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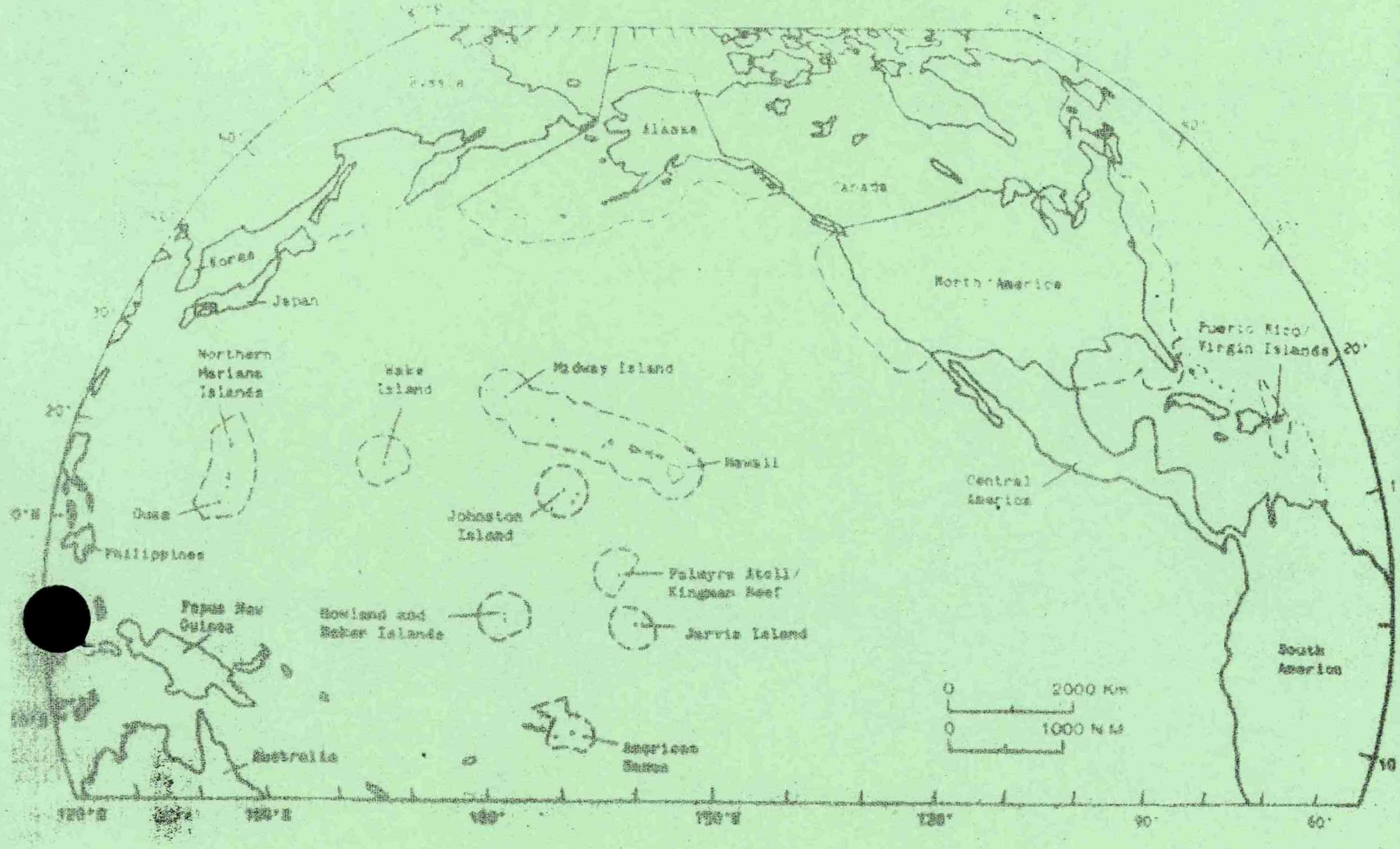

Fishery Management Plan

For

Bottomfish and Seamount Groundfish Fisheries

Of the

Western Pacific Region

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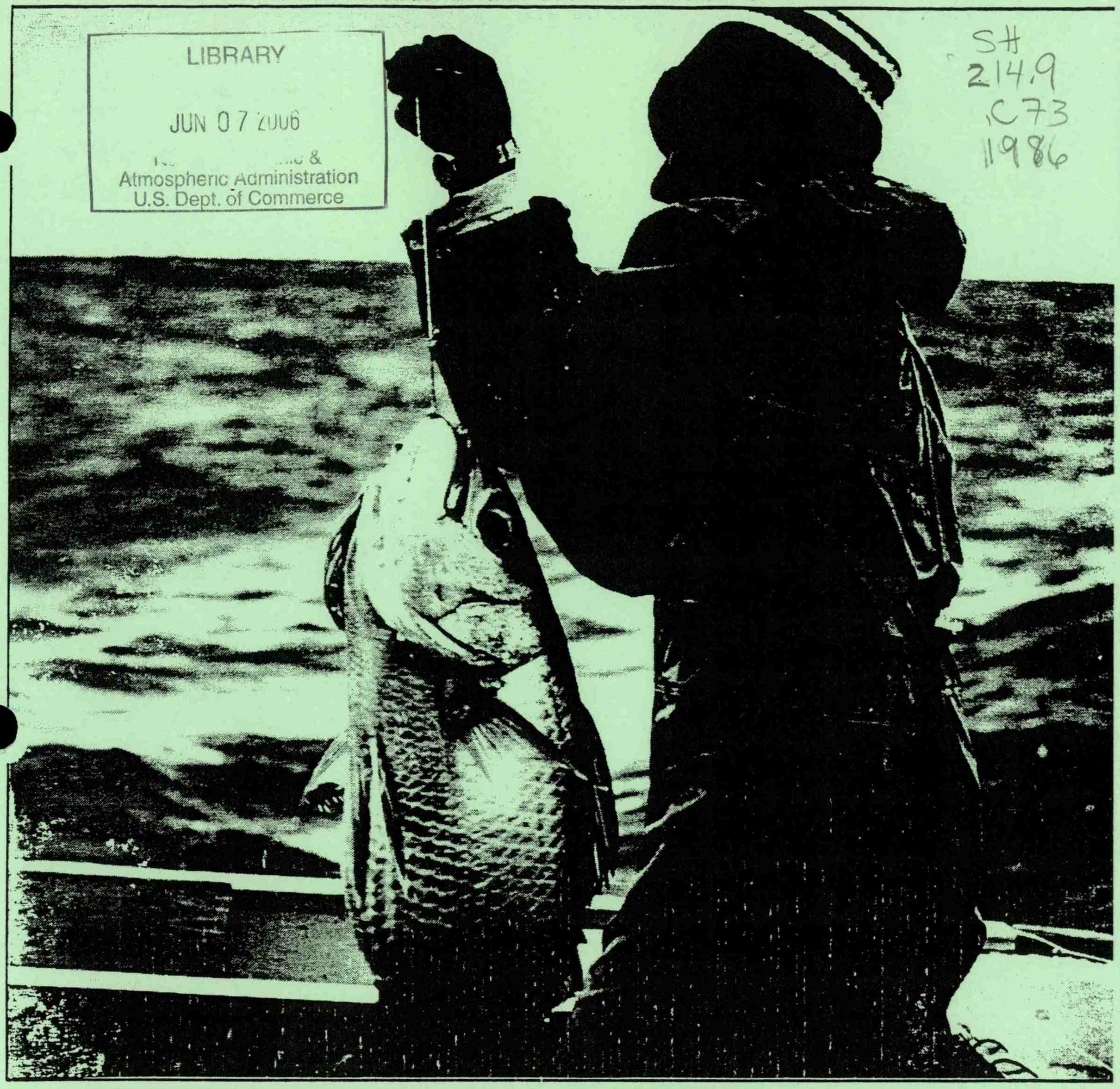

COMBINED FISHERY MANAGEMENT PLAN, ENVIRONMENTAL ASSESSMENT AND REGULATORY IMPACT REVIEW FOR THE BOTTOMFISH AND SEAMOUNT GROUNDFISH FISHERIES OF THE WESTERN PACIFIC REGION

FINAL
MARCH 1986

Western Pacific Regional Fishery Management Council
1164 Bishop Street, Suite 1405
Honolulu, Hawaii 96813

(808) 523-1368

COMBINED

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AND

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FOR THE

BOTTOMFISH AND SEAMOUNT GROUNDFISH FISHERIES

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2.0 PREFACE

2.1 Title and Location of Proposed Action

This document presents the combined Fishery Management Plan (FMP), Environmental Assessment (EA), and Regulatory Impact Review (RIR) for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region. The plan was prepared by the Western Pacific Regional Fishery Management Council (WPRFMC) principally to establish a framework for managing the bottomfish fisheries within the U.S. Fishery Conservation Zone (FCZ) around Hawaii, American Samoa, and Guam and the seamount groundfish fisheries in the FCZ around the Hancock Seamounts northwest of the Hawaiian Islands. The inner boundary of the FCZ is a line coterminous with the seaward boundary of each of the coastal States and Territories, and the outer boundary of the zone is a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured. Midway Island is a possession of the U.S., but for the purpose of the FMP, Midway is treated as if it is part of the State of Hawaii. Although the FCZ includes waters off the Northern Mariana Islands and miscellaneous U.S. island possessions, the plan proposes no management system for the FCZ in those areas because of the relatively undeveloped status of the deepsea bottomfish fishery.

The plan covers a diverse group of species which are taken by a variety of gear, principally hook-and-line in the bottomfish fishery and trawl in the seamount groundfish fishery. The plan addresses fish stocks that are in all stages of exploitation. It recognizes that harvesting and marketing practices in the bottomfish fishery cause some species to be fished more intensively than others.

2.2 Proposed Actions

2.2.1 Framework for Future Actions

The plan proposes a "framework" for managing the bottomfish fishery in the FCZ around Hawaii, American Samoa and Guam. This framework is largely an administrative procedure which describes the processes by which the fishery will be managed and which establishes the limits and controls within which regulatory adjustments may be made. A set of heavily-fished species would be routinely monitored and a set of indicators would provide the basis for further investigation. Investigation could result in recommendations to make adjustments in the manage-

ment system in response to new information. The types of adjustments that could occur include the following:

-- Catch Limits (individual or total harvest)

-- Size Limits

-- Area/Season Closures

-- Fishing Effort Limitation

-- Fishing Gear Restrictions

-- Access Limitation

-- Permit and/or Catch Reporting Requirements for the FCZ

-- Rule-Related Notice System

These are options for future consideration but the acceptibility and mechanics of each measure would be subject to further review when a specific action is proposed.

2.2.2 Immediate Actions

2.2.2.1 Prohibit Bottom Trawl and Bottom-Set Nets

The use of bottom trawl and bottom-set net gear to harvest bottomfish would be prohibited in the FCZ around Hawaii, American Samoa and Guam. Although there is no known use of these gear-types at present in the fishery, there are several reasons for establishing a prohibition:

-- Less Selective and Lower Quality Catch Than Hook-and-Line Fishery

Nets are less selective in terms of species caught than is hook-and-line gear. Furthermore, netted bottomfish are susceptible to damage which reduces the catch quality compared to the higher quality of the hook-and-line catch.

-- Overcapitalization

There is sufficient harvesting capacity in the hook-and-line fleet to harvest the entire maximum sustainable yield in the bottomfish fishery. The entry of bottom trawlers or gill-netters would only add unnecessary harvesting capacity and increase the problem of overcapitalization, as well as create gear conflicts.

— Habitat Degradation

Lost nets present a potential for ghost fishing and subsequent habitat degradation.

The effect of a bottom trawl fishery on the quality of bottom habitat off Australia has been examined. The trawling converted an initially irregular bottom to a smoother bottom. An alteration in species structure occurred as the character of the habitat was modified (K. Sainsbury, draft ms. presented at Workshop on the Biology of Tropical Groupers and Snappers, May 20-22, 1985, Honolulu).

It is the hypothesis of some fisheries scientists that the bottomfish populations in the western Pacific islands are limited by availability of high relief habitat. There is so little habitat off the Pacific islands which meets the requirements of deepwater bottomfish that degradation or alteration of even a small amount could be extremely detrimental to the fishery.

-- Net Gear/Protected Species Interactions

The use of bottom gill nets and bottom trawls by domestic fishermen has been very limited to date, and is not presently in use but if these fishing methods should ever develop in Hawaii, incidental mortality of monk seals or sea turtles could occur as the result of the animals becoming entangled in lost netting or net fragments.

2.2.2.2 Adopt Existing State/Territory Measures In Adjacent FCZ

The following State/Territory laws/rules would be adopted in the adjacent FCZ:

Jurisdiction	Law/Rule
Territory of Guam	Prohibition on use and possession of explosives, poisons or intoxicating substances (Article 1, Section 12303, 12305).
State of Hawaii	Prohibition on the use and possession of explosives, poisons or intoxicating substances (HRS Section 188-23).

In addition, the use of explosives and poisons or intoxicating substances to harvest bottomfish in the FCZ adjacent to American Samoa would be prohibited.

Extending the prohibitions on the use of explosives and poisons to the harvesting of bottomfish in the FCZ would be generally beneficial in protecting stocks and habitat from destructive fishing techniques.

2.2.2.3 Moratorium on the Harvest of Seamount Groundfish

A moratorium on commercial fishing (by foreign and domestic fishermen) is recommended for an initial period of 6 years to restore depleted armorhead stocks at the Hancock Seamounts. Experimental fishing could be allowed under permit for those who may want to try non-trawl gear under controlled conditions. This closure should be accompanied by scientific investigations to assess the recruitment and recovery process. The 6-year period is proposed so that several cycles of recruitment can be investigated. These investigations would provide the basis for re-establishing an optimum yield (OY) for the seamount groundfish fishery from the initial OY determination of zero (0). The National Marine Fisheries Service is asked to report to the Council throughout the 6-year experimental closure period on the recovery of the Hancock Seamounts groundfish stocks and on the progress, if any, in obtaining international agreement on a management plan for groundfish species throughout their range in the Emperor Seamount chain.

2.2.2.4 Federal Permit Requirement for Bottomfishing in the FCZ of the Northwestern Hawaiian Islands

The Federal permit requirement for the FCZ of the NWHI would provide accurate monitoring of increases/decreases in fishing effort and in entry/exit patterns of the bottomfish fleet. A listing of permitted bottomfish vessels would allow more effective surveillance by the Coast Guard aircraft. It would also provide the U.S. Fish and Wildlife Service and the NMFS a point of contact with the fishermen and provide an opportunity for education on the sensitivity of the NWHI's unique wildlife and the need for their protection. As a part of the permit application an informational document which includes a protected species/fishing operation interaction or "take" form and a statement to be signed stating that the applicant has read and understands the applicable laws, regulations and penalties regarding the protected species of the area has been added. The

information requested on the permit application will be considered confidential and provide essential information for evaluating the various management options under the framework process.

2.2.2.5 Experimental Fishing Permit

Experimental fishing permits for domestic fishermen may be issued by the Regional Director of the NMFS. These controlled permits will be used to improve the data base by allowing fishing activities which might otherwise be prohibited by regulations promulgated through the framework process.

2.3 Summary of Management Costs

The implementation of the Bottomfish and Seamount Groundfish management plan will involve costs incurred by the State of Hawaii, the National Marine Fisheries Service, the U.S. Coast Guard, and the Western Pacific Regional Fishery Management Council (Appendix F).

The costs of management under a no FMP, a framework FMP, and a conventional FMP have been estimated. The U.S. Coast Guard surveillance and enforcement costs are roughly $1.83 million. This figure represents the total costs for a multi-purpose multi-fishery effort. A breakdown by fishery or purpose is very difficult to estimate. Additional costs under any management scheme is not foreseen to increase significantly.

Under a no FMP alternative, the projected costs, not including the Coast Guard costs, total $308,000 annually and is equivalent to approximately 8% of the value of the 1984 domestic commercial bottomfish fishery of the western Pacific FCZ. Under a no FMP alternative, State/Territory jurisdiction would prevail and no additional enforcement or administrative costs would be incurred. The seamount groundfish stocks would continue to be managed under the existing PMP.

Management costs under a framework FMP was estimated assuming one framework action per year. A total annual cost of $403,000, not including the Coast Guard costs, is expected (a 31% increase over a no FMP approach). The framework FMP costs correlates to approximately 11% of the value of the 1984 domestic bottomfish fishery value. The major areas of increased expenditures occurs under the NMFS enforcement (dockside enforcement practices) and administration.

The costs of management under a conventional FMP is estimated at $485,000 (approximately 13% of the 1984 domestic bottomfish fishery value) with one FMP amendment per year. Increased costs in the NMFS and WPRFMC administration make up the bulk of the additional costs.

A comparison between a framework versus a conventional FMP approval is discussed in Appendix F. The framework FMP approach with its timeliness in the implementation of any management action is favored.

2.4 Relationship to Applicable Laws and Policies

This FMP presents biological, environmental, economic and social information to provide a framework for management of the bottomfish and seamount groundfish fisheries in the western Pacific and to institute gear restrictions in the bottomfish fishery, a permit requirement for bottomfishing in the FCZ of the NWHI, and a moratorium on harvesting in the seamount groundfish fishery. The information and analysis are intended to satisfy Magnuson Act requirements as well as requirements of other laws and policies. Section 4 provides an overview of the fisheries, the conditions which led to the need for action through the FMP, and the context in which the FMP was prepared. Section 5 describes the management unit in terms of the targeted species and the participants in the fishery. Section 5 also presents the problems and the management objectives established in the FMP to address them. Section 6 sets forth recommendations for Federal actions to govern fishing for the management unit species in the FCZ of the western Pacific region. Section 7 compares the proposed actions with alternative approaches to demonstrate that the selected measures are the most effective for meeting the Council's objectives and are the most cost-effective. Section 8 defines the optimum yield for the fisheries and provides determinations of domestic annual harvest, joint venture processing, and total allowable levels of foreign fishing. Section 8 also discusses the relationship of the proposed actions to MFCMA National Standards. Section 9 discusses the relationship of the FMP to other applicable laws and policies. Section 10 describes plan administration and enforcement. Section 11 details the rules and regulations promulgated for this FMP. Appendix F compares the costs and benefits, to the extent that they are quantifiable, of the alternative management approaches.

2.5 Responsible Agencies

The FMP was prepared by the Western Pacific Regional Fishery Management Council, which was established by the Magnuson Fishery Conservation and Management Act. The Council is comprised of private and public sector representatives from Hawaii, American Samoa, Guam, and representatives of U.S. government agencies. Its primary function is to prepare fishery management plans which recommend Federal regulations and other actions in the Council's area of authority. For further information, contact:

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2.6 Public Review and Comment

The Council is required to obtain public input during plan preparation and to hold public hearings before approving a plan for Federal implementation. Public scoping meetings, as well as formal hearings, were scheduled on early drafts of the FMP during 1985. The Council held public hearings on the final version of the plan as follows:

Date:	Time:	Location:
September 24, 1985	7:00 p.m.	Satellite City Hall 65-670 Farrington Highway Waianae, Oahu, Hawaii
September 25, 1985	7:00 p.m.	United Fishing Agency 117 Ahui Street Honolulu, Oahu, Hawaii
September 26, 1985	7:00 p.m.	Lihue Neighborhood Center 3353 Eono Lihue, Kauai, Hawaii
October 1, 1985	7:00 p.m.	First Hawaiian Bank Conference Room 74-5593 Palani Road Kailua-Kona, Hawaii, Hawaii
October 2, 1985	7:00 p.m.	Hawaii Country Council Room 25 Aupuni Street Hilo, Hawaii, Hawaii
October 3, 1985	7:00 p.m.	Maalaea Boat & Fishing Clubhouse Maalaea, Maui, Hawaii

2.7 List of Preparers

The FMP was prepared by Paul Bartram as consultant to the Council and the Bottomfish Plan Development Team comprised of the following individuals:

Dr. George Boehlert
Chief, Insular Resources Investigation
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Alvin Katekaru
Marine Section Chief
Division of Aquatic Resouces (DAR)
Hawaii Department of Land and Natural Resources
Bottomfish Plan Development Team Chairman

Kurt Kawamoto, Biologist, Contract Services
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National Marine Fisheries Service (NMFS) - Honolulu Laboratory

Dr. Stephen Ralston, Biologist
Insular Stock Assessment Program Leader
National Marine Fisheries Service (NMFS) - Honolulu Laboratory

The Council also acknowledges the contribution of the members of its Scientific and Statistical Committee and its Bottomfish Advisory Subpanel members from Hawaii, Guam, and American Samoa. The Chairman of the subpanel is Frank Farm of Honolulu.

2.8 Glossary of Terms

Definition of terms used in this draft FMP.

Abundance: The number of fish of a species present in an area of interest over a specified unit of time.

Advisory Panel (AP): A Council appointed panel of fishing industry individuals whose purpose is to guide and advise the Council on the development and issues of the fishery management plan (FMP).

Availability: The proportion of a stock that is within the area of a fishery or the range of the type of fishing gear used. Availability may vary yearly and seasonally even when abundance remains nearly constant.

Catch: The number or weight of a particular species or group of species taken in a unit of time.

Catch-Per-Unit of-Effort (CPUE): The average catch taken by a defined unit of fishing effort. In the bottomfish fishery, for example, the number of weight of bottomfish caught per vessel per day or per line-hour of fishing.

Coastal Zone Management Act (CZMA): The principal objective of the Coastal Zone Management Act of 1972 is to encourage and assist States in developing coastal zone management programs, to coordinate State activities and to safeguard the regional and national interests in the coastal zone. CZMA requires that any Federal activity directly affecting the coastal zone of a State be consistent with that State's approved coastal zone management program to the maximum extent practicable.

Domestic Annual Processing (DAP): An estimate of that portion of the harvest by domestic fishing vessels that will be processed on an annual basis by domestic processors.

Domestic Annual Harvest (DAH): An estimate of the total catch of the management unit species that the domestic fleets will make in one year. DAH is equal to the total domestic catch of the management unit species made by all domestic fishing methods in any one year.

Domestic Fishery or Fishing: A fishery conducted by vessels of the United States.

Effort: A numerical measure of the amount of gear and time used in an attempt to catch fish. Effort may be expressed in terms of number of hooks fished per day, number of boat days, man hours, line hours, etc.

Endangered Species Act (ESA): The Endangered Species Act of 1973 provides for the conservation of endangered and threatened species of fish, wildlife, and plants. The program is administered jointly by the Department of the Interior (DOI) and the Department of Commerce (DOC).

Environmental Assessment (EA): A document prepared by a Federal agency which presents a brief analysis of the environmental impacts of the proposed action and its alternatives, including sufficient evidence to determine that either: (1) an environmental impact statement is required; or (2) a finding of no significant impact should be declared (CEQ sec. 1508.9).

Executive Order (E.O.) 12291: This Executive Order applies to the issuance of new rules, the review of existing rules, and the development of legislative proposals concerning regulations. The Order requires that (1) regulatory objectives and priorities be established with the aim of maximizing net benefits to the United States, taking into account the condition of particular industries, State and local governments, and consumers affected by the rule; (2) rules be developed with a cost/benefit approach when possible; (3) the chosen regulatory approach or alternative be the one with the least net cost to society, if practicable; and (4) regulatory action should not be undertaken unless the potential benefits outweigh the potential costs to society.

Fishery: A fishery is a composite of the following essential components: a resource consisting of a population of a species or set of species usually with similar ecological requirements or characteristics; a number of fishermen who regularly exploit the resource, together with their boats and equipment for harvesting and handling fish; and a market in which fishermen can sell their catch.

Fishery Conservation Zone (FCZ): U.S. waters from the seaward boundary of a State or Territory to 200 nautical miles from the shoreline.

Fishery Management Plan (FMP): A plan prepared by the Council and implemented by the Department of Commerce for the conservation and management of fishery resources in the Fishery Conservation Zone.

Hancock Seamounts: That portion of the FCZ in the NWHI west of 180° 00' W. longitude and north of 28° 00' N. latitude.

Magnuson Fishery Conservation and Management Act (MFCMA): Federal law (P.L. 94-265, passed in 1976 and amended several times in subsequent years) covering fishing activity in U.S. waters between State waters and 200 nautical miles from the coastline.

Main Hawaiian Islands (MHI): The high islands of the State of Hawaii consisting of Niihau, Kauai, Oahu, Molokai, Lanai, Maui, Kahoolawe, and Hawaii (from 154°W. Longitude to 161° 20'W. Longitude).

Management Unit: A species or a group of fish species affected or exploited by the same fishery or fisheries.

Management Unit Species (MUS): In this Fishery Management Plan (FMP), the MUS include approximately 22 species of deepwater bottomfish and seamount groundfish.

Marine Mammal Protection Act (MMPA): The Marine Mammal Protection Act (MMPA) enacted in 1972 establishes a moratorium on the taking of marine mammals and a ban on the importation of marine mammal products with certain exceptions. Responsibility is divided between the Department of Commerce (whales, porpoises, seals, and sea lions) and the Department of Interior (other marine mammals) to issue permits and to waive the moratorium for specified purposes, including incidental takings during commercial fishing operations. The Magnuson Act amended the MMPA to extend its jurisdiction to the FCZ.

Maximum Sustainable Yield (MSY): The greatest average amount, in theory, that can be harvested from a population of fish on a continuing basis.

Metric Ton (MT): Unit of measure equal to 1000 kilograms or approximately 2200 pounds.

Mortality: Refers to the death rate in a population from natural and fishery causes. Together these constitute total mortality. Mortality rates can be considered on an instantaneous or an annual basis (instantaneous mortality rates are the limits approached by average rates over progressively shorter periods).

National Environmental Policy Act (NEPA): The National Environmental Policy Act requires that the effects of Federal activities on the environment be assessed. NEPA's basic purpose is to insure that Federal officials weigh and give appropriate consideration to environmental values in policy formulation, decision-making and administrative actions, and that the public is provided adequate opportunity to review and comment on the major Federal actions. NEPA requires preparation of an EIS for major Federal actions significantly affect the quality of the human environment.

National Marine Fisheries Service (NMFS): The NMFS has the primary Federal responsibility for the conservation, management, and development of living marine resources and for the protection of certain marine mammals and endangered species under numerous Federal laws. The Agency also has responsibilities to the U.S. commercial and marine recreational fishing industry, including fishermen, and to the States and the general public.

Northwestern Hawaiian Islands (NWHI): The FCZ of the Hawaiian islands archipelago lying to the west of 161° 20' W. longitude.

Optimum Yield (OY): The amount of fish which produces maximum benefits to the Nation, especially considering food production and recreational opportunities.

Overfishing: A term often used to describe fishing at a level of effort in excess of the level needed to obtain the MSY. The term is also used to imply that fishing has reduced stock to such a level that its reproductive potential is reduced. Overfishing may occur in a fishery at different levels of effort for recreational and commercial users. This may occur, for example, when recreational users prefer fish of smaller size than commercial users.

Plan Development Team (PDT): A team appointed by the Council to prepare the fishery management plan under the direction of the Council. The PDT utilizes inputs from all committees and panels as well as outside sources in developing the FMP.

Population: A general term for all the individuals of a species or several species of fish occupying a particular area. A sub-population is a portion of the whole population that is isolated in time or space.

Preliminary Fishery Management Plan (PFMP or PMP): A preliminary Fishery Management Plan is prepared by the Council in response to an application to the Secretary of State (SOS) from a foreign nation to fish a particular resource. The plan contains a description of the fishery and provides a Total Allowable Level of Foreign Fishing (TALFF) that is available to all foreign nations. The PFMP is preliminary to a full Fishery Management Plan (FMP).

Production Model: One of several mathematical descriptions of the effects of natural and fishing mortality on the size (weight) of a fish population. A mathematical description of the annual added weight to a fishable stock, plus recruits added to it, less what is removed by natural mortality. This figure is usually estimated as the catch in a given year plus the increase in stock size or minus the decrease (Ricker, 1975). The production model is widely used for stock assessment purposes because its inputs are simply data on catch and effort. Because of its simplicity, the model requires a number of assumptions which are often violated.

Recruitment: The rate at which new fish (recruits) enter the fishery by reaching catchable size or reaching an age where their distribution and behavior makes them vulnerable to the fishing gear, or the total amount of recruits added in a given period of time (i.e., the recruitment rate integrated over the time period), or the process of adding recruits.

Regional Director (RD): Southwest Regional Director of the National Marine Fisheries Service (NMFS).

Regulatory Flexibility Act (RFA): The Regulatory Flexibility Act establishes the principle that where Federal regulation is necessary, the regulation should be tailored to the regulated entity's size and capacity to bear the regulatory burden. Effect on FMP process: like E.O. 12291, the RFA requires analysis of costs, benefits, and effective alternatives; it also requires preparation of a Regulatory Flexibility Analysis for rules likely to have a significant economic impact on a substantial number of small entities for review by SBA.

Regulatory Impact Review (RIR): Provides the rationale for the choice of a proposed regulatory action. It includes a cost/benefit analysis and the consequences of all alternatives considered. This also includes the no action alternative.

Scientific and Statistical Committee (SSC): A committee appointed by the Council to assist it in the development, collection, and evaluation of such statistical, biological, economic, social, and other scientific information as is relevant to such Council's development and amendment of any fishery management plan.

Stock: A population or portion of a population that can be treated as a single unit for management purposes.

Subsistence Fishery (Fishing): A fishery to obtain food for personal use rather than for sale or recreation.

Total Allowable Level of Foreign Fishing (TALFF): The TALFF is that portion of the OY that is made available to foreign vessels.

Western Pacific Regional Fishery Management Council (WPRFMC): The Western Pacific Regional Fishery Management Council shall consist of the State of Hawaii, the territories of American Samoa and Guam, and the Commonwealth of the Northern Mariana Islands. It shall have authority over the fisheries in the Pacific Ocean seaward of the jurisdiction of such State, territories, Commonwealth, and possessions of the United States in the Pacific Ocean area out to 200 nautical miles from shore.

3.0 SUMMARY

3.1 Proposed Actions

The Western Pacific Regional Fishery Management Council proposes a package of management measures for the bottomfish and seamount groundfish fisheries in the FCZ around Hawaii, American Samoa, and Guam, as follows:

Administrative framework for future regulations -- The plan proposes a "framework" for managing the bottomfish fishery in the FCZ around Hawaii, American Samoa, and Guam. The list of management unit species is covered in Table 5.1 and 5.2. This framework is largely an administrative procedure which describes the processes by which the fishery will be managed and which establishes the limits and controls within which regulatory adjustments may be made. The framework procedure is illustrated in Figure 3.1. A set of heavily-fished species would be routinely monitored and a set of indicators would provide the basis for further investigation. Investigation could result in recommendations to make adjustments in the management system in response to new information. The types of adjustments that could occur include the following:

- o Catch Limits (individual or total harvest)
- o Size Limits
- o Area/Season Closures
- o Fishing Effort Limitation
- o Fishing Gear Restrictions
- o Access Limitation
- o Permit and/or Catch Reporting Requirements for the FCZ
- o Rule-Related Notice System

The framework process includes a thorough evaluation of the biological and economic impacts of any proposed adjustments before their implementation.

Gear restrictions -- Prohibit the use of bottom trawl and bottom-set gillnets to harvest bottomfish in the FCZ.

-- Establish a 6-year moratorium on commercial fishing activities within the FCZ portion of the seamount groundfish fishery to promote the recovery of depleted stocks.

-- Prohibit the use of explosives and poisons for harvesting bottomfish in the FCZ off Hawaii, Guam, and American Samoa. In the FCZ off Hawaii and Guam, this would be consistent with existing State/Territory rules.

NWHI permit -- Require a Federal permit for bottomfishing in the FCZ of the Northwestern Hawaiian Islands (see Appendix A for permit application and attached protected species inclusions).

Experimental fishing permit -- To improve the data base, the Regional Director of NMFS will be authorized to issue a limited number of domestic experimental fishing permits allowing fishing under controlled conditions which might otherwise be prohibited by regulations promulgated through the framework process.

Annual review -- A monitoring team will be appointed by the Council. The Team will prepare an annual review of fishery performance with special emphasis on further investigation of any key indicators which raise concerns.

Data collection procedures -- To obtain the catch/effort data for the annual review, reliance would be placed on existing State and Territory data reporting systems, and a Federal reporting requirement would not be added initially. The Council would consider authorizing Federal data reporting requirements in the event State/Territory systems prove inadequate.

The available evidence indicates that groundfish resources on seamounts throughout the central North Pacific are depressed and that the resources in the Hancock Seamount area within the FCZ are severely depressed (Table 4.2 shows trends in FCZ groundfish catch). The catch per unit of effort of pelagic armorhead at the Hancock Seamounts has declined from a high of over 80 MT/hr in 1972 to about 30 MT/hr in 1978 (Humphreys, et al., 1984) to only 0.29 MT/hr in 1984. Although a TALFF of only 1,000 MT has been allocated each year, the quota has never been attained. Only 72 MT was taken in 1984. It is clear that rebuilding of these stocks could ultimately lead to a renewed fishery both within and outside the FCZ.

The FMP is needed to implement immediately the following proposed actions:

a) Prohibit bottom trawl and bottom-set nets because these gear-types are non-selective and produce lower quality product than hook-and-line methods; entry of bottom trawlers or gill-netters into the fishery would accentuate the problem of over-capitalization as well as create gear conflicts; lost nets present potential for ghost fishing and bottomfish habitat degradation; lost nets also increase the potential for entanglement of endangered or threatened species which may result in incidental mortalities.

b) Adopt existing State/Territory measures in the adjacent FCZ to ban the use of explosives and poisons for harvesting bottomfish thereby protecting stocks and habitat in the FCZ from destructive fishing techniques.

c) Establish a moratorium on seamount groundfish fishing activities for an initial period of 6 years to restore depeleted armorhead stocks at the Hancock Seamounts and to facilitate scientific investigations by the National Marine Fisheries Service in assessing the recruitment and recovery process of this fishery.

d) Establish a permit requirement for the FCZ of the Northwestern Hawaiian Islands (NWHI) bottomfish fishery. The permit requirement would: provide accurate monitoring of increases/decreases in fishing effort; provide entry/exit patterns of the bottomfish fleet; a listing of permitted bottomfish vessels would allow more effective U.S. Coast Guard surveillance; provide essential information for evaluating various management options; and provide the U.S. Fish and Wildlife Service and the NMFS a point of contact for educational purposes dealing with the protected species found in the area.

e) Establish an Experimental Fishing Permit (EFP) to be issued by the Regional Director of the NMFS. The EFP's would be used to improve the data base and will allow fishing, under controlled conditions which might otherwise be prohibited by regulations promulgated through the framework process.

The FMP also provides the means for identifying management problems/issues of the bottomfish and seamount groundfish fishery and taking

future management actions within the FCZ. The Council has considered the following to be major problems and issues:

a) Risk of overfishing as the bottomfish fisheries expand rapidly;

b) Maintenance of social and economic values associated with small-scale commercial, recreational, and subsistence fisheries in areas;

c) Consistency of management in the FCZ and State/Territorial waters;

d) Need for timely data to identify and respond to future problems;

e) Protection of habitat from impacts of destructive gear (e.g., bottom trawls);

f) Avoidance of interaction with protected endangered and threatened species;

g) Achievement of economically profitable fisheries; and

h) Restoration of depleted seamount groundfish stocks.

These problems and related management objectives are detailed in sections 4.3, 4.4, and 5.4

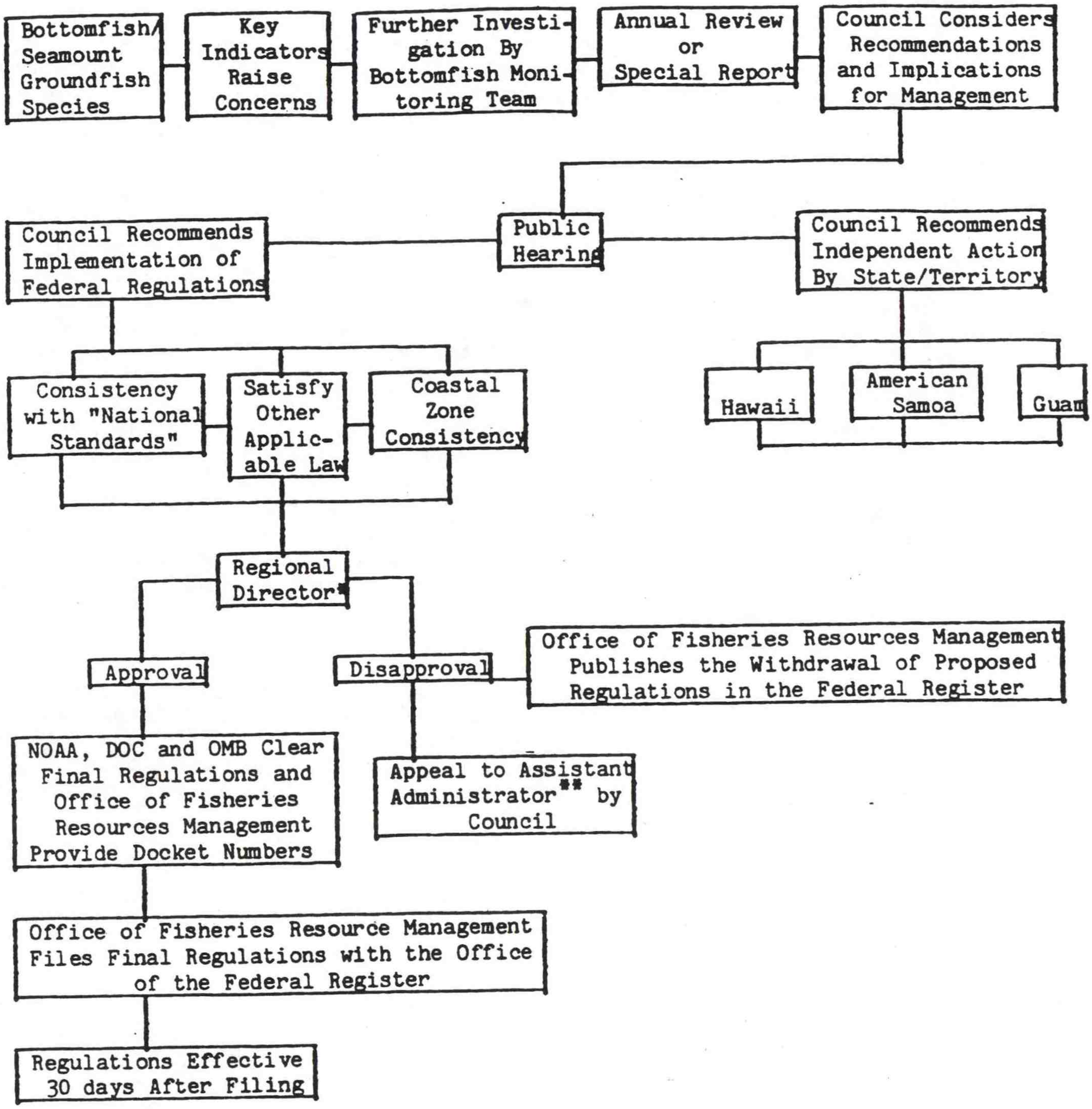
The Council is aware that each management (regulatory) measure proposed for the fishery would have to be justified and be evaluated on its costs and benefits. This FMP provides the historical background for such analysis and establishes a long-term administrative "framework" by which the bottomfish and seamount groundfish fishery in the FCZ of the western Pacific can be effectively monitored and that regulatory adjustments (e.g., catch limits, size limits, area/season closures, access limitation, etc. See Figure 3.2) can be implemented rapidly by the Council in response to new information.

Without an FMP (no action) there would be no management of the bottomfish resources within the FCZ of the western Pacific and the seamount groundfish resources would continue to be managed under the existing Preliminary Management Plan.

Some of the major potential consequences resulting from no action taken by the Council are: longlasting or irreversible damage to the bottomfish habitat in the NWHI; increased incidences of lost bottom-trawl and bottom-set nets that pose entanglement problems for protected, endangered, and threatened marine aquatic animals; instability in NWHI bottomfish production resulting in projected losses of at least $500,000 per year by 1990 and $780,000 per year by 2000; the use of explosives and poisons could also produce longlasting or irreversible damage to the habitat as well as increase the risk for indiscriminate harvest of juvenile fish; and loss in timeliness on the part of the Council to effectively manage the bottomfish fishery and thus prevent severe economic disruption to the fishery and long-term impact to the resource.

FIGURE 3.1

ADMINISTRATIVE FRAMEWORK FOR INSTITUTING NEW CONTROLS ON BOTTOMFISHING



* Southwest Regional Director of National Marine Fisheries Service.
** Assistant Administrator for fisheries of the National Oceanographic and Atmospheric Administration.

3.2 Need for FMP

Commercial bottomfish landings as well as fishing effort are at record-high levels in the FCZ off the main Hawaiian Islands and the Northwestern Hawaiian Islands (NWHI). In 1984, the landings were estimated to be 1.4 million pounds, the highest since the period between 1945 to 1948 when the landings averaged around 1 million pounds annually. Although bottomfish landings declined to 400,000 pounds during the 1960's and mid 1970's, they rapidly increased to over a million pounds from 1974 to the present, a direct result of an expanded local market for fresh bottomfish and strong interest in the NWHI stocks. The maximum sustainable yield (MSY) for the fishery has been estimated to be 596,000 pounds for the main Hawaiian Islands and 508,000 pounds for the portion of the NWHI (Nihoa-Northampton Bank) currently being fished. In 1984, the MSY for the main Hawaiian Islands was exceeded by 55%; the MSY for the NWHI was exceeded by approximately 15%. The preliminary 1985 data indicated that the MSY level in the fishable range of the NWHI was exceeded by approximately 33% in 1985. Although the history of landings from American Samoa and Guam is not well known, increasing efforts to exploit the bottomfish resources in these areas are expected.

Several indicators already seem to point to the potential for overfishing in the Hawaiian bottomfish fishery. These are: the average size (weight) of bottomfish, e.g. approximately 36% by number of the opakapaka, caught around the main Hawaiian Islands are below the size of first reproduction (Ralston and Kawamoto, 1985); harvest capacity of the existing fleet exceeds the best estimate of MSY from the entire charted Hawaiian bottomfish habitat; unstable patterns have been observed in the entry/exit pattern of fishermen in the NWHI bottomfish fishery; and there have been significant increases in the total bottomfish landings in all areas of the FCZ.

Although scientific evidence for potential overfishing is not definitive, Hawaii's fishermen have clearly voiced their fear that smaller-sized fish and lower catch per unit effort indicate that the fishery is reaching a danger point. The fishing community itself has already begun to debate the merits of various management measures, with particular interest in access management.

On the seamounts 1,500 miles northwest of the main Hawaiian Islands, there is a distinct change in the deepwater demersal fish fauna from the bottomfish complex to a seamount groundfish complex which includes the pelagic armorhead, alfonsin, raftfish (see Table 5.2 for scientific names), and numerous other species of lesser or no commercial importance.

Newly-acquired Russian catch data suggest that the maximum stock size of pelagic armorhead on all seamounts in the 1969-1975 period was some 400,000 MT (Borets, 1975). At a recent meeting on the resources of the northern Pacific seamounts held in Shimizu, Japan, papers presented by Sasaki (1984) and Wetherall and Yong (1984) documented the decline in the pelagic armorhead stocks.

The seamount groundfish fishery would continue to be managed under the PMP which essentially limits foreign harvest to an annual quota of 2000 metric tons. Without the proposed actions under the FMP, the likelihood that maximum sustainable yield estimates for groundfish species would be improved through scientific research would be reduced. Another potential consequence would be the reduced likelihood of developing a cooperative international management scheme for seamount stocks across their range.

3.3 Consistency with MFCMA National Standards

a) Prevent overfishing -- The FMP acknowledges that the risk of overfishing appears to be high in the Hawaii FCZ. The biological evidence of overfishing is not definitive at present but, the FMP incorporates an annual review requirement designed to identify problems in the future so that they can be acted on rapidly through an administrative rule-making framework.

b) Best scientific information available -- The FMP acknowledges the limitations of available data, but the best available information has been used to prepare the FMP and the annual review requirement will result in considerably improved data and analysis for future management.

c) Inter-related stocks managed as a unit -- The FMP treats Hawaii, American Samoa, and Guam as individual management areas because there is no evidence of the mingling of larval or adult fish among these areas. However, bottomfish stocks in Hawaii, American Samoa, and Guam are treated as a unit throughout their range in the respective areas.

d) Non-discrimination between residents of different states -- The FMP does not propose any differential licensing programs or other requirements for residents of different states.

e) Promote efficiency -- The FMP does not restrict the times, places, or methods of bottomfishing except that environmentally-destructive gear (bottom trawls and bottom-set nets) is prohibited in order to protect the limited amount of habitat, to provide added protection for endangered species, and to prevent potential gear conflicts.

f) Allow for variations and contingencies -- The annual review requirement of the FMP allows for variations and contingencies to be considered by the Bottomfish Monitoring Team when concerns are raised by a prescribed set of indicators. The FMP does not automatically trigger regulations when changes in fishery conditions are indicated.

g) Minimize costs and avoid duplication -- The FMP provides for a cost-effective means of monitoring for changes in fishery condition and, through an annual review requirement, assessing the need for regulation as problems arise. There is no duplication of existing data reporting requirements.

3.4 Management Problems and Issues Considered

TABLE 3.1

PROBLEMS AND RELATED OBJECTIVES FOR BOTTOMFISH/SEAMOUNT GROUNDFISH MANAGEMENT

PROBLEM	OBJECTIVE
	Bottomfish
Increased fishing effort and associated potential for overfishing.	1. Protect against overfishing and maintain the long-term productivity of bottomfish stocks.
Insufficient data to guide long-term management.	2. Improve the data base for future decisions through data reporting requirements and cooperative Federal/State/Territory data collection programs.
Transboundary (Federal/State) distribution of the fishery.	3. Provide for consistency in Federal/State/Territory bottomfish management to ensure effective management across the range of the fisheries.
Limited amount of bottomfish habitat and possible damage to stocks or habitat through the use of destructive harvesting techniques.	4. Protect bottomfish stocks and habitat from environmentally-destructive fishing activities and enhance habitat if possible.
Possible imbalance in the distribution of benefits among commercial, recreational, and subsistence fishery interests.	5. Maintain existing opportunities for rewarding fishing experiences by small-scale commercial, recreational, and subsistence fishermen, including native Pacific islanders.
Possible disruption in the supply or quality of fresh bottomfish available to the domestic market.	6. Maintain consistent availability of high quality products to consumers.
Possible overcapitalization of the Northwestern Hawaiian Islands' bottomfish harvesting capacity.	7. Maintain a balance between harvest capacity and harvestable fishery stocks to prevent overcapitalization.

TABLE 3.1

PROBLEMS AND RELATED OBJECTIVES FOR BOTTOMFISH/SEAMOUNT GROUNDFISH MANAGEMENT
(Continued)

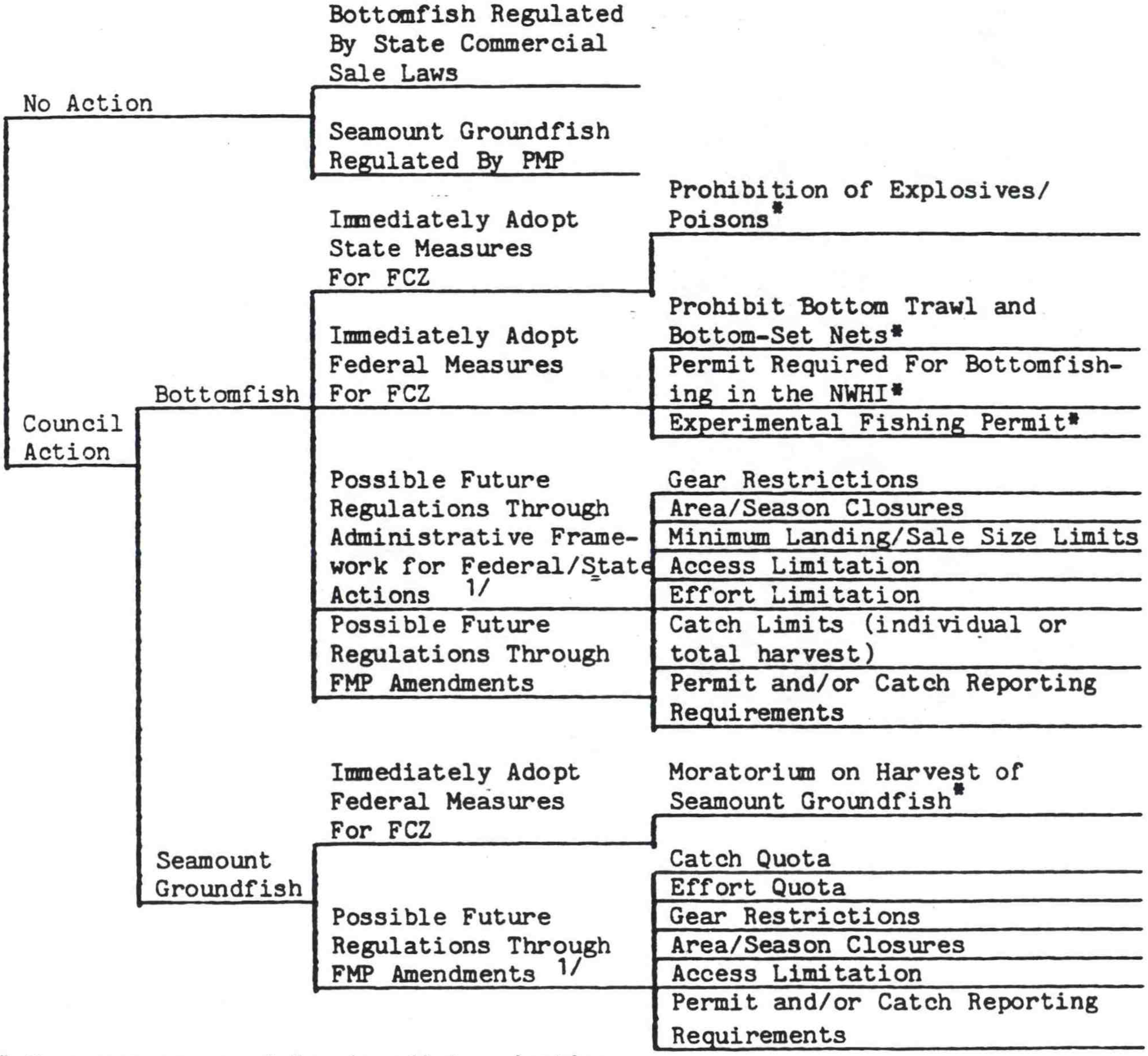
PROBLEM	OBJECTIVE
Bottomfish	
Increased participation in the Northwestern Hawaiian Islands' bottomfish fishery by fishermen unfamiliar with that region, with a corresponding increase in the risk of vessel groundings, and injury of individual animals through various fishing operations, i.e. hooks and/or fishermen, and the potential for use of net gear that would have adverse impacts on threatened or endangered marine species.	8. Avoid the taking of protected species and minimize possible adverse modifications to their habitat.
Seamount Groundfish	
Depleted groundfish stocks.	9. Restore depleted groundfish stocks and to provide the opportunity for U.S. fishermen to develop new domestic fisheries for seamount groundfish which will displace foreign fishing.
The stocks of many, if not most, of the groundfish species, range across the FCZ into international waters.	10. Monitor stock recovery of depleted stocks in the FCZ so that any international plan of action for managing the common resource can be guided by experimental results.

3.5 Alternatives Considered

The alternatives and the immediate actions considered for managing the bottomfish and seamount groundfish fisheries are illustrated in a decision tree format in Figure 3.2.

FIGURE 3.2

REGULATORY OPTIONS OPEN TO THE COUNCIL
FOR MANAGING BOTTOMFISH AND SEAMOUNT GROUNDFISH FISHERIES



* Measures proposed for immediate adoption.
1/ Preferred alternative.

3.6 Determinations in the FMP

3.6.1 Maximum Sustainable Yield (MSY)

The FMP acknowledges the limitations of available data for accurate assessment of the maximum sustainable yield (MSY) in both the bottomfish and seamount groundfish fisheries. However, provisional estimates of MSY can be provided, as follows:

Area	Provisional Estimate of MSY (Tons/Year)	Source
American Samoa	34	Extrapolation of MSY estimate per unit of habitat for Guam
Guam*	28	Polovina et al., 1985
Main Hawaiian Islands (MHI)	298	Ralston and Polovina, 1982
Northwestern Hawaiian Islands (Nihoa-Northhampton Seamounts)**	254	Extrapolation of MSY estimate per unit of habitat for MHI (Ralston and Polovina, 1982)
Hancock Seamounts	<1,100	Japanese have never caught their 1,000 mt annual allocation

* Guam and associated banks.
** NWHI area presently being fished.

3.6.2 Optimum Yield (OY)

The OY to be achieved from the fisheries for species included in the management unit addressed by this framework plan is the amount of bottomfish caught by U.S. fishermen in the FCZ and adjacent waters around Hawaii, Guam, and American Samoa under the management measures implemented under the FMP to achieve to the greatest extent practicable the management objectives (see Table 3.1). Initial estimates of the amounts which will be harvested are shown in Table 8.5.

Each year, as part of the process of reviewing the prior year's fishery and assessing the need for regulatory adjustments, the Council will consider whether any species or species group in any area needs to be managed on a numerical basis.

The OY for seamount groundfish in the FCZ of the Hancock Seamounts initially is set at zero (0) metric tons (mt) per year through 1990.

3.6.3 Domestic Annual Harvest (DAH)

The reasons for defining OY in non-numeric terms also apply to the definition of DAH, which, for the purposes of the FMP, is the quantity of each species in the management unit that will be caught by domestic vessels in the FCZ under the management measures implemented under the FMP to achieve, to the greatest extent practicable, the management objectives. Initial estimates of the quantity which will be harvested are shown in Table 8.5.

3.6.4 Total Allowable Level of Foreign Fishing (TALFF)

In the bottomfish fishery, the existing fleets in Hawaii, American Samoa, and Guam have sufficient harvesting capacity to take the entire maximum sustainable yield and optimum yield. Hence, the amount of bottomfish species available for TALFF is zero (0). Until an optimum yield is re-established for the Hancock Seamount fishery, the amount of seamount groundfish available for TALFF is also zero (0).

3.6.5 Domestic Annual Processing (DAP) and Joint Venture Processing (JVP)

All of the landings of bottomfish species enter local markets in fresh product forms. Although frozen bottomfish products may become more acceptable in established market, there is no reason to believe the DAP will be other than zero (0). There is no processing (in the industrial sense) of domestic catches of bottomfish. Until an OY is re-established for the Hancock Seamount fishery, the amount of seamount groundfish available for JVP is zero (0).

3.7 Impacts Anticipated

a) The proposed action is expected to benefit the long-term productive capability of the stocks. The framework process will promote timely action by the Council/NMFS to address resource problems (if any) in a flexible manner as they are identified. The cooperative State/Territory/NMFS data collection and analysis program will ensure that necessary data are available at minimal additional cost. The moratorium for the seamount fishery will permit depleted stocks to rebuild. The prohibition on net use will limit the risk of waste associated with non-selective gear and reduce the potential for taking substantial numbers of small fish;

b) The proposed action will not allow substantial damage to the ocean and coastal habitats. The prohibition on net use will prevent habitat damage;

c) The proposed action will not have an adverse impact on public health and safety. The markets for bottomfish have established high quality standards. The proposed action should promote maintenance of these standards;

d) The proposed action is not expected to affect adversely any endangered or threatened species (Appendix J). The prohibition on trawl and bottom-set nets to harvest bottomfish will remove much of the risk of incidental taking of Hawaiian monk seals and sea turtles by bottomfish fishermen;

e) The proposed action will not result in cumulative adverse effects that could have a substantial effect on the target resource species or any related stocks that may be affected by the action. The proposed action will establish a monitoring and reporting program to determine if the objectives of the plan are being achieved and to identify corrective actions if resource problems are subsequently identified;

f) The proposed action will protect against damage to scientific resources of the NWHI. No scientific, cultural or historic resources will be affected;

g) The proposed action is intended to maintain the economic and social values associated with establish small-scale commercial, recreational and subsistance fisheries around the populated islands in Hawaii, Guam, and American Samoa. Most of the fishing in these areas occurs in the territorial sea, under control by the respective island governments. The framework process provides for systematic, cooperative assessment of fishery conditions within the FCZ and territorial seas so that problems and solutions can be identified;

h) The proposed action will promote rebuilding of seamount groundfish stocks so that an economically viable fishery can be resumed;

i) Controversy - The Council has worked closely with State and Territory officials and the fishing community in developing the management program over the past 3 years. The risk of controversy appears to be low; and

j) Uncertainty - The data base has improved substantially in the past several years. The Council has worked closely with the industry to obtain current data. The Honolulu Laboratory, Southwest Fishery Center (SWFC), U.S. Fish and Wildlife Service, and State of Hawaii conducted a five-year Tripartite Survey of the NWHI which greatly

expanded the knowledge about fishery potentials. The Honolulu Laboratory also has conducted or funded a substantial amount of economic research and has assisted Hawaii, Guam, and American Samoa in establishing effective data management systems. While there is some uncertainty about how fishery participants will operate in the future and about stock responses to fishing pressure, the proposed action provides a mechanism to assess changes and implement new measures if necessary. Therefore, uncertainty is not a significant problem.

4.0 INTRODUCTION

Bottomfish is an important commercial and recreational deepwater complex of species in American Samoa, Guam, and Hawaii. Recent evidence suggests that some species of this complex may be on the verge of being overfished and that fishing effort has been expanding on an annual basis. To prevent the possibility of overfishing and substantial public loss through declines in the bottomfish stocks, the Western Pacific Regional Fishery Management Council has prepared a fisheries management plan which will create an administrative framework for proposing new fishing regulations for bottomfish and seamount groundfish fisheries in the U.S. Fishery Conservation Zone (FCZ). This "framework" management process is detailed in Section 6.2.

The bottomfish fishery is a mainstay of the small-scale developing fisheries of American Samoa and Guam. Although the number of boats engaged in commercial bottomfishing is less than 100, they represent the majority of commercial fishing enterprises in these areas and are important to the local economies. In Hawaii, the main island commercial fishery is comprised of some 100 vessels landing bottomfish regularly and perhaps 1,000 vessels which land bottomfish intermittently. The Northwestern Hawaiian Island fishery is a commercial large-boat fishery involving approximately 20 vessels. Although these vessels could be converted to pelagic and shellfish gears, they are predominantly considered single-purpose vessels which target bottomfish.

The impetus for bottomfish management arose in the western Pacific from generally-shared perceptions of fishermen, scientists, and managers that fishing had deteriorated in some areas, that major changes in the amount of fishing effort had recently or were about to occur, and that an allocation problem between large and small users could conceivably occur.

Although the scientific evidence of potential overfishing is not definitive, the biological nature of many bottomfish species seems to preclude their rapid recovery from overfishing. Hawaii fishermen have clearly voiced their fear that smaller-sized fish and lower catch rates are reaching a danger point. The scientists are engaged in a number of research projects to evaluate the available evidence and reach conclusions about appropriate management measures. The fishing community itself has debated the merits of various measures as well. The essential feature of this management plan is that it provides a low-cost means for implementing management measures in a timely manner once their need and justification is established. Each measure would have to be evaluated on its costs and benefits and this FMP provides the framework and historical background for such analysis. The FMP cannot evaluate all the aspects of specific future decisions because of uncertainty about what decisions will be made.

4.1 Importance of the Bottomfish and Seamount Groundfish Fisheries

4.1.1 Bottomfish

The western Pacific bottomfish complex includes approximately 20 commercially or recreationally important species of snappers, groupers, jacks, and emperorfishes (see Table 5.1 for scientific names) and many others of the same families of lesser or no importance. The fishery for these species is of high value due to fresh fish market prices, consumer demand, and cultural attraction in Pacific island communities. The bottomfish fishery is a source of income and employment, provides recreation and nutrition, and satisfies social customs and lifestyles.

The snapper-grouper-jack-emperorfish complex contributes about 11 percent of the total weight caught and 15 percent of the combined value of the commercial fisheries in the western Pacific FCZ (see Table 4.1). Prices for whole fresh bottomfish sold in Hawaii averaged $2.65 per pound, ex-vessel, in 1984, reaching a high of $11.85 per pound for opakapaka (Pristipomoides filamentosus) in April 1984.

TABLE 4.1

RELATIVE IMPORTANCE OF THE 1984 DOMESTIC COMMERCIAL FISHERIES IN THE WESTERN PACIFIC FCZ

Species Group	FCZ CATCH		Value of FCZ Catch (Million$)
	MT	T	
Tunas	3,545	3,900	$12.9
Non-Tuna Pelagic Species	701	771	2.6
Bottomfish	600	660	3.8
Shellfish	488	537	2.8
TOTAL	5,334	5,868	$21.6

Source: WPRFMC, unpublished data.

The recreational (non-market) value of bottomfish landings is also significant, although poorly documented. The proportion of the total main Hawaiian Islands' bottomfish landings attributed to the recreational component of the fishery has increased considerably in recent years. The National Marine Recreational Fishing Survey indicated that over 200,000 pounds of opakapaka and related species were caught in 1981 by recreational fishermen in Hawaii, with smaller quantities caught

by recreational fishermen in American Samoa and Guam (NMFS, Honolulu Laboratory, unpublished data from National Marine Recreational Fishing Survey). It is estimated that 50% of the offshore fish catch (harvested Seaward of the reef) on Guam is not sold commercially (K.E. Knudson, contract WPC 0983 progress report, 6/5/84).

4.1.2 Seamount Groundfish

On the seamounts 1,500 miles northwest of the main Hawaiian Islands, there is a distinct change in the deepwater demersal fish fauna from the bottomfish complex to a seamount groundfish complex which includes the pelagic armorhead, alfonsin, raftfish (see Table 5.2 for scientific names), and numerous other species of lesser or no commercial importance. No U.S. fishermen have commercially harvested the seamount groundfish resource, but foreign trawl harvest of armorhead and alfonsin has occurred since the late 1960s. Foreign catches have declined in recent years, and only a small portion of the overall foreign fishery is conducted at the Hancock Seamounts inside the FCZ. The 1984 catch from the FCZ was only 72.7 metric tons, compared to a high of 795.2 metric tons in 1980 (see Table 4.2).

TABLE 4.2

TRENDS IN THE FCZ CATCH OF SEAMOUNT GROUNDFISH (ALL SPECIES)

Year	FCZ Catch	
	MT	T
1977	22.0	24.2
1978	416.0	457.6
1979	217.8	239.6
1980	795.2	874.7
1981	647.0	711.7
1982	390.3	429.3
1983	163.3	179.6
1984	72.7	80.0

4.2 Goals of Fisheries Management in the FCZ

4.2.1 Bottomfish

The goal of the Council in managing the bottomfish fishery in the FCZ is to achieve and maintain bottomfish production at a level that

will support a stable and profitable commercial fishery, as well as a rewarding recreational and subsistence fishery, and that will furnish a consistently available supply of high quality products.

4.2.2 Seamount Groundfish

The goal of the Council in managing the groundfish fishery in the FCZ around the Hancock Seamounts is to replenish the armorhead and alfonsin stocks as a contribution to a profitable domestic commercial fishery that will furnish high quality products.

4.3 Problems for Resolution and Objectives of the FMP

Early in the plan development process, the Council identified problems and related management objectives for the bottomfish and seamount groundfish fisheries. These broad objectives are summarized in Table 4.3 and are discussed in detail in Section 5.4. The central problem in the bottomfish fisheries of the main islands of American Samoa, Guam, and Hawaii is that fishing pressure, both in terms of number of vessels and in relative fishing power (technology), has increased dramatically in the past ten years. Although the biological signs are not yet definitive, the risk of overfishing is growing. The same is true in the NWHI where a commercial fishery was recently developed. At the Hancock Seamounts, the cause for groundfish stock collapse in recent years is uncertain, but a rebuilding/research program is planned for the next six years.

4.4 Relationship Between Objectives

The Council recognizes that not all management objectives will be achieved to the same degree. Implementation of the FMP can make a positive contribution to most of the objectives, but achievement of all objectives will require cooperation by the private sector and by the State/Territory governments, as well as Federal implementation of the FMP.

TABLE 4.3

PROBLEMS AND RELATED OBJECTIVES FOR BOTTOMFISH/SEAMOUNT GROUNDFISH MANAGEMENT

PROBLEM	OBJECTIVE
	Bottomfish
Increased fishing effort and associated potential for overfishing.	1. Protect against overfishing and maintain the long-term productivity of bottomfish stocks.
Insufficient data to guide long-term management.	2. Improve the data base for future decisions through data reporting requirements and cooperative Federal/State/Territory programs.
Transboundary (Federal/State) distribution of the fishery.	3. Provide for consistency in Federal/State/Territory bottomfish management to ensure effective management across the range of the fisheries.
Limited amount of bottomfish habitat and possible damage to stocks or habitat through the use of destructive harvesting techniques.	4. Protect bottomfish stocks and habitat from environmentally-destructive fishing activities and enhance habitat if possible.
Possible imbalance in the distribution of benefits among commercial, recreational, and subsistence fishery interests.	5. Maintain existing opportunities for rewarding fishing experiences by small-scale commercial, recreational, and subsistence fishermen, including native Pacific islanders.
Possible disruption in the supply or quality of fresh bottomfish available to the domestic market.	6. Maintain consistent availability of high quality products to consumers.
Possible overcapitalization of the Northwestern Hawaiian Islands' bottomfish harvesting capacity.	7. Maintain a balance between harvest capacity and harvestable fishery stocks to prevent overcapitalization.

TABLE 4.3

PROBLEMS AND RELATED OBJECTIVES FOR BOTTOMFISH/SEAMOUNT GROUNDFISH MANAGEMENT
(Continued)

PROBLEM	OBJECTIVE
Bottomfish	
Increased participation in the Northwestern Hawaiian Islands' bottomfish fishery by fishermen unfamiliar with that region, with a corresponding increase in the risk of vessel groundings, and injury of individual animals through various fishing operations, i.e. hooks and/or fishermen, and the potential for use of gear that could have adverse impacts on threatened or endangered marine species.	8. Avoid the taking of protected species and minimize possible adverse modifications to their habitat.
Seamount Groundfish	
Depleted groundfish stocks.	9. Restore depleted groundfish stocks and to provide the opportunity for U.S. fishermen to develop new domestic fisheries for seamount groundfish which will displace foreign fishing.
The stocks of many, if not most, of the groundfish species, range across the FCZ into international waters.	10. Monitor stock recovery of depleted stocks in the FCZ so that any international plan of action for managing the common resource can be guided by experimental results.

4.4.1 Bottomfish

Objective 1 reflects the mandate of the Magnuson Act to prevent "overfishing". However, a definitive and timely assessment that overfishing is occurring requires an improved data base (Objective 2).

Objective 3 reflects the Council's view of the importance of State and Territory governments in managing western Pacific bottomfish fisheries and the preference for a coordinated Federal/State approach to fishery management rather than unilateral Federal action. Objective 4 is intended to protect bottomfish habitat, which is a key factor inherently limiting the biological yield of the fishery. Objective 5 recognizes the diversity of the small-boat fleets which participate in the fishery off the main Hawaiian Islands, American Samoa, and Guam. This objective reflects the Council's view that large social values are generated by maintaining open access for diverse fisheries interests in these areas. Objective 6 reflects the Council's view that the FMP should not accentuate the existing fluctuations in fresh fish supply which characterize island markets. Objective 7 recognizes the need to maintain the bottomfish stocks of the Northwestern Hawaiian Islands at a level which will promote commercial fishing. If stocks are overfished throughout their range in Hawaii, scarcities will ultimately raise consumer prices and will disrupt the commercial fishing industry. Objective 8 recognizes that increased bottomfishing activity in the NWHI may carry with it a potential for adverse impacts on protected marine species or their habitats.

4.4.2 Seamount Groundfish

Objective 9 reflects the mandate of the Magnuson Act to encourage increased domestic harvest of underutilized species. U.S. fishermen cannot possibly develop a new fishery with groundfish stocks at such low levels as presently exist. Even if no domestic fishery is forthcoming, stock rebuilding would be beneficial in terms of the U.S. "fish and chips" policy upon which foreign fishing allocations are based. Objective 10 promotes the concept of international management of fish stocks which range across the FCZ into international waters.

In conclusion, the Council has adopted a set of objectives which are consistent with the defined management goals, with the purposes of the Magnuson Act, and with U.S. policies regarding protected marine species and foreign fishing allocations.

4.5 Context for Management Decisions

4.5.1 Habitat-Limited and Recruitment-Limited Resource

The distribution of adult bottomfish in the western Pacific is closely linked to suitable physical habitat. Hard bottom and high relief seem to be key elements, particularly for groupers. It is not clear how

strongly the occurrence of food items is controlled by this type of physical habitat. The breadth of diet shown by most groupers and particularly snappers suggests that the strong substratum dependency is probably based on shelter rather than prey distribution (J. Parrish, draft ms., 1985).

Deepwater snapper and grouper adults establish a home range on the drop-off, the boundary between the narrow terraces and steep slopes that surround the western Pacific islands. Ulua (Carangidae) and the uku (Aprion virescens) appear to be less constrained by substratum association than groupers and Pristipomoides snappers. Ulua and uku forage throughout much of the water column and can even be caught with a surface lure. Even Pristipomoides snappers are moderately mobile for bottomfish, rising 10-20 fathoms above the bottom to feed. They may also travel miles from a home base and, as a result, fishermen may sometimes find their regular bottomfishing grounds temporarily vacated.

Continued expansion of fishing effort would have a detrimental impact on bottomfish yields. Bottomfish production off western Pacific islands is inherently limited because only a narrow portion of the ocean bottom satisfies the depth requirements of most bottomfish species. Unlike the continental shelf ecosystems on the mainland U.S., the Pacific islands are primarily volcanic peaks with steep drop offs and limited shelf ecosystems. Moreover, bottomfish populations are not evenly distributed within their natural habitat. Fishable concentrations occur in pockets, and when discovered, these pockets are heavily fished. Commercial fishing experience, as well as fishing experiments conducted by researchers, have demonstrated that intensive fishing on small banks reduces bottomfish stocks and catch rates in a remarkably short time.

Yield estimates in the western Pacific bottomfish fishery are usually estimated on the basis of a yield per unit of bottomfish habitat. As bottomfish are concentrated along the submarine drop-off zones centered around the 100-fathom isobath, the length of the 100-fathom isobath around an island or bank is frequently used as an index of bottomfish habitat rather than an area measure which is difficult to compute for the steep-sloped Pacific islands (J. Polovina, draft ms., 1985).

TABLE 4.4

INDEX OF BOTTOMFISH HABITAT

Island Area	Approximate Length of 100-Fathom Isobath	
	nmi	km
American Samoa	169	313
Guam	138	255
Main Hawaiian Islands	997	1,846
Northwestern Hawaiian Islands	1,231	2,280

After initial catches of old, large fish decline to reduced catches of much smaller fish, fishermen shift to new or less-exploited pockets of bottomfish. When fishing effort increases to the extent that most pockets within the range of fishing vessels have already been fished, then a decline in overall production is inevitable. However, there is presently no evidence to demonstrate that stock reduction has reached a level where subsequent recruitment has been affected, even in areas where the catch is comprised of a large proportion of small fish.

Stock depletion on a scale ranging from local populations to entire banks is an inevitable result of the bottomfish fishery. The need to "rest" heavily-fished grounds is a well-known method of stock conservation once voluntarily practiced by professional fishermen in Hawaii. Rotation of bottomfishing grounds allowed local stocks to recover from intensive fishing (C. Yamamoto, pers. comm., 1983). According to statements made at recent public meetings in Hawaii (August 1984), fishermen no longer rotate bottomfishing grounds to allow local fish populations to recover from intensive fishing because they believe competitors will not exercise the same self-restraint (WPRFMC, 1984).

The "cost" of overfishing, in the absence of effective management, is directly related to the recovery times required for depleted bottomfish populations to rebuild to harvestable levels. Recovery times depend on the nature of the reproductive biology and recruitment of the affected species. Recruitment may occur through the return of larval fish to the adult habitat where they were spawned or it may occur through the settlement of larval fish which was spawned at distant islands and banks and dispersed long distances by the currents. The juveniles of certain species seem to be more limited in depth distribution than the adults of the same species. According to fishermen, banks which shoal to 60 fathoms are shallow enough for opakapaka recruitment, but banks whose shallowest areas are 100 fathoms do not harbor opakapaka.

Recruitment of juvenile fishes to reefs in Hawaii was monitored by Walsh (1984), who found that many species exhibited strikingly low levels of recruitment over a 51-month period. Loss of larval fish to offshore or other unfavorable currents may be responsible for low levels of juvenile recruitment described in this and other Hawaii studies (Walsh, 1984). This generalization probably also applies to deepsea bottomfish. Hawaii fishermen have noted that after catch rates of an opakapaka population are reduced to a low level by intensive harvesting, it may take 3 years for the same population to become economically feasible to fish again (WPRFMC, 1984). There is some scientific support for a 3-5 year recovery time based on growth rates of selected bottomfish species reported in the literature. However, if the original population of a heavily-fished bank does not produce enough larvae after stock depletion, recovery could take much longer than 3-5 years. Recovery as a result of larval dispersal over great distances would be a chance event, subject to favorable oceanographic conditions.

4.5.2 Geographic Context

The Council's area of jurisdiction (see Figure 4.1) is the FCZ around Hawaii (648,000 square miles, 1.7 million sq. km), American Samoa (75,000 square miles, 194,000 sq. km), Guam (60,000 square miles, 155,000 sq. km), and U.S. commonwealth and possessions in the Pacific (476,000 square miles, 1.2 million sq. km). Bottomfishing is non-existent or is relatively undeveloped in the FCZ around the U.S. commonwealth and possessions. If bottomfishing ever develops to the level that management should be considered for this portion of the FCZ, amendments to the FMP will be considered.

Bottomfishing is intensive off the main Hawaiian Islands, American Samoa, and Guam; however, most of the catch is harvested in the territorial seas rather than in the FCZ. In the main Hawaiian Islands, the southern tip of the Penguin Bank, a major bottomfishing area, is in the FCZ. This bank lies 18 nautical miles (33 km) from Honolulu and 40 nautical miles (74 km) from Maui's closest boat landing sites. In American Samoa, banks 20 to 35 nautical miles (37-65 km) east and south of the populated islands are in the FCZ; however, these banks are only lightly fished at present. Large banks 15 to 30 nautical miles (28-56 km) south of the island of Guam are in the FCZ, and bottomfish have been exploited there in the past. At present, no boats are known to range this far from Guam for bottomfish.

The major FCZ fishery for bottomfish is in the Northwestern Hawaiian Islands. The fishery lies 250 to 1,260 nautical miles (463-2,333 km) from Honolulu in an area of rough seas and dangerous currents.

The Hancock Seamounts, a part of the northern extent of the Hawaiian Ridge, is located within the FCZ (see Figure 4.2) some 1,500 nautical miles (2,778 km) northwest of Honolulu. The large-scale foreign seamount groundfish fishery once extended throughout the southeastern reaches of the Northern Hawaiian Ridge that lies 2,400 nautical miles (4,444 km) from Tokyo and 3,000 nautical miles (5,556 km) from Vladiovostak. The present foreign fishery is greatly reduced compared to historical patterns.

For generalized maps of major bottomfishing and seamount fishing grounds, readers are referred to Appendix B.

4.5.3 Legal Context

The Western Pacific Regional Fishery Management Council was established under the Magnuson Fishery Conservation and Management Act of 1976 (P.L. 94-265, as amended) to develop management plans for fisheries

within the U.S. Fishery Conservation Zone around Hawaii, the territories (American Samoa, Guam), commonwealth, and possessions of the United States in the Pacific Ocean. Exclusive U.S. jurisdiction over all fish (except tunas) in the zone was established by the Magnuson Act. All fishery management plans must be consistent and must comply with various federal laws and requirements such as the Marine Mammal Protection Act, Endangered Species Act, Regulatory Flexibility Act, National Environmental Policy Act, etc. as described in Section 9.0. After a plan is approved by the Federal government, it is implemented by Federal regulations and enforced by the National Marine Fisheries Service (NMFS) and the U.S. Coast Guard.

The inner boundary of the FCZ is a line coterminus with the seaward boundaries of Hawaii, American Samoa, and Guam. The outer boundary is a line drawn in such a manner that each point is 200 nautical miles from the baseline from which the territorial sea is measured. Federal regulations implemented under a FMP usually apply only to the FCZ, although Federal landing laws may affect non-FCZ activities as well.

The Magnuson Act does not explicitly or implicitly preempt State enforcement of its fishery laws in Federal waters beyond the territorial sea. Preserved to the States is the authority to regulate State-registered vessels in the FCZ, but no State may directly or indirectly regulate any fishing engaged in by any vessel outside the territorial sea unless the vessel is registered under the laws of the State.

The State and both territories have Federally-approved Coastal Zone Management (CZM) programs which call for the conservation of marine resources and require that government activities directly affecting the coastal zone be consistent with approved CZM plans. State CZM policy generally requires consistency of Federal with State fishing laws/rules.

A minimum size limit for sale in Hawaii, a prohibition in all areas on the use of poisons for fishing, and a prohibition against the use of explosives in Hawaii and Guam are the State/Territory management measures which affect the harvest of bottomfish in the western Pacific. Stock assessments were the basis for few of the existing regulations.

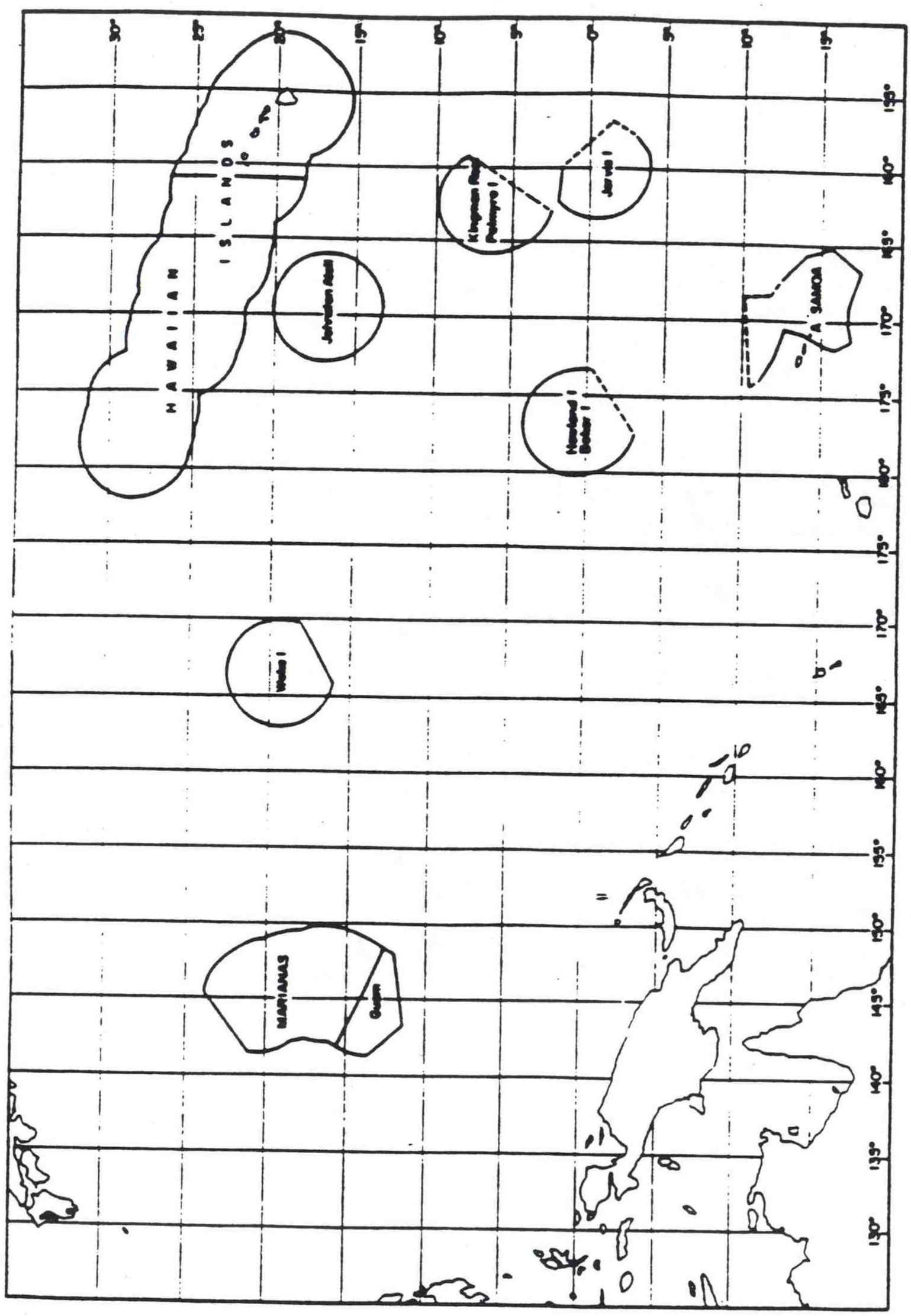


FIGURE 4.1 APPROXIMATE BOUNDARIES OF THE U.S. FISHERY CONSERVATION ZONE AROUND HAWAII, AMERICAN SAMOA, GUAM, THE NORTHERN MARIANA ISLANDS, AND U.S. POSSESSIONS

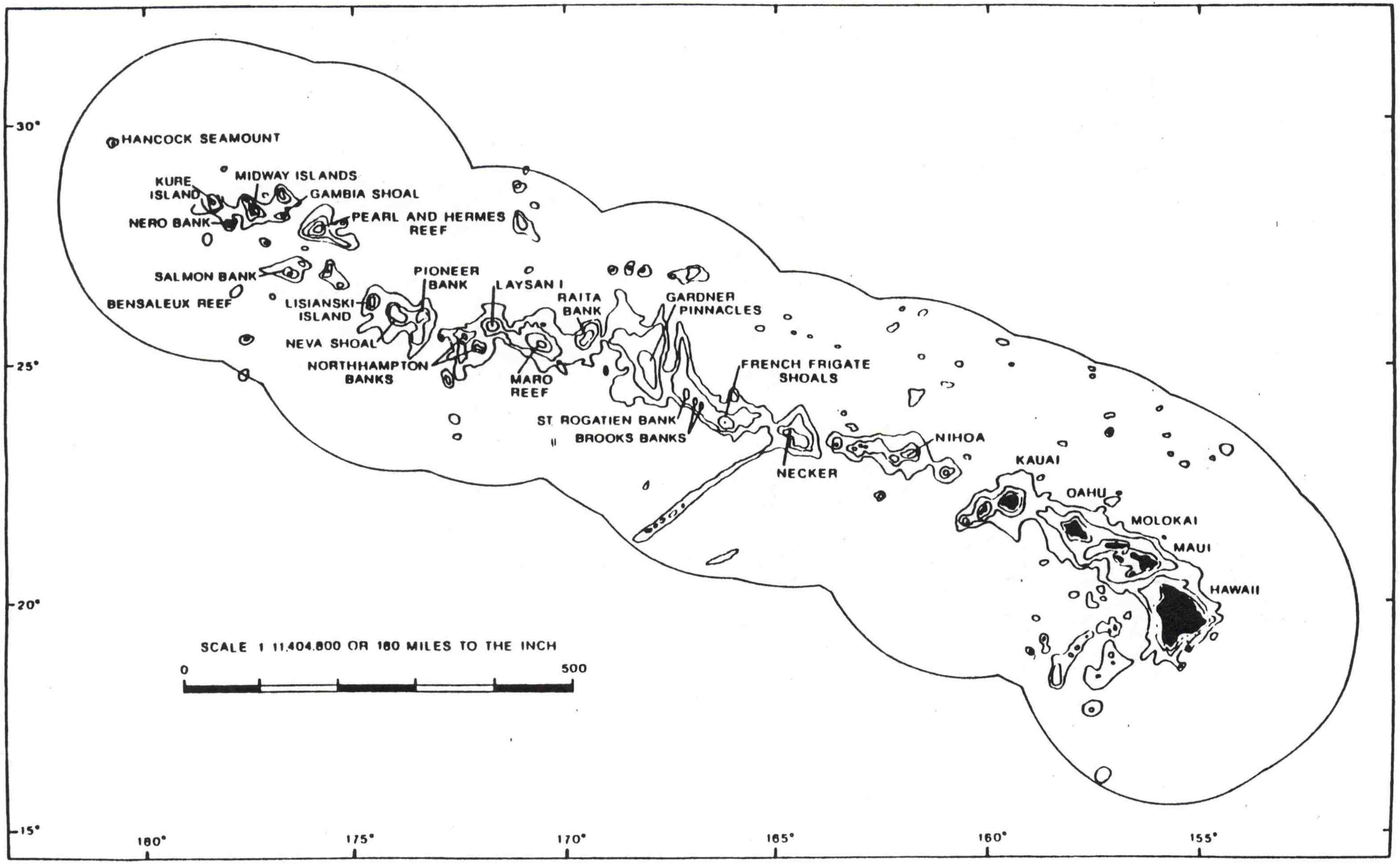


FIGURE 4.2 NORTHWESTERN HAWAIIAN ISLANDS AND NEARBY SEAMOUNTS

TABLE 4.5

SUMMARY OF EXISTING STATE/TERRITORY LAWS AND RULES
WHICH AFFECT HARVESTING OF BOTTOMFISH

Jurisdiction	Law/Rule	Effect on Bottomfish Stocks/Habitat
Territory of American Samoa	Prohibition against the "reckless use" of poisons for harvesting fish.	Protects bottomfish habitat from destructive fishing techniques.
Territory of Guam	Prohibition on use and possession of explosives, poisons or intoxicating substances.	Same as above.
State of Hawaii	Prohibition on the use and possession of explosives, poisons or intoxicating substances. Prohibition on the sale by fishermen or possession by fish dealers of onaga, opakapaka, uku, and ulua under one pound.	Same as above. Deters non-selective gear types that could potentially harvest large concentrations of juvenile recruits.

4.5.3.1 Hawaii

The State has established a minimum size limit of one pound for opakapaka, ula'ula (onaga), uku, and ulua (scientific names shown in Table 5.1) which are offered for sale or in the possession of a fish dealer. This size limit is too small to have a positive effect on the biological yield of the stocks since it is substantially below size at onset of sexual maturity of most of the regulated species and below the size of entry of most regulated species to the hook-and-line fishery. However, it acts as a deterrent to non-selective gears which could indiscriminately harvest concentrations of small bottomfish recruits.

Except for a prohibition on the use and possession of explosives and poisons for fishing (H.R.S. 188-23), no other laws or rules presently exist that would affect harvesting of

deepsea bottomfish. However, the Department of Land and Natural Resources has broad authority (Hawaii Revised Statutes 197-2) to make administrative rules that may include size limits, bag limits, open and closed seasons, or specifications of fishing gear which may be used or possessed.

In addition, H.R.S. 188-37 provides the State Department of Land and Natural Resources with special authority to regulate the fishing in the "... islands, reefs, and shoals, as well as their respective appurtenant reefs and territorial waters" of the Northwestern Hawaiian Islands. The Department may issue permits to licensed fishermen and may limit the number of permits issued to take marine life, with the limitation based on the order of application for permits.

4.5.3.2 Guam

Although the Territory has provided broad authority to the Guam Division of Aquatic and Wildlife Resources to regulate several dimensions of fish harvesting, only a few regulations have actually been promulgated. Of these, only the prohibition on the use and possession of explosives and poisons or intoxicating substances by fishermen could have any impact on the harvest of bottomfish.

4.5.3.3 American Samoa

The Territory of American Samoa has only one fishing law -- a prohibition against the "reckless use" of poisons for harvesting fish -- which could have an impact on the harvest of bottomfish. Other restrictions on fishing activity are traditional and are instituted at a village level for inshore fisheries. Village restrictions are much more effective than those imposed at higher levels of government because they are promulgated within the cultural context by traditional leaders and, consequently, are more likely to receive the approval and acceptance of the villagers. Current management efforts by village councils are not as extensive as in the past (Wass, 1980). The offshore bottomfish fishery involves the use of boats which fish far outside the areas in which village control is effective and land the catch at two or three harbors which have not traditionally been managed by village leaders.

4.5.3.4 Seamount Groundfish Preliminary Fishery Management Plan

The inclusion of the Hancock Seamounts within the FCZ in March 1977 placed management of the fishery resources there under jurisdiction of the United States. The seamount groundfish stocks were judged provisionally to be fully exploited, and regulations were implemented restricting foreign harvest to a 2,000 MT annual quota for bottom trawling or bottom longlining and to 60 vessel-days of effort. In addition, a license for each foreign vessel and complete catch reports for each trip are also required. Another requirement is the placement of a U.S. fishery observer onboard all vessels permitted to operate within the FCZ. The latter requirement allowed an onsite inspection of this fishery and the opportunity to independently gather catch data. Beginning in 1978, Japan was allotted a total yearly catch quota of 1,000 MT for all seamount groundfish species.

4.5.4 Economic Considerations

4.5.4.1 Bottomfish

The markets for fresh bottomfish in the western Pacific appear to be much the same as the markets for snapper are throughout the world -- a high-valued product with significant quality premiums. In the western Pacific, market niches exist for particular species and there are substantial price differentials among species. Hence, mixtures of bottomfish species are harvested to maximize catch values and fishing efficiency based on location and seasons. In the long-range Northwestern Hawaiian Islands fishery, the mix of bottomfish species which is harvested in a sequence is related to perishability and to the quantities which can be absorbed without flooding the Honolulu market.

Although short-run fluctuations in landings are reflected in price, island markets seem capable of long-term expansion which would increase pressure on certain species. Medium-run fluctuations are greater and indicate the kind of problems which might arise with management measures which would affect the scheduling of landings (such as annual catch quotas or seasonal closures) and could accentuate supply fluctuations. Proposals for managing Hawaii's bottomfish fishery need to consider the quality premiums for fish coming from the main Hawaiian islands as well the weak substitutability between species, especially in the case of opakapaka. (S. Pooley, draft ms., 1985).

Economic analysis of bottomfish vessels' financial data suggests that the NWHI fishery is financially risky, which only compounds the market problems. Whether a high-quality frozen product would be acceptable in Hawaii, and whether it would compete with the fresh catch or with frozen snapper imports is an important issue. At-sea freezing of the bottomfish catch would increase to an even greater extent the pressure on NWHI stocks (S. Pooley, draft ms., 1985).

Samoan consumers have a traditional preference for small fish (¼ to 2 pounds), and until recently, the larger, deepwater species of bottomfish were not targeted. In April 1982, the American Samoa Office of Marine Resources launched a program to stimulate the export of fresh fish to Hawaii. These efforts resulted in the air shipment of bottomfish for sale in Honolulu. Deepwater snappers (onaga, ehu) are now being targeted because they bring the best prices in Honolulu (Howell, 1983). The development of an export fishery for deepwater snappers has stimulated a greater fishing effort in the FCZ.

Guam, like American Samoa has limited marketing potential for deepwater bottomfish. This has prompted numerous export attempts. Although exports of whole fish during 1981 amounted to less than one metric ton (Myers, et al., 1983), there is a trend toward greater export of bottomfish from Guam. (M. Pohl, pers. comm., 1985).

A large market demand for one species (onaga) exists in Japan, but it will be difficult for Guam fishermen to supply the large quantities of onaga sought by Japanese importers. There may also be opportunities to substitute local bottomfish for fish presently imported by Guam hotels and restaurants which serve the large population of tourists from Japan.

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4.5.4.2 <u>Seamount Groundfish</u>

Due to its small size, the pelagic armorhead does not seem to have much market potential in Hawaii. Larger species which inhabit the seamount slopes probably have greater promise as potential targets of a domestic hook-and-line fishery (Yamamoto, 1983). Most of these species are considered "incidental" in the Preliminary Fishery Management Plan (PMP). It has not been determined if the harvest of incidental species in the foreign trawl fishery is adversely affecting stocks of potential importance to a domestic hook-and-line fishery or if a domestic fishery for the seamount slope resources is economically feasible.

4.5.5 Enforcement Capabilities

The capabilities of the National Marine Fisheries Service, and the U.S. Coast Guard to patrol and enforce fishery regulations in the vast ocean area of the FCZ around the American-flag islands of the western Pacific are limited. The U.S. Coast Guard in the western Pacific has two high endurance cutters, two buoy tenders, three patrol boats, three C-130 aircrafts, and two helicopters available in Hawaii, and one buoy tender and one patrol boat to patrol Guam and the CNMI. Ships and planes are subject to frequent redeployment to other areas (e.g., Alaska) to address serious problems as they arise. These carriers are used for a variety of enforcement programs as well as for search and rescue efforts. The existing at-sea enforcement capability is allocated almost entirely to foreign fishing violations of the MFCMA. Management alternatives are practically limited to measures which can be enforced at dockside. The limitations of enforcement capabilities and budgets are a major consideration in evaluating the management alternatives for the western Pacific bottomfish fisheries.

4.5.6 Biological Information Available to Guide Management

Despite their importance in western Pacific fisheries, the life history of bottomfish and seamount groundfish species is not well known, and management is subject to the familiar limitations of data inadequacy. There is a particular lack of information on recruitment and the early development stages of deepsea bottomfish and groundfish populations.

The eggs and larvae of deepsea bottomfish are pelagic, but there are no good quantitative data on the distribution of deepsea bottomfish larvae around oceanic islands. From incidental catches in Hawaii, they seem to be more common in offshore rather than inshore environments (Leis, 1982). Based on the larger size upon settlement of deepwater snapper larvae, it seems possible that duration of the pelagic period is longer for Pristipomoides spp. than for Lutjanus spp. (larvae of the latter group may drift 25 to 50 days before settling out on the bottom) (J.M. Leis, draft ms., 1985). One investigator has inferred that juveniles of Pristipomoides may lead an extended planktonic life until settlement in the adult habitat (Mizenko, 1984). At this stage in larval fish studies, investigators are establishing where the early life history is spent and are beginning to approach the question of whether locally-spawned larvae are transported great distances by currents or are retained in an eddy-like circulation near the sites of spawning (J.M. Leis, draft ms., 1985).

A review of the reproductive pattern of extended spawning by island bottomfish populations strongly indicates peak activity in the late spring and summer (C.B. Grimes, draft ms., 1985), presumably to

compensate for low levels of recruitment. There is support in the literature (Lambert and Ware, 1983) for the view that demersal spawners produce batches of larvae over an extended period to enhance the chances of survival in ocean environments of relatively low biological production and intense predation (C.B. Grimes, draft ms., 1985).

Bottomfish species currently requiring management attention in the western Pacific have life history patterns that encourage over-exploitation. They have such low rates of production and relatively high unexploited standing stocks that fisheries can develop and mature relying almost entirely on the standing stock as opposed to surplus production. These resources may be ultimately harvested down to levels at which a fishery is no longer economically feasible without prolonged recovery periods to rebuild stocks. Some of the bottomfish stocks are so available to modern gear that they can be rapidly depleted before conclusive statistical evidence can be developed. Fisheries that develop while fishing long-lived, low-production stocks of bottomfish may attain a harvesting potential that greatly exceeds the long-term productive capacity of the resources.

4.5.7 Sources of Data

4.5.7.1 Data on Domestic Fisheries

4.5.7.1.1 Hawaii

The Hawaii Department of Land and Natural Resources, Division of Aquatic Resources is the major source of fisheries data for Hawaii. Aggregate statewide data on reported commercial landings of the bottomfish management unit species and ex-vessel sale revenues for 1948-1984 are available.

The NMFS National Marine Recreational Fishing Statistical Survey (MRFSS) collected sample data on marine recreational fishing in 1979-1981 in Hawaii, and estimates of recreational bottomfish catches are available for those years.

The Western Pacific Regional Fishery Management Council monitors ex-vessel sales of bottomfish. Data on management unit species is available from January 1984 to the present. The monitoring program provides current information on the NWHI fishery and a substantial portion of the main Hawaiian island fishery for use and analysis by the Bottomfish Monitoring Team.

4.5.7.1.2 Guam

The Guam Division of Aquatic and Wildlife Resources, utilizing intercept creel surveys and through agreements with several fish wholesalers, collects bottomfish catch data. The Western Pacific Fishery Information Network (WPACFIN) has the compiled data from 1977 through 1984 available to its users.

The recreational catch estimates are available from the MRFSS for the years 1979-1981. A study of non-commercial fish production and distribution on Guam was funded in 1984 by the Council.

4.5.7.1.3 American Samoa

The Office of Marine Resources has collected commercial fishery data since 1976. WPACFIN estimates of commercial landings are available for 1981-1984. The data represents a sample of the commercial fishery in American Samoa and not a census of landings. Data such as area, method, weight, value, and price per pound by species (or species group) are included.

Estimates of the recreational catch are available from the MRFSS for the years 1979-1981.

4.5.7.2 Data on Foreign Fisheries

4.5.7.2.1 Hawaii

Data on Russian catches made before the Seamount Groundfish PMP became effective were reported by Sakiura (1972) and Borets (1975). Subsequent Russian data are not available, but Sasaki (1984) provides recent Japanese catch data for the overall fishery.

The catch per unit effort (CPUE) of pelagic armorhead for all major seamounts fished by the Japanese from 1969-1976 are given by Takahashi and Sasaki (1977).

The U.S. observer and catch reporting requirements imposed on foreign fishermen under the Seamount Groundfish PMP have yielded data on catch, effort, species composition, fishing area, size composition, and product forms. The foreign vessel observer reports are available through the SWFC Honolulu Laboratory.

The SWFC Honolulu Laboratory, has conducted research surveys at various seamounts in the FCZ (Gooding 1980, Uchida and Tagami, 1985).

An international workshop on the Environment and Resources of the Seamounts in the North Pacific held in March of 1984 in Shimizu, Japan consolidated the latest information on the many aspects of the seamounts and their associated resources.

4.5.7.3 Biological Data Sources

Ralston (1979) published the first review of the western Pacific bottomfish fisheries. Descriptions of the fisheries and the biology of the targeted species are included. Ralston later expanded on the biology of opakapaka in his Ph.D. dissertation (Ralston, 1981).

Ralston (1981) and Ralston and Polovina (1982) provide the preliminary estimates of the MSY for the Hawaiian archipelago. Preliminary MSY estimates for islands of the Mariana Archipelago are found in Polovina, et al. (1985).

The Proceedings of the First Symposium on the Resource Investigations in the NWHI in April of 1980 present information collected on the biology, trophic relationships, distribution and abundance of many of the management unit species.

The Proceedings of the Second Symposium on Resource Investigations in the NWHI in May of 1983 present additional biological information, as well as an assessment of commercial feasibility of the NWHI bottomfish fishery.

The Workshop on the Biology of Tropical Groupers and Snappers sponsored by the Honolulu Laboratory in May 1985 provides current information on the biology, systematics, assessments, distribution, and marketing of various snapper and groupers. The collection of papers are an excellent synopsis on the available information and their sources.

4.5.7.4 -- Research

One of the major investigations that has yielded important information on the biology and assessment of the bottomfish management unit species was a 5-year survey and assessment of the marine resources of the NWHI by the NMFS Honolulu Laboratory, the Hawaii Division of Aquatic Resources, and the U.S. Fish and Wildlife Service. This research provided much of the basic biological information that was previously lacking for many Hawaiian bottomfish species.

The NMFS Honolulu Laboratory's Research Assessment Investigation of the Marianas Archipelago (RAIOMA) program has yielded a wealth of biological data on the bottomfish resources of the Marianas Archipelago. The latest information was presented in Guam and Saipan in May 1985.

5.0 MANAGEMENT UNIT AND MANAGEMENT ISSUES

5.1 Management Unit (Affected Species)

The bottomfish and seamount groundfish fisheries comprise a large number of species, only a few of which seem to be in danger of overfishing at present. The administrative burden and cost of FMP preparation can be reduced through development of a single, comprehensive plan to manage these species as a unit throughout their range rather than creating a separate management plan for each species.

5.1.1 Included Bottomfish Species

The bottomfish complex consists of bottom-associated species which generally occupy the same type of deep-water habitat and are caught by the same fishing methods offshore of American Samoa, Guam, and Hawaii. This complex includes at least 65 species of 4 families: snappers (Lutjanidae), groupers (Serranidae), jacks (Carangidae), and emperor-fishes (Lethrinidae). About 20 of these species are landed in substantial quantities.

Although most of the same species occur in Hawaii, American Samoa, and Guam, the stocks in these island areas are reproductively isolated. Available data do not allow a clear separation of stocks within each island area. A study of opakapaka (Pristipomoides filamentosus) (Shaklee and Samollow, 1984) could not provide evidence of genetically-distinct groups of this species in the Hawaiian islands. Although some interchange between geographically separate banks occurs through recruitment of larval fish, deep channels between islands and banks are probably effective barriers to the dispersal of post-larval bottomfish.

The existence of geographically isolated stocks of bottomfish, as well as the geographic variation in species composition, socio-economic conditions, and existing condition of stocks requires separate management regimes for the sub-areas of the FCZ around American Samoa, Guam, the main Hawaiian Islands, the Northwestern Hawaiian Islands, and the Hancock Seamounts.

Although the bottomfish fishery is operationally a mixed-species fishery and fisheries development activities are directed at the bottom-fish complex as a whole, multi-species and ecosystem interactions cannot be taken into account at this time because of a lack of biological and economic information and a lack of pertinent multi-species assessment models.

Targeting is an important concept in defining the management unit. A bottomfish species is a target if it can be caught without a significant catch of incidental species. The ability to target may vary widely depending on the skill of each captain. Initially, the species included in the management unit are those which are being actively targeted by fishermen in the FCZ. This may have to be modified in the future by the Council if there are shifts in the species which are targeted. Species which are harvested incidentally to target species are treated as non-specified species for the purpose of this plan. Existing data collection activities are adequate to indicate if any non-specified species needs to be reclassified in the future as a management unit species.

The bottomfish species included in the management unit are listed in Table 5.1, together with information concerning their presence and relative abundance in each island area, their usual depth of capture and the usual size harvested.

5.1.2 Excluded Bottomfish Species

Fish species which are members of the reef fish complex and which are captured primarily with inshore fishing gear (pole-and-line, spear, surface gillnet, seine net, cast net) are excluded from the management unit. Although caught in shallow waters with hook-and-line gear, goatfishes (weke), squirrelfishes (menpachi), certain hogfishes (a'awa) and certain scorpionfishes (nohu) are also excluded from the management unit because their inshore distribution is more closely associated with the reef fish complex than with the deepsea bottomfish complex. Also excluded from the management unit are coastal pelagic species, such as bigeye scad (akule) and mackerel scad (opelu), which are regularly taken with shallow handline gear. Deepsea handline fishing methods do not produce significant quantities of these species. Although excluded on biological grounds, both sets of species may compete with deepsea bottomfish at the market level and thus may be indirectly affected by the FMP.

5.1.3 Included Seamount Groundfish Species

The seamount groundfish complex is comprised of several species which dwell at depths (150-300 fathoms) on the submarine slopes and summits of seamounts below the depth range and at higher latitudes than are generally inhabited by the snapper-grouper-jack-emperorfish assemblage. The pelagic armorhead (Pseudopentaceros wheeleri) is the primary target species of a foreign trawl fishery conducted in the Emperor Seamount range. Catches of alfonsin (Beryx splendens) were incidental in the trawl fishery but have increased in importance as the armorhead catch

declined in recent years. Another seamount groundfish species which may have commercial potential is the butterfish Hyperoglyphe japonica (medai).

The seamount groundfish complex includes a large number of incidental species of uncertain or little commercial value which are not specified as management unit species in Table 5.2.

TABLE 5.1 BOTTOMFISH SPECIES INITIALLY INCLUDED IN THE MANAGEMENT UNIT

FAMILY	SPECIES	POPULAR NAMES	DISTRIBUTION*	RANGE OF DEPTH USUALLY CAUGHT (fm)	WEIGHT OF INDIVIDUAL FISH USUALLY CAUGHT (lbs.)
Lutjanidae	Aphareus rutilans (silver jaw jobfish)	lehi (H), palu-gutusiliva (S)	G, h, S	90 - 150	6 - 18
	Aprion virescens (gray jobfish)	uku (H), asoama (S)	g, H, S	15 - 60	4 - 18
	Etelis carbunculus (squirrelfish snapper)	ehu (H), palu-malau (S)	G, H, S	110 - 180	1 - 5 (to 45 in American Samoa)
	Etelis coruscans (longtail snapper)	onaga, ula'ula (H), palu-loa (S)	G, H, S	100 - 150	4 - 18
	Lutjanus kasmira (blue stripe snapper)	ta'ape (H), savane (S), funai (G)	G, H, S	20 - 60	1
	Pristipomoides auricilla (yellowtail snapper)	palu-i'usama (S), yellowtail kalekale (G)	G, h, S	100 - 150	1 - 2
	Pristipomoides filamentosus (pink snapper)	opakapaka (H), palu-'ena'ena (S) gadao (G)	G, H, S	30 - 110	2 - 18
	Pristipomoides flavipinnus (yelloweye snapper)	palu-sina (S), yelloweye opakapaka (G)	G, h, S	90 - 150	1 - 4
	Pristipomoides sieboldii (snapper)	kalekale (H)	G, H	80 - 150	1 - 3
	Pristipomoides zonatus (snapper)	gindai, palu-sega (S)	G, H, S	70 - 120	1 - 5

Table 5.1 Bottomfish Species Initially Included in the Management Unit (Page 2)

FAMILY	SPECIES	POPULAR NAMES	DISTRIBUTION*	RANGE OF DEPTH USUALLY CAUGHT (fm)	WEIGHT OF INDIVIDUAL FISH USUALLY CAUGHT (lbs.)
Carangidae (jacks)	Caranx ignobilis (giant trevally)	white ulua (H), tarakito (G), sapo'anae (S)	g, H, S	20 - 65	10 - 40
	Caranx lugubris (black jack)	black ulua (H), tarakito (G) tafauli (S)	G**, h, S	15 - 100	3 - 15
	Pseudocaranx dentex (thick-lipped trevally)	pig ulua, butaguchi (H)	H	40 - 100	2 - 40
	Seriola dumerili (amberjack)	kahala (H)	g, H**, s	40 - 130	8 - 30
Serranidae (groupers)	Epinephelus fasciatus (blacktip grouper)	fausi (S), gadau (G)	G, S	10 - 90	1 - 2
	Epinephelus quernus (sea bass)	hapu'upu'u (H)	H	50 - 150	6 - 22
	Variola louti (lunartail grouper)	papa (S)	G, S	30 - 90	1 - 5
Lethrinidae (emperorfishes)	Lethrinus amboinensis (ambon emperor)	filoa-gutumumu (S)	S	20 - 60	1 - 4
	Lethrinus rubrioperculatus (redgill emperor)	filoa-pa'o'omumu (S), mafuti (G)	G, S	15 - 100	1 - 2

Notes: G = Guam
S = American Samoa
H = Hawaii

* Capital letters indicate that species is relatively common in bottomfish catches. Lower case indicates that species is uncommon.

** Marketability is reduced because of the risk of ciguatera.

TABLE 5.2 SEAMOUNT GROUNDFISH SPECIES INCLUDED IN THE MANAGEMENT UNIT

FAMILY	SPECIES	POPULAR NAMES	DISTRIBUTION*	RANGE OF DEPTH USUALLY CAUGHT (fm)	WEIGHT OF INDIVIDUAL FISH USUALLY CAUGHT (lbs.)
Pentacerotidae (armorheads)	Pseudopentaceros wheeleri (armorhead)	kusakari tsubodai (J)	SE-NHR	125 - 300 +	0.5 - 2.5
Berycidae (alfonsins)	Beryx splendens (alfonsin)	kinmedai (J)	SE-NHR	150 - 300 +	2 - 4 (hook-and-line)
Centrolophidae (raftfishes)	Hyperoglyphe japonica (butterfish)	medai (J)	se-nhr	175 - 200 +	5 - 20 (hook-and-line)

Notes: J = Japan

SE-NHR = Southern Emperor - Northern Hawaiian Ridge Seamounts

* Capital letters indicate that species is relatively common in groundfish catches. Lower case indicates that species is uncommon.

5.2 Management Unit (Affected Fishery)

5.2.1 Production

Participants in domestic bottomfish fisheries are of four general types:

* Vessel operators who are part-time or casual fishermen. This fishery, which usually blends recreational, commercial, and subsistence purposes, occurs in American Samoa, Guam, and the main Hawaiian Islands. This category of bottomfishing usually involves small, trailerable boats 16 to 25 feet in length.

* Multi-species, mixed-gear commercial fishing vessels which shift from species group to species group or from fishery to fishery in response to seasonal fish abundance or fluctations in price. Although bottomfishing is not the only activity of these boats, it may be vital to year-round operations. This fishery occurs in all areas. In Hawaii, this group includes longtime local commercial and charterboat fishermen and, more recently, longline fishermen, as well as former albacore trollers who have relocated from the Pacific west coast. The vessels usually range in size from 35 to 55 feet in length.

* Commercial handline vessels which specialize in harvesting bottomfishes. This fishery occurs primarily in the Northwestern Hawaiian Islands and main Hawaiian Islands, but there are a few such fishermen in American Samoa and Guam. Vessels range in size from 35 to 65 feet in length. In the NWHI fishery nearly 50% of the 1984 mixed-species bottomfish catch was harvested by 15% of the participating vessels.

* In addition, small catches of management unit species are made incidentally in the Northwestern Hawaiian Islands' commercial lobster trap fishery. There are about 15 active catcher/processor boats in the lobster fishery.

Table 5.3 presents estimates of the number of domestic fishermen according to level of participation.

TABLE 5.3

NUMBER OF DOMESTIC FISHING VESSELS IN THE BOTTOMFISH FISHERY 1984-85, BY ISLAND AREA AND LEVEL OF PARTICIPATION

Island Area	Level of Participation		
	Full-Time Single-Purpose (Bottomfish)	Multi-Purpose With Primary Emphasis on Bottomfish	Multi-Purpose With Secondary Emphasis on Bottomfish
American Samoa	2	40	
Guam	2		
Main Hawaii Islands	20 1/	400 2/	900 2/
Northwestern Hawaiian Islands	12 1/	6 1/	15 1/

1/ WPFMC, unpubl. data from ex-vessel monitoring

2/ Estimated from data reported in Skillman and Louis (1984)

The majority of the participants in the Hawaii fishery are part-timers, fishing fewer than 50 days during the year, and engaged in other fisheries as well. The bottomfish fishery is attractive to part-time fishermen because of the low initial investment, low operating costs, and the high potential returns (HDLNR, draft report).

There is no legal foreign fishery in the FCZ for species of the bottomfish complex, although some illegal bottomfishing by foreign tuna pole-and-line vessels may be occurring surreptitiously, according to domestic fishermen who frequent the NWHI.

Experienced domestic harvestors in all island areas have the capability to target particular bottomfish species with little incidental catch. Fishermen take into account the species which are available, the bottom types, depths, and seasons when they are available, their vessel's holding capacities, the prices for which the catch can be sold, the expected catch rates for their vessels at specific grounds, and the expected landings by other vessels. Integrating all this information, a vessel captain, whether a commercial fisherman or part-time fisherman, will decide to go to the grounds and fish for the species whose sale would provide the highest net profit or offset the greatest percentage of vessel operating costs.

Vertical hook-and-line remains the most efficient gear in the bottomfish fishery. However, in areas where bottomfish populations are substantially reduced, traps may prove to be a more efficient gear-type. Two of the boats in the NWHI fleet are equipped for bottom longlining, which may prove effective for aggressive-biting species, like hapu'upu'u.

Trawl gear and bottom-set nets have been used experimentally by several fishermen but due to inexperience and the rugged bottomfish habitat, all use of these gear-types has been voluntarily stopped. Prohibiting these gear-types at this time would not cause economic harm or any dislocation from a loss of catch by these gear-types. If experimentation with these gear-types is desired, an Experimental Fishing Permit (EFP) may be applied for under this plan.

No U.S. fishermen have yet harvested seamount groundfish on a commercial basis, although exploration surveys have occurred. Japanese trawlers are the principal harvesters of the FCZ seamount groundfish stocks. The number of Japanese trawlers that fished at Hancock was one each in 1978 and 1979, two each in 1980 and 1981, and three during 1982 (Humphreys, et al., 1984). In 1983-84, only one trawler fished the Hancock Seamounts.

5.2.2 Marketing and Consumption

5.2.2.1 Hawaii

Nine major bottomfish species which are components of Hawaii's fresh seafood market. The number of reef fish species is even greater, although their market is smaller. Market demand for some bottomfish (especially opakapaka for "up-scale" restaurants) has grown substantially and a separate market (household retail) for small-sized fish continues to grow. The market doubled in size, reaching 2½ - 3 million pounds (1.1 - 1.4 million kg) in 1984 (S. Pooley, draft ms., 1985).

From the production side, the bottomfish market is served by two types of Hawaii-based commercial fishing vessels, as well as by import brokerage. The large-scale modern vessels which frequent the NWHI have the capacity to flood the fresh market (landing over 10,000 lbs., 4,530 kg) at the conclusion of their two-three week trips. They have not developed an effective market for frozen products and this limits not only their catch total but their fishing range (Hau, 1984).

The main Hawaiian Islands (MHI) are the site of a mixed commercial and part-time fishery of relatively small vessels. Their catches fill the rest of the bottom and reef fish niches. The main Hawaiian island vessels are frequently operated on extra-economic characteristics and are faced with substantial resource pressure. Both the NWHI and the MHI vessels compete in the same fresh fish market which revolves around an auction in Honolulu although a sizeable market channel exists outside the auction. Fresh bottomfish is also imported on occasion from American Samoa, Guam, Palau, and Fiji. Size composition tends to allocate the larger sized fish of the NWHI catch to restaurants and the smaller sized fish to the household market (Pooley, draft ms., 1985). This competition between large and small scale vessels, each representing small business enterprises, has increased pressure for government regulation, including limited entry (Pooley, 1985a).

The retail market for fresh or fresh/frozen bottomfish and reef fish is estimated at 6 million pounds (2.7 million kg) valued at $13.7 million, which represents approximately 11% of the total retail value of seafood sold in Hawaii. Frozen snapper imports (mainland United States and foreign) are estimated at 1.8 million pounds (815,000 kg) with a wholesale value of $2.5 million. (Data from an unpublished 1981/1982 NMFS survey and Higuchi and Pooley, 1985a).

The Hawaii market includes a particular cultural interest in red snappers for ceremonial occasions such as New Year's. This cultural demand also includes non-seasonal events such as weddings and birthdays. Favored fish in this category include the onaga, Etelis coruscans, and ehu, E. carbunculus. The regular household component can be served by small bottom and reef fish, by fillets of larger bottomfish, and by frozen snapper imported from the mainland United States and New Zealand. Although consumer substitution between product forms occurs, frozen product is considered an inferior alternative for local bottomfish consumers. The price differential is substantial. In 1981, frozen snapper from New Zealand was entering Hawaii as fillets at $1.40 per pound ($3.08/kg). During that year, the average price for whole locally-produced bottomfish was $2.30 per pound ($5.06/kg) and for opakapaka alone it was $2.80 per pound ($6.16/kg) (Pooley, draft ms., 1985). Table 5.4 shows recent trends in the ex-vessel price of the Hawaii mixed-species bottomfish catch.

TABLE 5.4

RECENT TRENDS IN EX-VESSEL PRICE
FOR HAWAII MIXED-SPECIES BOTTOMFISH CATCH

Year	Price Per Pound (Whole Fish)
1978	$1.70 1/
1979	1.83 1/
1980	1.74 1/
1981	2.35 1/
1982	2.34 1/
1983	2.62 1/
1984	2.65 (MHI) 2/
	2.25 (NWHI) 2/

Source: 1/ Hawaii Division of Aquatic Resources, annual statistical catch summaries.

2/ WPRFMC, unpublished data from daily ex-vessel monitoring.

Examination of market data for 1976-77 shows almost no cross-effects with other types of fresh seafood in Hawaii; e.g., tuna, mahimahi, and ono (Higuchi and Pooley, 1985a). The implication is that substitutions exist to a certain degree within the bottomfish grouping as a whole, in that landings of one species affect the price of other species. However, landings in the rest of the fishery seem to have no particular influence in the short-term price formation for bottomfish, which contributes to the idea that their demand is relatively independent. A strong negative relationship exists between local landings of tuna both ahi (yellowfin, bigeye, and albacore tunas) and aku (skipjack tuna) and the price of bottomfish.

Another question important to Hawaii's commercial fishery is the extent to which market price is determined by landings from the two main harvesting areas. The strongest correlation with overall market price is with NWHI landings, which is not surprising since they provide larger fluctuations in volume. Because landings from the MHI are considered of higher quality, their volume appears to determine their own price level, independent of NWHI landings. Of course they also have a different species composition (S. Pooley, draft ms., 1985).

Available data suggest that the strongest long-term impact on the price for bottomfish is the growth of Hawaii's de facto population (both resident and tourist).

Although prices for fresh fish in Hawaii track together a certain extent, the relationship is weaker than one might expect. Over the long-term, the price of bottomfish rose more rapidly than the price of all fresh fish (except skipjack which increasingly shifted from the cannery to the fresh market) in Hawaii. The non-skipjack prices rose at an annual rate of 1.5%, of which bottomfish rose by 3.1%, after inflation. Opakapaka prices increased more than onaga/ehu prices during the 1965-1982 period. This suggests the importance of the restaurant market, compared to the traditional home market, for growth in the demand for fresh bottomfish (Pooley, draft ms., 1985).

5.2.2.2 Guam

The bottomfish catches of the numerous weekend small-boat fishermen on Guam are typically either sold to offset the cost of operation, consumed personally, or given to family and friends. The two full-time commercial bottomfishing vessels sell their catch to a Guam fish dealer. The average 1983 ex-vessel prices for deepwater bottomfish ranged from $1.32 - $2.41 per pound with an average of $1.89 per pound ($4.16/kg) (WPACFIN, unpublished data).

Although the local bottomfish fishery produced 40,000 pounds in 1983, Guam relies heavily on imports to satisfy local consumer demand for bottomfish. Fresh whole bottomfish imported to Guam from the Philippines during 1981 totaled 70.9 mt (78 st), compared to only 5.9 tons of local production. Philippine imports account for a major share of seafood purchases among certain subpopulations (Myers, et al., 1983).

An estimated 73% of the fresh whole bottomfish imported from the Philippines are species which occur or have market equivalents potentially available in Guam waters. Local consumption patterns offer possibilities for import substitution with locally-caught bottomfish, the prices received by local fishermen will be controlled at the lower price levels of imports. Guam fishermen probably will not realize higher prices unless export markets can be developed for local bottomfish (Myers, et al., 1983).

5.2.2.3 American Samoa

Samoan consumers have a traditional preference for small fish (¼ - 2 pounds). Most of the bottomfish species harvested in the shallow-water handline fishery are in the preferred size range and are marketed as whole, chilled fish.

Fishermen sell their bottomfish catch directly to the public at the Fagatogo market, for average prices of $1.75/lb., or sell to the retail markets and restaurants, for average prices of $1.25/lb.

Retail markets refuse bottomfish larger than about 12 inches total length. A few restaurants buy large snappers, as do the U.S. purse seiners which frequent Pago Pago Harbor. Otherwise, fish over 5 pounds are difficult to market in Samoa.

In addressing the problem of low local demand for large bottomfish, in May 1982 Samoan fishermen started exporting large snappers to the Hawaii market, where onaga and ehu are particularly in demand. The prices received in this export trade, after deducting packing and shipping expenses and auction commissions, initially averaged about $2.10/lb. (Wass and Aitaoto, 1983). The establishment of the air-shipped bottomfish trade to Hawaii has had a dramatic impact on the small-boat fishing fleet in Samoa. Fishermen sort their catch according to market, directing deepwater snappers, such as onaga, ehu, and lehi (all of which may reach 20 pounds or more in American Samoa), to the export market and selling the small fish locally. Fresh fish exports to Hawaii increased from about 3,200 pounds in 1982 to nearly 7,000 pounds in 1984. The average export price (ex-vessel) for onaga and ehu, the primary species exported, were $3.81 and $2.36, respectively, in 1982, $4.53 and $2.65, respectively in 1983, and $4.15 and $2.55, respectively, in 1984 (WPACFIN, unpublished data).

On a whole, the Samoan bottomfish now enjoy a reputation of good quality and freshness and the prices are steadily trending upwards. This could well provide a good income to the nucleus of professional fishermen in American Samoa for the foreseeable future, provided that the deepwater stocks are not overfished (Howell, 1983).

5.2.2.4 Seamount Groundfish

To test Hawaii market reaction, approximately 240 kg (528.0 lbs.) of groundfish captured at the seamounts during a research cruise of the R/V Townsend Cromwell were frozen onboard for sale through the Honolulu fish auction in July 1983. The akodai-like Hozukius sp. received the highest prices, ranging from $0.55 to $1.25/lb. Alfonsin received $0.55/lb., pelagic armorhead also received $0.55/lb., and medai received from $0.25 to $0.50/lb. (Seki and Tagami, 1984). By contrast, the 1982 ex-vessel value (in U.S. dollars) landed in Japan was $0.35/lb. (dressed) for pelagic armorhead and $0.11/lb. (whole) for alfonsin (Humphreys, et al., 1984).

5.3 History of Exploitation

Historical data on Pacific island fisheries are scant compared to that for the continental fisheries of the U.S. Commercial exploitation of bottomfish in Hawaii began before the twentieth century (Cobb, 1903). In American Samoa and Guam, fisheries for deepsea bottomfish are a much more recent development and are smaller in scale (Swerdloff, 1972; Ikehara, et al., 1970).

Commercial, recreational, and subsistence fishermen land bottomfish in the FCZ primarily with vertical hook-and-line gear and to a lesser extent with bottom longlines and traps. There is considerable variation in the fishing power exerted by a small vessel lacking in fish-finding and navigational gear and hauling fish by hand compared to that exerted by a modern fiberglass boat equipped with a chromoscope, LORAN, and automated line haulers. Attempts have been made to use bottom-set gill nets and trawl nets in the western Pacific without much success to date. Species composition of hook-and-line catches varies considerably among the 3 island areas. Ralston (1979) listed the species typical of Hawaii, American Samoa, and Guam fisheries.

Ralston and Polovina (1982) reviewed historical commercial catch data for the deepsea handline fishery in Hawaii for the 1959-1980 period. Unreliable reporting makes the information difficult to interpret. The main Hawaiian Islands commercial handline fishery has experienced declines in catch per unit of effort, but not in total landings, since 1975. Landings from the Northwestern Hawaiian Islands increased dramatically in 1984-85 as a result of expanded bottomfishing by long-range boats.

The history of landings from American Samoa and Guam is less known but increasing effort for shallow-water and deepsea bottomfish is indicated. The Honolulu Laboratory Western Pacific Fishery Information Network has compiled the best available historical catch data for these areas. If a generalization can be made, it is that catches are lower from small islands with precipitous offshore slopes and increase for larger islands and banks with less precipitous offshore slopes.

The extremes of the spectrum of available habitat are the Northwestern Hawaiian Islands (1,231 nautical miles of 100-fathom isobath) and Guam (152 nmi of 100-fathom isobath).

TABLE 5.5

INDEX OF BOTTOMFISH HABITAT, BY ISLAND AREA

Island Area	Length of 100-Fathom Isobath	
	nmi	km
Guam	138	255
American Samoa	169	313
Main Hawaiian Islands	977	1,809
Northwestern Hawaiian Islands	1,231	2,280

Annual bottomfish catches in Hawaii are considerably larger than those from the territories.

TABLE 5.6

1984 COMMERCIAL MIXED-SPECIES BOTTOMFISH CATCH, BY ISLAND AREA

Island Area	Estimated 1984 Commercial Landings	
	lb.	kg
Guam	34,000 1/	15,454
American Samoa	87,000 2/	39,545
Main Hawaiian Islands	910,000 3/	413,636
Northwestern Hawaiian Islands	583,000 4/	265,000

Sources: 1/ Based on data presented in Polovina, et al. (1985).

2/ WPACFIN data for management unit and unspecified species adjusted by a factor of 1.25 to account for unreported landings.

3/ WPFMC unpublished data from daily ex-vessel monitoring 1/19/84 through 1/18/85 corrected for incomplete coverage with an adjustment factor based on surveys by NMFS Honolulu Laboratory.

4/ WPFMC unpublished data from daily ex-vessel monitoring. 1/19/84 through 12/31/84.

5.3.1 Hawaii

There is a long history of commercial fishing in the Hawaiian Islands. A fleet of vessels fished the deepwater bottomfishes throughout most of the archipelago at least as early as the 1930s. Fishing pressure was high enough that in 1925 the Territorial Legislature enacted a one-pound minimum size limit for opakapaka, ula'ula, uku, and ulua offered for sale by the fisherman or in the possession of a fish dealer. The sparse legislative reports supporting the minimum size law indicate concern about a "decreasing supply of fish". Catch records covering the period 1945 to 1982 indicate that the commercial landings for the State began at about 450 MT (495 T) after the hiatus imposed by World War II, declined rapidly to a level of about 180 MT (198 T) by 1959, remained relatively stable at around 180 MT (198 T) until 1974 when landings began steadily increasing (Polovina, draft ms., 1985). These catch data come only from fishermen with commercial fishing licenses and do not include catches from the recreational fishermen which may be substantial around the populated islands (Ralston and Polovina, 1982). An estimate of the commercial landings for the State for 1984 is 662 MT (728 T) (WPFMC, unpubl. data) which indicates that commercial landings have continued their rapid increase and are now greater than at any time since World War II.

The high catches in the period 1948 to 1953 correspond to a period when both the NWHI and main Hawaiian Islands were fished. However, by the mid-1950s most of the fishing was restricted to the main Hawaiian Islands until the late 1970s, when there was renewed interest in the stocks of the NWHI. Landings from the main Hawaiian Islands remained relatively stable from 1959 to 1978 fluctuating from 100 to 200 MT (110-220 T), but since 1978 rapid growth is indicated with an estimate for 1984 of 413.6 MT (455 T) (see Figure 5.1). In 1984, opakapaka comprised 23% of the catch and together onaga, opakapaka, uku and ulua accounted for almost 70% of the landings (Polovina, draft ms., 1985).

The rapid increase in landings both from the main Hawaiian Islands and for the entire State since 1978 is a direct result of an expansion of the local market for fresh bottomfish at a relatively stable and strong price (Higuchi and Pooley, 1985a). The 1984 wholesale prices for bottomfish averaged $5.83/kg ($2.65/lb.) with onaga and opakapaka commanding the highest prices at $8.80/kg ($4.00/lb.) and $7.37/kg ($3.35/lb), respectively (WPFMC, unpubl. data).

The species composition of the commercial landings from the main islands does not show any radical changes over the period 1959 to 1984 but some of the species exhibit substantial relative increases or decreases (Table 5.7). Some of these changes are readily explainable such as a decline of kahala (grouped in the "others" category) due to its implication in ciguatera poisoning, the relative increase of onaga, a

deepwater species, due to increasing fishing pressure in deeper habitat, and the corresponding relative decline of the shallower water species ulua and uku due to heavy fishing in shallow water (Polovina, draft ms., 1985).

TABLE 5.7

SPECIES COMPOSITION OF COMMERCIAL LANDINGS OF
DEEPWATER BOTTOMFISHES FROM THE MAIN HAWAIIAN ISLANDS
(In Metric Tons)

Species	1964	(%)	1974	(%)	1984	(%)
Ehu	9.3	(5.2)	9.4	(6.3)	16.7	(4.0)
Gindai	0.7	(0.4)	0.5	(0.3)	2.1	(0.5)
Hapuupuu	4.0	(2.3)	8.5	(5.7)	25.1	(6.1)
Kalekale	7.1	(4.0)	2.2	(1.5)	10.8	(2.6)
Lehi	0.4	(0.2)	1.9	(1.3)	7.4	(1.8)
Onaga	21.7	(12.2)	17.7	(11.8)	86.7	(21.0)
Opakapaka	42.4	(23.9)	48.7	(32.4)	96.2	(23.2)
Uku	40.1	(22.6)	35.0	(23.3)	66.4	(16.1)
Ulua	13.8	(7.8)	12.0	(8.0)	27.1	(6.6)
Others	38.0	(21.4)	14.1	(9.4)	75.0	(18.1)
TOTAL	177.5		150.0		413.6	

Source: Polovina, draft ms. (1985)

The first approach to yield assessment for the Hawaii mixed-species fishery was obtained by fitting a total biomass Schaefer surplus production model to the commercial catch and effort (measured in vessel days) data over the period 1959-1978 (Ralston and Polovina, 1982). The Molokai-Lanai-Kahoolawe-Maui (MLKM) bank, which accounts for over 50% of the main Hawaiian Islands' bottomfish landings, is the only bank where the total biomass Schaefer model produced statistically significant results. As a first approximation, treating the mixed-species bottomfish resource with the total biomass model is appealing because all the species occupy a very similar range of habitat, all appear to be high-level carnivores with no evidence of strong prey-predator interactions between them and fishing for one species may also exert pressure on other species (Polovina, draft ms., 1985).

The estimated maximum sustainable yield (MSY) based on the total biomass Schaefer model for the MLKM bank is 106 MT (117 T) which corresponds to a unit MSY of 272 kg/nmi (598 lbs./nmi) of 100-fathom contour (Ralston and Polovina, 1982). This estimate is a lower bound since it includes only commercial landings and not the recreational catch which could be substantial.

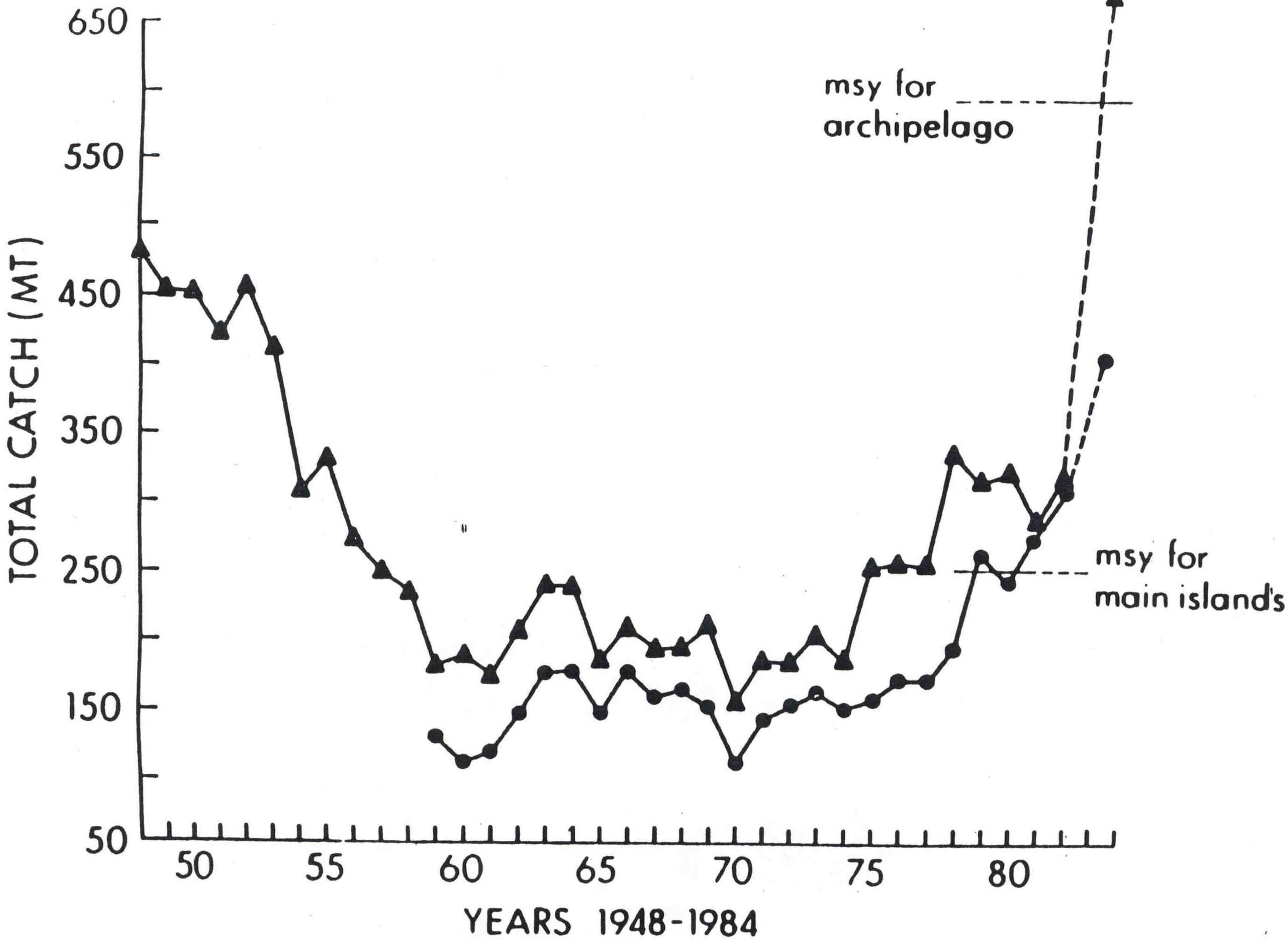


FIGURE 5.1 THE ANNUAL COMMERCIAL LANDINGS FOR DEEPWATER BOTTOMFISHES FROM THE MAIN ISLANDS AND THE ENTIRE ARCHIPELAGO FOR 1948-1984. DATA REPORTED BY STATE OF HAWAII, DIVISION OF QUATIC RESOURCES.
▲ = Archipelago Landings. ● Main Islands Landings.

Source: Polovina, draft ms., 1985.

The length of the 100-fathom contour for the main islands and the NWHI is 997 (1,847 km) and 1,231 (2,280 km) nmi, respectively. Based on the annual MSY estimate of 272 kg/nmi of 100-fathom contour, the MSY for the main islands is estimated at 271 MT (298 T) and that for the NWHI at 335 MT (368 T) with an archipelago total of 606 MT (667 T). Since 1979, the landings from the main islands have exceeded the estimated MSY level with the 1984 landings of 414 MT, 53% above the MSY level. Landings from the fishable range of the NWHI for 1984 exceeded the MSY level by 15%.

It is difficult to obtain an accurate measure of fishing mortality for the bottomfish resource. Over the period 1959-1978, for which a measure of effort in vessel days is available, there has been a threefold increase in vessel days (Ralston and Polovina, 1982). However, technological changes such as electric or hydraulic gurdies, fathometers, color chromoscopes, and LORAN have increased the fishing power of the vessel day many fold so that the trend in vessel days understates the real trend in fishing mortality. In addition to the considerable increase in fishing mortality in recent years there is evidence that, at least for opakapaka in the main islands, that there has been a substantial decrease in the age of entry to the fishery between 1980 and 1984 (Ralston and Kawamoto, 1985).

When the approach used in the Guam analysis (Section 5.3.2) to compute the ratio of the spawning stock biomass under exploitation to the spawning stock biomass in the absence of exploitation is applied to opakapaka stocks in the Hawaiian Islands with an age of entry of 1.8/yr. and a fishing mortality of 0.5/yr., it is estimated that the spawning stock biomass is reduced to 10% of its unexploited level as compared to 28% of its unexploited level when the age of entry is 4 years for the same level of fishing mortality (J. Polovina, draft ms., 1985).

5.3.2 Guam

The fishery for deepsea bottomfish in Guam grew out of a program of exploratory fishing initiated in 1969 (Ikehara, et al., 1970). Historical data for this fishery are sparse prior to 1979 but do not indicate overfishing (Ralston, 1979).

Recent exploratory surveys throughout the Mariana Archipelago produced an average catch rate of deepsea bottomfish that was 93% higher at banks in the FCZ south of Guam than immediately offshore of Guam (see Table 5.8) (Polovina, et al., 1985).

TABLE 5.8

BOTTOMFISH CATCH PER UNIT EFFORT (CPUE) AND STANDARD ERROR FOR GUAM AND FCZ BANKS

Area	Mean Drift CPUE (No. of Fish/Line-Hr.)	Standard Error
Guam	1.53	0.35
FCZ Banks - (Galvez and Santa Rosa Banks)	2.95	0.31

Source: Polovina, et al., 1985

The approach to yield estimation for the deepwater bottomfishes is described in detail in Polovina and Ralston (ms. in prep.). Using an estimate of catchability obtained from an intensive fishing experiment and a measure of bottomfish habitat together with the estimated relative abundance from the exploratory survey, the total bottomfish biomass which can be exploited with handline gear was computed. The Beverton and Holt (1956) yield equation, together with estimates of growth and mortality parameters obtained from otolith and size-frequency data, was used to first determine the age of entry for each of the major species which will maximize the yield per recruit. Then, with the estimate of unexploited biomass, the equilibrium yield was estimated as a function of fishing mortality. Also, the change in the spawning stock biomass relative to its level in the absence of exploitation can be computed with the Beverton and Holt yield equation as a function of fishing mortality.

The "optimum" biological equilibrium yield, not considering economic factors, has been suggested as the yield corresponding to that level of effort where an increase of one unit of effort will increase the catch by 0.1 of the amount caught by the very first unit of effort (Gulland, 1983, 1984).

The value of $F_{0.1}$ for the bottomfish resource in the Marianas is estimated to be F = 1.0, and the corresponding annual equilibrium yield for Guam and the banks south of Guam totals about 26 MT (see Table 5.9). At a fishing mortality of 1.0, the spawning stock biomasses for the seven major species are reduced to 20-42% of their unexploited levels (Polovina et al., 1985). Although the spawner recruit curve for these species is unknown, as a generic lower bound, the spawning stock biomass should not be reduced below 20% of its unexploited level if a serious reduction of recruitment is to be avoided (Beddington and Cooke, 1983).

The ratio of total yield for Guam and Santa Rosa and Galvez Banks to the total length of the 100-fathom contour is 164 to 202 kg/nmi (see Table 5.9) (Polovina, et al., 1985). These values suggest that the stocks in the Marianas are slightly less productive than those in Hawaii where a lower bound estimate of maximum sustainable yield of 272 kg/nmi of 100-fathom contour was obtained from a stock production model applied

to commercial catch and effort data (not including the recreational fishing component) from the deepsea handline fishery at Penguin Bank (Ralston and Polovina, 1982).

TABLE 5.9

ANNUAL EQUILIBRIUM BOTTOMFISH YIELD AND YIELD PER NAUTICAL MILE OF 100-FATHOM CONTOUR FOR THE AGE AT ENTRY WHICH MAXIMIZES THE YIELD PER RECRUIT AT A LEVEL OF FISHING MORTALITY OF F = 1.0

Area	Total Yield		Yield of 100-Fathom Contour	
	MT/Yr.	T/Yr.	Kg/Yr.	Lbs./Yr.
Guam	17.2	18.9	201.6	445
Galvez and Santa Rosa Banks	8.6	9.5	164.2	362
TOTAL	25.8	28.4	182.9	403

Source: Polovina, et al., 1985.

It is estimated that Guam's annual bottomfish landings have increased from 6 MT in 1980 to 20 MT in 1984 (Table 5.10). Although the location data were not always obtained for these data, it appears that 65-90% of this catch comes from around Guam and the remainder comes from Galvez Banks and Santa Rosa Reef south of Guam or areas in the Commonwealth of the Northern Marianas. Given the estimated equilibrium yield of 17.2 MT for Guam and that the CPUE around Guam is about one-half of the Mariana archipelago average (4.68 fish per-line-hour of drift fishing), it appears that Guam is already fished at its maximum sustainable yield and most probably overfished on the leeward coast. There may be an opportunity to increase the yield with more fishing effort directed toward Galvez Banks and Santa Rosa Reef, but most of the additional yield potential lies in the islands and banks to the north of Guam (Polovina, et al., 1985).

TABLE 5.10

ESTIMATES OF GUAM BOTTOMFISH LANDINGS 1980-84

Year	Deepwater Bottomfish 1/	
	MT	T
1980	6	7
1981	12	13
1982	9	10
1983	11	12
1984 2/	20	22

Source: Polovina, et al. (1985)

1/ Based on data from the Southwest Fisheries Center Honolulu Laboratory's Western Pacific Fishery Information Network file on the Guam Division of Aquatic and Wildlife Resources offshore creel survey. Confidence interval ± 50% of catch for bottomfish.

2/ Estimate expanded from data from period June-September 1984.

5.3.3 American Samoa

Data from American Samoa's fishing fleet are indicators of a trend toward increased bottomfishing effort and catch. In FY 1981, about 34% of the total recorded fishing trips by the Tutuila fleet were directed at bottomfish, which accounted for approximately 28% of the catch. In FY 1982, these values increased to 60% (of 825 trips) and 36% (of 137,000 pounds) respectively and in FY 1983, about 75% of all recorded fishing trips (589) were directed at bottomfish, which accounted for approximately 55% of the total catch (of 147,000 pounds) (Wass and Aitaoto, 1983). Only a small part of the bottomfish catch, perhaps 7,000-8,000 pounds (R. Tulafono, Director, American Samoa Office of Marine Resources, pers. comm.), is caught in the FCZ.

Supporting data are not readily available, but it appears that catch rates in 1983 were greater at depths inhabited by the deepwater snapper complex than at the shallower depths fished almost exclusively in years past. Until recent development of a fishery for deepwater snappers (onaga, ehu) which are exported to Hawaii, little effort was directed at deepwater species because of the preference of the Samoan consumer for smaller and more familiar species (Wass and Aitaoto, 1983). The fresh fish export program is more completely described in Howell (1983) and McGuire (1985). There is not yet any evidence of decreasing size frequency in the catch of the deepwater snappers which are targeted for export (WPRFMC, unpubl. data).

No direct estimates of maximum sustainable yield have been made for the American Samoa bottomfish fishery. However, the limited amount of habitat is indicative of a relatively small deepwater bottomfish resource, perhaps of an order of magnitude similar to Guam. Deepwater bottomfish landings are shown on Table 5.11.

TABLE 5.11

REPORTED LANDINGS OF DEEPWATER BOTTOMFISH
OF AMERICAN SAMOA, 1981-84

Year	Deepwater Bottomfish 1/	
	MT	T
1981	12.3	13.5
1982	21.8	24.0
1983	30.3	33.4.
1984	29.5 2/	32.4 2/

1/ Based on data from the Southwest Fisheries Center Honolulu Laboratory, Western Pacific Fishery Information Network file of American Samoa, Office of Marine Resources data. Confidence interval ± 50% of catch.

2/ Reported landings are lower than estimate of total catch which was adjusted to account for unreported landings in Table 5.6.

5.3.4 Seamount Groundfish

A 2,000 metric ton (MT) optimum yield (OY) for seamount groundfish inside the U.S. Fishery Conservation Zone has been available since 1977 under a Preliminary Fishery Management Plan for Seamount Groundfish. The OY consists entirely of the total allowable level of foreign fishing (TALFF), as domestic fishing for seamount groundfish has not occurred and is not expected immediately. The available evidence indicates that groundfish resources on seamounts throughout the central North Pacific are depressed and that the resources in the Hancock Seamount area within the FCZ are severely depressed. The catch per unit of effort of pelagic armorhead at the Hancock Seamounts has declined from a high of over 80 MT/hr in 1972 to about 30 MT/hr in 1978 (Humphreys, et al., 1984) to only 0.29 MT/hr in 1984. Although only 1,000 MT has been allocated each year, the quota has never been attained. Only 72 MT was taken in 1984. It is not clear whether this decline was caused entirely by intensive exploitation of adult fish starting in 1968 and continuing into the late 1970's. (Sasaki, 1984), or whether high natural variability in recruitment has been a contributing factor (Wetherall and Yong, 1984). Regardless of the

causative factor, the present armorhead spawning stock is at a very low level and recruitment may have been negatively affected (Wetherall and Yong, 1984).

Newly-acquired Russian catch data suggest that the maximum stock size of pelagic armorhead on all seamounts in the 1969-1975 period was some 400,000 MT (Borets, 1975). It is clear that rebuilding of these stocks could ultimately lead to a renewed fishery both within and outside the FCZ. Although the Soviet data show that the original assumption (Wetherall, 1978) of equal Soviet and Japanese catches during this period was incorrect, the format of the newly acquired data does not allow a sophisticated analysis as attempted by Wetherall and Yong (1984) to be completed. Efforts by the Honolulu Laboratory are underway to acquire this needed data.

Since 1978, the dominant species in the Japanese trawl catches at most of the Emperor Seamounts has been the alfonsin, Beryx splendens, previously only a minor constituent. The catch per unit of effort for the latter species has greatly increased in all seamounts except Hancock Seamounts, suggesting either an increase in abundance of alfonsin or a switching of target species (Wetherall and Yong, 1984).

The Hancock Seamounts were never significant for the foreign hook-and-line fishery because the center of abundance of the primary target species (alfonsin) is at higher latitudes in the Emperor Seamount range. In recent years, the seamount fishing grounds have been abandoned altogether by foreign hook-and-line vessels (Seki and Tagami, 1984).

5.4 Management Issues

5.4.1 Increased Bottomfishing Effort and Associated Potential for Overfishing

Although there is no evidence from the history of the bottomfish fishery to demonstrate that the stocks are vulnerable to a sudden collapse due to recruitment overfishing, there is every indication that fishing pressure on some species, especially opakapaka, in Hawaii is at record-high levels. The previous high in annual mixed-species production was about one million pounds per year in commercial landings during the 1948-1953 period. In 1984, commercial landings from the main Hawaiian Islands and NWHI combined reached over 1.4 million pounds (WPRFMC, unpubl. data).

During the first five months of 1985, total production was about 2% ahead of the 1984 pace. The main Hawaiian Islands catch had declined by nearly 5% while the NWHI catch had risen by 14% (Table 5.12). By October of 1985, the NWHI catch had risen by 18% over the comparable 1984 period (WPRFMC, unpublished data).

TABLE 5.12

COMMERCIAL MIXED-SPECIES LANDINGS IN THE HAWAII BOTTOMFISH FISHERY

Area	Landings Through May 31 (x1,000 lbs.)	
	1984	1985
Main Hawaiian Islands	296	282
Northwestern Hawaiian Islands	187	213
TOTAL	483	495

Source: WPFMC, unpublished data.

The maximum sustainable yield for the mixed-species fishery has been estimated to be approximately 596,000 pounds per year in the MHI and 508,000 pounds per year for the portion of the NWHI (Nihoa - Northhampton Bank) which was being fished in 1984. MHI bottomfish landings in 1984 exceeded the estimated MSY level by 53%. NWHI landings exceeded the estimated MSY level by 15% in 1984. The increased pace of harvesting in 1985 indicates that the MSY level in the fishable range of the NWHI was exceeded by 33% in 1985.

One analysis (Polovina, draft ms., 1985) suggests that with the present age of entry of opakapaka into the main Hawaiian Islands' fishery, the spawning stock biomass may be reduced to 10% of its unexploited level. With fresh market prices for bottomfish continuing to rise in spite of greatly expanded production, continued increases in bottomfishing effort and catch can be expected. To address this problem, the Council has established the following objective:

Objective 1: Protect against overfishing and maintain the long-term productivity of bottomfish stocks.

5.4.2 Insufficient Data to Guide Long-Term Management

Sound management of the western Pacific bottomfish and seamount groundfish fisheries is hindered by the familiar limitations of limited data and the unrecognized effects of environmental and recruitment variability on the condition of stocks. In most fisheries, the data needed to make management decisions are not available unless a preconceived data gathering program has been in effect. To address this problem, the Council has established the following objective:

Objective 2: Improve the data base for future decisions through data reporting requirements and cooperative Federal and State/Territory data collection programs.

5.4.3 Transboundary (State/Federal) Distribution of the Bottomfish Fishery

The geographic focus of existing bottomfishing activity in American Samoa and Guam is the territorial sea, and the FCZ portion of the fishery receives little effort. Although the FCZ portion of the bottomfish fishery in the main Hawaiian Islands (primarily the southern tip of the Penguin Bank) is one of the more productive areas, it is not unusual for a boat to bottomfish in both the territorial sea and in the FCZ on the same trip. Hence, the boundary is not distinctive in terms of the operations of the MHI fishery. Only in the Northwestern Hawaiian Islands is it clear that bottomfishing is conducted predominantly in the FCZ.

The State and both territories have federally-approved Coastal Zone Management (CZM) Programs which call for the conservation of marine resources and require that government activities in the coastal zone be consistent with approved CZM policies and programs. CZM policy generally requires consistency of Federal and State fishing laws/regulations.

The "costs" of conflict or inconsistency in State/Federal bottomfish management programs include the potential for lengthy and expensive litigation, more complex and expensive enforcement activities, and possible duplication of data reporting burdens on fishermen.

To avoid the costs of a non-cooperative approach to the management of the transboundary bottomfish fishery, the Council has established the following management objective:

> Objective 3: Provide for consistency in State/Federal or Territory bottomfish management to ensure effective management across the range of the fisheries.

5.4.4 Limited Amount of Bottomfish Habitat and Possible Damage to Bottomfish Stocks or Habitat Through the Use of Destructive Harvesting Technology

The use of trawl nets to harvest bottomfish is severely restricted or precluded in most Pacific island areas because of rugged bottom relief which snags and damages the gear. In 1983, a trawler from Oregon fished for a short period at the Penguin Bank off the island of Oahu and made small catches of opakapaka (100 pounds per day). However, it was reported to have suffered considerable loss and damage to its gear and left the fishery. There are no vessels utilizing trawl or bottom-set net gear to harvest bottomfish at this time.

The bottom topography becomes smoother in some areas of the western Pacific, notably the northern part of the Northwestern Hawaiian Islands, as a consequence of older submarine geology. Prior to the requirement for foreign fishing permits in the FCZ, the Japan Marine

Fisheries Resource Research Center conducted trawling surveys in the Northwestern Hawaiian Islands. Although commercial feasibility was not demonstrated, one haul caught over 13,000 pounds of opakapaka at a bank west of Lisianski Island (JAMARC, 1973).

As long as unfavorable conditions prevail in so many of the fisheries off the North American continent, it would not be surprising for a succession of U.S. vessels to explore fisheries in the western Pacific. It is inevitable that trawl or gillnet fishing methods would be attempted by some of these vessels. Although unlikely to achieve much sustained success, trawling experiments could alter bottom relief by tending to smooth bottom irregularities. This would be detrimental to the present ecosystem (K. Sainsbury, draft ms., 1985).

Space and cover are usually the major factors governing the distribution and abundance of demersal fishes. There is substantial scientific literature which relates the abundance of bottom-dwelling fish stocks to the degree of bottom complexity or physical relief. This relationship has also been practically tested by establishing artificial reefs on "dead" level bottom areas. These structures create vertical relief and often stimulate productive fisheries for demersal species.

To deal with the use of possibly destructive harvesting technology, the Council has established the following management objective:

> Objective 4: Protect bottomfish stocks and habitat from environmentally-destructive fishing activities and enhance habitat if possible.

5.4.5 Possible Imbalance in the Distribution of Benefits Among Commercial, Recreational and Subsistence Fishery Interests

In the Northwestern Hawaiian Islands, bottomfishing is the domain of full-time commercial fishermen. In American Samoa, commercial and subsistence fishermen compete for some of the same bottomfish resources, and in the main Hawaiian Islands, there has been a dramatic influx of part-time or casual fishermen into the deepsea handline fishery which was historically dominated by full-time commercial fishermen. Part-time recreational and subsistence fishermen also predominate in the Guam bottomfish fishery.

The diversity of user groups has raised questions about the equitable distribution of benefits from the harvest of bottomfish: who gets what share of the benefits? Commercial value in the fishery is more important for fishermen who depend on fishing for a significant source of personal income than for part-time fishermen who have other jobs or sources of income. The non-commercial values of the western Pacific bottomfish fishery cannot be estimated from available data. However, in other regions where non-commercial fishing values have been assessed, they have

been found to be more significant than commercial values. With ever-increasing fishing effort in the bottomfish fishery, it is important to guard against an inequitable allocation of benefits. Some have expressed the opinion that native Pacific islanders do not have equal access to the fishery as compared to other groups. However, the measures in this plan are non-discriminatory.

Therefore, the Council has established the following management objective:

> Objective 5: Maintain existing opportunities for rewarding fishing experiences by small scale commercial, recreational, and subsistence fishermen, including native Pacific islanders.

5.4.6 Possible Disruption in the Supply or Quality of Fresh Bottomfish Available to the Domestic Market

If overharvested, bottomfish stocks will not be able to provide a continuous supply of fresh product to the domestic market. Per capita seafood consumption in Hawaii and the other western Pacific island area is at least twice the national average, and fresh fish accounts for nearly half of the total. The bottomfish species complex generates 19% of total wholesale revenues derived from seafood products in Hawaii (Cooper and Pooley, 1982).

With demand for fresh Pacific island fish escalating rapidly, any disruption in the availability of a major bottomfish species (e.g., opakapaka) would have severe consequences for consumers. It is important to realize that Hawaii consumers are willing to pay high prices for fresh bottomfish, with average wholesale prices ranging from $3.15 to $4.20 per pound, and with the wholesale price averaging $4.85 per pound for onaga and $4.25 per pound for opakapaka =(NMFS Honolulu Laboratory, unpublished data). The restaurant demand for high quality fresh bottomfish cannot always be satisfied by the production of Hawaii fishermen, and fishermen in American Samoa and Guam export a portion of their catch of deepwater snappers to the Hawaii market.

The following management objective reflects the Council's view that fishery management should not accentuate the inherent fluctuations in fresh fish supply which characterize the western Pacific bottomfish fishery:

> Objective 6: Maintain consistent availability of high quality products to the domestic market.

5.4.7 Possible Overcapitalization of the Northwestern Hawaiian Islands Bottomfish Harvesting Capacity

Western Pacific bottomfish populations are slow-growing for warm water species. Although unexploited standing stocks may be high, production is low. Fisheries that develop rapidly while fishing down long-lived, low-production stocks, such as opakapaka and other species, may attain a harvesting potential that vastly exceeds the long-term productive capacity of the resource. Large boats capable of distant-water bottomfishing operations in the NWHI continue to join the Hawaii commercial fleet. Many of the fishing decisions made by the captains of these vessels are based on the performance of the top boats in the fishery. This has led to an overly-optimistic assessment of the likely future of the NWHI bottomfish fishery.

Experience in other groundfish fisheries which harvest species with similar life histories suggests that once a stock is fished down to a low level, one can expect sustained production of as little as one-fifth to one-tenth of the yield produced in the process. In the past when U.S. mainland fisheries became over-capitalized and eventually depeleted resources to the point of economic extinction, the boats simply moved on to other, often less desirable, fisheries. What this portends is a significant transfer of fishing power from the NWHI to other areas of the western Pacific.

To address this problem, the Council has established the following objective:

Objective 7: Maintain a balance between harvest capacity and harvestable fishery stocks.

5.4.8 Increased Participation in the Northwestern Hawaiian Islands' Bottomfish Fishery by Fishermen Unfamiliar With That Region, With a Corresponding Increase in the Risk of Vessel Groundings, and Injury of Individual Animals Through Various Fishing Operations, i.e. Hooks and/or Fishermen and the Potential For Use of Net Gear That Would Have Adverse Impacts on Protected Marine Species

A large percentage of the boats which presently frequent the Northwestern Hawaiian Islands are involved in commercial bottomfishing. The NWHI bottomfishing fleet has increased from 5 boats in 1983 to over 20 boats in 1984-85, with the range of fishing expanding from French Frigate Shoals to the Northhampton Bank 850 nautical miles northwest of Honolulu. This expansion is increasing the possibility for adverse impacts on the area's unique wildlife (including some species which are legally defined as "endangered" or "threatened").

Characterized by unpredictable currents and weather, the remote NWHI offer little protection and almost no support services for fishing

vessels. Although the military and the Coast Guard have responded to emergencies in these waters, the only government facility near the bottomfishing grounds is a U.S. Fish and Wildlife Service base at Tern Island which has a radio and small airstrip for emergency landings. The only other refuge would be Midway, 1,100 miles from Honolulu.

The major threat is from vessel groundings and the associated impacts of fuel spills and rat introductions on the habitat and populations of the Hawaiian monk seal, green sea turtle, and other wildlife. Groundings which have already occurred, including the sinking of the Keola at French Frigate Shoals (FFS) in 1981 and the recent sinking of the Carolyn K at FFS, illustrate the hazards of operating vessels in the NWHI. The risk of groundings increases, not only with the number of boats involved in bottomfishing, but with the expanding range of the fishery into poorly-charted areas northwest of Gardner Pinnacles and by the increased participation of vessel captains who are unfamiliar with the hazardous waters of the NWHI. The risk of vessel groundings may be related to the size and general seaworthiness of the boats operating in the NWHI fishery.

The use of bottom gill nets and bottom trawls by domestic fishermen has been very limited to date, but if these fishing methods should ever develop in the NWHI, incidental mortality of monk seals or sea turtles could occur as the result of the animals becoming entangled in nets or net fragments. Documentation of the entanglement of monk seal pups in lost or discarded Japanese fishing nets indicates that this may already be a serious problem in the Northwestern Hawaiian Islands (Henderson, in press).

Lost netting that is washed inshore probably represents a greater threat to the monk seal than actively operated net gear. A large percentage of the incidents of seal entanglements observed since 1974 have involved weaned monk seal pups. These pups spend much of their time in the nearshore areas where nets and other floating debris concentrate, and they are more likely to explore objects in their environment than older animals (Henderson, in press).

No Hawaiian monk seal has ever been observed to die as a result of debris entanglement, nor has an entangled carcass ever been found (Henderson, in press), but net fragments derived from domestic bottomfishing gill netting operations would only increase the hazard to seals. Observations made by California Department of Fish and Game personnel suggest that entanglement in gill and trammel nets might be a significant cause of mortality of sea otters and other marine mammals in certain coastal areas of California.

In addition, scraps of net at sea seem to attract sea turtles, which can become hopelessly enmeshed and subsequently drown (Balazs, in press).

Monk seals at French Frigate Shoals have been observed taking fish from hooks. One monk seal has been observed with a bottomfish hook embedded in its lip. No mortality has been reported, but it can be

inferred from the observation of a hooked monk seal and a report of a Mediterranean monk seal drown in longline gear (Sergeant et al., 1978, First International Conference on the Mediterranean Monk Seal. Rodos, Greece, May 1978. 45 p.) that the potential for incidental mortality exists. Also, a more direct conflict may evolve as monk seals learn to exploit bottomfish hook-and-line gear for food and fishermen try to protect their catch from depredation. There is no mechanism to authorize an incidental take of monk seals because they are protected under the Marine Mammal Protection Act (MMPA). Also, NMFS believes that incidental mortality is likely to affect the population adversely. Fishermen should understand the potential conflicts and risks of fishing in areas where monk seals occur before entering fisheries in those areas.

To avoid increased risk to threatened or endangered marine species as a result of bottomfish vessel groundings or the use of net gear or hook-and-line practices in the NWHI, the Council has established the following management objective for that sub-area:

> Objective 8: Avoid the taking of protected species and minimize possible adverse modifications to their habitat.

5.4.9 Depleted Seamount Groundfish Stocks

Japanese fishery statistics show that in the late 1970's, the armorhead stock on the seamounts collapsed as Japanese C.P.U.E. dropped over two orders of magnitude from its peak in 1972.

At a recent meeting on the resources of the northern Pacific seamounts held in Shimizu, Japan, papers presented by Sasaki (1984) and Wetherall and Yong (1984) documented the decline in the pelagic armorhead stocks. The current status of the armorhead stocks, as reflected in the decline in catch rates, suggests that immediate management decisions are necessary (Anon., 1984). Hence, the Council has established the following management objective for the Hancock Seamounts:

> Objective 9: Restore depleted groundfish stocks and to provide the opportunity for new domestic fisheries for seamount groundfish which will displace foreign fishing.

5.4.10 The Stocks of Many, if Not Most, of the Groundfish Species Range Across the FCZ into International Waters

It is apparent that the remaining populations of pelagic armorhead inhabiting the Emperor Seamount chain are depleted and in need of management. With the exception of the Hancock Seamounts, the Emperor Seamounts are located in international waters with no management regime in effect. There is some question as to how effectively the groundfish

resources within the FCZ could be unilaterally managed. The most effective management plan might be a holistic approach requiring the involvement and cooperation of all nations participating in the seamount fishery.

Hence, the Council has established the following management objective for the FCZ portion of the seamount groundfish fishery:

> Objective 10: Monitor the recovery of depleted stocks in the FCZ so that any international plan of action for managing the common resource can be guided by experimental results.

6.0 PROPOSED ACTIONS (PREFERRED ALTERNATIVE)

The Western Pacific Fishery Management Council proposes a package of management measures for the bottomfish and seamount groundfish fisheries in the FCZ around Hawaii, American Samoa, and Guam, as follows:

Administrative framework for future regulations -- The plan proposes a "framework" for managing the bottomfish fishery in the FCZ around Hawaii, American Samoa and Guam. This framework is largely an administrative procedure which describes the processes by which the fishery will be managed and which establishes the limits and controls within which regulatory adjustments may be made. The framework procedure is illustrated in Figure 6.1 (also on Figure 2.1).

Gear restrictions -- Prohibit the use of bottom trawl and bottom-set gillnets for commercial harvest of bottomfish in the FCZ.

-- Establish a 6-year moratorium on commercial fishing in the FCZ portion of the seamount groundfish fishery to promote the recovery of depleted stocks.

-- Prohibit the use of explosives and poisons for harvesting bottomfish in the FCZ off Hawaii, Guam, and American Samoa. In the FCZ off Hawaii and Guam, this would be consistent with existing State/territory rules.

NWHI permit -- Require a Federal permit for bottomfishing in the FCZ of the Northwestern Hawaiian Islands (see Appendix A for draft permit application and attached protected species inclusions).

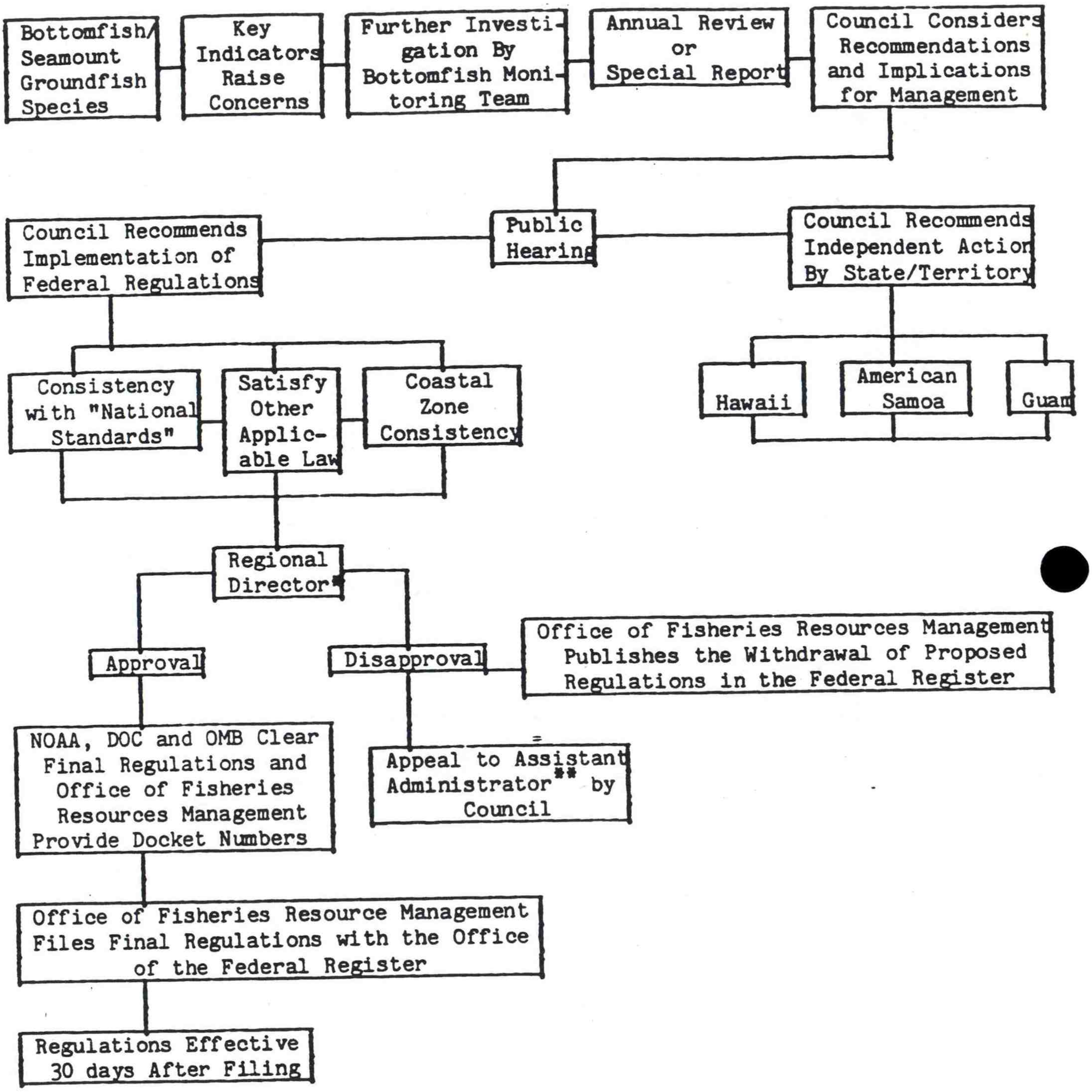
Experimental fishing permit -- To improve the data base, the Regional Director of NMFS will be authorized to issue a limited number of domestic experimental fishing permits allowing fishing which might otherwise be prohibited by regulations promulgated through the framework process.

Annual review -- A monitoring team will be appointed by the Council. The Team will prepare an annual review of fishery performance with special emphasis on further investigation of any key indicators which raise concerns.

Data collection procedures -- To obtain the catch/effort data for the annual review, reliance would be placed on existing State and Territory data reporting systems, and a Federal reporting requirement would not be added initially. The Council would consider authorizing Federal data reporting requirements in the event State/Territory systems prove inadequate.

FIGURE 6.1

ADMINISTRATIVE FRAMEWORK FOR INSTITUTING NEW CONTROLS ON BOTTOMFISHING



* Southwest Regional Director of National Marine Fisheries Service.
** Assistant Administrator for fisheries of the National Oceanographic and Atmospheric Administration.

6.1 Actions Proposed for Immediate Implementation

6.1.1 Prohibit Bottom Trawl and Bottom-Set Nets

One element of the preferred alternative is a recommendation to prohibit the use of bottom trawl and bottom-set net gear to harvest bottomfish. Current fishing practices do not include the use of bottom trawl and bottom-set net gear, therefore, this management measure would not have adverse impacts on the current fishing participants. There are several reasons for this recommendation:

-- Less Selective and Lower Quality Catch Than Hook-and-Line Fishery

Nets and traps are less selective in terms of species caught than is hook-and-line gear. Limited experience with bottom-set gill nets and bottom trawl nets in Hawaii and information from U.S. observers on Japanese trawlers fishing at the Hancock Seamounts suggest that the incidental catch is much higher in net fisheries than in the hook-and-line fishery. Furthermore, netted bottomfish are susceptible to damage which reduces the catch quality compared to the higher quality of the hook-and-line catch.

-- Overcapitalization

There is sufficient harvesting capacity in the hook-and-line fleet to harvest the entire MSY in all of the management sub-areas. The entry of bottom trawlers or gillnetters would only add unnecessary harvesting capacity and accentuate the problem of over-capitalization. Gear conflicts between gill nets and the hook-and-line fishery would be likely.

-- Habitat Degradation

Lost gill nets present a potential for ghost fishing and subsequent habitat degradation.

The effect of a bottom trawl fishery on the quality of bottom habitat off the northwest continental shelf of Australia has been examined. The trawling converted an initially irregular bottom to a smoother bottom. An alteration in species structure occurred as the character of the habitat was modified (K. Sainsbury, draft ms., 1985).

-- Net Gear/Protected Species Interaction

The use of bottom gill nets and bottom trawls by domestic fishermen has been very limited to date, but if these fishing methods should ever develop in Hawaii, incidental mortality of monk seals or sea turtles could occur as the result of the animals becoming entangled

in lost netting or net fragments. The incidence of the entanglement of monk seal pups in lost or discarded Japanese fishing nets indicates that this may already be a serious problem in the Northwestern Hawaiian Islands (Andre and Ittner, 1980; Balazs, 1979; Kenyon, 1980).

6.1.2 Moratorium on Commercial Fishing at Hancock Seamounts

A moratorium on commercial fishing is recommended for an initial period of 6 years to restore the depleted groundfish stocks, and the National Marine Fisheries Service (NMFS) has requested the Department of State to hold in reserve indefinitely the total allowable level of foreign fishing (TALFF). These decisions resulted from the inability of foreign vessels to harvest the TALFF and a continuous decline in catch per unit of effort.

Foreign hook-and-line fishing is not known to have occurred at the Hancock Seamounts since the implementation of the PMP in 1977. Recent bottom longlining operations by the Honolulu Laboratory have proven effective even when employed on a depressed stock. Due to the depressed nature of the stocks coupled with the highly limited seamount area, a large longlining operation could do a great deal of damage to the present depressed stock.

The Honolulu Laboratory of NMFS has initiated a Seamount Resources study. The total ban of all commercial fishing gears on the seamounts, as recommended by the Honolulu Laboratory, provides an opportunity for the Laboratory to assess the impact of the moratorium and to investigate the recovery of the armorhead stocks through several cycles of recruitment and to compare groundfish stocks between seamounts with and without a fishery. This study is needed to assess the sustained fishery potential of the Hancock Seamount groundfish fishery as the basis for re-establishing optimum yield. The results of this study could also be useful in guiding an international plan of action for managing the common resource across its range.

6.1.3 Prohibit the Use of Explosives and Poisons to Harvest Bottomfish in the FCZ

The State of Hawaii and Territory of Guam have existing rules prohibiting the use of explosives and poisons in fishing. Explosives and some poisons have the potential for long-lasting or irreversible damage to bottom habitat. Previous discussion has emphasized the extremely limited amount of habitat off western Pacific islands which is suitable for deepsea bottomfish. Bottomfish stocks are probably habitat-limited, and strengthening of the existing Hawaii and Guam measures by establishing complementary Federal regulations in the adjacent FCZ is therefore

proposed. To strengthen the existing American Samoa rule against poisons and to provide additional protection for limited bottomfish habitat, the use of poisons and explosives would also be prohibited in the FCZ adjacent to American Samoa.

6.1.4 Federal Permit for Bottomfishing in the FCZ of the NWHI

The Council proposes to establish a Federal permit requirement for bottomfishing in the FCZ of the Northwestern Hawaiian Islands. Each vessel owner must obtain a permit before the vessel may bottomfish in the Northwestern Hawaiian Islands. Each owner who would specify a vessel and an operator on the application (see Appendix A for draft application form). The permit will serve four purposes:

-- Issuing permits to particular vessels will provide more accurate tracking of increases/decreases in fishing effort and entry/exit of fishermen in the NWHI bottomfish fishery;

-- A listing of vessels with bottomfishing permits will allow more effective surveillance by Coast Guard aircraft of the vast NWHI; and

-- A permit system will give the U.S. Fish and Wildlife Service and NMFS a point of contact with bottomfish fishermen and provide an opportunity for education relative to the sensitivity of the area's wildlife and the need for their protection. As a part of the permit application form an informational document which includes a protected species/fishing operation interaction or "take" form and a statement to be signed stating that the applicant has read and understands the applicable laws, regulations and penalties regarding the protected species of the area will be attached; and

-- The information requested on the permit application will be considered confidential and is intended to provide information needed to assemble a general profile of the fleet's fishing power and present capabilities. The information will be invaluable in making informed rational decisions based on a full assessment of the impacts of any type of management options especially area closure or access limitation options.

6.1.5 Experimental Fishing Permit

The Council has acknowledged the paucity of data on stock sizes and yield potentials in various areas and on the economic and biological impacts of non-traditional fishing gear or techniques. The Council believes that provisions should be made to permit limited domestic experimental fishing to improve the data base for estimating yield potentials and possibly increasing the economic efficiency of domestic fishing

without adverse impacts. Impact determinations on habitat damage, protected species interactions, marketing, or other problem could be made using data from Experimental Fishing Permits with controlled testing conditions. If experimental fishing is deemed appropriate, it will be conducted under EFPS issued under Section 303(b)(1) of the MFCMA. Such EFPs could authorize the direct or incidental catch of bottomfish or seamount groundfish in the management unit which otherwise would be prohibited by this FMP. The Council proposes that the regulations implementing this FMP include a system for issuance of EFPs by the Southwest Regional Director (RD) of the NMFS consistent with the criteria and procedures to be determined by the RD in consultation with the Council. An EFP will be valid for up to one year, will be free, and will be non-transferable. The RD will consult with the Council in considering EFP applications and may limit the number, time, or area of use of EFPs to prevent overcrowding, gear conflicts, or adverse effects on fish stocks or protected species.

If the permit is granted, the RD will publish a notice in the Federal Register describing the experimental fishing to be conducted under the EFP. The RD may attach terms and conditions to the EFP consistent with the purpose of the experiment.

6.2 Framework for Regulatory Adjustments

Because of limited information about the management unit species and the uncertainty of fishing patterns in the future under this plan, the Council has concluded that a continuing monitoring and adjustment process must be built into the plan. This will provide a framework for annual or in-season adjustments in regulatory measures and strategies without requiring plan amendments if such changes are necessary to meet the objectives of the plan. This section explains the methods the Council will use to determine if such changes are necessary, the kinds of changes which may be made, and the procedure by which the Regional Director may implement changes under this framework plan.

In the event of an emergency which does not allow for timely management response under the framework procedure, the Council will still have the option of recommending that the Secretary of Commerce take emergency action, effective for a period of 90 days (with a possible 90 day extension) to manage the fishery while framework measures were being adopted and implemented.

The Council may in the future decide to put into effect a rule-related notice system. The FMP and implementing regulations must specifically provide that such a management adjustment will be accomplished by a rule-related notice and specify the procedures by which it will be accomplished. A rule-related notice applies to actions that have been anticipated in an FMP and implementing regulations. Provided the FMP contains adequate instructions, the RD is clearly implementing the FMP (a Secretarial function) rather than amending it (a Council function requiring subsequent Secretarial review). Therefore OMB will have already reviewed and approved the regulations implementing the FMP, rule-related

notices are exempt from OMB review. OMB has granted the Department this exemption on a year-by-year basis. To qualify for the exemption, a determination must be made for each management adjustment that it is, in fact, within the scope of the original framework regulations. This implies also that the consideration of the impacts made in the original Regulatory Impact Review (RIR) covers the full range of those that will occur under each of the management adjustments that may be taken under the approved framework FMP.

6.2.1 Annual Review

A. The Council shall establish and appoint the members of a Bottomfish Monitoring Team which is necessary to assist Council in carrying out its functions under the MFCMA. The Team will have lead responsibility for preparing an annual report on the effectiveness of the plan in meeting its objectives. The composition of the Team will be decided by the Council. The Team will work closely with NMFS, Coast Guard, State, and Territory officials to ensure that data submission requirements and data collection programs are generating the data necessary for effectively monitoring the fishery and determining whether different management measures are necessary. The Honolulu Laboratory will be responsible for providing timely data analysis, summaries, and research results on the bottomfish fishery for use by the Monitoring Team. The Team will prepare an annual report on the fishery by March 31 each year containing the following information about the previous year and comparative results for prior years to the extent data are available for each area of the FCZ and adjacent waters around the main Hawaiian Islands, Northwestern Hawaiian Islands, American Samoa, and Guam.

1. Fishery Performance Data

   a. Total landings (commercial and recreational) by species by area per month.

   b. Estimated ex-vessel revenues by species.

   c. Number of vessels, numbers of fishing trips, days fished, landings per trip, species composition of landings, areas fished, catch by area, catch per day by area, and other indicators of performance for commercial and recreational fisheries.

   d. Biological characteristics of the landings, including size-frequency by species by area.

2. Summary of Recent Research and Survey Results

3. Habitat Conditions and Recent Alterations

4. Enforcement Activities and Problems

5. Administrative Actions (e.g., data collection and reporting, permits)

6. State and Territory Management Actions

7. Assessment of Need for Council Action

   a. Biological conditions and trends.

   b. Economic conditions and trends.

   c. Social conditions and trends.

   d. Enforcement problems and significance

   e. Administrative problems.

   f. State/Federal consistency.

8. Recommendations for Council Action

9. Estimated Impacts of Recommended Action

B. Among the criteria which warrant further investigation into potential problems are the following:

1. The Mean Size of the Catch of Any Species in Any Area is Pre-Reproductive

Mean size of catch is a simple and probably sufficiently reliable indicator of the health of the spawning stocks of particular species in the areas for which catch statistics are aggregated. If the mean size of the catch of particular species falls below the first reproductive size, this is a clear indicator of a risk of recruitment failure.

2. Ratio of Fishing Mortality to Natural Mortality for Any Species

Where the collection of catch and effort data has only recently been initiated or where there are problems in measuring the fishing effort component from available catch statistics, it is valuable to approach yield assessment independent of a time series of catch and effort data. Polovina and Ralston (ms. in prep.) have developed a species-specific approach for the Marianas Archipelago which can be applied anywhere in the western Pacific to bottomfish species for which growth and mortality parameters can be estimated. The Beverton-Holt equation was used to evaluate the impact of fishing mortality on spawning

stock biomass and some generic guidelines were prepared by Polovina (draft ms., 1985) for two situations:

- When the size of entry to the fishery exceeds the size at onset of sexual maturity, fishing mortality should not exceed twice the level of natural mortality.

- When the size of entry to the fishery is less than or equal to the size at onset of sexual maturity, fishing mortality should not exceed natural mortality.

It has been suggested that, as a general lower bound, the spawning stock biomass of a species should not be reduced below 20 percent of its unexploited level before a substantial reduction in recruitment will occur (Beddington and Cooke, 1983). Adherence to the proposed guidelines would guard against recruitment failure in the bottomfish fishery. Approximate mortality parameters and sizes at onset of sexual maturity have been or soon will be estimated for most of the management unit species. This indicator, therefore, could provide the basis for timely management action for many of the FCZ fisheries. However, in developing fisheries, it will take a long time for the effects of harvesting to be translated into bottomfish size structure. In addition, fishing mortality may be underestimated in a fishery which is rapidly expanding in the area of grounds fished. The difficulty and cost of obtaining valid estimates of natural mortality and fishing mortality for new management unit species could render this indicator ineffective except for present management unit species.

3. Harvest Capacity of the Existing Fleet and/or Annual Landings Exceed Best Estimate of MSY for the Entire Charted Bottomfish Habitat in Any Area

Although MSY (Section 8.1) can be estimated only approximately for the western Pacific bottomfish fishery, any area in which total landings equal or exceed MSY and/or where total harvest capacity could take the entire MSY would probably have a high risk of overfishing. This is a sensitive indicator which can be estimated with available data.

4. Significant Decline (50% or more) in Bottomfish CPUE from Baseline Levels

A significant decline in catch per unit effort (CPUE) is the most commonly used indicator of deteriorating fishery conditions. Declining CPUE in western Pacific bottomfish fisheries, on a species or species group basis, could indicate

that one or more stocks are being overfished. A major disruption of the fishery would be indicated by a 50% decline from the CPUE of a baseline level, especially if combined with declining landings. Commercial fishermen in the NWHI have kept moving northwest through the chain of banks and islands to maintain a high CPUE as catch rates decline in the southern reaches of the NWHI. The CPUE of new entrants to the fishery starts relatively low and increases as they become more proficient.

CPUE is not a particularly sensitive indicator in some areas of the western Pacific because of problems with established catch/effort data reporting and collection systems, especially in measuring the effort component.

5. Substantial Decline in Ex-Vessel Revenue Relative to Baseline Levels

A substantial drop in ex-vessel revenue for the bottomfish fishery (relative to historical baseline levels) would indicate a change in the economic condition of the fishery deserving further investigation. Ex-vessel revenue changes can be assessed with available data and are relatively sensitive in detecting problems. If changes in ex-vessel revenue are a leading indicator, biological indicators will ultimately confirm the cause after more data are accumulated.

6. A Significant Shift in the Relative Proportions of Gear in Any Area

Vertical hook-and-line gear predominates in the western Pacific bottomfish fisheries. When bottomfish are aggregated, this is an efficient method of harvesting. Experimentation can be expected with bottom longline gear and trap gear. A significant shift away from vertical hook-and-line to either bottom longline or trap fishing would provide an indication of a change in fishing efficiency. Such a change could indicate the need for management.

7. Significant Change in the Frozen/Fresh Components of the Bottomfish Catch

Western Pacific bottomfish fisheries have historically supplied the fresh fish market. Hence, fishing has always been limited to areas within reasonable (relative to the shelf life of the targeted species) traveling distance from the fresh market.

A number of initiatives to develop markets for frozen bottomfish in Hawaii have apparently not succeeded. Should the marketing situation become more favorable for frozen bottomfish, this would provide an incentive to fish in the northernmost reaches of the NWHI, where bottomfish stocks are relatively unexploited.

A shift toward frozen products could stimulate greater fishing pressure throughout the entire Hawaiian Islands range of the major species. Also, since boats could stay longer on the fishing grounds per trip, they would catch more per trip (per unit of time out of port), which represents a net increase in fishing effort. This could indicate the need for management response.

8. Entry/Exit of Fishermen in Any Area

Entry and exit patterns in any fishery provide an indication of its economic and social stability. A highly unstable pattern (relative to a historic baseline) could indicate that the goal of maintaining a profitable commercial fishery and rewarding recreational and subsistence fisheries is not being achieved. Entry/exit patterns have the potential to be a relatively sensitive indicator if a permit system is established to record participation in the fishery. If entry/exit patterns are a leading indicator of instability, lagging biological indicators will ultimately confirm the cause after more data are accumulated.

9. Per-Trip Costs for Bottomfishing Exceed Per-Trip Revenues for a Significant Percentage of Trips

In any fishery, the per-trip revenues must remain above the per-trip costs over the long term for the fishery to remain economically feasible. Even in the part-time fishery for deepsea bottomfish, if operating costs exceed revenues for a majority of trips, a change in targeted species or fishing grounds may occur, or the decision to bottomfish part-time or recreationally may be re-evaluated. The paucity of cost-earnings data specifically for the bottomfish fishery would have to be overcome before this indicator could be completely functional. Although less sensitive than a decline in ex-vessel revenue overall, a per trip cost and revenue comparison is promising as an indicator of economic stability in the bottomfish fishery.

10. Significant Decline or Increase in Total Bottomfish Landings in Any Area

A significant decline or increase in total landings of targeted bottomfish species is a clear indicator of changing fishery conditions. Only commercial landings data are available on a relatively current basis in Hawaii and American Samoa. Moreover, landings alone are not a very sensitive indicator for timely management action. If management action were initiated only after landings have dropped sharply, action probably would be too late to prevent overfishing and associated costs.

11. Change in Species Composition of the Bottomfish Catch in Any Area

A change in the bottomfish catch composition from the existing species mix in any area would be a clear indicator of a problem but would probably be detected too late for effective management responses. Even when such a change occurred, its cause could be (1) environmental disturbances, (e.g., El Nino events), (2) habitat alteration, (3) species interactions, or (4) actual shifts in relative abundance of species. Some of these variables could affect other indicators, such as total landings.

12. Research Results

Research results in the western Pacific or in other areas could indicate the need for more investigation and possibly management adjustments in the bottomfish fishery. Examples of pertinent research results might be:

- General information on bottomfish presented at conferences and workshops (e.g., "Workshop on the Biology of Tropical Groupers and Snappers", Honolulu, May 1985).

- Information on fishery habitat condition and productivity developed by deepwater submersible vessels and research associated with other resource uses; e.g., deepsea mining.

- Information on fishery/protected species interactions.

- Information on the selectivity and catch rates of experimental fishing permits issued under this FMP.

13. Habitat Degradation or Environmental Problems

The potential yield of western Pacific bottomfish fisheries is habitat-limited. Habitat degradation or loss on a scale that might have little negative impact on a continental shelf fishery can be of major concern in a Pacific island bottomfish fishery because of the limited amount of bottom area that satisfies bottomfish habitat requirements. Therefore, any indication of habitat degradation, even on a small scale, is deserving of further investigation in the annual review. Habitat modification could occur as the result of a small-scale project (e.g., an OTEC facility) or a destructive gear type, or as the result of a large scale environmental disturbance (e.g., an El Nino event or major hurricane). The sensitivity of this indicator generally will be low, because small-scale effects (e.g., thermal barriers to recruitment of larval fishes associated with an OTEC discharge) may escape detection, and large-scale climatic and oceanographic effects of events such as El Nino could overwhelm and disguise smaller-scale problems.

14. Reported Interactions Between Bottomfishing Operations and Protected Species in NWHI

Increased fishing efforts in the NWHI could possibly lead to increased fishermen-protected species interactions. "Taking" a species means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. Fishermen are required by law to report to the NMFS any incidental "takes" and/or interactions during fishing vessel operations. Reports of fishermen-protected species interactions provide valuable information that may help reduce or eliminate harmful interactions in the future.

The ESA Section 7 Biological Opinion has set an acceptable level of "incidental take" of the listed sea turtles (Table 9.1, Appendix J). The Biological Opinion has also set criteria for the reinitiation of the formal Section 7 consultation. Should any of these criteria trigger the reinitiation of consultation, the Regional Director of the National Marine Fisheries Service would contact the Council, the appropriate Recovery Team, and such other individuals or organizations as may be relevant to obtain information concerning the possible effect of the reported taking or the activities resulting in the reported taking on the affected species or populations. The Section 7 consultation could suggest the need for regulatory adjustments under the framework procedure.

Summary:

Although all of the indicators described could be of use to the Bottomfish Monitoring Team, obviously not all are supported by an adequate data base. It would be unreasonably costly to collect the necessary data for all of the indicators to become completely functional and equally sensitive. The paucity of complete data is a familiar limitation in assessing and managing western Pacific fisheries. Considering the size and fragility of the bottomfish and seamount groundfish resources, the Team will need to rely on "leading" indicators in making recommendations to the Council, and the Council must be willing to respond before the weight of indisputable evidence has accumulated--by which time the fishery could be severely damaged or disrupted.

C. Evaluation of Alternatives (if necessary). During the annual review or at any time that the indicators raise concerns that warrant further investigation of fishery problems, the Council's investigation will assess alternatives and may conclude that a management adjustment is necessary to achieve FMP objectives and optimum yield. The following alternative adjustments will be considered before recommending that action be taken by the Regional Director. One or more alternatives could be recommended to apply to commercial, recreational, or subsistence components (or any combination) in one or more sub-areas of the FCZ (American Samoa, Guam, main Hawaiian Islands, Northwestern Hawaiian Islands, Hancock Seamounts).

a. Catch limits

b. Size limits

c. Closures

d. Effort limitations

e. Access limitations

f. Other measures

D. Recommendations (with justification relative to Council objectives and estimated benefits and costs). At a minimum, the following range of impacts will be considered in the analysis accompanying each recommendation:

a. Biological/Physical Impacts on:

. Management unit stocks/habitats
. Protected species.

b. Economic and Social Impacts on:

. Small-boat fishermen
. Large-boat fishermen
. Commercial Fishing
. Recreational/subsistence fishing
. Multi-species, multi-gear fishing operators
. At-sea discards
. Potential for gear conflict
. Markets/consumers

c. Administrative Impacts on:

. Enforcement difficulty and cost
. Data reporting burdens on fisheries
. Data collection and processing burdens on fishery managers
. Biological/economic research needs

The Team may present recommendations to the Council for any of the following actions by the Regional Director, Southwest Region, NMFS (the RD), or other organizations:

a. Federal regulations

b. State/Territory action

c. Enforcement/administrative elements

d. Research and data collection

Any such recommendations will include a determination of urgency and an assessment of the impacts of not taking action as recommended.

It must be noted that a Bottomfish Monitoring Team with the timely assistance of the Honolulu Laboratory will continually monitor the performance of the fishery throughout the year relative to the factors to be described in the annual report. The Team may at any time recommend that the Council and RD take action to address a problem identified during a year. The framework process described above could be used for in-season adjustments as well as annual adjustment to the management and conservation program for bottomfish fisheries.

E. Council and RD Action. The assessment will be distributed to voting and non-voting Council members, the Scientific and Statistical Committee (SSC), and the Bottomfish Advisory Subpanel (AP). The Council will request the views of these subgroups at the next Council meeting. At that meeting, the Council also will schedule a public hearing to afford an opportunity for public and industry inputs to be put on the record. The hearing notice will be announced in the Federal Register as well as in local news media.

The Council will discuss the Team report, the views of the SSC and AP, and public and industry comments made at the hearing, and will make recommendations to the RD. The recommendations will be documented with relevant data and public comment and will explain the urgency of the action. The Council also may recommend action by State or Territory agencies or the Coast Guard.

The RD will consider the Council's recommendation and accompanying data and, if he concurs, will propose regulations to carry out the action. The proposed regulations will be published in the Federal Register, with a reasonable period for public comment consistent with the urgency of the need to take action. Final regulations will subsequently be published unelss new information from the comment period indicates that there is reason not to implement the recommendations of the Council.

If the RD rejects the Council recommendations, or decides after public comment not to implement the recommendations, he shall provide reasons for that decision in writing within two weeks of the decision.

The Council may appeal to the Assistant Administrator (AA). The appeal shall be considered filed upon receipt by the Assistant Administrator of a written letter from the Council stating the reasons that the proposed regulations should have been implemented by the Regional Director. The Assistant Administrator shall determine whether the proposed regulation is consistent with the Magnuson Act within thirty (30) days after the appeal is filed.

6.2.2 Adoption of State/Territory Measures for FCZ

The Council acknowledges that the fishery for bottomfish in American Samoa, Guam, and the main Hawaiian Islands occurs predominantly in the territorial sea. The Council also has recognized the importance of ensuring that State and Territory management measures and Federal management measures be consistent across the territorial sea and FCZ boundaries. State and Territory measures may be set by statute and administrative proceedings on a schedule that does not coincide with the Council's annual review and decision schedule. It is quite possible as a result that there could be a period in which State or Territory regulations would differ from Federal regulations for a period of several months if there is no provision for reconciliation of such differences under a framework approach. The Council proposes the following system to minimize the risk of problems of this sort.

The appropriate State or Territory fishery agency member shall forward to the Council each change in its laws, regulations, or other directives applicable to fishing for management unit species in its territorial sea or adjacent FCZ. If possible, such changes shall be sent when in a proposal stage before action is taken so the implications for FCZ management can be considered to all voting and non-voting Council

members, the SSC, the AP, and the Bottomfish Monitoring Team. The notice of the next Council meeting shall indicate that the Council will discuss and will receive industry and public comment at that time on the potential implementation of a companion measure under this FMP for the FCZ adjacent to the State or Territory involved.

At the meeting, the Council shall decide whether to recommend Federal adoption by the RD, and if so recommending, shall indicate its reasons, the urgency of the action (including consideration of timing to coincide with State or Territory action), and the potential impacts (in terms of FMP objectives) of implementing or not implementing the change. This recommendation shall include consideration of an analysis by the Team of the benefits and costs of adopting the measure in the FCZ. The Team shall assess the impacts on the bottomfish stock(s) involved, fishermen, markets, and consumers. This analysis shall also explain why other actions were not proposed.

The RD shall consider the recommendation of the Council, including the associated data and impact analysis, and review the measure(s) proposed relative to the Magnuson Act national standards, other applicable law, and FMP objectives. If the RD concurs, he shall publish the proposed regulations in the Federal Register and provide a reasonable period for public comment consistent with the urgency of the action.

If the RD rejects the Council recommendations, or decides after public comment not to implement the recommendations, he shall provide reasons for that decision in writing within two weeks of the decision.

The Council may appeal to the Assistant Administrator (AA). The appeal shall be considered filed upon receipt by the Assistant Administrator of a letter from the Council stating the reasons that the proposed regulations should have been implemented by the Regional Director. The Assistant Administrator shall determine whether the proposed regulation is consistent with the Magnuson Act within thirty (30) days after the appeal is filed.

6.3 Alternative Adjustments Available Under Framework

The kinds of management actions which could be instituted in response to changing fishing conditions include the following:

6.3.1 Catch Limits

Catch limits (quotas) could be implemented for one or more subareas. They could be applied to the mixed-species bottomfish complex, to one or more individual species, or to incidentally-caught species. Quotas would place a ceiling on total annual (or other period) harvest,

and once a quota is reached, no additional fishing would be permitted. Quotas usually encourage a large pulse of competitive fishing and are usually filled early in a season. In fisheries managed under quotas, the supply of fresh fish is curtailed after the harvest level is reached. Quota management usually results in progressively shorter seasons open to fishing to prevent a growing fleet from exceeding conservation determined quotas. Although catch limits could prevent biological overfishing, they would not prevent overcapitalization of the harvest sector. Catch limits would tend to accentuate the natural instability of fresh fish supply which is inherent in Pacific island fisheries. To be effectively enforced, a quota system normally requires reporting or data collection in all components (commercial, recreational, and subsistence) of the fishery and timely compilation of data so that fishing will not continue beyond the time when the quota is achieved. Variations such as quarterly quotas or quotas for specific fleet components could offset some of the disadvantages but could require additional monitoring or accelerated data collection and processing.

An alternative method of limiting total catch is to establish an individual fishermen's quota which is a derivative of an overall catch quota. Under an individual quota system, each fisherman who received rights to participate in the fishery would be guaranteed the opportunity to a predetermined percentage of the total harvest quota established annually (or for some other period) for the fishery regardless of when and where he chose to fish. The initial allocation of shares could be limited to fishermen who participated in the past or who have already made major sacrifices to enter the fishery. Each year, a catch quota would be determined for each fisherman based on his initial entitlement and the condition of the stocks. Annual changes in the total harvest quota could be automatically apportioned among shareholders. The shares could be fully transferrable, except that a limit could be placed on the number of shares that any one fisherman could own.

Each fisherman who is allocated a share would have the choice to harvest that amount of bottomfish, increase his catch by buying more quotas from other share-holders, reduce his catch by selling some of his quotas, or not fish at all for the year by selling all of his quotas (while still retaining his initial entitlement). Persons lacking a record of historical participation could participate in the fishery by purchasing unused quotas from shareholders. This would allow new participants in the fishery without increasing the overall catch of the fleet.

The system would provide flexibility within the fleet with free exchange of shares (for privately negotiated terms between buyer and seller) and should avoid the need for extensive gear or vessel restrictions to limit overall fishing mortality. However, there is a possibility that fishermen would upgrade their individual harvesting capacity to reach their quota faster, thus freeing the vessel from further operating cost or allowing it to participate in other fisheries. Shares would probably tend to shift to those with higher incomes.

A share system poses some significant problems in implementation, with the most obvious being that of enforcement. Assignment of individual quotas would give fishermen a strong incentive to under-report their catch to misrepresent the species landed, or to land at remote, unpoliced sites so they could continue fishing. Constant monitoring of ex-vessel sales would be required for the system to be effective. At-sea enforcement, including observers or boardings, might be needed to discourage large discards designed to maximize the value of limited quotas.

In any fishery where there is substantial variability in catches (due to chance, weather, or seasonality of species) over the period of a fisherman's quota, the quota will lead to suboptimal catch concentrated early in the period, just as with annual quotas. It is possible to have some boats which have filled their quotas early sitting idle while the total quota for the fishery is not taken (Clark, 1985).

Fishermen's quotas have the effect of truncating catches at the quota limit. Hence, the expected catch is smaller than the quota. Many fishermen rely on the occasional lucky catch, and they view a quota as preventing them from realizing this important though irregular windfall (Clark, 1985).

6.3.2 Size Limits

Minimum size limits could be established for one or more individual species but would only be effective if fish were landed whole or gilled and gutted. Size limits could not be applied to a frozen fillet fishery. The minimum sizes would correspond to the size at onset of sexual maturity for females of the species. A length at onset of sexual maturity of 50% of maximum length is suggested for a range of island snapper populations (Grimes, draft ms., 1985; Grandperrin and Brouard, 1984). For some species, the size at onset of sexual maturity is known more precisely (e.g., Hawaiian opakapaka = 3 pounds; ehu = 1 pound). Minimum size limits are not an appropriate measure to apply to the management of groupers because the size at onset of sexual maturity varies with population structure. In American Samoa and Guam, where there is a strong cultural preference for small sizes of fish (¼ to 2 pounds), minimum size limits for bottomfish would be extremely difficult to enforce.

Minimum size limits would, in the long term, assist in achieving stable patterns of catches of bottomfish in the size ranges preferred for the commercial market. Medium to large fish are preferred to supply fillets to the Hawaii restaurant market (Hau, 1984) because the percent yield of edible material is high, handling costs per unit weight are lower, larger fish often keep better, and more uniform products can be made from them. A negative impact in Hawaii would be the disruption of the household retail market for small bottomfish.

Minimum size limits for bottomfish could be increased to the target size all at once or incrementally. An example of an incremented increase would be for the State to raise the current minimum size for sale limit for opakapaka from the existing one-pound limit to 3 pounds (the size at onset of sexual maturity in the majority of females) over a period of 4 years (½ pound per year). Management recommendations which increase the age at entry must be sensitive to the short-term response of the fishery. The short-term loss to the fishermen while the population structure is readjusting to the higher age of entry may exceed the long-term gain (Waters, 1983).

Bottomfish fishermen who are marginal commercial producers may not have the financial ability to remain in the deepsea handline fishery during the transition period while short-term losses are being incurred. The chief beneficiaries of a sudden increase to a target size limit would be commercial fishermen who have staying power through the transition period and new entrants once a new equilibrium is established. In such situations, a gradual increase in the age of entry through small annual increments is preferable to a single-step increase to the optimal age of entry.

The effect of minimum size limits would be to increase the yield per recruit by raising the age of entry into the fishery. Associated benefits could be to augment the spawning stock and subsequent recruitment. A larger spawning population is expected to increase the size of future year classes, although this outcome may not directly occur due to (1) chance events affecting the spawning-recruitment process; (2) population density-independent egg production; and (3) environmental carrying capacity constraints.

Deepwater bottomfish usually suffer damage from gas expansion as they are hauled to the surface and are landed nearly dead with little or no chance of survival if released. Therefore, a minimum size limit for bottomfish must aim to discourage the capture of undersized fish rather than to require the release of undersized fish which will not survive. There are two means by which fishermen can avoid capturing undersized bottomfish.

Experimental bottomfishing trials with different hook sizes fished simultaneously indicate that small hooks (Nos. 28 and 30) are more effective in capturing small fish (less than 45 cm FL) than are larger hooks (Nos. 34 and 38) (Ralston, 1982). Thus, fishermen can reduce the capture of undersized bottomfish by using large hooks. However, even large hooks catch small fish, so the problem cannot be avoided entirely. There is another means for fishermen to reduce the catch of undersized bottomfish. If initial fishing in one area indicates a preponderance of small fish, fishermen can shift fishing areas to avoid concentrations of undersized bottomfish, but this means they will have caught some undersized fish which cannot be sold or retained.

Many fisheries rely upon minimum size limits despite the probable mortality and waste of fish which is dead when landed but cannot legally be retained. Forced release of undersized fish could serve to encourage relocation of fishing effort (away from concentrations of small fish). Minimum size limits could be applied to the commercial and recreational/subsistence components of the bottomfish fishery or both. A prohibition against the sale of undersized fish would be effective in regulating the commercial component, whereas a bag limit would be more effective for the recreational/subsistence component. Both measures are enforceable through dockside activities and, hence, are relatively less costly than other alternative responses.

6.3.3 Closures

Closures of the bottomfish fishery could be applied to any one of the management areas (American Samoa, Guam, main Hawaiian Islands, Northwestern Hawaiian Islands) or a portion of any sub-area (i.e., one or more separate banks). Area closures could be applied to a portion of the mixed-species complex in the FCZ, such as a nursery area where juveniles congregate. Seasonal closures could be applied to reduce fishing pressure on one or more individual species caught in the FCZ during one or more months of the year when the affected species are particularly vulnerable to capture (e.g., all or a portion of the spawning season or some other critical season).

As part of its marine conservation programs, the State of Hawaii has closed, temporarily or permanently, certain reef areas to all fishing. These experiences have amply demonstrated the beneficial effects of area closures in terms of reef fish stock recovery. It is highly likely that bottomfish populations would respond similarly to area closures. In the early days of the bottomfish industry in Hawaii there was voluntary rotation of fishing grounds by those participating in the fishery. Selective closure of various areas could offer several advantages:

* Closure could provide an opportunity to restore balance to a mixed species fishery. The more aggressive species that are caught first would have an opportunity to recover.

* Closure could protect concentrations of juveniles against premature harvest.

* Aerial surveillance can detect boats that are actively fishing in a closed area.

* Rotation of closed areas could keep the amount of area available to fishing at a constant level.

A large scale area closure in the recent past occurred during World War II when Hawaii was under martial law which brought about a cessation of deepsea fishing activities for several years. After the war, bottomfish and other species had accumulated, and the harvesting of surplus stocks caused bottomfish landings in the 1948-1953 period to reach one million pounds per year, a commercial harvest level not attained again until 1984.

The extent to which area/season closure would protect against overfishing depends on the magnitude of the closure. The size of an area closure could range from an area 2 to 3 miles in diameter to an entire bank, for example the Penguin Bank. Area closures large enough to encompass a significant portion of the home range of the affected species would be more effective, but observations of fishermen and scientists suggest that the extent of the home range is limited for some species (e.g., onaga, ehu), while extensive for others (uku, ulua). The growth rates of management unit species suggest that a 3-4 year closure would be needed to protect recruits of severely depleted populations until they grow to spawning size. Hawaii fishermen formerly practiced a self-imposed closure system, resting heavily-fished areas one or two years before resuming fishing. For species which form spawning aggregations during a 2- or 3-month period (e.g., uku), closures as short as one month could protect a portion of the stock, which is highly vulnerable to capture during spawning. However, most other species are not known to form spawning aggregations or they spawn over an extended period of the year, and seasonal closures unless of great duration would have less impact.

Although an area closure may allow depleted stocks to recover, it precludes the possibility of fishing the undepleted stocks that may be in the same area. This would be a detriment to fishermen who target the area for species other than those that the closure protects. An area closure, in protecting all stocks, would serve as a reproductive refuge, enhancing recruitment to nearby areas still open to bottomfishing. The benefits of an area closure cannot be assessed quantitatively without at least one experimental closure designed and closely monitored by management agencies and scientists. Some bottomfish fishermen home ported on the island of Maui have expressed support for experimentally closing a known bottomfish nursery area off leeward Maui to determine if and at what rate bottomfish stocks rebuild. The area proposed is under the management jurisdiction of the State of Hawaii.

Those who normally bottomfish in the areas selected for closure are likely to shift to alternative areas or to fisheries which are still open. This relocation of fishing pressure may interfere with the opportunities of existing users in the areas and fisheries which remain open. Information requested on the NWHI permit (Appendix A) will help fishery managers to predict likely shifts in fishing pressure caused by an area closure. Vessel information (operating and refrigeration capabilities) could provide estimates of the costs of relocation. Those who have to relocate bottomfishing activities as a result of area closures in the NWHI as well as the main Hawaiian Islands may incur increased travel times and associated vessel operating costs.

If the magnitude of an area closure is large enough, it may accentuate fluctuations in fresh fish supply and raise consumer prices. If a particular consumer population relies heavily on the area selected for closure, their supply of fresh bottomfish could be disrupted.

A seasonal closure for a particular species over a broad area to protect spawning stocks would disrupt the pattern of landings and the supply of fresh bottomfish. For example, a seasonal closure on the harvest of uku during the summer spawning season for this species would cut off the supply of one of the few bottomfish species available in substantial quantities to Hawaii consumers during the summer months. A closure of spawning areas would reduce catch rates and the efficiency of the fishing effort directed at the spawning stocks.

Although seasonal closures may increase the fish available for harvest in the short term, fishing effort may increase to exploit the available stock, leading to further and further reduction in the length of open seasons. Some fishermen may have the technical capability to shift to unregulated species, but others will not be able to do so. Closed seasons inevitably lead to an increase in fish discards at sea.

For year-round operations, most Pacific island fishing boats target a combination of species because they cannot catch enough of any single species, due to seasonal availability. A seasonal closure for any major species could disrupt the pattern of landings.

The 6-year fishing moratorium of the Hancock Seamount's FCZ is an experimental area closure prompted by the depleted stocks of seamount groundfish. The Honolulu Laboratory has initiated a Seamount Resources Study to monitor and investigate the recovery of the armorhead stocks. Assessment of the sustained fishery potential, coupled with other results, could be useful in guiding management of the common international resource.

6.3.4 Effort Limits

Several separate types of fishing effort limitation or some combination could be applied in any of the management sub-areas of the FCZ (American Samoa, Guam, main Hawaiian Islands, Northwestern Hawaiian Islands):

* Limit quantities or types of gear
* Limit landings (pounds) per trip
* Limit trips or number of fishing days per year

All of these measures would introduce inefficiency to bottomfishing operations, hence reducing fishing mortality to some degree. Their objective is to regulate the harvest rate, not just the annual amount of catch.

Catch and frequency limits on fishing trips re-allocate economic returns among the various size-classes of vessels. When trip catch (poundage) limits are low enough, smaller vessels would take a larger share of the annual catch than they would otherwise, and their profitability should improve relative to that of larger vessels. Larger vessels are designed to take advantage of profit opportunities related to large harvest volumes that the trip catch limits preclude. Therefore, the larger vessels could take a larger share of the annual catch, if a fishing trip limit was implemented.

6.3.4.1 Gear Restrictions

Gear restrictions to reduce fishing power in the hook-and-line fishery include measures such as limits on the size of vessels, on the number of lines or hooks, limits on the number of crew members per boat, or restrictions against the use of electronic fish-finding equipment. This group of measures was considered and rejected by the Council because they could not be enforced effectively at a reasonable cost. Gear restrictions on the hook-and-line fishery would not be an alternative response under the framework management procedure. However, the FMP is recommending a prohibition on the use of net gear to harvest bottomfish for reasons given in Section 6.1.

Additional gear restrictions could be implemented under the framework management procedures after sufficient information has been obtained. Restrictions might be placed on the use of traps or other gear. According to fishermen who have experimented with traps in the Northwestern Hawaiian Islands, trapping was such an efficient method of fishing that trapping on a large-scale could threaten productive fishing. Hook-and-line fishing relies on the feeding instincts of fish, whereas trapping relies on their curiosity and instinct for shelter. Fishermen believe that schooling management unit species may account for large trap catches of certain species such as ulua. Traps are an extremely unselective form of fishing gear as they catch almost any bottomfish species that can get into the trap opening (K. Kawamoto, WPRFMC, unpubl. memo). Restrictions on traps could range from a limit on the number of traps per vessel to a requirement for a trap design that reduces ghost fishing or a combination of both. Additional restrictions might be considered if interactions arise between fish traps and protected species in the NWHI. At present, traps are a minor gear type in the deepsea bottomfish fishery, and the indiscriminate harvest of undersized fish by traps or other gear may adequately be regulated in Hawaii by the State's minimum size limits for the

sale of major species of bottomfish (opakapaka, onaga, uku, ulua). There is little or no use of traps in the deepsea bottomfish fishery in American Samoa and Guam.

6.3.4.2 Limit Landings Per Trip

Bottomfish landings per trip could be limited for the mixed-species complex or for one or more individual species in any of the management sub-areas of the FCZ (American Samoa, Guam, main Hawaiian Islands, Northwestern Hawaiian Islands). This measure would be similar to a "bag limit". The State of Hawaii has set bag limits for several reef fish species, but not for deepsea bottomfish. Because of the different sizes and holding capacities of vessels in the bottomfishing fleet, a single landing limit would discriminate against larger boats. Scaling of limits could be established to match the size structure of the fleet.

Fishermen could circumvent a limit on landings per trip by making more trips. However, limiting the amount of landings per trip in essence places a ceiling on the revenue per trip. If fishing costs remain constant or increase with inflation, profitability will be reduced and presumably this will remove some of the per-vessel fishing effort directed to bottomfish.

The reduction of fishing effort per vessel would not reduce total fishing effort or fishing mortality in the long run if new units of harvesting (new boats) continue to join the fishery. However, the new boats would probably have smaller harvesting capacity because an individual vessel trip poundage limit would reduce the economic incentive for greater vessel catching capacity. Limits on landings per trip can be enforced by dockside activities, but enforcement manpower and budgets would have to be increased substantially to cover all of the possible landing sites both day and night.

6.3.4.3 Limit Trips Per Year

An alternative means of restricting fishing effort per vessel through inefficiency would be to limit the bottomfishing trips per year by the commercial or recreational/subsistence components (or both) of the fleet. Because of the variability in the operations of different sectors of the bottomfishing fleet, the trip limits would need to be scaled according to fleet structure.

Although fishing effort and mortality per boat might be reduced by limiting the number of trips per year there would be no reduction in effort/mortality if fishermen made longer trips to compensate for a limited number of trips. If frozen bottomfish becomes acceptable to the market, an increase in effort/mortality may occur as a result. In the long run, total fishing effort and fishing mortality would not be reduced if new entrants join the fishery. Trip limits would not require dockside enforcement as extensive as poundage limits per trip, although cross-checking of fishermen's trip reports would have to be thorough enough to discourage cheating. The recreational/subsistence component as well as commercial component of the fleet might need to be licensed. Trip reporting by both the commercial and recreational/subsistence sectors would have to be mandatory.

6.3.5 Access Limitation

Even if they could be effectively enforced, many of the measures which reduce fishing effort or introduce inefficiency would only bring temporary relief. Additional new fishermen to the fishery would still increase fishing effort (and fishing mortality) in the long run. Dividing the available resource among more hands will not necessarily prevent long-term deterioration of the fishery.

In recent years, regulations that are more explicit in their access/effort limitation objectives have been implemented in some U.S. commercial fisheries. These measures, generally labeled as limited entry regulations, have produced mixed results as compared with more traditional management techniques. Access limitation is a controversial method of management, but it is doubtful that any management decision the Council takes under the framework procedure for the bottomfish fishery, including "no action", would receive unanimous acceptance by the fishing industry and public.

Application of access limitation approaches to American Samoa and Guam may be beneficial but requires further analysis. The main Hawaiian Islands fishery, with its large number of resident fishermen, render blanket implementation of access limitation complicated and of uncertain benefit. Access limitation approaches under the FMP could be applied with clearer benefit to the Northwestern Hawaiian Islands bottomfish fishery. As part of the annual review, access limitation as well as other approaches would be considered for the FCZ of the NWHI. The Council during their 50th meeting, established August 7, 1985 as the cut-off date for participation in the NWHI bottomfish fishery if an access management measure is to be implemented in the future. This date was chosen by the Council to prevent a large influx of speculative entrants into the NWHI bottomfish fishery during the time interval needed to explore the access management option. The Council is fully aware that besides establishing a cut-off date, any proposed access limitation program must clearly define and qualify any performance

or eligibility criteria for the fishery, and the impacts of using these or other criteria in terms of the number of participants who will be eligible, how their catch is likely to change, and the associated effects on revenue and cost. The information requested on the NWHI permit application is needed to provide a general profile of the fleets' capabilities (range as well as refrigeration). The information is needed to make a rational decision on any area closure or access limitation option. Furthermore, the RD may not implement a limited entry management recommendation unless:

(1) The annual review or special report of the Bottomfish Monitoring Team takes into account:

a. Present participation in the fishery;

b. Historical fishing practices in, and dependence on, the fishery;

c. The economics of the fishery;

d. The capability of fishing vessels used in the fishery to engage in other fisheries;

e. The cultural and social framework relevant to the fishery; and

f. Any other relevant considerations.

(2) Public hearings are conducted on a specific limited entry design to provide opportunity for public comment on limited entry alternatives;

(3) A provision is included in the limited entry recommendation that would create a new advisory subpanel of persons experienced in the Hawaii fishing industry which would advise the Council and the RD on administrative decisions relating to the proposed limited entry system; and

(4) The Council recommendation to the RD is approved by at least a two-thirds majority of voting members.

These prerequisites will protect the fishermen's and public's interest on a controversial issue and will afford the opportunity for public comment on specific features of limited entry alternatives.

6.3.6 Plan Administration

The annual review will consider whether adjustments are needed to improve FMP administration. Administrative or enforcement adjustments might be recommended for implementation by the RD under the framework procedure.

6.3.6.1 Data Collection Adjustments

The Council may conclude that improvements in data reporting are required to improve the sensitivity of key indicators of fishery performance or to facilitate the annual review by the Bottomfish Monitoring Team. The Council may recommend specific improvements in cooperative Federal and State/Territory data collection programs or may recommend that the RD implement a Federal reporting requirement to collect catch/effort data for the FCZ if the initial reliance on State/Territory data reporting systems does not generate adequate information.

6.3.6.2 Enforcement Adjustments

If regulatory measures are implemented under the framework procedure, it may be necessary to make future adjustments to improve the enforceability of such measures. Although difficult to anticipate in advance, an example of such an adjustment might be to require boats returning from a fishing trip to specify a landing site, and to notify the authorities 24 hours in advance of landing to facilitate dockside enforcement.

7.0 ALTERNATIVES CONSIDERED, RELATIVE IMPACTS, AND RATIONALE FOR PREFERRED ALTERNATIVE

7.1 Measures Precluded From Council Consideration

Some potentially attractive management alternatives for the bottomfish fishery are precluded from Council consideration under existing provisions of the Magnuson Act. License fees levied upon vessels, gear, fishermen, or taxes on the catch could limit entry into a fishery since those who were unable to, or who did not wish to pay these costs would be discouraged from participating through economic means rather than regulations and fishing effort would be reduced proportionately. This would also allow the government to recover some part of the public expenditures for fishery management and enforcement, or for fishery enhancement.

7.1.1 License Fees

Although a FMP can require a Federal permit to harvest management unit species in the Fishery Conservation Zone, the Magnuson Act limits the permit fee which can be charged domestic fishermen to a level not to exceed the "administrative costs" of issuing the permit. Although attractive because they offer the potential to generate revenues from the fishery itself to offset enforcement, monitoring, and research costs, alternatives which involve the pricing of license fees at levels high enough to discourage fishing or which involve the allocation of individual fishermen's quotas through competitive bidding are not legally available to the Council under the existing provisions of the Act if they exceed administrative costs.

Nevertheless, indications of support for auctioning of fishery access may be found in the August 11, 1983 report by the Presidential Task Force on Regulatory Relief, "Reagan Administration: Regulatory Achievements". In the section on allocation of government-controlled resources, the report concludes, "Direct use of the price system, through auctioning licenses or charging fees, is all that is necessary to allocate the resources to those who can use them most productively" (page 44). Further, the report states, "Among the many areas where the auctioning approach could replace existing administrative mechanisms is the allocation of air space and landing rights and fishing rights where total harvest must be limited" (pages 44-45).

7.1.2 Taxation

According to economic theory, fishing effort could be shifted away from overharvested species through a landing tax or excise tax that is higher for overfished species than for underfished species. A tax implemented as part of a license or quota scheme could ensure that costs of management would not be borne by the Federal government. But taxes would pose practical difficulties for implementation and would create incentives to misreport species being landed in order to reduce tax payments. In any case, the Council cannot propose such a measure as a FMP regulation. A tax on bottomfish harvesting in the FCZ would have to be levied by the U.S. Congress, which is always sensitive to public reaction against new taxes.

7.2 Measures Rejected as Responses Under Framework Procedure

At its 44th meeting on April 23-24, 1983, the Council reviewed a comprehensive list of management possibilities for the western Pacific bottomfish fishery and rejected several on the basis that they would produce uncertain benefits or they would be prohibitively difficult and expensive to enforce.

A. Vessel size limits. A limit on the size of vessel permitted to participate in the bottomfish fishery would be administratively and politically impossible to adopt. Since the current fleet is comprised of vessels of all sizes and types, the determination of the legal size limit might be impossible to support with adequate data and, therefore, could be considered arbitrary by those adversely affected. Limiting harvesting capacity by restricting vessel size would only produce a short-term limitation of effort, as new vessels of the legal size would continue to enter the fishery.

B. Limit the number of lines or hooks per vessel. This type of regulation would probably be impossible to enforce in the bottomfish fishery because there is no way to ensure that vessels would only fish the authorized number of lines or hooks. In-port inspections of vessels immediately prior to a fishing trip would not guarantee compliance with such a regulation because this does not take into consideration that fishermen must have spare gear on board to replace any they may lose during a trip. Nothing would prevent a fisherman from fishing "spare" gear in addition to the legal limit of gear. At-sea enforcement of this regulation would be required because it would be impossible, through aerial surveillance, to detect the amount of gear a vessel was fishing. However, even at-sea enforcement would be ineffective because a fishermen could either discard excessive gear or, if hauling, could cut his gear when approached by

a surveillance boat. Even if enforceable, the effectiveness of this approach in reducing fishing effort would be temporary at best because of additional vessels entering the fishery.

C. Establish a minimum hook size. This alternative was rejected because (1) it is not enforceable other than through at-sea boardings; and (2) its effectiveness in conserving stocks is uncertain. Such a regulation would be impossible to enforce through aerial surveillance, would require costly expanded at-sea enforcement, and could be circumvented through the use of two sets of gear -- a legal set for "show" and small hooks for fishing.

D. Limit the number of crew members per bottomfishing vessel. The need to pay each crew member a share of the gross revenue already limits crew size on commercial vessels. The crew size on non-commercial vessels is not a good quantitative measure harvesting capacity. The fishing power of a vessel is related not so much to crew size as to the skill of the skipper and crew and their knowledge of the topography of the bottomfish grounds and their fish-finding ability. Vessel clearance immediately before a fishing trip would be required to aid enforcement of such a regulation. However, additional crewmen might embark and debark outside of home port. Aerial surveillance would be only partially effective, and sufficient dockside enforcement presence to enforce this regulation would be prohibitively expensive.

7.3 Alternatives Considered

7.3.1 General Approaches and Comparative Impacts

The Council considered several general approaches to management before selecting the preferred alternative consisting of the proposed measures described in Section 6.

A. Federal or State/Territory Management —

The FCZ portion of the seamount groundfish fishery is clearly subject to Federal management. The bottomfish fishery is transboundary, occurring predominantly in the territorial sea off American Samoa, Guam, and the main Hawaiian Islands and predominantly in the FCZ in the Northwestern Hawaiian islands. Although the primary management responsibility for the NWHI is clearly Federal, the responsibility for initiating bottomfishing regulations in the other areas has been intensely debated by fishermen, scientists, and managers.

Existing laws/rules of the State and territories apply to bottomfishing operations of state-registered vessels regardless of whether fishing occurs in the territorial sea or the FCZ. There is nothing to prevent the State/territories from adding new rules that would restrict bottomfishing operations by state-registered vessels, both in and beyond the territorial sea. It appears that Hawaii and Guam fishery agencies have statutory authority for much broader rule-making than the American Samoa agency.

The Bottomfish Plan Development Team seriously favored a management procedure for the FCZ off the main Hawaiian Islands, American Samoa, and Guam which would have relied on the local fishery agencies to initiate new controls on bottomfishing when faced with data demonstrating a conservation problem. The procedure would not have permitted Federal initiation of new controls for the FCZ until after a time period had elapsed with no local action. This proposal was viewed by local government reviewers as setting unreasonable "deadlines" on them, whereas, Federal government reviewers warned that the extended time period allowed for local initiation of controls could be too slow to respond effectively to problems arising in the fishery.

It was generally agreed that where State/territory management provisions are statutorily-established, it is not possible to initiate amendments except by the local legislatures during the part of the year when they are in session. Even then, it is not assured that amendments would receive legislative approval, as exemplified by the defeat of a measure to increase the minimum size of opakapaka for sale from one pound to three pounds during the 1985 session of the Hawaii State Legislature. In the absence of at-sea enforcement capability by the State/territories, local landing laws would remain the primary control for the bottomfish fishery under State/territorial management. The lengthy process involved in obtaining new legislation approval presents an obstacle to timely action.

Since the resources made available to State/territory fishery agencies are often inadequate for assessing the biological and economic status of fisheries, it may be difficult to determine the need for new management action. If the State/terriitories did not take action, Federal managers would be forced into the position of having to implement regulations that would as a consequence, not be consistent, with State/territorial laws, thus causing further problems. The preferred approach is a cooperative State/Federal management scheme involving joint assessment and monitoring followed by appropriate actions by the respective agencies to implement the indicated management action.

B. Framework FMP vs. Conventional FMP —

It is believed critical to maintain an opportunity to institute new controls reasonably rapidly in the bottomfish fishery, especially in the FCZ off Hawaii, where commercial bottomfish landings and presumably fishing effort are at record-high levels. Although the history of the main Hawaiian Islands' fishery does not suggest that bottomfish stocks are subject to a sudden collapse due to recruitment failure, fishing effort has never been so great. It is believed that the NWHI fishery has expanded rapidly by fishing standing stocks of species which had gone unfished for a long time and which are not capable of a sustainable production to match the harvesting capacity represented in the present fleet. These conditions require the ability to act rapidly when indicators raise concerns about the fishery.

The FMP proposes to institute a few regulations immediately, primarily to provide immediate protection for the extremely limited bottomfish habitat in the FCZ and to initiate cooperative Federal/State management which would be extended through the annual review and framework rule-making procedure.

The framework procedures equip the Council and the Regional Director of NMFS with broad rule-making authority comparable to the statutory authority which the Hawaii Depart-ment of Land and Natural Resources and the Guam Division of Aquatic and Wildlife Resources already have. The annual review requirement of the FMP could result in initiation of regulatory action by the Council under the framework procedure or by the State of Hawaii or Territory of Guam independently under existing authority. The administrative framework recommended is a way of expediting action on a faster schedule than under the procedures associated with a conventional FMP approval. The framework would not eliminate Regulatory Impact Analysis/Regulatory Flexibility Act requirements, public hearings, determination of consistency with MFCMA National Standards, or coastal zone consistency determination for any specific new regulation proposed. The framework procedure can be expected to save at least 140 days of time associated with the normal FMP approval process and perhaps as much as nine months of lead time associated with the normal informal review of a conventional FMP.

C. Single-Species vs. Multi-Species Approach to Management —

The bottomfish and seamount groundfish fisheries comprise a large number of species, only a few of which seem to be in danger of overfishing at present. The administrative burden and cost of FMP preparation can be reduced through development of a

single, comprehensive plan to manage these species as a unit throughout their range rather than creating a separate management plan for each species.

In view of the pragmatic advantages of single-species approaches and because of the relative selectivity of the hook-and-line fishery in terms of species harvested, the strategy of this FMP is to closely monitor the relatively few heavily-fished bottomfish species, with management decisions on a species-by-species basis. Data are insufficient and appropriate models are lacking for multi-species or ecosystem approaches to management. It is impossible to predict the long-term ecological effect of such a management strategy.

The species assigned to this complex have specific distributions and biological characteristics which enable fishermen to target individual species. The similarities in gear type, fishing methods and general habitat justify consolidating them for research and management units and treating them as a single fishery here.

D. Numerical vs. Non-Numerical Estimates of OY and DAH —

As with most fisheries in the western Pacific, the available data do not allow the definition of OY and DAH in numerical terms. It would be inadvisable to specify numerical estimates of what is "optimum" for some fisheries, particularly the NWHI fishery, which has rapidly been expanding its geographic range over the past 18 months and in which the optimum yield is not yet apparent.

E. Federal Data Reporting Requirements vs. State/Territory Data Collection

A Federal requirement for logbooks containing catch weight and number of fish by species, fishing effort, location, and other standard information could be established for vessels bottomfishing in the FCZ, with a standard requirement that these logbooks be available for inspection at sea by U.S. Coast Guard or NMFS agents, and be submitted within 5 working days of landing.

However, this approach would duplicate, to various degrees, data reporting systems already established by the State of Hawaii and the territories of American Samoa and Guam, some with Federal funding assistance. The Federal government has made an investment in a regional Fishery Information Network (FIN)

covering each of the island areas represented by the Council. Rather than duplicate this investment and create a new data reporting burden for fishermen, the Council believes that the established State of Hawaii and FIN data systems should be improved so that they can be relied upon for the annual review of fishery performance. The framework process under this FMP would allow the Council to recommend improvements in the State/Territorial data systems and to recommend that the Regional Director establish a Federal/State reporting requirement if initial reliance on State/Territory data reporting proves unsatisfactory. In making this assessment, the Council considered the practicality and costs of a more comprehensive requirement for data reporting.

The Council recognizes that commercial enterprises which have long submitted data covering their fishing trips and catches are likely to keep doing so willingly. The Council also recognizes that the many part-time commercial or subsistence fishermen or sports fishermen in the island areas served by the Council, some of whom only occasionally sell their catch, are less likely to submit detailed, accurate catch reports covering all of their fishing trips. The cost of enforcing universal catch and effort data submission requirements could be prohibitive.

7.3.2 Alternatives For Each Management Sub-Area

7.3.2.1 Main Hawaiian Islands

Commercial landings of bottomfish have never been at higher levels in the main Hawaiian Islands. Some of the biological indicators raise concerns about a high risk of overfishing, particularly of opakapaka. It is believed critical to establish an administrative framework for instituting new controls in the FCZ, although a major part of the fishery is conducted in the terriorial sea.

Specific minimum size limits for bottomfish species were considered for the FCZ off the main islands. If implemented under a Federal landing law, such limits could cover all landings unless a vessel fished only in or was licensed to fish only in the territorial sea. This option raised too much potential for inconsistency in Federal/State management because of differences between the size limit which would be needed to raise the age at entry into the hook-and-line fishery and the existing one-pound minimum size limit for sale under State law. The likelihood that it could take years to increase the one-pound minimum size through the legislative route would make it difficult to bring about consistency.

7.3.2.2 Northwestern Hawaiian Islands

The rapid decline in CPUE at successive banks and the progression of bottomfishing vessels up the chain to Northampton Seamount, the extreme range of fishing for the fresh market, raise concerns about overfishing. It is believed critical to establish an administrative framework for instituting new controls in the FCZ, where virtually all of the fishing occurs.

A set of management options much like those considered for the MHI were discussed by the PDT. At the present time, the Council has proposed for immediate implementation a prohibition on the use of explosives and poison and the prohibition on the use of trawl and bottom-set net gear for the FCZ of the NWHI. Other options such as size limits, catch limit/quota, effort limits, gear limitation, area closures, and access limitation were discussed. The Council has expressed a strong interest in access limitation since the possibility for using this management option was first brought up by a group of concerned NWHI bottomfish fishermen. To that end the Council sponsored a Limited Entry Workshop for all interested parties in August of 1984 (WPRFMC, 1984) during the 46th Council Meeting. The Council has contracted in 1985 a study of the status of the bottomfish fisheries and options for management actions in the NWHI. The contractor has been working closely with the fishermen in developing management options.

When necessary, management options will be evaluated by the PMT and recommended to the Council for management action.

7.3.2.3 Guam

There does not appear to be a high risk of overfishing of the FCZ portion of the bottomfish fishery at present in Guam, although fishing effort is much greater in the territorial sea. In weighing Territory versus Federal management of the fishery, the Council concluded that the most urgent management needs should be addressed by the Territory. To strengthen the existing rule against the use of poisons and to provide the basis for long-term cooperative management of the transboundary fishery under the annual review and framework procedure, the Council concluded it was desirable to establish a complementary Federal regulation in the adjacent FCZ. Short-term Territory management strengthened by long-term cooperative Territory/Federal management under the framework process has a better chance of achieving the management objectives than either unilateral Federal or unilateral Territory management.

Although a Federal permit requirement was considered for the FCZ off Guam, it was considered unnecessary at this time because of low levels of bottomfishing and because it is not needed to aid aircraft surveillance of domestic fishing vessels in this area.

7.3.2.4 American Samoa

The options and conclusions are much the same for American Samoa as for Guam.

7.3.2.5 Hancock Seamounts

The Council considered 4 management alternatives for the FCZ portion of the seamount groundfish fishery.

Continue to allow some level of foreign harvest in the FCZ up to or below the present allocation (1,000 MT/year).

Under this alternative, the total allowable level of foreign fishing currently in effect under the Seamount Groundfish FMP could be continued up to the 1,000 metric ton level of annual harvest which has been allocated in recent years to Japan.

Limit total foreign fishing effort rather than total annual harvest in the FCZ.

Under this alternative, foreign vessels would be permitted to fish in the FCZ up to a total annual quota of effort (e.g., vessel days or trawl-hours) rather than a total annual quota of groundfish catch.

Place a moratorium (initially effective for 6 years) on all commercial trawling (foreign and domestic) in the FCZ portion of the seamount groundfish fishery.

Under this alternative, a moratorium, effective for an initial period of 6 years, would be imposed on all commercial trawling at the Hancock Seamounts. This will primarily restrict the foreign trawlers which have participated historically, but it is necessary to restrict domestic trawling as well to provide the controlled conditions for a scientific experiment comparing unexploited groundfish stocks (in the FCZ) and exploited stocks (outside the FCZ). During this time, the Seamount Resources Study of the Honolulu Laboratory of NMFS will monitor recovery of the stock and provide evidence of the sustained fishery potential. Experimental trawling necessary for this study would

not be restricted. Hook-and-line fishing would not be restricted.

Place a moratorium (initially effective for 6 years) on all commercial (foreign and domestic) fishing in the FCZ portion of the seamount groundfish fishery.

Under this alternative, a moratorium, effective for an initial period of 6 years, would be imposed on all commercial fishing of seamount groundfish at the Hancock Seamounts. This total ban is also recommended by the Honolulu Laboratory. Recent experimental bottom longline trials by the NMFS for harvesting groundfish indicates that a large commercial operation could have a serious impact on the already depressed stocks. The total ban on all fishing would preclude any possibility of additional damage to the stocks and allows the Honolulu Laboratory's Seamount Resources Study to proceed under controlled conditions.

The effect of continuing the present allocation of up to 1,000 metric tons per year to Japan or other nations is likely to be a further depression of the armorhead stocks at the Hancock Seamounts. Alfonsin stocks may also be depleted if foreign harvestors shift to this alternative target species as they have in the portion of the seamount fishery outside the FCZ. Managing the FCZ portion of the seamount fishery by limiting total fishing effort rather than total harvest would have only minor effects on the overall levels of pelagic armorhead in the Emperor Seamounts because populations on different seamounts are probably not separate stocks (Borets, 1975; Humphreys and Tagami, 1984). This is probably true of alfonsin as well. The chief benefit of allowing foreign harvesting to continue at some level in the FCZ portion of the seamount fishery would be continued availability of catch/effort data for the Hancock Seamounts. No increase in Federal responsibilities or costs are expected which differ from those incurred under the existing Preliminary Fishery Management Plan for Seamount Groundfish.

A temporary moratorium on all commercial fishing could be implemented as a scientific investigation to learn more about stock recruitment and recovery, while foreign harvesting continues at seamounts outside the FCZ. The benefits include rebuilding of the Hancock Seamount population and better scientific understanding of the population dynamics of the seamount species through comparison of exploited and unexploited populations of pelagic armorhead and alfonsin. Further, even a single seamount may serve as a reproductive refuge, enhancing recruitment to other seamounts. This research could guide an international plan of management for the common resource.

A total moratorium on all harvest of seamount groundfish would include the benefits of a trawling moratorium and

allow a more controlled study of the resource. The absence of domestic fishing activity will minimize immediate impacts of all the alternatives, but in the long-term, a moratorium on all fishing could restore the opportunity for U.S. fishermen to develop a new fishery. Hancock Seamounts represent a relatively small percentage of the total pelagic armorhead habitat which has been subject to the foreign trawl fishery, so a closure would not have a great impact on the fishery. Additionally, although alfonsin catch and CPUE have continued to rise in recent years, the contribution from Hancock Seamount has represented less than 1% of the total catch from the Emperor Seamount - northern Hawaiian ridge region. Thus, the impact to foreign fishing interests will be minor. Continuation of the foreign seamount fishery outside the FCZ will depend upon economic factors probably separate from whether Hancock Seamounts are closed to fishing or not.

The moratorium would terminate foreign harvesting and foreign fishermen who continue to fish outside the FCZ might retaliate by refusing to provide catch/effort data which will be necessary to understand the population dynamics of stocks on a regionwide basis. No increase above current levels of foreign fishing surveillance and enforcement by the U.S. Coast Guard is expected under this alternative.

7.4 Regulatory Analysis

The framework portion of the FMP is largely a procedural document which describes the processes by which the bottomfish and seamount groundfish fisheries will be managed and establishes the limits and controls within which regulatory adjustments may be made. Because the framework procedure is specifically not designed to pre-select any future regulatory action in detail, a detailed RIR/RFA of future management actions can only be accomplished at the time when specific regulations are proposed. However, the framework process does specify the categories of impacts that must be addressed in making future regulatory adjustments. In this manner, the requirements of Executive Order 12291 and the RFA can be addressed on a continual basis.

The estimated costs and benefits of general approaches to the FMP and for each management sub-area are quantified, in Appendix F, to the extent that available data permits.

8.0 DETERMINATIONS

8.1 Maximum Sustainable Yield

8.1.1 Bottomfish Fishery

Maximum sustainable yield (MSY) estimates derived for various areas of the western Pacific are summarized in Table 8.1.

TABLE 8.1

ESTIMATES OF MAXIMUM SUSTAINABLE YIELD (MSY)
BY UNIT OF BOTTOMFISH HABITAT

MSY Per Nautical Mile of 100-Fathom Isobath	Geographic Area For Which Derived	Reference	Methodology
286 kg (629 lb.) per nmi	Standing stock estimate based on intensive fishing experiment off Guam (Ikehara et al., 1970). MSY estimate derived for French Frigate Shoals.	Polovina and Tagami (1980)	Gulland's formula
272 kg (598 lb.) per nmi	Maui-Kahoolawe-Lanai-Molokai bank complex	Ralston and Polovina (1982)	Total biomass surplus production analysis
183 kg (403 lb.) 1/ per nmi	Mariana Archipelago	Polovina and Ralston, ms. in prep.	Beverton-Holt yield equation

1/ Guam and banks South of Guam only

The per unit estimate of 598 lb. per nautical mile of habitat per year (Ralston and Polovina, 1982) is applied to the entire Hawaiian Archipelago to obtain the following MSY values:

TABLE 8.2

MAXIMUM SUSTAINABLE YIELD (MSY) ESTIMATES
FOR THE HAWAIIAN ARCHIPELAGO

Area	MSY Per Unit Habitat	Amount Of Habitat	Total MSY Estimate
MHI	598 lb./nmi/yr.	997 nmi	596,000 lbs./yr.
NWHI	598 lb./nmi/yr.	1,231 nmi	736,000 lbs./yr.

Polovina and Ralston (ms. in prep.) derived island-by-island estimates of MSY in the Mariana Archipelago based on bottomfishing surveys and other research accomplished by NMFS.

TABLE 8.3

MAXIMUM SUSTAINABLE YIELD (MSY) ESTIMATE
FOR GUAM AND OTHER OFFSHORE BANKS

Area	MSY Per Unit Habitat	Amount Of Habitat	Total MSY Estimate
Guam and Other Offshore Banks	403 lb./nmi/yr.	138 nmi	55,000 lbs./yr.

No specific MSY estimates have been derived for American Samoa, but the per unit (nmi) yield is probably closer to that of Guam and its associated banks (403 lb./nmi/yr.) than that of Hawaii (598 lb./nmi/yr.).

Table 8.4 applies the Guam MSY estimate (Table 8.3) to the amount of habitat in American Samoa to arrive at a preliminary estimate of MSY for American Samoa.

TABLE 8.4

MAXIMUM SUSTAINABLE YIELD (MSY) ESTIMATE
FOR AMERICAN SAMOA

Area	MSY Per Unit Habitat	Amount Of Habitat	Total MSY Estimate
Am. Samoa	403 lb./nmi/yr.	169 nmi	68,000 lbs./yr.

8.1.2 Seamount Groundfish Fishery

Japanese catch and effort statistics (Takahashi and Sasaki, 1977) led to a preliminary MSY estimate of roughly 50,000 MT (55,000 T) for the pelagic armorhead stocks on all seamounts (Wetherall, 1978). One of the key assumptions of Wetherall's model was that Russian catch and effort were approximately equal to that of the Japanese. Borets (1975) suggests that total Russian catch from 1968 to 1975 was 1,457 million fish. Assuming a mean weight of 0.5 kg per fish, the total catch is 728,500 MT, some five times the Japanese catch (Anon., 1984). The available Soviet data do not cover the late 1970's period during which the amorhead stock collapsed and are inadequate to revise the estimate of MSY for pelagic armorhead as attempted by Wetherall and Yong (1984).

No MSY estimate is available for alfonsin or other seamount slope species, some of which may have considerably more potential than armorhead for exploitation by a domestic hook-and-line fishery. Considering the limited fishing grounds for alfonsin, akodai, medai, and like species, the potential yield is probably much lower than that of armorhead.

8.2 Optimum Yield

8.2.1 Bottomfish Fishery

The optimum yield (OY) to be achieved from the fisheries for species included in the management unit addressed by this framework plan is the amount of bottomfish which will be caught by fishermen in the FCZ and adjacent waters around Hawaii, Guam, and American Samoa under the management measures implemented under the FMP to achieve, to the greatest extent practicable, the following management objectives:

a. Maintain the long-term productivity of bottomfish stocks and rebuild depleted seamount groundfish stocks;

b. Maintain existing opportunities for rewarding fishing experiences by small-scale commercial, recreational, and subsistence fishermen including native Pacific islanders;

c. Maintain a balance between harvest capacity and harvestable fishing stocks to prevent overcapitalization and provide consistent supplies of high quality fish to consumers; and

d. Protect bottomfish stocks, habitat, and associated endangered and threatened species from adverse effects of destructive or indiscriminate fishing activities.

Because it is described in general terms, the OY will remain constant over the years. What will change is the abundance of different stocks in different areas and the knowledge of the effects of fishing on stock productivity and yields. Accordingly, the annual levels of harvest by different fishing sectors in different areas will vary. Each year, as part of the process of reviewing the prior year's fishery and assessing the need for regulatory adjustments, the Council will consider whether any species or species group in any area needs to be managed on a numerical basis.

Notwithstanding the non-numeric definition of OY, the Council has estimated the quantity (see Table 8.5) of bottomfish which is expected to be taken under this FMP based on current stock and economic conditions. These estimates may be considered as initial specifications of OY, although the numbers should not be construed as quotas. Whether actual landings are above or below the estimated amounts will not be cause for concern except in the context of the framework process of this plan (Section 6.2).

TABLE 8.5

INITIAL ESTIMATES OF OPTIMUM YIELD (OY)

Island Area	Likely Range of OY (lb./yr.)
American Samoa	50,000 - 70,000
Guam	30,000 - 70,000
Main Hawaiian Islands	400,000 - 600,000
Northwestern Hawaiian Islands	400,000 - 700,000

8.2.2 Seamount Groundfish Fishery

The OY for seamount groundfish initially is set at zero (0) metric tons (mt) per year through 1991. The Council has concluded that a

moratorium on the seamount groundfish trawl fishery in the FCZ is necessary to promote rebuilding of the stock(s). OY will be re-established after a determination is made on the ability of the groundfish stocks to recover. In the annual review, the Council will consider the results of research and experimental fishing in determining whether an early opening (or possibly longer closure) is appropriate.

8.3 Domestic Annual Harvest (DAH)

Experience in 1984-85 has demonstrated that the Hawaii fleet has sufficient bottomfish harvesting capacity to take the entire estimated maximum sustainble yield, both in the main Hawaiian islands and the Northwestern Hawaiian Islands. Demand for fresh bottomfish continues to increase with population growth and tourist arrivals, and domestic annual harvest of the management unit species is expected to remain high. Long-range NWHI boats each have the capacity to harvest 60,000-100,000 pounds per year (P. Meyer, unpubl. ms.), whereas small commercial vessels, each with 2 electric or hydraulic gurdies fishing 12 hours a day for 200 days a year can achieve a level of fishing effort to catch 16,000 pounds per year per vessel (Polovina et al., 1985). It is difficult to predict the actual catch levels, except they will fall in the same range as the reference points for OY. The reasons given for defining OY in non-numeric terms also apply to the definition of DAH, which for purposes of this FMP, is the quantity of each species in the management unit that will be caught by domestic vessels in the FCZ under the management measures implemented under the FMP to achieve, to the greatest extent practicable, the management objectives.

8.4 Total Allowable Level of Foreign Fishing (TALFF)

In the bottomfish fishery, the existing fleets in Hawaii, American Samoa, and Guam have sufficient harvesting capacity to take the entire maximum sustainable yield. Hence, the amount of management unit species available for TALFF is zero (0).

In the seamount fishery, the FMP proposes a moratorium on all commercial fishing for an initial period of 6 years, during which time the quantity of groundfish available for foreign fishing would be zero (0).

8.5 Domestic Annual Processing (DAP) and Joint Venture Processing (JVP)

There is no domestic processing of the management unit species in the industrial sense. The only imaginable processing that could occur would be the manufacture of "surimi", and, considering the relatively high price and limited supplies of bottomfish, this is unlikely. All of the landings of bottomfish presently enter local markets in fresh product forms. Although frozen bottomfish products may become more acceptable in established markets, there is no

reason to believe that DAP will be other than zero (0). Until an OY is re-established for the Hancock Seamount fishery, the amount of seamount groundfish available for joint venture processing is also zero (0).

8.6 International Management

There are no international treaties or bilateral agreements to which the U.S. Government is a party for the management of bottomfish or seamount groundfish. From an international standpoint, only the closure of the Hancock Seamounts to commercial fishing is of concern. Because of stock depletion, there is no foreign trawling in the area of concern, at present. One of the FMP objectives is to undertake a management experiment for the FCZ portion of the seamount groundfish fishery with the hope that the results could guide international management of the seamount stocks across their range.

8.7 Consistency With MFCMA National Standards

The proposed FMP is intended to conform with the National Standards of the MFCMA:

a) Prevent overfishing -- The FMP acknowledges that the risk of overfishing appears to be high in the Hawaii FCZ. The FMP incorporates an annual review requirement designed to identify problems in the future so that they can be acted upon rapidly through an administrative rule-making framework. The biological evidence of overfishing is not definitive at present.

b) Best scientific information available -- The FMP acknowledges the limitations of available data, but the best available information has been used to prepare the FMP and the annual review requirement will result in considerably improved data and analysis for future management.

c) Inter-related stocks managed as a unit -- The FMP treats Hawaii, American Samoa, and Guam as individual management areas because there is no evidence of the mingling of larval or adult fish among these areas. However, bottomfish stocks in Hawaii, American Samoa, and Guam are treated as a unit throughout their range in the respective areas.

d) Non-Discrimination between residents of different states -- The FMP does not propose any differential licensing programs or other requirements for residents of different states.

e) Promote efficiency -- The FMP does not restrict the times, places, or methods of bottomfishing except that environmentally-destructive gear (bottom trawls and bottom-set nets) is prohibited in order to protect the limited amount of habitat, to provide added protection for endangered species, and to prevent gear conflicts.

f) Allow for variations and contingencies -- The annual review requirement of the FMP allows for variations and contingencies to be considered by the Bottomfish Monitoring Team when concerns are raised by a prescribed set of indicators. The FMP does not automatically trigger regulations when changes in fishery conditions are indicated.

g) Minimize costs and avoid duplication -- The FMP provides for a cost-effective means of monitoring for changes in fishery condition and, through an annual review requirement, assessing the need for regulation as problems arise. There is no duplication of existing data reporting requirements.

8.8 Documentation for a Finding of No Significant Environmental Impact

1. Proposed Action: Implementation of a fishery management plan for bottomfish and seamount groundfish fisheries in the fishery conservation zone (FCZ) of the western Pacific region.

2. Areas and Resources Involved:

   a) Areas - The fishery conservation zone (FCZ) around the State of Hawaii, the Territory of Guam, the Territory of American Samoa, and the Hancock Seamounts;

   b) Resources - Bottomfish, seamount groundfish and associated habitats to a depth of 300 fathoms.

3. Management Problems and Issues Considered:

   a) Risk of overfishing as fisheries expand rapidly;

   b) Maintenance of social and economic values associated with small-scale commercial, recreational, and subsistence fisheries in areas;

   c) Consistency of management in the FCZ and State and Territory waters;

   d) Need for timely data to identify and respond to future problems;

   e) Protection of habitat from impacts of destructive gear (e.g., bottom trawls);

   f) Avoidance of interaction with endangered and threatened species and;

   g) Achievement of economically profitable fisheries;

   h) Restoration of depleted seamount groundfish stocks.

4. Principal Elements of the Proposed Action:

a) All areas:

(1) Cooperative State/Federal data collection and analysis;

(2) Prohibit bottom-set nets and trawl nets to protect bottomfish habitat and prevent entanglement of monk seals and sea turtles;

(3) Establish a framework for proposing regulations in the FCZ according to an administrative process consistent with the FMP, the Magnuson Act, State/Territory approved coastal zone management programs, and other applicable law.

b) Hawaii:

(1) Establish a Federal regulation in the adjacent FCZ consistent with the existing State prohibition on the use of explosives and poisons to harvest fish.

c) Guam:

(1) Establishing a Federal regulation in the adjacent FCZ consistent with the existing Territory prohibition on the use of explosives and poisons to harvest bottomfish.

d) American Samoa:

(1) Establishing a Federal regulation prohibiting the use of poisons and explosives to harvest bottomfish in the FCZ.

e) Seamounts:

(1) Six-year moratorium on commercial harvesting of seamount groundfish resources to restore depleted stocks;

(2) Periodic reporting by NMFS to document degree of stock rebuilding and potential for reopening fishery.

5. Evaluation of Significance Relative to Specific FMP Criteria (NDM 02-10 Section 13.b.)

a) The proposed action is not expected to jeopardize the long-term productive capability of the stocks. The framework process will promote timely action by State and Territory agencies and the NMFS to address resource problems (if any) as they are identified. The cooperative State/Territory/NMFS data collec-

tion and analysis program will ensure that necessary data are available at minimal additional cost. The moratorium on the harvest of seamount groundfish will permit depleted stocks to rebuild. The prohibition on the use of nets will limit the risk of waste associated with nonselective gear and reduce the potential for taking substantial numbers of small fish;

b) The proposed action will not allow substantial damage to the ocean and coastal habitats. The prohibition on trawl and bottom-set net use will prevent habitat damage;

c) The proposed action will not have an adverse impact on public health and safety. The markets for bottomfish have established high quality standards. The proposed action should promote maintenance of these standards;

d) The proposed action is not expected to affect adversely any endangered or threatened species. The prohibition on trawl and bottom-set nets to harvest bottomfish will significantly reduce the risk of incidental taking of Hawaiian monk seals and sea turtles by bottomfish fishermen;

e) The proposed action will not result in cumulative adverse effects that could have a substantial effect on the target resource species or any related stocks that may be affected by the action. The proposed action will establish a monitoring and reporting program to determine if the objectives of the plan are being achieved and to identify corrective actions if resource problems are subsequently identified.

6. Other Considerations:

a) Socio-economic impacts - The proposed action is intended to maintain the economic and social values associated with established small-scale commercial, recreational, and subsistance fisheries around the populated islands in Hawaii, Guam, and American Samoa. Most of the fishing in these areas occurs in the territorial sea, under varying degrees of control by the respective island governments. The framework process provides for systematic, cooperative assessment of fishery conditions so that problems and solutions can be identified and fishery values can be maintained in the NWHI;

The proposed action will promote rebuilding of seamount groundfish stocks so that an economically viable fishery can be resumed;

b) Controversy - The Council has worked closely with State and Territory officials and the fishing community in developing the management program over the past 3 years. The risk of controversy appears to be low;

c) Uncertainty - The data base has been substantially improved in the past several years. The Council has worked closely with the industry to obtain current data. The Honolulu Laboratory (SWFC), U.S. Fish and Wildlife Service, and State of Hawaii conducted a five-year Tripartite Survey of the NWHI which greatly expanded the knowledge about fishery potentials. The Honolulu Laboratory also has conducted or funded a substantial amount of economic research and has assisted Hawaii, Guam, and American Samoa in establishing effective data management systems. While there is some uncertainty about how fishery participants will operate in the future and about stock responses to fishery pressure, the proposed action provides a mechanism to assess changes and implement new measures if necessary. Therefore, uncertainty is not a significant problem;

d) The proposed action will protect against damage to scientific resources of the NWHI. No other significant scientific, cultural or historic resources will be affected.

7. Conclusion:

The proposed action will not have a significant effect on the quality of the human or marine environment. Such impacts as will occur are generally beneficial.

9.0 RELATIONSHIP OF FMP TO OTHER APPLICABLE LAWS AND POLICIES

9.1 Coastal Zone Management Act

Section 307(c)(1) of the National Coastal Zone Management Act of 1972 (CZMA) requires that all Federal activities which directly affect the coastal zone be conducted in a manner which is consistent with approved State coastal zone management (CZM) programs to the maximum extent practicable. The State of Hawaii and the Territories of Guam and American Samoa have approved CZM programs.

The FMP proposes to adopt selected features of the current management programs of the state and territories in the adjacent FCZ. Thus the level of protection which the existing State/Territory measures provide for bottomfish habitat in the territorial sea would be extended to the FCZ. This should contribute to consistency in State/Federal resource management.

The FMP would also prohibit the use of nets to harvest bottomfish. Although no comparable laws/rules currently exist in the State/territories, approved coastal zone programs in all three areas call for the protection of marine habitats. The prohibition on net gear is believed to contribute positively to this policy.

The framework procedures recommended in the FMP would allow management adjustments to be initiated by either Federal or State/Territories, with opportunities for the non-initiating agency to independently establish comparable regulations in a time frame suited to its own administrative or legislative procedures. The framework procedure provides the Council and RD with broad authority to make rules that may include size limits, closures, gear restrictions, and conditions for entry. This is equivalent to the authority provided the Hawaii Department of Land and Natural Resources and the Guam Division of Aquatic and Wildlife Resources under existing statutes. The measures and the framework process proposed in this plan are fully consistent with the approved CZM programs of Hawaii, Guam, and American Samoa.

The Council has received State and Territory concurrence with the CZM consistency determinations (Appendix I).

9.2 Marine Mammal Protection Act

Passage of the Marine Mammal Protection Act (MMPA) in 1972 committed the United States to long-term management and research programs to conserve and protect these animals. With few exceptions, the MMPA placed a moratorium on taking or importing marine mammals or their products into the United States. In 1976,

the Magnuson Fishery Conservation and Management Act (MFCMA) expanded U.S. control of marine mammals to include the 200-mile fishery conservation zone (FCZ).

The National Marine Fisheries Service grants or denies requests for exemptions, issues permits, carries out research and management programs, enforces the MMPA, participates in international programs, and issues rules and regulations to carry out its mission to conserve and protect marine mammals.

It is the goal of the Office of Protected Species and Habitat Conservation (NMFS) and the Marine Mammal Commission (MMC) that the incidental "take" or incidental serious injury due to fishing operations be reduced to insignificant levels approaching a zero incident level. "Taking" a species means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. Towards that end the Council has established Objective 8 (Section 5.4.8): avoid the taking of protected species and minimize possible adverse modification to their habitat. The immediate action of prohibiting bottom trawl and bottom-set nets and a Federal permit requirement also provide measures of education and protection which minimizes the risk of incidental "takes". As a part of the NWHI FCZ bottomfish permit application form (Appendix A) an informational document which includes a protected species/fishing operation interaction or "take" form and a statement to be signed stating that the applicant has read and understands the applicable laws, regulations and penalties regarding the protected species of the area will be included.

Marine mammals and endangered and threatened species which reside in or have been observed in the FCZ of the western Pacific is listed in Table 9.1. None of these listed species are expected to be adversely affected by the measures proposed in this FMP. Throughout the history of commercial fishing in Hawaii, there has been no documented cases of incidental mortality of these species in the bottomfish hook-and-line fishery.

Under the general permit system, the MMPA authorizes the incidental taking of non-protected and non-endangered marine mammals by domestic and foreign fishermen during commercial fishing operations. The 1981 amendments to the MMPA added two categories of "small take" to the moratorium exception; one is for commercial fishing and the other applies to other activities such as oil and gas exploration. The MMPA, as amended, allows for the incidental but not intentional taking of small numbers of nondepleted species or stocks of marine mammals by U.S. citizens engaged in commercial fishing operations. Commercial fishermen may obtain a Certificate of Inclusion (under a General Permit) to take marine mammals that interfere with their catch. In the main Hawaiian islands, there have been occasional reports of dolphins removing bait or hooked fish from the lines of trollers and handline fishermen. Some of these fishermen have obtained a "certificate of inclusion" from the NMFS. There has been no reported "takes" of marine mammals from the NWHI by fishing vessel operations. Should any problems or "takes" occur through any bottomfishing operation interactions, the report should be investigated by the appropriate agencies. It is felt that the available information concerning these interactions is not sufficient to provide a thorough understanding of the problem. Therefore due to the infrequent nature of interactions, research by the appropriate agencies should be conducted to ascertain the need for any incidental take permit or small take

exemption. If warranted, an incidental take permit or small take exemption will then be applied for under the general permit system of the Marine Mammal Protection Act (MMPA).

The formal ESA Section 7 Biological Opinion received from the NMFS has specified conditions for re-initiation of Section 7 Consultations and has also set acceptable levels of incidental take for threatened and endangered turtle species for in the regulated FCZ bottomfish fishery for the NWHI (Table 9.1, Appendix J).

9.3 Endangered Species Act (ESA)

The ESA requires Federal agencies to use their authorities to protect, restore and enhance threatened and endangered species and their habitats. Marine mammals and endangered or threatened species which have been recorded in the FCZ are identified in Table 9.1.

A Federal agency (e.g., the Council) may not take action which is likely to jeopardize the continued existence of a species listed as threatened or endangered, except under very limited circumstances. Before undertaking an action, a Federal agency must request consultations under Section 7 of the ESA with the National Marine Fisheries Service (NMFS) or U.S. Fish and Wildlife Service (FWS), as appropriate. A Biological Opinion is then issued indicating whether the action is likely to jeopardize the continued existence of a species or will result in modification or destruction of "critical habitat" for such species and recommending adjustments to the proposed action to achieve greater protection of endangered or threatened species.

None of the cetaceans listed in Table 9.1 is expected to be affected by the measures proposed in this FMP. Sea turtles have been reported taken on occasion on longline gear. Endangered and threatened sea turtles occur throughout the FCZ and in other parts of the central and western Pacific. If taking does occur, small numbers of individuals are likely to be affected. Monk seal pups are particularly susceptible to potential entanglement in netting. A proposal for a "critical habitat designation" for the endangered Hawaiian monk seal has been published in the Federal Register. The measures proposed in this FMP, especially those pertaining to prohibiting net fishing in the FCZ, should increase protection of marine mammals and threatened or endangered species. This provision will eliminate entanglement problems and much of the potential impact on these species.

The Council has received the formal Section 7 consultations from the NMFS. Based on the available information, it has concluded that the proposed action is not likely to jeopardize any threatened or endangered species within the FMP's geographic scope. Acceptable levels of incidental take for threatened and endangered turtle species and conditons for a re-initiation of Section 7 Consultations were also set (Table 9.1, Appendix J).

TABLE 9.1

MARINE MAMMALS AND ENDANGERED AND THREATENED SPECIES RECORDED IN THE FCZ OF THE WESTERN PACIFIC REGION

Scientific Name	Common Name	"Incidental Takes"[2] Levels
*Megaptera novaengliae	(humpback whale)	3/
Balaenoptera edeni	(Bryde's whale)	4/
*B. physalus	(fin whale)	3/
*Physeter catodon	(sperm whale)	3/
Orcinus orca	(killer whale)	4/
Pseudorca crassidens	(false killer whale)	4/
Steno bredanensis	(rough-toothed dolphin)	4/
Stenella longirostris	(Hawaiian spinner dolphin)	4/
S. attenuata	(spotted dolphin)	4/
S. caeruleoalba	(striped dolphin)	4/
Tursiops truncatus	(bottlenosed dolphin)	4/
Feresa attenuata	(pygmy killer whale)	4/
Kogia sp.	(dwarf and pygmy sperm whale)	4/
Peponocephala electra	(melon-headed whale)	4/
Globicephala macrorhynchus	(short-finned pilot whale)	4/
Grampus griseus	(Risso's dolphin)	4/
Ziphius cavirostris	(goosebeak whale)	4/
Mesoplodon densirostris	(densebeak whale)	4/
*Monachus schauinslandi	(Hawaiian monk seal)	3/
+Chelonia mydas	(green turtle)1/	15
*Eretmochelys imbricata	(hawksbill turtle)1/	5
*Dermochelys coriacea	(leatherback turtle)1/	5
+Lepidochelys olivacea	(olive ridley turtle)1/	5
*Diomedea albatrus	(short-tailed albatross)	3/

* = endangered species
\+ = threatened species

1/ = (Joint NMFS-FWS jurisdiction)
2/ = Mortality on acceptable levels of "incidental takes" not to exceed two (2) animals of each species.
3/ = Under the MMPA it is illegal to set any "incidental takes" level on species listed as depleted.
4/ = No set level of acceptable "takes" but any interaction must be reported.

NOTE: Taking a species means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.

The NMFS has completed a biological opinion after reviewing the revised FMP. Three major issues were identified in the preliminary NMFS review:

-- Monk seals at French Frigate Shoals have been observed taking fish off hooks, and one monk seal has been observed with a bottomfish hook embedded in its lip. No mortality has been reported, but it can be inferred from the observation of a hooked monk seal and a report of a Mediterranean monk seal drown in longline gear (Sergeant et al., 1978, First International Conference on the Mediterranean Monk Seal. Rodos, Greece, May 1978. 45 p.) that the potential for incidental mortality exists. Also, a more direct conflict may evolve as monk seals learn to exploit bottomfish hook-and-line gear for food and fishermen try to protect their catch from depredation. There is no mechanism to authorize an incidental take of monk seals because they are protected under the Marine Mammal Protection Act. Also, NMFS believes that incidental mortality is likely to affect the population adversely. Fishermen should understand the potential conflicts and risks of fishing in areas where monk seals occur before entering fisheries in those areas.

-- The incidental take of sea turtles is more straightforward. They apparently swim into the gear and become tangled. Some turtles are released alive and procedures exist for reviving comatose turtles. Under Section 7(b)(4) NMFS has developed an incidental take statement to authorize an acceptable level of mortality and specify the terms and conditions under which an incidental take of sea turtles may occur (Appendix J). Fishermen will need to be advised of the potential for incidental capture of sea turtles and methods of returning them to the sea without additional injury (Appendix A).

-- The last issue is the need for a reporting requirement. Reports of interactions and mortality are necessary to monitor the effects of increased fishing effort on listed populations. The Council will include with the NWHI FCZ permit application form an informational document on protected species/fishing interactions and a form to be signed and returned stating that the applicant has read and understands the applicable laws, regulations, and penalties regarding the protected species of the area (Appendix A).

9.4 Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) requires that agencies evaluate the impacts of their regulation on the businesses that are affected and to consider adjustments to those regulations if necessary to avoid a significant adverse impact on a substantial number of small business entities. The Council acknowledges that virtually all of the fishermen affected by this plan would classify as "small businesses".

A formal Regualtory Flexibility Analysis has not been prepared but sections of the FMP contain discussions that would be included in a Regulatory Flexibility Analysis. Discussions on: the problems the FMP is trying to solve (Section 2.2, 2.4, 4.3, and 5.4,); the alternative approaches (Sections 6.3 and 7.0,); analysis of the impacts of each alternative (Sections 6.3 and 7.0); a description and estimate of the number of small entities in the fishery (Section 5.2.1); an analysis of the economic impact on small entities (Section 4.5.4, 5.2.2, and Appendix F); and the rationale for choosing the proposed regulatory action (Section 1.2 and 6.1) are included.

The Council believes that the General Counsel of the Department of Commerce can certify to the Small Business Administration that this proposed FMP will not have a significant adverse economic impact on a substantial number of small entities. Specific regulations implemented under the framework procedure established by the FMP could have a significant impact, and it is recommended that the RFA analytical requirements be met before each regulation is implemented by the RD under the framework procedure.

9.5 Paperwork Reduction Act

The only new paperwork requirement would be the permit application form for the NWHI fishery (see Appendix A). The NMFS will have to get OMB clearance for the permit form. Catch and effort data submission requirements and data collection programs would be continued at the State and Territory levels.

9.6 Executive Order 12291

Under this order, a Regulatory Impact Analysis is required if a proposed Federal rule is major. A major Federal rule is defined as one that will result in:

a) An annual effect on the economy of $100 million or more;

b) A major increase in costs or prices for consumers, industries, Federal, State, or local government agencies, or geographical regions;

c) Significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of United States-based enterprises to compete in domestic or export markets.

There will be no major adverse impacts under the FMP requiring a Regulatory Impact Analysis immediately. However, the need for a RIA will have to be assessed each time a specific regulation is recommended for implementation by the RD under the framework procedure.

9.7 National Environmental Policy Act (NEPA)

The environmental assessment that is incorporated in the revised FMP meets the requirements of NEPA and has been accepted by the NOAA Office of Policy and Planning. Documentation for a finding of no significant environmental impact is provided in Section 8.8.

9.8 Department of the Interior Laws and Policies

The U.S. Fish and Wildlife Service (FWS) administers the Hawaiian Islands National Wildlife Refuge in the Northwestern Hawaiian Islands (NWHI) under Executive Order 1019, which established the refuge, and the National Wildlife Refuge System Administration Act, which sets forth the management objectives for all units of the National Wildlife Refuge System. There is no overlap between the boundaries of the Refuge and the boundaries of the FCZ. If the NWHI domestic fishery continues to expand without any management, there may be increased possibility for groundings or emergency landings of vessels on the Refuge islands. No FWS-managed resources are expected to be negatively affected in any way by this plan, and the plan could contribute positively through the proposed permit for bottomfishing in the FCZ of the NWHI.

The Department of the Interior has the responsibility for the administration of the Territories of Guam and American Samoa. This plan appears to be fully consistent with Department of the Interior policies.

9.9 Department of Defense

The Department of Defense administers Midway Island and several of the U.S. Possessions in the Pacific. This plan should not affect the affairs of the Defense Department in any way.

9.10 Department of Transportation

The U.S. Coast Guard, Department of Transportation, shares enforcement responsibilities with NMFS under the MFCMA. Enforcement difficulty will vary depending on the management approaches ultimately selected. Simplicity of enforcement is especially critical in the western Pacific region due to the large area of the FCZ (1.5 million square miles) and limited enforcement resources.

9.11 Department of State

Under the PMP for Seamount Groundfish, the Department of State is involved in allocations of TALFF. The plan recommends zero (0) TALFF for this fishery for the next 6 years.

10.0 PLAN ADMINISTRATION AND ENFORCEMENT

10.1 Monitoring

10.1.1 Annual Review

A. The Council shall establish and appoint the members of a Bottomfish Monitoring Team (Team) which is necessary to assist it in carrying out its functions under the MFCMA. The Team will have lead responsibility for preparing an annual report on the effectiveness of the plan in meeting its objectives. The composition of the Team will be decided by the Council. The Team will work closely with NMFS, Coast Guard, State, and Territory officials to ensure that data submission requirements and data collection programs are generating the data necessary for effectively monitoring the fishery and determining whether different management measures are necessary. The Honolulu Laboratory will be responsible for providing timely data analysis and research results on the bottomfish fishery for use by the Monitoring Team. The Team will prepare an annual report on the fishery by March 31 each year containing the following information on the previous year and comparative results for prior years to the extent data are available for each area of the FCZ and adjacent waters around the main Hawaiian Islands, Northwestern Hawaiian Islands, American Samoa, and Guam.

1. Fishery Performance Data

   a. Total landings (commercial and recreational) by species by area per month.

   b. Estimated ex-vessel revenues by species.

   c. Number of vessels, numbers of fishing trips, days fished, landings per trip, species composition by landings, areas fished, catch by area, catch per day by area, and other indicators of performance for commercial and recreational fisheries.

   d. Biological characteristics of the landings, including size-frequency by species by area.

2. Summary of Recent Research and Survey Results

3. Habitat Conditions and Recent Alterations

4. Enforcement Activities and Problems

5. Administrative Actions (e.g., data collection and reporting, permits)

6. State and Territory Management Actions

7. Assessment of Need for Council Action

   a. Biological conditions and trends.

   b. Economic conditions and trends.

   c. Social conditions and trends.

   d. Enforcement problems and significance

   e. Administrative problems.

   f. State/Federal consistency.

8. Recommendations for Council Action

9. Estimated Impacts of Recommended Action

B. The criteria which warrant further investigation into potential problems are described in Section 6.2.1 (B).

10.1.2 Catch Reporting

State of Hawaii laws require a person to obtain a commercial marine fishing license prior to selling any fish caught; and all commercially licensed fishermen must file a monthly report listing all fishing trips taken during the month and all fish caught, whether any fish are sold or not (see Appendix D for samples of the State license application and catch reporting form). These data will be provided to the Council through the Honolulu Laboratory by the data sharing agreement between the HDAR and the NMFS. Recreational and subsistence fishermen are not required to obtain licenses nor to report their catches. These data may be collected through survey means.

Neither commercial, recreational, or subsistence fishermen are required to obtain fishing licenses in Guam or to report their catches. Presently, there are two principal sources of data in Guam which contain

some catch and effort information on billfish and the other management unit species: (a) commercial fish wholesalers, and (b) the offshore creel survey conducted by the Guam Division of Wildlife Resources (DAWR). The largest and oldest of the fish wholesalers is the Guam Fishermen's Cooperative (Coop) which has been collecting data on its purchases from commercial fishermen since July 1979 and submitting this information to the Honolulu Laboratory of NMFS on a voluntary basis. During 1984, two additional wholesalers started submitting their purchase data to the DAWR on a similar basis. The DAWR has conducted an intercept creel survey (sample) data on collection program for offshore (boat-based) fisheries since the 1970's. Sample catch and effort data on the management unit species can be obtained from this data base. The offshore creel survey (sample) data are expanded into island-wide estimates of catch and effort by fishing method. Non-confidential, summarized data are available through WPACFIN.

The Territory of American Samoa does not have a licensing requirement for commercial, subsistence, or recreational fishermen. Fisheries data come from the voluntary catch reports and back-up interviews with commercial fishermen to obtain catch and effort information on the management unit species. Because this data base is a result of a sampling program, the sample data are expanded to get estimates of total commercial landings of the management unit species.

The WPACFIN program will produce an annual series of summary reports (see Appendix E) which may satisfy a large part of the data needs for the annual review by the Council's Bottomfish Monitoring Team. The Council has concluded that first priority should be given to building on the previous Federal investment in WPACFIN, rather than establishing a new data reporting requirement for the Bottomfish FMP initially.

10.1.3 Ex-Vessel Monitoring

Beginning in January 1984, WPRFMC staff began daily to collect information concerning ex-vessel bottomfish transactions. The data are recorded by specific lots of fish and include the total weight, number of pieces, price per pound, collection date, and an approximate location of capture (main Hawaiian Islands or Northwestern Hawaiian Islands). The summarized data partially satisfy research needs A.1, A.2b, and A.4 (see Table 10.2).

There is size variation within lots, although it is small relative to overall levels of variation. For example, analysis of variance of 694 individually measured uku, Aprion virescens, taken from a sample of 167 lots, reveals that 91% of all weight variation was attributable to differences among lots (WPRFMC, unpublished data). (Ralston and Kawamoto, 1985).

10.1.4 NWHI Permit

The characteristics of bottomfishing operations in the FCZ of the NWHI would be documented through the NWHI permit proposed in the FMP (see Appendix A for permit application and attached protected species inclusions). The information required on the permit application would assist in addressing portions of research need No. A.2b (see Table 10.2). In addition, entry and exit of fishermen could be tracked on an annual basis, and the assignment of each permit to a particular vessel would facilitate aircraft surveillance of the NWHI by the Coast Guard.

10.2 Enforcement

Enforcement in all areas would rely initially on shoreside monitoring of commercial landings (see Appendix F.1.3). Based on the proposed management measures and the number of active participants in the fishery, NMFS effort would be approximately one man year, or about $50,000 per year. Aircraft surveillance will be focused on the NWHI fishing grounds. No increase above current levels of aircraft surveillance (see Table 10.1) are planned.

TABLE 10.1

AIRCRAFT AND VESSEL SURVEILLANCE OF THE FCZ
OF THE WESTERN PACIFIC REGION

Aircraft Surveillance (C-130 at $2,147 Per Hour)		
Area of the FCZ	Frequency of Coverage	Annual Costs
Main Hawaiian Islands	Bi-weekly	$ 362,843
Northwestern Hawaiian Islands	Bi-weekly	809,419
Guam	Quarterly	373,578
American Samoa	Quarterly	287,698
TOTAL AIRCRAFT SURVEILLANCE		$1,833,538

An aircraft patrol covers about 200 miles per hour, or 1,600 miles per 8-hour day. On a clear day with moderate seas, radar and visual sightings will be quite reliable within 30 miles to either side. Thus, in a day, an aircraft patrol can cover about 48,000 square miles at a cost of $17,176. Aircraft patrols are multi-purpose, with fisheries surveillance an important but not the only purpose. Moreover, aircraft patrols are multi-fishery operations, therefore, Table 10.1 should not be interpreted, as showing Coast Guard costs under the FMP.

The gear restrictions proposed in the FMP for domestic fisheries (i.e., prohibition against the use of bottom trawl and bottom-set nets and against the use of explosives or poisons for fishing) can only practically be enforced by port inspections because at-sea enforcement resources are so severely limited. Therefore, bottomfishing vessels have to be prohibited from carrying restricted gear onboard.

The moratorium on commercial fishing with any gear-type at the Hancock Seamounts should be enforced by aircraft surveillance without an increase above the present level of coverage by the Coast Guard. If the moratorium on commercial fishing is changed in the future, the permitted gear-types will be allowed on seamount groundfish vessels.

10.3 Research Needs

The following research needs, priorities, and recommended allocation of responsibilities were established by the WPFMC Scientific and Statistical Committee (SSC):

TABLE 10.2

RESEARCH NEEDS AND PRIORITIES

Item/Priority	Responsible Agency(ies)	For Area(s)
A. Research/data needs projects which are anticipated to be on-going or one-time-continuing-into 1988, in order of decreasing priority.		
1. Monitor the size-frequency of the catch of management unit bottomfish species, including assessment of the variation from the mean length and weight of bottomfish marketed in lots.	NMFS GDAWR* w/NMFS analysis ASOMR* w/NMFS analysis	Hawaii Guam A. Samoa

TABLE 10.2

RESEARCH NEEDS AND PRIORITIES
(Continued)

Item/Priority	Responsible Agency(ies)	For Area(s)
2a. Create/maintain time sequence data of corresponding bottomfish catch and effort data, at least for the most heavily-fished species and for the commercial fishery.	HDAR* w/NMFS analysis GDAWR w/NMFS analysis ASOMR w/NMFS analysis (Good effort data are crucial; if state/ territorial reporting systems have not improved effort reporting to an acceptable (useful) level of sensitivity and timeliness by a specified date, a new, Federal data program for such data should be created.)	Hawaii Guam A. Samoa
2b. Dockside and market observation and fishermen-contact interviews that produce data to support the following aspects of bottomfish fisheries:	NMFS	
- commercial landings, species composition, pieces, ex-vessel revenue of fresh fish component of catch	WPRFMC/NMFS/HDAR	Hawaii
- shifts in types of gear	NMFS (using NWHI permit)	NWHI
- frozen fish component of catch	NMFS (using NWHI permit)	NWHI
- entry/exit of fishermen	NMFS (using NWHI permit)	NWHI
2c. A data collection program that makes use of U.S.C.G. surveillance flights to provide a sample of the distribution of U.S. fishing vessels in the FCZ of the NWHI.	U.S.C.G./NMFS	NWHI only

TABLE 10.2

RESEARCH NEEDS AND PRIORITIES
(Continued)

Item/Priority	Responsible Agency(ies)	For Area(s)
3. Reproductive studies of heavily-fished bottomfish species to determine size at first reproduction, spawning season, pattern of egg release, and fecundity as a function of size.	NMFS	All areas
4. Document trends in Hawaii bottomfish catch rates by a selected number of commercial boats; relate the trends to changes in fishing power resulting from technological innovations.	WPRFMC/contractor/NMFS/ HDAR	Hawaii
5. Size and value of non-market (recreational) bottomfish fishery.	NMFS WPRFMC/contractor	Hawaii Guam
6. Age/size relationships for heavily-fished bottomfish species.	NMFS	Hawaii/Guam
7. Effect of cultural influences on commercial fish production and distribution in the American Samoa deepsea fishery.	WPRFMC/contractor	Samoa
8.** Derive estimates of stock size and turnover rate of groundfish populations on seamount summits and slopes.	NMFS	Hawaii
9.** Recruitment studies of bottomfish species.	NMFS	Hawaii

TABLE 10.2

RESEARCH NEEDS AND PRIORITIES
(Continued)

Item/Priority	Responsible Agency(ies)	For Area(s)
B. Research/data needs projects which are anticipated to be completed by 1988, in order of decreasing priority.		
1. Time series trip cost and earnings data for domestic fishing fleets.	NMFS	Hawaii only
2. Current description of domestic fishing fleets.	NMFS	All areas
3. Current description of commercial distribution of fishery products.	NMFS	Hawaii (and Guam)

* GDAWR = Guam Division of Aquatic and Wildlife Resources
ASOMR = American Samoa Office of Marine Resources
HDAR = Hawaii Division of Aquatic Resources
WPFMC = Western Pacific Regional Fishery Management Council
NMFS = National Marine Fisheries Service

** Considerably lower priority and longer term efforts

11.0 RULES AND REGULATIONS

CODE OF FEDERAL REGULATIONS — TITLE 50

PART 683 — WESTERN PACIFIC BOTTOMFISH AND SEAMOUNT GROUNDFISH FISHERIES

SUBPART A — GENERAL PROVISIONS

Sec.

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SUBPART A — GENERAL PROVISIONS

683.1 Purpose and Scope

(a) The regulations in this part govern fishing for bottomfish and seamount groundfish by fishing vessels of the United States in the fishery conservation zone (FCZ) off the coasts of Hawaii, American Samoa, and Guam.

(b) Regulations governing fishing for bottomfish and seamount groundfish by fishing vessels other than vessels of the United States are published at 50 CFR Part 611.

(c) These regulations implement the Fishery Management Plan for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region (FMP) developed by the Western Pacific Regional Fishery Management Council under the Magnuson Fishery Conservation and Management Act (Magnuson Act).

683.2 Definitions

In addition to the definitions in the Magnuson Act, the terms used in this part have the following meanings (some definitions in the Magnuson Act have been repeated here to aid understanding of the regulations):

Administrator means the Administrator of the National Oceanic and Atmospheric Administration (NOAA), or a designee.

Authorized officer means:

(a) Any commissioned, warrant, or petty officer of the U.S. Coast Guard.

(b) Any special agent of the National Marine Fisheries Service.

(c) Any officer designated by the head of any Federal or State agency which has entered into an agreement with the Secretary and the Commandant of the U.S. Coast Guard to enforce the provisions of the Magnuson Act; or

(d) Any U.S. Coast Guard personnel accompanying and acting under the direction of any person described in paragraph (a) of this definition.

Bottomfish means the following species managed by the FMP:

Common Name	Local Name	Scienfitic Name
SNAPPERS:		
Silver jaw jobfish	lehi (H) palu-gutusiliva (S)	Aphareus rutilans
Gray jobfish	uku (H) asoama (S)	Aprion virescens
Squirrelfish snapper	ehu (H) palu-malau (S)	Etelis carbunculus
Longtail snapper	onaga, ula'ula (H) palu-loa (S)	Etelis coruscans
Blue stripe snapper	ta'ape (H) savane (S)	Lutjanus kasmira
Yellowtail snapper	palu-i' usama (S) yellowtail kalekale (G)	Pristipomoides auricilla
Pink snapper	opakapaka (H) palu-'ena'ena (S) gadao (G)	Pristipomoides filamentosus
Yelloweye snapper	palusina (S) yelloweye opakapaka (G)	Pristipomoides flavipinnus
Snapper	kalekale (H)	Pristipomoides sieboldii
Snapper	gindai (H,G) palu-sega (S)	Pristipomoides zonatus
JACKS		
Giant trevally	white ulua (H) tarakito (G)	Caranx ignoblis
Black jack	black ulua (H) tarakito (G) tafauli (S)	Caranx lugubris
Thick lipped trevally	pig ulua (H) butaguchi (H)	Pseudocaranx dentex
Amberjack	kahala (H)	Seriola dumerili

Bottomfish means the following species managed by the FMP (Continued):

Common Name	Local Name	Scienfitic Name
GROUPERS:		
Blacktip grouper	fausi (S) gadau (G)	Epinephelus fasciatus
Sea bass	hapu'upu'u (H)	Epinephelus quernus
Lunartail grouper	papa (S)	Variola louti
EMPEROR FISHES:		
Ambon emperor	filoa-gutumumu (S)	Lethrinus amboinensis
Redgill emperor	filoa-pa'o'omumu (S) mafuti (G)	Lethrinus rubrioperculatus

NOTES: G = Guam
H = Hawaii
S = American Samoa

Fishery conservation zone (FCZ) means that area adjacent to the United States which, except where modified to accommodate international boundaries, encompasses all waters from the seaward boundary of each of the coastal states to a line each point of which is 200 nautical miles from the baseline from which the territorial sea of the United States is measured.

Fishery management area means the fishery conservation zone off the coasts of Hawaii, American Samoa and Guam.

Fishing means:

(a) The catching, taking, or harvesting of fish;

(b) The attempted catching, taking or harvesting of fish;

(c) Any other activity which can reasonably be expected to result in the catching, taking, or harvesting of fish; or

(d) Any operations at sea in support of, or in preparation for, any activity described above.

This term does not include any scientific research activity which is conducted by a scientific research vessel.

Fishing gear:

(a) Bottom trawl means a trawl in which the otter boards or the footrope of the net are in contact with the seabed.

(b) Gillnet means a rectangular net with one or more layers of mesh which is set vertically in the water.

(c) Hook-and-line means one or more hooks attached to one or more lines.

(d) Set net means a stationary, buoyed, and anchored gill net.

(e) Trawl net means a cone or funnel-shaped net which is towed through the water by one or more vessels.

Fishing trip means a period of time during which fishing is conducted, beginning when the vessel leaves port and ending when the vessel lands fish.

Fishing vessel means any vessel, boat, ship, or other craft which is used for, equipped to be used for, or of a type which is normally used for: (a) fishing; or (b) aiding or assisting one or more vessels at sea in the performance of any activity relating to fishing, including, but not limited to, preparation, supply, storage, refrigeration, transportation, or processing.

Fishing year means the year beginning at 0001 local time on January 1 and ending at 2400 local time on December 31.

Incidental catch or incidental species means species caught while fishing for the primary purpose of catching a different species.

Land or landing means to begin offloading any fish, to arrive in port with the intention of offloading any fish, or to cause any fish to be offloaded.

Magnuson Act means the Magnuson Fishery Conservation and Management Act, 16 U.S.C. 1801 et seq., as amended.

Maximum sustainable yield (MSY) means an average over a reasonable length of time of the largest catch which can be taken continuously from a stock.

Official number means the documentation number issued by the U.S. Coast Guard or the certificate number issued by a State or by the U.S. Coast Guard of undocumented vessels.

Operator, with respect to any vessel, means the master or other individual on board and in charge of that vessel.

Owner, with respect to any vessel, means:

(a) Any person who owns that vessel in whole or in part;

(b) Any charterer of the vessel, whether bareboat, time, or voyage;

(c) Any person who acts in the capacity of a charterer including but not limited to parties to a management agreement, operating agreement, or any similar agreement that bestows control over the destination, function, or operation of the vessel; or

(d) Any agent designated as such by a person described in paragraph (a), (b), or (c) of this definition.

Person means any individual (whether or not a citizen or national of the United States), any corporation, partnership, association, or other entity (whether or not organized or existing under the laws of any State), and any Federal, State, local or foreign government or any entity of any such government.

Regional Director means the Southwest Regional Director, National Marine Fisheries Service, 300 South Ferry Street, Terminal Island, California 90731, or a designee.

Seamount groundfish means the following species managed by the FMP:

Common Name	Scientific Name
Armorhead	Pseudopentaceros wheeleri
Alfonsins	Beryx splendens
Raftfishes	Hyperoglyphe japonica

Secretary means the Secretary of Commerce or the person(s) to whom appropriate authority has been delegated.

State means the State of Hawaii, the Territory of American Samoa and the Territory of Guam.

Vessels of the United States means (a) a vessel documented or numbered by the U.S. Coast Guard under U.S. law; or (b) a vessel, under five net tons, which is registered under the laws of any State.

683.3 Relation to State Laws

This part recognizes that any State law which pertains to vessels registered under the laws of that State while in the fishery management area, and which is consistent with the FMP including any State landing law, shall continue in effect with respect to fishing activities regulated under this part.

683.4 Reporting

This part recognizes that catch and effort data necessary for implementing the FMP are collected by the State of Hawaii, American Samoa, and Guam under existing State data collection programs. No additional Federal reports are required of fishermen or processors as long as the data collection and reporting systems operated by the State agencies continue to provide the Secretary with statistical information adequate for management.

683.5 Management Subareas

(a) The fishery management area is divided into five subareas for the regulation of bottomfish and seamount groundfish fishing with the following designations and boundaries:

(1) Main Hawaiian Islands means the FCZ of the Hawaiian Islands Archipelago lying to the east of 161° 20' W. longitude will include middle bank with MHI.

(2) Northwestern Hawaiian Islands means the FCZ of the Hawaiian Islands Archipelago lying to the west of 161° 20' W. longitude.

(3) Hancock Seamounts means that portion of the FCZ in the Northwestern Hawaiian Islands west of 180° 00' W. longitude and north of 28° 00'N. latitude.

(4) Guam means the FCZ of the Territory of Guam.

(5) American Samoa means the FCZ of the Territory of American Samoa.

(b) The inner boundary of the fishery management area is a line coterminous with the seaward boundaries of the State of Hawaii, the Territory of American Samoa, and the Terriory of Guam (the "3 mile-limit").

Midway Island is a possession of the United States. However, for the purpose of regulations issued under this part and the regulations which apply to the Northwestern Hawaiian Islands, Midway Island shall be treated as if it is a part of the State of Hawaii.

(c) The outer boundary of the fishery management area is a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured, or is coterminous with adjacent international maritime boundaries.

The outer boundary of the fishery management area north of Guam shall extend to those points which are equidistant between Guam and the island of Rota in the Commonwealth of the Northern Mariana Islands.

683.6 General Prohibitions

It is unlawful for any person:

(a) To possess, have custody or control of, ship or transport, offer for sale, sell, puchase, import or export any bottomfish or seamount groundfish taken, retained, or landed in violation of the Magnuson Act, this part, or any other regulation promulgated under the Magnuson Act;

(b) To refuse to allow an authorized officer to board a fishing vessel subject to such person's control for purposes of conducting any search or inspection in connection with the enforcement of the Magnuson Act, this part, or any other regulation promulgated under the Magnuson Act;

(c) To forcibly assault, resist, oppose, impede, intimidate, or interfere with any authorized officer in the conduct of any inspection or search described in paragraph (b) of this section;

(d) To resist a lawful arrest for any act prohibited by this part;

(e) To interfere with, delay, or prevent, by any means, the apprehension or arrest of another person, with the knowledge that such other person has committed any act prohibited by this part;

(f) To interfere with, obstruct, delay, or prevent by any means a lawful investigation or search conducted in the process of enforcing the Magnuson Act'

(g) To transfer, or attempt to transfer, directly or indirectly, any U.S.-harvested bottomfish or seamount groundfish to any foreign fishing vessel within the FCZ, unless the foreign vessel has been issued a permit which authorizes the receipt of U.S.-harvested fish of the species being transferred;

(h) To fail to comply immediately with enforcement and boarding procedures specified in 683.7;

(i) To fish for bottomfish or seamount groundfish in violation of any terms or conditions attached to an EFP issued under 683.9;

(j) To fish for bottomfish or seamount groundfish using gear prohibited under 683.22 or under an EFP issued under 683.9.

(k) To violate any other provision of this part, the Magnuson Act, any notice issued under Subpart B of this part, or any other regulation or permit promulgated under the Magnuson Act.

683.7 Enforcement

(a) General. The operator of, or any other person aboard, any fishing vessel subject to this part must immediately comply with instructions and signals issued by an authorized officer to stop the vessel and with instructions to facilitate safe boarding and inspection of the vessel, its gear, equipment, fishing record (where applicable), and catch for purposes of enforcing the Magnuson Act and this part.

(b) Communications:

(1) Upon being approached by a U.S. Coast Guard vessel or aircraft, or other vessel or aircraft with an authorized officer aboard, the operator of a fishing vessel must be alert for communications conveying enforcement instructions.

(2) If the size of the vessel and the wind, sea, and visibility conditions allow, loudhailer is the preferred method for communicating between vessels. If use of a loudhailer is not practicable, and for communications with an aircraft, VHF-FM or high frequency radio-telephone will be employed. Hand signals, placards, or voice may be employed by an authorized officer and message blocks may be dropped from an aircraft.

(3) If other communications are not practicable, visual signals may be transmitted by flashing light directed at the vessel signaled. Coast Guard units will normally use the flashing light signal "L" as the signal to stop.

(4) Failure of a vessel's operator to stop his vessel when directed to do so by an authorized officer using loudhailer, radio-telephone, flashing light signal, or other means constitutes primafacie evidence of the offense of refusal to permit an authorized officer to board.

(5) The operator of a vessel who does not understand a signal from an enforcement unit and who is unable to obtain clarification by loudhailer or radio-telephone must consider the signal to be a command to stop the vessel instantly.

(c) Boarding. The operator of a vessel directed to stop must:

(1) Guard Channel 16, VHF-FM if so equipped;

(2) Stop immediately and lay to or maneuver in such a way as to allow the authorized officer and his party to come aboard;

(3) Except for those vessels with a freeboard of four feet or less, provide a safe ladder, if needed, for the authorized officer and his party to come aboard;

(4) When necessary to facilitate the boarding or when requested by an authorized officer, provide a manrope or safety line, and illumination for the ladder; and

(5) Take such other actions as necessary to facilitate boarding and to ensure the safety of the authorized officer and the boarding party.

(d) Signals. The following signals, extracted from the International Code of Signals, may be sent by flashing light by an enforcement unit when conditions do not allow communications by loudhailer or radio-telephone. Knowledge of these signals by vessel operators is not required. However, knoweldge of these signals and appropriate action by a vessel operator may preclude the necessity of sending the signal "L" and the necessity for the vessel to stop instantly.

(1) "AA" repeated (.-/.-)* is the call to an unknown station. The operator fo the signaled vessel should respond by identifying the vessel by radio-telephone or by illuminating the vessel's identification.

(2) "RY-CY" (.-./-.--/-.-./-.--)* means "you should proceed at slow speed, a boat is coming to you". This signal is normally employed when conditions allow an enforcement boarding without the necessity of the vessel being boarded coming to a complete stop, or, in some cases, without retrieval of fishing gear which may be in water.

(3) "SQ3" (.../--.-/...--)* means "you should stop or heave to; I am going to board you".

(4) "L" (.-..)* means "you should stop your vessel instantly".

*Period (.) means a short flash of light.
Dash (-) means a long flash of light.

683.8 Penalties

Any person or fishing vessel found to be in violation of this part will be subject to the civil and criminal penalty provisions and forfeiture provisions prescribed in the Magnuson Act, and 50 CFR part 620 (Citations), 50 CFR Part 621 and 15 CFR Part 904 (Civil Procedures) and other applicable laws.

683.9 Experimental Fishing Permit

(a) General. The Secretary may authorize, for limited experimental purposes, the direct or incidental harvest of bottomfish or seamount groundfish managed by the FMP which would otherwise be prohibited by this part. No experimental fishing may be conducted unless authorized by an experimental fishing permit (EFP) issued by the Secretary in accordance with the criteria and procedures specified in this section. EFP's will be issued without charge.

(b) Application. An applicant for an EFP shall submit to the Regional Director at least 60 days before the desired effective date of the EFP a written application including, but not limited to, the following information:

(1) The date of the application;

(2) The applicant's name, mailing address, and telephone number;

(3) A statement of the purposes and goals fo the experiment for which an EFP is needed, including a general description of the arrangements for disposition of all species harvested under the EFP;

(4) A statement of whether the proposed experimental fishing has broader significance than the applicant's individual goals;

(5) For each vessel to be covered by the EFP:

(i) Vessel name;

(ii) Name, address, and telephone number of owner and master;

(iii) U.S. Coast Guard documentation, State license, or registration number;

(iv) Home port;

(v) Length of vessel;

(vi) Net tonnage; and

(vii) Gross tonnage.

(6) A description of the species (directed and incidental) to be harvested under the EFP and the amount(s) of such harvest necessary to conduct the experiment;

(7) For each vessel covered by the EFP, the approximate time(s) and place(s) fishing wil take place, and the type, size, and amount of gear to be used; and

(8) The signature of the applicant.

The Secretary may request from an applicant additional information necessary to make the determinations required under this section. An applicant will be notified of an incomplete application within 10 working days of receipt of the application. An incomplete application will not be considered until corrected in writing.

Approval by Office of Management and Budget is required, under 44 U.S.C. 3506 (c) (5).

(c) Issuance

(1) If an application contains all of the required information, the Secretary will publish a notice of receipt of the application in the FEDERAL REGISTER with a brief description of the proposal, and will give interested persons an opportunity to comment. The Secretary will also forward copies of the application to the Western Pacific Regional Fishery Management Council, the U.S. Coast Guard, and the fishery management agency of the affected State, accompanied by the following information:

(i) The current utilization of domestic annual harvesting and processing capacity (including existing experimental harvesting, if any) of the directed

and incidental species for which an EFP is being requested;

(ii) A citation of the regulation or regulations which, without the EFP, would prohibit the proposed activity; and

(iii) Biological information relevant to the proposal.

(2) At a Western Pacific Regional Fishery Management Council meeting following receipt of a properly completed application, the Secretary will consult with the Western Pacific Regional Fishery Management Council and the Director of the affected State fishery management agency concerning the permit application. The applicant will be notified in advance of the meeting at which the application will be considered, and invited to appear in support of the application if the applicant desires.

(3) Within 5 working days after the consultation in paragraph (c) (2) of this section, or as soon as practicable thereafter, the Secretary shall notify the applicant in writing of the decision to grant or deny the EFP, and, if denied, the reasons for the denial. Grounds for denial of an EFP include, but are not limited to, the following:

(i) The applicant has failed to disclose material information required, or had made false statements as to any material fact, in connection with his or her application; or

(ii) According to the best scientific information available, the harvest to be conducted under the permit would detrimentally affect any species of fish in a significant way; or

(iii) Issuance of the EFP would inequitably allocate fishing privileges among domestic fishermen or would have economic allocation as its sole purpose; or

(iv) Activities to be conducted under the EFP would be inconsistent with the intent of this section or the management objectives of the FMP; or

(v) The applicant has failed to demonstrate a valid jurisdiction for the permit; or

(vi) The activity proposed under the EFP would create a significant enforcement problem.

(4) The decision of the Secretary to grant or deny an EFP is final and unappealable. If the permit is granted, the Secretary will publish a notice in the FEDERAL REGISTER describing the experimental fishing to be conducted under the EFP. The Secretary may attach terms and conditions to the EFP consistent with the purpose of the experiment including, but not limited to:

(i) The maximum amount of each species which can be harvested and landed during the term of the EFP, including trip limits, where appropriate;

(ii) The number, sizes, names, and indentification numbers f the vessels authorized to conduct fishing activities under the EFP;

(iii) The time(s) and place(s) where experimental fishing may be conducted;

(iv) The type, size, and amount of gear which may be used by each vessel operated under the EFP;

(v) The condition that observers be carried aboard vessels operated under an EFP;

(vi) Data reporting requirements; and

(vii) Such other conditions as may be necessary to assure compliance with the purposes of the EFP consistent with the objectives of the FMP.

(d) Duration. Unless otherwise specified in the EFP or a superseding notice or regulation, an EFP is effective for no longer than one year unless revoked, suspended, or modified. EFP's may be renewed following the application procedures in this section.

(e) Alteration. Any permit that has been altered, erased, or mutilated is invalid.

(f) Transfer. EFP's issued under this part are not transferable or assignable. An EFP is valid only for the vessel(s) for which it is issued.

(g) Inspection. Any EFP issued under this part must be carried aboard the vessel(s) for which it was issued. The EFP must be presented for inspection upon request of any authorized officer.

(h) Sanctions. Failure of the holder of an EFP to comply with the terms and conditons of an EFP, a notice issued under Subpart B of this part, any other applicable provision of this part, the Magnuson Act, or any other regulation promulgated thereunder,

shall be grounds for revocation, suspension, or modification of the EFP with respect to all persons and vessels conducting activities under the EFP. Any action taken to revoke, suspend, or modify an EFP will be governed by 15 CFR Part 904 Subpart D, or 50 CFR part 621.

SUBPART B — MANAGEMENT MEASURES

683.21 Permit Requirement for the Northwestern Hawaiian Islands (NWHI)

(a) General. Any vessel of the United States engaged in commercial fishing for bottomfish or seamount groundfish in the NWHI must have a permit issued under this section.

(b) Applications.

(1) An application for a permit under this section must be submitted to the Regional Director by the vessel owner or operator at least 15 days before the date on which the applicant desires to have the permit made effective.

(2) Each application must be submitted on an appropriate form which may be obtained from the Regional Director. Each application must be signed by the vessel owner or operator and contain the following information:

(i) The applicant's name;

(ii) The owner's name, mailing address, and telephone number;

(iii) The operator's name, mailing address, and telephone number;

(iv) The name of the vessel;

(v) The vessel's official number;

(vi) The radio call sign of the vessel;

(vii) The home port of the vessel;

(viii) Gross registered tons;

(ix) Registered length of vessel;

(x) Beam of vessel;

(xi) Fuel capacity;

(xii) Average cruising speed;

(xiii) Maximum range of vessel;

(xiv) Horsepower;

(xv) Purchase price of vessel;

(xvi) Purchase date of vessel;

(xvii) Age of vessel;

(xviii) Vessel fish hold capacity;

(xix) Type of refrigeration capacity;

(xx) Type and number of fishing gear;

(xxi) Whether the application is for a new permit or a renewal;

(xxii) Number and expiration date of any prior permit for the vessel issued under this part.

(c) Fees. No fee is required for a permit issued under this section.

(d) Change in Application Information. Any change in the information specified in paragraph (b) of this section must be reported to the Regional Director ten days before the effective date of the change.

(e) Issuance.

(1) Within 15 days after receipt of a properly completed application, the Regional Director will determine whether to issue a permit.

(2) If an incomplete or improperly completed permit application is filed, the Regional Director will notify the applicant in writing of the deficiency in the application. If the applicant fails to correct the deficiency within 30 days following the date of notification, the application will be considered abandoned.

(3) Permits issued under this section will be accompanied by an informational package advising the permit holder of the applicable laws and regulations regarding threatened and endangered species in the NWHI. Permit holders are required to report any incidental take or fisheries interaction with protected species on a form provided for that purpose.

(f) Expiration. Permits issued under this section expire on June 30 following issuance of the permit.

(g) Renewal. An application for renewal of a permit must be submitted to the Regional Director in the same manner as described in paragraph (b) of this section.

(h) Alteration. Any permit that has been substantially altered, erased, or mutilated is invalid.

(i) Replacement. Permits may be issued to replace lost or mutilated permits. an application for a replacement permit is not considered a new application.

(j) Transfer. Permits issued under this section are not transferable or assignable to other persons. A permit is valid only for the vessel for which it is issued.

(k) Display. Any permit issued under this section must be on board the vessel at all times while the vessel is still fishing for bottomfish or seamount groundfish in the NWHI. Any permit issued under this section must be displayed for inspection upon request of any Authorized Officer.

(l) Sanctions. Procedures governing permit sanctions and denials are found at Subpart D of 15 CFR Part 904.

683.22 Gear Restrictions

(a) Bottom trawls and bottom set gillnets. Fishing for bottomfish and seamount groundfish with bottom trawls and bottom set gillnets is prohibited.

(b) Poisons and explosives. The possession or use of any poisons, explosives or intoxicating substances for the purpose of harvesting bottomfish and seamount groundfish is prohibited.

683.23 Fishing Moratorium on Hancock Seamounts

Fishing for bottomfish and seamount groundfish on the Hancock Seamounts is prohibited until _____ 1992.

683.24 Framework for Regulatory Adjustments

(a) Annual Reports. By March 31 of each year a Council appointed bottomfish monitoring team will prepare an annual report on the fishery by area covering the following topics:

(1) Fishery performance data;

(2) Summary of recent research and survey results;

(3) Habitat conditions and recent alterations;

(4) Enforcement activities and problems;

(5) Administrative actions (e.g., data collection and reporting, permits);

(6) State and Territorial management actions;

(7) Assessment of need for Council action (including biological, economic, social, enforcement, administrative, and State/Federal needs, problems, and trends). Indications of potential problems warranting further investigation. Indicator criteria include:

(i) Mean size of catch of any species in any area is pre-reproductive;

(ii) Ratio of fishing mortality to natural mortality for any species;

(iii) Harvest capacity of the exiting fleet and/or annual landings exceed best estimate of MSY in any area;

(iv) Significant decline (50% or more) in bottomfish CPUE from baseline levels;

(v) Substantial delcine in ex-vessel revenue relative to baseline levels;

(vi) Significant shift in the relative proportions of gear in any one area;

(vii) Significant change in the frozen/fresh components of the bottomfish catch;

(viii) Entry/exit of fishermen in any area;

(ix) Per-trip costs for bottomfishing exceed per-trip revenues for a significant percentage of trips;

(x) Significant decline or increase in total bottomfish landing in any area;

(xi) Change in species composition of the bottomfish catch in any area;

(xii) Research results;

(xiii) Habitat degradation or environmental problems;

(xiv) Reported interactions between bottomfishing operations and protected species in NWHI.

(b) Recommendation of Management Action.

(1) The team may present management recommendations to the Council at any time. Recommendations may cover actions suggested for Federal regulations, State/Territorial action, enforcement or administrative elements, and research and data collection. Recommendations will include an assessment of urgency and of impacts of not taking action.

(2) The Council will evaluate the team's reports and recommendations, and the indicators of concern. The Council will assess the need for one or more of the following types of management action:

(i) Catch limits;

(ii) Size limits;

(iii) Closures;

(iv) Effort limitations;

(v) Access limitations (for NWHI only);

(vi) Other measures.

(3) The Council may recommend management action by either the state/territorial governments or by Federal regulation.

(c) Federal Management Action

(1) If the Council thinks that management action should be considered, it will make specific recommendations to the NMFS Regional Director after taking the following steps:

(i) Request and consider the views of the SSC and bottomfish advisory panel; and

(ii) Obtain public comments at a public hearing.

(2) The Regional Director will consider the Council's recommendation and acvcompanying data, and if (s)he concurs with the Council's recommendation, will propose regulations to carry out the action. If the Regional Director reject the Council's proposed action, a written explanation for the denial shall be provided to the Council within two weeks of the decision.

(3) The Council may appeal denial by writing to the Assistant Administrator for Fisheries, who must respond in writing within 30 days.

(4) The Regional Director and the Assistant Administrator for Fisheries will make their decisions in accordance with the Magnuson Act, other applicable law, and the FMP.

(5) To minimize conflicts between the Federal and State management systems, the Council will use the procedures in the subsection to respond to state/territorial management actions. Council consideration of action would normally begin with a representative of the state or territorial government bringing a potential or actual management conflict or need to the Council's attention.

(d) Access Limitation Procedures (limited to NWHI only)

(1) If access limitation is proposed for adoption or subsequent modification through the process described in this subsection, the following requirements must be met:

(i) The bottomfish monitoring team must consider and report to the Council on present participation in the fishery; historical fishing practices in, and dependence on, the fishery; economics of the fishery; capability of fishing vessels using the fishery to engage in other fisheries; cultural and social framework relevant to the fishery; and any other relevant considerations;

(ii) Public hearings held specifically addressing the limited access proposal(s);

(iii) Creation in the limited access limitation system of a specific advisory subpanel of persons experienced in the Hawaii fishing industry (for Hawaii measures) to advise the Council and the Regional Director on administrative decisions; and

(iv) Council recommendation to the Regional Director must be approved by a two-thirds majority of the voting members.

(2) If prior participation in the fishery is used as a factor in any access limitation system recommended by the Council, August 7, 1985 is the date selected by the Council as the date to be used.

683.25 Scientific Research

Nothing in this part is intended to inhibit or prevent any scientific research which is conducted in the fishery management area by a scientific research vessel. The Secretary will acknowledge notification of scientific research involving bottomfish and seamount groundfish and conducted by a scientific research vessel by issuing to the operator or master of that vessel a letter of acknowledgement, containing information on the purpose and scope (locations and schedules) of the activities. The Secretary will transmit copies of such letters to the Western Pacific Regional Fishery Management Council, and to State and Federal administrative and enforcement agencies, to ensure that all concerned parties are aware of the research activities.

12.0 REFERENCES

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SUMMARY OF BOTTOMFISH FISHING REGULATIONS and RECENT FISHERY STATISTICS

WESTERN PACIFIC

American Samoa

Ray A. Tulafono, Director
Department of Marine & Wildlife Resources
P.O. Box 3730
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Guam

Rufo J. Lujan, Chief
Division of Aquatic & Wildlife Resources
Department of Agriculture
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Henry M. Sakuda, Administrator
Division of Aquatic Resources
Department of Land and Natural Resources
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Honolulu, HI 96813

Northern Mariana Islands

Calistro Falig, Acting Chief
Division of Fish & Wildlife
Department of Natural Resources
Saipan, MP 96950

Western Pacific Region

Western Pacific Regional Fishery
Management Council
1164 Bishop Street, Suite 1405
Honolulu, HI 96813

revised 3/94

AMERICAN SAMOA

Territorial Regulations

- No taking with explosives, poisons or electrical shocking devices
- Fish traps may not exceed 6 ft in any dimension
- Permit required for commercial fishing
- Seafood dealers must submit receipts of fish purchases

Federal Regulations

- No taking with explosives, poisons, trawl nets or bottom set gillnets

1993 Fishery Status

1993 total estimated bottomfish landings were 16,800 lb. Catch composition included snappers, emperors, groupers and jacks. Some 23 commercial vessels made 95 trips, catching about 16,000 lb worth $29,000. Average combined 1993 price was $1.81.

GUAM

Territorial Regulations

- No taking with explosives, poisons or electrical shocking devices
- No taking with gear which may damage fish externally

Federal Regulations

- No taking with explosives, poisons, trawl nets or bottom-set gillnets

1993 Fishery Status

1993 total estimated harvest was 78,300 lb. Some 271 boats made 6265 trips. 1993 commercial landings of 10,125 lb were worth about $29,000 ex-vessel. Catch composition included snappers, jacks, emperors and groupers. 1993 average price was $2.90/lb.

HAWAII

State Regulations

- License and monthly catch reports required for commercial harvest
- No sale less than one pound for opakapaka, onaga, uku and ulua
- No taking with explosives, poisons or electrical shocking devices
- Fish traps not to exceed 10 ft x 6 ft x 6 ft
- Trap minimum mesh size 2 in x 1 in (non-conforming traps may be used until 7/94 if registered by 10/89)

Federal Regulations

- No taking with explosives, poisons, trawl nets or bottom-set gillnets

Northwestern Hawaiian Islands only:

- Annual limited access permit required for Ho'omalu Zone (west of 165° W). Permit required for Mau Zone (161°20' W to 165° W), and holders of Ho'omalu Zone limited access permits may not fish in Mau Zone.
- State of Hawaii catch report required
- Vessel must notify U.S. Coast Guard 24 hours before landing bottomfish caught in the Ho'omalu Zone
- Attendance at protected-species seminar required
- Vessel must carry observer in certain areas if requested by NMFS
- Control date of 17 Dec 1991 for Mau Zone may be used to limit entry
- No fishing for groundfish on Hancock Seamounts until August 1998

1993 Hawaii Fishery Status

Main Hawaiian Islands

1993 commercial landings were 348,000 lb. Recreational landings are thought to be significant Species catch composition included snappers, groupers and jacks. Over 1000 commercial, semi-commercial and recreational fishermen were suspected to have sold bottomfish in Honolulu in 1993. The average combined price was $3.29/lb.

Northwestern Hawaiian Islands

1993 commercial landings were 385,000 lb. Species catch composition included snappers, groupers and jacks. Twelve vessels reported fishing in the NWHI, four in the limited-access Ho'omalu Zone and eight in the qualifying Mau Zone. These boats made 106 trips. 1993 average price was $3.02/lb.

Total 1993 ex-vessel revenues from bottomfish sales combined from the Northwestern and main Hawaiian Islands were about $2.3 million.

NORTHERN MARIANA ISLANDS

Commonwealth Regulations

- No taking with explosives, poisons or electrical shocking devices
- Size limits for several species

Federal Regulations

- No taking with explosives, poisons, trawl nets or bottom set gillnets

1993 Fishery Status

1993 commercial landings of 14,800 lb were worth about $37,000 ex-vessel. Species composition included snappers, emporers, groupers and jacks. Bottomfish were taken during multi-species (pelagic, bottomfish and reef fish) trips. About 20 vessels made 178 trips. 1993 average price was $2.53/lb.

Please note: This summary is provided as a quick reference; it does not contain all fishery requirements. The public is advised that requirements may change, and that any discrepancy between this summary, and the Code of Federal Regulations and statutes and rules of the territories, state and commonwealth will be resolved in favor of the latter.

For more information:

Territory of American Samoa

Regulations:

Department of Marine and Wildlife Resources
Tel: (684) 633-4456
Fax: (684) 633-5944

Enforcement:

Department of Public Safety
Tel: (684) 633-1111
Fax: (684) 633-5111

Territory of Guam

Regulations and Enforcement:

Division of Aquatic and Wildlife Resources
Tel: (671) 734-3944
Fax: (671) 734-6570

Enforcement:

Customs and Quarantine Division
Tel: (671) 646-5841
Fax: (671) 646-7242

State of Hawaii

Regulations:

Division of Aquatic Resources
Tel: (808) 587-0102
Fax: (808) 587-0115

Enforcement:

Division of Conservation and Resources Enforcement
Tel: (808) 587-0066
Fax: (808) 587-0080

Commonwealth of the Northern Mariana Islands

Regulations:

Division of Fish and Wildlife
Tel: (670) 322-9729
Fax: (670) 322-3386

Enforcement:

Department of Public Safety
Tel: (670) 234-6823
Fax: (670) 234-8531

United States of America (Federal)

Regulations:

Pacific Area Office
National Marine Fisheries Service
Tel: (808) 955-8831
Fax: (808) 949-7400

Western Pacific Regional Fishery Management Council
Tel: (808) 541-1974
Fax: (808) 526-0824

Enforcement:

Law Enforcement Branch
National Marine Fisheries Service
Tel: (808) 541-2727
Fax: (808) 541-3166

Law Enforcement Branch
U.S. Coast Guard
Tel: (808) 541-2300
Fax: (808) 541-2036

The Western Pacific Regional Fishery Management Council is authorized by the Magnuson Fishery Conservation and Management Act of 1976 (P.L. 94-265)

APPENDIX A

FISHING PERMIT APPLICATION

TO FISH IN THE NORTHWESTERN HAWAIIAN ISLANDS,

PROTECTED SPECIES INFORMATION AND

INCIDENTAL "TAKE" FORM

APPENDIX - A

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE

FISHING PERMIT APPLICATION TO FISH FOR BOTTOMFISH IN THE NORTHWESTERN HAWAIIAN ISLANDS

Date Application Received	Permit Number Assigned

(APPLICANT INFORMATION - PLEASE PRINT)

(1) Name of Applicant (Last, First, Middle)

(2) Name of Vessel Owner (Last, First, Middle) | Telephone Number

(3) Mailing Address of Vessel Owner | City and State | Zip Code

(4) Operator's Name (Last, First, Middle) | Telephone Number

(5) Mailing Address of Operator | City and State | Zip Code

(PERMIT INFORMATION - PLEASE PRINT)

(6) Type of Application:
a. New Permit - ___
b. Renewal Permit - ___

(7) Prior Permit Number:

(8) Expiration Date of Permit:

(VESSEL INFORMATION - PLEASE PRINT)

(9) Vessel Name:

(10) Official Number:

(11) Radio Call Sign:

(12) Home Port:

(13) Gross Registered Tons:

(14) Registered Length of Vessel:

(15) Beam of Vessel:

(16) Fuel Capacity

(17) Average Cruising Speed:

(18) Maximum Range of Vessel:

(19) Horsepower:

(20) Purchase Price of Vessel:

(21) Purchase Date of Vessel:

(22) Age of Vessel:

(FISHING INFORMATION - PLEASE PRINT)

(23) Vessel Fish Hold Capacity: (IN TONS)

(24) Type of Refrigeration Capacity: (IN TONS)
a. Ice - _____
b. On Board Ice Plant - _____
c. Plate Freeze - _____
d. Blast Freeze - _____
e. Other (specify): - _____

(25) Type and Number of Fishing Gear:
a. Handline - ___
b. Traps - ___
c. Bottom longline - ___
d. Other (specify): - ___ _____

I have read and understand the attached restrictions and conditions regarding protected species in the Northwestern Hawaiian Islands.

APPLICANT'S SIGNATURE: _____ DATE: _____
(owner/operator)

SUBMIT THIS COPY TO THE REGIONAL DIRECTOR

APPENDIX A

RESTRICTIONS AND CONDITIONS REGARDING THE PROTECTED SPECIES IN THE NORTHWESTERN HAWAIIAN ISLANDS

The Northwestern Hawaiian Islands (NWHI) are the only home of the Hawaiian monk seal. About 1300 to 1400 of these mammals inhabit the chain from Nihoa Island to Kure Atoll. Hawaiian monk seals have survived and remained virtually unchanged for 15 million years, but in the last 100 years have been reduced in numbers due to disturbance by man.

Monk seals sometimes steal fish from lines in the NWHI. This behavior can be expected to continue and increase as fishing in the NWHI expands. Because monk seals are protected as an endangered species under Federal law, it is illegal to "harass" them. This means you cannot throw firecrackers at them, shoot them, or disturb them in any way. While bait stealing is not expected to be a major problem, you may occasionally become quite aggravated by a hungry monk seal. Small losses may be thought of as part of the overall cost of fishing in the NWHI.

Sea turtles, also protected species under Federal and State law, sometimes become entangled in fishing gear. These animals are air-breathers, and will drown if they can't reach the surface. The green turtle, most commonly seen in Hawaii, nests on the isolated beaches of the NWHI. Green turtles may weigh upwards of 300 pounds. Leatherback turtles do not breed near Hawaii, but are often seen by fishermen. These giant reptiles may weigh up to 1500 pounds and may be identified by the ridges appearing lengthwise on the back shell.

If a seal or turtle becomes entangled or hooked, it should be released immediately by cutting the line as close to the hook as possible.

Any interactions with protected species (theft, fouled line, accidental hooking, etc.) must be reported so that problems can be understood, and, hopefully, resolved. Your use of the reporting forms will identify problem areas. If you are able to take photos of incidents, they will be very helpful in identifying species. The National Marine Fisheries Service will replace your film upon request.

PROTECTED SPECIES/BOTTOMFISHING INTERACTION OR INCIDENTAL "TAKE" FORM

PROTECTED SPECIES INFORMATION

Animals:_____Number:_____

Size:_____Date:_____Time:_____

Vessel:_____Observer:_____

Address & Ph:_____

Type of fishing activity:_____

Position (Lat/Long):_____Photos?(Y/N)____

Condition of animal upon release?:
Dead: ☐ Alive (injured): ☐ Alive (healthy): ☐

Comments (tags, injuries, description of incident):

(Reverse of Protected Species Information Form):

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

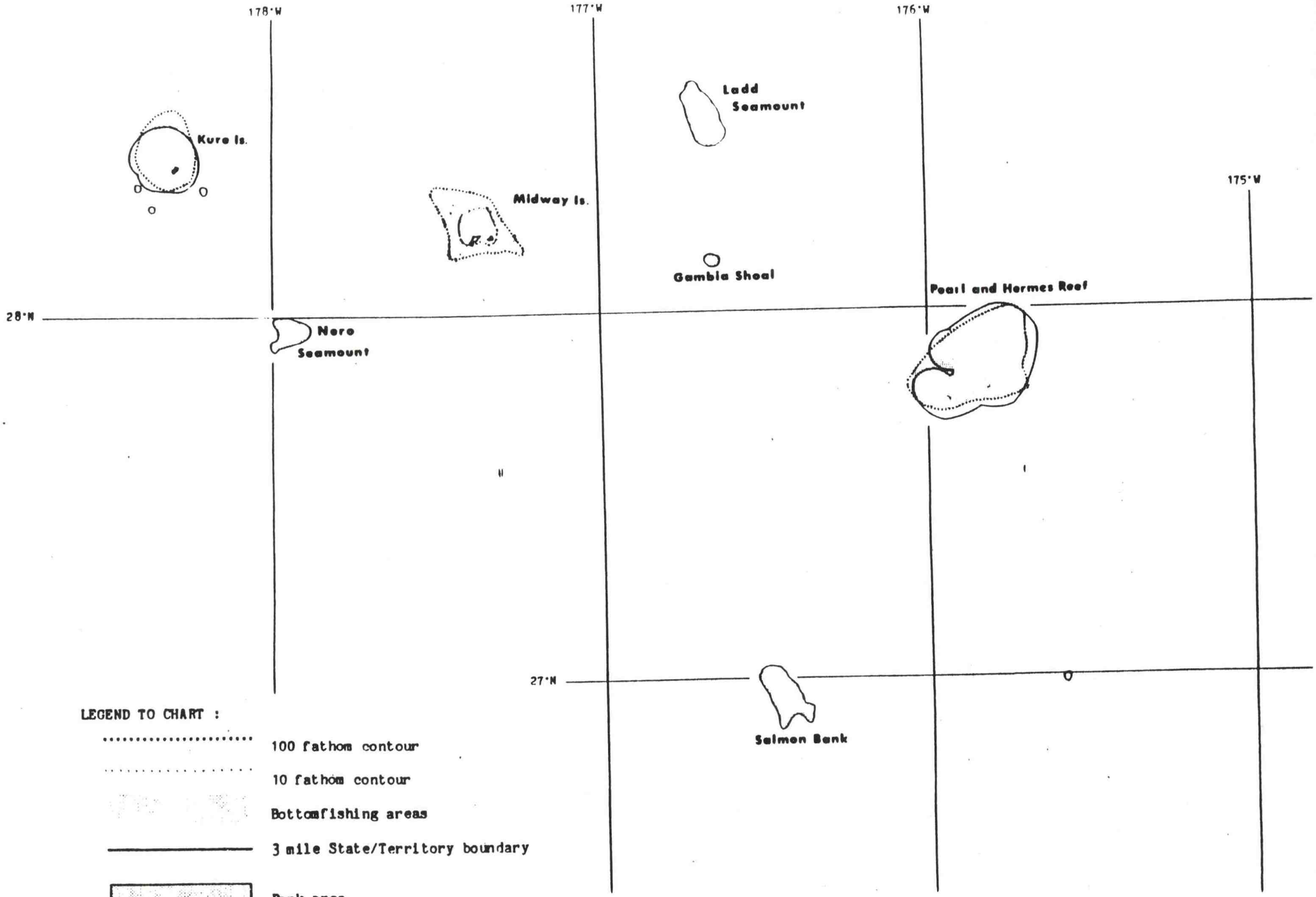
U.S.MAIL

POSTAGE AND FEES PAID

Western Pacific Program Office
Marine Mammal Division
SW Region, NMFS
P.O. Box 3830
Honolulu, Hawaii 96812

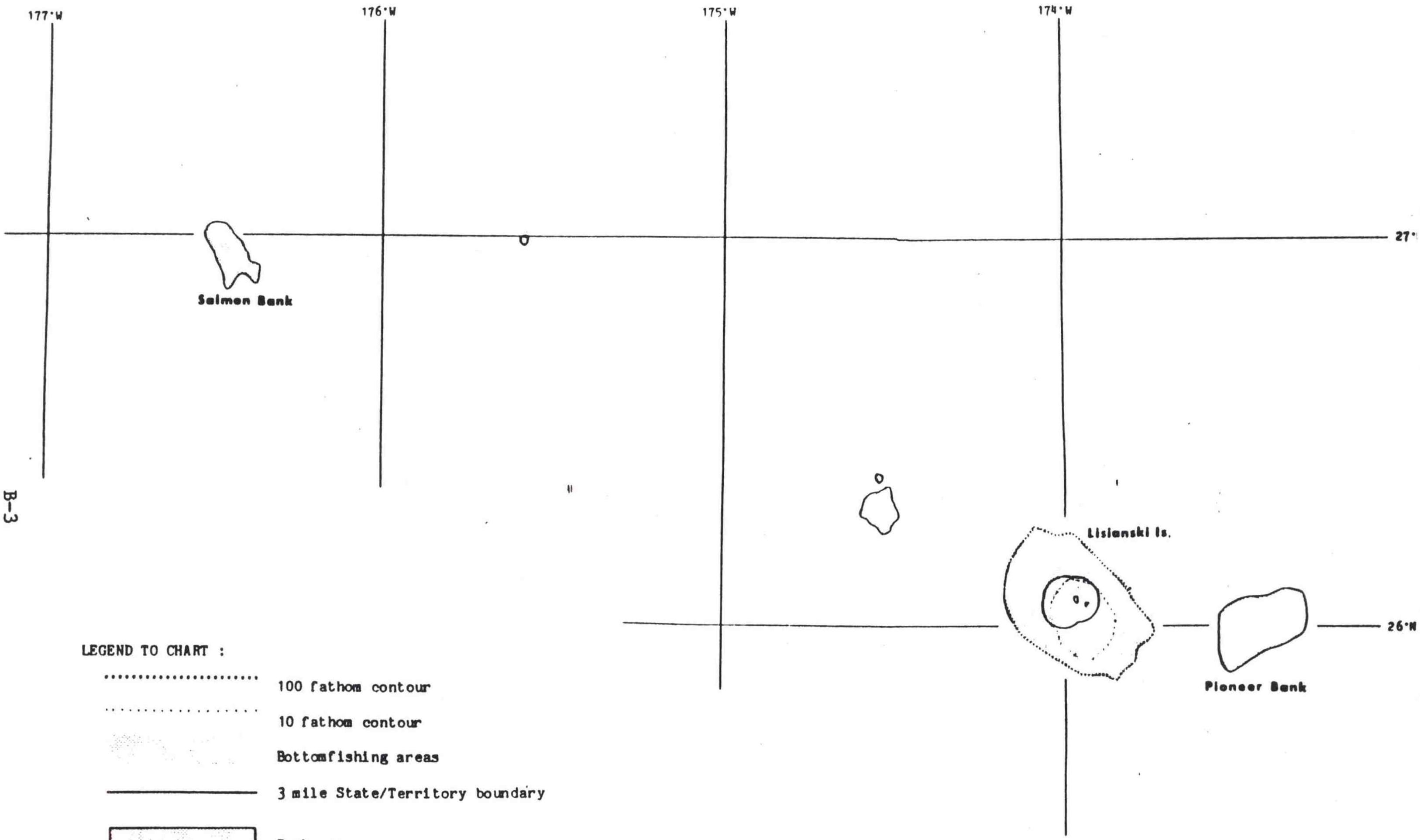
APPENDIX B

GENERALIZED MAP OF MAJOR BOTTOMFISHING GROUNDS



LEGEND TO CHART :

- 100 fathom contour
- 10 fathom contour
- Bottomfishing areas
- 3 mile State/Territory boundary
- Bank area



LEGEND TO CHART :

- 100 fathom contour
- 10 fathom contour
- Bottomfishing areas
- 3 mile State/Territory boundary
- Bank area

172°W

171°W

170°W

26°N

25°N

Laysan Is.

Maro Reef

Raita Bank

Northampton Seamounts

LEGEND TO CHART :

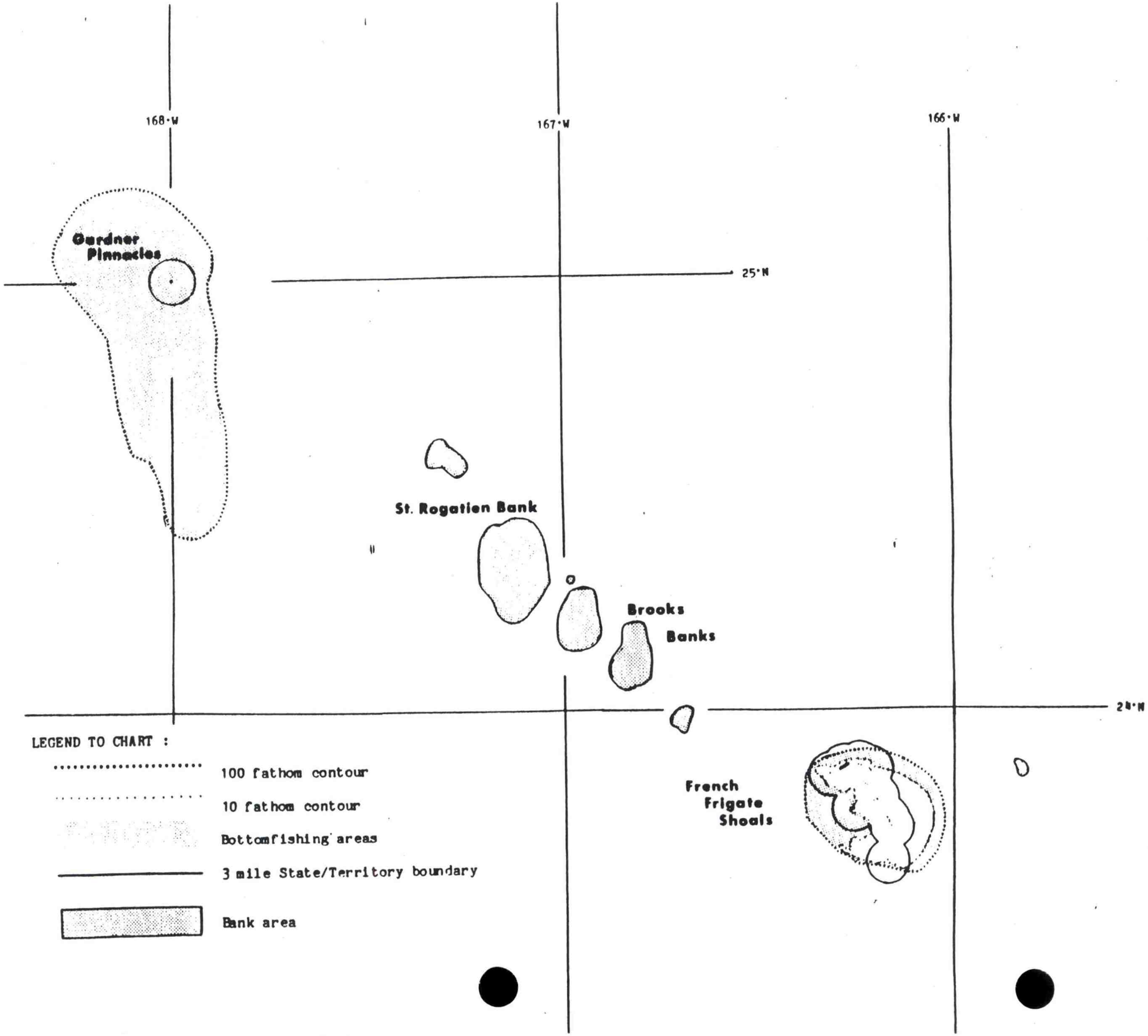
100 fathom contour

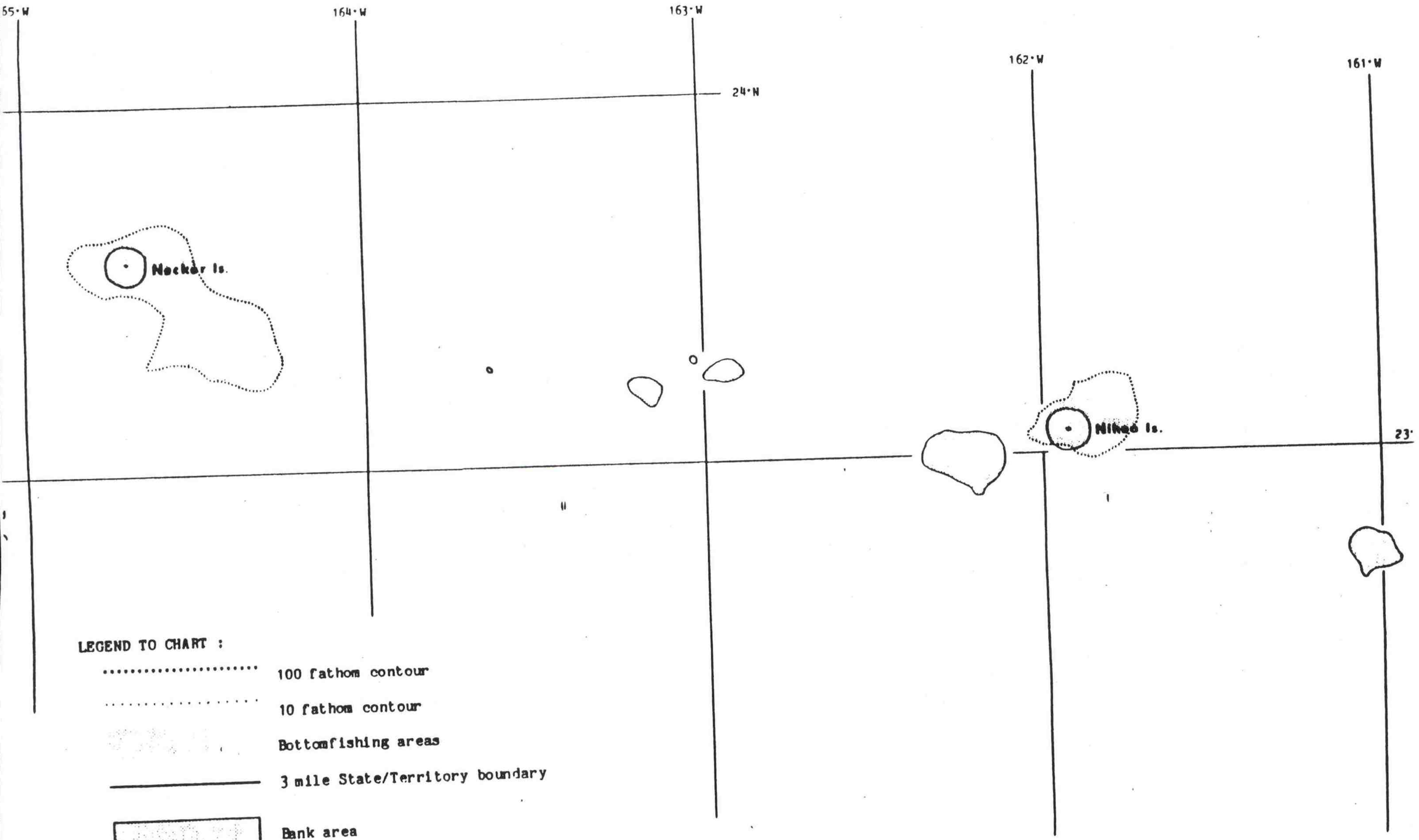
10 fathom contour

Bottomfishing areas

3 mile State/Territory boundary

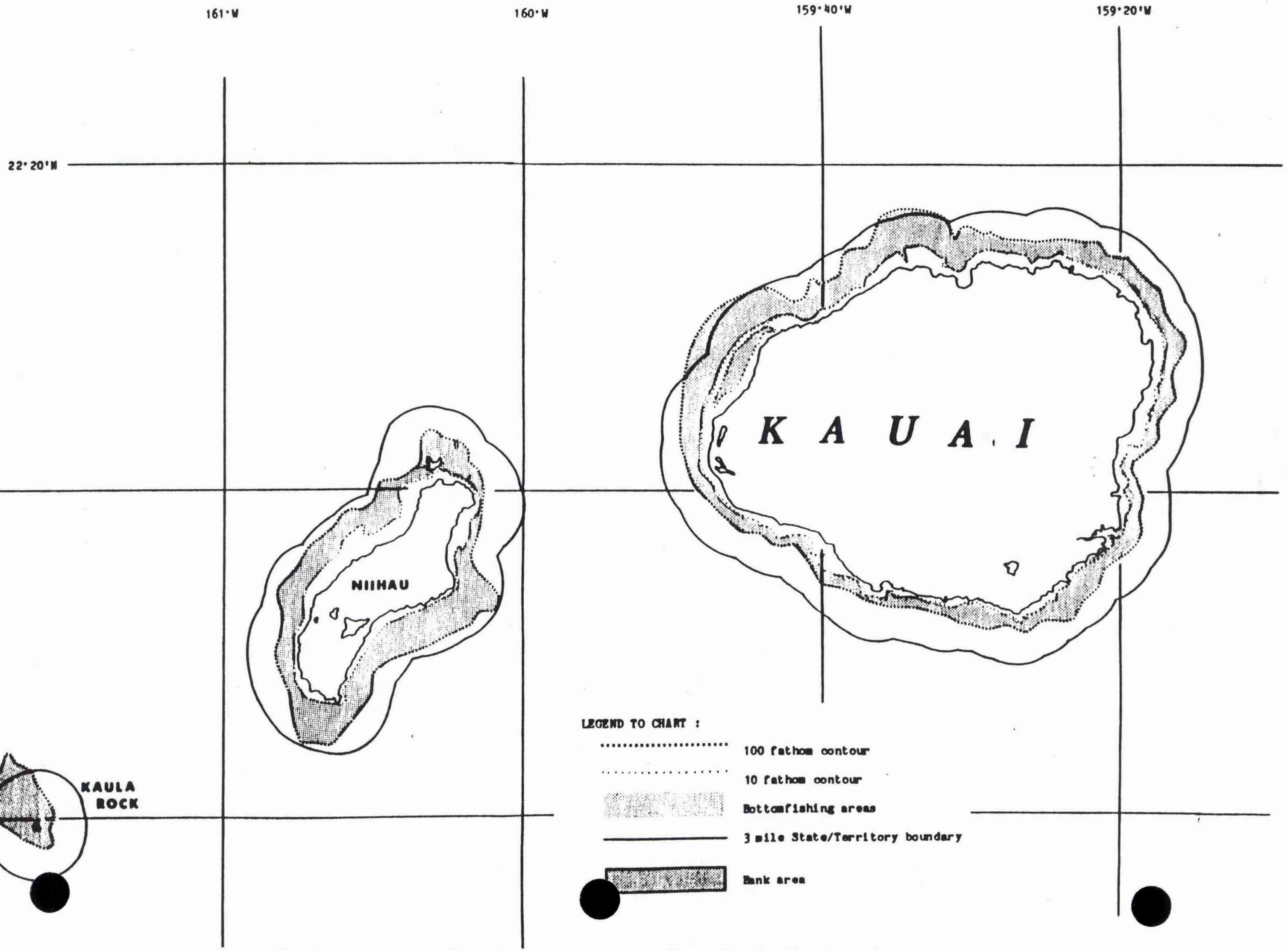
Bank area


168°W
167°W
166°W
25°N
24°N
Gardner Pinnacles
St. Rogatien Bank
Brooks Banks
French Frigate Shoals
LEGEND TO CHART :
100 fathom contour
10 fathom contour
Bottomfishing areas
3 mile State/Territory boundary
Bank area



LEGEND TO CHART :

.....	100 fathom contour
.....	10 fathom contour
	Bottomfishing areas
———	3 mile State/Territory boundary
	Bank area


161°W
160°W
159°40'W
159°20'W
22°20'N
22°N
21°40'N
KAUAI
NIIHAU
KAULA ROCK
LEGEND TO CHART :
100 fathom contour
10 fathom contour
Bottomfishing areas
3 mile State/Territory boundary
Bank area

158°20'W

158°W

157°40'W

21°40'N

21°20'N

O A H U

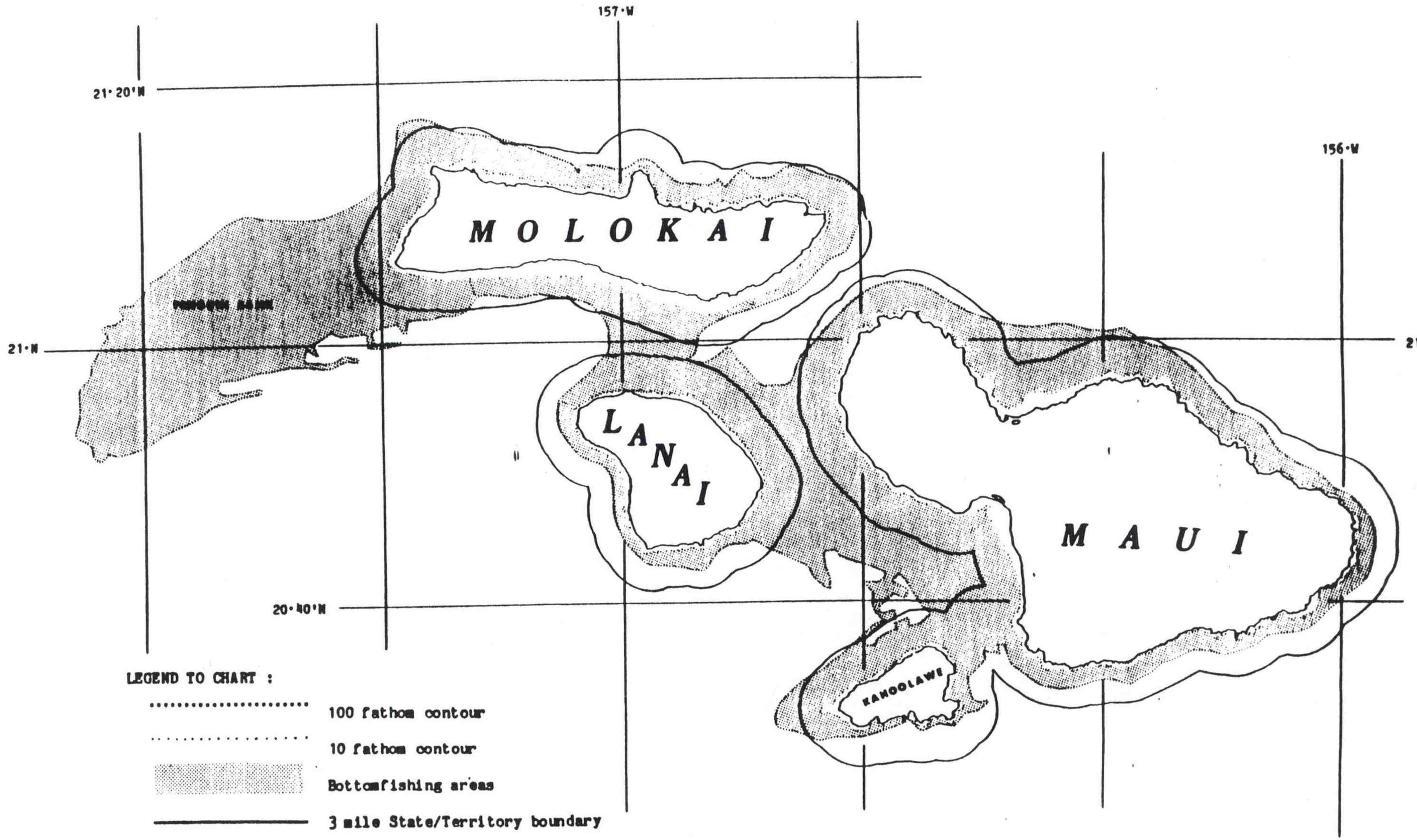
LEGEND TO CHART :

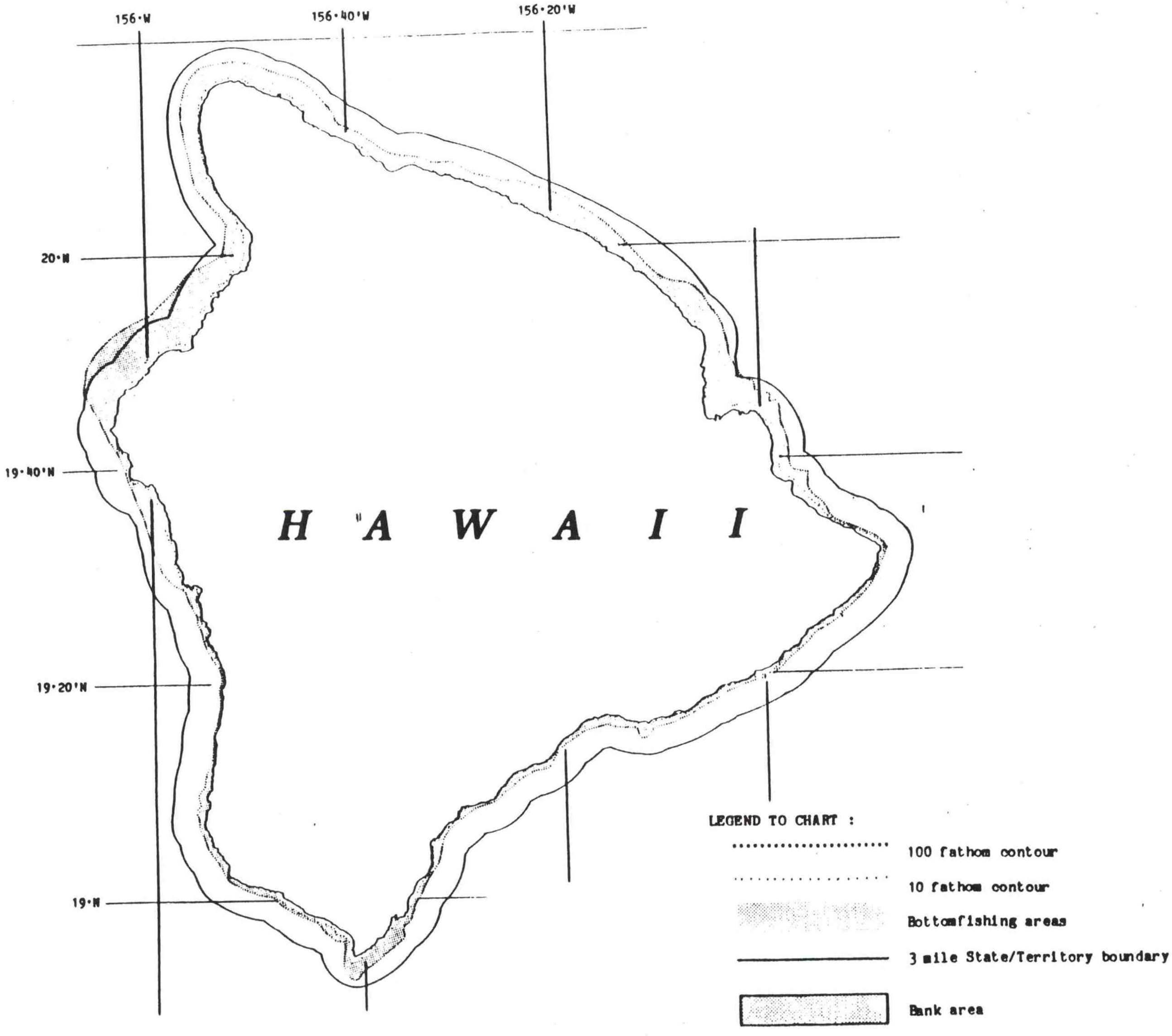
100 fathom contour

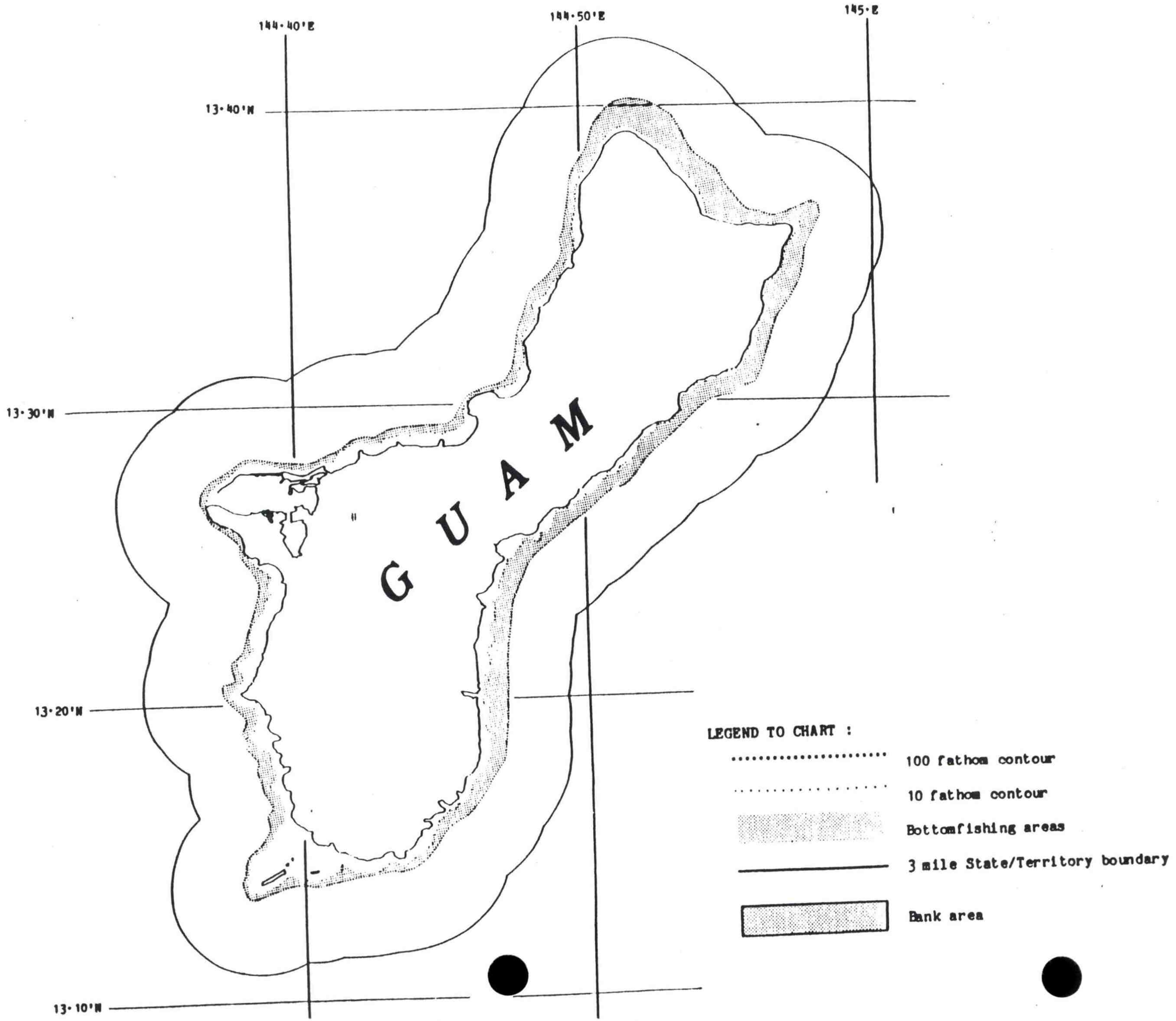
10 fathom contour

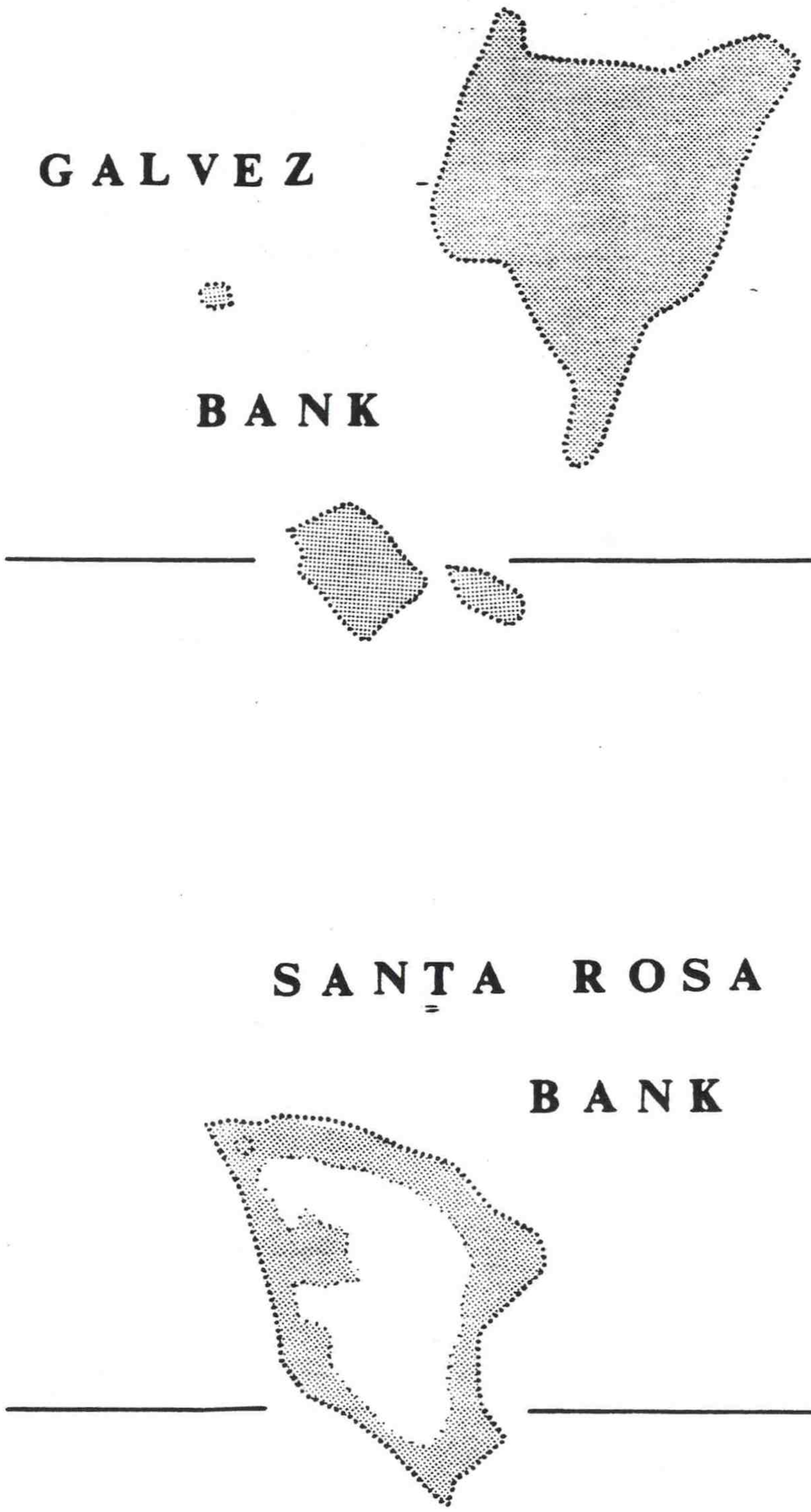
Bottomfishing areas

3 mile State/Territory boundary


157°W
21°20'N
156°W
MOLOKAI
21°N
LANAI
MAUI
20°40'N
KAHOOLAWE
LEGEND TO CHART :
100 fathom contour
10 fathom contour
Bottomfishing areas
3 mile State/Territory boundary
Bank area

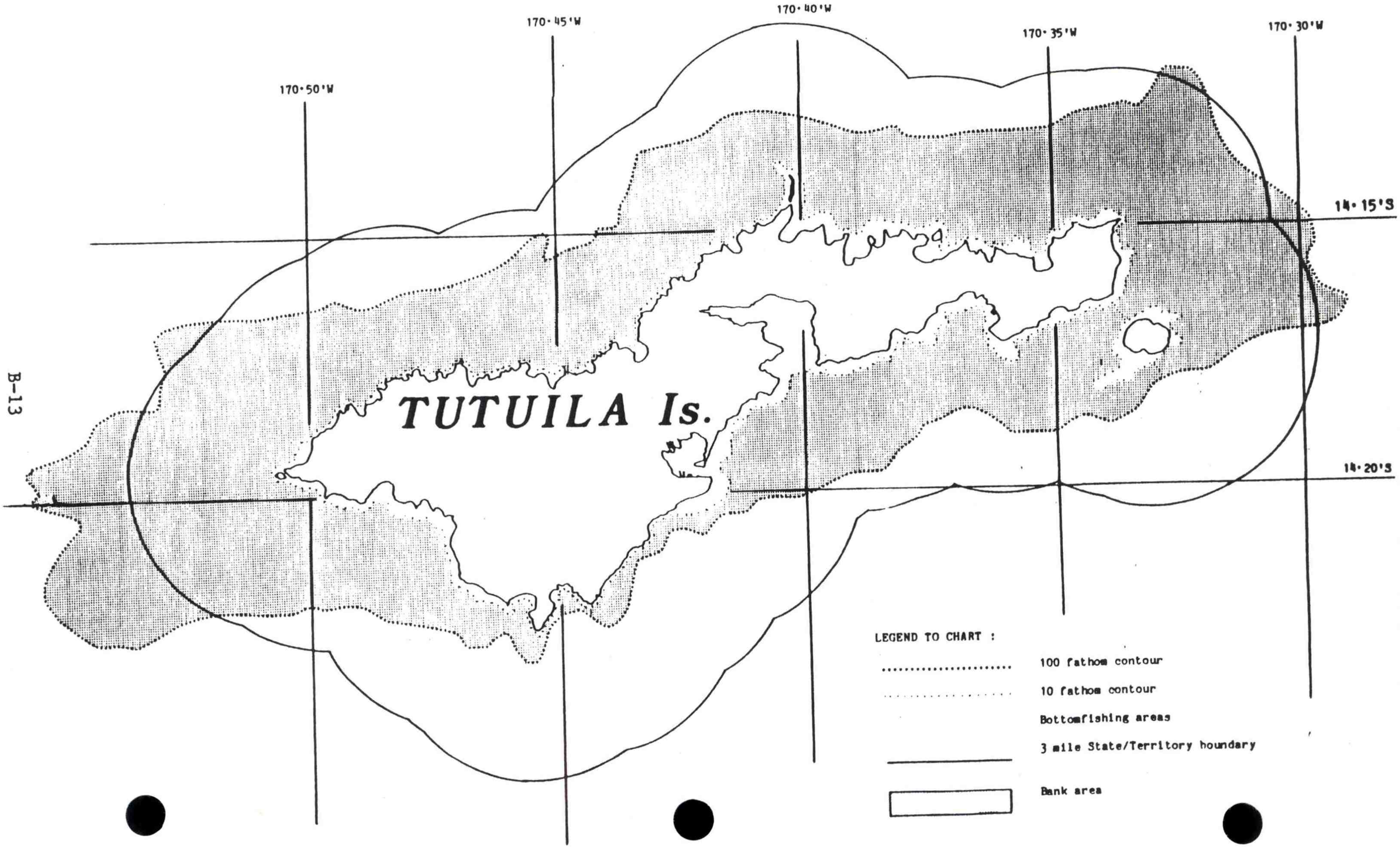

156°W
156°40'W
156°20'W
20°N
19°40'N
19°20'N
19°N
HAWAII
LEGEND TO CHART :
100 fathom contour
10 fathom contour
Bottomfishing areas
3 mile State/Territory boundary
Bank area

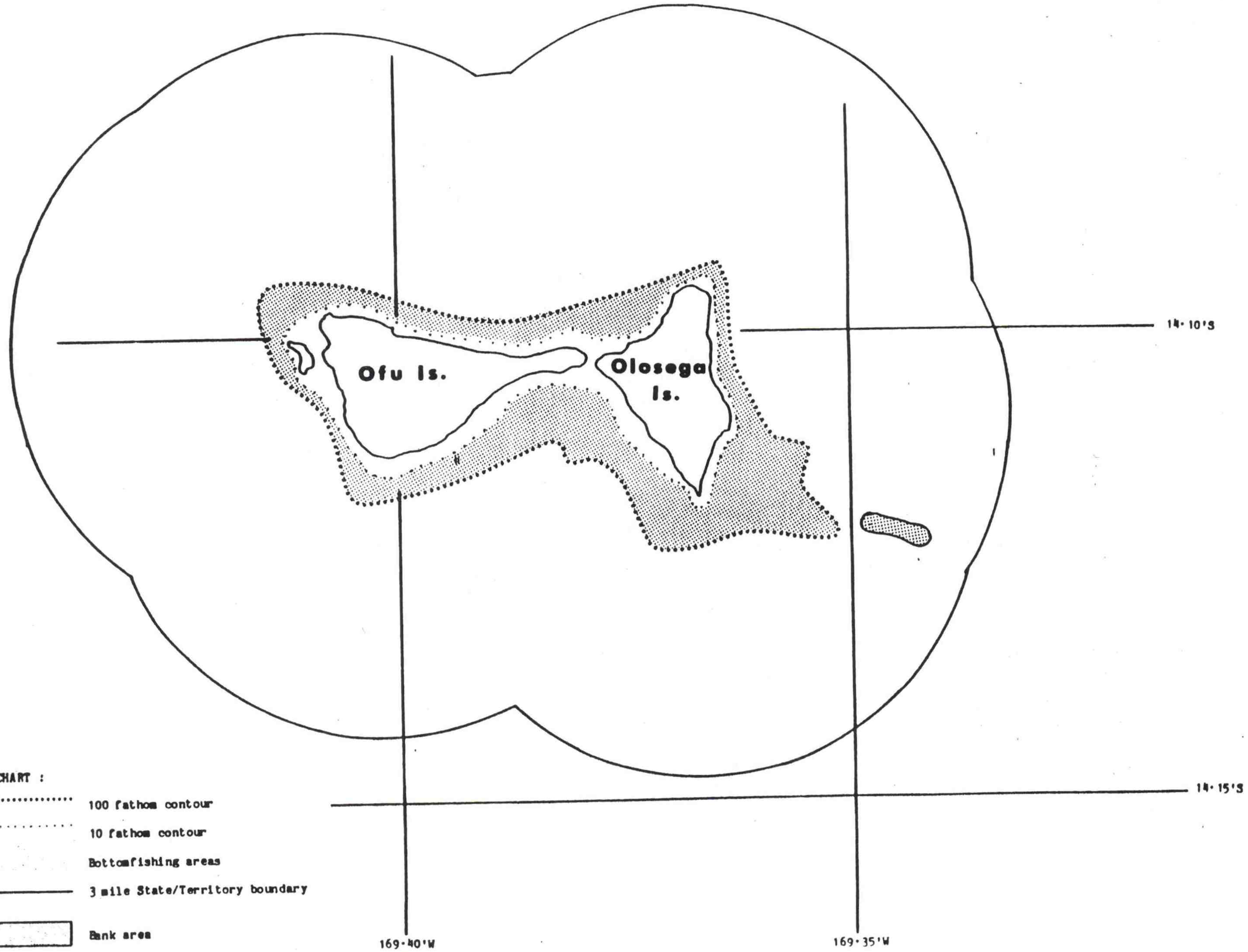

144·40'E
144·50'E
145·E
13·40'N
13·30'N
13·20'N
13·10'N
G U A M
LEGEND TO CHART :
100 fathom contour
10 fathom contour
Bottomfishing areas
3 mile State/Territory boundary
Bank area



LEGEND TO CHART :

- ..... 100 fathom contour
- ..... 10 fathom contour
- Bottomfishing areas
- ——— 3 mile State/Territory boundary
- Bank area


170°50'W
170°45'W
170°40'W
170°35'W
170°30'W
14°15'S
14°20'S
TUTUILA Is.
LEGEND TO CHART :
100 fathom contour
10 fathom contour
Bottomfishing areas
3 mile State/Territory boundary
Bank area


Ofu Is.
Olosega Is.
14° 10'S
14° 15'S
169° 40'W
169° 35'W
LEGEND TO CHART :
100 fathom contour
10 fathom contour
Bottomfishing areas
3 mile State/Territory boundary
Bank area

169°30'W

169°25'W

14°10'

TAU Is.

B-15

14°15'S

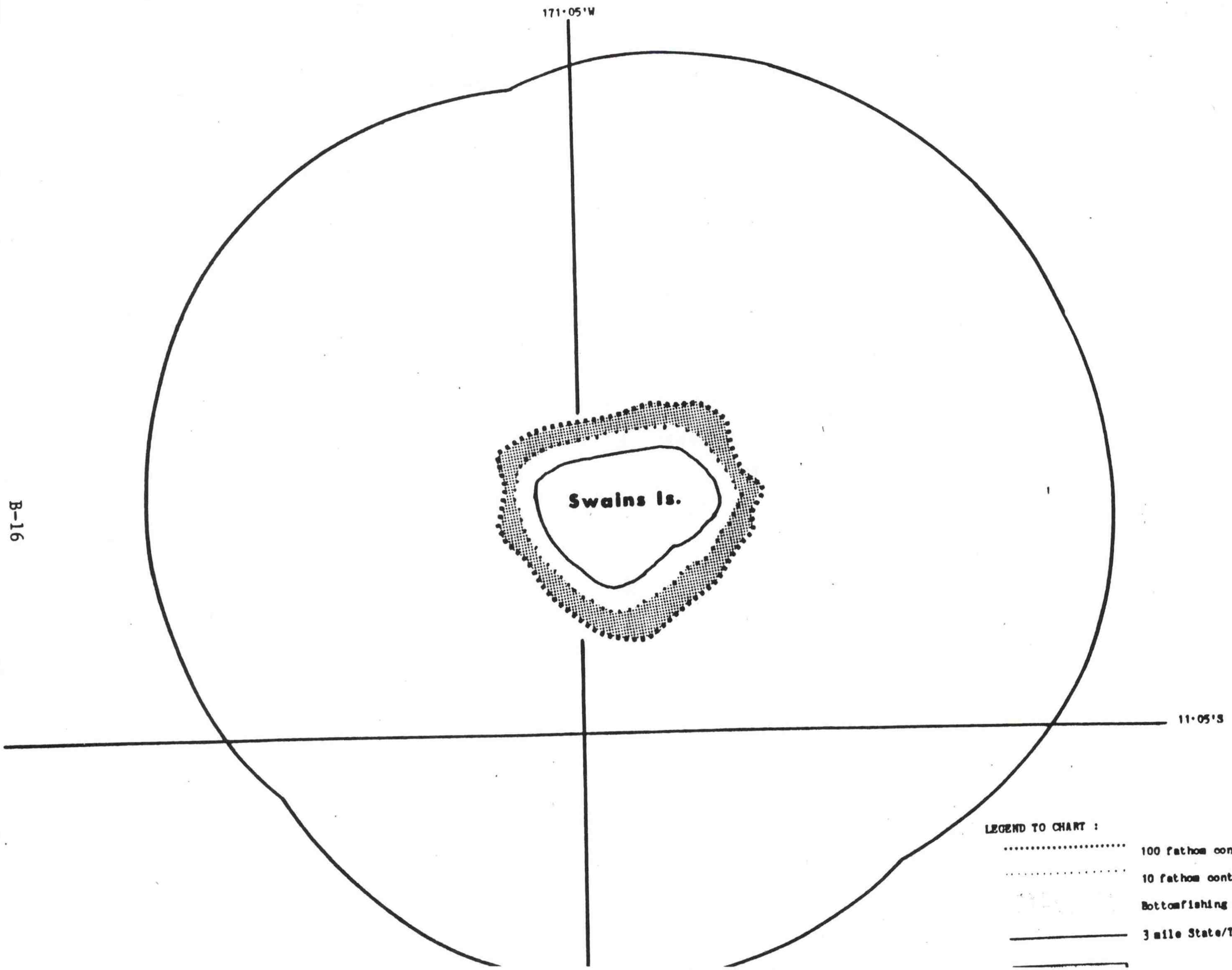
LEGEND TO CHART :

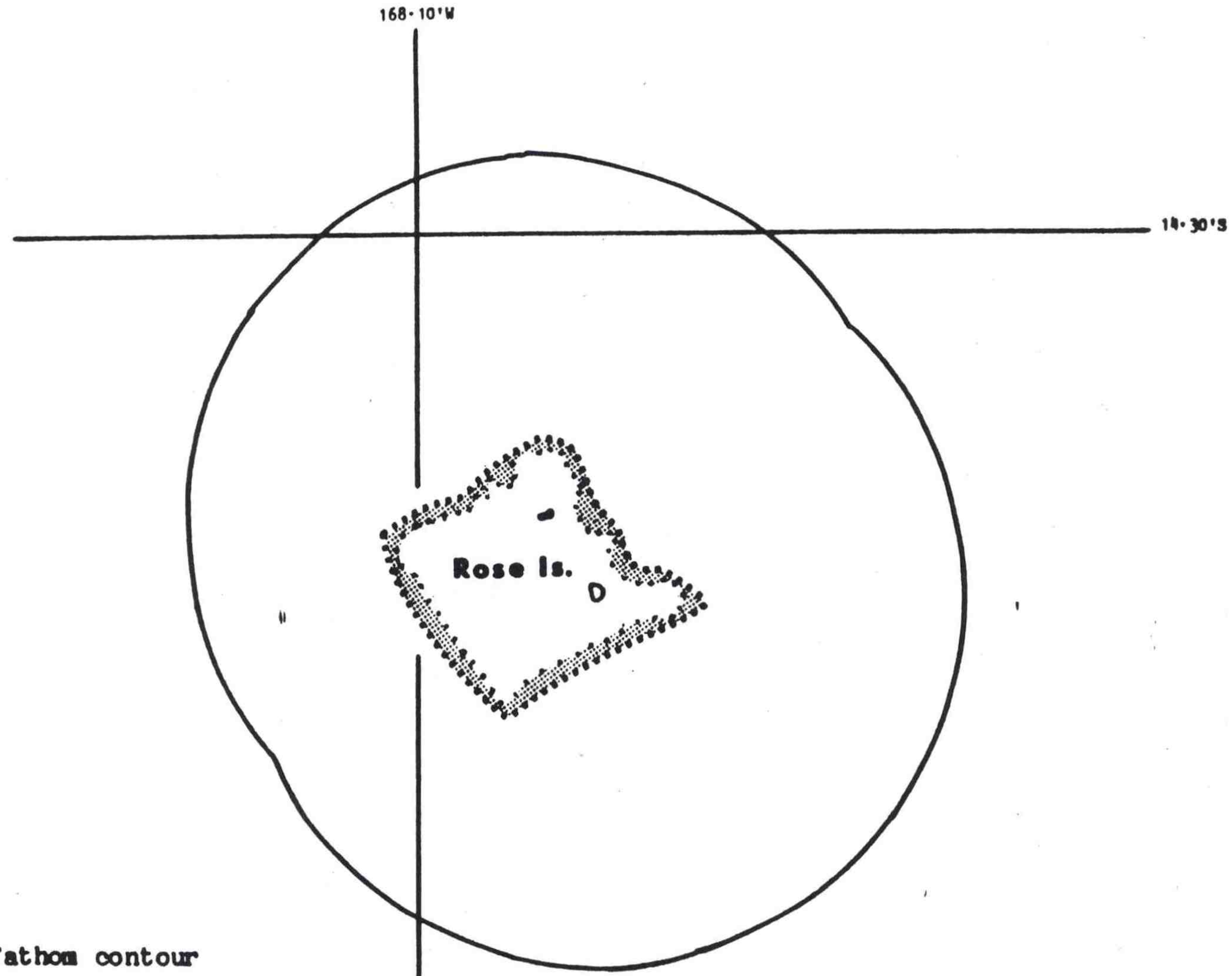
100 fathom contour

10 fathom contour

Bottomfishing areas

3 mi[illegible]te/Territory bounds


171°05'W
Swains Is.
11°05'S
LEGEND TO CHART :
100 fathom contour
10 fathom contour
Bottomfishing areas
3 mile State/Territory boundar



LEGEND TO CHART :

.....	100 fathom contour
.....	10 fathom contour
	Bottomfishing areas
———	3 mile State/Territory boundary
	Bank area

APPENDIX C

ADVISORY PANEL RESOLUTION

WESTERN PACIFIC REGIONAL FISHERY MANAGEMENT COUNCIL

1164 BISHOP STREET - ROOM 1405
HONOLULU, HAWAII 96813
TELEPHONE (808) 523-1368
FTS 546-8923

APPENDIX C

RESOLUTION

ADOPTED BY ADVISORY PANEL OF THE WHOLE

ON

AUGUST 7, 1985

WHEREAS, existing maps and charts of fishing grounds within the Fishery Conservation Zone (FCZ) around American Samoa are outdated and inaccurate, and

WHEREAS, updated and accurate maps and charts would reduce stress on fishing grounds which are presently exploited, and

WHEREAS, updated and accurate maps and charts will provide for growth and development of the local fishery in American Samoa, and

WHEREAS, updated and accurate maps and charts would assist the Western Pacific Regional Fishery Management Council in effectively managing the offshore fishery around American Samoa,

NOW, THEREFORE, BE IT RESOLVED that the Advisory Panel recommend to the Western Pacific Regional Fishery Management Council that appropriate action be taken to develop updated and accurate maps and charts of all fishing grounds in the FCZ around American Samoa.

8/7/85

APPENDIX D

STATE OF HAWAII -

A) CATCH REPORT FORM

B) COMMERCIAL FISHING PERMIT APPLICATION

C) FISHERIES CHART #3 OF THE NORTHWESTERN HAWAIIAN ISLANDS

D) FISHERIES CHART #2 OF THE MAIN HAWAIIAN ISLANDS

DEPARTMENT OF LAND AND NATURAL RESOURCES

FISH CATCH REPORT

DIVISION OF AQUATIC RESOURCES
STATE OF HAWAII

1. Name of Licensee ..... 2. Commercial Marine License No. ..... 8☐-☐☐☐☐

3. Name of Boat ..... 4. HA No. HA-☐☐☐☐-☐☐ 5. Federal No. ☐☐☐☐☐☐

6. Month Fished ..... 7. Year Fished —19☐☐ ☐ Place an "X" in the box if you did not fish.

8. Day Fished	9. Area Fished	9a. Buoy Fished	10. Type of Fishing Gear Used		11. Species Caught		12. No. Caught	13. Lbs. Caught	14. Lbs. Sold	15. Value of Lbs. Sold		16. Port of Landing

FG-1 (Rev.7/86)

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES

COMMERCIAL MARINE LICENSE
1985-1986

Effective: Date of Issue to June 30, 1986

LICENSE NO. 86-0001

LICENSE FEE

RESIDENT _____ x $25 = _____

NON-RESIDENT _____ x $50 = _____

GRAND TOTAL _____

☐ RENEWAL ☐ INDIVIDUAL
☐ NEW ☐ VESSEL
☐ MAIL ☐ VESSEL ADMENDMENT

Name (Last, First, Middle Initial)		Sex M☐ F☐	Birth Date	Weight	Height	Color of Hair	Color of Eyes
Mailing Address	City			County/State		Zip	
Residence	Street No. & Name	City			County/State		Zip
Birth Place	Length of Residence in Hawaii	U.S. Citizen? ☐Yes ☐No	Business Phone		Home Phone	☐ PART-TIME COMMERCIAL ☐ FULL-TIME COMMERCIAL**	

CHECK.

☐ CREW MEMBER

☐ BOAT CAPTAIN

☐ CHARTER

☐ SHORELINE FISHERMAN

Name of Boat

Name of Boat _____

HA. No. _____

Documented No.: _____

Number of Crew: _____

Port of Anchorage: _____

Monthly Fish Catch Report Required?

☐Yes ☐No

METHOD OF FISHING (Rank in order of Usage. No more than 3)

____Deepsea HL (opakapaka, onaga, ehu)
____Trolling
____Nets _____
Specify (gill, throw, trawl, purse, surround, etc.)
____Traps (pot)
____Ika-shibi/Palu-ahi
____Inshore HL (akule, opelu, moana)
____Spear
____Hand-pick (limu, opihi, etc.)
____Other (specify) _____
____Aquarium (C-6)
____Fish Pond (Pond)
____Pole & Line (Aku boats) (C-4)
____Longline (flagline, ahi boats) (C-5)
____Other Longline (kaka line, set line)

AREA FISHED
☐ HI ☐ NWHI ☐ Other Specify _____

X _____
SIGNATURE OF LICENSEE

If Minor below age 18 _____
PARENT OR GUARDIAN

VALIDATION (LAND AND NATURAL RESOURCES USE ONLY)

_____
AGENT

DATE _____ ISLAND _____

*ANY PERSON WHO HAS RESIDED IN THE STATE FOR ONE YEAR OR LONGER (HAWAII REVISED STATUTES § 189-2)
**ANY PERSON WHO DERIVES MORE THAN ONE-HALF OF HIS GROSS ANNUAL INCOME FROM FISHING.

"ORIGINAL TO LICENSEE"

	2512	2412	2413	2307	2214	2215													
2510	2511	2411	2410	2306	2213	2212	2113	2114											
2509	HANCOCK BANK 2540	2408	2409	2305	2210	2211	2112	2111	1907	1807									
2508	2507	2407	2450 KURE	2340 MIDWAY	2209	2260	2109	2110	1906	1806	1706	1606	1512	1513					
2505	2506	2405	2406	2304	2240	PEARL & HERMES REEF 2250	2108	2107	1905	1805	1705	1605	1511	1510	1213				
2504	2503	2404	2403	2303	2208	2207	2170	2160	1904	1804	1704	1604	1508	1509	1211	1212	1113	1112	1017	1016	1015
2501	2502	2401	2402	2302	2205	2206	2140	PEARL & HERMES REEF 2150	NORTHAMPTON BANKS 1940	LAYSAN 1840	MARO REEF 1740	RASTA BANK 1640	1570	HANCOCK BANK 1560	1210	1209	1111	1110	1012	1013	1014
				2301	2204	2203	2105	2106	1903	1803	1703	1603	1540	ST ROGATIEN BANK 1550	BROOKS BANKS 1250	1208	1109	1108	1011	1010	1009
					2201	2202	2104	2103	1902	1802	1702	1602	1507	1506	1240	1207	NECKER 1140	1107	1070	NIHOA 1060	1008
							2101	2102	1901	1801	1701	1601	1504	1505	1205	1206	1105	1106	1040	1050	REFER TO FISHERIES CHART NO 2
													1503	1502	1204	1203	1104	1103	1007		
														1501	1201	1202	1101	1102	1006	1005	1004
																			1001	1002	1003

31° 30° 29° 28° 27° 26° 25° 24° 23° 22° 21° 20° 19°

174° 173° 172° 171° 170° 169° 168° 167° 166° 165° 164° 163° 162° 161°

THE NORTHWESTERN HAWAIIAN ISLANDS

NIHOA (including bank area)	1060
NECKER (including bank area)	1130
FRENCH FRIGATE SHOALS (including bank area)	1230
BROOKS BANKS	1250
ST ROGATIEN BANK	1430
GARDNER PINNACLES (including bank area)	1530
RASTA BANK	1630
MARO REEF (including bank area)	1730
LAYSAN (including bank area)	1830
NORTHAMPTON BANKS	1930
PIONEER BANK	2030
LISIANSKI (including bank area)	2130
PEARL & HERMES REEF (including bank area)	2230
MIDWAY (including bank area)	2330
KURE (including bank area)	2430
HANCOCK BANK	2530

FISHERIES CHART NO 3

This Chart should be kept on board all fishing boats for use in making out monthly fish catch reports Indicate the approximate area where fish were caught by putting the area number in the 'AREA FISHED' portion of the catch report

The shaded areas include the bank areas (approximately 100 fathoms or less) around the major islands and banks in the Northwestern Hawaiian Islands To obtain the area number for these areas refer to the listing in the upper right corner of this chart or refer to the number in parentheses of the appropriate island or bank e g Necker (1138) Rasta Bank (1638) etc

The blocks on this chart represent the areas covered by 1 degree latitude and 1 degree longitude or approximately 60 miles by 60 miles

Should areas be fished which are not identified on this chart indicate the approximate location of the area by longitude and latitude

THIS CHART IS NOT INTENDED FOR USE IN NAVIGATION.

FISHERIES CHART NO. 2

This Chart should be kept on board all fishing boats for use in making out fish catch reports. Indicate on the catch report the area or areas where fish were caught by writing on the blank line immediately following "Area of Catch" the area number or area numbers as given on this chart.

The shaded areas represent the inshore areas which extend just beyond the reefs, roughly 2 miles from the coastline.

The offshore areas extend from the outer boundaries of the inshore areas to 20 miles from the coastline.

The blocks on the chart represent the mid-ocean areas which cover twenty minutes of latitude and twenty minutes of longitude. Should mid-ocean areas be fished which are not shown on the chart, indicate on the catch report the latitude and longitude of the catch as well as the course of the fishing trip; e.g., 14° N, 159° W, from Christmas Island to Honolulu.

Should islands be fished which are not given on this chart, indicate on the report, the name or names of the islands fished; e.g., Pearl and Hermes Reef or Christmas and Fanning Islands.

Additional copies of this chart may be obtained from the Division of Fish and Game.

THIS CHART IS NOT INTENDED FOR USE IN NAVIGATION.

APPENDIX E

WPACFIN MEMORANDUM ON ANNUAL FISHERIES STATISTICS

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory
P. O. Box 3830
Honolulu, Hawaii 96812

September 11, 1985

TO: Distribution List

FROM: David C. Hamm, WPACFIN Program Manager

During the last Fisheries Data Coordinating Committee and Technical Subcommittee meetings it was decided that WPACFIN participants would begin producing an annual series of summary reports of fisheries statistics from the Pacific islands. The major purpose of the series is to disseminate regional fisheries data in a concise and timely manner, thereby reducing the number of data requests received by participants each year. Reports in the series will be informational and summary in nature and will not contain confidential information or scientific interpretation or analysis of the statistics. Some simple trends may be provided in graphical form, but analytical interpretation of them will not be made. The series will also help meet many of the standard, recurrent reporting requirements of most participants and will serve to tie the network together as a functioning entity.

As a WPACFIN participant, you will be one of the principle users of these reports. Therefore, I am requesting your suggestions and comments in developing the series. I have met with representatives of the major data contributing agencies and developed a basic outline for the series.

As it is currently designed the series will contain reports from Guam, the Commonwealth of the Northern Marjana Islands (CNMI), and American Samoa. It is unlikely that Hawaii will be able to provide landings information on a timely enough basis to be included in the annual series because the Hawaii data collecting and processing system still has about a 2-year lag time. However, the Division of Aquatic Resources is working to improve that situation and if they do, their reports will be added to the series. The first report in the series will include data from about 1980 to 1984 and will include available data from Hawaii. Subsequent reports will be produced annually and will be available as soon after the end of the calendar year as possible. These annual updates will contain only the most recent year's data unless updates to previously published data are needed.

Each report in the series will contain an introductory and overview section with comments about WPACFIN, its participants, the diversity of data collection systems, limitations of the data, and precautions for interpretation and comparison of the data sets. The remainder of each document will be divided into island specific sections. Each section will include a more detailed description of the origin and use of that island's data. All reports will be arranged on a calendar year basis, but each island's reports may vary in specific content and format based on their data collecting and reporting capabilities. Some reports will be provided

by WPACFIN central and some by each of the fisheries offices. The WPACFIN central will be responsible for final compilation and editing of the series.

Presently, the following island specific reports have been identified for inclusion in the series.

I. Guam

A. Guam Offshore Expansion System (GOES) reports:

1. Catch and effort reports - Monthly and calendar year reports by method will contain estimated weight in pounds and effort in boat hours, boat count, person hours, and person count. All estimates will include standard error and 90% confidence limits.

2. Species reports - Monthly and calendar year estimates of total weight and weight by method including percent species composition for totals and by method.

B. Guam Inshore Expansion System (GIES) reports:

1. Catch and effort reports - Similar to A.1. above, but for inshore methods and calendar year totals only.

2. Species reports - Similar to A.2. above, but for inshore methods and calendar year totals only.

C. Combined GOES/GIES species summary - Calendar year total weight and percent species composition regardless of method.

D. Commercial landings - Monthly and calendar year reports by species containing pounds, value, and average price per pound.

E. Vessel reports - Descriptive fleet characteristics and classification.

F. Special reports - See explanation to follow.

II. Commonwealth of the Northern Mariana Islands

A. Saipan Offshore Expansion System (SOES) reports - Similar to I.A.1., but for the island of Saipan.

B. Commercial landings - Similar to I.D., but for the island of Saipan.

C. Vessel reports - Similar to I.E., but for the CNMI.

D. Special reports - See explanation to follow.

III. American Samoa

A. Commercial landings sampling - Similar to I.D. and II.B.

B. Vessel reports - Similar to I.E. and II.C.

C. American Samoa Expansion System (ASES) reports - This data collecting and processing system is to be implemented in late 1985 and reports from it will be included in the summary report series in the future. Reports similar to I.A.1. and I.A.2. will be included.

D. Special reports - See explanation below.

SPECIAL REPORTS

It is envisioned that each island specific report will contain some special reports on species of particular interest or importance such as the pelagic management unit species, tunas, and other migratory or seasonal species. Species identified thus far are mahimahi, billfish, wahoo, skipjack tuna, yellowfin tuna, and white or dogtooth tuna. Other species can be added if desired. Summary tables and graphs of estimated total and/or commercial landings (depending on availability of data) will be provided for each species. Both monthly and annual graphs will be provided for seasonality and trend comparisons.

Since I helped establish a WPACFIN compatible system in Palau in 1983, it is possible to include commercial landings data from the Republic of Belau from mid-1983 to the present if it is desired and Belau agrees to do so. I also helped establish a similar system in Yap in 1984, so data from Yap may also become available for inclusion in the future if desired.

Your timely comments and suggestions regarding all aspects of the proposed summary report series (including suggestions for a title) will be appreciated. Thank you.

Distribution List:

Richard Shomura, SWFC/HL
Kitty Simonds, WPRFMC
Doyle Gates, WPPO
E. Charles Fullerton, SWR
Henry Sakuda, Hawaii DAR
Ray Tulafono, American Samoa OMR
Harry Kami, Guam DAWR
Arnold Palacios, CNMI DFW

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
Honolulu Laboratory
P. O. Box 3830
Honolulu, Hawaii 96812

December 18, 1985 F/SWC2:DCH

TO: DISTRIBUTION LIST

FROM: David C. Hamm, FDCC/TS Executive Officer, WPACFIN Program Manager

SUBJECT: Western Pacific fishery statistics report series

Since writing my September 11, 1985 memo describing the general contents of the upcoming report series, I've received comments, questions, and additional information that I would like to pass on to you. First of all, the Hawaii Division of Aquatic Resources (DAR) will have completed processing 1984 data as of this week and will be making those data available for inclusion in the first volume of the series. We will be including annual and monthly summaries by species for Hawaii for the calendar years 1979 through 1984. Staff from DAR are optomistic that they will be able to further reduce their data processing lag time to about 6 months, so it is possible that the 1985 annual report series, tentatively scheduled for late summer 1986, will include data for Hawaii as well. Secondly, data for Palau will most likely appear in the second volume with data for Guam (formal approval pending). Finally, the following graphs have been identified for use in the series to provide a more visual presentation of the data:

I. Monthly landings for each year's worth of data

   A. Fisheries mix of Troll, Bottom, Reef, and Miscellaneous
   B. Tunas, Pelagic Management Unit Species (PMUS), and Bottomfish Management Unit Species (BMUS)
   C. Wahoo, Mahimahi, and Billfishes
   D. Skipjack, Yellowfin, and Other Tunas

II. Seasonality plots using average monthly landings over time period

   A. Tunas, PMUS, BMUS
   B. Wahoo, and Mahimahi
   C. Blue Marlin, Sailfish, Spearfish (and other billfishes where applicable)
   D. Skipjack, Yellowfin, Other Tunas
   E. BMUS, and the 2 most important (by weight) species of the BMUS

III. Annual Trends

A. Total Commercial Landings (pounds and value)
B. Fisheries Mix of Troll, Bottom, Reef, Miscellaneous
C. Tunas, PMUS, BMUS
D. Skipjack, Yellowfin, Other Tunas
E. Wahoo, Mahimahi, Billfish

IV. Species plots of monthly landings over the entire time series for Wahoo, Mahimahi, Blue Marlin, Sailfish, Spearfish, Skipjack tuna, Yellowfin tuna, and two of the most important bottomfish species in each island area

Each island's reports will be separate within the document and will follow this general format:

I. Narrative introduction/ background.

II. Yearly reports including annual and monthly landings by species followed by graphs of type I above. All years will be presented in sequence.

III. Remaining graphs in same order as described above.

IV. Other reports and information as required and available.

Distribution List:

Izadore Barrett, SWFC
Richard Shomura, SWFC/HL
Kitty Simonds, WPRFMC
Doyle Gates, WPPO
E. Charles Fullerton, SWR
Henry Sakuda, Hawaii DAR
Ray Tulafono, American Samoa OMR
Rufo Lujan, Guam DAWR
Harry Kami, Guam DAWR
Arnold Palacios, CNMI DFW

APPENDIX F

COST/BENEFIT COMPARISON OF FMP ALTERNATIVES

COST/BENEFIT COMPARISON OF FMP ALTERNATIVES

General approaches to managing the western Pacific bottomfish and seamount groundfish fisheries were compared qualitatively and quantitatively to the extent allowed by the available data.

F.1 Bottomfish Alternatives Evaluated

A. Federal or State/Territory Management

The most basic choice facing the Council was whether (1) to take no action and maintain the status quo (no short-term and long-term management of the bottomfish fishery in the FCZ; (2) to establish short-term and long-term Federal management in the FCZ; or (3) to support State/territory management programs in the short-term while working in the long-term toward Federal or Federal/State or territory management of the bottomfish fisheries across the range of the respective stock units. The options were evaluated for each management sub-area -- American Samoa, Guam, Hawaii.

F.1.1 American Samoa

In American Samoa, most of the fishing pressure on bottomfish stocks occurs inside the territorial sea, and the FCZ is viewed as an area where domestic harvesting of underutilized bottomfish resources could be expanded. At present, the FCZ fishery produces only about 8,000 pounds annually (10% of total bottomfish harvest). If valued at $1.75 per pound (ex-vessel), the FCZ portion of the bottomfish fishery is presently worth $14,000. Based on existing charts of the FCZ, bottomfishing grounds under Federal jurisdiction and within reasonable traveling distance from the fresh fish market may have the potential to produce an additional 12,000 pounds per year, worth $21,000 ex-vessel and perhaps twice that amount at the wholesale level. Although better charting of the FCZ might indicate greater potential, the value of the FCZ fishery would still not be large enough to justify any additional Federal expenditure for data collection or enforcement. A Federal catch reporting requirement for the FCZ is also unjustified considering the potential catch and catch value in the FCZ.

The major limitation on bottomfish production, in the territorial sea as well as in the FCZ of American Samoa, is the small amount of natural habitat which satisfies the depth requirements of bottomfish. Considering this inherent limitation on fishery potential, the Council concluded that the only immediate action that would be justified in the FCZ would be to prohibit the use of explosives and poisons and on trawl nets and bottom-set nets to harvest bottomfish. These destructive fishing techniques could have a long-lasting and detrimental effect on bottomfish habitat. A prohibition on gear which could be detrimental to fish habitat in the FCZ would be supportive of future American Samoa Government resource conservation initiatives in the territorial sea (Office of Marine Resources personnel, pers. comm.) (Appendix I).

The gear restrictions proposed for the FCZ (prohibition against the use of bottom trawl and bottom-set nets and against the use of explosives or poisons for fishing) can only practically be enforced by port inspections because at-sea enforcement resources are severely limited. The capabilities of the NMFS and the Coast Guard to perform port inspections in American Samoa are practically non-existent, and the FMP does not recommend an additional Federal expenditure solely for this purpose. The most cost-effective method of enforcement of the recommended gear restrictions would be by American Samoa government personnel who are enforcing similar locally-adopted restrictions for the territorial sea. Table F.1 summarizes the management options for American Samoa.

TABLE F.1

EVALUATION OF MANAGEMENT OPTIONS FOR AMERICAN SAMOA BOTTOMFISH FISHERY

Options	Evaluation
Administrative "framework" for raising management concerns and recommending future regulatory adjustments in FCZ and territorial sea.	Desirable if data collection and analysis are maintained at existing levels of expenditure.
No short-term and long-term management by Federal regulations.	Acceptable only if ASG is able to take effective action independently to protect habitat and to initiate other conservation measures when needed.
Short-term and long-term management by Federal regulations.	Unacceptable due to small potential yield of FCZ Fishery.
Federal gear restrictions in FCZ to support ASG protection of extremely limited habitat.	Desirable in support of ASG initiatives to protect habitat by a prohibition on destructive fishing methods (i.e., explosives and poisons) if enforcement can be accomplished through port inspections which consolidate several enforcement activities.

F.1.2 Guam

In Guam, the present distribution of the bottomfish fishery is similar to that in American Samoa. However, the FCZ is better charted, and the potential exists for perhaps an annual yield of 27,000 pounds from the FCZ. If valued at the 1983 average price (ex-vessel) of $1.89 per pound, the FCZ fishery is potentially worth approximately $51,000 per year. As in American Samoa, habitat seems to be the most limiting factor and protection of habitat against long-lasting damage by explosives, poisons, trawl and bottom-set nets is the most urgent management need. The potential value of the FCZ fishery is too small to justify additional Federal expenditures specifically for bottomfish management, and the general recommendations for American Samoa also apply to Guam.

The gear restrictions proposed for the FCZ (prohibition against the use of bottom trawl and bottom-set nets and against the use of explosives or poisons for fishing) can only prac-

tically be enforced by port inspections because at-sea enforcement resources are so severely limited. The NMFS and the Coast Guard have the capability to perform port inspections in Guam, but the FMP does not recommend an additional Federal expenditure solely for this purpose. The most cost-effective method of enforcement of the recommended gear restrictions would be by Guam government personnel who are enforcing similar locally-adopted restrictions for the territorial sea. Table F.2 summarizes the management options for Guam.

TABLE F.2

EVALUATION OF MANAGEMENT OPTIONS FOR GUAM BOTTOMFISH FISHERY

Options	Evaluation
Administrative "framework" for raising management concerns and recommending future regulatory adjustments in FCZ and territorial sea.	Desirable if data collection and analysis is maintained at existing levels of expenditure.
No short-term and long-term management by Federal regulations.	Acceptable if Government of Guam is able to take effective action to protect habitat and to institute other conservation measures when needed.
Short-term and long-term management by Federal regulations.	Unacceptable due to small potential yield of FCZ fishery.
Federal gear restrictions in FCZ to support Government of Guam protection of extremely limited habitat.	Desirable in support of Government of Guam rules against destructive fishing methods (i.e., explosives and poisons) if enforcement can be accomplished through port inspections which consolidate several enforcement activities.

F.1.3 Hawaii

Although bottomfish catch data for Hawaii are not reported in a manner that allows clearcut differentiation of the FCZ and territorial sea fisheries, maps of the major bottomfishing grounds (see Appendix B) and interviews with fishermen suggest that the vast majority (80%) of the bottomfish catch off the main Hawaiian Islands is from the territorial sea, whereas the vast majority (90% or more) of the bottomfish catch in the

NWHI is from the FCZ. The State of Hawaii (and the territories) have jurisdiction over vessels registered with them even if those vessels fish in the FCZ, so long as the management regime does not contravene Federal regulations.

Like Guam, the State of Hawaii has rules which prohibit the possession or use of explosives or poisons for fishing. Although bottomfish habitat off the Hawaiian Islands is not as severely restricted as off Guam or American Samoa, habitat is the major factor which limits fishery yields and the arguments for prohibiting destructive fishing gear in the FCZ off Hawaii are the same as for Guam and American Samoa. Lost nets are potentially harmful to bottomfish habitat, and the banks and slopes which harbor bottomfish are generally so small that efficient and potentially destructive fishing methods employing explosives, poisons, or trawl nets carry a high risk of long-term or perhaps irreversible damage to fish habitat.

In addition to gear restrictions, the State has a minimum size limit of one pound for sale of opakapaka, onaga, uku, and ulua. This size limit was established by statute in 1925 due to concern about a "decreasing supply of fish". Hawaii's one-pound minimum size limit for sale seems to coincide with the mean size of entry into the hook-and-line fishery for opakapaka and perhaps other species (Ralston and Kawamoto, 1985). The major benefit of the one-pound size limit cited by State personnel familiar with its enforcement is that it deters the use of non-selective gear which could indiscriminately harvest concentrations of undersized bottomfishes. However, the one-pound existing size limit does not postpone hook-and-line harvest of most of the regulated species before they have reproduced once, nor does it maximize the yield-per-recruit of adult fishes.

Although the State could theoretically manage both the territorial sea and FCZ portions of the bottomfish fishery through minimum size limits for sale or new landing laws, the lengthy process involved in obtaining new amended legislation presents an obstacle to timely effective management. Most State management provisions are statutorily-established. It is not possible to initiate statutory amendments except by the local legislature during the part of the year when they are in session. Even then, it is not assured that amendments would receive legislative approval, as exemplified by the defeat of a measure to increase the minimum size of opakapaka for sale from one pound to three pounds during the 1985 session of the Hawaii State Legislature. New legislation is also relatively costly. The average cost per piece of legislation approved by the 1983 State Legislative was about $25,000.

Size limits are among the future options for Council action under the framework procedure and they could be established relatively rapidly under the framework procedure (90-120 days). The Adoption of a larger minimum size for sale of opakapaka (greater than one pound) taken in the FCZ of the NWHI was considered for immediate implementation under the FMP. This measure could assist in maintaining stable landings of opakapaka in the size ranges targeted for the restaurant fillet market. If implemented under a Federal landing law, minimum size limits could cover all landings unless a vessel fished only in or was licensed to fish only in the territorial sea. This option raised too much potential for inconsistency in Federal/State management, because of differences between the size limit which would be needed to raise the age at entry into the hook-and-line fishery and the existing one-pound minimum size limit for sale under State law.

If a particular size of bottomfish could not be taken legally in the FCZ pursuant to Federal regulations implemented under this plan, but the same size of fish is legal if taken in the territorial sea, the Federal enforcement officer would have to be able to prove that the fish was caught in the FCZ. This would increase the complexity and Federal cost of enforcement, as dockside or market inspections might not be feasible enforcement methods.

Selective area closures in the FCZ were considered for immediate implementation under the FMP. Closures could mitigate the risk of overfishing, but at a high enforcement cost, $800,000 or more annually if U.S. Coast Guard aircraft surveillance of the NWHI had to be doubled. Initial selection of areas to be closed would require a large amount of new data to demonstrate the need for selective closures.

The management options for Hawaii are evaluated in Table F.3.

TABLE F.3

EVALUATION OF MANAGEMENT OPTIONS FOR HAWAII BOTTOMFISH FISHERY

Options	Evaluation
Administrative "framework" for raising management concerns and recommending future regulatory adjustments in FCZ and territorial sea.	Desirable to allow flexibility in management responses and to achieve consistency in Federal/State management. It is not possible to quantify the cost of not achieving consistency but in areas of the U.S. mainland where regional fishery Councils and States have not cooperated, this has sometimes led to costly legal action.
No short-term and long-term management by Federal regulations.	Acceptable in main islands but unacceptable in NWHI because the majority of bottomfish grounds are in the FCZ and because a large percentage of the fleet is registered out-of-state.
Short-term and long-term management by Federal regulations.	Unacceptable in main islands because of small FCZ fishery, but acceptable in NWHI because of large FCZ fishery. Risk of inconsistency with State management action.
Federal gear restrictions in FCZ to support State protection of limited habitat.	Desirable if enforcement can be accomplished through port inspections which consolidate several enforcement activities. Supports the State's laws prohibiting the use of destructive fishing methods (i.e., explosives and poisons).
Larger minimum size limit for opakapaka taken in FCZ of NWHI than State one-pound size for sale.	Could help maintain the present size composition of the opakapaka catch which is more valuable for restaurant fillet market than are smaller fish. High risk of inconsistency with State management and increased enforcement difficulty and cost.

TABLE F.3

EVALUATION OF MANAGEMENT OPTIONS FOR HAWAII BOTTOMFISH FISHERY
(Continued)

Options	Evaluation
Adopt State one-pound minimum size for sale limit for opakapaka, onaga, uku, and ulua taken in FCZ.	Would promote consistency in Federal/State management while maintaining the opportunity to raise the minimum size through regulatory adjustments under the "framework". High risk of duplicating State's enforcement efforts and increased costs. Also very little protection against recruitment overfishing.
Selective area closures in FCZ.	Very difficult and costly to enforce for small areas and for specific fishing methods (i.e., bottomfishing). Large closures to all fisheries are enforceable but would close some fisheries unnecessarily to conserve bottomfish stocks.

B. Single-Species vs. Multi-Species Management Unit

The second basic choice facing the Council was whether to (1) manage each bottomfish species as the need arises; or (2) manage bottomfish species as a unit recognizing that the various species are in different stages of exploitation. It is relatively straightforward to manage the bottomfish species complex through the annual review and framework rule-making process prepared in the FMP. If species-by-species management were practiced, this would necessitate continual amendment of the FMP to redefine the management unit, and the administrative cost would be much greater than multi-species management under the annual review and framework process.

C. Framework FMP vs. Conventional FMP

A third basic choice facing the Council was whether to establish Federal regulations immediately through preparation of a conventional FMP

or to provide for flexibility in management responses and to address the problem of incomplete scientific data. As bottomfishing habitat is the most critical factor limiting fishery yields in the western Pacific, it was believed necessary to provide immediate protection in the FCZ to complement existing State/territory regulations and CZM policies. Hence, prohibitions against the use of explosives, poisons, bottom trawl and bottom-set nets were recommended for immediate implementation. Enforcement can be cost-effective if accomplished by port inspections which consolidate several enforcement activities. Added protection will be afforded to protected species, and economic impacts will be positive. Assuming that the MSY per unit of bottomfish habitat ranges from 400 pounds to 600 pounds per nautical mile of 100-fathom isobath, long-lasting or irreversible damage to the bottom habitat would cost the fishery at least $800 to $1,200 per year (at $2.00 per pound ex-vessel price) for each nautical mile which is damaged.

A second critical consideration is that the biological nature of many bottomfish species suggests that recovery to levels of sustained yield may be prolonged once overharvesting has occurred. Therefore, timeliness in managment response is needed to prevent severe disruptions in production and economic losses. The framework FMP offers a means of expediting action through the elimination of certain bureaucratic barriers associated with FMP approval. The framework would not eliminate Regulatory Impact Analysis/Regulatory Flexibility Act requirements, public hearings, determination of consistency with MFCMA National Standards, or coastal zone consistency determination for any specific new regulation proposed. The framework procedure can be expected to save at least 140 days of time associated with the normal FMP approval process and perhaps as much as nine months of lead time associated with the normal informal review of a FMP. Consistency in Federal/State or territory management would also be promoted through the annual review and framework rule-making procedure.

Although it may require 90 to 120 days to implement a Federal regulation under the framework FMP, a time savings of 5-9 months would still reduce administrative costs, relative to the FMP amendment process. Furthermore, the framework process could prevent stock reductions and economic losses that would occur during the 5-9 months of plan review and approval. Experience in the NWHI bottomfish fishery has shown that CPUE can be reduced by 50% or more along a bank perimeter of 100 nautical miles in a 5 to 9 month period. The minimum value of a reduction of this magnitude would be $40,000-$60,000 per year multiplied by a recovery period of 3-5 years for a potential loss totalling $120,000-$300,000. To reflect the economic impact on the Hawaii fishing industry, the savings of 5-9 months in reaction time through a framework management process could be valued at the wholesale price of the potential catch or roughly twice the ex-vessel value.

The management costs under a no FMP, a conventional FMP, and a framework FMP is estimated on Table F.4.

TABLE F.4

MANAGEMENT COSTS

	No FMP	Conventional FMP[1]	Framework FMP[2]
NMFS/NOAA:			
Administration	$ -0-	$ 50,000 [3]	$ 30,000 [4]
Enforcement	-0-	50,000 [5]	-0- [6]
Research	246,000 [7a]	246,000 [7]	246,000 [7]
Data analysis	-0-	65,000 [8]	65,000 [8]
Subtotal	246,000	411,000	341,000
WPRFMC:			
Council administration	12,000 [9a]	24,000 [9b]	12,000 [9c]
Plan monitoring team	30,000 [10]	30,000 [10]	30,000 [10]
Subtotal	42,000	54,000	42,000
STATE OF HAWAII:			
Upgrading Hawaii fisheries statistics system: small business micro-computer, fishing effort reports, data base report generation software ($65,595 of a total cost of $290,000 can be allocated to bottomfish fishery, based on the proportion of total fish catch reports which include management unit species).			
Data collection and enforcement	20,000 [11]	20,000 [11]	20,000 [11]
Subtotal	20,000	20,000	20,000
U.S. COAST GUARD:			
Enforcement (all fisheries)	1,830,000 [12]	1,830,000 [12]	1,830,000 [12]
TOTAL	$ 308,000	$ 485,000	$ 403,000

1 Assumes regulations promulgated through FMP amendments at a rate of one per year.

2 Assumes regulations promulgated under framework process at a rate of one per year.

3 Assumes that each FMP amendment requires about one man-year, collectively, of NMFS/NOAA personnel time for review and processing by SWR and headquarters staffs.

4 Same assumption as 3 except that a minimum of 140 days can be saved through framework process.

5 Based on number of active participants in fishery, the cost of NMFS shoreside enforcement effort would be approximately one additional man-year, representing an increase of about $50,000.

6 The framework plan does not initially generate a substantial increase in Federal enforcement burden. If actions are subsequently taken under the framework process, the cost of enforcement among other things will be fully considered before the action is final.

7 The only major new research effort under the FMP is the Seamount Resources Study by the NMFS Honolulu Laboratory. This study was initiated by NMFS and does depend upon whether there is a FMP or not.

a) If there was no FMP or minimal interest in seamount resources the funding would be considerably less.

8 Assumes that NMFS Honolulu Laboratory will have responsibility for analysis of State/Territory catch data and other data for the Plan Monitoring Team to consider in preparing the annual review. The estimated cost of analyzing catch reports under Spiny Lobster FMP would approximate cost of data analysis for Bottomfish annual review.

9 Costs are estimated on the basis that one full Council meeting held in Hawaii costs about $12,000, and that preparation for each meeting and follow-up after each meeting on each major fishery issue costs about $6,000 in staff time.

Even without a FMP, issues would be raised and staff time expended on the bottomfish fishery.

a) Assumes that one half of one full meeting ($12,000 divided by 2) would be devoted to bottomfish isues over the course of a year, with preparation and follow-up by staff costing an additional $6,000.

b) Assumes that one-half of two full meetings per year would be necessary to institute new regulations under a FMP amendment process, and that staff work to prepare for and to follow-up these meetings would cost an additional $12,000.

c) Assumes one-half of one full meeting per year would be devoted to the annual review under framework provisions of a FMP, with preparation and follow-up by staff costing an additional $6,000.

10 Coordination of the plan monitoring team and preparation of the annual review is estimated to require one man-year of effort by Council staff or temporary staff, at a cost of $30,000. To fulfill its responsibility to monitor the fishery, the Council would incur this cost whether there is a FMP or not.

11 State estimated cost for data collection improvements to speed the availability of catch/effort statistics for fishery monitoring.

12 Reflects total costs of multi-purpose surveillance of all areas of jurisdiction. Breakdown by fishery or purpose not possible therefore costs not added to total.

D. Numerical vs. Non-Numerical Estimate of OY

As with most fisheries in the western Pacific, the available data are not specific enough to allow the definition of OY for the bottomfish fishery in numerical terms. The scientific research needed for derivation of a numerical OY would require a public expenditure which could not be justified given the present and potential value of the bottomfish fishery.

E. Federal Data Reporting Requirements vs. State/Territory Data Collection

A Federal requirement for logbooks containing catch weight and number of fish by species, fishing effort, location, and other standard information could be established for vessels bottomfishing in the FCZ, with a standard requirement that these logbooks be available for inspection at sea by U.S. Coast Guard or NMFS agents, and be submitted within a few days of landings.

However, this approach would duplicate, to varying degrees, data reporting systems already established by the State of Hawaii and the territories of American Samoa and Guam, some with Federal funding assistance. The Federal government has made an investment in a regional Fishery Information Network (FIN) covering each of the island areas represented by the Council. Rather than duplicate this investment and create a new data reporting burden for fishermen, the Council believes that the established State of Hawaii and FIN data systems should be improved so that they can be relied upon for the annual review of fishery performance. The framework process under this FMP would allow the Council to recommend improvements in the State/Territorial data systems or to recommend that the Regional Director establish a Federal data reporting requirement in the future if initial reliance on State/Territory data reporting proves unsatisfactory for the annual review.

The cost of enforcing universal catch and effort data submission requirements would be prohibitive. Even modest investments to improve FIN in American Samoa and Guam cannot be justified for this FMP because of the small potential yields of the FCZ bottomfish fisheries in those island areas.

The State of Hawaii catch reporting system could provide much of the data for the annual review under the FMP for an additional $20,000 per year plus a one-time cost of $65,595.

F. Federal Permit

Although a Federal permit requirement was considered for the FCZ off American Samoa and Guam, it was considered unnecessary because of the small present and potential fishery yields. The State of Hawaii commercial fishing license provides an adequate record of bottomfish fishermen in the main Hawaiian Islands without adding a Federal permit requirement. Although NWHI bottomfish fishermen are also licensed by the State, a Federal permit would serve other purposes that would be difficult to accomplish through State licenses, due to the State's confidentiality laws:

-- Issuing permits to particular vessels will provide more accurate tracking of increases/decreases in fishing effort and in entry/exit of fishermen from the large FCZ bottomfish fishery in the NWHI;

-- A listing of vessels with bottomfishing permits will allow more effective surveillance by Coast Guard aircraft of the vast NWHI; and

-- A permit system would also give the U.S. Fish and Wildlife Service and NMFS a point of contact with bottomfish fishermen and provide an opportunity for education relative to the sensitivity of the area's wildlife and the need for their protection. Furthermore, as part of this system an informational handout for the fishermen has been developed by NMFS to describe and explain the applicable laws and regulations concerning interactions with Hawaiian monk seals and other endangered or threatened species.

-- The information requested on the permit application will be considered confidential and is intended to provide additional information needed to assemble a general profile of the fleet's fishing power and present capabilities. The information will be invaluable in making informed rational decisions on any type of management option especially area closure or access limitation options.

G. Benefits and Costs Under Management Alternatives

For the Hawaii cost-benefit analysis, key benchmark data include projections of average monthly bottomfish landings in Hawaii for the years 1990 and 2000. The projections are based on projected increase in Hawaii's residential population. Unpublished analysis (S. Pooley, 1985b) has demonstrated a strong statistical relationship between the increase in average monthly bottomfish landings and population growth during the 1965-1982 period:

TABLE F.5

AVERAGE MONTHLY HAWAII BOTTOMFISH LANDINGS
(1,000 lbs.)

Actual (1965-1982)	Actual (June 1982)	Projected (1990)	Projected (2000)
36.8	54.5	69.8	75.2

The average ex-vessel price for the mixed-species bottomfish catch in Hawaii is also strongly correlated with residential population growth during the 1965-1982 period. Based on the historical relationship, a 10% increase in residential population will increase the average price of bottomfish by 15.5%. Although a 10% increase in landings depresses average price by 2.3% for bottomfish, this historical relationship is overcome by the increases in demand suggested by population growth and by the expectation that export markets will continue to develop for Hawaii's fresh fish products (Pooley, 1985b). Depending on the relative influence of the variables which affect bottomfish price, the future monthly value of the Hawaii fishery (in 1982 dollars) is projected as follows:

TABLE F.6

AVERAGE MONTHLY EX-VESSEL VALUE OF HAWAII BOTTOMFISH FISHERY
($1,000)

Actual (1965-1982)	Actual (June 1982)	Projected (1990)	Projected (2000)
76.9	111.7	151.4 - 175.7	234.6-259.4

Additional benchmark data for this analysis are preliminary indications of a long-term decline (30%) in the catch per fishing trip of main Hawaiian Islands' commercial bottomfish fishermen over the decade 1974-1983 (WPRFMC, unpublished data), as well as a 29% decline in the catch per trip of opakapaka in the Northwestern Hawaiian Islands' commercial fishery between 1984 and 1985 (WPRFMC, unpublished data). Catch data provided by fishermen (S. Ralston, NMFS Honolulu Laboratory, unpublished analysis) indicated a 50% decline in the CPUE (pounds per line-hour) of opakapaka at St. Rogatien Bank (in just 4 months of fishing during 1983). Catch data for the-Northampton Sea-mount, which is the extreme range of the present fishery in the NWHI, show a drop from 165 opakapaka to 40 opakapaka per fishing day in just 2 months of fishing (Meyer, ms.).

A third set of benchmark data for this analysis is a simulation of the effects of reduced CPUE and increased operat-ing costs on the net revenues of bottomfishing vessels of vari-ous sizes (S. Pooley, 1985c). The effect of a decline in CPUE from about 250 pounds per day of bottomfishing to about 200 pounds per day of bottomfishing (20% reduction) would be to reduce the net annual revenue (after costs) for a 40-foot vessel by 66%. The effect of a decline in CPUE from 1,108 pounds per day of bottomfishing to 997 pounds per day of bottomfishing (a 10% reduction) would be to reduce net annual revenue for a 60-foot vessel by 178% (S. Pooley, 1985c). Thus, for a 60-foot vessel simulation, the loss in CPUE of 111 pounds to 997 pounds per day represents the boarderline case where the 1,108 pounds per day will net the vessel a <u>profit</u> of $17,000 whereas, 997 pounds per day will <u>lose</u> the vessel $13,000 of net annual revenue (S. Pooley, 1985c).

Although the history of the main Hawaiian Islands' fishery does not suggest that bottomfish stocks are subject to a sudden collapse due to recruitment failure, commercial bottomfish landings and presumably fishing effort are at record-high levels in the FCZ. It is believed that the NWHI fishery has expanded rapidly by "fishing down" standing stocks of species which had gone unfished for a long time and which are not capable of a sustainable production which can match the harvesting capacity represented in the present fleet. These conditions require the ability to act rapidly when indicators raise concerns about the fishery, particularly because the biology of these species seems to preclude their rapid recovery, after overharvesting, to levels of commercially-viable sustained production.

If sustained production can be achieved in the NWHI fishery, the present value will increase due to residential population growth and associated increases in the price of bottomfish. According to Pooley (1985c), a 15% increase in residential population projected between 1982 and 1990 should bring about a 19% increase in the average price of bottomfish. If annual production of 500,000 pounds per year of targeted species can be sustained in the portion of the NWHI within reasonable

travel time from the fresh fish market, the fishery will increase in value (ex-vessel) by about $0.40 per pound (1982 dollars) by 1990 and by about $0.90 per pound (1982 dollars) by the year 2000. If current levels of harvest can be sustained, the added value would be approximately $200,000 per year by 1990 and approximately $450,000 per year by the year 2000. If NWHI bottomfish catch rates decline to the same extent as these in the main Hawaiian Islands' fishery (30%) over the past few years, the annual production would fall by 150,000 pounds, valued (in 1982 dollars) at $330,000 (Table F.7). Preliminary results from a vessel simulator model (S. Pooley, 1985c) suggest that commercial viability of bottomfishing operations in the NWHI is sensitive to reductions in catch rates less drastic than 30%. This further emphasizes the need to maintain current fishery yields if possible.

Management efforts which succeed in maintaining the current level of bottomfish production in the FCZ of the NWHI would produce benefits of at least $500,000 per year by 1990 and $780,000 per year by 2000 (Table F.7). These estimates can be considered conservative since it does not include benefits to consumers who would not face inflated prices following overfishing and the subsequent reduced supply of bottomfish. Moreover, there is no consideration of the benefits of maintaining a catch size composition favoring larger fish, which produce a greater yield and are more desirable for the restaurant fillet market than small fish. Figure F.1 shows that the size-frequency distinction of the opakapaka catch in the main Hawaiian Islands already favors small fish and without future management the size composition of the NWHI opakapaka catch could be similarly reduced.

TABLE F.7

BENEFITS AND COSTS UNDER MANAGEMENT ALTERNATIVES

I. BENEFITS	
Type of Benefit	Value of Benefit
Prevent long-term decline in bottomfish C.P.U.E. in FCZ of NWHI such as has occurred in MHI.	A 30% decline in CPUE (such as in MHI) is estimated (at 1984 prices) as a loss of $330,000 (ex-vessel) per year or $660,000 (wholesale) per year.
Prevent loss of opportunities to market U.S.-caught bottomfish in place of foreign imports.	If resident population of Hawaii increases as projected, the effect on demand should provide for an additional $200,000 (ex-vessel) or $400,000 (wholesale) in bottomfish sales per year by 1990 and $450,000 (ex-vessel) or $900,000 (wholesale) per year by 2000.

TABLE F.7

BENEFITS AND COSTS UNDER MANAGEMENT ALTERNATIVES
(Continued)

I. BENEFITS	
Type of Benefit	Value of Benefit
Maintain economically-viable opportunities for bottomfishing to avoid bankruptcy and default on commercial and government loans and loan guarantees.	Declines in CPUE as small as 10% for a 60-foot boat bottomfishing in the FCZ of the NWHI could change a net profitable operation (+$17,000/yr.) to a net unprofitable operation (-$13,000/yr.). As many as 20 boats representing a combined capital investment of $4 million could be adversely affected.
Prevent long-lasting or irreversible damage to bottomfish habitat.	Each nautical mile of 100-fathom bank perimeter lost to destructive fishing techniques represents approximately $1,000 per year (ex-vessel) or $2,000 per year (wholesale) in lost bottomfish production.
Restore groundfish stocks at the Hancock Seamounts.	If CPUE (trawling) can be restored from <1 MT/hr. to 50% of initial CPUE (6 MT/hr.), at least 5 additional MT could be available for each hour of trawling effort. Valued at 1984 Japanese prices ($0.35/lb.) for dressed armorhead, this additional catch would represent $2,500 in increased revenue per hour of trawling[1/].
PRESENT VALUE OF FCZ FISHERY (1984)	Bottomfish $3.8 million (ex-vessel)/yr. $7.6 million (wholesale)/yr. Seamount Groundfish $32,000 (ex-vessel)/yr.
TOTAL BENEFITS (1990)[2/]	$530,000 (ex-vessel) or $1,110,000 (wholesale) revenue per year. $4 million in capital investment protected. $2.5 million (ex-vessel) or $5.0 million in bottomfish habitat protected from long-lasting or irreversible damage.

TABLE F.7

BENEFITS AND COSTS UNDER MANAGEMENT ALTERNATIVES
(Continued)

I. BENEFITS	
Type of Benefit	Value of Benefit
	At a level of trawling effort similar to 1984 (90 hours), increase revenue from the Hancock Seamount groundfish fishery by $2 million per year.

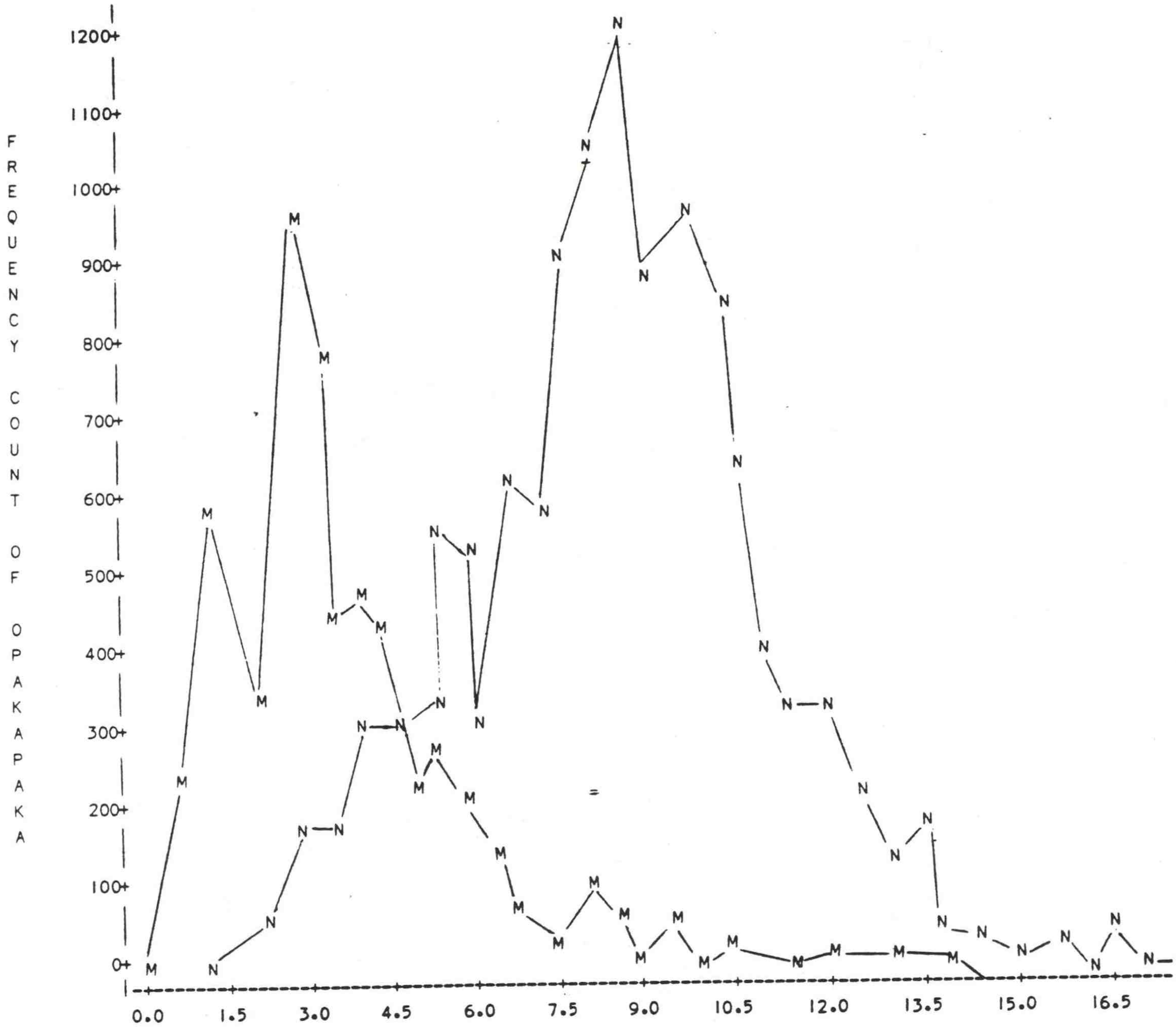
II. COSTS	
Type of Cost	Value of Cost
MANAGEMENT COSTS[3/]	$403,000/year plus undetermined future costs for shoreside enforcement activities if required for regulations promulgated under the "framework" process.
COST UNDER "FRAMEWORK" AS % OF PRESENT VALUE	11% (ex-vessel), 5% (wholesale)
COMPLIANCE COSTS UNDER "FRAMEWORK"	Initially zero because there are no existing domestic net fisheries for bottomfish and there is no existing legal use of poisons or explosives for harvesting bottomfish. Compliance costs could be added as a result of new regulations promulgated under the "framework" process.

Note: 1/ Dressed weight of armorhead = 66% of whole weight.

2/ Does not include potential benefits to consumers who would face inflated prices following overfishing and subsequent reduced supply of bottomfish or the benefits of maintaining a larger catch size composition which is preferred for the restaurant market.

3/ Does not include Coast Guard enforcement costs. Coast Guard costs reflect multipurpose surveillance of all areas. Breakdown by fishery or purpose not possible, therefore, costs are not included in total.

FIGURE F.1 SIZE DISTRIBUTION OF OPAKAPAKA CATCH, MAIN HAWAIIAN ISLANDS VS. NORTHWESTERN HAWAIIAN ISLANDS, JANUARY - MAY, 1985



NOTE: 2 OBS Hidden

M = Main Hawaiian Islands
N = Northwestern Hawaiian Islands

It will be difficult, if not impossible, to maintain or increase the value of the NWHI bottomfish fishery solely by relying on State laws. Not only is the approval of new legislation a lengthy and costly process, but at least one-third of the vessels currently bottomfishing in the NWHI are registered out-of-state. The catcher/processor vessels involved in the NWHI lobster fishery make incidental catches of bottomfish. These vessels are also registered predominantly out-of-state and would not necessarily land their mixed-species catch entirely in Hawaii. Thus, existing State measures and the processes for establishing new State laws may not provide long-term protection of the FCZ bottomfish fishery, especially if the fish are landed and sold elsewhere.

The result of maintaining the status quo (no Federal action) could, in extreme circumstances, lead to a reduction in the potential of fish assemblages to reproduce themselves. More than likely there would be a shift in catch composition toward smaller-sized heavily targeted fish and lower-value species.

The preferred approach to management is a cooperative State/Federal scheme involving joint assessment and monitoring followed by respective action to implement the indicated management action.

F.2 Seamount Groundfish Alternatives Evaluated

A. PMP vs. Framework FMP

The first basic choice facing the Council was whether to (1) continue management of the seamount groundfish fishery through the existing PMP; or (2) place the fishery under the FMP.

The PMP states that, due to the almost complete absence of information on seamount resources, the fishery is regarded as experimental and that the goal of the plan is to obtain a better estimate of maximum sustainable yield (MSY). The PMP was not effective in preventing armorhead stock collapse, and a definitive estimate of MSY is still not available. By including the Hancock Seamounts in the annual review and framework rule-making process under the FMP, OY can be redefined and regulatory adjustments (Figure 3.1) can be made as new information becomes available. This will provide greater flexibility than the fixed determination of OY and annual allocations of TALFF under the PMP. The administrative costs of continuing the PMP or managing the fishery under the FMP are not likely to differ greatly, but management can be more responsive to new information under the FMP.

B. Quotas vs. Moratorium

A second basic choice facing the Council was whether to continue to manage the FCZ seamount fishery through quotas or to impose a complete moratorium on commercial fishing in the FCZ. Foreign fishing quotas have not been effective in maintaining sustained yields of pelagic armorhead at the Hancock Seamounts.

The effect of continuing the present allocation of up to 1,000 metric tons per year to Japan or other nations is likely to be a further depression of the armorhead stocks at the Hancock Seamounts. Alfonsin stocks may also be depleted if foreign harvestors shift to this alternative target as they have in the portion of the seamount fishery outside the FCZ. Managing the FCZ portion of the seamount fishery by limiting total fishing effort rather than total harvest would have only minor effects on the overall levels of pelagic armorhead in the Emperor Seamounts because populations on different seamounts are probably not separate stocks.

A temporary moratorium on all fishing could be implemented as a scientific investigation to learn more about stock recruitment and recovery, while foreign harvesting continues at seamounts outside the FCZ. The benefits include rebuilding of the Hancock Seamount population and better scientific understanding of the population dynamic of the seamount species through comparison of exploited and unexploited populations of pelagic armorhead and alfonsin. Further, even a single seamount may serve as a reproductive refuge, enhancing recruitment to other seamounts. This could guide an international plan of management for the common resource.

The chief benefit of allowing foreign harvesting to continue at some level in the FCZ portion of the seamount fishery would be continued availability of catch/effort data for the Hancock Seamounts. No increase in Federal responsibilities or costs are expected which differ from those incurred under the existing Preliminary Fishery Management Plan for Seamount Groundfish, except for the cost incurred by the Honolulu Laboratory of NMFS in conducting the Seamount Resources Study.

The moratorium would terminate foreign harvesting and foreign fishermen who continue to fish outside the FCZ who might retaliate by refusing to provide catch/effort data which will be necessary to understand the population dynamics of stocks on a regionwide basis. No increase above current levels of foreign fishing surveillance and enforcement by the U.S. Coast Guard is expected under this alternative.

If the moratorium is successful in rebuilding groundfish stocks at the Hancock Seamounts, long-range domestic fishermen may be able to exploit a new fishery or the value of the fishery for foreign "fish and

chips" trade agreements would be enhanced. If the moratorium is successful, CPUE in the trawl fishery (if re-established) might be sustained at 50% of the initial CPUE in 1978 (12.5 metric tons/hr.) when the Seamount Groundfish PMP was first implemented. If a sustained CPUE of 6 metric tons/hr. could be achieved, this would represent a great improvement over the CPUE of 0.42-0.79 metric tons/hr. in 1983-84.

APPENDIX G

COMMENTS ON THE

DRAFT BOTTOMFISH AND SEAMOUNT GROUNDFISH FMP

ENVIRONMENTAL ASSESSMENT

AND

REGULATORY IMPACT REVIEW

COMMENTS ON THE DRAFT BOTTOMFISH AND SEAMOUNT GROUNDFISH FMP ENVIRONMENTAL ASSESSMENT AND REGULATORY IMPACT REVIEW

This appendix summarizes oral and writen testimony on the draft Bottomfish and Seamount Groundfish FMP Environmental Assessment and Regulatory Impact Review submitted for public review. The draft was reviewed at six public hearings conducted on Kauai, Oahu, Maui and Hawaii. In addition, letters were received from government agencies, environmental organizations, and private interests. The section below summarizes comments, oral and written, provided during the review period, followed by responses of the Bottomfish/Seamount Groundfish Plan Development Team. Comments suggesting editorial rather than substantive changes have been accommodated in the final FMP and are not listed below.

Summary of Public Comments With Responses

1. **Comment:** What will be the make up of the monitoring team?

   Commenters: Fishermen.

   Response: The composition of the Team will be decided by the Council. The members will include representatives of the Honolulu Laboratory (NMFS), the Division of Aquatic Resources (DLNR), fisheries and endangered species scientists, fishery managers, and industry representatives (fishermen/dealers).

2. **Comment:** Of the many indicators that will be used, how many will have to be triggered to set off a red light and will each island have its own indicators?

   Commenters: Fishermen.

   Response: The management unit species in the main Hawaiian islands will be considered as part of one stock. Therefore, no individual island will have a unique set of indicators. A single indicator on any one of the management unit species will be sufficient to warrant an investigation by the Plan Monitoring Team, which will possibly lead to recommendations for management action.

3. **Comment:** Will the (Plan Monitoring) team consider only the FCZ or the whole fishery?

   Commenter: Fisherman.

   Response: Due to the fact that bottomfish stocks in the territorial seas and the FCZ are inter-related, the Team will investigate all problems whenever possible.

4. **Comment:** How can you tell where the fish are being caught? A NWHI catch may get sold on Kauai or a catch off Maui by a Honolulu boat may be sold in Honolulu.

Commenter: Fisherman.

Response: The State of Hawaii requires the commercial fishermen to submit catch reports. The form includes the area fished and the port of landing. Aggregated totals of catch by area are available.

5. **Comment:** There is no sense in setting something up that can't be enforced.

Commenter: Fisherman.

Response: Without any form of law or regulation, there can be no enforcement. If there is a law or regulation, that is the first step towards enforcement.

6. **Comment:** How much of the main Hawaiian islands bottomfishing grounds is in the FCZ?

Commenter: Fisherman.

Response: There is approximately 260 nautical miles of 100-fathom isobath within the FCZ of the main Hawaiian islands as opposed to 737 nautical miles within the State's jurisdiction.

7. **Comment:** If (Federal) regulations are instituted in the future for the MHI, would they only pertain to the FCZ? How will the State respond? Will it adopt similar regulations? Which law supercedes the other?

Commenter: Fisherman.

Response: Under the Magnuson Act, the Secretary of Commerce has the authority to regulate the fishery, beyond the FCZ, i.e. State/Territorial waters, if the fishery is predominantly in the FCZ and beyond such zone and where action or inaction by the State will substantially and adversely affect the implementation of the plan. Undoubtedly, the State will oppose any attempt by the Federal government to extend its jurisdiction and authority or to diminish the State's jurisdiction and authority. The question of Federal preemption of the State's right to manage the bottomfish resources and fishermen around the MHI seems moot because most (74%) of the bottomfish grounds are within State's waters. The Federal government would find it difficult to justify preempting the State in order to manage the small portion (26%) of the bottomfish habitat under its purview around the main Hawaiian islands.

8. **Comment:** Has there been any trawling or gillnetting in Hawaiian waters?

Commenter: Fisherman.

Response: There has been at least one attempt to trawl for bottomfish as well as several peneid shrimp trawling operations. Gill netting with trammel nets have also been experimented with. These methods were subsequently discontinued as the rugged topography produced large amounts of gear loss.

9. **Comment:** Can't you stop foreign trawling indefinitely, longer than 6 years? Could a moratorium on trawling at seamounts enhance armorhead stocks in the NWHI? Who will do the fishery surveys during the moratorium?

Commenter: Fisherman.

Response: Due to the depressed nature of the armorhead stocks within the U.S. FCZ, a 6-year moratorium is being requested. During this time, the Honolulu Laboratory will conduct a Seamount Resources Study which will monitor the recovery of the resources. After the results of the study are analyzed, a decision on whether or not to open up the fishery will be made. If a decision to reopen the fishery is made and an optimum yield is re-established, unless domestic fishermen establish a fishery, the foreign vessels will be allowed to fish the groundfish stocks up to a Total Allowable Level of Foreign Fishing (TALFF).

10. **Comment:** We have reservations about recommendations that the Council will make on our behalf. We have been railroaded before at public hearings to set up reserves here on Maui. A group of Council people will make a study and recommendations, meanwhile we have no guarantees. I would like to see how these people are selected, what their interests are. I would hate to see these people recommend restricting our catches. Do we have guarantees against something like this?

Commenter: Maui Bottomfisherman.

Response: Fisheries management recommendations made by the Council (WPRFMC) are the result of broad base input and careful deliberation. The Council relies heavily on input especially from the fishermen themselves. In formulating fisheries management plans, the Council is assisted by a scientific/statistical committee as well as an advisory panel which membership includes representation from user groups and interests concerned with the management of the fishery. The Council cannot guarantee the preclusion of management measures that would restrict or prohibit catches or fishing activities.

11. **Comment:** We'll always be getting a red light indicator while the Leeward (NWHI) guys will always have a green light because only so many boats can

fish down there. They'll always have a green light but we'll always have a red light that is going to cause you folks to put on more restrictions and we're going to be limited while people going to the NWHI are going to get the green light all the time.

Commenter: Maui Bottomfisherman.

Response: Due to large numbers of fishermen in the main Hawaiian islands (MHI), the pressure on all bottomfish stocks, in particular opakapaka, is great. Preliminary evidence show that indeed at least one red light indicator may have already been triggered. It is highly unlikely that the Council (WPRFMC) will institute any Federal regulations for the MHI bottomfish fishermen because most of the bottomfish grounds are within State jurisdiction. It is most likely that if an indicator in the MHI is triggered that the Council's Bottomfish Monitoring team will investigate and recommend management actions to the Council for State consideration.

At the present time, there is no access management plan being proposed for either the MHI or the NWHI. Access management is an option along with many others that will be considered when an indicator is triggered. Fishing pressure in the NWHI's is increasing and the opakapaka stocks in some areas are showing signs of stress.

12. **Comment:** Is there a standard grading level on (bottomfish) quality?

Commenters: Bottomfish Fisherman.

Response: At the present time there are no mandatory quality grading or inspection for domestic products, bottomfish included. The auction system as well as the markets and dealers themselves do provide an incentive for quality fish. The better the quality the higher the ex-vessel price paid for the fish.

A voluntary seafood inspection service is available for a fee by the U.S. Department of Commerce (USDC). Inspection is to USDC and the Food and Drug Administration (FDA) requirements. There are basically four services available: an in-plant inspection service; a lot inspection service; export inspection service; and a miscellaneous service. Under the in-plant inspection service a "Packed Under Federal Inspection" (PUFI) service is available under which is a product grading service. Products packed under these inspections and grading processes meets the U.S. Grade Standards and can bear the U.S. Grade marks.

13. **Comment:** If we're going to be on top of these biological indicators, let's have a Federal reporting requirement from the start. Why wait to find out State system proves inadequate? We've had a state system for years and years that doesn't seem very adequate. I'm under the impression that the data are confidential.

Commenters: Maui Sea Grant Agent.

Response: The FMP will rely on the existing Federal/State date collection system. Using and improving the existing data gathering systems will be more cost-effective and eliminate any additional double reporting burden on the fishermen. A Federal/State agreement on data access should provide timely data management and analysis. Data are considered confidential in this agreement and will be transferred without inclusion of any commercial fishing license number.

Summary of Agency Comments

1. **Comment:** A statement should be added on pages 94 and 115 saying that one of the measures that the Council may choose to implement through the framework process it is establishing is a rule-related notice system (previously known as a field order system) in order to respond very rapidly in certain management areas (such as changing trip limits or open and closed seasons in response to rapidly changing information). While I do not think that the absence of this statement in the FMP would prevent the Council from doing this anyway, the statement does alert everyone that the Council is aware of this option and may put it into place using the framework system if appropriate.

Commenter: NOAA General Counsel S.W., NMFS S.W. Region.

Response: The rule-related notice system has been added to the list of management alternatives for Council consideration (Section 2.2.1 and 6.2).

2. **Comment:** The process of appealing an adverse decision of the Regional Director of NMFS in regard to a rulemaking action recommended by the Council can be improved upon (see pp. 103, 105). The requirement of publishing the assistant administrator's decision in the Federal Register is overkill, in that a letter from the AA to the Council would seem to suffice. Also, if there is going to be an explicit appeal provided for in the FMP, it should be limited to the Council as a body, since it is the Council's action which is the subject of the appeal. Providing for an appeal does seem redundant, however, because the Regional Director would be exercising authority delegated to him from the AA, and we would coordinate any actions with the AA.

Commenter: NOAA General Counsel S.W., NMFS S.W. Region.

Response: Section 6.2.1 Annual Review has been reworked as suggested by the NOAA General Counsel S.W., to better reflect the process by which the Council may appeal the Regional Director's decision in regard to rule making action.

3. **Comment**: The discussions on the use of trawl gear and bottom-set net gear on pp. 2, 3, 15 and 91 are confusing in their reference to gill nets, since as I understand gear types, not all gill nets are bottom-set nets. It would also help if the FMP clearly stated to what extent, if any, there are any domestic fisherman using this type of gear in the NWHI's and to what extent they would be affected by a ban on this gear.

Commenter: NOAA General Counsel S.W., NMFS S.W. Region.

Response: It is true that not all gillnets are bottom-set but any gill net gear that will be used to harvest bottomfish species will necessarily have to be set on or near the bottom. Although there are have been several attempts to use trawl gear and bottom-set gillnets to harvest bottomfish in the Hawaiian islands, all attempts were voluntarily halted due to gear loss. At this time, there are no vessels currently utilizing these gear types (Section 2.2.2.1, 3.1, 5.2.1, 5.4.4, and 6.1.1).

4. **Comment**: The DAH discussion should include a statement of how much of the fish covered by the plan are actually expected to be harvested by U.S. fishermen, and the absence of TALFF explicitly justified if there is a gap between DAH and OY (p. 22). Expected growth in U.S. catches and a desire to make the fishery attractive to prospective U.S. fishermen is a reason which has been used in other plans to deal with this issue. Adjustments to the OY to take into account this objective would be appropriate.

Commenter: NOAA General Counsel S.W., NMFS S.W. Region.

Response: The DAH and OY are defined in non-numeric terms as the quantity of each management unit species that will be caught by domestic vessels in the FCZ under the management measures implemented under the FMP to achieve to the greatest extent practicable, the management objectives. In the bottomfishery, the harvest capacity of the existing fleets is sufficient to take the entire MSY in all areas. Therefore, there is no gap between DAH and OY.

5. **Comment**: Need for the FMP - Headquarters staff do not question the need for the FMP but note that Section 3.2 could be strengthened in two ways. First, a summary of the pace of growth of Hawaii's bottomfish fisheries and a brief discussion of the "indicators" which raise concerns could be added. Second, the section culd be combined with 3.4 and could reference the management problems and objectives discussed in more detail in Sections 4.3, 4.4, and 5.4. Whatever factual or logical justifications can be further articulated for the need for the FMP, for the gear bans, and the moratorium on the seamount groundfish fishery, would probably aid in getting the plan approved.

Commenter: NOAA General Counsel S.W., NMFS S.W. Region.

Response: Section 3.2 Need for FMP has been reworked to provide more data and a stronger discussion on the trends in the bottomfish/seamount groundfish fishery.

6. **Comment:** We support the administrative framweork process outlined in the draft FMP and its intent to provide for timely and cost-effective management response. However, our support for the framework process should not be construed as registering our approval for each of the management options described in section 6.3. We acknowledge the various management measures as options for future consideration, but subject to further review when action is proposed. For example, in the proposed access limitation management option, the establishment of August 7, 1985, as the firm cut off date for designing a specific limited entry proposal should be tied to reasonable criteria.

Commenter: NMFS S.W. Region.

Response: When considering any of the management options in the future, the Council will investigate the acceptability and mechanics of the proposed management option. August 7, 1985 was established by the Council at its 50th Meeting, held August 5-8, 1985, as a cutoff date for participation in the NWHI bottomfish fishery if an access managment measure is implemented in the future. This date was chosen by the Council to prevent a large influx of speculative entrants into the NWHI fishery (Section 6.3.5).

7. **Comment:** It might be helpful if the annual report outline explicity included reference to recreational fishing catch and effort data. This could be a clear charge to NMFS to work with State and Territory agencies to develop a recreational fisheries data base.

Commenter: NMFS S.W. Region.

Response: Agreed and the necessary changes have been made in Section 6.2.1 and 10.1.1 under Fishery Performance Data. Section 4.5.7 (Sources of Data) lists the NMFS recreational fishing data that have been collected. Recreational fishing data have not been collected in all areas and in some areas may comprise a significant amount of harvested bottomfish. However, annual compilation of recreational fishing data (which also should include the subsistence component) could be prohibitively expensive.

8. **Comment:** Authorization in the FMP for the Regional Director to implement Federal data reporting requirements if he determines in consultation with the Council and State and Territory agencies, that State and Territory data reporting requirements and voluntary data collection programs are not providing the data needed to effectively monitor the FMP.

Commenter: NMFS S.W. Region.

Response: Data collection is being accomplished through already established Federal/State/Territory networks. It is felt that though this system of reporting may require some improvements, it may be preferable and more cost-effective to determine if the existing systems will function effectively than imposing a Federal data reporting requirement and its attendent increased cost and risk of double reporting. Therefore, the Council would like to utilize the established data networks but reserve the right to request that the R.D. implement a Federal reporting requirement should it become necessary.

9. Comment: To obtain the catch/effort data required for effective monitoring and timely management response...a requirement that all NWHI permit holders file catch reports as required by State law.

Commenter: NMFS S.W. Region.

Response: The State of Hawaii already requires all holders of Commercial Marine Licenses (State commercial fishing licensees) to file a catch report form (Appendix D) 10 days after the end of each month. In 1985, the State law was amended specifically to allow the Hawaii Department of Land and Natural Resources to enter into cooperative agreement with U.S. government agencies in order to exchange confidential fisheries information for resource management purposes. A NMFS - State of Hawaii cooperative data sharing agreement, which is currently being developed, will provide access and analysis of bottomfish catch/effort data to be done in a timely manner.

10. Comment: The draft FMP notes that the FCZ includes waters around the CNMI but no management measures are proposed. This is understandable given the political realities concerning the CNMI position on the FCZ, the non-participation of the CNMI on the Council and the absence of any NMFS guidance on the subject to date. We propose, however, that the FMP clearly state at the beginning of the plan and the U.S. position regarding the applicability of the MFCMA to the CNMI and the Council's reasons for not recommending management measures in this part of the FCZ.

Commenter: NMFS S.W. Region.

Response: Agreed. Section 2.1 now includes the statement "Although the FCZ includes waters off the Northern Mariana Islands and miscellaneous U.S. island possessions, the plan proposes no management system for the FCZ in those areas because of the relatively undeveloped status of the deepsea bottomfish fishery".

11. Comment: Moratorium on Seamount Groundfish. The FMP sets an OY for seamount groundfish at zero (0) but establishes a moratorium only on commercial trawl fishing for a period of six years. This approach would

allow domestic or foreign longlining or hook-and-line fishing on a depressed stock. To remedy this contradiction and provide added flexibility, we propose that the moratorium be complete but allow experimental fishing under permit for those who may want to try non-trawl or trawl gear under controlled circumstances. The draft FMP describes details of the moratorium on the seamount groundfish.

From the Honolulu Laboratory's perspective, we would prefer a total ban of commercial fishing with any types of fishing gear on the seamounts, and that monitoring and experimental fishing be conducted under the complete control of NMFS (Southwest Fisheries Center). Substantial deviation from this may result in difficulty for Center scientists to assess the impact of the prohibition of fishing on the seamount resources.

Commenter: NMFS S.W. Region, NMFS Honolulu Laboratory.

Response: The Council agrees on a moratorium on commercial fishing for seamount groundfish for the FCZ of the Hancock Seamounts. At its 51st meeting, the Council voted to include the moratorium in the proposed actions of the FMP. Recent evidence from the NMFS has established the effectiveness of bottom longline gear in the harvest of seamount groundfish on depressed stocks. It is highly possible that a large longliner could do a great deal of damage to the present stock as the seamount area is highly limited.

12. **Comment:** NWHI Bottomfishing Permit. The FMP proposes to establish a Federal permit requirement for bottomfishing in the FCZ of the Northwest Hawaiian Islands. Reference to this requirement should be included in the preface to the FMP. The FMP establishes a permit requirement for the NWHI only, but the draft application identifies 4 permit areas to choose from. No explanation is provided in the FMP.

Commenter: NMFS S.W. Region.

Response: The Federal permit requirement for bottomfishing in the FCZ of the NWHI is already included in the preface under immediate actions (Section 2.2.2.4). In Section 2.2.1, Framework for Future Actions, a permit and/or catch reporting requirements for the FCZ referes to a potential for implementation in other areas of the Council's jurisdiction. The draft permit application showed this consideration but since a requirement for just the NWHI is proposed initially, the draft application (Appendix A) has been changed to reflect this. If a permit requirement for other areas of jurisdiction is deemed necessary at a later date, the form will be amended.

13. **Comment:** The FMP provides no explanation of the need for such vessel information as beam length, fuel capacity, cruising speed, range, horsepower, purchase price, purchase date, etc. There is no readily apparent need for this information, some of which appears to be confidential, and

without adequate justification cannot be included in a permit application.

Commenter: NMFS S.W. Region.

Response: The information requested on the permit application form will be considered by all parties to be confidential. The information will be used to generate a profile of the bottomfishing fleet's capabilities as to range, refrigeration capabilities, and the ability to switch fisheries or do multi-fishery activities. To evaluate the many forms of management available under the framework process, information such as this is needed. Changes in Section 2.2.2.4, 6.1.4, 6.3.5, and Appendix F reflect this view.

14. **Comment:** The Council should consider whether a fisherman with a commercial license should be prohibited from possessing an undersized fish in the FCZ around Hawaii. We recognize that this may create a problem of consistency with State law.

Commenter: NMFS S.W. Region.

Response: The State of Hawaii's law does not prohibit possession of an undersized fish by the fishermen. The law is on the sale of the fish by the fishermen and the sale or possession of the fish by a dealer. Therefore, no inconsistency should result.

15. **Comment:** The FMP prohibits the use of bottom trawls, bottom-set nets, explosives, and poisons for fishing, and for enforcement purposes (p. 148), prohibits bottomfish vessels from carrying restricted gear on board. The Council may wish to consider the desired scope of the prohibition. Presumably, the FMP will allow bottom trawls in the Seamount fishery after 1990.

Commenter: NMFS S.W. Region.

Response: A commercial fishing moratorium for seamount groundfish in the FCZ of the Hancock Seamounts has been proposed as an immediate action. During the 6-year period, a reassessment of the stocks will be performed and the decision to open the fishery will be evaluated. If the fishery is to be reopened then an amendment will be made to reflect the changes and permitted gear-types will be allowed on vessels harvesting seamount groundfish. An addition to Section 10.2 has been added to reflect this view.

16. **Comment:** Enforcement Costs. Clarification of the information in Table 10.1 (p. 147) would be helpful. First, it should be noted the data include the cost of surveillance for the possessions and CNMI, which are not covered in the FMP. Second, it should be made clear whether the

"hours per patrol" column includes only surveillance time or presents total hours flown including transit to and from Hawaii. Third, it should be emphasized that aeiral patrols are multi-fishery and multi-purpose; fisheries surveillance may be an important purpose but is not the only purpose. As presented, the Table could be incorrectly interpreted to show Coast Guard costs under the FMP.

Commenter: NMFS S.W. Region.

Response: Table 10.1 (Section 10.2) has been altered by eliminating surveillance costs for the possessions and the CNMI. The text emphasizes that these patrols are multi-fishery and multi-purpose and stresses that for these reasons, Table 10.1 should not be interpreted as Coast Guard costs under the FMP.

17. **Comment**: It is difficult to understand the statement that net annual revenue could be reduced 178% with a 10% decline in CPUE, as written on p. 193. Clarification is needed.

Commenter: NMFS S.W. Region.

Response: Preliminary results from the vessel simulator model (S. Pooley, 1985c) suggest that commercial viability of bottomfishing operations in the NWHI is sensitive to reductions in catch rates of less than 30%. Thus, at a CPUE of 1,108 pounds per day, the corresponding net annual revenue for a simulated bottomfishing operation would be $17,000 whereas a 10% reduction to 997 pounds per day would correspondingly result in a net annual loss of $13,000 which equals a total loss of 178% (Appendix F, F.1.3).

18. **Comment**: The last paragraph on page 195 should be reworded to describe more clearly the "conservative" nature of the estimated benefits of maintaining NWHI bottomfish production. It appears the benefit is due to the fact that consumers would not face inflated prices following overfishing and subsequent reduced supply of bottomfish.

Commenter: NMFS S.W. Region.

Response: It is agreed and the sentence "These estimates can be considered conservative since it does not include benefits to consumers who would not face inflated prices following overfishing and subsequent reduced supply of bottomfish" was inserted into the paragraph (Appendix F, F.1.3).

19. **Comment**: The Council may wish to consider an allowable take for recreational or direct consumption purposes by non-permitted vessels transiting or fishing for other species in the NWHI FCZ.

Commenter: NMFS S.W. Region.

Response: The TALFF for bottomfish species is set at zero (0) (Section 3.6.4, 8.4) because the present domestic harvesting capacity is capable of taking the entire MSY of the various areas. In the NWHI, recreational fishing for bottomfish is zero (0) due to the distance factor. Non-permitted vessels, i.e. lobster vessels, do make incidental catches of management unit species (Section 5.2) but the catches are considered to be low in comparison to the total production of the fishery. The incidental catches by non-permitted vessels are not forseen to increase appreciably in the future as the lobster fishery is also controlled. To this end, no official allowable take has been established at this time.

20. **Comment:** My first comment relates to the incorporation of the State of Hawaii regulations regarding a 1 lb. size limit for sale or possession by dealers. Although it may be essential that some action like this be taken to maintain consistency with State regulations under Coastal Zone Management (CZM) rules, it seems incongruous to incorporate this specific size limit when biological justification is included in the draft FMP for a 3 lb. size limit for selected species. I understand that the Hawaii Department of Land and Natural Resources is continuing its attempts to increase the size limit by legislative action. It might thus be desirable to include specific language in the draft FMP to indicate that it is desirable to have a larger size limit and the incorporation of the existing 1 lb. state limit is temporary until the state adopts a larger size limit.

Commenters: NMFS Honolulu Laboratory

Response: At the Council's 51st meeting this particular subject was examined. The State of Hawaii felt that to propose a complimentary size limit in the FCZ may hamper its efforts to increase the current state size limit to 3 pounds. A motion to go ahead with the FMP and to include access limitation as a management option was amended to also eliminate the proposed complementary Federal regulations on a one pound size limit for sale by fishermen and sale or possession by dealers. The motion as amended was accepted by the Council.

21. **Comment:** Data collection. Preparation of an annual report, and the role of the plan monitoring team. The plan does not indicate what agency will have responsibility for collecting the specific data required to produce the annual report, who will manage the data, and who will do the analyses and produce the summaries. The makeup of the plan monitoring team should be stated in terms of agencies as well as expertise. I believe this is an important area of the draft FMP and needs to be worked out in more detail. Incidentally, I was under the impression that NMFS had the responsibility of assembling the statistics, providing computerized data management, data analysis, and preparation of an annual report on the

status of the fishery. Based on the draft FMP it appears that the Council's plan development team would assume these responsibilities and also provide recommendations for management action to the Council.

Commenters: NMFS Honolulu Laboratory

Response: The plan states that data collection will continue through established channels. Federal/State/Territory data management, summaries, analysis, and research reports for the Plan Monitoring Team (PMT) use will be provided for by the NMFS Honolulu Laboratory (Section 6.2.1, 10.1.1, and 10.1.2). The PMT will be responsible for the Annual or Special Report which includes recommendations for Council action. The PMT will be made up of representatives from the Honolulu Laboratory (NMFS), the Division of Aquatic Resources, fishery and endangered species scientists, fishery managers, and industry representatives (fishermen/dealers).

22. **Comment:** Cost of management under the FMP - Headquarters staff indicated that the "annual cost" of the framework approach (p. 198) appears excessive for the value of the fishery. You may recall that my staff similarly had pointed out that the method or basis for estimating management costs needs to be described. This could include comparisons of agencies' programs and activities under current conditions and under the FMP and of administrative costs and timing under a conventional FMP (i.e., periodic amendments) and the proposed framework approach. A summary of this information could be added to Sections 2.2 and 3.7.

Commenter: NMFS S.W. Region.

Response: The annual cost of management for the responsible agencies was estimated (Appendix F, F.1.3) under No FMP, Framework FMP, and Conventional FMP.

23. **Comment:** The FMP should identify research and monitoring efforts to avoid the possibility of adverse effects on monk seals and other endangered species.

Commenter: Office of Protected Species and Habitat Conservation, Marine Mammal Commission.

Response: The Council feels that endangered species research and monitoring efforts fall under the purview of the various endangered species agencies.

24. **Comment:** The FMP should identify steps that would be taken to make sure that bottomfish fishermen are aware of potential interactions and regulations necessary to protect monk seals and other endangered and non-endangered species.

Commenter: Office of Protected Species and Habitat Conservation, Marine Mammal Commission.

Response: The Federal Bottomfishing permit (Sections 2.2.2.4 and 6.1.4) would provide a point of contact between the NMFS and the U.S. Fish and Wildlife Service and the NWHI bottomfish fishermen. It would indeed be desirable to distribute an information document developed by these agencies along with the Permit application. Information on the applicable laws and regulations concerning the threatened and endangered species of the area and a statement that the applicant has read the applicable laws, regulations, and penalties regarding the capture, killing, or harassment of Hawaiian monk seals or other endangered or threatened species could be included.

25. **Comment:** Experimental fishing permits can be issued to allow testing under controlled conditions to determine if habitat damage, protected species interactions, marketing problems, or other problems would result if such gear were permitted in the future (in 6.1.6).

Commenter: NMFS S.W. Region.

Response: Experimental fishing permits (EFP) for domestic fishermen are allowed for in the FMP under immediate actions (Sections 2.2.2.5, 3.1, 6.1.5). The Council proposes that the regulations implementing this FMP include a system for issuance of EFPs, under Section 303(b)(1) of the MFCMA, with the criteria and procedures to be determined by the Regional Director in consultation with the Council.

26. **Comment:** The March 1985 draft FMP indicated that bottomfish less than one pound in weight make up a small percentage of total commercial landings (in numbers of fish) and therefore the minimum size will have relatively little impact on commercial revenues (and in fact should have no impact if the State size limit were fully enforced). A summary of this information on impacts could be added to 2.2 and 3.7.

Commenter: NMFS S.W. Region.

Response: Data indicated that early in 1984, 30% by number of the ehu (*Etelis carbunculus*) sold from the MHI was under one pound in weight. The State of Hawaii does not include ehu in its one pound for commercial sale law. Therefore, there would be no impact on the current commercial fishing community. The Council at its 51st meeting passed a motion to eliminate the complementary Federal one pound for sale by fishermen and sale or possession by a dealer regulation.

27. **Comment:** It is not clear whether the Council-appointed bottomfish monitoring team will include scientists and managers with knowledge and responsibilities relative to the Hawaiian monk seal and other endangered or threatened species. Will the Monitoring Team and its annual report include consideration of information and problems concerning the protection of endangered and threatened species?

Commenter: Marine Mammal Commission.

Response: The Bottomfish Plan Monitoring Team (PMT) will include representation from the protected species agencies. The PMT under Section 6.2.1B 12 and 6.2.1B 14 will consider information and reported interactions between bottomfishing operations and protected species.

28. **Comment:** As drafted, it is not clear whether the Council is proposing that the criteria and procedures to be used to issue experimental fishing permits be established by regulation, or only that the general regulations that presently apply to implementation of the Fishery Management Plan include provisions for issuing experimental fishery permits. The advantages of establishing criteria and procedures, by regulation, would appear to outweigh the possible disadvantages and the Fishery Management Plan should be revised to provide a clearer indication of what is being proposed. In addition, Endangered Species Act recovery teams as well as the Fishery Management Council should be consulted by the Regional Director of the National Marine Fisheries Service to obtain their views concerning the criteria and procedures for issuing experimental fishing permits.

Commenter: Marine Mammal Commission.

Response: The Council proposes to rely on the Region to draft the proposed regulations. The Region will obtain input from all areas of expertise.

29. **Comment:** It would be appropriate and desirable for the Regional Director of the National Marine Fisheries Service to consult with the Fishery Management Council and any other interested or knowledgeable persons or organizations, such as endangered species recovery teams, to help assess the possible significance of any reported taking of monk seals or of other threatened or endangered species.

Commenter: Marine Mammal Commission.

Response: Agreed, after consultation with the various agencies, etc. that the decision to reinitiate Section 7 consultations rests with the Regional Director of the National Marine Fisheries Service. The appropriate language has been inserted in Section 6.2.1 B14.

30. **Comment:** Section 5.4.8 does not address other possible adverse interactions between endangered or threatened species and bottomfish fishing operations. Although currently available information concerning the nature, location, extent, and effects of such interactions is not sufficient to provide a thorough understanding of the magnitude of possible problems, these concerns should be referenced in this section.

Commenter: Marine Mammal Commission.

Response: Section 5.4.8 has been changed to reflect concern on the interaction of endangered and/or threatened species with hooks and fishermen as well.

31. **Comment:** It is indicated that a number of non-endangered and non-threatened species, as well as endangered and threatened species, of marine mammals are present in the Western Pacific Region. If there is a possibility that any of these non-endangered or non-threatened marine mammal species could be "taken" incidentally during fishing operations or related activities, the FMP would not be consistent with the provisions of the Marine Mammal Protection Act unless an incidental take permit or small take exemption has been issued. Therefore, this section of the FMP should be expanded to indicate why no non-endangered or non-threatened marine mammal species are expected to be taken, or, alternatively, to indicate what steps have been or will be taken to obtain the necessary permit or exemption. In addition, it would be desirable and appropriate to include a provision in the FMP calling upon the Regional Director of the National Marine Fisheries Service to investigate reports of the incidental taking of non-endangered and non-threatened, as well as threatened and endangered species of marine mammals.

Commenter: Marine Mammal Commission.

Response: Section 9.2 addresses the relationship of the Marime Mammal Protection Act to the FMP. Although there has not been any documented cases of incidental mortality of any of the species listed on Table 9.1 throughout the history of commercial fishing in Hawaii some evidence does exist that potentially detrimental interactions between fishing operations and protected species is possible. It is felt that the available information concerning these interactions is not sufficient to provide a thorough understanding of the problem. Therefore, due to the infrequent nature of interactions, research by the appropriate agencies should be conducted to ascertain the need for any incidental take permit or small take exemption.

APPENDIX H

NMFS LETTER REQUESTING MORATORIUM

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
300 South Ferry Street
Terminal Island, California 90731

DEPARTMENT OF COMMERCE
RECEIVED
JAN 15 1985
F/SWR31:JSM
INTERNATIONAL FISHERIES AFFAIRS
National Marine Fisheries Service

January 10, 1985

NATIONAL MARINE FISHERIES SERVICE
JAN 15 1985
FISHERIES RESOURCE MANAGEMENT

TO: Carmen J. Blondin
Deputy Assistant Administrator for
Fisheries Resource Management, F/M

FROM: for E.C. Fullerton
Regional Director, F/SWR

SUBJECT: Allocations of Seamount Groundfish

From the recent information available through publications on seamount groundfish resources, the reports of U.S observers placed aboard foreign trawlers in the fishery conservation zone (FCZ), and the recommendations (Attachment 1) of the Southwest Fishery Center, Honolulu Laboratory, I recommend that the total allowable level of foreign fishing (TALFF) for seamount groundfish be held in reserve indefinitely until a determination can be made on the ability of the resource to recover from excessive fishing pressure.

The available evidence indicates that seamount groundfish resources on seamounts throughout the western Pacific are depressed and that the resources in the Hancock Seamount area within the FCZ are severely depressed. The catch per unit of effort of seamount groundfish at Hancock has declined from a high of 12.51 mt./hr. in 1978 to 0.79 mt./hr. in 1984 (Attachment 2). A 2,000 mt. TALFF has been available since implementation of the Preliminary Management Plan (PMP) in 1977. Although only 1,000 mt. has been allocated each year, the quota has never been attained; only 72 mt. was taken in 1984.

The PMP states that, due to the almost complete absence of information on seamount resources, the fishery is regarded as experimental and that the goal of the plan is to obtain a better estimate of maximum sustainable yield (MSY). The information accumulated since 1977 permits a better estimate of MSY; however, the implementation of a moratorium by holding the TALFF in reserve is the best approach for two reasons:

1. The Western Pacific Council's bottomfish fishery management plan (FMP) is expected to be implemented in 1985. The FMP will include seamount groundfish, will present a management approach different from that of the PMP, and will contain a framework procedure for determining optimum yield (OY). At its December meeting, the Council agreed that the moratorium is appropriate.

2. The Honolulu Laboratory is planning to initiate a research effort on seamount resources. The closure of Hancock Seamount will provide an opportunity to compare growth between seamounts with and without a fishery. The research effort will lead to better estimates of MSY than can be provided at this time.

Domestic fishing for seamount groundfish has not occurred and is not expected in the near future; therefore, placing the OY in reserve will completely protect the remaining resource. A draft announcement for the Federal Register is attached.

Attachments

cc:
F/SWR1, D. Gates
F/SWR1, R. Shomura
F/SWC, I. Barrett

APPENDIX H

FEB 22

FEB 13 1985

F/M32:SPF

SEND YELLOW TO GATES and Kelly

Mr. Edward Wolfe
Deputy Assistant Secretary
for Oceans and Fisheries Affairs
Department of State
Washington, D.C. 20520

Dear Ed,

The National Marine Fisheries Service requests that no allocations of Hancock Seamount Resources be made until a determination can be made on the ability of the resource to recover. The enclosures review the current status of the resources and conclude that the resources in the Hancock Seamount area within the U.S. Exclusive Economic Zone are severely depressed.

A 2,000 metric ton (mt) optimum yield, which consists entirely of the total allowable level of foreign fishing (TALFF), has been available since 1977. Although only 1,000 mt has been allocated each year, the quota has never been attained; only 72 mt was taken in 1984.

The Western Pacific Fishery Management Council's (Council) bottomfish Fishery Management Plan is expected to be implemented in 1985 and will include the current Preliminary Management Plan. At its December meeting, the Council agreed that the moratorium is appropriate. Domestic fishing for seamount groundfish has not occurred and is not expected in the near future; therefore, placing OY in reserve will completely protect the resource.

We request that you inform the Japanese Government and other appropriate foreign governments of our decision to hold the 1985 2000 mt TALFF in reserve.

Sincerely yours,

William G. Gordon
Assistant Administrator
for Fisheries

Enclosures

cc: F(2), F/M, F/M1-Finch, Leedy, F/M11-Jensen, F/M3-Beasley, F/M32-Fox, Freese, Shutler, Terpak-Malm, Dike, F/M4-Roe, GCF-Luipold, Johnson, F/SWR, F/SWC

F/M32:SPFreese:634-7263:jd:1/31/85

F/SWR

DEPT. OF COMMERCE - NOAA
RECEIVED
FEB 15 1985
SOUTHWEST REGION
NATL MARINE FISHERIES SVC.

35:0-22

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 611

Foreign Fishing

AGENCY: National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; final specifications for seamount groundfish for 1985.

SUMMARY: 50 CFR 611.20(b) requires that each specification of optimum yield (OY) be reviewed during each fishing season and adjustments to the total allowable level of foreign fishing (TALFF) be made based on updated information related to status of stocks, estimated and actual performance of domestic and foreign fleets, and other relevant factors. A review of the seamount groundfish fishery has been completed and the 2,000 mt. TALFF is being held in reserve for 1985 due to a severe decline in the resource.

EFFECTIVE DATE: (Date of publication)

FOR FURTHER INFORMATION CONTACT: Donna D. Turgeon (Regulations Coordinator), (202) 634-7432.

SUPPLEMENTARY INFORMATION: The initial estimates of U.S. harvest and TALFF for seamount groundfish were published in the FEDERAL REGISTER on January ( ), 1985, ( ) as required by 50 CFR 611.20(c). The initial estimate of OY and TALFF was 2,000 mt. which it has been since implementation in 1977 of the Preliminary Management Plan for the Seamount Groundfish Fishery of the Pacific.

A review of the status of seamount groundfish resources in and beyond the Fishery Conservation Zone was concluded after the close of the 1984 fishing season. This has led to the decision to hold the 2,000 mt. OY in reserve while a research effort is conducted to determine the condition of the seamount resources in the Hancock Seamount area and the ability of the resource to recover from apparent excessive fishing pressure. This decision has resulted from the inability of foreign vessels to harvest the TALFF and a continuous decline in catch per unit of effort.

APPENDIX I

LETTERS OF CONSISTENCY

AMERICAN SAMOA GOVERNMENT
PAGO PAGO, AMERICAN SAMOA 96799
OFFICE OF ECONOMIC DEVELOPMENT PLANNING

In reply refer to
ECD
Serial: 016

December 5, 1985

Kitty Simonds, Executive Director
Western Pacific Fishery Management
Council
1164 Bishop Street
Honolulu, Hawaii 96813

Dear Kitty:

The Office of Economic and Development Planning on October 29, 1985 a copy of the revised draft Fishery Management Plan for the bottomfish and seamount fisheries of the Western Pacific for consistency certification with the American Samoa Coastal Zone Management Program. This plan proposes to prohibit the use of bottom trawl and bottom gillnets, as well as the use of explosives, poison, and other toxic substances by both foreign and domestic fishing in the FCZ around American Samoa.

These restrictions would be highly beneficial to local fisheries interest in that the plan provides for protection of endangered sea turtles, prevention of bottom habitat destruction and prevention of indiscriminate fishing activities. In addition, the proposed Administrative framework provides flexibility for future adjustment if found justifiable.

In conclusion, this revised draft Management Plan is found to be consistent with American Samoa Coastal Zone Management Program (ASCZMP) policies, and therefore meets federal consistency as required by the Coastal Zone Management Act of 1972.

Thank you for the opportunity to comment.

Yours sincerely,

ALFONSO P. GALEA'I
Director

cc: Ray Tulafono, Director, Marine Resources
Henry Sesepasara, ASCZMP Manager, DPO

APG:rpl

BUREAU OF PLANNING

GOVERNMENT OF GUAM
AGANA, GUAM 96910

NOV 1 3 1985

Ms. Kitty Simonds
Executive Director
Western Pacific Regional
Fishery Management Council
1164 Bishop Street, Room 1405
Honolulu, Hawaii 96813

Dear Ms. Simonds:

The Bureau of Planning received on October 24, 1985 a copy of the revised draft Fishery Management Plan for the Bottomfish and Seamount Ground Fisheries of the Western Pacific for consistency certification with the Guam Coastal Management Program (GCMP). This plan proposes to prohibit the use of bottom trawl and bottom gill nets, as well as the use of explosives, poison, and other toxic substances by both foreign and domestic fishing in the FCZ around Guam.

These restrictions would be highly beneficial to local fisheries interest in that the plan provides for protection of endangered sea turtles, prevention of bottom habitat destruction, and prevention of indiscriminate fishing activities. In addition, the proposed administrative framework provides flexibility for future adjustment if found justifiable.

In conclusion, this revised draft management plan is found to be consistent with GCMP policies, and therefore meets federal consistency as required by the Coastal Zone Management Act of 1972.

Thank you for the opportunity to comment.

Sincerely,

PAUL B. SOUDER
Director

DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT

KAMAMALU BUILDING, 250 SOUTH KING ST, HONOLULU, HAWAII
MAILING ADDRESS: P.O. BOX 2359, HONOLULU, HAWAII 96804 • TELEX: 7430250 HIDPED

GEORGE R. ARIYOSHI
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DEPUTY DIRECTOR
LINDA KAPUNIAI ROSEHILL
DEPUTY DIRECTOR

DIVISIONS
BUSINESS AND INDUSTRY DEVELOPMENT DIVISION
ENERGY DIVISION
335 Merchant St, Room 110, Honolulu, Hawaii 96813
FOREIGN-TRADE ZONE DIVISION
Pier 2, Honolulu, Hawaii 96813
LAND USE DIVISION
PLANNING DIVISION
RESEARCH AND ECONOMIC ANALYSIS DIVISION

OFFICES
ADMINISTRATIVE SERVICES OFFICE
INFORMATION OFFICE

Ref. No. P-3469

February 4, 1986

Ms. Kitty Simonds
Executive Director
Western Pacific Fishery
Management Council
1164 Bishop Street, Room 1405
Honolulu, Hawaii 96813

Dear Ms. Simonds:

Subject: Revised Draft Fishery Management Plan for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region (FC/85-072)

We have reviewed the revised plan and agree with the Council's determination that it is consistent to the maximum extent practicable with Hawaii's Coastal Zone Management (CZM) Program. Your continued cooperation in assuring compliance with the CZM consistency review process is greatly appreciated.

Very truly yours,

Murray E. Towill
for Kent M. Keith

cc: Mr. Doyle Gates, Director
Western Program Office
National Marine Fisheries Service

III. Harvesting sector stability

The proposed action improves stability in the harvesting sector of Hawaii's bottomfish community by encouraging the presence of relatively permanent members within the industry. The remaining fishermen will be increasingly committed to the fishery as personal income begins to rise as a result of the implementation of this amendment.

IV. Profit maximizing fishermen

Comparing revenue estimates between "actual 1986 conditions" and the year after the amendment is implemented, the annual gross revenue per boat improves by approximately $3,600 (6%). Annual gross revenue per boat increases by an estimated $17,200 (37%) when an average vessel operating in a fleet the size of that existing in 1986 and landing the equilibrium of harvesting "NWHI MSY landings," is compared to an average boat fishing in a fleet of limited size landing the Ho'omalu Zone MSY. The cost formula used by Meyer (1987) provides an estimate of the operating and fixed costs for a typical bottomfishing vessel averaged across seven trips per year. Using this formula and the assumptions presented in Table 13, an estimate of the net economic impact of the proposed action is compared to 1) the 1986 disequilibrious situation and 2) the projected equilibrious condition under a policy of no action. The results are presented in Table 14.

If the NWHI MSY landing scenario is used as the base line, then the proposed action is estimated to increase an owner's profits, before fixed costs, by $1,296 (120%) when compared to the no action policy (Table 14). It is estimated that under the proposed action, vessels' financial loss will be reduced by 10% when compared to the no action scenario. Owners would still be operating their boat "in the red" if they fished for only bottomfish and made only seven trips per year. However, they would be losing less money, and the financial health of firms remaining in the fishery would continue to improve as the size of the fleet diminishes over time because of natural attrition. For example, under Meyer's estimate of an 11-boat fleet occurring five years after the plan, an owner's available income per trip increases $5,778 (535%) above the estimated income earned in the no action scenario. Comparing the estimated net economic impacts of an average vessel fishing under the no action scenario and that described five years after the plan indicates that a boat would be gaining approximately $40,000 more in revenues (losing $40,000 less) if the proposed action is adopted. The reader should be aware that this represents an "average" and does not reveal the full-time and part-time nature of the 11-boat fleet on which Meyer based his scenario. Meyer estimates full-time operators would have landings sufficient to cover both fixed and variable cost, while part-time multispecies vessel would cover only variable cost of three bottomfishing trips. Meyer's 11-vessel Ho'omalu Zone fleet is presented here to aid the reader in comparing an average boat's income under a long-run fleet estimate (Meyer, 1987) with the fleet size and landing observed in the past (actual 1986 condition), and two apposing, short-run (no action and first year under plan) fleet size and landing estimates.

This amendment does not impose inefficiencies on the fishing operations. As a result, fishermen are capable of minimizing the cost of

landing the fish. By their very nature, profit maximizing fishermen strive for increased efficiency while minimizing costs. The preferred alternative encourages these conditions in the fishery, thereby promoting efficiency (NS 5) while minimizing industry costs (NS 7).

B. Impact of Rejected Alternative Categories

1. Establish for the NWHI bottomfish fishery a different direct effort regulation policy

I. Fishery overcapitalization

Direct effort regulation policies are designed to produce positive, long-term economic impacts. They can be effective management tools for assisting fisheries suffering from overcapitalization. Removing excessive effort from the fishery rewards the efficiency and cost effectiveness of profit maximizing fishermen. As a result, the alternative direct effort policies achieve the efficiency (NS 5) and minimum cost (NS 7) objectives.

II. Bottomfish market stability

Detrimental impacts on market stability are associated with IFQ; effort they create changes in the timing of landings, especially in a fishery faced with substantial uncertainty.

III. Harvesting sector stability

A disadvantage of these regulation policies is the initial period of economic hardship that can occur when they are instituted. Marginally productive operators, who cannot afford the license fee or taxes on fishing effort would suffer economic loss and exit the industry. The Council believes an IFQ system would likely cause an unacceptably high number of firms to go out of business immediately as a result of quota scarcity. (Limited quotas would be necessary if the scheme is to be effective in removing effort from the fishery.) As a result, the short-term economic impact from abruptly implementing an alternative direct effort policy is considered to be negative. In contrast, both the short- and long-term economic impacts of the proposed action should benefit most bottomfish operators because of the policy's gradual approach to effort reduction.

An additional problem is the windfall benefit to fishermen grandfathered into the fishery if their quotas become saleable. The Council did not wish to establish a policy that would result in creating windfall profit associated with transferrable fishing rights.

IV. Profit maximizing fishermen

Economic theory of fisheries management supports direct effort regulation policies, which encourage profit maximizing behavior among fishermen. Operational freedom exists under these measures because fishermen are not burdened with the imposition of institutionalized inefficiencies.

While these advantages are identified with the alternative direct effort regulations, they are also associated with the preferred alternative.

2. Establish for the NWHI bottomfish fishery an indirect effort regulation policy

I. Fishery overcapitalization

Open access policies do not prohibit additional vessels entering the fishery and are an inefficient means to remedy overcapitalization. These policies may exacerbate the problem by encouraging further capital investment for vessel modifications designed to circumvent regulated inefficiency. In the short term, economic returns decline because of reduced landings caused by operational restrictions. In addition, too many boats fishing a declining stock causes economic returns to be spread thin among operators. Even in a scenario in which MSY is achieved by a fleet of 29 vessels, the average firm is estimated to generate approximately $2,400 less per trip than under the proposed action (Table 13).

II. Bottomfish market stability

Marketing channels are disrupted under some indirect effort policies because of the combined effect of allowing additional fishing boats into the fishery while constraining a specific aspect of fishing operations. Under such conditions, operators may find it justifiable to capture the majority of annual total catch in a relatively short period of time. This results in marketing bottlenecks, inconsistent supply of a quality product to consumers, low landing prices to fishermen, and high prices to consumers at other times in the year. These results indirectly conflict with FMP objectives. For these reasons, indirect effort policies are considered by the Council to negatively impact the stability of local bottomfish markets.

III. Harvesting sector stability

Under this policy approach, temporary participation could continue as fishermen come and go from the fishery. The composition of the fleet would likely continue to change. Vessels more capable of operating under the regulated inefficiencies could displace existing boats, adding to a further destabilization of the fishery. Further instability within the bottomfish fishery would be a negative, long-term economic impact of following a policy of indirect effort regulation.

IV. Profit maximizing fishermen

Indirect effort policies are designed to institute inefficiencies into the fishery in order to achieve biological objectives. These measures are not intended to be defended on economic grounds and prove deficient under such a criterion. For example, indirect effort regulations fail to minimize costs (NS 7). NOAA interprets this as minimizing industry costs as well as administrative and enforcement costs (50 CFR 602; 1-2055). Inefficiencies imposed on fishermen by an indirect effort policy increase operators' costs of fishing and further reduce income. The Council considers

the financial success of fishermen an important objective and rejects indirect effort policies on the basis of these costly inefficiencies.

3. No action

I. Fishery overcapitalization

The no action policy allows fishing effort to continue unabated. No mechanism will exist to reduce the number of entrants to the fishery or to constrain existing bottomfishing operations from expanding their vessels' fishing capacity. The problem of overcapitalization (FMP 7) is exacerbated under the no action policy.

II. Bottomfish market stability

Consumers suffer under a no action policy as excessive effort continues to fish down stocks, thereby reducing both the quality and quantity of desirable bottomfish species available to local fresh fish markets. A no action policy could not ensure against the negative impact overfishing has on market stability. Overfishing would result in annual landings well under MSY levels, thereby allowing the fishery to operate below its potential to supply bottomfish to the local markets. Product shortages would be more evident as NWHI bottomfish stocks became more difficult to locate. Prices could increase to consumers for specific products such as *opakapaka* that historically contribute a significant amount to local fresh fish markets. As a result, the no action policy fails to achieve FMP objective 6 established to maintain consistent availability of high quality products to consumers.

III. Harvesting sector stability

Economic disequilibrium would continue within the harvesting sector as more vessels test the fishery by entering and exiting on a temporal basis. Economic sectors of the fishing community are negatively impacted by such a policy in both the short and long term. The economic condition of the fishing community is destabilized by a transient bottomfishing sector. The financial health of bottomfish fishermen continues to spiral downward as they compete against an increasing number of fishermen for a portion of a declining resource.

IV. Profit maximizing fishermen

Under the assumptions set forth in Section 8.4.A.I, implementing a policy of no action, rather than the proposed alternative, would cost the average firm an additional total annual loss of approximately $9,000 (Table 14). This 10% decline in profitability per boat is based on the conservative assumption that the size of the fleet would not increase above the 1986 level. Economic returns per boat would worsen if the size of the fleet increases because of fishermen entering the fleet.

Table 15. Summary of economic effects of policy alternatives.

	Short term	Long term
Preferred Alternative:		
1. Access management policy	+	+
Rejected alternatives:		
1. Direct effort regulation	-	+
2. Indirect effort regulation	-	-
3. No action	-	-

+ = Beneficial impact.
- = Negative impact.

8.5 Social Impacts of Alternatives

A. Impacts of Proposed Action

I. NWHI bottomfish fishermen

The preferred alternative benefits NWHI bottomfish fishermen by allowing them greater responsibility in their prudent use of the resource. This policy enables fishermen to benefit from conservative fishing behavior that allows stocks to replenish while still harvesting acceptable landings. Prudent stewardship of long-term fishermen is no longer threatened by temporal fishing behavior of new entrants. Fishermen can have greater confidence that they will enjoy the future benefits of increasing yields due to their conservative fishing in the present. Participant longevity could be beneficial to the social structure within the fishing community as well as in the related industries. Establishing long-term professional associations within and outside the commercial fishing community should encourage stability and confidence by fostering personal and professional commitments.

II. Future access to NWHI bottomfish fishery

The policy allows eligible fishermen to enter the fishery in the future when bottomfish stocks and economic returns are sufficiently large to support more boats. The point system established to determine individuals "next in line" to enter the fishery is designed to select those individuals establishing themselves in the fishery over time. This amendment rewards an individual displaying a commitment to bottomfishing in the main Hawaiian Islands and in the Mau Zone, with the prospect of being able to enter the NWHI bottomfish fishery in the future. Fishing in these areas enables commercial operators to accumulate points to improve their eligibility for selection to join the fishery. This selection process ensures that these individuals are more likely to have a long-term commitment to the success and health of the fishery and its environment.

III. Stability in NWHI bottomfish fishery

Stabilizing the NWHI bottomfish fishery is an objective of this amendment. The preferred alternative accomplishes this objective by regulating the size of the fleet through continued participation, thereby discontinuing the influx of excess fishing effort.

IV. Flexibility for fishermen

The policy provides operational flexibility for bottomfish fishermen without the hindrance of regulated inefficiencies. With the freedom to operate efficiently fishermen achieve their business interest as well as the efficiency (NS 5) and least cost (NS 7) objectives.

B. Impact of Rejected Alternative Categories

1. Establish a different direct effort regulation policy for the NWHI bottomfish fishery

I. NWHI bottomfish fishermen

The Council considers individual quotas, license fees, and taxes on fishing effort to have overriding, negative social consequences upon NWHI bottomfish fishermen. The concept of fishing freedom is inherent to the unique cultural and social fabric of the western Pacific region, and management schemes that challenge this view are negatively received. Paying for fishing rights has been debated at length by the Council and members of the fishing community. Strong public opinion in opposition to such management regulations have been expressed. The concept of quotas has also been poorly received because many members of the community fear (rightly or wrongly) that these fishing rights will eventually become the possession of a few large corporations or wealthy individuals. The worry that smaller operations will be "bought out" or otherwise excluded from the fishery by the "big boys" is a very real concern existing in the commercial fishing community. As a result, alternative direct effort regulation policies were rejected, in part, on the basis of their social unacceptableness.

II. Future access to NWHI bottomfish fishery

Alternative direct effort regimes may tend to bias the fishery in favor of wealthier participants who can afford fishing taxes or fees or have the ability to bid quota shares away from operators with less financial strength. The long-term composition of the fishery could be one in which excessive shares or fishing privileges are accrued by a particular individual, corporation, or other entity. A fishery of this kind conflicts with the MFCMA (NS 4) which is concerned with such social factors. Concerns about this potential conflict contributed to the Council's decision to reject these alternative direct effort policies.

III. Stability in NWHI bottomfish fishery

Direct effort regulations such as IFQs may inadvertently be counterproductive to the stabilization of the fishery. For fishermen to have a long-term commitment to the industry, they must feel a certain degree of confidence in anticipated landings in future years. Quotas would likely be allocated on the basis of the productive health of the various individual stocks being exploited in this multispecies fishery. Not a great deal of information is presently available to facilitate the establishment of quota limits by species on which to base a system for IFQs. Because of this lack information, initial quotas would necessarily be conservative and could change considerably from year to year. Conceivably, fishermen would be unwilling to commit themselves and their resource for any great length of time to a fishery managed by a fluctuating quota system. A lack of commitment of long-term participation in the fishery could exacerbate the problem of fleet instability.

IV. Flexibility for fishermen

The alternative direct effort regulations are flexible to the degree fishermen can operate freely once they have met the initial criterion, such as paying the fee or tax. The regulation itself is not flexible but can allow operational freedom when conducting fishing at sea. An individual quota scheme also provides operational freedom up to the point the quota is reached. However, once the quota is met, fishing must stop for the remainder of the fishing season. Given the presently depleted condition of various bottomfish stocks, an initially low total quota, with low individual quotas, is very likely. If individual quotas must be set prohibitively low, fishermen would land their quota quickly and then shut down or search for other opportunities. Under this realistic scenario, an individual quota policy is poorly rated with regard to its flexibility for fishermen who wish to fish for bottomfish year round.

2. Establish an indirect effort regulation policy for the NWHI bottomfish fishery

I. NWHI bottomfish fishermen

The Council considers indirect effort regulation less beneficial to NWHI bottomfish fishermen than the proposed action. In the absence of a limited access policy, any beneficial results from these regulations will attract additional operators and be dissipated among the larger fleet.

II. Future access to NWHI bottomfish fishery

Indirect effort regulations enable free and open access into the fishery. However, this type of freedom, without any constraints on increases in fishing effort, is a primary cause for the fishery's presently overfished condition. Such an approach would only contribute to further degrading the fishery's productive potential.

III. Stability in NWHI bottomfish fishery

This policy exacerbates the problem of instability by not addressing the crucial issue of unabated expansion in fishing effort by new entrants. Instability is due to fishermen operating on a short-term basis as conditions change within the bottomfish fishery and alternative local fishing opportunities. Indirect effort regulations do not encourage long-term commitments to the bottomfish fishery. This destabilizes the social fishing community of permanent bottomfish fishermen as well as those long-term operators in other local fisheries.

IV. Flexibility for fishermen

Indirect effort policies promulgate inefficiencies in the industry, thereby reducing fishermen's operational flexibility. Operators are put at a disadvantage in order to reduce their fishing success. Frequently, under an indirect effort policy, there is a recurring need to add more constraints because fishermen are continually working around the initial regulated inefficiency. In the long-run, the fishery becomes increasingly inflexible.

3. No action

I. NWHI bottomfish fishermen

If no action is taken to regulate fishing effort in the NWHI bottomfish fishery, overfishing will continue and the long-term productivity of the stock will be in jeopardy. This approach fails to meet NS 1 and FMP objective 1 and conveys no concern for the social well-being and continued existence of the bottomfishing community in Hawaii. Hawaii's fishing community at large would be justifiably concerned over the Council's failure to attempt responsible management of the NWHI bottomfish fishery.

II. Future access to NWHI bottomfish fishery

Under a policy of no action, access into the fishery will continue uncontrolled as it has in the past. This approach would essentially condone increasing the fishing pressure on a presently overexploited resource.

III. Stability in NWHI bottomfish fishery

A policy of no action would encourage the perpetuation of instability in the fishery.

IV. Flexibility for fishermen

The present condition of the fishery is one of tremendous flexibility. In direct response to this flexibility, there are considerable problems associated with the overall health and future productivity of the fishery. Establishing no further management measures would protect the fishery's flexibility at the expense of exacerbating its problems.

Table 16. Summary of social impacts of policy alternatives.

	Short term	Long term
Preferred Alternative:		
1. Access management policy	+	+
Rejected Alternatives:		
1. Direct effort regulation	-	-
2. Indirect effort regulation	-	-
3. No action	-	-

+ = Beneficial impact
- = Negative impact

8.6 Enforcement and Administrative Impacts of Alternatives

A. Impact of Preferred Alternative

I. Legality under MFCMA

The preferred alternative, which is a fishing opportunity allocation scheme for the NWHI bottomfish fishery, must satisfy issues identified within NS 4 to be legal under the MFCMA. The plan does not create markets for shares in the fishery and avoids establishing circumstances conducive to the establishment of inordinate control by any particular individual, corporation, or other entity.

Discretionary provisions that also must be addressed for an access limitation proposal are as listed under Section 303 of the MFCMA. These requirements state that, in the process of developing an access limitation policy, the following issues must be considered: 1) present participation in the fishery, 2) historical fishing practices, 3) the economics of the fishery, 4) capability of vessels to engage in other fisheries, and 5) the cultural and social framework relevant to the fishery. A further discussion on the proposed action's adherence to these issues is summarized in Section 9.11 of this document.

II. Absence of illegal discrimination

No discrimination among residents of different states exists in the plan. Under this amendment, the privilege to fish is assigned on the basis of time of prior participation (i.e., fishery participation prior to August 7, 1985), and no discrimination exists between persons residing in different states (NS 4).

III. Minimization of necessary regulation

The Council considered this amendment to be the best alternative to meet the objectives of the MFCMA and the FMP while minimizing the amount of regulations necessary to achieve that goal. The proposed action encourages participants to self-regulate in the interest of the resource and their own future as bottomfish fishermen.

IV. Minimization of necessary enforcement costs

The preferred alternative does not alter the ongoing $809,000/year cost for bi-weekly surveillance (with the multiple fishery as well as non-fishery enforcement and safety missions of the U.S. Coast Guard over the NWHI as presented in Section 10.2 of the FMP). Self-monitoring becomes inherent as personal interests motivate operators to investigate bottomfishing activity conducted by any vessel not qualifying in the fishery. This type of "self-surveillance" would occur in both the Ho'omalu Zone (within which access is limited) and the Mau Zone (within which access is not allowed to Ho'omalu Zone permit holders). The two groups would essentially police each other to a certain degree. Cooperation between enforcement officials and fishermen is heightened under this amendment, and no additional presence of Federal enforcement officials on the high seas is anticipated. Dockside inspections would continue to be the primary enforcement mode.

V. Minimization of administrative costs

Increases in administrative costs are minimized under the limited access proposal. Additional costs may come from the creation of the Advisory Review Board which could meet as often as four times annually. However, only 3 out of 10 board members (2 fishermen and 1 market representative) would require travel costs or per diem when attending a board meeting. Most bottomfish fishermen and marketing or processing representatives reside on the island of Oahu, where the majority of the meetings would be held. These administrative costs would be reduced further if the non-government board members need not travel off the island to attend board meetings. Remaining members are locally stationed government employees and require no additional remuneration for board participation.

B. Impact of Rejected Alternative

1. Establish a different direct effort policy for the NWHI bottomfish fishery

I. Legality under MFCMA

The alternative direct effort regulation policies considered by the Council include IFQs, license fees, and taxation. Fishery economists recommend direct effort regulations on the basis of their ability to promote economic efficiency. As with the preferred alternative, these policies cater to profit maximizing fishermen by allowing them operational freedom. They are designed to specifically address fisheries suffering from overcapitalization and unstable economic markets. Despite these advantages,

the implementation of license fees and taxes in excess of administrative costs are specifically disallowed under the MFCMA [602.15(c)(1) 50 CFR 602, pp. 1-2044]. For this reason, the Council rejected these two alternative direct effort policies. Because adequate taxes or license fees are not allowed under the MFCMA, they are not evaluated further under the remaining criteria in this section.

II. Absence of illegal discrimination

In concept, there is no discrimination between persons residing in different states associated with these alternative direct effort policies that the Council has considered.

III. Minimization of necessary regulation

An individual quota scheme is rejected by the Council in part, due to its incompatibility with a multispecies fishery. Individual quotas are considered incompatible because a quota would be necessary for each species in the bottomfish fishery. Regulations associated with each species for each individual quota are conceivable under such a policy. An elaborate regulatory system could become necessary to ensure the success of quotas if implemented in this fishery. At this time, the Council views the regulatory requirements of such a policy to be prohibitive.

IV. Minimization of necessary enforcement costs

The Council considers an individual quota policy too costly, in terms of enforcement, to be effectively implemented. Increased surveillance would be required to ensure less desirable bottomfish are not discarded in attempts to fill individual quotas with more profitable species. Dockside inspection could become increasingly time consuming and expensive if enforcement officers are required to identify fish by species in order to ascertain whether quotas are being adhered to for different fish groups. The overall enforcement complexities associated with this approach make it less preferable for managing the fishery.

V. Minimization of administrative costs

Individual quotas would require considerably more scientific and administrative resources to be properly established and implemented than would the proposed action. Significantly more detailed information would be required from fisheries scientists in order to provide a basis for establishing the quotas. Research and data collection become increasingly critical for stock assessment and revision of individual quotas. Much of the information is not presently available, and considerably more research would be needed before quotas could be confidently quantified. The Council considers the time and cost requirements associated with developing an individual quota system to preclude its being pursued at the present time.

2. Establish an indirect effort regulation policy for the NWHI bottomfish fishery

I. Legality under MFCMA

The MFCMA provides the latitude to accommodate the implementation of an indirect effort regulation policy.

II. Absence of illegal discrimination

Generally, no illegal discrimination is associated with indirect effort regulations.

III. Minimization of necessary regulation

Following an indirect effort management approach will, in the long term, result in a highly regulated fishery. For example, as fishery managers impose restrictions on effort to maintain the desired level of catch, fishermen circumvent the regulation by modifying some other aspect of their operation. Managers must consequently establish another regulation to further curb effective fishing effort, and the cycle continues. This result directly contradicts the objective to minimize necessary regulation and unnecessary duplication (NS 7).

IV. Minimization of necessary enforcement costs

This management approach tends to impose substantial burdens on enforcement agencies to adequately monitor compliance within the fishery. The cost of enforcing an ever-increasing number of effort regulations would eventually become prohibitive. Continued public support for a management policy is important to its success. Indirect effort regulations impose operational inefficiencies at fishermen's expense. Rarely, if ever, is such action popular in the fishing community. Generating supportive participation in the design and implementation process of such a policy would be a formidable task for administrative and enforcement officials.

V. Minimization of administrative costs

Under an indirect effort policy, administrative costs increase in the long term as additional regulations are imposed to limit catch and maintain effective reductions in fishing effort. Fishermen work around regulated inefficiencies by modifying some other aspect of their fishing operation to increase fishing effort. The cost of administration grows with each additional effort regulation. As a result, open access policies are unable to achieve the cost minimizing objective (NS 4).

3. No action

I. Legality under MFCMA

Establishing no additional management measures in the NWHI bottomfish fishery is legal under the MFCMA, except that it will not reduce chances of overfishing.

II. Absence of illegal discrimination

Following a policy of no action would not establish any illegal discrimination in the fishery.

III. Minimization of necessary regulation

The short-term implication of a no action policy would result in no further regulations imposed in the NWHI bottomfish fishery. However, in the absence of some type of restrictive fishing effort policy, more severe regulation measures would likely be needed in the future to protect the resource. Establishing preventive management in the present will minimize necessary regulation in the future.

IV. Minimization of necessary enforcement costs

A policy of no action would perpetuate the status quo for existing enforcement procedures without adding or reducing costs or responsibility to management agencies in the short term. However, enforcement costs in the long term could be excessive if expensive management measures are later required to protect the resource because of past management neglect.

V. Minimization of administrative costs

Such a policy could result in higher administrative costs when the Council needs to seek more stringent management measures to protect the fishery in the future. Negative political ramifications also result from taking a no action approach to the NWHI bottomfish fishery. Public opinion among members of Hawaii's fishing community would turn unfavorable toward the Council because of its failure to attempt responsible management of the bottomfish fishery. Future participation in the regulatory process by members in the fishing community would decline as their perception of the value of management bodies deteriorates. The loss of this valuable input would negatively impact the long-term effectiveness of administrative and enforcement goals.

Table 17. Summary of administrative and enforcement impacts of policy alternatives.

	Short term	Long term
Preferred Alternative:		
1. Access management policy	+	+
Rejected Alternatives:		
1. Direct effort regulation	-	-
2. Indirect effort regulation	-	-
3. No action	0	-

+ = Beneficial impact.
- = Negative impact.
0 = No impact.

8.7 Summary of Impacts of Proposed and Rejected Alternatives.

Presented in this section are three tables designed to aid the reader in summarizing the impacts of the various fishery management alternatives as they apply to the MFCMA NS, FMP objectives, and the objectives of this amendment. The rating code used in these tables is described below:

++	=	Strong beneficial impact
+	=	Moderate beneficial impact
0	=	No impact or not applicable
-	=	Moderately negative impact
--	=	Strong negative impact

Table 18. Impact summary of proposed action and alternatives (Alt.): based on compliance to FMP objectives.

FMP Objectives	Proposed Action	No Action	Other Direct Effort Alt.	Indirect Effort Alt.
Protect against overfishing	++	--	++	+
Provide management framework	++	--	+	+
Protect stocks and habitat	++	--	+	-
Maintain quality market product	++	-	+	-
Prevent over-capitalization	++	--	+	--
Minimize adverse impacts on habitat and endangered species	++	0	0	-

Table 19. Impact summary of proposed action and alternatives (Alt.): based on compliance to MFCMA NS.

MFCMA N.S.	Proposed Action	No Action	Other Direct Effort Alt.	Indirect Effort Alt.
Prevent overfishing	++	--	++	+
Based on best information	+	0	0	0
Manage stock(s) as one unit	++	0	0	0
No discrimination by State residency	+	+	+	+
Promote efficient resource use	++	--	+	--
Management flexibility	+	0	+	--
Minimize administrative and enforcement costs	+	-	-	--

Table 20. Impact summary of proposed action and alternatives (Alt.): based on compliance to amendment objectives.

Amendment Objectives	Proposed Action	No Action	Other Direct Effort Alt.	Indirect Effort Alt.
To reduce overfishing	++	--	++	+
To reduce overcapital-ization	++	--	+	-
To increase fishery stability	++	--	-	-
To increase the fishery's profitability	++	--	+	--

9.0 DETERMINATIONS

9.1 Maximum Sustainable Yield

This amendment contains a revised estimate of the MSY for NWHI bottomfish. The estimate for the MSY in the bottomfish FMP was derived by extrapolating the yield estimate of 272 kg/per nautical mile of the 200-meter depth contour (Ralston and Polovina, 1982). Results from a more recent analysis conducted by the NMFS Honolulu Laboratory established a yield estimate of 286 kg/nautical mile of 100-fathom contour (Ralston, 1986). The length of the 100-fathom contour for the NWHI is 1,231 nautical miles. The revised estimate of MSY for bottomfish for the entire NWHI at 352 metric tons.

The NWHI fishery for bottomfish is at present only a fresh fish fishery. Extended travel time to and from the northernmost parts of the Hawaiian Archipelago precludes most fishing operations returning to port (Honolulu) with a marketable fresh fish product. For this reason, MSY is also estimated for the "fresh fish portion" of the NWHI. The MSY for bottomfish in their NWHI fresh fish zone (Nihoa to Lisianski Island) is estimated to be approximately 275 metric tons (Ralston and Kawamoto, 1987). The fresh fish access zone comprises all of the Mau Zone and nearly two-thirds of the Ho'omalu Zone, as describe under the limited access program. To estimate MSY for both the Ho'omalu Zone and the Mau Zone, island-specific MSY estimates must be used. The most current island-specific MSY estimates using the 286 kg per year per nautical mile production estimate are found in a memorandum dated March 1986 from Dr. Steve Ralston (NMFS biologist) to the Council-appointed Bottomfish Plan Monitoring Team. Ralston estimates MSY for the Mau Zone (Nihoa and Necker Island) to be 78.9 metric tons and the Ho'omalu Zone (French Frigate Shoals to Kure Island) to be 273.2 metric tons. Ralston's memorandum is presented in Appendix A.

9.2 Optimum Yield

The optimum yield for the NWHI bottomfish fishery is defined non-numerically in the FMP as the amount of bottomfish caught by fishermen within the Federal Coastal Zone that will achieve FMP objectives to the greatest extent practicable. The objectives directly applicable to this amendment are presented below.

A. Maintain long-term productivity of bottomfish stocks.

B. Maintain a balance between harvest capacity and harvestable fishing stocks to prevent overcapitalization and provide consistent supplies of high quality fish to consumers.

C. Protect bottomfish stocks, habitat, and associated endangered and threatened species from adverse effects of destructive or indiscriminate fishing activities.

The definition of optimum yield has not been affected by this amendment. At the time the FMP was developed, the Council estimated the quantity of

bottomfish expected to be taken in the NWHI under the FMP as between 400,000-700,000 pounds per year (FMP, 1986). This is approximately equivalent to between 182 and 318 metric tons. The most current estimate of MSY indicates that annual "sustainable" yields of fresh fish landings beyond 275 metric tons are not possible in the NWHI bottomfish fishery. Under this amendment, 28% and 72% of these fresh fish landings would be distributed between the Mau Zone (78 metric tons) and the Ho'omalu Zone (198 metric tons), respectively. Price and revenue effects are also essentially neutral in the MSY range. Notwithstanding the non-numeric definition of optimum yield, the Council estimates the annual harvest associated with optimum yield to be less than or equal to MSY. The estimates of MSY and optimum yield are not to be construed as quotas for the fishery, but rather as revised yield estimates.

9.3 Domestic Harvest

The fishing capacity for NWHI bottomfish is substantial enough to harvest the optimum yield. Supporting evidence is found in catch figures for 1985 and 1986: Catch for the fresh fish access zone surpassed the MSY by 8% and 18%, respectively. The amendment does not directly lessen fishing effort below the level needed to land the MSY and optimum yield. Therefore, domestic annual harvest is estimated as equal to optimum yield.

9.4 Total Allowable Level of Foreign Fishing

The domestic fishery has the capability and intent to harvest the entire optimum yield from the fishery. Therefore, the total allowable level of foreign fishing is zero.

9.5 Domestic Annual Processing

This amendment has no effect on the domestic annual processing estimates described initially in the FMP. There is no domestic processing of the management unit species in the industrial sense. The only imaginable processing that could occur would be the manufacture of "surimi." However, this possibility is unlikely, given the relatively high price and limited supplies of bottomfish. All of the landings of bottomfish presently enter local markets in fresh product forms. At this time, there is no reason to believe that the domestic annual processing will be other than zero.

9.6 Joint Venture Processing

Harvesting capacity does not exceed that presently utilized by the fleet and sold through domestic market channels. Therefore, the amount of bottomfish available for joint venture processing is zero.

9.7 Consistency to MFCMA National Standards

Selection of the preferred alternative was based, in part, on how well it was consistent with the seven NS set forth within the MFCMA. The seven NS are presented below as an added reference for the reader.

1. Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the U.S. fishing industry.

The preferred alternative directly supports the prevention of overfishing by capping fishing effort and facilitating its reduction. The amendment enables the achievement of non-numeric optimum yield for the NWHI bottomfish fishery as described in Section 9.2.

2. Conservation and management measures shall be based upon the best scientific information available.

This amendment was constructed with the best available information provided by scientists and other professionals within the Federal (NMFS) and State government.

3. To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

The NWHI fishery for bottomfish is composed of several species of bottomfish. They share similar habitat and are fished by the same operators using comparable gear. The bottomfish FMP recognizes these similarities and attempts to manage NWHI bottomfish stocks as one unit. The proposed amendment is consistent with the singular management unit approach to the NWHI bottomfish fishery.

4. Conservation and management measures shall not discriminate between residents of different states.

This amendment proposes a limited access scheme that determines eligibility on the basis of historic participation. The State residency of operators is not a factor. The grandfathering component of the plan is equitable to all. Any vessel owner who presents appropriate documentation of bottomfish landings made by his vessel prior to the August 7, 1985, cutoff date is eligible. In addition, the plan allows any fisherman to gain future access into the NWHI bottomfish fishery by demonstrating personal participation as a non-owner skipper of an eligible vessel prior to the cutoff date. The individual can earn eligibility points through bottomfishing in the main Hawaiian Islands and in the Mau Zone. Finally, the access limitation amendment is designed to avoid inequitable distribution of fishing privileges to individuals, corporations, or other entities.

5. Conservation and management measures shall, where practicable, promote efficiency in the utilization of fishery resources, except that no such measure shall have economic allocation as its sole purpose.

Unlike some other effort limitation schemes, this amendment does not institute inefficiencies into the industry. Under this amendment, fishermen remaining in the fishery are given the freedom to manage their operation

without additional regulations and are encouraged by the profit motive to maximize efficiency to the extent they desire.

6. Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.

The amendment includes establishment of an Advisory Review Board composed of members from the scientific and fishing community. The Board will receive an annual report on the bottomfish fishery from the Plan Monitoring Team. The Board will monitor the fishery's progress and make recommendations to the Council of any adjustment needed to accommodate fluctuations observed in the fishery and its resources. The FMP and the limited access program are designed with flexibility in mind and provide opportunity for the Council to respond quickly in the event contingency adjustments are required under the FMP's framework process.

7. Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

Alternative management measures were considered to determine whether any would achieve the Council's objectives without imposing unnecessary burdens on the fishery. The disadvantages varied among alternatives and included the following negative impacts: 1) additional operating costs to fishermen, 2) increases in administrative and enforcement costs resulting from more complex regulations, and 3) negative changes in product availability and price to consumers. In contrast, the proposed amendment is intended to bring about beneficial impacts in these areas. The plan achieves the objectives of the FMP while accomplishing the following: 1) causes no increase in capital outlay or operating or maintenance costs to fishermen remaining in the fleet, 2) imposes no significant new burdens on administrative or enforcement resources, and 3) stabilizes the supply of bottomfish to fishermen and to consumers. For these reasons, the Council determined the limited access plan presented in this amendment is the most cost-effective means of achieving the FMP objectives.

9.8 Description of Habitat

Depending on the species, adult bottomfish of the NWHI inhabit depths from 40 to 145 fathoms (Table 21). The habitat of the six most important species of bottomfish listed below tends to overlap, as indicated by the depth range at which the fish can be hooked. Even with this overlap, certain species are still more common at specific depths. This factor, along with other individual biological characteristics, enables NWHI fishermen to target individual species.

Depth alone does not assure satisfactory bottomfish habitat as evidenced by variations in catch rates occurring along the same depth contour. The quantity and quality of benthic habitat are important to determine suitable bottomfish environment and how habitat varies around each island and bank of the NWHI. The underwater habitat of bottomfish consists of a mosaic of sandy and rocky areas. In addition, benthic relief in the NWHI varies dramatically from gently sloping atolls to abrupt dropoffs associated with pinnacles and

banks. These environments of the bottomfish habitat have insufficient sunlight to support an abundance of algae (calcarious or otherwise) or coral. However, some corals, such as black coral (Antipathes spp.), have been observed at depths corresponding to shallow bottomfish habitat at ranges from 15 to 50 fathoms (FMP, 1980).

Bottomfish species may be attracted to similar habitat but appear to have negligible multispecies interactions (Ralston and Polovina, 1982). Supportive of this view is Polovina's (1987) perception of weak predator-prey relationships among NWHI bottomfish. His observation is based on trophic data presented by Parrish (1987). Low multispecies interaction in the bottomfish community may be caused by the establishment of territorial strongholds by particular species. In addition, variations in the way different bottomfish utilize habitat are known to occur. For example, *opakapaka* is believed to migrate into shallower depths during the night hours. *Onaga* is caught in considerably deeper water and is associated with abrupt relief zones such as outcroppings, pinnacles, and dropoffs (DLNR, 1979). In a consolidated report on snappers and groupers, Parrish (1987) references findings indicating groupers are generally much more sedentary than snappers and are more dependent on hard substrates (Hiatt and Strasburg, 1960). These behavioral characteristics may help explain the absence of direct multispecies interaction between the various snappers and groupers found in the fishery.

Conclusive evidence identifying habitat requirements for juvenile bottomfish has not yet been obtained. Sampling attempts to capture juveniles have been made at depths ranging from relatively shallow water to 100 fathoms. Thus far, sampling efforts conducted by NMFS scientists have proven unsuccessful in capturing juvenile bottomfish. This has led to the current hypothesis that juveniles inhabit depths below the adult population and migrate upward as they mature.

Table 21. Habitat depth range for dominant Northwestern Hawaiian Islands bottomfish.

Species	Hooking Depth Range (in Fathoms)	Average
Opakapaka	30-110	70
Onaga	100-150	125
Hapu'upu'u	50-150	100
Butaguchi	40-100	70
Ehu	110-180	145
Uku	20-60	40

(Source: FMP, 1986.)

9.9 Conditions of the Bottomfish Habitat

The deepwater habitat of NWHI bottomfish is relatively pristine. Human-induced impacts on the bottomfish habitat can arise from three major sources:

1. Anchors used by vessels attempting to maintain position over productive bottomfish habitat.
2. Heavy weights and line entanglement during normal hook-and-line bottomfish operations.
3. Illegal foreign fishing activities for precious corals by using dredges.

These three sources of damage are considered to occur on a very small percentage of the NWHI bottomfish habitat and are probably not significantly detrimental. For the most part, live coral is absent at depths where the majority of bottomfishing occurs. Coral rubble and small basalt rocks may be rearranged in the process of anchoring, but the effect is probably not significant.

Regulations have been implemented under the FMP to prohibit the use of bottom trawls, bottomset nets, explosives, and poisons for harvesting bottomfish. These measures, while having direct biological implications, also have direct positive impacts on preserving the condition of bottomfish habitat. This amendment makes no changes in these regulations and would lower potential habitat damage by decreasing the fleet size and correspondingly reduce interaction between commercial fishermen and bottomfish habitat. Under the proposed access limitation plan, no additional degradation of bottomfish habitat would occur.

9.10 Vessel Safety Issues

By memorandum, a vessel safety consultation was requested of the U.S. Coast Guard to evaluate this amendment and its implications to the safety of fishing vessels operating in the Ho'omalu Zone. Special attention has been given to the establishing a vessel length limit of 60 feet, under the proposed amendment. The memorandum requested U.S. Coast Guard consideration of the 60-foot size limit component of this amendment. The Coast Guard's official response is as follows: "Amendment #2 does not call for temporary adjustments, such as altering a closure schedule, to accommodate fishing vessels prevented from harvesting by weather or other ocean conditions affecting vessel safety. Consequently, there is no issue in this amendment to be addressed by the Coast Guard within the statutory guidelines of the MFCMA." A copy of the Coast Guard's letter is available in Appendix E.

9.11 Discretionary Provisions

Section 303 of the MFCMA deals with the "Contents of Fishing Management Plans." The contents section is subdivided into two parts: 1) required

provisions and 2) discretionary provisions. The required provisions have already been discussed, but several of the discretionary provisions are relevant and appropriate to this amendment.

Any fishery management plan proposed by the Council with respect to any fishery may do the following:

6) Establish a system for limiting access to the fishery to achieve optimum yield, if, in developing such a system, the Council and the Secretary take the following into account.

(A) Present participation in the fishery: Present and past participation is the criterion for eligibility. This topic is discussed in Section 3.4, Chapter 6.0 Section 6.1, and Table 1.

(B) Historical fishing practices in, and dependency on, the fishery: Continued participation will be necessary to maintain eligibility; those dependent on the fishery will be protected. The subject of indigenous fishery rights is discussed in Section 10.8.

(C) The economics of the fishery: The amendment seeks to improve the fishery's economics by allowing MSY/optimum yield to be taken by a smaller number of vessels and by maintaining the balance between harvest capability of vessels and ability of stocks to yield harvest. This topic is discussed at some length in Sections 6.3 and 8.4.

(D) The capability of fishing vessels used in the fishery to engage in other fisheries: Many boats presently in the fishery engaged in fisheries elsewhere before they came to Hawaii. While in Hawaii, some of these boats fished longlines for bigeye tuna and yellowfin tuna, while others trolled for albacore. A few of the boats have fished for lobster. Bottomfish fishermen have the capability to engage in other fisheries, and some of them only fish for bottomfish part time.

(E) The cultural and social framework relevant to the fishery: The Council and the Office of Hawaiian Affairs are jointly sponsoring research in this area. The subject of native Hawaiian fishing rights is reserved until the research is finished.

10.0 RELATIONSHIP OF AMENDMENT 2 TO OTHER APPLICABLE LAWS AND POLICIES

10.1 Compliance with Hawaii Coastal Zone Management Policies

Section 307(c)(1) of the Federal Coastal Zone Management Act of 1972 requires that all Federal activities directly affecting the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. This amendment will create a difference between Hawaii and Federal regulations concerning the eligibility of permit holding fishermen in the NWHI bottomfish fishery.

The State of Hawaii requires a Commercial Marine License ($25 residence fee and $50 non-residence fee) to be obtained by individuals or vessels engaged in taking, selling, or offering for sale any marine life for commercial purposes. The term "commercial purposes" is defined as taking of marine life for profit or gain or as a means of livelihood when the marine life is taken in or outside of the State, and when the marine life is sold, offered for sale, or landed, or transported for sale anywhere in the State (DLNR, 1987). In addition, the State requires a Northwestern Islands Taking Permit ($1 fee) of persons fishing for commercial purposes in the NWHI. Presently, there is no permit eligibility criterion. Any person may purchase these permits and enter the commercial fisheries of the NWHI. Under Amendment 2, Federal regulations would establish eligibility criteria for permit holders operating as commercial NWHI bottomfish fishermen. As a result, implementing the proposed amendment would initially cause an inconsistency, between State and Federal regulations identifying legal permit holders. If the State acts to alleviate this inconsistency it must either produce its own limited access plan or simply adopt the Federal policy set forth in this amendment.

The State has an entirely different set of procedures that must be followed before changes can occur, particularly if regulations are statutory. Therefore, even though the Council and the State attempt to establish complementary management measures, the timing of such changes is practically never synchronized.

A consultation has been requested from the State of Hawaii to address the amendment's consistency with Coastal Zone Management. Given the management needs of the fishery, the Council considers Amendment 2 to be consistent to the maximum extent practicable with Hawaii's approved Coastal Zone Management Program.

10.2 Marine Mammal Protection Act

Passage of the Marine Mammal Protection Act in 1972 committed the United States to long-term management of these animals. In compliance with this statute, the Council established objective 8 in the FMP which states the following:

> "Avoid the taking of protected species and minimize possible adverse modifications to their habitat."

There is no evidence that bottomfishing practices have any effect on marine mammals in the NWHI. The FMP also established restrictions in the fishery to prevent use of gear or techniques that could prove especially hazardous to marine mammals and their habitat. The use of bottom trawls, bottomset gill nets, poisons, and explosives is prohibited in the fishery.

The proposed amendment makes no changes in the FMP that would be detrimental to marine mammals inhabiting the NWHI. The amendment would likely be to their benefit because 1) interaction between fishermen and marine mammals would decline as the number of NWHI fishermen is reduced, and 2) permit holders must participate in a NMFS-U.S.Fish and Wildlife Service workshop to ensure their familiarity with concerns involving marine mammal and endangered and threatened species in the NWHI.

10.3 Endangered Species Act

The Endangered Species Act Section 7 consultation noted the NWHI bottomfish fishery would potentially impact endangered or threatened species via entanglement in fishing lines. The consultation identified the endangered Hawaiian monk seal and the threatened green turtle as species that could potentially suffer entanglement due to NWHI bottomfishing. The consultation concluded that the implementation of the FMP regulations would reduce the risk of entanglement to these species and this amendment makes no changes in those regulations.

Establishment of the proposed amendment could beneficially impact endangered and threatened species inhabiting the NWHI. The amendment will reduce the number of boats in the area and require all remaining fishermen to attend an information workshop on endangered and threatened species. The workshop is intended to further reduce the risk of commercial fishing negatively impacting these animals.

The NMFS has designated critical habitat for the Hawaiian monk seal in parts of the NWHI. This amendment will not cause, or result in, modification of that habitat and may have long-term benefits. Reduced bottomfishing effort would lower the potential for vessel groundings or other accidents, and the endangered species workshop will ensure that vessel owners and operators are aware of possible problems if care is not taken. The Council has initiated consultation with NMFS to ensure that requirements of the Endangered Species Act are met. The regional Director responded by acknowledging that this amendment "will not likely adversely affect listed species and will not substantively alter the conclusions in Biological Opinion issued by NMFS for the Bottomfish FMP on February 10, 1986. Accordingly neither formal consultation nor reiteration of consultation under Section 7 of the ESA of 1973, as amended, will be required for this action." A copy of the Regional Director's consultation is presented in Appendix D.

10.4 National Environmental Policy Act - Environmental Assessment

The need for this amendment, the actions proposed, and the impacts of those actions are discussed in Section 8.3. The proposed amendment is not a significant Federal action requiring preparation of an Environmental Impact

Statement. The environmental assessment incorporated in the revised FMP met National Environmental Policy Act requirements. The management measure (access limitation) proposed in this amendment was considered under the FMP framework (Section 6.3.5) and therefore, is covered under the FMP Environmental Assessment. In addition, the amendment does not expand the original proposal of the FMP or change its environmental impacts. As a result of these factors, the proposed amendment qualifies for Categorical Exclusion under NOAA Directive 02-10, Section 5c(3)(f).

10.5 Documentation for a Finding of No Significant Environmental Impacts Under NEPA

The proposed amendment will not significantly impact the quality of the marine or human environment of the NWHI. It should not result in impacts significantly different in context or intensity from those described in the Environmental Impact Statement published with the initial regulations implementing the approved bottomfish FMP. The FMP contains an environmental assessment that meets the National Environmental Policy Act requirements and was accepted by the NOAA Office of Policy and Planning. Documentation for the finding of no significant environmental impact under NEPA is identical to that recorded in Section 8.8 of the bottomfish FMP(1986).

10.6 Determination of Impacts Under Executive Order 12291 and the Regulatory Flexibility Act

The proposed actions are not considered major as defined under Executive order 12291. None of the impacts, individually or collectively, resulting from this amendment will have an annual effect on the economy greater than or equal to $100 million. Based on ex-vessel sales, the NWHI bottomfish fishery was worth $1.9 million in 1986. The implementation of the plan will not cause major increases in prices for consumers because supply to local bottomfish markets will not be hindered. The NWHI bottomfish represent less than 40% of bottomfish sold at the wholesale market (Pooley and Kawamoto, 1988). If the contribution of NWHI bottomfish to the wholesale market declines in the future, it will not be due to this amendment because fishing capacity capable of harvesting MSY will still exist in the fishery. Industries or government agencies will not incur major cost or price increases due to this amendment. As mentioned in Section 9.7.7, the Council considers the plan to be the most cost-effective approach to achieving FMP objectives while adhering to the MFMCA NS.

The Regulatory Flexibility Act (RFA) requires that agencies evaluate the impacts of their regulation on affected businesses and to consider adjustments to those regulations if necessary to avoid a significant adverse impact on a substantial number of small business entities. The necessary components of an initial regulatory flexibility analysis are available within this document. The issues required in the analysis and the sections in which they are discussed within this document are presented below.

A. Description of reason why action is considered.

The fishery is experiencing overcapitalization and declining catch rates. As a result, economic survival of NWHI bottomfish fishermen has become threatened. A detailed description of these conditions is presented in Chapter 6.

B. Statement of objectives of proposed rule.

The objectives of this amendment are to reduce overfishing and overcapitalization while increasing stability and profitability within the fishery. These four objectives are stated in Section 8.0.

C. Where feasible, a description of the number of small businesses to which the proposed rule would apply.

The Council acknowledges that virtually all of the fishermen affected by this proposed rule would classify as "small businesses". The exact numbers of fishermen eligible to be grandfathered into the fishery is not known, and even if it were calculated from the State of Hawaii catch records (which date back to the early 1940's), it would not reveal who would actually exercise their option to enter the fishery. What is available is the number of vessels operating in the fishery in 1986 and an estimate of whether they were full-time or part-time fishermen in the NWHI. Meyer (1987) estimated the percentage of vessels fishing in the Ho'omalu and Mau Zones were 81% and 19% of the fleet, respectively. Of those fishing the Ho'omalu Zone, approximately 23% were part-time and 77% full-time bottomfish fishermen (Table 22). The majority of these vessels are based on the island Oahu, and a few operate from the island of Maui. The boats exclusively fishing the Mau Zone (19% indicated above) have their operations based on the island of Kauai. Applying Meyer's ratios on a 29 vessel fleet (1986 conditions) would result in the following approximations: 6 boats fishing the Mau Zone and 23 boats fishing the Ho'omalu Zone. Of these 23 vessels, 5 would fish part time for bottomfish and 18 would be full-time operators.

Table 22. Fleet's estimated percentages of full-time and part-time bottomfish fishermen in areas considered the Mau Zone and Ho'omalu Zone.

Ho'omalu Zone (N=22 boats)		Mau Zone (N=5 boats)	
Full-time	23%	Full-time	Unknown
Part-time	77%	Part-time	Unknown

(Source: Meyer (1987). Based on estimated fleet size of 27 boats.)

No significant economic impact on active vessels, or the total number of boats active in the fleet, is expected to occur under the proposed rules. In the years immediately following the amendment, the number of qualifying vessels fishing in the Ho'omalu zone is estimated to drop from 23 (above) to 21 boats (see Sections 6.1 and 8.4), a reduction of approximately only 2 boats. It is unknown if these boats would be full time or part time, or even in the fishery

when the amendment is implemented. With increasing financial returns in other local fisheries (longlining and shrimping), struggling bottomfish fishermen are giving serious consideration to entering these alternative fisheries. Therefore, any concern over excluding from the fishery's existing participants will likely be a mute point. By the time the proposed limited access program is in place, those estimated few (two) fishermen that the proposed program may exclude will very likely have already exited the fishery for other opportunities. It should also be noted that boats fishing the Mau Zone (estimated six vessels) would not be affected by this amendment.

D. Description of the projected reporting and recordkeeping requirement.

The proposed program will require all commercial bottomfishing vessels fishing in the Ho'omalu Zone to submit copies of selective documentation. The type of information required and its purpose is elaborated on in Chapter 3 and Section 10.7.

F. Relationship of proposed program to other Federal regulation

Chapter 10 elaborates on the association of the proposed program to selected applicable laws and policies.

G. Description of significant alternative to proposed program.

An extensive discussion on the consideration of specific alternative management strategies for the NWHI bottomfish fishery is presented in Chapter 7. The review includes such options as fishing quotas, size limits, season and area closures, landing limits, trip limits, crew limits, taxes and license fees. These various strategies are categorized in Chapter 8 and evaluated under criteria such as biological, social, economic, and enforceability.

10.7 Applicability of Paperwork Reduction Act

The existing permit application process established by the FMP is sufficient to accommodate the proposed action. However, this amendment requires gathering additional information from the public, and adjustments will be necessary to address the following components in the amendment: 1) applicant eligibility, 2) designation of fishing zone, 3) identify percentage of ownership interest (if multiple owners), and 4) listing of relief captains, if any. Applicant eligibility would be established by submitting, with the permit application, documentation of commercial fishing experience in the NWHI bottomfish fishery prior to August 7, 1985. For owners of two or more eligible vessels, evidence would also be required to prove that each boat landed NWHI bottomfish in 1986 and 1987. Documentation would be issued by the State in the form of a notarized copy of a State catch report. This information is presently available, and no additional burden for data collection is required. The remaining adjustments would be achieved by modifying the existing permit application form. A revised permit application form is presented in Appendix B.

The present bottomfishing permit has a condition stating the permit may be revoked if required by management measures established for the fishery. This clause would be exercised under the amendment. The number of fishermen who will apply for a fishing permit under the amendment is unknown, but if only eligible fishermen presently participating in the fishery reapply, there would be a net reduction in permits and future applicants.

Because the amendment is designed to lower the number of active fishermen, the Council believes this amendment will, in the long run, reduce the burden of Federal paperwork, thereby satisfying the purpose of the Paperwork Reduction Act. However, the amendment does require the submission of information previously not required under the FMP. For this reason, Amendment 2 and associated data submission regulations and forms will require clearance under the conditions of the Paperwork Reduction Act.

10.8 Native Hawaiian Fishing Rights

Unlike the continental United States, where treaties and agreements have provided formal legal ground for allocation of fishing rights to native Americans, no treaties exist in Hawaii regarding fishing rights for native Hawaiians. Traditional Hawaiian society was significantly affected in the quarter century prior to annexation of Hawaii by the United States in 1900. Formal agreements between the two governments concerning fishing rights were not incorporated into the Organic Acts relevant to Hawaii's political integration into the United States. However, there is growing concern about the manner in which Hawaii was annexed and Hawaiian land ceded to the U.S. Government. The relationship between ancient Hawaiian land and water rights and the developing commercial fisheries is presently not known.

Is there a legal basis under the MFCMA, as amended in 1976, for providing preferential access rights to native Hawaiian fishermen under the proposed limited entry program for bottomfishing resources in the Federal waters of the U.S. EEZ in the NWHI? On the basis of preliminary research, there appears to be such a basis. However, whether such a system for preferential access rights may in fact be legally established depends upon a clear set of findings that there existed and exist historical fishing practices in such a fishery in the NWHI. Also, on such a fishery, there must be dependency by native Hawaiians, a relevant cultural and social framework, and present participation--among other relevant considerations--all set forth in 16 U.S.C.A. 1853 (6) of the MFCMA.

To establish a system of preferential access rights in the limited access proposal, it is necessary to meet the MFCMA discussed above. To determine whether the MFCMA criteria can and will be met, it is necessary to undertake certain historical and archeological research on the existence of historic fishing practices, and the attendant social and cultural frameworks of native Hawaiians with respect to bottomfishing in the NWHI.

The Council has entered into a memorandum of understanding with the Office of Hawaiian Affairs to jointly do the necessary research. A research report, or its findings, may be incorporated into the bottomfish FMP and, if the results are favorable, will be the basis for development of such a system of preferential access rights to native Hawaiians.

11.0

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

50 CFR Part

Docket No.

Western Pacific Bottomfish Fisheries

AGENCY: National Marine Fisheries Service (NMFS), NOAA, Department of Commerce.

ACTION: Proposed Rule

SUMMARY: NOAA issues a proposed rule to implement a limited access program for the bottomfish fishery in certain waters of the Northwestern Hawaiian Islands (NWHI). The program would establish a control zone called the Ho'omalu Zone, in which a person must have a limited entry permit to fish, and a qualifying zone called the Mau Zone, in which a person could earn points to qualify for future eligibility for a limited entry permit. Persons who can demonstrate participation in, or substantial financial commitment to participate in the NWHI fishery, on or before August 7, 1985, would be eligible for initial permits to participate in the Ho'omalu Zone fishery. A landings requirement would be established to maintain eligibility for annual renewal of permits. No new permits to enter the fishery would be issued until stocks are sufficiently large to provide adequate catches. A point system would be established to control issuance of permits for future entry to the fishery. The Western Pacific Fishery Management Council, (Council) with the advice of an industry and government Advisory Review Board, would make recommendations to the Regional Director, Southwest Region, NMFS, regarding future entry to the fishery. The objectives of the limited access program are to reduce the risk of overfishing, reduce the level of overcapitalization in the fishery, increase stability in the fishery, and increase profitability or net return to the fishery. The Council will undertake a full evaluation of the effectiveness of the program in five years. The rule would make it a violation of Federal law to fail to report fishery data in accordance with State reporting requirements and would require vessel operators to notify the U.S. Coast Guard prior to anticipated arrival in port to unload bottomfish taken in the NWHI.

DATE: Written comments must be received on or before _____.

ADDRESSES: Comments should be sent to E. C. Fullerton, Director, Southwest Region, National Marine Fisheries Service, 300 South Ferry Street, Terminal Island, California 90731. Copies of the limited access program, the environmental assessment (EA), and the regulatory impact review/initial regulatory flexibility analysis (RIR/IRFA) may be obtained by contacting the Western Pacific Fishery Management Council, 1164 Bishop Street, Suite 1406, Honolulu, Hawaii 96813, 808-523-1368.

Comments on the collection of information requirement should be sent to the Office of Information and Regulatory Affairs, Office of Management and Budget, Attention: Desk Officer for NOAA, Washington, D.C. 20503.

FOR FURTHER INFORMATION CONTACT: Svein Fougner (Chief, Fisheries Management and Analysis Branch), 213-514-6660.

SUPPLEMENTARY INFORMATION: The domestic fisheries for bottomfish in the U.S. Exclusive Economic Zone (EEZ) adjacent to the State of Hawaii are managed under the Fishery Management Plan (FMP) for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region. The FMP was developed by the Council under the Magnuson Fishery Conservation and Management Act (MFCMA) and implemented August 27, 1986 (51 FR 27413, July 31, 1986).

The Council explicitly considered but did not adopt a limited access program in the FMP because further study was deemed necessary. In a separate action, the Council adopted a control date for entry into the NWHI bottomfish fishery. This date (August 7, 1985) was set to provide a potential cutoff for eligibility based on past participation in the event the Council would choose prior participation as a criterion for eligibility for permits under the program. The intended effect of the cutoff date announcement was to discourage new entry to the fishery based on speculation while further study and discussions were undertaken on whether, and if so how, access to the resource should be controlled. Such speculation frequently occurs and could have negated the effects of any limited entry program. The notice also provided current and prospective fishermen a basis for making informed investment decisions knowing that limited entry was a definite management possibility in the future.

It should be noted that the FMP, as approved, provided the option of instituting a limited entry program through the framework process rather than as an amendment. The Council chose to use the FMP amendment process because of the significance of the action. The amendment process provides greater opportunity for broad public review as well as government agency reviews. The record will be far more complete as a result and will thus provide greater guidance to other Councils that may consider limited entry for their fisheries.

The bottomfish fishery of the NWHI management subarea has grown greatly since vessels first began exploiting the resource in the 1980s. The fleet grew from 8 vessels in 1980 to 29 vessels in 1986. Landings increased substantially from only 100,000 pounds in 1981 to about 784,000 pounds in 1986. However, catch rates have dropped sharply for the most abundant and highly priced species (*opakapaka*), and fishermen have been able to maintain total revenues only by harvesting larger amounts of less abundant (*onaga*) or less valuable (*hapu'upu'u, ulua*) species. Vessels also have had to make longer and longer trips in attempts to find areas with higher catch rates and larger fish. It is estimated that the average vessel in the fishery is losing $50,000 or more per year before depreciation and taxes, in spite of this increased fishing effort in relatively lightly fished areas where catch rates have been favorable. In summary, the fishery has been overcapitalized. Although some vessels have recently left the fleet, there is far more capacity to harvest fish than there is fish to be harvested. Further, the possibility exits that

new vessels will enter the fishery despite the present overfishing of the stocks and economic prospects.

This situation was first brought to the Council's attention in 1984 when several vessel owners proposed that the Council develop a limited entry program. The Council concluded that further information and analysis was necessary and proceeded to contract for a study. In 1985, the Council established a "control date" of August 7, 1985, which could serve as a cutoff for eligibility for entry into the fishery under a future limited access program using prior participation as a criterion for initial permits. This control date was published in the Federal Register (51FR11462, April 3, 1986), and work proceeded on an assessment of limited entry alternatives. The proposed rules would implement the program supported by that assessment (Meyer, 1987).

The goal of the limited access program is to achieve a long-term balance between harvesting capacity and harvestable stocks of bottomfish in the NWHI management subarea, so that those in the fishery will make a profit while the stocks remain healthy. This would be accomplished by initially limiting the number of persons and vessels eligible to obtain permits to fish for bottomfish in a newly designated Ho'omalu Zone in the NWHI management subarea, requiring continuing participation in the fishery to maintain eligibility for renewal of permits, preventing new entry until it is demonstrated that the bottomfish stocks can support additional effort, and establishing a system by which persons can earn points for possible entry to the fishery when new entry is permitted. A section-by-section summary of the program follows:

(a) Vessel owners and captains who can demonstrate that, before August 8, 1985, they participated in, or made commitments to invest (e.g., by obtaining a loan, making an offer to buy a vessel, or having a vessel under construction) for future participation in the fishery, would be eligible to obtain permits initially. This assures that those who were in the fishery, either as owners of vessels or as captains of those vessels, will have a continuing opportunity to participate regardless of monetary or non-monetary motivations but prevents new entry until the health of the bottomfish stocks and the fishery can support additional boats. An owner with more than one vessel in the fishery in the qualifying period would be eligible for one permit for each vessel that made at least one qualifying landing of bottomfish in 1986 and 1987. A person who owns two or more vessels which made landings before August 8, 1985, but either none or only one of those vessels made a qualifying landing in 1986 and 1987, would be eligible for only one permit. The permits will be area-specific; a person with a limited entry permit may not fish for bottomfish in the Mau Zone; and a person with a permit for the Mau Zone may not fish for bottomfish in the Ho'omalu Zone.

(b) Permits would be awarded to vessel owners for specific vessels. This is to recognize that the owners are the persons who have the greatest stake in the fishery and who would be most directly affected by the program. The owners decide how to use their vessels and associated resources and should have control over the permits for the vessels.

(c) Eligible owners would have five years from the effective date of the program in which to apply for their initial permit. This is intended to provide flexibility for a vessel owner to defer obtaining a permit until the owner concludes conditions are suitable to enter the fishery. This should prevent an initial rush to participate in the fishery and further drive down stocks under the license renewal conditions.

(d) Documentation of participation would include official landing records submitted to a State or Federal agency demonstrating that the vessel made at least one landing (regardless of weight) of bottomfish from the NWHI on or before August 7, 1985. For the purposes of this section, the NWHI is the area defined in CFR 683.5(a)(1) and is that portion of the EEZ adjacent to Hawaii that is west of 161°20'W longitude.

(e) A person who can document that he was captain of a vessel that made one or more qualifying landings from the NWHI bottomfish fishery on or before August 7, 1985, and who becomes owner of a 50% or greater share of a vessel within five years of the effective date of this plan also would be eligible for an initial permit within that time frame. This is intended to recognize that these captains should have the option of entering the fishery on the normal progression from captain to owner or part-owner of a vessel. It ensures that no owners or non-owner captains of vessels that made qualifying landings before August 8, 1985, will be automatically excluded from the fishery.

(f) A vessel for which a permit has been obtained must make at least three qualifying landings from the Ho'omalu Zone in the calendar year in which the permit was issued to be eligible for permit renewal for the next year. A qualifying landing is a landing which contained at least 2,500 pounds of bottomfish from the Ho'omalu Zone or a landing totalling more than 2,500 pounds of fish from the Ho'omalu Zone, of which at least half of the fish by weight was bottomfish. This is intended to provide a performance standard for continuing eligibility. Only those who continue to fish up to a minimum level will remain in the fishery. This provision is expected to result in a gradual reduction in the fleet. Some owners will conclude that other fisheries offer better opportunities and will shift effort accordingly; others will be unable to meet the landing criterion and will be forced to withdraw from the fishery. Remaining vessel owners will have a better chance of covering costs with less risk of biological overfishing of the stocks. The choice of three landings as the minimum performance level was based on the conclusion that the fishery is intended to support those who derive a sizable portion of their fishing income from the fishery. Requiring fewer than three landings would allow occasional participants to maintain eligibility, while more than three landings could pose a hardship for those whose vessels operate in two or more fisheries, including bottomfish in the NWHI. The program includes a provision for a permit holder to apply for a waiver from the three-landing requirement when circumstances beyond the holder's control prevented the permit holder's vessel from making the requisite landings. General economic conditions or marketing difficulties will not qualify as sufficient reason for a waiver.

(g) An owner who obtains and then voluntarily surrenders a permit to the Regional Director in the first five years of the plan will have priority for a new permit when it is found the fishery can sustain new entry. This is

intended to encourage owners to withdraw from the fishery with minimal adverse impact in the long term. If successful, this step will provide better income opportunities for remaining participants and less risk of biological overfishing. If two or more owners voluntarily surrender permits and all apply to reenter at the same time, priority shall be given to the person who first surrendered his permit. A permit holder may use this option only once.

(h) New permits may be issued in the future when the Regional Director, after consulting with the Council, finds that stocks are sufficient in the Ho'omalu Zone to generate catches high enough so that total fleet revenues with the added vessel(s) will equal or exceed total fleet costs (fixed plus variable). That is, the average vessel will have to exceed the break-even level of production before additional vessels will be permitted. This is intended to allow the fishery to become economically viable for the average vessel before new vessels will be allowed to compete for the resource. The Regional Director will place a notice in the Federal Register and use other means to notify prospective participants of the opportunity to apply for a permit under this program.

(i) Eligibility for new permits will be based on a point scale for prospective participants based on prior experience in fishing for bottomfish in the Hawaiian Archipelago. A vessel owner or captain would receive two eligibility points for each year for which he can document three or more qualifying landings of bottomfish caught in the NWHI. A qualifying landing for the point system is a landing which contained at least 2,500 pounds of bottomfish from the NWHI or which contained a total of at least 2,500 pounds of fish from the NWHI, at least half of which was bottomfish. One point would be awarded to an owner or captain for each year that the vessel landed at least 6,000 pounds of bottomfish from the main Hawaiian Islands. Points may only be earned for one area in any given year. The applicant who has at least a 25% interest in a vessel and who has the highest number of points would get the first new permit issued under the program, provided that no person who voluntarily surrendered a permit wants to reenter. This is intended to give priority to those captains who have served longest in the fishery without owning a vessel and who become owners (25% or more) of vessels to be used in the fishery. Participation as a captain in the NWHI qualifies for more points than in the main Hawaiian Islands because of the familiarity gained for that area. This is important in terms of safety and knowledge about the special protected resources of the NWHI. The partial ownership requirement is set to ensure that the participant will have an ongoing stake in maintaining the viability of the fishery. If two or more persons are tied for the highest number of points and the number of permits is less than the number of applicants, the permit(s) shall be awarded by the Regional Director by a lottery system.

(j) Permits may not be sold or otherwise transferred. If a permitted vessel is sold, the seller will retain the permit. The prohibition on the sale of permits is intended to ensure that no persons will have a windfall financial benefit by virtue of eligibility for initial permits under the program and to minimize the potential for one or a few interests to acquire a virtual monopoly or oligopoly in the fishery. The Council considered using an individual fisherman's quota system but concluded that it would be impossible to agree on

cumulative bottomfish quotas or species quotas that could be allocated in such shares. The Council also preferred not to allow the cost of permits to become a significant barrier to future entry to the fishery.

(k) Notwithstanding the general prohibition on permit transfers, a permit holder may replace his permitted vessel with another vessel of up to 60 feet in length without obtaining any approvals. This is intended to allow a vessel owner to increase the size of his vessel for safety purposes. This provision recognizes that adverse sea conditions often arise in the control zone.

(l) A permit holder also may apply to the Regional Director for permission to replace his permitted vessel with another vessel of equal catching power. The Regional Director shall consult with the Council before acting on such a request. This would allow use of a vessel with greater safety or comfort but not greater catching power.

(m) A permit holder may apply to the Regional Director for permission to replace his vessel with one of greater fishing power in order to maintain fishing power comparability with other permitted vessels in the fishery. The Regional Director shall consult with the Council and shall review the application for consistency with the objectives of the limited access program before taking action on such applications.

(n) Permits may be held and renewed by partnerships or corporations. If 50% or more of their interest in the permitted vessel passes to persons other than those listed in the original application, however, the permit will lapse and be surrendered to the Regional Director. This is intended to ensure that a partnership or corporation ownership will not be used to circumvent the prohibition on sale or transfer of a permit.

(o) Designated captains and relief captains must attend a workshop on safety and endangered species concerns specific to the NWHI. The waters in the NWHI present unusual conditions which give rise to special safety concerns. In addition, there are several endangered and threatened species in the area, and special management regulations exist to protect them. The workshop is intended to minimize the risk of problems associated with these factors.

(p) The Council will establish an Advisory Review Board to assist the Council in developing recommendations for the Regional Director concerning whether and when new entry to the Ho'omalu Zone is appropriate, catching power equivalency for replacement vessels, and other matters in implementing this program. The Board will consist of nine persons, including two limited entry permit holders, two persons fishing for bottomfish in the Mau Zone or around the main Hawaiian Islands, one person engaged in marketing or processing of NWHI bottomfish, two technical State fishery staff, and two NMFS staff. The technical staff shall include at least one biologist and one economist. The term of nongovernment members is limited to five years, and initial terms may be staggered. The intent of the panel is to provide both technical information and practical fishery information in carrying out the program. The composition of the panel is intended to ensure full representation of fishing interests and technical experts on the fishery.

(q) The program provides an appeal mechanism by which persons can request higher level review of a decision by the Regional Director. The Assistant Administrator for Fisheries would decide such appeals.

(r) The Council is aware of the potential that the limited access program will not have the intended effects. This is a new approach, and the responses of fishermen cannot be predicted with certainty. It is quite possible that program changes will be needed as experience is gained in the program. The effectiveness of the program will be assessed in the annual review of the fishery called for under the FMP. In addition, the Council will complete a special evaluation of the program after the initial five-year grace period during which historic participation is an automatic eligibility criterion. At that time, the Council and the NMFS will know how many persons are eligible for permits and can better predict future participation and problems.

s) The proposed rule contains two provisions intended to facilitate monitoring of the fishery for future evaluation of its effectiveness and administration of the program. The first provision is it would be a violation of Federal law to fail to report landings in accordance with State fishery reporting requirements. This will not add to the reporting burden but should strengthen the effeciveness of State reporting requirements. State-collected landings data will be important to determine changes in the fishery under this program and to assess whether the program is having the intended effects. The second provision is vessel operators be required to notify the U.S. Coast Guard in advance of the anticipated arrival in port to unload bottomfish taken in the NWHI. This will support determination of participation by vessels in the fishery and occasional inspection of the catch to collect biological data with the cooperation of the vessel operators.

Nothing in the limited entry program is intended to prevent or limit the authority of the Council to propose and the Secretary to institute additional conservation and management measures necessary to protect the productivity of the bottomfish stocks of the NWHI. It is expected, however, that such measures will be far more likely to succeed after the limited entry program is in effect. In addition, it is expected that, with limited entry in effect, the participants in the fishery will ultimately have greater flexibility in their selection of fishing strategies to maximize economic returns or achieve non-monetary objectives with a reduced regulatory burden.

In developing this program, the Council considered the question of whether to make special provision for native Hawaiian fishing rights. No recommendations or proposals are made at this time. The Council is continuing to research this issue with the Native Hawaiian Legal Corporation and the Office of Hawaiian Affairs.

The proposed program will add slightly to the information collection burden under the FMP. Fishermen in the NWHI already are required to obtain permits under the current management regulations. Those who may be eligible for permits under the limited access program will have to provide additional information to document their prior participation or their financial commitment for anticipated participation in the fishery. This does not entail new catch or effort reporting requirements. However, the applicant will have

to provide either copies of historic catch records filed with a State or Federal agency or a statement from a State or Federal agency confirming that the applicant was an owner or captain of a vessel that made qualifying landings from the fishery during the period in question.

The proposed rule does not require that catch, effort or fishery operations data be submitted to the Secretary of Commerce (Secretary) under this program. The FMP calls for an annual report to be prepared for Council consideration. The State and Territory governments and the NMFS provide information for this report, which is used to consider the need for changes in management of the fishery. The annual report includes an assessment of economic conditions as well as the status of the stocks. It is anticipated that existing State and Federal reporting requirements will be sufficient to make the determinations required under the limited access program. The provision making it a violation of Federal law to fail to report in conformance with State laws and regulations governing reporting landings should support State reporting requirements.

CLASSIFICATION

Section 304(a)(1)(D)(ii) of the MFCMA, as amended by Pub. L. 99-659, requires the Secretary to publish regulations proposed by a Council within 15 days of receipt of any amendment to an FMP. At this time, the Secretary has not determined whether the FMP amendment that these rules would implement is consistent with the MFCMA National Standards, other provisions of the MFCMA, and other applicable law. The Secretary, in making that determination, will take into account the data, view points, and comments received during the comment period.

The Council prepared an environmental assessment as part of the FMP amendment and concluded that there will be no significant impact on the environment as a result of this rule.

The Administrator of NOAA determined that this proposed rule is not a "major rule" requiring a regulatory impact analysis under Executive Order 12291. The proposed action will not have a cumulative effect on the economy of $100 million or more nor will it result in a major increase in costs to consumers, industries, government agencies, or geographical regions. No significant adverse impacts are anticipated on competition, employment, investments, productivity, innovation, or competetiveness of U.S.-based enterprises.

The Council prepared a regulatory impact review as part of its amendment and concluded that the proposed action will have a long term positive impact on the fishery and on related processing and marketing sectors. Preventing new entry at this time will prevent additional effort which would drive catch rates down to even lower levels than at present. The performance standard is expected to be sufficient to ensure that those dependent on the fishery will be able to maintain their participation without putting excessive pressure on the stocks, while those not dependent on the fishery will be less likely to maintain eligibility for future participation. The measure allowing those initially eligible to obtain permits to defer applying for permits for up to five years is expected to allow such persons flexibility to participate in other fisheries

without losing eligibility; this would further reduce pressure on the stocks while giving persons in the fishery a better chance to cover costs. The measure allowing voluntary surrender of a permit with priority for later entry to the fishery is expected to encourage some producers to exit from the fishery. Again, this will reduce pressure on the stocks and remaining participants should achieve better returns. The fishery accounted for total catch of 784,000 pounds valued at $1.9 million in 1986. Without the proposed program, the fishery is expected to decline to a level substantially below the maximum sustainable yield (MSY) level (600,000 pounds for portion of the NWHI within the range for deliveries for the fresh fish market) and ex-vessel revenue would likely be less than $1 million per year. With the limited entry program, the fishery is expected to achieve production of 600,000 pounds per year (the MSY) valued at $1.4 million. In addition, the average vessel is expected to be able to cover all costs of operation, although some vessels will make more and some less. Further, deliveries of fish to markets are expected to be more stable and level throughout the year, which will benefit both marketers and consumers. Finally, although there may be a one- time increase in administrative costs to implement the program initially, these costs will be reduced over time as the size of the harvest sector is reduced and fishery patterns become more stable.

This proposed rule is exempt from the review procedures of Executive Order 12291, Section 8(a)(2). Deadlines imposed under the MFCMA as amended by Pub. L. 99-659, require the Secretary to publish this rule 15 days after its receipt. The proposed rule is being reported to the Director, Office of Management and Budget (OMB), with an explanation of why it is not possible to follow procedures of the order.

The General Counsel of the Department of Commerce certified to the Chief Counsel for Advocacy of the Small Business Administration that this proposed rule, if adopted, will not have a significant economic impact on a substantial number of small businesses. No person who participated in the fishery on or before the control date will be forced to exit the fishery. The program will provide an opportunity for fishermen to make their own decisions concerning whether to remain in the fishery. The reporting burden will be somewhat increased to obtain information needed to decide whether applicants are eligible for permits, but the added burden is slight. Therefore, a formal Regulatory Flexibility Analysis was not prepared.

This proposed rule contains a collection of information requirements subject to the Paperwork Reduction Act. Permit application procedures will not change appreciably from those now in place, but applicants will have to obtain and submit certification of records of past participation or documentation of commitments intended to lead to future participation in the fishery in past years. In addition, it is proposed that permit holders be required to report in advance their anticipated arrival in a port to unload fish taken in the NWHI. Further, it is proposed that it be a violation of Federal law to fail to report fishery data in accordance with State reporting requirements. The new information collection request has been submitted to the OMB for clearance. Reporting requirements now in force are authorized by OMB number 0648-0097.

The Council has determined that the measures established in this amendment are consistent to the maximum extent practicable with the approved Coastal Zone Management Program in Hawaii. A letter requesting the State of Hawaii's concurrence was forwarded by the Council.

List of Subjects in 50 CFR Part 683

Fisheries, reporting, and recordkeeping requirements.

Dated:

For the reasons stated in the preamble, 50 CFR Part 683 is proposed to be amended as follows:

PART 683 - [AMENDED]

1. The authority citation for 50 CFR Part 683 continues to read as follows:

Authority: 16 U.S.C. 1801 et seq. unless otherwise noted.

2. In Section 683.2, a new definition for qualifying landing is added to read as follows:

Section 683.2 Definitions

* * * * *

Qualifying landing means a landing that meets a standard required for permit eligibility under Section 683.25, as follows:

(a) Initial permit eligibility. (i) a qualifying landing for initial permit eligibility under 683.25(b)(1) and (3) is a landing that contained bottomfish from the NWHI, regardless of amount, and which was made before August 8, 1985;

(ii) a qualifying landing for 1986 and 1987 under 683.25 (b)(2) is a landing which contained at least 2,500 pounds of bottomfish from the NWHI or a landing of at least 2,500 pounds of fish from the NWHI, of which at least 50 percent by weight was bottomfish;

(b) Permit renewal - a qualifying landing for permit renewal under 683.25(e) is a landing which contained 2,500 pounds of bottomfish from the NWHI or a landing of at least 2,500 pounds of fish from the NWHI, of which at least 50 percent by weight was bottomfish.

(c) New entry eligibility points - a qualifying landing for eligibility points under 683.25(j) is any landing of bottomfish from the NWHI, regardless of weight, if made prior to August 8, 1985; or a landing of at least 2,500 pounds of bottomfish from the NWHI, or a landing of at least 2,500 pounds of fish from the NWHI, of which at least 50 percent by weight was bottomfish.

3. In Section 683.5, paragraph (a)(2) is revised to add two subareas as follows:

Section 683.5 Management subareas

* * * * *

(2) * * * *

(i) Ho'omalu Zone means that portion of the EEZ around the NWHI west of 165°W longitude.

(ii) Mau Zone means that portion of the EEZ around the NWHI between 161°20' and 165°W longitude.

* * * *

4. In Section 683.6, paragraph (k) is redesignated (m) and new paragraphs (k) and (l) are added as follows:

Section 683.6 General prohibitions

* * * * *

(k) Fish for bottomfish in the Ho'omalu Zone without a limited access permit issued under Section 683.25;

(l) Falsify or fail to make and/or file any and all reports of bottomfish landings, containing all data and in the exact manner, required by the applicable State law as specified in Section 683.25 provided that the person is required to do so by the applicable State law;

5. A new Section 683.10 is added as follows:

683.10 Appeals of administrative action

(a) Except as provided in Subpart D of 15 CFR 904, any applicant for a permit or permit holder may appeal the granting, denial, conditioning, or suspension of their permit or a permit affecting their interests to the Assistant Administrator for Fisheries, NOAA. In order to be considered by the Assistant Administrator, such appeal must be in writing, must state the action(s) appealed, and the reasons therefor, and must be submitted within 30 days of the action(s) by the Regional Director. The appellant may request an informal hearing on the appeal.

(b) Upon receipt of an appeal authorized by this section, the Assistant Administrator will notify the permit applicant, or permit holder as appropriate, and will request such additional information and in such form as will allow action upon the appeal. Upon receipt of sufficient information, the Assistant Administrator will decide the appeal in accordance with the criteria set forth in Section 683 and the amendment to the bottomfish FMP, as appropriate, based upon information relative to the application on file at the NMFS and the Western Pacific Fishery Management Council and any additional information, the summary record kept of any hearing and the hearing officer's recommended decision, if any, as provided in Section 3 of this section, and such other considerations as deemed appropriate. The Assistant Administrator will notify all interested persons of the decision, and the reasons therefor, in writing, normally within 30 days of the receipt of sufficient information, unless additional time is needed for a hearing.

(c) If a hearing is requested or if the Assistant Administrator determines that one is appropriate, the Assistant Administrator may grant an informal hearing before a hearing officer designated for that purpose after first giving notice of the time, place, and subject matter of the hearing in the FEDERAL REGISTER. Such a hearing shall normally be held no later than 30 days following publication of the notice in the FEDERAL REGISTER unless the hearing officer extends the time for reasons deemed equitable. The appellant, the applicant (if different), and, at the discretion of the hearing officer, other interested persons, may appear personally or be represented by counsel at the hearing and submit information and present arguments as determined appropriate by the hearing officer. Within 30 days of the last day of the hearing, the hearing officer shall recommend in writing a decision to the Assistant Administrator.

(d) The Assistant Administrator may adopt the hearing officer's recommended decision, in whole or in part, or may reject or modify it. In any event, the Assistant Administrator will notify interested persons of the decision, and the reason(s) therefor, in writing within 30 days of receipt of the hearing officer's recommended decision. The Assistant Administrator's action shall constitute final action for the agency for the purposes of the Administrative Procedures Act.

(e) Any time limit prescribed in this section may be extended for a period not to exceed 30 days by the Assistant Administrator for good cause, either upon his or her own motion or upon written request from the appellant or applicant stating the reason(s) therefor.

6. A new Section 683.11 is added as follows:

683.11 Reports

Any person who is required to do so by the applicable State law shall make and/or file any and all reports of bottomfish landings, containing all data and in the exact manner, required by the applicable State law.

7. In Section 683.21, paragraph (a) is revised and a new paragraph (f) is added to read as follows:

683.21 Permit requirements for the NWHI

(a) Permit areas.

(1) The owner of any vessel being used to fish for bottomfish in the Mau Zone must have a permit issued under this section for that vessel.

(2) The owner of any vessel fishing for bottomfish in the Ho'omalu Zone must have a permit issued under Section 683.25 for that vessel.

(3) The owner of any vessel fishing for seamount groundfish in the fishery management area must have a permit issued under this section for that vessel.

(4) No vessel may be covered by a permit for both the Ho'omalu Zone and the Mau Zone at the same time.

* * * * *

(f) Expiration. Permits issued under this section expire on December 31 of the year covered by the permit.

8. Section 683.25 is renumbered 683.26, and a new 683.25 is added to read as follows:

683.25 Limited access management program

(a) Limited access permits. General requirements.

(1) The owner of any vessel engaged in fishing for bottomfish in the Ho'omalu Zone must have a permit issued under this section.

(2) Permits issued under this section shall expire on December 31 of the year covered by the permit.

(3) Each application for a permit must be submitted to the Regional Director by the vessel owner at least 30 days before the date on which the applicant wants the permit to be effective.

(4) Each application must be submitted on the form used to apply for a permit under 683.21(b) and a supplementary information sheet to be provided by the Regional Director. Each application must be signed by the vessel owner and must contain, in addition to the information listed in 683.21(b)(2), the following information:

(i) The qualification criterion that the applicant believes he or she meets for issuance of a limited access permit; and

(ii) Copies of landings receipts or other documentation with a certification from a State or Federal agency that this information is accurate to demonstrate participation in the NWHI bottomfish fishery; or

(iii) Notarized copies of loan documents or other documents that would demonstrate financial commitments before August 8, 1985, to enter the NWHI bottomfish fishery; or

(iv) Written evidence indicating that an offer was made to purchase a vessel or that a vessel was under construction, by August 7, 1985, and that the vessel was to be used in the NWHI bottomfish fishery.

If the application is filed by a partnership or corporation, the application must identify the names of the owners and their respective percentage of ownership of the partnership or corporation.

(5) Protected species seminar. Each designated captain and relief captain must participate in a seminar conducted by the NMFS and U.S. Fish and Wildlife Service to ensure familiarity with protected species laws and regulations applicable to the NWHI and the species those laws and regulations are designed to protect.

(6) Sale or transfer of permits to new owners.

(i) A vessel permit may not be sold or otherwise transferred to a new owner.

(ii) A permit or permits may be held by a partnership or corporation. If 50% or more of the ownership of the vessel passes to persons other than those listed in the original application, the permit will lapse and must be surrendered to the Regional Director.

(7) Transfer of permits to new vessels.

(i) An owner of a permitted vessel may without limitation transfer his permit to another vessel owned by him provided that the replacement vessel does not exceed 60 feet in length and that the replacement vessel is put into service within 12 months after the owner declares to the Regional Director the intent to make the transfer of the permit.

(ii) An owner of a permitted vessel may apply to the Regional Director for approval to use the permit for a replacement vessel greater than 60 feet in length. The Regional Director may allow this change upon determining, after consultation with the Council and considering the objectives of the limited access program, that the replacement vessel has equal catching power as the original vessel, or that the replacement vessel has catching power that is comparable to the rest of the vessels holding permits for the fishery, and that the change is not inconsistent with the objectives of the program.

(iii) The Regional Director shall consider vessel length, range, hold capacity, gear limitations, and other appropriate factors in making determinations of catching power equivalency and comparability of the catching power of vessels in the fishery.

(b) Supplementary requirements for initial permits. A permit for a vessel to be used for fishing for bottomfish in the Ho'omalu Zone may be issued to:

(1) Any owner who can document that a vessel owned by him made one or more qualifying landings of bottomfish from the NWHI before August 8, 1985.

(2) Any owner of two or more vessels that made at least one qualifying landing under (1), or such owners may obtain a permit for each such vessel that made at least one qualifying landing of bottomfish under (1) and also in both 1986 and 1987.

(3) Any person who can document that by August 7, 1985, he or she had incurred substantial expenditures for or had received written approval of a loan to purchase or construct a vessel to be used in the NWHI bottomfish fishery.

(4) Any person who can document that by August 7, 1985, he or she made an offer to purchase a vessel for the NWHI bottomfish fishery or had such a vessel under construction.

(5) Any person who can document that he or she was captain of a vessel that made at least one qualifying landing of bottomfish from the NWHI before August 8, 1985, and who becomes an owner of 50% or more interest in a vessel within five years of the effective date of this program.

(6) Any person who qualifies for issuance of a permit under paragraph (j) of this section.

An application for a permit under this section must be filed within five years of the effective date of this program.

(b) Supplementary requirements for permit renewal.

(1) A permit will be eligible for renewal if the vessel covered by the permit makes three or more qualifying landings during the permit year.

(2) The owner of a permitted vessel that did not make three or more qualifying landings of bottomfish in a year may apply to the Regional Director for waiver of the landing requirement. If the Regional Director finds that failure to make three landings was due to circumstances beyond the owner's control, he may renew the permit. A waiver may not be granted if the failure to make three landings was due to general economic conditions or market conditions such that the vessel operations would not be profitable.

(c) Supplementary requirements for new entry permits. The Regional Director may issue new vessel permits under this part when the Regional Director has determined, in consultation with the Council, that bottomfish stocks in the Ho'omalu Zone are able to support additional fishing effort. This shall be established by determining that the total estimated annual revenue to the fleet exceeds the total estimated annual fixed and variable costs to the fleet in the Ho'omalu Zone by an amount at least equal to the average cost of a vessel year. This determination shall be made and published annually in association with the annual report required under Section 683.24 of this part.

(1) Eligibility

(i) When the Regional Director has determined that new permits may be issued, they shall be issued to applicants based upon eligibility determined as follows:

(A) Two points shall be assigned for each year in which the applicant was owner or captain of a vessel which made three or more landings of bottomfish from the NWHI.

(B) One point shall be assigned for each year in which the applicant was owner or captain of a vessel that landed at least 6,000 pounds of bottomfish from the main Hawaiian Islands.

(C) Points will be assigned only under (A) or under (B) for any one year.

(D) Points will be assigned for every year for which the requisite landings can be documented.

(ii) An applicant must own at least a 25% share in the vessel that the permit would cover, and only one permit will be assigned to any vessel.

(iii) New permits shall be awarded to applicants in descending order starting with the applicant with the largest number of points. If two or more persons have an equal number of points, and there are insufficient new permits for all such applicants, the new permits shall be awarded by the Regional Director through a lottery.

(iv) Notwithstanding (iii) above, a person who originally qualifies for and obtains a permit under 683.25(a) and who voluntarily surrenders that permit to the Regional Director within the first five years of this program shall have priority over applicants under the point scale system for a new permit under this section. If two or more persons qualify under this provision, the person surrendering his permit at the earliest date will have first priority. If two or more such persons are equally qualified under the date of surrender criterion, the permit shall be awarded by the Regional Director by a lottery. A permit holder may qualify for this provision only one time.

(v) The Regional Director shall place a notice in the FEDERAL REGISTER and shall use other means to notify prospective applicants of the opportunity to file applications for new permits under this program.

9. A new part 683.27 is added as follows:

Section 683.27 Notification of landings

The operator of a fishing vessel that has taken bottomfish in the NWHI shall contact the U.S. Coast Guard, by radio or otherwise, at the 14th District, Honolulu, Hawaii (Telex: 392401); Pacific Area, San Francisco, California (Telex: 330427); or 17th District, Juneau, Alaska (Telex: 45305), at least 24 hours before landing, and report the port and the approximate date and time at which the bottomfish will be landed.

10. A new part 683.28 is added as follows:

Section 683.28 Native Hawaiian fishing rights (reserved)

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13.0 APPENDIX A

DATE: March 27, 1986

TO: Bottom Fish Planning Team Members

FROM: Steve Ralston

SUBJECT: Estimating productivity and MSY of Hawaii's bottom fishery

One of the most pressing items before the team, at least from my perspective, is to provide guidance and recommendations to the Council concerning how much activity the local fishery can support. Clearly, if a limited access management program is adopted, we need to know something about how many people the fishery can support. The first step in answering this question is to develop what may be considered a reasonable estimate standardized bottom fish productivity (i.e., sustained yield per unit area of habitat).

At the present time there are 3 sources for this kind of estimate. The first is provided in the Ralston-Polovina paper which appeared in Fishery Bulletin (1982, vol. 80(3):435-448). Based upon a total biomass surplus-production model using HDAR data collected over the period 1959-1978, an attempt was made to estimate MSY for 4 separate multispecies "stocks" within the main Hawaiian Islands. Results were inconclusive for the Big Island stock and for the Kauai-Niihau-Kaula Rock stock. Significant results were obtained, however, for the Oahu and Molokai-Lanai-Maui-Kahoolawe (MLMK) stocks. The results were as follows:

	MSY	Available Habitat	Productivity
Oahu	15,700 kg/yr	150 nmi 100-fathom isobath	105 kg/yr/nmi
MLMK	106,000 "	390 "	272 "

There is one major problem with the above estimates. Because the HDAR catch report data set does not include recreational landings, we must consider the above estimates of bottom fish productivity to represent lower bounds of potential production. This is perhaps an especially significant problem for the Oahu estimate, due to the proximity of Honolulu and its high density urban environment. For this reason, I believe it is reasonable to discount the figure obtained for Oahu.

The second source of bottom fish productivity estimates is derived from the resource assessment survey of the Marina Archipelago undertaken by the Honolulu Laboratory of NMFS (RAIMO Program, 1982-1985). The analytical approach used in this study was entirely different from the Ralston-Polovina analysis. In this case, the Beverton-Holt dynamic pool model was applied to an array of biological data gathered on a variety of individual species, including estimates of growth, mortality, abundance, and several other significant assessment parameters. The results of this work are summarized in the appended tables. Twenty-two different island communities were treated individually, each composed of 7 different species and a catchall "others" for the

unaccounted for species which remained. Close examination of species composition, catch rates, and other factors showed that these 22 localities were representative of 3 main types of communities based on habitat similarity: (a) the southern limestone islands, (b) the northern basaltic islands, and (c) the offshore seamounts of the Western Marianas Ridge. After the numbers were fully crunched the following results emerged.

Island Type	Productivity
Limestone Islands	228.5 kg/yr/nmi
Basalt Islands	212.9 "
Seamounts	264.4 "
-Average-	222.4 "

The figures compare remarkably well with those obtained by entirely different methods at the MLK bank in Hawaii. The data suggest further that the Marianas are perhaps not as productive as Hawaii when it comes to bottom fish. The preceding analysis is now in press in Fishery Bulletin (Polovina and Ralston).

The last source of information on this subject comes from the work Jeff Polovina did with the ecosystem model at French Frigate Shoals as part of the Northwestern Hawaiian Islands Resource Investigations (Coral Reefs, 1984, Vol. 3:1-11). Once again, based on an entirely different type of approach, in which biomass components in a model ecosystem were balanced to reflect assumed predator limitation, Jeff estimated that the potential fisheries productivity of the bottom fish component at FFS amounted to 286 kg/yr/nmi of 100 fathom isobath.

There is surprising similarity in all of these estimates, which range from 213-286 kg/yr/nmi (coefficient of variation = 12%). The problem we are faced with is to pick one to proceed with. I suggest we use 286 kg/yr/nmi as our first choice. The reasons for this are:

(1) If we are going to err at this time we should be careful not to be so overly conservative that we alienate industry and jeopardize our interactions in the future.

(2) The estimate of productivity from the heavily fished MLMK bank (272 kg/yr/nmi) is similar and appears to be reasonably reliable. Remember that this figure does not include "recreational catch."

Once an estimate of bottom fish productivity is assumed (286 kg/yr/nmi) it is possible to estimate the potential landings from each of the island areas as shown in the following table. All figures given for the total amount of bottom fish habitat at each island area were provided by the Council's research staff.

Main Hawaiian Islands

Island	Habitat		MSY	
Hawaii	263 nmi	100 fathom isobath	75.2	MT
MLMK	415	"	118.7	"
Oahu	137	"	39.2	"
Kauai	100	"	28.6	"
Niihau	60	"	17.2	"
Kaula Rock	22	"	6.3	"
TOTAL	997	"	285.2	MT

NORTHWESTERN HAWAIIAN ISLANDS -- (subdivided into "Kauai access," primary fresh, and potential frozen zones).

Nichoa	122	"	34.9	"
Necker	154	"	44.0	"
FFS	67	"	19.2	"
Brooks	68	"	19.4	"
St. Rogatian	41	"	11.7	"
Intervening Bank	18	"	5.1	"
Gardner	123	"	35.2	"
Raita	59	"	16.9	"
Maro	93	"	26.6	"
Laysan	51	"	14.6	"
Northampton	53	"	15.2	"
Pioneer	45	"	12.9	"
Lisianski	75	"	21.5	"
Intervening Bank	35	"	10.0	"
Salmon Bank	27	"	7.7	"
Pearl & Hermes	62	"	17.7	"
Gambia Shoal	8	"	2.3	"
Ladd Seamount	29	"	8.3	"
Midway	44	"	12.6	"
Nero Seamount	21	"	6.0	"
Kure	36	"	10.3	"

Kauai Access Zone			78.9 MT
Primary Fresh Zone			198.3 MT
Potential Frozen Zone			74.9 MT
NWHI TOTAL	1231	"	352.1 MT
GRAND TOTAL	2228	"	637.3 MT

As you can tell by the way these figures were arrived at, they must be considered a first approximation to the potential sustainable yield from the Hawaiian bottom fishery. I do believe they provide us with a basis to begin thinking about implementing a limited access management program in the Northwestern Hawaiian Islands. It is also worth pointing out that, according

to the best estimates available, the 1984 landings of bottomfish from the Main Hawaiian Islands (commercial and recreational) were 354 MT and those from the NWHI were 265 MT. The total estimated landings were 619 MT. The next problem is the economic issue of optimum yield. Another problem is whether species composition and seasonality will affect these optimality decisions.

APPENDIX B

OMB Control #
0648-0387

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE

FISHING VESSEL PERMIT APPLICATION FOR LIMITED ACCESS PROGRAM FOR BOTTOMFISH IN THE NORTHWESTERN HAWAIIAN ISLANDS

Date Application Received

Permit Number Assigned

APPLICATION INFORMATION - PLEASE PRINT

(1) Name of Applicant (Last, First, Middle)

(2) Name of Vessel Owner (Last, First, Middle) | Telephone Number

(3) Mailing Address of Vessel Owner | City and State | Zip Code

(4) Operator's Name (Last, First, Middle) | Telephone Number

(5) Mailing Address of Operator | City and State | Zip Code

PERMIT INFORMATION - PLEASE PRINT)

(6) Type of Application:
a. New Permit - ☐
b. Renewal Permit - ☐

(7) Prior Permit Number:

(8) Expiration Date of Permit:

VESSEL INFORMATION - PLEASE PRINT)

(9) Vessel Name: | (10) Official Number: | (11) Radio Call Sign: | (12) Home Port:

(13) Gross Registered Tons: | (14) Registered Length of Vessel: | (15) Beam of Vessel: | (16) Fuel Capac:

(17) Average Cruising Speed: | (18) Maximum Range of Vessel: | (19) Horsepower: | (20) Age of Vessel:

(21) Purchase Date of Vessel:

(22) Purchase Price of Vessel:

FISHING INFORMATION - PLEASE PRINT)

(23) Vessel Fish Hold Capacity: (IN TONS)

(24) Type of Refrigeration Capacity: (IN TONS)
a. Ice - ____
b. On Board Ice Plant - ____
c. Plate Freeze ____
d. Blast Freeze ____
e. Other (specify): - ____

(25) Type and Number of Fishing Gear:
a. Handline - ☐
b. Traps - ☐
c. Bottom longline - ☐
d. Other (specify):- ☐ _____

I have attached the documentation necessary to demonstrate eligibility under the limited access criteria and will attend an endangered species seminar prior to fishing under this permit.

APPLICANT'S SIGNATURE: _____ DATE: _____
(owner/operator)

SUBMIT THIS COPY TO THE REGIONAL DIRECTOR

OMB CONTROL NO

LIMITED ACCESS PERMIT APPLICATION - SUPPLEMENTAL INFORMATION

NAME _____

VESSEL _____

Basis for application (documentation must be attached):

NEW PERMIT BASED ON HISTORIC PARTICIPATION CRITERIA

_____ Owner of vessel which made landings of NWHI bottomfish prior to 8/7/85; if permits are being requested for two or more vessels, documentation must show that each vessel made at least one landing of NWHI bottomfish in 1986

_____ Previously non-owner skipper of vessel which landed NWHI bottomfish prior to 8/7/85 and now owner (50% or greater interest) of vessel for bottomfish fishery

_____ Incurred substantial expenditure, or received written commitment for loan, prior to 8/7/85, to obtain vessel for bottomfish fishery

_____ Owner of vessel which qualified for initial permit and for which the permit was voluntarily surrendered by the owner to the Regional Director

NEW PERMIT BASED ON ELIGIBILITY POINT SYSTEM

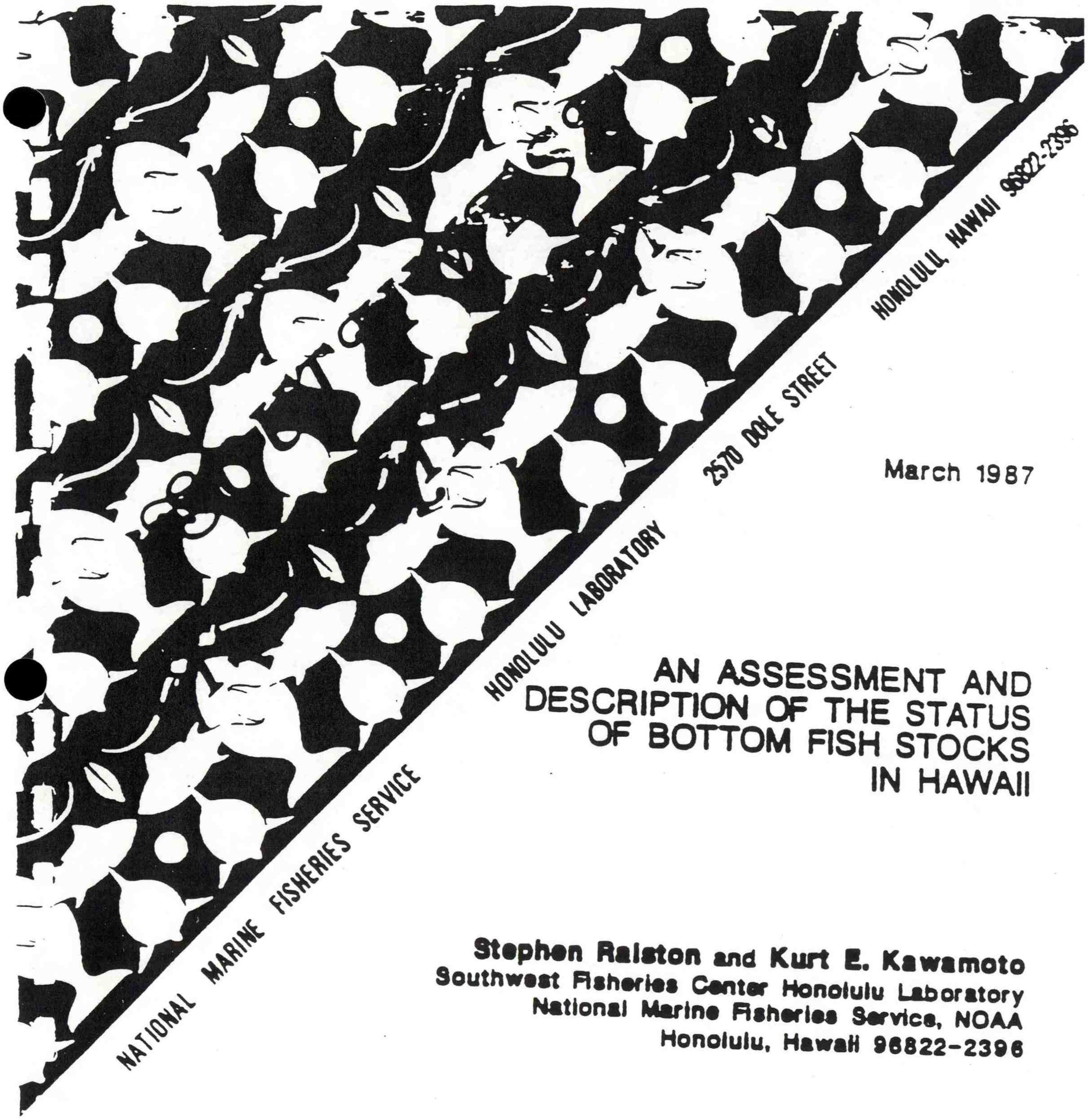
_____ Owner of 25% or greater interest in a vessel which may qualify on the basis of points earned through landings of bottomfish from the NWHI or Main Hawaiian Islands

RENEWAL OF EXISTING PERMIT

_____ Owner of vessel which qualifies for permit renewal by making at least three (3) landings of bottomfish taken in the Ho'omalu Zone in the past year

IF THE VESSEL OWNER IS A PARTNERSHIP OR CORPORATION, THE DOCUMENTATION MUST INCLUDE A LIST OF PARTNERS/SHAREHOLDERS AND THE RELATIVE OWNERSHIP SHARE OF EACH

IF THE VESSEL FOR WHICH THE APPLICATION IS BEING FILED IS A REPLACEMENT FOR A VESSEL WHICH WOULD HAVE QUALIFIED UNDER THE CRITERIA OF THE PROGRAM, DOCUMENTATION MUST INCLUDE INFORMATION ON THE ORIGINAL VESSEL AS IN THE "VESSEL INFORMATION" BLOCK ON THE APPLICATION FORM



March 1987

AN ASSESSMENT AND DESCRIPTION OF THE STATUS OF BOTTOM FISH STOCKS IN HAWAII

Stephen Ralston and Kurt E. Kawamoto
Southwest Fisheries Center Honolulu Laboratory
National Marine Fisheries Service, NOAA
Honolulu, Hawaii 96822-2396

NOT FOR PUBLICATION

ADMINISTRATIVE REPORT H-87-7

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Southwest Fisheries Center Administrative Report H-87-7

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ABSTRACT

The Honolulu wholesale market for bottom fish was studied to assess the condition of the fishery and the status of the stocks. Six species comprise the preponderance of landings passing through this market (opakapaka, onaga, ehu, uku, hapuupuu, and butaguchi) and nearly all lots of bottom fish are of Hawaiian origin (89.6-96.9% between 1984 and 1986).

Total landings indicate the importance of opakapaka to the Hawaiian deep-sea handline fishery, although catches from the Northwestern Hawaiian Islands (NWHI) have declined 16.5% over the last 3 years. A trend of substitution by onaga is increasingly evident in the fishery. Catches of onaga, ehu, hapuupuu, and butaguchi from the NWHI have all increased substantially from 1984 to 1986. In contrast, bottom fish landings from the main Hawaiian Islands (MHI) have remained very stable (coefficient of variation = 3.0%).

Size structured yield-per-recruit analyses demonstrate that the MHI fisheries for opakapaka, ehu, and uku are moderately to severely growth-overfished. These species may benefit from minimum size restrictions. In contrast, an increased harvest of onaga in the MHI is suggested while the fishery for hapuupuu is close to optimal.

In the NWHI there is no evidence of growth-overfishing for any of the five species analyzed (opakapaka, onaga, ehu, hapuupuu, and butaguchi). This is likely due to the fishery being in a state of disequilibrium, the result of increasing fishing effort (30% increase in 3 years) and major changes in fishing grounds. In 1986 the fishery for bottom fish in the NWHI shifted almost 300 nmi to the northwest as more distant stocks were more heavily exploited.

Current harvest levels in the MHI are believed near maximum sustainable yield, although much better information concerning the recreational and unaccounted for commercial catch of these fishes is necessary before a more accurate assessment can be made. In the NWHI landings are presently in excess of the best available estimate of MSY as bottom fish stocks are "fished up." It is recommended that better data on the location of bottom fish harvests in the NWHI be obtained for future assessment work.

INTRODUCTION

As used by the fishermen of Hawaii and other island locations in the tropical Pacific, the term bottom fish refers to the complex of species typically caught with deep-sea handline gear. Most are snappers (lutjanids) and related forms (i.e., lethrinids and emmelichthyids), although groupers (epinepheline serranids), several species of jacks (carangids), and at least one scorpionfish (scorpaenid) are included in the fish community that is harvested by hook-and-line fishing gear in offshore waters 60-300 m deep. Bottom fish are usually found in habitats characterized by hard bottom of high structural complexity, restricting their accessibility to trawl and longline gears. Historically the Hawaiian deep-sea handline fishery for bottom fish has been one of the most important in the State, serving both commercial and recreational sectors of the community. A number of previous workers have studied and described aspects of the biology (Ralston and Polovina 1982; Ralston and Miyamoto 1983; Ralston 1984; Ralston, Gooding, and Ludwig 1986; Polovina 1987) and economics (Hau 1984; Pooley 1987) of this fishery (see also Hawaii Department of Land and Natural Resources 1979; Ralston 1979, 1982).

In 1986 a fishery management plan (FMP) was implemented by the Western Pacific Regional Fishery Management Council (Council) for the bottom fish and seamount groundfish fisheries of the western Pacific region (Hawaii, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands). The plan was prepared under the guidelines of the Magnuson Fishery Conservation and Management Act of 1976 and is intended to result in the management of the bottom fish fishery so that optimal yields are realized.

The bottom fish FMP stipulates that every year a monitoring team appointed by the Council will assess the biological and economic conditions prevailing in the fishery and will prepare a report that presents its findings to the Council. If deemed necessary the team will suggest alternatives for corrective management action. The work presented here, by examining a variety of biological factors and fishery performance indicators that have been gleaned from a market sampling program, represents a biological contribution to the monitoring team's annual assessment of the fishery. Particular attention is paid to the size structure of certain key species in the Hawaiian fishery. This specific type of analysis has been used previously (Ralston and Kawamoto 1985) and is described in detail elsewhere (Ralston, Tagami, and Shiota 1986).

METHODS

The data used here were derived from a sampling program designed to monitor the landings of commercial fishermen at the centralized wholesale fish market in Honolulu. The fish passing through these market channels are a subset of the entire Statewide commercial bottom fish catch. Significant markets also exist on Maui, Hawaii, and Kauai. Moreover, there is without doubt a substantial recreational-subsistence harvest of bottom fish. The catch totals compiled here, therefore, do not represent meaningful absolute statistics. The value of monitoring the catch at this wholesale

level is that it represents the most centralized point at which a large volume of landings can be intercepted and data economically collected. Because such a large share of the total Statewide catch of bottom fish is marketed there, trends and patterns in the data collected at the wholesale market are believed to be indicative of the fishery as a whole.

At the wholesale market bottom fish are auctioned either as individual fish or more commonly in lots. A lot is composed of a grouping of conspecific fish from a single fisherman's landings on a given day. Significantly, fish are sorted by size before assignment to lots, so that all those within a single lot tend to be of similar size (Ralston, Tagami, and Shiota 1986). For each lot of fish sold at the market it is possible to record the following information: (1) the species, (2) the total weight (lb) of the lot, (3) the number of individual fish comprising it, (4) the fishing vessel landing the catch, (5) the general location of fishing, (6) the purchaser, (7) the bid price, and (8) the date of the transaction. Previous work has shown that one can recover 88.0–99.3% of the information regarding actual bottom fish size structure by examination of these simple lot statistics (Ralston, Tagami, and Shiota 1986). Thus, size-frequency analysis of these data is possible.

The above data were recorded for all lots of bottom fish sold over the 3 years spanning 1984–86. The data were entered into a computer file in which each lot of fish comprises one record (observation) composed of the eight variables listed above. Various summary statistics were computed using Statistical Analysis System computer routines (SAS 1985a, 1985b, 1985c).

Weight-frequency distributions were compiled and analyzed in detail to estimate various biological and fishery dependent parameters. For each distribution considered the ascending portion of the curve (including the modal size class) was used to determine the weight at entry to the fishery (w_c) as suggested by Gulland (1969). Species were assumed fully vulnerable to the gear in all weight categories greater than, but not equal to, the mode. The descending portion of each weight-frequency distribution (excluding the mode) was transformed to a length-frequency polygon using the length-weight regressions provided in Loubens (1980), Uchiyama et al. (1983), Brouard and Grandperrin (1984), and Ralston (in press). In all cases analyzed the descending portions of catch length-frequency distributions were assumed to accurately depict stock size structure. This is equivalent to assuming constant selectivity of the gear (hooks) over the full size range of the descending limb, i.e., a "trawl" type sigmoidal selection curve. It is noteworthy that evidence exists in support of this assumption (Ralston 1982; Ralston unpublished data), although it is undoubtedly a simplification of what is in reality a complex interaction between the fish and the fishing gear.

The descending limbs of length-frequency distributions, pooled over 1984–86, were used to estimate the maximum length parameter (L_∞) of the von Bertalanffy growth model using the regression method of Wetherall et al. (in press). The data were pooled due to the instability of L_∞ estimates calculated for each year separately. The growth coefficient (K) of the von

Bertalanffy model was estimated from L_∞ using the growth performance equation derived specifically for snappers and groupers by Manooch (1987). This in turn was used to estimate the natural mortality rate (M) as suggested by Ralston (1987) in his study of snapper and grouper mortality rates. Total mortality rates (Z) were estimated from the descending limbs of length-frequency distributions using both the Beverton and Holt (1956) length-based estimator and the length converted catch curve method of Pauly (1982). In general there were no systematic differences between the two estimates of Z (Fig. 1), so they were averaged to produce a final estimate of Z. Instantaneous fishing mortality rates (F) were determined by subtraction ($F = Z-M$) and ages at entry to the fishery (t_c) were calculated from w_c, the length-weight regression, and the estimates of von Bertalanffy growth parameters. Maximum weight parameters (W_∞) were estimated with the values of L_∞ and the appropriate length-weight regression.

Yield-per-recruit analyses were conducted using the various parameters estimated from size structure (W_∞, K, M, F, and t_c). All species were assumed to recruit to the fishery at age I (i.e., constant natural mortality rate thereafter) and the simplified cubic form of the equilibrium Beverton and Holt (1957) yield equation based on isometric growth was used in lieu of the more complicated computations involving the incomplete beta function (Wilimovsky and Wicklund 1963). Previous calculations by Ralston (1981) using the latter had failed to appreciably alter the analytical result for opakapaka, Pristipomoides filamentosus. As suggested by Ricker (1975) the upper bound of the yield equation integral was assumed infinite.

In addition to total landings and size structure, another useful application of the wholesale market data set is the calculation of fishing effort and catch per unit effort (CPUE) statistics for the Northwestern Hawaiian Islands (NWHI) fishery. All bottom fishing trips to the NWHI tend to be of relatively short duration (approximately 2 weeks) because the product is marketed fresh at the wholesale market. For the same reason, when brought to port a vessel's landings are quickly sold. On the other hand the distance to the fishing grounds requires a minimum of 4 days transit time. Thus, it is possible to determine the number of fishing trips to the NWHI each year by following the pattern of sales at the market by individual fishermen. While on occasion it may require as much as 4 days to completely offload and sell the catch obtained from any particular trip to the NWHI, if 5 consecutive business days elapse at the wholesale market in which no subsequent transactions relating to that vessel occur, the sales from that trip can be considered complete. The total trip landings can then be determined by summation and, by examining the sales by all fishermen at the wholesale market, the total number of bottom fishing trips to the NWHI can be calculated for any given time period.

RESULTS

The data were first summarized to determine what species of bottom fish appear in the wholesale market samples. The results given in Table 1 show that many species are sold at the market, although a small subset accounts for the preponderance of lots. In particular, seven species (opakapaka,

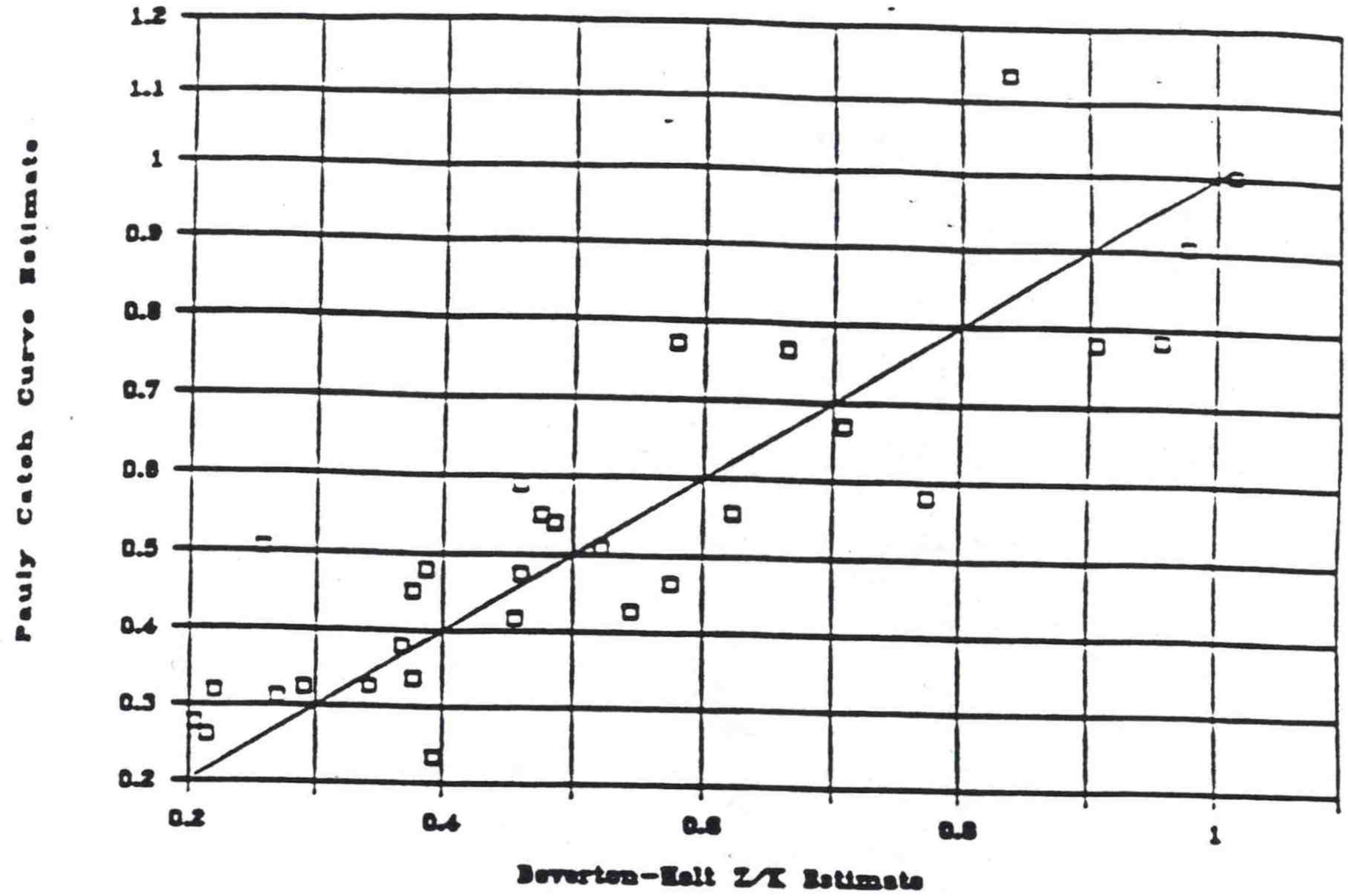


Figure 1.—A comparison of total mortality rate estimates (Z) derived from the Beverton and Holt (1956) length-based estimator and the Pauly (1982) length converted catch curve. The solid line represents equality of the estimates (units are per year).

Table 1.—Bottom fish species sold at the wholesale market from 1984 to 1986. The figures represent the percentage each species contributed to the total number of bottom fish lots in a year. A dash indicates trace quantities. Note that this table contains fish from areas other than Hawaii.

Family Species	Common name	1984	1985	1986
Lutjanidae				
Pristipomoides zonatus	Gindai	2.0	2.6	2.2
P. filamentosus	Opakapaka	28.8	20.0	18.8
P. sieboldii	Kalekale	3.8	5.3	3.9
P. flavipinnis	Yelloweye opakapaka	0.2	0.2	0.3
P. auricilla	Yellowtail kalekale	0.2	0.5	0.2
P. multidens	Goldbanded jobfish	0.1	0.4	0.4
P. argyrogrammicus	Ornate jobfish	—	--	--
P. typus	Sharptooth jobfish	—	—	—
Etelis coruscans	Onaga	14.7	21.4	21.2
E. carbunculus	Ehu	8.7	15.2	15.1
Lutianus kasmira	Taape	2.8	3.5	2.4
L. fulvus	Toau	0.9	0.6	0.8
Aphareus rutilans	Lehi	1.9	2.9	1.6
A. furca	Hauni	0.3	0.2	—
Aprion virescens	Uku	9.1	2.6	4.6
Paracaesio spp.	Various	—	0.2	0.4
—	"Snapper"	—	0.2	—
Emmelichthyidae				
Erythrocles schlegelii	Golden kalekale	0.2	0.2	0.2
Serranidae				
Epinephelus quernus	Hapuupuu	9.0	8.2	8.6
Epinephelus spp.	Various	0.3	0.4	0.5
Carangidae				
Pseudocaranx dentex	Butaguchi, pig ulua	4.9	5.4	5.9
Caranx ignobilis	White ulua	3.7	3.8	2.6
Caranx and *Carangoides* spp.	Ulua	7.2	4.5	8.1
Seriola spp.	Kahala	—	0.1	0.2
Scorpaenidae				
Pontinus macrocephalus	Nogo	1.1	1.5	1.6

onaga, ehu, uku, hapuupuu, butaguchi, and ulua) comprised 77.3-82.4% of all bottom fish lots sold from 1984 to 1986. The total numbers of bottom fish lots recorded during these years were 22,461, 34,612, and 39,840, respectively.

Fishing areas for the bottom fish sold at the wholesale market from 1984 to 1986 are presented in Table 2. In this table all areas are mutually exclusive categories, i.e., if a lot appears under the Twin Banks heading it does not appear under either the NWHI or Hawaiian Islands headings. Examination of the data in the table shows that out of State sales of fish are assuming increasing importance. Whereas in the past only American Samoa and Fiji shipped bottom fish to the wholesale market on a regular basis, in 1986 a wide variety of Pacific island nations marketed bottom fish in Honolulu. Nonetheless, bottom fish caught in Hawaii represent the vast majority of the market sampling data. In the first year of sampling 96.9% of all bottom fish lots were composed of fish caught in Hawaii. For the subsequent 2 years the figures are 93.9 and 89.6%.

A significant development in the collection of the location data is that the precision of the information has steadily improved. Since 1984, both the fraction and number of bottom fish lots classified to the "Hawaiian Islands" area category declined to zero. In 1986 it was possible to assign all Hawaiian bottom fish landings to either the main Hawaiian Islands (MHI) or the NWHI categories. Likewise, within the NWHI region, only 15% of the lots sampled in 1984 had the specific bank of harvest recorded. In 1986 the situation was reversed; 64% of all NWHI bottom fish lots were classified to specific bank or island locations. In spite of the marked improvement in the collection of the 1986 data, the fairly crude geographical resolution that characterizes the first 2 years of data precludes detailed treatment on a bank by bank basis. For this reason, the fundamental separation of MHI and NWHI landings was the only areal distinction made in the yield analyses that follow.

Moreover, due to the abundance of lot statistics for opakapaka, onaga, ehu, uku, hapuupuu, and butaguchi, and the relative paucity of data concerning the remaining species, detailed analyses were conducted only on this subset of species. Note that although "ulua" accounts for a substantial number of lots (4.5-8.1%), it is a heterogeneous group of species, each of uncertain taxonomic affiliation.

Landings of Hawaiian Bottom Fish at the Wholesale Market

The data presented in Table 3 summarize the total Hawaiian landings of opakapaka, onaga, ehu, uku, hapuupuu, butaguchi, and total bottom fish. The figures given represent only the catch that is known to have been caught in either the MHI or the NWHI. However, the remaining "Hawaiian Islands" catch (see Table 2) amounts to no more than 3.4% of these totals. In aggregate this catch represents 82.4-86.9% of all the bottom fish sold at the wholesale market from 1984 to 1986, regardless of species or area caught.

Table 2.—Harvest locations of bottom fish appearing at the wholesale market during 1984–86. The figures represent the percentage each area contributed to the total number of bottom fish lots in a year. A dash indicates trace quantities and a zero no recorded landings. All area categories are treated as mutually exclusive.

Area	1984	1985	1986
Hawaiian Islands	2.4	1.3	0
Main Hawaiian Islands	3.7	2.2	0.4
Hawaii	10.0	18.0	12.3
Maui	0.5	—	0.2
Molokai	1.6	2.7	3.1
Oahu	37.0	31.1	37.0
Kauai	7.1	6.1	2.3
Northwestern Hawaiian Islands	29.5	29.7	12.3
Middle Bank	0.1	0	0.6
Nihoa	—	0.1	0.8
Twin Banks	0	0.9	0.3
Necker Island	0.6	0.3	1.3
French Frigate Shoals	1.0	0.3	0.9
Brooks Banks	2.6	0	0.5
Gardner Pinnacles	0.4	0	2.4
Raita Bank	0	0	1.5
Maro Reef	0	0	0.7
Laysan Island	0.4	0.1	1.4
Northampton Seamounts	0	0	0.8
Pioneer Bank	0	0.2	1.0
Lisianski Island	0	0	9.0
Pearl and Hermes Reef	0	0	0.6
Line Islands	0	0	0.1
Tahiti	0	—	0
American Samoa	2.1	0.6	1.2
Western Samoa	0	0	—
Tonga	0	—	0.1
Fiji	0.9	3.3	6.8
Vanuatu	0	—	0.1
Federated States of Micronesia	0	0	0.1
Pohnpei	0	0	—
Yap	0	0	—
New Zealand	0	0	0.2
Australia	0	0	1.5
Palau	0	2.1	0.1
Guam	0	0.1	0.1
Taiwan	0	0	0.1

Table 3.—Total landings (in metric tons) of Hawaiian bottom fish from the main Hawaiian Islands and the Northwestern Hawaiian Islands.

	1984	1985	1986
Opakapaka			
Main Hawaiian Islands	37.5	30.9	34.2
Northwestern Hawaiian Islands	143.4	140.5	119.8
Onaga			
Main Hawaiian Islands	36.7	64.4	56.2
Northwestern Hawaiian Islands	3.1	23.4	43.1
Ehu			
Main Hawaiian Islands	6.5	12.9	11.6
Northwestern Hawaiian Islands	2.2	9.3	11.8
Uku			
Main Hawaiian Islands	31.1	8.1	20.1
Northwestern Hawaiian Islands	3.4	0.7	3.0
Hapuupuu			
Main Hawaiian Islands	6.7	3.4	3.4
Northwestern Hawaiian Islands	46.1	66.5	84.3
Butaguchi			
Main Hawaiian Islands	0.8	0.4	0.6
Northwestern Hawaiian Islands	29.5	56.2	63.5
All six species			
Main Hawaiian Islands	119.4	120.1	126.0
Northwestern Hawaiian Islands	227.7	296.5	325.5

It is apparent from these results that opakapaka has been the mainstay of the bottom fish fishery in Hawaii, especially if only the NWHI is considered. For example, this species alone comprised over half the Hawaiian bottom fish share of the wholesale market in 1984. However, there has been a marked (16.5%) decline in the harvest of this species in the NWHI over the period in question. In contrast, landings from the MHI appear to be relatively stable.

Onaga is the second most important species in the Hawaiian deep-sea handline fishery, contributing 22.0% to the 1986 total. In contrast to opakapaka, the catch of this species has generally risen from 1984 to 1986, most notably in the NWHI where landings increased fourteenfold in 3 years. Moreover, in the last 3 years the onaga catch from the MHI has generally exceeded opakapaka landings from the same area.

From 1984 to 1986 the catch of ehu from the NWHI increased markedly, likely in direct association with the increase in onaga landings. Both species inhabit deeper habitats than opakapaka and, for that reason, they tend to co-occur in the catch (Ralston and Polovina 1982).

As measured by the coefficient of variation (CV), landings of uku from the MHI are highly variable (CV = 58%). The fishery for this species is very seasonal during the early summer months (Ralston 1979), a time when uku aggregate to spawn. Because no other Hawaiian bottom fish is known to similarly aggregate, this aspect of the life history may be related in some way to the relatively high variation in catch between years. Moreover, it is evident from the data in Table 3 that compared with the MHI, the NWHI harvest of uku is presently negligible. Insufficient numbers of uku were recorded from the NWHI region to perform a size structured analysis of yield per recruit, although a number of fishermen have displayed an increasing interest in the Middle Bank and Necker Island stocks of uku.

Like the onaga and ehu, landings of hapuupuu from the NWHI have increased dramatically in recent years (83%). While substantially less than the NWHI, the MHI catch is nonetheless of sufficient magnitude to allow a yield analysis. The data suggest that the MHI hapuupuu catch may be waning. Overall the hapuupuu is the third most important species of bottom fish in the Hawaiian fishery on the basis of landed weight, trailing opakapaka and onaga.

The geographical distribution of butaguchi is limited almost entirely to the NWHI, where almost 99% of all landings are taken. This pattern is reciprocal to that of the uku. Consequently, insufficient quantities of butaguchi were landed from the MHI to analyze further. In parallel with onaga, hapuupuu, and ehu, landings of butaguchi from the NWHI show a steady increase from 1984 to 1986, rising 115% during this time.

The general pattern of the wholesale market landings of these six species taken together shows a distinct difference between the trends in the MHI and NWHI regions. In aggregate, over the 3-year span for which there are data, the MHI catch has been very stable (CV = 3.0%) while the NWHI catch has increased 43.0%.

It is also of considerable interest to compare the wholesale market landings of bottom fish from the MHI and the NWHI with our current estimates of the maximum sustainable yield (MSY) from these areas. In a memorandum to the members of the Bottom Fish Planning Team dated 27 March 1986, Stephen Ralston of the National Marine Fisheries Service, Southwest Fisheries Center Honolulu Laboratory summarized information pertaining to estimates of bottom fish productivity (Ralston and Polovina 1982; Polovina 1984; Polovina and Ralston 1986) and habitat area within the Hawaiian Islands. Bottom fish MSY for the MHI was estimated to be 285 t, while for the primary fresh access zone of the NWHI (Nihoa to Lisianski Island) it was set at 275 t. The data presented in Table 3 show that over the last 3 years the MHI "wholesale market" harvest level has been stable at a value somewhat less than our best estimate of MSY. In fact, these data indicate that only 43% of the potential MHI yield is being caught and marketed at

the wholesale level. By comparison the 1986 NWHI catch of bottom fish sold at the wholesale market is substantially in excess of the projected MSY (18% greater).

Size Structured Analysis

In this section the size structure of six different species (opakapaka, onaga, ehu, uku, hapuupuu, and butaguchi) will be considered in some detail. Moreover, the wholesale market landings of these fishes have been separated into MHI and NWHI categories. As previously indicated, the NWHI catch of uku and the MHI catch of butaguchi were insufficient to perform yield-per-recruit analyses. This leaves 10 different species by area combinations to examine.

Main Hawaiian Islands Opakapaka

Weight-frequency histograms for the 1984-86 catch of MHI opakapaka are presented in panels A-C of Figure 2. Note that the presence of individuals in the "0" pound weight class (e.g., for 1984 and 1986) indicates the existence of some illegal fish weighing 0.00-0.50 lb. This is because all weights were rounded to the nearest integer. Note also that the modal size of MHI opakapaka dropped from 1.36 kg (3 lb) in 1984 to 0.91 kg (2 lb) in 1985 and 1986.

Panel D of Figure 2 provides the relative length structure of MHI opakapaka during the time period in question. These data, jointly and in isolation, were used to estimate the following parameters: L_∞, W_∞, Z, w_c, and t_c (Table 4). It was then possible to perform a yield-per-recruit analysis (Fig. 3), the results of which indicate that over the 1984-86 period the age at entry to the fishery (t_c) has dropped substantially as fishing mortality rate has increased. If the current trend continues yield per recruit will decline. Ralston and Kawamoto (1985) believed the 1984 value of t_c to be slightly less than 2.0 years, while that given here is approximately 3.0. The difference in estimates is due to the more limited data available to the former study (1,347 MHI opakapaka sampled in the 6 weeks from mid-January to the end of February). In any event, the primary conclusion at this point is that the age at entry is presently too low.

Northwestern Hawaiian Islands Opakapaka

Similar data are presented in Table 4 and Figures 4 and 5 for the NWHI "stock" of opakapaka. The histograms show that NWHI opakapaka are generally much larger than their MHI counterparts. Relatively speaking, very few small fish are landed from the NWHI, i.e., t_c is quite high. Neither is there evidence of growth overfishing due to excessive fishing effort. Moreover, the current trend appears to indicate a lessening of fishing mortality and an increase in the age at entry. This result is likely due to relatively unexploited fishing grounds being targeted in 1985 and 1986, with the catch demonstrating a virgin size structure (see section on

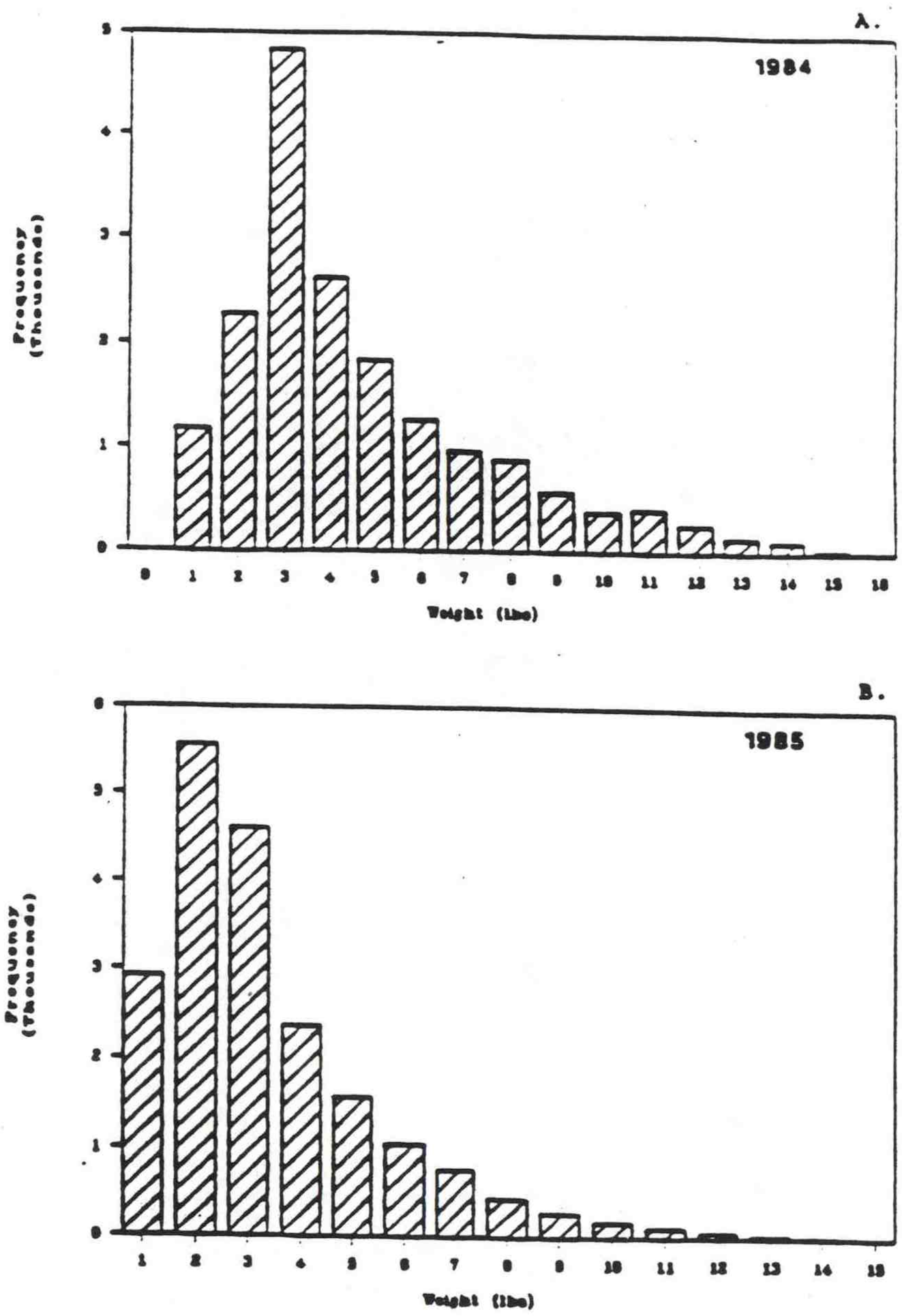
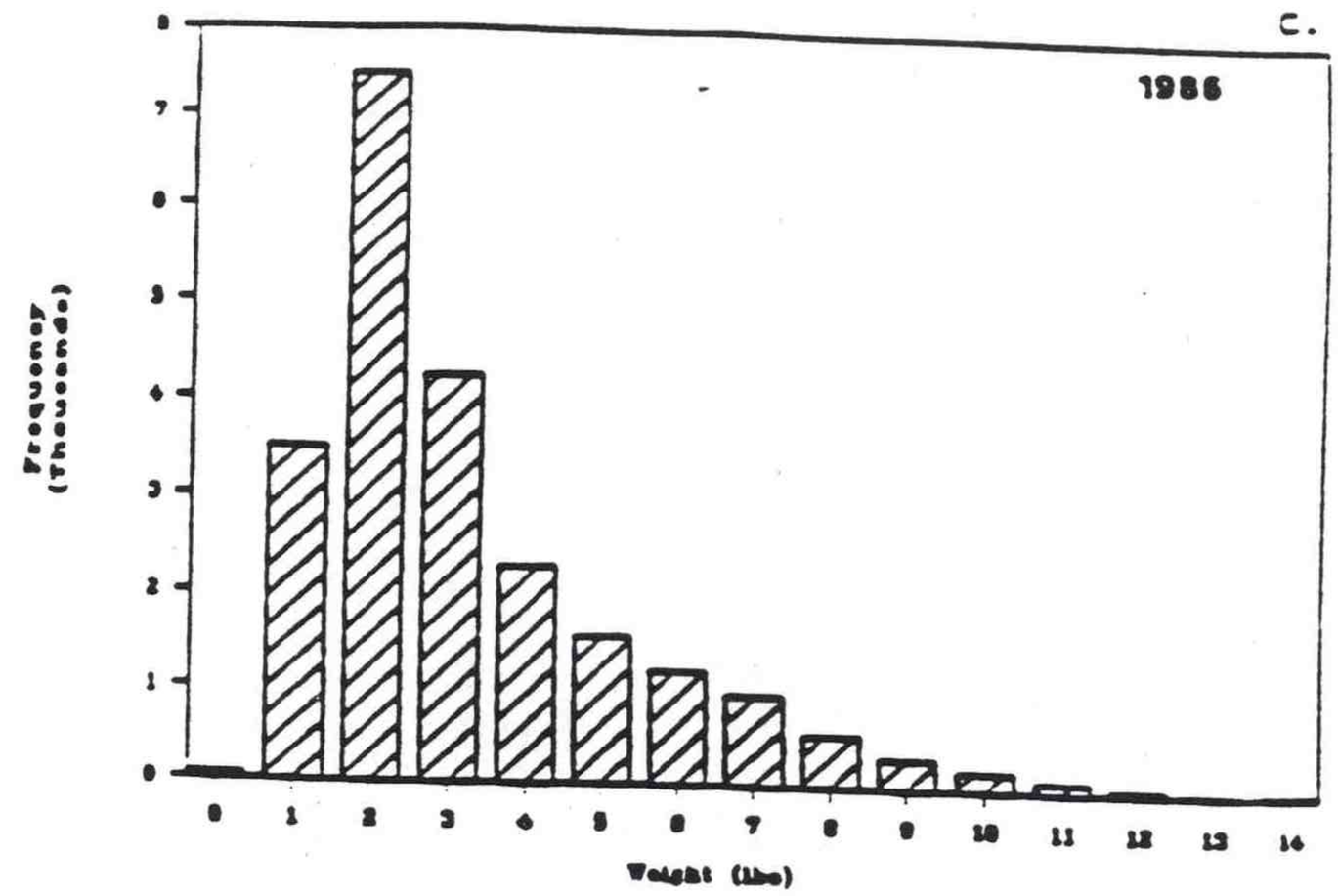


Figure 2.—Size structure of opakapaka landed from the main Hawaiian Islands over the period 1984–86. The first three panels (A-C) provide the weight-frequency histograms for each year. The fourth panel (D) is an overlay of the annual relative length-frequency polygons.



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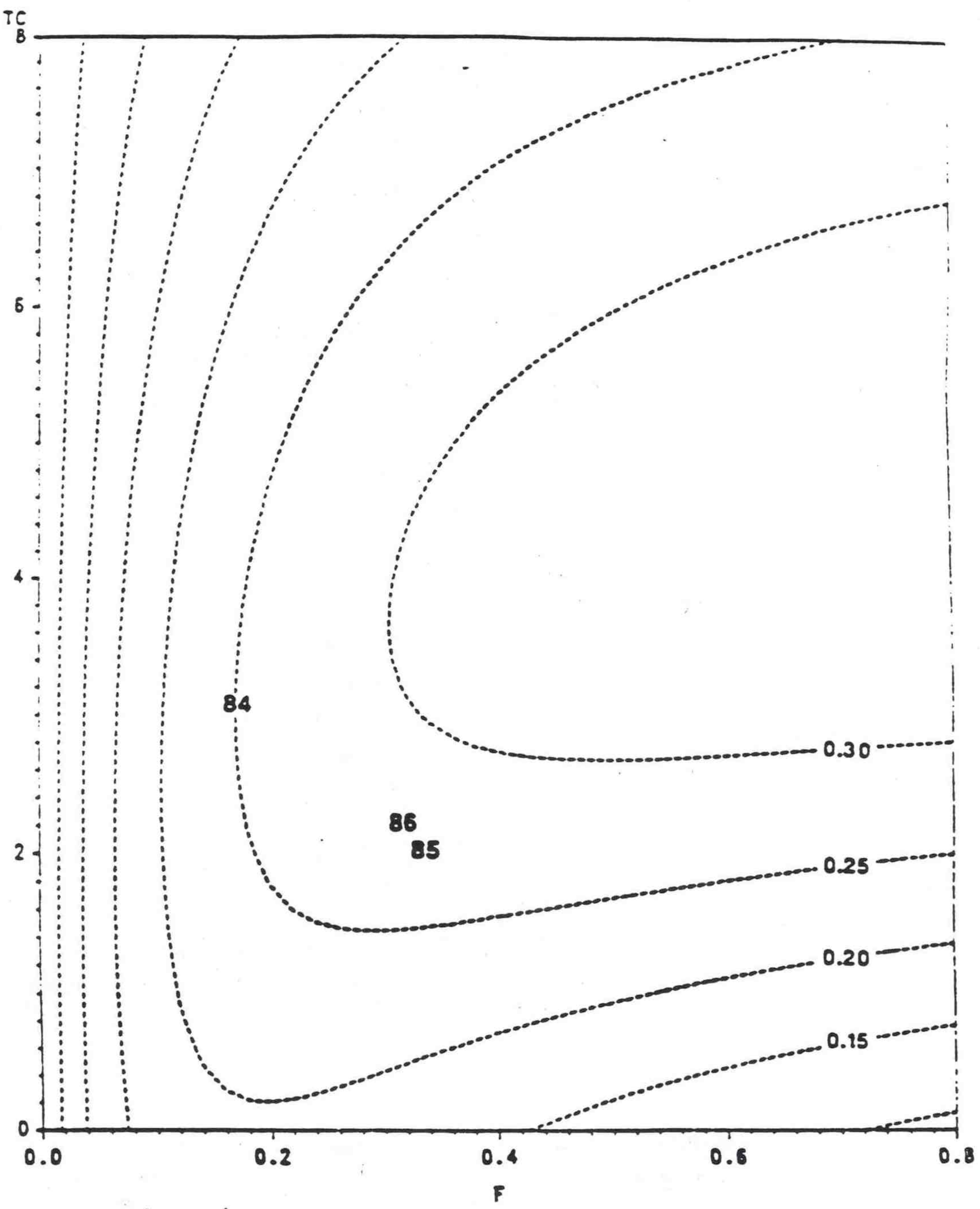


Figure 3.—Yield-per-recruit analysis for opakapaka caught in the main Hawaiian Islands. The unit of F is per year and the unit of t_c is years. Contoured isopleths represent the locus of points corresponding to equal yield per recruit (kg). The estimated positions of the fishery during the years 1984, 1985, and 1986 are plotted.

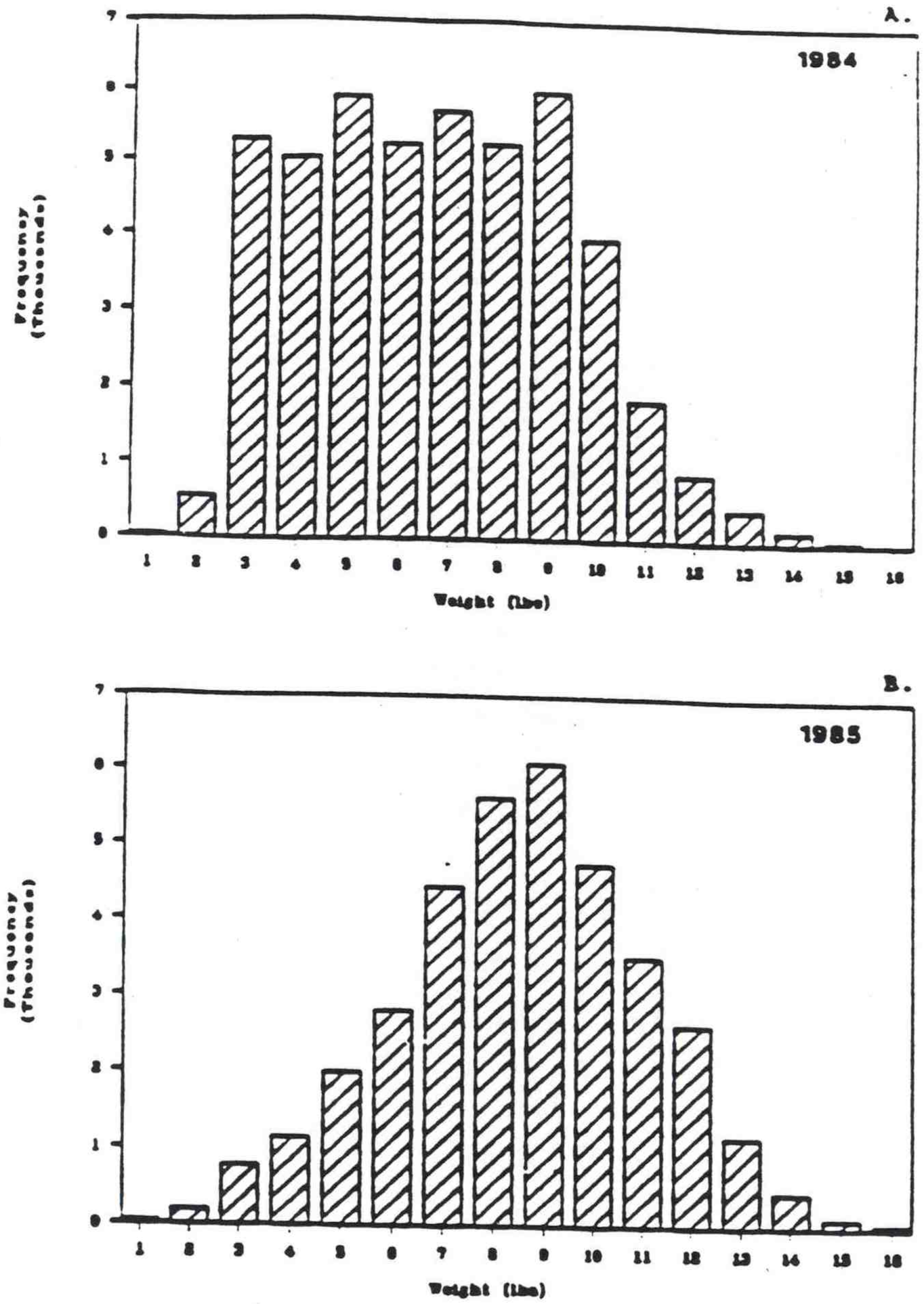
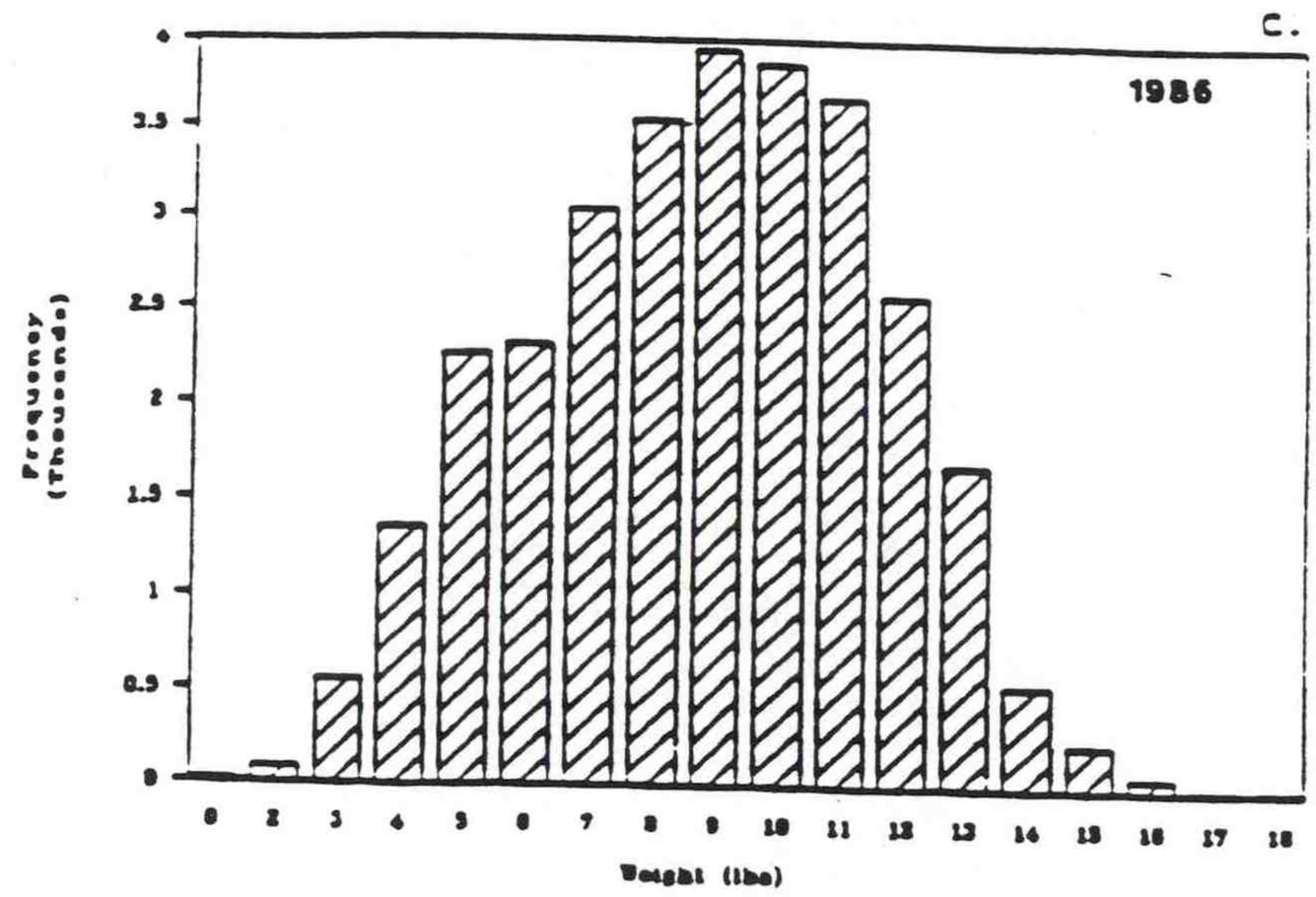


Figure 4.—Size structure of opakapaka landed from the Northwestern Hawaiian Islands over the period 1984-86. The first three panels (A-C) provide the weight-frequency histograms for each year. The fourth panel (D) is an overlay of the annual relative length-frequency polygons.



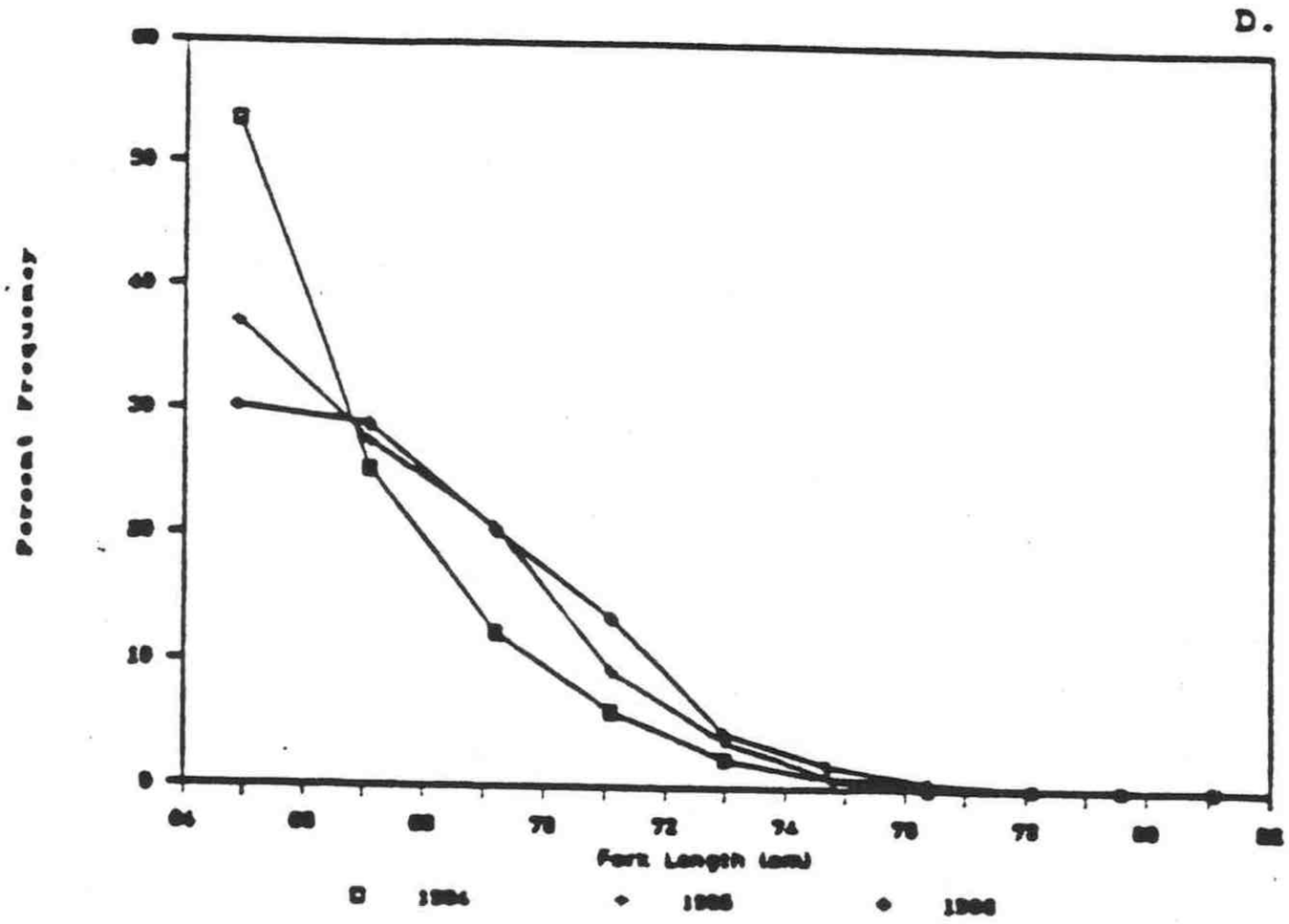


Figure 4.—Continued.

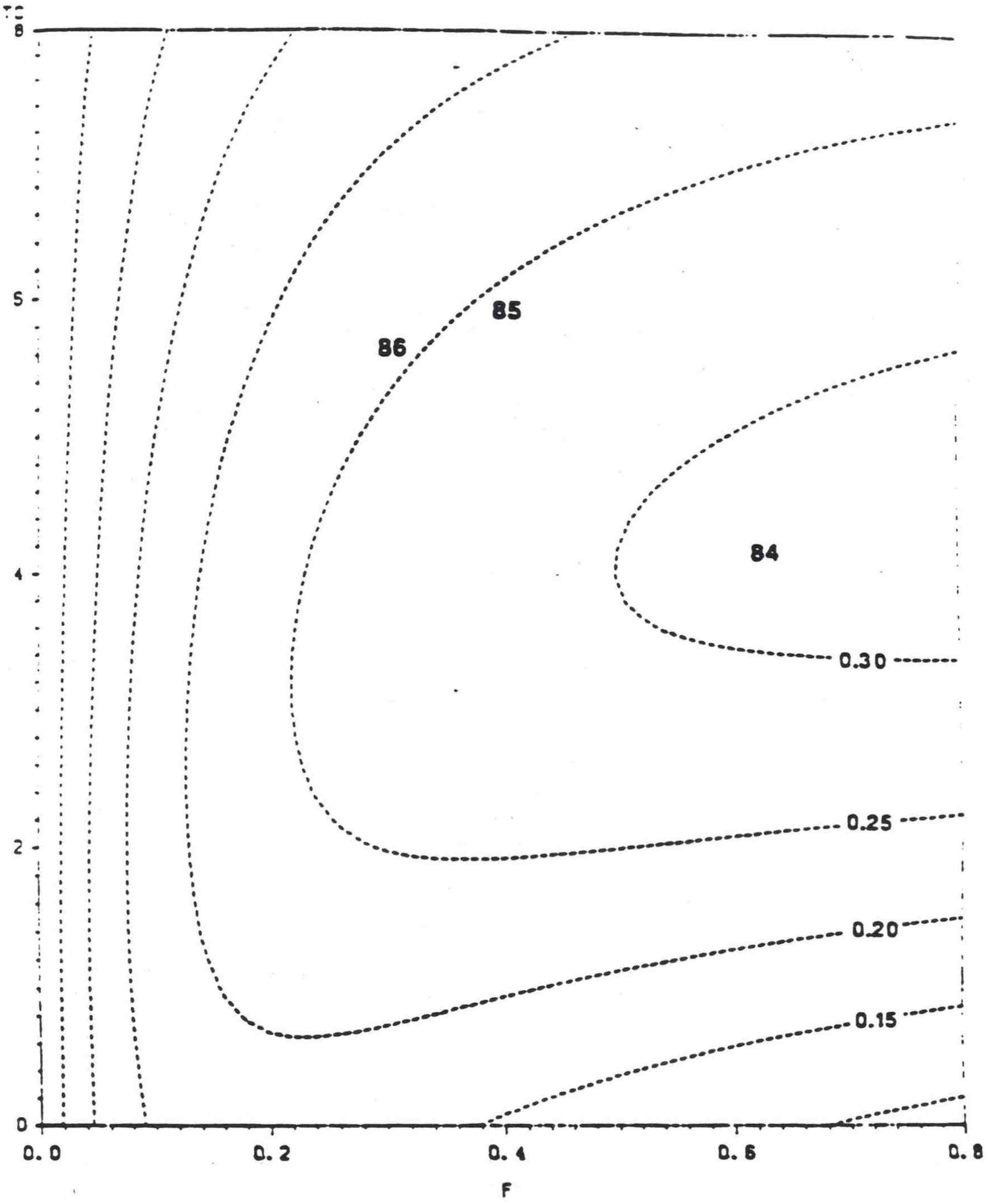


Figure 5.--Yield-per-recruit analysis for opakapaka caught in the Northwestern Hawaiian Islands. The unit of F is per year and the unit of t_c is years. Contoured isopleths represent the locus of points corresponding to equal yield per recruit (kg). The estimated positions of the fishery during the years 1984, 1985, and 1986 are plotted.

Table 4.—Parameter estimates for bottom fish yield assessments: L_∞ = von Bertalanffy asymptotic length (cm), SE(L_∞) = standard error of L_∞, K = von Bertalanffy growth coefficient (per year), M = natural mortality rate (per year), W_∞ = von Bertalanffy asymptotic weight (kg), w_c = weight at entry to the fishery (kg), t_c = age at entry to the fishery (year), F = fishing mortality rate (per year).

	Opakapaka		Onaga		Ehu		Uku	Hapuupuu		Butaguchi
	MHI	NWHI	MHI	NWHI	MHI	NWHI	MHI	MHI	NWHI	NWHI
L_∞	86.6	83.7	89.4	95.7	82.1	69.4	116.5	118.6	108.0	98.6
SE(L_∞)	1.62	3.12	0.63	1.59	2.21	1.06	3.64	0.70	1.02	1.62
K	0.146	0.150	0.143	0.137	0.151	0.169	0.120	0.119	0.126	—
M	0.293	0.299	0.287	0.274	0.303	0.338	0.241	0.238	0.253	—
W_∞	10.4	9.43	10.8	13.2	10.3	6.13	24.35	32.13	24.03	17.2
1984										
w_c	0.8	1.4	0.6	4.3	0.2	0.6	2.3	1.4	1.0	2.8
t_c	2.97	4.18	2.56	7.64	1.49	3.09	4.61	3.15	2.87	—
F	0.16	0.61	0.05	0.14	0.55	0.15	0.51	0.12	0.00	—
1985										
w_c	0.4	2.6	0.6	3.7	0.2	0.6	2.0	1.3	1.1	3.6
t_c	2.02	6.14	2.56	6.89	1.49	3.09	4.29	3.04	3.01	—
F	0.33	0.37	0.01	0.26	0.75	0.06	0.44	0.11	0.00	—
1986										
w_c	0.5	2.3	0.5	3.8	0.2	0.7	2.4	1.3	1.1	2.1
t_c	2.28	5.67	2.32	7.02	1.49	3.36	4.70	3.04	3.01	—
F	0.28	0.28	0.00	0.20	0.70	0.13	0.70	0.12	0.00	—

geographical patterns of fishing in the NWHI). Additionally there is a trend within the NWHI fishery to use larger size hooks, perhaps favoring the catch of larger fish (but see Ralston 1982).

Main Hawaiian Islands Onaga

The data presented in Table 4 and Figures 6 and 7 form the basis for a assessing the MHI fishery for onaga. The histograms indicate that, like the opakapaka, onaga are entering the fishery at a very small size (a 2-lb mode in 1985 and 1986). However, the length-frequency polygon overlay for the data from all 3 years (panel D, Fig. 6) provides no indication of a high mortality rate. The descending limbs of all three curves do not show excessive curvature. These results are indicative of a stock under light exploitation, as evidenced by the low estimates of fishing mortality in Figure 7. Even with the low age at entry to the fishery there is at present no indication that the resource is overfished. To the contrary, all the evidence suggests that MHI onaga are presently underutilized.

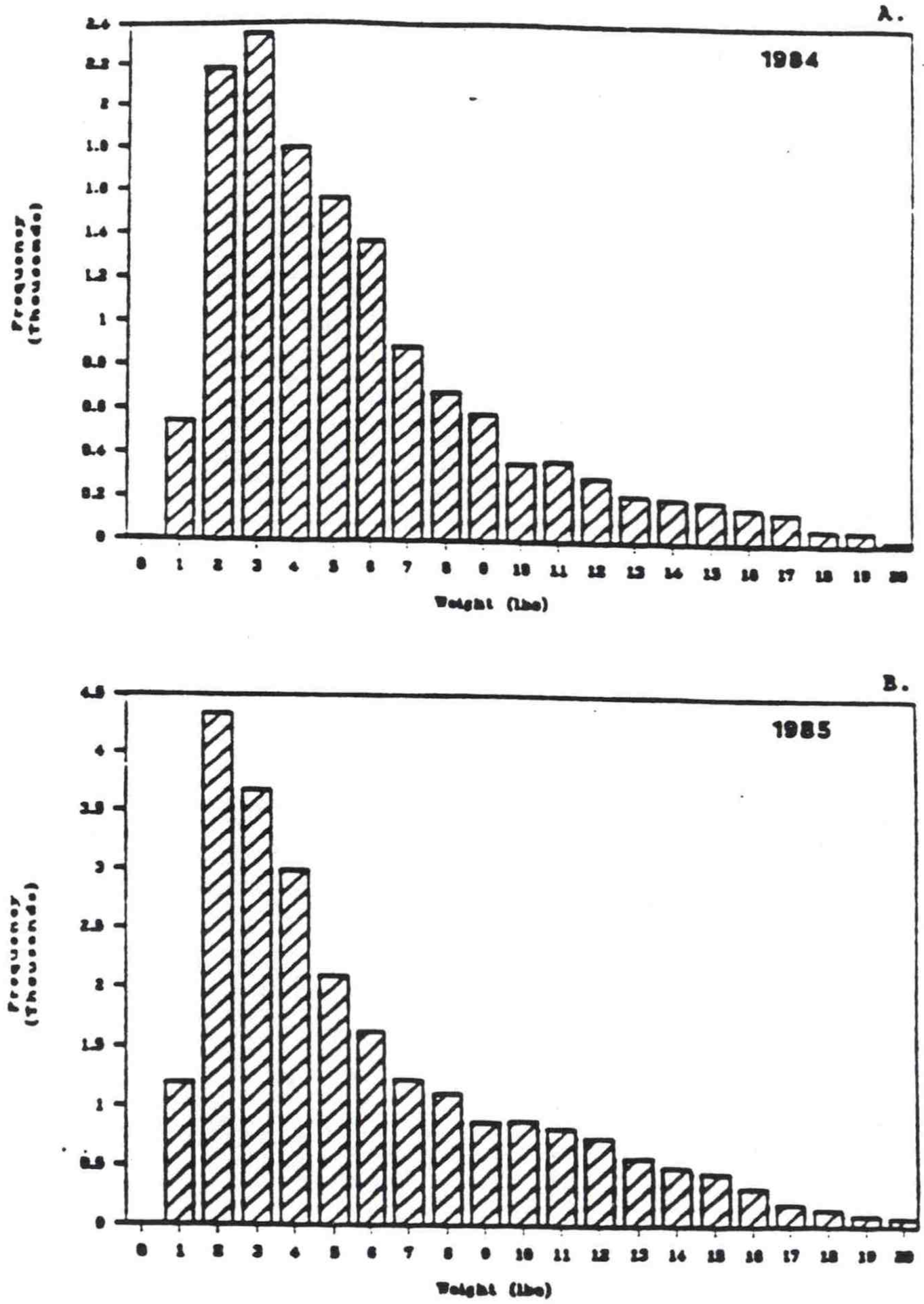
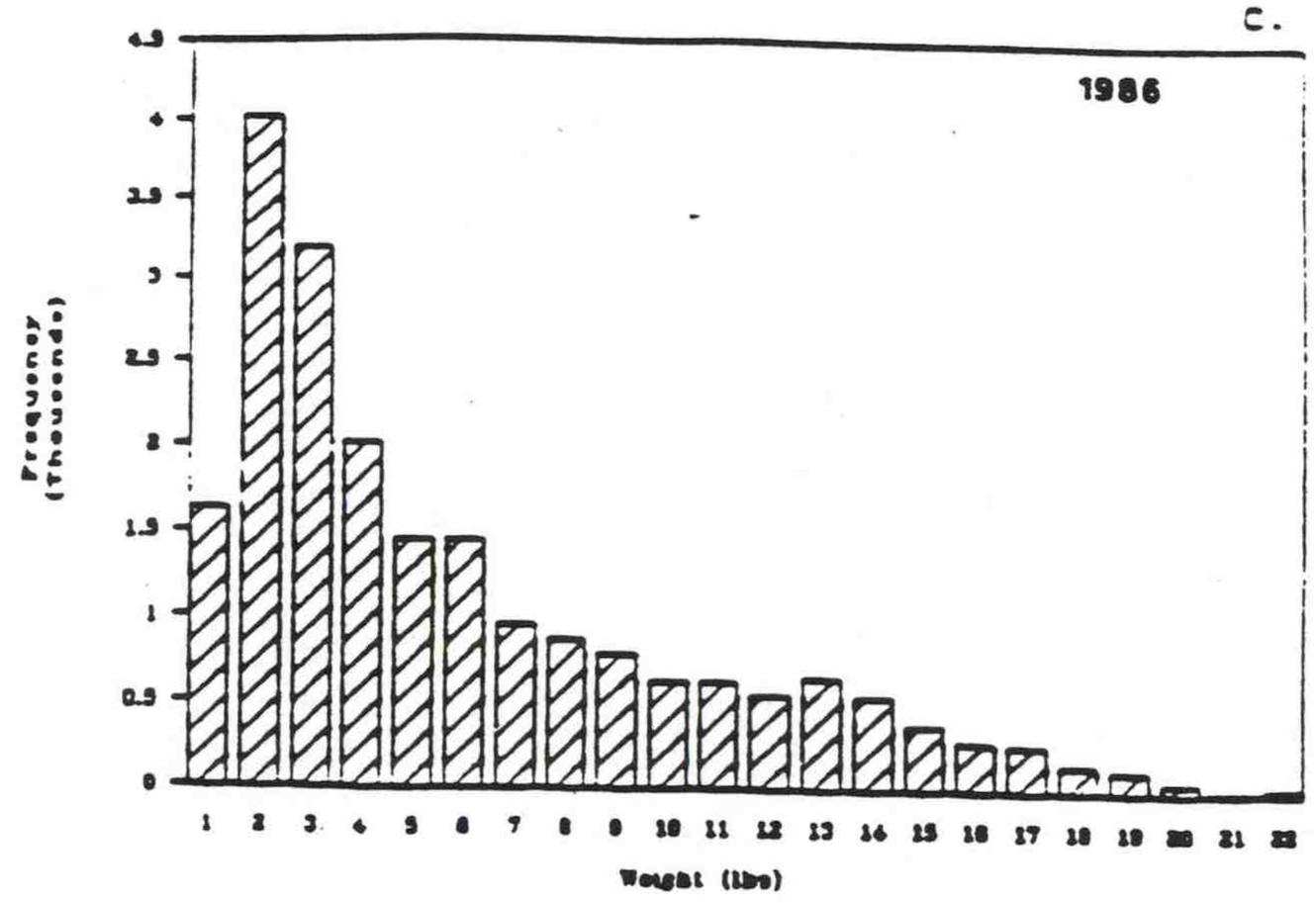
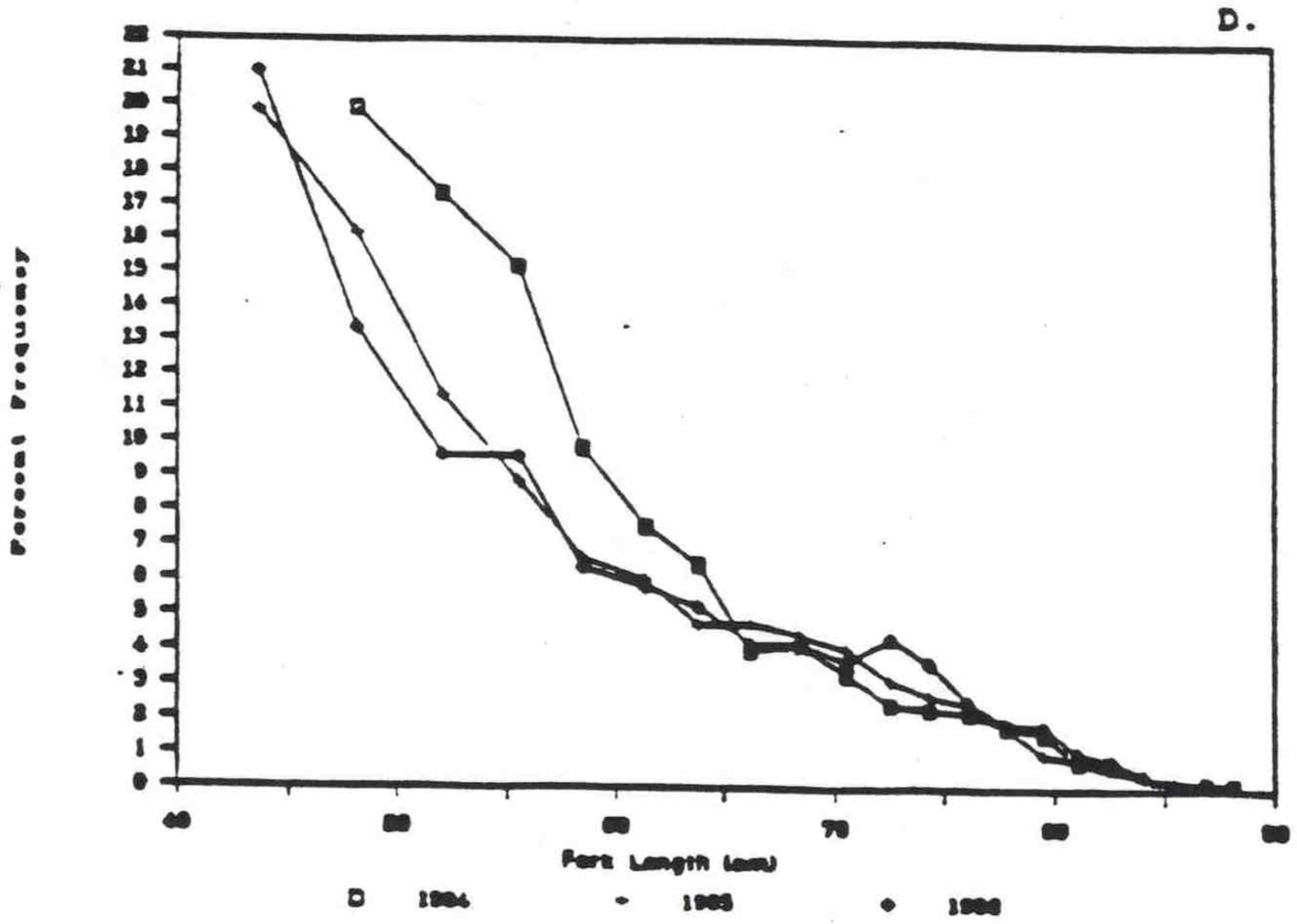


Figure 6.—Size structure of onaga landed from the main Hawaiian Islands over the period 1984–86. The first three panels (A–C) provide the weight-frequency histograms for each year. The fourth panel (D) is an overlay of the annual relative length-frequency polygons.





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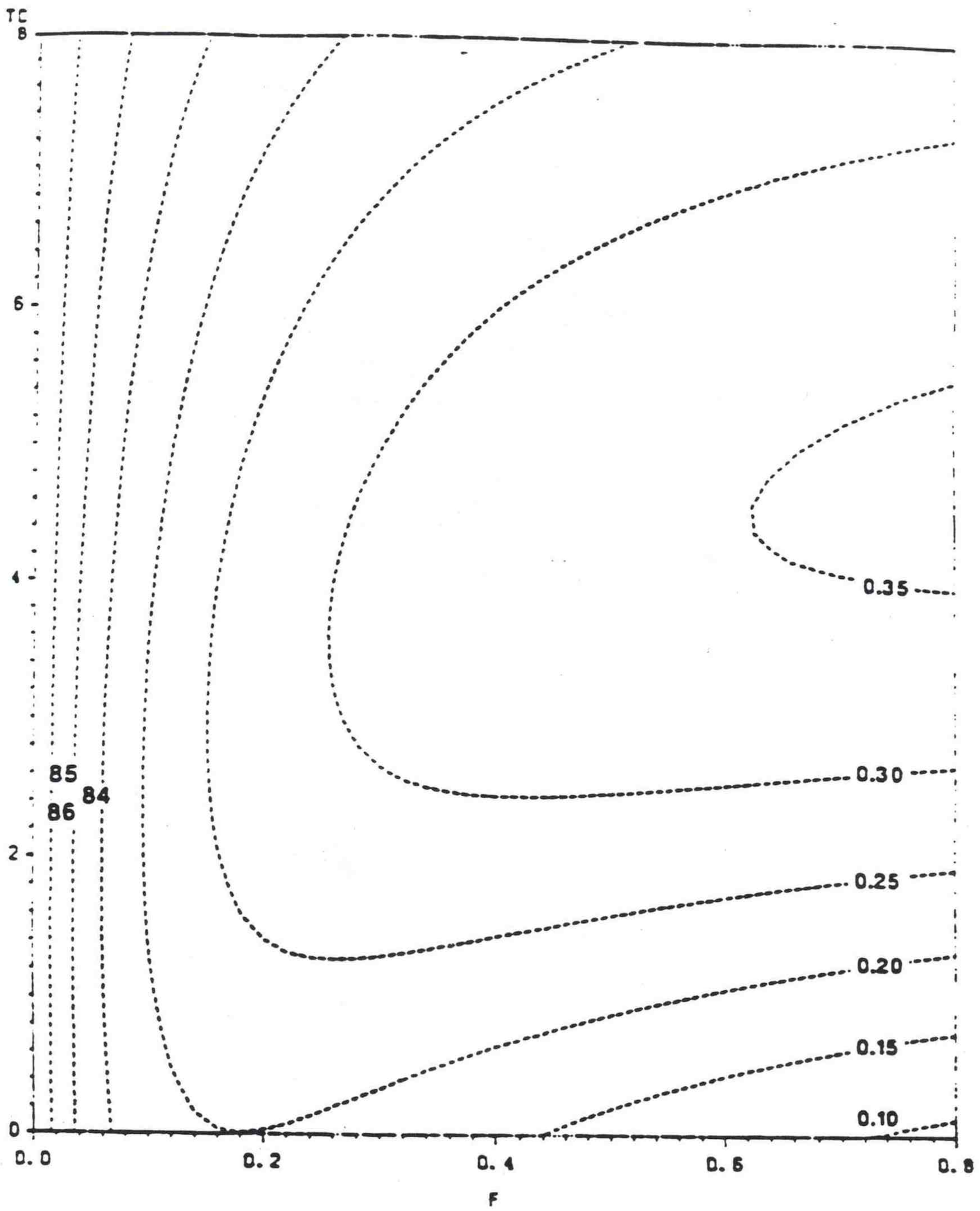


Figure 7.--Yield-per-recruit analysis for onaga caught in the main Hawaiian Islands. The unit of F is per year and the unit of t_c is years. Contoured isopleths represent the locus of points corresponding to equal yield per recruit (kg). The estimated positions of the fishery during the years 1984, 1985, and 1986 are plotted.

Northwestern Hawaiian Islands Onaga

The analysis for NWHI onaga indicates a very high age at entry to the fishery (greater than 6 years) and a moderate level of fishing mortality (Table 4; Figs. 8 and 9). Because the modes of the histograms for 1984-86 are all in excess of 11 lb, the descending limbs presented in the relative length-frequency polygon overlay (panel D, Fig. 8) span a very small range in length, approximately 15 cm. This narrow range exacerbates the problem of estimating mortality rates due to the increased likelihood of substantial measurement and sampling errors. The fishery for onaga in the NWHI is relatively new, as evidenced by the fact that only 3.1 t were landed in 1984 (see discussion above). A change in size structure that would lead to a significant estimate of fishing mortality is not to be expected over so short a time interval. As pointed out by Ricker (1975), "survival rates which we estimate from age frequencies in a catch are ancient history." The same holds true for length frequencies. The estimates of fishing mortality for onaga caught in the NWHI (Table 4 and Fig. 9) are therefore in need of further validation and study.

Main Hawaiian Islands Ehu

Presented in Table 4 and Figures 10 and 11 are the results concerning the MHI fishery for ehu. It is clear that this species does not reach the large size characteristic of opakapaka and onaga. It is also apparent that, like the MHI fisheries for these other species, the age at entry for the ehu fishery is very low. The mode of all three histograms for the years 1984-86 is 1 lb. But unlike MHI onaga, substantial curvature exists in the descending limbs of the length-frequency polygons (panel D, Fig. 10). This characteristic is indicative of a high fishing mortality, at least for snappers and groupers (Ralston 1987). The yield-per-recruit analysis suggests that the fishery is overexploited (Fig. 11). Based on the data available, an increase in the age at entry to the fishery (t_c) would have a substantially beneficial effect on yield.

Northwestern Hawaiian Islands Ehu

A similar analysis was performed on the NWHI stock of ehu, the results of which are presented in Table 4 and Figures 12 and 13. When compared with the MHI, the ehu that are harvested in the NWHI are of a much larger size. Fish are entering the fishery at a weight three times that of the MHI (compare values of w_c in Table 4). Likewise, the age at entry is over twice as great. Neither is there excessive curvature in the descending limbs of the length-frequency distributions for 1984-86. The overall result (Fig. 13) is that the NWHI fishery for ehu is not fully utilized. Improvements to yield could be realized by increasing the existing level of fishing mortality.

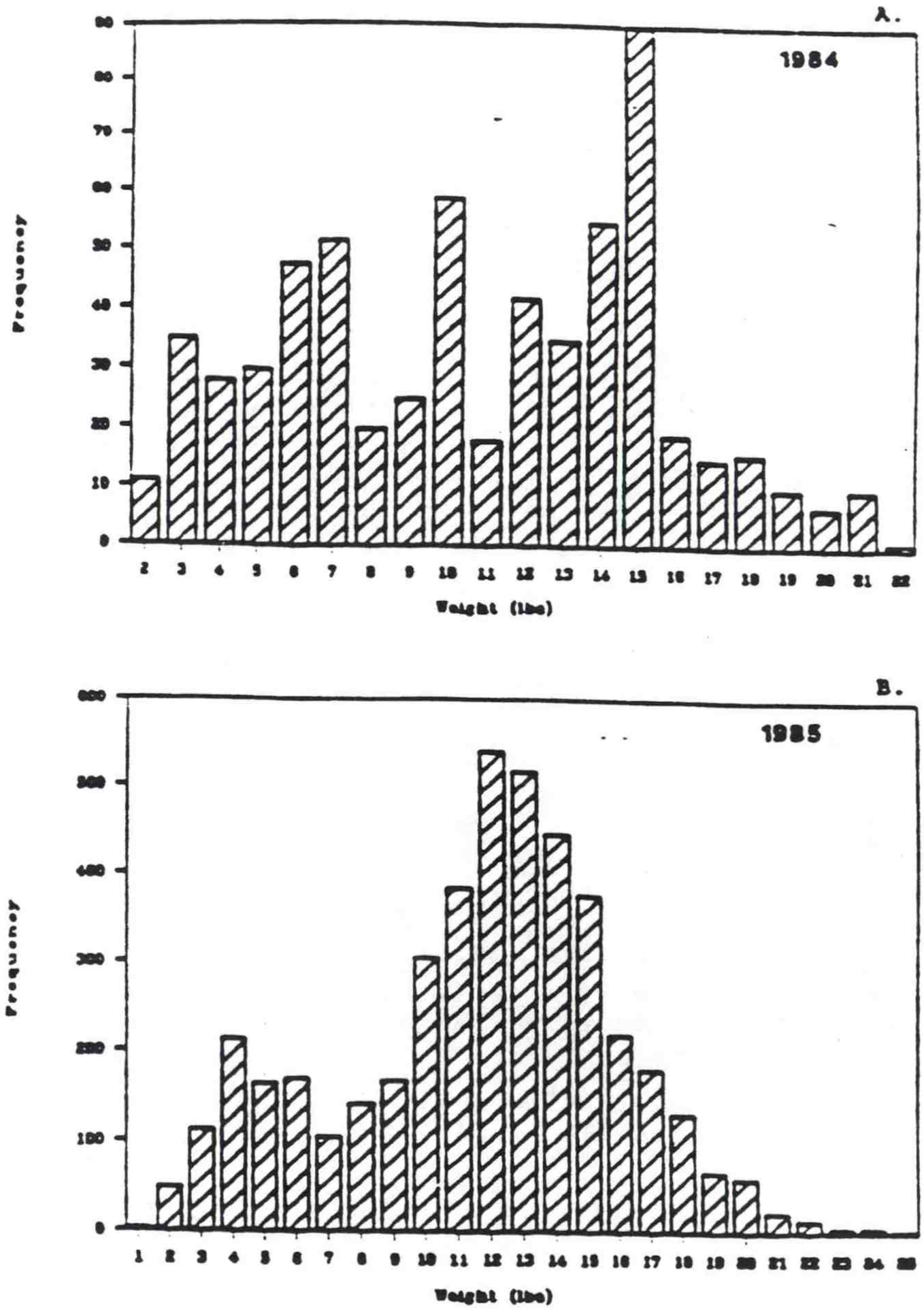
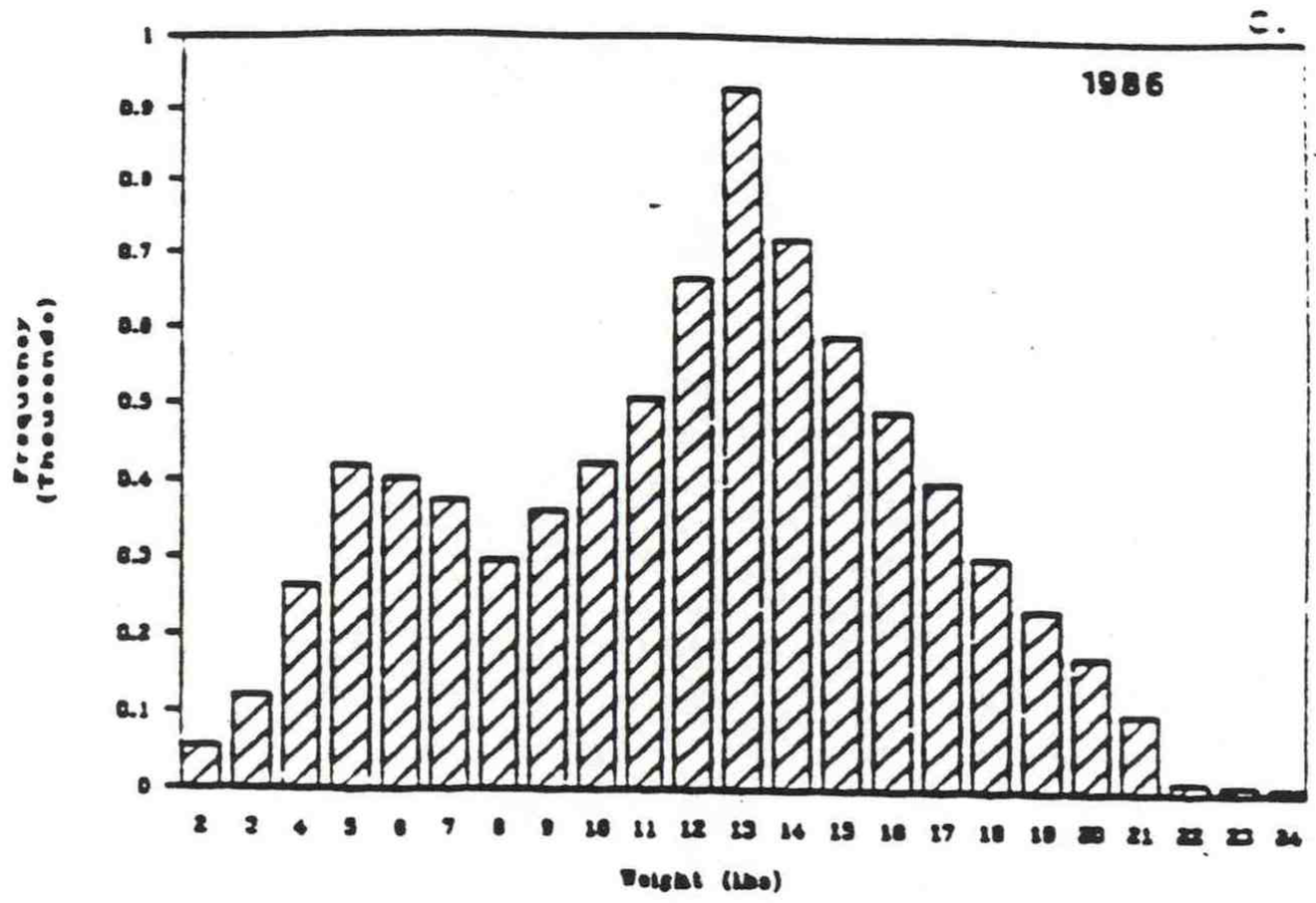


Figure 8.—Size structure of onaga landed from the Northwestern Hawaiian Islands over the period 1984-86. The first three panels (A-C) provide the weight-frequency histograms for each year. The fourth panel (D) is an overlay of the annual relative length-frequency polygons.



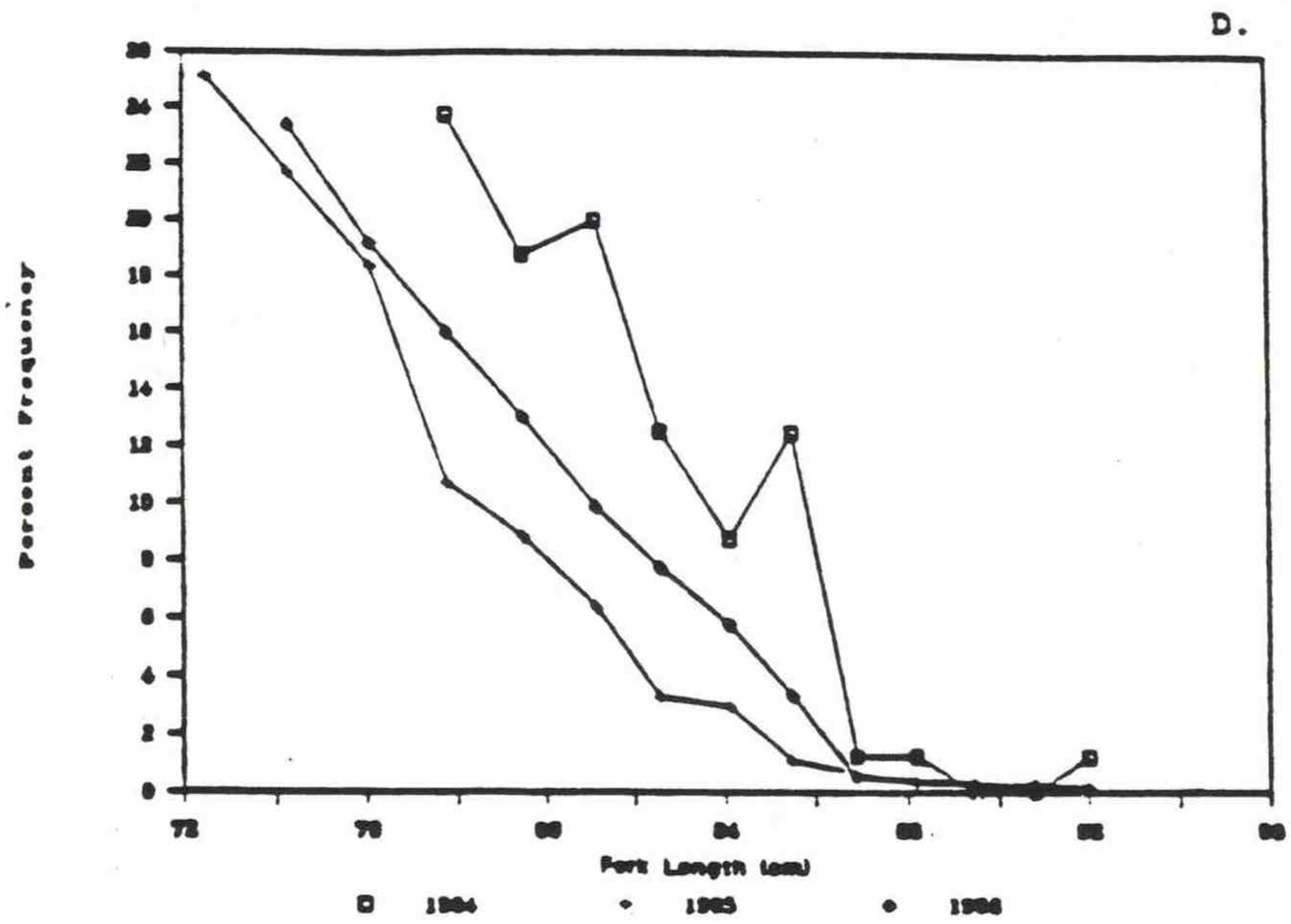


Figure 8.—Continued.

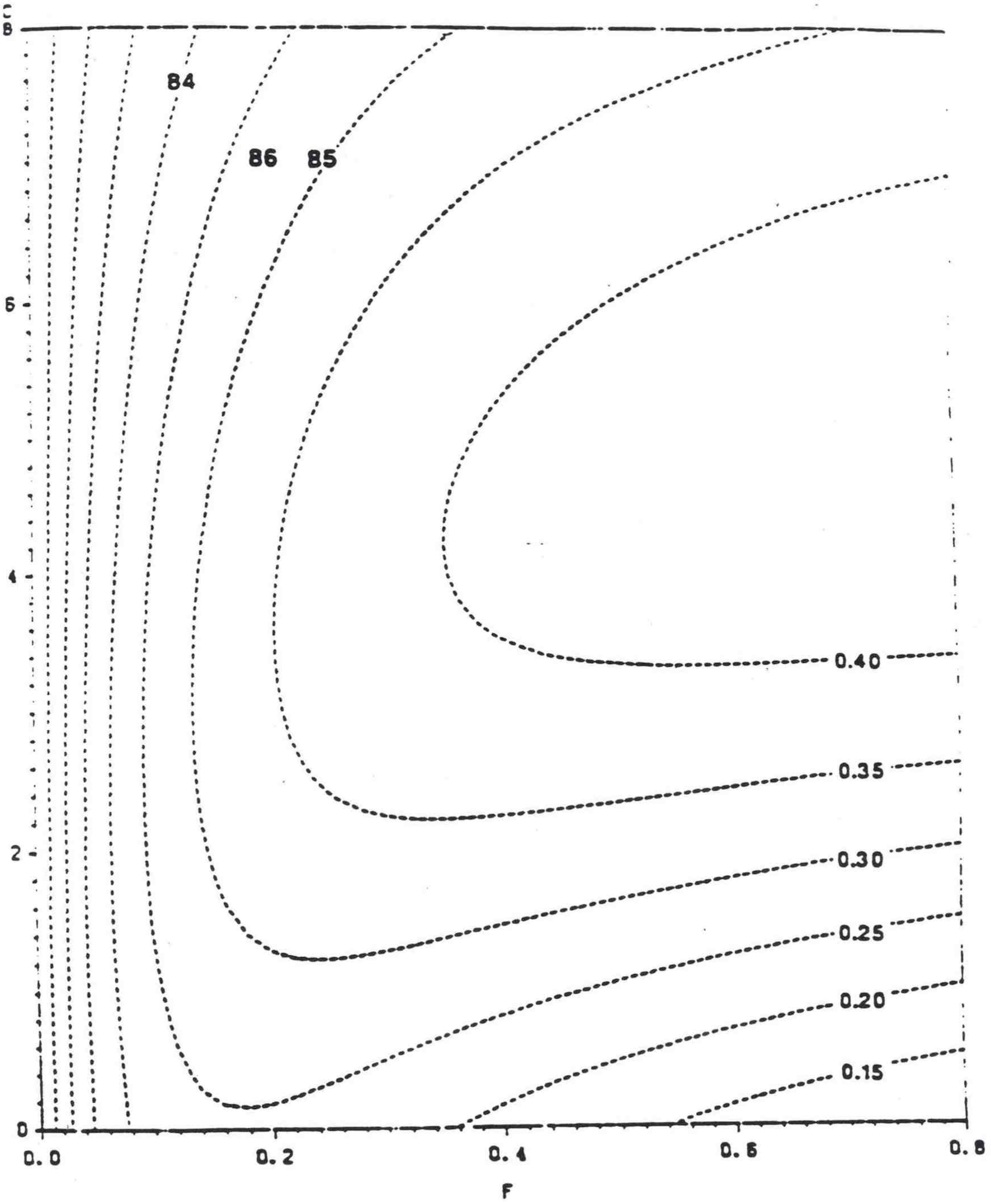
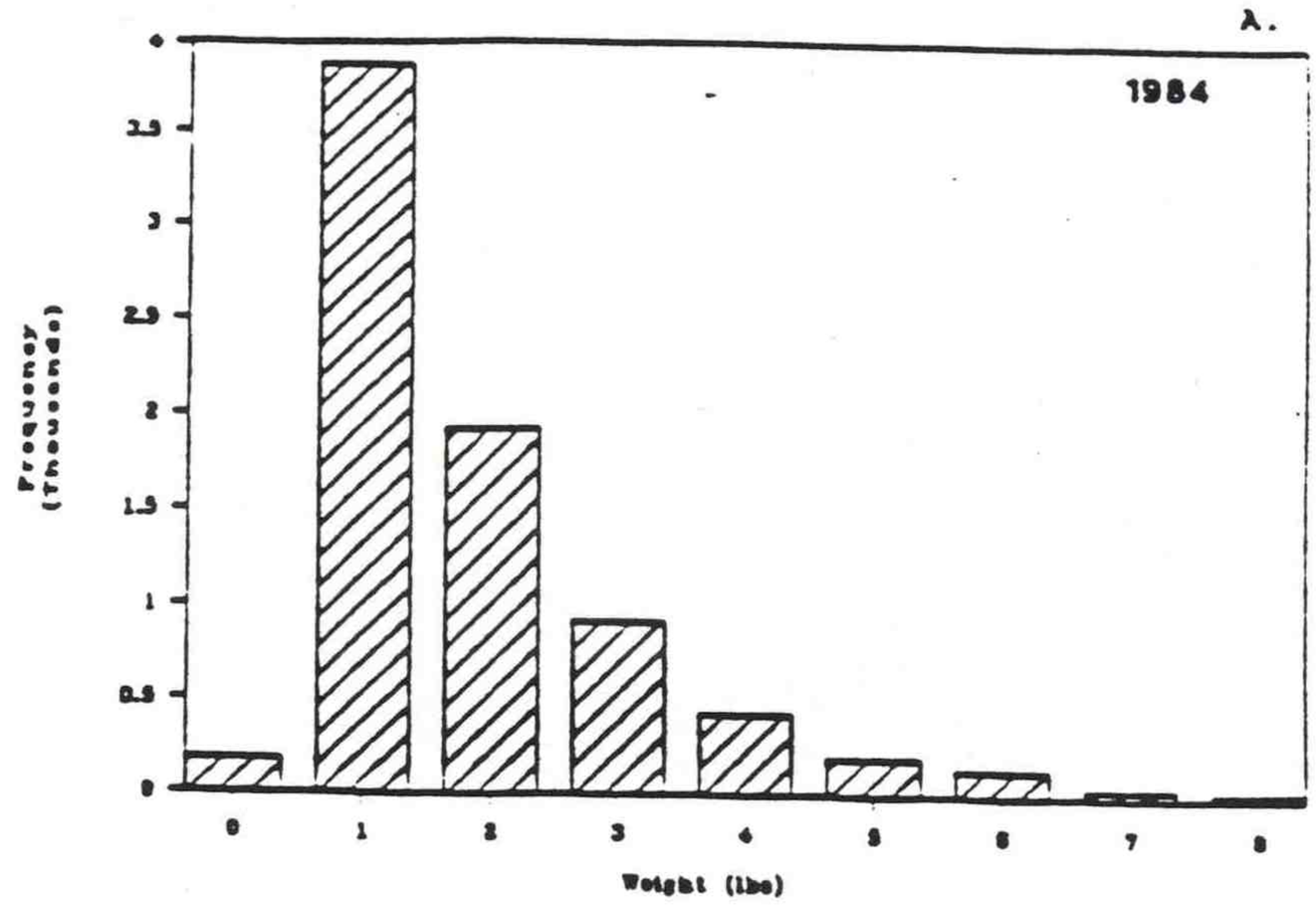


Figure 9.—Yield-per-recruit analysis for onaga caught in the Northwestern Hawaiian Islands. The unit of F is per year and the unit of t_c is years. Contoured isopleths represent the locus of points corresponding to equal yield per recruit (kg). The estimated positions of the fishery during the years 1984, 1985, and 1986 are plotted.



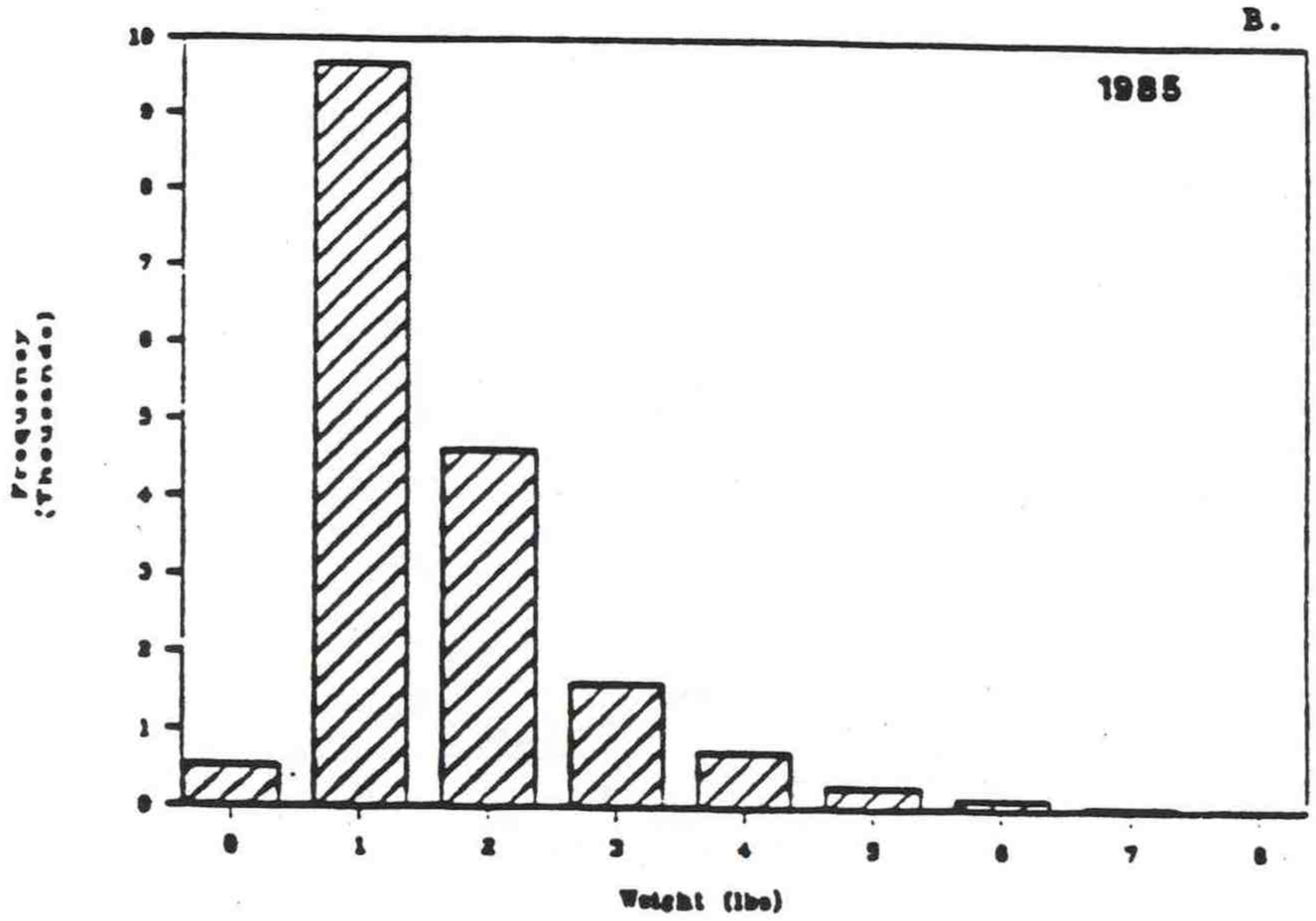
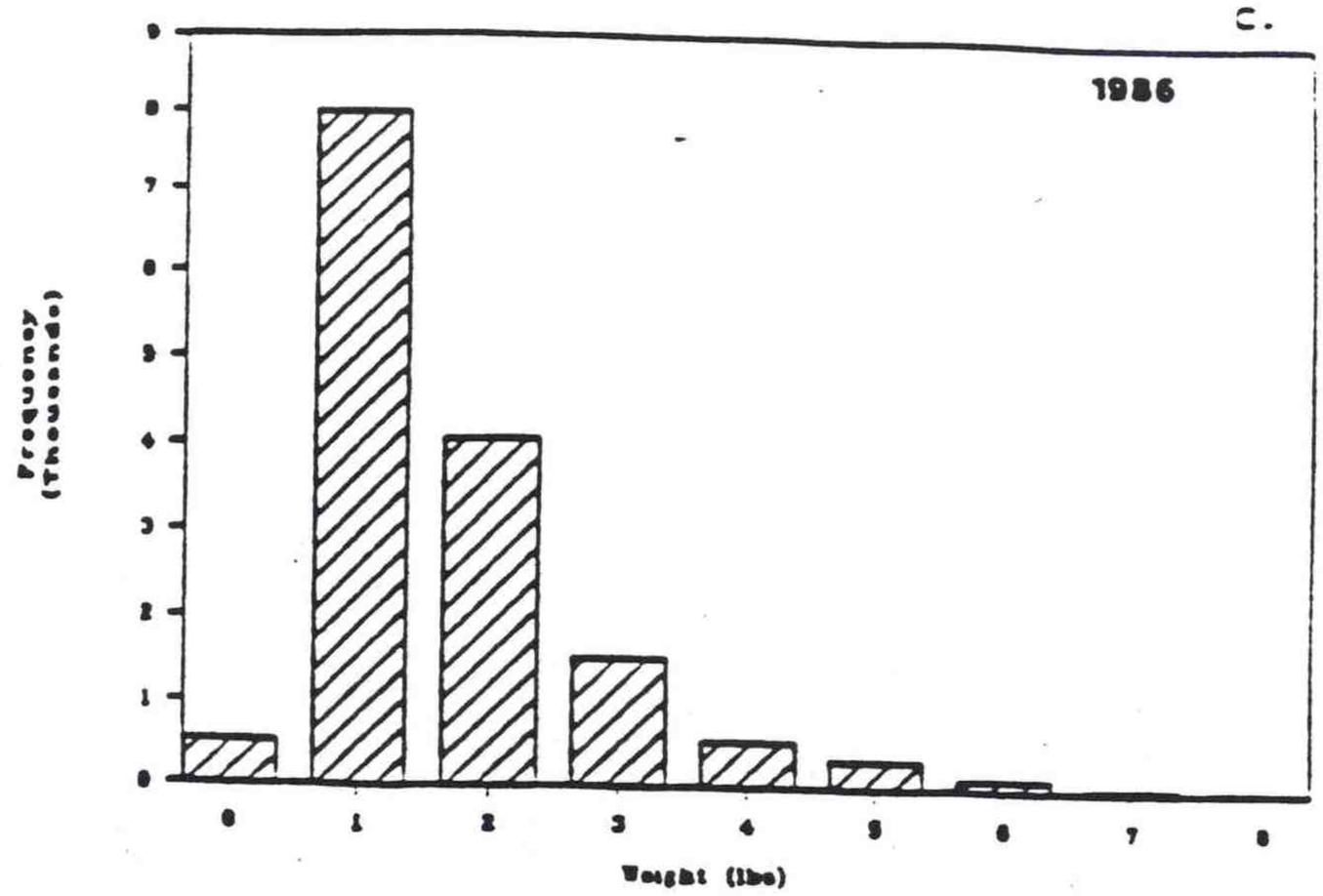
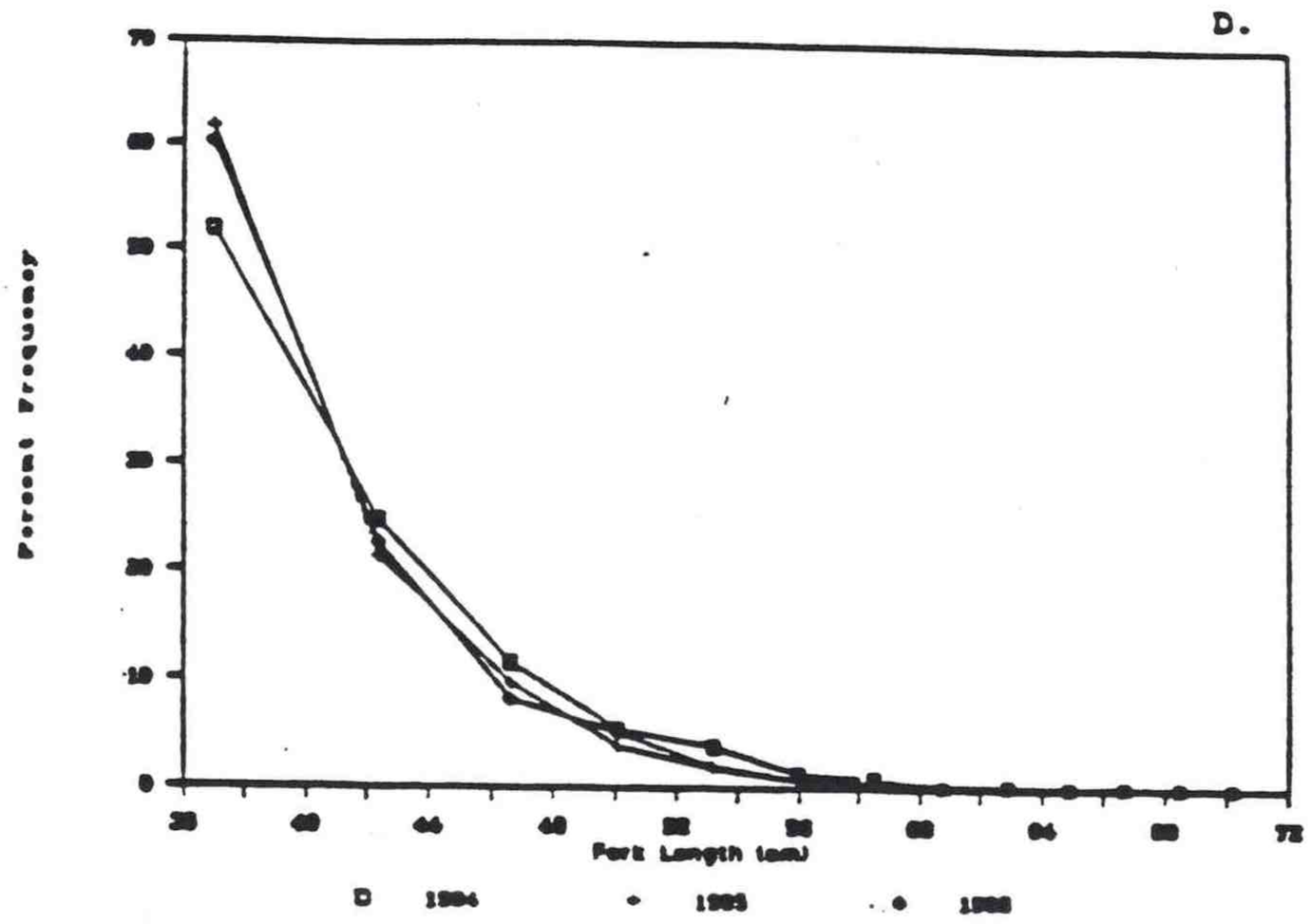


Figure 10.—Size structure of ehu landed from the main Hawaiian Islands over the period 1984-86. The first three panels (A-C) provide the weight-frequency histograms for each year. The fourth panel (D) is an overlay of the annual relative length-frequency polygons.





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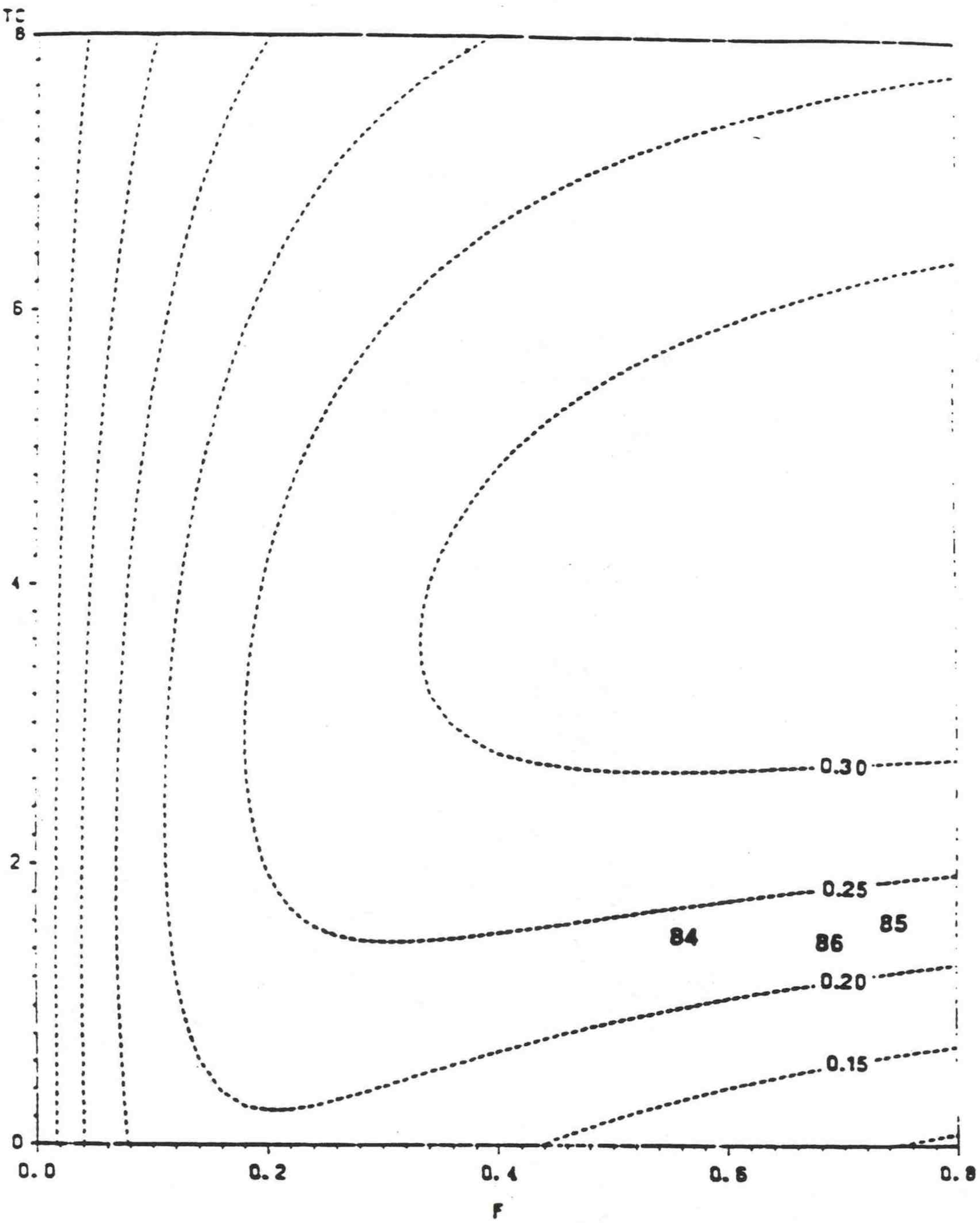


Figure 11.—Yield-per-recruit analysis for ehu caught in the main Hawaiian Islands. The unit of F is per year and the unit of t_c is years. Contoured isopleths represent the locus of points corresponding to equal yield per recruit (kg). The estimated positions of the fishery during the years 1984, 1985, and 1986 are plotted.

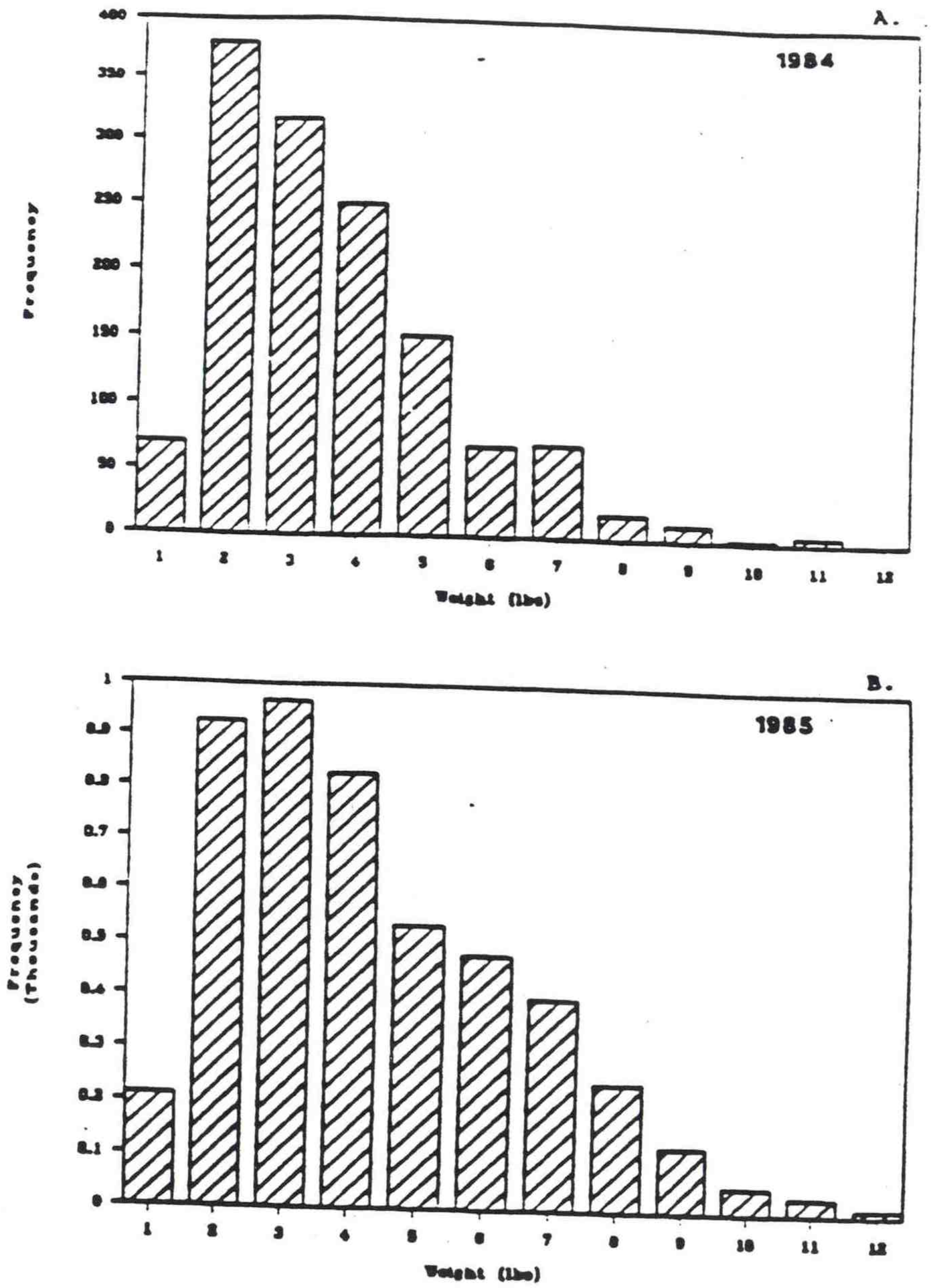
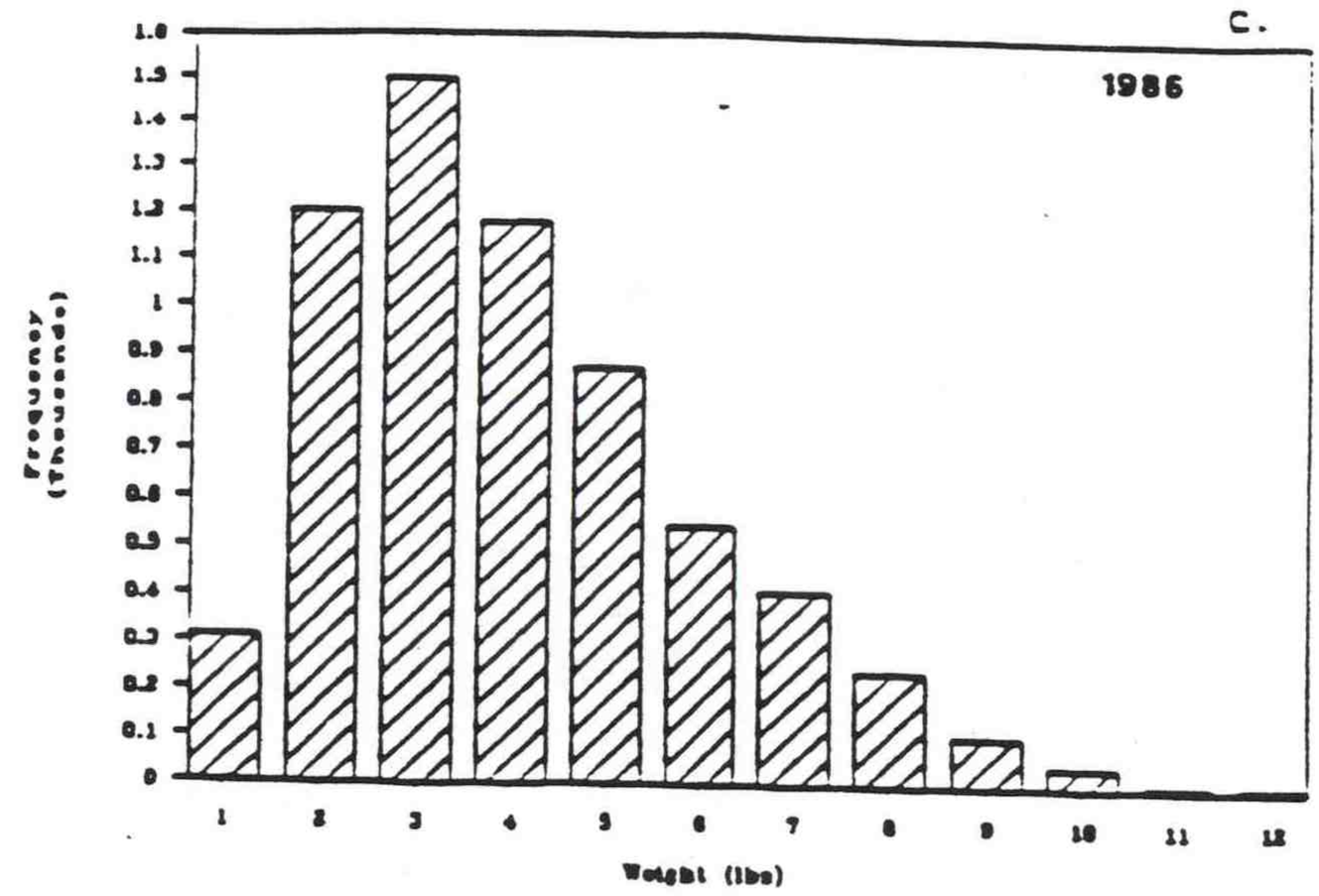


Figure 12.—Size structure of ehu landed from the Northwestern Hawaiian Islands over the period 1984–86. The first three panels (A–C) provide the weight-frequency histograms for each year. The fourth panel (D) is an overlay of the annual relative length-frequency polygons.



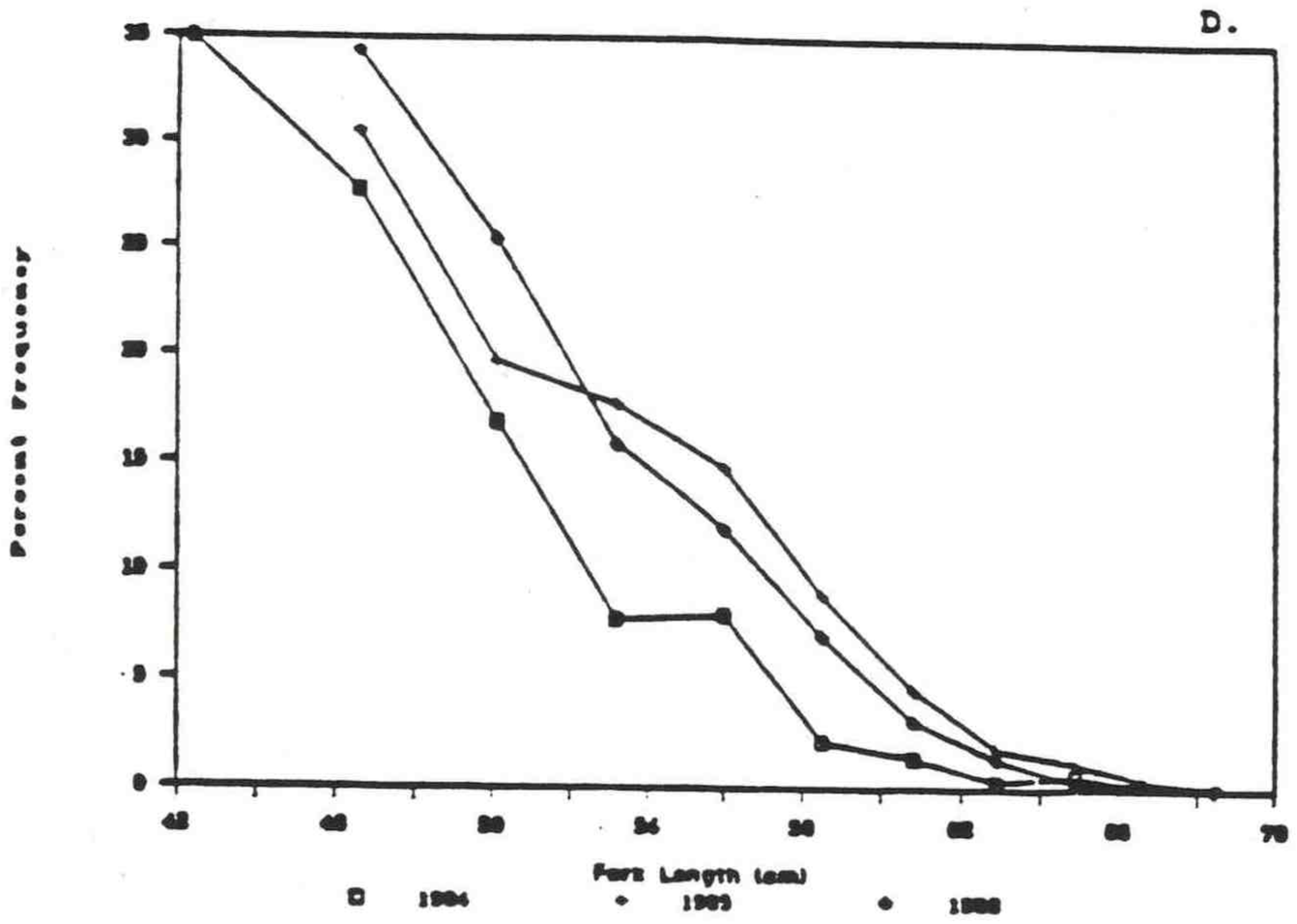


Figure 12.—Continued.

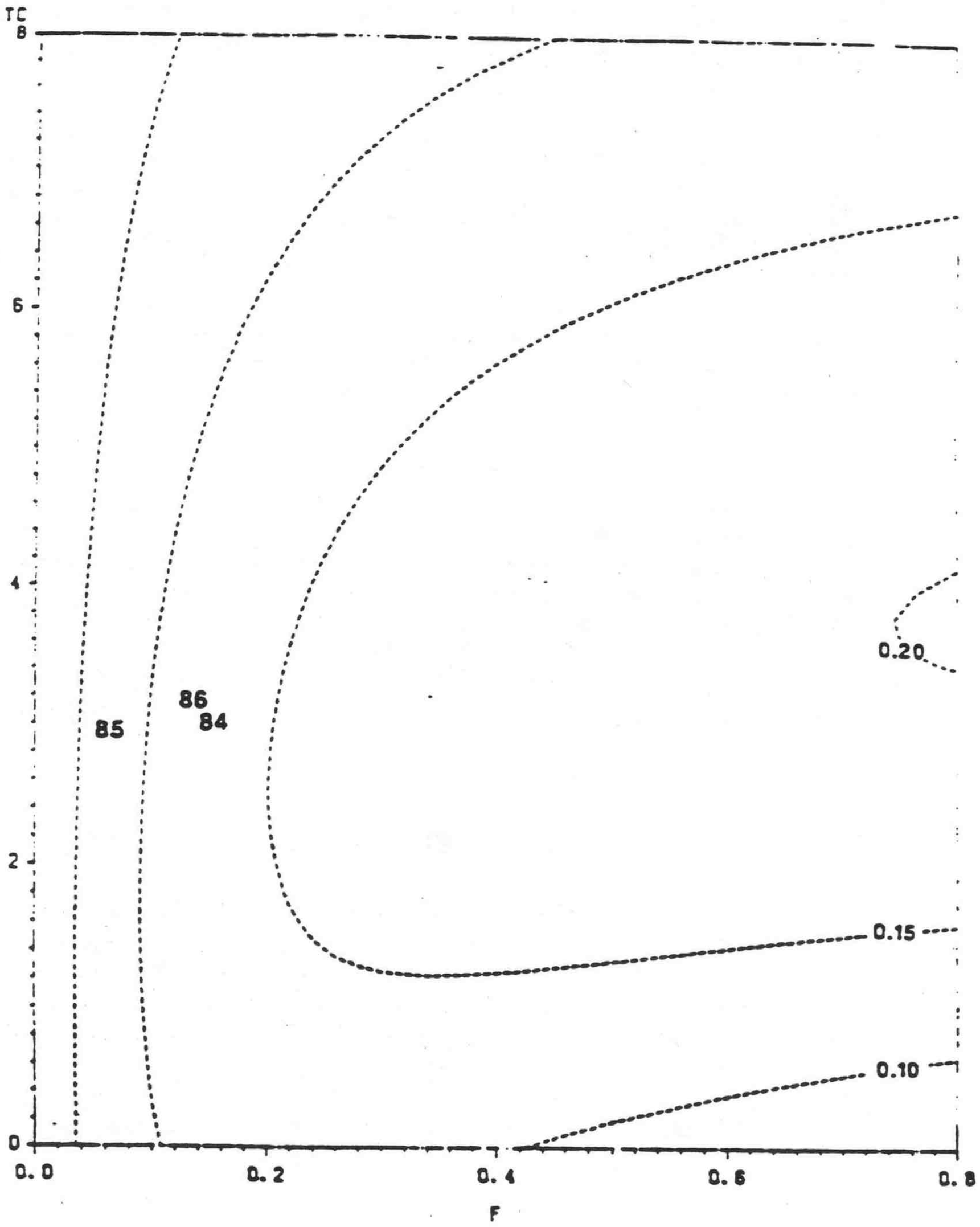


Figure 13.—Yield-per-recruit analysis for ehu caught in the Northwestern Hawaiian Islands. The unit of F is per year and the unit of t_o is years. Contoured isopleths represent the locus of points corresponding to equal yield per recruit (kg). The estimated positions of the fishery during the years 1984, 1985, and 1986 are plotted.

Main Hawaiian Islands Uku

The MHI fishery for uku stands in contrast to the other MHI fisheries discussed so far. The weight and age at entry to the fishery (Table 4) are much greater than for opakapaka, onaga, and ehu. The poor representation of small uku in the MHI catch (Fig. 14) is believed to be due to their unavailability. As indicated previously, the uku fishery generally targets fish that are aggregated for spawning, effectively conserving the pre-reproductive portion of the resource. Nonetheless, the MHI stock of uku is intensively exploited. The descending limbs of the relative length-frequency distributions for 1984-86 all demonstrate substantial curvature. Even with a much greater age at entry than the MHI fisheries already examined, the uku fishery would appear to be slightly overexploited (Fig. 15). Certainly no reduction in t_c is desirable at this time, and fishing mortality is already much greater than natural mortality (Table 4), a warning sign for snapper and grouper fisheries (Polovina 1987; Ralston 1987).

Main Hawaiian Islands Hapuupuu

The data presented in Table 4 and Figures 16 and 17 summarize the biological assessment and yield analysis for MHI hapuupuu. The weight at entry to the fishery is not great (about 1.3 kg), but neither is the estimated fishing mortality rate. In fact, the estimated position of the fishery on the isopleth surface from 1984 to 1986 places it close to the eumetric fishing line. Thus, given the prevailing level of fishing mortality, the current age at entry to the fishery (t_c) is near optimal. If fishing mortality were to increase very much, however, an increase in t_c would be desirable.

Northwestern Hawaiian Islands Hapuupuu

Hapuupuu harvested in the NWHI actually become vulnerable to fishing at a smaller size and age than do MHI conspecifics (Table 4). This is the only species to demonstrate this reversal of form. Nonetheless, as evidenced by the near linear descending limbs of the three length-frequency polygons in panel D of Figure 18, the ratio of total mortality rate to von Bertalanffy growth coefficient (Z/K) is approximately 2.0. A ratio of 2.0 is typically indicative of an unexploited grouper stock (Ralston 1979). Hence the yield-per-recruit analysis (Fig. 19) shows the NWHI stock of hapuupuu to be underutilized. If true, a moderate increase in fishing effort should produce a major increase in yield per hapuupuu recruit.

Northwestern Hawaiian Islands Butaguchi

The butaguchi is a carangid and cannot be analyzed using the methods employed up to this point. For all the species treated so far, the von Bertalanffy growth coefficient (K) and natural mortality rate (M) were estimated using the regression equations provided in Manooch (1987) and Ralston (1987). These two equations relate specifically to snappers and groupers

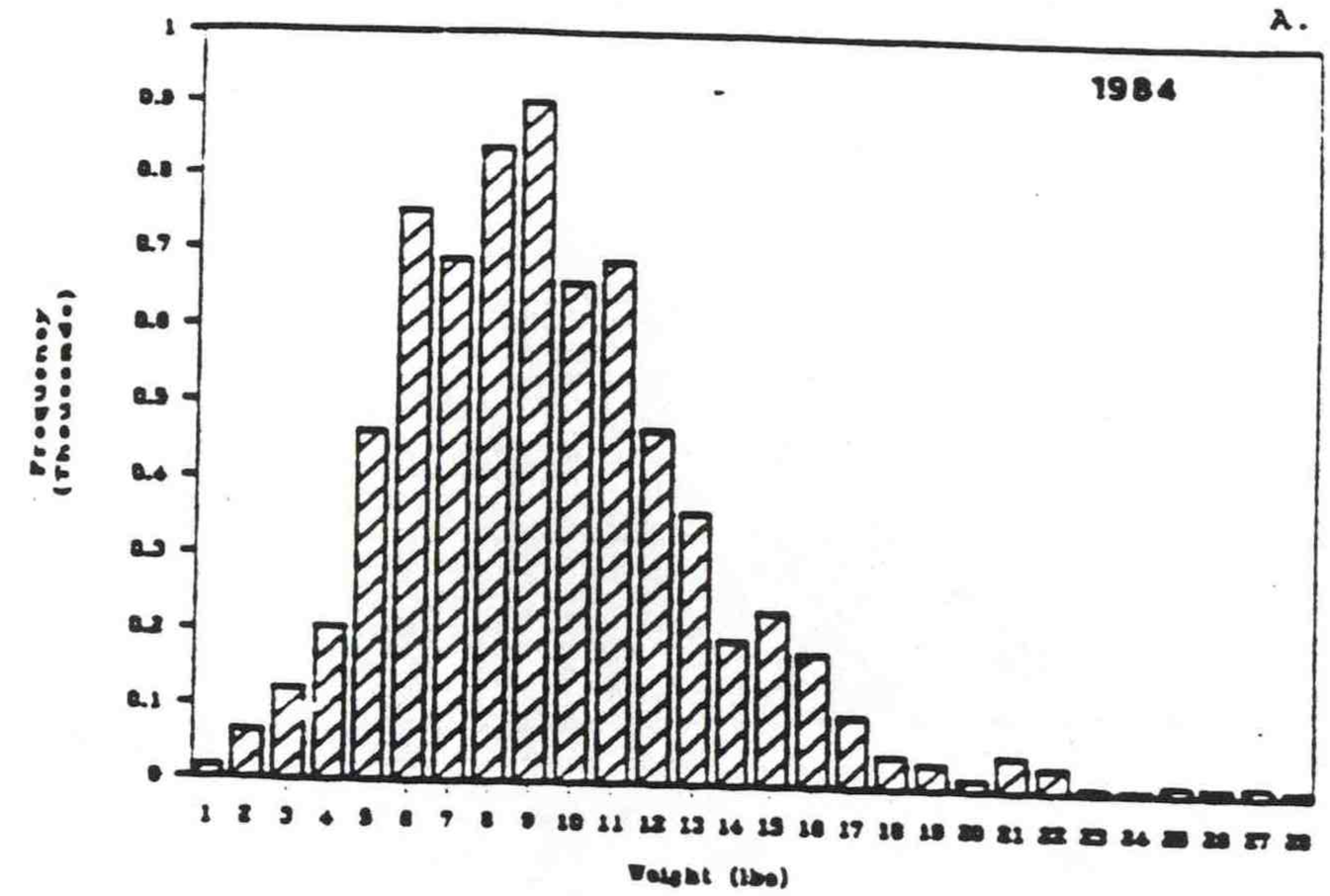
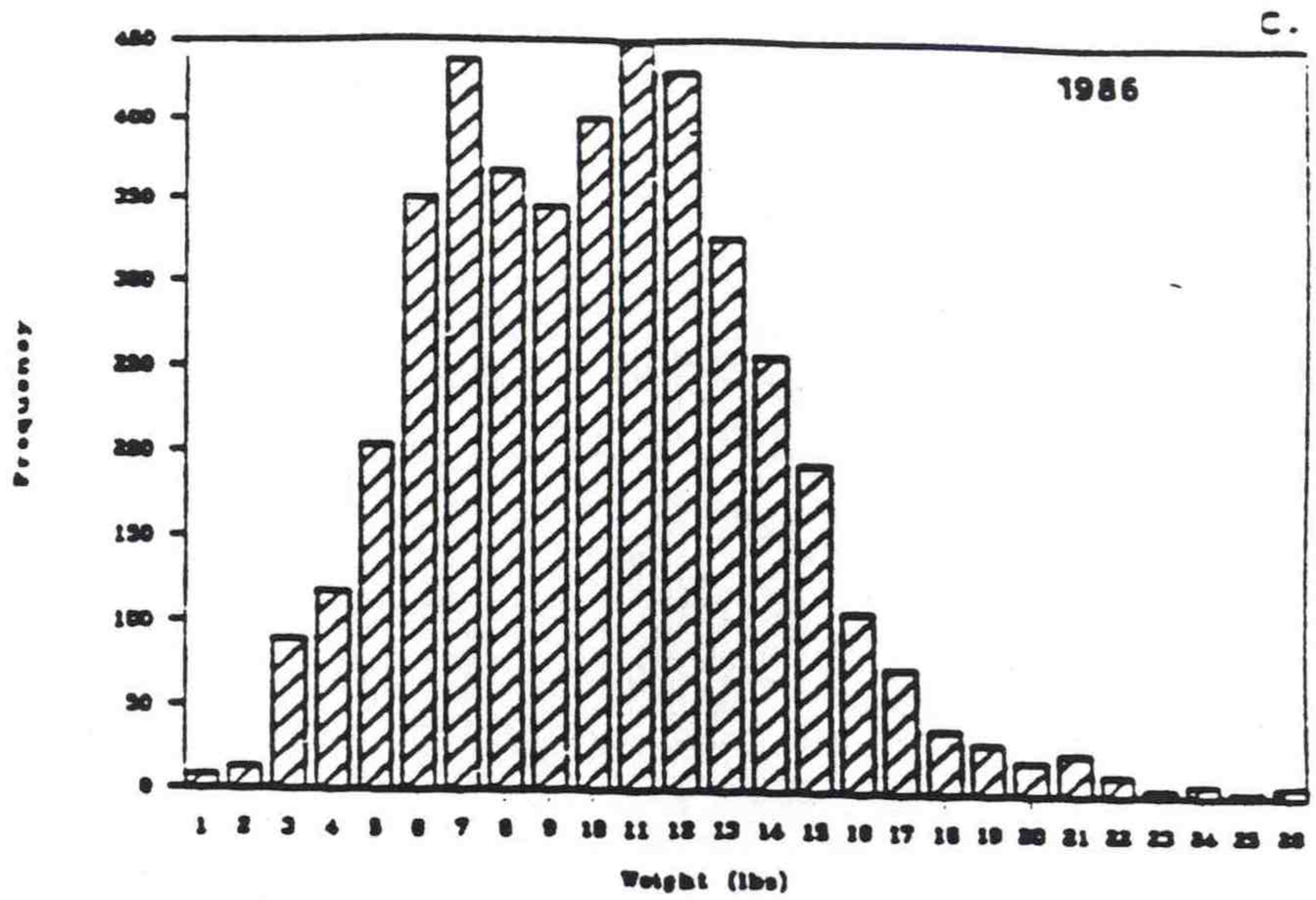
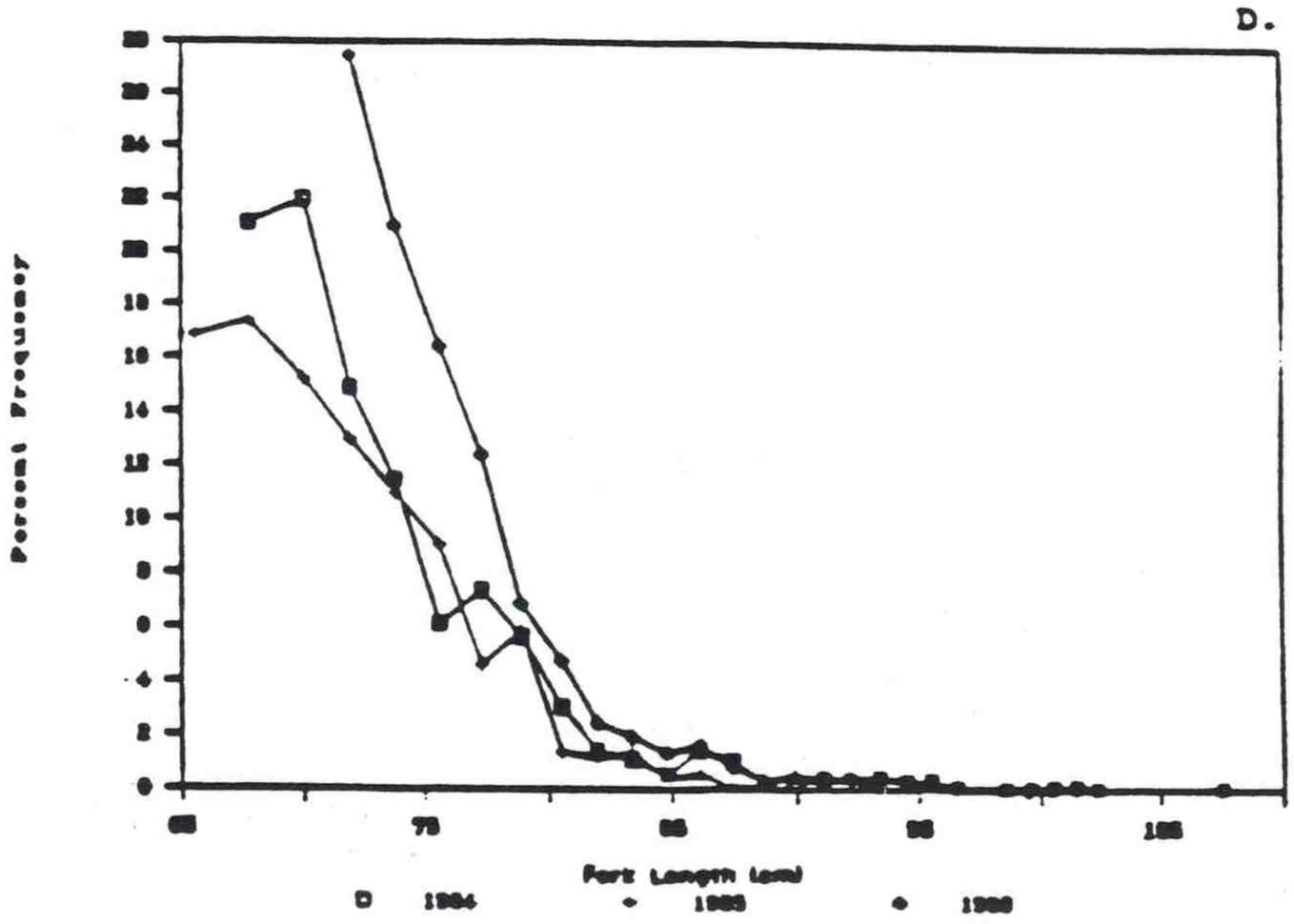


Figure 14.—Size structure of uku landed from the main Hawaiian Islands over the period 1984-86. The first three panels (A-C) provide the weight-frequency histograms for each year. The fourth panel (D) is an overlay of the annual relative length-frequency polygons.





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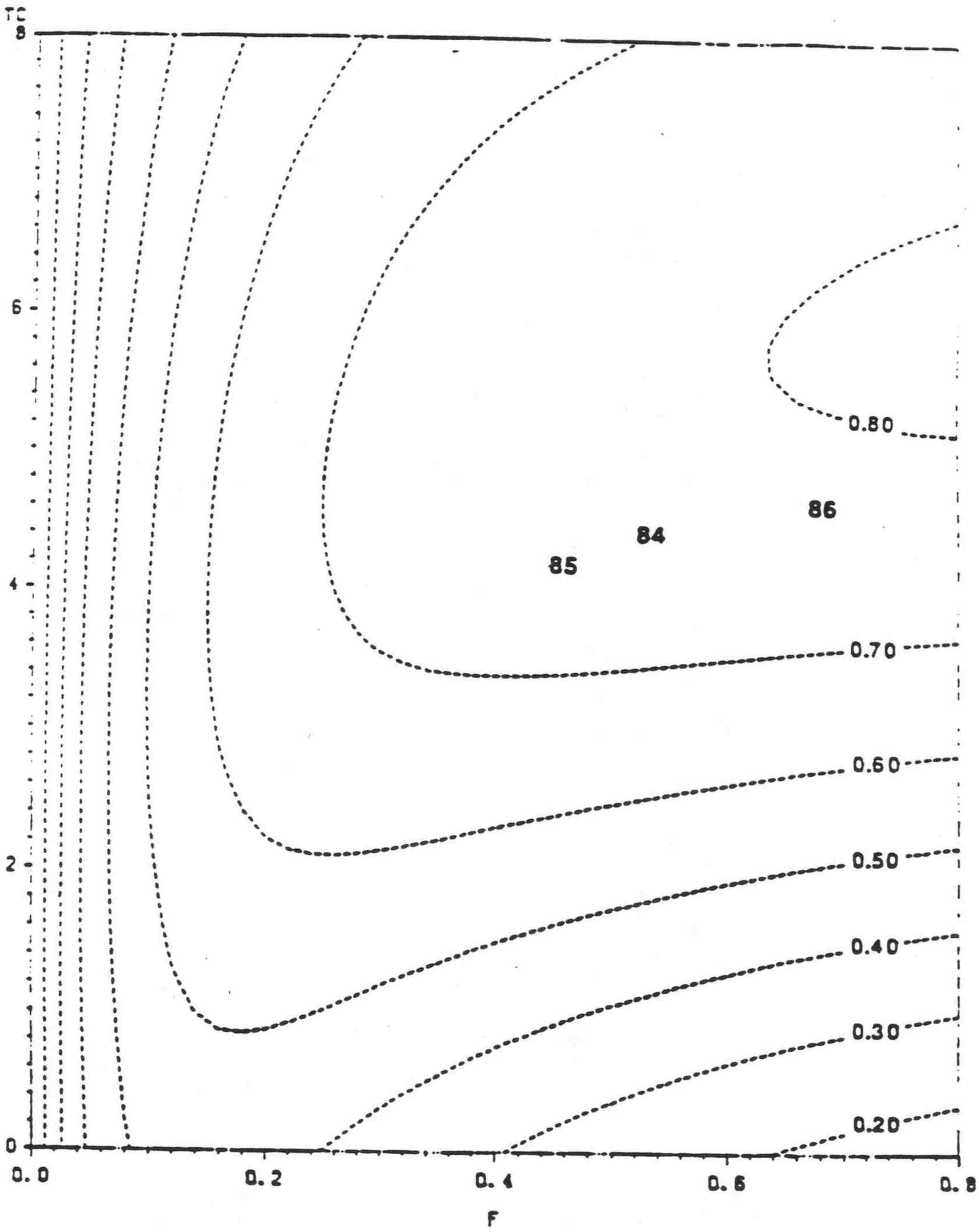


Figure 15.—Yield-per-recruit analysis for uku caught in the main Hawaiian Islands. The unit of F is per year and the unit of t_c is years. Contoured isopleths represent the locus of points corresponding to equal yield per recruit (kg). The estimated positions of the fishery during the years 1984, 1985, and 1986 are plotted.

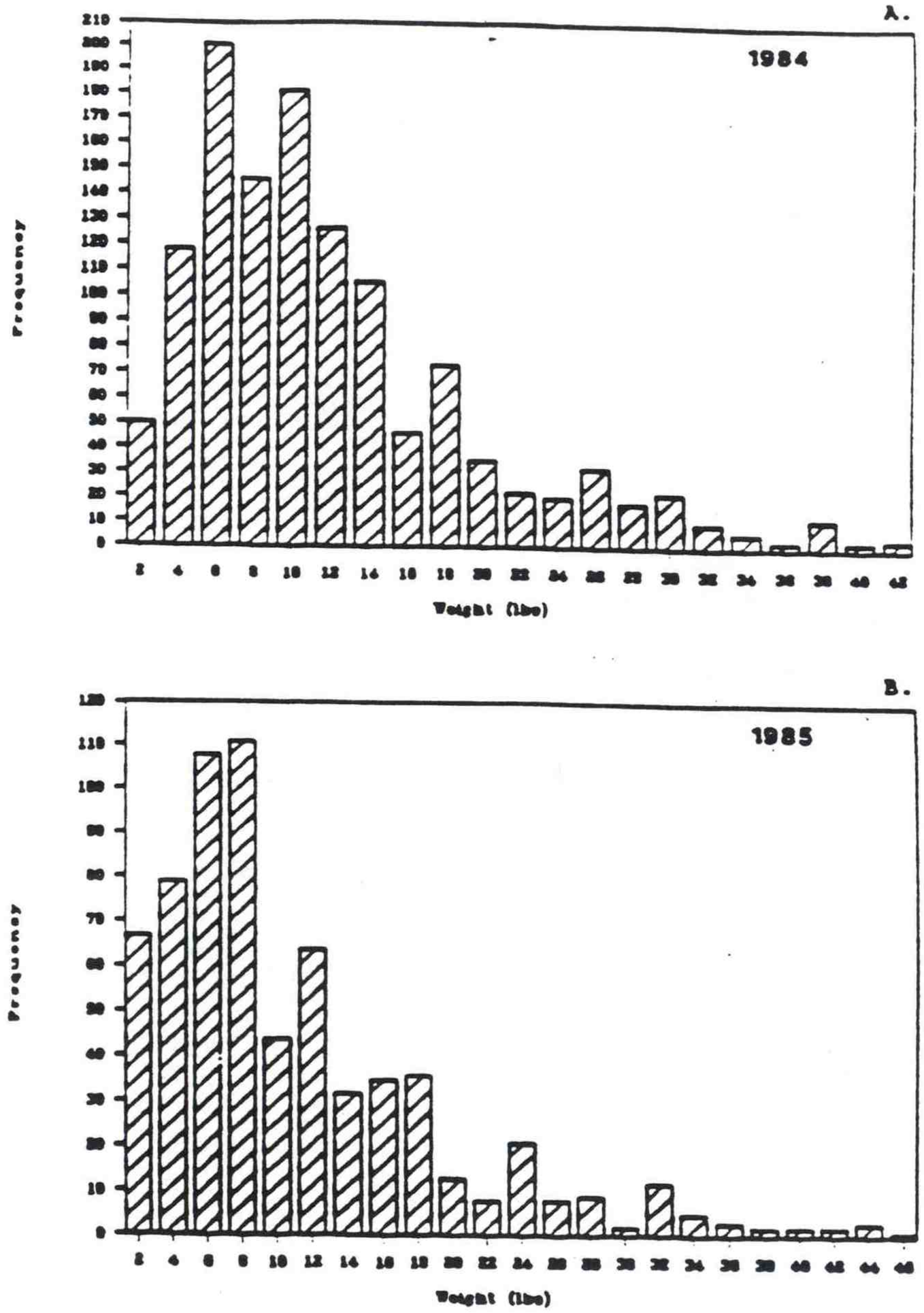
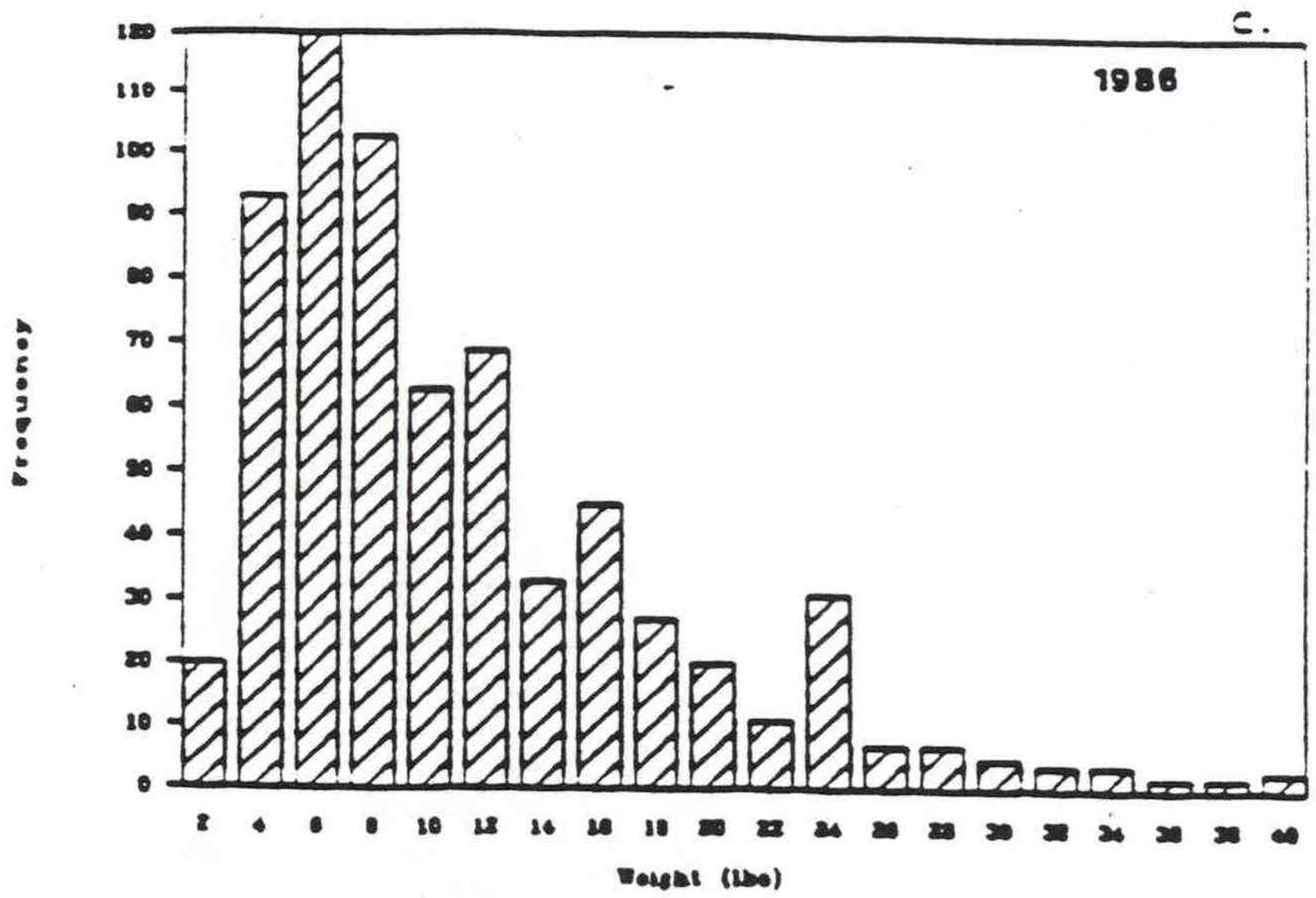
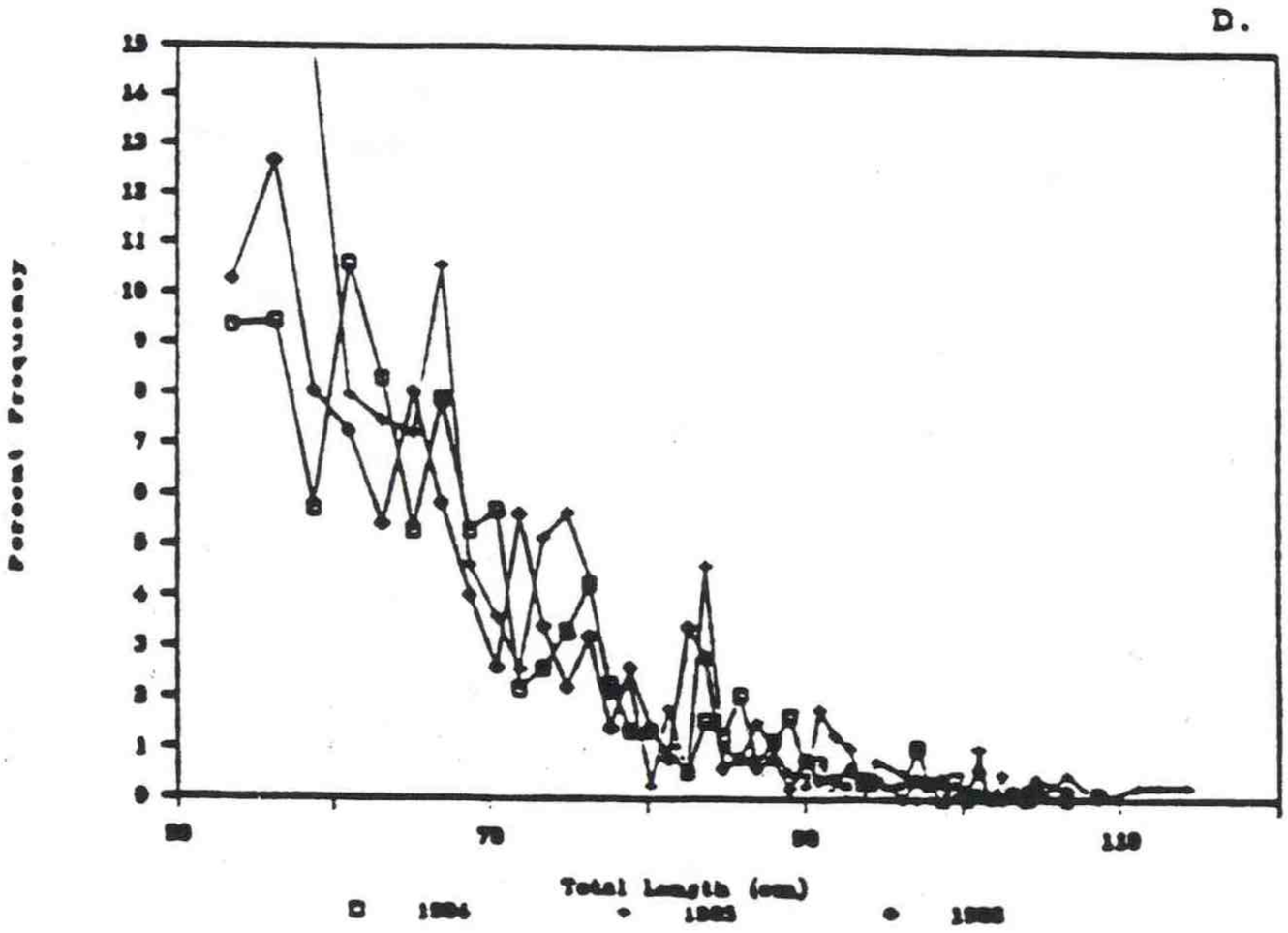


Figure 16.—Size structure of hapuupuu landed from the main Hawaiian Islands over the period 1984-86. The first three panels (A-C) provide the weight-frequency histograms for each year. The fourth panel (D) is an overlay of the annual relative length-frequency polygons.





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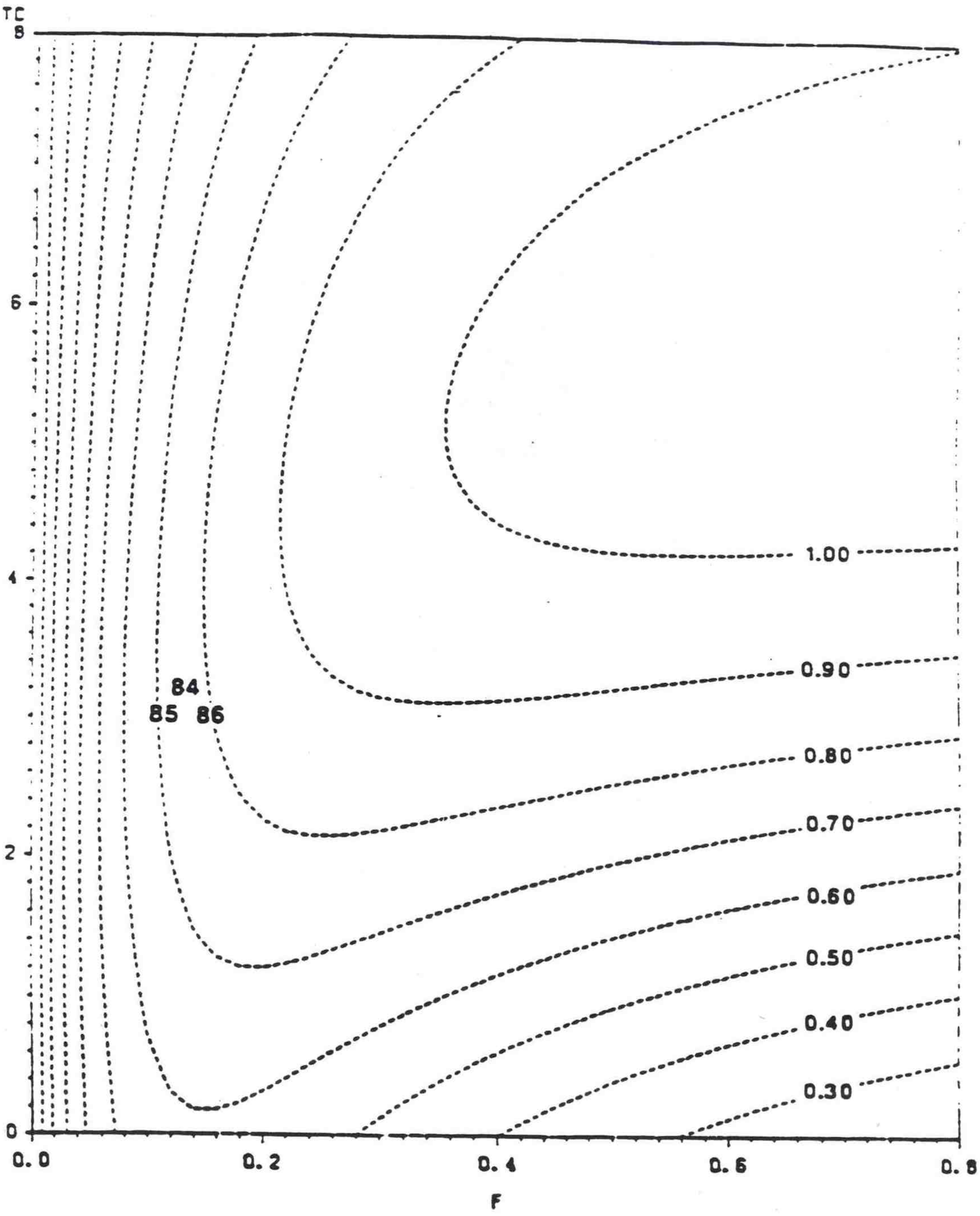


Figure 17.—Yield-per-recruit analysis for hapuupuu caught in the main Hawaiian Islands. The unit of F is per year and the unit of t_c is years. Contoured isopleths represent the locus of points corresponding to equal yield per recruit (kg). The estimated positions of the fishery during the years 1984, 1985, and 1986 are plotted.

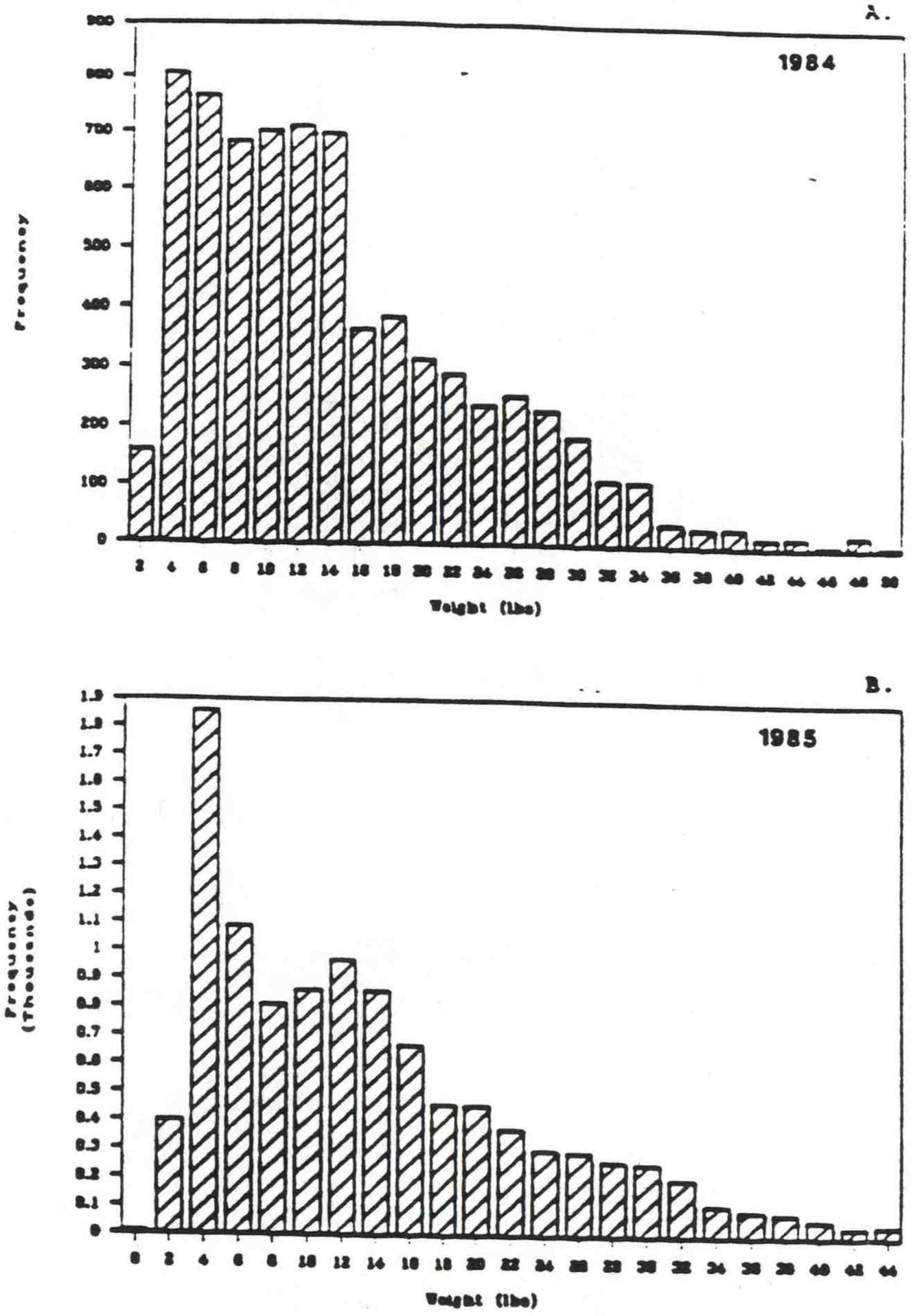
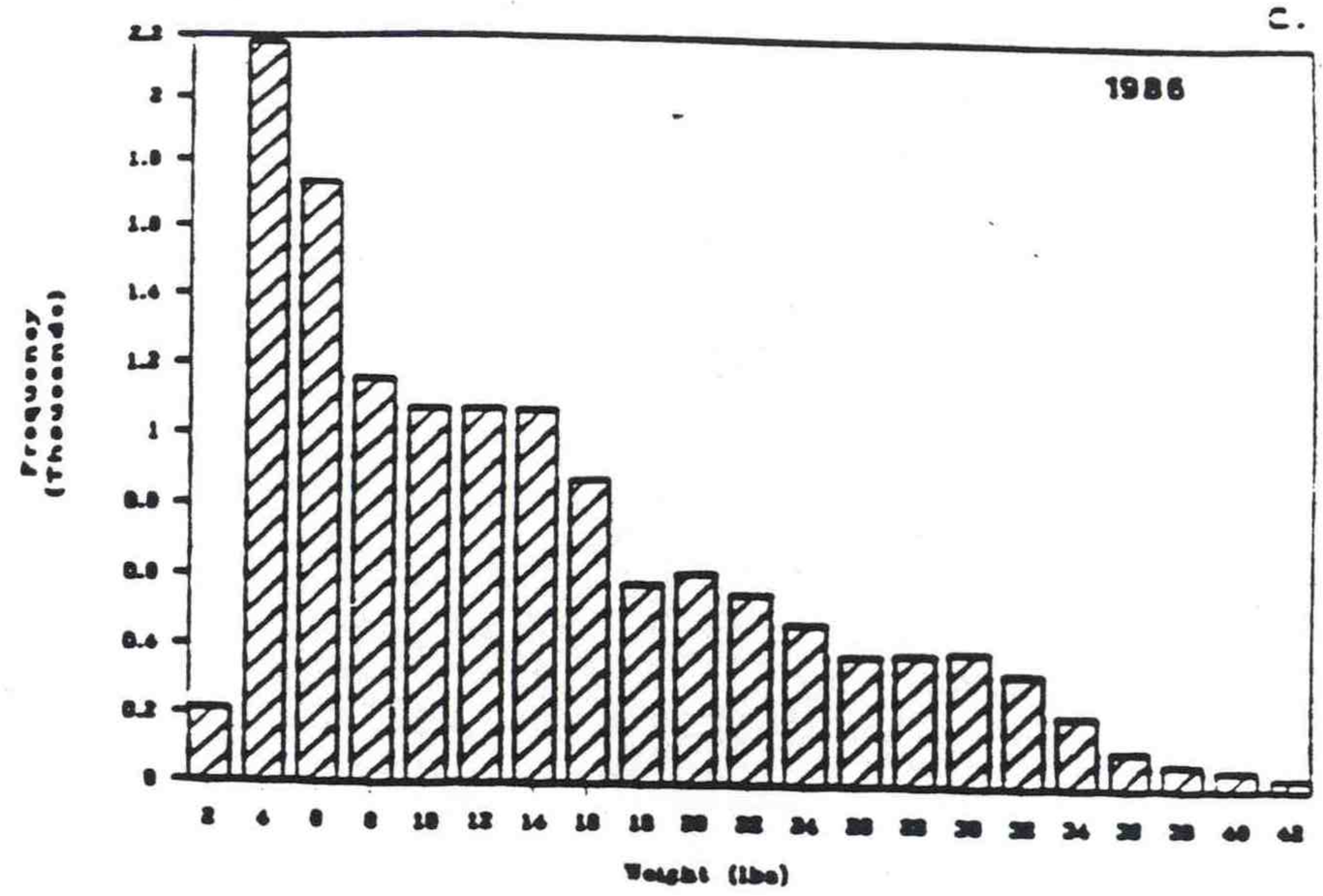


Figure 18.—Size structure of hapuupuu landed from the Northwestern Hawaiian Islands over the period 1984-86. The first three panels (A-C) provide the weight-frequency histograms for each year. The fourth panel (D) is an overlay of the annual relative length-frequency polygons.



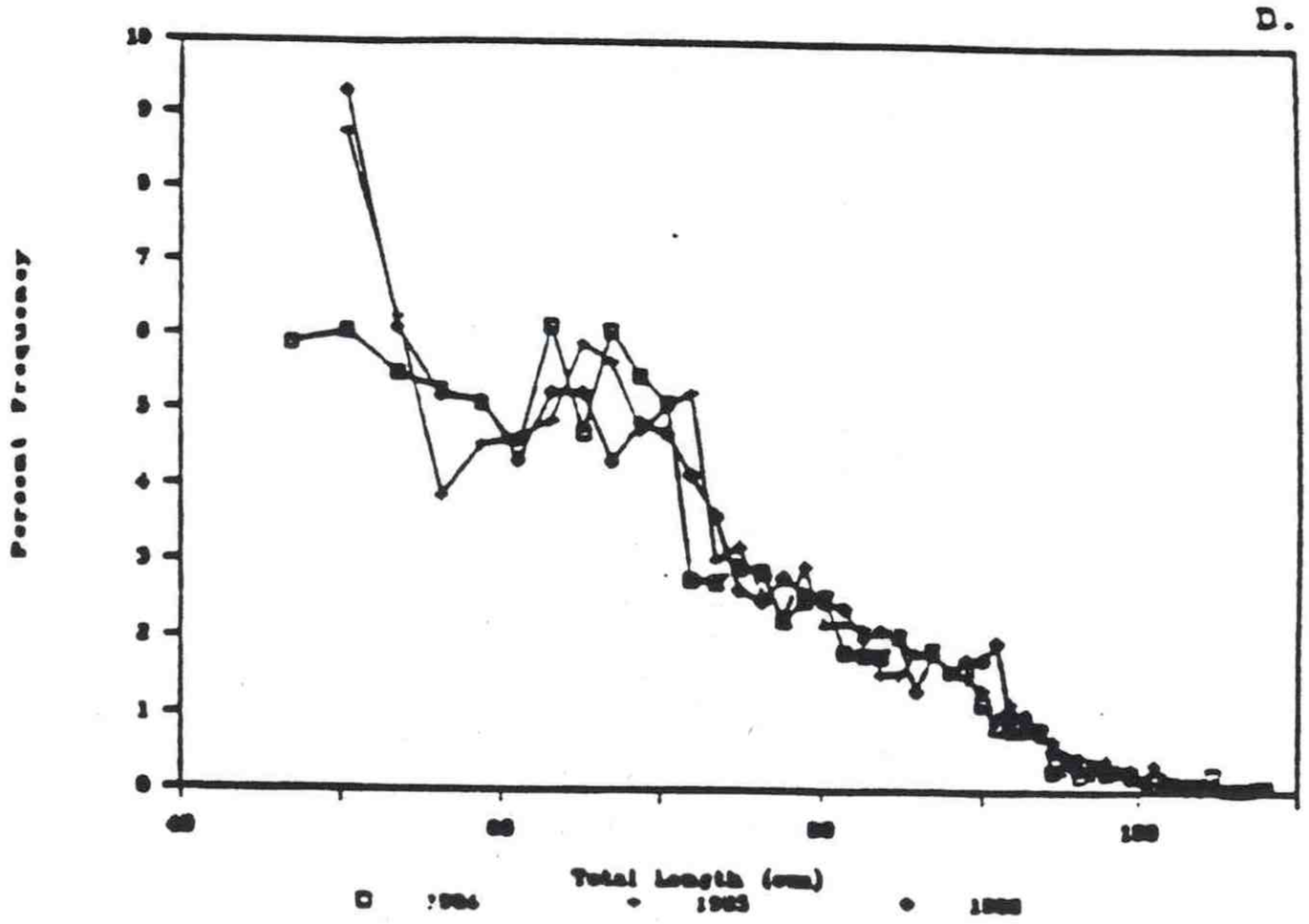


Figure 18.—Continued.

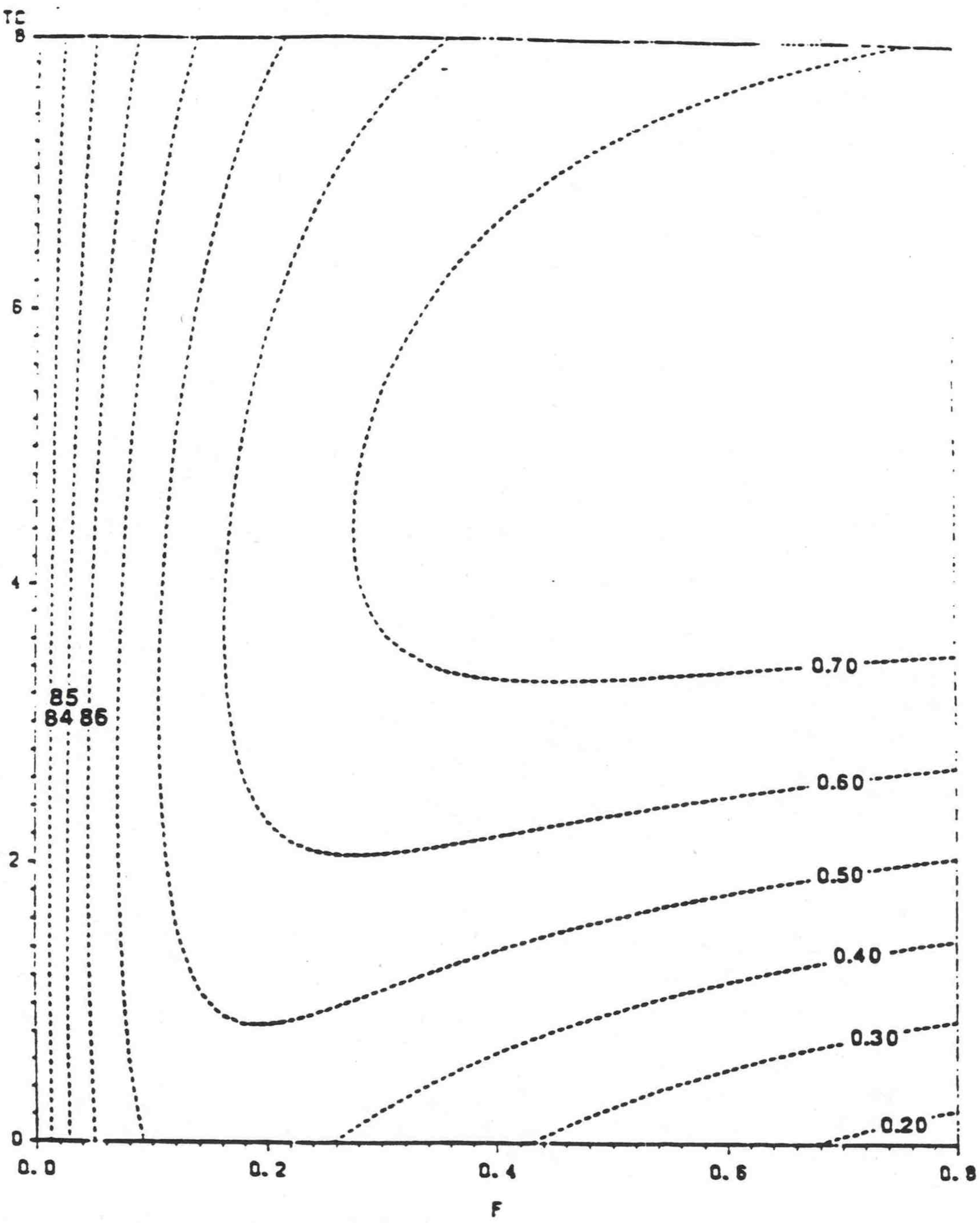


Figure 19.--Yield-per-recruit analysis for hapuupuu caught in the Northwestern Hawaiian Islands. The unit of F is per year and the unit of t_c is years. Contoured isopleths represent the locus of points corresponding to equal yield per recruit (kg). The estimated positions of the fishery during the years 1984, 1985, and 1986 are plotted.

and, without some compelling reason, it is unjustifiable to apply them to unrelated taxa. A preliminary analysis of size structure is possible, however, the results of which are presented in Table 4 and Figure 20.

Weight-frequency distributions for butaguchi landed from the NWHI are quite broad and flat (platykurtic). In such situations the detection of a mode becomes increasingly difficult and arbitrary. Still, as illustrated in the length-frequency polygons for this species (panel D), the descending limb for 1986 shows little curvature. Those for 1984 and 1985 appear to exhibit more severe levels of mortality. Like the NWHI harvest of opakapaka discussed above, this pattern is consistent with a change in the geographical pattern of fishing activity between these time periods.

Geographical Patterns of Fishing in the Northwestern Hawaiian Islands

Even though detailed information on the geographical origin of bottom fish landings did not become widely available until 1986, it is possible to examine the pattern of fishing activity in the NWHI with the existing data. Caution must be exercised, however, because only a small portion of the 1984 and 1985 NWHI bottom fish landings include bank specific fishing locations (15 and 8%, respectively).

The results presented in Figures 21 and 22 show how the geographical pattern of fishing in the NWHI has altered in the last 3 years. In Figure 21 the areal distribution of the opakapaka catch is shown in each year since 1984. Note that the fishing banks are listed horizontally and are arranged in rank order relative to distance up the archipelago. For example, Middle Bank (MD) is the closest to Honolulu, while Pearl and Hermes Reef (PH) is the most distant. The pattern is mimicked in Figure 22, in which the geographical pattern of total bottom fish landings is summarized.

The data presented in these figures strongly suggest that in 1984 and 1985 the center of bottom fishing activity in the NWHI was in the vicinity of Twin Banks, Necker Island, French Frigate Shoals, and Brooks Banks. In fact, the "expected" or average distance to the fishing grounds for a unit weight of opakapaka harvested in 1984 was 498 nmi from Honolulu (Brooks Banks). The comparable figure for 1985 was 411 nmi (Necker Island, French Frigate Shoals). Because of the sparse representation of bank specific information available for these 2 years, however, it is unlikely that this slight difference in the mean distance to the fishing grounds represents any sort of meaningful alteration in fishing activity.

In contrast, bottom fish fishing activity in 1986 had extended much farther up the Hawaiian chain. Significant landings of opakapaka and other bottom fishes were taken at Gardner Pinnacle, Raita Bank, Maro Reef, Laysan Island, Northampton Seamounts, Pioneer Bank, and especially Lisianski Island. The expected distance to the fishing grounds for a unit weight of opakapaka in 1986 was 771 nmi, equivalent to traveling as far as Maro Reef and Laysan Island.

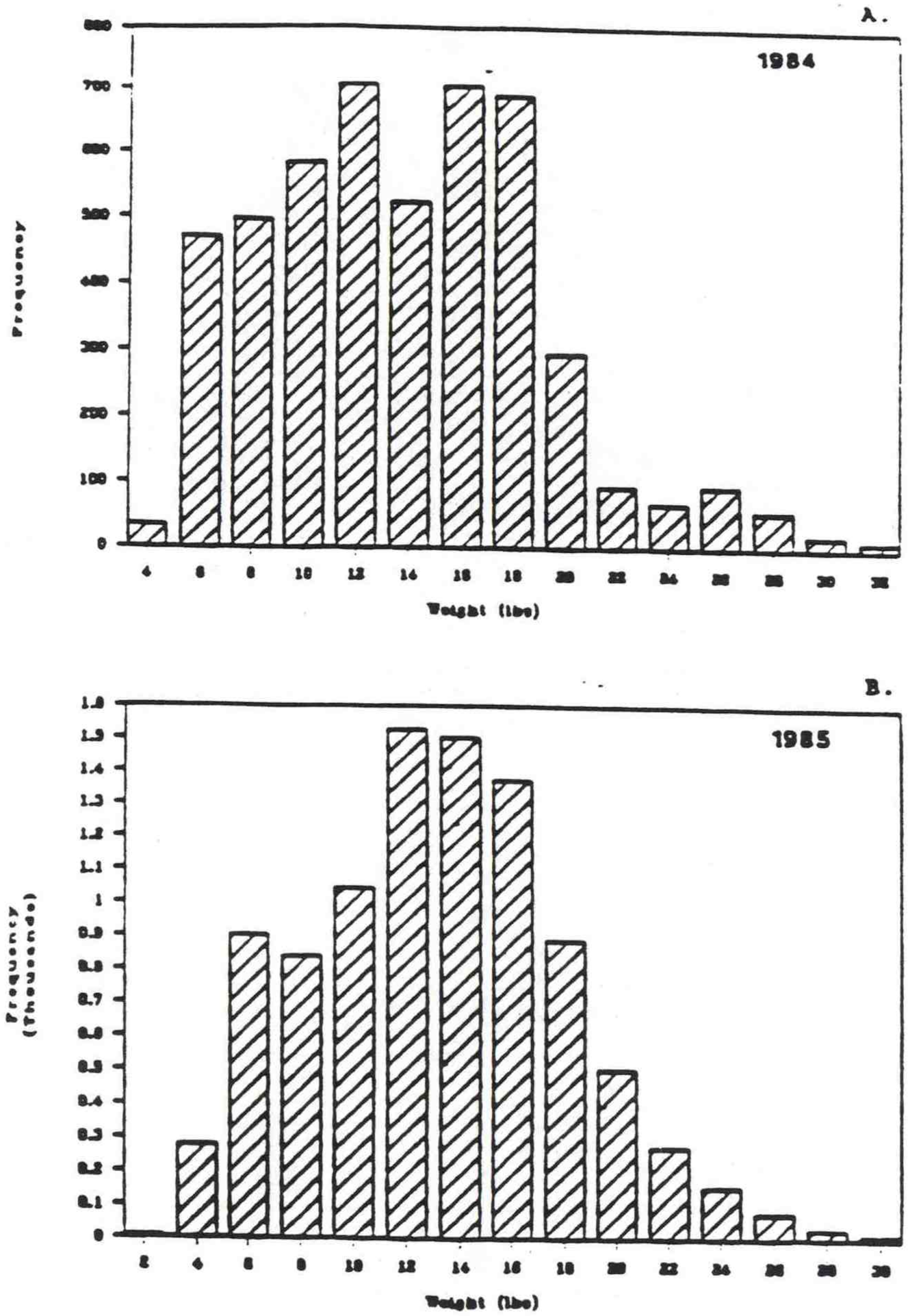
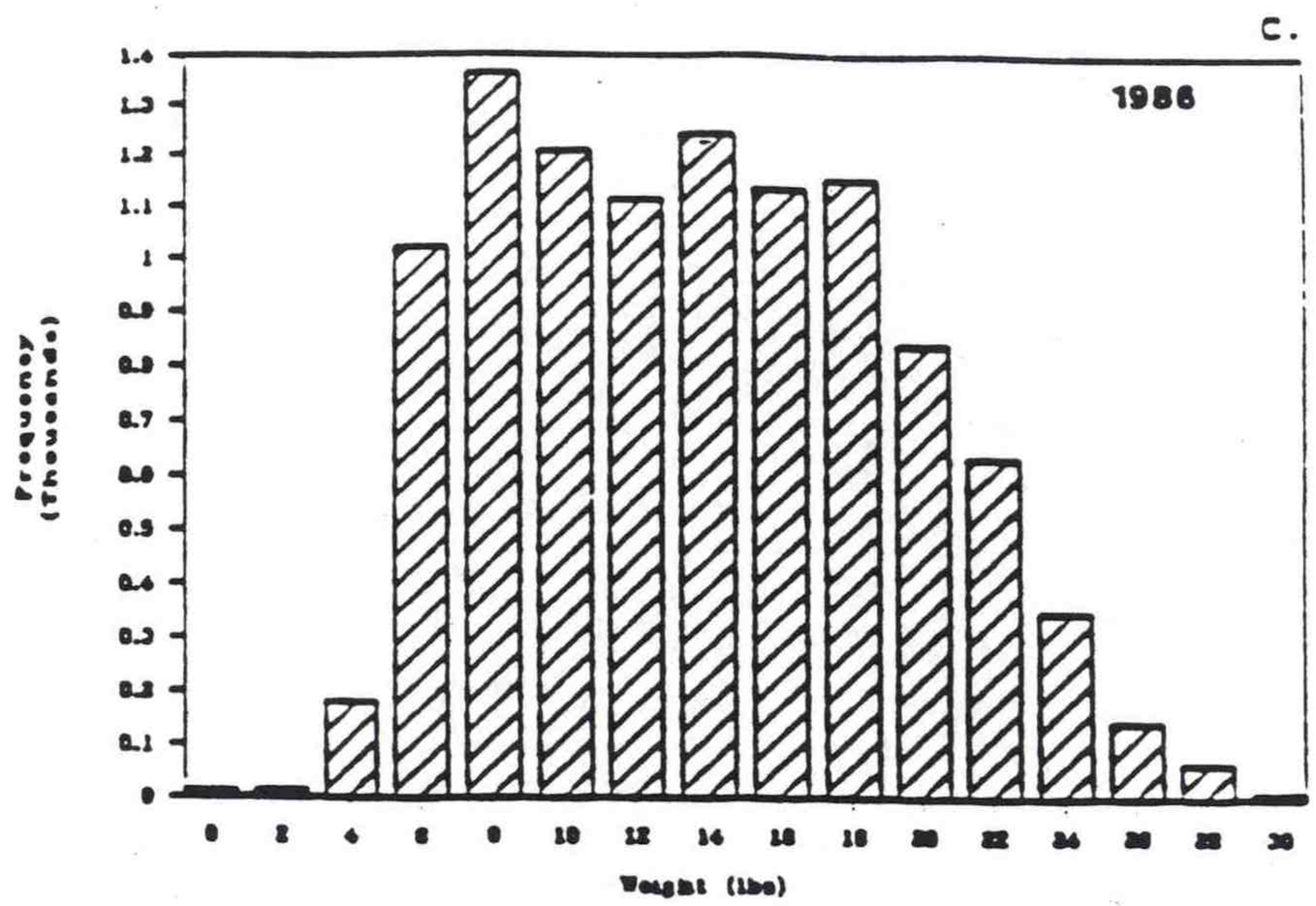


Figure 20.—Size structure of butaguchi landed from the Northwestern Hawaiian Islands over the period 1984-86. The first three panels (A-C) provide the weight-frequency histograms for each year. The fourth panel (D) is an overlay of the annual relative length-frequency polygons.



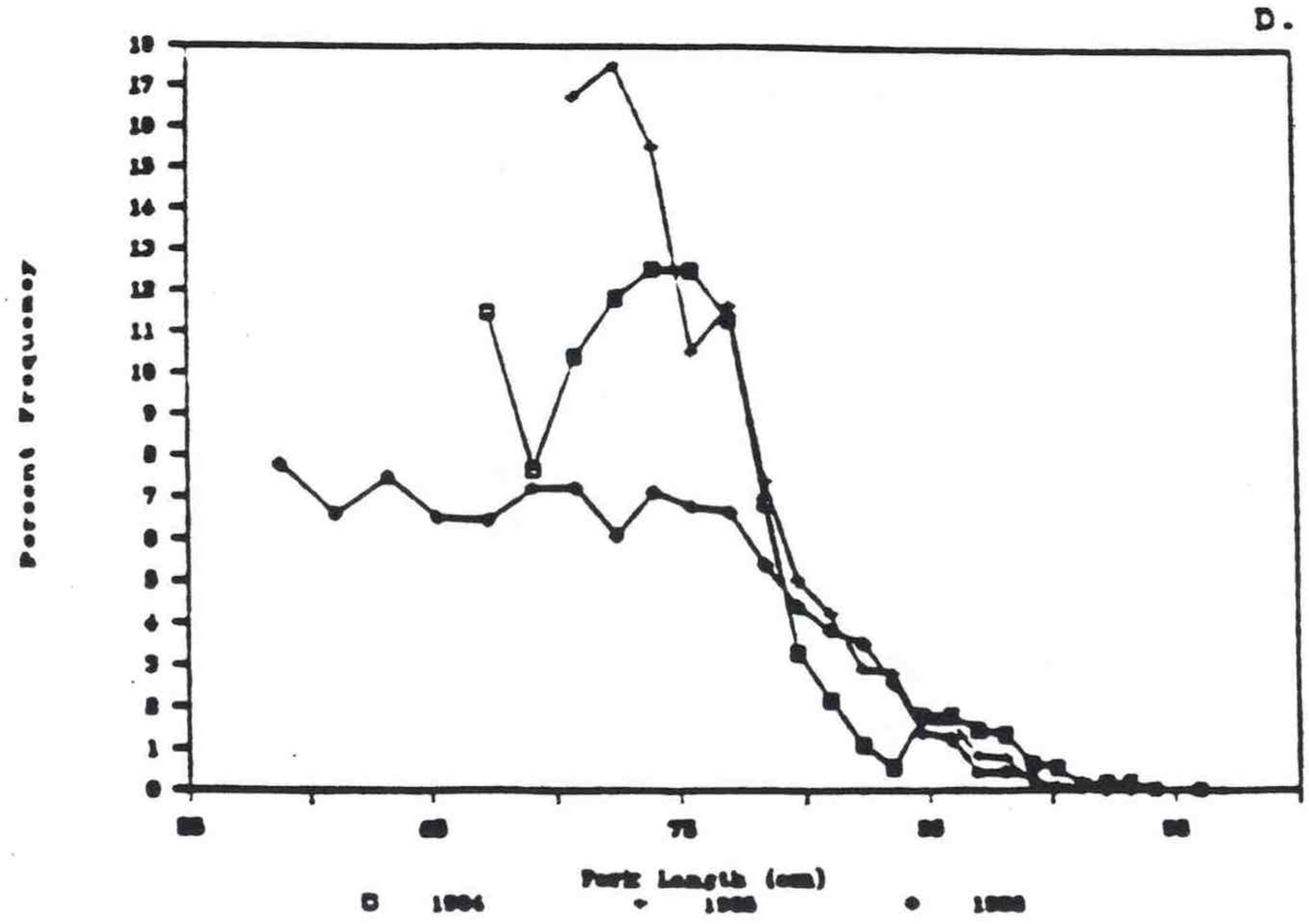


Figure 20.—Continued.

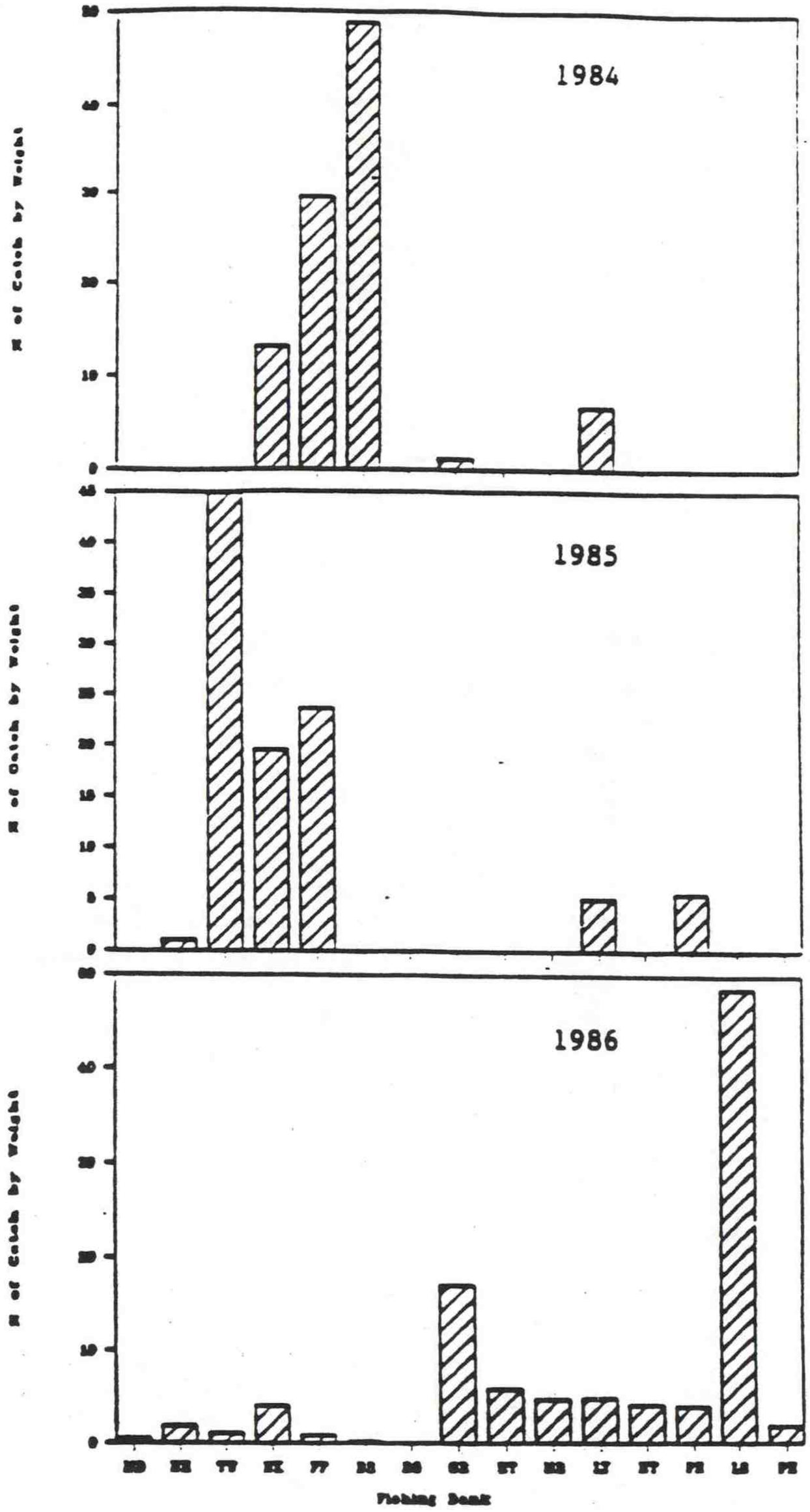


Figure 21.—Locations of opakapaka harvests in the Northwestern Hawaiian Islands (1984–86). Fishing bank abbreviations are as follows: MD = Middle Bank, NH = Nihoa, TW = Twin Banks, NK = Necker Island, FF = French Frigate Shoals, BR = Brooks Banks, EG = St. Rogatien Banks, GR = Gardner Pinnacles, RT = Raita Bank, MR = Maro Reef, LY = Laysan Island, NT = Northampton Seamounts, PN = Pioneer Bank, LS = Lisianski Island, PH = Pearl and Hermes Reef.

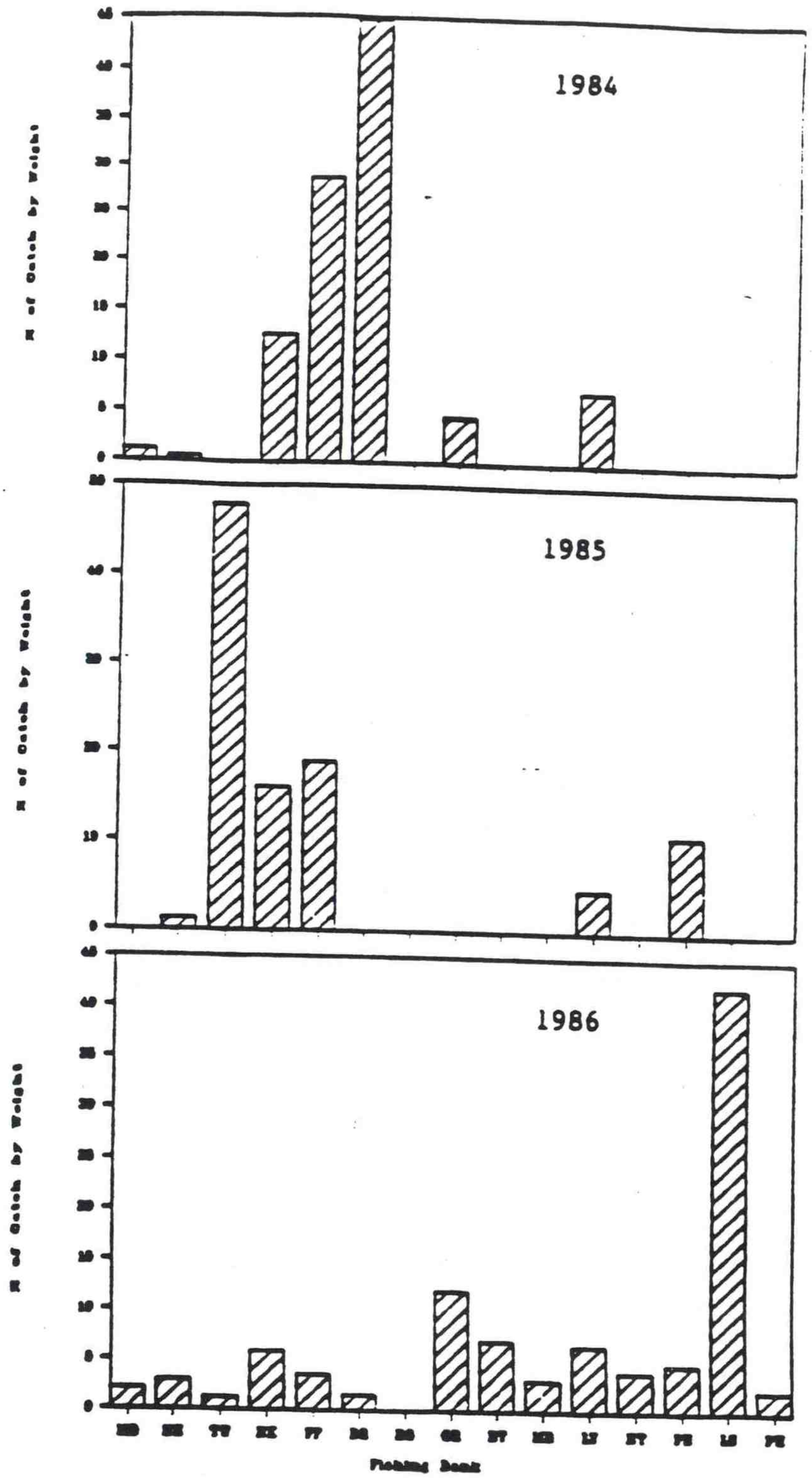


Figure 22.—Locations of bottom fish harvests in the Northwestern Hawaiian Islands (1984-86). Fishing bank abbreviations are as follows: MD = Middle Bank, NH = Nihoa, TW = Twin Banks, NK = Necker Island, FF = French Frigate Shoals, BR = Brooks Banks, EG = St. Rogatien Banks, GR = Gardner Pinnacles, RT = Raita Bank, MR = Maro Reef, LY = Laysan Island, NT = Northampton Seamounts, PN = Pioneer Bank, LS = Lisianski Island, PH = Pearl and Hermes Reef.

These results illustrate that the fishing activities of the bottom fishing fleet in the NWHI have been in a dynamic state of flux. Fishermen are traveling greater distances up the Hawaiian Island chain in order to encounter the higher catch rates that characterize unexploited fishing grounds. The move up the archipelago has occurred in conjunction with what has been an overall decline in the NWHI harvest of opakapaka, the previous mainstay of the fishery. Significantly, the natural abundance of opakapaka is known to decline with the distance traveled up the NWHI (Moffitt 1980; Humphreys 1986). The "fishing-up" process (sensu Ricker 1975) for this species in the NWHI is now likely complete.

Bottom Fishing Effort and CPUE in the Northwestern Hawaiian Islands

For the years 1984-86 there were 144, 164, and 166 recorded "bottom fishing trips" to the NWHI, respectively. Due to a small catch many of these represented an ineffective application of fishing effort, however. Thus, in order to qualify as an effective fishing trip (the nominal unit of fishing effort), at least 454 kg (1,000 lb) of bottom fish needed to be landed and marketed at the wholesale market. Under this constraint there were 108, 136, and 140 effective bottom fish fishing trips to the NWHI over the time period in question. Moreover, the mean catches (lb) of bottom fish per effective trip (CPUE) were 4,888, 5,332, and 5,539 during the 1984-86 period. From these data in isolation there is no indication of a decline in the abundance of bottom fish in the NWHI.

In order to more closely assess changes in NWHI bottom fish catch rates, the success of individual fishing vessels was followed over the last 3 years. The results presented in Table 5 document the annual CPUE statistics (mean pounds per effective fishing trip) for the 30 different vessels that actively participated in the fishery. In 1984 there were a total of 18 boats, in 1985 there were 21, and in 1986 there were 22 vessels contributing significantly to the fishery. Thus, the balance of entry to and exit from the fishery has resulted in a net gain in each year for which there are data. In terms of participants the fishery is growing.

Close examination of the data in Table 5 reveals 11 boats that fished all 3 years. Standardizing annual comparisons of CPUE by restricting the computation of sampling statistics to a uniform set of sampling units (i.e., vessels) should increase the power of the comparison to detect change. The mean catch rates of the 11 vessels that participated in the NWHI fishery during all 3 years for which there are data are 4,190, 4,230, and 4,866 lb per effective bottom fish fishing trip, respectively. Standard deviations about these means are 1,750, 1,827, and 1,886. These figures confirm the prior comparison based upon the entire fleet. Overall there has been no decline in the total bottom fish catch per NWHI fishing trip since 1984. If anything, there has been a slight increase.

Table 5.—Bottom fish CPUE in the Northwestern Hawaiian Islands. The catch rates (pounds per trip) of 30 different fishings vessels are listed for the years 1984–86. Note that 11 different vessels (E–R) fished in all 3 years.

Vessel		1984	1985	1986
1.	A	6,202	—	--
2.	B	2,554	—	--
3.	C	10,812	—	--
4.	D	2,905	—	--
5.	E	1,489	1,042	--
6.	F	1,391	2,130	--
7.	G	3,409	4,224	--
8.	H	4,585	3,040	5,100
9.	I	5,147	5,684	3,296
10.	J	4,743	3,630	3,526
11.	K	3,757	2,869	4,806
12.	L	3,175	4,354	4,091
13.	M	3,725	3,248	6,385
14.	N	2,229	5,959	5,653
15.	O	8,529	8,303	6,465
16.	P	4,143	4,398	4,402
17.	Q	1,922	1,744	1,368
18.	R	4,132	3,304	8,434
19.	S	—	2,397	1,466
20.	T	—	1,708	2,014
21.	U	—	7,242	7,706
22.	V	—	7,471	6,323
23.	W	—	8,994	11,328
24.	X	—	4,038	1,233
25.	Y	—	5,735	—
26.	Z	—	—	1,608
27.	AA	—	—	3,756
28.	BB	—	—	6,893
29.	CC	—	--	1,225
30.	DD	—	—	11,457

DISCUSSION

In attempting to synthesize the information presented here it is useful to review and reiterate the key assumptions of the analysis, of which there are five.

The first assumption is that the size structure of the bottom fish catch is adequately represented by the methods discussed in Ralston, Tagami, and Shiota (1986). Depending on the species they showed that 88.0–96.5% of all variation in bottom fish weights is attributable to differences between lots. Therefore, by calculating the mean weights of fish in auction lots, it is possible to generate a size–frequency distribution by allocating fish to the size class of their lot mean (Ralston and Kawamoto 1985). A refinement is to estimate the weight variance within lots as a function of the species, lot weight, and number of fish (Ralston, Tagami, and Shiota 1986). Fish are then allocated to size categories in accordance with lot means and variances under the normal distribution. This procedure accounts for 97.2–99.3% of the total variation in bottom fish weight. In this study allocation was made solely according to lot means. It was found that the estimation of L_∞ using the method of Wetherall et al. (in press) was sensitive to the largest size class represented in a length–frequency distribution. Mortality estimates were in turn very sensitive to values of L_∞. Because weight variance increases with a lot's weight and the number of fish comprising it, the process of allocation using both the mean and variance caused the presumptive assignment of fish to large weight categories, a result that could not be confirmed empirically. Allocation using only the mean weights is by comparison a more conservative approach to estimating L_∞. Still, the important point is that the weight distributions of the species studied here were estimated, undoubtedly with some error.

An even more important assumption is that the weight distributions derived from the catch (i.e., lot statistics) can be used as valid samples to infer something about the size structure of bottom fish populations in the wild. While evidence exists to show that hooks are capable of catching fish over a very broad range in size and that size structure is quite insensitive to alterations in gear (suggestive of constant selectivity) there are no data available to show that attack rates are independent of fish size. Intra–specific and behavioral interactions could alter the size composition of catch samples in ways we only partially understand (Allen 1963; Banmerot and Austin 1983). The interpretation of the descending limbs of length–frequency distributions relies critically on the assumption that catch samples are representative of the stock.

A third assumption is that snapper and grouper growth coefficients and natural mortality rates can be estimated with the comparative method. The graphs and equations presented in Mamooch (1987) and Ralston (1987) permit the statistical prediction of "average" snapper and grouper vital rates from estimates of maximum size, but the extent to which the species studied here conform to such average expectations is unknown. However, at least one Hawaiian species (opakapaka) has been studied in some detail (Ralston and Miyamoto 1983; Ralston 1984). For this species the predictive estimates of vital rates are very similar to those determined by direct study.

An additional analytical simplification is that the Beverton and Holt (1956) length-based mortality estimator assumes that recruitment to the exploitable phase occurs at a constant uniform rate, and yet the spawning and recruitment of Hawaiian fishes is known to be seasonal (Walsh in press). Moreover, the length-frequency samples analyzed here represent an annual accumulation of fish in the catch. Ralston (in prep.) has shown, however, that the use of the Z/K length-based estimator is justified under such conditions. Pooling data from throughout the year results in an integrated average of stock size structure and obviates the bias due to seasonal recruitment.

Several important final assumptions are inherent in the formulation of the Beverton and Holt (1957) yield equation and underly the computation of yield per recruit. For one, this particular model assumes that recruitment to the exploitable phase is independent of stock size and fishing pressure. Over a fair range of stock conditions this assumption has been shown to be more or less realistic (Cushing 1973). Nevertheless, the subject of recruitment-overfishing is something that has not been seriously considered in this assessment. This topic deserves to be reviewed at some time in the future.

Moreover, application of the Beverton and Holt (1957) yield-per-recruit model presupposes that it is desirable to optimize the yield in biomass from a fish stock. Sometimes this may not be the case if, as a result of market conditions, a premium is placed on small fish. This may well be the case in the MHI fishery for ehu. It is possible to perform an assessment in which factors other than yield are optimized, although this has not been attempted here.

Lastly, the Beverton and Holt model is constructed under equilibrium conditions. Actually, there are several aspects of the present study in which this particular assumption is violated. The first relates to the computation of mortality rates from length-frequency distributions. As indicated previously, calculating vital rates based on length or age-frequency distributions from catch statistics provides a glimpse of historical conditions in the fishery (Ricker 1975). When these are altered through time, changes in size structure lag behind. Estimates of mortality derived here are, therefore, likely to be somewhat in error. Secondly, the actual composition of bottom fish populations under exploitation is in a state of flux. Strong evidence exists to show that the NWHI fleet has recently made significant changes in fishing grounds (Figs. 21 and 22). Thus, the fishery is not in equilibrium in time or space.

Given these principal assumptions, with their associated caveats, it is possible to draw several conclusions concerning the status of bottom fish stocks in the Hawaiian Islands.

The assessment in the MHI is generally consistent. Conditions seem to have been stable over the 1984-86 time period, as indicated by the uniformity in landing statistics (Table 3). There is evidence of growth-overfishing for three of the five species studied (opakapaka, ehu, and uku). An increase in the age at entry to the fishery would benefit all three

species. Minimum size limits would therefore seem warranted, especially for opakapaka. The harvest of 1 and 2 lb pound individuals is a biological waste in the short run and over the long term it could ultimately affect the ability of the stock to replenish itself. Although there are certain costs in implementing minimum size regulations, including those due to the mortality of released fish and the transition losses incurred in moving from one equilibrium state to another (Huntsman and Waters 1987), they only become more severe as growth-overfishing continues unabated.

Even though there is evidence of overfishing in the MHI for three of the most important species of bottom fish, the condition of hapuupuu and onaga stocks would seem to be much better. The assessment for onaga, in particular, is surprising. As indicated in Table 3, MHI catch totals for this species are substantial. Moreover, the length-frequency polygons of panel D in Figure 6 show that a broad size range of fish are entering the marketplace. Relatively speaking, large onaga are plentiful in the MHI. There is thus some justification for encouraging further exploitation of this resource.

With respect to the best available information concerning MSY, it is difficult to evaluate the MHI fishery for bottom fish. A figure of 285 t of sustainable yield has been given for this fishery. In 1986 landings at the wholesale market were about 130 t. The difficulty here is that there exists a harvest of fish that does not appear at the wholesale market, which is presently unaccounted for. Recreational fishing and sales of MHI fish through other market channels are believed equal in magnitude to the wholesale share of the fishery. Although more data are needed before a proper assessment relative to MSY can be made, the harvest of bottom fish in the MHI is probably close to MSY, if not in excess of it.

The situation in the NWHI is more complex. Opakapaka landings are in a state of decline as vessels fish farther up the archipelago in search of productive fishing grounds. The fishery is presently in a state of disequilibrium, a problem exacerbated by inadequate data on fishing locations in 1984 and 1985.

The yield-per-recruit analysis for NWHI opakapaka indicated that fishing mortality is actually declining. Bottom fish effort statistics indicate otherwise. The number of effective vessel trips has increased from 108 to 140 in 3 years, a 30% increase. The likely explanation for the apparent decrease in opakapaka fishing mortality rate is that the fleet has moved to the northwest and cropped the final vestiges of opakapaka populations in the NWHI. Henceforth the fishery for this species will likely be based on catch rates characteristic of a stock under moderate exploitation.

As fishing pressure in the farther reaches of the NWHI has increased landings of other, less desirable, species have risen. The catch of hapuupuu and butaguchi in the NWHI has doubled since 1984. The natural abundance of these species to the northwest of Raita Bank does not decline in parallel with opakapaka (Moffitt 1980). Given the extensive fishing activity in the vicinity of Northampton Seamounts and Lisianski Island in 1986, an increasing share of these species in the catch is thus to be

expected. Since new fishing grounds have been exploited this would explain the relatively low estimates of fishing mortality derived for the hapuupuu.

All evidence indicates that the onaga is starting to replace the opakapaka in the catch of NWHI bottom fishermen. Both are highly priced species that could support a fishery. Moreover, the yield-per-recruit analysis of NWHI onaga provided some justification for expanding fishing effort. An obstacle to the development of this fishery, however, is the shorter shelf life of onaga in comparison with opakapaka, a constraint that reduces the length of time vessels can stay on the fishing grounds.

In 1986 overall landings of bottom fish from the NWHI exceeded the best available estimate of MSY by 18%. In and of itself, this is not cause for alarm because the fishery is in a state of disequilibrium. The record harvest of 1986 is likely due in large part to the fishing-up of stocks as the fleet moved farther to the northwest. Nevertheless, there is every reason to be concerned about the biological condition of bottom fish stocks in the NWHI. With fishing activity so unstable the estimation and interpretation of vital rates from catch composition is severely compromised. One major improvement in our ability to monitor conditions within the fishery is the precise (i.e., bank specific) recording of fishing location. Without this type of data future assessments will be very much in jeopardy.

ACKNOWLEDGMENTS

We would like to thank Paul Gates of the Western Pacific Regional Fishery Management Council for suggesting the analysis of geographical patterns of fishing in the NWHI. Moreover, without the helpful cooperation of the United Fishing Agency this study would not have been possible. Appreciation is also extended to the skippers and owners of the fishing vessels that operate in the NWHI and all of the wholesalers who attend the fish auction daily. Occasionally Skippy Hau, Joanne Ho, and Jason Fukumoto helped collect the data. Special thanks to all three.

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
300 South Ferry Street
Terminal Island, California 90731-7415

March 9, 1988 F/SWR1:ETN

Ms. Kitty Simonds
Executive Director
Western Pacific Regional Fishery
Management Council
1164 Bishop Street, Suite 1405
Honolulu, HI 96813

RECEIVED
MAR 10 1988
Western Pacific
Management

Dear Kitty:

This is in response to your letter regarding Section 7 consultation for implementation of Amendment 2 to the Fishery Management Plan for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region (Bottomfish FMP). The Amendment is specific to the EEZ of the Northwestern Hawaiian Islands (NWHI) and is intended to diminish the risk of overfishing.

As described in the proposal the Amendment will reduce the number of vessels engaged in the fishery thereby lessening risk of negative interactions with listed species. The proposed Amendment will not cause or result in the adverse modification of the habitat of any threatened or endangered species in the NWHI. The inclusion of Section 3.11, Workshop on Endangered and Threatened Species Concerns requires all permitted fishermen to attend an information workshop regarding protected species.

Our review of Amendment 2 finds that its implementation will not likely adversely affect listed species and will not substantively alter the conclusions in the Biological Opinion issued by the NMFS for the Bottomfish FMP on February 10, 1986. Accordingly, neither formal consultation nor reinitiation of consultation under Section 7 of the Endangered Species Act of 1973, as amended, will be required for this action. However, informal consultation should continue as the Amendment is implemented. The principal contact for this consultation is Eugene T. Nitta, Protected Species Coordinator, Western Pacific Program Office, Southwest Region. Should you require any further information he can be reached at 808/955-8831.

Sincerely yours,

E C Fullerton

E.C. Fullerton
Regional Director

cc: F/SWR1

U.S. Department of Transportation
United States Coast Guard

Commander (ole)
Fourteenth Coast Guard District

Prince Kalanianaole
Federal Building
300 Ala Moana Blvd
Honolulu, Hawaii 96850
Phone (808) 541-2200

RECEIVED
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Western Pacific Fishery Management Council

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Mr. John Sproul
Western Pacific Fishery
Management Council
1164 Bishop St. - Room 1405
Honolulu, Hawaii 96613

Dear Mr. Sproul:

You have requested Coast Guard input on Amendment #2 to the Fishery Management Plan for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region. Specifically, you have requested a written evaluation on the effects on safety of Amendment #2.

Section 303(a) of the Magnuson Fishery Management and Conservation Act (MFCMA), as amended on 14 November 1986, provides, among other things:

> ... any fishery management plan which is prepared by any Council...with respect to any fishery shall...consider, and may provide for, temporary adjustments, after consultation with the Coast Guard and persons utilizing the fishery, regarding access to the fishery for vessels otherwise prevented from harvesting because of weather or other ocean conditions affecting the safety of the vessels.....16 U.S.C. 1853(a) (as amended by Pub. L. No. 99-659, Sec 105(a)(1)(c)).

Amendment #2 does not call for temporary adjustments, such as altering a closure schedule, to accommodate fishing vessels prevented from harvesting by weather or other ocean conditions affecting vessel safety. Consequently, there is no issue in this amendment to be addressed by the Coast Guard within the statutory guidelines of the MFCMA.

Please feel free to contact me concerning any additional inquiries you may have.

Sincerely,

M. J. Williams, Jr.
M. J. WILLIAMS, JR.
Commander, U. S. Coast Guard
Chief, Law Enforcement Branch
By direction of the District Commander

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 683

[Docket No. 80483-8147]

Western Pacific Bottomfish Fisheries

AGENCY: National Marine Fisheries Service (NMFS), NOAA, Commerce.

ACTION: Final rule.

SUMMARY: NOAA issues a final rule to implement a limited access program for the bottomfish fishery in certain waters of the Northwestern Hawaiian Islands (NWHI). The program establishes a control zone called the Ho'omalu Zone, in which a person must have a limited entry permit to fish, and a qualifying zone called the Mau Zone, in which a person could earn points to qualify for future eligibility for a limited entry permit. Persons who can demonstrate participation in, or substantial financial commitment to participate in the NWHI fishery, on or before August 7, 1985, would be eligible for initial permits to participate in the Ho'omalu Zone fishery. A landings requirement is established to maintain eligibility for annual renewal of permits. No new permits to enter the fishery will be issued until stocks are sufficiently large to provide adequate catches. A point system is established to qualify persons for permits for future entry to the fishery. The Western Pacific Fishery Management Council (Council), with the advice of an industry and government Advisory Review Board, will make recommendations to the Regional Director, Southwest Region, NMFS, regarding future entry to the fishery. The objectives of the limited access program are to reduce the risk of overfishing, reduce the level of overcapitalization in the fishery, increase stability in the fishery, and increase profitability or net return to the fishery. The Council will undertake a full evaluation of the effectiveness of the program in 5 years. Under the rule, it is a violation of Federal law to fail to report fishery data in accordance with State reporting requirements and vessel operators must notify the U.S. Coast Guard prior to anticipated arrival in port to unload bottomfish taken in the NWHI.

EFFECTIVE DATES: September 6, 1988. The permit requirement will go into effect January 1, 1989. Persons who wish to obtain permits by that date must file the application and supplementary information by November 30, 1988.

ADDRESS: A copy of the amendment containing the limited access program, the environmental assessment (EA), and the regulatory impact review (RIR) may be obtained by contacting the Western Pacific Fishery Management Council, 1164 Bishop Street, Suite 1406, Honolulu, Hawaii 96813, 808-523-1368. Comments on information collection requirements should be sent to the Office of Information and Regulatory Affairs of OMB, Washington, DC 20503. Attention Desk Officer for NOAA.

FOR FURTHER INFORMATION CONTACT: Svein Fougner (Southwest Region, Terminal Island, CA), 213-514-6660; or Peter Milone (Southwest Region, Honolulu, HI), 808-955-8831.

SUPPLEMENTARY INFORMATION: The domestic fisheries for bottomfish in the U.S. exclusive economic zone (EEZ) adjacent to the State of Hawaii are managed under the Fishery Management Plan for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region (FMP). The FMP was developed by the Council under the Magnuson Fishery Conservation and Management Act (MFCMA) and implemented August 27, 1986 (51 FR 27413, July 31, 1986).

The notice of availability of Amendment 2 to the FMP was published on April 18, 1988 (53 FR 12712) and the proposed rule was published on May 11, 1988 (53 FR 16735). Comments were invited until June 20, 1988. One written comment was received.

The preamble to the proposed rule presented in substantial detail the features of the limited access program proposed for the NWHI and that discussion will not be repeated here.

This final rule is scheduled to go into effect January 1, 1989. Interested persons should be advised that the Regional Director, Southwest Region, NMFS, will be working with the Council and the State of Hawaii to prepare for implementation of the Ho'omalu Zone permit requirement and other provisions of the limited access program. Persons who wish to obtain permits under this program are urged to obtain application forms from the Southwest Region and to compile and submit the necessary documentation of participation in the fishery, or of financial commitments made for participation in the fishery by November 30, 1988, in time for review and award of permits in advance of the effective date. The NMFS also will arrange the protected species seminars required for captains and relief captains and will advise applicants of the time and location of seminars when permit applications were received.

Comments and Responses

Written comments were received from one individual.

Comment: The individual objected to the proposed limited access program because he had been advised that he might not qualify for an initial permit. He indicated he had previously supported the proposal when he had been assured that he would qualify.

Response: Whether or not this person would qualify is not yet known. Under the program, the Southwest Regional Director will make a decision based on the information presented in support of an application, including documentation of participation in the fishery on or before August 7, 1985, or of a firm commitment or offer to buy a vessel for the fishery on or before August 7, 1985. It also is noted that even if the individual does not qualify for an initial permit under the criteria of the program, he may qualify for subsequent entry to the fishery under the point system for new participation when the Regional Director concludes that stock and economic conditions warrant additional entry.

Changes From the Proposed Rule in the Final Rule

A prohibition that did not appear in the proposed rule is added in the regulatory text of the final rule. The proposed rule and this final rule contain § 683.27, which requires fishermen to notify the U.S. Coast Guard at least 24 hours before making any landing of bottomfish from the Ho'omalu Zone. This final rule adds a new paragraph (n) to § 683.6, General prohibitions, which expressly prohibits failure to comply with the requirement of § 683.27.

Classification

The Director, Southwest Region, NMFS, determined that the Amendment, as approved, is necessary for the conservation and management of the NWHI bottomfish resource and is consistent with the Magnuson Act and other applicable law.

The Council included an environmental review as part of the FMP amendment and an environmental assessment was prepared. The Assistant Administrator for Fisheries, NOAA concluded that there will be no significant impact on the human environment as a result of this rule.

Implementation of this rule is not an action that may affect any species listed as endangered or threatened under the Endangered Species Act of 1972 (Act), or the critical habitat of those species. The Council initiated informal consultations with NMFS under section 7 to the Act and it was concluded that the action was not likely to have adverse effects on any listed species or critical habitat.

The Under Secretary, NOAA, determined that this rule is not a "major rule" requiring a regulatory impact analysis under Executive Order 12291. A summary of this determination appears in the proposed rule (53 FR 16735, May 11, 1988) and is based on the regulatory impact review (RIR) which is included in the Amendment.

The General Counsel of the Department of Commerce certified to the Chief Counsel for Advocacy of the Small Business Administration that this rule will not have a significant economic impact on a substantial number of small entities. A summary of this determination appears in the proposed rule.

This final rule contains collection of information requirements subject to the Paperwork Reduction Act. These collection of information requirements contained in this rule were approved by the Office of Management and Budget under Control Number 0648–0201. Public reporting burdens for these collection of information requirements are estimated to average 1 hour per response for the permit requirement and 4 minutes per response for each advanced notification of the U.S. Coast Guard before landing bottomfish. These estimates include the time for reviewing instructions, searching existing date sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding these burden estimates or any other aspect of these collection of information requirements, including suggestions for reducing these burdens, to Charles Fullerton, Director, Southwest Region, National Marine Fisheries Service, NOAA, 300 South Ferry St., Terminal Island, CA 90731; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

The Council determined that this rule will be implemented in a manner that is consistent to the maximum extent practicable with the approved coastal zone management program of Hawaii. The State of Hawaii concurred with this determination.

This final rule does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order 12612.

List of Subjects in 50 CFR Part 683

Fisheries, Reporting and recordkeeping requirements.

Dated: August 3, 1988.

James E. Douglas, Jr.,

Deputy Assistant Administrator For Fisheries, National Marine Fisheries Servi

For the reasons stated in the preamble, 50 CFR Part 683 is amended as follows:

PART 683—[AMENDED]

1. The authority citation for 50 CFR Part 683 continues to read as follows:

Authority: 16 U.S.C. 1801 *et seq.* unless otherwise noted.

2. In § 683.2, a new definition for *Qualifying landing* is added to read as follows:

§ 683.2 Definitions.

* * * * *

Qualifying landing means a landing that meets a standard required for permit eligibility under § 683.25, as follows:

(a) Initial permit eligibility. (1) A qualifying landing for initial permit eligibility under § 683.25(b) (1) and (5) is a landing that contained bottomfish from the NWHI, regardless of amount, and which was made on or before August 7, 1985; (2) A qualifying landing for 1986 and 1987 under § 683.25(b)(2) is a landing which contained at least 2,500 pounds of bottomfish from the NWHI or a landing of at least 2,500 pounds of fi from the NWHI, of which at least 50 percent by weight was bottomfish;

(b) Permit renewal—a qualifying landing for permit renewal under § 683.25(c) is a landing which contained 2,500 pounds of bottomfish from the NWHI or a landing of at lest 2,500 pounds of fish from the NWHI, of which at least 50 percent by weight was bottomfish.

(c) New access eligibility points—a qualifying landing for eligibility points under § 683.25(e) is any landing of bottomfish from the NWHI, regardless of weight, if made on or before August 7, 1985; or a landing of at least 2,500 pounds of bottomfish lawfully harvested from the NWHI, or a landing of at least 2,500 pounds of fish lawfully harvested from the NWHI, of which at least 50 percent by weight was bottomfish, if made after August 7, 1985.

* * * * *

3. In § 683.5, paragraph (a)(2) is amended by adding (a)(2) (i) and (ii) to read as follows:

§ 683.5 Management subareas.

(a) * * *

(2) * * *

(i) *Ho'omalu Zone* means that portio of the EEZ around the NWHI west 165°W longitude.

(ii) *Mau Zone* means that portion of the EEZ around the NWHI between 161°20′ and 165° W. longitude.

* * * * *

4. In § 683.6, paragraph (k) is redesignated (o) and new paragraphs (k), (l), (m) and (n) are added as follows:

§ 683.6 General prohibitions.

* * * * *

(k) Fish for bottomfish in the Ho'omalu Zone without a limited access permit issued under § 683.25;

(l) Serve as captain or relief captain on a vessel fishing in the Ho'omalu Zone without first participating in a protected species seminar conducted by NMFS;

(m) Falsify or fail to make and/or file any and all reports of bottomfish landings, containing all data and in the exact manner, required by the applicable State laws and regulations, as specified in § 683.11, provided that the person is required to do so by the applicable State laws and regulations;

(n) Fail to notify the U.S. Coast Guard at least 24 hours prior to making any landing of bottomfish taken in the Ho'omalu Zone, as required by § 683.27;

* * * * *

5. A new § 683.10 is added as follows:

§ 683.10 Appeals of administrative action.

(a) Except as provided in Subpart D of 15 CFR Part 904, any applicant for a permit or permit holder may appeal the granting, denial, conditioning, or suspension of their permit or a permit affecting their interests to the Assistant Administrator for Fisheries, NOAA. In order to be considered by the Assistant Administrator, such appeal must be in writing, must state the action(s) appealed, and the reasons therefor, and must be submitted within 30 days of the action(s) by the Regional Director. The appellant may request an informal hearing on the appeal.

(b) Upon receipt of an appeal authorized by this section, the Assistant Administrator will notify the permit applicant, or permit holder as appropriate, and will request such additional information and in such form as will allow action upon the appeal. Upon receipt of sufficient information, the Assistant Administrator will decide the appeal in accordance with the criteria set forth in 50 CFR Part 683 and the amendment to the FMP, as appropriate, based upon information relative to the application on file at NMFS and the Council and any additional information, the summary record kept of any hearing and the hearing officer's recommended decision, if any, as provided in paragraph (c) of this section, and such other considerations as deemed appropriate. The Assistant Administrator will notify all interested persons of the decision, and the reasons therefor, in writing, normally within 30 days of the receipt of sufficient information, unless additional time is needed for a hearing.

(c) If a hearing is requested or if the Assistant Administrator determines that one is appropriate, the Assistant Administrator may grant an informal hearing before a hearing officer designated for that purpose after first giving notice of the time, place, and subject matter of the hearing in the **Federal Register**. Such a hearing shall normally be held no later than 30 days following publication of the notice in the **Federal Register** unless the hearing officer extends the time for reasons deemed equitable. The appellant, the applicant (if different), and, at the discretion of the hearing officer, other interested persons, may appear personally or be represented by counsel at the hearing and submit information and present arguments as determined appropriate by the hearing officer. Within 30 days of the last day of the hearing, the hearing officer shall recommend in writing a decision to the Assistant Administrator.

(d) The Assistant Administrator may adopt the hearing officer's recommended decision, in whole or in part, or may reject or modify it. In any event, the Assistant Administrator will notify interested persons of the decision, and the reason(s) therefor, in writing, within 30 days of receipt of the hearing officer's recommended decision. The Assistant Administrator's action shall constitute final action for the agency for the purposes of the Administrative Procedure Act.

(e) Any time limit prescribed in this section may be extended for a period not to exceed 30 days by the Assistant Administrator for good cause, either upon his or her own motion or upon written request from the appellant or applicant stating the reason(s) therefor.

6. A new § 683.11 is added as follows:

§ 683.11 Reports.

Any person who has a Federal permit to fish for bottomfish or seamount groundfish in the NWHI, and who is required to do so by the applicable State laws and regulations, shall make and/or file any and all reports of bottomfish and seamount groundfish landings, containing all data and in the exact manner, required by the applicable State laws and regulations.

7. In § 683.21, paragraphs (a) and (f) are revised to read as follows:

§ 683.21 Permit requirements for the Northwestern Hawaiian Islands.

(a) *Permit areas.* (1) The owner of any vessel being used to fish for bottomfish in the Mau Zone must have a permit issued under this section for that vessel.

(2) The owner of any vessel fishing for bottomfish in the Ho'omalu Zone must have a permit issued under § 683.25 for that vessel.

(3) The owner of any vessel fishing for seamount groundfish in a given fishery management area must have a permit issued under this section for that vessel.

(4) No vessel may be covered by a permit to harvest groundfish in the Ho'omalu Zone and the Mau Zone at the same time.

* * * * *

(f) *Expiration.* Permits issued under this section expire on December 31 of the year covered by the permit.

* * * * *

§ 683.26 [Redisignated from § 683.25]

8. Section 683.25 is redesignated § 683.26 and a new § 683.25 is added to read as follows:

§ 683.25 Limited access management program.

(a) *Limited access permits.* General requirements.

(1) The owner of any vessel engaged in fishing for bottomfish in the Ho'omalu Zone must have a permit issued under this section.

(2) Permits issued under this section shall expire on December 31 of the year covered by the permit.

(3) Each application for a permit must be submitted to the Regional Director by the vessel owner at least 30 days before the date on which the applicant wants the permit to be effective.

(4) Each applicant must be submitted on the form used to apply for a permit under § 683.21(b) and a supplementary information sheet to be provided by the Regional Director. Each application must be signed by the vessel owner and must contain, in addition to the information listed in § 683.21(b)(2), the following information:

(i) The qualification criterion that the applicant believes he or she meets for issuance of a limited access permit; and

(ii) Copies of landings receipts or other documentation, with a certification from a State or Federal agency that this information is accurate, to demonstrate participation in the NWHI bottomfish fishery; or

(iii) Notarized copies of loan documents or other documents that would demonstrate financial commitments on or before August 7,

1985, to enter the NWHI bottomfish fishery; or

(iv) Written evidence indicating that an offer was made to purchase a vessel or that a vessel was under construction, on or before August 7, 1985, and that the vessel was to be used in the NWHI bottomfish fishery.

(v) If the application is filed by a partnership or corporation, the application must identify the names of the owners and their respective percentage of ownership of the partnership or corporation.

(5) Protected species seminar. Each designated captain and relief captain must participate in a seminar conducted by NMFS to ensure familiarity with protected species laws and regulations applicable to the NWHI and the species those laws and regulations are designed to protect.

(6) Sale or transfer of permits to new owners.

(i) A vessel permit may not be sold or otherwise transferred to a new owner.

(ii) A permit or permits may be held by a partnership or corporation. If 50 percent or more of the ownership of the vessel passes to persons other than those listed in the original application, the permit will lapse and must be surrendered to the Regional Director.

(7) Transfer of permits to new vessels.

(i) An owner of a permitted vessel may, without limitation, transfer his permit to another vessel owned by him, provided that the replacement vessel does not exceed 60 feet in length and that the replacement vessel is put into service within 12 months after the owner declares to the Regional Director the intent to make the transfer of the permit.

(ii) An owner of a permitted vessel may apply to the Regional Director for approval to use the permit for a replacement vessel greater than 60 feet in length. The Regional Director may allow this change upon determining, after consultation with the Council and considering the objectives of the limited access program, that the replacement vessel has equal catching power as the original vessel, or that the replacement vessel has catching power that is comparable to the rest of the vessels holding permits for the fishery, and that the change is not inconsistent with the objectives of the program.

(iii) The Regional Director shall consider vessel length, range, hold capacity, gear limitations, and other appropriate factors in making determinations of catching power equivalency and comparability of the catching power of vessels in the fishery.

(b) *Supplementary requirements for initial permits.* An application for an initial permit under this paragraph must be filed within 5 years of the effective date of this program. A permit for a vessel to be used for fishing for bottomfish in the Ho'omalu Zone may be issued to:

(1) Any owner who can document that a vessel owned by him made one or more qualifying landings of bottomfish from the NWHI on or before August 7, 1985.

(2) Any owner of two or more vessels which qualify under paragraph (b)(1) of this section may obtain a permit for each of such vessels which also made at least one qualifying landing of bottomfish in 1986 and 1987.

(3) Any person who can document that on or before August 7, 1985, he or she had incurred substantial expenditures for or had received written approval of a loan to purchase or construct a vessel to be used in the NWHI bottomfish fishery.

(4) Any person who can document that on or before August 7, 1985, he or she made an offer to purchase a vessel for the NWHI bottomfish fishery or had such a vessel under construction.

(5) Any person who can document that he or she was captain of a vessel that made at least one qualifying landing of bottomfish the NWHI on or before August 7, 1985, and who becomes an owner or 50% or more interest in a vessel within 5 years of the effective date of this program.

(c) *Supplementary requirements for permit renewal.* (1) A permit will be eligible for renewal if the vessel covered by the permit makes three or more qualifying landings during the permit year.

(2) The owner of a permitted vessel that did not make three or more qualifying landings of bottomfish in a year may apply to the Regional Director for waiver of the landing requirement. If the Regional Director finds that failure to make three landings was due to circumstances beyond the owner's control, he may renew the permit. A waiver may not be granted if the failure to make three landings was due to general economic conditions or market conditions such that the vessel operations would not be profitable.

(d) *Supplementary requirements for new entry permits.* The Regional Director may issue new vessel permits under this part when the Regional Director has determined, in consultation with the Council, that bottomfish stocks in the Ho'omalu Zone are able to support additional fishing effort. This shall be established by determining that the total estimated annual revenue to the fleet exceeds the total estimated annual fixed and variable costs to the fleet in the Ho'omalu Zone by an amount at least equal to the average cost of a vessel year. This determination shall be made and published annually in association with the annual report required under § 683.24 of this part.

(e) *Eligibility.* When the Regional Director has determined that new permits may be issued, they shall be issued to applicants based upon eligibility determined as follows:

(1) *Point System.* (i) Two points shall be assigned for each year in which the applicant was owner or captain of a vessel which made three or more qualifying landings of bottomfish from the NWHI.

(ii) One point shall be assigned for each year in which the applicant was owner or captain of a vessel that landed at least 6,000 pounds of bottomfish from the main Hawaiian Islands.

(iii) Points will be assigned only under paragraph (e)(1)(i) of this section or under paragraph (e)(1)(ii) of this section for any one year.

(iv) Points will be assigned for every year for which the requisite landings can be documented.

(2) An applicant must own at least a 25 percent share in the vessel that the permit would cover, and only one permit will be assigned to any vessel.

(3) New permits shall be awarded to applicants in descending order, starting with the applicant with the largest number of points. If two or more persons have an equal number of points, and there are insufficient new permits for all such applicants, the new permits shall be awarded by the Regional Director through a lottery.

(4) Notwithstanding paragraph (e)(3) of this section, a person who originally qualifies for and obtains a permit under § 683.25(a) and who voluntarily surrenders that permit to the Regional Director within the first 5 years of this program will have priority over applicants under the point scale system for a new permit under this section. If two or more persons qualify under this provision, the person surrendering a permit at the earliest date will have first priority. If two or more such person are equally qualified under the date of surrender criterion, the permit shall be awarded by the Regional Directory by a lottery. A permit holder may qualify for this provision only one time.

(5) The Regional Director shall place a notice in the **Federal Register** and shall use other means to notify prospective applicants of the opportunity to file applications for new permits under this program.

9. A new § 683.27 is added as follows:

§ 683.27 Notification of landings.

The operator of a fishing vessel that s taken bottomfish in the Ho'omalu one must contact the U.S. Coast Guard, y radio or otherwise, at the 14th District, Honolulu, Hawaii (Telex: 392401); Pacific Area, San Francisco, California (Telex: 330427); or 17th District, Juneau, Alaska (Telex: 45305), at lease 24 hours before landing, and report the port and the approximate date and time at which the bottomfish will be landed.

10. A new § 683.28 is added to read as follows:

§ 683.28 Native Hawaiian fishing rights. [Reserved]

[FR Doc. 88-17967 Filed 8-5-88; 8:45 am]

BILLING CODE 3510-22-M

Amendment 3

and Environmental Assessment

Fishery Management Plan for the

Bottomfish and Seamount Groundfish of the Western Pacific Region

October 19, 1990

Western Pacific Regional Fishery Management Council
1164 Bishop Street #1405
Honolulu, Hawaii 96813
Telephone: (808) 523-1368
Fax: (808) 526-0824

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1.0 PREFACE

1.1 Responsible Agencies

The Western Pacific Regional Fishery Management Council (WPRFMC or Council) was established by the Magnuson Fishery Conservation and Management Act (MFCMA) to develop Fishery Management Plans (FMPs) for fisheries in the US Exclusive Economic Zone (EEZ) around American Samoa, Hawaii (including the Northwestern Hawaiian Islands), Guam, the Northern Mariana Islands, and other United States possessions in the Pacific[1]. Once an FMP is approved by the Secretary of Commerce, it is implemented by federal regulations which, in turn, are enforced by the National Marine Fisheries Service (NMFS) and the US Coast Guard, along with state and territorial agencies.

For further information, contact:

Ms. Kitty Simonds
Executive Director
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Honolulu, HI 96813
Telephone: (808) 523-1368
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Mr. Alvin Katekaru
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1.2 Public Review and Comment

The Council elicits the help of commercial and recreational fishing interests, as well as other parties interested in the various fisheries. This ensures that those who might be affected by new management measures have an opportunity to submit ideas and suggestions for potential actions by the Council. Therefore, those affected by the FMPs are involved in the decision-making process.

The action proposed by this amendment was developed by the Bottomfish Plan Team, and was reviewed by the Scientific and Statistical Committee and the industry Advisory Panel. A draft of this amendment was distributed for comments to fishermen and other interested parties in August 1990. The final document is responsive to comments received, and the Council considered these comments at its September 1990 public meeting. The comments were

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[1] *Howland and Baker Islands, Jarvis Island, Johnston Atoll, Kingman Reef and Palmyra Island, and Wake Island.*

incorporated into the draft amendment, which will be submitted to the Secretary of Commerce and released for public review.

1.3 Relationship to Applicable Laws and Policies

This third amendment to the FMP for the bottomfish fisheries complies with the Secretary of Commerce's revised guidelines for the national standards of the MFCMA. Information and analysis in support of the proposed action are presented in a manner intended to satisfy MFCMA requirements, as well as the requirements of other applicable laws and policies. The FMP for the bottomfish and seamount groundfish fisheries satisfied the information and procedural requirements of the National Environmental Policy Act, the Regulatory Flexibility Act, Executive Order 12291, and other laws and directives. The FMP also served as an Environmental Impact Statement (EIS). Similarly, this amendment is intended to serve as an Environmental Assessment. The amendment assesses the economic and administrative/enforcement impacts of the proposed action, and will satisfy the requirement for a Regulatory Impact Review. This document contains all the information necessary under the several statutes and directives applicable to the planning process. A copy of the original FMP, its amendments, and companion regulations may be obtained from the Council. In addition, this amendment provides information regarding habitat and vessel safety concerns as required by the 1986 changes to the MFCMA.

1.4 List of Preparers

Amendment 3 was prepared by the WPRFMC Bottomfish and Seamount Groundfish Plan Team:

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2.0 BACKGROUND

The FMP for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region (WPRFMC 1986, as amended) covers the geographical region encompassing the US EEZ around American Samoa, Guam and Hawaii and the seamount groundfish fisheries in the FCZ around the Hancock Seamounts northwest of the Hawaiian Islands. Commercial, recreational and subsistence fisheries occur in American Samoa, Guam and Hawaii. A limited entry program was implemented in the Northwestern Hawaiian Islands (NWHI) in 1989. A moratorium on all fishing activity on the Hancock Seamounts is in effect until 1992 in an effort to rebuild depleted armorhead stocks.

2.1 Species and Habitat

The marine bottomfish resources of the western Pacific region can be divided into three broad classes related to their vertical distribution on the islands' shelves and slopes on and over the summits of seamounts. The first group is the reef fish complex, which occupies shallow reefs, bays, and lagoons, the second group is the bottomfish complex which inhabits the outer shelf and deep slopes; and the third group is the groundfish complex associated with the summits of some seamounts.

At present, the species most important to domestic handline fishermen are a variety of snappers, jacks, groupers, and emperor fishes which inhabit submarine banks and slopes to depths of 200 fathoms. Prior to the fishing moratorium on the Hancock Seamounts, foreign fleets harvested pelagic armorheads and alfonsins in this area.

2.2 Description of Fishery

Extensive background information on the bottomfish fisheries in Hawaii, Guam and American Samoa are found in the FMP and in the previous amendments to that plan. The following is a brief description of the current fisheries for bottomfish in the Western Pacific.

Main Hawaiian Islands - The fleet harvesting bottomfish in the MHI consists of both full-time commercial operations and fishermen who fish primarily for recreational or subsistence purposes but sell a portion of their catch to defray operating costs. An accurate estimate of the total number of vessels participating in the bottomfish fishery is not available at this time. However, estimates from the market monitoring program indicate that at least 1050 vessels sold a portion of their catch during 1989. The MHI fleet harvested 1,234,000 pounds of bottomfish in approximately 6,000 trips during 1989. Estimated value of these landings was $3,861,000.

Northwestern Hawaiian Islands - A limited access program was instituted for the NWHI fishery in 1989. A total of 10 vessels participated in the NWHI bottomfish fishery in 1989, 5 in the restricted Ho'omalu Zone and 5 in the open access Mau permit zone. These vessels made a total of 50 trips, landing 303,000 pounds in 1989. The estimated ex-vessel revenue was $756,000.

American Samoa - There are approximately 30 vessels landing bottomfish in American Samoa. In 1989, a total of 45,000 pounds were landed, about 78 percent of which were sold. Ex-vessel revenue for the fishery was estimated to be $70,000.

Guam - During 1989, 50,763 pounds were landed in approximately 2700 bottomfishing trips. Commercial landings accounted for approximately 15,000 pounds of the landings, with an ex-vessel value of about $30,000. The remainder of the harvest was recreational and subsistence.

CNMI - Commercial landings of 20,000 pounds with an ex-vessel value of $42,000 occurred during 1989. Thirty boats participated in the fishery, making a total of approximately 270 trips.

2.3 Condition of Stocks

Under the provisions of the framework FMP, the Bottomfish PMT performs an annual review of the fisheries and status of the stocks each year. According to the 1989 Annual Report prepared by the Bottomfish Plan Monitoring Team the principal bottomfish stocks in all areas where fisheries are currently occurring except the Main Hawaiian Islands appear to be in good condition. Several MHI stocks however, are showing signs of stress. These species are opakapaka, onaga, ehu and ulua.

2.4 Vessel Safety Considerations

Vessel safety is not affected in this fishery because none of the actions proposed in the FMP or in this amendment imposes any restrictions on vessel operations. Nonetheless, this amendment has been reviewed by the US Coast Guard for evaluation regarding vessel safety. The Coast Guard has concurred that no impact is expected.

3.0 EXISTING MANAGEMENT MEASURES

The Bottomfish and Seamount Groundfish FMP regulates fishing in the EEZ surrounding American Samoa, Guam and Hawaii and on the Hancock Seamounts (50 CFR 683 Subpart B). The FMP implemented a prohibition on the use of bottom trawl and bottom-set nets and a ban on the use of explosive and poisons for harvesting bottomfish. It established a permit requirement for the EEZ of the NWHI bottomfish fishery, provided for an experimental fishing permit (EFP) and established a moratorium on seamount groundfish fishing activities for an initial period of six years, ending in 1992. A subsequent amendment to the FMP (50 CFR 683.25) in 1989 implemented a limited entry program in the Northwestern Hawaiian Islands. The FMP was recently amended by administrative rule to include a provision making compliance with state catch reporting regulations a federal requirement.

4.0 NEED FOR AMENDMENT 3

The MFCMA does not define overfishing, nor does the Bottomfish and Seamount Groundfish FMP. In addition, biological data necessary to determine overfishing are limited, so management decisions might be made without sufficient regard to the long-term health of the resource or industry. To ensure that long-term viability is of basic consideration, the Secretary's revised guidelines (Federal Register: 54 FR 30826 et seq.) stipulate that each FMP specify an objective and measurable definition of overfishing for each stock or stock complex, with an

analysis of how the definition was developed and how it relates to biological potential.

5.0 MANAGEMENT OBJECTIVE OF AMENDMENT 3

The management objective of Amendment 3 is to ensure the long-term health of the bottomfish resources by specifying what portion of the spawning stock biomass must be protected to maintain the productive capacity of the species being managed under the FMP. The FMP currently focuses on indicators of growth and economic overfishing; the latter was the basis for implementing a limited entry provision for the Northwestern Hawaiian Islands. This amendment deals only with recruitment overfishing.

6.0 PROPOSED ACTION AND IMPACT

6.1 Proposed Action

The action of Amendment 3 to the Bottomfish and Seamount Groundfish FMP is to amend the plan to include a definition of recruitment overfishing as follows:

> "A bottomfish species is recruitment overfished when the Spawning Potential Ratio (SPR; Goodyear 1989), (i.e., the ratio of the spawning stock biomass per recruit at the current level of fishing ($SSBR_f$) to the spawning stock biomass per recruit that would occur in the absence of fishing ($SSBR_u$)), is equal to or less than .20."

6.2 Alternative Methods of Measurement

Two estimators of SPR are proposed. The relative utility of the two estimators will vary depending upon the type and amount of data that are available.

Option 1: <u>The Equilibrium Estimator</u>. The equilibrium estimator of SPR is based on yield-per-recruit theory (Beverton and Holt, 1957) and assumes that the rate of fishing and the size range of fish that are harvested have remained or will remain constant long enough for the population to be considered in equilibrium.

Algebraically, this estimator is expressed as:

$$SPR = \left(\frac{L_\infty - l_e}{L_\infty - l_m}\right)^{-F/K} \frac{\sum_{n=0}^{3} \frac{\Omega_n (1 - l_m/L_\infty)^n}{F/K + M/K + n}}{\sum_{n=0}^{3} \frac{\Omega_n (1 - l_m/L_\infty)^n}{M/K + n}}$$

where $\Omega_n = 1, -3, 3, -1$ for $n = 0, 1, 2, 3$. Evaluation of this expression requires estimates of the length at entry into the fishery (l_e), the length at maturity (l_m), fishing mortality (F), natural mortality (M), and the von Bertalanffy growth constants (K, L_∞). If adequate age and growth data are available, then Z (i.e., F + M), M, K and L_∞ can be estimated using traditional age-based estimation procedures (Ricker, 1975). If only length frequency data is available, then the composite parameters Z/K and M/K as well as L_∞ can be estimated using a length-based estimation procedure (Wetherall et. al., 1987). In either case, estimates of total mortality (Z or Z/K) are derived from current data and estimates of natural mortality (Z or M/K) are derived either from historical data from a period near the intiation of the fishery or current data collect from an area that has received light fishing pressure.

Option 2: <u>The Dynamic Estimator.</u> The dynamic estimator of SPR is a ratio of an estimate of the current relative spawning stock biomass (SSB) to the SSB existing at the initiation of the fishery. SSB is measured by the product of catch per unit effort (CPUE) and the proportion of the catch, corrected for size selection, that is mature. This is expressed as:

$$SPR = \frac{U_f P_f}{U_u P_u}$$

where U_f and U_u are the current (fished) and initial (unfished) CPUE, and P_f and P_u are the current and initial population correction coefficients. U_f and U_u are computed in terms of the aggregate catch rather than the catch of individual species to eliminate the effects of changes in targeting. P_f and P_u are calculated as $P = P_m/P_s$, where P_m is the proportion, by weight, of mature fish n the catch and P_s is the proportion of the mature size distribution selected by the fishery. For both U_u and P_u, the "unfished" condition can be approximated using either historical data from a period near the initiation of the fishery or current data collected from an area that has received light fishing pressure.

6.3 Data Requirements and Potential Biases

The relative utility of these two estimators depends on the type and quantity of data available for a given species in a given area. Somerton and Kobayashi (NMFS Admin Report H-90-10, 1990) calculate both estimators, where possible, for five principal bottomfish species from the Main Hawaiian Islands. The paper examines in detail the various types of data that are currently available for estimating SPR, focusing on the limitations of such data and potential biases associated with each estimator. The administrative report is provided as a supplementary document to this amendment.

For the EEZ bottomfish stocks outside of the Main Hawaiian Islands, the quantity and quality of data available with which to calculate one or both of the proposed estimators varies from area to area throughout the Western Pacific region. Table 1 summarizes the currently available data for all of the areas. Principal shortcomings of the available data are that the length at maturity is unknown for all species outside of Hawaii, as are the size distributions and CPUE at the initiation of the fishery. Studies to collect such data are planned. The seamount groundfish fishery is currently closed; its status will be reviewed in 1992.

6.4 Initial Use of Dynamic Estimator

6.4.1 Bottomfish Stocks in the EEZ surrounding American Samoa, CNMI, Guam and Hawaii

Initially the dynamic estimator will be used to measure recruitment overfishing since there is a greater availability of data with which to calculate this estimator. However, in this future it may be possible to calculate both estimators for a number of stocks. At that time, the Team will evaluate which estimator is more appropriate based on the best available scientific information. By the same reasoning, if new information becomes available which justifies a definition based on a SPR different than 0.2, the Council, based on the analysis of the PMT, may choose to adjust the definition through the framework process to reflect the best scientific information at that time. This adjustment would be made only after thorough review and concurrence by the SSC.

6.4.2 Pelagic Armorhead on the Hancock Seamounts

Application of the recruitment overfishing definition to pelagic armorhead is complicated because the breeding population of armorhead is spread across many seamounts and only about 1 % of the total known adult habitat, that is,

Table 1. Currently Available Data Needed to Estimate SPR

	Hawaii	Samoa	Guam	CNMI
Species Specific Data				
Number of Principal Species	7	15	9	9
Number of Species for Which:				
1) length-age data sufficient to estimate L_∞ and k	2	2	8	8
2) length-age data sufficient to estimate Z, F and M	0	0	0	0
3) length-maturity data sufficient to estimate l_m	5[2]	0[3]	0[2]	0
4) length-frequency data sufficient to estimate M/K, F/K and L_∞	7	2	1	0
5) length-frequency data sufficient to estimate P_f	7	10	8	0
6) length-frequency data sufficient to estimate P_u	7	0[2]	0[2]	0[2]
CPUE Data				
1) Current CPUE (U_f)	Yes	Yes	Yes	Yes
2) Initial or Unfished CPUE (U_u)	Yes	Maybe[2]	Maybe[2]	Maybe[2]

[2]Additional studies in progress.

[3]Future study anticipated.

the area of the Hancock Seamounts above 500 meters, occurs within the U.S. exclusive economic zone.

Since it is economically impossible for the United States to conduct resource assessment cruises of sufficient scale to adequately assess the entire armorhead population, determination of recruitment overfishing will be made as follows:

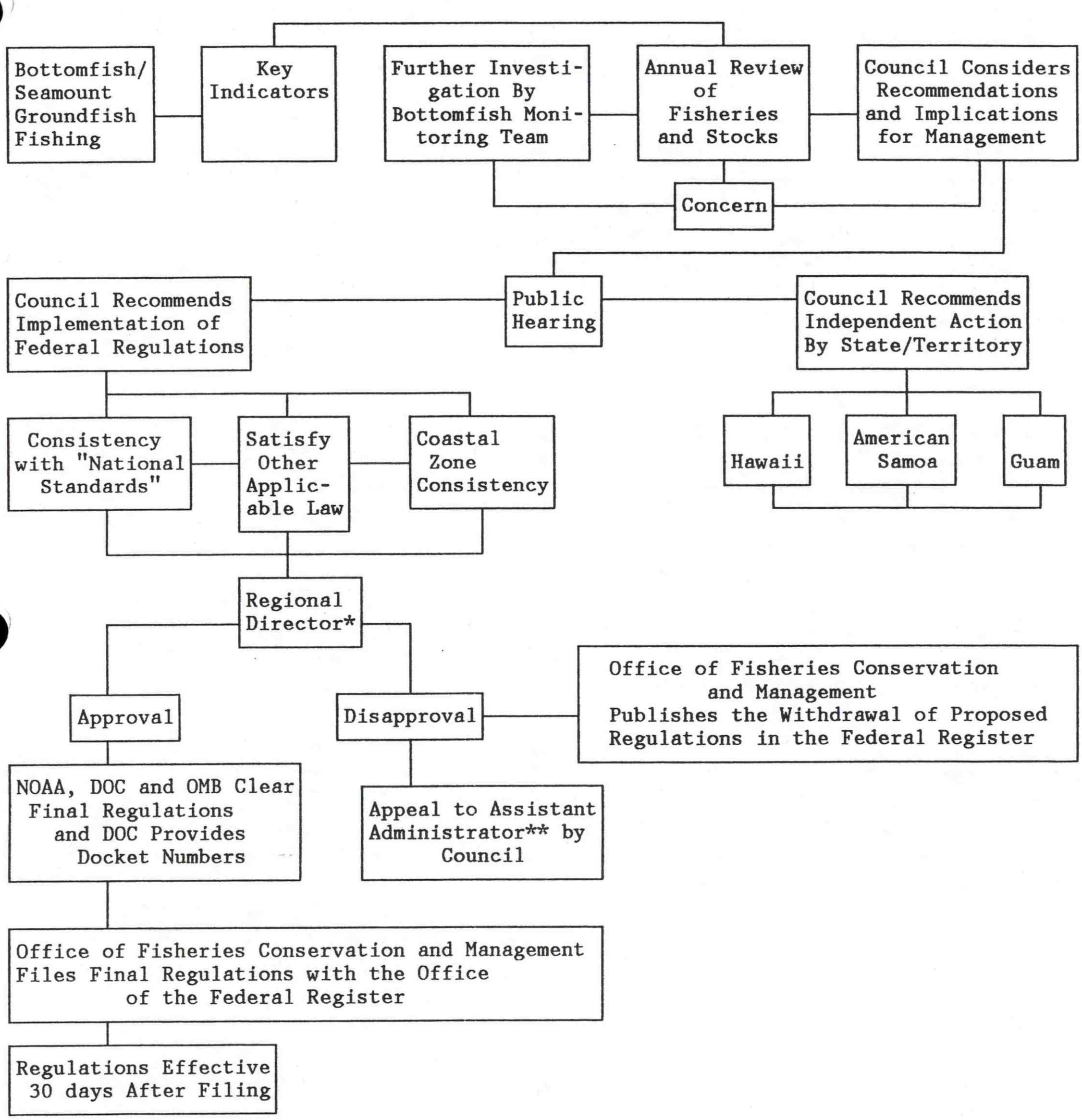
(1) If the Japanese trawl fishery for armorhead continues and if catch and effort statistics from this fishery are available, then spawning biomass will be assessed using the dynamic estimator of SPR. The value of U_u is computed as the average, over the three year period 1970-1972, of the annual estimates of the average U and the value of U_f will be computed as the most recently available annual estimate of average U. In both cases, the annual estimate of average U will be calculated as the total catch of armorhead from all areas excluding the Hancock Seamounts divided by the total effort. In this case, recruitment overfishing occurs when the calculated value of SPR is less than 0.20.

(2) In the absence of a Japanese fishery, the spawning biomass of the entire armorhead population will be assess indirectly from a value of dynamic SPR computed for the Hancock Seamounts alone. In the evaluation of SPR, U_u is computed as the average over the three period 1970-1972, of the annual estimates of U for Japanese trawlers on the Hancock Seamounts. Annual U is computed as the total catch divided by the total effort. U_f will be computed as the U obtained on a current standardized NMFS stock assessment survey to SE Hancock Seamount multiplied by a proportionality constant to convert NMFS U to Japanese U. A description of a standard NMFS armorhead stock assessment survey and a description of the proportionality constant are provided in Somerton and Kikkawa (in prep.). In the absence of a Japanese fishery, variation in annual recruitment and therefore spawning biomass is likely to be similar among the various seamounts. But the variation will not be identical, and the uncertainty involved with extrapolating from a part to the whole requires a more conservative definition of recruitment overfishing. In this case recruitment overfishing is therefore defined as occurring when Hancock Seamount SPR is less than 0.4.

6.5 Application of Definition

The FMP for the Bottomfish and Seamount Groundfish Fishery of the Western Pacific is a framework FMP which provides a process for annually monitoring and assessing the status of the stocks and fisheries on those stocks. This process is outlined in Figure 1.

FIGURE 1. Administrative framework for instituting new controls on bottomfishing.



* Southwest Regional Director of National Marine Fisheries Service.
** Assistant Administrator for fisheries of the National Oceanographic and Atmospheric Administration.

Each year the PMT prepares a report on the fisheries and status of the stocks for th Council. The annual report is intended to provide the kind of systematic review of the fishery as in the Stock Assessment and Fishery Evaluation (SAFE) report called for in the 602 guidelines.

Central to this annual assessment is the examination of a number of key indicator criteria by the Plan Team as part of their annual review of the fishery. Examples of these include temporal changes in CPUE, in mean size, and in percentage of mature fish in the catch. These indicators are used to identify potential problems in the fishery. Based on their analysis, the Team may recommend that the problem be investigated further or that the Council initiate one of the management actions listed in the FMP. Some of these management actions such as catch and size limits are directed toward individual species while others such as time and area closures, and gear limitations are directed toward a group of species.

If the Team recommends that management measures be imposed, the Team report to the Council would include analysis of the biological and socio-economic impacts of alternative management measures. After receiving such a recommendation from the Team, subject to SSC and Advisory Panel review and public comments, the Council **may or may not** choose to impose restrictive management regulations.

With this amendment, a recruitment overfishing analysis for the major monitorable species will be incorporated into the annual FMP monitoring and assessment process. Shoul the recruitment overfishing occur for one or more major species, the Council must choose to impose restrictive management regulations.

It is not possible at this time to specify the particular measures which the Council would propose if a stock is found to be approaching or have reached recruitment overfishing as defined. The appropriate response will depend on a number of factors, including the potential for selective management of the stock, the geographic distribution of the species involved, the apparent or suspected reasons for the stock's decline, and the feasibility of effective enforcement of particular measures. However, using the indicator approach and the framework process, the Council intends to ensure that management will be directed to achieving stock conditions such that SPR will never approach 0.2 due to the fishery. The Council's management goal is not to allow fishing to drive a stock down to a level where SPR is less than 0.2, but to manage the fishery to sustain a much higher level of productivity.

If a stock is found to be overfished, the Council will take action to rebuild the stock. As indicated, the Council's ultimate proposed actions will contain the necessary supporting analyses, including a draft regulatory impact review and environmental assessment. The analysis of the conservation and management measures proposed will cover such impact categories as impacts on the stock(s) in the fishery, on fishermen (including distribution of

impacts across vessel types and fishery participation types), on other fisheries, on markets and on consumers.

7.0 REJECTED ALTERNATIVES

7.1 List of Rejected Alternatives and Reason for Rejection

A. No action.

This alternative does not meet the needs of the Secretary's revised guidelines.

B. Define overfishing as a non-numerical threshold, e.g., if 3 or more of the key indicator criteria evaluated as part of the annual review indicate signs of stress for the stocks or fishery. The five key indicator criteria are aggregate CPUE, mean size, percent catch immature, revenue per trip and costs per trip.

This alternative was rejected because the signs of stress identified by these indicators may be indicative of growth overfishing or economic overfishing rather than recruitment overfishing. Concerns raised by the indicators may be cause for management response but to achieve other objectives than preventing recruitment overfishing. Several of the indicators, particularly the economic indicators clearly have little direct relationship to spawning stock biomass and could be subject to challenge.

C. Define the recruitment overfishing based on a SPR greater than 0.2 (0.3 or 0.4).

Except in the situation discussed for the armorhead stocks of the Hancock Seamounts where extrapolation uncertainty was high, this alternative was rejected in favor of the O.2 SPR definition. An SPR of O.2 as recommended by Goodyear is also being used for similar reef fish stocks in the Gulf and the Atlantic. The life history characteristics of Western Pacific bottomfish are similar to those for which Goodyear recommended O.2. Furthermore, stocks that are close to a SPR of 0.2 show no evidence of recruitment failure. Therefore, the Council considers a SPR of 0.2 to be sufficient to protect the BMUS from recruitment failure.

8.0 RELATIONSHIP OF AMENDMENT 3 TO OTHER APPLICABLE LAWS AND POLICIES

8.1 Coastal Zone Consistency

Section 307(c)(1) of the federal Coastal Zone Management Act (CZMA) requires that all federal activities which directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. The State of Hawaii

CZM policies directly relating to the action proposed in this amendment are contained in the coastal ecosystems and economic use resources categories of the Hawaii CZM statute (Act 188, Chapter 205A, HRS). Those policies are to: 1) improve the technical basis for natural resource management, 2) preserve valuable coastal (offshore) ecosystems of significant biological importance, and 3) minimize adverse environmental effects from economic uses of coastal zone resources. The action of this amendment is fully consistent with these objectives. The Council has also reviewed the Coastal Zone Management Programs of American Samoa and Guam, and found the action of this amendment to be consistent with policies set forth on fisheries and living marine resources. The Council requested reviews of this amendment from agencies responsible for CZM policy within each state and territory government. These agencies have concurred with the Council's finding of consistency.

8.2 Marine Mammal Protection Act and Endangered Species Act

The management measures of the FMP document were judged not to have any significant impact on marine mammals or endangered species. The formal Section 7 consultation from the NMFS agreed with this conclusion while specifying conditions for re-initiation of Section 7 consultations and setting acceptable levels of incidental take for threatened and endangered turtle species in the regulated EEZ bottomfish fishery for the NWHI. The action proposed in this amendment is passive with regard to marine mammal and endangered species interactions. The measures of Amendment 6 will not impose any new or increased risks to marine mammals or endangered species.

8.3 National Environmental Policy Act - Environmental Assessment (EA)

A. Purpose and Need for Action

This EA has been prepared in compliance with provisions of the National Environmental Policy Act which requires an assessment on the potential for significant impacts to the marine and human environments as a result of proposed Amendment 3 to the FMP for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific REgion. The proposed action is consistent with the goals and objectives of the FMP, National Standards of the MFCMA, and the revised guidelines for the national standards (50 CFR Part 602).

B. Analysis of Impacts of the Preferred Alernative

1) The proposed action is not expected to jeopardize the long-term productive capability of the bottomfish and seamount groundfish stocks. This action requires that management measures must to imposed if a overfishing according to a measurable definition occurs. Therefore, it will help to ensure the long-term maintenance of the spawning stock biomass by preventing any potential for recruitment overfishing and failure.

2) The proposed action will complement existing FMP regulations in helping to prevent damage to the ocean and coastal habitats. The regulations prohibit the use of bottomtrawl and bottom-set nets as well as the use of explosives and poisons or intoxicating substances to harvest bottomfish and seamount groundfish.

3) The proposed action is not expected to have any adverse impact on public health or safety. The markets for bottomfish and established high quality standards. The proposed action is seen as a means of fostering these standards.

4) The proposed action is not expected to affect adversely any endangered or threatened species or marine mammals. It is viewed as complementary to existing FMP regulations prohibiting use of bottom-set nest for harvesting bottomfish.

5) The proposed action will not result in cumulative adverse effects that could substantially impact bottomfish and seamount groundfish management unit species or any related stocks that may be affected by the proposed action. All cumulative effects are expected to be beneficial to the stocks, fishermen, and the fisheries under the Council's management purview.

6) The proposed action is not expected to generate controversy. However, it is acknowledged that there are uncertainties in the development and application of spawning potential ratio as a method of defining a situation where recruitment overfishing is deemed to be taking place. Furthermore, the estimators of spawning potential ratio will probably require refinement and revision as more scientific data become available. Under these circumstances the validity of the overfishing definition may be challenged; nevertheless, it is the intent of the Council to exercise the best informed judgement in implementing the proposed action to prevent the stocks of bottomfish and seamount groundfish from closely approaching or reaching an overfished state. The proposed action in and of itself should not result in socio-economic impacts.

7) The proposed action will not have any effect upon flood plain and wetlands, or trails and rivers listed, or eligible for listing, on the National Trails and Nationwide Inventory of Rivers.

C. Agencies and Persons Consulted:

The Coastal Zone Management offices and Natural Resources offices of American Samoa, Guam, Hawaii and the Northern Mariana Islands were sent this draft amenment for review, as were the US Goast Guard and Fish and Wildlife Service, and commercial bottomfish fishermen, both federally-permitted and otherwise.

D. Finding of No Significant Impact

Based on the information contained in the environmental assessment and previous sections of the FMP amendment, it is concluded that the action proposed will not have a significant impact upon the marine or human environment. An environmental impact statement, therefore, is not required.

8.4 Executive Order 12291 and Regulatory Flexibility Act

Amending the plan to include a definition of overfishing does not in itself result in socio-economic impacts. It is at that point where the threshold is reached and restrictive action is mandated that socio-economic impacts must be assessed. Until a particular stock in danger of recruitment overfishing has been identified and specific management measures elected, it is not possible to assess the potential socio-economic impact of implementing an overfishing definition. The framework process requires that for any recommended management action an assessment of the biological and socio-economic impacts of alternatives be provided.

If a given stock is determined to be at or below the threshold level for recruitment overfishing, the analysis of management options will include a Regulatory Impact Review (RIR) which will assess the economic and social impacts on:

- small boat fishermen
- large-boat fishermen
- commercial fishing
- recreational/subsistence fishing
- multi-species, multi-gear fishing operations
- at-sea discards
- potential for gear conflict
- markets/consumers

(See Sec 6.2.1.D of the FMP)

The action proposed by this amendment does not, at this time, require the issuance of new rules, review of existing rules, or development of legislative proposals concerning regulations. A regulatory impact review and flexibility analysis will be performed when regulatory review and/or amendment become necessary.

8.5 Paperwork Reduction Act

No additional rule for establishing record-keeping and reporting requirements, for the purpose of collecting information from the public, are proposed under Amendment 3.

8.6 Indigenous Peoples' Fishing Rights

There is no formal agreement between the US government and the indigenous people (i.e., native Chamorros, Hawaiians and Samoans) of the region that allocate preferential

fishing rights to native people. The necessity and legal possibility of granting such rights, however, are being investigated. If indigenous people are awarded special considerations, then the Bottomfish and Seamount Groundfish FMP might require revision. At present, Amendment 3 does not appear to affect any native Chamorro, Hawaiian or Samoan cultural or religious practices.

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Amendment 4
and Environmental Assessment

Fishery Management Plan for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region

January 1991

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1.0 PREFACE

1.1 Responsible Agencies

The Western Pacific Regional Fishery Management Council (Council) was established by the Magnuson Fishery Conservation and Management Act (MFCMA) to develop fishery management plans for fisheries in the U.S. Exclusive Economic Zone (EEZ) around American Samoa, Hawaii (including the Northwestern Hawaiian Islands), Guam, the Northern Mariana Islands, and other United States possessions in the Pacific[1]. Once a fishery management plan is approved by the Secretary of Commerce, it is implemented by federal regulations which, in turn, are enforced by the National Marine Fisheries Service (NMFS) and the U.S. Coast Guard.

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1.2 Public Review and Comment

The Council solicits the views and comments of commercial and recreational fishing interests, as well as other parties interested in the various fisheries. This ensures that those who might be affected by FMP management measures have an opportunity to submit ideas and suggestions for consideration and potential action by the Council. Therefore, those affected by fishery management plans are involved in the decision-making process.

FMP Amendment 4 will be distributed for comments to fishermen and other interested parties in conjunction with the review period for rules published in the Federal Register Notice. The final rules will be responsive to comments received and responses to these comments will be incorporated into the plan amendment or rules as appropriate.

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[1] Howland and Baker Islands, Jarvis Island, Johnston Atoll, Kingman Reef and Palmyra Island, and Wake Island.

1.3 List of Preparers

This plan amendment was prepared by Council staff member, Ms Dorothy Lowman and Mr. Alvin Katekaru, National Marine Fisheries Service, Pacific Area Office with input from the Bottomfish and Seamount Groundfish Plan Monitoring Team:

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Mr. Skippy Hau, Aquatic Biologist
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Dr. Samuel Pooley, Industry Economist
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2.0 BACKGROUND

2.1 Fishery Management Plan and Amendments

The Fishery Management Plan for Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region (FMP) became effective on August 27, 1986. It covers the geographical region encompassing the EEZ around American Samoa, Guam, and Hawaii for the bottomfish fishery and around the Hancock Seamounts northwest of the Hawaiian Islands for the seamount groundfish fishery. Although the EEZ includes waters off the Northern Mariana Islands and the U.S. island possessions, the FMP contains no management regime for these areas because of the relatively undeveloped status of the bottomfish and seamount groundfish fisheries.

The FMP was amended in 1987 to include access management as a means of controlling bottomfishing effort under the framework process in the EEZ around American Samoa and Guam, and to extend the due date for the bottomfish annual report from March to June of each year (FMP 1987). FMP Amendment 2 established a limited access program for the northwestern Hawaiian Islands (NWHI) bottomfish fishery (FMP 1988). FMP Amendment 3 defined overfishing for the fishery in compliance with National Standards 1 and 2 of the MFCMA, and described the process by which the Council will evaluate annually the status of stocks and condition in the fishery to determine if any stock is overfished relative to the overfishing definition (FMP 1990).

2.2 Species and Habitat

The bottomfish complex (snapper-grouper-jack-emperor fish) consists of bottom associated species that generally occupy the same depth range and habitat, and are caught primarily by hook-and-line fishing gear. This complex includes at least 65 species of 4 families: snapper (Lutjanidae), groupers (Serranidae), jacks (Carangidae), and emperor fish (Lethrinidae). About 20 of these species are landed in substantial quantities.

The seamount groundfish complex consists principally of three species (pelagic armorheads, alfonsins, and butterfish). These species dwell at depths (150 - 300 fathoms) on the submarine slopes and summits of seamounts below the depth range and at higher latitudes than are generally inhabited by the bottomfish complex (Appendix 1).

The bottomfish and seamount groundfish species that are managed as a unit under the FMP are those which are being actively targeted by fishermen in the EEZ around American Samoa, Guam, and Hawaii. Those bottomfish and groundfish

species that are harvested incidentally to the target species are regarded as non-specified species for the purpose of the FMP.

2.3 Description of the Fishery

A comprehensive description and status report on the bottomfish fishery are contained in the FMP (FMP 1986) and the 1989 Bottomfish and Seamount Groundfish Annual Report (WPRFMC 1989), respectively.

FMP Amendment 4 pertains to the NWHI bottomfish fishery which is the second largest fishery managed by the Council in the western Pacific region and where endangered and threatened marine mammals and turtles are known to occur (see Appendix 2: Endangered and Threatened Species List). On January 1, 1989, a limited entry program for the NWHI was implemented which effectively established two permitted bottomfish zones: Mau Zone (a qualifying zone) and Ho'omalu Zone (limited access zone)[2]. The Ho'omalu Zone can only be fished by vessels whose owners meet certain qualifying criteria that are specified in 50 CFR 683.25; the Mau zone may be fished by any non-Ho'omalu Zone permittee.

During the first year of the limited entry program 20 vessels (8 Ho'omalu and 12 Mau) were issued permits for the NWHI bottomfish fishery. Although five of the Ho'omalu permitted vessels actually fished in the zone, only two could be regarded as full-time equivalent vessels. Likewise, only five vessels reportedly fished in the Mau Zone. In 1989 a total of 50 bottomfish trips were made to the NWHI, with each trip lasting an average of 14.8 days. The vessels landed an average of 5,016 pounds of bottomfish per trip (WPRFMC 1989).

In 1989, the annualized average gross revenue (adjusted for inflation) for NWHI bottomfish vessels was $259,000; net revenue per vessel was minus $7,200 (WPRFMC 1989).

2.4 Condition of Stocks

The bottomfish stocks appear to be in good condition where the fisheries are currently occurring in the EEZ except for the main Hawaiian Islands. In its 1989 fishery status report to the Council, the bottomfish plan monitoring team had the following conclusions (WPRFMC 1989):

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[2] Mau Zone is the area between 161°20′ and 165° W. longitude which encompasses Necker and Nihoa Islands. The Ho'omalu Zone is the area west of 165° W. longitude which encompasses French Frigate Shoals and the remainder of the northwestern Hawaiian Islands.

- o American Samoa -- No management action is required at this time.

- o Guam -- No management action is required at this time.

- o Main Hawaiian Islands -- Some bottomfish species (opakapaka, onaga, ehu, and ulua) are showing signs of stress (i.e., yellow light condition). The Council should evaluate and consider alternative management measures.

- o Northwestern Hawaiian Islands -- No management action is required at this time.

3.0 EXISTING MANAGEMENT MEASURES

FMP management measures (50 CFR Part 683 Subpart B - Western Pacific Bottomfish and Seamount Groundfish Fisheries) govern bottomfish and seamount groundfish fishing activities in the EEZ surrounding American Samoa, Guam, Hawaii, and the Hancock Seamounts. The existing measures:

- o Require owners of bottomfishing vessels to have permits to fish for bottomfish and seamount groundfish in the NWHI (Mau and Ho'omalu Zones).

- o Prohibit the use of bottomtrawls and bottomset gillnets to fish for bottomfish and seamount groundfish.

- o Prohibit the use of explosives, poisons or intoxicating substances to harvest bottomfish and seamount groundfish.

- o Establish a fishing moratorium of 6 years (1986 to 1992) for bottomfish and seamount groundfish on the Hancock Seamounts.

- o Establish a framework process for regulatory adjustments by the Council based on the annual report on the fishery by the bottomfish plan monitoring team.

- o Establish a limited access management program for the NWHI,

- o Allow scientific research in the fishery management area by a scientific research vessel.

- o Establish pre-landing notification requirements for bottomfish vessels that fish within NWHI Ho'omalu Zone.

- o Establish observer requirements for operators of bottomfish vessels intending to fish within a 50 mile protected species study zone off certain NWHI[3]. (Emergency rule regulation which expires, if extended, on June 3, 1991.)

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[3] French Frigate Shoals, Laysan Island, Lisianski Island, Pearl and Hermes Reef, Midway Island, and Kure Atoll.

4.0 BACKGROUND AND NEED FOR FMP AMENDMENT 4

4.1 Issue

In April 1990, reports were received that Hawaiian monk seals were being hooked by longline fishermen targeting broadbill swordfish off French Frigate Shoals in the NWHI. Special Agents of the NMFS interviewed the captains and crews of 28 vessels and were informed that interactions between longliners as well as bottomfish vessels and protected species, i.e., monk seals and green sea turtles, may be occurring frequently in the NWHI. The main concern with regard to the bottomfish fishery is entanglement of monk seals and turtles with fishing gears. Also, reports were received of monk seals taking bait from fishing hooks. Although there was insufficient information to take enforcement action there was enough consistency in the reports to raise concern for obtaining definitive information on this matter. The NMFS (Honolulu Laboratory, Southwest Fisheries Science Center) sent a field party to French Frigate Shoals in May 1990 to conduct a survey of the monk seals and turtles on the beaches for evidence of interaction with the fisheries. The number of dead monk seals (9) was well within the range of animals normally reported each year; however injuries ranging from gaping wounds to abrasions were observed on seven animals that could not be attributed to shark attack or to male monk seal harassment.

Based on the NMFS report, the Council, at its 69th meeting on June 20, 1990, voted to request the Secretary of Commerce to implement the following emergency actions: (1) implement a permit and logbook reporting system for the longline fishery, and (2) implement an observer program to place observers on longline and bottomfish vessels operating in a fifty-mile protected species study zone around certain islands in the NWHI. Permit requirements were already in effect for the NWHI bottomfish fishery.

On November 26, 1990, the Secretary of Commerce issued an emergency interim rule (55 FR 49050 et seq.) requiring all bottomfish vessel operators to notify NMFS if they intend to fish in the EEZ within a 50-mile study zone around the NWHI so that observers may be placed aboard their vessels. The purpose of the emergency rule is to gather accurate information on possible interactions of the bottomfish fleet with protected monk seals and turtles. This emergency action is effective for a period of 90 days and may be extended another 90 days upon request of the Council and with approval by the Secretary of Commerce.

4.2 Need for FMP Amendment 4

The Council proposes to amend the FMP to make permanent the emergency observer requirements (50 CFR 683.29 Observers) when they expire under the time limits set by the MFCMA. The need to continue observer requirements for the

NWHI bottomfish fishery is well-established. The Council and NMFS must continue to rely on observer data to determine actual, or potential for, interaction between the fishery and protected species. Sole reliance on voluntary reporting by fishermen is not sufficient for resource management, protected species conservation, and law enforcement purposes.

5.0 PROPOSED ACTION AND IMPACTS

5.1 Proposed Action

The Council proposes to make permanent emergency rules (see Section 8.0 - Draft Regulations), which were implemented on November 26, 1990, requiring operators of all bottomfish vessels intending to fish within the protected species study zone in the NWHI to notify the Regional Director for possible placement of NMFS observers on board their vessels.

The amendment also allows the Director of the NMFS to change the size of the study area if he determines, based on observers' reports or other information, that the fishery is not having and is not likely to have an adverse impact on any protected species or any critical habitat designated under the Endangered Species Act. Prior to making any changes in the study area, the Regional Director shall consult with the Council and present the Council with the information and rationale to support such changes. Proposed changes in the size of the study area shall be announced through publication of a notice in the Federal Register at least thirty (30) days prior to the effective date of the change. The information used by the Regional Director to make changes in the study area shall be available for public review and comment in the thirty (30) day period prior to the effective date of any such changes.

5.2 Impacts

a. Biological Impact -- The proposed action will have no direct impact on the stocks of bottomfish or on threatened and endangered marine species. The information obtained from the observer program (See Appendix A3: NMFS Protected Species Interaction Logsheet) will support validation and assessment of interactions, if any, and will provide a stronger basis for determining need for fishery management controls. The ultimate effect is to maintain the long-term protection of endangered and threatened marine species in the NWHI.

b. Economic Impact -- The immediate and direct impact of the proposed action will be the imposition of a cost burden on bottomfish vessel owners or operators in notifying NMFS of their intent to fish within the NWHI protected species study zone. This requirement has been evaluated in detail in a Paperwork Reduction Act Clearance request submitted to the Office of Management and Budget. Briefly, it is estimated that the total cost burden to industry is $100 - 200 per year (approximately 50 notifications). The estimated cost to NMFS for placing observers on selected bottomfish vessels is $60,000 per year (15 observer trips). This is a minor cost compared to closing the NWHI bottomfish fishery, or a substantial portion thereof, without the benefit of definitive information on the occurrence and level of interactions with protected species. The observer

data collected under this amendment will enable the Council to maintain an economically viable fishery and at the same time ensure the protection of the special species in the NWHI.

c. Social Impact -- The immediate social impact of the proposed action will be to demonstrate that the Council and the NMFS are concerned about the well-being of protected species and the bottomfish fishery in the NWHI. This may alleviate some public concern that the activities of bottomfish fishermen are not being monitored with respect to interactions with protected species. Fishermen, scientists, and fishery enforcement officers agree to the need for accurate data. The proposed action should result in improved data for resource management and protected species conservation such that the reasons for controls, if needed, will be understood by both the public and industry, and the basis for selected controls will be supported. This will encourage cooperation between the public and industry, and the prevention of conflicts among fishermen.

5.3 Alternatives to the Proposed Action and Reason for Rejection

5.3.1 No Action

The Council considered and rejected the alternative of no action. This would allow the current emergency rule to expire at the end of the term specified by the NMFS. The resultant impact would be the termination of data collection effort by NMFS observers on board selected NWHI bottomfish vessels. Without new data it would be difficult, if not impossible, for the Council to evaluate and propose measures to protect both the fishermen and special species in the NWHI.

5.3.2 Alternative Management Measures

The Council considered and rejected any restrictions (e.g., area closure) for the NWHI bottomfish fishery based on unsubstantiated reports of interactions with protected species. The data on fishermen actually interacting with protected species are insufficient to provide a basis for imposing stringent management measures at this time.

5.3.3 Changes in Observer Requirements

The Council concluded that only minor changes from the current emergency measures were warranted. These changes would make observer coverage complete for the entire NWHI and allow the Regional Director, after consultation with the Council, flexibility in setting the offshore boundaries for the study zones. The Council considered but concluded that major changes in observer coverage, e.g. placement of

an observer on every bottomfish vessel, would not significantly contribute or be cost-effective to developing effective management controls in the future.

6.0 RELATIONSHIP OF THE PROPOSED ACTIONS TO OTHER APPLICABLE LAWS AND POLICIES

This plan amendment complies with the National Standards of the MFCMA. Information and analysis in support of the proposed actions are presented in a manner intended to satisfy MFCMA requirements, as well as the requirements of other applicable laws and policies. The FMP, including the amendments, satisfied the information and procedural requirements of the National Environmental Policy Act, the Regulatory Flexibility Act, Executive Order 12291, and other laws and directives. The FMP also served as an Environmental Impact Statement. Similarly, this plan amendment is intended to serve as an Environmental Assessment. It assesses the biological, economic, and social impacts of the proposed actions, and will satisfy the requirement for a Regulatory Impact Review. A copy of the FMP and FMP Amendments 1 to 3 may be obtained from the Council.

6.1 National Environmental Policy Act

This Environmental Assessment (EA) has been prepared to complement the proposed FMP Amendment 4. It should be read in context with the plan amendment. Much of this EA is a summary of information contained in the plan amendment with appropriate sections being incorporated in the EA by reference. This is intended to minimize the risk of information or conclusions being taken out of context or misunderstood due to slight variations in language or format.

The purpose of the proposed action is to continue to obtain observer-collected data on any interaction between bottomfish vessels and protected species when temporary observer measures (50 CFR 683.29) expire at the end of the emergency period. The data obtained from the observer program will enable the Council and the NMFS to determine if any additional management measures need to be implemented to ensure the survival of protected species in the NWHI.

Specifically the proposed action will require bottomfish vessel owners or operators who intend to fish within a study zone around the NWHI to notify the NMFS prior to departure from port so that the NMFS Southwest Regional Director can determine whether an observer should be placed on the vessel. The function of the observer is to document any interaction that takes place between the vessel and protected species (e.g., monk seals, turtles) during bottomfishing activities in the study zone. The size of the zone may be adjusted by the Regional Director, after consultation with the Council, if data support changes.

Obtaining accurate information on protected species interactions will enable the Council and the NMFS to develop and implement effective management and conservation measures for the protection of threatened and endangered species in the

NWHI. The direct economic impact of the proposed action upon the industry is estimated at $100 - 200 per year; the cost to NMFS for placing observers on selected bottomfish vessels is estimated at $60,000 per year. The social impact of the proposed action will be beneficial to the industry and the public because concern over protected species interactions in the NWHI will be substantially reduced.

6.1.1 Conclusions and Determinations

a. The proposed action is expected to support development of management measures to ensure the long-term productivity of bottomfish species stocks in the EEZ of the NWHI.

b. The proposed action will have no impact on the habitat of NWHI bottomfish species or protected species in the EEZ.

c. The proposed action is not expected to have any impact on public health or safety, although information obtained as a result of the plan amendment may result in better consideration of health and safety concerns in selection of fishery conservation and management measures.

d. The proposed action will not directly affect any endangered or threatened species; however, the information obtained under this plan amendment will provide a better basis than now exists for determining if special conservation and management measures are needed to give full protection to these species.

e. The proposed action will not result in cumulative adverse impacts that could substantially affect bottomfish or protected species. The information obtained should provide a better basis for determining management and conservation measures that will maintain the long-term productivity of these species.

f. The proposed action is not expected to generate controversy. While there may be concerns expressed by fishermen regarding the observer notification and placement burden placed on them, all are agreed on the need for observer-collected interaction data so that any management action taken will be based on facts and not on perceptions or allegations.

g. The proposed action will not have any effect upon floodplains or wetlands, nor upon any trails and rivers listed, or eligible for listing on the National Trails and Nationwide Inventory of Rivers.

6.1.2 Finding Of No Significant Impact

Based on the information provided in this EA and the associated FMP Amendment, it is concluded that the proposed action will not have a significant impact upon the marine or human environment. An environmental impact statement therefore is not required under the National Environmental Policy Act.

6.2 Coastal Zone Management Act

Section 307(c)(1) of the Federal Coastal Zone Management Act requires that all federal activities which directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable.

The State of Hawaii coastal zone management policies directly relating to the action proposed in this amendment are contained in the coastal ecosystems and economic resources categories of the Hawaii Revised Statutes, Chapter 205 A. Those policies are to improve the technical basis for natural resource management and minimize adverse environmental effects from economic uses of coastal zone resources. The Council has determined that the proposed action is consistent with these objectives.

The Council has requested and received concurrence by the State of Hawaii that the proposed action is consistent with their coastal zone management policies.

6.3 Paperwork Reduction Act

The collection-of-information requirement (i.e. pre-trip observer notification by vessel operators) of the proposed action has been approved by the Office of Management and Budget, OMB Control Number 0648-0214. The public reporting burden for this collection of information is 2 minutes per observer notification.

6.4 Regulatory Flexibility Act and Executive Order 12291

The proposed action will not have significant impact on a substantial number of small business entities as defined under the Regulatory Flexibility Act. At present, there are less than 15 vessels active in the NWHI bottomfish fishery (see Section 5.2b). These vessels will not be adversely affected by the proposed action which is essentially for information gathering purposes.

The economic impact of the proposed action would be substantially less than $100 million. The ex-vessel revenue generated by fish sales from the NWHI bottomfishing fleet as a whole is about $1 million. For this reason, the proposed action is exempt from procedures of E.O. 12291 under section 8(a)(2) of that order.

6.5 Endangered Species Act

The Endangered Species Act of 1973, as amended, prohibits the taking of endangered species except under limited circumstances. The FMP was initially reviewed under Section 7 consultation of the Act resulting in a Biological Opinion rendered by NMFS. The Biological Opinion specified no allowable incidental take of Hawaiian monk seals. Existing regulations require all NWHI bottomfish fishermen to report interactions with protected species. The proposed action imposes observer requirements on the fishermen to obtain accurate and detailed information on possible interactions with protected species in the fishery. Hence, the proposed action is viewed as fully consistent and supportive of the goals and objectives of the Endangered Species Act. Formal Section 7 consultations have been initiated between the Council and the NMFS for FMP Amendment 4.

6.6 Marine Mammal Protection Act

The Marine Mammal Protection Act of 1972, as amended, allows for the incidental take of marine mammals during commercial operations under certain limited circumstances. Hawaiian monk seals, being designated as a depleted species, cannot be taken. In 1989, all fisheries in Hawaii were classified as Category III under the Act which meant the fisheries were determined to have a remote likelihood or no known incidental taking of marine mammals. The proposed action is viewed as an effective means of monitoring the bottomfish fishery and assessing its potential for taking marine mammals in the NWHI.

6.7 Indigenous Peoples' Fishing Rights

The culture or religious practices of native Hawaiians, Samoans, or Chamorros will not be affected by the proposed action.

6.8 Executive Order 12630 (Government Actions and Interference with Constitutionally Protected Property Rights)

The proposed action does not entail any administrative, regulatory, legislative policy or action that affects, or may affect, the use of any real or personal property.

6.9 Executive Order 12612 (Federalism Assessment)

The proposed action does not contain policies with known federalism implications that warrant the preparation of a federalism assessment under Executive Order 12612.

6.10 Habitat and Vessel Safety Considerations

Vessel safety and habitat considerations that were previously addressed in FMP Amendment 2 remain applicable.

7.0 DRAFT REGULATIONS

PART 683 -- WESTERN PACIFIC BOTTOMFISH AND SEAMOUNT GROUNDFISH FISHERIES

1. The authority citation for part 683 continues to read as follows:

Authority: 16 U.S.C. 1801 et seq.

2. In section 683.2, the following definition is added in alphabetical order to read as follows:

Section 683.2 Definitions.

Sexual harassment means any unwelcome sexual advance, request for sexual favors, or other verbal and physical conduct of a sexual nature which has the purpose or effect of substantially interfering with an individual's work performance or creating an intimidating, hostile, or offensive working environment.

3. In section 683.6, new paragraphs (i), (j), and (k) are added to read as follows:

Section 683.6 Prohibitions.

(i) Fail to notify the Regional Director of intent to fish within a protected species study zone in the Northwestern Hawaiian Islands as required under section 683.29.

(j) Refuse to carry an observer when requested to do so by the Regional Director as required under section 683.29.

(k) Forcibly assault, impede, intimidate, interfere with, influence, attempt to influence, or harass (including sexual harassment) an observer by conduct which has the purpose or effect of unreasonably interfering with the observer's work performance, or which creates an intimidating, hostile or offensive environment. In determining whether conduct constitutes harassment, the totality of the circumstances, including the nature of the conduct and the context in which it occurred, will be considered. The determination of the legality of a particular action will be made from the facts on a case-by-case basis.

(l) Study zone means a 50-nautical mile designated area around French Frigate Shoals, Gardner Pinnacles, Maro Reef, Laysan, Lisianski Island, Pearl and Hermes Reef, Midway Island, and Kure in the Northwestern Hawaiian Islands.

5. In subpart B, a new section 683.29 is added to read as follows:

Section 683.29 Observers.

(a) The Regional Director of the NMFS may change the size of the study zone if he determines that the fishery is or is not having, or is or is not likely to have an adverse impact on any protected species. Prior to making any changes to the study zone, the Regional Director shall consult with the Council providing the information and rationale to support such changes. Proposed changes in the size of the study zone shall be announced through publication in the Federal Register at least thirty (30) days prior to the effective change. The information used by the Regional Director to make changes in the study zone shall be made available for public review and comment during the thirty (30) day period prior to the effective date of the change.

(b) The owner or operator of a fishing vessel subject to this part shall notify the Pacific Area Office by telephone (808-955-8831) at least 72 hours (not including weekends and holidays) before leaving port of his or her intent to fish within a protected species study zone in the Northwestern Hawaiian Islands as established and published by notice in the Federal Register by the Regional Director. Notification shall include the name of the vessel, name of the owner or operator, intended departure and return date, and a telephone number at which the owner or operator may be contacted during the business day (8 a.m. to 5 p.m.) to indicate whether an observer will be required on the subject fishing trip.

(c) The Pacific Area Office will advise the vessel owner or operator of any observer requirement within 72 hours (not including weekends or holidays) of receipt of the notice, and if an observer is required, will establish with the owner or operator the terms and conditions of observer coverage, the time and place of embarkation of the observer.

(d) All fishing vessels subject to this part must carry an observer when directed to do so by the Regional Director.

(e) All observers must be provided with sleeping, toilet and eating accommodations at least equal to that provided to a full crew member. A mattress or futon on the floor or a cot is not acceptable in place of a regular bank. Meal and other galley privileges must be the same for the observer as for other crew members.

(f) Female observers on a vessel with an all-male crew must be accommodated either in a single-person cabin or, if reasonable privacy can be ensured by installing a curtain or other temporary divider, in a two-person cabin shared with a licensed officer of the vessel. If the cabin assigned to a female observer does not have its own toilet and shower facilities that can be provided for the exclusive use of the observer, then a schedule for time-sharing of common facilities must be established and approved by the Regional Director prior to the vessel's departure from port.

8.0 REFERENCES

FMP. 1986. Combined Fishery Management Plan, Environmental Assessment and Regulatory Impact Review for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region. Western Pacific Regional Fishery Management Council. Honolulu. Hawaii. 96813.

FMP. 1987. Amendment #1 for the Fishery Management Plan - Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region. Western Pacific Regional Fishery Management Council. 27p.

FMP. 1988. Amendment 2 to the Fishery Management Plan - Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region. Western Pacific Regional Fishery Management Council. 55p.

FMP. 1990. Amendment 3 and Environmental Assessment - Fishery Management Plan for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region. Western Pacific Regional Fishery Management Council. 17p.

WPRFMC. 1989 Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region. 1989 Annual Report. Western Pacific Regional Fishery Management Council.

9.0 APPENDICES

BOTTOMFISH SPECIES INITIALLY INCLUDED IN THE MANAGEMENT UNIT

FAMILY	SPECIES	POPULAR NAMES	DISTRIBUTION*	RANGE OF DEPTH USUALLY CAUGHT (fm)	WEIGHT OF INDIVIDUAL FISH USUALLY CAUGHT (lbs.)
Lutjanidae	Aphareus rutilans (silver jaw jobfish)	lehi (H), palu-gutusiliva (S)	G, h, S	90 - 150	6 - 18
	Aprion virescens (gray jobfish)	uku (H), asoama (S)	g, H, S	15 - 60	4 - 18
	Etelis carbunculus (squirrelfish snapper)	ehu (H), palu-malau (S)	G, H, S	110 - 180	1 - 5 (to 45 in American Samoa)
	Etelis coruscans (longtail snapper)	onaga, ula'ula (H), palu-loa (S)	G, H, S	100 - 150	4 - 18
	Lutjanus kasmira (blue stripe snapper)	ta'ape (H), savane (S), funai (G)	G, H, S	20 - 60	1
	Pristipomoides auricilla (yellowtail snapper)	palu-i'usama (S), yellowtail kalekale (G)	G, h, S	100 - 150	1 - 2
	Pristipomoides filamentosus (pink snapper)	opakapaka (H), palu-'ena'ena (S) gadao (G)	G, H, S	30 - 110	2 - 18
	Pristipomoides flavipinnus (yelloweye snapper)	palu-sina (S), yelloweye opakapaka (G)	G, h, S	90 - 150	1 - 4
	Pristipomoides sieboldii (snapper)	kalekale (H)	G, H	80 - 150	1 - 3
	Pristipomoides zonatus (snapper)	gindai, palu-sega (S)	G, H, S	70 - 120	1 - 5

Notes: G = Guam
S = American Samoa
H = Hawaii

* Capital letters indicate that species is relatively common in bottomfish catches. Lower case indicates that species is uncommon.

** Marketability is reduced because of the risk of ciguatera.

Bottomfish Species Initially Included in the Management Unit (Page 2)

FAMILY	SPECIES	POPULAR NAMES	DISTRIBUTION*	RANGE OF DEPTH USUALLY CAUGHT (fm)	WEIGHT OF INDIVIDUAL FISH USUALLY CAUGHT (lbs.)
Carangidae (jacks)	Caranx ignobilis (giant trevally)	white ulua (H), tarakito (G), sapo'anae (S)	G, H, S	20 - 65	10 - 40
	Caranx lugubris (black jack)	black ulua (H), tarakito (G) tafauli (S)	G**, h, S	15 - 100	3 - 15
	Pseudocaranx dentex (thick-lipped trevally)	pig ulua, butaguchi (H)	H	40 - 100	2 - 40
	Seriola dumerili (amberjack)	kahala (H)	G, H**, s	40 - 130	8 - 30
Serranidae (groupers)	Epinephelus fasciatus (blacktip grouper)	fausi (S), gadau (G)	G, S	10 - 90	1 - 2
	Epinephelus quernus (sea bass)	hapu'upu'u (H)	H	50 - 150	6 - 22
	Variola louti (lunartail grouper)	papa (S)	G, S	30 - 90	1 - 5
Lethrinidae (emperorfishes)	Lethrinus amboinensis (ambon emperor)	filoa-gutumumu (S)	S	20 - 60	1 - 4
	Lethrinus rubrioperculatus (redgill emperor)	filoa-pa'o'omumu (S), mafuti (G)	G, S	15 - 100	1 - 2

Notes: G = Guam
S = American Samoa
H = Hawaii

* Capital letters indicate that species is relatively common in bottomfish catches. Lower case indicates that species is uncommon.

** Marketability is reduced because of the risk of ciguatera.

SEAMOUNT GROUNDFISH SPECIES INCLUDED IN THE MANAGEMENT UNIT

FAMILY	SPECIES	POPULAR NAMES	DISTRIBUTION*	RANGE OF DEPTH USUALLY CAUGHT (fm)	WEIGHT OF INDIVIDUAL FISH USUALLY CAUGHT (lbs.)
ntacerotidae rmorheads)	Pseudopentaceros wheeleri (armorhead)	kusakari tsubodai (J)	SE-NHR	125 - 300 +	0.5 - 2.5
rycidae lfonsins)	Beryx splendens (alfonsin)	kinmedai (J)	SE-NHR	150 - 300 +	2 - 4 (hook-and-line
ntrolophidae aftfishes)	Hyperoglyphe japonica (butterfish)	medai (J)	se-nhr	175 - 200 +	5 - 20 (hook-and-line

tes: J = Japan

E-NHR = Southern Emperor - Northern Hawaiian Ridge Seamounts

* Capital letters indicate that species is relatively common in groundfish catches. Lower case indicates that species is uncommon.

A.2 List of Endangered and Threatened Species in the NWHI Protected Species Study Zone

Hawaiian monk seal (Monachus schauinslandi) - endangered

Green sea turtle (Chelonia mydas) - threatened

Leatherback turtle (Dermochelys coriacea) - endangered

Olive ridley turtle (Lepidochlys olivacea) - threatened

Sperm whale (Physeter macrocephalus) - endangered

Humpback whale (Megaptera novaeangliae) - endangered

NATIONAL MARINE FISHERIES SERVICE

FISHING-ENDANGERED AND PROTECTED SPECIES INTERACTION SUMMARY LOG

Vessel _____ Time _____ Date _____ Latitude _____ Longitude _____

Permit No. _____ Start of Haul _____ _____ _____ _____

End of Haul _____ _____ _____ _____

SPECIES	SIGHTED IN AREA OF GEAR		RELEASED or DROPPED OFF					
			ALIVE		INJURED		DEAD	
	Workspace	Total	Workspace	Total	Workspace	Total	Workspace	Total
Monk seal								
False killer whale								
Green sea turtle								
Hawksbill turtle								
Blackfoot albatross								
Laysan albatross								
Booby								
Others (specify)								

6/90

A.4 Status and Mortality Factors of the Endangered Hawaiian Monk Seal - Prepared by Justin Rutka, Council Staff

A.4.1 Distribution and Status of the Endangered Hawaiian Monk Seal

Hawaiian monk seals are found in the NWHI. The are also seen infrequently in the water and on beaches in the main Hawaiian islands, and less frequently still at Johnston Island. Pupping occurs regularly on the islands and islets at French Frigate Shoals, Laysan Island, Lisianski Island, Pearl and Hermes Reef, and Kure Atoll. Pupping has been intermittent during the last decade at Midway Island, and pups have been recorded from Necker and Nihoa Islands only since 1983. Nihoa and Necker Islands are probably not significant pupping sites because of the limited beach areas and rough lava beaches there which can be awash at high tide or during storm conditions. One pup was born on Kauai in 1988.

Adult females with pups prefer beaches with shallow protected waters where their pups learn to swim and feed in relative safety from sharks and strong wave and surge conditions. Nearshore protected waters provide areas which are critical for successful rearing and acclimation of pups to the ocean environment.

Adult male monk seals do not form harems like some other seals, but instead patrol sections of beaches from the water searching for receptive females. Mating has only been observed in nearshore waters. Breeding aggregations located on separate islands and atolls in the NWHI are probably fairly discreet.

When at the breeding islands, monk seals feed on reef fish, octopus, lobster, and eels. Studies have shown that adult male monk seals can dive down to at least 400 feet to feed. Monk seals spend prolonged periods at sea away from their home islands. While tagging studies have shown that monk seals swim from island to island in the NWHI, at least three seals have been sighted at Johnston Island (500 miles south of the NWHI) over the past 30 years. They apparently have low migration rates between islands and a high fidelity to the islands of their birth. The causes for going to sea are not well known. The destinations, routes, and food sources available to monk seals while at sea are also unknown.

There have been observations of monk seals at most of the NWHI from the 19th century. Although some early counts of animals are available for some of the NWHI, the first chain-wide census was not done until 1957-58. Counts of seals on all NWHI atolls in 1982 were about 50 percent lower than the beach counts made in 1957-58. Both counts were only of hauled out seals and did not include seals that were at sea, nor were the counts corrected for seasonality. It is possible to evaluate total monk seal population changes in earlier years from beach counts made in the 1950's and 1960's since the proportion of hauled out seals (relative to the total population) was

unknown. The portion of hauled out seals varies seasonally and among atolls. Therefore, direct comparisons of beach counts made during different times of the year could lead to invalid conclusions. The population of Hawaiian monk seals has declined since the beach count surveys were initiated in 1957. Sufficient data has been collected since 1983 for the extrapolation of beach count data to population size and composition as a whole. There were an estimated 1,488 monk seals in the NWHI in 1983, and 1,718 in 1987, an encouraging increase of 230 animals. The 1987 monk seal population included 202 pups of the year.

A.4.2 Mortality Factors

Groups of adult male monk seals sometimes attack single adult females during attempts to mate. Female seals are usually severely injured during such encounters, and such episodes contribute to the mortality rate of adult females. At some locations such as Kure Atoll, Laysan Island, and Lisianski Island, adult male seals attack weaned pups often ending in the death of the pups. Both these aberrant behaviors of adult male monk seals may be having a significant effect on recruitment and recovery of the population.

Shark predation is also a likely major factor in the natural mortality of monk seals, particularly among younger animals and those of all ages that are sick or injured. Monk seals have also been found entangled in discarded fishing line, trawl webbing, gillnet fragments, and other kinds of marine debris. Weaned pups and yearlings are particularly vulnerable to entanglement with marine debris because they spend a disproportionate amount of time in nearshore areas to feed, the same areas which tend to concentrate debris and webbing materials.

Although seals are easy to approach on land, repeated disturbances even low level ones, apparently can have grave results such as premature weaning of pups, heat stress, and abandonment of preferred pupping and haul out areas. Sustained human activity on beaches used by monk seals apparently cause the seals to desert these beaches.

Most of the NWHI have been occupied by people at one time or another for varying periods. Necker and Nihoa Islands, for example, show much evidence of sustained prehistoric occupation by the early Polynesians. Shipwrecked crews have spent varying lengths of time at French Frigate Shoals, Laysan, Lisianski, Pearl and Hermes Reef, Midway, and Kure Atoll. During the 18th, 19th, and early 20th century, sealers, feather poachers, guano diggers, and egg gatherers must have greatly reduced the monk seal population by taking them for food, shark bait, hides, and oil, and caused the seals to abandon ancestral beaches and nearshore waters.

In a more modern-day context, Hawaii monk seal populations have demonstrated a high degree of sensitivity to human disturbances at Midway, Tern Island (French Frigate Shoals), and Kure Atoll. Midway Island has been under the jurisdiction of the U.S. Navy since 1903. It figured prominently in World War II and was shelled and bombed by the Japanese forces. During the 1960's, there were as many as 3,000 naval personnel and their dependents on Midway Island. There are around 300 people on Midway now. The first permanent occupation of French Frigate Shoals occurred in 1942 when the Navy constructed an air strip on Tern Island for use in WWII. The U.S. Coast Guard took over the island following the war and began operating a Loran A station there in 1944. The loran station was closed in 1979, and the U.S. Fish and Wildlife Service now maintains a few personnel on Tern Island. The island was also used for fishery support activities right after WWII. Long term occupation of Kure Atoll began in 1960 with the establishment of a Coast Guard Loran C station which is still operational today. Military bases and loran stations have contributed a major part of the reduction of the habitat and numbers of Hawaiian monk seals. There are now no commercial uses of monk seals and human disturbances of seals on the NWHI are kept to a minimum. The species is showing indications of recovery since its listing in 1976.

There are no confirmed cases of monk seals being killed or injured in conjunction with bottomfishing or longline operations. Longliners began targeting swordfish near the NWHI in the spring of 1990 and indirect evidence of possible interactions has emerged (see FMP Amendment 4 Section 4.1). While there are unconfirmed reports of monk seals interacting with the longline fishery for swordfish in the NWHI, the frequency and severity of interactions is not documented.

Monk seal interactions with the bottomfish fishery can also occur in the NWHI. Monk seals have also been observed removing catch from bottomfish gear in the NWHI. They are often attracted to the vessels as the catch is being retrieved. In 1982, a monk seal was photographed at French Frigate Shoals with a bottomfish hook in its mouth.

The sex ratio of Hawaiian monk seals at birth is 1:1. However, there is considerable variation in the ratio of males to females in adult and juvenile age classes at some islands. For example, 1987 census counts shows that there were many more adult male monk seals on Lisianski Island than adult female seals. Necker, Laysan, and Kure Islands also had more adult male seals in 1987 (beach counts) than adult female seals, while the sex ratio at Pearl and Hermes Reef was evenly split between males and females. The original causes of the skewed ratios are not fully understood.

A.4.3 Conclusions

Through 1987, the monk seal population has shown some improvement since 1983. The population is, however, probably lower than it was in 1957-58 when the first NWHI-wide census was made. Some populations are at risk from skewed sex ratios and male aggression (Laysan and Lisianski), while others may be responding to recovery actions (Kure), and others may be at carrying capacity (French Frigate Shoals, Necker, Nihoa). French Frigate Shoals is estimated to accommodate about a half of the breeding population of Hawaiian monk seals. The sandy islets at French Frigate Shoals are particularly important habitat for seal pupping and weaning.

regulations, except that the Suk Carney Pool in Area 5 is open only from December 15 through September 15.

(2) Fishing is permitted in all waters of Area 3 that are located south of the Turkey Track Road and north of the Sprague-Mather Road including the Goose and Sprague Pools from December 15 through March 15 and from June 1 through September 15.

(3) Non-motorized boats are permitted in all areas that are open at the time of fishing.

* * * * *

15. Section 33.56 is amended by adding new paragraph (a)(3) as follows:

§ 33.56 Pacific Islands Territory.

(a) *Johnston Atoll National Wildlife Refuge.* * * *

(3) Taking of fish by the use of spear "guns" is prohibited. Hand-propelled spears or "Hawaiian Slings" consisting of a single shaft propelled by a rubber tube are permitted for underwater taking of fish.

* * * * *

Dated: March 12, 1991.

Bruce Blanchard,

Acting Director, U.S. Fish and Wildlife Service.

[FR Doc. 91-12867 Filed 5-29-91; 8:45 am]

BILLING CODE 4310-55-M

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 672

[Docket No. 901184-1042]

Groundfish of the Gulf of Alaska

AGENCY: National Marine Fisheries Service (NMFS), NOAA, Commerce.

ACTION: Notice of closure; request for comments.

SUMMARY: The Director, Alaska Region, NMFS (Regional Director), has determined that the remaining share of the initial allowable catch amounts (TACs) for sablefish allocated to hook-and-line gear in the combined Southeast Outside/East Yakutat District of the Eastern Regulatory Area (SEO/EYK) of the Gulf of Alaska for the 1991 fishing year is needed as a bycatch amount to support directed fisheries in that area for remaining groundfish species. The Secretary of Commerce is prohibiting directed fishing for sablefish by vessels using hook-and-line gear in the SEO/EYK. This action is necessary to prevent the hook-and-line share of sablefish in that area from being harvested before the end of the fishing year. The intent of this action is to promote optimum use of groundfish while conserving sablefish stocks.

DATES: *Effective* from 12 noon, Alaska local time (A.l.t.), on May 25, 1991, through December 31, 1991. *Comments* are invited for 15 days following the effective date of this notice.

ADDRESSES: Comments should be mailed to Dale R. Evans, Chief, Fisheries Management Division, National Marine Fisheries Service, P.O. Box 21668, Juneau, Alaska 99802-1668, or be delivered to 9109 Mendenhall Mall Road, Federal Building Annex, Suite 6, Juneau, Alaska.

FOR FURTHER INFORMATION CONTACT: Patsy A. Bearden, Resource Management Specialist, NMFS, 907-586-7228.

SUPPLEMENTARY INFORMATION: The Fishery Management Plan for Groundfish of the Gulf of Alaska (FMP) governs the groundfish fishery in the exclusive economic zone within the Gulf of Alaska (GOA) management area under the Magnuson Fishery Conservation and Management Act. The FMP was prepared by the North Pacific Fishery Management Council and was implemented by regulations appearing at 50 CFR 611.92 and parts 620 and 672.

Section 672.20(a)(1) of the implementing regulations establishes an optimum yield (OY) range of 116,000 to 800,000 metric tons (mt) for all groundfish species in the GOA management area. The TAC for target species and the "other species" category are specified annually within the OY range and are apportioned among the regulatory areas and districts.

The 1991 TAC specified for sablefish in the SEO/EYK District is 4,950 mt (March 1, 1991, 56 FR 8723). The portion of that TAC assigned to hook-and-line gear is 4,700 mt.

Under §§ 672.20(c)(2) and 672.24(c)(3)(i), if the Regional Director determines that the share of the sablefish TAC assigned to any type of gear in any regulatory area or district is likely to be reached, the Regional Director may establish a directed fishing allowance. In establishing a directed fishing allowance, the Regional Director shall consider the amount of sablefish that will be taken as incidental catch in directed fishing for other species in the same regulatory area or district. If the Regional Director establishes a directed fishing allowance and that allowance is or will be reached, he will prohibit directed fishing for sablefish in the specified regulatory area or district by that gear type.

The Regional Director has determined that the remaining hook-and-line gear share of sablefish in the SEO/EYK District of the Eastern Regulatory Area, 235 mt, will be necessary as bycatch to support remaining groundfish fisheries in that district. With this action the Regional Director is establishing a directed fishing allowance of 4,465 mt for the SEO/EYK and is prohibiting directed fishing for sablefish taken with hook-and-line gear in the SEO/EYK District of the Eastern Regulatory Area, effective 12:00 noon, A.l.t., May 25, 1991. After the closure, in accordance with § 672.20(g)(2), amounts of sablefish retained on board hook-and-line vessels in the SEO/EYK District of the Eastern Regulatory Area at any time during a trip must be less than 4 percent of the total amount of all other fish species retained at the same time by the vessel during the same trip.

Classification

This action is taken under §§ 672.20 and 672.24 and is in compliance with Executive Order 12291.

Immediate effectiveness of this notice is necessary to prevent excessive harvest of sablefish by hook-and-line gear that will occur if amounts of the sablefish TACs that are allocated to hook-and-line gear are exceeded and retention of sablefish is prohibited. Therefore, the Assistant Administrator for Fisheries, NOAA, finds for good cause that it is impractical and contrary to the public interest to provide prior notice and comment or to delay its effective date. However, interested persons are invited to submit comments in writing to the address above for 15 days after the effective date of this notice.

List of Subjects in 50 CFR Part 672

Fish, Fisheries, Reporting and recordkeeping requirements.

Authority: 16 U.S.C. 1801 *et seq.*

Dated: May 24, 1991.

David S. Crestin,

Acting Director, Office of Fisheries Conservation and Management, National Marine Fisheries Service.

[FR Doc. 91-12771 Filed 5-24-91; 2:55 pm]

BILLING CODE 3510-22-M

50 CFR Part 683

[Docket No. 910354-1111]

RIN 0648-AD74

Western Pacific Bottomfish and Seamount Groundfish Fisheries

AGENCY: National Marine Fisheries Service (NMFS), NOAA, Commerce.

ACTION: Final rule.

SUMMARY: NOAA issues a final rule to implement Amendment 4 to the Fishery Management Plan for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region (FMP). This rule requires bottomfish vessel operators intending to fish within 50 nautical miles (nm) of certain islands in the Northwestern Hawaiian Islands (NWHI) to notify NMFS prior to such fishing and to carry observers aboard their vessels if directed to do so by the Director, Southwest Region, NMFS (Regional Director). This rule also authorizes the Regional Director to change the size of the area in which observers might be required after consultation with the Western Pacific Fishery Management Council (Council). This action is intended to ensure adequate collection of data on interactions between the bottomfish fishery and marine mammals or endangered and threatened species in the NWHI. This rule also standardizes the fishing permit application process and contains a technical revision to clarify the restriction against overlapping permits for the Ho'omalu and Mau Zones in the NWHI.

EFFECTIVE DATE: This action becomes effective at 0000 hours local time May 28, 1991.

ADDRESSES: Copies of the amendment are available from Kitty B. Simonds, Executive Director, Western Pacific Fishery Management Council, 1164 Bishop Street, Suite 1405, Honolulu, HI 96813 (808–523–1368).

FOR FURTHER INFORMATION CONTACT: Svein Fougner, Fisheries Management Division, Southwest Region, NMFS, Terminal Island, California (213) 514–6660, or Alvin Katekaru, Pacific Area Office, Southwest Region, NMFS, Honolulu, Hawaii (808) 955–8831.

SUPPLEMENTARY INFORMATION: This rule implements Amendment 4 to the FMP, which was prepared by the Council and approved by the Secretary of Commerce in 1985. This amendment is intended to ensure that fishing under the FMP will not result in adverse impacts on endangered and threatened animals in the NWHI.

Prior to implementation of the FMP, NMFS issued a biological opinion pursuant to section 7(b) of the Endangered Species Act (ESA) concerning the potential impacts on threatened and endangered species associated with the bottomfish and seamount groundfish fishery. The opinion stated that the proposed FMP would not likely jeopardize any threatened or endangered species nor adversely affect any critical habitat for such species, and the opinion recommended that NMFS and the Council document marine mammal and sea turtle interactions with the fishery. Criteria also were established for reinitiating consultation under the ESA. The main concern with regard to the bottomfish fishery has been entanglement of Hawaiian monk seals and turtles with fishing gear; therefore, the FMP prohibits the use of bottom set gill nets and bottom trawls in the NWHI.

However, concerns about the impact of the fishery on monk seals were deepened as a result of reports received in April 1990 that monk seals were being hooked by pelagic longline fishermen in the NWHI. The NMFS Honolulu Laboratory sent a field party to French Frigate Shoals in May to conduct a survey of the monk seals and turtles on the beaches for evidence of interaction with the pelagic fishery. Nine dead monk seals were found, well within the range for numbers of carcasses normally reported each year, but injuries were observed on several animals ranging from gaping wounds to abrasions that could not be attributed to shark attack, male monk seal harassment, or other natural causes.

NMFS Special Agents interviewed captains and crews of 28 vessels returning from the NWHI. Insufficient information was received for agents to take enforcement action; however, there was enough consistency in the reports to raise concern that measures were needed to obtain definitive information on possible impacts from the longline fishery as well as the bottomfish fishery.

At a meeting on June 20, 1990, the Council heard reports from its Pelagic Plan Monitoring Team and its Scientific and Statistical Committee on the dramatic increase in the number of vessels in the Hawaiian pelagic longline fishery. The reports indicated the possible effects this increase might have on the harvest and stocks of pelagic resources and discussed the potential for interactions between the pelagic longline and bottomfish fisheries and protected species, primarily the Hawaiian monk seal.

The Council voted to propose that NMFS implement the following emergency actions: (1) A permit and logbook reporting system for the pelagic longline fishery, and (2) a program to place observers on selected longline and bottomfish vessels operating within a 50-nm study zone around certain islands in the NWHI. Permit requirements were already in effect for the bottomfish fishery. The Council indicated it would follow up with an FMP amendment to institute these measures on a permanent basis.

NMFS concurred with the Council's request and promulgated emergency regulations for the NWHI bottomfish fishery effective for a 90-day period beginning November 27, 1990 (55 FR 49050, November 26, 1990). The regulations were extended for a second 90-day period ending May 25, 1991 (56 FR 5159, February 8, 1991). The regulations stipulate that no bottomfish vessel can fish within 50-nm of certain islands in the NWHI (French Frigate Shoals, Gardner Pinnacles, Laysan Island, Lisianski Island, Pearl and Hermes Reef, Midway Islands, and Kure Island), unless the operator of the vessel has provided the Regional Director with an opportunity to place an observer aboard the vessel for that trip to document whether there are any interactions with protected species and if so, the particulars of the interactions. The estimated cost to NMFS for placing observers on selected bottomfish vessels was $60,000 per year, based on an estimate of 15 observer trips per year using staff in Honolulu.

The primary reason the Council proposed this observer requirement on an emergency basis was the precarious condition of the Hawaiian monk seal, listed as an endangered species under the Endangered Species Act, which made it imperative that accurate and site-specific data on interactions be collected immediately. If interactions were in fact occurring, then the effects of such interactions could be evaluated and solutions to any problems could be identified quickly. Therefore, in the Council's and NMFS' view, it was crucial that the rule go into effect on an emergency basis. This concern deepened after further reports, in January 1991, of monk seals observed with hooks embedded in their bodies and severe injuries that appear to be the result of interactions with longline fishing operations.

Amendment 4 implements these emergency measures for the bottomfish fishery on a permanent basis. In the Council's view, the conditions that generated the need for emergency action continue to exist, and implementation of Amendment 4 will provide for continuation of data collection necessary to arrive at long-term solutions to conservation problems facing the bottomfish fishery.

The proposed rule to implement Amendment 4 was published at 56 FR 11166 (March 15, 1991). With the Council's concurrence, the proposed rule varied from the emergency rule in several ways. In addition to continuing

the requirement of notifying the Regional Director before fishing within 50-nm of the islands listed in the emergency rule, the proposed rule would extend this requirement to include the waters within 50-nm of Nihoa Island, Necker Island, and Maro Reef. These areas are referred to as protected species study zones. These regulations would also authorize the Regional Director to adjust the size of the protected species study zones after consultation with the Council, if the Regional Director determines that the fishery is not adversely affecting any threatened or endangered species. The final rule adds a definition of protected species study zones for clarification throughout the rule.

The proposed rule also proposed revision of certain permit application requirements, consistent with the streamlining of the permit process for federally permitted fisheries in the western Pacific region. In addition, it proposed a technical correction to § 683.21(a)(4). In that paragraph, the word "groundfish" was proposed to be revised to read "bottomfish," making the paragraph consistent with the original intent and language of the bottomfish fishery limited access program, which was established by Amendment 2 to the FMP. This revision would not affect the stocks or the fishery.

This final rule differs from the proposed rule in one respect. The protected species study zones have been defined as the waters within 50-nm of certain islands of the NWHI, measured from the midpoints of those islands. Coordinates are listed for each island. No other changes in the rule were deemed necessary following public review and comment.

Public Comments Received and Responses

Comment

The Marine Mammal Commission (Commission) recommended that the proposed measure be revised to require annual observer coverage of at least 30 percent of the bottomfish fishing trips to the NWHI to assure that interactions avoid lethal takings of monk seals. The Commission noted that the environmental assessment (EA) for this action suggested that, at 1989 fishing levels, this would be an appropriate level of coverage. The Commission also recommended that the EA for this action be revised to describe evidence of interactions between monk seals and longline this year and to indicate the number of observers that had been placed on bottomfish fishing vessels under the 1990 emergency regulations.

Response

The final rule does not specify a target level of observer coverage due to uncertainty about the level of fishing in the NWHI and the inflexibility that would result if the regulations set forth a specific target. In 1990, there were 15 active vessels in the NWHI, which made 82 trips. However, only four vessels were active in the Ho'omalu Zone (i.e., the limited entry zone) and only 23 trips were made. This is considerably below the 1989 activity level, and NMFS estimates that the 1991 fishery will not be substantially greater than 1990. The Ho'omalu Zone encompasses most of the monk seal habitat in the NWHI. It is quite possible that NMFS will arrange for observer coverage on more than 30 percent of all bottomfishing trips to this area given the relatively low level of fishing activity. On the other hand, if observer reports indicate there is no interaction occurring, it may not be necessary to maintain a 30 percent rate of coverage indefinitely. It would be unnecessarily cumbersome if NMFS were required to amend the regulations whenever it adjusted the rate of observer coverage.

With respect to observer coverage under the emergency rule, two complete bottomfish fishing trips have been observed with no documented interactions to date. It can also be noted that there have been no additional reports since January of monk seals with hooks in them or with injuries suggesting interaction with either the bottomfish fishery or the pelagic longline fishery.

Comment

The U.S. Fish and Wildlife Service (FWS) commented that the process for changing the size of the protected species study zone was predisposed to reducing the size of the zone. FWS also urged that NMFS fully fund and staff the observer program to ensure adequate coverage.

Response

The final rule does not preclude enlargement of the study zone. However, because there is virtually no bottomfish habitat beyond the 50-nm radii of the protected species study zones, it is unlikely there could be any interactions between the bottomfish fishery and monk seals or other protected animals beyond the study zones. With respect to funding of the observer coverage, longline fishing within a new protected species zone in the NWHI has been prohibited by an emergency rule (56 FR 15842, April 18, 1991). Observers who might have been assigned to longline vessels will be available for assignment to bottomfish fishing vessels. NMFS is committed to placing a sufficient number of observers to ensure a sound basis for future actions if needed to protect monk seals from interactions with the bottomfish fishery.

Classification

The Assistant Administrator for Fisheries, NOAA (Assistant Administrator) has determined that Amendment 4 to the FMP and its implementing rule are necessary for the conservation and management of the bottomfish resources of the Western Pacific Region and are consistent with the Magnuson Fishery Conservation and Management Act (Magnuson Act) and other applicable law.

The Council prepared an EA for this amendment. The Assistant Administrator has determined that there will not be a significant impact on the environment. A copy of the amendment containing the EA may be obtained from the Council (see **ADDRESSES**).

The Assistant Administrator has determined that this is not a "major rule" requiring a regulatory impact analysis under E.O. 12291. The final rule will not have a cumulative effect on the economy of $100 million or more, nor will it result in a major increase in costs to consumers, industries, government agencies, or geographical regions. No significant adverse impacts are anticipated on competition, employment, investments, productivity, innovation, or competitiveness of U.S.-based enterprises.

The General Counsel of the Department of Commerce has certified to the Small Business Administration that this rule will not have a significant economic impact on a substantial number of small entities. The reason for this conclusion is that the rule will not impose significant costs on the fishery. The observer program costs generally are borne by NMFS. Observer salaries, provisions, and supplies are paid for by NMFS, and a vessel owner or operator can be reimbursed for insurance costs associated with coverage of the observer. Also, if a vessel is forced to curtail operations due to observer illness or injury, there is a process to reimburse the vessel for lost fishing time. It is recognized that displacement of a crew member by an observer could adversely affect revenues and profits from a particular trip, and the capability of the vessel to carry an observer without severe economic impacts will be among the factors considered in deciding whether an observer should be

required for that trip. In NMFS' view, the impacts on the fishery will be less than if more conservative management (e.g., area closures) were required to ensure that no adverse impacts would occur to monk seals. In summary, no significant impacts are expected. Therefore, a regulatory flexibility analysis was not prepared.

This final rule contains a collection-of-information requirement subject to the provisions of the Paperwork Reduction Act. This requirement was established by the emergency rule as a result of the observer program. Vessel owners or operators who intend to fish within the protected species study zones around the NWHI must notify the Regional Director so that NMFS has the opportunity to place an observer aboard their vessels. Placing observers aboard bottomfish vessels in the NWHI ensures the collection and processing and analysis of data needed for sound management decisions. Observers will ensure the collection of data and document whether there are adverse interactions with protected species and the particulars of the interactions. The public reporting burden for this collection-of-information is 2 minutes for the pre-trip notification. This collection-of-information has been approved by the Office of Management and Budget, OMB Control Number 0648-0214.

This rule also contains a revised reporting requirement whereby information requested from bottomfish permit applicants would be standardized as part of an effort by NMFS to consolidate into one form the different application forms now being used for fisheries permits in the western Pacific region. An applicant for a NWHI bottomfishing permit would use the same application form and provide the same information on vessel owner, vessel operator, and vessel, as a person who applies for a precious corals, crustaceans, or pelagic longline fishing permit. The public reporting burden for this collection-of-information is estimated to average 15 minutes per application. The permit requirement has been approved by the Office of Management and Budget under the title Southwest Region Federal Fisheries Permits (OMB Control Number 0648-0204).

Comments on the collections of information and/or suggestions on how to reduce the burden can be sent to the Regional Director, Southwest Region, NMFS, (see ADDRESSES) and to the Office of Information and Regulatory Affairs, Office of Management and Budget, ATTN: Paperwork Reduction Projects 0648-0204 and 0648-0214, Washington, DC 20503.

The Assistant Administrator has determined that the final rule will be implemented in a manner that is consistent to the maximum extent practicable with the approved coastal zone management program of the State of Hawaii. This determination was submitted for review by the responsible state agency under section 307 of the Coastal Zone Management Act. The State of Hawaii agreed with the determination.

This rule does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order 12612.

Fishery operations under this rule are not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of any critical habitat. This conclusion is based on a biological opinion issued by NMFS in May 1991.

Amendment 4 and its implementing regulations will not have an adverse impact on marine mammals.

In order to afford maximum opportunity for public comment and participation, the Administrative Procedure Act (5 U.S.C. 553) requires that, generally, final rules be published not less than 30 days before they become effective. This 30-day period may be shortened or waived if the rulemaking agency publishes with the rule an explanation of what good cause justifies an earlier date. This rule, implementing Amendment 4 to the FMP, makes permanent certain management measures that were promulgated, with a request for public comments, by emergency rule on November 27, 1990. The public has had opportunities to comment on that emergency rule as well as to participate in the development of Amendment 4. The emergency rule is effective through May 25, 1991. To prevent a lapse in the management regime, which includes urgent measures necessary to protect the endangered Hawaiian monk seals, this rule should be effective when the emergency rule expires. However, the public comment period on the proposed rule ended on April 26, 1991, and, although this rule has been published as expeditiously as possible, it is not possible to provide a full 30 days before the emergency measures will expire. Accordingly, good cause is found for making this rule effective on May 26, 1991.

List of Subjects in 50 CFR Part 683

Fisheries, Fishing, Reporting and recordkeeping requirements.

Dated: May 23, 1991.

Samuel W. McKeen,

Acting Assistant Administrator for Fisheries, National Marine Fisheries Service.

For the reasons stated in the preamble, 50 CFR part 683 is amended as follows:

PART 683—WESTERN PACIFIC BOTTOMFISH AND SEAMOUNT GROUNDFISH FISHERIES

1. The authority citation for part 683 continues to read as follows:

Authority: 16 U.S.C. 1801 *et seq.*

2. In § 683.2, the following definitions are added in alphabetical order, to read as follows:

§ 683.2 Definitions.

* * * * *

Pacific Area Office means the Pacific Area Office, Southwest Region, National Marine Fisheries Service, 2570 Dole Street, Honolulu, HI 96822.

Protected species study zones means the waters within a specified distance, designated by the Regional Director pursuant to § 683.29(d) of this part, around the following islands of the NWHI and as measured from the following coordinates: Nihoa Island 23°05' N. 161°55' W., Necker Island 23°35' N. 164°40' W., French Frigate Shoals 23°45' N. 166°15' W., Gardner Pinnacles 25°00' N. 168°00' W., Maro Reef 25°25' N. 170°35' W., Laysan Islan 25°45' N. 171°45' W., Lisianski Island 26°00' N. 173°55' W., Pearl and Hermes Reef 27°50' N. 175°50' W., Midway Island 28°14' N. 177°22' W., and Kure Island 28°25' N. 178°20' W. Until further notice by the Regional Director the protected species study zones will encompass waters within 50 nautical miles of the geographical coordinates listed above.

* * * * *

Sexual harassment means any unwelcome sexual advance, request for sexual favors, or other verbal and physical conduct of a sexual nature which has the purpose or effect of substantially interfering with an individual's work performance or creating an intimidating, hostile, or offensive working environment.

3. In § 683.6, new paragraphs (i), (j), and (k) are added to read as follows:

§ 683.6 Prohibitions.

* * * * *

(i) Fishing within any protected species study zone in the Northwestern Hawaiian Islands without notifying the Regional Director of the intent to fish in these zones as required under § 683.29.

(j) Fishing without an observer after having been directed to do so by the Regional Director as required under § 683.29.

(k) Forcibly assault, impede, intimidate, interfere with, influence, attempt to influence, or harass (including sexual harassment) an observer by conduct that has the purpose or effect of unreasonably interfering with the observer's work performance, or that creates an intimidating, hostile, or offensive environment. In determining whether conduct constitutes harassment, the totality of the circumstances, including the nature of the conduct and the context in which it occurred, will be considered. The determination of the legality of a particular action will be made from the facts on a case-by-case basis.

4. In § 683.21 paragraphs (a)(4), (b), (d), (e)(2), and (g) are revised to read as follows:

§ 683.21 Permit requirements for the Northwestern Hawaiian Islands.

(a) * * *

(4) No vessel owner may have permits for a single vessel to harvest bottomfish in the Ho'omalu Zone and the Mau Zone at the same time.

(b) *Applications.* (1) An application for a permit under this section must be submitted to the Pacific Area Office by the vessel owner, or a designee of the owner, at least 15 days before the date the applicant desires to have the permit be effective.

(2) Each application must be submitted on a form that is obtained from the Pacific Area Office and contains at least the following information:

(i) Type of application: whether the application is for a new permit or a renewal; and whether it is for the Mau Zone or the Ho'omalu Zone;

(ii) Owner's name, social security number, mailing address, and telephone numbers (business and home);

(iii) Name of the partnership or corporation, if the vessel is owned by such an entity;

(iv) Primary operator's name, social security number, mailing address, and telephone numbers (business and home);

(v) Relief operator's name;

(vi) Name of the vessel;

(vii) Official number of the vessel;

(viii) Radio call sign of the vessel;

(ix) Principal port of the vessel;

(x) Length of the vessel;

(xi) Engine horse power;

(xii) Approximate fish hold capacity;

(xiii) Number of crew;

(xiv) Construction date;

(xv) Date vessel purchased;

(xvi) Purchase price;

(xvii) Type and amount of fishing gear carried on board the vessel;

(xviii) Position of the applicant in the corporation, if the vessel is owned by such an entity;

(xix) Signature of the applicant; and

(xx) Date of signature.

* * * * *

(d) *Change in application information.* Any change in the information specified in paragraph (b)(2) of this section must be reported to the Pacific Area Office 10 days before the effective date of the change. Failure to report such changes may result in termination of the permit.

(e) * * *

(2) If an incomplete or improperly completed permit application is filed, the Regional Director will notify the applicant in writing of the deficiency. If the applicant fails to correct the deficiency within 15 days following the date of notification, the application will be considered abandoned.

* * * * *

(g) *Renewal.* An application for renewal must be submitted to the Pacific Area Office in the same manner as described in paragraph (b) of this section.

* * * * *

5. A new § 683.29 is added to read as follows:

§ 683.29 Observers.

(a) The owner or operator of a fishing vessel subject to this part shall inform the Pacific Area Office by telephone, (808) 955-8831, at least 72 hours (not including weekends and holidays) before leaving port, of his or her intent to fish within the protected species study zones defined in § 683.2 of this part. The notice must include the name of the vessel, name of the operator, intended departure and return date, and a telephone number at which the owner or operator may be contacted during the business day (8 a.m. to 5 p.m.) to indicate whether an observer will be required on the subject fishing trip.

(b) The Pacific Area Office will advise the vessel owner or operator of any observer requirement within 72 hours (not including weekends or holidays) of receipt of the notice. If an observer is required, the owner or operator will be informed of the terms and conditions of observer coverage, and the time and place of embarkation of the observer.

(c) All fishing vessels subject to this part must carry an observer when directed to do so by the Regional Director.

(d) The Regional Director may change the size of the protected species study zones defined in § 683.2 of this part:

(1) If the Regional Director determines that a change in the size of the study zones would not result in fishing for bottomfish in the NWHI that would adversely affect any species listed as threatened or endangered under the Endangered Species Act;

(2) After consulting with the Council; and

(3) Through a notice in the Federal Register published at least thirty (30) days prior to the effective date or through actual notice to the permit holders.

(e) All observers must be provided with sleeping, toilet, and eating accomodations at least equal to that provided to a full crew member. A mattress or futon on the floor or a cot is not acceptable in place of a regular bunk. Meal and other galley privileges must be the same for the observer as for other crew members.

(f) Female observers on a vessel with an all-male crew must be accommodated either in a single-person cabin or, if reasonable privacy can be ensured by installing a curtain or other temporary divider, in a two-person cabin shared with a licensed officer of the vessel. If the cabin assigned to a female observer does not have its own toilet and shower facilities that can be provided for the exclusive use of the observer, then a schedule for time-sharing of common facilities must be established and approved by the Regional Director prior to the vessel's departure from port.

[FR Doc. 91-12726 Filed 5-24-91; 2:55 pm]
BILLING CODE 3510-22-M

and approximately 2.3 mt of large medium/giant BFT (subquota of 5 mt) were landed. Updates to these estimates will be used to effect any further inseason adjustments as necessary. NMFS has determined that a catch limit adjustment is warranted to ensure reasonable fishing opportunities in all geographic areas without risking overharvest.

The daily catch limit for the southern area is adjusted as follows: No more than one BFT per angler, with a maximum of three fish per vessel, from the school size class may be retained each day per Angling category vessel. In addition, one BFT per vessel per day may be landed from the large school or small medium size class. This catch limit adjustment is effective June 26 through July 27, 1998, whereupon the catch limit will revert to one BFT from the school, large school, or small medium size class per vessel per day.

These catch limits have been selected based on catch rates for the 1997 fishing season. Therefore, NMFS will continue to monitor the Angling category fishery closely through the Automated Catch Reporting System and the Large Pelagic Survey. Depending on the level of fishing effort and catch rates of BFT, NMFS may determine that an interim closure or additional catch limit adjustment is necessary to enhance scientific data collection from all geographic areas. Closures or subsequent adjustments to the daily catch limit, if any, shall be announced through publication in the **Federal Register**. In addition, anglers may call the Atlantic Tunas Information Line at 888–USA-TUNA (888–872–8862), 301–713–1279, or 978–281–9305 for updates on quota monitoring and catch limit adjustments. Anglers aboard Charter/Headboat vessels, when engaged in recreational fishing for school, large school, and small medium BFT, are subject to the same rules as anglers aboard Angling category vessels. All BFT landed under the Angling category quota must be reported within 24 hours of landing to the NMFS Automated Catch Reporting System by phoning 888–USA-TUNA (888–872–8862), or in North Carolina, to a reporting station. For information about the North Carolina Harvest Tagging Program, including reporting station locations, call 800–338–7804.

Classification

This action is taken under 50 CFR 285.24(d)(3) and is exempt from review under E.O. 12866.

Authority: 16 U.S.C. 971 *et seq.*

Dated: June 23, 1998.

Gary C. Matlock,

Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 98–17166 Filed 6–23–98; 5:02 pm]

BILLING CODE 3510–22–F

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 660

[Docket No. 980319068–8155–02; I.D. 021998A]

RIN 0648–AK59

Fisheries Off West Coast States and in the Western Pacific; Western Pacific Bottomfish Fishery; Fishing Moratorium

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Final rule.

SUMMARY: NMFS is extending the current moratorium on harvesting seamount groundfish from the Hancock Seamount in the Northwestern Hawaiian Islands until August 31, 2004. The fishery has been under a moratorium since 1986. This action is being taken in response to a recommendation by the Western Pacific Fishery Management Council (Council), which heard reports from its Bottomfish Plan Team and Scientific and Statistical Committee that revealed that armorhead (*Pentaceros richardsoni*), an overfished seamount species, has not recovered. The intent of this action is to allow the protection provided for this resource to continue.

DATES: Effective September 1, 1998.

ADDRESSES: Request for information relevant to this action should be sent to William T. Hogarth, Administrator, Southwest Region, NMFS, 501 West Ocean Boulevard, Suite 4200, Long Beach, CA 90802.

FOR FURTHER INFORMATION CONTACT: James J. Morgan or Svein Fougner, Assistant Regional Administrator for Sustainable Fisheries, (562) 980–4030, or Al Katekaru, Pacific Islands Area Office, (808) 973–2985.

SUPPLEMENTARY INFORMATION: A proposed rule was published in the **Federal Register** on March 26, 1998 (63 FR 14675) requesting public comments on extending the moratorium on harvesting seamount groundfish from Hancock Seamount in the Northwestern Hawaiian Islands until August 31, 2004. There were no comments received during the public comment period ending May 11, 1998.

This resource was overfished by foreign vessels before the Magnuson Fishery Conservation and Management Act was implemented; it has never been the target of domestic fishermen. The original Fishery Management Plan for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region, implemented in 1986, established a moratorium on fishing for bottomfish and seamount groundfish (51 FR 27413, July 31, 1986). Periodic reviews of the stocks indicated that no recovery had occurred. Therefore, on August 17, 1992 (57 FR 36907), the moratorium was extended to August 31, 1998. Armorhead was listed as overfished in the September 1997 "Report to Congress Status of Fisheries of the United States."

The last U.S. research cruise of Hancock Seamount was conducted in 1993; however, the Japanese trawl fleet continues to harvest armorhead on neighboring seamounts outside the exclusive economic zone (EEZ). According to bottom trawl catch and effort statistics provided by the National Research Institute of the Far Seas Fisheries, the most current (1995) spawning potential ratio (SPR) for the armorhead stock is 1.8 percent at all seamounts outside the EEZ. These seamounts comprise 95 percent of the trawl grounds and 91 percent of the total historic seamount-wide catch in the Japanese trawl fishery. Based on the low SPR value, it is inferred that the status of the Hancock Seamount armorhead stock is similarly depressed and well under the current 20 percent SPR definition for an overfished stock.

At its April 21, 1997, meeting, the Council heard reports from its Bottomfish Plan Team and Scientific and Statistical Committee on the status of seamount groundfish resources. On the basis of those reports, and in accordance with the framework procedures at 50 CFR 660.67, the Council recommended that the moratorium be extended for at least another 6 years (i.e., August 31, 2004).

The Council recognizes that the stocks extend outside the EEZ and that the moratorium will not ensure recovery of the resource within the EEZ; however, the action is in accordance with U.S. responsibilities under the Magnuson-Stevens Fishery Conservation and Management Act. The Council also has taken action to convene a panel of international experts to explore possible international management of the Emperor and Hawaiian Ridge Seamount armorhead fishery under the aegis of the United Nations Agreement Relating to

Straddling Fish Stocks and Highly Migratory Fish Stocks.

Classification

This final rule has been determined to be not significant for purposes of E.O. 12866.

The Assistant General Counsel for Legislation and Regulation of the Department of Commerce certified to the Chief Counsel for Advocacy of the Small Business Administration that this rule, would not have a significant economic impact on a substantial number of small entities. No comments were received regarding this certification. As a result, a regulatory flexibility analysis was not prepared.

List of Subjects in 50 CFR Part 660

Administrative practice and procedure, American Samoa, Fisheries, Fishing, Guam, Hawaiian Natives, Indians, Northern Mariana Islands, Reporting and recordkeeping requirements.

Dated: June 23, 1998.

David L. Evans,

Deputy Assistant Administrator for Fisheries, National Marine Fisheries Service.

For the reasons set out in the preamble, 50 CFR part 660 is amended as follows:

PART 660—FISHERIES OFF WEST COAST STATES AND IN THE WESTERN PACIFIC

1. The authority citation for part 660 continues to read as follows:

Authority: 16 U.S.C. 1801 *et seq.*

2. Section 660.68 is revised to read as follows:

§ 660.68 Fishing moratorium on Hancock Seamount.

Fishing for bottomfish and seamount groundfish on the Hancock Seamount is prohibited through August 31, 2004.

[FR Doc. 98–17274 Filed 6–26–98; 8:45 am]

BILLING CODE 3510–22–F

Western
Pacific
Regional
Fishery
Management
Council

Amendment 5

Northwestern Hawaiian Islands Mau Zone Limited Access System

Fishery Management Plan for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region

August 1998

(Includes Environmental Assessment, Regulatory Impact Review, Initial Regulatory Flexibility Analysis and Proposed Regulations)

Western Pacific Regional Fishery Management Council
1164 Bishop Street, Suite 1400
Honolulu, Hawaii 96813

1.0 Introductory Material

1.1 Summary

The Mau Zone was intended to serve as an area where fishermen can gain experience fishing in the Northwestern Hawaiian Islands, thereby enhancing their eligibility for subsequent entry into the limited access system established for the Hoomalu Zone. Access to the Mau Zone remained unrestricted, except for excluding vessel owners permitted to fish in the Hoomalu Zone. More than 80 permits have been issued for the Mau Zone fishery since the implementation of the FMP. An immediate concern is the low economic returns in the fishery. Long-term concerns are continued social and economic problems associated with open access and the biological overharvesting that may result from excessive effort.

This amendment will establish a limited access system for the Mau Zone. The objectives are to ensure long-term productivity of bottomfish stocks while maintaining fishing opportunities for small-scale commercial fishermen, continue to deliver high quality products to consumers and prevent excessive fishing capacity. Consistency between the existing management regime in the Hoomalu zone and the proposed measures under this amendment was also emphasized to allow for future management options for both zones.

Target number of vessels

Taking into account various biological and economic factors, the Council determined that the long-term target number of vessels allowed in the fishery should be 10.

Initial allocation of permits

The qualifying point system for the initial allocation of permits balances historic participation with current or recent fishing activity. The control date of December 17, 1991, is used with other eligibility criteria to ensure that those who have exhibited a commitment to the fishery are allowed to maintain the continuity of their economic enterprises.

Any vessel owner who is eligible for three or more points according to the following point system shall be awarded a permit under the limited access system:

- Was the owner of a vessel that was used to make at least one landing of bottomfish management unit species (BMUS) from the Mau Zone on or before December 17, 1991 - 1.5 points.

- Was the owner of a vessel that was used to make at least one landing of BMUS from the Mau Zone in 1996 - 3.0 points; 1995 - 2.5 points; 1994 - 2.0 points; 1993 - 1.5 points; 1992 - 1.0 point; 1991 - 0.5 point.

A landing is defined for this purpose as any amount of BMUS caught in the Mau Zone and off-loaded for sale. Documentation of qualifying landings must be from properly submitted State of Hawaii landing reports. The reported landings for any given year may not be used to accumulate points unless an applicant held a valid Mau Zone permit during that year.

In addition, approximately one-fifth of the target number of permits will be reserved for use by a community development program. The Council, in consultation with National Marine Fisheries Service (NMFS), will develop criteria for community eligibility. In addition, the Council, in consultation with NMFS, will establish principles, procedures and process for soliciting, evaluating and selecting community development plans describing how the permits will be used. The number of permits allocated to the program may be periodically reviewed and changed.

The initial allocation of permits under a limited access system for the Mau Zone fishery may result in a number of participants that exceeds the long-term target number. For this reason, various permit restrictions (described below) are imposed that are expected to gradually reduce the number of fishery participants to achieve the target number.

Vessel ownership restrictions

Permit holders must be an individual, partnership or corporation. The holders must retain at least 50% ownership in the permitted vessel or its replacement. A permit holder whose vessel is unseaworthy or who does not currently own a vessel may lease or charter a vessel for up to 12 months.

Use-it-or-lose-it requirement

Permits for the Mau Zone fishery will be issued on an annual calendar basis. Participants must meet annual trip and landing criteria in order to qualify for a permit the following year. Participants must make 5 trips to the Mau Zone and land a minimum of 500 pounds per trip of BMUS from the Mau Zone in order to qualify for a permit the following calendar year. The absence of a vessel does not exempt a permit holder from the use-it-or-lose-it requirement. The Council may adjust the annual trip and landing criteria of the use-it-or-lose-it permit requirement and/or impose other requirements.

Permit transfer, lease, charter and sale restrictions

Permit recipients can not transfer, lease, charter or sell their permit.

Annual review

The Council shall undertake an annual review of the Mau Zone limited access system to determine whether adequate attrition has taken place. In the event that it has not, the Council may adjust the use-it-or-lose-it permit requirement and/or impose other requirements. If the current number of

fishery participants is less than the target number, the Council may develop opportunities for new vessels to enter the fishery.

Five-year review

The Council shall undertake a comprehensive review of the effectiveness of the limited access system five years after implementation.

Entry by new vessels

When the number of permitted vessels falls below the target number an opportunity for new participants to enter the fishery will be provided. At this time, the Council is considering establishing a lottery or qualifying point system to allow new entrants into the fishery. The lottery or point system may take into account historical participation in the Northwestern Hawaiian Islands or main Hawaiian Islands bottomfish fishery.

When the number of permitted vessels is equal to or falls below the target number the Council may also combine the Mau and Hoomalu Zones into one limited access system, and/or it may implement identical systems of permit transfer in both zones. If the two zones are combined, the Council may consider establishing other systems of transfer, including direct transfers of permits from one fisherman to another through a market mechanism subject to anti-monopoly and certain other constraints.

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1.3 Introduction

1.3.1 Existing Regulations

The fishery management plan (FMP) for bottomfish and seamount groundfish fisheries in the western Pacific region became effective on August 27, 1986, as published in Federal Register Notice 51FR27413, July 31, 1986. The FMP prohibits certain destructive fishing techniques, including explosives, poisons, trawl nets and bottom-set gillnets, establishes a moratorium on the commercial harvest of seamount groundfish stocks at the Hancock Seamounts and implements a permit system for fishing for bottomfish in the exclusive economic zone (EEZ) around the Northwestern Hawaiian Islands (NWHI). The plan also establishes a management framework that includes adjustments, such as catch limits, size limits, area or seasonal closures, fishing effort limitation, fishing gear restrictions, access limitation, permit and/or catch reporting requirements and a rules-related notice system.

Amendment 1 includes the establishment of limited access systems for bottomfish fisheries in the EEZ surrounding American Samoa and Guam within the framework measures of the FMP.

Amendment 2 was developed in 1988 to diminish the risk of biological overfishing and improve the economic health and stability of the bottomfish fishery in the NWHI. The amendment divides Federal waters of the NWHI into two zones: the Hoomalu Zone and the Mau Zone. A limited access system was established for the Hoomalu Zone. Access to the Mau Zone remained unrestricted, except for excluding vessel owners permitted to fish in the Hoomalu Zone. The Mau Zone is intended to serve as an area where fishermen can gain experience fishing in the NWHI, thereby enhancing their eligibility for subsequent entry into the Hoomalu Zone.

Amendment 3 defines recruitment overfishing as a condition in which the ratio of the spawning stock biomass per recruit at the current level of fishing to the spawning stock biomass per recruit that would occur in the absence of fishing is equal to or less than 20 percent. Amendment 3 also delineates the process by which overfishing is monitored and evaluated.

Amendment 4 requires vessel owners or operators to notify the NMFS at least 72 hours before leaving port if they would be fishing in a 50-mile study zone around the NWHI. This notification allows Federal observers to be placed on board bottomfish vessels to record interactions with protected species if this action is deemed necessary.

1.3.2 Responsible Agencies

The Council was established by the Magnuson Fishery Conservation and Management Act to develop management plans for fisheries operating in the U.S. EEZ around American Samoa, Guam, Hawaii, the Northern Mariana Islands and the U.S. possessions in the Pacific[1]. Once an FMP is approved by the Secretary of Commerce, it is implemented by Federal regulations that are enforced by the NMFS and the U.S. Coast Guard, in cooperation with state, territorial and

commonwealth agencies. For further information, contact:

Kitty M. Simonds
Executive Director
Western Pacific Fishery
Management Council
1164 Bishop Street, Suite 1400
Honolulu, HI 96813
Telephone: (808) 522-8220

Charles Karnella
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1.3.3 List of Preparers

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1.3.4 Public review and comment

This amendment was developed with the assistance of a Mau Zone task force established by the Council and was reviewed by the bottomfish and seamount groundfish Plan Team, fishing industry Advisory Panel and the Scientific and Statistical Committee. A draft of this amendment was distributed for comments to all holders of Federal permits for the Northwestern Hawaiian Islands bottomfish fishery and holders of State of Hawaii Commercial Marine Licenses. Notice of the availability of a draft amendment for public review and comment was published in the Federal Register on June 3, 1998. Public meetings and hearings regarding this amendment are listed below.

Date	Meeting (Location)	Published Notice

29 July 1998	97th Council, pubic hearing (Kona)	*FR, **HNA, Hawaii Tribune Herald, West Hawaii Today
16 April 1998	95th Council, public meeting (American Samoa)	FR, HNA, American Samoa News
5 April 1998	Task Force, public meeting (Honolulu)	FR, HNA
25 March 1998	Scientific and Statistical Committee (Honolulu)	FR, HNA
11 March 1998	Bottomfish Plan Team, public meeting (Honolulu)	FR, HNA
29 January 1998	Pubic Hearing, Kauai	FR, HNA, The Garden Isle, Kauai Times
28 January 1998	Public Hearing, Oahu	FR, HNA
27 January 1998	Public Hearing, Maui	FR, HNA, Maui News
14 November 1997	94th Council, public meeting (Honolulu)	FR, HNA
11 November 1997	Scientific and Statistical Committee, public meeting (Honolulu)	FR, HNA
2 October 1997	Task Force, public meeting (Honolulu)	FR, HNA
August 21, 1997	93rd Council, public meeting (Honolulu)	FR, HNA
August 6, 1997	Scientific and Statistical Committee, public meeting (Kona)	FR, HNA
July 28, 1997	Task Force, Bottomfish Plan Team, Bottomfish Advisory Panel, public meeting (Honolulu)	FR, HNA
15 May 1997	Bottomfish Plan Team, public meeting (Honolulu)	FR, HNA
25 April 1997	92nd Council, pubic meeting (Honolulu)	FR, HNA
23 April 1997	Bottomfish Advisory Panel, public meeting (Honolulu)	FR, HNA
1 April 1997	Task Force, public meeting (Honolulu)	FR, HNA
9 April 1997	SSC, public meeting (Honolulu)	FR, HNA
28 February 1997	Task force, public meeting (Honolulu)	FR, HNA

21 November 1996	91st Council, public meeting (Honolulu)	FR, HNA
24 September 1996	Task Force, public meeting (Honolulu)	FR, HNA
9 August 1996	90th Council, public meeting (Molokai)	FR, HNA, Molokai Dispatch
23 July 1996	Task Force, public meeting (Honolulu)	FR, HNA
17 June 1996	Task Force, public meeting (Honolulu)	FR, HNA
26 April 1996	89th Council, public meeting (Honolulu)	FR, HNA

*Federal Register

**Hawaii Newspaper Agency (Honolulu Advertiser and Honolulu Star Bulletin)

1. Howland Island, Baker Island, Jarvis Island, Johnston Atoll, Midway Island, Kingman Reef, Palmyra Island and Wake Island.

2.0 Fishery management program

2.1 Problems for resolution

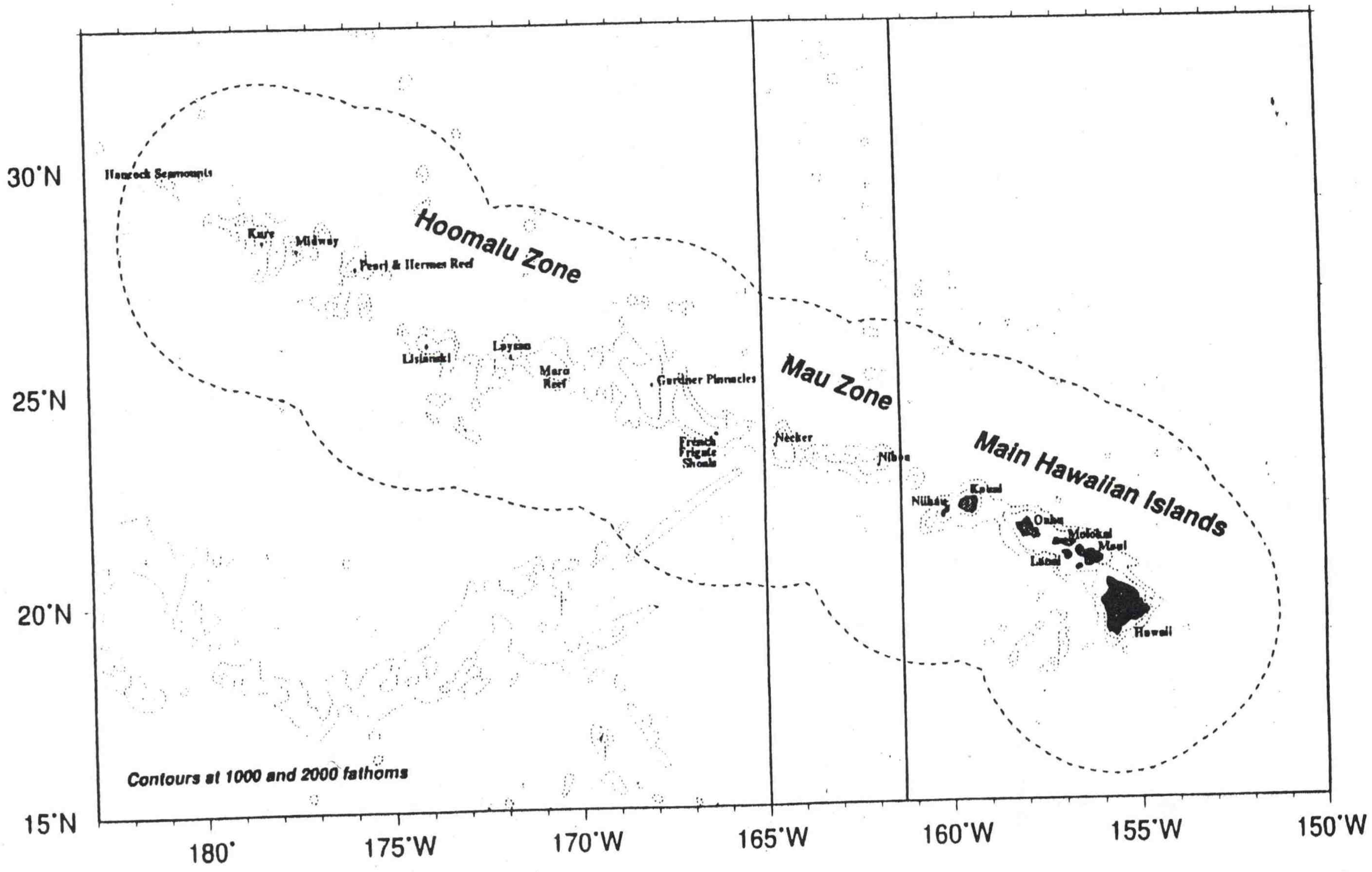
The Council first considered a system of limited access for the Mau Zone bottomfish fishery when Amendment 2 to the FMP was developed in 1988. At that time, the Council decided that there was a need for limited access only in the Hoomalu Zone (the more distant portion of the Northwestern Hawaiian Islands bottomfish fishery) and that the Mau Zone should remain open access (Figure 2.1). A permit was required to fish in the Mau Zone, but the number of permits issued was not limited. One objective of Amendment 2 was to provide opportunities for fishermen who were excluded from the Hoomalu Zone to earn Mau Zone points that could qualify them for limited entry permits should new vessels be allowed to enter the Hoomalu Zone. Maintaining the Mau Zone as open access was also important to bottomfish fishermen who relied on these fishing grounds. However, in recognition of the potential economic and biological problems associated with open access, the Council established a control date in 1991 giving notice to fishermen that a vessel entering the Mau Zone fishery after the control date might be deemed ineligible for a permit if a limited access system based on historical participation was established in the future.

While limited access effectively stabilized effort in the Hoomalu Zone, it was not long before complaints of potential overfishing and low profitability were heard with increasing frequency at meetings of Mau Zone fishermen. Economic analyses showed that instability in the species mix of the catch and the net annual influx of new vessels significantly affected the economic well-being of participants in the Mau Zone fishery (Section 4.4).The average vessel in the fleet could not cover its total annual costs, and the result was extensive economic displacement. Since 1989, more than 15 vessels have entered and left the fishery. Fishermen also expressed apprehension that the decline of bottomfish resources in the main Hawaiian Islands would prompt additional fishermen to enter the Mau Zone fishery. This potential increase in the number of participants in the Mau Zone fishery would cause further economic hardship for the vessels that have traditionally participated in the fishery.

In 1994 and 1995, the total landings of bottomfish management unit species (BMUS) in the Mau Zone fishery exceeded the estimated maximum sustainable yield (MSY) (Section 4.1). The record harvests were largely due to increased catches of uku, a species known to experience cyclical changes in stock abundance. Although the harvests in excess of MSY are not necessarily cause for immediate alarm, there is reason to be concerned about the future condition of bottomfish stocks in the Mau Zone. Fishing pressure increased by three vessels between 1995 and 1996. In addition, the instability and unpredictability of the number of vessels in the fishery from year to year makes it difficult to estimate and interpret biological parameters from catch and effort data. Consequently, the risk of localized overfishing in the Mau Zone is raised.

In response to these concerns, the Council established a two-year moratorium on new entrants into the Mau Zone, effective March 27, 1997. The moratorium capped the total number of vessels admitted into the fishery and allowed time for the Council to examine alternative management measures.

Figure 2.1. Location of Mau and Hoomalu Zones in Hawaiian Island archipelago



2.2 Management objectives

The following FMP objectives are relevant to this amendment:

- Protect against overfishing and maintain the long-term productivity of bottomfish stocks.
- Maintain existing opportunities for rewarding fishing experiences by small-scale commercial, recreational and subsistence fishermen, including native Pacific islanders.
- Maintain consistent availability of high quality products to consumers.
- Maintain a balance between harvest capacity and harvestable fishery stocks to prevent overcapitalization.

2.3 Management unit

The management unit is defined as the bottomfish complex harvested in the Mau Zone fishery of the Northwestern Hawaiian Islands. BMUS and other commonly caught bottomfish species are listed in Table 4.1.

2.4 Management alternatives

The Council considered an array of actions to achieve the management objectives, including limited access (the preferred alternative), total annual quota, minimum size limits, seasonal closures, area closures, gear restrictions, vessel landing limits, vessel trip limits and crew limits. The Council also considered the alternative of taking no action. Detailed descriptions of these alternatives are provided in Section 3.0.

It is the long term goal of the Council to simplify the management of the NWHI bottomfish fishery by joining the Mau Zone and Hoomalu Zone. However, the Council did not regard the alternative of combining the two zones into a single management regime as a practical alternative at this time. Unless the number of Mau Zone permits are immediately reduced to the target level (Section 2.6.2.1), joining the two zones would have the effect of re-creating the over-capacity in the Hoomalu Zone that regulation to date has kept in check. The Council determined that immediately reducing the number of permits to the target number would impose undue economic hardship on fishery participants. Once the number of participants in the Mau Zone fishery has stabilized the Council will consider joining the two zones.

2.5 Summary of beneficial and adverse impacts of management alternatives

A comparison of impacts between the preferred action and alternatives is more easily made when the rejected management measures are grouped together. The "no action" alternative is considered separately. Grouping of these alternatives generally follows the categorization by Anderson (1986). The principal categorization criterion is whether these measures limit effort in the fishery directly or indirectly. Regulations that limit effort directly are classified as limited-entry techniques and include license limitation (the preferred alternative), individual fishing quotas

(IFQs) and taxes on effort or fish. The Council did not consider IFQs or taxes because of the constraints imposed on the use of these measures by the Magnuson-Stevens Act. Measures that limit effort indirectly are classified as open-access techniques and include total quotas, minimum size limits, seasonal closures, area closures, gear restrictions, vessel landing limits, vessel trip limits and crew limits.

A detailed evaluation of the alternatives considered is provided in Section 3.0 and Section 5.6. Tables 2.1 and 2.2 summarize the impacts of the various management alternatives as they apply to the national standards of the Magnuson-Stevens Act and the objectives of the FMP.

The rating code is as follows:

++	=	Strong beneficial impact
+	=	Moderate beneficial impact
0	=	No impact or not applicable
-	=	Moderate negative impact
--	=	Strong negative impact

Table 2.1. Impact summary of preferred action and alternatives based on consistency with FMP objectives.

MP Objectives	Limited access (preferred action)	No action	Indirect effort limitation
Protect against overfishing	++	--	+
Maintain quality market product	++	--	-
Prevent over-capitalization	++	--	--
Maintain fishing opportunities for small-scale fishermen	++	--	--

Table 2.2. Impact summary of preferred action and alternatives based on consistency with national standards.

National Standard	Limited access (preferred action)	No action	Indirect effort limitation
Prevent overfishing	++	--	+

Based on best information	+	0	0
Manage stocks as a unit	++	0	0
No discrimination by state residency	+	+	+
Consider efficiency in use of resource	++	--	--
Management flexibility	+	0	--
Minimize administrative and enforcement costs	+	-	--
Impacts on participants and fishing community	+	-	0
Minimize bycatch	+	0	0
Promote safety of human life	0	-	-

In summary, the Council preferred a limited access system over indirect effort limitations, as limited access offers a more effective long-run solution to the problems of instability and poor economic returns in the fishery. In evaluating the management alternatives the Council also took into consideration that its long term goal is to simplify the management of the NWHI bottomfish fishery by joining the Mau Zone and Hoomalu Zone. The future consolidation of the two zones would be facilitated if the management regime for the Mau Zone fishery is compatible with the limited access system established for the Hoomalu Zone.

2.6 Measures recommended to attain management objectives

2.6.1 Specification of Optimum Yield

The optimum yield for the NWHI bottomfish fishery is defined non-numerically in the FMP as the amount of bottomfish caught by fishermen that will achieve FMP objectives to the greatest extent practicable. The objectives directly applicable to this amendment are listed in Section 2.2.

Notwithstanding the non-numeric definition of optimum yield, the Council regards the annual harvest associated with optimum yield to be less than or equal to MSY. Estimates of MSY and optimum yield are not to be construed as quotas for the fishery, but as revised yield estimates.

2.6.2 Preferred management measures

The preferred managment measure establishes a limited access system to reduce the number of permitted vessels in the Mau Zone fishery to a target number that would allow the highest level of fishery participation consistent with the management objectives. The limited access system for the Mau Zone is consistent with the current limited access system established for the Hoomalu Zone in the NWHI bottomfish fishery.

As required under Sec. 303(b)(6) of the Magnuson-Stevens Act, the Council took into account the following considerations in determining the number of vessels that will be allowed to participate in the Mau Zone fishery and the allocation of fishing privileges among various fishermen: (a) present participation in the fishery (Section 4.3); (b) historical fishing practices in, and dependence on, the fishery (Section 4.5.2); (c) the economics of the fishery (Sections 4.4 and 4.5); (d) the capability of fishing vessels used in the fishery to engage in other fisheries (Section 4.5.2); and (e) the cultural and social framework relevant to the fishery and any affected fishing communities (Section 4.6).

2.6.2.1 Determination of target number

The Council considered various biological and economic factors in determining the number of vessels that should be allowed to enter the fishery. Using the data and methodology presented in Section 6.2.1, target numbers based on three criteria were calculated (Table 2.3). All three criteria maximize the number of vessels in the fishery subject to the constraint of not exceeding MSY. Maximizing the number of vessels was considered important by current participants in the fishery in order to enable the broadest level of access possible within a limited entry system. All three criteria anticipate continuing the part-time participation in the fishery that has been the vessel operation norm. This is consistent with the FMP objective to maintain fishing opportunities for small-scale commercial fishermen and was considered to be an important factor by current fishery participants because of the multipurpose nature of the vessels that typically operate in the fishery and the limited economic profitability of these vessels.

The first criterion seeks to maintain current average vessel operations in terms of fishing effort and daily catch rates. It is the most vessels that can fish at current operating patterns without exceeding MSY. It is essentially an "operational" criterion. The second criterion seeks to increase the average daily catch rate within the MSY constraint. It "mimics" the MSY production model by targeting the MSY catch rate, and is essentially a "biological" criterion. The third criterion seeks to attain a catch rate which generates sufficient revenue to cover trip costs and that portion of fixed costs attributable to participation in the Mau Zone fishery. It is an "economic" criterion.

Table 2.3. Target number of vessels based on various criteria.

Criterion	BMUS pounds landed per vessel	Target number of vessels
1) Maintain average vessel performance	11,580	11
2) Attain MSY catch rate	13,395	10
3) Economic break-even	22,107	6

Considering these biological and economic factors, the Council set the initial target number at ten permits. The Council rejected a target number of 11 because it does not take into account possible error caused by non-reporting or under-reporting of BMUS catches by fishery participants nor does it accommodate a possible level of fishing activity higher than the 1994-1996 levels used to calculate an annual average.[1] The Council rejected a target number of six because it disregards the importance of participation in the fishery by part-time operators (Section 4.5.2), who may accrue significant non-monetary rewards from fishing in the Mau Zone. A target number of ten, on the other hand, increases the average daily catch and allows for a high level of participation by part-time operators without jeopardizing the long-term sustainability of the fishery.

After the limited access system has been in effect for five years, the Council will verify that the target number is still appropriate for current fishing activity levels, catch rates and the biological condition of the stocks (Section 2.6.2.8). If it is not, a new target will be calculated.

2.6.2.2 Initial allocation of permits

The initial allocation of permits under a limited access system for the Mau Zone is based on a qualifying point system. In addition, one-fifth of the target number of permits are reserved for use by a community development program.

2.6.2.2.1 Qualifying point system

The weighted point system balances the claims of historic participation by those fishermen who entered the fishery prior to the control date, but who may have been relatively inactive thereafter, with the economic dependence on the fishery of active newcomers. Overall, the system allows those who have exhibited a commitment to the fishery to maintain the continuity of their economic enterprise. With one exception,[2] no vessel is expected to be excluded under the point system that has fished in the Mau Zone since January 1, 1994. Given the inactivity of the vessels

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[1]Pooley (1996) states that, if the Mau Zone fleet operates at the maximum annual level of fishing days, the MSY could be harvested by three vessels.

[2]Three permits were issued in 1997 prior to the March 27, 1997 moratorium, but only one of these permit holders participated in the Mau Zone fishery. This permit holder would not qualify under the point system.

that will not qualify to participate in the fishery, the economic consequences of being excluded are expected to be negligible.

Any vessel owner who is eligible for three or more points according to the following point system shall be awarded a permit under the limited access system:

- Was the owner of a vessel that was used to make at least one landing of bottomfish management unit species (BMUS) from the Mau Zone on or before December 17, 1991 - 1.5 points.

- Was the owner of a vessel that was used to make at least one landing of BMUS from the Mau Zone in 1996 - 3.0 points; 1995 - 2.5 points; 1994 - 2.0 points; 1993 - 1.5 points; 1992 - 1.0 point; 1991 - 0.5 point.

A landing is defined for this purpose as any amount of BMUS caught in the Mau Zone and off-loaded for sale. Documentation of qualifying landings must be from properly submitted State of Hawaii landing reports. No landing report that is submitted to the State more than one year after the landing can be used to document eligibility points. The reported landings for any given year may not be used to accumulate points unless an applicant held a valid Mau Zone permit during that year. Applicants must submit their documentation and apply for an initial permit within 45 days of the publication date of the final rule or lose their initial eligibility for a permit. An owner of two or more vessels that are each awarded three or more points can receive a Mau Zone permit for each such vessel.

Applications for a permit must be addressed to the NMFS Pacific Islands Area Office (PIAO) Administrator. The permit application must identify the vessel to be used in fishing, the owner, the captain, relief captains and other information that may be required by the PIAO Director. Partners who alternate as captain should be indicated. For partnerships or corporations, owners names and their percentages of ownership must be included. Vessel identification requirements must be met as established by the regulations. A vessel owner must designate on the initial permit application the vessel to be used in the Mau Zone fishery and must be identified as the vessel's owner on the Coast Guard documentation or state registration form. This vessel may be no greater than 60 feet in length overall (which would be larger than the largest vessel currently in the fleet). In the event that a qualifying individual does not own a vessel at the time permits are issued, a 12-month period, beginning on the date of issuance of permits, will be allowed for a vessel to be acquired. The absence of a vessel does not exempt a permit holder from the use-it-or-lose-it requirement (Section 2.6.2.3.2).

2.6.2.2.2 Community development program

The Magnuson-Stevens Act provides for the establishment of a western Pacific community development program for any fishery under the authority of the Council. This provision was added to the Act to address concerns that communities consisting of descendants of indigenous peoples in the Council's area have not been appropriately sharing in the benefits from the region's fisheries. The Council and the Secretary, respectively, have discretion to develop and to approve

programs for eligible communities for the purpose of enhancing access to the fisheries under the authority of the Council.

As stated in the Magnuson-Stevens Act, to be eligible to participate in a western Pacific community development program, a community must

1) be located within the western Pacific regional fishery management area;

2) consist of community residents who are descended from the aboriginal people indigenous to the area who conducted commercial or subsistence fishing using traditional fishing practices in the waters of the western Pacific region;

3) not have previously developed harvesting or processing capability sufficient to support substantial participation in fisheries in the Council's area;

4) develop and submit a community development plan to the Council and the Secretary; and

5) meet other criteria developed by the Council that are based on traditional fishing practices in or dependence on the fishery, the cultural and social framework relevant to the fishery and economic barriers to access to the fishery. These criteria must be approved by the Secretary and published in the Federal Register.

The Council determined that a community development program should be established to enhance access by eligible communities to the Mau Zone fishery. The Council noted that communities consisting of people descended from the aboriginal people indigenous to the Hawaiian islands have long been among the most economically disadvantaged in the State (Section 4.5.1). The purpose of the community development program is to develop sustainable economic activities in eligible communities. (Hereafter, the term "Hawaiians" or "Part Hawaiians" refers to the aboriginal people indigenous to the Hawaiian Islands and any descendants of those aboriginal people, regardless of blood quantum. In the past, the Council has also used the term "Native Hawaiian" to refer to any descendant of the aboriginal inhabitants).

In determining how many permits should be reserved for the program, the Council took into account that approximately 20 percent of the State of Hawaii's population consists of "Hawaiians" or "Part Hawaiians" (Department of Business, Economic Development and Tourism 1995). Based on this initial guideline, the Council recommended that the number of permits reserved for the community development program be 20 percent of the target number of permits for the Mau Zone. Given that the target number has been determined to be ten permits (Section 2.6.2.1), two of these ten permits will be reserved for the community development program. The number of permits allocated to the program may be periodically reviewed and changed.

The Council, with the approval of the Secretary, will establish the principles and procedures for a community development program for the Mau Zone fishery in accordance with the Magnuson-Stevens Act. The program is expected to be in place before attrition reduces the number of participants in the Mau Zone fishery to the target number. In the event that the program has not been established before the target number is reached the Council will adjust the management

regime to ensure that ten vessels have an opportunity to partcipate in the fishery.

The permits held by the community development program will not be subject to the use-it-or-lose-it requirement (Section 2.6.2.3.2). However, the permits will be subject to transfer, lease, charter and sale restrictions (Section 2.6.2.3.3), and permit holders will be subject to vessel replacement restrictions (Section 2.6.2.4), workshops on endangered and threatened species (Section 2.6.2.6), permit fee (Section 2.6.2.10) and reporting and record keeping requirements (Section 2.6.3).

2.6.2.3 Permit restrictions

It is anticipated that the initial system of allocation will result in a number of potential permit holders that exceeds the target number. Based on State of Hawaii landings data, an estimated 18 vessels will qualify under the point system for entry into the Mau Zone fishery. In addition, two permits will be reserved for a community development program, resulting in an estimated 20 eligible permittees. The system of limited access established by the Council avoids imposing undue hardship on fishery participants and allows attrition resulting from market forces and freedom of choice to reduce the fleet to the target number over several years. With a minimum attrition rate of 15 percent per year (Section 3.1.1.1), the target of 10 vessels is expected to be reached within five years. To help ensure that the desired level of attrition occurs within this time frame, restrictions are imposed on vessel ownership and the transfer of permits and a use-it-or-lose-it requirement is applied.

2.6.2.3.1 Vessel ownership requirements

A permit holder can be an individual, partnership or corporation who may continue as a permit holder as long as the individual, partners or shareholders of record are listed on the original initial application and retain more than 50 percent ownership in the permitted vessel or its replacement. If the ownership of the vessel passes to persons other than those listed as the original permitted parties or falls to 50 percent or below, the permit shall lapse and be surrendered to NMFS. The purpose of this section is to prevent the use of corporate or partner ownership structures to pass fishing vessel permits from one group of individuals to another. A permit holder whose vessel is unseaworthy or who does not currently own a vessel may lease or charter a vessel for use in the Mau Zone for up to 12 months. At the end of the 12-month period the permit shall lapse (Section 2.6.2.5).

2.6.2.3.2 Use-it-or-lose-it requirement

An individual, partnership or corporation awarded a permit under the qualifying point system described in Section 2.6.2.2.1 can apply for a new permit annually as long as the permitted vessel makes a minimum of five landings of Mau Zone bottomfish during the calendar year for which the initial permit was issued and in each calendar year thereafter.

A landing of Mau Zone bottomfish is defined, for the purpose of a permit application, as catching and off-loading at least 500 pounds of bottomfish management unit species from the Mau Zone. Only one landing per fishing trip can be counted toward the landing requirement. Splitting large

landings into multiple 500 pound parts to meet this requirement is prohibited.

Appeals for a waiver of this landing requirement will be determined by the NMFS Southwest Regional Administrator, who will consult with the Council prior to making a determination. Grounds for a waiver are limited to captain incapacitation, vessel breakdowns and a vessel lost at sea. Unprofitability of the fishery is not sufficient reason to waive the landing requirement. The Council may adjust the annual trip and landing criteria of the use-it-or-lose-it permit requirement and/or impose other requirements.

2.6.2.3.3 Permit transfer, lease, charter and sale restrictions

An individual, partnership or corporation awarded a permit under the qualifying point system described in Section 2.6.2.2.1 can not transfer, lease, charter or sell their permit. If a vessel covered by a permit is sold, the permit remains with the original permittee for possible use for a replacement vessel. If the sold vessel is not replaced within 12 months from date of sale, the eligibility of the permit holder to retain or apply for a Mau Zone permit will be lost. Permit holders may hire captains to operate their vessels but may not lease or charter their vessels or permits to fish in the Mau Zone.

2.6.2.4 Vessel replacement restrictions

A permit holder's vessel may be upgraded (through vessel additions or new vessel purchases) to one of no more than 60 feet in length. This restriction on vessel size will limit increases in fishing power but not place the safety of fishery participants at risk.

2.6.2.5 Permit duration

Permits will be issued based on a calender year, January 1 through December 31.

2.6.2.6 Workshops on endangered and threatened species

Participants will still be required (Amendment 2) to participate in a NMFS-U.S. Fish and Wildlife Service workshop to ensure their familiarity with concerns involving marine mammals and endangered species.

2.6.2.7 Annual review

The Council shall undertake an annual review of the Mau Zone limited access system during which time it will examine current participation rates and landings in relationship to MSY and the target number of vessels. The objective of this review is to determine whether adequate attrition has taken place. In the event that it has not, the Council may adjust the annual trip and landing criteria of the use-it-or-lose-it permit requirement and/or impose other requirements. If the current number of participants is less than the target, the Council may develop opportunities for new participants to enter the fishery (Section 2.6.2.9)

2.6.2.8 Five-year review

The Council shall undertake a comprehensive review of the effectiveness of the limited access system five years after implementation. This evaluation will be done with the assistance and advice of the Scientific and Statistical Committee, Bottomfish Plan Team and other advisory bodies as needed. The Council will consider the extent to which FMP objectives have been met and the extent to which the target number of vessels has been reached through attrition. The Council will verify that the target is still appropriate for current fishing activity levels, catch rates and the biological condition of the stocks. If it is not, a new target will be calculated.

The Council will next compare the current participation levels to the original or revised target. If the current number of participants is more than the target, the Council will adjust the annual trip and landing criteria of the use-it-or-lose-it permit requirement and/or impose other requirements.

2.6.2.9 Entry by new vessels

The selling or leasing of permits is prohibited (Section 2.6.2.3.3). However, when the number of permitted vessels falls below the target number, an opportunity for new participants to enter the fishery will be provided. At this time, the Council is considering establishing a lottery or qualifying point system to allow new entrants into the fishery. The lottery or point system may take into account historical participation in the NWHI or main Hawaiian Islands bottomfish fishery. NMFS may require payment of a fee (see Section 2.6.2.10) to cover the costs of administering a lottery system. Establishment of a lottery or qualifying point system or an alternative way of allowing new participants into the fishery will be accomplished under framework procedures in the FMP.

When the number of permitted vessels is equal to or falls below the target number, the Council may also combine the Mau and Hoomalu Zones into one limited access system, and/or it may implement identical systems of permit transfer in both zones. If the two zones are combined, the Council may consider establishing other systems of transfer, including direct transfers of permits from one fisherman to another through a market mechanism provided that the scheme is designed so as to deter any person or entity from acquiring an excessive share of fishing privileges. The framework procedures of the FMP will be used to effect any such changes.

2.6.2.10 Permit fee

A fee will be charged for each application for a Mau Zone bottomfish fishery permit. The amount of the fee will be calculated in accordance with procedures set forth in the NOAA Finance Handbook for determining the administrative costs incurred in issuing permits. The fee will not exceed such costs and will be specified on each permit application form. Failure to pay the fee will preclude the issuance of a Mau Zone permit.

2.6.2.11 Prohibition of sale of incidentally caught bottomfish

BMUS caught in the Mau Zone by vessels engaged in other fisheries in the NWHI may not be retained unless the vessel has a Mau Zone permit. If catches are retained, the vessel involved will

be considered to be fishing for bottomfish in the Mau Zone without a permit, and appropriate penalties will be levied against the offending vessel.

2.6.2.12 Appeals

Appeals to decisions of the PIAO Administrator regarding FMP measures pertaining to the Hoomalu Zone and Mau Zone bottomfish fisheries shall be heard by the NMFS Southwest Regional Administrator, who will consult with the Council prior to making a determination. This appeals process replaces the process set forth in Section 3.17 of amendment 2.

2.6.3 Reporting and record keeping requirements

Any person who receives a permit under the limited access system must comply with reporting and record keeping requirements as described in CFR Section 660.14.

2.7 Rationale and net benefit discussion

The principal motivation for implementing a limited access system for the Mau Zone fishery is to support conservation and long-term productivity of Mau Zone bottomfish stocks. In addition, the Council believes limited access will improve the economic stability of the fishery. Implementation of the limited access system is viewed by the Council as an important component of the overall management strategy to achieve optimum yield and diminish the risk of overfishing in a cost-effective manner over the long term while allowing participation by the greatest number of fishermen possible. The moratorium has stopped the influx of new entrants into the fishery. The system of limited access decreases the large reserve of potential effort that could, under reasonably foreseeable conditions, threaten the resource. At the same time, the system allows attrition due to market forces and freedom of choice to reduce the fleet to more economically rational levels. In summary, the Council is adopting a precautionary approach by instituting fair and equitable controls before a crisis in the fishery occurs.

3.0 Analysis of the beneficial and adverse impacts of management alternatives

The purpose of this section is to assist in understanding the relative ecological, economic and social consequences of alternative management measures by providing a qualitative evaluation of the alternatives identified in this amendment. A shortage of economic and social data on fishery participants and limitations on available information concerning the potential physical effects of management alternatives on fishing activities precludes a detailed quantitative analysis of beneficial and adverse impacts. However, the analysis presented provides an adequate basis for making management decisions.

Before choosing the limited access system described in Section 2.6.2, the Council considered an array of management measures to address the problems in the Mau Zone bottomfish fishery. The alternatives examined by the Council included the following:

Total annual quotas - Quotas would place a ceiling on total annual (or any other period) harvest, and once a quota is reached, no additional fishing would be permitted. Quotas could be applied to one or more bottomfish species or to the entire mixed-species bottomfish complex in the Mau Zone or subareas of the Mau Zone. Quotas are normally filled early in a season because they usually encourage a large pulse of competitive fishing as fishermen rush to get a piece of the action. In fisheries managed under quotas, the supply of fresh fish is cut off as soon as the harvest level is reached. This would be very disruptive to Honolulu fresh fish markets because prices would be erratic, the markets would be vulnerable to import penetration during closed periods and the existing market for fresh bottomfish might be diminished.

Although quotas can prevent biological overfishing, they would not prevent overcapitalization of the harvest sector. Management by quota usually results in progressively shorter fishing seasons to prevent a growing fleet from exceeding conservation-determined quotas. If quotas were species specific, a major difficulty would be to decide what should be done once a quota was reached for a particular species in a multispecies fishery. Should all further fishing be prohibited, or should some sort of non-retention rule be instituted instead? A quota would result in a waste of fish, which must be discarded even if already dead. In addition, to be effectively enforced a quota system normally requires catch reporting or data collection on catches on a near "real-time" basis so that fishing will not continue once the quota is reached. Administrative and enforcement costs are high.

Minimum size limits - The intent of minimum size limits is to increase the yield per recruit by raising the age of entry into the fishery. An associated benefit is the augmentation or protection of the spawning stock and subsequent recruitment. A larger spawning population would be expected to increase the size of future year classes, although this outcome may not necessarily occur for several reasons: 1) environmental changes affecting the spawning-recruitment process; 2) changes in egg production, which is independent of the population density; and 3) environmental carrying capacity constraints.

Minimum size limits could be established for the major species of bottomfish in the Mau Zone. The minimum sizes would correspond to the size at onset of sexual maturity for the species' females. For some species, the size at onset of sexual maturity is known (e.g., opakapaka = 3 pounds; ehu = 1 pound), but for other species, the size at onset of sexual maturity is not known at present or may not be an appropriate management measure to use. For example, minimum size limits are not appropriate for the management of grouper (e.g., hapuupuu) because the size at onset of sexual maturity varies with population structure.

Another problem with implementing minimum size restrictions for the Mau Zone fishery is that deepwater bottomfish usually suffer damage from gas expansion as they are hauled to the surface and have little or no chance of survival if released. To avoid waste, a minimum size limit for bottomfish would need to aim to discourage the hooking of undersized fish rather than to require their release.

Finally, there is no evidence of growth overfishing for any of the Mau Zone species of bottomfish analyzed. Although recent landings of Mau Zone bottomfish have exceeded the best available estimate of MSY, size structure yield-per-recruit analyses show Mau Zone populations of opakapaka, onaga, ubu, hapuupuu. and butaguchi are not growth-overfished (Kobayashi 1997). Few small bottomfish are landed from the Mau Zone compared to the Main Hawaiian Islands.

Closed seasons - For species which are known to form spawning aggregations during a two to three month period, seasonal closures could be a very effective means of protecting stocks that are highly vulnerable to capture during spawning. However, most of the species of Mau Zone bottomfish are not known to form spawning aggregations or they spawn over an extended period.

The spawning period for opakapaka in the Mau Zone is from June through December, with peak spawning in August. For hapuupuu, the spawning period has not been determined. However, ovaries with eggs have been collected from January through April in the NWHI, indicating winter spawning. Very little is known about the reproductive biology of onaga in the Mau Zone, but it is probably similar to that of ehu whose spawning season extends from May through October. The spawning season for butiguchi in the Mau Zone has not been determined.

Unless seasonal closures are of great duration they would not be very effective in protecting most Mau Zone bottomfish stocks because they spawn throughout a large portion of the year. Closing a season for one species in a multispecies fishery means either a season closure for all species or waste of the prohibited species which must be discarded. Moreover, a seasonal closure for a particular species covering a broad area to protect spawning stocks would disrupt the supply of fresh bottomfish. For example, a seasonal closure on the harvest of Mau Zone opakapaka during its apparent late summer spawning season would cut off the supply of one of the few bottomfish species available to Hawaii consumers during the summer months. Moreover, for year-round operations, many Mau Zone fishing boats target a combination of species because seasonal availability prevents them from catching enough of any single species. A seasonal closure for any major species could disrupt the pattern of landings.

Seasonal closures are not likely to increase the fish available for harvest in the long term. Fishing effort could increase to exploit the available stock, requiring progressively shorter open seasons. Moreover, a shortened fishing season would concentrate fishing effort within the season, thereby nullifying any intended conservation gains. Finally, keeping an affected species from the fresh fish market during a closed season could reduce the market acceptance of that species during the fishing season and open the doors for substitutes through imports.

Area closures - Area closures of the bottomfish fishery in the Mau Zone could be applied to any of the numerous banks, shoals and other undersea features in the Mau Zone. Area closures could provide an opportunity to restore the balance to a multispecies fishery. The more aggressive species that are caught first, such an the hapuupuu, would have an opportunity to recover. Area closures could be applied to a portion of the mixed-species complex in the EEZ. For example, closing a nursery area where juveniles congregate would protect against premature harvest. Moreover, periodic rotation of closed areas could keep the amount of area available to fishing at more or less constant levels.

The extent to which an area closure would protect against overfishing depends on the size and location. The size of an area could range from two to three miles in diameter to an entire bank. Closure of areas large enough to encompass a significant portion of the home range of the affected species would be more effective, but observations of fishermen and scientists suggest that the extent of the home range is limited for some species (e.g., onaga, ehu) and extensive for others (e.g. uku, ulua).

Although an area closure may allow depleted stocks to recover, it precludes the possibility of fishing any undepleted stocks in the same area. This would be a detriment to fishermen who target the area for species other than those that the closure is intended to protect. Those fishermen who normally bottomfish in the areas selected for closure are likely to shift to areas or fisheries that are still open. This relocation of fishing pressure may interfere with the opportunities of existing users in the areas and fisheries remaining open. Those who must relocate bottomfish fishing activities as a result of area closures in the Mau Zone may incur increased travel times and associated vessel operating costs.

Gear restrictions - Gear restrictions to reduce fishing power in the hook and line fishery could include measures such as limits on the number of lines or hooks. However, limiting the number of lines or hooks per vessel would probably be impossible to enforce in the bottomfish fishery. Port inspections of vessels immediately prior to a fishing trip would not guarantee compliance with such a regulation because each vessel must have spare gear on board to replace any lost during a trip and the "spare" gear could be fished in addition to the legal limit of gear. At-sea enforcement of this regulation would be required because aerial surveillance could not determine the amount of gear a vessel was fishing. Even at-sea enforcement could be ineffective; a fisherman could either discard excessive gear or, if hauling, could cut his gear when approached by a surveillance boat. Even if enforceable, the effectiveness of this approach in reducing fishing effort would be temporary at best because of additional vessels entering the fishery.

Experimental bottomfishing trials with different hook sizes fished simultaneously indicate that small hooks (Nos. 28 and 30) are more effective in capturing small fish (less than 45 cm fork length) than are larger hooks (Nos. 34 and 38) (Ralston 1982). Thus, fishermen can reduce the capture of small bottomfish by using large hooks. However, even large hooks catch some small fish, so the problem cannot be avoided entirely.

Landing limits per trip - Bottomfish landings per trip could be limited for the mixed-species complex or for one or more individual species of Mau Zone bottomfish. This measure would be similar to a "bag limit." Because of the different sizes and holding capacities of vessels in the bottomfishing fleet, a single landing limit would discriminate against larger boats. Scaling of limits could be established to match the size structure of the fleet.

Fishermen could circumvent a limit on landings per trip by making more trips. However, limiting the amount of landings per trip, in essence, places a ceiling on the revenue per trip. If fishing costs remain constant or increase with inflation, profitability per trip will be reduced or eliminated, possibly reducing the feasibility of making more trips per year directed at bottomfish. Also, fishing would likely be directed at the more valuable species to maximize revenue per trip within the established time limit. This would put further pressure on opakapaka and onaga stocks.

The reduction of fishing effort per vessel would not reduce total fishing effort or fishing mortality in the long run if new boats continue to join the fishery. However, the new boats would probably have smaller harvesting capacities; an individual vessel trip poundage limit reduces the economic incentive for greater vessel catching capacity. Limits on landings per trip can be enforced by dockside activities, but enforcement manpower and budgets might have to be increased to cover all of the possible landing sites both day and night.

Limit the number of trips per year - An alternative means of restricting fishing effort per vessel is to limit the number of bottomfishing trips per year. Because of the variability in the operations of different commercial sectors of the bottomfishing fleet, the trip limits would be scaled according to fleet structure.

Fishing effort and mortality per boat might be reduced by limiting the number of trips per year, but not if fishermen made longer trips or larger catches (including smaller fish) to compensate for a limited number of trips taken. If frozen bottomfish becomes acceptable to the market, an increase in effort and mortality may occur as a result. In the long run, total fishing effort and fishing mortality would not be reduced if now entrants continued to join the fishery. Trip limits do not require dockside enforcement as extensive as poundage limits per trip. However, cross-checking fishermen's trip reports must be thorough enough to discourage cheating.

Crew limits - Limiting the number of crew members per vessel would reduce fishing power. However, the need to pay each crew member a share of the gross revenue already limits crew size on commercial vessels. Moreover, the fishing power of a vessel is related not so much to the size of the crew as to the skill of the skipper and crew, their knowledge of the topography of the

bottomfish grounds and their fish-finding ability. Vessel clearance immediately before a fishing trip would be required to aid enforcement of a crew size regulation. However, additional crew members might embark and debark outside of home port. Aerial surveillance would be only partially effective, and sufficient dockside enforcement would be prohibitively expensive.

No action - Doing nothing presupposes either that there is no problem or that a problem is not severe enough to warrant taking any action. Testimony from Mau Zone fishermen indicates that must fish harder than ever before to catch an acceptable load, and the prospects for improving this situation are not encouraging. Incentives apparently exist for continued fishery pressure despite an apparently bleak profit picture. Evidence suggests that, on average, sufficient revenue is being obtained by fishermen to cover their variable costs of fishing, but their fixed costs are not being covered. This situation, if left unchecked, will result in greater economic losses to fishermen in the short term and beyond and will lead to reduced fishery yields and further instability. A status quo alternative would prolong the existing situation and possibly result in additional problems over the long term.

A comparison of impacts between the preferred measure and alternatives described above is more easily made when the rejected management measures are grouped together. The "no action" alternative is considered separately. Grouping of these alternatives generally follows the categorization by Anderson (1986). The principal categorization criterion is whether the measures limit the total amount of effort in the fishery directly or indirectly. Regulations that limit effort directly are classified as limited-entry techniques and include license limitation (the preferred measure), individual fishing quotas (IFQs) and taxes on effort or fish. These measures constrain fishing pressure by restricting the number of vessels or fishermen allowed to participate in the fishery or by regulating the individual fishing operation through the establishment of biological limits (IFQs) or economic constraints (taxes or fees). At present, the Magnuson-Stevens Act imposes a moratorium on the creation of any new IFQ program and limits fees to those that do not exceed the administrative costs incurred in issuing permits. Because of these constraints, the Council did not consider IFQs or taxes as management options. Measures that limit effort indirectly are classified as open-access techniques and include total quotas, minimum size limits, seasonal closures, area closures, gear restrictions, vessel landing limits, vessel trip limits and crew limits.

Impacts of management alternatives are assessed under three major headings and various sub-headings derived from the national standards of the Magnuson-Stevens Act and objectives of the FMP.

Ecological impacts

- Bottomfish stock
- Bottomfish habitat
- Bycatch and interaction with protected species
- Other fish stocks

Economic impacts

- Economic performance
- Bottomfish market stability
- Harvesting sector stability
- Minimize administrative and enforcement costs

Social impacts

- Fairness and equity
- Opportunity for new participants to enter the fishery
- Participation by Hawaiians
- Safety of fishermen

3.1 Ecological impacts

3.1.1 Preferred measure

3.1.1.1 Bottomfish stock

The system of limited access decreases the large reserve of potential effort that could, under reasonably foreseeable conditions, threaten the resource. However, it is anticipated that the initial system of allocation would result in a number of potential permit holders that exceeds the target number. Based on State of Hawaii landings data, an estimated 18 vessels would qualify under the point system for entry into the Mau Zone fishery. In addition, two permits would be reserved for a community development program, resulting in an estimated 20 eligible permittees. In addition, there is the risk that some permit holders would keep their permits as long as possible in anticipation of the "windfall" profits they may receive if permits are made freely transferable. This factor, combined with the use-it-or-lose-it requirement, may have the affect of increasing fishing effort as participants make sure they qualify each year. The result would be that effort in the Mau Zone could exceed the resource capacity.

However, it unlikely that all the individuals who qualify will enter the fishery. Three of the estimated 20 eligible permittees have not fished in the Mau Zone since 1993; four have taken a total of three or less trips to the Mau Zone since that time; two do not currently own vessels; and two participate intensely in other fisheries and may be unwilling to accept the economic risk of fishing in the Mau Zone. Furthermore, even if the target number is exceeded during the first years of the limited access system, the quantity of participants in the fishery is expected to rapidly decline. As a point of comparison, after the first year (1989-90) of the limited access system in the Hoomalu Zone, the number of vessels participating in that fishery fell from eight to five. In the event that adequate attrition does not take place in the Mau Zone fishery, the Council will adjust the annual trip and landing criteria of the use-it-or-lose-it permit requirement and/or impose other requirements.

Based on data from the 1994-1996 fishing seasons (Kawamoto 1997) and a model for estimating

future catch rates (Section 6.2.2), eight-year projections of fleet size and catch rates were made under two different scenarios. The first scenario (Table 3.1) represents the "worst case" in which all of the estimated 20 eligible permittees enter the fishery during the first year of the limited access program. An attrition rate of approximately 15 percent per year occurs until the target number is reached in year five.

Table 3.1. Projected fleet size and catch rate for the Mau Zone if 20 vessels initially enter the fishery.

	Year							
	1	2	3	4	5	6	7	8
Number of active vessels	20	17	14	12	10	10	10	10
Number of fishing days/vessel/season	36	36	36	36	36	36	36	36
BMUS landings/ vessel/day (lbs)	282	204	184	190	208	240	268	293
BMUS landings/ vessel/season (lbs)	10,152	7,344	6,624	6,840	7,488	8,640	9,648	10,548
Fleet BMUS landings/ season (lbs)	203,040	124,848	92,736	82,080	74,880	86,400	96,480	105,480
Percent of MSY	158	71	54	47	46	66	73	80
Spawning potential ratio	38	27	25	25	28	32	36	39

In this scenario the catch per unit effort (CPUE)(BMUS landings per day) declines sharply and then gradually increases as total effort decreases. The projected CPUE rises above the 1997 level of 290 pounds by the eighth year. The first year in which the MSY catch rate (Section 2.6.2.1) is attained is year 19. The estimated spawning potential ratio, calculated as the ratio of the projected biomass to the carrying capacity, is 49 after 16 years and 50 after 27 years (Section 6.2.2).

The second scenario (Table 3.2) is the one more likely to occur. The number of vessels that enter the fishery in the first year is assumed to be 14, the maximum number of vessels that has ever operated in the fishery. The number of vessels in the fishery then gradually decreases until the target number is reached in the third year.

Table 3.2. Projected fleet size and catch rate for the Mau Zone if 14 vessels initially enter the fishery.

	Year							
	1	2	3	4	5	6	7	8
Number of active vessels	14	12	10	10	10	10	10	10
Number of fishing days/vessel/season	36	36	36	36	36	36	36	36
BMUS landings/ vessel/day (lbs)	282	264	271	295	315	330	341	349
BMUS landings/ vessel/season (lbs)	10,152	9,504	9,756	10,620	11,340	11,880	12,276	12,564
Fleet BMUS landings/ season (lbs)	142,128	114,048	97,560	106,200	113,400	118,800	122,760	125,640
Percent of MSY	108	87	74	81	86	91	94	96
Spawning potential ratio	38	36	36	40	42	44	46	47

In this scenario the projected CPUE rises above the 1997 level of 290 pounds by the fourth year. The first year in which the MSY catch rate (Section 2.6.2.1) is attained is year 15. The estimated spawning potential ratio, calculated as the ratio of the projected biomass to the carrying capacity, is 49 after 12 years and 50 after 27 years (Section 6.2.2). The annual and five-year reviews (Sections 2.6.2.7 and 2.6.2.8) provide opportunities to implement measures to further restrict fishing effort and catch, if necessary. Over the long term, the limited access alternative will lead to a permanent decrease in the amount of effort, thereby contributing to the conservation of Mau Zone bottomfish resources.

Another benefit from restricting the number of fishery participants is that permit holders would have a greater incentive to fish bottomfish stocks conservatively, as prudence is less likely to be negated by competing fishermen who only have a short-term interest in the fishery. The number of fishermen may be reduced to a level where they would be able to agree among themselves, tacitly or explicitly, to exercise restraint. Finally, stability in the number of vessels in the fishery would facilitate the estimation and interpretation of biological parameters from catch and effort data. More accurate information on the condition of Mau Zone bottomfish resources would decrease the risk of biological overfishing.

3.1.1.2 Bottomfish habitat

Fishermen would have an increased incentive to protect bottomfish habitat since they would benefit directly in the form of healthy sustainable catch rates. In addition, reduced fishing effort would lower the potential for vessel groundings or other accidents.

3.1.1.3 Bycatch and interaction with protected species

All new participants in the fishery will continue to be required to attend an information workshop on the protection of endangered and threatened species. In addition, limited access may indirectly reduce the amount of human interaction with endangered and threatened species by reducing fishing effort. Similarly, reduced fishing effort would result in a lower level of bycatch.

3.1.1.4 Other fish stocks

The preferred measure indirectly stabilizes and protects other local fisheries and their stocks by stabilizing participation in the Mau Zone fishery through the maintenance of substantial sustainable landings.

3.1.2 Indirect effort managment measures

3.1.2.1 Bottomfish stock

In general, indirect effort regulations are intended to prevent overfishing. However, in the absence of a limited access policy, any beneficial results from these regulations would attract additional operators and be dissipated among the larger fleet. In addition, they may not provide individuals with incentives for making long-term trade-offs for improved stock conditions. Performance would be on the basis of immediate gains; the fish an individual leaves for a later day may be taken by someone else. Under an indirect effort regulation approach potentially unlimited numbers of fisherman would be pursuing a limited resource.

3.1.2.2 Bottomfish habitat

As mentioned above, fishermen may tend to be more interested in short-term gains than in the long-term biological impacts stemming from their fishing practices. Such shortsightedness could increase the potential for habitat degradation and a lack of concern for the future condition of the environment.

3.1.2.3 Bycatch and interaction with protected species

Indirect effort management measures would allow additional vessels to enter the fishery, thereby exposing the environment to increasing amounts of fishing gear and raising the risk of human interaction with endangered and threatened species. The quantity of bycatch is expected to

increase with an increase in the number of vessels in the fishery.

3.1.2.4 Other fish stocks

Indirect effort regulations have the potential to inadvertently increase fishing pressure on other fish stocks in the Mau Zone because such regulations do not inhibit the influx of new boats. Some of these boats fishing for bottomfish may exploit other fisheries in the area. If the new boats come from outside the state, a net increase in fishing power would occur which may be directed toward fisheries that are already overexploited.

3.1.3 No action

3.1.3.1 Bottomfish stock

If no action were taken it is likely that stocks of preferred bottomfish, such as opakapaka and onaga, would decline as effort increases. Excessive fishing effort is responsible for declining bottomfish catch rates in the main Hawaiian Islands. As the State of Hawaii and Council look toward restricting access to main Hawaiian Islands bottomfish resources, fishermen may increase their effort in the NWHI to meet market demands. In addition, the instability and unpredictability of the number of vessels in the fishery from year to year makes it difficult to estimate and interpret biological parameters from catch and effort data. Consequently, the risk of biological overfishing in the Mau Zone is raised.

3.1.3.2 Bottomfish habitat

The same impact presented in Section 3.1.2.2 is applicable to the no action alternative

3.1.3.3 Bycatch and interaction with protected species

The same impact presented in Section 3.1.2.3 is applicable to the no action alternative.

3.1.3.4 Other fish stocks

The same impact presented in Section 3.1.2.4 is applicable to the no action alternative.

3.2 Economic impacts

3.2.1 Preferred measure

3.2.1.1 Economic performance

The overall economic performance of the fleet in the Mau Zone fishery is poor. For most vessels, revenues are insufficient to cover total annual costs (Section 4.4.1). While it is true that the

majority of vessels operate in other fisheries, the open access characteristic of the Mau Zone fishery precludes any improvement in economic performance. The proposed system of limited access would establish controls to stop further increases in harvest capacity and facilitate its reduction over time with a minimum of short-term economic dislocation.

Based on data from the 1994-1996 fishing seasons (Kawamoto 1997) and a model for estimating future catch rates (Section 6.2.2), the gross revenue and an average vessel after eight years were estimated for three scenarios: 1) no action resulting in a 10 percent per year increase in number of vessels; 2) a limited access system in which all of the estimated 20 eligible permittees enter the fishery during the first year; and 3) a limited access system in which the number of vessels that enter the fishery in the first year is 14 (Table 3.3). Projections are based on the following assumptions:

Number of fishing days per trip	5.5	Number of trips per season	6.6
Price per pound of BMUS ($)	3.10	Price per pound of non-BMUS ($)	2.15

Table 3.3. Estimated gross revenue of an average vessel after eight years under three scenarios.

	No Action	Limited access: 20 initial entrants	Limited access: 14 initial entrants
Number of permits	80	10	10
Number of active vessels	24	10	10
BMUS landings/ vessel/day (lbs.)	118	293	349
Other species landings/ vessel/day (lbs.)	149	149	149
Gross revenue/vessel/ season - all species ($)	24,907	44,600	50,902

If a limited access system is implemented and the number of vessels that enter the fishery in the first year is 14, it is estimated that after eight years gross revenue per vessel would be twice as high than if no action were taken and the expected increase in effort occurred. The larger income would result from the substantially higher CPUE that is predicted if effort levels are controlled. In summary, a limited access system is expected to strengthen the economic performance of the fleet, thereby improving the individual earnings of permit holders as well as the contribution of the fishery to the overall economy

3.2.1.2 Bottomfish market stability

A limited access system should improve market stability and achieve the FMP objective of maintaining high quality products to consumers. It would create conditions conducive to maintaining MSY landings over time and thereby encourage the fishery's maximum contribution possible to the local fish market and consumers on a consistent basis.

3.2.1.3 Harvesting sector stability

The preferred measure would improve stability in the harvesting sector by encouraging the presence of relatively permanent members within the fishery. Those persons receiving permits under the limited access system would be increasingly committed to the fishery as personal income begins to rise.

3.2.1.4 Administrative and enforcement costs

The preferred measure does not alter the cost of surveillance by the U.S. Coast Guard. However, self-monitoring is more likely to occur as personal interests would motivate operators to investigate bottomfish fishing activity conducted by any vessel not licensed to participate in the fishery. Cooperation between enforcement officials and fishermen would heightened under this alternative, and no additional presence of federal enforcement officials on the high seas would be anticipated. Dockside inspections would continue to be the primary enforcement mode.

The process of review and revision established within the Council would broaden. Specifically, the Council would undertake an annual review of the Mau Zone limited access system during which time it would examine current participation rates and landings in relationship to MSY and the target number of vessels. In addition, the Council would undertake a comprehensive review of the effectiveness of the limited access system five years after implementation.

3.2.2 Indirect effort management measures

3.2.2.1 Economic performance

Indirect management measures may exacerbate the problem of overcapitalization by encouraging further capital investment for vessel modifications designed to circumvent regulated inefficiency. In addition, indirect effort policies are designed to institute inefficiencies into the fishery in order to achieve biological objectives. Inefficiencies imposed on fishermen increase operators' costs of fishing and further reduce net income.

3.2.2.2 Bottomfish Market stability

Marketing channels may be disrupted under traditional command-and-control fisheries regulations (e.g., limits on fleet catch or number of trips) because of the combined effect of allowing

additional fishing boats into the fishery while constraining a specific aspect of fishing operations. Under such conditions, operators may find it justifiable to capture the majority of annual total catch in a relatively short period of time. This would result in market gluts, inconsistent supply of a quality product to consumers, low landing prices to fishermen and high prices to consumers at other times in the year.

3.2.2.3 Harvesting sector stability

Vessels more capable of operating under the regulated inefficiencies could displace existing boats, adding to a further destabilization of the fishery.

3.2.2.4 Administrative and enforcement costs

Indirect effort regulations impose operational inefficiencies at fishermen's expense. Rarely, if ever, is such action popular among fishery participants. Consequently, substantial burdens are imposed on enforcement agencies to adequately monitor compliance within the fishery.

Fishermen tend to circumvent regulated inefficiencies by modifying some other aspect of their fishing operation to increase fishing effort. Administrative costs increase in the long term as additional regulations are imposed to limit catch and maintain effective reductions in fishing effort.

3.2.3 No action

3.2.3.1 Economic performance

The no action policy would allow fishing effort to continue to increase. No mechanism would exist to reduce the number of entrants to the fishery or to constrain existing operations from expanding their vessels fishing capacity.

The economic performance of the fleet would continue to spiral downward as an increasing number of fishermen compete for a portion of a declining resource. Under the assumptions set forth in Section 3.2.1.1, a policy of no action would result in a substantial reduction in gross revenues for the average firm.

3.2.3.2 Bottomfish market stability

Consumers may suffer under a no action policy if excessive effort fishes down stocks, thereby reducing both the quality and quantity of desirable bottomfish species available to local fresh fish markets. Prices could increase to consumers for specific products, such as opakapaka, that have historically contributed a significant amount to local fresh fish markets.

3.2.3.3 Harvesting sector stability

Under a no action policy, fishing pressure in the Mau Zone would remain unstable, with fluctuating activity levels and catches.

3.2.3.4 Administrative and enforcement costs

A policy of no action would perpetuate the status quo for existing enforcement procedures without adding or reducing costs or responsibility to management agencies in the short term. However, enforcement and administrative costs in the long term could be excessive if expensive management measures are later required to protect or rebuild stocks because of past management neglect.

3.3 Social impacts

3.3.1 Preferred measure

3.3.1.1 Fairness and equity

An initial allocation of permits by means of a qualifying point system would take into account present participation in, and economic dependence on, the fishery. The point system would not cause redistribution of the access to the resource away from the part-time or smaller producers. Admitting a larger number than the target total, but retracting the permits as holders retire until the target number remains outstanding, would provide time for fishermen to make adjustments to leaving the fishery. The Council regards such voluntary withdrawal to be the fairest way to attain a balance between harvest capacity and harvestable fishery stocks.

A limited access system would stabilize the Mau Zone fishery by regulating the size of the fleet. Participant longevity could be beneficial to social relations within the group of fishery participants as well as within the Hawaii fishing community as a whole. Establishing long-term professional associations within the fishery and broader community should encourage stability and confidence by fostering personal and professional commitments.

3.3.1.2 Opportunity for new participants to enter the fishery

Should the number of permitted vessels fall below the target number, an opportunity for new participants to enter the fishery would be provided. At this time, the Council is considering establishing a lottery or qualifying point system to allow new entrants into the fishery. The lottery or point system may take into account historical participation in the NWHI or main Hawaiian Islands bottomfish fishery.

Should the number of permitted vessels equal or fall below the target number, the Council may also combine the Mau and Hoomalu Zones into one limited access system, and/or it may

implement identical systems of permit transfer in both zones. If the two zones were combined, the Council may consider establishing other systems of transfer, including direct transfers of permits from one fisherman to another through a market mechanism subject to anti-monopoly and certain other constraints.

3.3.1.3 Participation by Hawaiians

The preferred action of limited access would help ensure that the commercial value of the Mau Zone fishery could be maintained for Hawaiians as well as other ethnic groups in the state.

To the extent that a limited access system reduces the ability of Hawaiians to participate in the fishery, the benefits of the management action should be evaluated more conservatively. However, reserving a certain number of permits for use by a community development program should facilitate the entry of Hawaiians into the fishery.

3.3.1.4 Safety of fishermen

The 60-ft. restriction on vessel size would limit increases in fishing power but not place the safety of fishery participants at risk.

3.3.2 Indirect effort management measures

3.3.2.1 Fairness and equity

Indirect effort policies would promulgate inefficiency in the industry, thereby reducing fishermens operational flexibility. Operators would be put at a disadvantage in order to reduce their fishing success. Frequently, under an indirect effort policy, there is a recurring need to add more constraints because fishermen are continually circumventing the initial regulated inefficiency. In the long run, the fishery would become increasingly inflexible.

Indirect effort regulations would not encourage long-term commitment to the fishery. This may destabilize social relations among participants in the fishery as well as among members of the Hawaii fishing community as a whole.

3.3.2.2 Opportunity for new participants to enter the fishery

Indirect effort regulations would enable free and open access into the fishery. However, this type of freedom, without any constraints on increases in fishing effort, is a primary cause for the fishery's poor economic performance.

3.3.2.3 Participation by Hawaiians

Indirect effort policies may encourage further capital investment for vessel modifications designed

to circumvent regulated inefficiency. In addition, inefficiencies imposed on fishermen by these measures may increase fishing costs. Increases in capital and operating costs will fall most heavily on low-income groups. Hawaiians are the most economically disadvantaged of any ethnic group in the state.

3.3.2.4 Safety of fishermen

Indirect effort regulations could reduce the level of safety for fishermen operating in the Mau Zone. Measures such as closed seasons, catch limitations and gear restrictions may encourage fishermen to take a greater number of trips for longer periods of time during weather periods that may compromise safety of vessels and their crews.

3.3.3 No action

3.3.3.1 Fairness and equity

No action would allow maximum flexibility for fishermen at the expense of perpetuating the social, economic and biological problems associated with open access.

3.3.3.2 Opportunity for new participants to enter the fishery

The same impact presented in Section 3.3.2.2 is applicable to the no action alternative.

3.3.3.3 Participation by Hawaiians

The excessive fishing effort and decline in bottomfish stocks that would likely occur if no action were taken will result in fewer profitable fishing opportunities for Hawaiians and other fishermen.

3.3.3.4 Safety of fishermen

No action could result in safety problems at sea if gear and/or vessel conflicts develop as the number of participants increase.

3.4 Evaluation of impacts of preferred measure relative to national standards for fishery conservation and management.

National Standard 1 -- The preferred measure is expected to increase the net benefits of the fishery to the nation while preventing overfishing of the fishery resources (Sections 3.1.1.1 and 3.2.1.1).

National Standard 2 -- Based on the best scientific information available, the preferred measure would institute controls before a crisis in the fishery occurs (Section 3.1.1.1).

National Standard 3 -- The preferred measure would be consistent with the current limited access management regime established for the Hoomalu Zone in the NWHI bottomfish fishery (Amendment 2).

National Standard 4 -- The preferred measure would not discriminate between residents of different states and would be fair and equitable, reasonably calculated to promote conservation and designed to deter any person or entity from acquiring an excessive share of fishing privileges (Section 3.3.1).

National Standard 5 -- The preferred measure is expected to improve the profitability of harvest operations without endangering the long-term productivity of the bottomfish resource (Sections 3.1.1.1 and 3.2.1.1)

National Standard 6 -- The limited access system would be evaluated annually and a comprehensive assessment would be performed five years after implementation (Section 3.2.1.4).

National Standard 7 -- The preferred measure, to the extent practicable, would minimize costs (Section 3.2.1.4).

National Standard 8 -- The preferred measure would take into account the importance of fishery resources to the fishing community in order to provide for the sustained participation of such communities (Sections 3.1.1.1 and 3.2.1) and to the extent practicable, minimize adverse economic impacts on the community (Section 3.3.1).

National Standard 9 -- The preferred measure would minimize bycatch (Section 3.1.1.3).

National Standard 10 -- The preferred measure would not decrease the safety of human life at sea (Section 3.3.1.4).

4.0 Supporting material

4.1 Description of the stock comprising the management unit

4.1.1 Species or group of species and their distribution

The BMUS and other commonly caught bottomfish species are presented in Table 4.1. The first six species listed account for nearly all of the landings of Mau Zone BMUS. All of the species in Table 4.1 occur throughout the Hawaiian archipelago, but little is known about stock dynamics and interchange between bottomfish populations along the archipelago.

Table 4.1. List of common and scientific names of bottomfish species frequently caught in the Mau Zone.

Common name	Scientific name
Bottomfish Management Unit Species (BMUS)	
Uku	*Aprion virescens*
Butaguchi	*Pseudocaranx dentex*
Hapuupuu	*Epinephelus quernus*
Opakapaka	*Pristipomoides filamentosus*
Onaga	*Etelis coruscans*
Ehu	*E. carbunculus*
Kalekale	*P. sieboldii*
Gindai	*P. zonatus*
Lehi	*Aphareus rutilans*
Yellowtail kalekale	*P. auricillia*
White ulua	*Caranx ignobilis*
Black ulua	*C. lugubris*
Kahala	*Seriola dumerili*
Taape	*Lutjanus kasmira*
Other bottomfish species	
Papa ulua	*Carangoides orthogrammus*
Omilu	*Caranx melampygus*
Hogo	*Pontimus macrocephalus*

4.1.2 Abundance and present condition

Amendment 3 defined recruitment overfishing as having occurred when the ratio of the spawning stock biomass per recruit at the current level of fishing to the spawning stock biomass per recruit that would occur in the absence of fishing is equal to or less than 20 percent.

Spawning potential ratios (SPRs) for the principal species in the Mau Zone fishery were calculated using the methodology of Somerton and Kobayashi (1990) for dynamic SPR (Table

4.2). Virgin CPUE is estimated from the 1948-52 mean; the current CPUE estimate is a single-year estimate; the CPUE of aggregate bottomfish were calculated separately for Mau and Hoomalu Zones; virgin catch size composition is estimated from 1986-1988 NWHI catch data; current size composition is estimated from single-year catch data; and 90.25 percent non-parametric bounds confidence intervals were constructed on best and worst case bounds of SPR components (CPUE and percent immature) (Kobayashi 1996).

Table 4.2. Spawning potential ratios for principal species in the Mau Zone 1991-1996.

Species	1991	1992	1993	1994	1995	1996
Uku	42	37	35	66	46	51
Opakapaka	40	36	35	64	43	51
Onaga	41	36	36	75	49	59
Hapuupuu	47	42	39	71	46	56
Ehu	42	37	35	65	43	51

SPR estimates for all five species available are above the 0.20 level, though lower confidence limits often are near or slightly below this level. It is difficult to detect trends because of the uncertainty associated with the SPR estimates.

The correlation of SPR values among species is due to the high dependence of SPR on the CPUE component, given that the maturity component is nearly negligible. All species utilize the same aggregate bottomfish CPUE component. The maturity component is small relative to main Hawaiian Island SPR calculations because 1) the NWHI catch is primarily mature fish and 2) the current catch size composition is relatively unchanged from the best estimate of the virgin catch size composition. Presently, there are no means by which to calculate a targeted CPUE for this fishery because most bottomfish trips to the Mau Zone are mixed trips from which species specific effort can not be separated given the available data.

4.1.3 Estimate of MSY

The MSY for bottomfish in the Mau Zone is estimated to be 131,210 pounds (Kobayashi 1996). This MSY estimate is for all bottomfish species combined, as it is not yet possible to derive species-specific MSY.

4.1.4 Probable future condition

Table 4.5 shows that in 1994 and 1995 the landings of BMUS in the fishery exceeded the estimated MSY. The record harvests were largely due to increased catches of uku, a species known to experience cyclical changes in stock abundance. Although the harvest in excess of MSY is not necessarily cause for immediate alarm, there is reason to be concerned about the future

condition of bottomfish stocks in the Mau Zone. Fishing pressure increased by three vessels between 1995 and 1996. Moreover, the instability and unpredictability of the number of vessels in the fishery from year to year (Table 4.4) makes it difficult to estimate and interpret biological parameters from catch and effort data. Consequently, the risk of biological overfishing in the Mau Zone is raised.

4.2 Description of habitat of the stocks comprising the management unit

4.2.1 Habitat information needs

Research is needed to continue to identify areas important for the recruitment of juvenile bottomfish. Researchers have identified two persistent, aggregations of juvenile opakapaka in areas of low relief benthic habitat at depths of 65-100 m in the main Hawaiian Islands. The first site is located off Kaneohe Bay on Oahu and the second off the southwest coast of Molokai. Juvenile Hapuupuu have been collected during the summer months around Necker Island and Maro Reef in the NWHI. This type of research is needed in the NWHI and will provide information necessary to protect and conserve critical bottomfish nursery habitat.

4.3 Description of fishing activities affecting the stocks comprising the management unit

4.3.1 History of exploitation

Fishing for bottomfish has been a component of Hawaii's commercial fisheries since at least 1900; while subsistence bottomfish fishing has been a part of Hawaiian culture for more than a thousand years. Fishing by Hawaiians in areas of the NWHI predates by centuries any U.S. fishing activities in the area. Descriptions of early fishing practices indicate that Hawaiians harvested the same deep-sea bottomfish species as the modern fishery and used some of the same specialized gear and techniques (ie. circle type hooks, branch lines separators, etc.) employed today. Oral traditions state that Hawaiians visited Nihoa on a regular basis into the 1800s, and it is likely that they had the canoes and fishing gear to harvest bottomfish on banks in what is today the EEZ surrounding the Hawaiian Islands (Iverson *et al.* 1990). A large rotating fishhook was recovered during archaeological excavations on Nihoa Island by Emory (1928). This type of fishhook would have been used while fishing deep-water grounds for bottomfish (Iverson *et al.* 1990).

After European colonization of the Hawaiian Islands in the nineteenth century, an extensive commercial bottomfish fishery developed. By the 1930s, a fleet of vessels fished for bottomfish throughout the archipelago, with as many as five large (20 m) vessels venturing into the NWHI (Haight *et al.* 1993). The number increased to nine vessels immediately following the end of the Second World War, and landings reached a record high. In the mid-1950s, vessel losses and depressed fish prices resulting from large catches reduced the number of fishermen in the NWHI; by the 1960s only one vessel remained in operation in the NWHI.

There was renewed interest in the resources of the NWHI in the mid-1970s when state and federal agencies collaborated in a study focusing on the resources of the region (Haight *et al.* 1993). Both the supply of and demand for bottomfish expanded substantially during the 1970s and 1980s. The number of vessels fishing in the NWHI increased from five in 1978 to 28 in 1987. Increased fishing effort by new vessels in the NWHI provided a reliable supply to restaurants catering to a growing tourism trade. This led to increased prices for fishermen, who further expanded their fishing effort in response (Pooley 1993). Increased fishing pressure and fluctuating exploitation rates in the NWHI prompted the Council to impose a limited access system for the Hoomalu Zone in 1988. In recent years, the Mau Zone has seen a disproportionately greater effort, as any new entrant to the NWHI bottomfish fishery has been restricted to fishing in that area. Only three vessels harvested bottomfish in the Mau Zone in 1989, but during the 1990s, eight or more boats have participated in the fishery (Table 4.4). Approximately 80 permits for the Mau Zone fishery were issued between 1989 and the permit moratorium in 1997, 30 of which have been actually used to fish in the area. However, only one-third of the 30 vessels were active in the fishery for more than two years (Table 4.3).

In short, the Mau Zone fishery has been characterized by rapid growth and high turnover. New vessels entered the fishery during each year of the eight years examined, and the recent rate of entry has been substantially greater than the rate of exit.

Table 4.3. Mau Zone vessel entry and exit patterns 1989-1996

Vessel	1989	1990	1991	1992	1993	1994	1995	1996
1	X							
2	X							
3		X						
4		X						
5		X						
6		X						
7			X					
8		X	X					
9	X	X	X					
10		X	X					
11		X	X					
12				X				
13		X	X	X				
14					X			
15					X			
16			X			X		
17		X	X			X	X	
18				X	X	X	X	X
19		X	X	X	X	X	X	
20						X	X	X
21		X	X	X	X	X	X	X
22					X	X	X	X

| | | |

Table 4.5. Total landings of Mau Zone BMUS species 1991-1996 (1,000 lbs). Percent of total landings by species is presented in parentheses.

Species	1991	1992	1993	1994	1995	1996
Uku	22	5	8	52	61	45
	(22.2)	(7.6)	(8.8)	(34.2)	(39.6)	(34.6)
Butaguchi	19	18	29	34	25	22
	(19.0)	(6.0)	(15.0)	(14.0)	(14.0)	(19.0)
Opakapaka	13	26	27	22	14	15
	(13.6)	(26.0)	(29.7)	(14.5)	(9.1)	(11.5)
Onaga	9	6	4	8	6	10
	(6.9)	(9.1)	(4.4)	(7.2)	(16.9)	(7.7)
Ehu	14	2	4	8	6	10
	(14.7)	(3.0)	(4.4)	(5.3)	(3.9)	(7.7)
Other BMUS	8	3	4	11	8	9
Total	97	66	91	152	153	130

Uku has been the mainstay of the Mau Zone fishery for the past three years. It is thought that the recent importance of uku is due to a cyclical increase in abundance. However, little is known about the biology or behavior of this species (Kawamoto 1997). The catch of opakapaka has shown a downward trend since 1992 and decreased 32 percent in the past three years. Landings of onaga fell in 1996 due to the appearance of a "burn" condition in larger onaga (Kawamoto 1997).

4.4 Description of economic characteristics

4.4.1 Harvesting sector

The total revenues earned by participants in the Mau Zone fishery are presented in Table 4.6.

Table 4.6. Ex-vessel value of Mau Zone bottomfish landings 1991-1996.

	1991	1992	1993	1994	1995	1996
Inflation adjusted ex-vessel value ($)	326,000	223,000	310,000	514,000	476,000	448,000

The instability in the species mix of the catch (Table 4.5) and the net annual influx of new vessels (Table 4.3) has significantly affected the economic performance of the Mau Zone fishery. Table 4.7 provides estimates of average gross and net revenue and fixed and variable costs for vessels operating in the Mau Zone expressed on a per trip and per season basis. The majority of vessels participate in the Mau Zone fishery during a season that generally extends from November to April. For the remainder of the year many vessels participate in other Hawaii fisheries. Due to the variety of these fishing activities and the resulting difficulty in estimating costs and returns, a Mau Zone fishing season is used as the unit of economic analysis. Fixed costs have been apportioned to Mau Zone fishing activity based on an examination of catch reports submitted between 1994 and 1996 which showed that the average vessel was expending 41% of its total annual effort (in fishing days) to Mau Zone fishing trips. Cost estimates are based on data collected by Hamilton (1994) from eight vessels active in the fishery and have been adjusted to current dollars using the Honolulu consumer price index. Catch and revenues are derived from 1994-1996 average catch rates, vessel operating patterns and ex-vessel fish prices (Kawamoto 1997). Revenues are based on all fish landed and sold, including pelagic species that are typically an important secondary target.

The analysis assumes a one-man crew including captain and 44-foot, diesel-powered vessel costing $150,000 and equipped with a refrigerated hold.

Assumptions:

Number of fishing days per trip	5.5	Number of trips per season	6.6
Catch per day of BMUS (lbs.)	319	Catch per day of non-BMUS (lbs.)	149
Price per pound of BMUS ($)	3.10	Price per pound of non-BMUS ($)	2.15
Fixed costs per season ($):		Operating costs per season ($):	
Capital	4,579	Fuel and oil	4,189
Annual repair	5,415	Ice	1,392
Vessel insurance	3,170	Bait	1,928
Administrative	1,717	Handling	4,800
Total	14,881	Provisions	2,142
		Gear and supplies	2,999

Other	2,892
Crew income	8,000
Captain income	11,500
Total	40,472

Table 4.7. Average net profit/loss per trip and season for a Mau Zone vessel

	Trip	Season
Gross revenue ($)	7,201	47,526
Net return ($)	-1,186	-7,827

The average vessel in the fleet cannot cover its total annual costs, and the result has been extensive economic displacement. Since 1989, more than 15 vessels have entered and left the fishery. It cannot be assumed that economic failure of vessels in the fishery for bottomfish in the Mau Zone will eventually reduce fishing effort to more appropriate levels. Continuing instability in the fleet can be expected in an open access fishery. Some vessels that can cover variable costs will continue to fish in the Mau Zone because of the non-monetary benefits they receive from participating in the fishery. Bankrupt vessels are sometimes bought for a fraction of their initial capital cost and return to the fishery with new owners who believe that reduced capital servicing obligations will give them a competitive edge over other fishermen. Also, vessels displaced from overfished continental U.S. fisheries have been arriving in Hawaii at a steady rate on a "look-see" basis. These owners and captains are largely unaware of economic conditions in the fishery when they first arrive in Hawaii.

4.4.2 Business and markets

Nearly all bottomfish caught in the Mau Zone are sold to the United Fishing Agency, the principal Honolulu wholesale market. Markets exist on the islands of Maui, Kauai and Hawaii, but these are relatively minor. Virtually the entire demand for bottomfish is limited to fresh fish, and the vessels frequenting the NWHI have the capacity to periodically flood the fresh fish market. A market for frozen Mau Zone bottomfish products has not developed, and this limits fishing time as well as range. The limiting factors are, first, how long a vessel can stay on the fishing grounds and still deliver high-quality fresh fish to Honolulu and, second, the amount of fishing time necessary to land a catch that will meet the vessel owner's financial obligations. The Mau Zone fishermen are thus caught in a dilemma - they must stay out long enough to cover trip expenses, but keep the trips short enough to deliver a readily saleable, high-quality fresh product.

4.5 Description of socioeconomic aspects of the commercial and recreational domestic fishing industries and communities

4.5.1 Employment opportunities and unemployment rates

The traditional mainstays of Hawaii's economy - construction, plantation agriculture and tourism - have experienced a dramatic decline in the 1990s, resulting in bankruptcies, foreclosures and unemployment. It is unlikely that, at least in the near future, any new major industry will develop in the state to significantly increase employment opportunities.

The lack of alternative sources of employment in Hawaii may increase the emphasis that the State's large number of part-time commercial fishermen place on fishing income and attract additional part-timers into the fisheries. For example, with the decline of Hawaii's sugar industry many former plantation employees are turning to fishing as a livelihood. The bottomfish fishery is particularly attractive to part-timers because of the comparatively low initial investment, low operating costs and high potential returns. However, opportunities for a greater level of participation in the bottomfish fishery are limited. Catch rates of bottomfish around the main Hawaiian Islands have declined substantially during the last decade. The State of Hawaii has recently established area closures and implemented other regulations to support the recovery of bottomfish resources in the main Hawaiian Islands. Increased fishing pressure and fluctuating exploitation rates in the NWHI prompted the Council to establish a limited access system for the NWHI Hoomalu Zone in 1988 and to impose a two year moratorium on new entrants into the Mau Zone in 1997.

The poor performance of the state economy during the last several years has had particularly severe consequences for the Hawaiian population. Hawaiians have long been among the most economically disadvantaged ethnic or racial groups in Hawaii in terms of standard of living, degree of unemployment, dependence on transfer payments and limited alternative employment opportunities. In recent years, Hawaiians have had the highest proportion of individuals living below the poverty line. In 1989, 6 percent of all the families in the state had incomes classified below the Federal poverty level (Eshima 1996). During the same period, 14 percent of Hawaiians were below the poverty line. Nearly 15 percent of Hawaiian households receive public assistance income, compared to 6.8 percent of all households in the state (Eshima 1996). In several residential areas over a third of Hawaiian households receive public assistance. The recent downturn in the State economy has further increased the economic pressure on the Hawaiian population. Stagnation in the tourism industry, for example, has decreased the number of low-wage service jobs available to Hawaiians, who typically lack marketable skills for alternative forms of employment. In addition, given the high dependence of Hawaiians on social welfare programs, cuts in federal- and state-funded assistance have a particularly adverse economic effect on this group.

4.5.2 Economic dependance of communities on commercial, recreational or subsistence fishing and related activities

The majority of participants in the Mau Zone fishery shift from species group to species group and from the bottomfish fishery to other fisheries, primarily the pelagics fishery, in response to seasonal fish abundance or fluctuations in price. Only a small percent of the fishermen fish exclusively for bottomfish during the year. Seasonal price variability causes the fishermen to concentrate their bottomfish fishing effort during December, when they can take advantage of the year-end holiday demand for red snappers, such as onaga and ehu. Although bottomfish fishing is not the only fishing activity of most Mau Zone fishery participants, it may be important to the year-round operations of some individuals.

Bottomfish fishing, together with other types of fishing, are also important to many Hawaii fishermen who have traditionally relied on the sale of fish for only a portion of their income. Without this supplement to basic incomes, many of these part-timers would face economic hardships in Hawaii's expensive economic climate. For many of these fishermen it is the plurality of their occupational endeavor that provides economic stability as well as personal satisfaction and lifestyle.

4.5.3 Distribution of income within the fishing communities

Most of the participants in the Mau Zone fishery are small businesses, mainly individual proprietorships. As noted in Section 4.4.1, the net income earned by owners, captains and crews from the fishery is modest.

4.6 Description of social and cultural framework of domestic commercial, recreational and subsistence fishermen and their communities

4.6.1 Ethnic character, family structure and community organization

As indicated in Section 4.3.1, bottomfish fishing by Hawaiians in areas of the NWHI predates by centuries any U.S. fishing activities in the area. Archival material suggests that after European colonization many Hawaiians became actively engaged in commercial fishing (Cobb 1905). However, by the turn of the century Japanese immigrants to Hawaii represented the majority of the deep-sea handline fishery participants.

Some Hawaiians participated in the commercial NWHI bottomfish fishery both as captains and crew members during the 1920s and 1930s and the post-WWII period until 1988, but the number is unknown (Iverson *et al.* 1990). At present, participation by Hawaiian fishermen in the NWHI bottomfish fishery appears minimal (Iverson *et al.* 1990). They are outnumbered by non-Hawaiian fishermen.

There is abundant historical and archaeological evidence of the social importance of bottomfish in

traditional Hawaiian culture (Iverson *et al.* 1990). This significance was of both an economic and ritual nature. Bottomfish, such as kahala, ulua and ula ula (onaga), are specifically mentioned in traditional prayers used by fishermen, and fishing for these species was associated with religious rites. The cultural significance of bottomfish species to Hawaiian society is also indicated by the growth stage names for opakapaka, white ulua, and kahala and the varietal names for ula ula and uku.

There may continue to be a strong cultural and religious connection between contemporary Hawaiians and certain species of bottomfish (Iverson *et al.* 1990). Some present-day Hawaiian consumers of these bottomfish may still associate these fish with traditional beliefs and depend upon the fish for food. Because of the high cost of some bottomfish, they may be frustrated in maintaining such a traditional connection. Industry sources report that Hawaiians purchase proportionally less bottomfish than other ethnic groups, possibly because of the relatively high cost. If Hawaiians have less disposable income, they would likely opt to purchase less costly fish species or alternative food items. It is important to note that Hawaiians have experienced a significant reduction in the availability of many traditional foods, such as bottomfish, due to high costs. The resulting changes in diet have contributed to the poor health of Hawaiians. Of all racial groups living in Hawaii, Hawaiians are the group with the highest proportion of multiple risk factors leading to illness, disability and premature death (Look and Braun 1995).

Certain species of bottomfish also hold a particular cultural interest for Hawaii's large Asian-American population. In particular, Hawaii residents of Japanese ancestry have found local species of bottomfish to be an acceptable substitute for the red tai (sea bream) of Japan as a showy and auspicious fish to be served on festive occasions. December is the peak year for landings of opakapaka, onaga, kalekale and ehu apparently as a result of increased demand of consumers for red fish during the New Year's period. This cultural demand for red-colored bottomfish also includes non-seasonal events such as weddings and birthdays.

4.7 Safety considerations

4.7.1 Fishery access and weather-related vessel safety

The preferred alternative will likely increase safety in the fishery by limiting the total number of vessels operating in the zone.

4.8 Existing fishery management juridictions, law, and policies

4.8.1 Rights of Aboriginal Americans

The Council is required to take into account the various traditional fishing practices of indigenous island residents in preparing FMPs. Moreover, in the establishment of a limited access system the Council must take into account "historical fishing practices in, and dependence on, the fishery" and "the cultural and social framework relevant to the fishery."

As indicated in Section 4.3.1, Hawaiians fished in the waters surrounding parts of the NWHI for many centuries preceding contact with Europeans. Traditional fishing grounds extended several miles offshore into the Pacific Ocean. The historic usage of offshore fishing grounds in the Hawaiian Islands, together with the importance of bottomfish fishing in traditional Hawaiian culture (Section 4.6.1), supports a claim for preferential access by Hawaiians to the area.

Apart from considerations of traditional participation in the fishery is the Council's concern that communities consisting of descendants of indigenous peoples in the Council's area have not been appropriately sharing in the benefits from the area's fisheries. The Magnuson-Stevens Act provides for the establishment of a community development program for western Pacific fisheries (Section 2.6.2.2.2). This provision is intended to increase opportunities for indigenous communities to participate in and benefit from fisheries in the Council's area. The Council and the Secretary, respectively, have discretion to develop and to approve programs for eligible communities for the purpose of enhancing access to the fisheries under the authority of the Council.

It is also important to note that the U.S. Congress has afforded special considerations to aboriginal Hawaiians in numerous statutes because of their socio-economic disadvantage and because of the federal trust obligation by virtue of Section 5 of the Admissions Act. Given the history of special legal status afforded to Hawaiians by Congress and the fact that neither the state nor federal courts have ruled on the trust obligation, it may be appropriate that provisions extending preferential fishing rights to Hawaiians be included in a limited access system.

Finally, the circumstances by which the U.S. gained control of Hawaii should be taken into consideration. In 1993, the U.S. Congress passed the Apology Bill which states that "... the indigenous Hawaiian people never directly relinquished their claims to their inherent sovereignty as a people or over their national lands to the United States, either through their monarchy or through a plebiscite or referendum." In the absence of any treaty or voluntary relinquishment, the lingering sovereign claim by Hawaiians may dictate that a higher right to the living marine resources within the U.S. EEZ surrounding the Hawaiian Islands might be justified.

5.0 Other applicable laws

5.1 National Environmental Policy Act

An environmental assessment (EA) has been prepared for this amendment. Relevant sections of the amendment are incorporated into the EA by reference.

5.1.1 Conclusions and determination

a. The amendment is expected to support development of management measures to ensure the long-term productivity of bottomfish stocks in the Mau Zone of the NWHI (Section 3.1.1.1).

b. The amendment will have no adverse impact on the habitat of the Mau Zone bottomfish species or protected species in the NWHI (Sections 3.1.1.2 and 3.1.1.3).

c. The amendment is not expected to have any negative impact on public health or safety, although information obtained as a result of the plan amendment may result in better consideration of health and safety concerns in selection of fishery conservation and management measures (Section 3.3.1.4).

d. The amendment will not directly affect any endangered or threatened species (Section 3.1.1.3).

e. The amendment will not result in cumulative, long-term, adverse impacts that could substantially affect bottomfish or protected species (Sections 3.1.1.1 and 3.1.1.3).

f. The amendment may generate controversy in that it will limit the total number of vessels that can participate in the Mau Zone bottomfish fishery. To address this potential controversy, the Council formed a task force and held numerous public meetings throughout the state to develop a process for allocating permits that is fair and equitable (Section 3.3.1.1).

g. The amendment will not have any effect upon flood plains or wetlands, nor upon any trails and rivers listed, or eligible for listing, on the National Trails and Nationwide Inventory of Rivers.

Based on the information contained in the environmental assessment, and other sections of this document, I have determined that the proposed alternative would not significantly affect the quality of the human environment, and therefore, preparation of an environmental impact statement is not required under the National Environmental Policy Act or its implementing regulations. Therefore, a finding of no significant impact is appropriate.

_____ _____

Rolland Schmitten Date

5.2 Paperwork Reduction Act

The major purpose of the Paperwork Reduction Act of 1995 is to minimize the paperwork burden on the public (i.e. fishermen) resulting from the collection of information by or for the Federal Government. The Act is intended to ensure the information collected under the proposed action is needed and is collected in an efficient manner (44 U.S.C. 3501 (1)).

The existing permit application process and forms established by the FMP are sufficient to accommodate the proposed actions. The new measures will require gathering of additional information from Mau Zone fishermen with respect to initial application and eligibility for the limited access program. Applicant eligibility would be established by submitting, with the permit application, documentation of commercial fishing experience in the Mau Zone fishery prior to December 31, 1996. For owners of two or more eligible vessels, evidence would also be required to prove that each vessel landed Mau Zone bottomfish prior to that date. Documentation to support qualified landings, also used to determine permit renewal eligibility, will be in the form of official State catch reports. The remaining requirements will be captured through slight modifications of the existing NMFS SW Region Permit Family of Forms (OMB 0648-0204).

Under the current program, NMFS issues an average 25 annual Mau Zone permits. Based on a 0.5 hour per permit federal paperwork burden, which is the same as required for the Hoomalu Zone permit, the burden for the Mau Zone has been about 12.5 hours annually. The proposed measures are designed to initially lower the total number of permits issued in the Mau Zone to between 12 and 20 permits. This will reduce the federal paperwork burden from the current annual burden of 12.5 hours to 6-10 hours. Within five years, the paperwork burden should be further reduced to 5 hours, based on the long-term target number of 10 vessels for the Mau Zone.

5.3 Coastal Zone Management Act

Section 307(c)(1) of the Coastal Zone Management Act of 1972 requires all federal activities that directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable.

The State of Hawaii coastal zone management policies directly relating to the action proposed in this amendment are contained in the coastal ecosystems and economic resources categories of the Hawaii Revised Statues, Chapter 205a. These policies are to improve the technical basis for natural resource management and minimize adverse environmental effects from economic uses of the coastal zone resources. This amendment helps conserve the bottomfish resource in the NWHI Mau Zone and, therefore, is consistent with the Hawaii coastal zone management program's policies.

5.4 Endangered Species Act

The Endangered Species Act of 1973, as amended, prohibits the taking of endangered species

except under limited circumstances. The FMP was initially reviewed under Section 7 consultation of the Act resulting in a Biological Opinion rendered by NMFS. The Biological Opinion specified no allowable incidental take of Hawaiian monk seals. Existing regulations require all NWHI bottomfish fishermen to report interactions with protected species. The proposed action imposes observer requirements on the fishermen to obtain accurate and detailed information on possible inactions with protected species in the fishery. Amendment 4 to the FMP added mandatory observer coverage which is fully consistent and supportive of the goals and objectives of the Endangered Species Act. The proposed measures would not increase the likelihood of endangered species interactions.

5.5 Marine Mammal Protection Act

The Marine Mammal Protection Act of 1972, as amended, allows for the incidental take of marine mammals during commercial operations under certain limited circumstances. Hawaiian monk seals, being designated as a depleted species, cannot be taken. In 1989, all fisheries in Hawaii were classified as Category III under the Act, meaning that the fisheries were determined to have a remote likelihood or no known incidental taking of marine mammals. Amendment 4 to the Bottomfish and Seamount Groundfish FMP requires observers on bottomfish vessels if the NMFS determines observers are needed. The proposed amendment will not increase the likelihood of marine mammal interactions in the Mau Zone bottomfish fishery.

5.6 Regulatory impact review and Regulatory Flexibility Act

In compliance with Executive Order 12866 and the Regulatory Flexibility Act (RFA), NMFS requires the preparation of a regulatory impact review (RIR) and analysis of impacts under the RFA for all regulatory actions or for significant policy changes that are of public interest. Information presented in this section is based on the analysis of the beneficial and adverse impacts of management measure alternatives provided in Section 3.0.

5.6.1 Statement of problem

The problems to be resolved by this amendment are described in Section 2.1 of this document.

5.6.2 Description of alternatives

The Council considered the following three management alternatives for the Mau Zone of the NWHI bottomfish fishery: no action; limited entry (preferred alternative); and indirect effort limitations.

For the RIR and RFA analysis, two of the three alternatives were divided into two scenarios (A and B), while the third was not:

Alternative 1 - No action (Scenario A)

This scenario assumes that only the 13 vessels currently participating in the fishery continue to fish from the current period into the future (there may be changes in vessel participation but it

assumed here that the total number of vessels and number of fishing days remains at 1997 levels). A model for estimating future catch rates (Section 6.2.2) indicates that the present BMUS catch rate of 290 pounds per fishing day will decline to a CPUE of 253 pounds per day in year 2010 and remain there until 2018 (Figure 5.1). Beyond this year there is a continued decline in CPUE, but it is minimal. The non-BMUS CPUE continues at 149 pounds of fish per day from the current period into the future. In this scenario an overall degradation of the fishery occurs, both economically (see below) and biologically (the SPR in 2018 is predicted to be 0.34 compared to the current estimate of 0.40).

Alternative 1 - No action (Scenario B)

This scenario assumes that the 13 vessels currently participating in the fishery continue to fish and the fleet grows at the rate of 15 percent per year until a maximum of 24 participants is reached in 2006. This growth leads to a dramatic decline in BMUS CPUE, and by the year 2006/7 the accumulated harvest reduces the SPR to 0.20 (Figure 5.1). The time frame for the scenario does not continue beyond 2007 because it is assumed the Council would be compelled to take management action as the SPR decreased.

The scenario could be characterized as open access with incentives for fishermen to enter the fishery (e.g., increases in fish prices reduced opportunities in other fisheries or declines in other sources of income). Although there is no detailed information on the response of fishermen to changing biological or economic conditions in the Mau Zone fishery, the history of participation in the fishery suggests that for a variety of reasons fishermen will remain in or enter the fishery even as declining catch rates induce others to leave. Some fishermen that can cover variable costs will continue to fish in the Mau Zone because of the non-monetary benefits they receive from participating in the fishery. Bankrupt vessels are sometimes bought for a fraction of their initial capital cost and return to the fishery with new owners who believe that reduced capital servicing obligations will give them a competitive edge over other fishermen. Vessels displaced from overfished continental U.S. fisheries have been arriving in Hawaii at a steady rate on a "look-see" basis. These owners and captains are largely unaware of economic conditions in the fishery when they first arrive in Hawaii. Furthermore, as the State of Hawaii and Council look toward restricting access to the main Hawaiian Islands bottomfish resources, fishermen may increase their effort in the NWHI to meet market demands. Although the total number of vessels in the fishery may not grow at the projected rate, it is reasonable to believe that the current participants, plus a few additional entrants, could exert the equivalent fishing effort of 24 vessels in terms of fishing days (870 fishing days).

Alternative 2 - Limited entry (Scenario A)

This scenario assumes that the number of vessels that enter the fishery in the first year of the limited entry program is 14, and the number of vessels decreases at the rate of 10 percent per year to the Council target of 10 vessels, which fish into the future. The scenario is the one most likely to occur if the preferred alternative were implemented. The BMUS average daily catch rate declines to 264 pounds in 2000 (SPR = 0.36) and then rebounds to 364 pounds in 2014 (SPR = 0.50) as vessels drop out of the fishery due to economic effects (increased opportunity costs, negative returns to capital, etc.). The proposed limited access system provides no opportunities for new entrants until target participation levels are reached (as opposed to alternative scenario

1B). It is assumed that effort per vessel will not increase and that the fishery reaches a biological optimum.

Alternative 2 - Limited entry (Scenario B)

This alternative assumes that all of the estimated 20 eligible permittees enter the fishery during the first year of the limited access program and exert the same effective effort per vessel as the current participants. Participation then declines at the rate of 15% per year to the Council target of 10 vessels, which fish into the future. The scenario represents the "worst case" under the preferred alternative. The BMUS average daily catch rate declines to 184 pounds in 2001 (SPR = 0.26) as vessels meet their use-or-lose permit requirement, then rebounds to 364 pounds in 2018 (SPR = 0.50). The scenario is similar to 2A but assumes more effort is exerted as a result of increased short-term incentives for fishermen to participate (use-or-lose-it permit requirement, increased price incentives, etc.). The fishery eventually attains the same biological optimum as in 2A but does so over a longer time frame.

Alternative 3 - Indirect effort limitations

Measures that limit effort indirectly are classified as open-access techniques and include total quotas, minimum size limits, seasonal closures, area closures, gear restrictions, vessel landing limits, vessel trip limits and crew limits. Because this alternative includes a broad range of possible management measures, the impacts are evaluated only in qualitative terms.

Table 5.1. Change in the number of vessels under various management alternatives/scenarios over the time frames of the analysis, 1999-2004/1999-2018

Alternative/ Scenario	Number of Vessels	Time Frame(s)
1A	13 → 13	1999-2004/ 1999-2018
1B	13 → 24	1999-2004/ 1999-2018
2A	14 → 10	1999-2004/ 1999-2018
2B	20 → 10	1999-2004/ 1999-2018
3	n/a	n/a

5.6.3 Analysis of the benefits and costs

A net present value (NPV) analysis calculates the stream of net income over a discrete time horizon with the assumption that revenue received in later periods is not valued as much as revenue received in the current period. From the perspective of industry participants (harvesters and marketers), net revenues that can be reinvested earlier have a higher value than revenue obtained in later periods. This consideration is counterbalanced by the need to maintain the biological integrity of the stock and social preferences (ecological and economic) for its continuing existence. For each management alternatives/scenario the NPV is calculated as

follows:

$$NPV = \sum_{t=0}^{n} \frac{B_t}{(1 + r_t)^t} - \sum_{t=0}^{n} \frac{C_t}{(1 + r_t)^t}$$

where B_t represents the benefits derived for period t, C_t is the cost in period t, n is the time horizon evaluated, r_t is the discount rate for period t.

In theory, the management alternative that maximizes the sum of the positive changes of producer and consumer surplus less management and enforcement costs should be the preferred management alternative barring any overriding associated concern (national security, etc.). With the data available only a qualitative discussion of the impacts of the various management alternatives on consumer surplus and management and enforcement costs is possible.

Consumers may suffer under a no action policy if excessive effort fishes down stocks, thereby reducing both the quality and quantity of desirable bottomfish species available to local fresh fish markets. Prices could increase to consumers for specific products, such as opakapaka, that have historically contributed a significant amount to local fresh fish markets. However, a limited access system should improve market stability and achieve the FMP objective of maintaining high quality products to consumers. It will create conditions conducive to maintaining MSY landings over time and thereby encourage the fishery's maximum contribution possible to the local fish market and consumers on a consistent basis. With regard to the effects of indirect effort limitations, marketing channels may be disrupted under traditional command-and-control fisheries regulations (e.g., limits on fleet catch or number of trips) because of the combined effect of allowing additional fishing boats into the fishery while constraining a specific aspect of fishing operations. Under such conditions, operators may find it justifiable to capture the majority of annual total catch in a relatively short period of time. This results in market gluts, inconsistent supply of a quality product to consumers, low landing prices to fishermen and high prices to consumers at other times in the year.

A policy of no action would perpetuate the status quo for existing enforcement procedures without adding or reducing costs or responsibility to management agencies in the short term. However, enforcement and administrative costs in the long term could be excessive if expensive management measures are later required to protect or rebuild stocks because of past management neglect. The preferred measure of a limited access system does not alter the cost of surveillance by the U.S. Coast Guard. However, self-monitoring is more likely to occur as personal interests will motivate operators to investigate bottomfish fishing activity conducted by any vessel not licensed to participate in the fishery. Cooperation between enforcement officials and fishermen is heightened under this alternative, and no additional presence of Federal enforcement officials on the high seas is anticipated. Dockside inspections would continue to be the primary enforcement mode. Indirect effort regulations impose operational inefficiencies at fishermen's expense. Rarely, if ever, is such action popular among fishery participants. Consequently, substantial burdens are imposed on enforcement agencies to adequately monitor compliance within the fishery.

Finally, important non-fiduciary factors may not be quantitatively incorporated in the B/C analysis. For example, fishermen may have other motives to fish besides making a profit or are offsetting apparent losses in the Mau Zone fishery by activities in other fisheries or income sources. In addition, survey-data suggests that there is a segment of the fishery which can be characterized as "high-liners", and these operators appear to perform in a significantly different fashion than the "average" fishery participant.

Costs are charged even if the opportunity cost of participating in the NWHI bottomfish fishery is below break-even levels or opportunities afforded in other fisheries.

There are several decision criteria that can be used regarding NPV analysis. If the NPV is greater than zero, the alternative creates real wealth and should be considered, but typically there are a series of options, and the one that maximizes wealth should be chosen (all other factors being equal). Another decision criterion can be to compare alternatives to determine which maximizes wealth or net benefits or minimizes losses. A third decision criterion would be to compare each alternative to the no action alternative. Given the data available, what is presented is a partial analysis in which a portion of the producer surplus (that of the primary producers) is evaluated. Therefore, only comparison with the no action alternative is relevant.

The management alternatives/scenarios are evaluated using the same vessel cost-earnings simulator/data provided in Section 4.4. Input BMUS CPUE for the cost-earnings model are provided by the model described in Section 6.2 and are depicted in Figure 5.1. To be consistent with the economic analysis presented in Section 4.0, it was assumed that non-BMUS CPUE and price remain constant (149 pounds per fishing day; $2.15 per pound). The average number of fishing days per vessel also remains constant at 36.3 per year. Total fleet revenue is equal to total effort (fishing days) times BMUS CPUE times a price of $3.10/pound plus the non-BMUS catch revenue. The total and variable costs per fishing day per vessel are provided for each scenario, along with an estimation of yearly total fleet revenues. For all management alternatives/scenarios positive returns are provided to labor with one exception (1B), the implications of which are discussed below. All parameters for the management alternatives/scenarios are given in Table 5.2.

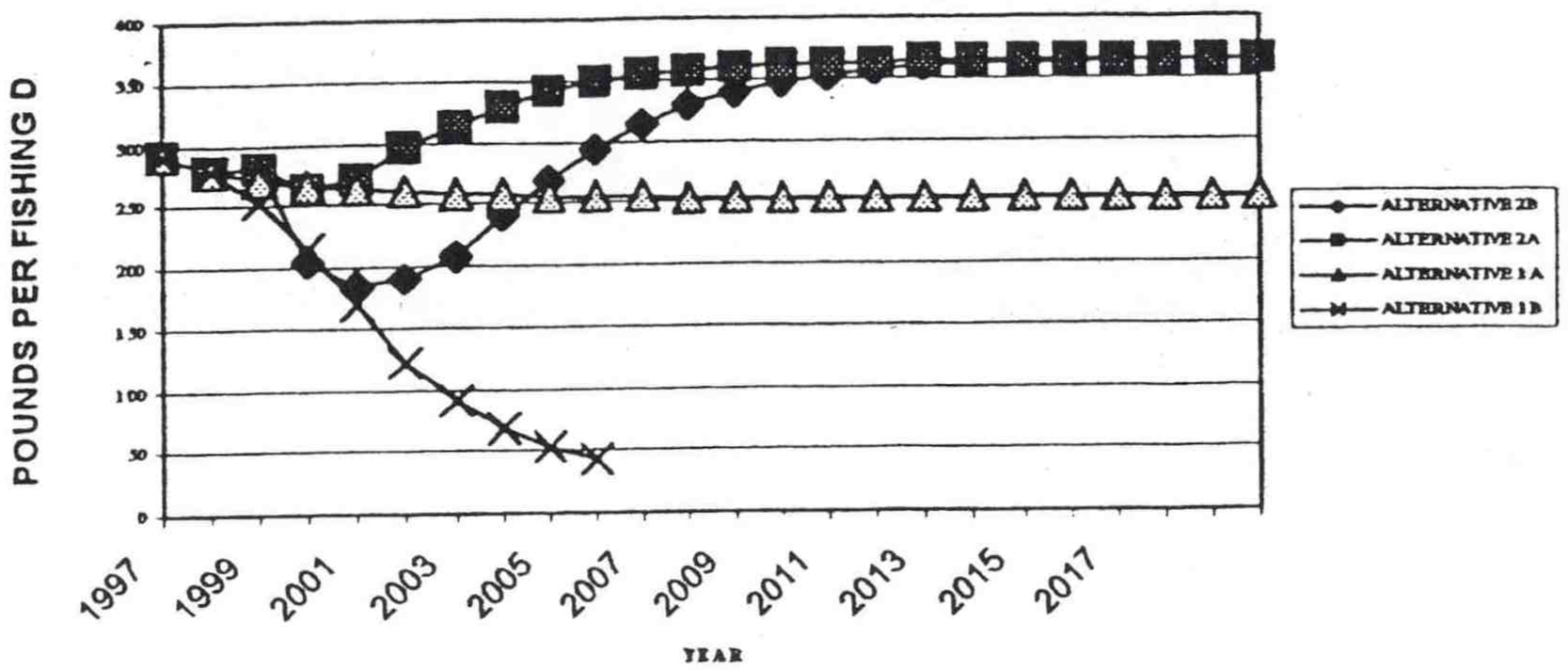

Figure 5.1. Projected BMUS CPUE in the Mau Zone fishery under various management alternatives/scenarios.

Table 5.2. Performance parameters for the Mau Zone fishery under various management alternatives/scenarios

Alternative 1 - No action (Scenario A)

1997 effort levels are assumed to remain constant through the year 2018

Year	Number of Vessels	BMUS CPUE (lbs)	Total Fishery Revenues ($)000	Total Cost Per Fishing Day ($)	Variable Cost Per Fishing Day ($)
1997	13	290	575	1,456	567
1998	13	279	559	1,431	564
1999	13	272	549	1,415	561
2000	13	267	542	1,401	561
2001	13	263	535	1,393	558
2002	13	260	532	1,384	558
2003	13	259	530	1,384	558
2004	13	258	527	1,379	556
2005	13	256	526	1,376	556
2006	13	256	526	1,376	556
2007	13	255	524	1,373	556
2008	13	254	523	1,371	556
2009	13	253	521	1,368	556
2010	13	253	521	1,368	556
2011	13	253	521	1,368	556
2012	13	253	521	1,368	556
2013	13	253	521	1,368	556
2014	13	253	521	1,368	556
2015	13	253	521	1,368	556
2016	13	253	521	1,368	556
2017	13	253	521	1,368	556

2018	13	253	521	1,368	556

Alternative 1 - No action (Scenario B)

1997 data are actual, while 1998-2007 are hypothetical. Model truncated in 2007 because fishery SPR drops below 0.20

Year	Number of Vessels	BMUS CPUE (lbs)	Total Fishery Revenues ($)000	Total Cost Per Fishing Day ($)	Variable Cost Per Fishing Day ($)
1997	13	290	575	1,456	567
1998	14	279	602	1,459	567
1999	15	262	617	1,390	558
2000	17	241	659	1,340	553
2001	19	210	670	1,269	542
2002	21	173	653	1,181	531
2003	23	137	622	1,095	520
2004	24	103	557	1,015	509

Alternative 2 - Limited entry (Scenario A)

1997 data are actual, while 1998-2018 are hypothetical

Year	Number of Vessels	BMUS CPUE (lbs)	Total Fishery Revenues ($)000	Total Cost Per Fishing Day ($)	Variable Cost Per Fishing Day ($)
1997	13	290	575	1,456	567
1998	12	279	516	1,431	564
1999	14	282	607	1,437	564
2000	12	264	496	1,493	558
2001	10	271	421	1,412	561
2002	10	295	448	1,470	569
2003	10	315	471	1,514	575
2004	10	330	488	1,560	580
2005	10	341	500	1,577	583
2006	10	349	509	1,594	586
2007	10	354	521	1,608	586
2008	10	357	523	1,616	589
2009	10	360	524	1,621	589
2010	10	361	524	1,624	589
2011	10	362	526	1,624	589
2012	10	363	526	1,630	589
2013	10	364	526	1,632	592
2014	10	364	526	1,632	592
2015	10	364	526	1,632	592
2016	10	364	526	1,632	592
2017	10	364	526	1,632	592
2018	10	364	526	1,632	592

Alternative 2 - Limited entry (Scenario B)

1997 data are actual, while 1998-2018 are hypothetical

Year	Number of Vessels	BMUS CPUE (lbs)	Total Fishery Revenues ($)000	Total Cost Per Fishing Day ($)	Variable Cost Per Fishing Day ($)
1997	13	290	575	1,456	567
1998	12	279	516	1,431	564

1999	20	282	867	1,437	564
2000	17	204	587	1,255	542
2001	14	184	453	1,205	534
2002	12	190	396	1,222	536
2003	10	208	350	1,263	542
2004	10	240	386	1,338	553
2005	10	268	418	1,406	561
2006	10	293	446	1,464	569
2007	10	313	469	1,508	575
2008	10	329	487	1,547	580
2009	10	340	499	1,574	583
2010	10	348	508	1,594	586
2011	10	353	514	1,605	586
2012	10	357	518	1,616	589
2013	10	360	525	1,621	589
2014	10	361	526	1,624	589
2015	10	362	526	1,624	589
2016	10	363	526	1,630	589
2017	10	364	526	1,632	592
2018	10	364	526	1,632	592

The near term (1999-2004) fleet revenue for the fishery under the various management alternatives is provided in Figure 5.2. Net revenue for the fleet at the various levels of participation for the management alternative for the period 1999-2013 is depicted in Figure 5.3 (all revenues stabilize after 2013 – see Table 5.2). Total revenue minus total variable (trip) costs is depicted in Figure 5.4.

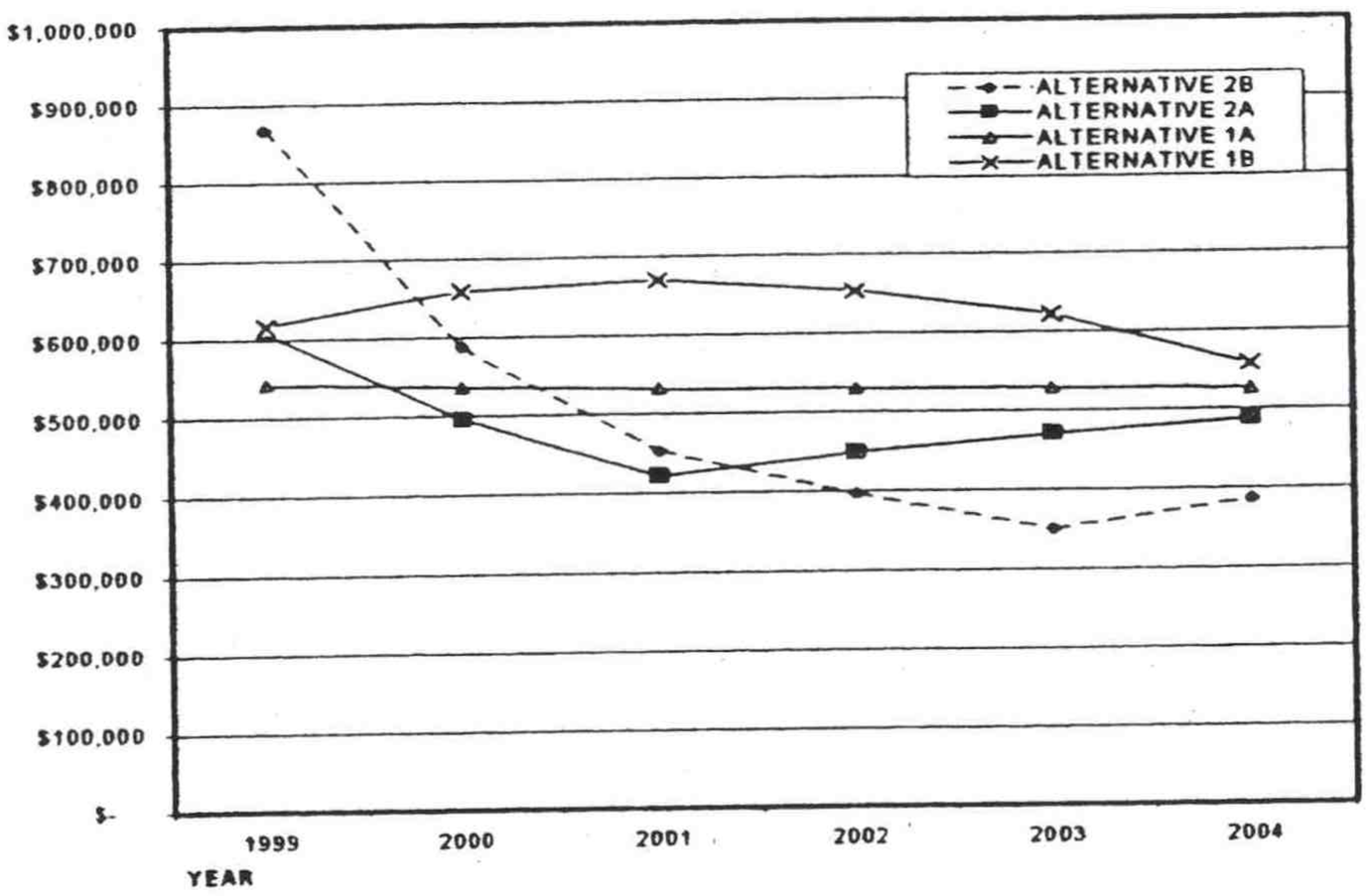

Figure 5.2. Total fleet revenue for the Mau Zone fishery under various management alternatives/scenarios

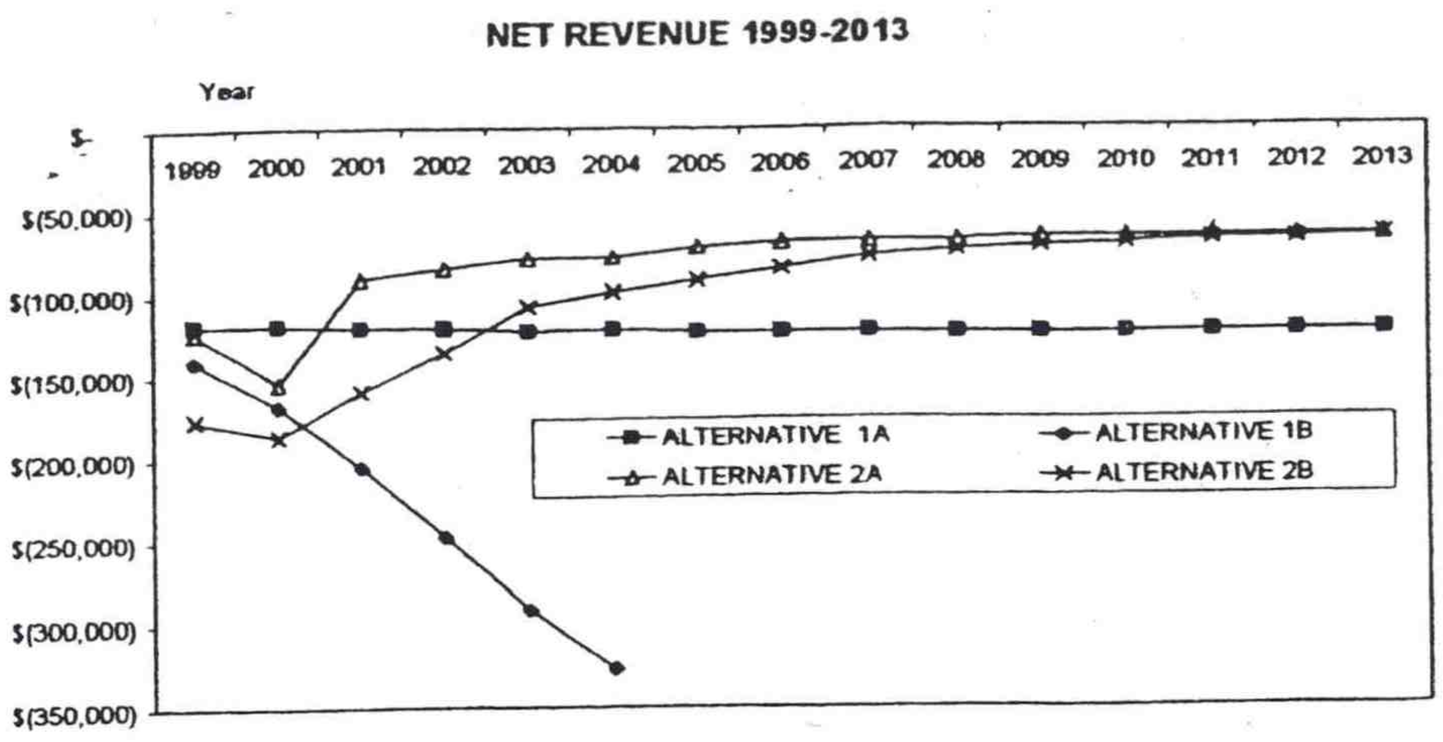

Figure 5.3. Net Fleet Revenue (Total costs - revenue) for the Mau Zone fishery under various management alternatives/scenarios.

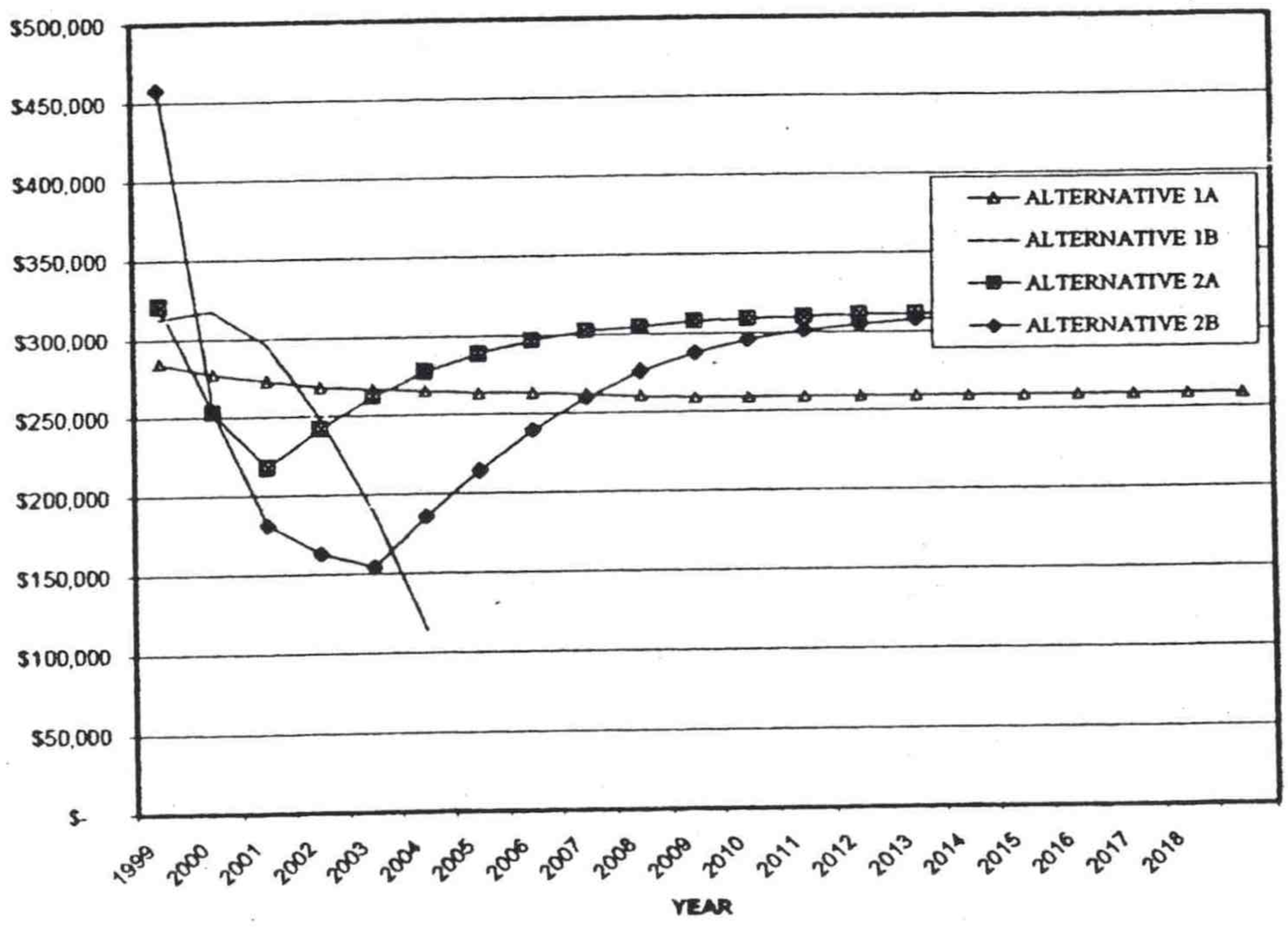

Figure 5.4. Net Fleet Revenue (Total revenues - variable costs) for the Mau Zone fishery under various management alternatives/scenarios.

The NPV for the four management scenarios is presented in Table 5.3.

Table 5.3. Net present values of management alternatives/scenarios for the Mau Zone fishery. Base year is 1997 and discount rate is 5%; values are in thousands of dollars; values in parentheses are negative; TR = total revenue, TC = total costs, TVC = total variable costs.

	TR - TC 1999-2004	TR-TC 1999-2018	TR-TVC 1999-2004	TR-TVC 1999-2018
Alternative 1A	(526)	(1,535)	1,170	3,285
Alternative 1B	(1,057)	-	1,029	-
Alternative 2A	(468)	(1,028)	1,127	3,591
Alternative 2B	(672)	(1,290)	1,077	3,306

Alternative 1B could not be evaluated in the long term because it was truncated after year 2007 when the SPR dropped below 0.20 and fishery revenue became negative. The overall results suggest that, on average, fishermen will continue to show negative returns to capital under all alternatives/scenarios. In the long-and short-term the alternative/scenario that minimizes the loss is Alternative 2A (preferred alternative and most likely scenario). When only variable costs are considered in the short term, all of the scenarios, with the exception of 1B, rank very close. When only variable costs are considered in the long run, all of the scenarios are close, with 2A showing the highest NPV.

The economic model estimates that vessel captains and crew make $286 and $197 per fishing day, respectively, at the 1997 catch of 290 pounds per day. Income rises to $375 and $261 at the MSY BMUS catch rate of 364 pounds. The returns to capital for the vessels are negative (- 4.4%) at the MSY BMUS catch rate. If the vessels are to become profitable, effort, in terms of the number of fishing days, must increase. Break-even analysis shows that at the MSY BMUS catch rate, the average vessel would have to fish 107 days per year or approximately three times the current average. At this level of effort the fishery could only support three or four vessels.

This partial analysis suggests that from the perspective of producer surplus, the preferred alternative minimizes economic losses in the Mau Zone fishery. If one assumes fishermen are participating for non-fiduciary motives and that trip expenses are used as a measure of economic viability for the fishery, then all alternatives/scenarios provide positive NPVs. In this later case, NPV in the short-run is greatest under scenario 1A. But the total difference is less than five percent between 1A, 2A and 2B (Table 5.2). If just variable costs are considered, 2A is the best option over the long run.

Changing the discount rate does not change the relative ranking of the scenarios 1A and 2A (Table 5.4). As the discount rate increases, the losses are minimized in the near-term and the benefits are minimized in the long-term

In conclusion, the preferred alternative--Alternative 2 - Limited entry (Scenario A)--appears to be the most economically efficient measure, especially in the near-term. However, if economic efficiency is an important determinant in setting target participation levels in the fishery, considerable additional adjustments in input variables (i.e. effort) are required to approach breakeven levels in the production sector (let alone approach economially efficient levels). A further consideration should be given to minimizing monitoring and enforcement costs given the relative size of the fishery and the demands placed on institutions to "manage" the fishery.

Table 5.4. Affect of changing discount rates on net present values of management scenarios 1A and 2A for the Mau Zone fishery. Base year is 1997; values are in thousands of dollars; values in parentheses are negative; TR = total revenue, TC = total costs, TVC = total variable costs

Discount Rate	TR - TC 1999-2004	TR-TC 1999-2018	TR-TVC 1999-2004	TR-TVC 1999-2018
Alternative 1A: 5%	(526)	(1,535)	1,170	3, 285
2%	(573)	(1,509)	1,273	4,298
7%	(498)	(1,304)	1,109	2,798
Alternative 2A: 5%	(413)	(938)	1,184	3,746
2%	(505)	(1,303)	1,223	4,761
7%	(446)	(894)	1,069	3,032

5.6.4 Regulatory Flexibility Act determination

NMFS considers economic impacts on small entities as significant under the RFA if the proposed action would result in 1) a reduction in annual gross revenues of more than 5 percent, for 20 percent or more of the affected small entities; 2) an increase in total costs of production of more than 5 percent as a result of an increase in compliance costs, for 20 percent or more of the affected small entities; 3) compliance costs as a percent of sales for small entities that are at least 10 percent higher than compliance costs as a percent of sales for large entities, for 20 percent or more of the affected small entities; 4) capital costs of compliance represent a significant portion of capital available to small entities, considering internal cash flow and external financing capabilities; or 5) two percent of the small business entities affected being forced to cease business operations.

Approximately 80 permits for the Mau Zone fishery were issued between 1989 and the permit moratorium, 30 of which have been used to fish in the area. However, only one-third of the 30 vessels were active in the fishery for more than two years (Table 4.3). For the purposes of the initial RFA, the entities that can reasonably be expected to be affected by the proposed action are those businesses that have been actively engaged in the fishery, in this case the 30 vessels that

fished in the Mau Zone at least once. All 30 of these vessels meet the Small Business Administration definition of a small business in commercial fishing, that is, a fish harvesting or hatchery business that is independently owned and operated and not dominant in its field of operation with annual receipts not in excess of $3,000,000.

For the initial allocation of permits the Council applies a weighted point system that balances historic participation by those fishermen who entered the fishery prior to the control date, but who may have been relatively inactive thereafter, and the economic dependence on the fishery of active newcomers. Overall, the point system allows those who have exhibited a commitment to the fishery to maintain the continuity of their economic enterprise. The system will not cause redistribution of access to the resource away from the part-time or smaller producers. Based on State of Hawaii fish landings data it is estimated that 18 vessels would qualify under the point system for entry into the Mau Zone fishery.

With one exception,[1] no vessel is expected to be excluded under the point system that has fished in the Mau Zone since January 1, 1994. Given the inactivity of the estimated 12 vessels that will not qualify to participate in the fishery, the economic consequences of being excluded are expected to be negligible.

The initial allocation of permits is likely to result in a number of participants that exceeds the target number of ten. The proposed system of limited access avoids imposing undue hardship on fishery participants and allows attrition resulting from market forces and freedom of choice to reduce the fleet to the target number over several years. Admitting a larger number than the target total, but retracting the permits as holders retire until the target number remains outstanding, provides time for fishermen to make adjustments to leaving the fishery. The Council regards such voluntary withdrawal to be the fairest way to attain a balance between harvest capacity and harvestable fishery stocks.

To help ensure that attrition occurs within an appropriate time frame, restrictions are imposed on vessel ownership and the transfer of permits and a use-it-or-lose-it requirement will be applied. According to fishermen that participate regularly in the fishery, these restrictions would have a minimal economic impact on those businesses that obtain a significant amount of their income from Mau Zone fishery landings.

For the current participants in the fishery the preferred management alternative (2A) is projected to have a 8.2 percent positive impact on BMUS generated gross revenues on a per vessel basis when compared to the no action alternative (1A) (Table 5.5). The same is true when non-BMUS revenues are included.

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[1]Three permits were issued in 1997 prior to the March 27, 1997 moratorium, but only one of these permit holders participated in the Mau Zone fishery. This permit holder would not qualify under the point system.

Table 5.5. Economic impact of the preferred management alternative (2A) on the BMUS generated gross revenue of Mau Zone participants. TR = BMUS total revenues

Year	TR/Vessel No Action (ScenarioA)	TR/Vessel Preferred Alternative	2A/1A
1997	$32,634	$32,634	1.0
1998	$31,396	$31,396	1.0
1999	$30,608	$31,733	1.04
2000	$29,595	$29,708	0.99
2001	$29,259	$30,496	1.03
2002	$29,145	$33,196	1.13
2003	$29,033	$35,447	1.22
2004	$29,808	$38,373	1.33

This analysis indicates that the proposed regulations in this amendment do not result in significant economic impacts on a substantial number of small entities.

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6.2 Sources of data and methodology

6.2.1 Determination of alternative target numbers

The target numbers under three criterion were calculated using 1994-1996 catch and effort data collected by Kawamoto (1997) from the Mau Zone fishery. This data set was compiled from trips which have complete effort information available. The estimate of MSY is from Kobayashi (1997). Projected catch rates were calculated using the model presented in Section 6.2.2.

Criterion 1: Maintain average vessel performance

11,580 BMUS lbs per vessel @ 319 lbs per day

131,200 lbs(MSY)/ 11,580 lbs/vessel = 11.3 vessels

The catch rate is based on the 1994-96 average daily BMUS catch rate for Mau Zone fishery participants.

Criterion 2: Attain MSY catch rate

13,395 BMUS lbs per vessel @ 369 lbs per day

131,210 lbs(MSY)/13,395 lbs/vessel=9.8 vessels

The catch rate is the MSY catch rate estimated by the model developed by Kobayashi (1996). It exceeds the current average catch rate. An increased catch rate would be expected under a limited access system in which most fishery participants would be experienced than under the present open access situation in which vessels may enter and exit the fishery without experience at will.

Criterion 3: Economic break-even

22,107 BMUS lbs per vessel @ 609 lbss per day (estimated by model described in Section 6.2.2)

131,200 lbs.(MSY)/ 22,107 lbs./vessel=5.9 vessels

The break-even estimate was derived from cost-earnings simulators described in Pooley (1996). The catch rate may be unrealistic, but it indicates what level would be required to

meet an economic standard. By using this high catch rate, the target number of vessels is reduced. These vessels may operate at a higher level of effort than at present, but their catch rates would in reality be constrained by the carrying capacity of the fishery (i.e., MSY).

6.2.2 Model for estimating catch rates

Using the Hilborn and Walters (1992) version of the dynamic production model and parameters for catchability (q), intrinsic growth (r) and carrying capacity (k) presented in Kobayashi (1996), Mau zone catches (C) and catch rates can be projected under various effort (E) scenarios.

$$B_t = B_{t-1} + rB_{t-1}(1 - B_{t-1} / k) - C_{t-1} \qquad C_{t-1} = q\, E_{t-1}\, B_{t-1}$$

What is required is a starting biomass (B) and effort values to determine catch for a particular year and the change in biomass for calculating the following year's biomass. A proxy for SPR can be calculated as current year biomass divided by carrying capacity. This assumes no changes in size class structure, therefore, this is probably a high estimate for SPR. Biomass for 1996 can be estimated as the quotient of CPUE divided by catchability, $298/9.917 \times 10^{-4} = 300{,}494$ pounds. With carrying capacity in the Mau zone of 741,823 pounds, the rough proxy SPR value can be calculated as 41 percent.

7.0 Draft proposed regulations

§ 660.12 Definitions.

Owner, as used in subparts C, D and § 660.61(i) of this part, means a person who is identified as the current owner of the vessel as described in the Certificate of Documentation (Form CG-1270) issued by the USCG for a documented vessel, or in a registration certificate issued by a state or territory or the USCG for an undocumented vessel. As used in subparts E and F of this part, owner has the meaning in § 600.10 of this chapter.

Pacific Islands Area Office means the Pacific Islands Area Office, Southwest Region, NMFS, located at 2570 Dole Street, Honolulu, HI 96822-2396.

Qualifying landing means a landing that meets a standard required for permit eligibility under § 660.61.

1) Mau Zone A qualifying landing for permit renewal under § 660.61 (d) or eligibility points for initial limited entry permit under § 660.61(l) is a landing that contained 500 lb (226.8 kg) of bottomfish management unit species from the Mau Zone per fishing trip.

Regional Administrator means the Administrator, Southwest Region, NMFS (see Table 1 of § 600.502 for address).

§ 660.13 Permits and fees.

(a) Validity.

(1) Each permit is valid for fishing only in the specific fishery management area or subareas identified on the permit.

(2) A permit issued under § 660.61 is valid only if the vessel operator has completed a protected species workshop as required under § 660.61(b)(2).

(b) Fees.

A fee is charged for each application for a Hawaii longline limited access permit (including permit transfers and permit renewals), Hoomalu Zone limited access permit and Mau Zone limited access permit (including renewals). The amount of the fee is calculated in accordance with the procedures of the NOAA Finance Handbook, available from the Regional Administrator, for determining the administrative costs of each special product or service. The fee may not exceed such costs and is specified with each application form. The appropriate fee must accompany each application. Failure to pay the fee will preclude issuance of a Hawaii longline, Hoomalu Zone or Mau Zone limited access permit.

(c) Expiration.

(1) Permits issued under subparts C, D and F will remain valid for the period specified on the permit unless transferred, revoked, suspended or modified under 15 CFR part 904.

(2) Permits issued under subpart E expire on 2400 local time on December 31.

(d) Transfer. An application for a permit transfer as allowed under § 660.21(h), § 660.41(e) or § 660.61(c) and (d) must be submitted to the Pacific Islands Area Office as described in paragraph (c) of this section.

Subpart E--Bottomfish And Seamount Groundfish Fisheries

§ 660.61 Permits.

(a) Applicability.

(1) The owner of any vessel being used to fish for bottomfish or seamount groundfish species in the Northwestern Hawaiian Islands bottomfish fishery management subarea must have a permit issued under this section.

(b) Application.

(2) The operator of a vessel registered with a Mau Zone limited access permit or Hoomalu Zone permit must complete a protected species workshop conducted by NMFS.

(c) Mau Zone permit.

(1) Each applicant for an initial Mau Zone permit will submit a supplementary information sheet to be provided by the Pacific Islands Area Office. Each application for a Mau Zone permit will be signed by the vessel owner or a designee and include the following information:

(i) The qualification criterion that the applicant believes he or she meets for issuance of a limited access permit;

(ii) Copies of State of Hawaii fish catch reports with certification from the State that this information is accurate, to demonstrate participation in the NWHI bottomfish fishery;

(iii) If the application is filed by a partnership or corporation, the application must identify the names of the owners and their respective percentage of ownership of the partnership or corporation. If 50 percent or more of the ownership of the vessel passes to persons other than those listed in the original application, the permit will lapse and must be surrendered to the Regional Administrator.

(2) An application for an initial Mau Zone permit must be received by the Pacific Islands Area Office no later than 45 days from the effective date of the final rule implementing Amendment 5.

(d) Transfer of Mau Zone limited access permit.

(1) A Mau Zone permit shall not be transferred via sale or lease agreement to a new owner.

(2) A Mau Zone permit or permits may be held by a partnership or corporation. If 50 percent or more of the ownership of the permitted vessel or its replacement passes to other than those listed in the original application or falls below 50 percent, the permit will lapse and must be surrendered to the Regional Administrator.

(3) A Mau Zone permit holder whose vessel is unseaworthy may register his or her permit to a replacement vessel, which is leased or chartered, for a maximum period of 12 months from the effective date of the lease or charter agreement.

(4) A Mau Zone permit holder may hire a captain to operate his or her permitted vessel, but may not lease or charter a vessel or permit to bottomfish in the Mau Zone.

(5) A Mau Zone permit holder who does not own a vessel at the time an application for an initial permit was submitted to the Pacific Islands Area Office may lease or charter a replacement vessel for a maximum period of 12 months from the effective date of the lease or charter agreement.

(6) A Mau Zone permit holder who sells his or her permitted vessel must replace the sold vessel within 12 months from the date of sale. If the sold vessel is not replaced within 12 months from the date of sale, the permit will lapse. The permit holder will be ineligible for permit renewal.

(e) Requirements for Mau Zone limited access permit renewal.

(1) A Mau Zone permit will be eligible for renewal if the vessel covered by the permit makes five or more qualifying landings as defined in § 660.12 during the permit year.

(2) The owner of a permitted vessel that did not make five or more qualifying landings of bottomfish in a permit year may apply to the Regional Administrator for waiver of the landing requirement. Grounds for a waiver are limited to captain incapacitation, vessel breakdowns and a vessel lost at sea. Unprofitability of the fishery is not sufficient reason to waive the landing requirement.

(f) Eligibility for initial Mau Zone limited access permits.

(1) An initial Mau Zone permit will be issued to a vessel owner who has accumulated a total of three or more points based on a point system as follows:

(i) 1.5 points shall be assigned to an applicant who held a Mau Zone permit on or before December 17, 1991, and whose permitted vessel made at least one landing of bottomfish management unit species taken from the Mau Zone on or before December 17, 1991.

(ii) 0.5 point shall be assigned to an applicant whose permitted vessel made at least one landing of bottomfish management unit species from the Mau Zone during calendar year 1991.

(iii) 1.0 point shall be assigned to an applicant whose permitted vessel made at least one landing of bottomfish management unit species from the Mau Zone during calendar year 1992.

(iv) 1.5 points shall be assigned to an applicant whose permitted vessel made at least one landing of bottomfish management unit species from the Mau Zone during calendar year 1993.

(v) 2.0 points shall be assigned to an applicant whose permitted vessel made at least one landing of bottomfish management unit species from the Mau Zone during calendar year 1994.

(vi) 2.5 points shall be assigned to an applicant whose permitted vessel made at least one landing of bottomfish management unit species from the Mau Zone during calendar year 1995.

(vii) 3.0 points shall be assigned to an applicant whose permitted vessel made at least one landing of bottomfish management unit species from the Mau Zone during calendar year 1996.

(2) Mau Zone permits may be issued to a person who owns two or more vessels providing each of the owners vessel has made the required landings to be assigned three or more eligibility points as described in this subsection.

(3) A Mau Zone permit will not be registered for use with a vessel that has a length overall greater than 60 ft (18.3 m).

(g) Appeals of permit actions.

(1) Except as provided in subpart D of 15 CFR part 904, any applicant for a permit or a permit holder may appeal the granting, denial, conditioning, or suspension of their permit or a permit affecting their interests to the Regional Administrator. In order to be considered by the Regional Administrator, such appeal must be in writing, must state the action(s) appealed, and the reasons therefore, and must be submitted within 30 days of the action(s) by the PIAO Administrator. The appellant may request an informal hearing on the appeal.

§ 660.62 Prohibitions.

(c) Fish for bottomfish in the Mau Zone without a permit issued under §§ 660.13 and 660.61.

254, 303(r), 403, and 405, and 47 CFR 1.108 of the Commission's rules, part 54 of the Commission's rules, 47 CFR part 54, are amended, as set forth.

29. It is further ordered that, because the rule changes set forth below grant an exemption and relieve a restriction, the rule changes are effective immediately upon publication in the **Federal Register**.

30. It is further ordered that the Commission's Office of Public Affairs, Reference Operations Division, shall send a copy of this Tenth Order on Reconsideration, including the Supplemental Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

List of Subjects in 47 CFR Part 54

Healthcare providers, Libraries, Reporting and recordkeeping requirements, Schools, Telecommunications, Telephone.

Federal Communications Commission.

Magalie Roman Salas,

Secretary.

Rule Changes

Part 54 of Title 47 of the Code of Federal Regulations is amended to read as follows:

PART 54—UNIVERSAL SERVICE

1. The authority citation for part 54 continues to read as follows:

Authority: 47 U.S.C. 1, 4(i), 201, 205, 214, and 254 unless otherwise noted.

2. Revise § 54.507(b) to read as follows

§ 54.507 Cap.

* * * * * *

(b) A funding year for purposes of the schools and libraries cap shall be the period July 1 through June 30. For the initiation of the mechanism only, the eighteen month period from January 1, 1998 to June 30, 1999 shall be considered a funding year. For the 1998–99 funding year:

(1) Schools and libraries filing applications within the initial 75-day filing window, and receiving approval for discounts on recurring services, shall receive funding for requested recurring services through June 30, 1999; and

(2) Schools and libraries filing applications within the initial 75-day filing window, and receiving approval for discounts on eligible nonrecurring services, may receive those nonrecurring services subject to the approved discount amounts through September 30, 1999.

* * * * * *

3. Revise § 54.511(d) to read as follows

§ 54.511 Ordering services.

* * * * * *

(d)(1) The exemption from the competitive bid requirements set forth in paragraph (c) of this section shall not apply to voluntary extensions or renewals of existing contracts, with the exception that an eligible school or library as defined under § 54.501 or consortium that includes an eligible school or library, that filed an application within the 75-day initial filing window for 1998 (January 30, 1998–April 15, 1998), may voluntarily extend or renew, to a date no later than June 30, 1999, an existing contract that otherwise would terminate between April 15, 1998 and June 30, 1999.

(2) For the 1998–1999 funding year, a contract exempt from the competitive bid requirement, as described in paragraph (c) of this section, may be voluntarily extended to September 30, 1999 only to the extent necessary to permit delivery of the nonrecurring services subject to that contract and for which discounts have been approved.

4. Revise § 54.604(d) to read as follows

§ 54.604 Existing contracts.

* * * * * *

(d) The exemption from competitive bid requirements set forth in paragraph (a) of this section shall not apply to voluntary extensions or renewals of existing contracts, except to the extent that an eligible rural health care provider as defined in § 54.601 or consortium that includes an eligible health care provider, and that filed an application within the 75-day initial filing window for 1998 (May 1, 1998—July 14, 1998), may voluntarily extend or renew, to a date no later than June 30, 1999, an existing contract that otherwise would terminate between July 14, 1998 and June 30, 1999.

[FR Doc. 99–10702 Filed 4–27–99; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 660

[Docket No. 981204297–9091–02; I.D. 110698B]

RIN 0648–AK21

Fisheries Off West Coast States and in the Western Pacific; Western Pacific Bottomfish Fishery; Amendment 5

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Final rule.

SUMMARY: NMFS issues a final rule to implement Amendment 5 to the Fishery Management Plan for Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region (FMP). This rule implements a permanent limited access program for the Mau Zone bottomfish fishery in the Northwestern Hawaiian Islands (NWHI). The intent of this action is to conserve and support the long-term productivity of the bottomfish stocks by preventing the potential for excessive harvest capacity and to improve the low economic returns in the fishery.

DATES: Effective May 28, 1999.

ADDRESSES: Copies of Amendment 5 may be obtained from Kitty Simonds, Executive Director, Western Pacific Fishery Management Council, 1164 Bishop St., Suite 1400, Honolulu, HI 96813. Comments on the modifications to approved collection-of-information requirements should be sent to the Pacific Island Area Office (PIAO), NMFS, 2570 Dole Street, Honolulu, HI 96813 and to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Washington, D.C. 20503 (ATTN: NOAA Desk Officer).

FOR FURTHER INFORMATION CONTACT: Alvin Katekaru, Fishery Management Specialist, PIAO, NMFS, at 808–973–2985 or Kitty Simonds at 808–522–8220.

SUPPLEMENTARY INFORMATION: NMFS is issuing this rule to implement FMP Amendment 5, as recommended by the Western Pacific Fishery Management Council (Council) under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). This rule implements a limited access program for the Mau Zone bottomfish fishery in the NWHI. The Mau Zone is located north of Kauai between 161°20′ W. and 165°00′ W. longitude in the U.S.

exclusive economic zone around the Hawaiian Islands. The amendment is intended to prevent biological overfishing and improve poor economic returns that are plaguing the open access bottomfish fishery in the Mau Zone. The history of the Mau Zone bottomfish fishery, including the establishment of a control date and a 2-year moratorium on issuance of new Mau Zone open access permits, is summarized in the preamble to the proposed rule (64 FR 823, January 6, 1999) and is not repeated here.

This rule: (1) restricts participation in the Mau Zone bottomfish fishery to vessel owners who hold limited access permits; (2) adopts 10 as the long-term target number of vessels that would be allowed to fish for bottomfish in the Mau Zone; (3) establishes qualifying criteria for allocating initial Mau Zone limited access permits based on historic participation in the fishery (December 17, 1991, control date) and landing of bottomfish from the Mau Zone up to December 31, 1996; (4) prohibits the transfer, lease, charter, or sale of permits to reduce the number of vessels in the fishery to achieve the target number; (5) provides that Mau Zone limited access permits issued to partnerships or corporations will expire (and must surrendered to NMFS) upon a change in more than 50 percent ownership in the vessel, partnership or corporation; (6) limits the amount of time a permit holder may register a limited access permit for use with a leased or chartered vessel; (7) limits the length of replacement vessels to no longer than 60 ft (18.3 m); (8) requires permit holders to make a minimum of five landings of at least 500 lb (227 kg) each of bottomfish management unit species each year from the Mau Zone to qualify for permit renewal; (9) states that the Council will undertake a 5-year comprehensive review of the limited access program to determine its effectiveness in meeting the objectives of the FMP; (10) requires the Council to develop criteria to allow new entry into the Mau Zone when the number of permitted vessels falls below 10; and (11) reserves 20 percent of the long-term target number of limited access permits, i.e., two permits, for a Western Pacific Community Development Program. The rule establishes a fee for processing Mau Zone permits, specifies an appeals process for permit actions, and prohibits the retention of incidentally caught bottomfish in the Mau Zone without a limited access permit are described in Amendment 5. Also, certain provisions governing the Ho'omalu Zone bottomfish limited access program are revised for housekeeping purposes only, such as moving the description of "qualifying landing" for initial Ho'omalu Zone permit eligibility points and permit renewal from the *Definitions* section (§ 660.12) of subpart B (Western Pacific Fisheries - General) to subpart E (Bottomfish and Seamount Groundfish Fisheries). Section 660.67(d)(3) of the current bottomfish regulations that refer to 1985 and 1986 "control dates" for limiting access to the fisheries off the NWHI, Guam, and American Samoa is removed since it is unlikely that the Council and NMFS will use such old control dates.

Comments and Response

NMFS received three comments from the public during the comment period on the proposed rule which ended February 22, 1999.

Comment: Three commenters expressed their support for setting aside two permits for a Western Pacific Community Development Program.

Response: NMFS agrees.

Changes to the Proposed Rule

Except for insertion of specific dates in § 660.61(a)(3) and (b)(3), no changes were made to the proposed rule. The regulatory text of this final rule is the same as the regulatory text of the proposed rule.

Classification

The Administrator, Southwest Region, NMFS, determined that FMP Amendment 5 is necessary for the conservation and management of the bottomfish and seamount groundfish fisheries of the Western Pacific region and that it is consistent with the Magnuson-Stevens Fishery Conservation and Management Act and other applicable laws.

This final rule has been determined to be not significant for the purposes of E.O. 12866.

The Chief Counsel for Regulation of the Department of Commerce certified to the Chief Counsel for Advocacy of the Small Business Administration that this rule, if adopted as proposed, would not have a significant economic impact on a substantial number of small entities. No comments were received regarding this certification. As a result, a regulatory flexibility analysis was not prepared.

This rule contains collection-of-information requirements subject to the Paperwork Reduction Act (PRA). Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB control number. The collection of this information has been approved by OMB, under OMB control number 0648–0204 for Federal fishing permits.

The public reporting burden for these requirements is estimated to be 45 minutes for a Mau Zone limited access permit application, 2 hours for a permit appeal submission, and 1 hour for permit renewal exemption request per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. This rule also restates an information collection requirement already approved by OMB under control number 0648–0204. An application for a Ho'omalu Zone limited access permit is estimated to take 2 hours for an initial application and 1 hour for an application for renewal. Send comments regarding these burden estimates or any other aspect of the data requirements, including suggestions for reducing the burden to NMFS (see ADDRESSES) and to the Office of Information and Regulatory Affairs, OMB, Washington, D.C. 20503 (ATTN: NOAA Desk Officer).

List of Subjects in 50 CFR Part 660

Administrative practice and procedure, American Samoa, Fisheries, Fishing, Guam, Hawaiian Natives, Indians, Northern Mariana Islands, Reporting and recordkeeping requirements.

Dated: April 22, 1999.

Penelope D. Dalton,

Assistant Administrator for Fisheries, National Marine Fisheries Service.

For the reasons set out in the preamble, 50 CFR part 660 is amended as follows:

PART 660 - FISHERIES OFF WEST COAST STATES AND IN THE WESTERN PACIFIC

1. The authority citation for part 660 continues to read as follows:

Authority: 16 U.S.C. 1801 *et seq.*

2. Section 660.12 is amended by removing the definitions of "Pacific Area Office," and "Qualifying landing", revising the definition of "Owner" and adding a definition of "Pacific Islands Area Office" to read as follows:

§ 660.12 Definitions.

* * * * *

Owner, as used in subparts C and D of this part and § 660.61(i)through (m),

means a person who is identified as the current owner of the vessel as described in the Certificate of Documentation (Form CG–1270) issued by the USCG for a documented vessel, or in a registration certificate issued by a state, a territory, or the USCG for an undocumented vessel. As used in subpart F of this part and § 660.61(c) through (h), the definition of "owner" in § 600.10 of this chapter continues to apply.

Pacific Islands Area Office means the Pacific Islands Area Office, (PIAO) Southwest Region, NMFS, located in Honolulu, Hawaii. The address and phone number may be obtained from the Regional Administrator, whose address is in Table 1 to § 600.502 of this chapter.

* * * * *

3. Section 660.13 is amended by revising paragraphs (f), (g), and (i) to read as follows:

§ 660.13 Permits and fees.

* * * * *

(f) *Fees.* (1) PIAO will not charge a fee for a permit issued under subpart D or F of this part, or for a Ho'omalu Zone limited access permit issued under § 660.61.

(2) PIAO will charge a fee for each application for a Hawaii longline limited access permit (including permit transfers and permit renewals) and Mau Zone limited access permit (including permit renewals). The amount of the fee is calculated in accordance with the procedures of the NOAA Finance Handbook, available from the Regional Administrator, for determining the administrative costs of each special product or service. The fee may not exceed such costs and is specified with each application form. The appropriate fee must accompany each application. Failure to pay the fee will preclude issuance of a Hawaii longline or Mau Zone limited access permit.

(g) *Expiration.* (1) Permits issued under subparts C, D, and F of this part are valid for the period specified on the permit unless transferred, revoked, suspended, or modified under 15 CFR part 904.

(2) Permits issued under subpart E of this part expire at 2400 local time on December 31.

* * * * *

(i) *Transfer.* An application for a permit transfer under §§ 660.21(h), 660.41(e), or 660.61(e), or for registration of a permit for use with a replacement vessel under § 660.61(k), must be submitted to the PIAO as described in paragraph (c) of this section.

* * * * *

4. Section 660.61 is revised to read as follows:

§ 660.61 Permits.

(a) *Applicability.* (1) The owner of any vessel used to fish for bottomfish management unit species in the Northwestern Hawaiian Islands Subarea must have a permit issued under this section and the permit must be registered for use with the vessel.

(2) The PIAO will not register a single vessel for use with a Ho'omalu Zone permit and a Mau Zone permit at the same time.

(3) Mau Zone permits issued before June 14, 1999 become invalid June 14, 1999, except that a permit issued to a person who submitted a timely application under paragraph (i) of this section is valid until the permit holder either receives a Mau Zone limited entry permit or until final agency action is taken on the permit holder's application. The Ho'omalu Zone and the Mau Zone limited entry systems described in this section are subject to abolition, modification, or additional effort limitation programs.

(b) *Submission.* (1) An application for a permit required under this section must be submitted to the PIAO as described in § 660.13. (2) *Ho'omalu Zone limited access permit.* In addition to an application under § 660.13(c), each applicant for a Ho'omalu Zone permit must also submit a supplementary information sheet provided by the PIAO, which must be signed by the vessel owner or a designee and include the following information:

(i) The qualification criterion that the applicant believes he or she meets for issuance of a limited access permit;

(ii) A copy of landings receipts or other documentation, with a certification from a state or Federal agency that this information is accurate, to demonstrate participation in the NWHI bottomfish fishery; and

(iii) If the application is filed by a partnership or corporation, the names of each of the individual partners or shareholders and their respective percentages of ownership of the partnership or corporation.

(3) *Mau Zone limited access permit.* The PIAO will not accept applications for a new Mau Zone permit after June 14, 1999. In addition to an application under § 660.13(c), each applicant for a Mau Zone permit must also submit a supplementary information sheet provided by the PIAO, which must be signed by the vessel owner or a designee and include the following information:

(i) The qualification criterion that the applicant believes he or she meets for issuance of a limited access permit;

(ii) Copy of State of Hawaii catch report(s) to demonstrate that the permitted vessel had made qualifying landings of bottomfish from the Mau Zone; and

(iii) If the application is filed by a partnership or corporation, the names of each of the individual partners or shareholders and their respective percentage of ownership of the partnership or corporation.

(c) *Sale or transfer of Ho'omalu limited access permits to new vessel owners.* (1) A Ho'omalu zone permit may not be sold or otherwise transferred to a new owner.

(2) A Ho'omalu zone permit or permits may be held by a partnership or corporation. If 50 percent or more of the ownership of the vessel passes to persons other than those listed in the original application, the permit will lapse and must be surrendered to the Regional Administrator.

(d) *Transfer of Ho'omalu Zone limited access permits to replacement vessels.* (1) Upon application by the owner of a permitted vessel, the Regional Administrator will transfer that owner's permit to a replacement vessel owned by that owner, provided that the replacement vessel does not exceed 60 ft (18.3 m) in length. The replacement vessel must be put into service no later than 12 months after the owner applies for the transfer, or the transfer shall be void.

(2) An owner of a permitted vessel may apply to the Regional Administrator for transfer of that owner's permit to a replacement vessel greater than 60 ft (18.3 m) in length. The Regional Administrator may transfer the permit upon determining, after consultation with the Council and considering the objectives of the limited access program, that the replacement vessel has catching power that is comparable to the rest of the vessels holding permits for the fishery, or has catching power that does not exceed that of the original vessel, and that the transfer is not inconsistent with the objectives of the program. The Regional Administrator shall consider vessel length, range, hold capacity, gear limitations, and other appropriate factors in making determinations of catching power equivalency and comparability of the catching power of vessels in the fishery.

(e) *Ho'omalu Zone limited access permit renewal.* (1) A qualifying landing for Ho'omalu Zone permit renewal is a landing of at least 2,500 lb (1,134 kg) of bottomfish management unit species from the Ho'omalu Zone or a landing of at least 2,500 lb (1,134 kg) of fish from the Ho'omalu Zone, of which at least 50

percent by weight was bottomfish management unit species. A permit is eligible for renewal for the next calendar year if the vessel covered by the permit made three or more qualifying landings during the current calendar year.

(2) The owner of a permitted vessel that did not make three or more qualifying landings of bottomfish in a year may apply to the Regional Administrator for waiver of the landing requirement. If the Regional Administrator finds that failure to make three landings was due to circumstances beyond the owner's control, the Regional Administrator may renew the permit. A waiver may not be granted if the failure to make three landings was due to general economic conditions or market conditions, such that the vessel operations would not be profitable.

(f) *Issuance of new Ho'omalu Zone limited access permits.* The Regional Administrator may issue new Ho'omalu Zone limited access permits under § 660.13 if the Regional Administrator determines, in consultation with the Council, that bottomfish stocks in the Ho'omalu Zone are able to support additional fishing effort.

(g) *Eligibility for new Ho'omalu Zone limited access permits.* When the Regional Administrator has determined that new permits may be issued, they shall be issued to applicants based upon eligibility, determined as follows:

(1) *Point system.* (i) Two points will be assigned for each year in which the applicant was owner or captain of a vessel that made three or more of any of the following types of landings in the NWHI:

(A) Any amount of bottomfish management unit species, regardless of weight, if made on or before August 7, 1985;

(B) At least 2,500 lb (1,134 kg) of bottomfish management unit species, if made after August 7, 1985; or

(C) At least 2,500 lb (1,134 kg) of any fish lawfully harvested from the NWHI, of which at least 50 percent by weight was bottomfish, if made after August 7, 1985.

(ii) One point will be assigned for each year in which the applicant was owner or captain of a vessel that landed at least 6,000 lb (2,722 kg) of bottomfish from the main Hawaiian Islands.

(iii) For any one year, points will be assigned under either paragraph (g)(1)(i) or (g)(1)(ii) of this section, but not under both paragraphs.

(iv) Before the Regional Administrator issues an Ho'omalu zone permit to fish for bottomfish under this section, the primary operator and relief operator named on the application form must have completed a protected species workshop conducted by NMFS.

(2) *Restrictions.* An applicant must own at least a 25–percent share in the vessel that the permit would cover, and only one permit will be assigned to any vessel.

(3) *Order of issuance.* New permits shall be awarded to applicants in descending order, starting with the applicant with the largest number of points. If two or more persons have an equal number of points, and there are insufficient new permits for all such applicants, the new permits shall be awarded by the Regional Administrator through a lottery.

(4) *Notification.* The Regional Administrator shall place a notice in the *Federal Register* and shall use other means to notify prospective applicants of the opportunity to file applications for new permits under this program.

(h) *Eligibility for new Mau Zone limited access permits* (1) The PIAO will issue an initial Mau Zone permit to a vessel owner who qualifies for at least three points under the following point system:

(i) An owner who held a Mau Zone permit on or before December 17, 1991, and whose permitted vessel made at least one qualifying landing of bottomfish management unit species on or before December 17, 1991, shall be assigned 1.5 points.

(ii) An owner whose permitted vessel made at least one qualifying landing of bottomfish management unit species during 1991, shall be assigned 0.5 point.

(iii) An owner whose permitted vessel made at least one qualifying landing of bottomfish management unit species during 1992, shall be assigned 1.0 point.

(iv) An owner whose permitted vessel made at least one qualifying landing of bottomfish management unit species during 1993, shall be assigned 1.5 points.

(v) An owner whose permitted vessel made at least one qualifying landing of bottomfish management unit species during 1994, shall be assigned 2.0 points.

(vi) An owner whose permitted vessel made at least one qualifying landing of bottomfish management unit species during 1995, shall be assigned 2.5 points.

(vii) An owner whose permitted vessel made at least one qualifying landing of bottomfish management unit species during 1996, shall be assigned 3.0 points.

(viii) Before the PIAO issues a Mau Zone permit to fish for bottomfish under this section, the primary operator and relief operator named on the application form must have completed a protected species workshop conducted by NMFS.

(2) For purposes of this paragraph § 660.61(h), a "qualifying landing" means any amount of bottomfish management unit species lawfully harvested from the Mau Zone and offloaded for sale. No points shall be assigned to an owner for any qualifying landings reported to the State of Hawaii more than 1 year after the landing.

(3) More than one Mau Zone permit may be issued to an owner of two or more vessels, provided each of the owner's vessels for which a permit will be registered for use has made the required qualifying landings for the owner to be assigned at least three eligibility points.

(4) A Mau Zone permit holder who does not own a vessel at the time initial permits are issued must register the permit for use with a vessel owned by the permit holder within 12 months from the date the permit was issued. In the interim, the permit holder may register the permit for use with a leased or chartered vessel. If within 12 months of initial permit issuance, the permit holder fails to apply to the PIAO to register the permit for use with a vessel owned by the permit holder, then the permit expires.

(5) For each of paragraphs (h)(1)(i) through (h)(1)(viii) of this section, the PIAO shall assign points based on the landings of one permitted vessel to only one owner if the vessel did not have multiple owners during the time frame covered by the subordinate paragraphs. If a vessel had multiple owners during a time frame covered by any of paragraphs (h)(1)(i) through (h)(1)(viii) of this section (including joint owners, partners, or shareholders of a corporate owner), the PIAO will assign the points for that subordinate paragraph to a single owner if only one owner submits an application with respect to the landings of that vessel during that time frame. If multiple owners submit separate applications with respect to the same landings of the same vessel during the same time frame, then the PIAO shall:

(i) Adhere to any written agreement between the applicants with respect to who among them shall be assigned the aggregate point(s) generated by landings during such time frame(s), or

(ii) If there is no agreement:

(A) Shall issue the applicants a joint permit provided the vessel's landings during such time frames generated at least three points, or

(B) In the event the vessel's landings during such time frame(s) generated less than three points, shall not assign any

points generated by the vessel's landings during such time frame(s).

(i) *Ownership requirements and registration of Mau Zone limited access permits for use with other vessels.* (1) A Mau Zone permit may be held by an individual, partnership, or corporation. No more than 49 percent of the underlying ownership interest in a Mau Zone permit may be sold, leased, chartered, or otherwise transferred to another person or entity. If more than 49 percent of the underlying ownership of the permit passes to persons or entities other than those listed in the original permit application supplemental information sheet, then the permit expires and must be surrendered to the PIAO.

(2) A Mau Zone permit holder may apply under § 660.13 to the PIAO to register the permit for use with another vessel if that vessel is owned by the permit holder, and is no longer than 60 ft (18.3 m).

(3) If a Mau Zone permit holder sells the vessel, for which the permit is registered for use, the permit holder must within 12 months of the date of sale apply to the PIAO to register the permit for use with a vessel owned by the permit holder. If the permit holder has not applied to register a replacement vessel within 12 months, then the permit expires.

(4) If a permitted vessel owned by the permit holder is sold or becomes unseaworthy, the Mau Zone permit with which the vessel was registered may be registered for use with a leased or chartered vessel for a period not to exceed 12 months from the date of registration of the leased or chartered vessel. If by the end of that 12-month period the permit holder fails to apply to the PIAO to register the permit for use with a vessel owned by the permit holder, then the permit expires.

(j) *Mau Zone limited access permit renewal.* (1) A Mau Zone permit will be eligible for renewal if the vessel for which the permit is registered for use made at least five separate fishing trips with landings of at least 500 lb (227 kg) of bottomfish management unit species per trip during the calender year. Only one landing of bottomfish management unit species per fishing trip to the Mau Zone will be counted toward the landing requirement.

(2) If the vessel for which the permit is registered for use fails to meet the landing requirement of paragraph (j)(1) of this section, the owner may apply to the Regional Administrator for a waiver of the landing requirement. Grounds for a waiver are limited to captain incapacitation, vessel breakdowns, and the loss of the vessel at sea if the event prevented the vessel from meeting the landing requirement. Unprofitability is not sufficient for waiver of the landing requirement.

(3) Failure of the permit holder to register a vessel for use under the permit does not exempt a permit holder from the requirements specified in this paragraph.

(k) *Appeals of permit actions.* (1) Except as provided in subpart D of 15 CFR part 904, any applicant for a permit or a permit holder may appeal the granting, denial, or revocation of his or her permit to the Regional Administrator.

(2) In order to be considered by the Regional Administrator, such appeal must be in writing, must state the action appealed, and the reasons therefore, and must be submitted within 30 days of the appealed action. The appellant may request an informal hearing on the appeal.

(3) The Regional Administrator, in consultation with the Council, will decide the appeal in accordance with the FMP and implementing regulations and based upon information relative to the application on file at NMFS and the Council, the summary record kept of any hearing, the hearing officer's recommended decision, if any, and any other relevant information.

(4) If a hearing is requested, or if the Regional Administrator determines that one is appropriate, the Regional Administrator may grant an informal hearing before a hearing officer designated for that purpose. The applicant or permit holder may appear personally or be represented by counsel at the hearing and submit information and present arguments as determined appropriate by the hearing officer. Within 30 days of the last day of the hearing, the hearing officer shall recommend in writing a decision to the Regional Administrator.

(5) The Regional Administrator may adopt the hearing officer's recommended decision, in whole or in part, or may reject or modify it. The Regional Administrator's decision on the application is the final administrative decision of the Department of Commerce, and is effective on the date the Administrator signs the decision.

5. Section 660.62 is amended by revising paragraph (b), removing paragraph (c), and redesignating paragraphs (d) through (f) as paragraphs (c) through (e), respectively, to read as follows:

§ 660.62 Prohibitions.

* * * * *

(b) Fish for, or retain on board a vessel, bottomfish management unit species in the Ho'omalu Zone or Mau Zone without the appropriate permit, registered for use with that vessel, issued under § 660.13.

* * * * *

6. Section 660.67 is amended by removing paragraph (d)(3) and adding new paragraph (e) to read as follows:

§ 660.67 Framework for regulatory adjustments.

* * * * *

(e) *Five-year review.* The Council will conduct a comprehensive review on the effectiveness of the Mau Zone limited access program 5 years following implementation of the program. The Council will consider the extent to which the FMP objectives have been met and verify that the target number of vessels established for the fishery is appropriate for current fishing activity levels, catch rates, and biological condition of the stocks. The Council may establish a new target number based on the 5-year review.

[FR Doc. 99–10635 Filed 4–27–99; 8:45 am]

BILLING CODE 3510–22–F

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 679

[Docket No. 990304062–9062–01; I.D. 042399B]

Fisheries of the Economic Exclusive Zone Off Alaska; Groundfish Fisheries by Vessels using Hook-and-Line Gear in the Gulf of Alaska

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Closure.

SUMMARY: NMFS is prohibiting directed fishing for groundfish by vessels using hook-and-line gear in the Gulf of Alaska (GOA), except for sablefish or demersal shelf rockfish. This action is necessary because the first seasonal bycatch mortality allowance of Pacific halibut apportioned to hook-and-line gear targeting groundfish, other than sablefish or demersal shelf rockfish, in the GOA has been caught.

DATES: Effective 1200 hrs, Alaska local time (A.l.t.), April 24, 1999, until 1200 hrs, A.l.t., May 18, 1999.

FOR FURTHER INFORMATION CONTACT: Mary Furuness, 907–586–7228

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COUNCIL

July, 2003

Amendment 6 to the Bottomfish and Seamount Groundfish Fishery Management Plan is contained in the Council's Magnuson-Stevens Act Definitions and Required Provisions, as required under the Sustainable Fisheries Act. This amendment would implement new definitions for overfishing and for Hawaii fishing communities, as well as summarizing the status of bycatch in the region's fisheries. For a complete background description and analysis of Amendment 6, please see the Magnuson-Stevens Act Definitions and Required Provisions.

Vermont Avenue, NW., Washington, DC 20590.

SUPPLEMENTARY INFORMATION: Section 5 of the Department of Transportation Act (49 U.S.C. 1654 *et seq.*) establishes a program of federal grants to states to fund local rail freight assistance projects. The regulations implementing section 5 of the Act are contained in 49 CFR part 266. The Local Rail Service Reauthorizing Act, Public Law No. 101–213 (Dec. 11, 1989) ("Reauthorizing Act") amended section 5 of the Act in several ways. The proposed amendment of part 266 was to reflect those amendments enacted by the Reauthorizing Act. However, the Administration has not requested, and the Congress has not provided, any appropriations for that program since 1995. As a result no new funding has been made available to recipients since that time and none is anticipated. Since no further funding is anticipated for the program, the proposed amendments to part 266 are no longer necessary.

Conclusion: Based on the foregoing, FRA is withdrawing the NPRM.

Issued in Washington, DC on March 31, 2003.

Allan Rutter,

Administrator.

[FR Doc. 03–8283 Filed 4–4–03; 8:45 am]

BILLING CODE 4910–06–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 660

[I.D. 032703B]

RIN 0648–AN79, 0648–AP54, 0648–AP55

Fisheries Off West Coast States and in the Western Pacific; Precious Coral Fisheries, Fishery Management Plan (FMP) Amendment 4; Bottomfish and Seamount Groundfish Fisheries, FMP Amendment 6; Pelagic Fisheries, FMP Amendment 8; Crustacean Fisheries, FMP Amendment 10

AGENCY: National Marine Fisheries Service (NOAA), Commerce.

ACTION: Notice of availability of supplemental FMP amendments; request for comments.

SUMMARY: NMFS announces that the Western Pacific Fishery Management Council (Council) has prepared supplements to FMP Amendment 4 to the Fishery Management Plan for the Precious Coral Fisheries of the Western Pacific Region (Amendment 4) fisheries, FMP Amendment 6 to the Fishery Management Plan for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region (Amendment 6), fisheries FMP Amendment 8 to the Fishery Management Plan for the Pelagic Fisheries of the Western Pacific Region (Amendment 8) for fisheriesand FMP Amendment 10 to the Fishery Management Plan for Crustaceans Fisheries of the Western Pacific Region (Amendment 10) of the Western Pacific Region. The supplemental amendments, which have been submitted to NMFS for Secretarial review, are intended to implement certain revisions made by the provisions of the Sustainable Fisheries Act (SFA) revisions to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). Included in the supplemental amendments are bycatch provisions for the bottomfish and seamount groundfish and pelagic FMPs fisheries; overfishing definitions and control rules for the bottomfish and seamount groundfish, pelagics, and crustacean FMPs fisheries; and definitions of "fishing communities" in Hawaii for the bottomfish and seamount groundfish, pelagics, crustaceans, and precious corals FMPs fisheries.

DATES: Written comments on the supplemental FMP amendments must be received on or before June 6, 2003.

ADDRESSES: Written comments on any of the supplemental FMP amendments should be sent to Dr. Charles Karnella, Administrator, Pacific Islands Area Office, NMFS, 1601 Kapiolani Boulevard, Suite 1110, Honolulu, HI 96814, or faxed to 808–973–2941. Comments will not be accepted via e-mail or the internet.

Copies of the amendment documents are available from Kitty Simonds, Executive Director, Western Pacific Fishery Management Council, 1164 Bishop St., Suite 1400, Honolulu, HI 96813. The documents are also available on the following website: *http://www.wpcouncil.org.*

FOR FURTHER INFORMATION CONTACT: Kitty Simonds, phone: (808) 522–8220; fax: (808) 522–8226.

SUPPLEMENTARY INFORMATION: The Magnuson-Stevens Act requires each Regional Fishery Management Council to submit fishery management plans or plan amendments to NMFS for review and approval, disapproval, or partial approval. The Magnuson-Stevens Act also requires NMFS, immediately upon receiving a fishery management plan or amendment, to publish notification in the **Federal Register** that the fishery management plan or plan amendment is available for public review and comment. NMFS will consider the public comments received during the comment period described above in determining whether to approve, disapprove, or partially disapprove the fishery management plan or plan amendment.

The Council has prepared supplements to Amendment 4, Amendment 6, Amendment 8, and Amendment 10 that address bycatch issues; establish overfishing definitions and describe control rules; and designate define fishing communities in the State of Hawaii, consistent with the certain SFA amendments made by the 1996 SFA to the Magnuson-Stevens Act. Then on February 3, 1999, NMFS approved portions of the Council's FMP amendments pertaining to essential fish habitat provisions, identification of commercial, recreational and charter fishing sectors; overfishing definition for precious corals; bycatch provisions for crustaceans and precious coral fisheries; and designation definition of fishing communities for American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.

The supplemental amendments provide new specifications of overfishing criteria. Maximum sustainable yield-based control rules and overfishing thresholds are defined for the Northwestern Hawaiian Islands (NWHI) lobster stock and multi-species complexes of bottomfish and seamount groundfish and western Pacific pelagic management unit species. Stock status determination criteria, including maximum fishing mortality thresholds and minimum stock size thresholds, are defined for the lobster stock, bottomfish, and pelagic stock complexes. The bottomfish and seamount groundfish FMP already contains measures to prevent overfishing and to rebuild overfished stocks. These include a moratorium on the harvest of armorhead to rebuild this stock in the seamount groundfish fishery, a prohibition on the use of destructive bottomfish fishing methods, area closures around the main Hawaiian Islands, and limited access programs in the implementation of bottomfish NWHI to limit fishing effort. Additional measures to prevent overfishing or to rebuild overfished stocks that may be considered by the Council in the future include additional area closures, seasonal closures, reduction in the number of available limited access permits, establishment of limited access programs in areas other than the NWHI, limits on catch per trip, limits on effort per trip, and fleet-wide limits on catch and effort.

The pelagics FMP already includes measures to prevent local overfishing

and to keep stocks from becoming locally overfished through a limited access program for the Hawaii-based longline fishery, prohibition on the use of drift gill nets, and various longline area closures in Federal waters around American Samoa, Guam, and Hawaii. Additional measures that may be considered by the Council in the event of overfishing include reductions in the number of limited access longline permits, size restrictions, etc.

The crustaceans FMP contains measures to prevent overfishing and keep NWHI stocks from becoming overfished including gear restrictions, trap specifications (to allow juvenile lobsters to escape), a limited access permit program for the NWHI commercial lobster fishery, a limit on the number of lobster traps allowed per vessel, seasonal and area closures, and annual bank-specific harvest guidelines. Additional measures that may be considered by the Council, if needed, include adjustments to the NWHI seasonal closure, temporary fishery closures, and size or species harvest restrictions.

Supplemental FMP amendments pertaining to bycatch issues describe bycatch levels and patterns in the bottomfish and seamount groundfish and pelagic fisheries. Management measures currently require all primary and relief operators (captains) in the NWHI limited access fisheries to complete one-time protected species workshop. The supplemental amendments describe recent improvements in bycatch reduction and bycatch reporting, as well as non-regulatory management initiatives to further minimize bycatch and reduce bycatch mortality, and improve the measurement of bycatch and analyses thereof in these fisheries. These initiatives include fishery outreach programs that foster awareness of bycatch issues, research into fishing methods and gear modification to reduce bycatch and bycatch mortality, development of markets for low value fish that would otherwise be discarded by fishermen, and improvements to information collection for bycatch.

The supplemental amendments for the bottomfish and seamount groundfish, pelagics, crustaceans, and precious corals FMPs define each of the major inhabited main Hawaiian islands as a fishing community. This island-by-island designation definition of fishing communities is based on analyses indicating that the social and economic cohesion of fishery participants is strongest at the island level. Fishing, support services, and fishery infrastructure are critically important to all of Hawaii's populated areas. As such fishing communities in Hawaii are not distinguished according to a particular fishery or gear type. The supplemental amendments define Hawaii's fishing communities as the islands of Niihau, Kauai, Oahu, Molokai, Maui, Lanai, and Hawaii.

Public comments on any or all of the supplemental FMP amendments must be received by June 6, 2003, to be considered by NMFS in the decision whether to approve, disapprove, or partially approve the amendments.

The supplemental amendments contain no implementing regulations.

Authority: 16 U.S.C. 1801 *et. seq.*

Dated: April 2, 2003.

Richard W. Surdi,

Acting Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 03–8398 Filed 4–4–03; 8:45 am]

BILLING CODE 3510–22–S

Vermont Avenue, NW., Washington, DC 20590.

SUPPLEMENTARY INFORMATION: Section 5 of the Department of Transportation Act (49 U.S.C. 1654 *et seq.*) establishes a program of federal grants to states to fund local rail freight assistance projects. The regulations implementing section 5 of the Act are contained in 49 CFR part 266. The Local Rail Service Reauthorizing Act, Public Law No. 101–213 (Dec. 11, 1989) ("Reauthorizing Act") amended section 5 of the Act in several ways. The proposed amendment of part 266 was to reflect those amendments enacted by the Reauthorizing Act. However, the Administration has not requested, and the Congress has not provided, any appropriations for that program since 1995. As a result no new funding has been made available to recipients since that time and none is anticipated. Since no further funding is anticipated for the program, the proposed amendments to part 266 are no longer necessary.

Conclusion: Based on the foregoing, FRA is withdrawing the NPRM.

Issued in Washington, DC on March 31, 2003.

Allan Rutter,

Administrator.

[FR Doc. 03–8283 Filed 4–4–03; 8:45 am]

BILLING CODE 4910–06–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 660

[I.D. 032703B]

RIN 0648–AN79, 0648–AP54, 0648–AP55

Fisheries Off West Coast States and in the Western Pacific; Precious Coral Fisheries, Fishery Management Plan (FMP) Amendment 4; Bottomfish and Seamount Groundfish Fisheries, FMP Amendment 6; Pelagic Fisheries, FMP Amendment 8; Crustacean Fisheries, FMP Amendment 10

AGENCY: National Marine Fisheries Service (NOAA), Commerce.

ACTION: Notice of availability of supplemental FMP amendments; request for comments.

SUMMARY: NMFS announces that the Western Pacific Fishery Management Council (Council) has prepared supplements to FMP Amendment 4 to the Fishery Management Plan for the Precious Coral Fisheries of the Western Pacific Region (Amendment 4) fisheries, FMP Amendment 6 to the Fishery Management Plan for the Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region (Amendment 6), fisheries FMP Amendment 8 to the Fishery Management Plan for the Pelagic Fisheries of the Western Pacific Region (Amendment 8) for fisheriesand FMP Amendment 10 to the Fishery Management Plan for Crustaceans Fisheries of the Western Pacific Region (Amendment 10) of the Western Pacific Region. The supplemental amendments, which have been submitted to NMFS for Secretarial review, are intended to implement certain revisions made by the provisions of the Sustainable Fisheries Act (SFA) revisions to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). Included in the supplemental amendments are bycatch provisions for the bottomfish and seamount groundfish and pelagic FMPs fisheries; overfishing definitions and control rules for the bottomfish and seamount groundfish, pelagics, and crustacean FMPs fisheries; and definitions of "fishing communities" in Hawaii for the bottomfish and seamount groundfish, pelagics, crustaceans, and precious corals FMPs fisheries.

DATES: Written comments on the supplemental FMP amendments must be received on or before June 6, 2003.

ADDRESSES: Written comments on any of the supplemental FMP amendments should be sent to Dr. Charles Karnella, Administrator, Pacific Islands Area Office, NMFS, 1601 Kapiolani Boulevard, Suite 1110, Honolulu, HI 96814, or faxed to 808–973–2941. Comments will not be accepted via e-mail or the internet.

Copies of the amendment documents are available from Kitty Simonds, Executive Director, Western Pacific Fishery Management Council, 1164 Bishop St., Suite 1400, Honolulu, HI 96813. The documents are also available on the following website: *http://www.wpcouncil.org.*

FOR FURTHER INFORMATION CONTACT: Kitty Simonds, phone: (808) 522–8220; fax: (808) 522–8226.

SUPPLEMENTARY INFORMATION: The Magnuson-Stevens Act requires each Regional Fishery Management Council to submit fishery management plans or plan amendments to NMFS for review and approval, disapproval, or partial approval. The Magnuson-Stevens Act also requires NMFS, immediately upon receiving a fishery management plan or amendment, to publish notification in the **Federal Register** that the fishery management plan or plan amendment is available for public review and comment. NMFS will consider the public comments received during the comment period described above in determining whether to approve, disapprove, or partially disapprove the fishery management plan or plan amendment.

The Council has prepared supplements to Amendment 4, Amendment 6, Amendment 8, and Amendment 10 that address bycatch issues; establish overfishing definitions and describe control rules; and designate define fishing communities in the State of Hawaii, consistent with the certain SFA amendments made by the 1996 SFA to the Magnuson-Stevens Act. Then on February 3, 1999, NMFS approved portions of the Council's FMP amendments pertaining to essential fish habitat provisions, identification of commercial, recreational and charter fishing sectors; overfishing definition for precious corals; bycatch provisions for crustaceans and precious coral fisheries; and designation definition of fishing communities for American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.

The supplemental amendments provide new specifications of overfishing criteria. Maximum sustainable yield-based control rules and overfishing thresholds are defined for the Northwestern Hawaiian Islands (NWHI) lobster stock and multi-species complexes of bottomfish and seamount groundfish and western Pacific pelagic management unit species. Stock status determination criteria, including maximum fishing mortality thresholds and minimum stock size thresholds, are defined for the lobster stock, bottomfish, and pelagic stock complexes. The bottomfish and seamount groundfish FMP already contains measures to prevent overfishing and to rebuild overfished stocks. These include a moratorium on the harvest of armorhead to rebuild this stock in the seamount groundfish fishery, a prohibition on the use of destructive bottomfish fishing methods, area closures around the main Hawaiian Islands, and limited access programs in the implementation of bottomfish NWHI to limit fishing effort. Additional measures to prevent overfishing or to rebuild overfished stocks that may be considered by the Council in the future include additional area closures, seasonal closures, reduction in the number of available limited access permits, establishment of limited access programs in areas other than the NWHI, limits on catch per trip, limits on effort per trip, and fleet-wide limits on catch and effort.

The pelagics FMP already includes measures to prevent local overfishing

and to keep stocks from becoming locally overfished through a limited access program for the Hawaii-based longline fishery, prohibition on the use of drift gill nets, and various longline area closures in Federal waters around American Samoa, Guam, and Hawaii. Additional measures that may be considered by the Council in the event of overfishing include reductions in the number of limited access longline permits, size restrictions, etc.

The crustaceans FMP contains measures to prevent overfishing and keep NWHI stocks from becoming overfished including gear restrictions, trap specifications (to allow juvenile lobsters to escape), a limited access permit program for the NWHI commercial lobster fishery, a limit on the number of lobster traps allowed per vessel, seasonal and area closures, and annual bank-specific harvest guidelines. Additional measures that may be considered by the Council, if needed, include adjustments to the NWHI seasonal closure, temporary fishery closures, and size or species harvest restrictions.

Supplemental FMP amendments pertaining to bycatch issues describe bycatch levels and patterns in the bottomfish and seamount groundfish and pelagic fisheries. Management measures currently require all primary and relief operators (captains) in the NWHI limited access fisheries to complete one-time protected species workshop. The supplemental amendments describe recent improvements in bycatch reduction and bycatch reporting, as well as non-regulatory management initiatives to further minimize bycatch and reduce bycatch mortality, and improve the measurement of bycatch and analyses thereof in these fisheries. These initiatives include fishery outreach programs that foster awareness of bycatch issues, research into fishing methods and gear modification to reduce bycatch and bycatch mortality, development of markets for low value fish that would otherwise be discarded by fishermen, and improvements to information collection for bycatch.

The supplemental amendments for the bottomfish and seamount groundfish, pelagics, crustaceans, and precious corals FMPs define each of the major inhabited main Hawaiian islands as a fishing community. This island-by-island designation definition of fishing communities is based on analyses indicating that the social and economic cohesion of fishery participants is strongest at the island level. Fishing, support services, and fishery infrastructure are critically important to all of Hawaii's populated areas. As such fishing communities in Hawaii are not distinguished according to a particular fishery or gear type. The supplemental amendments define Hawaii's fishing communities as the islands of Niihau, Kauai, Oahu, Molokai, Maui, Lanai, and Hawaii.

Public comments on any or all of the supplemental FMP amendments must be received by June 6, 2003, to be considered by NMFS in the decision whether to approve, disapprove, or partially approve the amendments.

The supplemental amendments contain no implementing regulations.

Authority: 16 U.S.C. 1801 *et. seq.*

Dated: April 2, 2003.

Richard W. Surdi,

Acting Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 03–8398 Filed 4–4–03; 8:45 am]

BILLING CODE 3510–22–S

WESTERN
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COUNCIL

July, 2003

Amendment 7 to the Bottomfish and Seamount Groundfish Fishery Management Plan is contained in the Council's Coral Reef Ecosystems (CRE) Fishery Management Plan. This amendment would prohibit fishing for Bottomfish Management Unit Species in the CRE Plan's no-take areas. For a complete background description and analysis of Amendment 7, please see the Coral Reef Ecosystems Fishery Management Plan.

It is prohibited to harvest the bottomfish management unit species listed in Table 5.1, and all future additions to the bottomfish MUS list, in no-take marine protected areas designated in the Coral Reef Ecosystem FMP, and in any marine protected areas that may be designated by amendment to the Coral Reef Ecosystem FMP. The locations of the no-take MPAs are:

(1) federal waters shallower than 10 fathoms in the Northwestern Hawaiian Islands; and,

(2) federal waters shallower than 50 fathoms around Jarvis Island (0°23' S, 160°01' W), Howland Island (0°48' N, 176° 38' W), Baker Island (0° 13' N, 176°38' W), Kingman Reef (6°23' N, 162°24' W), Laysan Island (25° 45' N, 171°45' W), French Frigate Shoals (23° 45' N, 166°15' W), the Northern half of Midway Atoll (28° 14' N, 177° 22' W), and Rose Atoll (14° 33' S, 168° 09' W).

Table 5.1: Bottomfish management unit species list.

Scientific Name	English Common Name	Scientific Name	English Common Name
Aphareus rutilans	red snapper/silvermouth	*Pristipomoides auricilla*	yellowtail snapper
Aprion virescens	gray snapper/jobfish	*P. filamentosus*	pink snapper
Caranx ignobilis	giant trevally/jack	*P. flavipinnis*	yelloweye snapper
C. lugubris	black trevally/jack	*P. seiboldi*	pink snapper
Epinephelus fasciatus	blacktip grouper	*P. zonatus*	snapper
E. quemus	sea bass	*Pseudocaranx dentex*	thicklip trevally
Etelis carbunculus	red snapper	*Seriola dumerili*	amberjack
E. coruscans	red snapper	*Variola louti*	lunartail grouper
Lethrinus amboinensis	ambon emperor	*Beryx splendens*	alfonsin
L. rubrioperculatus	redgill emperor	*Hyperoglyphe japonica*	ratfish/butterfish
Lutjanus kasmira	blueline snapper	*Pseudopentaceros richardsoni*	armorhead

extension of the comment period for the proposed designations and non-designations of critical habitat for plant species on the island of Hawaii. We will accept public comments on the proposal for the island of Hawaii until November 30, 2002. The extension of the comment period gives all interested parties the opportunity to comment on the proposal. Comments already submitted on the proposed designations and non-designations of critical habitat for plant species from the island of Hawaii need not be resubmitted as they will be fully considered in the final determinations. Extension of the comment period will enable us to respond to the requests for a public hearing on the proposed action. Written comments should be submitted to the Service office listed in the **ADDRESSES** section. The comment period now closes on November 30, 2002.

Author

The primary author of this notice is Christa Russell (*see* **ADDRESSES** section).

Authority: The authority for this action is the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*).

Dated: September 16, 2002.

Craig Manson,

Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 02–24248 Filed 9–23–02; 8:45 am]

BILLING CODE 4310–55–M

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 660

[Docket No. 020508114–2114–01; I. D. 030702C]

RIN 0648–AM97

Fisheries of West Coast States and in the Western Pacific; Coral Reef Ecosystems Fishery Management Plan for the Western Pacific

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce

ACTION: Proposed rule; request for comments.

SUMMARY: NMFS issues a proposed rule that would implement those parts of the Fishery Management Plan for Coral Reef Ecosystems of the Western Pacific Region (CREFMP)that have been approved by NMFS. Coral reef ecosystem fisheries in federally managed waters of the western Pacific U.S. exclusive economic zone (U.S. EEZ) are currently unregulated under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). The CREFMP, which was developed by the Western Pacific Fishery Management Council (Council), would apply ecosystem principles to fisheries management to conserve and protect coral reef fisheries, their ecosystems, and associated habitats in the U.S. EEZ around American Samoa, Guam, Hawaii (main Hawaiian Islands), the Commonwealth of the Northern Mariana Islands (CNMI), and the U.S. Pacific remote island areas (PRIA): Howland Island, Baker Island, Jarvis Island, Wake Island, Kingman Reef, Palmyra Atoll, and Johnston Atoll.

DATES: Comments must be submitted in writing by October 24, 2002.

ADDRESSES: Written comments should be sent to Dr. Charles Karnella, Pacific Islands Area Office (PIAO), NMFS, 1601 Kapiolani Blvd, Suite 1110, Honolulu, HI 96814. Comments will not be accepted if submitted via e-mail or the internet. Copies of the CREFMP, environmental impact statement (EIS), regulatory impact review (RIR), and initial regulatory flexibility analysis (IRFA) are available at the Council website, *www. wpcouncil. org.* Requests for a CD or paper copy of these documents can be made by contacting *Jarad. Makaiau@noaa. gov.* A copy of the Record of Decision issued by NMFS for the partially approved CREFMP is available at the PIAO website, *http//swr. nmfs. noaa. gov/piao.* Send comments regarding the reporting burden estimate or any other aspect of the collection-of-information requirements in this proposed rule to the NMFS address and to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Washington, DC00503 (Attn: NOAA Desk Officer).

FOR FURTHER INFORMATION CONTACT: Kitty Simonds, Executive Director, Western Pacific Fishery Management Council, at (808) 522–8220 or Dr. Charles Karnella, Administrator, PIAO, at (808) 973–2937.

SUPPLEMENTARY INFORMATION: The Council began development of the CREFMP in 1996, with the preparation of an assessment of the coral reef ecosystem resources. Initial scoping hearings were conducted by the Council in June 1999 to obtain public input on a new fishery management plan for these resources. A notice of availability soliciting public comment on the CREFMP's draft environmental impact statement (DEIS) was published in the **Federal Register** on January 12, 2001 (66 FR 1945). Although the comment period ended on February 26, 2001, additional comments were accepted during the month following the closing date.

Four major agency reviews were conducted to ensure completeness, accuracy, and compliance of the draft CREFMP with applicable laws. The Council also conducted 59 public meetings and hearings to receive comments on the draft document. These comments were incorporated into the text of the final CREFMP. The Council adopted the final CREFMP on June 20, 2001, and transmitted it to NMFS on March 8, 2002. A notice of availability was published in the **Federal Register** on March 18, 2002, 67 FR 11971. On June 14, 2002, NMFS partially approved the CREFMP and parallel amendments to the Council's management plans for bottomfish and seamount groundfish fisheries (Bottomfish FMP), pelagic fisheries (Pelagics FMP), precious coral fisheries, and crustacean fisheries of the western Pacific region. The CREFMP was approved, except for that portion of the CREFMP that governs fishing in waters of the U.S. EEZ around the Northwestern Hawaiian Islands (NWHI) west of 160°50′ W. long. NMFS disapproved a portion of the plan because it would be inconsistent with, or duplicate, certain provisions of Executive Order 13178 and 13196s, which together establish the NWHI Coral Reef Ecosystem Reserve (Reserve), as authorized by section 6(g) of Public Law 106–513. The Reserve encompasses a portion of the U.S. EEZ around the NWHI from the seaward boundary of the State of Hawaii, out to a distance of 50 nautical miles (nm). Specifically, section 7(b)(5) of Executive Order 13178, one of two executive orders that established the Reserve, prohibits the harvest of almost all living and non-living resources throughout the Reserve, while the CREFMP would actively manage the same species within the same geographical area. The bottomfish fishery in the NWHI will continue to be managed under existing management measures for the Bottomfish FMP, as authorized by the Magnuson-Stevens Act, while the process to designate a national marine sanctuary in the NWHI as directed by section 6(g) of Public Law 106–513, is ongoing. Coral reefs are highly complex, integrated ecosystems. The vast majority of the total area covered by coral reefs under U.S. jurisdiction is located in the western Pacific region and would be managed either by this new fishery management plan or by the NWHI Reserve management regime. The CREFMP

adopts aprecautionary approach by addressing the potential for problems before they occur, and by establishing management measures that can be adapted rapidly in response to changes in the fishery. Although state and territorial regulations control most impacts from coral reef ecosystem fisheries in near-shore areas, the CREFMP would complement those regulations by implementing measures to manage coral reef ecosystems in adjacent Federal waters of the U.S. EEZ. In general, these areas have been minimally exploited, but potential fisheries, including those for live fish markets in Southeast Asia, coral and "live rock" for the U.S. aquarium trade, and marine bioprospecting for pharmaceutical uses, may develop and are addressed within the CREFMP.

The CREFMP has eight objectives: (1) Foster sustainable use of coral reef ecosystem resources in an ecologically and culturally sensitive manner; (2) provide a flexible and responsive management program for coral reef ecosystem resources that allows for rapid adjustments to management measures in response to changes in resource abundance, new scientific information, or changes in fishing patterns; (3) establish integrated resource data collection and permitting systems, including a research and monitoring program to collect fishery and other ecological information necessary to make informed management decisions about coral reef ecosystems in the U.S. EEZ; (4) minimize adverse human impacts on coral reef ecosystem resources by establishing new and improving existing marine protected areas (MPAs), managing fishing pressure, controlling wasteful harvest practices, reducing other anthropogenic stressors directly affecting coral reef ecosystem resources (through the conservation and protection of essential fish habitat (EFH) and allowing the recovery of naturally balanced reef ecosystems); (5) improve public and government awareness and understanding of coral reef ecosystems, their vulnerability and resource potential so as to reduce adverse human impacts and foster support for science-based management; (6) facilitate collaborative effort among agencies and organizations concerned with the conservation of coral reef ecosystems in order to share in decision-making, data, and resources needed to effectively monitor the vast and complex coral reef ecosystems managed under the CREFMP; (7) encourageand promote surveillance and enforcement in support of CREFMP management measures; and (8) provide for sustainable participation by fishing communities in coral reef ecosystem fisheries and, to the extent practicable, minimize adverse economic impacts on such communities.

Relation to Other Laws

In order to ensure consistency between the management regimes of different Federal agencies, NMFS is adding language to the proposed rule that states that unless specifically authorized by the U.S. Fish and Wildlife Service (USFWS), fishing authorized under Subpart J—Western Pacific Coral Reef Ecosystem Fisheries is not allowed within the boundary of a wildlife refuge regardless of whether that refuge was established by action of the President or the Secretary of the Interior. Contact the USFWS at 808–541–1291 for more information and boundary details.

Amendments to Existing FMPS

To ensure consistency with the proposed regulations of the CREFMP, the Council would amend its existing fishery management plans for bottomfish and seamount groundfish fisheries, crustacean fisheries, pelagic fisheries, and precious coral fisheries. Fishing for management unit species (MUS) included in these existing plans would be prohibited in the CREFMP no-take MPAs. The Council initially proposed an insurance requirement for all vessels managed under these fishery management plans while operating in or transiting through the coral reef ecosystem MPAs. This measure was intended to provide the means for mitigating reef damage in the event of a vessel grounding or an oil spill in the coral reef ecosystems, including the possibility for wreck removal and reef recovery activities. The FMP did not set forth the details of this complex and novel issue. As a result, the insurance requirement is not included in this proposed rule; however, the Council will continue to address appropriate means to provide for reef protection. Finally, the MUS list for the Pelagics FMP would be amended to include only the following species of pelagic sharks: *Alopias pelagicus* (pelagic thresher shark), *Alopias superciliousus* (bigeye thresher shark), *Alopias vulpinus* (common thresher shark), *Carcharhinus falciformis* (silky shark), *Carcharhinus longimanus* (oceanic whitetip shark), *Prionace glauca* (blue shark), *Isurus oxyrinchus* (shortfin mako shark), *Isurus paucus* (longfin mako shark), and *Lamna ditropis* (salmon shark). The remaining coastal sharks currently listed as MUS in the Pelagics FMP would become CREFMP MUS. Dogtooth tuna would also change from a Pelagics FMP MUS to a CREFMP MUS. This revision to the Pelagics FMP MUS would closely reflect the species associated with the respective ecosystems for each plan and provide for more accurate data gathering without affecting fisheries operations.

Management Area

The coral reef ecosystem management area consists of the U.S. EEZ around American Samoa, Guam, Hawaii, PRIA, and the Commonwealth of the Northern Mariana Islands (CNMI). For American Samoa, Guam, and Hawaii, the management area would generally occur between 3 nm and 200 nm from shore; in some areas, the outer boundary of the U.S. EEZ is truncated by adjacent international maritime boundaries. Management measures are proposed only for the "offshore zone", which consists of those waters from 3 to 200 nm. The management area for the PRIA (Kingman Reef, Johnston and Palmyra Atolls, and Jarvis, Howland, Baker, and Wake Islands) begins at the shoreline and extends offshore 200 nm (seaward boundary of the U.S. EEZ). Kingman Reef, Johnston and Palmyra Atolls, and Jarvis, Howland, and Baker Islands are National Wildlife Refuges managed by the USFWS. Fisheries management responsibilities in the PRIA and Rose Atoll will be shared by the Council, NMFS and the USFWS. Because the CNMI EEZ includes all waters from the shoreline to 200 nm, this would comprise the management area. For the purposes of this rule, those waters for which management measures are proposed are collectively termed the "coral reef ecosystem regulatory area", which includes the U.S. EEZ waters of the western Pacific region, with the exception of EEZ waters within 3 miles of the shoreline of the CNMI and the EEZ around the NWHI west of 160°50′ W. long.

Coral Reef Ecosystem MUS

CRE-MUS are defined as those taxa listed in Table 1. 2 and 1. 3 of the CRE-FMP that spend the majority of their non-pelagic (post-settlement) life stages within waters less than or equal to 50 fathoms in total depth. These MUS are separated into two lists: "Currently harvested coral reef taxa" (CHCRT) and "potentially harvested coral reef taxa" (PHCRT). CHCRT consists of coral reef associated species, families, or subfamilies, as described in Table 1. 2 to the CREFMP, that have annual landings greater than 454. 54 kg (1,000 lb) as reported on individual state, commonwealth, or territory catch reports or through creel surveys. Fisheries and research data for many of these species have been analyzed by

regional management agencies. PHCRT consists of coral reef associated species, families, or subfamilies, as described in Table 1. 3 to the CREFMP, for which little or no information is available beyond general taxonomic and distribution descriptions. These species have either not been caught in the past or have been harvested annually in amounts less than 454. 54 kg (1,000 lb). Species that occur in the coral reef ecosystem that are not managed, i. e., not listed as management unit species under the Council's other fishery management plans, would be similarly categorized. NMFS is specifically soliciting public comments on these MUS definitions.

Principal Management Measures

The proposed rule contains four types of management measures, (MPAs, permits and monitoring, fishing gear methods, and other management measures) which, unless otherwise specified, would apply throughout the regulatory area.

MPAs

Based on their natural resource values, human use and historic values, impacts of human activities, and management concerns, this rule would establish MPAs within the U.S. EEZ waters around the PRIA and Rose Atoll in American Samoa. Ecologically sensitive areas would be designated as no-take MPAs, in which all harvesting activities would be prohibited. These no-take MPAs would be located in waters of the U.S. EEZ seaward from the shoreline to the 50–fathom (fm) (91.5–m) curve (isobath) at Jarvis, Howland, and Baker Islands, Kingman Reef and Rose Atoll. Low-use MPAs would be located in waters of the U.S. EEZ between the shoreline and the 50–fm (91.5–m) curve around Johnston Atoll, Palmyra Atoll, and Wake Island.

In low-use MPAs, most existing fishing activities, primarily recreational fishing by residents on Palmyra, could be permitted under special permits. The CREFMP does not abolish or amend prohibitions or restrictions on fishing imposed under other Federal laws, such as the National Wildlife Refuge System Administration Act. In other words, no special permits issued under these regulations would allow fishing within the boundary of a national wildlife refuge unless such fishery is also authorized by the USFWS. Fisheries governed under the Council's other fishery management plans and operating in low-use MPAs would continue to abide by the permit and reporting requirements established under those plans. Minimum insurance coverage against vessel groundings and oil spills is not included in this proposed rule at this time for reasons explained earlier; however, the Council will continue to explore options to help mitigate adverse impacts resulting from potential vessel groundings in the coral reef ecosystems in the U.S. EEZ. Although not an MPA in the sense of having fishing or permitting restrictions, Guam's Southern Banks is designated as a no-anchoring zone.

Permits and Monitoring

In general, any person who harvests coral reef ecosytem MUS in low-use MPAs would be required to have a Federal special permit issued by NMFS. Issuance of special permits would be on a case-by-case basis and based upon several factors including the potential for bycatch, the sensitivity of the area to the type of fishing proposed, and the level of fishing occurring in relation to the level considered sustainable in a low-use MPA. A person permitted and targeting non-CRE MUS under other fishery management plans would not be required to obtain a special permit to fish in low-use MPAs. In addition to the permit requirement for low-use MPAs, special permits would be required for any directed fisheries on PHCRT within the regulatory area. The harvest of live rock and living corals would be prohibited throughout the federally managed U.S. EEZ waters of the region (except 0–3 miles around CNMI); however, under special permits with conditions specified by NMFS following consultation with the Council, indigenous people could be allowed to harvest live rock or coral for traditional uses, and aquaculture operations could be permitted to harvest seed stock. The proposed rule would implement a Federal reporting system for all fishing under special permits. Resource monitoring systems administered by state, territorial, and commonwealth agencies would continue to collect fishery data on the existing coral reef fisheries that do not require special permits.

Fishing Gears and Methods

Fishing gear has the potential to adversely impact coral reef ecosystems. The CREFMP lists both allowable fishing gear types and fishing methods for targeting MUS. The listing of allowable gear types and methods is based on: (1) Impact on habitat; (2) potential for bycatch; and (3) degree to which fish may find refuge from capture. The proposed list of allowable gear types is: (1) Hand harvest; (2) spear; (3) slurp gun; (4) hand/dip net; (5) hoop net for Kona crab; (6) throw net; (7) barrier net; (8) surround/purse net that is attended at all times; (9) hook-and-line (powered and unpowered handlines, rod and reel, and trolling); (10) crab and fish traps with vessel ID number affixed; and (11) remote operating vehicles/submersibles. New fishing gears that are not included in the allowable gear list may be allowed under the special permit provision. The proposed rule would prohibit SCUBA-assisted spearfishing at night within U.S. EEZ waters around the PRIA.

Other Management Measures

Adaptive Management

A framework process, providing for an administratively simplified procedure to facilitate adjustments to management measures previously analyzed in the CREFMP, is an important component of the CREFMP. These potential framework measures include designating "no-anchoring" zones and establishing mooring buoys, requiring vessel monitoring systems on board fishing vessels, designating areas for the sole use of indigenous peoples, and including species not specifically listed as PHCRT under the "special permit" regime as warranted. A general fishing permit program could also be established for all U.S. EEZ coral reef ecosystem fisheries under the framework process of the CREFMP.

Other Actions

The CREFMP also contains non-regulatory measures consistent with CREFMP objectives that would be undertaken by the Council outside of the regulatory regime. These include a process and criteria for EFH consultations; formal plan team coordination to identify and to address coral reef ecosystem impacts from existing FMPs fisheries; a system to facilitate consistent state and territorial level management; and research and education efforts.

Classification

With the exception of provisions of the CREFMP that have been disapproved, NMFS has determined that the CREFMP and the parallel amendments to the bottomfish and seamount groundfish fisheries, pelagic fisheries, crustacean fisheries, and precious coral fisheries fishery management plans that this rule would implement are consistent with the national standards of the Magnuson-Stevens Act and other applicable laws.

The Council prepared an Final Environmental Impact Statement (EIS) for the CREFMP; a notice of availability was published on May 10, 2002 (67 FR

31801). On June 14, 2002, in partially approving the CREFMP, NMFS issued a Record of Decision identifying the selected alternative, a variation of the preferred alternative in the EIS. The intent of the partially approved CREFMP and its proposed implementing rule (i. e., selected alternative) is to prevent harmful activities and adverse impacts to the environment before they occur. This proposed rule is expected to maintain the sustainability of target and non-target species; safeguard against substantial damage to the ocean and coastal habitats and/or EFH;protect endangered or threatened species, marine mammals, and critical habitat; help ensure public health and safety; prevent the occurrence of cumulative adverse effects that could have a substantial effect on the target species or non-target species; promote biodiversity and ecosystem function within the affected area; and minimize, if not eliminate, negative social or economic impacts.

This proposed rule has been determined to be significant for purposes of Executive Order 12866.

The Council prepared an IRFA that describes the economic impact this proposed rule, if adopted, would have on small entities. The IRFA is available from the Council (see ADDRESSES). A summary of the IRFA follows.

The need for and objectives of this proposed rule are stated in the **SUMMARY** and **SUPPLEMENTARY INFORMATION** sections of this document and are not repeated here. This action is taken under authority of the Magnuson-Stevens Act and regulations at 50 CFR part 660.

All commercial fishing operations affected by this proposed rule are considered to be small entities under guidelines issued by the Small Business Administration because they are independently owned and operated, and have annual receipts not in excess of $3. 5 million. Based on information provided in the IRFA, this proposed rule would potentially affect 24 to 63 entities, including commercial harvesters of food fish, ornamental fish collectors, charter sportsfishing operations, and research entities. It is difficult to predict how many entities would alter their planned operations by fishing in state waters or moving to other target species to avoid applying for special permits and complying with increased reporting requirements under this proposed rule. However, NMFS believes that initially approximately five special permit applications will be received each year.

It is estimated that the costs to these small entities will primarily consist of a special permit application fee of between $50 and $100 per application. It is not anticipated that many additional entities (beyond those holding special permits) will be affected by this measure, as the proposed MPAs are located far from inhabited areas and the majority of other fisheries operate outside of proposed MPA waters utilizing gears that would continue to be allowed under this proposed rule. However, small entities using fish or crab traps to target CRE MUS throughout the regulatory area will be required to affix identification markers to each trap on board a vessel or deployed in the water. Based on similar requirements in other fisheries, the cost of this requirement is anticipated to be minimal, as identification markings may be inexpensively made using permanent ink, paint, or dye. Other, non-quantifiable, potential costs include revenue impacts resulting from the implementation of no-take MPAs. This action has information collection requirements that are addressed elsewhere in this classification section.

Several alternatives to these proposed measures are examined in the IRFA. Please note that the impacts of the proposed measures (selected alternative) will be less than the preferred alternative because the NWHI commercial bottomfish fishery will not be affected under the partially approved CREFMP (see Record of Decision). The first alternative is the no action alternative, which would not impose any economic costs on small entities. This alternative was rejected on the basis that it could lead to unsustainable levels of fishing effort and eventual degradation of coral reef ecosystems and their component resources. The second alternative examined is similar to the selected alternative with the following exceptions. It would not designate any no-take MPAs (low-use MPAs would be designated). It would not implement any prohibitions on nighttime fishing for coral reef ecosystem MUS with SCUBA/hookah gear, and it would not prohibit the take of live rock or coral throughout the regulatory area. This alternative was also rejected on the basis that it would not provide sufficient protection to coral reef ecosystems or their component resources. Finally, the third alternative examined would designate no-take MPAs out to 100 fathoms around all western Pacific islands and atolls (no low-use MPAs would be designated); require general permits for harvest of all CHCRT and special permits for harvest of all PHCRT throughout the western Pacific U.S. EEZ; prohibit all spearfishing with SCUBA/hookah throughout the U.S. EEZ; and prohibit the take of live rock or coral throughout the U.S. EEZ. This alternative was rejected on the basis that it would unnecessarily impede the sustainable use of coral reef ecosystem resources, as the selected alternative would provide adequate conservation and protection for these resources.

A copy of this analysis is available from the Council for public review and comment.

This proposed rule contains collection-of-information requirements subject to review and approval by OMB under the Paperwork Reduction Act (PRA). These requirements have been submitted to OMB for approval. Public reporting burden for these collections of information is estimated to average 2 hours per response for a permit application, 3 hours for a permit appeal, 30 minutes per day for a fishing record, 15 minutes per day for a transshipment log, 3 minutes for an at-sea notification prior to landing, and 2 minutes per trap to mark fishing gear. These estimates include the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Public comment is sought regarding whether this proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information has practical utility; the accuracy of the burden estimate; ways to enhance the quality, utility, and clarity of the information to be collected; and ways to minimize the burden of the collection of information, including through the use of automated collection techniques or other forms of information technology. Send comments on these and any other aspects of the collection regarding these burden estimates or any other aspect of the collection of information to PIAO at the **ADDRESSES** above, and to the OMB at the Office of Information and Regulatory Affairs, OMB, Washington, DC20503 (Attention:NOAA Desk Officer).

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of informationsubject to the requirements of the PRA, unless the collection of information displays a currently valid OMB Control Number.

On March 7, 2002, an informal Endangered Species Act section 7 consultation was completed by NMFS' Southwest Region, Office of Sustainable Fisheries, and concluded by NMFS'

Southwest Region, Office of Protected Resources regarding the CREFMP. It was determined that the proposed action is not likely to adversely affect any endangered or threatened resources or critical habitat under NMFS's jurisdiction. On May 22, 2002, the USFWS concurred with the determination of NMFS that the activities proposed in the CREFMP are not likely to adversely affect listed species (i. e., seabirds and terrestrial plants) and listed species shared with NMFS (i. e., sea turtles under its jurisdiction).

This proposed rule is consistent with Executive Order 13089, which is intended to preserve and protect the biodiversity, health, heritage, and social and economic value of U.S. coral reef ecosystems and the marine environment.

List of Subjects in 50 CFR Part 660

Administrative practice and procedure, American Samoa, Fisheries, Fishing, Guam, Hawaiian Natives, Indians, Northern Mariana Islands, and Reporting and recordkeeping requirements.

Dated: September 13, 2002.

William T. Hogarth,

Assistant Administrator for Fisheries, National Marine Fisheries Service.

For the reasons set out in the preamble, 50 CFR part 660 is proposed to be amended as follows:

PART 660 FISHERIES OFF WEST COAST STATES AND IN THE WESTERN PACIFIC

1. The authority citation for part 660 continues to read as follows:

Authority: 16 U.S.C. 1801 *et seq.*

2. In § 660.11, paragraph (b) is revised, and a new paragraph (c) is added to read as follows:

§ 660.11 Purpose and scope.

* * * * *

(b) Regulations specific to individual fisheries are included in subparts C, D, E, F, and J of this part.

(c) Nothing in subparts C, D, E, F, and J of this part is intended to supercede any valid state or Federal regulations that are more restrictive than those published here.

3. Section 660.12 is amended by revising the introductory text and the definition for "Pacific pelagic management unit species"; and adding definitions for the "Commonwealth of the Northern Mariana Islands (CNMI)", "CNMI offshore area", "Coral reef ecosystem management area", "Coral reef ecosystem management unit species", "Coral reef ecosystem regulatory area", "Hookah breather", "Live rock", "Low use marine protected area", "No-take marine protected area", and "Special permit", alphabetically to § 660.12 to read as follows:

§ 660.12 Definitions.

In addition to the definitions in the Magnuson-Stevens Act, and in § 600. 10, the terms used in subparts B through F and subpart J of this part have the following meanings:

* * * * *

Commonwealth of the Northern Mariana Islands (CNMI) means Northern Mariana Islands.

CNMI offshore area means the portion of the U.S. EEZ around the CNMI extending seaward from

(1) a line drawn 3 nautical miles from the baseline around the CNMI from which the territorial sea is measured, to

(2) the outer boundary of the U.S. EEZ, which to the south means those points which are equidistant between Guam and the island of Rota in the CNMI.

* * * * *

Coral Reef ecosystem management area means the U.S. EEZ waters surrounding American Samoa, Guam, Hawaii, CNMI and the U.S. Pacific remote island areas (PRIA).

Coral reef ecosystem management unit species (MUS) means all of the taxa listed in Table 1. 2 and 1. 3 of the Coral Reef Ecosystems Fishery Management Plan (CREFMP) that spend the majority of their non-pelagic (post-settlement) life stages within waters less than or equal to 50 fathoms in total depth. Table 1. 2 contains a listing of Currently Harvested Coral Reef Ecosystem MUS, and Table 1. 3 contains a listing of Potentially Harvested Coral Reef Ecosystem MUS.

Coral reef ecosystem regulatory area means the U.S. EEZ waters around American Samoa, Guam, Hawaii, CNMI and the PRIA except for the portion of EEZ waters 0–3 miles around the CNMI, and EEZ waters around the NWHI.

* * * * *

Hookah breather means a tethered underwater breathing device that pumps air from the surface through one or more hoses to divers at depth.

* * * * *

Live rock means any natural, hard substrate, including dead coral or rock, to which is attached, or which supports, any living marine life-form associated with coral reefs.

* * * * *

Low use marine protected area (MPA) means an area of the U.S. EEZ where fishing operations have specific restrictions in order to protect the coral reef ecosystem, as specified under area restrictions.

* * * * *

No-take Marine Protected Area (MPA) means an area of the U.S. EEZ that is closed to fishing for or harvesting of MUS from every Western Pacific Council Fishery Management Plan.

* * * * *

Pacific Pelagic Management Unit Species means the following fish:

Common Name	Scientific Name
Mahimahi (dolphinfish)	*Coryphaena spp.*
Indo-Pacific blue marlin	*Makaira mazara*
Black marlin	*M. indica*
Striped marlin	*Tetrapturus audax*
Shortbill spearfish	*T. angustirostris*
Swordfish	*Xiphias gladius*
Sailfish	*Istiophorus platypterus*
Pelagic thresher shark	*Alapiaspelagicus*
Bigeye thresher shark	*Alopias*
Common thresher shark	*Alopias vulpinus*
Silky shark	*Carcharhinus falciformis*
Oceanic whitetip shark	*Carcharhinus longimanus*
Blue shark	*Prionace glauca*
Shortfin mako shark	*Isurus oxyrinchus*
Longfin mako shark	*Isurus paucus*

Common Name	Scientific Name
salmon shark	*Lamna ditropis*
Albacore	*Thunnus alalunga*
Bigeye tuna	*T. obesus*
Yellowfin tuna	*T. albacore*
Northern bluefin tuna	*T. thynnus*
Skipjack tuna	*Katsuwonus pelamis*
Kawakawa	*Euthynnus affinis*
Wahoo	*Acanthocybium solandri*
Moonfish	*Lampris spp.*
Oilfish family	*Gempylidae*
Pomfret	family Bramidae
Other tuna relatives	*Auxis spp., Scomber spp.; Allothunus spp.*

* * * * *

Special permit means a permit issued to allow fishing for coral reef ecosystem resources in low-use MPAs or to fish for any potentially harvested coral reef taxa.

* * * * *

4. In § 660.13, paragraph (a), the first sentence of paragraph (c)(1), the first and second sentences of paragraph (c)(2), and paragraphs (e), (f)(2), and (g)(1) are revised to read as follows:

§ 660.13 Permits and fees.

* * * * *

(a)*Applicability.* The requirements for permits for specific Western Pacific fisheries are set forth in subparts C, D, E, F and J of this part.

* * * * *

(c) *Application.* (1) A Southwest Regional Federal fisheries permit application form may be obtained from the Pacific Islands Area Office (PIAO) to apply for a permit or permits to operate in any of the fisheries regulated under subparts C, D, E, F, and J of this part.

* * *

(2) A minimum of 15 days should be allowed for processing a permit application for fisheries under subparts C, D, E, and F of this part. A minimum of 60 days should be allowed for processing a permit application for fisheries under subpart J of this part.* * *

* * * * *

(e) *Issuance.* (1) After receiving a complete application, the Regional Administrator will issue a permit to an applicant who is eligible under §§ 660.21, 660.41, 660.61, and 660.81.

(2) After receiving a complete application, the PIAO Administrator may issue a special permit in accordance with § 660.601(d)(3).

(f) *Fees.** * *

(2) PIAO will charge a fee for each application for a Hawaii longline limited access permit, a Mau zone limited access permit, and a coral reef ecosystem special permit (including permit transfers and permit renewals). The amount of the fee is calculated in accordance with the procedures of the NOAA Finance Handbook, for determining the administrative costs of each special product or service. The fee may not exceed such costs and is specified with each application form. The appropriate fee must accompany each application. Failure to pay the fee will preclude issuance of any of the permits listed in this section.

(g) *Expiration.* (1) Permits issued under subparts C, D, E, F, and J of this part are valid for the period specified on the permit unless transferred, revoked, suspended, or modified under 15 CFR part 904.

* * * * *

5. In § 660.14, paragraphs (a), (b), and (g) are revised and paragraph (f)(4) is added to read as follows:

§ 660.14 Reporting and recordkeeping.

(a) *Fishing record forms.* The operator of any fishing vessel subject to the requirements of §§ 660.21, 660.41, 660.81, or 660.601 must maintain on board the vessel an accurate and complete record of catch, effort and other data on report forms provided by the PIAO Administrator. All information specified on the forms must be recorded on the forms within 24 hours after completion of each fishing day. Each form must be signed and dated by the fishing vessel operator. For the fisheries managed under §§ 660.21, 660.41, and 660.81, the original logbook form for each day of the fishing trip must be submitted to the PIAO Administrator within 72 hours of each landing of MUS. For the fisheries managed under § 660.601, the original logbook form for each day of the fishing trip must be submitted to the PIAO Administrator within 30 days of each landing of MUS.

(b) *Transshipment logbooks.* Any person subject to the requirements of § 660.21(c) or 660.601(a)(2) must maintain on board the vessel an accurate and complete NMFS transshipment logbook containing report forms provided by the PIAO Administrator. All information specified on the forms must be recorded on the forms within 24 hours after the day of transshipment. Each form must be signed and dated by the receiving vessel operator. The original logbook for each day of transshipment activity must be submitted to the PIAO Administrator within 72 hours of each landing of Pacific pelagic management unit species. The original logbook for each day of transshipment activity must be submitted to the PIAO Administrator within 7 days of each landing of coral reef ecosystem MUS.

* * * * *

(f) * * *

(4) *Coral Reef Ecosystem MUS.* Any person who has a special permit and who is required by state laws and regulations to maintain and submit records of catch and effort, landings and sales for coral reef ecosystem MUS by this subpart and subpart J of this part must make those records immediately available for Federal inspection and copying upon request by an authorized officer as defined in § 600. 10.

(g) *State reporting.* Any person who has a permit under § 660.21, 660.61, or 660.601 of this chapter and who is regulated by state laws and regulations to maintain and submit records of catch and effort, landings and sales for vessels regulated by subparts C, E and J of this part must maintain and submit those records in the exact manner required by state laws and regulations.

6. In § 660.15, paragraphs (f) and (k) are revised and a new paragraph (l) is added to read as follows:

§ 660.15 Prohibitions.

* * * * *

(f) Fail to affix or maintain vessel or gear markings, as required by §§ 660.16, 660.24, 660.47, and 660.605.

* * * * *

(k) Fail to notify officials as required in §§ 660.23, 660.28, 660.43, 660.63, and 660.603.

(l) Fish for, take or retain within a no-take MPA. defined in § 660.18, any Bottomfish MUS, Coral reef ecosytem

MUS, Crustacean MUS, Pelagic MUS, Precious coral MUS or Seamount groundfish.

* * * * *

7. In subpart B, § 660.18 is added to read as follows:

§ 660.18 Area restrictions.

(a) Fishing is prohibited in all no-take MPAs designated in this section.

(b) Anchoring by all fishing vessels over 50 ft (15.25 m) LOA is prohibited in the U.S. EEZ seaward of the Territory of Guam west of 144 °30′ E. long. except in the event of an emergency caused by ocean conditions or by a vessel malfunction that can be documented.

(c) *MPAs.*—(1) *No-take MPAs.*The following U.S. EEZ waters in the Western Pacific Region are no-take MPAs:

(i) Landward of the 50–fathom (fm) (91.5–m) curve at Jarvis, Howland, and Baker Islands, and Kingman Reef; as depicted on National Ocean Survey Chart Numbers 83116 and 83153;

(ii) Landward of the 50–fm (91.5–m) curve around Rose Atoll, as depicted on National Ocean Survey Chart Number 83484.

(2) *Low-use MPAs.* The following U.S. EEZ waters in the Western Pacific Region are low-use MPAs:

(i) All waters between the shoreline and the 50–fm (91.5–m) curve around Johnston Atoll, Palmyra Atoll, and Wake Island. as depicted on National Ocean Survey Chart Numbers 83637, 83157 and 81664.

(ii) [Reserved]

8. A new subpart J is added to read as follows:

Subpart J—Western Pacific Coral Reef Ecosystem Fisheries

Sec.

660.601 Relation to other laws
660.602 Permits and fees.
660.603 Prohibitions.
660.604 Notifications.
660.605 Allowable gear and gear restrictions.
660.606 Gear identification.
660.607 Framework for regulatory adjustments.
660.608 Regulatory Area.
660.609 Annual reports.

Subpart J—Western Pacific Coral Reef Ecosystem Fisheries

§ 660.601 Relation to other laws.

To ensure consistency between management regimes of different Federal agencies with shared management responsibilities of fishery resources within the Coral reef ecosystem management area, fishing authorized under this subpart will not be allowed within the boundary of a national wildlife refuge regardless of whether that refuge was established by action of the President or the Secretary of Commerce.

§ 660.602 Permits and fees.

(a) *Applicability.* Unless otherwise specified in this subpart, § 660.13 applies to coral reef ecosystem permits.

(1) *Special Permit.* Any person of the United States fishing for, taking or retaining coral reef ecosystem MUS must have a special permit if they, or a vessel which they operate, is used to fish for any:

(i) Coral reef ecosystem MUS in low-use MPAs as defined in § 660.18;

(ii) Potentially harvested coral reef ecosystem MUS in the regulatory area; or

(iii) Coral reef ecosystem MUS in the regulatory area with any gear not specifically allowed in this subpart.

(2) *Transshipment permit.* A receiving vessel must be registered for use with a transshipment permit if that vessel is used in the regulatory area to land or tranship potentially harvested coral reef ecosystem MUS species, or any coral reef ecosystem MUS harvested within low-use MPAs.

(3) *Exceptions.* The following persons are not required to have a permit under this section:

(i) Any person incidentally harvesting coral reef ecosystem MUS while targeting MUS listed under a separate FMP. It will be considered a rebuttable presumption that such a person is targeting coral reef ecosystem MUS if the total weight or number of pieces of landed coral reef ecosystem MUS comprise more than 20 percent of the total landed weight or number of pieces respectively, on any one trip;

(ii) Any person targeting currently harvested coral reef ecosystem species outside of an MPA, who does not retain any incidentally caught potentially harvested coral reef ecosystem MUS; and

(iii) Any person collecting marine organisms for scientific research as described in § 600. 745 of this chapter.

(b) *Validity.* Each permit will be valid for fishing only in the fishery management subarea specified on the permit.

(c) *General requirements.* General requirements governing application information, issuance, fees, expiration, replacement, transfer, alteration, display, sanctions, and appeals for permits are contained in § 660.13.

(d) *Low use MPAs special permit.* No direct harvest of coral reef ecosystem MUS species may be conducted in low use MPAs unless authorized by a special permit issued by the PIAO Administrator in accordance with the criteria and procedures specified in this section.

(1) *Application.* An applicant for a special or transshipment permit issued under this section must complete and submit to the PIAO Administrator, a Special Coral Reef Ecosystem Fishing Permit Application Form issued by NMFS. Information in the application form must include, but is not limited to a statement describing the objectives of the fishing activity for which a special permit is needed, including a general description of the expected disposition of the resources harvested under the permit (i. e., stored live, fresh, frozen, preserved; sold for food, ornamental, research, or other use, and a description of the planned fishing operation, including location of fishing and gear operation, amount and species (directed and incidental) expected to be harvested and estimated habitat and protected species impacts).

(2) *Incomplete applications.* The PIAO Administrator may request from an applicant additional information necessary to make the determinations required under this section. An applicant will be notified of an incomplete application within 10 working days of receipt of the application. An incomplete application will not be considered until corrected in writing.

(3) *Issuance.* (i) If an application contains all of the required information, the PIAO Administrator will forward copies of the application within 30 days to the Council, the U.S. Coast Guard, the fishery management agency of the affected state, and other interested parties who have identified themselves to the Council, and the USFWS.

(ii) Within 60 days following receipt of a complete application, the PIAO Administrator will consult with the Council through the Executive Director, USFWS, and the Director of the affected state fishery management agency concerning the permit application and will receive their recommendations for approval or disapproval of the application based on:

(A) Information provided by the applicant,

(B) The current domestic annual harvesting and processing capacity of the directed and incidental species for which a special permit is being requested,

(C) The current status of resources to be harvested in relation to the overfishing definition in the FMP,

(D) Estimated ecosystem, habitat, and protected species impacts of the proposed activity, and

(E) Other biological and ecological information relevant to the proposal. The applicant will be provided with an opportunity to appear in support of the application.

(iii) Following a review of the Council's recommendation and supporting rationale, the PIAO Administrator may:

(A) Concur with the Council's recommendation and, after finding that it is consistent with the goals and objectives of the FMP, the national standards, the Endangered Species Act, and other applicable laws, approve or deny a special permit; or

(B) Reject the Council's recommendation, in which case, written reasons will be provided by the PIAO Administrator to the Council for the rejection.

(iv) If the PIAO Administrator does not receive a recommendation from the Council within 60 days of Council receipt of the permit application, the PIAO Administrator can make a determination of approval or denial independently.

(v) Within 30 working days after the consultation in paragraph (a)(3)(ii) of this section, or as soon as practicable thereafter, NMFS will notify the applicant in writing of the decision to grant or deny the special permit and, if denied, the reasons for the denial. Grounds for denial of a special permit include the following:

(A) The applicant has failed to disclose material information required, or has made false statements as to any material fact, in connection with his or her application.

(B) According to the best scientific information available, the directed or incidental catch in the season or location specified under the permit would detrimentally affect any coral reef resource or coral reef ecosystem in a significant way, including, but not limited to issues related to, spawning grounds or seasons, protected species interactions, EFH, and habitat areas of particular concern (HAPC).

(C) Issuance of the special permit would inequitably allocate fishing privileges among domestic fishermen or would have economic allocation as its sole purpose.

(D) The method or amount of harvest in the season and/or location stated on the permit is considered inappropriate based on previous human or natural impacts in the given area.

(E) NMFS has determined that the maximum number of permits for a given area in a given season has been reached and allocating additional permits in the same area would be detrimental to the resource.

(F) The activity proposed under the special permit would create a significant enforcement problem.

(vi) The PIAO Administrator may attach conditions to the special permit, if it is granted, consistent with the management objectives of the FMP, including but not limited to:

(A) The maximum amount of each resource that can be harvested and landed during the term of the special permit, including trip limits, where appropriate.

(B) The times and places where fishing may be conducted.

(C) The type, size, and amount of gear which may be used by each vessel operated under the special permit.

(D) Data reporting requirements.

(E) Such other conditions as may be necessary to ensure compliance with the purposes of the special permit consistent with the objectives of the FMP.

(4) *Appeals of permit actions.* (i) Except as provided in subpart D of 15 CFR part 904, any applicant for a permit or a permit holder may appeal the granting, denial, conditioning, or suspension of their permit or a permit affecting their interests to the Regional Administrator. In order to be considered by the Regional Administrator, such appeal must be in writing, must state the action(s) appealed, and the reasons therefore, and must be submitted within 30 days of the original action(s) by the Regional Administrator. The appellant may request an informal hearing on the appeal.

(ii) Upon receipt of an appeal authorized by this section, the Regional Administrator will notify the permit applicant, or permit holder as appropriate, and will request such additional information and in such form as will allow action upon the appeal. Upon receipt of sufficient information, the Regional Administrator will rule on the appeal in accordance with the permit eligibility criteria set forth in this section and the FMP, as appropriate, based upon information relative to the application on file at NMFS and the Council and any additional information, the summary record kept of any hearing and the hearing officer's recommended decision, if any, and such other considerations as deemed appropriate. The Regional Administrator will notify all interested persons of the decision, and the reasons therefor, in writing, normally within 30 days of the receipt of sufficient information, unless additional time is needed for a hearing.

(iii) If a hearing is requested, or if the Regional Administrator determines that one is appropriate, the Regional Administrator may grant an informal hearing before a hearing officer designated for that purpose after first giving notice of the time, place, and subject matter of the hearing in the **Federal Register**. Such a hearing shall normally be held no later than 30 days following publication of the notice in the **Federal Register**, unless the hearing officer extends the time for reasons deemed equitable. The appellant, the applicant (if different), and, at the discretion of the hearing officer, other interested parties, may appear personally or be represented by counsel at the hearing and submit information and present arguments as determined appropriate by the hearing officer. Within 30 days of the last day of the hearing, the hearing officer shall recommend in writing a decision to the Regional Administrator.

(iv) The Regional Administrator may adopt the hearing officer's recommended decision, in whole or in part, or may reject or modify it. In any event, the Regional Administrator will notify interested persons of the decision, and the reason(s) therefore, in writing, within 30 days of receipt of the hearing officer's recommended decision. The Regional Administrator's action constitutes final action for the agency for the purposes of the Administrative Procedure Act.

(5) Any time limit prescribed in this section may be extended for good cause, for a period not to exceed 30 days by the Regional Administrator, either upon his or her own motion or upon written request from the Council, appellant or applicant stating the reason(s) therefore.

§ 660.603 Prohibitions.

In addition to the general prohibitions specified in § 600. 725 of this chapter and § 660.15 of this part, it is unlawful for any person to do any of the following:

(a) Fish for, take, retain, possess or land any coral reef ecosystem MUS in any low-use MPA as defined in § 660.18(c)(1) and (c)(2) unless:

(1) A valid permit has been issued for the hand harvester or the fishing vessel operator that specifies the applicable area of harvest;

(2) A permit is not required, as outlined in the permit section of these regulations;

(3) The coral reef ecosystem MUS possessed on board the vessel originated outside the regulatory area and this can be demonstrated through receipts of purchase, invoices, fishing logbooks or other documentation.

(b) Fish for, take, or retain any coral reef ecosystem MUS species:

(1) That is determined overfished with subsequent rulemaking by the PIAO Administrator.

(2) By means of gear or methods prohibited under § 660.604.

(3) In a low-use MPA without a valid special permit.

(4) In violation of any permit issued under § 660.13 or § 660.601.

(c) Fish for, take, or retain any wild live rock or live hard coral except under a valid special permit for scientific research, aquaculture seed stock collection or traditional and ceremonial purposes by indigenous people.

§ 660.604 Notifications.

Any special permit holder subject to the requirements of this subpart must contact the appropriate NMFS enforcement agent in American Samoa, Guam, or Hawaii at least 24 hours before landing any coral reef ecosystem MUS unit species harvested under a special permit, and report the port and the approximate date and time at which the catch will be landed.

§ 660.605 Allowable gear and gear restrictions.

(a) Coral reef ecosystem MUS may be taken only with the following allowable gear and methods:

(1) Hand harvest;

(2) Spear;

(3) Slurp gun;

(4) Hand net/dip net;

(5) Hoop net for Kona crab;

(6) Throw net;

(7) Barrier net;

(8) Surround/purse net that is attended at all times;

(9) Hook-and-line (includes handline (powered or not)), rod-and-reel, and trolling);

(10) Crab and fish traps with vessel ID number affixed; and

(11) Remote-operating vehicles/ submersibles.

(b) Coral reef ecosystem MUS may not be taken by means of poisons, explosives, or intoxicating substances. Possession or use of these materials by any permit holder under this subpartwho is established to be fishing for coral reef ecosystem MUS in the regulatory area is prohibited.

(c) Coral reef ecosystem MUS may not be taken by means of spearfishing with scuba at night (from 6 p. m. to 6 a. m.) in the U.S. EEZ waters around Howland Island, Baker Island, Jarvis Island, Wake Island, Kingman Reef, Johnston Atoll and Palmyra Atoll.

(d) Existing FMP fisheries shall follow the allowable gear and methods outlined in their respective plans.

(e) Any person who intends to fish with new gear not included in § 660.604 must describe the new gear and its method of deployment in the special permit application. A decision on the permissibility of this gear type will be made by the PIAO Administrator after consultation with the Council and the director of the affected state fishery management agency.

§ 660.606 Gear identification.

(a) The vessel number must be affixed to all fish and crab traps on board the vessel or deployed in the water by any vessel or person holding a permit under § 660.13 or § 660.601 or that is otherwise established to be fishing for coral reef ecosystem MUS in the regulatory area.

(b) *Enforcement action.* (1) Traps not marked in compliance with paragraph (a) of this section and found deployed in the regulatory area will be considered unclaimed or abandoned property, and may be disposed of in any manner considered appropriate by NMFS or an authorized officer;

(2) Unattended surround nets or bait seine nets found deployed in the regulatory area will be considered unclaimed or abandoned property, and may be disposed of in any manner considered appropriate by NMFS or an authorized officer.

§ 660.607 Framework for regulatory adjustments.

(a) *Procedure for established measures.* (1) Established measures are management measures that, at some time, have been included in regulations implementing the FMP, or for which the impacts have been evaluated in Council/NMFS documents in the context of current conditions;

(2) Following framework procedures of the CREFMP, the Council may recommend to the Regional Administrator that established measures be modified, removed, or re-instituted. Such recommendation shall include supporting rationale and analysis, and shall be made after advance public notice, public discussion and consideration of public comment. NMFS may implement the Council's recommendation by rulemaking if approved by the Regional Administrator.

(b) *Procedure for new measures.* (1) New measures are management measures that have not been included in regulations implementing the FMP, or for which the impacts have not been evaluated in Council/NMFS documents in the context of current conditions. New measures include but are not limited to catch limits, resource size limits, closures, effort limitations, reporting and recordkeeping requirements;

(2) Following the framework procedures of the FMP, the Regional Administrator will publicize, including by **Federal Register** document, and solicit public comment on, any proposed new management measure. After a Council meeting at which the measure is discussed, the Council will consider recommendations and prepare a document summarizing the Council's deliberations, rationale, and analysis for the preferred action, and the time and place for any subsequent Council meeting(s) to consider the new measure. At subsequent public meeting(s), the Council will consider public comments and other information received to make a recommendation to the Regional Administrator about any new measure. NMFS may implement the Council's recommendation by rule making if approved by the Regional Administrator.

(i) The Regional Administrator will consider the Council's recommendation and supporting rationale and analysis, and, if the Regional Administrator concurs with the Council's recommendation, will propose regulations to carry out the action. If the Regional Administrator rejects the Council's proposed action, the Regional Administrator will provide a written explanation for the denial within 2 weeks of the decision.

(ii) The Council may appeal denial by writing to the Assistant Administrator, who must respond in writing within 30 days.

(iii) The Regional Administrator and the Assistant Administrator will make their decisions in accordance with the Magnuson-Stevens Act, other applicable laws, and the CREFMP.

(iv) To minimize conflicts between the Federal and state/territorial/ commonwealth management systems, the Council will use the procedures in paragraph (a)(2) in this section to respond to state/territorial/ commonwealth management actions. Council consideration of action would normally begin with a representative of the state, territorial or commonwealth government bringing a potential or actual management conflict or need to the Council's attention.

§ 660.608 Regulatory area.

(a) The regulations in this subpart govern fishing for coral reef ecosystem management unit species by vessels of the United States or persons who operate or are based inside the outer boundary of the U.S. EEZ off:

(1) The Hawaiian Islands Archipelago lying to the east of 160°50′ W. long.

(2) Guam.
(3) American Samoa.
(4) Offshore area of the CNMI or that portion of the U.S. EEZ around the CNMI between three nautical miles offshore and the outer boundary of the U.S. EEZ.
(5) Baker Island, Howland Island, Jarvis Island, Wake Island, Johnston Atoll, Palmyra Atoll and Kingman Reef.

(b) The inner boundary of the regulatory area is as follows:
(1) The shoreline of Baker Island, Howland Island, Jarvis Island, Wake Island, Johnston Atoll, Palmyra Atoll and Kingman Reef.
(2) The seaward boundaries of the State of Hawaii, the Territory of Guam, the Territory of American Samoa; and
(3) A line three nautical miles seaward from the shoreline of the CNMI.

(c) The outer boundary of the regulatory area is the outer boundary of the U.S. EEZ or adjacent international maritime boundaries. The CNMI and Guam regulatory area is divided by a line intersecting these two points: 148° E. long., 12° N. lat., and 142° E.

§ 660.609 Annual reports.

(a) *Annual reports.* By July 31 of each year, a Council-appointed coral reef ecosystem plan team will prepare an annual report on the fisheries in the management area. The report will contain, among other things, fishery performance data, summaries of new information and assessments of need for Council action.

(b) *Recommendation for Council action.*
(1) The Council will evaluate the annual report and advisory body recommendations and may recommend management action by either the state/territorial/commonwealth governments or by Federal regulation;
(2) If the Council believes that management action should be considered, it will make specific recommendations to the PIAO Administrator after considering the views of its advisory bodies.

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WESTERN
PACIFIC
REGIONAL
FISHERY
MANAGEMENT
COUNCIL

July, 2003

Amendment 8 to the Bottomfish and Seamount Groundfish Fishery Management Plan would include the EEZ waters around the Commonwealth of the Northern Mariana Islands and around the Pacific Remote Island Areas (Wake, Howland, Baker and Jarvis Islands; Kingman Reef and Johnston and Palmyra Atolls - although Midway Atoll is designated as a Pacific Remote Island Area, it has already been included in the FMP) in the FMP. It would also designate 48 additional species as Bottomfish Management Unit Species and define Essential Fish Habitat for these species. This amendment is currently being updated for review and approval by the National Marine Fisheries Service.

WESTERN PACIFIC REGIONAL FISHERY MANAGEMENT COUNCIL

July, 2003

Amendment 9 to the Bottomfish and Seamount Groundfish Fishery Management Plan would prohibit vessels greater than 50 feet in length overall from targeting Bottomfish Management Unit Species within EEZ waters less than 50 miles from Guam. It would also implement federal permitting and reporting requirements for these vessels. This amendment is currently being finalized for review and approval by the National Marine Fisheries Service.

WESTERN PACIFIC REGIONAL FISHERY MANAGEMENT COUNCIL

July, 2003

A regulatory adjustment to the Bottomfish and Seamount Groundfish Fishery Management Plan that would define criteria for new entrants seeking to enter the Mau Zone bottomfish fishery under both regular and Community Development Plan (CDP) permits, is currently being finalized for review and approval by the National Marine Fisheries Service.

WESTERN PACIFIC REGIONAL FISHERY MANAGEMENT COUNCIL

July, 2003

A regulatory adjustment to the Bottomfish and Seamount Groundfish Fishery Management Plan that would adjust the criteria for permit renewals in the limited entry bottomfish fishery in the Northwestern Hawaiian Islands is currently being finalized for review and approval by the National Marine Fisheries Service.