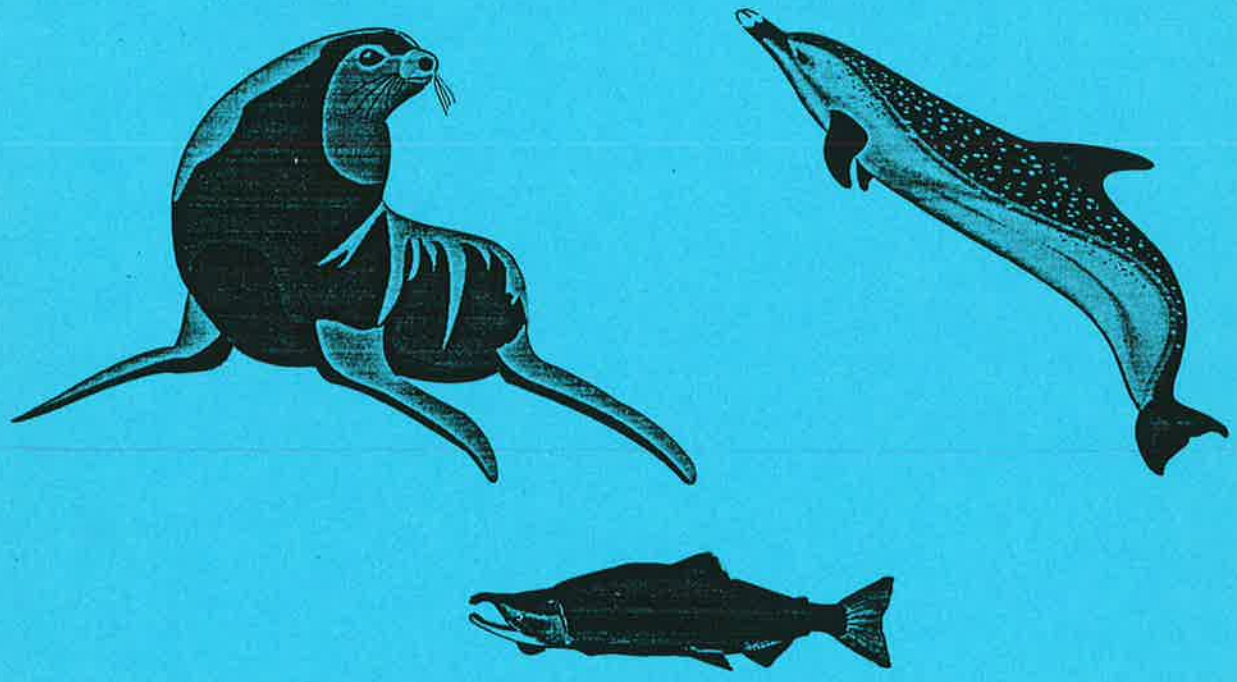
QL713.2
.U54En89
1995

JUN 29 1995
LIBRARY
National Marine Mammal Laboratory
7600 Sand Point Way N.E., Bldg. 4
Seattle, Washington 98115-0070

Environmental Assessment of Proposed Regulations to Govern Interactions between Marine Mammals and Commercial Fishing Operations, Under Section 118 of the Marine Mammal Protection Act



Prepared by

National Marine Fisheries Service
National Oceanic and Atmospheric Administration
U.S. Department of Commerce

June 1995

QL713.2
.U54 En89
1995

JUN 29 1995

Environmental Assessment of Proposed Regulations to Govern Interactions Between Marine Mammals and Commercial Fishing Operations, under Section 118 of the Marine Mammal Protection Act

Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Office of Protected Resources
June 1995

LIBRARY
NATIONAL MARINE MAMMAL LAB
7600 SAND POINT WAY NE BLDG. 4
SEATTLE WA 98115-0070

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This Environmental Assessment examines the effects of regulations implementing section 118 of the 1994 Amendments of the Marine Mammal Protection Act on the affected environment. The affected environment consists of two main groups: protected species and commercial fishers. The impacts of these regulations to both groups are considered.

The goal of the implementing regulations is to authorize fisheries to take marine mammals incidental to commercial fishing operations. Those fisheries that have frequent or occasional takes of marine mammals must register with the National Marine Fisheries Service and may be required to carry an observer so the marine mammal take can be carefully monitored. All fishers must report incidental mortalities and serious injuries of marine mammals to the National Marine Fisheries Service. In addition, take reduction teams will be formed to address the issue of reducing bycatch of marine mammals in fisheries with frequent or occasional takes of marine mammals. The ultimate goal of the 1994 Amendments to the MMPA is to reduce marine mammal bycatch to insignificant levels approaching a zero mortality and serious injury rate.

The impact to commercial fishers depends on how fisheries are classified into those with "frequent", "occasional" and a "remote likelihood" of marine mammal take. Several different classification schemes and their results are discussed. The proposed implementing regulations would impact a number of commercial fishers by requiring them to pay a registration fee (of approximately $30). In addition, NMFS would have the option of placing observers on vessels in some fisheries. Overall, however, the number of commercial fishers affected would be lower under the proposed regulations than under the current regulations.

1.0.) INTRODUCTION

Interactions between fisheries and marine wildlife, including marine mammals, are a continuing problem in waters of the United States. Marine mammals, sea birds, and sea turtles are incidentally injured or killed during the course of commercial fishing operations, and may often be intentionally injured or killed. Intentional and non-intentional lethal interactions with commercial fisheries are a concern for all marine wildlife, but are of particular concern for cases in which the interactions are with stocks of marine mammals that are declining, threatened, or endangered or in cases where the status of the stock is unknown.

In recognition of the potential impact direct interactions could have on marine mammal populations, the U. S. Congress passed amendments to the Marine Mammal Protection Act (MMPA) in 1988 that included a program to gather information on the incidental take of marine mammals in commercial fisheries. In addition, a 5-year exemption from the taking moratorium of the MMPA was granted to fisheries that participated in the Interim Exemption Program. This program was outlined in Section 114 of the MMPA and implementing regulations were established at 50 CFR 229.

The MMPA amendments of 1994 replaced the Interim Exemption program with a long-term regime for governing interactions between marine mammals and commercial fisheries (Public Law 103-238, April 30, 1994). Section 118 of the MMPA governs the incidental taking of all marine mammals by commercial fishing operations, except for those vessels engaged in the eastern tropical Pacific tuna purse seine fishery. The immediate goal of section 118 is to reduce the incidental mortality or serious injury of marine mammals incidental to commercial fisheries to insignificant levels approaching a zero mortality or serious injury rate.

The Secretary of Commerce, through the National Marine Fisheries Service, proposes to issue regulations implementing Section 118. An extensive Draft Legislative Environmental Impact Statement (DLEIS) was prepared for the proposed regime, and many of the impacts considered in the DLEIS are still current under the proposed regime. NMFS has prepared this Environmental Analysis, however, to analyze the impact of the proposed regulations on the environment and on the public and to provide guidance on whether an Environmental Impact Statement is necessary.

1.1.) Description of the Interim Exemption Program

The objective of the section 114 Interim Exemption for Commercial Fisheries was to collect much-needed information on the status of marine mammal stocks and the degree to which commercial fishermen interact with marine mammals. The Interim Exemption program consisted of four major elements: stock assessments, categorization of fisheries, registration and reporting, and the observer program.

Stock Assessment Program

The section 114 Interim Exemption program provided NMFS with a means to monitor the status and trends of affected marine mammal populations. The stock assessment program

focused on collecting minimum abundance estimates for those stocks for which there was a lack of information on abundance and trends and that had the potential for significant incidental take in commercial fisheries. Information on stock delineations and population trends was also collected.

Categorization of Fisheries

Under the Interim Exemption, commercial fisheries were assigned to one of three categories based on whether the level of incidental interaction with marine mammals was frequent, occasional, or remote. NMFS interpretation of Congressional intent resulted in definitions of frequent, occasional, and remote likelihood based on a per-vessel rate of incidental take. NMFS established the following criteria for classifying fisheries:

> Category I. There is documented information indicating a "frequent" incidental taking of marine mammals in the fishery. "Frequent" means that it is highly likely that more than one marine mammal will be incidentally taken by a randomly selected vessel in the fishery during a 20 day period.
>
> Category II. (1) There is documented information indicating an "occasional" incidental taking of marine mammals in the fishery, or (2) in the absence of information indicating the frequency of incidental taking of marine mammals, other factors such as fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, and species and distribution of marine mammals in the area suggest there is a likelihood of at least an "occasional" incidental taking in the fishery. "Occasional" means that there is some likelihood that one marine mammal will be incidentally taken by a randomly selected vessel in the fishery during a 20 day period, but that there is little likelihood that more than one marine mammal will be incidentally taken.
>
> Category III. (1) There is information indicating no more than a "remote likelihood" of an incidental taking of a marine mammal in the fishery, or (2) in the absence of information indicating the frequency of incidental taking of marine mammals, other factors such as fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, and species and distribution of marine mammals in the area suggest there is no more than a remote likelihood of an incidental take in the fishery. "Remote likelihood" means that it is highly unlikely that any marine mammal will be incidentally taken by a randomly selected vessel in the fishery during a 20-day period.

In 1988, five fisheries were identified by Congress as Category I fisheries, and two were identified as Category III fisheries. Remaining fisheries were categorized using available data; fisheries for which there was no data on marine mammal incidental take were categorized based on examination of similar gear types or fishing strategies, according to the above-mentioned

regulatory definitions. NMFS published the first of its annual final List of Fisheries in 1989 (54 Federal Register 16072), classifying 167 fisheries. The List of Fisheries has been reviewed annually and modifications made as necessary.

Registration and Reporting

Under the section 114 Interim Exemption, vessel owners that participate in a Category I or II fishery were required to register with NMFS and carry a valid Exemption Certificate (mailed to the fisher upon filing the registration with NMFS). Fishers participating in Category I and II fisheries were also required to maintain daily logs of fishing effort and incidental takes of marine mammals. For each day of fishing, fishers were required to provide information regarding: the fishery currently being fished, fishing effort, gear type, fish species involved, marine mammal species or a description of the marine mammal if the species is unknown, number, date, and location of incidental takes, type of interaction and any injury to the marine mammal, a description of intentional takes, and loss of fish or gear caused by marine mammals. A copy of the logbook was required to be submitted to NMFS every year by December 31. Fishers participating in Category III fisheries were not required to register, but were required to report all incidental lethal takes of marine mammals within 10 days.

Registration and logbook data have been entered into NMFS' Marine Mammal Exemption Program data base and used to examine the number and size of fishing vessels, types of gear used, reported number of takes by fisheries and by species, and to compare the frequencies of takes documented in logbooks with the frequencies of takes determined through observer coverage.

Observer Program

Under the Interim Exemption program, NMFS was required to place observers on Category I vessels to monitor between 20 and 35% of the fishing operations. The purpose of the observer program was to obtain statistically reliable information on the species and number of marine mammals incidentally taken in the fishery, to verify the adequacy of self-reporting by fishers, to identify possible means for reducing take, and to collect other biological information on marine mammals and the marine ecosystem.

Fifteen fisheries were observed throughout the course of the Interim Exemption program. Table 1 provides a list of observed fisheries and associated levels of observer coverage.

1.2.) A Long-Term Regime to Govern Marine Mammal/Fishery Interactions

Because the section 114 Interim Exemption for Commercial Fisheries was originally intended as a temporary means to govern marine mammal/fishery interactions, and it was scheduled to expire in October, 1993, the Secretary of Commerce was required to develop a proposed regime to govern interactions between marine mammals and commercial fisheries after October 1, 1993.

1.2.1.) The NMFS Proposed Regime

NMFS submitted its "Proposed Regime to Govern Interactions between Marine Mammals and Commercial Fishing Operations" to Congress in November, 1992. It was developed through a three year process which began with public hearings and meetings with interested parties, led to the issuance of two draft regimes, and incorporated comments from the environmental and fishing communities, the Fish and Wildlife Service, state agencies, fishery management councils, and the Marine Mammal Commission.

The proposed regime offered a procedure for issuing incidental take permits to fishermen that interact with marine mammal stocks that have not been determined to be at their Optimum Sustainable Population (OSP). OSP determination is a lengthy process, as it requires data on historical and current population sizes and reproductive rates. The proposed regime instead used the calculation of a Potential Biological Removal (PBR) for each marine mammal stock, using conservative default reproductive rates and best available population estimates. PBRs would then be allocated annually among groups that have authorization to take marine mammals (subsistence, fishermen, scientific research, public display, oil and gas, etc.).

Other provisions of the proposed regime included: 1) the authority to take small numbers of threatened and endangered marine mammals (listed under the Endangered Species Act) in the course of fishing operations, 2) the consideration of all human-related activities in the assessment of impacts to marine mammals, and 3) the long-term monitoring of marine mammal stocks to ensure recovery to OSP, provided for by the continuation of observer programs and stock assessment research.

1.2.2.) The Negotiated Proposal

In March of 1993, representatives from several fishery groups met with representatives of environmental groups to discuss a strategy for identifying possible amendments to the Marine Mammal Protection Act. The negotiating group, as this alliance between the fishing industry and environmental community was commonly called, met several times to develop specific amendments to the MMPA. A proposal from the group was presented to Congress on June 10, 1993. It was signed on by almost 40 groups representing most members of the negotiating group. It contained several key provisions that varied from the NMFS proposed regime. The group believed that agency resources should be focused on developing take reduction strategies for certain fisheries that have significant interactions with marine mammals. To achieve this end, they proposed that Conservation Teams be formed for critical stocks of marine mammals, composed of all interested parties and user groups, to develop workable fishing strategies to reduce marine mammal takes. The teams would submit Conservation Plans with agreed-upon strategies to the Secretary, who would then implement the plans (or modify them, if needed). Tools available to mitigate interactions would include the placement of observers, registration of fishing vessels, area or seasonal closures, gear research, education and outreach to fishing communities, and any other measures the team found necessary.

1.2.3.) The 1994 Amendments to the Marine Mammal Protection Act

The 1994 amendments to the MMPA were enacted on April 30, 1994 (Public Law 103-238). The amendments replace the section 114 Interim Exemption for Commercial Fisheries (section 114) with a long-term regime for governing interactions between marine mammals and commercial fisheries (sections 117 and 118). Following is a summary of the amendments as they pertain to the new regime to govern interactions between marine mammals and commercial fisheries.

Stock Assessments

New section 117 of the MMPA required NMFS to complete a draft assessment for every population, or stock, of marine mammals under U.S. jurisdiction within by August 1, 1994. The assessments must include a wide variety of information about each stock, including its range, an estimate of minimum population and net productivity (population growth rate), estimates of human caused mortality within the stock, a description of the commercial fisheries that are likely to interact with the stock, and an estimate of the potential biological removal (PBR) level for the stock.

The assessments were to identify as "strategic stocks" those stocks that have a level of human caused mortality likely to reduce or keep the stock below its optimum sustainable population. Strategic stocks are also those stocks that are listed as endangered or threatened under the ESA, depleted under the MMPA, or that are declining and likely to be listed as threatened under the ESA in the foreseeable future. Alaskan Natives may request a hearing before an Administrative Law Judge regarding draft stock assessments before NMFS publishes a final stock assessment report for stocks utilized by Alaskan Natives for subsistence purposes. Final stock assessments must be published 90 days after the close of the public comment period on the proposed assessments. Stock assessments for strategic stocks must be reviewed at least annually; for other stocks, assessments are to be reviewed every three years.

[NMFS published notice of availability of draft stock assessments for approximately 130 stocks of marine mammals on August 7, 1994 (59 FR 40527).].

Scientific Review Groups

Within 60 days of enactment of the 1994 Amendments to the MMPA (June 29, 1994), NMFS was required to establish three regional Scientific Review Groups, representing Alaska, the Pacific Coast (including Hawaii) and the Atlantic Coast (including the Gulf of Mexico). The responsibilities of the Scientific Review Groups are to review draft stock assessments and advise NMFS concerning marine mammal population status, trends, stock identity, and dynamics; uncertainty and research needed on the marine mammal stocks and research needed to identify methods to reduce incidental mortality and injury; impacts of habitat degradation and appropriate measures to reduce impacts; and any other issue NMFS or the groups consider appropriate for pursuing the goals of the MMPA. The groups must consist of individuals with expertise in marine mammal biology and ecology, populations dynamics and modeling, commercial fishing technology and practices, or marine mammal stocks taken for subsistence by Alaska Natives, and must represent, to the extent feasible, a balance of viewpoints. NMFS established the Scientific

Review Groups on June 30, 1994.

Registration and Reporting

Within 90 days of enactment of the 1994 Amendments to the MMPA (July 29, 1994), NMFS was required to publish proposed revisions to the list of fisheries that interact with marine mammals, describing the marine mammal stocks involved and the number of vessels in each fishery. New section 118(c) of the MMPA states that each fishery is to be categorized by whether incidental mortality or serious injury to marine mammals is frequent, occasional, or has only a remote likelihood of occurring (corresponding to a Category I, Category II or Category III fishery, respectively). All intentional lethal killing or serious injury of marine mammals is prohibited. Vessels engaged in commercial fisheries included in Categories I or II must register with NMFS, which will authorize the take of non-listed marine mammals in the course of fishing. Each registered vessel will receive a decal that must be displayed while the registration is current. All owners or operators of commercial vessels in all fisheries must report the incidental death or injury of marine mammals to NMFS on a postage-paid form within 48 hours after the end of each fishing trip.

In addition, the 1994 amendments to the MMPA allow NMFS to permit the taking of endangered and threatened marine mammals incidental to commercial fishing for three-year periods provided that, in addition to other restrictions, the taking will have a negligible impact on the stock, and that a recovery plan has been or is being developed for the species.

NMFS published its Proposed Changes to the List of Fisheries on September 1, 1994 (59 FR 45263). In this notice, NMFS proposed the reclassification of several fisheries based on the 1994 MMPA amendments' new prohibition of intentional lethal serious injury or mortality of marine mammals in the course of commercial fishing. NMFS also recognized that the criteria for classifying fisheries may need to be changed, and requested information from the public on how to revise the fishery classification criteria and existing regulatory definitions to better define the terms "frequent", "occasional", and "remote likelihood". NMFS also requested information on possible methods by which the accuracy and timeliness of information on incidental serious injuries and mortalities, and fishing effort, might be improved. The public comment period for this proposed action ended November 30, 1994, and comments received on these and other aspects of agency actions to implement the amendments are summarized in the next chapter.

Monitoring of Incidental Takes

The 1994 amendments to the MMPA require NMFS to establish a program to monitor marine mammal mortalities and serious injuries incidental to commercial fishing operations. The program will combine information from on-board observers and voluntary reporting by vessel owners of incidental takes, as well as information collected on alternative platforms and by members of local stranding networks. The objectives of the monitoring program are to (1) obtain statistically reliable estimates of incidental mortality and serious injury; (2) determine the reliability of reports of incidental mortality and serious injury submitted by fishing vessel owners and operators; and, (3) identify changes in fishing methods or technology that may increase or

decrease incidental mortality and serious injury.

Zero Mortality Rate Goal

Since it was first enacted in 1972, one of the underlying goals of the MMPA is "that the incidental kill or incidental serious injury of marine mammals permitted in the course of commercial fishing operations be reduced to insignificant levels approaching a zero mortality and serious injury rate" (section 101(a)(2)). The 1994 MMPA amendments reaffirmed this Zero Mortality Rate Goal (ZMRG), requiring NMFS to begin review of each fishery's progress toward the ZMRG within three years of enactment (April 30, 1997), and report the results of the study to Congress within four years of enactment (April 30, 1998). The amendments also specify that all fisheries must attain this goal within seven years (April 30, 2001).

Take Reduction Teams/Plans

The 1994 MMPA amendments require NMFS to establish take reduction teams to develop take reduction plans to assist in the recovery or prevent the depletion of strategic stocks that interact with Category I or Category II commercial fisheries. Take reduction plans may also be developed for certain other marine mammal stocks that interact with commercial fisheries. For strategic stocks, take reduction teams must be convened within 30 days of the issuance of final stock assessment reports. The take reduction teams must submit take reduction plans designed to reduce fishery-caused marine mammal mortality within six months of their convening for strategic stocks, and within 11 months of convening for non-strategic stocks.

1.3) Purpose and Need for Action

To implement the 1994 Amendments to the MMPA, the Secretary of Commerce must develop regulations governing the interactions between marine mammals and commercial fisheries. These new regulations would replace the current regulations authorizing commercial fisheries under the section 114 Interim Exemption at 50 CFR 229.

1.4.) Scope

The proposed regulations would implement sections 101 (a) (5) (E) and 118 of the Marine Mammal Protection Act of 1972, as amended (16 U.S.C. 1371 (a) (5) (E) and 1387, Public Law 103-238), which provide for exceptions from the Act's moratorium on the taking of marine mammals incidental to certain commercial fishing operations. These regulations would apply to all commercial fisheries subject to the jurisdiction of the United States, except for vessels engaged in the purse seine fishery for tuna in the eastern tropical Pacific. Upon implementation, the provisions of section 118 of the MMPA, and not sections 103, 104 or 114, will govern interactions between marine mammals and commercial fishing operations. The overall goal of section 118 is to reduce the incidental mortality and serious injury occurring in the course of commercial fishing operations to insignificant levels approaching a zero mortality

and serious injury rate by April 30, 2001.

2.0.) ALTERNATIVES

Public Participation in the Process

The development of the proposed regulations has been characterized by public involvement throughout the process through public meetings, working sessions, and distribution of the *MMPA Bulletin* (a bi-monthly news publication of the NMFS Office of Protected Resources). These efforts insured that the proposed regulations were comprehensive in scope and rigorously reviewed for consistency with the statute.

On September 1, 1994, NMFS published the proposed changes to the List of Fisheries in the *Federal Register* (59 FR 45263). This notice requested comments not only on proposed changes, but also on suggested revisions to the classification criteria, during a 90-day public comment period. NMFS received comments from twelve different organizations on this notice.

In the interim, the first draft of the proposed regulations was prepared and informally presented to the NMFS MMPA Task Force in October of 1994. The MMPA Task Force is composed of representatives from all NMFS regions and science centers that are involved in the research and management of marine mammals or fisheries, or responsible for interpretation or enforcement of the Act's provisions. A series of conference calls with representatives of the Task Force resulted in general agreement on the basic revised structure of the regulations. There was also general agreement to conduct informal, regional working sessions to which representatives of the fishing industry, the environmental community, Congress, and other interested parties would be welcome.

The second draft of the proposed regulations was distributed to and discussed with interested parties at two MMPA working sessions held in November and December in Silver Spring, Maryland and in Seattle, Washington. The main topics of discussion were the definitions of the categories for commercial fisheries and how fisheries should be categorized when incidental take data are scant. In addition, the working session participants discussed changes in the registration and reporting requirements, the establishment of Take Reduction Teams and associated Take Reduction Plans, the definitions of "serious injury" and "zero mortality rate goal", and other issues. Approximately 25 representatives of fishing and environmental organizations, states, interstate fisheries commissions, other Federal agencies, and Congressional offices attended the all-day sessions. Written comments on the draft proposed regulations were also received by mail.

2.1.) Issuance of authorization certificates

Statutory Language

New section 118(c)(2)(A) of the Act states that "an authorization shall be granted by the Secreatry in accordance with this section for a vessel engaged in a [Category I or II] commercial fishiery, upon receipt by the Scretary of a competed registration form providing the name of the

vessel owner and operator, the name and description of the vessel, the fisheries in which it will be engaged, the approximate time, duration, and location of such fishery operations, and the general type and nature of use of the fishing gear and techniques used."

New section 118(c)(3)(D) of the Act states "If the owner of a vessel has obtained and maintains a current and valid authorization from the Secretary...and meets the requirements set forth in this section, including compliance with any regulations to implement a take reduciton plan under this section, the owner of such vessel, and the master and crew members of the vessel, shall not be subject to the penalties set forth in this title for the incidental taking of marine mammals while such vessel is engaged in a fishery to which the authorization applies."

2.1.1.) Alternative 1: No Action Alternative

The statutory authority that currently governs interactions between commercial fishing operations and marine mammals is the section 114 Interim Exemption. That authority expires Sept. 1, 1995, after which such interactions are governed by new section 118 of the Act. This alternative would involve allowing the section 114 Interim Exemption and the exemption certificates to expire, and not authorizing fishers to incidentally take marine mammals under new section 118.

This alternative is not considered viable because NMFS is required by law (section 118 of the Act) to issue authorization certificates upon receipt of a completed registration form by fishers.

2.1.2.) Alternative 2: Issue Authorization Certificates With Terms and Conditions

Under this alternative, NMFS would issue section 118 authorization certificates with terms and conditions incorporated that could place limitations on certificate holders' activities (e.g., time or location closures, gear restrictions) to mitigate impacts on the environment. This alternative would allow NMFS to minimize the adverse effects caused by individual fishers.

This alternative is not considered viable because section 118 requires NMFS to issue an authorization certificate upon receipt of a completed registration form. There is no authority granted to NMFS to include any restrictions on fishers' activities via the authorization certificates. Any such restrictions to mitigate environmental impacts can be imposed only through take reduction plans and the regulations that implement such plans issued under section 118(f), emergency regulations under section 118(g), or, in the case of marine mammal stocks listed under the Endangered Species Act, through appropriate conditions in permits issued under section 101(a)(5)(E) of the MMPA.

2.1.3.) Alternative 3: Issue Authorization Certificates Without Terms or Conditions and carry forward existing provisions of the section 114 Interim Exemption Regulations (Preferred Action)

Under this alternative, NMFS would issue section 118 authorization certificates upon

receipt of completed registration forms from fishers. These authorization certificates would not contain terms or conditions to mitigate environmental impacts. Limitations on fishers' activities to mitigate environmental impacts would instead be applied through take reduction plans and their implementing regulations under section 118(f) of the Act, emergency regulations issued under section 118(g), and, in the case of marine mammal stocks listed under the Endangered Species Act, through appropriate permits issued under section 101(a)(5)(E) of the Act. In addition, this alternative would carry forward two elements of the section 114 Interim Exemption regulations which have proven beneficial to marine mammals and which are fully consistent with the requirements of new section 118. These elements are the prohibition on discarding fishing gear at sea, and the requirement that fishers return to the sea any marine mammals incidentally taken during commercial fishing operations with a minimum of further injury, unless directed otherwise by NMFS personnel or an observer.

This alternative most directly tracks the statutory requirements of the Act, and therefore is the preferred action.

2.2.) Criteria for Assigning Fisheries into Categories

Statutory Language

New section 118(c)(1) of the Act requires that commercial fisheries be classified according to the following categories:

(I) frequent incidental mortality and serious injury of marine mammals.
(ii) occasional incidental mortality and serious injury of marine mammals; or,
(iii) a remote likelihood of or no known incidental mortality or serious injury of marine mammals.

Need for the Consideration of Alternatives

Because new sections 117 and 118 of the MMPA place an emphasis on the impact of fishery interactions on marine mammal stocks of concern (i.e., strategic stocks), NMFS suggested that the criteria used to determine whether a fishery has a "frequent", "occasional", or "remote likelihood" of an incidental serious injury or mortality due to commercial fishing operations should be reviewed and revised in order to reflect this emphasis on individual marine mammal stocks (59 FR 45263, Sept. 1, 1994). The rationale for revising the criteria is based, in part, on the need to improve the ability to identify and address the most significant problems involving incidental mortality and serious injury of marine mammals in commercial fishing operations.

After consideration of comments from representatives of state and federal agencies, representatives of commercial fishing organizations, congressional staffers, and members of the environmental community, NMFS proposed several alternative criteria to categorize commercial fisheries, with one preferred alternative that was widely accepted, in concept, by many participants at the working sessions and others that commented on the draft proposed regulations.

2.2.1.) Alternative 1: Status Quo, or No Action Alternative

Currently, under regulations implement ing the section 114 Interim Exemption, the fishery classification criteria are based on a "by-vessel" rate of total marine mammal "take" per twenty days of fishing. NMFS interpreted "take" under section 114 as entanglement, injury, and mortality. NMFS included injuries and morality due to intentional actions by fishers in its classification criteria. Under new section 118, however, the statute directs NMFS to classify fisheries based on incidental serious injuries and mortalities only. Under this alternative, the regulations would need to be re-drafted in order to make this distinction. The regulatory definitions would be as follows:

Category I: There is documented information indicating a "frequent" incidental *serious injury or mortality* of marine mammals in the fishery. "Frequent" means that it is highly likely that more than one marine mammal will be incidentally *seriously injured or killed* by a randomly selected vessel in the fishery during a 20-day period.

Category II: (1) There is documented information indicating an "occasional" incidental *serious injury or mortality* of marine mammals in the fishery, or (2) in the absence of information indicating the frequency of incidental *serious injury or mortality* of marine mammals, other factors such as fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, and species and distribution of marine mammals in the area suggest there is a likelihood of at least an "occasional" incidental *serious injury or mortality* in the fishery. "Occasional" means that there is some likelihood that one marine mammal will be incidentally *seriously injured or killed* by a randomly selected vessel in the fishery during a 20-day period, but that there is little likelihood that more than one marine mammal will be incidentally *seriously injured or killed.*

Category III: (1) There is information indicating no more than a "remote likelihood" of an incidental *serious injury or mortality* of a marine mammal in the fishery, or (2) in the absence of information indicating the frequency of incidental *serious injury or mortality* of marine mammals, other factors such as fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, and species and distribution of marine mammals in the area suggest there is no more than a remote likelihood of an incidental *serious injury or mortality* in the fishery. "Remote likelihood" means that it is highly unlikely that any marine mammal will be incidentally *seriously injured or killed* by a randomly selected vessel in the fishery during a 20-day period.

Assumptions. This approach assumes that NMFS has fairly reliable estimates of rates of serious injuries and mortalities for each fishery per 20-days of fishing. For fisheries in which NMFS has placed observers, these rates may vary in accuracy, depending on the level of observer coverage applied. For other fisheries, only that information submitted in fishers' logbooks are available. Take rates obtained from fishers' logbooks has been found to vary from those reported by observers for the same fishery, with the general tendency to have observed take rates higher than fisher-reported take rates. Reported take rates also vary from fishery to fishery and from fisher to fisher (NMFS, unpublished report).

The implementing regulations for section 114 stated that "in the absence of information indicating the frequency of incidental taking of marine mammals, other factors such as fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, and species and distribution of marine mammals in the area" would be used to suggest the level of removals associated with that fishery. That method of estimating the rate of serious injuries and mortalities per 20-day period would also be used if this alternative were chosen.

This approach would be useful in identifying fisheries that have high rates of serious injuries and mortalities across a number of marine mammal stocks, regardless of the status of the stocks involved. These fisheries would be classified as Category I or II fisheries and receive priority for the formation of take reduction teams. However, this could result in the allocation of agency resources to develop take reduction teams for fisheries that seriously injure and kill marine mammals in stocks that are increasing or stable.

This approach is problematic in that it does not account for the size of the fishery as a whole (i.e., the number of vessels participating in the fishery), as it relates to impacts on stocks. For instance, two fisheries may have the same serious injury and mortality rate per twenty days of fishing, yet one fishery may have twenty vessels participating and the other may have 3,000 vessels participating. These two fisheries would have significantly different impacts on a particular stock or stocks of marine mammals which would not be accounted for in the establishment of take reduction teams.

Also, reporting requirements under section 118 require that fishers report only serious injuries and mortalities, and not information on fishing effort. This significantly reduces the information available to calculate takes rates per 20-days of fishing. Such information would only be accurate for fisheries in which there are observers.

Comments Received Regarding this Alternative. This alternative was discussed as one of four approaches under consideration for recategorizing fisheries in the "Proposed Changes to the List of Fisheries" (59 FR 45263, September 1, 1994). It was also presented as an option at the working sessions held to discuss the draft proposed regulations.

Written comments were received on the "Proposed Changes to the List of Fisheries" from 10 different organizations. One commenter favored this alternative, stating that fisheries should be conducted in a manner that preserves marine mammal individuals, not just species. Four commenters supported an approach that categorizes fisheries based on either the number of takes per twenty days or impact of an annual take relative to the stock's Potential Biological Removal (PBR) level. Five commenters opposed classifying fisheries based on take rates per twenty days of fishing, instead suggesting that fisheries be classified based on the impact of an annual take from a stock relative to the stock's PBR level.

Informal comments were also offerred by several attendees at the working sessions. At the Silver Spring session, there was some discussion as to whether Congress intended that the fishery classification criteria be changed when it reauthorized the MMPA. Senate Committee on Commerce, Science and Transportation staffers stated that the criteria should remain as they were under section 114 in order to preserve the current classification of fisheries in certain categories. Their main concern was what process would be followed for classifying fisheries under a new set of criteria when little or no data exists from which to estimate fishing mortality or PBR. Others at the working session, and the majority of attendees at the Seattle session, believed that the criteria should be revised to reflect impact on stocks. Some attendees at the Seattle session suggested a new method of categorizing fisheries, which will be discussed under Alternative 2 (preferred action).

2.2.2.) Alternative 2: Proposed Regulations (Preferred Action)

This alternative is a two-tiered approach that first addresses the total impacts of all fisheries on each marine mammal stock and then addresses the impacts of individual fisheries on individual stocks. It is based on the annual number of serious injuries and mortalities due to commercial fishing relative to a stock's Potential Biological Removal, or PBR. The PBR is the level of human-related serious injuries and mortalities that can be removed from a marine mammal stock that will continue to allow that stock to reach or maintain its Optimum Sustainable Population. The lower limit for the delineation between Category I and II fisheries is set at 50%.

Tier 1:
IF the annual incidental mortality and serious injury in a stock across all fisheries is less than or equal to 10% of the PBR of a that stock, THEN all fisheries interacting with this stock (and no other stocks that do not fit this criteria) should be placed in Category III.

IF the annual incidental mortality and serious injury in a stock across all fisheries is greater than 10% of the PBR of a particular stock, THEN all fisheries interacting with this stock are subject to evaluation at the Tier 2 level.

Tier 2:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 50% of the PBR of that stock.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is greater than 1% and less than 50% of the PBR of that stock.

Category III: Annual incidental mortality and serious injury in a stock from a given fishery is less than or equal to 1% of the PBR of that stock.

Tier 1. This approach is modeled after the recommendations from the NMFS PBR Workshop held in June, 1994. During that workshop, NMFS scientists attempted to standardize

many of the concepts that would be used in the preparation of draft Stock Assessment Reports (required under section 117 of the MMPA). Representatives from the U.S. Fish and Wildlife Service and the Marine Mammal Commission were also in attendance.

The PBR Workshop participants agreed that serious injury and mortality incidental to commercial fishing operations would be insignificant to a stock if such removals were only a small portion (i.e., 10% of the PBR) of the stock. Using this rationale, all fisheries which impact a stock would be considered in the determination of whether impacts to that stock are significant (Tier 1). If the total removal from a stock was greater than 10% of the PBR for that stock, the fishery would then be categorized according to the criteria in Tier 2.

Tier 2. In this system, the delineation between the Category I and II fisheries would be set at 50% and the delineation between Category II and III fisheries would be set at 1%.

This two-tiered approach assumes that NMFS has fairly accurate information on both the abundance of a stock (in order to calculate PBR) and the current level of incidental serious injury and mortality due to commercial fishing per year. In a few fisheries, both PBR and estimated fishing mortality are known with some degree of confidence. In these cases, fishing mortalities and serious injuries were calculated using data collected by observers. If observer data were not available, fishers' logbooks would be used to estimate removal levels. However, it is assumed that logbooks provide only a minimum indication of total removal levels. In cases where the PBR of a stock is unknown, any known or inferred level of removal of that stock in a fishery would usually warrant placement of that fishery in Category II so that better information could be collected.

For some fisheries, NMFS must use its best estimate of fishing mortality and serious injury for these fisheries, based on inferences from similar fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, and species and distribution of marine mammals in the area. This method of inferring levels of removals was also used under the section 114 regulations. In most of the Category III fisheries for which no updated information to support a change in category is available, the Category III designation would be maintained.

This alternative would categorize fisheries based on their impacts to stocks, thereby prompting formation of take reduction teams first for those stocks of greatest concern. This approach would allow for the classification of fisheries that have relatively rare occurrences of serious injuries and mortalities as Category II, if the stock subject to removal has a low PBR level and could be greatly impacted by even a low level of removal.

This alternative would not specifically address fisheries that have a high frequency of marine mammal serious injuries and mortalities across several stocks. These fisheries could be classified as either Category I or II, depending on which stocks they interact with. This could affect the prioritization of take reduction team formation, although, eventually, take reduction teams must be formed for all Category I and II fisheries.

Comments received on this Alternative. The option of using impacts on stocks as a function of the annual number of serious injuries and mortalities relative to a stock's PBR was first suggested in the "Proposed Changes to the List of Fisheries" (59 FR 45263, September 1, 1994). This option was also considered at the working sessions to discuss the draft proposed regulations.

Written comments were received on the "Proposed Changes to the List of Fisheries" from 10 different organizations. Five commenters supported this general approach, recommending that fisheries be classified based on the impact of an annual take from a stock relative to the stock's PBR level. Four commenters supported an approach that categorizes fisheries based on either the number of takes per twenty days or impact of an annual take relative to the stock's Potential Biological Removal (PBR) level. One commenter objected to this alternative, and supported the criteria used under regulations implementing section 114.

Informal comments were also offered by several attendees at the working sessions. At the Silver Spring session, there was some support for this approach, but others believed that the criteria should remain as they were under section 114. Many attendees at the Seattle session supported the concept of basing fishery classification on takes relative to PBR.

Although written comments received on the "Proposed Changes to the List of Fisheries" and comments from participants at the Seattle working session suggested 30% as the dividing line between Category I and II fisheries, it was later determined by the MMPA Task force that 50% was a more appropriate because 1) there was a general feeling that the PBR system was conservative so there was a decreased need for the classification system to be conservative, and 2) because there was no difference in which fisheries were assigned to Category I when the percentage was increased. NMFS biologists believe this to be an adequately conservative approach.

2.2.3.) Alternative 3

This alternative, like the preferred alternative (Alternative 2), is a two-tiered approach that would first address the total impacts of all fisheries on each marine mammal stock and then addresses the impacts of individual fisheries on individual stocks. It is based on the annual number of serious injuries and mortalities due to commercial fishing relative to a stock's Potential Biological Removal, or PBR. This alternative differs from the preferred alternative in that the lower limit for the delineation between Category I and II fisheries would be set at 30% rather than 50%.

Tier 1:

IF the annual incidental mortality and serious injury in a stock across all fisheries is less than or equal to 10% of the PBR of a particular stock, THEN all fisheries interacting with this stock (and no other stocks that do not fit this criteria) should be placed in Category III.

IF the annual incidental mortality and serious injury in a stock across all fisheries is greater than 10% of the PBR of a particular stock, THEN all fisheries interacting with this stock are subject to evaluation at the Tier 2 level.

Tier 2:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 30% of the PBR of that stock.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is between *some percentage* and 29% of the PBR of that stock.

Category III: Annual incidental mortality and serious injury in a stock from a given fishery is less than *some percentage* of the PBR of that stock.

Tier 1. This approach is modeled after the recommendations from the NMFS PBR Workshop held in June, 1994. During that workshop, NMFS scientists attempted to standardize many of the concepts that would be used in the preparation of draft Stock Assessment Reports (required under section 117 of the MMPA). Representatives from the U.S. Fish and Wildlife Service and the Marine Mammal Commission were also in attendance.

The PBR Workshop participants agreed that serious injury and mortality incidental to commercial fishing operations would be insignificant to a stock if such removals were only a small portion (i.e., 10% of the PBR) of the stock. Using this rationale, all fisheries which impact a stock would be considered in the determination of whether impacts to that stock are significant (Tier 1). If the total removal from a stock was greater than 10% of the PBR for that stock, the fishery would then be categorized according to the criteria in Tier 2.

Tier 2. In this system, the term *some percentage* would be used because NMFS considered a number of different percentage options for Tier 2 in this approach. Each one is considered separately below.

As stated previously, the most critical dividing line is the one drawn between Category II and Category III fisheries. In order to simplify the analysis of options, the dividing line between Category I and II was set at 30% of PBR.

This two-tiered approach assumes that NMFS has fairly accurate information on both the abundance of a stock (in order to calculate PBR) and the current level of incidental serious injury and mortality due to commercial fishing per year. In a few fisheries, both PBR and estimated fishing mortality are known with some degree of confidence. In these cases, fishing mortalities and serious injuries were calculated using data collected by observers. If observer data were not available, fishers' logbooks are used to estimate removal levels. However, it is assumed that logbooks provide only a minimum indication of total removal levels.

For some fisheries, NMFS must use its best estimate of fishing mortality and serious injury based on inferences from similar fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, and species and distribution of marine mammals in the area. This method of inferring levels of removals was also used under the section 114 regulations. In most of the Category III fisheries for which we have no updated information from which to support a change in category, the Category III designation would be maintained.

This alternative would categorize fisheries based on their impacts to stocks, thereby prompting formation of take reduction teams first for those stocks of greatest concern. This approach would allow for the classification of fisheries that have relatively rare occurrences of serious injuries and mortalities as Category II, if the stock subject to removal has a low PBR level and could be greatly impacted by even a low level of removal.

This alternative would not specifically address fisheries that have a high frequency of

marine mammal serious injuries and mortalities across several stocks. These fisheries could be classified as either Category I or II, depending on which stocks they interact with. This could affect the prioritization of take reduction team formation, although, eventually, take reduction teams must be formed for all Category I and II fisheries.

Comments received on this Alternative. The option of using impacts on stocks as a function of the annual number of serious injuries and mortalities relative to a stock's PBR was first suggested in the "Proposed Changes to the List of Fisheries" (59 FR 45263, September 1, 1994). This option was also considered at the working sessions to discuss the draft proposed regulations.

Written comments were received on the "Proposed Changes to the List of Fisheries" from 10 different organizations. Five commenters supported this general approach, recommending that fisheries be classified based on the impact of an annual take from a stock relative to the stock's PBR level. Four commenters supported an approach that categorizes fisheries based on either the number of takes per twenty days or impact of an annual take relative to the stock's Potential Biological Removal (PBR) level. One commenter objected to this alternative, and supported the criteria used under regulations implementing section 114.

Informal comments were also offered by several attendees at the working sessions. At the Silver Spring session, there was some support for this approach, but others believed that the criteria should remain as they were under section 114. Many attendees at the Seattle session supported the concept of basing fishery classification on takes relative to PBR.

Options for setting Category dividing lines under Alternative 3.

Alternative 3a - 1% option (preferred option):

Tier 2:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 30% of the PBR of that stock.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is between *1%* and 29% of the PBR of that stock.

Category III: Annual incidental mortality and serious injury in a stock from a given fishery is less than *1%* of the PBR of that stock.

In this alternative, fisheries that do not take more than 30% of any stock's PBR yet take more than 1% of the PBR of that stock would be classified as Category II, and fisheries that do not take more than 1% of any stock's PBR would be classified as Category III.

Alternative 3b - 5% option:

Tier 2:

Category I: Annual incidental mortality and serious injury in a stock from a given

fishery is greater than or equal to 30% of the PBR of that stock.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is between *5%* and 29% of the PBR of that stock.

Category III: Annual incidental mortality and serious injury in a stock from a given fishery is less than *5%* of the PBR of that stock.

In this alternative, fisheries that do not take more than 30% of any stock's PBR yet take more than 5% of the PBR of that stock would be classified as Category II, and fisheries that do not take more than 5% of any stock's PBR would be classified as Category III.

Alternative 3c - 10% option:

Tier 2:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 30% of the PBR of that stock.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is between *10%* and 29% of the PBR of that stock.

Category III: Annual incidental mortality and serious injury in a stock from a given fishery is less than *10%* of the PBR of that stock.

In this alternative, fisheries that do not take more than 30% of any stock's PBR yet take more than 10% of the PBR of that stock would be classified as Category II, and fisheries that do not take more than 10% of any stock's PBR would be classified as Category III.

2.2.4.) Alternative 4

This alternative would be a combination of alternatives 1 and 2. In essence, this alternative would consider both the incidental serious injury and mortality rate of all marine mammal stocks in a 20-day period and the annual incidental serious injury and mortality rate relative to PBR, and would classify fisheries according to the more conservative approach of the two. Category definitions would be as follows:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 30% of the PBR of that stock, OR it is highly likely that more than one marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Category II: Annual incidental mortality and serious injury in a stock from a given

fishery is between *some percentage* and 29% of the PBR of that stock, OR there is some likelihood that one marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Category III: Annual incidental mortality and serious injury in a stock from a given fishery is less than *some percentage* of the PBR of that stock, OR it is highly unlikely that any marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

In this alternative, the term *some percentage* would be used because NMFS considered a number of different percentage options for this alternative. Each one is discussed separately below.

As stated previously, the most critical dividing line is the one drawn between Category II and Category III fisheries. In order to simplify the analysis of options, the dividing line between Category I and II for the first part of the definition was set at 30% of PBR. This percentage is based on recommendations from participants at the Seattle working session, and on written comments received on the "Proposed Changes to the List of Fisheries". NMFS biologists also believe this to be a fairly conservative approach, and in our analysis there was only one or two additional fisheries added to Category I as a result of lowering the dividing line from *exceeding PBR* to *30% of PBR*.

This approach assumes that NMFS has fairly accurate information on both the abundance of a stock (in order to calculate PBR) and the current level of incidental serious injury and mortality due to commercial fishing per year and per 20-day period. In a few fisheries, both PBR and estimated fishing mortality are known with some degree of confidence. In these cases, fishing mortalities and serious injuries were calculated using data collected by observers. If observer data were not available, fishers' logbooks are used to estimate removal levels. However, it is assumed that logbooks provide only a minimum indication of total removal levels.

For some fisheries, NMFS must use its best estimate of fishing mortality and serious injury based on inferences from similar fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, and species and distribution of marine mammals in the area. This method of inferring levels of removals was also used under the section 114 regulations. In most of the Category III fisheries for which we have no updated information from which to support a change in category, the Category III designation would be maintained.

Also, reporting requirements under new section 118(e) of the Act require that fishers report only injuries and mortalities, and not information on fishing effort. This significantly reduces the information available to calculate takes rates per 20-days of fishing. This information will only be accurate for fisheries in which there are observers.

Comments received on this Alternative. Written comments were received on the "Proposed Changes to the List of Fisheries" from 10 different organizations. Four commenters supported this approach, recommending fisheries be categorized based on either the number of

serious injuries and mortalities per twenty days or impact of an annual serious injury or mortality rate relative to the stock's Potential Biological Removal (PBR) level. Five commenters supported the approach that fisheries be classified based solely on the impact of an annual serious injury or mortality from a stock relative to the stock's PBR level. One commenter objected to these alternatives, and supported the criteria used under regulations implementing section 114.

Options for setting Category dividing lines under Alternative 4.

Alternative 4a - 1% option:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 30% of the PBR of that stock, OR it is highly likely that more than one marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is between *1%* and 29% of the PBR of that stock, OR there is some likelihood that one marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Category III: Annual incidental mortality and serious injury in a stock from a given fishery is less than *1%* of the PBR of that stock, OR it is highly unlikely that any marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Alternative 4b - 5% option:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 30% of the PBR of that stock, OR it is highly likely that more than one marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is between *5%* and 29% of the PBR of that stock, OR there is some likelihood that one marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Category III: Annual incidental mortality and serious injury in a stock from a given

fishery is less than *5%* of the PBR of that stock, OR it is highly unlikely that any marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Alternative 4c - 10% option:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 30% of the PBR of that stock, OR it is highly likely that more than one marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is between *10%* and 29% of the PBR of that stock, OR there is some likelihood that one marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Category III: Annual incidental mortality and serious injury in a stock from a given fishery is less than *10%* of the PBR of that stock, OR it is highly unlikely that any marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

2.3.) Reporting Requirements (Definition of "Injury", "Serious Injury")

Statutory Language

New section 118(e) of the Act states that "the owner or operator of a commercial fishing vessel subject to this Act shall report all incidental mortality and injury of marine mammals in the course of commercial fishing operations ...". However, in determining the classification of fisheries and evaluating their success in achieving the zero mortality rate goal, only incidental serious injuries and mortalities may be considered. Therefore, NMFS must define the terms "injury" and "serious injury" in relation to reporting requirements for vessel owners and operators.

In part as a result of discussions with representatives of state and federal agencies, commercial fishers, congressional staffers, and members of the environmental community, NMFS has drafted a number of possible definitions for both terms, with one preferred alternative which would be useful both for incorporating data from reports received by fishers and for applying consistent standards to data collected and used by other NMFS monitoring programs..

2.3.1.) Alternative 1: Status Quo, or No Action Alternative

Under the section 114 interim exemption for commercial fisheries, NMFS issued no

regulatory definitions for either "injury" or "serious injury". Fishers were required to report all interactions: marine mammals "involved" in gear, harassed, injured or killed. There were no distinctions made regarding the severity of injuries sustained as a result of interactions with gear, or harassment of animals in order to deter them from gear or catch.

NMFS observer programs also collected data on type of interactions marine mammals with commercial fishing gear. However, observers generally provided more detailed and descriptive reports of encounters, which were then interpreted by data analysts to determine whether the injury observed was potentially lethal. Each fishery generally used different standards of defining injury when calculating take rates for the fishery; however, in most cases, if an animal was released alive it was considered non-injured.

For the purposes of implementing the requirements of new section 118 of the Act, however, the status quo alternative would be unacceptable as it does not provide a consistent and widely recognized definition of injury or serious injury. In order to calculate rates of serious injury and mortality for each fishery, NMFS must establish definitions for "injury" (the incidence of which is required to be reported by all vessel owners and operators) and "serious injury" (required to determine which injuries should be considered by NMFS in calculating rates of serious injury and mortality for each fishery).

2.3.2.) Alternative 2: Proposed Regulations (Preferred Action)

After considerable discussions on this topic with NMFS biologists, contractor- and NMFS-employed observers, marine mammal stranding network members, and fishers, it would seems appropriate to define "injury" in very exact terms which could be applied consistently across many different situations. Therefore, the following definitions are proposed in this alternative:

> Injury: a wound, or other physical harm. Signs of injury to a marine mammal include, but are not limited to, visible blood flow, loss of or damage to an appendage or jaw, inability to use one or more appendages, asymmetry in the shape of the body or body position, any noticeable swelling or hemorrhage, laceration, puncture or rupture of eyeball, listless appearance or inability to defend itself, inability to swim or dive upon release from fishing gear, or signs of equilibrium imbalance. Any animal that ingests fishing gear or requires assistance to escape from entanglement in fishing gear will also be considered injured regardless of the absence of any wound or other evidence of an injury.
>
> Serious Injury: any injury that will likely result in mortality.

By having a detailed definition of "injury", vessel owners and operators, as well as NMFS biologists, fishery observers, and marine mammal stranding network members would be able to apply this definition consistently when reporting injuries incidental to commercial fishing operations. The more general definition of "serious injury" would give NMFS flexibility in determining which set of injuries should be considered serious.

A disadvantage to this alternative would be that for many internal injuries (e.g., crushed bones, internal hemorrhaging), there are no outward signs of injury. This is especially true for trauma and shock caused by entanglement or accidental vessel strikes. In these cases, the injury is not apparent to even the most experienced marine mammal biologists or veterinarians, even though these types of injuries may eventually lead to death by either direct or indirect means. For example, a marine mammal traumatized during entanglement may appear to be uninjured, and hence returned to the sea without further consideration. Unfortunately, the animal may then suffer from an inability to feed or respond to predators, resulting in latent death due to the initial interaction with the fishing gear. These types of injuries are difficult to interpret and to quantify, and so any entanglements or ingestion of fishing gear would be considered to be an "injury" regardless of visible evidence of a wound or other injury.

2.3.3.) Alternative 3

This alternative for defining "injury" and "serious injury" would exclude entanglements from the definition of injury, thereby eliminating the requirement to report interactions with gear in which the animal was released alive from the net, without other signs of injury, even though the release required assistance from either the vessel owner, operator or crew member, or other individual (such as an observer). This alternative assumes that all animals released alive (without other signs of injury) are essentially unharmed and unaffected by the interaction.

The definitions of "injury" and "serious injury" for Alternative 3 are as follows:

> Injury: a wound, or other physical harm, caused by a commercial fishing operation that results in visible blood flow, loss of or damage to an appendage or jaw, inability to use one or more appendages, asymmetry in the shape of the body or body position, any noticeable swelling or hemorrhage, laceration, puncture or rupture of eyeball, animal appearing listless or unable to defend itself, inability of animal to swim or dive upon release from fishing gear, or signs of equilibrium imbalance.
>
> Serious Injury: any injury of a marine mammal during a commercial fishing operation that will likely result in mortality of that marine mammal.

One disadvantage to this alternative would be that entanglements with gear would go unreported, thereby making unavailable what could be valuable information about rates of marine mammal entanglements with fishing gear. Another disadvantage lies in the assumption that all animals released alive are not injured. As discussed in Alternative 2, marine mammals may suffer injuries from interactions with vessels or gear that may not be immediately obvious.

2.4.) Zero Mortality and Serious Injury Rate

Statutory Language

New section 118(b)(1) of the Act states that it is the immediate goal of section 118 "that

the incidental mortality or serious injury of marine mammals occurring in the course of commercial fishing operations be reduced to insignificant levels approaching a zero mortality and serious injury rate within 7 years of enactment of this section." The Act does not attempt to define this goal any more specifically with regard to what a "zero mortality and serious injury rate" (ZMRG) refers to in biological and/or numerical terms. However, it does state that NMFS should review the progress of all commercial fisheries, by fishery, towards achieving the ZMRG, and fisheries must reach the ZMRG within by April 30, 2001. Moreover, fisheries which maintain insignificant serious injury and mortality levels approaching a zero rate will not be required by the Act to further reduce their take rates. For these reasons, the ZMRG must defined and must be 1) quantifiable and, 2) be related to individual fishery rates of serious injury and mortality.

Definition

Two definitions of the ZMRG have been considered. The definition in the preferred action would be numerically based and thus would provide clear and objective differentiation between those fisheries that have met the ZMRG and those that have not. The definition that was considered but not incorporated in the preferred action would be more theoretical and would allow NMFS to determine whether fisheries have attained the ZMRG based on circumstances particular to that fishery.

2.4.1.) Alternative 1: Proposed Definition (Preferred Action)

Based on the 1994 amendments to the MMPA, the legislative history of the MMPA, and comments received by NMFS on the ZMRG, Nthis alternative would consider that fishery has reached the ZMRG when, collectively with other fisheries, it is responsible for the annual removal of (1) 10% or less of any marine mammal stock's PBR level, or (2) more than 10% of any marine mammal stock's PBR level, yet the fishery by itself is responsible for the annual removal of one percent or less of that stock's PBR level.

An advantage to this alternative is that it would provide a clear, quantitative goal. In addition, this alternative would retain the stock-based approach contained in the Act and would consider the impacts of several fisheries on the same stock of marine mammals. Finally, the MMPA Task Force and most participants at the working sessions were in support of this type of alternative. The main disadvantage of this alternative would be that existing technology may not allow attainment of the goal without fairly extensive restrictions on fishering operations.

2.4.2.) Alternative 2

This alternative for defining the ZMRG would be based upon the legislative history of the MMPA regarding reducing mortality of small cetaceans in the yellow-fin tuna fishery in the Eastern Tropical Pacific Ocean. In 1981, Congress expressed it was not the intent to shut down

the tuna fishery and that the ZMRG could be achieved in that fishery by requiring the use of the best marine mammal safety techniques and equipment that are economically and technologically practicable (H.R. Rep. 228, 97th Cong., 1st Sess. 13 (Sept. 16, 1981). If a similar rationale were adopted for other fisheries, this alternative would define ZMRG as"the reduction of the annual number of incidental mortalities and serious injuries in each fishery to insigificant levels approaching a zero mortality and serious injury rate; at a minimum, this requires that the rate of incidental mortality and serious injury is at the lowest level that is technologically and economically practicable."

The major advantage to this approach is that the regulations would have enough flexibility to consider fishery impacts on marine mammal stocks on a case-by-case basis, and individual determinations as to whether a particular fishery had me the ZMRG would be made. There are major disadvantages: first, that "technologically and economically practicable" is not defined in the MMPA and second, that, similar to problems with setting marine mammal incidental take limits in the yellowfin tuna fishery, a "moving target" take limit could be set that would not give fishers a clear goal to attain. Perhaps the biggest drawback to this alternative is that, even in the case of the ETP yellowfin tuna fishery, Congress essentially abandoned this approach beginning in 1984, when it set a statutory quota of 20,500 dolphins. Then, in 1992, Congress enacted the International Dolphin Conservation Act by which it reduced the quota from 20,500 to 1000 for 1992, and 800 from January 1, 1993 through March 1, 1994. It also required that, for each year after 1992, dolphin mortality in that fishery must decrease by a "statistically significant amount." This requirement resulted in a total dolphin mortality of 115 in 1993, and 114 in 1994. These statutory limits on dolphin mortality indicate that Congress no longer considers the use of the best "technologically and economically practicable" methods and gear to satisfy the ZMRG, even in the case of the ETP yellowfin tuna fishery.

3.0.) DESCRIPTION OF THE AFFECTED ENVIRONMENT

This chapter is divided into two parts: status of protected marine populations (marine mammals, sea turtles, seabirds, and ESA-listed salmon), and a description of active U.S. commercial fisheries with estimates of incidentally taken marine populations. This information is intended to update information presented in the Draft and Final Legislative Environmental Impact Statements for NMFS' Proposed Regime to Govern Interactions between Marine Mammals and Commercial Fisheries (NMFS, 1991; NMFS, 1993).

3.1.) Status of Protected Marine Populations

3.1.1.) Marine Mammals

The status of marine mammal populations in waters under the jurisdiction of the United States has been discussed in great detail in the draft Stock Assessment reports made available by NMFS in August, 1994 (see 59 FR 40527, August 9, 1994). These Stock Assessment reports are in the process of being finalized and should be available to the public on or after March 1, 1995. Therefore, the information presented in the draft Stock Assessment reports is incorporated here by reference.

3.1.2.) Sea Turtles

The loggerhead, hawksbill, green, Kemp's ridley, and leatherback turtles are all listed as endangered species under the Endangered Species Act. The distribution, abundance, and mortality of sea turtle populations was discussed thoroughly in the Draft Legislative Environmental Impact Statement prepared in 1991. Recovery plans were developed for all species of sea turtle that resides in U.S. waters; these documents were prepared between 1991 and 1993 and provide more current information on sea turtle species. More current information on sea turtles is not readily available.

3.1.3.) Sea Birds

The estimated size of selected sea bird populations in waters under the jurisdiction of the United States was presented in the Draft Legislative Environmental Impact Statement (NMFS, 1991). The DLEIS also presents information on the relative susceptibility of sea bird species to entanglement in fishing gear. With the exception of the marbled murrelet population, no new information was available on sea bird populations at the time of this report. Therefore, the information presented in the DLEIS is incorporated here by reference.

Marbled murrelet. The marbled murrelet was declared a threatened species under the Endangered Species Act in 1992. This species ranges from California to Alaska and nests in old-growth forests along the coast. Washington has a maximum breeding population of approximately 5,000 birds, while the population size in California and Oregon are 2,000 birds.

Threats to the continued existence of this species are believed to include the loss and modification of old-growth forests, apparent mortality associated with current gill-net operations off the Washington coast, and oil spills.

The fisheries in Alaska that are known to take marbled murrelets are the Prince William Sound salmon drift gillnet and the Alaska Peninsula salmon drift gill net. By comparison it has been suggested that the gill net fishery in Washington may negatively affect the marbled murrelet populations there.

In 1994, an observer program for the Puget Sound non-treaty sockeye gill net fishery was begun. Preliminary results indicate mortalities of common murres, rhinoceros auklets, common loons, yellow-billed loons and pigeon guillemots, but do not include mortalities of marbled murrelets. It is important, however, to note that unobserved gill net fisheries exist in Puget Sound and that only 6.2% of the sockeye gill net fishery was observed (information for this section from Erstad et al., 1994; Department of the Interior, 1992).

Incidental mortality in observed fisheries is discussed below and is species-specific information is included in Appendix B. It should be noted, however, that incidental sea bird mortalities were not recorded consistently; thus, the lack of reported incidental mortality in an observed fishery does not ensure that no mortalities occurred.

3.1.4.) Salmonids

In recent years, because of the critically low population sizes of some salmon species, certain salmon stocks in the Pacific Northwest have been listed under the Endangered Species Act. This has resulted in a reduction of fishing effort in some areas. Bycatch of listed salmon stocks during fishing operations targeting other stocks is likely to continue to be a major issue for the fishers of northern California, Oregon, and Washington during the foreseeable future.

Any regulation that restricts fishing to prevent the serious injury or mortality of marine mammals is likely to decrease, not increase, the take of protected salmonid species. Thus, this issue is not discussed further.

3.2.) Description of Active U.S. Commercial Fisheries and Impacts on Protected Marine Populations

Information on fisheries described in this Environmental Assessment updates those descriptions presented in the Draft Legislative Environmental Impact Statement prepared to accompany the proposed legislation for the Marine Mammal Protection Act Amendments of 1994: the DLEIS is incorporated by reference and can be used to gain additional information on United States fisheries. Information on individual and groups of fisheries presented in this Environmental Assessment was collected by examination of federal and state fishery management plans, by examination of relevant publications, by contacting state fishery licensing offices, and by conducting telephone interviews with knowledgeable parties.

In most cases, fisheries have not changed significantly since the DLEIS was prepared in 1991. Notable exceptions are declines in effort in the Pacific Northwest salmon fisheries and an

increase in effort in the Western Pacific pelagic longline fishery. Overall, the major change in U.S. fisheries over the past few years has been a general decrease in participation. In addition, many state and fishery management plans recognize that fishing effort for most fisheries should be reduced.

Additional information on specific fisheries can be found in Appendix A.

The draft and final Stock Assessment reports summarize incidental take data for all marine mammal stocks in waters under U.S. jurisdiction. The information presented in the draft and final Stock Assessment reports is incorporated here by reference. The following section will also discuss impacts on marine mammals, as well as other protected marine populations (sea turtles, sea birds, and ESA-listed salmon). Each fishery summary will identify the fishery as it is listed in the proposed list of fisheries under section 118 of the MMPA. It will include its previous classification scheme under the Interim Exemption program, and a summary of incidental serious injury and mortality (i.e., take) data available. In cases where there are observer data available for a fishery, these data will be presented in terms of the fishery's average annual take by species. When observer data are available, the observed take is extrapolated to the entire fishery, and it is the extrapolated value presented in this Environmental Assessment (a full listing of observer data by year is presented in Appendix B, for 1989 to 1993). In fisheries for which no observer programs were in place, logbook data and/or other types of incidental take reports (i.e., Category III reports, stranding records) will be presented where available. Logbook data are complete for the years 1990 to 1992. Logbook data for 1989 was incomplete, and not all of the 1993 reports have been processed. Category III reports are presented where available up to 1993. Typically, the estimated takes reported below are average takes during those years in which the program was active.

Indications of fishery-induced mortality of marine mammals may be gleaned through examination of the frequency and location of stranded marine mammals. Indications that a fishery interaction caused the mortality include gill net marks on the carcass, missing fins or tail where it is obvious that the appendages have been cut off, or net or line wrapped around an appendage. Although the cause of the stranding typically cannot be traced to a specific fishery, the cause of death can often be attributed to a specific gear type (lobster pot fishery vs stop nets). Stranding information and other anecdotal accounts may be used to describe fishery interactions with marine mammals when other data are not available.

For all tables, "*" indicates a strategic stock, as identified in the Final Stock Assessment reports, "N/A" indicates a value is not applicable, and "N/C" indicates that a value is not computable.

3.2.1.) U.S. East Coast and Gulf of Mexico

3.2.1.1.) Gillnet Fisheries

Set and drift gillnet fisheries exist along the entire coast of the Atlantic Ocean and Gulf of Mexico, both along the outer coast and in inlets, sounds and bays. Some states, notably Florida and Texas, have banned the use of gillnets in coastal waters. The use of gillnets in Georgia coastal waters is severely restricted. A moratorium on all gillnets is being considered by other

states along the Gulf of Mexico, but there are a considerable number of people who oppose this idea.

Gillnet fisheries exist for a multitude of species in the Atlantic Ocean and Gulf of Mexico. Fish such as mackerel, swordfish, sturgeon, croaker, menhaden, black drum, and shad, among many others, are harvested using gillnets.

The mesh size used in set and drift gillnet operations varies from 3.5 in to 22 in (perch gillnet and swordfish gillnet, respectively). The smaller mesh sizes are used predominantly in inshore waters and are subject to minimum mesh size limits set by individual states. The larger mesh size is used for shark or swordfish gillnetting which is typically done offshore.

Many of the gillnet fisheries that occur in the Atlantic Ocean and the Gulf of Mexico focus effort in state waters and are thus subject to state management. Management of fish stocks is difficult because the stocks often migrate north and south along the coast, which subjects the same fish stock to multiple management regimes in different parts of its range. A number of interstate fishery management plans have been developed, but the plans do not cover all species and differences in managing stocks still exist between states.

In contrast to the fisheries in the Pacific Ocean, Atlantic Ocean and Gulf of Mexico fisheries are typically licensed solely by gear type, and not by a combination of gear type and target species. This, and the fact that many fishers may use two or more gear types simultaneously (for instance, gillnet and hand line), makes effort determinations in these fisheries difficult (South Atlantic Fishery Management Council, 1985; U. S. Department of Commerce, 1993). Proposals under development for limited access management of fisheries for Atlantic highly migratory species (sharks, swordfish, tunas) may resolve this problem.

The New England multi-species sink gillnet fishery . This fishery, also called the Gulf of Maine sink gillnet fishery, operates along the periphery of the Gulf of Maine from the lower Bay of Fundy to Cape Cod in water to 60 fathoms deep. In recent years, more effort has been focused in offshore waters. The participation in this fishery has declined in recent years from 399 to 341 in 1993. The fishery operates year round but peaks in spring and from October to February. This fishery harvests all species defined in the Multispecies Fishery Management Plan and spiny dogfish. Management of this fishery is quite complex, and involves seasonal area closures and minimum mesh sizes.

Marine mammals. This fishery was originally grouped with the Gulf of Maine mackerel surface drift gillnet fishery and classified as a Category I fishery in the list of fisheries in 1990. In 1992, the fisheries were split yet both remained in Category I. Data on incidental takes of marine mammals were obtained both by observers placed on random vessels and fisher self-reporting. Observer data are presented in Appendix B and summarized below, with respect to PBR:

Species	Avg. Annual Take (Extrapolated from Observer Data, 1990-1993)	PBR	Takes / PBR
Atl. white-sided dolphin, Western North Atlantic	136.2	125	> PBR
Gray seal, Northwest North Atlantic	4.5	122	0.04
Harbor porpoise *, Gulf of Maine/Bay of Fundy	1875	403	>PBR
Harbor seal, Western North Atlantic	476.0	1729	0.28
Minke whale, Canadian east coast	2.5	21	0.11
Unid. species	2.5	--	

The rate of marine mammal incidental serious injury and mortality for this fishery is 1.70 per 20 days.

Sea turtles. There are no records of sea turtle mortality incidental to this fishery.

Sea birds. Large numbers of seabirds are incidentally taken in the Gulf of Maine groundfish sink gillnet fishery. Shearwaters (great, sooty, and unidentified shearwaters) have the highest total estimated incidental mortality. The average number of sea birds taken per year for 1989 through 1993 is 4062. A breakdown of incidental mortality by species in observer data is provided in Appendix C.

The Gulf of Maine mackerel, herring, and menhaden surface drift gillnet fishery. This fishery no longer operates.

Marine mammals. This fishery was originally grouped with the Gulf of Maine groundfish sink gillnet fishery and classified as a Category I fishery in the list of fisheries in 1990. In 1992, the fisheries were split yet both remained in Category I. There were no incidental takes reported in fisher logbooks for 1992.

The pelagic swordfish, tuna, and shark drift gillnet fishery. In 1991, regulations were enacted to reduce fishing mortality on the swordfish stock by setting the fishing quota into equal semi-annual parts. This action focused the vast majority of the fishing effort in winter and

spring, whereas the fishing effort prior to 1991 was more evenly distributed across the year. Since the regulations were implemented in 1991, typically 12-15 of the 35 registered vessels have actively participated in this fishery. One vessel out of Florida typically fishes off the Carolinas during the winter; the remainder of the fishing effort occurs in the Atlantic north of Cape Hatteras during July. As of 1993, drift gill nets for this fishery must be under 2.5km long. This fishery operates at night to take advantage of the fact that swordfish migrate to the surface at night to feed. The gillnet used in this fishery has an 22 in stretched mesh. The fishery is managed by the Atlantic Highly Migratory Species Fishery Management Plan and the International Commission for the Conservation of Atlantic Tunas (NMFS, 1991; NMFS, 1994b; U. S. Department of Commerce, 1993; Code of Federal Regulations, 1993; C. Rogers, pers. comm.).

Marine mammals. This fishery has been included in the list of fisheries as a Category I fishery since 1991. Data on incidental takes of marine mammals were obtained both by observers placed on random vessels and fisher self-reporting. Observer data are presented in Appendix B and summarized below, with respect to PBR:

Species	Avg. Annual Take (Extrapolated from Observer Data, 1989-1993)	PBR	Takes / PBR
Atl. white-sided dolphin, Western North Atlantic	3.2	125	0.03
Beaked whale *	34.2	N/A	N/C
Bottlenose dolphin - offshore stock *	52.6	85	0.62
Common dolphin, Western North Atlantic *	424.2	32	exceeds PBR
Harbor porpoise, Gulf of Maine/Bay of Fundy *	0.8	403	< 0.01
Humpback whale *	1.2	10	0.12
Pilot whale, both long- and short-finned stocks *	60.6	4-28	exceeds PBR
Risso's dolphin	59.4	107	0.56

Species	Avg. Annual Take (Extrapolated from Observer Data, 1989-1993)	PBR	Takes / PBR
Spinner dolphin	1.0	N/A	N/C
Spotted dolphin *	22.6	11	exceeds PBR
Striped dolphin	27.0	73	0.37
Right whale*	1.2	0.00	exceeds PBR
Sperm whale *	1.2	1	exceeds PBR
Unid. dolphin	19.2	--	--

Observer data for this fishery during years of high observer coverage were used to extrapolate expected kills in years where the observer coverage were low (see Appendix B). Temporal stratification of the data was conducted to correct for the change in seasonal fishery effort that resulted from the regulatory change in 1991.

The rate of marine mammal incidental serious injury and mortality for this fishery is 34.39 per 20 days.

Sea turtles. Observer reports indicate that one loggerhead sea turtle was observed taken incidental to this fishery in 1990, leading to an estimated total take of 14 loggerhead turtles.

Sea birds. Observer reports indicate that one unidentified shearwater mortality occurred in this fishery between the years 1989 and 1993, leading to an estimated total annual take of 11 unidentified shearwaters.

The Mid-Atlantic coastal gillnet fishery. The mid-Atlantic coastal gillnet fishery is a multispecies fishery that extends throughout the mid-Atlantic coast. One estimate of the number of participants is 655; this number may, however, be an underestimate as between-state differences in reporting permitted fishers can result in biased total counts of participants in interstate fisheries. The minimum mesh size of the gill nets used in this group of fisheries varies from 3.5 in. for perch in Connecticut to 5 in. for shad. The seasons that fish are harvested vary between species and between states, especially for those stocks that migrate north and south along the Atlantic coast. Most coastal fisheries are managed by individual states or by interstate fishery management plans. Management of the fisheries is accomplished through time-area closures, minimum mesh sizes, minimum size limits, and quotas. Few limited-entry programs have been implemented to date. Maryland, however, has recently established a moratorium on all new gill net licenses and a moratorium on shad gill netting in bays and estuaries.

For those states in which information was available, qualitative estimates of effort has not

changed much over the past few years. One exception to this was the number of general Virginia gill net licenses, which decreased from over 5,300 to 3,200 due to the elimination of recreational fishers from the fishery.

The black drum fishery in the mid-Atlantic utilizes 3 to 5 in. stretched mesh drift and bottom gillnets in bays and inshore waters between New Jersey and Virginia (inclusive; range of fishery may extend further). American shad and weakfish are also targeted in this fishery.

The menhaden gill net fishery occurs during the summer and fall in bays and inshore waters in the mid-Atlantic. Stretched mesh size for this fishery ranges from 2.75 to 4 in., depending on state regulations (NMFS, 1994; J. Travelstead, pers. comm.; P. Jensen, State of Maryland, pers. comm.; State of Connecticut Department of Environmental Protection, 1994; NMFS, 1991; Peterson, 1994).

Marine mammals. This fishery was originally grouped with the Gulf of Maine, Southern New England, and South Atlantic gillnet fisheries and classified as a Category III fishery in 1990. In 1992, it was split off and recategorized as a Category II fishery. There were no reported takes of marine mammals in fishery logbooks in 1992. Stranding data indicate that there are interactions with certain components of this fishery. These data are summarized as follows:

Species	Avg. Annual Take (from Stranding Data, 1991-1993)	PBR	Takes / PBR
Humpback whale *	4	10	0.4
Bottlenose dolphin - U.S. mid-Atlantic coastal stock *	15	25	0.6
Harbor porpoise, Gulf of Maine/Bay of Fundy stock *	65	403	0.16

The NMFS Northeast Fisheries Science Center has been focusing observer effort on this fishery from 1993 to the present, but have not recorded any interactions. Therefore, classification of this fishery may be based on the necropsy results of the harbor porpoise stranded in the mid-Atlantic in 1993-94. Of the 68 animals examined, 41 (59 percent) were in good enough condition to be evaluated as to whether or not they had been involved in a human interaction. Twenty-one of the 41 (51 percent) exhibited no signs of human interaction, and 19 (46 percent)

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

were evaluated as having been involved in human interaction, based in each case on the presence of net marks. Therefore, approximately half of the stranded harbor porpoise in that area showed signs of having been involved in human interaction believed to be some kind of net gear. The average annual take of harbor porpoise in this fishery is then calculated at a minimum of ten animals, which is 2.5 percent of PBR.

The rate of serious injury and mortality of marine mammals in this fishery cannot be calculated because the effort in the fishery is unknown. However, based on the evidence from stranding records, it is likely that at least one marine mammal is taken in this fishery per 20 days.

Sea turtles. No incidental mortalities of sea turtles have been reported by observers placed on coastal gill net vessels in the mid-Atlantic. There is, however, an overlap of the seasonal peak in sea turtle strandings and the timing of gillnet, trawl, pot and pound net operations in state waters along the Atlantic coast between Rhode Island and North Carolina. The high number of strandings that typically occur in June may be related to captures by the active pound net fishery or the black drum fishery. For some strandings, a particular fishery can be directly implicated; the cause of other strandings may be the result of any, all or none of the active gill, trawl, pot, or pound fisheries in the area (Peterson, 1994).

Sea birds. No incidental mortalities of sea birds have been reported by observers placed on coastal gill net vessels in the mid-Atlantic.

South Atlantic shark gillnet fishery. This fishery uses large mesh (18 in.) to capture sharks in nearshore waters in late summer and early autumn. Approximately 10 participants are active in this fishery which targets the blacktip shark. The practice of "finning" or retaining the highly valuable shark fins and discarding the carcass has been prohibited in this fishery. The fishery is managed primarily by setting catch restrictions according to the Fishery Management Plan for Sharks (U. S. Department of Commerce, 1993; Code of Federal Regulations, 1993).

Marine mammals. This fishery was originally defined as the Florida East Coast shark gillnet fishery and classified as a Category III fishery in the 1990 list of fisheries. This fishery was reclassified as a Category II fishery in 1991, and redefined as the South Atlantic shark gillnet fishery in 1993. There were no Category III reports of incidental takes in this fishery in 1990, and no reported takes in logbooks in 1991 or 1992.

A limited observer program was conducted for this fishery between April and October, 1992 and between July and September, 1993. One bottlenose dolphin capture was observed in 1992 and no mortalities were observed in 1993. Although the decrease in mortality was speculated to be a result of modifications made to fishing gear to limit bycatch of marine mammals, the short period of observation time makes these results inconclusive.

The rate of marine mammal incidental serious injury and mortality per 20 days for this fishery is unknown.

Sea turtles. This fishery has had a very limited observer program during some years.

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

There are no reported incidental mortalities of sea turtles in this fishery.

Sea birds. This fishery has had a very limited observer program during some years. There are no reported incidental mortalities of sea birds in this fishery.

Other gillnet fisheries In addition to the gill net fisheries described above, there are several other gill net fisheries that operate in the Atlantic Ocean and Gulf of Mexico. Inshore gill nets are used in bays and nearshore waters all along the Atlantic Coast. Some of these fisheries, especially the black drum gill net fishery, may be responsible for the high number of sea turtle strandings described under the "Mid Atlantic gill net" section. Approximately 4000 vessels use gill nets in the South Atlantic and the Gulf of Mexico, and about 270 vessels use gill nets specifically for mackerel on the east coast of Florida. Coastal bottlenose dolphin stocks are known to occasionally interact with South Atlantic and Gulf of Mexico gill net operations, but the precise magnitude of the interactions is unknown. Between 1989 and 1994, approximately 9 mid-Atlantic coastal bottlenose dolphins and 7 coastal Gulf of Mexico bottlenose dolphins are subject to fishery-related mortality, some of which can be attributed to gillnet interactions. Because different gillnet fisheries may operate simultaneously, it is sometimes difficult to determine which fishery is responsible for the mortalities (Peterson, 1994; NMFS unpublished stranding data, NMFS 1994).

It has been demonstrated that observed gillnet fisheries capture sea birds incidental to normal fishing operations. It is reasonable, therefore, to assume that gillnet operations for which no observer data is available also have incidental captures of seabirds.

Sea turtles are captured incidental to at least some coastal gillnet fisheries. It is reasonable, therefore, to assume at least a small level of take for most gillnet fisheries.

3.2.1.2.) Trawl Fisheries

Several trawl fisheries operate in offshore areas of the Atlantic Ocean and the Gulf of Mexico. A trawl fishery for mackerel operates in the Gulf of Maine, along the mid-Atlantic and in the Gulf of Mexico. Trawl fisheries also harvest squid, butterfish, herring, sea scallops and groundfish. Trawl fisheries for finfish, squid, and scallops are managed under Federal Fishery Management Plans. A large trawl fishery for shrimp, with approximately 18,000 commercial participants, exists in the South Atlantic and the Gulf of Mexico.

The Atlantic mid-water trawl fishery. This fishery has been renamed to combine the "Mid-Atlantic mackerel trawl" and "Mid-Atlantic squid trawl fisheries".

The mid-Atlantic mackerel trawl occurs along the mid-Atlantic shelf region from Cape Hatteras to southern New England. The commercial fishery for mackerel is open from December through May. Atlantic mackerel stocks are currently believed to be under-utilized. Out of 277 vessels that landed mackerel in 1993, 53 vessels accounted for 95% of the mackerel trawl catch.

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

This fishery is managed under the Fishery Management Plan for Atlantic Mackerel, Squid and Butterfish fisheries (NMFS, 1991; U. S. Department of Commerce, 1993).

Squid (*Loligo* and *Illix* sp.) can be caught by the mid-Atlantic squid trawl fishery from New Brunswick to the Gulf of Mexico, but commercial quantities are concentrated from southern Georges Banks to Cape Hatteras. The majority (81% in 1992) of the *Loligo* catch was taken between October and April, while most *Illex* is harvested between June and October. Although there are approximately 380 vessels that landed squid in 1993, the majority of the catch is made by a small proportion of vessels: 18 vessels accounted for 99% of the *Illex* catch, and 125 vessels accounted for 90% of the *Loligo* catch. In 1992, 87% of the harvest of Loligo occurred in statistical areas 616, 537, 613, 622, 612, and 526, while areas 622, 626 and 632 accounted for 96% of the harvest. A main concern for this fishery is the large amount of bycatch (swordfish and bluefish, among others) in trawls made for *Loligo* (U. S. Department of Commerce, 1993; NMFS, 1991; Mid-Atlantic Fishery Management Council, 1994).

Marine mammals. The mackerel trawl fishery has been classified as a Category II fishery since 1990. Incidental take data were obtained from logbooks for 1990 to 1992. The squid trawl fishery was originally classified as a Category II fishery in 1990. In 1992, it was reclassified as a Category III fishery. Incidental take data for both fisheries were obtained from logbooks. These data are summarized below for each individual fishery:

Mackerel trawl fishery

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes / PBR
Atl. white-sided dolphin	0.33	113	< 0.01
Pilot whale *	4	4-28	0.14 - PBR
Unid. small cetacean	0.33	--	

Squid trawl fishery

Species	Avg. Annual Take (from Logbooks, 1990-1991)	PBR	Takes / PBR
Pilot whale *	1.5	4-28	0.05 - 0.38

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

The rate of marine mammal incidental serious injury and mortality for the combined mackerel and squid trawl fisheries is 0.02 per 20 days.

Sea turtles - mackerel trawl. There are no known sea turtle mortalities incidental to the unobserved mackerel trawl fishery. There is, however, an overlap of the seasonal peak in sea turtle strandings and the timing of gillnet, trawl, pot and pound net operations in state waters along the Atlantic coast between Rhode Island and North Carolina. The high number of strandings that typically occur in June may be related to captures by the active pound net fishery or the black drum fishery. For some strandings, a particular fishery can be directly implicated; the cause of other strandings may be the result of any, all or none of the active gill, trawl, pot, or pound fisheries in the area (Peterson, 1994).

Sea birds - mackerel trawl. There are no known sea bird mortalities incidental to the unobserved mackerel trawl fishery.

Sea turtles - squid trawl. No known sea turtle mortalities have resulted incidental to this unobserved fishery. There is, however, an overlap of the seasonal peak in sea turtle strandings and the timing of gillnet, trawl, pot and pound net operations in state waters along the Atlantic coast between Rhode Island and North Carolina. For some strandings, a particular fishery can be directly implicated; the cause of other strandings may be the result of any, all or none of the active gill, trawl, pot, or pound fisheries in the area (Peterson, 1994).

Sea birds - squid trawl. No known sea bird mortalities have resulted incidental to this unobserved fishery.

The North Atlantic bottom trawl fishery. This fishery is renamed from the "North Atlantic and Mid-Atlantic groundfish otter trawl fishery". This fishery operates in offshore waters in the Gulf of Maine and the mid-Atlantic Ocean. Targeted fish species include Atlantic cod, pollock, hake in the North Atlantic, and flounder, scup and goosefish in the mid-Atlantic. This fishery, which had 1056 participants in 1992, is regulated by the New England Multispecies Fishery Management Plan and the Summer Flounder Fishery Management Plan through restrictions on mesh size and minimum landing size, and by seasonal closures. Currently, 14 of the 25 species harvested in this fishery are considered over-utilized; some mesh sizes are expected to increase.

Marine mammals. This fishery has been classified as a Category III fishery since 1990. Data on incidental takes of marine mammals were obtained both by observers placed on random vessels and fisher self-reporting. Observer data are presented in Appendix B and summarized below, with respect to PBR:

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Species	Avg. Annual Take (Extrapolated from Observer Data, 1989-1993)	PBR	Takes / PBR
Atl. white-sided dolphin	25	113	0.22
Bottlenose dolphin - U.S. mid-Atlantic coastal stock*	25	25	equals PBR
Pilot whale*	25	4-28	0.89 - exceeds PBR
Striped dolphin	50	73	0.68

It should be noted, however, that all takes but those of the striped dolphins were of animals known or suspected to have been dead prior to being caught in the bottom trawl gear.

The rate of marine mammal incidental serious injury and mortality for this fishery (including those animals known or suspected to have been dead prior to capture) is 0.04 per 20 days.

Sea turtles. Based on observer records from 1989 to 1993, this fishery takes an average of 30 loggerhead turtles annually. Although the majority of interactions occur in the waters off North Carolina and southern Virginia in the summer flounder fishery, the overlap in distribution of sea turtles and bottom trawl fisheries suggest that turtles may be captured at least as far north as Delaware Bay (Peterson, 1994).

Sea birds. No known sea bird mortalities have resulted incidental to this fishery.

The South Atlantic, Gulf of Mexico shrimp trawl fishery. A large trawl fishery for shrimp exists in the South Atlantic and the Gulf of Mexico. . Approximately 18,000 vessels participate in the commercial shrimp trawl fishery (number of resident shrimp permits by state for those states for which information was collected: North Carolina: 7455, Georgia: 400, Texas: 1377, Alabama: 1119, Mississippi: 1338) A small proportion of these vessels target red shrimp in offshore waters; otherwise, the majority of the fishery takes place in nearshore waters. This fishery is managed by the Fishery Management Plan for the Gulf of Mexico, however, because much of the effort in the fishery is focused in nearshore waters, the fisheries are primarily regulated by individual states. Much of the inshore fishery in the Gulf of Mexico occurs in the coastal waters off Texas and Louisiana.

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

The fishery operates between May and December along the south Atlantic coast and year round in the Gulf of Mexico, with slack periods in the coldest months. Fishing seasons differ somewhat between states in the south Atlantic.

Several management concerns exist for this fishery. Because of the small mesh size and strong inshore component of this fishery, there is a considerable problem with bycatch of commercial finfish, especially juvenile commercial finfish. The shrimp fishery also has a large bycatch of coastal sharks; prior to the moratorium on finning this practice was used on many incidentally taken sharks.. The inshore fishery harvests a large proportion of juvenile shrimp; plans are currently being implemented to reduce this harvest. Incidental capture of sea turtles is also a major concern. The Fishery Management Plan indicates that enforcement of current regulations is a concern as well (Gulf of Mexico Fishery Management Council, 1994; U. S. Department of Commerce, 1993; State of North Carolina, 1994; G. Rogers, pers. comm.; State of Texas, 1994; State of Alabama, 1994; State of Mississippi, 1994)

Marine mammals. This fishery has been classified as a Category III fishery since 1990. Data on incidental takes of marine mammals were obtained by Category III reports and are summarized below:

Species	Avg. Annual Take (Extrapolated from Category III reports, 1990 - 1993)	PBR	Takes / PBR
Bottlenose dolphin - U.S. mid-Atlantic coastal *	0.25	25	0.01

The rate of marine mammal incidental serious injury and mortality per 20 days for this fishery is unknown as effort data are unavailable. It is expected that there is a remote likelihood of more that 1 marine mammal take per 20 days.

Sea turtles. There is a considerable rate of incidental mortality of sea turtles in the south Atlantic and Gulf of Mexico shrimp trawl fisheries. Annual incidental mortality estimates are not available for all species; however, it is estimated that 225 green turtles, 160 leatherback turtles, and between 5000 and 50,000 loggerhead turtles are killed annually in the shrimp trawl fishery. Mortalities of hawksbill and Kemp's ridley turtles also occur, but the magnitude is unknown. It has been hoped that the use of Turtle Exclusion Devices (TEDs) would reduce the annual incidental mortality of turtles in this fishery.

In 1994, unprecedented numbers of dead sea turtles stranded along the coasts of Texas

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

and Louisiana. The stranding event coincided with a period of intensive nearshore shrimp trawling. The major causes of the strandings were determined to be 1) incorrect installation of TEDs by shrimpers, 2) improper use of TEDs by shrimpers, 3) incompatibility problems between TEDs and the net types they were used in, and 4) intensive "pulse" fishing in areas where high densities of turtles exist. (National Marine Fisheries Service and U.S. Fish and Wildlife Service, 1991a; National Marine Fisheries Service and U.S. Fish and Wildlife Service, 1991b; National Marine Fisheries Service and U.S. Fish and Wildlife Service, 1992a; National Marine Fisheries Service and U.S. Fish and Wildlife Service, 1992b; National Marine Fisheries Service and U.S. Fish and Wildlife Service, 1993).

Sea birds. No known sea bird mortalities have resulted incidental to this fishery.

Other trawl fisheries Other trawl fisheries that operate in the Atlantic, Caribbean, and Gulf of Mexico that are not described in the above general descriptions include but are not limited to bluefish, calico scallops, blue crab, and whelk. Incidental mortalities of marine mammals, sea turtles and sea birds have not been recorded for these unobserved fisheries, but based on comparisons with observed fisheries, at least low levels of take are expected.

3.2.1.3.) Pair Trawl Fisheries

The pair trawl fishery is a controversial fishery due to the extreme efficiency with which it harvests highly migratory species, all of which are either fully utilized or overutilized. The pair trawl fishery has a history of both marine mammal and sea turtle incidental mortalities.

The Atlantic, Caribbean, and Gulf of Mexico pelagic tuna and shark pair trawl fishery. This fishery is an experimental fishery that has been operating for at least 4 years. The number of participants in this fishery has declined between 1991 and 1994 from 17 pairs to 7 permitted pairs (15 vessels) in 1994. In 1994, however, only 4 of the 7 permitted pairs were active. The gear used in this fishery is large mesh (> 20 in) trawl net deployed between two vessels. Towing the net at different speeds allows the fishers to target species at different levels in the water column. The coordination between the two vessels requires experience and practice. Only those fishers who participated in the 1993 experimental fishery could receive permits in 1994. The pair trawl fishery occurs at night and typically consists of two trawls each night. The primary reason for fishing at night is stealth: the targeted species are capable of both detecting and swimming quickly away from trawl gear and fishing vessels during the day. The targeted species switched from swordfish to tuna in 1993. This fishery operated inshore of the continental shelf from the Hudson Canyon north to the Grand Banks in 1991. This fishery, while not under any official management plans, is monitored closely to determine the level of take of sea turtles and marine mammals (NMFS, 1994 a,b).

Marine mammals. This fishery was identified in 1992 and classified as a Category II

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

fishery. In 1993, it was reclassified as a Category I fishery. Data on incidental takes of marine mammals were obtained both by observers placed on random vessels and fisher self-reporting. Observer data are presented in Appendix B and are summarized below, with respect to PBR:

Species	Avg. Annual Take (Extrapolated from Observer Data, 1992-1993)	PBR	Takes / PBR
Bottlenose dolphin - offshore stock *	158	83	> PBR
Common dolphin *	64	32	> PBR
Pilot whale *	40	4-28	> PBR
Risso's dolphin	6	10	0.06

The rate of marine mammal incidental serious injury and mortality for this fishery is 3.04 marine mammals per 20 days.

Sea turtles. This fishery had one leatherback turtle incidental mortality in 1993, which extrapolates to 14 leatherback mortalities in 1993, or an average of 7 per year. The experimental fishery permit states that if the documented level of take exceeds 2 Kemp's ridley, 2 hawksbill, 2 green, 2 leatherback, or 10 loggerhead sea turtles, the fishery will be terminated and Section 7 consultation will be reinitiated (NMFS, 1994b).

Sea birds. No sea bird mortalities were reported incidental to this observed fishery.

3.2.1.4.) Purse Seine, Beach Seine, and Throw Net Fisheries

Purse seine, beach seine and throw net fisheries are active along the Atlantic and Gulf of Mexico coast. Purse seines are used to harvest primarily menhaden and sardines along the Atlantic and Gulf of Mexico coasts. There are approximately 10 vessels using purse seines to harvest menhaden in the north and mid-Atlantic, and approximately 50 vessels using this gear type to harvest menhaden in the Gulf of Mexico. Menhaden is regulated by the Atlantic States Marine Fisheries Commission and the Gulf States Marine Fisheries Commission. Beach seines are used by approximately 15 people in the Caribbean.

Mid-Atlantic menhaden purse seine fishery. The menhaden purse seine fishery is a reduction fishery that operates along the Atlantic coast during the summer and fall and in the

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Gulf of Mexico between April and October. Because menhaden occur in large schools off North Carolina during the fall, much of the fishery effort in the Atlantic Ocean is focused in this area. There are approximately 10 participants in the mid-Atlantic component of this fishery and approximately 100 participants in the Gulf of Mexico component of this fishery. The majority of the fishery effort in the Gulf of Mexico occurs in nearshore waters of Mississippi and Alabama. This fishery is managed, often by regional or seasonal closures, by regional fishery management plans developed by the Atlantic States Marine Fisheries Commission and the Gulf States Marine Fisheries Commission. In the mid-Atlantic Ocean, the two most active states in the menhaden fishery, North Carolina and Virginia, have not implemented ASMFC recommendations to shorten the fishing season as of 1991 (Atlantic States Marine Fisheries Commission, 1991).

Marine mammals. This fishery has been classified as a Category III fishery since 1990. Data on incidental takes of marine mammals in the mid-Atlantic component of this fishery were obtained by Category III reports and are summarized below:

Species	Avg. Annual Take (Taken from Category III reports, 1990 - 1993)	PBR	Takes / PBR
Minke whale	0.25	21	0.01
Bottlenose dolphin - coastal stock	1.75	25	0.07

While Category III reports are only available for the mid-Atlantic component of the menhaden purse seine fishery, by analogy it is reasonable to assume that a low level of incidental take of coastal marine mammals also occurs in the Gulf of Mexico component of this fishery.

The rate of marine mammal incidental serious injury and mortality per 20 days for this fishery is unknown.

Sea turtles. There are no known records of incidental mortality of sea turtles in this unobserved fishery.

Sea birds. There are no known records of incidental mortality of sea turtles in this unobserved fishery.

3.2.1.5.) Longline Fisheries

Longline fisheries operate in offshore waters of the Atlantic, Caribbean, and the Gulf of Mexico. These fisheries have records of both marine mammal and sea turtle incidental

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

mortalities.

The Atlantic, Caribbean, and Gulf of Mexico swordfish, tuna, and shark longline fishery. Longline gear is used in the Atlantic Ocean, Caribbean, and Gulf of Mexico to target tuna, shark and swordfish. Approximately 830 vessels were permitted in this fishery in 1994. Fisheries for tuna and swordfish in the Atlantic Ocean north of Cape Hatteras occur between April and November, while the fishery in the Gulf of Mexico and in the Caribbean operates year round. This fishery, like the swordfish fishery in the Pacific Ocean, operates during the night because the swordfish feed near the surface during the night. Target fishing for tuna occurs during the day. Because Atlantic swordfish and bluefin tuna are considered to be over-utilized, a quota program for commercial and recreational fisheries has begun with the long-term goal of reducing the harvest mortality of these species by 55%. Although there is increasing conflict both between U.S. commercial and recreational fishers and with the expanding Spanish longline fleet, no international agreements for the swordfish fishery exist. Tuna and swordfish catch is managed by the International Commission for the Conservation of Atlantic Tunas (U.S. Department of Commerce, 1993; NMFS, 1991; J. Miller, NMFS, pers. comm.).

Marine mammals. This fishery has been classified as a Category II fishery since 1990. Data on incidental takes of marine mammals were obtained both by observers placed on random vessels and fisher self-reporting. Observer data are presented in Appendix B and summarized below, with respect to PBR:

Species	Avg. Annual Take (Extrapolated from Observer Data, 1992-1993)	PBR	Takes / PBR
Pilot whale *	26	4-28	0.93 - exceeds PBR
Risso's dolphin	6.5	107	0.06

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.045 marine mammals per 20 days.

Sea turtles. Sea turtles are captured and killed incidental to the Atlantic, Caribbean, Gulf of Mexico swordfish/tuna longline fishery operations. In 1992 and 1993, an estimate of 887 and 536 leatherback and loggerhead turtles were captured, respectively (captures of hawksbill, green, and Kemp's ridley turtles were combined and listed as loggerhead turtles). These captures, however, resulted in one leatherback turtle mortality in 1992 and two loggerhead mortalities in

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

1993; the remainder of the turtles were captured and released.

Of 27 loggerhead turtles captured in this fishery, comments on the capture revealed that 25 were hooked in the mouth and 2 were hooked externally. In addition, one of the 25 hooked turtles was hooked twice, and another was been hooked three times, indicating that some hooked turtles may survive and continue feeding an unknown period of time.

Of 40 captured leatherback turtles, 2 were hooked near the mouth, 17 were hooked externally, and 21 were entangled in branch lines or on buoy lines.

The highest catch per unit effort for both turtle species in the longline fishery occurred north of Cape Hatteras on lines that were set for swordfish (Witzel and Cramer, 1995).

Sea birds. No information is currently available on whether sea birds are captured incidental to this fishery.

3.2.1.6.) Fixed Gear Fisheries

The Gulf of Maine, Mid-Atlantic mixed species finfish fixed gear, trap/pot fishery. This fishery occurs in the Gulf of Maine and the mid-Atlantic and has approximately 100 participants. Although mortalities of marine mammals incidental to this fishery are recorded, the frequency of interaction is very low.

Marine mammals. This fishery has been classified as a Category III fishery since 1990. Data on incidental takes of marine mammals were obtained by Category III reports and are summarized below:

Species	Avg. Annual Take (Taken from Category III reports, 1990 - 1993)	PBR	Takes / PBR
Harbor seal	0.25	1729	< 0.01

The rate of marine mammal incidental serious injury and mortality per 20 days for this fishery is unknown because there is no information on effort.

Sea turtles. Sea turtles (all species found in U. S. waters) may become entrapped in trap lines below the surface of the water and drown. The magnitude of the mortality due to entanglement in this manner is unknown (National Marine Fisheries Service and U. S. Department of Fish and Wildlife, 1991).

Sea birds. No known sea bird mortalities have resulted incidental to this fishery.

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Stop net fisheries. The stop net fishery for roe mullet takes place in North Carolina. Four nets are fished continuously from October through late November. Nets of twisted nylon line are approximately 400 yards long and stretch from the surface of the water column to the sea floor, forming a wall perpendicular to the beach. The minimum mesh size is in.

Marine mammals. Since 1990, stranding records and visual observation have indicated that an average of 3 bottlenose dolphin mortalities per year have occurred incidental to this fishery. Strandings related to this fishery can be identified as such by evidence of twisted nylon line impressed in the carcass of the stranded animal. No other fishery in the immediate area uses this type of line.

Sea turtles. There is no known incidental mortality of sea turtles in this fishery.

Sea birds. There is no known incidental mortality of sea birds in this fishery.

Pound net fisheries

Pound nets are staked net that target a wide variety of finfish. Pound nets are found in coastal waters throughout New England and the mid-Atlantic. Sea turtles have been known to become entangled in these nets. In addition, there is one report of a bottlenose dolphin mortality (U.S. mid-Atlantic coastal stock) in the observed Chesapeake Bay pound net fishery. This fishery has been included under a general "staked fish trap" fishery in the Atlantic and has been in Category III throughout the MMEP.

Shellfish trap/pot fisheries

Shellfish trap/pot fisheries occur in both nearshore and offshore areas in the Atlantic Ocean, the Caribbean, and Gulf of Mexico. Target species include lobster, blue crab, stone crab, and spiny lobster. Marine mammals and turtles occasionally become entangled in the trap line. Entanglement in lobster gear has been documented northern Right whales; entanglement in crab pot gear has been documented for leatherback turtles (Kraus, 1990; National Marine Fisheries Service and U.S. Fish and Wildlife Service, 1992).

3.2.1.7.) Aquaculture, Ranch Pen Fisheries

Aquaculture facilities for finfish operate in nearshore waters of Maine. There are currently 24 companies operating aquaculture facilities; these 24 companies own a combined total of 48 leases. Because a large company holds multiple leases, 48 should be considered the number of participants in the fishery. All facilities except one are located near East Port; the remaining facility operates off Acadia National Park near Bar Harbor. Aquaculture of salmon, rainbow trout, and sea trout are the most common, but technology has recently improved such that other species, such as flounder, can be raised as well. Large aquaculture facilities often raise two or more finfish species. Private corporations have applied for permits to conduct aquaculture activities in offshore waters of Massachusetts, and in nearshore waters of Rhode

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Island and Long Island Sound (C. Mantzaris, pers. comm., D. Morris, pers. comm.).

As of 1994, the List of Fisheries only recognized the salmon component of the marine finfish aquaculture industry. Because no evidence exists to demonstrate the rate of interaction between the fishery and protected species is different depending on the species, raised, the description of the fishery will be modified to a more general description to encompass those aquaculture facilities that raise a variety of different species.

Salmon aquaculture (net pen).

Marine mammals. This fishery was originally classified as a Category III in 1990. It was reclassified as a Category II fishery in 1994. Data on incidental takes of marine mammals were obtained by Category III reports and are summarized below:

Species	Avg. Annual Take (Taken from Category III reports, 1990 - 1993)	PBR	Takes / PBR
Harbor seal	0.25	1729	< 0.01

Trout aquaculture (net pen).

Marine mammals. This fishery was not identified in previous lists of fisheries. Data on incidental takes of marine mammals are not available, although it is assumed that interactions are similar to that which occur in the salmon aquaculture (net pen) fishery.

Sea turtles. No known sea turtle mortalities have resulted incidental to this fishery, and no turtle interactions are expected providing the aquaculture facilities remain in nearshore waters of northern Maine.

Sea birds. No known sea bird mortalities have resulted incidental to this fishery.

3.2.2.) U.S. West Coast and Alaska

3.2.2.1.) Gillnet Fisheries

Gillnet fisheries operate along the Pacific coast in both offshore and inshore waters. These fisheries generally have at least a small number of annual incidental takes of protected species.

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Gillnet Fisheries - California

California set and drift gillnet fisheries have been divided into two main categories in the list of fisheries: those fisheries that use a stretched mesh size of greater than 3.5 inches, and those fisheries that use a stretched mesh size of 3.5 inches or less. Because observer data for sea birds and sea turtles are not separated by mesh size, a summary of sea bird and sea turtle mortality will be provided at the end of this section on gillnet fisheries in California rather than after each fishery description.

California, Oregon thresher shark/swordfish/blue shark (blue shark in Oregon only) drift gillnet fishery. This fishery is renamed from the "California drift gillnet fisheries that use a stretched mesh size of greater than 3.5 inches". This fishery generally targets thresher shark and swordfish, and has a minimum mesh size of 14in (U. S. Department of Commerce, 1993; Leet, et al., 1992; State of California, pers. comm.; M. Vojkovich, pers. comm.). The drift gillnet fishery for thresher shark and swordfish originally ranged from Washington to California, but due to the drift gillnet ban in Washington and Oregon state waters the fishery is now confined primarily to offshore waters of California. The fishery is active in water off Oregon, but vessels are currently prohibited from landing their catch there. Oregon does, however, have a recommendation to begin permitting 10 swordfish drift net vessels and 20 swordfish longline vessels as part of their Developmental Fisheries Program (Oregon Department of Fish and Wildlife, 1994).

Thresher sharks were the target species when the fishery began, but are now considered incidental to the more profitable swordfish catch. This fishery uses gillnets that are approximately 120 ft deep and 6000 ft long. Because swordfish migrate to the surface at night to feed, fishing effort for this species occurs at night. Approximately 140 participants fished in this limited entry fishery in 1994. During the past three years, fishing effort in this fishery has increased. The fishery is managed under the Pacific Fishery Management Council, which has delegated authority to the State of California. Although it is recognized that swordfish cross many international boundaries and are actively exploited by many nations, no international authority currently manages this species in Pacific waters (U. S. Department of Commerce, 1993; Leet, et al., 1992; State of California unpublished license data; M. Vojkovich, pers. comm.).

Marine mammals. This set of fisheries were grouped with set gillnet fisheries and classified as a single Category I fishery in the list of fisheries in 1994. Prior to 1994, they were listed as the thresher shark/swordfish drift gillnet fishery and classified as a Category I fishery. Data on incidental takes of marine mammals were obtained both by observers placed on random drift gillnet vessels and fisher self-reporting. Observer data are presented in Appendix B and summarized below, with respect to PBR:

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Species	Avg. Annual Take (Extrapolated from Observer Data, 1991-1993)	PBR	Takes / PBR
Beaked whale (all stocks) *	38	0 - 9	exceeds PBR
Bottlenose dolphin - offshore stock	8	18	0.44
California sea lion	66	5052	0.01
Common dolphin (all stocks)[1]	336	56-1792	exceeds PBR for short-beaked; 0.19 of PBR for long-beaked
Dall's porpoise - CA/OR/WA stock	32	589	0.05
N. right whale dolphin	46	151	0.30
N. elephant seal	116	1743	0.07
Pacific white-sided dolphin	30	829	0.04
Pilot whale *	30	36	0.83
Pygmy sperm whale *	2	4.8	0.42
Risso's dolphin	40	224	0.18
Sperm whale *	15	1	exceeds PBR

In 1994, 45 of the 253 common dolphins captured in this fishery were short-beaked and none were long-beaked. It is reasonable to assume that the majority of the common dolphins captured in this fishery are from the short-beaked stock.

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Species	Avg. Annual Take (Extrapolated from Observer Data, 1991-1993)	PBR	Takes / PBR
Steller sea lion, eastern N. Pacific*	2	1059	<0.01
Unid. cetacean	2	--	

The rate of marine mammals incidental mortality and serious injury per 20 days is 3.20.

California angel shark/halibut and other species large mesh (greater than 3.5in) set gillnet fishery. This fishery was renamed from the "California set gillnet fisheries that use a stretched mesh size of greater than 3.5 inches". This fishery includes those that target angel shark, halibut, soupfin shark, yellowtail, and white sea bass. Mesh size used is typically 8.5in. The angel shark set gillnet previously operated year-round in state waters near the Channel Islands off of Ventura County in southern California, but has been severely limited by the ban on gill nets in California state waters and the minimum size limit on angel sharks. Angel sharks were originally discarded as bycatch by fishers using set gillnets for halibut; however, with increased marketing of angel sharks as a seasonal alternative to thresher sharks, angel sharks became a valuable target species. The mesh size used in the set nets is typically 14 in diagonal stretched. Approximately 80 vessels fished in the angel shark/halibut set gillnet fishery until the ban on gillnets in inshore waters took effect. Currently, about 20 people operate set gill nets for halibut and angel shark outside the 3-mile limit off Ventura County in southern California (U. S. Department of Commerce, 1993; Leet, et al., 1992; State of California unpublished license data; M. Vojkovich, pers. comm.; F. Julian, pers. comm.).

Marine mammals. This set of fisheries was grouped with the drift gillnet fisheries and classified as a single Category I fishery in the list of fisheries in 1994. Prior to 1994, they were listed separately: the halibut set gillnet fishery, the angel shark set gillnet fishery, and the soupfin shark, yellowtail, and white sea bass set gillnet fisheries were classified as Category I fisheries. Prior to 1992, the soupfin shark, yellowtail, and white sea bass set gillnet fisheries were grouped with the white croaker, bonito/flying fish set gillnet fisheries, and this entire set of fisheries was classified as a Category II fishery. Data on incidental takes of marine mammals were obtained both by observers placed on random vessels and fisher self-reporting. Observer data are presented in Appendix B and summarized below, with respect to PBR:

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Species	Avg. Annual Take (Extrapolated from Observer Data, 1991-1993)	PBR	Takes / PBR
California sea lion	2368	5052	0.47
Common dolphin (all stocks)	6	56-1792	0.11 for short-beaked; < 0.01 for long-beaked
Harbor porpoise *	31	34	0.91
Harbor seal	729	1968	0.37
N. elephant seal	50	1743	0.03
Unid. cetacean	2	--	

The rate of marine mammal serious injury and mortality per 20 days is 8.73

California set gillnet fisheries that use a stretched mesh size of 3.5 inches or less target white croaker, bonito, flying fish, herring, smelt, shad, sturgeon, bottom fish, mullet, perch, and rockfish.

Marine mammals. This set of fisheries was classified as a single Category III fishery in the list of fisheries in 1994. Prior to 1994, the white croaker, bonito, and flying fish set gillnet fisheries were grouped with the soupfin shark, yellowtail, and white sea bass set gillnet fisheries and this entire set of fisheries was classified as a Category II fishery. The herring, smelt, shad, sturgeon, bottom fish, mullet, perch, and rockfish set gillnet fisheries have been classified as a Category III fishery since 1990. Logbook reports are available for only some of these fisheries (white croaker, bonito, and flying fish) and only for 1992 (1993 data are incomplete). There were no takes reported for 1992. There are no Category III reports of takes by fishers in the herring, smelt, shad, sturgeon, bottom fish, mullet, perch, and rockfish set gillnet fisheries prior to 1994.

The California Klamath River salmon gillnet fishery. In the past, the lower Klamath River gillnet fishery in California has between 1,000 and 2,000 participants and has been managed pursuant to a treaty between the Yurok tribe and the United States. The allocation of salmon resources between the tribal gillnet and the California troll fishery has been contentious

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

over the past few years but the proportion allocated to the two user groups has stabilized recently. This fishery used to operate between May and September, but has not operated during the past few years (State of California unpublished license data; K. Matteson, Pacific States Marine Fisheries Commission, pers. comm.; Washington Department of Fish and Wildlife, 1991; A. Baraco, California Department of Fish and Game, pers. comm.; U.S. Department of Commerce, 1993; J. Lecky, National Marine Fisheries Service).

Marine mammals. This fishery has been classified as a Category II fishery in the list of fisheries since 1990. There were no incidental takes of marine mammals reported in fishery logbooks for 1990-1992.

California non-salmonid gillnet fishery A small gillnet fishery for herring roe operated near San Francisco Bay in 1991; it is unknown whether this fishery was affected by the recent ban on gillnets in California state waters.

Interactions Between California Gill Net Fisheries and Sea Turtles and Sea Birds

Drift gillnets

Sea turtles. Between 1989 and 1993, National Marine Fisheries Service observers recorded 9 observations of leatherback turtle captures, 7 observations of loggerhead turtle captures, and 3 observations of unidentified sea turtle captures. No estimates of total mortality are currently available.

Sea birds. Between 1990 and 1993, two unidentified birds were taken incidental to this fishery. No estimate of total mortality is currently available.

Set gillnets

Sea turtles. Small numbers of green/black, Olive ridley and unidentified sea turtles were taken by the California set gillnet fisheries between 1990 and 1993. No estimates of total mortality are currently available.

Sea birds. Sea birds captures have been observed in set net fisheries between 1990 and 1993. The majority of the observed mortalities are of common murres. No estimates of total mortality are currently available.

Gillnet Fisheries - Washington, Oregon

Set and drift gill nets are used to harvest salmonids in Washington, Oregon and California. Management of salmon stocks in these regions was once accomplished solely by the individual states. The over-utilized state of most of the salmon stocks along the Pacific coast and the designation of some stocks as endangered or threatened under the Endangered Species Act has prompted federal management of two species of salmon: chinook and coho. Sockeye, pink

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

and chum salmon are still managed by the individual states. The management of these species is complex and involves limited entry and many short seasonal openings and closures (State of California unpublished license data; K. Matteson, Pacific States Marine Fisheries Commission, pers. comm.; Washington Department of Fish and Wildlife, 1991; A. Baraco, California Department of Fish and Game, pers. comm.; U.S. Department of Commerce, 1993)..

The Northern Washington coastal salmon set gillnet fishery (areas 4 and 4a) is also known as the Makah tribal fishery. This fishery is a tribal fishery administered under treaty between the Makah Tribe, the U. S. government, and agreements with the State of Washington. Since participants in this fishery are tribal members exercising treaty fishing right, implementation of Marine Mammal Protection Act regulations do not apply to this fishery.

This fishery currently operates in areas 4 and 4a, but included area 4b prior to 1993. The northern Washington coastal gillnet is a set gillnet fishery that targets salmonids between May and September, although most effort occurs in July and August. Participants in this fishery are members of the Makah tribe; thus, the fishery is managed pursuant to treaties between the tribe and the United States government. Between 1 and 3 participants actively fish in this fishery. The fishery takes place in two different areas: the coastal areas of the Strait of Juan de Fuca ("inside waters") and along the west coast of the Olympic Peninsula in the Pacific Ocean, especially near a landmark called Spike Rock ("outside waters"). Inside waters are fished frequently and outside waters are fished opportunistically, as the sea conditions and increased distance from port to the outside waters makes fishing outside grounds more inconvenient. Only 2% of the harbor porpoise mortalities incurred incidental to this fishery have occurred in the Strait of Juan de Fuca; the remaining 98% of the mortalities occurred in outside waters and the majority of those mortalities occurred at Spike Rock. The extent of the participation or the geographic range of this fishery is not expected to change in the near future (S. Osmek, National Marine Mammal Laboratory, pers. comm.).

Marine mammals. This fishery has been classified as a Category I fishery in the list of fisheries since 1990. Incidental take data were obtained both by observers placed on random vessels and fisher logbooks. Observer data are presented in Appendix B and summarized below, with respect to PBR:

Species	Avg. Annual Take (Extrapolated from Observer Data, 1989-1992)	PBR	Takes / PBR
Gray whale	0.25	434	<0.01

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Species	Avg. Annual Take (Extrapolated from Observer Data, 1989-1992)	PBR	Takes / PBR
Harbor porpoise - OR/WA coastal stock	21	220	0.10
Harbor seal - OR/WA coastal stock	24.75	850	0.03
Sea otter	0.5	9	0.06

The rate of marine mammal incidental mortality and serious injury per 20 days is 1.64 for this fishery.

Sea turtles. There is no evidence of incidental mortality of sea turtles in this fishery and incidental mortality is unlikely to occur based on the distribution of sea turtles.

Sea birds. No information on sea bird incidental capture in this fishery is available.

The Oregon Columbia River drift gillnet fishery. Gillnet fishing fleets in the lower Columbia River, Willapa Bay, and Grays Harbor, Washington consist of about 800 permitholders. The number of active permitholders has declined from over 500 in 1991 to about 80 vessels in 1993. In 1994, the 40 vessels that fished the Columbia River represented a 78% decline in active participation. As the decline in fishing effort is due to low salmon stock sizes that are not expected to recover in the next few years, the outlook for salmon gillnetting in these areas is bleak.

Marine mammals. This fishery was originally grouped with the Willapa Bay and Grays Harbor fisheries and classified as a single Category I fishery in the list of fisheries in 1990. It was split into three separate fisheries in 1992, and all three fisheries were reclassified as Category III fisheries in 1994. Incidental take data were obtained both by observers placed on random vessels and fisher logbooks. Observer data are presented in Appendix B and summarized below, with respect to PBR. The decline in effort in this fishery in recent years may substantially reduce the estimated incidental take of marine mammals in the future.

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Species	Avg. Annual Take (Extrapolated from Observer Data, 1991-1992)	PBR	Takes / PBR
California sea lion	22	5052	<0.01
Harbor seal -OR/WA coastal stock	211	850	0.25

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.56 per 20 days.

Sea turtles. There is no evidence of incidental mortality of sea turtles in this fishery and incidental mortality is unlikely to occur based on the distribution of sea turtles.

Sea birds. No information on sea bird incidental capture in this fishery is available.

The Washington Willapa Bay, Grays Harbor drift gillnet fishery. The Willapa Bay fishery had approximately 80 active participants in 1993 and the Grays Harbor fishery had approximately 24 active participants in 1993 (K. Matteson, Pacific States Marine Fisheries Commission, pers. comm.).

Marine mammals. This fishery was originally grouped with the Columbia River fishery and classified as a Category I fishery in the list of fisheries in 1990. It was split into three fisheries in 1992, and all three fisheries were reclassified as Category III fisheries in 1994. There were no observed incidental takes of marine mammals in the Willapa Bay fishery in 1991 or 1992. Observer data from the Grays Harbor fishery is summarized below:

Species	Avg. Annual Take (Extrapolated from Observer Data, 1991-1992)	PBR	Takes / PBR
Harbor seal -WA/OR stock	5	850	<0.01

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.07 per 20 days.

Sea turtles. There is no evidence of incidental mortality of sea turtles in this fishery and

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

incidental mortality is unlikely to occur based on the distribution of sea turtles.

Sea birds. No information on sea bird incidental capture in this fishery is available.

The Washington Puget Sound salmon drift gillnet fishery operates in inland waters south of the U.S-Canada border, including the Strait of Juan de Fuca, Hood Canal and estuaries and lower river areas (subject to tidal action). The fishery name has been modified to exclude set gillnet gear, which is used by treaty Tribal fishers. The participation in the Washington Puget Sound region drift gill net fisheries has declined in recent years as well, but not to the extent of those fisheries along the outer coast of Washington. This fishery has approximately 3,900 participants. The fishery typically occurs between May and September (State of California unpublished license data; K. Matteson, Pacific States Marine Fisheries Commission, pers. comm.; Washington Department of Fish and Wildlife, 1991; A. Baraco, California Department of Fish and Game, pers. comm.; U. S. Department of Commerce, 1993)

Marine mammals. This fishery has been classified as a Category II fishery in the list of fisheries since 1990. Incidental take data from this fishery were obtained from fisher logbooks, and are summarized below:

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes / PBR
California sea lion	24	5052	<0.01
Harbor seal - WA inland waters stock	50	783	0.06
Steller sea lion, eastern N. Pacific *	0.33	1059	<0.01
Unid. pinniped	7	--	
Unid. marine mammal	1.33	--	

The rate of incidental mortality and serious injury of marine mammals in this fishery is 0.16 per 20 days.

An observer program to monitor this fishery was begun in 1994. Preliminary results from this fishery indicate that one harbor porpoise incidental mortality was observed.

Sea turtles. There is no evidence of incidental mortality of sea turtles in this fishery and

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

incidental mortality is unlikely to occur based on the distribution of sea turtles.

Sea birds. The majority of sea birds incidentally killed in this fishery were common murres; rhinoceros auklets, common loons, yellow-billed loons, and pigeon guillemots were also taken (Erstad et al., 1994).

The Washington coastal river salmon set gillnet fishery. This fishery is a tribal fishery with 300 and 350 participants. This fishery is administered under treaty between the coastal tribes, the U. S. government and agreements with the State of Washington. Since participants in this fishery are tribal members exercising treaty fishing rights, implementation of section 118 regulations does not apply to members of this fishery. This fishery occurs between May and September (State of California unpublished license data; K. Matteson, Pacific States Marine Fisheries Commission, pers. comm.; Washington Department of Fish and Wildlife, 1991; A. Baraco, California Department of Fish and Game, pers. comm.; U.S. Department of Commerce, 1993).

Marine mammals. This fishery has been classified as a Category II fishery in the list of fisheries since 1990. There were no incidental takes reported in fisher logbooks for 1990-1992.

Washington and Oregon non-salmonid gillnet fisheries. Gillnets are used in the Columbia River to harvest shad and smelt in targeted fisheries and sturgeon incidentally to gillnet fishing for chinook salmon. Other fish targeted or taken incidentally may include herring, bottomfish, mullet, perch, and rockfish. These fisheries were small relative to the salmon gill net fishery in the early 1990's, but may increase in size in the future due to the closure of the salmon fishery in the Columbia River. A small gillnet fishery for herring roe operated near San Francisco Bay in 1991; it is unknown whether this fishery was affected by the recent ban on gillnets in California state waters. There were 36 gillnet permits issued in Washington for non-salmonid, non-treaty fisheries and there were approximately the same number of treaty participants (K. Matteson, pers. comm., G. Bergmann, pers. comm.).

Marine mammals. This fishery has been classified as a Category III fishery in the list of fisheries since 1990. No Category III reports of incidental takes have been received.

Sea turtles. There is no evidence of incidental mortality of sea turtles in this fishery and incidental mortality is unlikely to occur based on the distribution of sea turtles.

Sea birds. No direct evidence of incidental mortality of sea birds exists for this fishery. However, based on comparisons with observed salmonid fisheries, it is likely that some sea bird incidental capture does occur.

Gillnet Fisheries - Alaska

Alaska salmon are harvested along the coast of Alaska from the Canadian-Alaska border

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

to northern Bristol Bay. All salmon gillnet fisheries in Alaska are managed by the Alaska Department of Fish and Game. The number of fishers permitted has remained roughly constant over recent years and the proportion of permitted individuals that actively fish is high. Although permits can be obtained for any fishing district in Alaska, each individual can only hold one permit per year. The area with the highest number of permits in 1994 was Bristol Bay, with 1,887 issued permits. Salmonid fisheries are active from May to August, with fishery openings and closures timed to area-specific beginnings of salmon runs. Gear regulations and precise fishing seasons vary by area.

Although concentrations of fishing effort overlap closely with concentrations of marine mammals in areas throughout Alaska (such as the fisheries in the Egegik district and the Quinhagak district in Bristol Bay, interacting with harbor seals and harbor seals/spotted seals, respectively, and the fishery in upper Cook Inlet, interacting with beluga whales), records of incidental takes are infrequent in these areas. Records of incidental takes in salmon gillnet fisheries north of Bristol Bay (the Kuskokwim, Yukon delta, Norton Sound, and Kotzebue Sound areas) are also infrequent (U. S. Department of Commerce, 1993; Geiger and Savikko, 1993; State of Alaska unpublished license data; K. Frost, pers. comm.).

The Prince William Sound salmon drift gillnet fishery operates in the Copper River, Bering River, Eshamy, Coghill, and Unakwik districts. The State of Alaska issued 541 permits for this fishery in 1992 and in 1994. In 1992, 509 of the permitholders actively fished in the fishery. Salmon fisheries in this area are typically active between June and September (U. S. Department of Commerce, 1993; Geiger and Savikko, 1993; State of Alaska unpublished license data).

Marine mammals. This fishery was originally classified as a Category I fishery in 1990, and was split into the Copper River/Bering River districts fishery and the Prince William Sound (Eshamy, Coghill, and Unakwik districts) fishery in 1993, based on apparent differences in marine mammal take rates. Both fisheries were classified as a Category II fishery in the 1994 list of fisheries. Data on incidental takes were obtained both by observers placed on random vessels and fisher logbooks. Observer data are presented in Appendix B and summarized below, with respect to PBR:

Species	Avg. Annual Take (Extrapolated from Observer Data, 1990-1991)	PBR	Takes / PBR
Harbor porpoise	20	246	0.08
Harbor seal - GOA	24	N/A	N/C

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Species	Avg. Annual Take (Extrapolated from Observer Data, 1990-1991)	PBR	Takes / PBR
Steller sea lion, eastern N. Pacific *	14.5	1059	0.01
Unid. small cetacean	5.5	--	

The rate of incidental serious injury and mortality of marine mammals in this fishery is 0.67 per 20 days.

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. Marbled murrelets, kittlitz murrelets, common loons, common murres, red throated loons, unidentified murres, sooty shearwaters, unidentified alcids, and unidentified murrelets were caught incidental to the observed salmon drift gillnet fleet in 1991 and 1992. The combined total estimated take for all sea birds was 1468 birds in 1990 and 993 birds in 1991. Additional species-specific information can be found in Appendix C.

The Prince William Sound set gillnet fishery operates in the Eshamy district of Prince William Sound. The State of Alaska issued 30 permits for this fishery in 1992 and 30 permits in 1994. In 1992, 29 of the permitholders actively fished in the fishery. Salmon fisheries in this area are typically active between June and September (U. S. Department of Commerce, 1993; Geiger and Savikko, 1993; State of Alaska unpublished license data).

Marine mammals. This fishery was originally classified as a Category I fishery in the list of fisheries in 1990, and was reclassified as a Category II fishery in 1991. There were no observed takes of marine mammals in this fishery during 1990. Logbook data are summarized below:

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes / PBR
Steller sea lions, eastern N. Pacific*	0.67	1059	<0.01

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.01 per 20 days.

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. No mortalities were observed incidental to this fishery during the one year (1991) in which the fishery was observed. Additional species-specific information can be found in Appendix C.

The Alaska Peninsula drift gillnet fishery operates in South Unimak (False Pass and Unimak Pass) and other areas of the Alaska Peninsula, including the Alaska Dept. of Fish and Game Area M. The State of Alaska issued 114 permits for this fishery in 1992 and in 1994. In 1992, 107 of the permitholders actively fished in the fishery. Salmon fisheries in this area are typically active between June and September (U. S. Department of Commerce, 1993; Geiger and Savikko, 1993; State of Alaska unpublished license data).

Marine mammals. This fishery was originally classified as a Category I fishery in 1990, but was split into the South Unimak fishery and the Alaska Peninsula (other than South Unimak) fishery in 1991 and both were then recategorized as Category II fisheries. Incidental take data for marine mammals was obtained for the entire Alaska Peninsula fishery by an observer program that operated in 1990. One Dall's porpoise was observed taken, with an extrapolated annual total take of 28 porpoise (take/PBR=0.3). Logbook data for the entire Alaska Peninsula fishery are summarized below:

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes / PBR
Dall's porpoise	0.67	1537	<0.01
Harbor porpoise	1	246	<0.01
Harbor seal- GOA stock or Bering Sea stock	7	N/A	N/C
Northern fur seal*	0.67	20846	<0.01
Spotted seal	0.67	N/A	N/C

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes / PBR
Walrus	0.33	5649	<0.01
Unid. small cetacean	1	--	
Unid. species	0.67	--	

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.05 per 20 days.

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. Common murres, marbled murrelets, sooty shearwaters, short-tailed shearwaters, horned puffin, tufted puffin, unidentified murres, and unidentified birds were caught incidental to this fishery during the one year in which the fishery was observed. The combined total estimated take for all sea birds was 337 birds. Additional species-specific information can be found in Appendix C.

The Alaska Peninsula salmon set gillnet fishery. The State of Alaska issued 133 permits for this fishery in 1992 and 126 permits in 1994. In 1992, 120 of the permitholders actively fished in the fishery. Salmon fisheries in this area are typically active between June and September (U. S. Department of Commerce, 1993; Geiger and Savikko, 1993; State of Alaska unpublished license data).

Marine mammals. This fishery has been classified as a Category II fishery since 1990. Incidental take data were obtained from logbooks for 1990 to 1992. These data are summarized below:

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes / PBR
Harbor porpoise	0.67	297	<0.01
Steller sea lion, western N. Pacific*	0.33	766	<0.01

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes / PBR
Unid. pinniped	0.33	--	

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.01 per 20 days.

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. Common murres, marbled murrelets, sooty shearwaters, short-tailed shearwaters, horned puffin, tufted puffin, unidentified murres, and unidentified birds were caught incidental to this fishery during the one year in which the fishery was observed. The combined total estimated take for all sea birds was 337 birds. Additional species-specific information can be found in Appendix C.

The Southeast Alaska salmon drift gillnet fishery. The State of Alaska issued 485 permits for this fishery in 1992 and 482 permits in 1994. In 1992, 443 of the permitholders actively fished in the fishery. Salmon fisheries in this area are typically active between June and September (U. S. Department of Commerce, 1993; Geiger and Savikko, 1993; State of Alaska unpublished license data).

Marine mammals. This fishery has been classified as a Category II fishery in the list of fisheries since 1990. Incidental take data were obtained from logbooks for 1990 to 1992. These data are summarized below:

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes/PBR
Dall's porpoise	5	1537	<0.01
Harbor porpoise	3.67	246	0.01
Harbor seal - SE stock	3.67	1965	<0.01

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes/PBR
Steller sea lion, eastern N. Pacific*	0.67	1059	<0.01
Unid. small cetacean	3.67	--	
Unid. pinniped	0.33	--	
Unid. species	0.33	--	

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.02 per 20 days.

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. There are no known takes of sea birds in this unobserved fishery. However, by comparison with other gill net fisheries that have had observers, it is likely that sea bird takes do occur and that they probably include common murres and marbled murrelets.

The Yakutat salmon set gillnet fishery. The State of Alaska issued 170 permits for this fishery in 1992 and 171 permits in 1994. In 1992, 152 of the permitholders actively fished in the fishery. Salmon fisheries in this area are typically active between June and September (U. S. Department of Commerce, 1993; Geiger and Savikko, 1993; State of Alaska unpublished license data).

Marine mammals. This fishery has been classified as a Category II fishery in the list of fisheries since 1990. Incidental take data were obtained from logbooks for 1990 to 1992. These data are summarized below:

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes / PBR
Harbor seal - GOA stock	10.33	N/A	N/C
Spotted seal	6	N/A	N/C

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.11 per 20 days.

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. There are no known takes of sea birds in this unobserved fishery. However, by comparison with other gill net fisheries that have had observers, it is likely that sea bird takes do occur and that they probably include common murres and marbled murrelets.

The Cook Inlet salmon drift gillnet fishery. The State of Alaska issued 583 permits for this fishery in 1992 and 582 permits in 1994. In 1992, 554 of the permitholders actively fished in the fishery. Salmon fisheries in this area are typically active between June and September (U. S. Department of Commerce, 1993; Geiger and Savikko, 1993; State of Alaska unpublished license data).

Marine mammals. This fishery has been classified as a Category II fishery in the list of fisheries since 1990. It was split off from the Cook Inlet salmon set and drift gillnet fishery in 1991. Incidental take data for this fishery were obtained from logbooks for 1991 to 1992. These data are summarized below:

Species	Avg. Annual Take (from Logbooks, 1991-1992)	PBR	Takes / PBR
Dall's porpoise	0.5	1537	<0.01
Unid. small cetacean	0.5	--	

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. There are no known takes of sea birds in this unobserved fishery. However, by comparison with other gill net fisheries that have had observers, it is likely that sea bird takes do occur and that they probably include common murres and marbled murrelets.

The Cook Inlet salmon set gillnet fishery. The State of Alaska issued 745 permits for this fishery in 1992 and in 1994. In 1992, 633 of the permitholders actively fished in the fishery. Salmon fisheries in this area are typically active between June and September (U. S. Department

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

of Commerce, 1993; Geiger and Savikko, 1993; State of Alaska unpublished license data).

Marine mammals. This fishery has been classified as a Category II fishery in the list of fisheries since 1990. It was split off from the Cook Inlet salmon set and drift gillnet fishery in 1991. Incidental take data for this fishery were obtained from logbooks for 1991 to 1992. These data are summarized below:

Species	Avg. Annual Take (from Logbooks, 1991-1992)	PBR	Takes / PBR
Harbor seal - GOA	0.5	N/A	N/C

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. There are no known takes of sea birds in this unobserved fishery. However, by comparison with other set gill net fisheries that have had observers, it is likely that sea bird takes do occur but at a very low frequency.

Rate of marine mammal take in the Cook Inlet salmon set and drift gillnet fisheries. The rate of marine mammal incidental serious injury and mortality for combined Cook Inlet set and drift gillnet fisheries is 0.002 per 20 days.

The Kodiak salmon set gillnet fishery. The State of Alaska issued 189 permits for this fishery in 1992 and 190 permits in 1994. In 1992, 162 of the permitholders actively fished in the fishery. Salmon fisheries in this area are typically active between June and September (U. S. Department of Commerce, 1993; Geiger and Savikko, 1993; State of Alaska unpublished license data).

Marine mammals. This fishery has been classified as a Category II fishery since 1990. Incidental take data were obtained from logbooks for 1990 to 1992. These data are summarized below:

Species	Avg. Annual Take (from Logbooks, 1990-1992	PBR	Takes / PBR
Harbor porpoise	4.67	246	0.02
Harbor seal - GOA	0.67	N/A	N/C

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Sea otter	0.33	6000	<0.01
Unid. small cetacean	0.67	--	
Unid. species	0.67	--	

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.03 per 20 days.

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. There are no known takes of sea birds in this unobserved fishery. However, by comparison with other gill net fisheries that have had observers, it is likely that sea bird takes do occur at a low frequency and that takes probably include common murres.

The Bristol Bay salmon drift gillnet fishery. The State of Alaska issued 1,884 permits for this fishery in 1992 and 1,887 permits in 1994. In 1992, 1741 of the permitholders actively fished in the fishery. Salmon fisheries in this area are typically active between June and September (U. S. Department of Commerce, 1993; Geiger and Savikko, 1993; State of Alaska unpublished license data).

Marine mammals. This fishery has been classified as a Category II fishery in the list of fisheries since 1990. It was split off from the Bristol Bay salmon set and drift gillnet fishery in 1991. Incidental take data for this fishery were obtained from logbooks for 1991 to 1992. These data are summarized below:

Species	Avg. Annual Take (from Logbooks, 1991-1992	PBR	Takes / PBR
Bearded seal *	22.5	N/A	N/C
Harbor seal - BS stock	12.5	1099	0.01
N. fur seal *	24.5	20846	<0.01
Spotted seal	0.5	N/A	N/C

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Species	Avg. Annual Take (from Logbooks, 1991-1992	PBR	Takes / PBR
Steller sea lion, western Pacific*	3	766	<0.01
Unid. small cetacean	2	--	
Unid. pinniped	6	--	
Unid. species	6	--	

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. There are no known takes of sea birds in this unobserved fishery. However, by comparison with other gill net fisheries that have had observers, it is likely that sea bird takes do occur.

The Bristol Bay salmon set gillnet fishery. The State of Alaska issued 1,025 permits for this fishery in 1992 and 1,020 permits in 1994. In 1992, 888 of the permitholders actively fished in the fishery. Salmon fisheries in this area are typically active between June and September (U. S. Department of Commerce, 1993; Geiger and Savikko, 1993; State of Alaska unpublished license data).

Marine mammals. This fishery has been classified as a Category II fishery in the list of fisheries since 1990. It was split off from the Bristol Bay salmon set and drift gillnet fishery in 1991. Incidental take data for this fishery were obtained from logbooks for 1991 to 1992. These data are summarized below:

Species	Avg. Annual Take (from Logbooks, 1991-1992	PBR	Takes / PBR
Harbor seal - BS stock	0.5	1099	<0.01
Beluga whale	0.5	20	0.02
Unid. small cetacean	0.5	--	

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. There are no known takes of sea birds in this unobserved fishery. However, by comparison with other gill net fisheries that have had observers, it is likely that sea bird takes do occur.

Rate of interaction per 20 days for the Bristol Bay set and gillnets combined. The rate of marine mammal incidental serious injury and mortality for this fishery is 0.05 per 20 days.

The Metlakatla/Annette Island salmon gillnet fishery. The Metlakatla tribal gillnet fisheries for Alaska salmonids are managed though a treaty between the tribe and the United States. This fishery is restricted to within 3000 ft of Annette Island in Southeast Alaska. The approximately 55-60 gillnetters who participated in this fishery in 1994 fished 4-5 days per week during the salmon season. This fishery harvests between 1 and 2 million fish annually (of about 20-25 million fish in the southern Southeastern Alaska region).

Marine mammals. This fishery was added to the list of fisheries in 1992, as a Category II fishery. There were no logbook reports of incidental takes in this fishery in 1992. There have been no reports of interactions between this fishery and marine mammals (P. Dougherty, Alaska Department of Fish and Game, pers. comm.). Based on comparisons between this fishery and other gill net fisheries in southern Alaska, it is reasonable to assume a low level of take of harbor porpoise and harbor seals incidental to fishing operations.

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. There are no known takes of sea birds in this unobserved fishery. However, by comparison with other gill net fisheries that have had observers, it is likely that sea bird takes do occur and that takes probably include common murres and possibly marbled murrelets.

The Kuskokwim, Yukon, Norton Sound, Kotzebue salmon gillnet fishery.

The State of Alaska issued 1,959 permits for these fisheries in 1992 and 1,955 permits in 1994. In 1992, 1,651 of the permitholders actively fished in the fishery. Salmon fisheries in this area are typically active between June and September (U. S. Department of Commerce, 1993; Geiger and Savikko, 1993; State of Alaska unpublished license data).

Marine mammals. By comparison with other gillnet fisheries in Alaska and distributions of marine mammals in this area, this unobserved fishery probably has a low frequency of incidental mortality of harbor porpoise, beluga, and phocid seals (harbor or spotted seals).

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this

---

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. There are no known takes of sea birds in this unobserved fishery. However, by comparison with other gill net fisheries that have had observers, it is likely that sea bird takes do occur.

Alaska non-salmonid gillnet fisheries. These fisheries primarily target herring. Groundfish were once targeted using sink gill nets off Kodiak Island; however, this gear type has been prohibited and is no longer in use in Alaska.

Over 700 individuals received permits to use gillnets to harvest herring in Alaska in 1992 (658 received permits in 1992). Of the permitted individuals, however, only 149 were active in 1992. Herring gillnet fisheries operate at Nelson Island, Cape Romanzof, Norton Sound, Prince William Sound, Cook Inlet, Kodiak, Alaska Peninsula/Aleutian Islands, Nunivak Island and Kotzebue (State of Alaska unpublished license data).

Alaska sink (sunken) gillnet fisheries. Due to a prohibition on sink gillnets in Alaska, these fisheries are no longer operating.

The Alaska gillnet fishery (excluding salmon and herring).

There are approximately 230 participants in this fishery.

Marine mammals. This fishery has been classified as a Category II fishery in the list of fisheries since 1990. Incidental take data for this fishery were obtained from logbooks for 1990 to 1992. These data are summarized below:

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes / PBR
Unid. pinniped	0.33	--	
Unid. species	1.67	--	

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.18 per 20 days.

3.2.2.2.) Trawl Fisheries

Trawl fisheries in the Pacific Ocean primarily target groundfish in the Bering Sea/Aleutian Islands area, the Gulf of Alaska, and off the Washington/Oregon/California coast.

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

The composition of the catch in Alaska is primarily walleye pollock, while rockfish and Pacific whiting dominate in Washington/Oregon/California. A total of 490 permits were issued for the Alaska groundfish trawl; although the majority of the vessels fish in the Bering Sea, many fish in both the Bering Sea and the Gulf of Alaska. The groundfish trawl fisheries are managed by the Fishery Management Plan for Groundfish for each particular area. Areas around Steller sea lion rookeries have been closed to fishing to avoid harassing the animals and to allow fish to approach the islands and be available as food for the pinnipeds. Approximately 585 permits were issued to fish in the Washington/Oregon/California groundfish fishery; a licence limitation program for this fishery was established in 1994.

Two small state-managed trawl fisheries exist in Alaska; the miscellaneous groundfish trawl (8 permitholders) and the food/bait herring trawl (2 permitholders) (National Marine Fisheries Service, 1991; Pacific States Marine Fisheries Commission, 1992, 1993; North Pacific Fishery Management Council, 1993a; North Pacific Fishery Management Council, 1993b; U. S. Department of Commerce, 1993).

Trawl Fisheries - Washington, Oregon, California

The domestic groundfish trawl fishery.

Marine mammals. This fishery has been classified as a Category III fishery since 1990. Data on incidental takes were obtained both by observers placed on random vessels and fisher logbooks. Observer data are presented in Appendix B and summarized below, with respect to PBR:

Species	Avg. Annual Take (Extrapolated from Observer Data, 1990-1993)	PBR	Takes / PBR
Dall's porpoise	(1)	589	<0.01
Unid. pinniped	(2)	--	

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.02 per 20 days.

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. The average annual take of sea birds between 1990 and 1993 is 0.5

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

unidentified birds.

Trawl Fisheries - Alaska

The Bering Sea domestic groundfish trawl fishery. A total of 490 permits were issued for the Alaska groundfish trawl, with approximately 70% of the effort in the Bering Sea (U.S. Dept. of Commerce, 1993).

Marine mammals. This fishery was originally classified as the Bering Sea/Gulf of Alaska groundfish trawl fishery Category I fishery in 1990. It was split into two fisheries in 1991, and both were reclassified as Category III fisheries in 1992. Data on incidental takes were obtained both by observers placed on random vessels and fisher logbooks. Observer data are presented in Appendix B and summarized below, with respect to PBR:

Species	Avg. Annual Take (Extrapolated from Observer Data, 1989-1993)	PBR	Takes / PBR
Bearded seal	1.2	N/A	N/C
Dall's porpoise	5.8	1537	<0.01
Harbor seal - BS stock	0.8	1099	<0.01
Killer whale (resident and transient stocks)	0.8	2-8	0.1 - 0.4
N. fur seal *	2.6	20846	<0.01
Ribbon seal	0.2	N/A	N/C
Ringed seal	2.4	N/A	N/C
Steller sea lion, western Pacific *	20.4	766	0.03
Walrus	3.2	5649	<0.01
Unid. pinniped	0.4	--	
Unid. cetacean	1.4	--	

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.05 per 20 days.

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. From 1989 to 1992, large numbers (an average of 1070 per year) of unidentified birds were caught incidental to the Bering Sea groundfish trawl fishery. In 1993, species were specified as unidentified shearwater/petrel, unidentified murrelet/auklet, unidentified bird, and unidentified procellariiformes and the total combined take of all species in 1993 was 261 birds. Additional species-specific information can be found in Appendix C.

The Gulf of Alaska domestic groundfish trawl fishery. A total of 490 permits were issued for the Alaska groundfish trawl, with approximately 30% of the effort in the Gulf of Alaska (U.S. Dept. of Commerce, 1993).

Marine mammals. This fishery was originally classified as the Bering Sea/Gulf of Alaska groundfish trawl fishery Category I fishery in 1990. It was split into two fisheries in 1991, and both were reclassified as Category III fisheries in 1992. Data on incidental takes were obtained both by observers placed on random vessels and fisher logbooks. Observer data are presented in Appendix C and summarized below, with respect to PBR:

Species	Avg. Annual Take (Extrapolated from Observer Data, 1989-1993)	PBR	Takes / PBR
Dall's porpoise - Bering Sea stock	0.6	1537	<0.01
Harbor seal - GOA	1	N/A	N/C
No. elephant seal	0.4	1743	<0.01
Steller sea lion, eastern U.S. *	1.4	766	<0.01
Unid. pinniped	0.2	--	

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.02

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

per 20 days.

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. No incidental takes were recorded in this observed fishery in 1989 through 1992. In 1993, 24 observed unidentified shearwater/petrels were incidentally caught, which results in a total estimated take of 65 birds. Additional species-specific information can be found in Appendix C.

3.2.2.3.) Pair Trawl Fisheries

Pair Trawl Fisheries - Alaska

The Alaska pair trawl fishery. Alaska issued 1 permit for this fishery in 1992, however, no fishing occurred under this permit. In 1994, 2 permits were issued for an experimental "miscellaneous finfish" pair trawl in Alaska waters. In 1993, two vessels used pair trawl gear along the Alaska Peninsula to target cod between February and March (State of Alaska unpublished license data; D. Jackson, pers. comm.).

Marine mammals. The marine mammal incidental take in this fishery is unknown, but incidental mortalities are expected based on a comparison to the Atlantic pair trawl fishery. Which marine mammal species taken depends on the precise location of the fishery.

Sea turtles. No sea turtle incidental mortalities are expected due to the location of the fishery and the distribution of sea turtles.

Sea birds. The sea bird incidental take in this fishery is unknown, but incidental mortalities are expected based on a comparison to the Atlantic pair trawl fishery. Which sea bird species taken depends on the precise location of the fishery.

3.2.2.4.) Troll Fisheries

The Pacific salmon troll fishery operates along much of the coast from Southeast Alaska to central California. The participation has declined slightly in Alaska (2,643 permitholders in 1992 to 2,536 permitholder in 1994; 1,450 permitholders fished in 1992) and has declined approximately 50% in Washington and Oregon between 1991 and 1993 due to an increased number of salmon stocks that are listed as endangered or threatened under the Endangered Species Act. The salmon fisheries in northern California are managed to ensure a certain escapement of the natural run of Klamath River chinook salmon. The salmon fishery has been closed north of Horse Mountain since 1992 and will remain closed for the foreseeable future. The areas north of Fort Bragg are severely restricted (in 1994, fishing was permitted only in

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

September) and are expected to remain restricted. Management of the troll fisheries is complex and involves many short seasonal openers. The chinook fishery in Southeast Alaska is managed to minimize the number of Snake River fall chinook incidentally taken in that fishery.

Allocation of fishery resources is a constant concern for this fishery. Allocations of salmonid fishery resources in Southeast Alaska are first made to the Metlakatla tribe and the trollers, then within the troll fishery to the power trollers and the hand trollers. In 1993, there were approximately 1,000 power trolling and 2,000 hand trolling permits issued in Southeast Alaska. Allocation of fishery resources is also a concern for the Yurok gillnet fishery and the California salmon troll fleet (National Marine Fisheries Service, 1993; State of Alaska unpublished license data; A. Baraco, California Department of Fish and Game, pers. comm.; R. Dixon, California Dept. of Fish and Game, pers. comm.; Leet et al., 1992).

Troll Fisheries - California, Oregon, Washington

The California, Oregon, Washington salmon troll fishery. This fishery combines the "Oregon, California south of Cape Falcon" and the "Oregon, Washington north of Cape Falcon" salmon troll fisheries. The individual states are discussed below:

California: There were 1,100 active permitholders in this California fishery in 1994. The number of participants in the fishery has been declining over the past few years. However, the majority of the salmon catch is landed by a small proportion of the fishers, and those fishers who choose to discontinue or decrease their participation are often part-timers who are not as invested in the fishery (R. Dixon, California Dept. of Fish and Game, pers. comm.).

Marine mammals. This fishery has been classified as a Category II fishery since 1990. It was lumped with the Washington and Oregon troll fisheries originally and redefined as the South of Cape Falcon, Oregon and California salmon troll fishery in 1992. This fishery is being split from the Oregon salmon troll fishery for the purposes of the new list of fisheries under section 118. Incidental take data for this fishery were obtained from logbooks for 1990 to 1992. These data are summarized below (for takes reported in California only):

Species	Avg. Annual Take (from Logbooks, 1990 to 1992)	PBR	Takes / PBR
California sea lion	120.33	5052	0.02
Dall's porpoise	0.33	589	<0.01
Harbor seal - CA stock	7.33	1968	<0.01

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Species	Avg. Annual Take (from Logbooks, 1990 to 1992)	PBR	Takes / PBR
Sea otter - CA stock	0.33	N/A	N/C
Sperm whale *	0.67	1	0.67
Unid. pinniped	20	--	
Unid. species	37	--	

Sea turtles. There are no known takes of sea turtles incidental to this fishery.

Sea birds. There are no known takes of sea birds incidental to this fishery.

The Oregon South of Cape Falcon salmon troll fishery. There are approximately 800 participants in this fishery (D. McIsaac, Oregon Dept. of Fish and Game, pers. comm.).

Marine mammals. This fishery has been classified as a Category II fishery in the list of fisheries since 1990. It was lumped with the California, Washington and Oregon troll fisheries originally and redefined as the South of Cape Falcon, Oregon and California salmon troll fishery in 1992. This fishery is being split from the California salmon troll fishery for the purposes of the new list of fisheries under section 118. Incidental take data for this fishery were obtained from logbooks for 1990 to 1991. Effort in this fishery was severely reduced in 1992 due to reduced stock size, therefore 1992 is not used in the average in the following table. These data are summarized below (for takes reported in Oregon, South of Cape Falcon, only):

Species	Avg. Annual Take (from Logbooks, 1990 to 1991)	PBR	Takes / PBR
California sea lion	7.5	5052	<0.01
Harbor seal - WA/OR coastal stock	0.5	850	<0.01
Steller sea lion, eastern U.S. *	0.5	1059	<0.01
Unid. species	137	--	

Sea turtles. There are no known takes of sea turtles incidental to this fishery.

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Sea birds. There are no known takes of sea birds incidental to this fishery.

The Washington and Oregon (North of Cape Falcon) salmon troll fishery. It is estimated that there are over 900 participants in this fishery, yet only 162 vessels landed 90% of the troll catch in Washington in 1993. The fishery operates through short seasonal openings from May through mid-September (National Marine Fisheries Service, 1993; State of Alaska unpublished license data; A. Baraco, California Department of Fish and Game, pers. comm.; Leet et al., 1992).

Marine mammals. This fishery was originally classified as a Category II fishery in the list of fisheries in 1990, and included the area South of Cape Falcon, Oregon (including California). In 1992, it was split off and reclassified as a Category III fishery, based on low take rates North of Cape Falcon. There were no Category III reports received in 1992 for this fishery indicating incidental takes. Incidental take data for this fishery were obtained from logbooks for 1990 to 1991. These data are summarized below (for takes reported in Washington only):

Species	Avg. Annual Take (from Logbooks, 1990 to 1991)	PBR	Takes / PBR
California sea lion	0.5	5052	<0.01

Overall rate of take for marine mammals in the Washington, Oregon, California salmon troll fishery: The rate of marine mammal incidental serious injury and mortality for this fishery is 0.20 per 20 days. However, as fishers may have been "double-logging" those animals killed or injured during deterrence efforts as "killed in gear" or "injured in gear", this may be an overestimate of the rate.

Sea turtles. Sea turtles have not been recorded as being captured incidental to this fishery.
Sea birds. Sea birds have not been recorded as being captured incidental to this fishery.

Washington and Oregon non-salmon troll fisheries. Albacore and groundfish are harvested in Oregon and Washington using troll gear. Albacore is typically caught outside the EEZ between July and October. The number of albacore trollers is increasing due to the prohibition of the use drift gill nets to harvest this species. Albacore, as a highly migratory species, are managed under a FMP; groundfish are either managed by the individual states or by the Groundfish FMP.

Marine mammals. This fishery is currently listed under Category III. There are no known takes of marine mammals incidental to this fishery.

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Sea turtles. There are no known takes of sea turtles incidental to this fishery.
Sea birds. There are no known takes of sea birds incidental to this fishery.

Troll Fisheries - Alaska

The Alaska salmon troll fishery. The State of Alaska issued 2,643 permits for this fishery in 1992 and 2,536 permits in 1994. In 1992, 1,450 of the permitholders actively fished. This salmon fishery operates in both inside and outside waters and is active year round, with specific seasons for different salmon species (National Marine Fisheries Service, 1993; State of Alaska unpublished license data; A. Baraco, California Department of Fish and Game, pers. comm.; Leet et al., 1992).

Marine mammals. This fishery was originally classified as a Category II fishery in 1990. It was reclassified as a Category III fishery in 1991 because the original classification was based on suspected intentional takes of Steller sea lions and these takes were prohibited when Steller sea lions were listed as threatened in 1991. There were no Category III reports of incidental takes in this fishery in 1991, 1992, or 1993. Logbook reports of 1990 takes are summarized below:

Species	Avg. Annual Takes (from Logbooks, 1990)	PBR	Takes / PBR
Steller sea lion, eastern Pacific*	11	1059	0.01
Unid. small cetacean	1	--	
Unid. species	90	--	

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.06 per 20 days.

Alaska non-salmon troll fisheries. In Alaska, trolling is used to harvest halibut and other bottom fish. The troll fishery for bottom fish often provides part-time employment between openers for other fishing seasons. New fisheries in Alaska that use trolling gear are called fisheries with "mechanical jigging mechanisms" because "trolling" is prohibited. These fisheries are listed under Category III.

3.2.2.5.) Purse Seine, Beach Seine, and Throw Net Fisheries

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Purse seines are used to harvest salmonids in Southeast Alaska, Prince William Sound, Cook Inlet, Kodiak, and the Alaska Peninsula/Aleutian Islands. Some purse seines, such as those in Prince William Sound, may be required to fish near the entrances to hatcheries during part of the fishing season. There were a total of 1,387 purse seine permits issued in 1992 and 1,383 in 1994. In 1992, 1,113 of the permited fishers were active. A small purse seine fleet operated by the Metlakatla tribe in Southeast Alaska occurs near Annette Island. Purse seines are also used to harvest salmon in the inside waters of Puget Sound, Washington. Salmon purse seine fisheries occur between May and September and are managed by state regulations (State of Alaska unpublished license data; P. Dougherty, Alaska Department of Fish and Game, pers. comm.).

Purse seines for finfish other than salmonid species exist in Alaska, Washington, Oregon and California. The herring purse seine fishery is active in all states and targets herring roe. The herring fishery in Alaska is managed by the Alaska Department of Fish and Game, has approximately 70 participants, and occurs primarily in Prince William Sound, Southeast Alaska, and around Kodiak Island, Cook Inlet, Northern Bristol Bay and Norton Sound. There are approximately 100 participants in the state-managed California herring purse seine, and 100 participants in the Washington and Oregon fisheries for herring, smelt, and squid.

In California, purse seines are used to harvest several different types of finfish. There are currently 150 participants in the anchovy purse seine (which also harvests mackerel and tuna), 120 participants in the sardine purse seine, and 145 participants in the squid purse seine. Fisheries are either managed by the states (sardines) or under a Fishery Management Plan (anchovy) (U. S. Department of Commerce, 1993; Leet et al., 1992; E. Onizuka, correspondence to E. Nitta, Honolulu, Hawaii).

Purse Seine, Beach Seine, and Throw Net Fisheries - California

The California herring purse seine fishery. This fishery has approximately 100 participants, is managed by the State of California, and has brief open seasons (National Marine Fisheries Service, 1994).

Marine mammals. This fishery has been classified as a Category II fishery since 1990. Incidental take data for this fishery were obtained from logbooks for 1990 to 1992. These data are summarized below:

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes / PBR
Bottlenose dolphin - coastal stock	0.33	25	0.01

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes / PBR
California sea lion	2	5052	<0.01

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.14 per 20 days.

Sea turtles. There are no known takes of sea turtles incidental to this fishery.
Sea birds. There are no known takes of sea birds incidental to this fishery.

The California anchovy, mackerel, and tuna purse seine fishery. The California anchovy fishery is managed by the Anchovy Fishery Management Plan but fishing permits are not required. Mackerel and tuna are caught incidentally in this fishery. There have been approximately 150 active vessels in this fishery in recent years (U. S. Department of Commerce, 1993; Leets et al., 1992).

Marine mammals. This fishery has been classified as a Category II fishery in the list of fisheries since 1990. Incidental take data for this fishery were obtained from logbooks for 1990 to 1992. These data are summarized below:

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes / PBR
Bottlenose dolphin - offshore stock	0.33	18	0.02
California sea lion	2.67	5052	<0.01
Harbor seal	0.67	1968	<0.01

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.04 per 20 days.

Sea turtles. There are no known takes of sea turtles incidental to this fishery.
Sea birds. There are no known takes of sea birds incidental to this fishery.

The California sardine purse seine fishery. The directed California sardine purse seine

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

fishery is a small fishery that occurs off central and southern California. Approximately 120 vessels participate in this fishery, but it is unknown whether this number solely represents those with a directed take or if it includes those fishers with a significant amount of incidental catch of sardines in the fishery for Pacific and jack mackerel (U. S. Department of Commerce, 1993; Leets et al., 1992).

Marine mammals. This fishery has been classified as a Category II fishery since 1990. There were no logbook reports of incidental takes in this fishery from 1990 to 1992. The take rate per 20 days is 0.00.

Sea turtles. There are no known takes of sea turtles incidental to this fishery.

Sea birds. There are no known takes of sea birds incidental to this fishery

The California squid purse seine fishery. The California squid purse seine operates off southern California, targeting squid schools that are moving into shallow water to spawn. An increase in fishing effort near the Channel Islands has occurred since the late 1980's. Purse seines are used to harvest squid in Monterey Bay. The fishery currently has approximately 145 participants (Leets et al., 1992; National Marine Fisheries Service, 1994)

Marine mammals. This fishery has been classified as a Category II fishery in the list of fisheries since 1990. Incidental take data for this fishery were obtained from logbooks for 1990 to 1992. These data are summarized below:

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes / PBR
California sea lion	3	5052	<0.01

In addition, there is strong evidence of mortality of Risso's dolphins and pilot whales in this fishery (Heyning et al., 1994). These mortalities are due to intentional lethal deterrence.

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.07 per 20 days.

Sea turtles. There are no known takes of sea turtles incidental to this fishery.

Sea birds. There are no known takes of sea birds incidental to this fishery.

Purse Seine, Beach Seine, and Throw Net Fisheries - Washington, Oregon

The Washington drag seine fishery. There were 36 permits issued for this fishery in 1991; no target species was specified (Washington Department of Fish and Wildlife unpublished license data).

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Marine mammals. Incidental take levels are unknown.

Purse Seine, Beach Seine, and Throw Net Fisheries - Alaska

The Alaska Peninsula salmon purse seine fishery. There are approximately 124 participants in this fishery. This fishery operates between May and September (State of Alaska unpublished license data).

Marine mammals. This fishery was defined as the South Unimak (False Pass and Unimak Pass) purse seine fishery and has been classified as a Category II fishery since 1990. There were no logbook records of incidental takes in this fishery from 1990 to 1992. The rate of marine mammal incidental serious injury and mortality for this fishery is 0.07 per 20 days.

The Alaska salmon/herring beach or purse seine fishery.

Marine mammals. This fishery has been classified as a Category III fishery since 1990. There was one Category III report of a humpback whale taken in the Southeast Alaska salmon purse seine. As a result of this take, the fishery may be divided into the AK salmon purse/beach seine and the AK herring purse/beach seine fisheries. Fishery takes are summarized below with respect to PBR:

Species	Avg. Annual Take (from Cat. III reports, 1990 - 1993)	PBR	Takes / PBR
Humpback whale	0.25	2.8	0.09

The Alaska Metlakatla purse seine fishery. A small purse seine fleet of 2-3 vessels operated by the Metlakatla tribe in Southeast Alaska occurs near Annette Island. This fishery operates from May through September (P. Dougherty, Alaska Department of Fish and Game, pers. comm).

3.2.2.6.) Longline Fisheries

Longline and set line fisheries are used throughout the Pacific to catch a variety of species. In Alaska, longlines are used primarily to target sablefish in Prince William Sound, the Gulf of Alaska and the Bering Sea, although a variety of groundfish are also taken (turbot, Pacific cod, rockfish, lingcod). Washington and Oregon groundfish longline fisheries harvest sablefish, spiny dogfish, and rockfish, and California longline fisheries harvest rockfish, bocaccio and sablefish. Longline fisheries for groundfish are managed under the Groundfish

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Fishery Management Plan. There are approximately 1,450 vessels in the sablefish longline fishery in Alaska, and approximately another 400 in the participants in the groundfish longline in California, Oregon and Washington. Longlines are also used in the halibut fishery, for which there were approximately 5,600 permits issued in California, Oregon, Washington and Alaska in 1993. In order to limit effort in the fishery and reduce bycatch mortality in the groundfish and other fisheries that do not target sablefish or halibut, both sablefish and halibut are now under an individual transferable quota system. A small longline fishery for shark/bonito also exists in California (M. Murray-Brown, National Marine Fisheries Service, pers. comm.; National Marine Fisheries Service, 1991; Pacific States Marine Fisheries Commission, 1993; S. Fougner, National Marine Fisheries Service).

Longline Fisheries - Alaska

The Prince William Sound sablefish longline/set line fishery. The Alaska Prince William Sound sablefish longline fishery has approximately 270 participants. This fishery operates for two to three weeks in May and again from June until November or until the quota for sablefish is reached (State of Alaska unpublished license data, Young et al., 1992; Pacific States Marine Fisheries Commission, 1993).

Marine mammals. This fishery has been classified as a Category II fishery in South Unimak (False Pass and Unimak Pass) and as a Category III fishery in the rest of Alaska since 1990. There were no logbook reports of incidental takes in this fishery from 1990 to 1992.

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.00 per 20 days.

The Southern Bering Sea, Aleutian Islands, and western Gulf of Alaska sablefish longline/set line fishery. This fishery includes approximately 226 participants. The Bering Sea/Aleutian Islands fishery is open from January 1 until the sablefish quota is filled, and the Gulf of Alaska fishery is open from May 15 until the quota is filled (State of Alaska unpublished license data; Pacific States Marine Fisheries Commission, 1993).

Marine mammals. This fishery has been classified as a Category II fishery in the list of fisheries since 1990. Incidental take data for this fishery were obtained from logbooks for 1990 to 1992. These data are summarized below:

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes / PBR
N. elephant seal	0.33	1743	<0.01

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.003 per 20 days.

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. Incidental captures of sea birds has not been reported for this unobserved fishery. However, by comparison with the groundfish longline fishery, it can be assumed that at least a low level of incidental take occurs for northern fulmars and Laysan albatross, among others.

The Bering Sea/Gulf of Alaska groundfish longline fishery targets turbot, Pacific cod, rockfish, and lingcod. This fishery has been classified as a Category III fishery since 1990.

Marine mammals. Data on incidental takes were obtained by observers placed on random vessels, in accordance with fishery management regulations. Observer data are presented in Appendix B and summarized below, with respect to PBR:

Species	Avg. Annual Take (Extrapolated from Observer Data, 1989-1993)	PBR	Takes / PBR
Harbor seal -GOA and BS stocks	0.8	N/A-1099	N/C - 0.01
Steller sea lion, eastern & western U.S. *	1.2	766-1059	<0.01
N. elephant seal	1.2	1743	<0.01

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.004 per 20 days.

Sea turtles, Bering Sea groundfish longline . Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds, Bering Sea groundfish longline. From 1990 to 1992, an average of 7351

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

unidentified birds per year were caught in the Bering Sea domestic groundfish longline fishery. In 1993, the species of the incidentally caught birds was recorded. The majority of the birds caught in the fishery were northern fulmars, unidentified birds, unidentified gulls, Laysan albatross, and unidentified albatross. Additional species-specific information can be found in Appendix C.

Sea turtles, Gulf of Alaska groundfish longline. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds, Gulf of Alaska groundfish longline. From 1990 to 1992, an average of 879 unidentified birds were caught annually in the Gulf of Alaska groundfish longline. In 1993, the species of the incidentally caught birds was recorded. The majority of the birds caught in the fishery were northern fulmars, Laysan albatross, unidentified birds, and unidentified shearwater/petrels. Additional species-specific information can be found in Appendix C.

3.2.2.7.) Pot, Ring Net, and Trap Fisheries

Pot, Ring Net, and Trap Fisheries - Alaska

The Metlakatla fish trap fishery. This fishery is operated by the Metlakatla tribe out of Annette Island in Southeast Alaska. There was no effort in this fishery in 1994 (P. Dougherty, Alaska Department of Fish and Game, pers. comm.).

Marine mammals. This fishery has been classified as a Category II fishery since 1990. There were no logbook reports of incidental takes in this fishery from 1990 to 1992.

The Bering Sea/Gulf of Alaska domestic groundfish pot fishery is also known as the finfish pot fishery.

Marine mammals. This fishery has been classified as a Category III fishery since 1990. Data on incidental takes were obtained by observers placed on random vessels, in accordance with fishery management regulations. Observer data are presented in Appendix B and summarized below, with respect to PBR (there was also a Category III report of two sea otters taken in this fishery in the Aleutian Islands in 1992) :

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Species	Avg. Annual Take (Extrapolated from Observer Data, 1990-1993)	PBR	Takes / PBR
Harbor seal -GOA and BS stocks	(5)	N/A-1099	N/C - <0.01
Sea otter	36	6000	<0.01

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.06 per 20 days.

Sea turtles. Sea turtle incidental mortality has not been recorded incidental to this fishery. Due to the distribution of sea turtles, it is very unlikely that a sea turtle mortality would ever occur incidental to this fishery.

Sea birds. A small number of unidentified birds were caught incidental to this fishery in 1991 and 1992. The total average annual take for 1989 and 1993 is 10.25 birds.

3.2.2.8.) Dip Net Fisheries

Dip Net Fisheries - California

The California squid dip net fishery. In this night fishery, lights are used to lure squid to the surface where they can be collected with a dip net. The California squid dip net fishery has approximately 115 participants (Leets et al., 1992; National Marine Fisheries Service, 1994).

Marine mammals. This fishery has been classified as a Category II fishery since 1990. There were no reports of incidental takes in logbooks for this fishery from 1990 to 1992.

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.00 per 20 days.

Sea turtles. There are no known sea turtle mortalities incidental to this unobserved fishery.

Sea birds. There are no known sea bird mortalities incidental to this unobserved fishery.

Dip Net Fisheries - Washington, Oregon

The Washington, Oregon smelt, herring dip net fishery. This fishery has approximately 119 participants and occurs at least partly in the lower Columbia River (National Marine

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Fisheries Service, 1994; Washington Department of Fish and Wildlife, 1991).

Sea turtles. There are no known sea turtle mortalities incidental to this unobserved fishery.

Sea birds. There are no known sea bird mortalities incidental to this unobserved fishery.

2.2.2.9.) Pound Fisheries

There are currently two recognized pound fisheries in the Pacific Ocean: the Southeast Alaska herring food/bait pound fishery issued 7 permits in 1994 and the Washington herring brush fishery has one participant (State of Alaska unpublished licence data). No information is currently available as to mortalities of marine mammals, sea turtles, or sea birds incidental to these fisheries.

3.2.2.10.) Dive, hand/mechanical, collection fishery

There are many fisheries in the Pacific Ocean that are categorized as dive, hand/mechanical or collection fisheries. The following fisheries are those which have undergone major changes since the DLEIS was prepared in 1991.

Between 1991 and 1994, the Prince William Sound and Bristol Bay herring spawn-on-kelp fishery experienced a brief increase in participants followed by a sharp decrease. This dynamic was due to initial overcapitalization in the fishery followed by the realization that the fishery was less profitable than originally hoped. A total of 545 permits were issued for this fishery in 1994.

The sea urchin fisheries in Washington, Oregon, California and Oregon, all of which are state-managed, have changed in recent years. The California urchin fishery has decreased drastically due to the limited entry program initiated in 1994 to reduce the amount of effort. The goal of the limited entry program is to reduce the number of participants from the current 583 participants to 300 participants. The number of participants in the fishery for sea urchins in Alaska increased from 19 in the early 1990's to 122 in 1994. About 40% of this fishery occurs in Sitka Sound; the remainder of the fishery occurs primarily on Kodiak Island and in Cook Inlet (State of Alaska unpublished license data; California Department of Licensing unpublished license data; Pacific States Marine Fisheries Commission, 1993).

Marine mammals, sea turtles, sea birds. In general, dive and hand/mechanical collection fisheries do not cause incidental mortalities of marine mammals, sea turtles, or sea birds.

Dive, hand/mechanical, collection fishery - California

The California live trap/hook & line fishery. This new fishery primarily consists of gill

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

net fishers who were displaced by the gill net ban in California state waters. Fish caught in this fishery are placed live in display tanks in Asian restaurants in California; restaurant customers pick the fish they want for their meal from the tank. The fishery uses traps or hook and line to capture fish, especially those fish that can survive placement in an indoor fish tank for up to one week and those that look most appetizing in a restaurant situation. Fish that are red, such as rockfish, cabazon, scorpionfish, and sheepshead, are particularly popular. Some reddish shrimp species are also caught and retained in this fishery. Approximately 93 vessels participated in this unregulated fishery in 1994 (M. Vojkovich, California Department of Fish and Game, pers. comm.).

Marine mammals, sea turtles, sea birds. In general, hook and line fisheries do not cause incidental mortalities of marine mammals, sea turtles, or sea birds. Some low level of mortality may be expected due to entanglement in pot gear.

Dive, hand/mechanical, collection fishery - Alaska

The Alaska spawn-on-kelp empoundment fishery. This fishery takes place in Hoonah Sound and in Craig/Klawock in Southeast Alaska. This unregulated fishery was issued 200 permits by the State of Alaska in 1994 (H. Savikko, Alaska Department of Fish and Game, pers. comm.). No information is available on the interactions between this fishery and marine mammals, sea turtles, or sea birds.

3.2.2.11.) Bait Pens/Fisheries

Bait Pens/Fisheries - California

The California bait pen fishery. At least one bait pen exists in California as of December 1994. The nature of interactions between this fishery and marine mammals, sea turtles, and sea birds is not known.

Bait Pens/Fisheries - Washington/Oregon

The Washington ghost shrimp bait fishery. This fishery operates in the inside waters of Puget Sound and utilizes a water pump to flush ghost shrimp out of intertidal sand bars to be collected as bait. This fishery has indirect interactions with gray whales in Puget Sound, as gray whales have recently been seen feeding on intertidal ghost shrimp beds during high tides. Washington issued 14 permits for this fishery in 1994 (Washington Department of Fish and Wildlife unpublished license data).

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

3.2.2.12.) Aquaculture, Ranch Pen Fisheries

Aquaculture for salmon occurs in both Washington and Oregon and involves 21 permits for salmon net pens and 8 salmon ranch permits. Shellfish aquaculture facilities are also permited in Washington and Oregon (National Marine Fisheries Service, 1994).

Aquaculture, Ranch Pen Fisheries - California

The California salmon enhancement rearing pen fishery.

Marine mammals. This fishery was not identified in previous lists of fisheries. Data on incidental takes of marine mammals are not available, although it is assumed that interactions are similar to that which occur in the salmon aquaculture (net pen) fishery.

Species	Avg. Annual Take (from Category III reports, 1990-1993)	PBR	Takes / PBR
California sea lion	0.25	5052	<0.01

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.00 per 20 days.

Aquaculture, Ranch Pen Fisheries - Washington, Oregon

The Washington and Oregon salmon net pen fishery. Permits have been issued for 21 salmon net pens in Washington and Oregon. Some permits were issued to treaty tribes (National Marine Fisheries Service, 1994).

Marine mammals. This fishery has been classified as a Category II fishery since 1990. Incidental take data for this fishery were obtained from logbooks for 1990 to 1992. These data are summarized below:

Species	Avg. Annual Take (from Logbooks, 1990-1992)	PBR	Takes / PBR
California sea lion	3.33	5052	<0.01
Harbor seal - WA inland waters stock	0.67	783	<0.01

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

Unid. small cetacean	0.33	--	
Unid. species	0.33	--	

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.04 per 20 days.

The Oregon salmon ranch fishery. Permits have been issued for 8 salmon ranches in Oregon (National Marine Fisheries Service, 1994).

Marine mammals. This fishery has been categorized as a Category II fishery since 1990. There were no logbook reports of incidental takes in this fishery from 1990 to 1992.

The rate of marine mammal incidental serious injury and mortality for this fishery is 0.00 per 20 days.

3.2.2.13.) Commercial Passenger Fishing Vessel (Charter Boat) Fisheries

The Washington, Oregon, and California commercial passenger fishing vessel (charter boat) fishery.

Marine mammals. This fishery has been classified as a Category III fishery since 1990. Category III reports identified 8 California sea lions taken in this fishery from 1990 to 1993. These takes are summarized below with respect to PBR:

Species	Avg. Annual Take (from Cat. III reports, 1990 - 1993)	PBR	Takes / PBR
California sea lion	2	5052	< 0.01

The rate of marine mammal incidental serious injury and mortality for this fishery cannot be calculated because there is no information on effort.

3.2.3.) Hawaii and Western Pacific

3.2.3.1.) Troll Fisheries

Troll fisheries currently operate in the western Pacific off Hawaii, Guam, the Commonwealth of the Northern Mariana Islands, and American Samoa. Although all fisheries harvest a mixed species assemblage, the primary target of the Hawaiian troll fishery is yellowfin

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

tuna and the primary target of the fisheries in the western Pacific is skipjack tuna. All fisheries are managed by states and the Pelagic Fishery Management Plan. The State of Hawaii permited 1795 vessels for this fishery in 1993/1994. The number of participants in 1993 in Guam, Commonwealth of the Northern Mariana Islands, and American Samoa was approximately 300, 50, and 50, respectively (U. S. Department of Commerce, 1993; State of Alaska unpublished license data; E. Onizuka, correspondence with E. Nitta, Honolulu, Hawaii; Western Pacific Fishery Management Council, 1993).

Marine mammals, sea turtles, and sea birds. There are no known interactions between this unobserved fishery and marine mammals, sea turtles and sea birds.

3.2.3.2.) Longline Fisheries

Pelagic longline fishery In the western Pacific, longline gear is used to harvest tuna, billfish, mahi mahi, wahoo, swordfish, and oceanic sharks. This fishery has experienced a period of rapid growth during the past few years and has recently been put under a limited entry program under the Fishery Management Plan of the Western Pacific Region capping vessel permits at 166 (123 fished in 1994). Because the limit on the size of the vessel is the size of the largest vessel in the fleet, however, it is expected that permitholders will upgrade their vessels resulting in an increase in effort in the fishery will of about 32%. This increase in effort may cause an increase in sea turtle mortality. Area closures around the main Hawaii Islands and near Guam have been instigated to reduce gear conflicts. Observer coverage for the western Pacific pelagic longline fishery has been poor (Western Pacific Regional Fishery Management Council, 1993; M. Murray-Brown, National Marine Fisheries Service, pers. comm.).

Marine mammals. There is one known incidental mortality of a marine mammal in this fishery. However, because this fishery will be observed as of 1994, additional information on marine mammal incidental mortalities will be forthcoming.

Sea turtles: In 1993, there was 1 green turtle, 1 leatherback turtle, 3 loggerhead turtles, and 1 pygmy killer whale taken in the western Pacific swordfish/tuna longline fishery. A mandatory observer program went into effect in early 1994, so additional data should be forthcoming.

Sea birds. No information on captures of sea birds incidental to this fishery is currently available. However, based on comparisons to longline fisheries in the North Pacific, it is likely that sea bird incidental mortalities do occur and that they include Laysan albatross.

3.2.3.3.) Other Hawaiian Fisheries

Fisheries other than the pelagic troll and longline are abundant in Hawaii and the western Pacific. These fisheries include, but are not limited to, the hook and line bottomfish fishery, the lobster pot fishery, and the opelu/akule net fishery. With the exception of a general increase in

---

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

the number of permitholders and the sharp reduction in lobster fishing in Hawaii, there are no known changes from the material presented in the DLEIS. In general, there are no known interactions between these fisheries and marine mammals, sea turtles and sea birds (with the exception of entanglement of monk seals in lobster gear). Details on the fisheries can be found in Appendix A.

For all tables, "*" indicates a strategic stock as identified in the final Stock Assessment Reports, "N/A" indicates a value is not applicable, and "N/C" indicates a value is not computable.

4.0.) ALTERNATIVES CONSIDERED AND ASSOCIATED ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS

The environmental impact of all major Federal actions must be considered prior to implementation to determine whether it would significantly affect the quality of the human environment. In this section, an analysis of the environmental and socio-economic impacts of alternatives under each of the issues for which NMFS has regulatory flexibility is presented. At the end of the analysis of each issue is a table outlining the provisions and impacts associated with each alternative.

4.1.) Issuance of Authorization Certificates

4.1.1.) Alternative 1: No Action Alternative

As discussed in section 2.0.1., this alternative is not considered viable because NMFS is required by law (section 118 of the Act) to issue authorization certificates under section 118 which would authorize commercial fishers to seriously injure or kill marine mammals incidental to commercial fishing operations. The environmental consequences of not issuing authorization certificates under this alternative would depend on how the fishing industry responded. If, in the absence of authorization to incidentally take marine mammals, fishers decide to stay in port and not risk unlawfully taking a marine mammal, the environmental impacts of this alternative would be positive in that mortality of marine mammals and other protected species would be reduced. The economic impact to fishers could be signficant, however, by foregoing the profits that could be realized from conducting fishing operations. If, however, commercial fishers reacted by conducting fishing operations without a section 118 authorization certificate, the environmental impacts could be significant because there would be no observers monitoring the fishing activities and fishers might feel no need to comply with take reduction plans or emergency regulations to reduce mortality of protected species. In this scenario, fishers could suffer significant economic impacts due to civil or criminal enforcement proceedings (e.g., seizures of vessels, fines) under the Act or the Endangered Species Act.

4.1.2.) Alternative 2: Issue Authorization Certificates With Terms and Conditions

As discussed in section 2.0.2., this alternative is not considered viable because section 118 of the Act does not give NMFS the discretion to include terms or conditions in authorization certificates to mitigate environmental impacts. If NMFS had such discretion, environmental impacts would likely be positive due to mitigating terms or conditions that would limit fishers activities and their impact on the environment. This alternative could result in negative economic impacts to fishers by reducing the profitability of their operations due to the imposition of mitigation measures.

4.1.3.) Alternative 3: Issue Authorization Certificates Without Terms or Conditions and Carry Forward Existing Provisions Of The Section 114 Interim Exemption Regulations

(Preferred Action)

As discussed in section 2.0.3., this alternative would be most consistent with the statutory requirements and, by merely maintaining the status quo (i.e., activities currently authorized under the section 114 Interim Exemption), would not have any significant environmental or economic impacts. In addition, section 118 of the MMPA requires Take Reduction Teams to develop Take Reduction Plans to reduce incidental takes of certain marine mammal stocks in commercial fisheries. *****Add that section 118 of the MMPA also sets up TRTs TRPs that wil have a + impact on environment - will have own nepa analysis

4.2.) Criteria for Assigning Fisheries into Categories

Significance of this Issue

The classification of fisheries into Categories I, II, and III affects the vessel owners which participate in such fisheries in the following ways:

1) Registration requirements. Authorizations will be granted for vessel owners participating in Category I and II fisheries, to provide an exemption from the MMPA moratorium which would otherwise prohibit the incidental serious injury or mortality of marine mammals. These vessel owners will be required to register with NMFS, obtain a valid decal or other proof of authorization, report all incidental injuries or mortalities of marine mammals and comply with applicable take reduction plans and emergency regulations. Registration in itself has no environmental impact. Registration imposes an economic impact on vessel owners by requiring fees and paperwork to be submitted in order to obtain an authorization.

2) Monitoring requirements. The Secretary (NMFS) must place observers on board vessels engaged in Category I and II fisheries according to a prioritization scheme outlined in section 118(d)(4). NMFS may place observers on Category III vessels only with the consent of the vessel owner, except in certain emergency situations. Monitoring of fishery operations has a positive environmental impact in that it allows collection of information on all aspects of commercial fishing operations that can be used to reduce future incidental takes of marine mammals and, as a side benefit, other protected species. Monitoring could impose an economic burden on vessel owners by requiring that they carry observers on board their vessels which may interfere with the efficiency of fishing operations.

3) Reporting requirements. All commercial fishing vessel owners must report injuries or mortalities within 48 hours of the end of a fishing trip, regardless of which Category fishery they participate in. Vessel owners participating in Category III fisheries are not subject to the penalties of the MMPA if such owners report all incidental injuries and mortalities of marine mammals within 48 hours of the end of a fishing trip (vessel owners

in Category I and II fisheries must also comply with other requirements outlined in 1) in order to avoid penalties). Reporting has a positive environmental impact in that it provides information on the level of incidental serious injuries and mortalities of marine mammals due to commercial fishing that can be used to reduce future incidental takes of mairine mammals and, as a side benefit, other protected species. Reporting imposes an economic burden on vessel owners by requiring that vessel owners submit paperwork on a regular basis, depending on how often fishing operations result in the incidental injury or mortality of a marine mammal.

4) Take reduction plan development. Section 118(f) of the Act requires the Secretary (NMFS) shall develop and implement a take reduction plan designed to assist in the recovery or prevent the depletion of each strategic stock which interacts with a Category I or II fishery. NMFS may also develop and implement a plan for any other marine mammal stocks which interact with a Category I fishery which has a high level of mortality and serious injury across a number of such marine mammal stocks. Take reduction plans have a positive environmental impact in that they are intended to result in the reduction of incidental serious injuries and mortalities of marine mammals due to commercial fishing. Take reduction plans may impose an economic burden on vessel owners by requiring that they modify their gear or fishing techniques, or comply with restrictions on fishing effort, in order to reduce incidental serious injuries and mortalities of marine mammals.

5) Emergency regulations. Fisheries which the Secretary (NMFS) believes may be having an adverse impact on a stock or species may be subject to: emergency regulations to reduce such incidental serious injury and mortality; an immediate review of the stock assessment for such stock or species to determine if a take reduction team should be established; and, for Category III fisheries, the placement of observers if such fisheries are believed to be causing the immediate and significant adverse imacts to a stock listed as threatened or endangered under the Endangered Species Act. Emergency regulations have a positive environmental impact in that they are intended to immediately reduce the incidental serious injuries and mortalities of marine mammals due to commercial fishing. Emergency regulations may impose an economic burden on vessel owners by requiring that they comply with restrictions on fishing effort in order to reduce incidental serious injuries and mortalities of marine mammals.

Where dividing lines are drawn between categories has both environmental and economic impacts. The most important environmental and economic consideration is the dividing line between Category II and III fisheries, as the potential for collecting information in Category III fisheries is minimal as is the economic burden on these fisheries, except in certain emergency situations. Therefore, NMFS must ensure that these fisheries have little or no adverse impact on marine mammal stocks, as they will not normally be subject to monitoring and regulatory requirements under the MMPA.

Tables 1 and 2 provide the results of analyzing the fisheries under the alternatives

discussed under section 2. For those alternatives that have a Tier 1 and Tier 2 level of analysis, the Tier 1 criteria were met unless otherwise specified.

4.2.1.) Alternative 1: Status Quo, or No Action Alternative

Currently, under regulations implementing the section 114 Interim Exemption, the classification criteria are based on a "by-vessel" rate of total marine mammal "take" per twenty days of fishing. NMFS interpreted "take" under section 114 as entanglement, injury, and mortality. Under section 118, NMFS must classify fisheries based on incidental serious injuries and mortalities only. Under this alternative, the existing regulations would need to be amended to incorporate the new, more narrow, criteria. The regulatory definitions would be as follows:

Category I: There is documented information indicating a "frequent" incidental *serious injury or mortality* of marine mammals in the fishery. "Frequent" means that it is highly likely that more than one marine mammal will be incidentally *seriously injured or killed* by a randomly selected vessel in the fishery during a 20-day period.

Category II: (1) There is documented information indicating an "occasional" incidental *serious injury or mortality* of marine mammals in the fishery, or (2) in the absence of information indicating the frequency of incidental *serious injury or mortality* of marine mammals, other factors such as fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, and species and distribution of marine mammals in the area suggest there is a likelihood of at least an "occasional" incidental *serious injury or mortality* in the fishery. "Occasional" means that there is some likelihood that one marine mammal will be incidentally *seriously injured or killed* by a randomly selected vessel in the fishery during a 20-day period, but that there is little likelihood that more than one marine mammal will be incidentally *seriously injured or killed.*

Category III: (1) There is information indicating no more than a "remote likelihood" of an incidental *serious injury or mortality* of a marine mammal in the fishery, or (2) in the absence of information indicating the frequency of incidental *serious injury or mortality* of marine mammals, other factors such as fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, and species and distribution of marine mammals in the area suggest there is no more than a remote likelihood of an incidental *serious injury or mortality* in the fishery. "Remote likelihood" means that it is highly unlikely that any marine mammal will be incidentally *seriously injured or killed* by a randomly selected vessel in the fishery during a 20-day period.

Environmental Impacts of this Alternative. This alternative would allow for the collection of information in fisheries that are responsible for the incidental serious injury and mortality of all marine mammals, regardless of the status of the stocks involved. The classification of fisheries would be the same as it was in the Notice of Final List of Fisheries for 1994 (59 FR 43818, August 25, 1994), with the changes proposed in the Proposed Changes to the List of Fisheries (59 FR 45263, September 1, 1994) and adjustments made as necessary when new information becomes available.

This would have a positive environmental impact in that it would allow for the collection of information in approximately 31 fisheries, and from approximately 30,000 fishers. This would prioritize the development of take reduction plans for 7 Category I fisheries and 24 Category II fisheries. These take reduction plans would have a positive environmental impact by providing mechanisms to reduce incidental serious injuries and mortalities in these fisheries.

Economic Impacts of this Alternative. The economic impact of this alternative would be the requirement that approximately 30,000 vessel owners register with NMFS, at a cost of approximately $30 per vessel owner. These vessel owners would also be subject to costs associated with observer placement and the development of take reduction strategies which could reduce fishery profits (amount unknown).

4.2.2.) Alternative 2: Preferred Action

Alternative 2 is a two-tiered approach that would first address the total impacts of all fisheries on each marine mammal stock and then address the impacts of individual fisheries on individual stocks. It is based on the annual number of serious injuries and mortalities due to commercial fishing relative to a stock's PBR.

Tier 1:

IF the incidental annual mortality and serious injury in a stock across all fisheries is less than or equal to 10% of the PBR of a particular stock, THEN all fisheries interacting with this stock (and no other stocks that do not fit this criteria) should be placed in Category III.

IF the incidental annual mortality and serious injury in a stock across all fisheries is greater than 10% of the PBR of a particular stock, THEN all fisheries interacting with this stock are subject to evaluation at the Tier 2 level.

Tier 2:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 50% of the PBR of that stock.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is greater than 1% and less than 50% of the PBR of that stock.

Category III: Annual incidental mortality and serious injury in a stock from a given

fishery is less than or equal to 1% of the PBR of that stock.

Environmental Impacts of this Alternative. This alternative would have a positive environmental impact in that it would allow for the collection of information in approximately 37 fisheries, and from approximately 16,600 fishers. This would prioritize the development of take reduction plans for 7 Category I fisheries and 30 Category II fisheries. These take reduction plans would have a positive environmental impact by providing mechanisms to reduce incidental serious injuries and mortalities in these fisheries.

Economic Impacts of this Alternative. The economic impact of this alternative would be the requirement that approximately 16,600 vessel owners register with NMFS, at a cost of approximately $30 per vessel owner. These vessel owners would also be subject to costs associated with observer placement and the development of take reduction strategies which could reduce fishery profits (amount unknown).

4.2.3.) Alternative 3

Alternative 3 is a two-tiered approach that would first address the total impacts of all fisheries on each marine mammal stock and then address the impacts of individual fisheries on individual stocks. It is based on the annual number of serious injuries and mortalities due to commercial fishing relative to a stock's PBR.

Alternative 3a - 1% option:

Tier 2:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 30% of the PBR of that stock.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is between *1%* and 29% of the PBR of that stock.

Category III: Annual incidental mortality and serious injury in a stock from a given fishery is less than *1%* of the PBR of that stock.

In this alternative, fisheries that do not take more than 30% of any stock's PBR yet take more than 1% of the PBR of any stock would be classified as Category II, and fisheries that do not take more than 1% of any stock's PBR would be classified as Category III.

Environmental Impacts of this Alternative. This would have a positive environmental impact in that it would allow for the collection of information in approximately 34 fisheries, and from approximately 14,600 fishers. This would prioritize the development of take reduction plans for 7 Category I fisheries and 27 Category II fisheries. These take reduction plans would have a positive environmental impact by providing mechanisms to reduce incidental serious injuries and mortalities in these fisheries.

Economic Impacts of this Alternative. The economic impact of this alternative would be the requirement that approximately 14,600 vessel owners register with NMFS, at a cost of approximately $30 per vessel owner. These vessel owners would also be subject to costs associated with observer placement and the development of take reduction strategies which could reduce fishery profits (amount unknown).

Alternative 3b - 5% option:

Tier 2:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 30% of the PBR of that stock.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is between *5%* and 29% of the PBR of that stock.

Category III: Annual incidental mortality and serious injury in a stock from a given fishery is less than *5%* of the PBR of that stock.

In this alternative, fisheries that do not take more than 30% of any stock's PBR yet take more than 5% of the PBR of any stock would be classified as Category II, and fisheries that do not take more than 5% of any stock's PBR would be classified as Category III.

Environmental Impacts of this Alternative. This would have a positive environmental impact in that it would allow for the collection of information in approximately 21 fisheries, and from approximately 9000 fishers. This would prioritize the development of take reduction plans for 7 Category I fisheries and 14 Category II fisheries. These take reduction plans would have a positive environmental impact by providing mechanisms for reducing incidental serious injuries and mortalities in these fisheries.

Economic Impacts of this Alternative. The economic impact of this alternative would be the requirement that approximately 9000 vessel owners register with NMFS, at a cost of approximately $30 per vessel owner. These vessel owners would also be subject to costs associated with observer placement and the development of take reduction strategies which could reduce fishery profits (amount unknown).

Alternative 3c - 10% option:

Tier 2:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 30% of the PBR of that stock.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is between *10%* and 29% of the PBR of that stock.

Category III: Annual incidental mortality and serious injury in a stock from a given fishery is less than *10%* of the PBR of that stock.

In this alternative, fisheries that do not take more than 30% of any stock's PBR yet take more than 10% of the PBR of any stock would be classified as Category II, and fisheries that do not take more than 10% of any stock's PBR would be classified as Category III.

Environmental Impacts of this Alternative. This would have a positive environmental impact in that it would allow for the collection of information in approximately 17 fisheries, and from approximately 5000 fishers. This would prioritize the development of take reduction plans for 7 Category I fisheries and 10 Category II fisheries. These take reduction plans would have a positive environmental impact by providing mechanisms to reduce incidental serious injuries and mortalities in these fisheries.

Economic Impacts of this Alternative. The economic impact of this alternative would be the requirement that 5000 vessel owners register with NMFS, at a cost of approximately $30 per vessel owner. These vessel owners would also be subject to costs associated with observer placement and the development of take reduction strategies which could reduce fishery profits (amount unknown).

4.2.4.) Alternative 4

This alternative would combine alternatives 1 and 2. In essence, this alternative would consider both the incidental serious injury and mortality rate of all marine mammal stocks in a 20-day period and the annual incidental serious injury and mortality rate relative to PBR, and classify fisheries according to the more conservative approach of the two.

Alternative 4a - 1% option:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 30% of the PBR of that stock, OR it is highly likely that more than one marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is between *1%* and 29% of the PBR of that stock, OR there is some likelihood that one marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Category III: Annual incidental mortality and serious injury in a stock from a given fishery is less than *1%* of the PBR of that stock, OR it is highly unlikely that any marine mammal will be incidentally seriously injured or killed by

a randomly selected vessel in the fishery during a 20-day period.

Environmental Impacts of this Alternative. This would have a positive environmental impact in that it would allow for the collection of information in approximately 36 fisheries, and from approximately 14,600 fishers. This would prioritize the development of take reduction plans for 7 Category I fisheries and 29 Category II fisheries. These take reduction plans would have a positive environmental impact by providing mechanisms for reducing incidental serious injuries and mortalities in these fisheries.

Economic Impacts of this Alternative. The economic impact of this alternative would be the requirement that approximately 36 vessel owners register with NMFS, at a cost of approximately $30 per vessel owner. These vessel owners would also be subject to costs associated with observer placement and the development of take reduction strategies which could reduce fishery profits (amount unknown).

Alternative 4b - 5% option:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 30% of the PBR of that stock, OR it is highly likely that more than one marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is between *5%* and 29% of the PBR of that stock, OR there is some likelihood that one marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Category III: Annual incidental mortality and serious injury in a stock from a given fishery is less than *5%* of the PBR of that stock, OR it is highly unlikely that any marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Environmental Impacts of this Alternative. This would have a positive environmental impact in that it would allow for the collection of information in approximately 21 fisheries, and from approximately 8600 fishers. This would prioritize the development of take reduction plans for 7 Category I fisheries and 14 Category II fisheries. These take reduction plans would have a positive environmental impact by providing mechanisms for reducing incidental serious injuries and mortalities in these fisheries.

Economic Impacts of this Alternative. The economic impact of this alternative would be the requirement that 8600 vessel owners register with NMFS, at a cost of approximately $30 per vessel owner. These vessel owners would also be subject to costs associated with observer placement and the development of take reduction strategies which could reduce fishery profits

(amount unknown).

Alternative 4c - 10% option:

Category I: Annual incidental mortality and serious injury in a stock from a given fishery is greater than or equal to 30% of the PBR of that stock, OR it is highly likely that more than one marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Category II: Annual incidental mortality and serious injury in a stock from a given fishery is between *10%* and 29% of the PBR of that stock, OR there is some likelihood that one marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Category III: Annual incidental mortality and serious injury in a stock from a given fishery is less than *10%* of the PBR of that stock, OR it is highly unlikely that any marine mammal will be incidentally seriously injured or killed by a randomly selected vessel in the fishery during a 20-day period.

Environmental Impacts of this Alternative. This would have a positive environmental impact in that it would allow for the collection of information in approximately 19 fisheries, and from approximately 4000 fishers. This would prioritize the development of take reduction plans for 7 Category I fisheries and 12 Category II fisheries. These take reduction plans would have a positive environmental impact by providing mechanisms for reducing serious injuries and mortalities in these fisheries.

Economic Impacts of this Alternative. The economic impact of this alternative would be the requirement that 4000 vessel owners register with NMFS, at a cost of approximately $30 per vessel owner. These vessel owners would also be subject to costs associated with observer placement and the development of take reduction strategies which could reduce fishery profits (amount unknown).

Table 1: Categorization of fisheries in the Pacific Ocean using different fishery classification criteria.

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
Pacific Ocean											
CA angel shark/halibut and other species set gill net fishery	520	1	1	1	1	1	1	1	1	1	Observed take per 20 days = 8.73. Estimated takes of harbor porpoise based on observer data exceed 0.50 of PBR
CA thresher shark/swordfish drift gill net fishery	140	1	1	1	1	1	1	1	1	1	Observed take per 20 days = 3.14. Estimated takes based on observer data exceed PBR for beaked whales, pilot whales, and sperm whales
AK Prince William Sound set gill net	30	2	3	3	3	3	3	3	3	3	Estimated take per 20 days based on observer data = 0. Logbook data indicate take of eastern North Pacific Steller sea lions less than 0.01 of PBR. However, logbook data represent a minimum estimate of total takes in this fishery.
AK Prince William Sound drift gill net	571	2	2	2	2	2	3	2	2	3	Estimated take per 20 days based on observer data = 0.67. Estimated takes of harbor porpoise based on observer data are greater than 0.1 of the PBR

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
AK Peninsula drift gill net fishery	107	2	2	2	2	3	3	2	3	3	Takes per 20 days based on logbook data = 0.05. However, logbook data represent a minimum estimate of total takes in this fishery. Takes of harbor seals (GOA stock) based on logbook data is 0.01 of PBR.
AK Southeast drift gill net	482	2	3	2	2	3	3	2	3	3	Takes per 20 days based on logbook data = 0.02. However, logbook data represent a minimum estimate of total takes in this fishery. Take of harbor porpoise based on logbook data = 0.03 of PBR.
AK Yakutat set gill net	171	2	2	2	2	3	3	2	3	3	Takes per 20 days based on logbook data = 0.11. However, logbook data represent a minimum estimate of total takes in this fishery. Take of harbor seals (GOA stock) based on logbook data = 0.02 of PBR.
AK Cook Inlet drift gill net	582	2	2	2	2	3	3	2	3	3	Takes per 20 days based on logbook data = 0.002. However, logbook data represent a minimum estimate of total takes in this fishery and takes are likely > 0.01 of PBR for some stocks.

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
AK Cook Inlet set gill net	745	2	2	2	2	3	3	2	3	3	Takes per 20 days based on logbook data = 0.002. However, logbook data represent a minimum estimate of total takes in this fishery and takes are likely > 0.01 for some stocks.
AK Kodiak set gill net	190	2	2	2	2	3	3	2	3	3	Takes per 20 days based on logbook data = 0.03. Take of harbor porpoise based on logbook data = 0.02 of PBR.
AK Peninsula set gill net	114	2	2	2	2	3	3	2	3	3	Takes per 20 days based on logbook data = 0.01. Takes of Steller sea lions (w. N. Pacific stock) and harbor porpoise based on logbook data < 0.01 of PBR. However, logbook data represent a minimum estimate of total takes in this fishery, and takes are expected to exceed 0.01 of PBR for some stocks.
AK Bristol Bay drift gill net (observer data combimes drift and set gill net data)	1887	2	2	2	2	3	3	2	3	3	Takes per 20 days based on logbook data = 0.05. However, logbook data represent a minimum estimate of total takes in this fishery and takes are expected to exceed 0.01 of PBR for some stocks.
AK Bristol Bay set gill net	1020	2	2	2	2	3	3	2	3	3	Takes per 20 days based on logbook data = 0.05. Take of Bristol Bay stock of beluga whales based on logbook data = 0.02 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
WA Puget Sound Region and inland waters south of the US-Canada border, including the Strait of Juan de Fuca, Hood Canal and estuaries and lower river areas (subject to tidal action) drift gill net.	3900	2	2	2	2	2	3	2	2	3	Takes per 20 days based on logbook data = 0.16. Takes of harbor seals (WA inland waters stock) based on logbook data = 0.06 of PBR.
CA lower Klamath River gill net	1000	2	2	2	2	2	2	2	2	2	Takes per 20 days based on logbook data = 0.00. However, logbook data represent a minimum estimate of total takes in this fishery.
AK gillnet (except salmon and herring)	235	2	2	2	2	2	2	2	2	2	Takes per 20 days based on logbook data = 0.18. However, logbook data represent a minimum estimate of total takes in this fishery.
AK salmon purse seine	?	3	3	3	3	3	3	3	3	3	Takes per 20 days based on logbook data is 0.00. Available information suggests that there is a remote likelihood of a marine mammal being taken in this fishery.
AK Southeast salmon purse seine	443	3	3	2	2	2	2	2	2	2	Takes per 20 days based on logbook data is unknown. Takes of humpback whales are 0.14 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
CA, OR, WA salmon troll	3400	2	3	3	3	3	3	3	3	3	Takes per 20 days based on logbook data is 0.20. However, the majority of takes recorded were "double-logged" as both incidental and intentional takes. Available information suggests that there is a remote likelihood of a marine mammal being taken in this fishery.
CA herring purse seine	100	2	2	3	3	3	3	3	3	3	Takes per 20 days based on logbook data = 0.14. Takes of California sea lions based on logbook data < 0.01.
CA anchovy, mackerel, tuna purse seine	160	2	2	2	2	3	3	2	3	3	Takes per 20 days based on logbook data = 0.04. Takes of bottlenose dolphings (offshore stock) based on logbook data = 0.02.
CA sardine purse seine	120	2	3	3	3	3	3	3	3	3	Takes per 20 days based on logbook data = 0.00. Takes of all mairne mammals < 0.01 of PBR
CA squid purse seine	145	2	3	3	3	3	3	3	3	3	Takes per 20 days based on logbook data = 0.07. Takes of all marine mammals < 0.01 of PBR.
AK Prince William Sound sablefish long line/set line	270	2	3	3	3	3	3	3	3	3	Takes per 20 days based on logbook data = 0.00. This fishery was proposed to be reclassified as a Cat. 3 fishery based on prohibition of intentional lethal takes.

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
AK southern Bering Sea, Aleutian Islands, and Western Gulf of Alaska sablefish long line/set line	226	2	3	3	3	3	3	3	3	3	Takes per 20 days based on logbook data < 0.01. Take of northern elephant seals based on logbook data < 0.01. This fishery was proposed to be reclassified as a Cat. 3 fishery based on prohibition of intentional lethal takes.
AK Metlakatla fish trap	0	2	3	3	3	3	3	3	3	3	Takes per 20 days based on logbook data = 0.00. It is expected that there will be a remote likelihood of marine mammal takes in this fishery.
CA squid dip net	115	2	3	3	3	3	3	3	3	3	Takes per 20 days based on logbook data = 0.00. It is expected that there will be a remote likelihood of marine mammal takes in this fishery.
WA, OR salmon net pens	21	2	3	3	3	3	3	3	3	3	Takes per 20 days based on logbook data = 0.04. Takes of California sea lions and harbor seals based on logbook data < 0.01.
Oregon salmon ranch	8	2	3	3	3	3	3	3	3	3	Takes per 20 days based on logbook data = 0.00. It is expected that there will be a remote likelihood of marine mammal takes in this fishery.
AK Kuskokwim, Yukon, Norton Sound, Kotzebue salmon gill nets	1955	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
AK herring gill net	658	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA, OR Upper Columbia River Basin (above Bonneville Dam) salmon & other finfish gill net	100	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA, OR herring, smelt, shad, sturgeon, bottom fish, mullet, perch, rockfish, gill net	918	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA, OR lower Columbia River (includes tributaries) drift gill net	500	3	3	3	3	3	3	3	3	3	Estimate take per 20 days based on observer data = 0.56. Estimated take of harbor seals based on observer data = 0.25 of PBR. However, drastically reduced fishing effort is expected to result in a drastic reduction in # of takes.
WA Willapa Bay and Grays Harbor (includes rivers, estuaries, etc) drift gill net	362	3	3	3	3	3	3	3	3	3	Estimate take per 20 days based on observer data = 0.07. Estimated take of harbor seals based on observer data < 0.01 of PBR.
CA set and drift gill net fisheries that use a stretched mesh size of 3.5in or less	341	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Hawaii gill net	115	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
AK salmon troll	2536	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
AK north Pacific halibut, AK bottom fish, WA, OR, CA albacore, groundfish, bottom fish, CA halibut non-salmon troll fisheries	unknown	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI trolling, rod and reel	1795	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Guam tuna troll	50	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Commonwealth of the Northern Mariana Islands tuna troll	50	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
American Samoa tuna troll	50	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
AK herring beach or purse seine	1263	3	3	3	3	3	3	3	3	3	Take per 20 days is unknwon. Estimated takes are expected to be below 0.01 of PBR.
AK other finfish beach or purse seine	11	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA salmon purse seine	440	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA salmon reef net	53	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
WA, OR herring, smelt, squid purse seine or lampara	130	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA (all species) beach seine or drag seine	235	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI purse seine	18	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI opelu/akule net	16	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI throw net, cast net	47	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI net unclassified	106	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
AK groundfish longline/set line	1296	3	3	3	3	3	3	3	3	3	Estimated takes per 20 days based on observer data < 0.01. Estimated takes of all stocks based on observer data < 0.01 of PBR.
AK, WA, OR North Pacific halibut long line/set line	5577	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA, OR, CA groundfish, bottomfish long line/set line	367	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
CA shark/bonito long line/set line	10	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI swordfish, tuna, billfish, mahi mahi, wahoo, oceanic sharks long line/set line	140	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
AK Bering Sea and Aleutian Islands groundfish trawl	490	3	3	2	2	3	3	2	3	3	Estimated take per 20 days based on observer data = 0.05. Estimated take of Stellers sea lions (W. Pacific stock) = 0.03 of PBR. Take of killer whales also > 0.01 of PBR.
AK Gulf of Alaska groundfish trawl	490	3	3	2	3	3	3	3	3	3	Estimated take per 20 days based on observer data = 0.02. Estimated takes of all stocks < 0.01 of PBR.
AK state-managed waters of Cook Inlet, Kachemak Bay, Prince William Sound, Southeast AK groundfish trawl	8	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
AK food/bait herring trawl	2	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA, OR, CA groundfish trawl	585	3	3	3	3	3	3	3	3	3	Estimated take per 20 days based on observer data = 0.02. Estimate takes of all stocks < 0.01 of PBR.
AK shellfish pot	1951	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
AK Bering Sea, Gulf of Alaska, finfish pot	226	3	3	3	3	3	3	3	3	3	Estimated takes per 20 days based on observer data = 0.06. Estimated takes of all stocks based on observer data < 0.01 of PBR.
WA, OR, CA sablefish pot	176	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA, OR, CA crab pot	1478	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA, OR shrimp pot & trap	254	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
CA lobster, prawn, shrimp, rock crab, fish pot	608	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
OR, CA hagfish pot or trap	32	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI lobster trap	15	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI crab trap	22	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI fish trap	19	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
HI shrimp trap	5	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
AK North Pacific halibut (Mechanical jig)	84	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
AK other finfish	474	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA groundfish, bottomfish jig	679	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI aku boat, pole and line	54	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI inshore handline	650	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI deep sea bottomfish handline	434	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI tuna handline	144	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Guam bottomfish handline	50	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Commonwealth of the Northern Mariana Islands bottomfish handline	50	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
American Samoa bottomfish handline	50	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA, OR smelt, herring dip net	119	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
CA swordfish harpoon	228	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
AK Southeast Alaska herring food/bait	7	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA herring brush	1	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA, OR herring bait pens	12	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Coastwide scallop dredge	106	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
AK abalone	177	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
AK dungeness crab	1	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
AK, Prince William Sound herring spawn-on-kelp	239	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
AK herring spawn-on-kelp, Bristol Bay	306	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
AK urchin and other fish/shellfish	127	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
AK clam hand shovel	125	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
AK clam mechanical/hydraulic fishery	3	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA herring spawn-on-kelp	4	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA shellfish	37	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
CA abalone	111	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
CA sea urchin	583	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI squiding, spear	267	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI lobster diving	6	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
HI coral diving	2	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI handpick	135	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA oyster farm	316	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA mussel/clam	268	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
WA, CA kelp	4	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
HI fish pond	10	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
AK, WA, OR, CA all species	1243	3	3	3	3	3	3	3	3	3	Take of California sea lions based on Cat. 3 reports < 0.01 of PBR.
HI "other"	114	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
NEW PACIFIC FISHERIES											
Alaska pair trawl	2		2	2	2	2	2	2	2	2	Based on analogy with the Atlantic pair trawl fishery

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
Alaska Metlakatla purse seine	3		3	3	3	3	3	3	3	3	Based on analogy with other salmon purse seine fisheries in Alaska.
California bait pen	1		3	3	3	3	3	3	3	3	Based on analogy with other ranch and net pen fisheries.
CA finfish and shellfish live trap/hook&line	93		3	3	3	3	3	3	3	3	Based on analogy with other hook&line and trap fisheries.
Alaska spawn-on-kelp empoundment	200		3	3	3	3	3	3	3	3	Based on analogy with other spawn-on-kelp fisheries.
CA salmon enhancement rearing pen	>1		3	3	3	3	3	3	3	3	Take of California sea lions based on Cat. 3 reports < 0.01 of PBR.
OR swordfish/blue shark longline fishery	30		2	2	2	2	2	2	2	2	Based on analogy with the Atlantic swordfish/tuna/shark longline fishery.
OR Pacific sardine & Pacific saury unspecified gear	15		2	2	2	2	2	2	2	2	Based on uncertainty of gear type.
OR Pacific sandfish unspecified gear	10		2	2	2	2	2	2	2	2	Based on uncertainty of gear type.
OR eulachon, whitebait smelt, night smelt, longfin smelt, and surf smelt unspecified gear	20		2	2	2	2	2	2	2	2	Based on uncertainty of gear type.
OR Pacific pomfret unspecified gear	10		2	2	2	2	2	2	2	2	Based on uncertainty of gear type.
OR slender sole unspecified gear	10		2	2	2	2	2	2	2	2	Based on uncertainty of gear type.
OR shrimp trawl	6		3	3	3	3	3	3	3	3	Based on analogy with other small-mesh trawl fisheries.
OR cockle clam mechanical ocean harvest	5		3	3	3	3	3	3	3	3	Based on analogy with other mechanical fisheries.

Fishery	# of permit-holders	MMEP class-ification	Fishery Category Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
OR estuarine cockle clam hand pick			3	3	3	3	3	3	3	3	Based on analogy with other hand collection fisheries.
OR octopus pot	10		3	3	3	3	3	3	3	3	Based on analogy with other pot fisheries.
CA squid trawl			3	3	3	3	3	3	3	3	Based on analogy with other trawl fisheries.
CA/OR sea urchin/sea cucumber trawl	12		3	3	3	3	3	3	3	3	Based on analogy with other trawl fisheries.
OR sea urchin gear unspecified	6		3	3	3	3	3	3	3	3	Based on low suspected marine mammal interactions.
OR sea cucumber dive/handpick	10		3	3	3	3	3	3	3	3	Based on low suspected marine mammal interactions.
OR sea cucumber gear unspecified	10		3	3	3	3	3	3	3	3	Based on low suspected marine mammal interactions.
OR marine snails gear unspecified	10		3	3	3	3	3	3	3	3	Based on low suspected marine mammal interactions.
OR anchovy/herring unspecified gear			2	2	2	2	2	2	2	2	Based on uncertainty of gear type.

Table 2: Categorization of fisheries in the Atlantic Ocean, Gulf of Mexico, and the Caribbean using different fishery classification criteria.

Fishery	# of permit-holders	MMEP class-ification	Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
Atlantic Ocean, Caribbean, Gulf of Mexico											
Atlantic Ocean, Caribbean, Gulf of Mexico swordfish, tuna, shark pair trawl	7	1	1	1	1	1	1	1	1	1	Observer take per 20 days = 3.04. Estimated takes of common dolphins based on observer data exceed 0.50 of PBR.
Atlantic Ocean, Caribbean, Gulf of Mexico swordfish, tuna shark drift gillnet	75	1	1	1	1	1	1	1	1	1	Observer take per 20 days = 34.39. Estimated takes of common dolphins, pilot whales, spotted dolphins, right whales, and sperm twhales based on observer data exceed 0.50 of PBR.
New England multispecies sink gillnet	341	1	1	1	1	1	1	1	1	1	Observer take per 20 days = 1.70. Estimated takes of harbor porpoise based on observer data exceed 50% of PBR.
Gulf of Maine small pelagics survace gillnet	133	1	1	1	1	1	1	1	1	1	Known takes of marine mammals occurred in this fishery in the past. Although there has been little effort in this fishery in recent years, the fishery should remain in Cat. I.
Atlantic Ocean, Caribbean, Gulf of Mexico tuna, shark, swordfish longline	830	2	1	1	1	1	1	1	1	1	Observer take per 20 days = 0.045. Estimated takes of pilot whales based on observer data exceed 50% of PBR.

Fishery	# of permit-holders	MMEP class-ification	Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
U.S. mid-Atlantic coastal gillnet	>655	2	2	2	2	3	3	2	3	3	Observer take per 20 days is unknown but is expected to be occasional. Estimated takes of harbor porpoise based on stranding and necroposy data exceed 1% of PBR.
U.S. South Atlantic shark gillnet fishery	10	2	3	2	2	3	3	2	3	3	Take per 20 days is unknown. Estimated takes of U.S. mid-Atlantic coastal bottlenose dolphins based on logbook reports exceed 0.01 of PBR.
Gulf of Maine, Mid-Atlantic menhaden purse seine	10	3	3	2	?	3	3	2	3	3	Take per 20 days is unknown. Estimated takes of U.S. mid-Atlantic coastal bottlenose dolphins based on Category III reports exceed 0.01 of PBR.
Atlantic mid-water trawl	620	2 for mackerel; 3 for squid	3	2	2	2	2	2	2	2	Take per 20 days is = 0.02. Estimated takes of pilot whales (long or short-finned) in logbook reports could equal PBR depending on which stock was affected.
North Carolina haul seine	unknown	3	3	2	2	3	3	2	3	3	Take per 20 days is unknown. Estimated takes of U.S. mid-Atlantic coastal bottlenose dolphins based on expected to exceed 0.01 of PBR.
North Carolina roe mullet stop net	4	3	2	2	2	2	2	2	2	2	Take per 20 days is unknown. Estimated takes of U.S. mid-Atlantic coastal bottlenose dolphins based on stranding reports exceed 0.01 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
North Atlantic bottom trawl	1052	3	3	3	3	3	3	3	3	3	Take per 20 days is 0.04. Estimated takes of spotted dolphins based on observer data exceed 0.50 of PBR.
U.S. mid-Atlantic, U.S. South Atlantic Gulf of Mexico shtrimp trawl	>18,000	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes of U.S. mid-Atlantic coastal bottlenose dolphins based on observer data below 0.01 of PBR
Finfish aquaculture	48	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Shellfish aquaculture	unknown	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Rhode Island, southern Massachusetts (to Monomoy Island), and New York Bight (Raritan and Lower New York Bays) inshore gillnet	32	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Long Island Sound inshore gillnet	20	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Delaware Bay inshore gillnet	60	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
North Carolina inshore gillnet	94	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
Gulf of Mexico inshore gillnet (black drum, sheepshead)	unknown	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Offshore monkfish bottom gillnet	<50	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Gulf of Maine northern shrimp trawl	320	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Gulf of Maine mackerel trawl	30	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Gulf of Maine, U.S. mid-Atlantic sea scallop trawl	215	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Gulf of Maine, Southern North Atlantic, Gulf of Mexico coastal herring trawl	5	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
U.S. mid-Atlantic mixed species trawl	> 1000	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Gulf of Mexico butterfish trawl	2	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Georgia, South Carolina, Maryland whelk trawl	25	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Calico scallops trawl	200	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
Bluefish, croaker, flounder trawl	550	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Crab trawl	400	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Gulf of Maine Atlantic herring purse seine	30	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Gulf of Mexico menhaden purse seine	51	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
U.S. South Atlantic menhaden purse seine	51	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Florida west coast sardine purse seine	16	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
U.S. mid-Atlantic hand seine	> 250	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Gulf of Maine tub trawl groundfish bottom longline/hook-and-line	46	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
U.S. South Atlantic, Gulf of Mexico snapper-grouper and other reef fish bottom longline/hook-and-line	1944	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
U.S. South Atlantic, Gulf of Mexico shark bottom longline/hook-and-line	124	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Gulf of Maine, U.S. mid-Atlantic tuna, shark, swordfish hook-and-l,ine/harpoon	26223	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Gulf of Maine, U.S. South Atlantic coastal shad, sturgeon gillnet	1285	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
U.S. South Atlantic, Gulf of Mexico coastal gillnet	4000	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Florida east coast, Gulf of Mexico pelagics king and Spanish mackerel gillnet	271	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Florida mullet gillnet	unknown	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Gulf of Maine, U.S. mid-Atlantic mixed species trap/pot	100	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
U.S. mid-Atlantic black sea bass trap/pot	30	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
U.S. mid-Atlantic eel trap/pot	>700	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Gulf of Maine, U.S. mid-Atlantic inshore lobster trap/pot	10613	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
Gulf of Maine, U.S. mid-Atlantic offshore lobster trap/pot	2902	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Atlantic Ocean, Gulf of Mexico blue crab trap/pot	20500	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
U.S. South Atlantic, Gulf of Mexico, Caribbean spiny lobster trap/pot	736	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Gulf of Maine herring and Atlantic mackerel stop seine/weir	50	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
U.S. mid-Atlantic mixed species stop/seine/weir (except the North Carolina roe mullet stop net)	500	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
U.S. mid-Atlantic crab stop seine/weir	2600	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Gulf of Maine, U.S. mid-Atlantic sea scallop dredge	233	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
U.S. mid-Atlantic offshore surfclam and quahog dredge	100	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Gulf of Maine mussel	> 50	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.

Fishery	# of permit-holders	MMEP class-ification	Alt. 1 (stat. quo)	Alt. 2 (pref.)	Alt. 3a	Alt. 3b	Alt. 3c	Alt. 4a	Alt. 4b	Alt. 4c	Comments
U.S. mid-Atlantic/Gulf of Mexico oyster	7000	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
U.S. South Atlantic, Caribbean haul seine	150	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Caribbean beach seine	15	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Gulf of Maine urchin dive, hand/mechanical collection	> 50	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.
Atlantic Ocean, Gulf of Mexico, Caribbean shellfish dive, hand/mechanical collection	20000	3	3	3	3	3	3	3	3	3	Take per 20 days is unknown. Estimated takes are expected to be below 0.01 of PBR.

4.3.) Reporting requirements (Definition of "injury", "serious injury")

Because section 118(e) of the Act requires fishers to report "injuries" and mortalities, not defining injuries and serious injuries (Alternative 1: Status Quo or No Action Alternative) is not an available option. Excluding entanglement in or ingestion of fishing gear from the definition of "injury" (Alternative 3) would likely reduce the number of reported takes and might therefore lead to inaccurate assessment of the extent of taking during commercial fishing which could result in significant impacts to marine mammal stocks and other protected species. Alternative 3 would, however, minimize the number of reporting forms that fishers would need to submit, thus reducing the burden on fishers. Including entanglement in or ingestion of fishing gear in the definition of "injury" (Alternative 2 - preferred action) would minimize environmental impacts by giving NMFS the best information about the extent of the impacts on marine mammals by commercial fishing operations. This information, in turn, would allow NMFS to most appropriately categorize fisheries and take appropriate management actions to reduce such impacts. The additional time a fisher would have to spend to file a report under Alternative 2 could impose some economic impacts by decreasing profit levels, but it should also simplify the process for fishers in trying to determine what constitutes an "injury."

4.4.) Zero Mortality and Serious Injury Rate

The Act states that the incidental mortality and serious injury of marine mammals incidental to commercial fishing operations must be reduced to insignificant levels approach a zero mortality and serious injury rate. Two alternatives regarding the definition of the zero mortality and serious injury rate are discussed.

The preferred alternative (Alternative 1) would define this rate relative to the PBR for a stock and provides a clearly defined, quantitative goal. This alternative would also minimize impacts on protected species, as fishers that have a high incidence of take of marine mammals relative to the PBR will be required to reduce their level of take. This alternative would also allow higher rates of incidental takes for those marine mammal stocks that are more numerically abundant, therefore minimizing unnecessary restrictions on fisheries. If it is necessary to restrict fisheries, via acceptable gear types, fishing methods, seasons, etc, to reduce marine mammal incidental take, such restrictions may also have a positive impact on other protected species.

The other alternative (Alternative 2) would define the zero mortality and serious injury rate in terms of what is "technologically and economically practicable". Because of the vague nature of this definition, this alternative could have a either a negative or positive impact on either protected species or commercial fishers. In the case of the yellowfin tuna fishery, the "moving target" take limit benefited the protected species involved but only after severe curtailment of the fishery. However, protected species could be impacted in a negative manner if fishing practices known to be deleterious to protected species were determined to have reached the lowest rate of marine mammal take that is "technologically and economically practicable" prior to exercising effort to further reduce the take rate.

5.0.) FINDING OF NO SIGNIFICANT ENVIRONMENTAL IMPACT

For the reasons discussed in this Environmental Assesment, the National Marine Fisheries Service has determined that approval and implementation of the proposed regulations to 1) authorize commercial fisheries to incidentally take marine mammals and 2) categorize fisheries based on their level of incidental take of marine mammals, would not significantly affect the quality of the human environment, and that the preparation of an environmental impact statement on these actions is not required by Section 102(2) of the National Environmental Policy Act or its implementing regulations.

DATE: JUN 13 1995

Gary Matlock

ACKNOWLEDGEMENTS

Data included in this Environmental Assessment were provided by the Northwest Region, Alaska Region, Alaska Fisheries Science Center, Southwest Region, Southwest Fisheries Science Center, Southeast Region, Southeast Fisheries Science Center, Northeast Region, and Northeast Fisheries Science Center. The MMPA Task Force and other NMFS Center and Region staff provided reviews of portions of this document.

REFERENCES

Atlantic States Marine Fisheries Commission, 1991. Interstate fisheries of the Atlantic Coast. 131p.

Baraco, Alan. California Department of Fish and Game. Personal communication, January 1995.

Code of Federal Regulations, 1993. Part 600 to End. 620p.

Department of the Interior, 1992. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Washington, Oregon, and California Population of the Marbled Murrelet. 50 CFR Part 17, 45328-45337.

Dougherty, Phil. Alaska Department of Fish and Game. Personal communication, January 1995.

Erstad, P., Jeffries, S. J., and Pierce, D. J. 1994. 1994 Preliminary Report for Areas 7 & 7A Puget Sound Fishery Observer Program: Non-Treaty Sockeye Gill Net Fishery. Unpublished report submitted to the Washington Department of Fish and Wildlife. 8p.

Fougner, Svein. National Marine Fisheries Service. Personal communication, December 1994.

Frost, Kathy. Alaska Department of Fish and Game, Fairbanks. Personal communication, January 1995.

Geiger, H. J., and Savikko, H., 1993. Preliminary run forecasts and harvest projections for 1993 Alaska salmon fisheries and review of the 1992 season. Regional information report no. 5J93-04 submitted to the Alaska Department of Fish and Game.

Gledhill, Christopher, 1991. Status of Gulf Butterfish Stocks Report for 1991. 35p.

Gulf States Marine Fisheries Commission, 1994. Amendment Number 7 to the Fishery Management Plan for the Shrimp Fishery of the Gulf of Mexico, United States Waters; Includes Environmental Assessment with Regulatory Impact Review.

Gulf States Marine Fisheries Commission, 1993. The Black Drum Fishery of the Gulf of Mexico, United States: A Regional Management Plan.

Gulf States Marine Fisheries Commission, 1990. Amendment 4 to the Fishery Management Plan for the Stone Crab Fishery of the Gulf of Mexico.

Gulf States Marine Fisheries Commission, 1988. The MenhadenFishery of the Gulf of Mexico,

United States: A Regional Management Plan

Gulf of Mexico Fishery Mangement Council, 1994. Amendment Number 7 to the Fishery Management Plan for the Shrimp Fishery of the Gulf of Mexico

Gulf of Mexico Fishery Management Council, 1994. Public Hearing Draft Amendment 10 to the Reef Fish Fishery Management Plan for theReef Fish Resources of the Gulf of Mexico.

Gulf of Mexico Fishery Management Council, 1992. Regulatory Amendment to the Spiny Lobster Fishery for the Gulf of Mexico and South Atlantic.

Jensen, Pete. Maryland Department of Natural Resources. Personal communication, December 1994.

Kraus, S. D. Rates and potential causes of mortality in north Atlantic right whales (*Eubalaena glacialis*). Marine Mammal Science 6(4):278-291.

Leet, W. S., Dewees, C. M., and Haugen, C. W., 1992. California's Living Marine Resources and Their Utilization. Sea Grant Extension Publication UCSGEP-92-12. 258p.

Matteson, Keith. Pacific States Marine Fisheries Commission. Personal communication, January 1995.

Mid-Atlantic Fishery Management Council in cooperation with the Atlantic States Marine Fisheries Commission, 1994. Amendment 5 to the Fishery Management Plan for the Atlantic Mackerel, Squid, and Butterfish Fisheries.

Miller, Janet. Southeast Marine Fisheries Service, Southeast Regional Office, personal communication.

Murray-Brown, Mark. Fishery Conservation and Management, National Marine Fisheries Service, Personal communication, December 1994.

National Marine Fisheries Service, 1991. Gillnet Fisheries: Northeast Region. Unpublished report compiled by Martin Jaffe, National Marine Fisheries Service.

National Marine Fisheries Service, 1994a. Taking of Marine Mammals Incidental to Commercial Fishing Operations: Interim Exemption for Commercial Fisheries. Notice of Final List of Fisheries. Federal Register, 59(164).

National Marine Fisheries Service, 1994b. Final Environmental Assessment: 1994 Western Atlantic Tuna Fisheries Pelagic Pair-Trawl Experimental Authorization. 23p.

National Oceanic and Atmospheric Administration, 1993. Status of Fishery Resources off the Northeastern United States for 1993. NOAA Technical Memorandum NMFS-FNEC-101. 140p.

National Marine Fisheries Service, 1994. Taking of marine Mammals Incidental to Commercial Fishing Operations; Interim Exemption for Commercial Fisheries. Notice of Final List of Fisheries. Federal Register, 59(164).

National Marine Fisheries Service, 1991. Proposed Regime to Govern Interactions between marine mammals and commercial fisheries. Draft legislative environmental impact statement.

North Pacific Fishery Management Council, 1993a. Summary of Bering Sea/Aleutian Islands Groundfish Fishery Management Plan.

North Pacific Fishery Management Council, 1993b. Summary of Gulf of Alaska Groundfish Fishery Management Plan.

Oregon Department of Fish and Wildlife, 1994. Developmental Fisheries Program, Staff Report. Unpublished report presented to the Oregon Fish and Wildlife Commission, October 19, 1994.

Osmek, Steve. National Marine Mammal Laboratory, National Marine Fisheries Service. Personal communication January 1995.

Pacific States Marine Fisheries Commission, 1994. Pacific States Marine Fisheries Commission Annual Report for the Year 1993. 32p.

Peterson, A., 1994. Memorandum and report on Sea Turtle/Fishery Interactions submitted to W. Fox, July 18, 1994.

Rogers, Gina. Statistics Coordinator, Department of Fisheries, Georgia.

Savikko, Herman. Alaska Department of Fish and Game. Personal communication, January 1995.

Section 7 Consultations on the Shrimp Fishery of the Gulf of Mexico and Amendment 7 to the the Fishery Management Plan for Shrimp. Memorandum to Charles A. Oravetz from Michael B. Justen, 1994.

South Atlantic Fishery Management Council, 1985. Fishery Management Plan, Regulatory Impact Review, Initial Regulatory Flexiblity Analysis, Final Environmental Impact Statement for Atlantic Swordfish.

State of California, California Department of Licensing, unpublished vessel license data for 1993 provided by Liz Lethe.

State of Texas, unpublished license data. Texas Parks and Wildlife Department, Austin.

State of Alaska, Commercial Fisheries Entry Commission, unpublished vessel license data for 1992 and 1994 provided by Sue Burns.

State of Hawaii, unpublished license data. January 1995.

State of North Carolina, unpublished license data. North Carolina Division of Marine Fisheries.

State of Mississippi, unpublished license data. Mississippi Department of Marine Resources.

State of Alabama, unpublished license data. Alabama Departmetn of Conservation and Natural Resources.

State of Connecticut Department of Environmental Protection: 1995 Marine Fisheries Information Circular. Commercial and Recreational Fishing and Lobstering in Marine Waters. Commercial Fishing in the Inland District. 18p.

Thayer, Vicki. 1993. Letter, with enclosures, to Vicki Credle.

Travelstead, Jack. Virginia Department of Fish and Wildlife. Personal communication, December 1994.

U. S. Department of Commerce, 1993. Our Living Oceans: Report on the Status of U. S. Living Marine Resources. 155p.

Vojkovich, Maria. California Department of Fish and Game. Personal communication, December 1994.

Washington Department of Fish and Wildlife, 1991. Fisheries Statistical Report, 1991. 80p.

Western Pacific Regional Fishery Management Council, 1994. Amendment 7 to the Fishery Management Plan for the Pelagic Fisheries of the Western Pacific Region.

Western Pacific Regional Fishery Management Council, 1993. Pelagic Fisheries of the Western Pacific Region: 1993 Annual Report.

Witzell, W. N., and Cramer, J. 1995. Estimates of sea turtle by-catch by the U.S. pelagic longline fleet in the western North Atlantic Ocean. NOAA Technical Memorandum NMFSS-SEFC-359, 14p.

Young, N. M., Iudicello, S., Evans, K., and Baur, D. 1992. The Incidental Capture of Marine Mammals in U.S. Fisheries: Problems and Solutions. Published by the Center for Marine Conservation, Washington DC. 415p.

DEFINITIONS

Act:	The Marine Mammal Protection Act of 1972, as amended (16 U.S.C. 1361 *et seq.*).
Assistant Administrator:	The Assistant Administrator for Fisheries, National Marine Fisheries Service, National Oceanic and Atmospheric Administartion, or authorized representative.
Authorization Certificate:	A document issued by the Assistant Administrator, or designee, under the authority of section 118 of the Act that authorizes the incidental, but not intentional, taking of marine mammals during commercial fishing operations.
Category I Fishery:	A commercial fishery determined by the Assistant Administrator to have frequent incidental mortality and serious injury of marine mammals.
Category II Fishery:	A commercial fishery determined by the Assistant Administrator to have occasional incidental mortality and serious injury of marine mammals.
Category III Fishery:	A commercial fishery determined by the Assistant Administrator to have a remote likelihood of, or no known incidental mortality and serious injury of marine mammals.
Depleted Species:	Any species or population which has been determined to be depleted under the Act and is listed in part 216.15 of this chapter or part 18, subpart E of this title, or any endangered or threatened species of marine mammal.
Enadangered or Threatened Species:	Any species, subspecies, or population that has been listed under section 4 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).
Fishery:	Has the same meaning as it does in section 3 of the Magnuson Fishery Conservation and Management Act (16 U.S.C. 1802)).
Incidental Take:	Takings of marine mammals that result from, but are not the purpose of, carrying out an otherwise lawful commercial fishing operation.

Injury:	A wound, or other physical harm, caused by a commercial fishing operation.
List of Fisheries:	The most recent final list of commercial fisheries published in the *Federal Register* by the Assistant Administrator, categorized according to the likelihood of incidental mortality and serious injury of marine mammals during commercial fishing operations.
Marine Mammal:	For purposes of this action, marine mammal means any mammal which (1) is morphologically adapted to the marine environment, including sea otters and members of the order *Cetacea* (whales and dolphins), *Sirenia* (dugongs and manatees), and suborder *Pinnipedia* (seals, sea lions and walrus), or (2) primarily inhabits the marine environment (such as the polar bear).
Minimum Population Estimate:	An estimate of the number of animals in a stock that: (1) Is based on the best available scientific information on abundance, incorporating the precision and variability associated with such information; and (2) Provides reasonable assurance that the stock size is equal to or greater than the estimate.
Negligible Impact:	An impact which can be disregarded or which is so small, unimportant, or of so little consequence as to warrant little or no attention.
Net Productivity Rate:	The annual per capita rate of increase in a stock resulting from additions due to reproduction, less losses due to mortality.
Non-vessel Fishery:	A commercial fishing operation that uses fixed or other gear without a vessel, such as gear used in set gillnet, trap, beach seine, weir, ranch and pen fisheries.
Observer:	An individual designated by the National Marine Fisheries Service, or designated contractor, to record information on marine mammal interactions, fishing operations, marine mammal life history information, and other scientific data, and collect biological specimens during commercial fishing activities.

Potential Biological Removal:	The maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. The potential biological removal level is the product of the following factors: (1) The minimum population estimate of the stock; (2) One-half the maximum theoretical or estimated net productivity rate of the stock at a small population size; and (3) A recovery factor of between 0.1 and 1.0.
Regional Fishery Management Council:	A Regional Fishery Management Council established under section 302 of the Magnuson Fishery Conservation and Management Act.
Serious Injury:	Any injury of a marine mammal during a commercial fishing operation that will likely result in mortality of that marine mammal.
Strategic Stock:	A marine mammal stock: (1) For which the level of direct human-caused mortality exceeds the potential biological removal level; (2) Which, based on the best available scientific information, is declining and is likely to be listed as a threatened species under the Endangered Species Act of 1973 within the foreseeable future; (3) Which is listed as a threatened species or endangered species under the Endangered Species Act of 1973; or, (4) Which is designated as depleted under the Marine Mammal Protection Act of 1972.
Take Reduction Plan:	A plan developed to reduce the incidental mortality and serious injury of marine mammals during commercial fishing operations in accordance with section 118 of the Marine Mammal Protection Act of 1972.
Take Reduction Team:	A team established to review methods of reducing the incidental mortality and serious injury of marine mammals due to commercial fishing operations, in accordance with section 118 of the Marine Mammal Protection Act of 1972.
Vessel:	Refers only to those vessels, as defined in section 3 of the Magnuson Fishery Conservation and Management Act (16 U.S.C. 1802), that are used in the course of commercial fishing operations, other than vessels fishing for yellowfin

	tuna in the eastern tropical Pacific Ocean purse seine fishery, and vessels which have valid fishing permits issued in accordance with section 204(b) of the Magnuson Fishery Conservation and Management Act. This includes 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 fishing.
Vessel Owner or Operator:	The owner or operator of: (1) A fishing vessel which engages in a commercial fishing operation; or (2) Fixed or other commercial fishing gear that is used in a non-vessel fishery.
Zero Mortality Rate Goal:	The term used to represent the "immediate goal" of the MMPA to reduce serious injuries and mortalities incidental to commercial fishing operations to "insignificant levels approaching a zero mortality and serious injury rate."

TIMELINE

June, 1991	NMFS publishes the proposed regime to govern interactions between marine mammals and commercial fisheries in the *Federal Register* for public comment and provides the associated Draft Legislative Environmental Impact Statement.
March, 1993	NMFS publishes the Final Legislative Environmental Impact Statement.
November, 1992	NMFS submits "Proposed regime to govern interactions between marine mammals and commercial fishing interactions" to Congress.
April, 1994	Congress passes the 1994 amendments to the Marine Mammal Protection Act.
June, 1995	NMFS publishes the proposed regulations to govern interactions between marine mammals and commercial fishing operations in the *Federal Register* for public comment and provides the associated Environmental Assessment.

Appendix A: Description of U. S. Commercial Fisheries

This table was created using the 1994 List of Fisheries as a starting point. Thus, fisheries are placed in the categories where they were placed in that List. Care must be taken when using this table, as not all sources of information were exhaustively searched and the information contained in the table often represents the view of an interviewed individual. In addition, fisheries undergo a constant evolution, thus the number of participants, range, seasons, etc should be considered estimates rather than absolutes.

Appendix A: Descriptions of U.S. Commercial Fisheries

The following table was constructed using the 1994 List of Fisheries as a guide. Since that time, many fisheries have been combined or separated based on if it was believed that the fishery name was no longer appropriate. This does, however, remain a useful reference for finding basic information on many U.S. fisheries. Because fisheries evolve and change constantly and because the contents of the table are affected by the views of the individuals contacted, this table should be used carefully.

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
Pacific Ocean										
Category 1										
Northern WA coastal (areas 4 and 4a) salmon set gill net	19	1		Northern WA coastal, areas 4, 4A		set gill net	Treaty			1, 2
CA set and drift gill net fisheries that use a stretched mesh size of greater than 3.5in (this fishery observed by two diff. pgms: the CA, WA, OR thresher shark and swordfish drift gill net and the CA angel shark set gill net - results are combined)	717	185		CA shark & swordfish: southern CA CA set net: south of Pt Reyes	shark drift gill net - night fishery? (31)	set and drift gill net fisheries with stretched mesh size of > 3.5sqin; mesh for swordfish/thresher shark fishery is 14-20in - nets are 120 ft deep and 6000 ft long (49); inshore nets banned in CA in 1994 - angel shark set net fishery declines 70%	shark&swordfish: interstate & federal FMP CA set net: State of California	shark: season closures, effort limitations CA set net: restrictions on gear, times, and areas; limited entry	Includes shark and swordfish drift net fishery; California set net fishery; thresher shark fishery defunct in WA and OR - thresher sharks primarily as inciden in the swordfish fishery (49); angel sharks originally discarded as b.c. by the halibut fishery	1,2 ,22,49
Category 2										
Gill net fisheries, salmonids									Note: pelagic drift nets for salmon have been banned - salmon harvesting on the high seas should, therefore, cease (33)	
AK Prince William Sound set and drift gill net	30	29	23017 hours			set gill net				1, 3
AK Prince William Sound set and drift gill net	541	538	278630 hrs	Eshamy, Coghill and Unakwik districts		gill net	State	limited entry		1, 3
AK Copper River and Bering River districts salmon drift gill net				Copper River and Bering River districts		drift gill net	State	limited entry		1,3
AK South Unimak drift gill net	164	160		False Pass and Unimak Pass		drift gill net	State	limited entry		1,3
AK Peninsula (other than S. Unimak) drift gill net				other than False Pass and Unimak Pass		drift gill net	State	limited entry		1,3
AK Southeast drift gill net	482	443		Southeast AK		drift gill net	State	limited entry		1,3
AK Yakutat set gill net	171	152		Southeast AK		set gill net	State	limited entry		1,3
AK Cook Inlet drift gill net (observer data combines drift and set gill net data)	582	554		Cook Inlet		drift gill net	State	limited entry		1,3

Appendix A: Descriptions of U.S. Commercial Fisheries

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
AK Cook Inlet set gill net	745	633		Cook Inlet		set gill net	State	limited entry		1,3
AK Kodiak set gill net	190	162		Kodiak		set gill net	State	limited entry		1,3
AK Peninsula set gill net	114	107		AK Peninsula		set gill net	State	limited entry		1,3
AK Bristol Bay drift gill net (observer data combines drift and set gill net data)	1887	1741		Bristol Bay		drift gill net	State	limited entry		1,3
AK Bristol Bay set gill net	1020	888		Bristol Bay		set gill net	State	limited entry		1,3
WA Puget Sound Region and inland waters south of the US-Canada border, including the Strait of Juan de Fuca, Hood Canal and estuaries and lower river areas (subject to tidal action) set and drift gill net.	3900			see fishery description		set and drift gill net	Chinook and coho managed by the Pacific Fishery Management Council's FMP; sockeye, pink and chim managed primarily by the Pacific Salmon Commission and state and tribal agencies (33)		All stocks are overutilized (33)	1,33
WA coastal river set gill net	325			WA coastal rivers		set gill net	See WA Puget Sound Region	limited entry		1
CA lower Klamath River gill net	1000			Klamath River		gill net		Tribal	Yurok tribe; increased allocation of salmon in past few years that has reduced the number of salmon available for salmon trollers has leveled off in the past year (46)	4,46
Gill net fisheries, other finfish										
AK gillnet (except salmon and herring)	235					gill net	State		Change from the 1994 List of Fisheries: sunken gill nets for groundfish are no longer in this category - have been prohibited in AK	1
Purse seine fishery, salmonids:										
AK South Unimak (False Pass and Unimak Pass) salmon purse seine	115			AK Peninsula?		purse seine	State			1
Troll Fisheries										
OR, CA south of 45 degrees 46 minutes (Cape Falcon) OR salmon troll (logbook data is for Washington, Oregon, California salmon troll)	3400		effort in CA has been reasonably stable over the past few years (46)	OR, northern CA	~~Different seasons for~~ Indian and non-Indian commercial and recreational fishing; fishing generally open from May 1 through October 31 but some area closures (32)	trolling			In Category 2 due to intentional lethal takes	1,2,45,46

Appendix A: Descriptions of U.S. Commercial Fisheries

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
Round haul (seine and lampara), beach seine, and throw net fisheries:										
CA herring purse seine	100	100	1830 hours	California		purse seine	State	short openings		1,2,4
CA anchovy, mackerel, tuna purse seine	160	150	11400 hours	California		purse seine	Anchovy fishery under an FMP; remainder of fisheries under state management	Anchovy: allocation of the OY among user groups; Pacific mackerel: quota system; bonito: size limits & bag limits; Jack mackerel: no management	Anchovy is a reduction fishery - fish are mushed up and used as fish food etc.; mackerel, sardines and anchovies are transboundary stocks with Mexico but no management agreement exists & fishing effort is increasing in Mexico (33)	1,2,4,33,36
CA sardine purse seine	120			California		purse seine		quota system	sardines used for bait, human consumption (33); biomass is increasing & quota levels have been increasing as well (33)	1,4,33
CA squid purse seine	145			California		purse seine	FMP for California Coastal Pelagics was being drafted in 1991; what is current status?			1,4
Longline/set line fisheries, sablefish:										
AK Prince William Sound sablefish long line/set line	270			Prince William Sound is NMFS statistical area 649	PWS: May 15 for 2-3 weeks; northern SE inside: September until quota is reached; Southern SE inside: June to November 15 or until quota is reached	longline/set line	NPFMC, ADF&G (Groundfish FMP?)	Preset TAC allotted by area, gear and season; when target species or prohibited species bycatch quotas are reached, fishery is closed	High rate of interactions will killer whales - intentional takes	1,3,4
AK southern Bering Sea, Aleutian Islands, and Western Gulf of Alaska sablefish long line/set line	226			NMFS statistical areas 649, 517, 518, 519, 540, 610 W of 165 deg W	Bering Sea/Aleutians: Jan 1 until quotas filled; Gulf of AK: May 15 until quotas filled	longline/set line	NPFMC, ADF&G (Groundfish FMP?)	Preset TAC alloted by area, gear and season; when target species or prohibited species bycatch quotas are reached, fishery is closed	High rate of interactions will killer whales - intentional takes; also take cod, lingcod & rockfish etc. (32)	1,3,4
Pot, ring net and trap fisheries:										
AK Metlakatla fish trap	0			Metlakatla		fish trap	Metlakatla Indian Community, Bureau of Indian Affairs			1,4,35
Dip net fisheries:										

Appendix A: Descriptions of U.S. Commercial Fisheries

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
CA squid dip net	115	115	177 hours fished	California		dip net				
Aquaculture, ranch fish pens:										
WA, OR salmon net pens	21			WA and OR		net pens	some Indian Tribes		often Atlantic salmon are farmed in Puget Sound; in Oregon its coho, chum and chinook	1,2
Oregon salmon ranch	8			OR		salmon ranch				1
Category 3										
Gill net fisheries:										
AK Kuskokwim, Yukon, Norton Sound, Kotzebue salmon gill nets	1955			AK		gill net				1,3
AK herring gill net	658			AK		gill net			Herring gill net fisheries exist at Nelson Island, Cape Romanzof, Norton Sound, Prince William Sound, Cook Inlet, Kodiak, Alaska Peninsula/Aleutians, Nunivak Island, and Kotzebue	1,3
WA, OR Upper Columbia River Basin (above Bonneville Dam) salmon & other finfish gill net	100			WA, OR		gill net			This is in a river! why is this here?	1
WA, OR herring, smelt, shad, sturgeon, bottom fish, mullet, perch, rockfish, gill net	918			WA, OR		gill net				1,3
WA, OR lower Columbia River (includes tributaries) drift gill net	500			WA, OR		gill net			Gross reduction in effort due to the Endangered Species Act - intensity of salmon & other fisheries will be reduced (37)	1,37
WA Willapa Bay and Grays Harbor (includes rivers, estuaries, etc) drift gill net	362			WA		gill net				1
CA set and drift gill net fisheries that use a stretched mesh size of 3.5in or less	341			CA		gill net				1
Hawaii gill net	115			HI		gill net				1,43
Troll fisheries:										
AK salmon troll	2536	1450		Commercial salmon troll in Southeast AK only; commercial trolling in EEZ OK only to the east of Cape Suckling	chinook - winter: October 11 through April 14; summer: April 15 to September 20; coho June 15 through September 20	troll	ADF&G (inside waters) and NMFS (outside waters)	limited entry: approx. 1000 power trollers and 2000 hand trollers; in 1993, managed to reduce the number of chinook available for harvest to minimize the number of Snake River Fall chinook caught	ocean fishing by the US takes fish from Canada and vise versa; harvests primarily Chinook and coho salmon (troll fishery gets 90% of the chinook and 50-75% of the coho) (32)	1,3,4

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
WA, OR north of Cape Falcon salmon troll	900		1,718 thousand lbs in WA in 1991 (23)	WA, OR	WA: chinook salmon fishery from May 1 to June 15, 1993; all-salmon fishery from July 14 to Aug 6 on a 4-on-3 off schedule; pinks only from August 8 to 25; OR: all salmon but coho from May 1 to June 15 - then short openers 2-3X per month until mid	troll	see notes from categ 2 fishery	see notes from categ 2 fishery	50% decrease in participation from 1991 to 1993 (49)	1,2,23,37
AK north Pacific halibut, AK bottom fish, WA, OR, CA albacore, groundfish, bottom fish, CA halibut non-salmon troll fisheries				AK, WA, OR, CA; albacore: mostly outside the EEZ from CA to AK. In CA, fish in the S. Pacific in July, in the N. Pacific in August October - most fish caught in October between 100 and 200 miles off Eureka (32)		troll; number of trollers for albacore are increasing due to the prohibition on drift gill nets for this species (33)	albacore is a highly migratory species and is managed under the MFCMA; groundfish managed by states or FMPs		groundfish troll - provides both full and part-time employment; new fisheries are technically classified as "mechanical jigging mechanism" because trolling is prohibited	1,2,3,32,33
HI trolling, rod and reel	1795			HI		rod and reel			mixed-species: yellowfin tuna (ahi) is the preference, but billfish, mahimahi and ono are also frequently caught	1,2,36,43
Guam tuna troll	50			Guam		troll	by the Western Pacific Fishery Management Council through their Pelagic Fishery Management Plan; state regulations require a license and monthly catch reports		Skipjack tuna is primary species	1,2,51

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
Commonwealth of the Northern Mariana Islands tuna troll	50			Northern Mariana Islands		troll	by the Western Pacific Fishery Management Council through their Pelagic Fishery Management Plan; state regulations require a license and monthly catch reports		Skipjack tuna is primary species	1,2,51
American Samoa tuna troll	50			American Samoa		troll	by the Western Pacific Fishery Management Council through their Pelagic Fishery Management Plan; state regulations require a license and monthly catch reports		Skipjack tuna is primary species	1,2
Purse seine, beach seine, round haul (seine and lampara) and throw net fisheries:										
AK salmon/herring beach or purse seine	1263	958		Salmon beach seines permitted in the Cook Inlet, Kodiak, and Aleutian Islands districts; Purse seines almost entirely in state waters; herring purse seine in SE AK, Kodiak, Chignik and Alaska Peninsula, beach seine in Cook Inlet, Norton Sound and Kotzebue		purse and beach seine	salmon: state herring: state management, short openings	emergency openings and closures for salmon; short seasons for herring	herring fishery primarily for sac roe	
AK other finfish beach or purse seine	11			AK		purse seine				
WA salmon purse seine	440			Puget Sound, WA		purse seine	WA state			
WA salmon reef net	53			Puget Sound, WA		reef net				
WA, OR herring, smelt, squid purse seine	100			WA, OR		purse seine				
WA (all species) beach seine	199			Puget Sound, WA		beach seine				
HI purse seine	18			HI		purse seine				
HI opelu/akule net	16			HI		opelu/akule net				1,43
HI throw net, cast net	47			HI		throw net/cast net				1,43
HI net unclassified	106			HI		unclassified				1,43
Long line/set line fisheries:										

Appendix A: Descriptions of U.S. Commercial Fisheries

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
AK groundfish longline/set line (except sablefish in the Bering Sea and Gulf of Alaska which are in Category 2)	1296			AK		longline	Groundfish FMP		other than sablefish, also catch turbot, Pacific cod, rockfish, lingcod (32)	
AK, WA, OR North Pacific halibut long line/set line	5577			North Pacific - CA, WA, OR; 40% of harvest occurred in regulatory area 3A in 1993 (32)		long line/set line				
WA, OR, CA groundfish, bottomfish long line/set line	367			WA, OR, CA		long line/set line	Groundfish FMP and state regulations		WA: mostly sablefish, spiny dogfish, rockfish; OR: mostly sablefish and rockfish; CA: mostly rockfish, bocaccio, and sablefish (32)	1,32
CA shark/bonito long line/set line	10			CA		long line/set line				
HI swordfish, tuna, billfish, mahi mahi, wahoo, oceanic sharks long line/set line	140	123	1230 trips in 1993; 1681 trips, 12,323,686 total hooks in 1994	HI; in 1991, 113 vessels made at least one set outside the EEZ; 114 vessels made sets inside the EEZ; longline fishery takes mainly bigeye tuna (33)		long line/set line	FMP for the Pelagic Fisheries of the Western Pacific Region	1991: moratorium established to arrest the rapid growth of fishery; 1992: areas around the main HI and Guam closed to reduce gear conflicts and vessel safety issues; 1994: limited entry (166 vessels), vessel upgrade size ceiling, permits transferable	observer coverage poor. Because of vessel upgrade option, effort is expected to increase 32% - could cause an increase in turtle mortality to 939 captured, 373 dead (from 752 and 299 in the 1992 BO)	1,5,6,36
Trawl fisheries:										
AK Bering Sea and Aleutian Islands groundfish trawl	490			Bering Sea: INPFC fishing areas I (Statistical areas 511, 512, 513, 514, 516, 517, 518, 519), II (Statistical areas 521 and 522) and III (Statistical Area 530); Aleutian Islands	Peak activity during the first 1/2 of the calendar year	trawl	FMP for the groundfish fishery of the Bering Sea and Aleutian Islands area; some small scale fisheries managed by the State of Alaska	Allocation of TAC; fishery can be closed by reaching the limit on a prohibited bycatch species; special regulations to protect prohibited species (eg crabs)	primarily for walleye pollock, Pacific cod and rock sole (32); high incidental take of salmon (33); no fishing in the Donut Hole in 1993 and 1994 (33); all stocks are fully utilized (33)	1,7,32,33
AK Gulf of Alaska groundfish trawl	490			Western, Central & Eastern Gulf of Alaska	Peak activity during the first 1/2 of the calendar year	trawl	FMP for Groundfish of the Gulf of Alaska; some small-scale fisheries managed by the State of Alaska	Allocation of TAC; fishery can be closed by reaching the limit on a prohibited bycatch species; special regulations to protect prohibited species (eg crabs)	see above; in 1993, set TAC lower than the ABC for the Western and Central regulatory areas based on ecosystem concerns, primarily due to decline in sea lions; high incidental take of salmon (33)	1,2,8,32,33

Appendix A: Descriptions of U.S. Commercial Fisheries

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
AK state-managed waters of Cook Inlet, Kachemak Bay, Prince William Sound, Southeast AK groundfish trawl	8			state waters		trawl	State of Alaska			1
AK food/bait herring trawl	2					trawl	State of Alaska			1
WA, OR, CA groundfish, squid, smelt, bottomfish trawl	585							quotas and trip limits; license limitation program will be started in 1994 (33)	WA: mostly rockfish, Pacific whiting, and arrowtooth flounder in 1993 (32); OR: mostly Pacific whiting, Dover sole, rockfish and thornheads in 1993 (32); CA: mostly Dover sole, thornyheads, and Pacific whiting (Pacific whiting = hake)	1,32,33
Pot, ring net, and trap fisheries:										
AK shellfish pot	1951	1792		Alaska: Southeast, Yakutat, Prince William Sound, Cook Inlet, Alaska Peninsula, Kodiak, Dutch Harbor, Bering Sea, Adak, St. Lawrence Island, Norton Sound		pot			recent increase in effort for king crab in Norton Sound	1,3
AK finfish pot	226			Alaska		pot			for cod (32)	1,32
WA, OR, CA sablefish pot	176			WA, OR, CA		pot			WA catches almost nothing - CA and OR catches a fair amount of sablefish in pots (32)	1,32
WA, OR, CA dungeness crab pot	1443			WA, OR, CA		pot				1
WA, OR shrimp pot	244			WA, OR - most shrimp caught in 1993 were harvested between Cape Flattery and Cape Elizabeth & between Cape Perpetua and Cape Blanco (23)	WA: April through October, peak in May and June	pot				1
CA lobster, prawn, shrimp, rock crab, fish pot	608			CA		pot				1
OR, CA hagfish pot	7			OR, CA		pot				1

Appendix A: Descriptions of U.S. Commercial Fisheries

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
HI lobster trap	15	5		HI: main grounds around Necker Island, Maro Reef, and Gardner Pinnacles	general season - open year round but closed June - August; fishery closed for all of 1993 and an abbreviated season fished in 1994 (33)	trap	Federal: Crustaceans FMP for the Western Pacific	area closures, minimum size limits, restrictions o n gear type, presence of escape panels, mandatory annual permits and reports; limited entry (33)	restrictions on the trap entrance - can't by larger than 6.5 in in diameter	1,2,44
HI crab trap	22			HI: Penguin Bank, coastal Kauai and Niihau, north and south coasts of Oahu, NW Maui, and the Kona Coast		trap				1,2,43
HI fish trap	19			HI		trap				1,43
HI shrimp trap	5			HI		trap				1
Handline and jig fisheries:										
AK North Pacific halibut (Mechanical jig)	84	6		AK		jig				1,3
AK other finfish	474	102		AK		jig				1,3
WA groundfish, bottomfish jig	679			WA		jig				1
HI aku boat, pole and line	54			HI		pole and line				1
HI inshore handline	650			HI		handline				1
HI deep sea bottomfish	434			HI; mostly the western Hawaiian Islands; large boats fish far from port for many days (33)		handline	Managed jointly by the Western Pacific Fishery Management Council, Territories, Commonwealth, and State (33)		snapper/grouper fishery; some stocks (opakapaka, ehu, onaga, and ulua) near the main Hawaiian Islands are at 20-30% of original population levels (33); general decline in participation - focus of effort on the more profitable longline fishery (36)	1,33,36
HI tuna	144			HI		handline			mostly yellowfin tuna	1
Guam bottomfish	50			HI; small boats fish close to shore (33)		handline	Managed jointly by the Western Pacific Fishery Management Council, Territories, Commonwealth, and State (33)		snappers, jacks, groupers and emperors fishery; many boats are part time	1,33

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
Commonwealth of the Northern Mariana Islands bottomfish	50			HI; small boats fish close to shore (33)		handline	Managed jointly by the Western Pacific Fishery Management Council, Territories, Commonwealth, and State (33)		snappers, jacks, groupers and emperors fishery; many boats are part time	1,33
American Samoa bottomfish	50			American Samoa; small boats fish close to shore (33)			Managed jointly by the Western Pacific Fishery Management Council, Territories, Commonwealth, and State (33)		snappers, jacks, groupers and emperors fishery; many boats are part time	1,33
Dip net fisheries:										
WA, OR smelt, herring dip net	119			WA, OR		dip net				1
Harpoon fisheries:										
CA swordfish harpoon	228			CA		harpoon				1
Pound fisheries:										
AK Southeast Alaska herring food/bait	7			AK		pound net				1
WA herring brush	1			WA		pound net?				1
Bait pens:										
WA, OR herring bait pens	12			WA, OR		bait pens				
Dredge fishery:										
Coastwide scallop dredge	106			coastwise		dredge				1
Dive, hand/mechanical collection fishery:										
AK abalone	177	99		AK		hand				1,3
AK dungeness crab	1			AK		hand				1,3
AK, Prince William Sound herring spawn-on-kelp	239	217		AK		hand			The herring spawn-on-kelp fishery experienced a brief increase in participants followed by a sharp decrease due to overcapitalization followed by realization that the fishery was less profitable than hoped.	1,3

Appendix A: Descriptions of U.S. Commercial Fisheries

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
AK herring spawn-on-kelp, Bristol Bay	306	182		AK		hand			The herring spawn-on-kelp fishery experienced a brief increase in participants followed by a sharp decrease due to overcapitalization followed by realization that the fishery was less profitable than hoped.	1,3
AK urchin and other fish/shellfish	127			AK; about 40% of the harvest occurs in Sitka Sound, 60% in the rest of the state - mostly Kodiak and Cook Inlet (32)		hand	State			1,3,32
AK clam hand shovel	125	60		AK		shovel				1
AK clam mechanical/hydraulic fishery	3			AK						1
WA herring spawn-on-kelp	4			WA		hand				1
WA geoduck	37									1
CA abalone	111			CA		hand				1,9
CA sea urchin	583			CA		hand		Limited entry - only 1 diver can come into the fishery for every 10 that leave the fishery - need to reduce effort to approximately 300 divers (new regulations as of 1994)(32)		1,9
HI squiding, spear	267			HI		hand				1
HI lobster diving	6			HI		hand				1
HI coral diving	2			HI: Auau Channel		hand				1
HI handpick	135			HI		hand				1
Aquaculture, ranch, ponds:										
WA tribal ranch	1			WA		ranching				1
WA oyster farm	316			WA		farming				1
WA mussel/clam	268			WA		farming				1
WA, CA kelp	4			WA, CA		farming				1
HI fish pond	10			HI		farming	Unregulated			1
Commercial passenger fishing vessel (charter boat fisheries):										
AK, WA, OR, CA all species	1243			AK, WA, OR, CA		charter boat				1
Other fisheries:										
HI "other"	114			HI						1
NEW PACIFIC FISHERIES										
WA ghost shrimp	14									
Alaska Pair Trawl	2									

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
Alaska Metlakatla gill net	55		fish 4-5 days per week during the salmon season	within 3000ft of Annette Island, Southeast Alaska	Mid June to late September	drift gill net (200 fm length)	Treaty	long term objective of harvesting 5% of the southern Southeast Alaska salmon stocks	take about 1-2 million fish annually; no marine mammal interactions according to one source	35
Alaska Metlakatla purse seine	2		fish 2-3 days per week during the salmon season	within 3000ft of Annette Island, Southeast Alaska	Mid June to late September	purse seine	Treaty	long term objective of harvesting 5% of the southern Southeast Alaska salmon stocks	take about 1-2 million fish annually; no marine mammal interactions according to one source	
WA ring net	125									
WA drag seine - don't know gear type or species targeted	36									
WA, OR urchin	108			WA: Southern San Juan Islands & Neah Bay; OR: near Port Orford & Depoe Bay (central coast)	two days per week from December 6, 1993 to February 8, 1993	dive/hand collect	State	short openings, combined quota for the two regions of 1.13 million pounds	size-based population yield model suggested that previous levels of harvest should be reduced significantly	
WA shellfish diver - don't know what species, though	132									
WA lampara	23									
California bait pen - ** new to list of fisheries**				CA		bait pens				10
CA live trap/hook&line	93			CA		trap, hook & line	Unregulated		This new fishery is primarily made up of fishers who used to use gill nets; now that these are prohibited in CA, this new live fishery started - provides live fish to Asian restaurants; targeting rockfish, cabazon, scorpionfish,	10
CA sea cucumber trawl				CA		trawl - shallow water	Unregulated		Recent increase in this fishery prompted by coastal net ban	10
Alaska spawn-on-kelp empoundment	200			AK: Hoonah Sound, Craig/Klawock		empoundment	Unregulated			42
ATLANTIC OCEAN, CARIBBEAN AND GULF OF MEXICO										
Category 1										
Trawl fisheries:										

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
Mid Atlantic foreign mackerel trawl										
Pair trawl fisheries:										
Atlantic Ocean, Caribbean, Gulf of Mexico swordfish, tuna, shark pair trawl	14		242 fishing days in 1992	Fishing in 1991 was inshore of the continental shelf from the Hudson Caynon north to the Grand Banks		large mesh (> 20in) gill net deployed between two vessels	cant keep or target bluefin tuna; only pair trawlers who participated in 1993 are eligible for participation in 1994; regs in 50 CFR 285.22		fish at night - usually 2 trawls per night; minimum observer coverage is 35%; fishery is terminated if the level of take exceeds 2 of any single species of turtle; marine mammal takes happen in clumps: in 3 tows in 1993, there were 4, 5, and 8 dead	1,11,15
Gill net fisheries:										
Atlantic Ocean, Caribbean, Gulf of Mexico, swordfish, tuna, shark drift gill net	85	75	1987 hours	Atlantic, mostly north of Cape Hattaras; 7 vessels in the Gulf of Mexico and 2 in the Caribbean	Atlantic N. of Capa Hattaras: generally fish from April to November. Fish all year in the Gulf of Mexico	gill net; 18in mesh? (31)	Permits required for swordfish fishery but is not managed by states. NMFS in the process of developing management measures; International Commission for the Conservation of Atlantic Tunas (does regs based on recs by the Atlantic Tunas Convention Act)(33)	quota program for commercial and recreational fisheries started to reduce harvest levels of highly migratory species 55% (33); Shark FMP	night fishery? (15); this fishery occurs in the same area as the pair trawl fishery; swordfish, bluefin tuna are overutilized (33); conflict between comm. and recr. fishers as the US longline fishery for yellowfin and the Spanish longline expands (33)	1,2,4,15,31,33
New England multispecies sink gill net (includes all species as defined in the Multispecies FMP and spiny dogfish)	341	345	353,435 hours	New England; western periphery of the Gulf of Maine from the lower Bay of Fundy to Cape Cod in water to 60 fathoms (statistical areas 537 and 539); more effort being focused in offshore waters	year round; peak activity late spring and from October to February (43)	sink gill net	Multispecies FMP	complex; seasonal area closures in offshore waters, minimum mesh size restrictions is main management technique		1,2,4,48
Gulf of Maine small pelagics (includes mackerel, herring, menhaden) surface gill net (no longer exists?!)	133			Gulf of Maine	late fall	surface gill net			Atlantic mackerel and herring are underutilized; increases in effort to harvest these resources could lead to increased take of marine mammals, specifically pilot whales and common dolphins (33)	1,33
Category 2										

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
Gill net fisheries:										
Mid Atlantic coastal gill net	655			Mid Atlantic coastal; CT - area where commercial shad can be legally retained is very restricted (47)	in Maryland, fish for shad in the spring, spot and croaker in the summer, and weakfish in the winter; CT - shad open 1 April to 15 June	gill net; for shad in CT - minimum of 5in mesh; for white & yellow perch and catfish, min mesh size of 3.5in (47)	States (not many in NY!)	MD - currently has a moratorium on all new licenses - indefinate freeze on participation; CT - gear restrictions, area closures, trip limits (47)	VA black drum fishery - low # of fishers but high effort - turtle take (48); 3248 gill netters in Virginia in 993; down from 5300 in 1992 due to elimination of recreational fishers from fishery (39); moratorium on shad gillnetting in bays and tributaries	1,41,39,47,48
Southern Atlantic shark gill net	10	40		Southern Atlantic, nearshore	March and April; found "late summer and early autumn" in (33)	gill net; 18in mesh? (31)	Draft FMP under review by NMFS in 1991	commercial quota, permits, monthly reporting	target blacktip shark near shore (33)	1,2,31,33
Trawl fisheries:										
Mid Atlantic mackerel trawl	277	58		mid-Atlantic shelf region from Cape Hatteras to S. New England	US commercial fishery from December to May	trawl	FMP for Atlantic mackerel, squid, and butterfish fisheries		both long and short-finned squid and Atlantic mackerel is underutilized; increases in effort to harvest these resources could lead to increased take of marine mammals, specifically pilot whales and common dolphins (33)	1,2,4,33,48
Longline fisheries:										
Atlantic Ocean, Caribbean, Gulf of Mexico tuna, shark, swordfish longline	834			Atlantic Ocean; tunal and swordfish from Grand Banks to the Gulf of Mexico and the Caribbean	swordfish north of Cape Hatteras from April to November; South Atlantic, Gulf of Mexico and the Caribbean all year; tuna all year	longline	Permits required for swordfish fishery but is not managed by states. NMFS in the process of developing management measures; International Commission for the Conservation of Atlantic Tunas (does regs based on recs by the Atlantic Tunas Convention Act)(33)	quota program for commercial and recreational fisheries started to reduce harvest levels of highly migratory species 55% (33); Shark FMP	night fishery? (15); this fishery occurs in the same area as the pair trawl fishery; swordfish, bluefin tuna are overutilized (33); conflict between comm. and recr. fishers as the US longline fishery for yellowfin and the Spanish longline expands (33)	1,2,15,33,37
Aquaculture pens:										
Gulf of Maine Atlantic salmon	24			Northern Maine	all	pens	State		Intentional lethal take is the problem; fishery may expand to New England states	1,50
Category 3										
Mid Atlantic inshore gill net fisheries:										

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
Rhode Island, southern Massachusetts (to Monomoy Island) and New York Bight (Raritan and Lower New York Bight)	32			RI, MA, NY		gill net	State		to conversion from lobster to gill netting; gill netters fish during the fall, winter and spring and then switch gear to target lobster in the summer; marine mammal interaction data can be obtained	1,48
Long Island Sound	20			Long Island Sound		gill net	State			1
Delaware Bay	60			Delaware Bay	shad peaks in April and weakfish peaks in May	set and drift gill net (different seasons and regulations for both) (48)	State			1
Chesapeake Bay	45			Chesapeake Bay	May and June peak effort (48)	set and drift gill net; no set gillnets in MD waters (48)	State			1,48
North Carolina (Albemarle and Pamlico Sounds)	94			North Carolina		gill net	State			1
Trawl fisheries:										
Gulf of Maine northern shrimp trawl	320			Maine	December to May	trawl - small mesh	State	Atlantic States Fishery Management Commission	fully utilized (33); groundfish bycatch a big problem - have a "fish excluding device" in the bottom of the net	1,33
Gulf of Maine mackerel trawl	30			Maine		trawl	State		Few marine mammal interactions due to distribution of animals	1
Gulf of Maine, Mid Atlantic groundfish trawl (observer data is only for the North Atlantic)	1056			Maine, Mid Atlantic - especially south of Cape Cod and east ofthe New York Bight (statistical areas 537, 538, 539, 612, 613) (48); VA inshore	peak effort is winter/early spring; VA inshore September to April (48); NC - November through January is summer flounder nearshore trawl fishery - correlates with large numbers of stranded sea turtles this time of year (48)	otter trawl	NE Demersal Fisheries FMP, Fishery Management Councils, New England groundfish under the Northeast Multispecies FMP	mesh size, gear, minimum landing sizes, seasonal closures; Summer Flounder FMP will use catch quotas to decrease fishing mortality; New England Multispecies FMP will reduce fishing effort for some species; in 1994, some mesh sizes will increase (33)	of 25 species caught in this fishery, 14 are over-utilized, 6 are over, 2 are unknown, and 3 are under (red hake, skates, and spiny dogfish) (33)	1,33,48
Gulf of Maine, Mid Atlantic sea scallop trawl	215			Maine, Mid Atlantic; on the continental shelf from the Virginia Capes to the Hague Line (US-Canada border)		trawl	State? Some under scallop FMP		permits required; vessels must submit Fishing Vessel Trip Reports (15)	1,15,19

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
Gulf of Maine, Southern Atlantic, Gulf of Mexico coastal herring trawl	5			Maine, Southern Atlantic, Mid Atlantic, Gulf of Mexico		trawl	State			1
Mid Atlantic squid trawl	250	370	75826 hours	Mid Atlantic, New Brunswick to the Gulf of Mexico; commercial quantities concentrated from S. Georges Bank to Cape Hatteras		mostly modified mid-water otter trawls			Lots of bycatch in bottom trawls for Loligo	1,2,4
Mid Atlantic mixed species trawl	1000			Mid Atlantic; much effort in offshore waters south of Cape Cod and east of the New York Bight (statistical areas 537, 538, 539, 612, 613) (48)	peak offshore effort in winter and early spring; inshore effort peakss in late summer/early fall (48)	trawl				1,48
Mid Atlantic, South Atlantic, Gulf of Mexico shrimp trawl	>18000		total shrimp landings in 1992 was 337.8 million lbs or $479.9 million; Gulf of Mexico accounts for 66% of the quantity and 81% of the value landed	Gulf of Mexico - much of inshore fishery is in TX and LA waters - they are currently implementing plans to address the issue of overharvest of juvenile shrimp; offshore fishery (100-300 fathoms) for (underexploited) royal red shrimp	Atlantic coast: May through December; Gulf of Mexico - year round with slack periods in coldest months; South Atlantic - spring to winter in some areas, summer to winter in others	trawl	FMP for the Shrimp Fishery of the Gulf of Mexico; State regulations	area closures, restricted seasons for some areas, minimum mesh sizes, fish exclusion devices	Large bycatch of coastal sharks - sometimes fins are saved - remainder discarded by shrimpers (33)	1,2,12,33
Gulf of Mexico butterfish trawl	2		18469 in 1989 (26)	Gulf of Mexico		trawl (bottom)	Not regulated		use for pet food or fish meal, lots of butterfish in the offshore Gulf of Mexico shrimp fleet (26); Gulf butterfish are underutilized (33)	1,26,33
Georgia, South Carolina (add Maryland or just call this central/South Atlantic whelk trawl?) whelk trawl	25			Georgia, South Carolina		trawl			commercial shrimpers often trawl for whelk in the off-season for shrimp	1,13
Calico scallops trawl	200					trawl				1
Bluefish, croaker, flounder trawl	550					trawl	most croaker are under state management		flounder is under the Summer Flounder FMP - vessels must submit Fishing Vessel Trip Reports; Atlantic Croaker is sold for pet food (33); large numbers of Atlantic croaker, spot, and seatrout are caught as bycatch in	1,33
Crab trawl	400					trawl		permits required		1

Appendix A: Descriptions of U.S. Commercial Fisheries

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
Purse seine fisheries:										
Gulf of Maine Atlantic herring purse seine	30			Maine		purse seine				1
Gulf of Maine, Mid Atlantic menhaden purse seine	10			Maine, Mid Atlantic; juvenile and adult fish are in large schools off North Carolina in November - January		purse seine	Cooperative interstate management - w/Atlantic States Marine Fisheries Commission, NMFS, and each state	ASMFC recommended a shorter season; North Carolina & Virginia - the two states with the biggest menhaden fishery, have not complied (20)	purse seine fishery is a reduction fishery - also use pound nets, seines, gill nets & bait purse seines for BAIT FISHERY (20)	1,20
South Atlantic, Gulf of Mexico menhaden purse seine	97			Southern Atlantic, Gulf of Mexico; in the Gulf of Mexico, much effort is concentrated at the mouth of the MS River in LA and then a low but consistent amount of effort along the western LA and MS coast (29); also large amounts of effort off Carolinas (33)	Atlantic fishery: April - January; Gulf of Mexico: April to October - peaks in May to August	purse seine	Gulf States Marine Fisheries Commission in the Gulf of Mexico and Atlantic States Marine Fisheries Commission in the Atlantic	State	spotter planes used; up to 16% of the inshore finfish bycatch in the shrimp fishery is menhaden - no deleterious effect noticed as of 1988 (29); purse seines set of schools of menhaden	1,2
Florida west coast sardine purse seine	16			Florida		purse seine				1
Bottom longline/hook&line fisheries:										
Gulf of Maine tub trawl groundfish	46			Maine		longline/hook&line				1
South Atlantic, Gulf of Mexico snapper-grouper and other reef fish	1944			Southern Atlantic from North Carolina south, Gulf of Mexico	all year	longline/hook&line	State and federal; Snapper-Grouper FMP	Gulf of Mexico Fishery Management Council considering a commercial quota and bag limit for red snapper beginning in 1991	this is often one gear type of several on any fishing boat; sharks caught as bycatch (33)	1,2,33
South Atlantic, Gulf of Mexico shark	124			Southern Atlantic, Gulf of Mexico		longline/hook&line				1
Pelagic hook&line/harpoon fisheries:										
Gulf of Maine, Mid Atlantic tuna, shark, swordfish	26223			Gulf of Maine, Mid Atlantic		hook&line/harpoon				1

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
South Atlantic, Gulf of Mexico & Mid Atlantic? hook and line	>1446			Southern Atlantic, Gulf of Mexico		hook&line/harpoon				1,19
Gill net fisheries:										
Gulf of Maine, South Atlantic coastal shad, sturgeon gill net	1285			Maine, Southern Atlantic	In Georgia, January March	gill net; in Georgia, driftnets are used in the tidal portion of the river; set nets are used in the fresh water			Atlantic anadromous stocks heavily influenced by damming & environmental contamination (33)	1,13,33
South Atlantic, Gulf of Mexico coastal gill net	4000			South Atlantic, Gulf of Mexico		gill net				1
Florida east coast, Gulf of Mexico pelagics king & Spanish mackerel gill net	271 default; 2531 active permits (38)			Florida & Gulf of Mexico; Spanish mackerel - although it ranges over much of the Atlantic coast, 90% of the commercial catch in 1990 was landed in Florida; King mackerel - Chesapeake Bay southward (33)		gill net (run-around gill net (33))	Federal: Coastal Migratory Pelagic Resources Fishery Management Plan State: Interjurisdictional FMPs (33)		recreational fishery takes 24-42% of the Spanish mackerel; Spanish mackerel are over- or fully utilized throughout their range, King mackerel are over utilized in the Gulf of Mexico and under utilized in the Atlantic(33)	1,33,37
Fixed gear fisheries, trap/pot - fish:										
Gulf of Maine, Mid Atlantic mixed species	>100			Maine, Mid Atlantic		trap/pot				1,19
Mid Atlantic black sea bass	30			Mid Atlantic		trap/pot	Snapper-Grouper FMP		this is the only reef fish in the US that can be caught in pots	1,33

Appendix A: Descriptions of U.S. Commercial Fisheries

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
Mid Atlantic eel	500			Mid Atlantic		trap/pot	no longer regulated in Georgia due to low participation; can not determine # of participants			1,13,19
Fixed gear fisheries, trap/pot - lobster, crab:										
Gulf of Maine, Mid Atlantic inshore lobster	10613			Maine, Mid Atlantic		trap/pot	States		overutilized (33)	1,33,48
Gulf of Maine, Mid Atlantic offshore lobster	2902			ME, Mid Atlantic		trap/pot	Lobster FMP	no females w/eggs	overutilized (33); limited entry program will be implemented by NMFS in 1995	
Atlantic Ocean, Gulf of Mexico blue crab	20500			Atlantic Ocean and Mid Atlantic	Gulf of Mexico: March or April to late fall, peak in June or July (25); Atlantic: mostly from May through September	trap/pot	Gulf of Mexico: Gulf States Fishery Management Council; Atlantic: individual states	Gulf of Mexico: state-specific regulations, including minimum size of 5in; gear restriction in TX of 300-trap max per person; Atlantic: individual states only; no regional plan		1,2
South Atlantic, Gulf of Mexico, Caribbean spiny lobster				Southern Atlantic, Gulf of Mexico, Caribbean - mostly Florida keys and Monroe County and Dade County, FL (96% of catch in 86 was in s. Florida) (28)	August 6 to March 31	trap/pot	Has a federal FMP but is managed by the states	3inch minimum carapace size; 5in minimum tail size; restrictions on # of pots - decrease pots from +600,000 to 200,000 by 2004; restrictions on the number of undersized lobsters that can be used as "seed" lobsters in traps (33)	Overcapitalized: 662,000 traps used in 89-90, only 200,000 required to hit average annual landings (28); large recreational component in fishery - up to 29% of the total spiny lobster landings	1,28,33,38

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
South Atlantic, Gulf of Mexico, Caribbean reef fish	2200			Southern Atlantic, Gulf of Mexico, Caribbean		trap/pot	Gulf of Mexico managed by the Reef Fish Fishery Management Plan; Southern Atlantic managed by the Snapper Grouper Fishery Management Plan; Caribbean managed by the Fishery Management Plan for the Shallow Water Reef Fish Fishery of Puerto Rico (33)	minimum sizes for red snapper in Gulf of Mexico, ITQ system for wreckfish in the S. Atlantic based on historical catch, fish traps prohibited (except for sea bass) in the S. Atlantic, Carib. plan prohibits fish poisoning or bombing - criteria for pots (33	red snapper in the Gulf of Mexico overutilized partly due to its catch as bycatch in the shrimp fishery (33)	1,33
Florida east & west coast, Gulf of Mexico stone crab	500			Florida - Florida Keys north along the w. coast of Florida to the panhandle	October 15 to May 15	trap/pot	FMP	size, area, gear restrictions	claws removed, crab returned to the water; many fishers fish in the spiny lobster fishery in the first part of the stone crab season (30)	1,2
Stop seine, weirs (staked fish traps):										
Gulf of Maine herring and Atlantic mackerel	50			Gulf of Maine, Atlantic Ocean		stop seine, weirs				1
Mid Atlantic mixed species	600			Mid Atlantic; in South Carolina, Bogue Banks, between Beaufort Inlet and Bogue Inlet at 5 places (14)	In South Carolina, mullet stop nets are permitted from 3 October to 30 November	stop seine, weirs		gear restrictions (no smaller than 6in stretched mesh for some part of the net, 8in for other parts), stop nets cannot exceed 400 yards in length	October-November 1994: 3 bottlenose dolphins with evidence of entanglement in stop seines stranded along N. Carolina	1,14
Mid Atlantic crab	2600			Mid Atlantic		stop seine, weirs				
Dredge fisheries:										
Gulf of Maine, Mid Atlantic sea scallops	663		17.06 thousand metric tons	Maine, Mid Atlantic; on the continental shelf from the Virginia Capes to the Hague Line (US-Canada border)		dredge				1,11
Mid Atlantic offshore clam (rename "surfclam and quahog"?)	100			Mid Atlantic		dredge	Surfclam and Quahog Fishery Management Plan	individual Transferable Quotas allocated on the basis of historical participation (33)	full utilization (33); this is called an offshore hydrolic clam fishery in North Carolina - 88 permits issued in 1994 (19)	1,19,33
Gulf of Maine mussel	50			Gulf of Maine		dredge				1
Mid Atlantic oyster - change this to Mid Atlantic/Gulf of Mexico oyster?	7000			Mid Atlantic, Gulf of Mexico		dredge				1
Haul seine fisheries:										

Appendix A: Descriptions of U.S. Commercial Fisheries

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
South Atlantic, Caribbean	150			Caribbean		haul seine				1
Beach seine fisheries:										
Caribbean	15			Caribbean		beach seine				1
Dive, hand/mechanical collection fisheries:										
Gulf of Maine urchin	50			Gulf of Maine		hand collection				1
Atlantic Ocean, Gulf of Mexico, Caribbean shellfish	20000			Atlantic Ocean, Gulf of Mexico, Caribbean		hand collection				1
Delaware Bay	60			Delaware		hand collection				1
ATLANTIC OCEAN, GULF OF MEXICO, CARIBBEAN NEW FISHERIES										
Florida mullet gillnet				FL		gill net	State	mesh restrictions & minimum fish size		
Mid Atlantic, South Atlantic, Gulf of Mexico inshore multispecies longline/handline										
Mid Atlantic hand seine										19
North Caroline clam trawl										19
Gulf of Mexico finfish pot (reef fish) - catches primarily red grouper, then grunts, triggerfishes, sea bass, lane snammer, mutton snapper, porgys, black grouper etc)						pots	Reef Fish Fishery Management Plan - federal	3-year moratorium for new entrants	Some fishers entering this fishery because of the proposed ban on commercial nets in state waters; red grouper under a quota	27
South Atlantic catfish pots										13
South Atlantic catfish longline/trotline										13
Mid Atlantic menhaden bait pound net	140									
Atlantic pound net	over 500			Atlantic coastal	VA - March through November; NC - August to December	pound net - 2.25-in mesh in VA			In NY, have frequent live captures of sea turtles; in the Chesapeake Bay, pound nets may account for up to 33% of sea turtle mortality (48)	48
Gulf of Mexico spiny lobster diving	193									

1 National Marine Fisheries Service, 1994. Taking of Marine Mammals Incidental to Commercial Fishing Operations; Interim Exemption for Commercial Fisheries. Notice of Final List of Fisheries. Federal Register, 59(164). Thursday, August 25, 1994.

2 National Marine Fisheries Service, 1991. Proposed Regime to Govern Interactions between Marine Mammals and Commercial Fishing Operations. Draft Legislative Environmental Impact Statement.

3 Unpublished data from the State of Alaska, Commercial Fisheries Entry Commission, provided by Sue Burns.

4 Center for Marine Conservation green book

5 Mark Murray-Brown, National Marine Fisheries Service, Personal Communication

Appendix A: Descriptions of U.S. Commercial Fisheries

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
6 Western Pacific Regional Fishery Management Council, 1994. Amendment 7 to the Fishery Management Plan for the Pelagic Fisheries of the Western Pacific Region										
7 North Pacific Fishery Management Council, 1993. Summary of Bering Sea/Aleutian Islands Groundfish Fishery Management Plan										
8 North Pacific Fishery Management Council, 1993. Summary of Gulf of Alaska Groundfish Fishery Management Plan. 34p.										
9 Unpublished data from the California Department of Licensing, 1994. Contact is Liz Lethe.										
10 Maria Vojkovich, California Department of Fish and Game										
11 Status of Fishery Resources off the Northeastern United States for 1993. NOAA Technical Memorandum NMFS-FNEC-101. 140p.										
12 Gulf of Mexico Fishery Management Council, 1994. Amendment Number 7 to the Fishery Management Plan for the Shrimp Fishery of the Gulf of Mexico										
13 Gina Rogers, Statistics Coordinator, Department of Fisheries, Georgia										
14 Letter, with enclosures, from Vicky Thayer (NMFS, Southeast Fisheries Science Center) to Vicki Cornish (NMFS, Office of Protected Resources), December 7 1994.										
15 NMFS, 1994. Final Environmental Assessment: 1994 Western Atlantic Tuna Fisheries Pelagic Pair-Trawl Experimental Authorization. 23p										
16 Section 7 Consultations on the Shrimp Fishery of the Gulf of Mexico and Amendment 7 to the Fishery Management Plan for Shrimp. Memorandum to Charles A. Oravetz from Michael B. Justen, March 2 1994										
17 License sales for 1993-94 license year, Texas Parks and Wildlife Department, Austin, Texas.										
18 License sales for 1994 license year, State of Alabama Department of Conservation and Natural Resources										
19 License sales for 1994, North Carolina Division of Marine Fisheries										
20 Atlantic States Marine Fisheries Commission, 1991. Interstate fisheries of the Atlantic Coast. 131p.										
21 Mississippi Department of Marine Resources, License information										
22 State of California, Department of Fish and Game, License and Revenue Branch										
23 Washington Department of Fish and Wildlife, 1991 Fisheries Statistical Report. 80p.										
24 Gulf States Marine Fisheries Commission, 1993. The Black Drum fishery of the Gulf of Mexico, Unites States: A Regional Management Plan.										
25 Gulf States Marine Fisheries Commission, 1990. The Blue Crab Fishery of the Gulf of Mexico, Unites States: A Regional Management Plan.										
26 Gledhill, Christopher, 1991. Status of Gulf Butterfish Stocks Report for 1991. 35p										
27 Gulf of Mexico Fishery Management Council, 1994. Public Hearing Draft Amendment 10 to the Reef Fish Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico										
28 Gulf of Mexico Fishery Management Council, 1992. Regulatory Amendment to the Spiny Lobster Fishery Management Plan for the Gulf of Mexico and South Atlantic. 37p.										
29 Gulf States Marine Fisheries Commission, 1988. The Menhaden Fishery of the Gulf of Mexico, United States: A Regional Management Plan.										
30 Gulf of Mexico Fishery Management Council, 1990. Amendment 4 to the Fishery Management Plan for the Stone Crab Fishery of the Gulf of Mexico										
31 South Atlantic Fishery Management Council, 1985. Fishery Management Play, Regulatory Impact Review, Initial Regulatory Flexibility Analysis, Final Environmental Impact Statement for Atlantic Swordfish.										
32 Pacific States Marine Fisheries Commission Annual Report for the Year 1993. 32p.										
33 United States Department of Commerce, 1993. Our Living Oceans: Report on the Status of U.S. Living Marine Resources, 1993. 155p										
34 Gulf of Mexico Fishery Management Council, 1994. Amendment Number 7 to the Fishery Management Plan for the Shrimp Fishery of the Gulf of Mexico, United States Waters; Includes Environmental Assessment with Regulatory Impact Review.										
35 Phil Dougherty, Alaska Department of Fish and Game, Ketchikan										
36 Svein Fougner, National Marine Fisheries Service, Southwest Fisheries Science Center, California										
37 Don McIsaac, Oregon Department of Fish and Game, Portland										
38 Janet Miller, National Marine Fisheries Service, Southeast Regional Office										
39 Jack Travelstead, Virginia Department of Fisheries??????										
40 Jaffe, Martin. 1991. Gillnet fisheries: Northeast Region. Unpublished internal report prepared by and for the National Marine Fisheries Service.										
41 Pete Jensen, Maryland fisheries expert - get true affiliation										
42 Herman Saveko, Alaska Department of Fish and Game, Commercial Fisheries Management and Development										
43 Correspondence from Eric Onizuka, State of Hawaii, Department of Land and Natural Resources , Commercial Fisheries and Aquaculture to Eugene T. Nitta, National Marine Fisheries Service, Protected Species Coordinator. 3 January 1995.										
44 Al Katekaru, National Marine Fisheries Service, Honolulu, Hawaii.										
45 Leet, W. S., Dewees, C. M., and Haugen, C. W. 1992. California's Living Marine Resources and their Utilization. Sea Grant Extension Publication UCSGEP-92-12. 258p.										
46 Alan Baraco, California Department of Fish and Game										
47 State of Connecticut Department of Environmental Protection 1995 Marine Fisheries Information Circular. Commercial and Recreational Fishing and Lobstering in Marine Waters. Commercial Fishing in the Inland District. 18p.										
48 A. Peterson, correspondence to W. Fox, July 1994. Memo and report entitled "Sea Turtle/Fishery Interaction Report"										
49 Pacific Fishery Management Council, 1994. Review of 1993 Ocean Salmon Fisheries.										

Fishery	# of permit-holders	# of active permit-holders	Total effort	Geographic range	Seasons	Gear type	Regulations	Management type	Comments	Source
50 Dan Morris, National Marine Fisheries Service, Northeast Regional Office, January 1995										
51 Western Pacific Fishery Management Council, 1993. Pelagic Fisheries of the Western Pacific Region: 1993 Annual Report										

Appendix B: Marine mammal mortalities in observed U.S. commercial fisheries

This table provides the estimated kills of marine mammal species in U.S. commercial fisheries observed by the National Marine Fisheries Service. The estimated kill is extrapolated from the observed kill by taking into consideration the portion of the fishery that was not observed. Both direct extrapolations and stratified extrapolations were used.

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
ATLANTIC OCEAN OBSERVER PROGRAMS									
Foreign and Joint Venture Squid/Mackerel Trawl (01)	1990	TOTAL	92	656 days	0.140	2.81	100%	92 (0)	N.A.*
		Pilot whale	71		0.108	2.16		71 (0)	
		Common dolphin	11		0.017	0.34		11 (0)	
		Atlantic white-sided dolphin	10		0.015	0.31		10 (0)	
Foreign and Joint Venture Squid/Mackerel Trawl (01)	1991	TOTAL	21	284 days	0.074	1.47	100%	21 (0)	N.A.
		Pilot whale	12		0.042	0.84		12 (0)	
		Common dolphin	2		0.007	0.14		2 (0)	
		Atlantic white-sided dolphin	7		0.025	0.50		7 (0)	
New England Multispecies Sink Gillnet (02)	1990	TOTAL	21	188 days (647 sets)	0.111	2.22	1%	3502 (1028759)	0.29
		Harbor porpoise	17		0.090	1.80		2900 (861184)	0.32
		Harbor seal	4		0.021	0.42		602 (167575)	0.68

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
New England Multispecies Sink Gillnet (02)	1991	TOTAL	79	1217 days (4547 sets)	0.065	1.30	6%	2300 (493275)	0.31
		Harbor porpoise	47		0.039	0.77		2000 (490000)	0.35
		Harbor seal	23		0.020	0.38		231 (2583)	0.22
		Atlantic white-sided dolphin	4		0.003	0/07		49 (508)	0.46
		Minke whale	1		0.001	0.016		10 (92)	0.96
		Unknown	1		0.001	0.016		10 (92)	0.96
New England Multispecies Sink Gillnet (02)	1992	TOTAL	98	1400 days (5882 sets)	0.07	1.40	7%	1727 (73765)	0.16
		Harbor porpoise	53		0.036	0.72		1200 (63500)	0.21
		Harbor seal	24		0.017	0.34		373 (7360)	0.23
		Atlantic white-sided dolphin	9		0.006	0.13		154 (2905)	0.35
New England Multispecies Sink Gillnet (02)	1993	TOTAL	83	887 days (3956 sets)	0.09	1.87	4%	2321 (85455)	0.13
		Harbor porpoise	53		0.060	1.2		1400 (63504)	0.18
		Harbor seal	20		0.023	0.46		698 (17588)	0.19
		Grey seal	3		0.003	0.07		18 (324)	1.00
		Atlantic white-sided dolphin	7		0.008	0.16		205 (4039)	0.31

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
New England Multispecies Sink Gillnet (02)	**1990-1993**	**Atlantic white-sided dolphin**						**102**	
AVERAGE		**Gray seal**						**5**	
		Harbor porpoise						**1875**	
		Harbor seal						**476**	
		Minke whale						**3**	
		Unid. species						**3**	
Atlantic Swordfish Drift Gillnet (39)	1989	TOTAL	51	100 days (54 sets)	0.95/set	18.9/set	9%	914 (102245)	0.35*+
		Common dolphin	19		0.35/set	7.00/set		540 (88209)	0.55*+
		Beaked whale	12		0.22/set	4.44/set		60 (864)	0.49*+
		Bottlenose dolphin	8		0.15/set	3.00/set		72 (1805)	0.59*+
		Pilot whale	7		0.13/set	2.59/set		77 (7174)	1.10*+
		Striped dolphin	1		0.02/set	0.37/set		39 (1073)	0.84*+
		Risso's dolphin	3		0.06/set	1.11/set		87 (2047)	0.52*+
		Unid. dolphin	1		0.02/set	0.37/set		39 (1073)	0.84*+

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Atlantic Swordfish Drift Gillnet (39)	1990	TOTAL	66	119 days (69 sets)	0.96/set	19.1/set	7%	1525 (148914)	0.25
		Common dolphin	23		0.33/set	6.67/set		893 (127592)	0.40
		Risso's dolphin	14		0.16/set	3.26/set		144 (4388)	0.46
		Pilot whale	11		0.13/set	2.56/set		132 (6065)	0.59
		Bottlenose dolphin	8		0.09/set	1.86/set		115 (2333)	0.42
		Spotted dolphin	7		0.10/set	2.03/set		51 (3263)	1.12
		Beaked whale	1		0.01/set	0.30/set		76 (1811)	0.56
		Striped dolphin	1		0.01/set	0.30/set		57 (1731)	0.73
		Unid. dolphin	1		0.01/set	0.30/set		57 (1731)	0.73
Atlantic Swordfish Drift Gillnet (39)	1991	TOTAL	72	80 days (46 sets)	1.56/set	31.3/set	21%	323 (7360)	0.27
		Common dolphin	55		1.19/set	23.8/set		223 (6445)	0.36
		Bottlenose dolphin	5		0.11/set	2.17/set		26 (131)	0.44
		Pilot whale	4		0.09/set	1.7/set		30 (520)	0.76
		Beaked whale	3		0.06/set	1.3/set		13 (55)	0.57
		Risso's dolphin	3		0.06/set	1.3/set		21 (133)	0.55
		Striped dolphin	1		0.02/set	0.4/set		10 (76)	0.87

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Atlantic Swordfish Drift Gillnet (39)	1992	TOTAL	153	171 days (93 sets)	1.65/set	32.9/set	67%	350 (2336)	0.14
		Common dolphin	97		1.01/set	20.2/set		227 (2061)	0.20
		Risso's dolphin	16		0.17/set	3.4/set		31 (70)	0.27
		Pilot whale	14		0.16/set	3.3/set		33 (92)	0.29
		Bottlenose dolphin	12		0.12/set	2.5/set		28 (35)	0.21
		Spotted dolphin	12		0.12/set	2.5/set		20 (49)	0.35
		Beaked whale	1		0.01/set	0.2/set		10 (28)	0.53
		Spinner dolphin	1		0.01/set	0.2/set		1 (1)	0.61

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Atlantic Swordfish Drift Gillnet (39)	1993	TOTAL	152	134 days (86 sets)	1.76/set	35.34/set	40%	345 (1662)	0.12
		Common dolphin	111		1.29/set	0.32/set		238 (1450)	0.16
		Striped dolphin	13		0.15/set	3.02/set		21 (18)	0.20
		Pilot whale	11		0.13/set	2.32/set		31 (111)	0.34
		Bottlenose dolphin	6		0.07/set	1.40/set		22 (30)	0.25
		Atlantic white-sided dolphin	2		0.02/set	0.46/set		3 (1)	0.32
		Beaked whale	5		0.06/set	1.20/set		12 (15)	0.32
		Harbor porpoise	1		0.01/set	0.23/set		2 (1)	0.45
		Risso's dolphin	2		0.02/set	0.40/set		14 (35)	0.42
		Humpback whale	1		0.01/set	0.23/set		2 (1)	0.45

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Atlantic Swordfish Drift Gillnet (Called "The pelagic swordfish, tuna, and shark drift gillnet fishery" in the EA)	**1989-1993**	**Atlantic white-sided dolphin**						**3**	
		Beaked whale						**34**	
		Bottlenose dolphin-offshore stock						**53**	
		Common dolphin						**424**	
AVERAGE		**Harbor porpoise**						**1**	
		Humpback whale						**1**	
		Pilot whale						**61**	
		Risso's dolphin						**59**	
		Spinner dolphin						**1**	
		Spotted dolphin						**23**	
		Striped dolphin						**27**	
		Unid. dolphin						**19**	

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Atlantic Tuna Pelagic Pair Trawl	1992	TOTAL	8	67 days (48 tows)	0.119	2.38	14%	109 (1531)	0.36
		Common dolphin	3		0.045	0.090		32 (236)	0.48
		Bottlenose dolphin	4		0.060	1.20		73 (1279)	0.49
		Risso's dolphin	1		0.015	0.30		4 (16)	1.0
Atlantic Tuna Pelagic Pair Trawl	1993	TOTAL	28	151 days (103 tows)	0.185	3.7	41%	120 (1442)	0.32
		Common dolphin	6		0.039	0.78		35 (227)	0.43
		Bottlenose dolphin	17		0.113	2.26		85 (1215)	0.41
Atlantic Tuna Pelagic Pair Trawl AVERAGE	**1992-1993**	**Common dolphin**						**33**	
		Bottlenose dolphin						**79**	
		Risso's dolphin						**2**	
Atlantic Swordfish Longline (used data provided by the Southeast Region)	1992	TOTAL+	1	329 days (161 sets)	0.003	0.06	2.4%	52 (CI 32-83)	N.A.
		Pilot whale	1		0.003	0.06			

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Atlantic Swordfish Longline (used data provided by the Southeast Region)	1993	TOTAL[+] --- Risso's dolphin	1 --- 1	890 days	0.001 --- 0.001	0.03 --- 0.03	5.8%	13 (CI 8-21)	N.A.
Atlantic Swordfish Longline **AVERAGE**	**1992-1993**	**Pilot whale** **Risso's dolphin**						**26** **6.5**	
N. Atlantic Otter Trawl	1990	TOTAL --- Pilot whale	1 --- 1	453 days (1395 sets)	0.002 --- 0.002	0.04 --- 0.04	<1%	184 (33182) --- 184 (33182)	0.99 --- 0.99
N. Atlantic Otter Trawl	1991	TOTAL --- Bottlenose dolphin Striped dolphin	3 --- 1 2	764 days (2408 sets)	0.004 --- 0.001 0.003	0.08 --- 0.02 0.06	<1%	272 (38617) --- 91 (7792) 181 (30825)	0.72 --- 0.97 0.97
N. Atlantic Otter Trawl	1992	TOTAL --- Atlantic white sided dolphin	1 --- 1	721 days (1955 sets)	0.001 --- 0.001	0.02 --- 0.02	<1%	110 (12100) --- 110 (12100)	1.00 --- 1.00
N. Atlantic Otter Trawl	1993	No observed kills in 1993		415 days (1143 tows)			<1%		

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
N. Atlantic Otter Trawl	**1990-1993**	**Atlantic white sided dolphin**						**28**	
AVERAGE		**Bottlenose dolphin - coastal stock**						**23**	
		Pilot whale						**46**	
		Striped dolphin						**45**	
S. Atlantic/Gulf of Mexico Swordfish Longline	1992	N.A.	N.A.	171 sets (days?)			N.A.	N.A.	N.A.
S. Atlantic/Gulf of Mexico Swordfish Longline	1993	N.A.	N.A.	295 sets (days?)	N.A.	N.A.	N.A.	N.A.	N.A.
Mid-Atlantic Coastal Gillnet	1993	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
PACIFIC OCEAN OBSERVER PROGRAMS									
Prince William Sound Salmon Drift Gillnet (06)	1990	TOTAL --- Harbor seal Harbor porpoise	3 --- 2 1	3166 sets	0.0009 (/set) --- 0.0006 0.0003 (/set)	N.A.	4%	44 (0-97)† --- 36 (0-74) 8 (0-23)	- - -

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Prince William Sound Salmon Drift Gillnet (06)	1991	TOTAL --- Harbor porpoise Steller sea lion Harbor seal Unid. porpoise	7 --- 3 2 1 1	5875 sets	0.0012 (/set) --- 0.0005 0.0003 0.0002 0.0002 (/set)	N.A.	5%	83 (7-296)† --- 32 (3-103) 29 (2-108) 12 (1-44) 11 (1-41)	- - - - -
Prince William Sound Salmon Drift Gillnet **AVERAGE**	**1990-1991**	**Harbor porpoise** **Harbor seal - GOA/BS stock** **Steller sea lion** **Unid. small cetacean**						**20** **24** **14.5** **5.5**	
Prince William Sound Salmon Set Gillnet (07)	1990	No mortalities observed	N. A.	302 hours of 159 sets	N.A.	N.A.	3% set net hours	N. A.	N. A.
Alaska Peninsula (South Unimak) Salmon Drift Gillnet (08)	1990	TOTAL --- Dall's porpoise	1 --- 1	373 sets	0.0027 (/set) --- 0.0027 (/set)	N.A.	4%	28 (0-81)† --- 28 (0-81)	-

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Bering Sea Groundfish Trawl (14)	1989	TOTAL	7	1327	0.0053	0.106	12%	60 (846)	0.48
		Steller sea lion	5	1327	0.0038	0.075	12%	43 (716)	0.62
		Dall's porpoise	1	1327	0.0008	0.015	12%	9 (65)	0.94
		Ringed seal	1	1327	0.0008	0.015	12%	9 (65)	0.94
Bering Sea Groundfish Trawl (14)	1990	TOTAL	23	11026	0.0021	0.042	74%	24 (14)	0.15
		Steller sea lion	13	11026	0.0012	0.024	74%	13 (10)	0.24
		Dall's porpoise	6	11026	0.0005	0.011	74%	7 (3)	0.27
		Northern elephant seal	1	11026	0.0001	0.002	74%	-	-
		Ribbon seal	1	11026	0.0001	0.002	74%	1 (0)	0.51
		Harbor seal	1	11026	0.0001	0.002	74%	1 (1)	0.59
		Unid. cetacean	1	11026	0.0001	0.002	74%	1 (1)	0.51

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Bering Sea Groundfish Trawl (14)	1991	TOTAL	31	13590	0.0023	0.046	53%	45 (39)	0.14
		Steller sea lion	13	13590	0.0010	0.019	53%	19 (16)	0.22
		Walrus	5	13590	0.0004	0.007	53%	7 (7)	0.34
		Northern fur seal	3	13590	0.0002	0.004	53%	6 (5)	0.39
		Bearded seal	3	13590	0.0002	0.004	53%	6 (5)	0.39
		Killer whale	1	13590	0.0001	0.001	53%	2 (2)	0.68
		Dall's porpoise	1	13590	0.0001	0.001	53%	2 (2)	0.68
		Unid. cetacean	1	13590	0.0001	0.001	53%	2 (2)	0.68
		Unid. pinniped	3	13590	0.0002	0.004	53%	2 (2)	0.68
		Unid. marine mammal	1	13590	0.0001	0.001	53%	-	-

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Bering Sea . Groundfish Trawl (14)	1992*	TOTAL	36	12697	0.0028	0.057	63%	48 (30)	0.11
		Steller sea lion	15	12697	0.0012	0.024	63%	21 (14)	0.18
		Walrus	5	12697	0.0004	0.008	63%	6 (4)	0.30
		Northern fur seal	4	12697	0.0003	0.006	63%	5 (3)	0.35
		Dall's porpoise	5	12697	0.0004	0.008	63%	6 (4)	0.30
		Killer whale	1	12697	0.0001	0.002	63%	2 (1)	0.61
		Harbor seal	2	12697	0.0002	0.003	63%	3 (2)	0.43
		Ringed seal	2	12697	0.0002	0.003	63%	3 (2)	0.43
		Unid. cetacean	1	12697	0.0001	0.002	63%	2 (1)	0.61
		Unid. pinniped	1	12697	0.0001	0.002	63%	-	-

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Bering Sea Groundfish Trawl (14)	1993	TOTAL	15	10332	0.0015	0.029	66%	15 (11)	0.22
		Steller sea lion	4	10332	0.0004	0.008	66%	6 (5)	0.36
		Walrus	4	10332	0.0004	0.008	66%	3 (2)	0.41
		Northern fur seal	1	10332	0.0001	0.002	66%	-	-
		Dall's porpoise	4	10332	0.0004	0.008	66%	5 (4)	0.43
		Killer whale	1	10332	0.0001	0.002	66%	-	-
		Unid. cetacean	1	10332	0.0001	0.002	66%	2 (1)	0.58

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Bering Sea Groundfish Trawl	**1989-1993**	**Bearded seal**						**1.2**	
AVERAGE		**Dall's porpoise-Bering Sea Stock**						**5.8**	
		Harbor seal - GOA/BS stock						**0.8**	
		Killer whale						**0.8**	
		N. fur seal						**2.6**	
		Ribbon seal						**0.2**	
		Ringed seal						**2.4**	
		Steller sea lion						**20.4**	
		Walrus						**3.2**	
		Unid. pinniped						**0.4**	
		Unid. cetacean						**1.4**	
Gulf of Alaska Groundfish Trawl	1989	TOTAL	0.00	130	-	-	5%	-	-
Gulf of Alaska Groundfish Trawl	1990	TOTAL	3	2902	0.0010	0.021	55%	5 (0)	0.13
		Steller sea lion	2	2902	0.0007	0.014	55%	4 (3)	0.47
		Northern elephant seal	1	2902	0.0003	0.007	55%	2 (1)	0.67

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Gulf of Alaska Groundfish Trawl	1991	TOTAL	1	2566	0.0004	0.008	38%	3 (4)	0.79
		Harbor seal	1	2566	0.0004	0.008	38%	3 (4)	0.79
Gulf of Alaska Groundfish Trawl	1992	TOTAL	1	2544	0.0004	0.008	41%	2 (3)	0.77
		Harbor seal	1	2544	0.0004	0.008	41%	2 (3)	0.77
Gulf of Alaska Groundfish Trawl	1993	TOTAL	3	2152	0.0014	0.028	37%	5 (9)	0.56
		Steller sea lion	1	2152	0.0005	0.009	37%	3 (5)	0.80
		Dall's porpoise	1	2152	0.0005	0.009	37%	3 (5)	0.80
		Unid. pinniped	1	2152	0.0005	0.009	37%	-	-
Gulf of Alaska Groundfish Trawl	**1989-1993**	**Dall's porpoise - Bering Sea stock**						**0.6**	
AVERAGE		**Harbor seal - GOA/BS stock**						**1**	
		N. elephant seal						**0.4**	
		Steller sea lion						**1.4**	
		Unid. pinniped						**0.2**	
Bering Sea/Gulf of Alaska Domestic Groundfish Longline	1989	TOTAL	0	78	N.A.	N.A.	3%	N.A.	N.A.

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Bering Sea/Gulf of Alaska Domestic Groundfish Longline	1990	TOTAL	2	3633	0.0006	0.011	45%	4 (5)	0.52
		Steller sea lion	1	3633	0.0003	0.006	45%	2 (3)	0.74
		Northern elephant seal	1	3633	0.0003	0.006	45%	2 (3)	0.74
Bering Sea/Gulf of Alaska Domestic Groundfish Longline	1991	TOTAL	0.00	4721	N.A.	N.A.	55%	N.A.	N.A.
Bering Sea/Gulf of Alaska Domestic Groundfish Longline	1992	TOTAL	0	6358	N.A.	N.A.	28%	N.A.	N.A.
Bering Sea/Gulf of Alaska Domestic Groundfish Longline	1993	TOTAL	2	4924	0.0004	0.008	25%	4 (12)	0.87
		Steller sea lion	1	4924	0.0002	0.004	25%	N.A.	N.A.
		Northern elephant seal	1	4924	0.0002	0.004	25%	N.A.	N.A.
		Harbor seal - GOA/Bering Sea stock	1	4924	0.0002	0.004	25%	4 (12)	0.87

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Bering Sea/Gulf of Alaska Domestic Groundfish Longline	**1989-1993**	**Harbor seal - GOA/Bering Sea**						**0.8**	
		Steller sea lion						**1.2**	
AVERAGE		**N. elephant seal**						**1.2**	
Bering Sea/Gulf of Alaska Domestic Groundfish Pots	1990	TOTAL	0	353	N.A.	N.A.	7%	N.A.	N.A.
Bering Sea/Gulf of Alaska Domestic Groundfish Pots	1991	TOTAL	0	624	N.A.	N.A.	22%	N.A.	N.A.
Bering Sea/Gulf of Alaska Domestic Groundfish Pots	1992	TOTAL	9 (8)	1442	0.0062	0.125	22%	36 (127)	0.31
		Sea otter	8 (8)	1442	0.0055	0.111	22%	36 (127)	0.31
		Harbor seal	1 (0)	1442	0.007	0.014	22%	N.A.	N.A.
Bering Sea/Gulf of Alaska Domestic Groundfish Pots	1993	TOTAL	0.00	298	N.A.	N.A.	11%	N.A.	N.A.

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Bering Sea/Gulf of Alaska Domestic Groundfish Pots	**1989-1993**	**Harbor seal - GOA/Bering Sea**						**5**	
		Sea otter						**36**	
AVERAGE									
Washington, Oregon and California Domestic Groundfish Trawl	1990	TOTAL ----------	0.00	34	N.A.	N.A.	54%	N.A.	N.A.
Washington, Oregon and California Domestic Groundfish Trawl	1991	TOTAL ---------- Unid. pinniped	1 ------ 1	688 688	0.0015 ------ 0.0015	0.029 0.029	44% 44%	N.A. N.A.	N.A. N.A.
Washington, Oregon and California Domestic Groundfish Trawl	1992	TOTAL ---------- Dall's porpoise	1 ------ 1	677 677	0.0015 ------ 0.0015	0.030 0.030	72% 72%	N.A. N.A.	N.A. N.A.

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Washington, Oregon and California Domestic Groundfish Trawl	1993	TOTAL	0	305	N.A.	N.A.	58%	N.A.	N.A.
Washington, Oregon and California Domestic Groundfish Trawl	**1990-1993**	**Dall's porpoise**						1	
		Unid. pinniped						2	
AVERAGE									
Bering Sea/Gulf of Alaska Joint-Venture Groundfish Trawl	1989	TOTAL	8	4747	0.0017	0.034	58%	14 (10)	0.23
		Steller sea lion	5	4747	0.0011	0.0011	585	9 (6)	0.29
		Northern fur seal	1	4747	0.0002	0.0002	58%	2 (1)	0.65
		Harbor seal	1	4747	0.0002	0.0002	58%	2 (1)	0.65
		Minke whale	1	4747	0.0002	0.0002	58%	2 (1)	0.65
Bering Sea/Gulf of Alaska Joint-Venture Groundfish Trawl	1990	TOTAL	1	1353	0.0007	0.015	43%	2 (3)	0.75
		Walrus	1	1353	0.0007	0.015	43%	2 (3)	0.75

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Washington, Oregon and California Joint-Venture Groundfish Trawl	1989	TOTAL	1	2,193	0.0005	0.009	66%	2 (1)	0.58
		Dall's porpoise	1	2,193	0.0005	0.009	66%	2 (1)	0.58
Washington, Oregon and California Joint-Venture Groundfish Trawl	1990	TOTAL	13	1,673	0.0078	0.155	62%	2 (1)	0.61
		Dall's porpoise	3	1,673	0.0018	0.036	62%	2 (1)	0.61
		Pacific white-sided dolphin	8	1,673	0.0048	0.096	62%	N.A.	N.A.
		Unid. cetacean	2	1,673	0.0012	0.024	62%	N.A.	N.A.
WA Makah (Areas 4,4A,4B) Salmon Set Gillnet (09)	1989[1a]	TOTAL	30	361 net days[3]		1.7	27%	89 ( )	-
		Harbor porpoise	14		0.084			33 ( )	0.26
		Harbor seal	15		0.042			56 ( )	0.25
		Sea otter	1		0.006			2 ( )	1.00
WA Makah (Areas 4,4A,4B) Salmon Set Gillnet (09)	1990[1b]	TOTAL	23	264 net days[3]		1.7	47%	34 ( )	-
		Harbor porpoise	13		0.241			16 ( )	0.27
		Harbor seal	9		0.034			19 ( )	0.33
		Gray whale	1		0.019			1 ( )	0.99

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
WA Makah (Areas 4,4A,4B) Salmon Set Gillnet (09)	1991	TOTAL --- Harbor porpoise Harbor seal	29 --- 14 15	238 net days[3]	0.122 --- 0.058 0.063	2.4	62%	46 ( ) --- 22 ( ) 24 ( )	– --- 0.29 0.28
WA Makah (Areas 4,4A,4B) Salmon Set Gillnet (09)	1992	TOTAL --- Harbor porpoise	10 --- 10	264 net days[3]	0.038 --- 0.038	0.76	80%	13 ( ) --- 13 ( )	0.31 --- 0.31
WA Makah (Areas 4,4A,4B) Salmon Set Gillnet (09)	1993	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
WA Makah (Areas 4,4A,4B) Salmon Set Gillnet **AVERAGE**	**1989-1993**	**Gray whale** **Harbor porpoise - WA/OR stock** **Harbor seal - WA/OR stock** **Sea otter**						**0.25** **21** **24.75** **0.5**	

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Columbia River, Willapa Bay, Gray's Harbor Drift Gillnet (10)	1991	TOTAL	10	3432 sets		N.A.	3.8%	249 ( )	
		Columbia River:		(2,582 sets)		0.34	4.7%	249	
		Harbor seal	9		0.002 - 0.027			233 ( )	0.37-0.9
		California sea lion	1		0.0009 (/set)			16 ( )	1.0
		Willapa Bay:		(752 sets)			2.5%		
		No mortalities	N. A.						
		Grays Harbor:		(98 sets)			4.5%		
		No mortalities	N. A.						
Columbia River, Willapa Bay, Gray's Harbor Drift Gillnet (10)	1992	TOTAL	19	2428 sets			3.9%	227 ( )	
		Columbia River:		1545 sets		0.77	27.2%	117	
		Harbor seal	15		0.006 - 0.051			189 ( )	0.32- 0.45
		California sea lion	3		0.004			28 ( )	0.58
		Willapa Bay:		576 sets		N.A.	1.4%	N.A.	
		No mortalities	N.A.		N.A.				
		Grays Harbor:		307 sets		0.29			
		Harbor seal	1		0.009 (/set)		4.2%	10 ( )	10

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Columbia River, Willapa Bay, Gray's Harbor Drift Gillnet (10)	1993	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Columbia River drift gillnet	**1990-1992**	**California sea lion** **Harbor seal - WA/OR stock**						**22** **211**	
Willapa Bay drift gillnet	**1990-1992**	**Harbor seal - WA/OR stock**						**0.33**	

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
WA, OR, CA Thresher Shark and Swordfish Drift Gillnet (11)	1990	TOTAL	25	168 days	0.149	2.98	5%	885 ( )	0.24
		Common dolphin	9		0.054			430 ( )	0.40
		Northern elephant seal	4		0.024			101 ( )	0.49
		Pacific white-sided dolphin	3		0.018			76 ( )	0.74
		California sea lion	2		0.012			101 ( )	0.69
		Unid. seal	2		0.012			-	-
		Dall's porpoise	1		0.006			51 ( )	0.65
		Pilot whale	1		0.006			25 ( )	1.03
		Beaked whale	1		0.006			25 ( )	1.02
		Harbor seal	1		0.006			25 ( )	0.97
		Risso's dolphin	1		0.006			51 ( )	0.67

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
WA, OR, CA Thresher Shark and Swordfish Drift Gillnet (11)	1991	TOTAL	82	470 days (470 sets)	0.174	3.49	9.9%	809 (113.1SE***)	0.14
		Common dolphin	44		0.094			445 (93.0SE)	0.21
		Northern elephant seal	13		0.028			131 (33.1SE)	0.25
		Northern right whale dolphin	7		0.015			71 (29.0SE)	0.41
		Pacific white-sided dolphin	5		0.011			51 (31.8SE)	0.62
		Risso's dolphin	5		0.011			51 (25.3SE)	0.50
		California sea lion	4		0.009			40 (23.4SE)	0.59
		Dall's porpoise	2		0.004			20 (13.5SE)	0.68
		Unid. sea lion	1		0.002			-	-
		Unid. cetacean	1		0.002			-	-

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
WA, OR, CA Thresher Shark and Swordfish Drift Gillnet (11)	1992	TOTAL	105	596	0.176	3.52	13.2%	784 (87.5SE)	0.11
		Common dolphin	47		0.079			356 (66.1SE)	0.19
		Northern elephant seal	15		0.025			114 (27.1SE)	0.24
		California sea lion	9		0.015			68 (23.0SE)	0.34
		Cuvier's beaked whale	6		0.010			45 (16.5SE)	0.37
		Risso's dolphin	5		0.008			38 (18.2SE)	0.48
		Mesoplodont beaked whale	3		0.005			23 (12.0SE)	0.52
		Unid. beaked whale	3		0.005			23 (12.1SE)	0.53
		Bottlenose dolphin	3		0.005			23 (21.1SE)	0.92
		Pacific white-sided dolphin	3		0.005			23 (15.8SE)	0.69
		Sperm whale	3		0.005			8 (7.0SE)	0.88
		Northern right whale dolphin	2		0.003			15 (9.8SE)	0.65
		Steller sea lion	1		0.002			8 (7.0SE)	0.88
		Dall's porpoise	1		0.002			8 (7.0SE)	0.88
		Short-finned pilot	1		0.002			8 (7.0SE)	0.88

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
WA, OR, CA Thresher Shark and Swordfish Drift Gillnet (11)	1992, cont.	Unid. cetacean	1		0.002			8 (7.0SE)	0.88
		Unid. delphind	1		0.002			8 (7.1SE)	0.89

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
WA, OR, CA Thresher Shark and Swordfish Drift Gillnet (11)	1993	TOTAL	95	728	0.130	2.61	13.5%	702 (94.1SE)	0.13
		Common dolphin (unk. stock)	23		0.032			170 (55.2SE)	0.32
		Northern elephant seal	14		0.019			103 (27.0SE)	0.26
		California sea lion	12		0.016			89 (34.3SE)	0.39
		Short-finned pilot whale	11		0.015			81 (34.7SE)	0.43
		Dall's porpoise	9		0.012			67 (29.2SE)	0.44
		N. right whale dolphin	7		0.010			52 (20.1SE)	0.39
		Common dolphin (short-beaked)	5		0.007			37 (20.4SE)	0.55
		Risso's dolphin	4		0.005			30 (21.7SE)	0.72
		Sperm whale	3		0.004			22 (15.4SE)	0.70
		Cuvier's beaked whale	3		0.004			22 (11.7SE)	0.53
		Pacific white-sided dolphin	2		0.003			15 (9.7SE)	0.65
		Pygmy sperm whale	1		0.001			7 (6.9SE)	0.99
		Unid. cetacean	1		0.001			7 (6.9SE)	0.99

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
Thresher Shark and Swordfish Drift Gillnet	**1990-1993**	**Beaked whale (all stocks)**						**34.5**	
AVERAGE		**Bottlenose dolphin - offshore stock**						**5.8**	
		California sea lion						**74.5**	
		Common dolphin (all stocks)						**359.5**	
		Dall's porpoise						**36.5**	
		Harbor seal						**6.25**	
		N. right whale dolphin						**34.5**	
		N. elephant seal						**112.25**	
		Pacific white-sided dolphin						**41.25**	
		Pilot whale						**28.5**	
		Pygmy sperm whale						**1.75**	
		Risso's dolphin						**42.5**	
		Sperm whale						**7.5**	
		Steller sea lion						**2**	
								3.75	
								2	

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
CA Halibut and Angel Shark Set Gillnet (12/13)	1990	TOTAL	121	139 days	0.871	17.42	4%	3808 ( )	0.11
		California sea lion	67		0.482			2652 ( )	0.14
		Harbor seal	30		0.216			865 ( )	0.17
		Northern elephant seal	13		0.094			182 ( )	0.36
		Harbor porpoise	5		0.036			84 ( )	0.43
		Sea otter	3		0.022			-	-
		Unid. pinniped	2		0.014			-	-
		Unid. sea lion	1		0.007			-	-
CA Halibut and Angel Shark Set Gillnet (12/13)	1991	TOTAL	203	706 days (2215 sets)	0.288	5.75	10%	2501 (300SE)	0.12
		California sea lion	143		0.203			1865 (271SE)	0.15
		Harbor seal	43		0.061			571 (126SE)	0.22
		Northern elephant seal	3		0.004			27 (15.2SE)	0.56
		Harbor porpoise	5		0.007			38 (18.3SE)	0.48
		Unid. sea lion	6		0.008			-	-
		Unid. pinniped	3		0.004			-	-

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
CA Halibut and Angel Shark Set Gillnet (12/13)	1992	TOTAL	461	697	0.661	13.2	12.7%	4623 (979.4SE)	0.21
		California sea lion	341		0.489			3255 (878.9SE)	0.26
		Harbor seal	90		0.129			1136 (486.4SE)	0.43
		Northern elephant seal	7		0.010			51 (17.8SE)	0.35
		Harbor porpoise	6		0.009			44 (20.6SE)	0.47
		Unid. pinniped	7		0.010			59 (25.6SE)	0.43
		Common dolphin	2		0.003			17 (11.4SE)	0.67
		Unid. cetacean	1		0.001			7 (6.8SE)	0.97
		Unid. sea lion	7		0.010			63 (21.9SE)	0.35
CA Halibut and Angel Shark Set Gillnet (12/13)	1993	TOTAL	330	875	0.377	7.54	15.1%	2590 (251.3SE)	0.10
		California sea lion	239		0.273			1984 (241.3SE)	0.12
		Harbor seal	71		0.081			480 (59.9SE)	0.12
		Northern elephant seal	11		0.013			71 (19.5SE)	0.27
		Harbor porpoise	2		0.002			12 (7.8SE)	0.65
		Unid. pinniped	7		0.008			43 (30.2SE)	0.70

APPENDIX B: National Marine Fisheries Service Observer Program
Federal Observer Program Data - All Years

Fishery	Year	Marine Mammal Species	Observed Kills	Observed Effort	Kill Rate (/day)	Kill Rate (/20 days)	Observer Coverage	Total Estimated Kill (variance)	Coeff. Variation
CA Halibut and Angel Shark Set Gillnet ++	**1989-1993**	**California sea lion**						**731.7**	
		Common dolphin (all stocks)						**1.28**	
AVERAGE		**Harbor porpoise**						**13.35**	
		Harbor seal						**228.9**	
		N. elephant seal						**24.83**	
		Unid. cetacean						**0.53**	
		Unid. delphinid						**12.39**	

* N.A. = not available at this time

*+ For this fishery/species interaction, the values provided afor the total estimated kill, the variance of the total estimated kill, and the coefficient of variation for the total estimated kill are preliminary and likely to be revised in February 1995 when final stock assessment analyses are complete. The preliminary total kill estimates represent extrapolated values using unstratified fishing effort and hence may be higher than estimates more properly derived using stratified effort. The statistical reliability of the preliminayr estimates are lower than indicated by their variances because the variance calculations do not include all relevant sources of variability.

*** SE = Standard error

\+ When animals caught and released alive are added to the number of lethal takes, the resulting total estimated takes for 1992 and 1993 are as follows:
1992 - Pilot whale, 12 observed, 302 total take; Risso's dolphin, 3 observed, 76 total take; common dolphin, 1 observed, 25 total take; Unidentified dolphin, 1 observed, 25 total take
1993 - Pilot whale, 16 observed, 263 total take; Risso's dolphin, 3 observed, 49 total take; bottlenose dolphin, 2 observed, 33 total take; Atlantic spotted dolphin, 1 observed, 16 total take

† Variance expressed as the 95% confidence interval around the total estimated kill.

++ In the future, mortality of some species will be affected by California Proposition 132, implemented 1/94, which prohibits set gillnet fishing within three miles of the mainland from Pt. Arguello south to the U.S.-Mexico border.

1a: ALSO INCLUDES AREA 3 1b: ALSO INCLUDES AREA 3 AND 5
2: ONE NET DAY = ONE 100 FATHOM NET SET FOR A 24 HOUR PERIOD

Appendix C: Sea turtle mortalities in observed U.S. commercial fisheries

This table provides the estimated kills of sea turtle species in U.S. commercial fisheries observed by the National Marine Fisheries Service. The estimated kill is extrapolated from the observed kill by taking into consideration the portion of the fishery that was not observed. Both direct extrapolations and stratified extrapolations were used.

APPENDIX C: National Marine Fisheries Service Observer Program
Sea Turtle Interaction Data - All Years

Fishery	Year	Sea Turtle Species	Observed Kills	Observed Effort Sets	Kill Rate (per Set)	Kill Rate (per 20 Sets)	% Observer Coverage	Total Estimated Kill (variance)	Coeff. Var.
ATLANTIC OCEAN OBSERVER PROGRAMS									
Gulf of Maine Groundfish/ Mackerel Sink Gillnet	1990-1993	TOTAL --- no reported takes							
Atlantic Swordfish Drift Gillnet	1989	TOTAL	0	54 sets	0.0	0.0	9%	0 (0)	0
Atlantic Swordfish Drift Gillnet	1990	TOTAL --- Loggerhead	1 --- 1	69 sets	0.014 --- 0.014	0.290 --- 0.290	7%	14 (17) --- 14 (17)	0.93 --- 0.93
Atlantic Swordfish Drift Gillnet	1991	TOTAL	0	46 sets	0.0	0.0	21%	0 (0)	0
Atlantic Swordfish Drift Gillnet	1992	TOTAL	0	96 sets	0.0	0.0	67%	0 (0)	0
Atlantic Swordfish Drift Gillnet	1993	TOTAL	0	86 sets	0.0	0.0	40%	0 (0)	0
Atlantic Tuna Pair Trawl	1992	TOTAL	0	67 days	0.0	0.0	31%	0 (0)	0
Atlantic Tuna Pair Trawl	1993	TOTAL --- Leatherback	1 --- 1	151 days	0.006 --- 0.006	0.132 --- 0.132	7%	14 (17105) --- 14 (17105)	0.93 --- 0.93

APPENDIX C: National Marine Fisheries Service Observer Program
Sea Turtle Interaction Data - All Years

Fishery	Year	Sea Turtle Species	Observed Kills	Observed Effort Sets	Kill Rate (per Set)	Kill Rate (per 20 Sets)	% Observer Coverage	Total Estimated Kill (variance)	Coeff. Var.
North Atlantic Swordfish Longline	1990	TOTAL	0	23 sets	0.0	0.0	1%	0 (0)	0
North Atlantic Swordfish Longline	1991	TOTAL	0	48 sets	0.0	0.0	1%	0 (0)	0
North Atlantic Swordfish Longline	1992	TOTAL Green	1 1	161 sets	0.006 0.006	0.124 0.124	4%	25 (576) 25 (576)	0.96 0.96
North Atlantic Swordfish Longline	1993	TOTAL Leatherback	1 1	277 sets	0.003 0.003	0.072 0.072	7%	14 (177) 14 (177)	0.93
N. Atlantic otter trawl	1990-1993	no observed takes							
North Atlantic and South Atlantic Swordfish Longline: **Captures and known mortalities**	1992	TOTAL Leatherback Loggerhead*	46 28 18	329 sets				 779 (534-1171)** 994 (669-1530)**	
North Atlantic and South Atlantic Swordfish Longline: **Captures and known mortalities**	1993	TOTAL Leatherback Loggerhead*	92 66 26	817 sets				 994 (669-1530)** 567 (363-926)**	

APPENDIX C: National Marine Fisheries Service Observer Program
Sea Turtle Interaction Data - All Years

Fishery	Year	Sea Turtle Species	Observed Kills	Observed Effort Sets	Kill Rate (per Set)	Kill Rate (per 20 Sets)	% Observer Coverage	Total Estimated Kill (variance)	Coeff. Var.
North Atlantic and South Atlantic Swordfish Longline: **Known mortalities**	1992	TOTAL --- Leatherback	1 --- 1						
North Atlantic and South Atlantic Swordfish Longline: **Known mortalities**	1993	TOTAL --- Loggerhead	2 --- 2						
Mid Atlantic Bottom Trawl	1989	TOTAL --- Loggerhead	1 --- 1	138 days	0.007 --- 0.007	0.145 --- 0.145	1%	100 (9801) --- 100 (9801)	0.99 --- 0.99
Mid Atlantic Bottom Trawl	1990	TOTAL ---	0 ---	141 days	0.0 ---	0.0 ---	1%	0 (0) ---	0
Mid Atlantic Bottom Trawl	1991	TOTAL --- Loggerhead	1 --- 1	257 days	0.003 --- 0.003	0.078 --- 0.078	2%	50 (17105) --- 50 (17105)	0.98 --- 0.98
Mid Atlantic Bottom Trawl	1992	TOTAL ---	0 ---	241 days	0.0 ---	0.0 ---	1%	0 (0) ---	0
Mid Atlantic Bottom Trawl	1993	TOTAL ---	0 ---	121 days	0.0 ---	0.0 ---	1%	0 (0) ---	0
GME Tub Trawl Groundfish	1991	TOTAL ---	0 ---	28 days	0.0 ---	0.0 ---	.5%	0 (0) ---	0

APPENDIX C: National Marine Fisheries Service Observer Program
Sea Turtle Interaction Data - All Years

Fishery	Year	Sea Turtle Species	Observed Kills	Observed Effort Sets	Kill Rate (per Set)	Kill Rate (per 20 Sets)	% Observer Coverage	Total Estimated Kill (variance)	Coeff. Var.
New England Sink Gillnet	1989-1993	no observed takes							

APPENDIX C: National Marine Fisheries Service Observer Program
Sea Turtle Interaction Data - All Years

Fishery	Year	Sea Turtle Species	Observed Kills	Observed Effort Sets	Kill Rate (per Set)	Kill Rate (per 20 Sets)	% Observer Coverage	Total Estimated Kill (variance)	Coeff. Var.
PACIFIC OCEAN OBSERVER PROGRAMS									
California drift net	1990	TOTAL --- Leatherback	1 --- 1	178 (total effort = 4504)	0.0056[+] --- 0.0056	0.11[++] --- 0.11			
California drift net	1991	TOTAL --- Leatherback	1 --- 1	470 (total effort = 4752)	0.0021 --- 0.0021	0.043 --- 0.043			
California drift net	1992	TOTAL --- Loggerhead Leatherback	6 --- 2 4	596 (total effort = 4504)	--- 0.0034 0.0067	--- 0.067 0.134			
California drift net	1993	TOTAL --- Loggerhead Leatherback Unid. sea turtle	11 --- 5 3 3	728 (total effort = 5380)	--- 0.0069 0.0041 0.0041	--- 0.137 0.082 0.082			
California set net	1990	no observed takes							
California set net	1991	no observed takes							

APPENDIX C: National Marine Fisheries Service Observer Program
Sea Turtle Interaction Data - All Years

Fishery	Year	Sea Turtle Species	Observed Kills	Observed Effort Sets	Kill Rate (per Set)	Kill Rate (per 20 Sets)	% Observer Coverage	Total Estimated Kill (variance)	Coeff. Var.
California set net	1992	TOTAL --- Green/Black Olive ridley	2 --- 1 1	697 (total effort = 5468)	--- 0.0014+ 0.0014	--- 0.029++ 0.029			
California set net	1993	TOTAL --- Green/Black turtle Unid. turtle	3 --- 1 2	875 (total effort = 5797)	--- 0.0011 0.0023	--- 0.023 0.046			

* Hawksbill, green, and Kemp's ridley sea turtles were combined and listed as loggerhead turtles due to the possibility of field mididentification and known distribution patterns.

** Range specified is the 95% confidence interval.

\+ Rates for the California drift and set net fisheries are expressed in terms of observed kill per effort-day.

++ Rates for the California drift and set net fisheries are expressed in terms of observed kill per 20 effort-days.

Appendix D: Sea bird mortalities in observed U.S. commercial fisheries

This table provides the estimated kills of sea bird species in U.S. commercial fisheries observed by the National Marine Fisheries Service. The estimated kill is extrapolated from the observed kill by taking into consideration the portion of the fishery that was not observed.

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
ATLANTIC OCEAN OBSERVER PROGRAMS								
Foreign and Joint Venture Squid/Mackerel Trawl (01)	1990 - 1991	no incidental mortalities observed						
Gulf of Maine Groundfish/ Mackerel Sink Gillnet (02)	1989	TOTAL	4	132 days	0.030	0.9%	444 (48498)	0.50
		Shearwater sp.	2		0.015		222 (24249)	0.70
		Double crested cormorant	1		0.007		111 (12124)	0.99
		Loon sp.	1		0.007		111 (12124)	0.99
Gulf of Maine Groundfish/ Mackerel Sink Gillnet (02)	1990	TOTAL	6	188	0.031	1.2%	500 (40673)	0.40
		Unid. shearwater	4		0.021		333 (27115)	0.49
		Double crested cormorant	1		0.005		83 (6779)	0.99
		Black guillemot	1		0.005		83 (6779)	0.99

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
Gulf of Maine Groundfish/ Mackerel Sink Gillnet (02)	1991	TOTAL	235	1217	0.019	6%	3917 (57679)	0.06
		Unid. shearwater	132		0.108		2200 (32399)	0.08
		Great shearwater	64		0.052		1067 (15708)	0.12
		Sooty shearwater	13		0.010		217 (3191)	0.26
		Great cormorant	8		0.006		133 (1964)	0.33
		Unid. sea bird	7		0.005		117 (1718)	0.36
		Unid. loon	5		0.004		83 (1227)	0.42
		Great Northern loon	1		0.000		17 (245)	0.94
		Northern gannet	1		0.000		17 (245)	0.94
		Herring gull	1		0.000		17 (245)	0.94
		Unid. gull	1		0.000		17 (245)	0.94
		Wilson's storm petrel	1		0.000		17 (245)	0.94
		Unid. tern	1		0.000		17 (245)	0.94

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
Gulf of Maine Groundfish/ Mackerel Sink Gillnet (02)	1992	TOTAL	322	1400	0.230	7	4600 (56836)	0.05
		Unid. shearwater	146		0.108		2086 (25770)	0.08
		Great shearwater	59		0.042		843 (19414)	0.12
		Unid. sea bird	45		0.032		643 (7943)	0.14
		Unid. gull	18		0.012		257 (3177)	0.22
		Double crested cormorant	17		0.012		243 (3001)	0.23
		Sooty shearwater	10		0.007		143 (1765)	0.29
		Northern gannet	9		0.006		129 (1589)	0.31
		Great northern loon	7		0.005		100 (1236)	0.35
		Unid. loon	4		0.002		57 (706)	0.47
		Great cormorant	4		0.002		57 (706)	0.47
		Manx shearwater	1		0.000		14 (177)	0.93
		Unid. grebe	1		0.000		14 (177)	0.93
		Black-legged kittiwake	1		0.000		14 (177)	0.93

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
Gulf of Maine Groundfish/ Mackerel Sink Gillnet (02)	1993	TOTAL	434	887	0.493	4	10850 (249984)	0.05
		Unid. shearwater	317		0.357		7925 (182592)	0.05
		Unid. sea bird	26		0.029		650 (14976)	0.19
		Sooty shearwater	17		0.019		425 (9792)	0.23
		Great cormorant	17		0.019		425 (9792)	0.23
		Great northern loon	15		0.016		375 (8640)	0.25
		Unid. loon	14		0.015		350 (8064)	0.26
		Double crested cormorant	9		0.010		225 (5184)	0.32
		Great shearwater	6		0.006		150 (3456)	0.39
		Herring gull	4		0.004		100 (2304)	0.48
		Unid. gull	3		0.003		75 (1728)	0.55
		Common murre	2		0.002		25 (576)	0.68
		Great black backed gull	1		0.001		25 (576)	0.96
		Northern gannet	1		0.001		25 (576)	0.96
		Unid. murre	1		0.001		25 (576)	0.96
		Black-legged kittiwake	1		0.001		25 (576)	0.96

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
GME Tub Trawl Groundfish	1991	TOTAL --- Great shearwater Unid. gull	2 --- 1 1	28 days	0.071 --- 0.035 0.035	0.5	400 (79202) --- 200 (39601) 200 (39601)	0.70 --- 1.00 1.00
Atlantic Swordfish Drift Gillnet (39)	1989	TOTAL --- Unid. shearwater	1 --- 1	54 sets	0.018	9	11 (102) --- 11 (102)	0.91 --- 0.91
Atlantic Swordfish Drift Gillnet (39)	1990	TOTAL ---	0	69 sets	0	7	0	
Atlantic Swordfish Drift Gillnet (39)	1991	TOTAL ---	0	46 sets	0	21	0	
Atlantic Swordfish Drift Gillnet (39)	1992	TOTAL ---	0	96 sets	0	67	0	
Atlantic Swordfish Drift Gillnet (39)	1993	TOTAL ---	0	86 sets	0	40	0	
Atlantic Tuna Pelagic Pair Trawl	1992 - 1993	no incidental mortalities reported						
N. Atlantic Swordfish Longline	1990	TOTAL ---	0	23 sets	0	< 1		
N. Atlantic Swordfish Longline	1991	TOTAL ---	0	48 sets	0	1		

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
N. Atlantic Swordfish Longline	1992	TOTAL	6	161 sets	0.037	4	150 (3456)	0.39
		Unid. gull	4		0.024		100 (2304)	0.48
		Great shearwater	2		0.012		50 (1152)	0.68
N. Atlantic Swordfish Longline	1993	TOTAL	4	277	0.014	7	57 (706)	0.47
		Great black backed gull	3		0.010		14 (177)	0.93
		Northern gannet	1		0.003		43 (530)	0.54
N. Atlantic Otter Trawl	1990-1993	no incidental mortalities recorded						
S. Atlantic/Gulf of Mexico Swordfish Longline	1992-1993	N.A.						
Mid-Atlantic Coastal Gillnet	1993	no incidental mortalities recorded						

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
PACIFIC OCEAN OBSERVER PROGRAMS								
Prince William Sound Salmon Drift Gillnet (06)	1990	TOTAL --- Marbled murrelet Unid. murrelet Kittlitz murrelet Common loon	37 --- 31 3 2 1		---		1468 (836-2100)† ---	-
Prince William Sound Salmon Drift Gillnet (06)	1991	TOTAL --- Common murre Marbled murrelet Kittlitz murrelet Red throated loon Unid. murre Sooty shearwater Unid. murrelet Unid. alcid	53 --- 22 16 7 3 2 1 1 1		---		993 (334-2097)† ---	
Prince William Sound Salmon Set Gillnet (07)	1990	No mortalities observed	N. A.					

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
Alaska Peninsula (South Unimak) Salmon Drift Gillnet (08)	1990	TOTAL --- Common murre Unid. murre Marbled murrelet Sooty shearwater Short-tailed shearwater Horned puffin Tufted puffin Unid. bird	16 --- 8 2 1 1 1 1 1 1		---		337 (158-516)† ---	
Bering Sea Groundfish Trawl (14)	1989	TOTAL --- Unid. bird	15** --- 15	1298 days	0.0116	9.7	155	
Bering Sea Groundfish Trawl (14)	1990	TOTAL --- Unid. bird	689** --- 689	11425 days	0.0603	68.8	1002	
Bering Sea Groundfish Trawl (14)	1991	TOTAL --- Unid. bird	1514** --- 1514	13238 days	0.1144	49.0	3092	
Bering Sea Groundfish Trawl (14)	1992	TOTAL --- Unid. bird	19** --- 19	12243 days	0.0016	58.6	32	

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
Bering Sea Groundfish Trawl (14)	1993	TOTAL --- Unid. shearwater/petrel Unid. murrelet/auklet Unid. bird Unid. procellariiformes	161** --- 84 39 35 2	10174 days	0.0158 0.0034 0.0038 0.0034 0.0002	61.6	261 137 64 57 3	
Gulf of Alaska Groundfish Trawl	1989	TOTAL ---	0	127 days	0.000	4.9	0	
Gulf of Alaska Groundfish Trawl	1990	TOTAL ---	0	2743 days	0.000	45.4	0	
Gulf of Alaska Groundfish Trawl	1991	TOTAL ---	0	2438 days	0.000	34.5	0	
Gulf of Alaska Groundfish Trawl	1992	TOTAL ---	0	2288 days	0.000	37.4	0	
Gulf of Alaska Groundfish Trawl	1993	TOTAL --- Unid. shearwater/petrel	24** --- 24	2110 days	0.0114	36.7	65	
Bering Sea Domestic Groundfish Longline	1989	TOTAL --- Unid. bird	6** --- 6	70 days	0.0857	N.A.	N.A.	

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
Bering Sea Domestic Groundfish Longline	1990	TOTAL --- Unid. bird	3315** --- 	2687 days	1.2337	64.8	5114	
Bering Sea Domestic Groundfish Longline	1991	TOTAL --- Unid. bird	9942** --- 9942	3979 days	2.4986	72.4	13,740	
Bering Sea Domestic Groundfish Longline	1992	TOTAL --- Unid. bird	2555** --- 2555	5323 days	0.4800	79.8	3200	

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
Bering Sea Domestic Groundfish Longline	1993	TOTAL	5372**	3943 days	1.3624	77.3	6951	
		Northern fulmar	2951		0.7484		3819	
		Unid. bird	1203		0.3051		1556	
		Unid. gull	572		0.1451		740	
		Laysan albatross	380		0.0964		492	
		Unid. albatross	187		0.0474		242	
		Unid. shearwater/petrel	57		0.0145		74	
		Black-footed albatross	8		0.0020		10	
		Unid. guillemot	5		0.0013		6	
		Black-legged kittiwake	3		0.0008		4	
		Unid. murre	3		0.0008		4	
		Unid. auklet/murrelet	3		0.0008		4	
Gulf of Alaska Groundfish Longline	1989	-	0	8 days	0.00	N.A.	0	
Gulf of Alaska Groundfish Longline	1990	TOTAL	39**	946 days	0.0412	12.5	313	
		Unid. bird	39					
Gulf of Alaska Groundfish Longline	1991	TOTAL	143**	742 days	0.1927	13.5	1060	
		Unid. bird	143					

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
Gulf of Alaska Groundfish Longline	1992	TOTAL	273**	1035 days	0.2638	21.6	1265	
		Unid. bird	273					
Gulf of Alaska Groundfish Longline	1993	TOTAL	824**	981 days	0.8583	27.2	3033	
		Northern fulmar	549		0.5596		2021	
		Laysan albatross	113		0.1152		416	
		Unid. bird	75		0.0765		276	
		Unid. shearwater/petrel	35		0.0357		129	
		Unid. gull	26		0.0265		96	
		Black-footed albatross	21		0.0214		77	
		Unid. albatross	3		0.0031		11	
		Black-legged kittiwake	2		0.0020		7	
Bering Sea Domestic Groundfish Pots	1990	TOTAL	0	1176 days	0.000	64.0	0	
Bering Sea Domestic Groundfish Pots	1991	TOTAL	8**	405 days	0.0198	43.4	18	
		Unid. bird	8					
Bering Sea Domestic Groundfish Pots	1992	TOTAL	10**	1157 days	0.0086	42.9	23	
		Unid. bird	10					

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
Bering Sea Domestic Groundfish Pots	1993	TOTAL ----------	0	165 days	0.000	58.3	0	
Gulf of Alaska Groundfish Pots	1990	TOTAL ----------	0	177 days	0.000	2.9	0	
Gulf of Alaska Groundfish Pots	1991	TOTAL ----------	0	219 days	0.000	9.1	0	
Gulf of Alaska Groundfish Pots	1992	TOTAL ----------	0	285 days	0.000	11.2	0	
Gulf of Alaska Groundfish Pots	1993	TOTAL ----------	0	133 days	0.000	9.6	0	
Washington, Oregon and California Domestic Groundfish Trawl	1990	TOTAL ----------	0	35 days	0.000	41.5	0	
Washington, Oregon and California Domestic Groundfish Trawl	1991	TOTAL ---------- Unid. bird	1** ------ 1	746 days	0.0013	50.7	2	
Washington, Oregon and California Domestic Groundfish Trawl	1992	TOTAL ----------	0	678 days	0.000	65.6	0	
Washington, Oregon and California Domestic Groundfish Trawl	1993	TOTAL ----------	0	329 days	0.000	62.4	0	
Bering Sea Joint-Venture Groundfish Trawl	1989-1990	no incidental mortalities recorded	------					
Washington, Oregon and California Joint-Venture Groundfish Trawl	1989-1990	no incidental mortalities recorded						

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
WA Makah (Areas 4,4A,4B) Salmon Set Gillnet (09)	1989-1993	N.A.						
Columbia River, Willapa Bay, Gray's Harbor Drift Gillnet (10)	1991-1993	N.A.						
California drift net	1990	TOTAL --- Unid. bird	1 --- 1	178 (total effort = 4504)	0.0056 --- 0.0056	4%	N.A.	N.A.
California drift net	1991	TOTAL ---		470 (total effort = 4752)		10%	N.A.	N.A.
California drift net	1992	TOTAL --- Unid. bird	1 --- 1	596 (total effort = 4504)	0.0017 --- 0.0017	13%	N.A.	N.A.
California drift net	1993	TOTAL ---		728 (total effort = 5380)		14%	N.A.	N.A.

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
California set net ***	1990	TOTAL	169	158 (total effort = 6995)		2%	N.A.	N.A.
		Common murre	150		0.9494			
		Brandt's cormorant	5		0.0316			
		Double-crested cormorant	2		0.0127			
		Pelagic cormorant	1		0.0063			
		Unid. alcid	1		0.0063			
		Unid. loon	1		0.0063			
		Unid. cormorant	9		0.0570			

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
California set net ***	1991	TOTAL	361	706 (total effort = 7089)		10%	N.A.	N.A.
		Common murre	289		0.4093			
		Brandt's cormorant	42		0.0595			
		Common loon	4		0.0057			
		Western grebe	2		0.0028			
		Pelagic cormorant	1		0.0014			
		Pacific loon	1		0.0014			
		Unid. cormorant	16		0.2270			
		Unid. loon	4		0.0057			
		Unid. bird	2		0.0028			

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
California set net ***	1992	TOTAL	342	697 (total effort = 5468)		13%	N.A.	N.A.
		----------	------		------			
		Common murre	295		0.4232			
		Brandt's cormorant	21		0.0301			
		Western grebe	3		0.0043			
		Pacific loon	2		0.0029			
		Common loon	1		0.0014			
		Double-crested cormorant	1		0.0014			
		Unid. bird	5		0.0072			
		Unid. grebe	4		0.0057			
		Unid. cormorant	10		0.0143			

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

Fishery	Year	Sea Bird Species	Observed Kills	Observed Effort	Kill Rate (/day)	Observer Coverage (%)	Total Estimated Kill (variance)	Coeff. Variation
California set net ***	1993	TOTAL	159	875 (total effort = 5797)		15%	N.A.	N.A.
		Common murre	141		0.1611			
		Brandt's cormorant	21		0.0091			
		Western grebe	1		0.0011			
		Double-crested cormorant	1		0.0011			
		Unid. cormorant	6		0.0069			
		Unid. bird	1		0.0011			
		Unid. grebe	1		0.0011			

APPENDIX D: National Marine Fisheries Service Observer Program
Sea Bird Interaction Data - All Years

* N.A. = not available at this time

** This number is the number of observed takes, not the number of observed kills. Thus, the number may include a small portion of birds that were caught and released.

*** 24% of the set nets observed over the four year period from mid-90 to mid-94 had a stretched mesh size less than 8 inches.

1a: ALSO INCLUDES AREA 3 1b: ALSO INCLUDES AREA 3 AND 5
2: ONE NET DAY = ONE 100 FATHOM NET SET FOR A 24 HOUR PERIOD

Finding

Section 4(b)(3)(B)(iii) of the Act states that the Service may make warranted but precluded findings if it can demonstrate that an immediate proposed rule is precluded by other pending proposals and that expeditious progress is being made on other listing actions. Since September 30, 1993, the Service has proposed the listing of 118 species and has finalized the listing for 182 species. The Service believes this demonstrates expeditious progress. Furthermore, on September 21, 1983 (48 FR 43098), the Service published a system for prioritizing species for listing. This system considers 3 factors in assigning species' numerical listing priorities on a scale of 1 to 12. The three factors magnitude of threat, immediacy of threat, and taxonomic distinctiveness.

After reviewing and considering the scientific merits and significance of all comments, recommendations, and study proposals received from State and Federal agencies and from private individuals relative to the Service's 90-day Administrative Finding, the Service has concluded that the magnitude of the threat to the swift fox is moderate throughout its present range. The States of Kansas, Colorado, and Wyoming have presented evidence that swift foxes have reoccupied former prairie habitats and have also moved into agricultural lands. However, scientific evidence also indicates that identifiable threats to the swift fox exist over the entire 10-State range, and the Service has concluded that the immediacy of these threats is "imminent." The Service, in its determination of the current degree of threat to the species, also considered a long-range conservation strategy document drafted by an interagency State team which provides a framework of goals, objectives, and strategies. Implementation of this plan, including the formation of a swift fox working team should help reduce some of these threats to its survival. Having considered this draft conservation strategy document and the significance of the evidence provided by the aforementioned States, the Service believes that the magnitude of threats is "moderate" but the immediacy of these threats remains "imminent." Therefore, a listing priority of 8 is assigned for the species. The Service will reevaluate this warranted but precluded finding 1 year from the date of the finding. If sufficient new data or information becomes available in the future regarding the magnitude of threats, abundance, and health of these swift fox populations, the Service will reassess the status of the species. The warranted but precluded finding elevates the swift fox's candidate species status from category 2 to category 1.

The Service's 12-month finding contains more detailed information regarding the above decisions. A copy may be obtained from the South Dakota Field office (see **ADDRESSES** section).

References Cited

A complete list of references cited in the rule is available upon request from the South Dakota Field office (see **ADDRESSES** section).

Author

The primary author of this document is David A. Allardyce (see **ADDRESSES** section).

Authority

The authority for this action is the Endangered Species Act (16 U.S.C. 1531 *et seq.*)

Dated: June 12, 1995.

Mollie H. Beattie,

Director, Fish and Wildlife Service.

[FR Doc. 95–14730 Filed 6–15–95; 8:45 am]

BILLING CODE 4310–55–M

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Parts 216 and 229

[Docket No. 950605147–5147–01; I.D. 052395C]

RIN 0648–AH33

Taking of Marine Mammals Incidental to Commercial Fishing Operations; Authorization for Commercial Fisheries; Proposed List of Fisheries

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; request for comments.

SUMMARY: NMFS issues this proposed rule to implement the new management regime for the taking of marine mammals incidental to commercial fishing operations established by certain provisions of the Marine Mammal Protection Act of 1972 (MMPA) as added to that Act by certain amendments in 1994. The regulations would implement requirements to authorize vessels engaged in commercial fishing to incidentally, but not intentionally, take species and stocks of marine mammals upon the receipt of specified information and that require commercial fishers to report to NMFS the incidental mortality and injury of marine mammals in the course of commercial fishing and comply with certain other requirements. The intended effect of this rule is to provide for a limited exemption of commercial fisheries from the MMPA's moratorium on the taking of marine mammals incidental to commercial fishing activities. NMFS issues a proposed list of fisheries (LOF), categorized according to frequency of incidental serious injury and mortality of marine mammals. Comments are invited on the proposed rule and the proposed LOF.

DATES: Comments on this proposed rule must be received by July 31, 1995. Comments on the proposed LOF must be received by September 14, 1995.

ADDRESSES: Send comments to Chief, Marine Mammal Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910. A copy of the Environmental Assessment (EA) may be obtained by writing to this address, by telephoning one of the contacts listed below, or by accessing the NMFS "Home Page" on the World Wide Web at http://kingfish.ssp.nmfs.gov:80/home-page.html which will be available by June 19, 1995. Comments regarding the burden-hour estimate or any other aspects of the collection of information requirements contained in this rule should be sent to the above individual and to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB); Attention: NOAA Desk Officer, Washington, D.C. 20503.

FOR FURTHER INFORMATION CONTACT: Dr. Thomas Eagle or Robyn Angliss, Office of Protected Resources, 301–713–2322; Douglas Beach, Northeast Region, 508–281–9254; Charles Oravetz, Southeast Region, 813–570–5301; James Lecky, Southwest Region, 310–980–4015; Brent Norberg, Northwest Region, 206–526–6140; Dr. Steve Zimmerman, Alaska Region, 907–586–7235.

SUPPLEMENTARY INFORMATION:

Legislative and Regulatory History

Prior to passage of the 1988 amendments to the MMPA (Public Law 92–522), commercial fishers could receive an exemption from the MMPA's general moratorium on the taking of marine mammals by applying for a general permit and certificates of inclusion. The 1988 amendments to the MMPA (Public Law 100–711), added a section 114 to the MMPA that exempts, on an interim basis, commercial fishers who comply with certain registration

and reporting requirements from the general prohibition on taking marine mammals (Interim Exemption for Commercial Fisheries). The purpose of this exemption was to allow NMFS to collect data to be used in setting up a comprehensive management regime governing fisheries interactions with marine mammals. The 1988 amendments did not allow for the taking of California sea otters or the intentional lethal taking of Steller sea lions, cetaceans, or marine mammals from a population stock designated as depleted.

Section 11 of the MMPA Amendments of 1994 (Public Law 103-238) added a new section 118 to the MMPA establishing a new management regime for the taking of marine mammals incidental to commercial fishing operations. In order to provide time for development and implementation, section 15 of the MMPA Amendments of 1994 amended section 114, the interim exemption, to extend it until September 1, 1995, or until superseded by regulations prescribed under section 118, whichever is earlier.

Since it was first passed in 1972, one of the underlying goals of the MMPA has been that the incidental kill or incidental serious injury of marine mammals permitted in the course of commercial fishing operations be reduced to insignificant levels approaching a zero mortality and serious injury rate (section 101(a)(2) of the MMPA). Section 11 of the 1994 amendments to the MMPA reaffirmed this Zero Mortality Rate Goal (ZMRG)(new section 118(b)(1)) and requires NMFS to begin review of each fishery's progress toward the ZMRG within 3 years of enactment (April 30, 1997), and report the results of this review to Congress within 4 years of enactment (April 30, 1998)(new section 118(b)(3)). The amendments specify that all fisheries must attain this goal within 7 years of enactment (April 30, 2001)(new section 118(b)(2)).

Section 10 of the 1994 Amendments adds a new section 117 to the MMPA that requires NMFS to complete stock assessments for every population or stock of marine mammals that occur in the waters under U.S. jurisdiction and to designate strategic stocks based on the level of human-caused mortality likely to reduce or keep the stock below its optimum sustainable population level. Strategic stocks are also those that are listed as endangered or threatened species under the Endangered Species Act (ESA), depleted under the MMPA, or that are declining and likely to be listed as a threatened species under the ESA. Stock assessments must include an analysis of whether the incidental mortality and serious injury of marine mammals from commercial fishing operations is insignificant and is approaching a zero mortality and serious injury rate (e.g., ZMRG). Draft stock assessment reports (SARs) were published in August, 1994 (59 FR 40527). Final SARs are in preparation.

Section 118 of the MMPA requires NMFS to authorize commercial fishers to incidentally, but not intentionally, take marine mammals during the course of commercial fishing operations upon the receipt of specified information and provided certain conditions are met. The regulations being proposed by this notice would implement section 118.

Section 118(a)(5) of the MMPA prohibits the intentional lethal take of any marine mammal in the course of commercial fishing operations except as provided by section 101(c) which authorizes takings, including intentional lethal takings if imminently necessary in self-defense or to save the life of a person in immediate danger and as long as such taking is reported to NMFS within 48 hours (see 60 FR 6036). The 1994 amendments to the MMPA amended section 101(a)(4) of the MMPA to authorize fishers to deter marine mammals from damaging fishing gear, catch or other private property or from endangering personal safety provided such measures do not result in the serious injury or mortality of a marine mammal. Section 101(a)(4) directs NMFS to develop and publish guidelines for use in safely deterring marine mammals and to prohibit the use of deterrence measures determined to have a significant adverse effect on marine mammals. On May 5, 1995, NMFS published proposed guidelines and prohibited measures (60 FR 22345).

Section 4 of the MMPA Amendments of 1994 amended section 101(a)(5) of the MMPA to authorize NMFS to issue permits for the take of marine mammals listed as a threatened species or endangered species under the ESA incidental to commercial fishing operations.

The 1994 Amendments retained the concept of categorizing commercial fisheries into three groups based on the frequency of incidental mortality and serious injury of marine mammals from section 114—the Interim Exemption for Commercial Fisheries. On September 1, 1994, NMFS published a notice of proposed changes to the LOF (59 FR 45263). As required by section 118, that notice classified commercial fisheries by frequency of incidental serious injury and mortality of marine mammals. This classification differed from the classifications under the Interim Exemption in that non-injurious takes, incidental or intentional, such as harassment, were not included in the revised classification criteria. Only incidental serious injuries and mortalities were considered. Also, since intentional lethal takes are prohibited by section 118(a)(5), those fisheries previously classified based only on intentional takes were proposed for reclassification.

Additional information on the regulatory and legislative history of the MMPA prior to the 1994 Amendments appears in the Environmental Assessment prepared for this rule.

Comments and Responses to the Notice of Proposed Changes to the List of Fisheries

Ten comments were received in response to the September 1, 1994, notice of proposed changes to the LOF (59 FR 45263). Comments and information were received from State agencies, commercial fishing organizations, Indian tribes, conservation groups, and other interested parties. Comments on the proposed reclassification of fisheries, classification criteria, treaty Indian fisheries, and related topics are summarized below along with NMFS' responses. These comments were considered in developing this proposed rule.

Comments on the Proposed Changes to the Criteria

Two commenters agreed with the proposed reclassifications, because of the assumption that the prohibition on intentional serious injuries and mortalities would result in a reduced taking of marine mammals. However, three commenters believed that it was inappropriate to reclassify any fisheries based on this assumption until the prohibition was implemented by regulations. One commenter suggested that any attempt to factor unknown levels of illegal activities when classifying fisheries was inappropriate and would be unfair to law-abiding fishers. On March 3, 1995, the prohibition in section 118(a)(5) on intentionally seriously injuring or killing a marine mammal during commercial fishing operations became effective by regulation (60 FR 6036). Previously, under regulations implementing section 114, lethal deterrence measures could be used to protect fishing gear or catch during commercial fishing operations. NMFS has informed owners of vessels currently registered in a Category I or II fishery (respectively, frequent or

occasional incidental mortality and serious injury of marine mammals) of this prohibition by mail. Furthermore, NMFS conducted a public outreach campaign to inform other affected parties (e.g., vessel owners participating in a Category III fishery (a remote likelihood of incidental mortality and serious injury of marine mammals)) through tradepapers, newsletters, and other media. For these reasons, the proposed classification of fisheries in this proposed rule (see List of Fisheries) is based on the assumption that the prohibition on intentional serious injury and mortality will result in a reduced taking of marine mammals. The proposed LOF is also based on the new proposed definitions of "frequent," "occasional," and "remote" incidental mortality and serious injury of marine mammals (proposed § 229.2).

Comments on the Definition of a Fishery

For purposes of section 114, NMFS defined fisheries by gear type, geographical area, and target species, in accordance with existing state or Federal management designations. However, for some fisheries this information is unavailable or only partially available. In the notice of proposed changes to the LOF, NMFS suggested that fisheries could be partitioned as necessary to reflect concentrations of marine mammals in certain areas within a fishery, or at certain times of the year in order to address management actions on fishery hot spots, or seasons. Gear type (e.g., mesh size) could also be used to help define a fishery to allow flexibility. Three commenters supported these approaches.

The proposed LOF in this notice would define fisheries based on state or Federal management designations where these designations exist and where practicable. When this information was not available, fisheries are defined based on the 1994 LOF. The 1994 LOF based fishery definitions on the location of the fishery, the gear type used, and sometimes the fish species that are targeted by the fishery. A fishery may be proposed to be grouped with other fisheries if the general location and gear type are similar and if the rates of incidental marine mammal mortality and serious injury are known or suspected to be similar. For instance, the U.S. mid-Atlantic coastal gillnet fishery in the 1994 LOF is composed of many small fisheries that target different fish species seasonally but use the same general type of gear, fish in the same general location, and have a marine mammal take that is suspected to be similar. When additional information on either marine mammal incidental mortality and serious injury or on the fishery are available, fisheries in the proposed LOF may be grouped together or split apart in order to better manage the incidental mortality and serious injury of marine mammals in those fisheries.

New fisheries or fisheries that were new to the proposed LOF were defined based on general location, gear type, and, when applicable, target species.

Comments on Take Estimates

The classification criteria developed to implement the Interim Exemption (expiring section 114) were based on an interaction rate of marine mammals with a randomly selected vessel in a fishery during a 20-day period. In the September 1, 1994 notice of proposed changes to the LOF, NMFS solicited comments and/or suggestions on classification criteria based on the relative impact of a fishery on marine mammal stocks (e.g., percentage of a stock's potential biological removal level (PBR)) or other alternative criteria. Four commenters supported classifying fisheries based on the impact of the annual incidental take of marine mammals from a marine mammal stock relative to the stock's PBR. Two of these commenters suggested that a fishery should be considered to have a frequent taking of marine mammals if the incidental take is 30 percent of a stock's PBR per year, instead of 50 percent of a stock's PBR as was suggested in the notice. They believed that this would be a more conservative approach. One of these commenters suggested that a Category III fishery should be considered to have a remote likelihood of taking if the incidental take from a marine mammal stock is less than or equal to 10 percent of a stock's PBR, instead of the one percent of a stock's PBR as was suggested in the notice. Two commenters supported an approach that categorizes fisheries based on either the number of takes per 20 days or impact of an annual take relative to the stock's PBR.

Commercial fisheries were classified in this proposed LOF based on new definitions of "frequent," "occasional", and "remote" incidental mortality and serious injury of marine mammals (proposed § 229.2). These new definitions would take into account the relative impact of incidental serious injury and mortality by commercial fisheries on marine mammal stocks. The development and justification for these proposed new definitions are discussed in the "Comments and Responses to Draft Regulations to Implement Section 118 from Working Sessions and Written Comments" section of this preamble.

Comments on Treaty Indian Fisheries

In the notice of proposed changes to the LOF, NMFS considered whether the Pacific Northwest treaty Indian tribal fisheries should be excluded from the LOF. Seven commenters objected to the omission of Pacific Northwest Indian tribal fisheries from the LOF. Commenters believed that the requirement to register Treaty Indian Fisheries and categorize them in the LOF provided NMFS with a mechanism to evaluate the impact of these fisheries on marine mammals. Some of the commenters believed that while traditional hunting and fishing rights are covered by native treaty agreement, commercial enterprises are not covered and should be regulated under the MMPA. One commenter believed that the exclusion of the Pacific Northwest treaty Indian tribal fisheries from the LOF was appropriate and also objected to the solicitation of public opinion on this topic.

In a September, 1994 letter to the Northwest Indian Fish Commission, NMFS stated that it had reviewed the relationship of Northwest Indian treaties to the MMPA, and did not find clear evidence that Congress intended to abrogate Indian treaty rights with respect to marine mammals. The letter concluded that proposed tribal harvests of seals and sea lions did not violate the MMPA, noting that neither species was subject to the ESA, and that the healthy status of the stocks would not be affected. The letter urged the tribes to continue to consult with NMFS, and to observe adequate conservation measures.

With respect to the LOF and in keeping with its September, 1994 letter, NMFS has determined that Category I and II treaty Indian tribal fisheries are conducted pursuant to the tribes' treaty rights. For the reasons discussed above, NMFS proposes to not require treaty tribes to register, report or comply with take reduction plans under section 118 of the MMPA. In addition, NMFS has removed treaty fisheries from the LOF proposed in this notice.

Comments on Applicability to Zero Mortality Rate Goal

In the **Federal Register** notice of proposed changes to the LOF, NMFS solicited comments on the development of criteria that could be used in the assessment of a fishery's progress in achieving the ZMRG, and whether the criteria used to classify fisheries may be used to make that assessment. In the June 1994 workshop to develop

standards for SARs, workshop participants suggested that a marine mammal stock that experienced a removal level equal to or less than 10 percent of its PBR could be considered to have an insignificant level of incidental mortality and serious injury approaching zero mortality and serious injury rate because the biological impacts would be negligible (see PBR Workshop Report). Several comments were received on the proposed definition set forth in the workshop report. One commenter agreed that a fishery would have achieved the ZMRG if it took 10 percent or less of a stock's PBR. However, three commenters did not agree because for stocks with a large population size, 10 percent removal could still be a very large number of marine mammals. Even if a fishery achieved this 10 percent goal, these commenters believed the fishery should still try to reduce marine mammal bycatch when possible, regardless of whether the reduction would be necessary to mitigate a biological impact on the stock.

NMFS believes that the ZMRG would be met for a marine mammal stock when the incidental mortality and serious injury from commercial fishing operations are at levels significantly below such stock's PBR so that the incidental mortality and serious injury has a negligible effect on the status of the affected stock. In other words, when the total incidental mortality and serious injury from fisheries has no biological impact, the ZMRG will have been met. NMFS believes that fishers should make every reasonable effort to reduce incidental take below this level. Nevertheless, for the purposes of the MMPA, NMFS is proposing to consider a fishery as having achieved the ZMRG if, collectively with other fisheries, it is responsible for the annual removal of 10 percent or less of any marine mammal stock's PBR level (proposed § 229.2).

Comments and Responses to Draft Regulations To Implement Section 118 From Working Sessions and Written Comments

Informal working sessions to discuss the draft proposed regulations to implement section 118 of the MMPA were held in Silver Spring, MD, on November 30, 1994, and Seattle, WA, on December 2, 1994. Attendees at both sessions included Congressional staff (Silver Spring session only), representatives of conservation groups, members of the fishing community, representatives of state governments, a representative of the Alaska subsistence community (Seattle session only) and NMFS staff. Written comments were also received on the draft proposed regulations to implement section 118. Comments on fishery classification criteria, options for classifying fisheries, and related topics are summarized below along with NMFS' responses. These comments were considered in developing this proposed rule.

Comments on Logbook Data

Some commenters believed that logbook data should be used to classify fisheries. Although logbook information is not and probably will not be reliable enough to determine reliable mortality estimates, the information can be used to determine the minimum mortality of marine mammals in a particular fishery. In addition, qualitative information provided in reports by fishers, such as areas of operation, number of fishers, and relative number of incidental takes, is useful in determining which fisheries need more intensive monitoring programs. When no other information is available for a particular fishery, NMFS will continue to use logbook information collected during the Interim Exemption program to supplement information from the monitoring program (e.g., observer program), and to better understand interactions in those commercial fisheries that are not being observed. Under the proposed rule, fishers will no longer be required to submit logbooks; thus, reports of incidental takes made by fishers will be used to classify fisheries when other information is lacking.

Comments on Criteria When Stock Status or Fishery Take Information Are Lacking

Some commenters believed that fishery classification criteria should not be based on annual takes relative to PBR because in the draft SARs many PBRs were zero (no potential removal level estimated) due to a lack of information on the marine mammal stock in question (e.g., stock size) and this would subject certain fisheries to be classified arbitrarily. Some commenters believed that guidelines must be developed to allow categorization of new fisheries, or fisheries about which little is known. Most commenters supported defaulting new fisheries into Category II.

1. In contrast to the number of zero PBRs in the draft SARs, there are relatively few zero PBRs in the final SARs. Furthermore, fisheries that have annual takes of marine mammals from such stocks generally take more than one species of marine mammal; thus, the fishery can be classified based on a stock with a known PBR.

2. New fisheries for which no information is available on its level of interaction with marine mammals, and where the frequency of interaction can not be determined by analogy (e.g., gear used), would be deemed to be a Category II fishery until the next annual LOF is published which may recategorize them based on new information. NMFS believes that this would provide for the necessary safeguards to ensure that potentially high levels of incidental mortality and serious injury of marine mammals in new fisheries is appropriately monitored.

Comments on Options for Fishery Classification Criteria

Under section 118 of the MMPA, commercial fisheries must be classified in one of the following three categories:

Category I: Frequent incidental mortality and serious injury of marine mammals;

Category II: Occasional incidental mortality and serious injury of marine mammals;

Category III: A remote likelihood of or no known incidental mortality or serious injury of marine mammals.

Because the 1994 amendments to the MMPA did not define "frequent", "occasional" or "remote likelihood", definitions for these terms must be developed in order to classify fisheries. Several options for criteria to classify fisheries were considered and discussed during the working sessions, and are summarized below.

Option 1: Status Quo. This option would retain the definitions of "frequent", "occasional", and "remote likelihood" contained in the regulations to implementing section 114 (54 CFR 219.3). Under this option, "frequent" means that it is highly likely that more than one marine mammal will be incidentally taken by a randomly selected vessel in the fishery during a 20-day period. "Occasional" means that there is some likelihood that one marine mammal will be incidentally taken by a randomly selected vessel in the fishery during a 20-day period. "Remote likelihood" means that it is highly unlikely that any marine mammal will be incidentally taken by a randomly selected vessel in the fishery during a 20-day period.

Comments on Option 1. Some commenters stated that the criteria for classifying fisheries under section 118 of the MMPA should be identical to the criteria under section 114. They argued that changing the criteria was not the intent of Congress and might place additional regulatory burden on commercial fishers by increasing the number of fisheries placed in Categories I and II. Furthermore, they were

concerned about what process would be followed for classifying fisheries under a new set of criteria when little or no data exists from which to estimate fishing mortality or PBR. The majority of the commenters however, supported modification of fishery classification criteria to better reflect the effect of commercial fisheries on individual marine mammal stocks. This approach would allow NMFS to place management emphasis on stocks of particular concern. Attendees at the Seattle session constructed a new set of criteria, which is discussed below under Option 2.

Assumptions of Option 1. This approach assumes that NMFS has fairly reliable estimates of rates of serious injuries and mortalities for vessels per 20 days of fishing in each fishery. For fisheries in which NMFS has placed observers, these rates may vary in accuracy, depending on the level of observer coverage applied. For other fisheries, only information submitted in fishers' logbooks are available. Take rates obtained from fishers' logbooks have been found to vary from those reported by observers for the same fishery, with the general tendency to have observed take rates higher than fisher-reported take rates.

Strengths of Option 1. This criteria scheme is useful in identifying fisheries that have relatively high rates of incidental serious injuries and mortalities across a number of marine mammal stocks, regardless of the status of the stocks involved. These fisheries would be classified as Category I or II fisheries.

Weaknesses of Option 1. This approach is problematic in that it does not account for the size of the fishery as a whole (i.e., the number of vessels participating in the fishery), as it relates to impacts on stocks. For instance, two fisheries may have the same serious injury and mortality rate per 20 days of fishing, yet one fishery may have 20 vessels participating and the other may have 3,000 vessels participating. These two fisheries would have significantly different impacts on a particular stock or stocks of marine mammals.

Also, reporting requirements under section 118 require that fishers report only incidents of serious injury and mortality, and not information on fishing effort. This significantly reduces the information available to calculate takes rates per 20 days of fishing. This information would only be accurate for fisheries in which there are observers.

Option 1 could unnecessarily focus management and resources on fisheries (e.g., monitoring programs, take reduction plans, etc.) that do not have a significant impact on marine mammal stocks. It may subject more vessel owners to registration, fees, and observer coverage. Finally, NMFS is concerned that option 1 may be inconsistent with the new section 118 because it does not consider the status of or impact to the marine mammal stocks.

Option 2: Base Criteria on Proportions of the Stock Size and PBR. Under this option, proportions of the best estimated stock size and the PBR for a particular marine mammal stock would be used to classify fisheries in the following manner:

Category I: Annual mortality and serious injury exceeds 0.005 of the best population estimate for cetaceans or 0.01 of the best population estimate for pinnipeds.

Category II: Annual mortality and serious injury is greater than 0.005 of the best population estimate but is greater than 0.01 of the PBR for cetaceans or is less than 0.01 of the best population estimate but greater than 0.1 of the PBR for pinnipeds.

Category III: Annual mortality and serious injury is less than 0.1 of PBR.

Comments on Option 2. There was no support for this option.

Option 3: Proportions of PBR. Under Option 3, a proportion of the PBR for a particular marine mammal would be used to classify fisheries in the following manner:

Category I: Annual mortality and serious injury of a stock in a given fishery is less than or equal to 50 percent of PBR.

Category II: Annual mortality and serious injury is greater than 1 percent and less than 50 percent of PBR.

Category III: Annual mortality and serious injury is less than 1 percent of PBR.

Comments on Option 3. Although there was general support for this type of approach, working session participants were concerned that Option 3 did not account for the collective impacts of all fisheries that interact with a marine mammal stock. Working session attendees also recognized that Option 3 did not account for marine mammal stocks that are subjected to a low level of incidental mortality and injury across a number of fisheries.

Option 4: Proportions of PBR—Two-tiered Approach. This approach is a two-tiered scheme that first addresses the total impacts of all fisheries on each marine mammal stock and then addresses the impacts of individual fisheries on each stock. This approach is based on the annual number of serious injuries and mortalities due to commercial fishing relative to a stock's PBR.

Tier 1: If the annual mortality and serious injury across all fisheries that interact with a stock is less than or equal to 10 percent of the PBR of such a stock, then all fisheries interacting with this stock (and no other stocks that do not fit this criteria) would be placed in Category III. Otherwise, these fisheries are subject to the next tier to determine their classification.

Tier 2—Category I: Annual mortality and serious injury of a stock in a given fishery is greater than some percentage of PBR.

Category II: Annual mortality and serious injury is between some percentage and some percentage of PBR.

Category III: Annual mortality and serious injury is less than or equal to some percentage of PBR.

This approach is modeled after the recommendations from the NMFS PBR Workshop held in June 1994 and the working sessions on the draft proposed regulations. The most critical classification threshold is the one between Category II and Category III fisheries because Category III fisheries only have a "remote likelihood" of incidental serious injury or mortality of a marine mammal and would not be subject to the more stringent requirements of Category I or II fisheries. The PBR Workshop participants agreed that serious injury and mortality incidental to commercial fishing operations would be insignificant to a stock if such removals were only a small portion (i.e., 10 percent of the PBR) of the stock. Using this rationale, all fisheries which impact a stock would be considered in the determination of whether impacts to that stock are significant (Tier 1). If the total removals from a stock across all fisheries were greater than 10 percent of the PBR for that stock, the fishery would then be categorized according to the criteria in Tier 2.

The term "some percentage" under Tier 2 is used, because NMFS considered a number of different percentage options under Option 4 (see EA). The threshold between Category I and II fisheries was set at 50 percent of PBR in this proposed rule. NMFS believes that this is a conservative approach, and in its analysis there were few additional fisheries added to Category I as a result of lowering the dividing line from exceeding PBR to 50 percent of PBR (see EA).

Comments on Option 4. Attendees at the Seattle working session supported the concept of basing fishery classification on takes relative to PBR, and the two-tier system that is presented

here as Option 4 resulted from that session. At the Silver Spring working session, there was also some support for this approach, but others believed that the criteria should remain as they were under section 114.

Assumptions of Option 4. This two-tiered approach assumes that NMFS has fairly accurate information on both the abundance of a stock (in order to calculate PBR) and the current level of incidental serious injury and mortality due to commercial fishing per year. For some cases, both the estimated fishing mortality and the PBRs of marine mammal stocks incidentally taken in that fishery are known with some degree of confidence. In these cases, fishing mortalities and serious injuries were calculated using data collected by observers. If observer data were not available, fishers' logbooks were used to estimate removal levels. However, it is assumed that logbooks provide only a minimum indication of total removal levels. In cases where the PBR for a stock is unknown, any known or inferred level of removal from that stock by a fishery usually warranted placement of that fishery in Category II so that better information could be collected.

For some fisheries, NMFS must use its best estimate of fishing mortality and serious injury based on inferences from similar fishing techniques, gear used, target species, seasons and areas fished, and species and distribution of marine mammals in the area. This method of inferring levels of removals was also used under regulations to implement section 114. In most of the Category III fisheries for which NMFS has no updated information to support a change in classification, the Category III designation was maintained.

Strengths of Option 4. This approach categorizes fisheries based on their impacts on stocks, thereby prompting take reduction teams to be formed first for those stocks of greatest concern. Option 4 would alleviate the burden of the management program for those fisheries that do not significantly interact with marine mammal stocks (Category III), because Category III vessel owners would not be required to register, pay fees, or take aboard an observer. Option 4 would focus management resources on those commercial fisheries that have impacts to marine mammals that are more than negligible. Furthermore, this approach would allow for the classification of fisheries that have only rare occurrences of serious injuries and mortalities as Category II, if the stock subject to removal has a very low PBR level and could be greatly impacted by even a low level of taking.

Weaknesses of Option 4. This approach does not specifically address fisheries that have a high frequency of marine mammal serious injuries and mortalities across several stocks. These could be classified as either Category I, II, or III depending on the stocks with which they interact. This may affect the prioritization of take reduction team formation, although, eventually, take reduction teams must be formed for marine mammal stocks that have significant incidental interactions with Category I or II fisheries.

Criteria for Categorizing Fisheries

NMFS believes that the 1994 amendments to the MMPA emphasized management of the interaction between commercial fisheries and marine mammals on a stock-specific basis. For this reason, NMFS proposes to use Option 4 (discussed above) and the proposed definitions of frequent, occasional, and remote (proposed § 229.2) were used to classify commercial fisheries. This requires the previous proposed changes to the LOF to be revised and to be reproposed by this notice.

Zero Mortality Rate Goal

NMFS proposes to consider a fishery as having reached the ZMRG when collectively with other fisheries, it is responsible for the annual removal of (1) 10 percent or less of any marine mammal stock's PBR, or (2) more than 10 percent of any marine mammal stock's PBR, yet the fishery by itself is responsible for the annual removal of one percent or less of that stock's PBR (proposed § 229.2).

It is not possible to determine whether a level of mortality to a declining stock of marine mammals is insignificant simply by applying a mechanistic definition such as the one set forth above. Therefore, fisheries that kill or seriously injure declining, depleted, threatened, or endangered stocks of marine mammals would have to be examined separately to determine whether the incidental take is insignificant.

Another option for defining the ZMRG draws from the 1981 amendments to the MMPA that addressed reducing mortality of small cetaceans in the yellow-fin tuna fishery in the Eastern Tropical Pacific Ocean (ETP). In 1981, Congress expressed it was not its intent to shut down the tuna fishery via the MMPA and that the ZMRG could be achieved in that fishery by requiring the use of the best marine mammal safety techniques and equipment that are economically and technologically practicable (H.R. Rep. 228, 97th Cong., 1st Sess. 13 (Sept. 16, 1981)). If a similar rationale were adopted for other fisheries, the following might be an option for defining the ZMRG: "Zero Mortality Rate Goal means the reduction of the annual number of incidental mortalities and serious injuries in each fishery to insignificant levels approaching a zero mortality and serious injury rate; at a minimum, this requires that the rate of incidental mortality and serious injury is at the lowest level that is technologically and economically practicable."

A problem with such an adopting such an approach when implementing section 118 of the MMPA, however, is that, while Congress adopted a "technologically and economically practicable" approach for the ETP yellowfin tuna fishery in 1981, it effectively abandoned that approach in 1984 when it established an annual statutory quota of 20,500 for that fishery. Congress reduced the quota again in 1992 when through the International Dolphin Conservation Act; there, it added a new section 306 to the MMPA in which the quota was reduced to 1000 for 1992, and 800 from January 1, 1993 to March 1, 1994. It also required that, for each year after 1992, dolphin mortality must decrease by a "statistically significant amount." Under these new requirements, the ETP yellowfin tuna fishery was forced to stop fishing in February of 1994 because it was approaching a take of 114 dolphins, which was statistically significantly less than the 115 it took in 1993. These statutory limits on dolphin mortality clearly indicate that, even for the ETP yellowfin tuna fishery, the 1981 approach using "technologically and economically practicable" methods a questionable method of achieving the ZMRG.

Some commenters proposed a definition where "zero equals zero" and believed that fisheries should be required to reduce their incidental mortality and serious injury of marine mammals to zero. There are two main problems with this approach: (1) It does not consider a "rate" of take as required by the ZMRG, and (2) this option could result in severe curtailment or complete cessation of fishing operations, even for fisheries that had only a remote likelihood of marine mammal incidental take.

In the proposed rule, the definition of ZMRG is proposed to be based on 10 percent of PBR. Comments on the preferred definition and the options presented are specifically encouraged.

Commercial Fishing Authorization

As required by the provisions of section 118(c) of the MMPA, under the proposed rule, in order for persons to lawfully take a marine mammal while engaged in a Category I or II fishery, the owner of a vessel or an authorized representative thereof would have to register with NMFS for and obtain an Authorization Certificate and decal, display the decal on the vessel, possess physical evidence of the authorization on the vessel, and report all incidental mortality and injury of marine mammals to NMFS. Vessels engaged in a Category I or II fishery would be required to carry aboard an observer if requested by NMFS. In the case of a nonvessel fishery, the owner of the fishing gear, or an authorized representative thereof, would have to register with NMFS for and obtain an Authorization Certificate and decal and attach the decal to the Authorization Certificate and the Certificate or a copy thereof would have to be in the possession of the person in charge of the fishing operations.

Owners of vessels engaged only in Category III fisheries would not be required to register with NMFS for or obtain an Authorization Certificate or decal to incidentally take marine mammals as a result of their fishing operations; however, they would be required to report all marine mammals incidentally killed or injured. Owners of vessels in Category I or II fisheries would be required to comply with any general regulations, conditions of Authorization Certificates issued to the vessel owner, and emergency or take reduction plan regulations published under the authority of section 118; owners of vessels in Category III fisheries would be required to comply with emergency or take reduction plan regulations and reporting requirements.

As specified in section 118(c)(2)(B) of the MMPA, the authorization for commercial fisheries applies only to U.S. commercial fishing vessels including licensed commercial passenger fishing vessels (e.g., charter and party boats) or to those foreign vessels with valid fishing permits issued under section 204(b) of the Magnuson Fishery Conservation and Management Act (16 U.S.C. 1801 *et seq.*) (Magnuson Act). As specified in section 118(a)(3), authorizations under section 118 are not applicable to vessels fishing in the yellowfin tuna purse seine fishery in the eastern tropical Pacific. Although registration of vessels in Category I and II fisheries under the MMPA is necessary to lawfully incidentally take a marine mammal, not registering under the MMPA would not prevent a fisher from fishing. Fishing is governed by a variety of mechanisms such as Federal or state laws and their respective implementing regulations (including regulations implementing regional fishery management plans).

The authorization for commercial fisheries does not apply to Northwest Treaty Tribal fishers exercising treaty rights.

Section 118 of the MMPA does not include authority to incidentally take southern (California) sea otters (*Enhydra lutris nereis*). This subspecies historically ranged along the west coast of the United States, but currently is found only along the central California coast and San Nicolas Island, CA. Section 118 of the MMPA does not supersede or otherwise affect the provisions of Public Law 99–625, governing the translocation of southern sea otters to San Nicolas Island for research and recovery purposes. Within special zones established for this experimental population, certain restrictions on incidental taking under the MMPA do not apply. (See 50 CFR 17.84(d) for a description of these special zones and activities that can be lawfully conducted within these zones.)

Issuance of Authorization Certificates for Category I and II Fisheries

Registration Process

As required by section 118(c) of the MMPA, under the proposed regulations, a vessel owner (or authorized representative) would have to register to obtain an Authorization Certificate and decal for each vessel that will engage in a Category I or II fishery. The initial registration would cover 1996. After that, registrations to renew certificates would be required each calendar year. Those owners of vessels holding valid Exemption Certificates under section 114 would be deemed to have registered under section 118 through December 31, 1995.

Registration forms, outlining the required information, would be available from NMFS (proposed § 229.4(c)). However, if the granting and administration of authorizations is integrated and coordinated with an existing fishery license, registration, or related program operated by an entity other than NMFS, registrations forms will be available from those program offices. A notice will be published in the **Federal Register** indicating where to register and other means will also be used to notify fishers of the change (e.g., MMPA Bulletin, mailings to previously registered fishers, etc).

One registration per vessel would be required and would cover all Category I and II fisheries in which the vessel participates during the calendar year. The registrant would be requested to send the first page of the registration form to one of the NMFS offices listed in proposed section § 229.4; the second page should be retained by the registrant and would serve as an indication of registration until an Authorization Certificate is issued.

For annual renewals, registration forms, containing the information on file with NMFS, would be sent to existing Authorization Certificate holders prior to the beginning of the year. Vessel owners would be required to make any necessary corrections or updates and sign and return the form to NMFS. A signed registration renewal form would have to be submitted to NMFS prior to any incidental taking of a marine mammal by that vessel owner in a Category I or II fishery.

The term "vessel owners" (proposed § 229.2), in addition to owners of commercial fishing vessels, would be defined to include owners of fixed or other fishing gear that is used in a "nonvessel fishery." A "nonvessel fishery" would mean a commercial fishing operation that uses fixed or other fishing gear without a vessel, such as gear used in set gillnet, trap, beach seine, weir, ranch and pen fisheries. Owners of such gear would be subject to the same requirements and restrictions as owners of fishing vessels or fish processing vessels operating in a commercial fishery.

A registration fee may be required to accompany each registration or request for renewal if NMFS is issuing the Authorization Certificates.

Under the legislation, NMFS is authorized to establish a fee to cover the administrative cost of granting Authorization Certificates and renewals, however, the amount that would be required has not been determined at this time. "Vessel owners" in "nonvessel fisheries" may be required to submit one fee to register all gear owned. The fees collected in connection with the authorization system would be available to NMFS to cover the administrative costs and will be determined annually and published in the LOF.

Issuing Procedures

After submission of a completed registration form and the required fee, an Authorization Certificate and a vessel decal or other physical evidence would be issued to the vessel owner for each vessel intending to engage in a Category I or II fishery. The initial Certificate and decal would be valid for calendar year 1996. After that, Certificate renewals and decals would be issued each year after receipt of an updated registration,

required fee, and statement (yes/no) regarding whether any marine mammals were incidentally killed or injured during the previous calendar year covering all registered Category I or II fisheries.

Decals or other physical evidence would be required to be displayed as proof of current registration. In those instances where NMFS is successful in incorporating the registration process with existing licensing systems, fishers will be notified of the accepted "physical evidence" requirements.

A replacement decal would be issued, if requested, to replace a lost or damaged decal. In nonvessel fisheries, the decal would have to be affixed to the Certificate. Annual decals would be issued along with the Certificates in subsequent years.

The Authorization Certificate or a copy thereof would have to be on board the vessel while it is operating in a Category I or II fishery, or, in the case of a nonvessel fishery, a copy of the Certificate would have to be in the possession of the person in charge of the fishing operations. A copy of the Certificate would have to be made available upon request to any state or Federal government official authorized to enforce the provisions of the MMPA or to any designated agent of NMFS.

Suspension or Revocation of Authorization Certificates

Under the proposed regulations, NMFS could suspend or revoke a Certificate or deny a Certificate renewal for any vessel if the Certificate holder (1) fails to report as required under proposed § 229.6, or (2) fails to take aboard an observer in a Category I or II fishery as required under proposed § 229.7, if requested. In addition, NMFS could revoke or suspend a Certificate for any vessel that fails to comply with other terms and conditions of the Authorization Certificate or the regulations governing the incidental taking of marine mammals during commercial operations under this section. NMFS could suspend or revoke a Certificate or could deny a Certificate renewal for any vessel which fails to comply with a take reduction plan or emergency regulations under this section. The suspension, revocation or denial could occur without notice or opportunity for hearing in the case of failure to submit required reports. Other actions would be subject to NOAA's civil procedures contained in subpart D of 15 CFR part 904. Previous failure to comply with the requirements of section 114 of the MMPA would not bar authorization under this section for an owner who complies with the requirements of this section.

Requirements for Category III Fisheries

Under section 118(c) of the MMPA and these proposed regulations, owners of vessels engaged only in Category III fisheries are not required to register with NMFS or to obtain an Authorization Certificate to legally incidentally take marine mammals during commercial fishing operations. However, they would be required to report all incidental mortality and injury and make all reasonable efforts to release animals unharmed. Where necessary to address immediate and adverse impacts to marine mammal stocks, NMFS could place observers aboard Category III vessels if there is reason to believe that such vessels may be causing the incidental mortality and serious injury to such a stock.

Reporting Requirements

As required by section 118(e) of the MMPA and the proposed regulations, vessel owners or operators engaged in Category I, II, or III fisheries would have to report all incidental mortality and injury of marine mammals during the course of commercial fishing operations to NMFS Headquarters or appropriate NMFS Regional Office. NMFS proposes to define an "injury" (proposed § 229.2) as a wound or other physical harm. Any animal that requires assistance to escape from entanglement in fishing gear would also be considered injured and would have to be reported.

Reports would have to be submitted by mail or other means such as FAX within 48 hours after the end of each fishing trip during which the incidental mortality or injury occurred. The "end of a fishing trip" (proposed § 229.2) would mean the time of a vessels' return to port after a fishing trip. NMFS would provide a standard postage-paid form and instructions for recording information for this purpose. If a fisher participates in more than one fishery during a single fishing trip, a separate report would be required to be submitted for each such fishery. Report forms would require information on: The fishery, gear type and fish species involved; the marine mammal species (or description of the animal(s) if species is not known), number, date, and location of marine mammal incidental takes and whether an injury or mortality occurred. Failure to report incidental mortality or injury of marine mammals during the course of commercial fishing operations would result in suspension or revocation of the Authorization Certificate and denial of Authorization Certificate renewal requests until the vessel owner complies with reporting requirements of proposed § 229.6 of this part.

Monitoring Program

As required by section 118(d) of the MMPA, NMFS would establish a program to monitor incidental mortality and serious injury of marine mammals during the course of commercial fishing operations. A "serious injury" (proposed § 229.2) would be defined as any injury of a marine mammal during a commercial fishing operation that will likely result in mortality of that marine mammal. The purposes of the monitoring program as specified in section 118(d)(1) of the MMPA are to: (1) Obtain statistically reliable estimates of incidental mortality and serious injury of marine mammals; (2) determine the reliability of reports of incidental mortality and injury of marine mammals obtained from fishers' reports; and (3) identify changes in fishing methods or technology that may increase or decrease incidental mortality or serious injury of marine mammals. The monitoring program would use information from observer programs, fishers' reports, and marine mammal stranding reports.

Observer Program

Section 118(d)(2) authorizes NMFS to place observers aboard vessels, as necessary, to monitor incidental mortality and serious injury of marine mammals during commercial fishing operations for vessels engaged in Category I or II fisheries. Under the proposed regulations, the owner of a vessel engaged in a Category I or II fishery would be required to take aboard an observer if requested by NMFS or a contractor of NMFS, to do so. The extent of observer coverage would be based on the ability to obtain statistically reliable estimates of incidental mortality and serious injury in each individual fishery and could include up to 100 percent observer coverage of a fishery. The specific design of the observer program, including how long an observer would be placed on a particular vessel, would vary among fisheries.

As required by section 118(d)(4), the highest priority for allocating observers among fisheries would be for those commercial fisheries that have incidental mortality or serious injury of marine mammals from stocks listed as endangered or threatened species under the ESA. To the extent practicable, the next highest priority for allocation would be for those commercial fisheries that have incidental mortality and serious injury of marine mammals from strategic stocks. A "strategic stock" is a

marine mammal stock (1) for which the level of human-caused mortality is greater than the potential biological removal, or (2) which is declining and is likely to be listed under the ESA, or (3) which is listed under the ESA, or (4) which is designated as depleted under the MMPA (proposed § 229.2). The "potential biological removal level" (proposed § 229.2) would mean the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimal sustainable population. To the extent practicable, the third highest priority for allocation would be for commercial fisheries that have incidental mortality or serious injury of marine mammals from stocks for which the level of incidental mortality and serious injury relative to the stock size is uncertain.

As required by section 118(d)(3), when determining the distribution of observers among fisheries and vessels within a fishery, NMFS would be guided by the following standards: (1) The requirement to obtain statistically reliable information; (2) the requirement that the assignment of observers be fair and equitable among fisheries and among vessels within a fishery; (3) the requirement that no individual person or vessel, or group of persons or vessels, be subject to excessive or overly burdensome observer coverage; and (4) to the extent practicable, the need to minimize costs and avoid duplication.

Under section 118(d)(6) of the MMPA, NMFS is not required to place an observer on a Category I or II vessel if (1) statistically reliable information can be obtained from observers on processing vessels to which Category I or II harvesting vessels deliver a catch that has not been taken on board the harvesting vessel, (2) the facilities for housing the observer or for carrying out observer functions are so inadequate or unsafe that the health or safety of the observer or the safe operation of the vessel would be jeopardized, or (3) an observer is not available.

The first exception addresses the situation in which Category I or II vessel catcher/harvester boats do not bring the catch on board, but deliver the fish directly to a floating processor on which an observer is placed. For example, observers on foreign vessels in over-the-side joint ventures may satisfy the observer requirements, and observers would not be needed on the catcher/harvester boats.

With respect to whether a vessel is adequate for taking an observer aboard, NMFS would make the necessary determinations on a case-by-case basis. Examples of situations in which observers would not be required or if a vessel is too small to carry (or house) an observer safely, if an observer would displace a crew member, or if fishing gear or the vessel could not be operated safely because of the presence of an observer.

The exception for unavailability of observers would include situations where NMFS may have inadequate funds to cover a full observer program or may not be able to employ or contract for sufficient qualified personnel to fully staff an observer program. To minimize these situations, NMFS would use observers, to the maximum extent possible, placed under other authorities, such as the Magnuson Act, to collect marine mammal interaction information, in addition to their other duties, to fulfill the observer requirements under the MMPA.

Vessel owners, operators, and crew members would be required to cooperate with observers and to provide information, such as vessel location, needed to meet the observers' responsibilities. If feasible and if required by the observer, marine mammals killed during the fishing operation which are readily accessible to crew members would have to be brought on board the vessel for biological processing and could be retained by NMFS. NMFS recognizes that for many smaller vessels, this will not be feasible and, therefore, would not be required. As authorized by section 118(d)(2), observers could, among other tasks (1) record incidental mortality and serious injury, or bycatch of other nontarget species; (2) record numbers of marine mammals sighted; and (3) perform other scientific investigations, including photographing incidental takes.

Although the primary purpose of the observer program is to collect data on incidental take of marine mammals, observers would not be limited to this activity. Regional fishery management councils, states or other Federal agencies could request NMFS to collect other scientific or biological information needed in their resource conservation and management programs, such as fishery resource and sea bird data. NMFS would require the observer to collect the requested additional information unless NMFS found in writing, and after opportunity for public comment, that the collection of the requested information would interfere with the collection of information related to marine mammals.

Pursuant to section 118(d)(7) of the MMPA, NMFS could place an observer aboard a vessel engaged in a Category III fishery with the consent with the vessel owner or pursuant to section 118(g)(1)(C), if NMFS believed that the incidental mortality or serious injury of marine mammals from such fishery may be contributing to the immediate and significant adverse impact of a species or stock listed under the ESA and has prescribed emergency regulations under proposed § 229.9(a)(3). If an observer was placed on a vessel engaged in a Category III fishery, the vessel owner, operator, and crew members would have to comply with the requirements under § 229.9(e).

NMFS, in coordination with Federal and state scientists and personnel experienced in fishery observer programs, is designing its observer program to obtain statistically reliable information on the species and number of marine mammals incidentally killed or seriously injured in as many Category I and II fisheries as possible. The level of observer coverage and whether an alternative program would be used would be determined for each Category I and II fishery. These determinations would be based on the size and nature of each fishery and on the resources available for these programs. NMFS will try to make the best use of available resources by using existing research programs, programs operated by the states or other authorities, or alternative programs where statistically reliable information can be obtained at lower cost.

Alternative Observer Program

As authorized by section 118(d)(5) of the MMPA, if observers could not be placed on Category I or II vessels at the necessary level, NMFS could establish an alternative observer program to provide statistically reliable information on the species and number of marine mammals incidentally killed or seriously injured in the course of commercial fishing operations. The alternative observer program could include, but would not be limited to, direct observation of fishing activities from vessels, airplanes, or points on shore. Provided sufficient resources were available, an alternative program could also be established in any fishery for which reliable information was not otherwise obtainable.

Stranding Information

The NMFS may use marine mammal stranding data to monitor incidental mortality and serious injury of marine mammals from commercial fishing operations to supplement the information obtained from the observer program and fishers' reports. Intentional Taking of Marine Mammals

Section 118(a)(5) of the MMPA prohibits the intentional lethal take of any marine mammal in the course of commercial fishing operations in Category I, II, or III fisheries except as proved by section 101(c), which authorizes takings, including intentional lethal takings, if imminently necessary in self-defense or to save the life of a person in immediate danger and such taking is reported to NMFS within 48 hours. On February 1, 1995, NMFS published a final rule implementing this section of the MMPA (60 FR 6036). That rule, which became effective on March 3, 1995, requires that a report be made to the appropriate NMFS Regional Office within 48 hours if a marine mammal is killed by a fisher or a member of the general public in self-defense or in order to save the life of another person. If a report is not submitted, the person responsible for the take, whether a fisher or a member of the general public, will be subject to the penalties which have been authorized by the MMPA for illegal takes. This proposed rule incorporates the provisions of that final rule and would supersede it.

When necessary to deter a marine mammal from damaging gear, catch, or private property, or from endangering personal safety, fishers in Category I, II, or III fisheries may do so provided they follow the guidelines for safely deterring marine mammals found at proposed 50 CFR § 216.29(c) and do not use any measures prohibited under proposed 50 CFR 216.29(d). These sections were proposed on May 5, 1995 (60 FR 22345) and are subject to change based on the comments received.

Definitions of Incidental Taking and Incidental Mortality

The proposed definition of incidental, but not intentional, take is the nonintentional or accidental taking of a marine mammal that results from, but is not the purpose of, carrying out an otherwise lawful action. The proposed definition of incidental mortality is the non-intentional or accidental death of a marine mammal that results from, but is not the purpose of, carrying out an otherwise lawful action. The phrase "incidental, but not intentional" is intended to mean accidental taking. The words 'not intentional' should not be read to mean that persons who 'know' that there is some possibility of taking marine mammals incidental to commercial fishing operations or other specified activities are precluded from doing so.

Prohibition on Discarding Fishing Gear

Proposed section 229.3(f) would prohibit the discarding of fishing gear at sea. The ingestion of, or entanglement in, discarded fishing gear by marine mammals often causes them serious injury or mortality. It is not necessary for the conduct of fishing operations to discard fishing gear at sea. Gear can be stowed and safely discarded in port. Accordingly, it is proposed to prohibit the discard of fishing gear at sea, because such discards are not necessary to fishing operations and prohibiting such discards would decrease the number of serious injuries and mortalities to marine mammals caused by fishing operations consistent with the ZMRG.

Publication of List of Fisheries

Section 118(c) of the MMPA requires NMFS to publish a LOF, along with the marine mammals and number of vessels or persons involved in each such fishery, for those fisheries that have:

Category I: A frequent incidental mortality and serious injury of marine mammals;

Category II: An occasional incidental mortality and serious injury of marine mammals; or

Category III: A remote likelihood, or no known incidental mortality or serious injury of marine mammals.

A notice proposing revisions to the last LOF would be published in the Federal Register on or about July 1 of each year for the purpose of receiving public comment. A final LOF would be published on or about October 1 of each year which would become effective January 1 of the next calendar year. The proposed and final LOF would be developed according to the definitions for Category I, II, and III fisheries under § 229.2. Each LOF would list the marine mammals that interact with the fisheries, the approximate number of vessels or persons actively involved in each fishery, and would set forth the registration fee. A revised LOF may be published at any time after notice and opportunity for public comment.

Proposed List of Fisheries

The proposed regulations would establish the following fishery classification criteria:

Tier 1: If the annual mortality and serious injury across all fisheries that interact with a stock is less than or equal to 10 percent of the PBR of such a stock, then all fisheries interacting with this stock (and no other stocks that do not fit this criteria) would be placed in Category III. Otherwise, these fisheries are subject to the next tier to determine their classification.

Tier 2—Category I: Annual mortality and serious injury of a stock in a given fishery is greater than or equal to 50 percent of PBR.

Category II: Annual mortality and serious injury is greater than 1 percent and less than 50 percent of PBR.

Category III: Annual mortality and serious injury is less than or equal to 1 percent of PBR.

These criteria and information on commercial fisheries were used to develop the proposed LOF contained in this notice based on the following prioritization scheme:

1. Observer data extrapolated to estimate a total annual kill for that fishery was used where available, after which the proposed classification criteria were applied for Category I, II and III fisheries in order to classify the fisheries. The source of the observer data is provided in the description of how the fishery was classified.

2. Logbook data were used if observer data was unavailable. Only those animals recorded as "injured in gear" and "killed in gear" were included. Those animals harassed, injured, or killed by deterrence were not included in the data used to categorize the fisheries. Logbook data were summarized from the F/PR database. An estimated total annual kill is not calculated; fisheries are categorized based on the reported injuries and mortalities. When logbook data were questionable, the NMFS evaluated the reliability of the data.

3. When neither observer data nor logbook data were available, fisher's reports of marine mammal takes were used to classify the fisheries.

4. Evidence of fishery interactions can sometimes be gleaned by examination of stranded marine mammals. When the cause of death of a particular stranded marine mammal could be attributed to a specific fishery, this information was used to classify some fisheries.

5. If no information was available on which to base the classification of a particular fishery, the fishery was classified based on analogy with other fisheries occurring in similar locations or having similar gear types or methods for which observer or logbook information exists. When classifying fisheries, analogies were not made to fisheries which were classified based on fisher's reports or stranding data.

6. If available information is deemed by NMFS to be highly questionable, the fishery may be categorized based on the best information available, which includes but is not limited to historical patterns of marine mammal takes and expected magnitude of takes resulting from changes in fishery effort.

Justification for Categorization of Commercial Fisheries

The following are justifications for the proposed categorization of commercial fisheries into Category I, II, or III based on the proposed classification scheme. Justifications are presented for only those fisheries proposed to be placed in Category I or II and those fisheries in Category III for which observer, logbook, stranding or other information exist. Unless otherwise specified, fisheries classified into Category I or II have passed the Tier I criteria; thus, most justifications for placing fisheries detail only the information used to classify the fishery under the Tier 2 criteria. Tables 1 and 2 presents the proposed LOF.

Commercial Fisheries in the Pacific Ocean

Category I

California angel shark/halibut and other species large mesh (greater than 3.5 in) set gill net fishery. For the purpose of the 1994 LOF, this fishery was included with the California drift gillnet fishery under the general fishery definition "California set and drift gillnet fisheries that use a stretched mesh size of greater than 3.5 inches". This fishery was renamed in order to remain consistent with the name under which observer data is collected and because the name is more descriptive of the fishery.

This fishery is proposed to be placed in Category I, because observer data averaged across the years 1991 to 1993 indicate that the annual take of the central Californian stock of harbor porpoise (31 animals) is 91 percent of the PBR for this stock (34 animals).

California, Oregon thresher shark/swordfish/blue shark (blue shark in Oregon only) drift gill net fishery. This fishery was included with the California angel shark/halibut set gillnet fishery in the 1994 LOF and was called the "California set and drift gillnet fisheries that use a stretched mesh size of greater than 3.5 inches". This fishery was renamed to be more specific and to include the northward expansion of the fishery into Oregon and a possible future expansion into Washington. Observer data collected in the fishery both in California and in Oregon indicates that the incidental take of marine mammals occurs throughout the fishery. In addition, observer data collected in the late 1980's during an experimental shark fishery in Oregon and Washington using comparable gear also showed incidental takes of marine mammals for the fishery at that time (Stick and Hreha, 1989).

This fishery is proposed to be placed in Category I, because observer data provided by the NMFS Southwest Fisheries Science Center averaged across the years 1991 to 1993 indicate that the annual take of the Pacific sperm whale stock (15 animals) is greater than the PBR for this stock (1 animal).

Category II

Alaska Prince William Sound salmon drift gillnet. Categorization of this fishery is based on observer data. The Prince William Sound drift gillnet (Eshamy, Coghill and Unawik districts) and Copper River and Bering River salmon drift gillnet are combined in this fishery. Because total known harbor porpoise mortality and serious injury levels across all fisheries exceed 10 percent of the stock's PBR, and the known harbor porpoise mortality and serious injury level for this fishery is 20 animals per year (8.1 percent of PBR), this fishery is proposed to be placed in Category II.

Alaska Peninsula/Aleutians salmon drift gillnet fishery. Categorization of this fishery is based on observer data. The South Unimak (including False Pass and Unimak Pass) drift gillnet and the Alaska Peninsula (other than South Unimak) drift gillnet fisheries are combined in this fishery. Although total known Dall's porpoise mortality and serious injury levels across all fisheries do not exceed 10 percent of the stock's PBR with currently available information, low levels of observer coverage across all fisheries have been inadequate to determine mortality and serious injury levels across all fisheries for this stock, and available data suggest that levels of mortality and serious injury may exceed 10 percent of this stock's PBR if observer information were available. This, combined with the fact that known Dall's porpoise mortality and serious injury level of 28/year (1.8 percent of PBR) suggests that this fishery should be placed in Category II.

Southeast Alaska salmon drift gillnet fishery. Categorization of this fishery is based on observer and strandings data. Because total known humpback whale and harbor porpoise mortality and serious injury levels across all fisheries exceed 10 percent of each stock's PBR, and the known harbor porpoise mortality and serious injury level for this fishery is 3 animals per year (1.3 percent of PBR) and humpback mortality and serious injury level for this fishery is 0.13 animals per year (4.6 percent of PBR), this fishery is proposed to be placed in Category II.

Alaska Cook Inlet salmon drift gillnet. Categorization of this fishery is based on logbook data. Although total known marine mammal mortality and serious injury levels across all fisheries do not exceed 10 percent of each stock's PBR with currently available information for those species known to be taken in this fishery, low levels of observer coverage across all fisheries have been inadequate to determine mortality and serious injury levels across all fisheries for these stocks, and available data suggest that levels of mortality and serious injury may exceed 10 percent of each stock's PBR if observer information were available. Similarly, low levels of marine mammals have been documented for this fishery, and available data suggest that levels of marine mammal mortality and serious injury in this fishery are expected to be similar to levels of other drift gillnet fisheries which interact with similar marine mammals species if observer data were available. Therefore, this fishery is proposed to be placed in Category II.

Alaska Yakutat salmon set gillnet fishery. Categorization of this fishery is based on logbook data. Although total known harbor porpoise mortality and serious injury levels across all fisheries do not exceed 10 percent of this stock's PBR with currently available information, low levels of observer coverage across all fisheries have been inadequate to determine mortality and serious injury levels across all fisheries for this stock, and available data suggest that levels of mortality and serious injury may exceed 10 percent of this stock's PBR if observer information were available. This, combined with the fact that known harbor seal mortality and serious injury level of 30/year (1.5 percent of PBR) suggests that this fishery should be placed in Category II.

Alaska Cook Inlet salmon set gillnet. Categorization of this fishery is based on logbook data. Although total known marine mammal mortality and serious injury levels across all fisheries do not exceed 10 percent of each stock's PBR with currently available information for those species known to be taken in this fishery, low levels of observer coverage across all fisheries has not been at a level high enough to accurately determine mortality and serious injury levels across all fisheries for these stocks, and available data suggest that levels of mortality and serious injury may exceed 10 percent of each stock's PBR if observer information were available, especially for harbor porpoise. Similarly, low levels of marine mammals have been documented for this fishery, and available data suggest that levels of marine mammal mortality and serious injury in this fishery would be expected to be similar to levels of

other set gillnet fisheries which interact with similar marine mammals species if observer data were available. Therefore, this fishery is proposed to be placed in Category II.

Alaska Kodiak salmon set gillnet. Categorization of this fishery is based on logbook data. Because total known harbor porpoise mortality and serious injury levels across all fisheries exceed 10 percent of this stock's PBR, and the known harbor porpoise mortality and serious injury level for this fishery is 4 animals per year (1.6 percent of PBR), this fishery is proposed to be placed in Category II.

Alaska Peninsula/Aleutians salmon set gillnet (includes Atka and Amlia Islands). Categorization of this fishery is based on logbook data. Although total known marine mammal mortality and serious injury levels across all fisheries do not exceed 10 percent of each stock's PBR with currently available information for those species known to be taken in this fishery, low levels of observer coverage across all fisheries have been inadequate to determine mortality and serious injury levels across all fisheries for these stocks, and available data suggest that levels of mortality and serious injury may exceed 10 percent of each stock's PBR if observer information were available, especially for harbor porpoise. Similarly, though low levels of marine mammal mortalities and serious injuries have been documented for this fishery, available data suggest that levels of mortality and serious injury in this fishery would be expected to be similar to levels of other set gillnet fisheries which interact with similar marine mammals species if observer data were available. Therefore, this fishery is proposed to be placed in Category II.

Alaska Bristol Bay salmon drift gillnet. Categorization of this fishery is based on logbook data. Although total known marine mammal mortality and serious injury levels across all fisheries do not exceed 10 percent of each stock's PBR with currently available information for those species known to be taken in this fishery, low levels of observer coverage across all fisheries have been inadequate to determine mortality and serious injury levels across all fisheries for these stocks, and available data suggest that levels of mortality and serious injury may exceed 10 percent of each stock's PBR if observer information were available, especially for harbor porpoise, harbor seals and Steller sea lions. Similarly, though low levels of marine mammal mortalities and serious injuries have been documented for this fishery, available data suggest that levels of mortality and serious injury in this fishery would be expected to be similar to levels of other set gillnet fisheries which interact with similar marine mammals species if observer data were available. Therefore, this fishery is proposed to be placed in Category II.

Alaska Bristol Bay salmon set gillnet. Categorization of this fishery is based on information from logbooks. This fishery is proposed to be placed in Category II based on an occasional take of marine mammals (0.5 Bristol Bay stock of beluga whales per year). Because the take relative to PBR is 2 percent, which is greater than 1 percent and less than 50 percent, this fishery is proposed to be placed in Category II.

Alaska Metlakatla/Annette Island salmon drift gillnet. This fishery is separated from the Southeast drift gillnet fishery only for purposes of registration. It is a tribal fishery and is thus exempt from the registration fee. For categorization purposes, it is considered the same as the Southeast drift gillnet fishery and is thus proposed to be placed in Category II.

Washington Puget Sound Region salmon drift gillnet fishery (includes inland waters south of U.S.-Canada border and eastward of the Bonilla-Tatoosh line—Treaty Indian fishing is excluded). The name of this fishery has been modified from the name in the 1994 LOF in order to exclude set gillnet gear and commercial steelhead fishing since these fisheries are conducted only by treaty Indian fishers. Also, the name change clarifies that the regulations governing incidental take of marine mammals in fisheries do not apply to tribal members exercising treaty Indian fishing rights.

Categorization of this fishery is based on information from observer programs and logbooks. This fishery experiences an occasional take of marine mammals (50 harbor seals from the Washington inland waters stock were reported in logbooks each year). Because the take relative to PBR is 6 percent, which is greater than 1 percent and less than 50 percent, this fishery is proposed to be placed in Category II. The observer programs conducted in 1993 and 1994 documented a few incidental takes of harbor seals, harbor porpoise and Dall's porpoise; however, the extrapolated estimates of take for the non-Indian fishery are not yet available.

California anchovy, mackerel, tuna purse seine. Categorization of this fishery is based on information from logbooks. This fishery experiences an occasional take of marine mammals (0.33 bottlenose dolphins per year). Because the take relative to PBR is 2 percent, which is greater than 1 percent and less than 50 percent, this fishery is proposed to be placed in Category II.

Alaska Southeast salmon purse seine. This fishery was included under the general title "Alaska salmon/herring beach and purse seine" in the 1994 LOF. Categorization of this fishery is based on Category III reports. Because total known humpback whale mortality and serious injury levels across all fisheries exceed 10 percent of this stock's PBR, and the known humpback whale mortality and serious injury level for this fishery is 0.4 animals per year (14.3 percent of PBR), this fishery is proposed to be placed in Category II.

Alaska Bering Sea and Aleutian Islands groundfish trawl. Categorization of this fishery is based on observer data. Because total known killer whale mortality and serious injury levels across all fisheries exceed 10 percent of this stock's PBR, and the known killer whale mortality and serious injury level for this fishery is 1 animal (0.8 animals) per year (8 percent of PBR), this fishery is proposed to be placed in Category II.

Alaska pair trawl—new fishery. Because this is a new fishery to the region, no information is available to make a determination on expected levels of marine mammal mortalities and serious injuries in this fishery. Analogy cannot be drawn with the Atlantic tuna swordfish pair trawl, as target species and marine mammal species it might interact with are too dissimilar. However, because this is a new fishery for which no information is available, this fishery is proposed to be placed in Category II.

Oregon swordfish/blue shark surface longline fishery—new fishery. Categorization of this fishery is based on analogy with observed pelagic longline fisheries in the Atlantic Ocean. Based on observer data, the Atlantic Ocean pelagic longline fishery for swordfish and tuna have at least an occasional incidental serious injury and mortality of marine mammals. Accordingly, this fishery is proposed to be placed in Category II.

Alaska southern Bering Sea, Aleutian Islands, and Western Gulf of Alaska sablefish longline/set line (federally regulated waters). The name of this fishery has been modified from the 1994 LOF name to specify that this fishery occurs in Federal waters. Categorization of this fishery is based on observer data. Because total known killer whale mortality and serious injury levels across all fisheries exceed 10 percent of this stock's PBR, and the known killer whale mortality and serious injury level for this fishery is 0.25 animals per year (2.5 percent of PBR), this fishery is proposed to remain in Category II.

Category III

Alaska Kuskokwim, Yukon, Norton Sound, Kotzebue salmon set/drift gillnet. The name of this fishery has been changed from the 1994 LOF designation "Alaska Kuskokwim/Yukon/Norton Sound/Kotzebue salmon gillnets" to specify that both set and drift gillnets are used in this fishery. Although this fishery is expected to have occasional interactions with marine mammals, interactions usually result in directed takes for subsistence purposes. Therefore, this fishery is proposed to remain in Category III.

Alaska state waters sablefish longline/set line. This fishery is classified based on logbook data from the Alaska Prince William Sound longline/set line fishery. The fishery description has been expanded from the 1994 LOF to include all sablefish longline/set line fisheries in Alaska state waters. There were no records of incidental takes in logbook reports from this fishery. This fishery is proposed to be reclassified into Category III from Category II based on the prohibition of intentional lethal takes.

Alaska Prince William Sound set gill net. Categorization of this fishery is based on observer data. Because marine mammal mortality and serious injury levels approaching 1 percent of any stocks' PBR are not expected, this fishery is proposed to be reclassified from Category II to Category III.

Washington Willapa Bay salmon drift gillnet. This fishery is classified based on observer data extrapolated to estimate the total annual kill. There were no incidental serious injuries or mortalities in the Willapa Bay fishery in 1991 or 1992; thus, the fishery is proposed to remain in Category III.

Washington Grays Harbor (includes rivers, estuaries, etc.) drift gillnet. This fishery is classified based on observer data extrapolated to estimate the total annual kill. There is a low level of incidental mortality and serious injury of harbor seals in this fishery (under 1 percent of PBR). This fishery is proposed to be placed in Category III.

Washington, Oregon lower Columbia River (includes tributaries) drift gillnet. Categorization of this fishery is based on data from observer programs and current and anticipated future low fishing effort in the winter fishing season. During 3 years of observations in this fishery with observer coverage averaging from 3.0 percent to 9.5 percent each year, all but one of the observed harbor seal mortalities were documented in the winter season. The extrapolated annual mortality of harbor seals in this fishery from 1991 to 1993 was 233 seals in 1991 (all during the winter season), 192 seals in 1992 (180 in the winter season and 12 in the fall), and 11 seals in 1993 (all during the winter season). Although the estimated annual takes of harbor seals in 1991 and 1992 could justify placing this fishery in Category II, reduced fishing seasons in recent years and reduced fishing effort (due to restrictions on the fishery to minimize impacts on ESA listed Snake River chinook salmon) are unlikely to result in the levels of harbor seal mortality observed in 1991 and 1992. The winter season of 1993, when an estimated total of only 11 harbor seals were taken, was restricted due to ESA considerations and resulted in chinook landings of 446 fish in 1993 in contrast with landings of 2,692 fish in 1991 and 1,537 landings in 1992. The winter season was closed in 1994. Therefore, this fishery is proposed to be placed in Category III.

Alaska miscellaneous finfish set gillnet. This fishery description has been changed from the definition "Alaska gillnet (except salmon, herring, and sunken gill nets for groundfish)" used under the 1994 LOF to correlate with the State of Alaska name for this fishery. This fishery is categorized based on logbook data. This fishery is proposed to be moved from Category II to Category III based on an infrequent take of marine mammals (under two unidentified pinnipeds and unidentified species are taken per year).

Alaska salmon purse seine. This fishery used to be called the "Alaska salmon/herring beach and purse seine" fishery and the "Alaska South Unimak (False Pass and Unimak Pass) salmon purse seine" fishery under the 1994 LOF. This proposed fishery description includes all salmon purse seine fisheries in Alaska except for the Alaska Southeast salmon purse seine fishery. Because mortality and serious injuries of marine mammals are not expected for this fishery, it is proposed to be placed in Category III.

California/Oregon/Washington salmon troll. The name of this fishery has been changed from that used in the 1994 LOF, because it is managed as one fishery and the intentional lethal take prohibition will reduce the level of take to very low levels. The previous division of the fishery into the "Washington, Oregon north of 45°46′ (Cape Falcon) salmon troll" and the "California, Oregon south of 45°46′ (Cape Falcon) salmon troll" was based on differences in intentional lethal take rates between the northern and southern portions of the fishery. In this fishery, lethal deterrence, which is now prohibited, was the predominant source of mortality to marine mammals. As lethal deterrence is illegal and expected to no longer be a source of mortality for marine mammals, it is proposed to reclassify this fishery from Category II to Category III.

Alaska salmon troll. Categorization of this fishery is based on logbook data from 1990. Known Steller sea lion mortalities and serious injuries for this fishery do not exceed 1 percent of the stock's PBR and current information does not indicate that this level is likely to exceed 1 percent. Thus, this fishery is proposed to be placed in Category III.

California herring purse seine. This fishery is categorized based on logbook data. This fishery is proposed to be placed in Category III due to an infrequent take of marine mammals (all marine mammal takes are at a level less than 1 percent of PBR).

California sardine purse seine. This fishery is categorized based on logbook data. This fishery is proposed to be placed in Category III due to an infrequent take of marine mammals (no marine mammal takes have been recorded in logbooks).

California squid purse seine. This fishery is categorized based on logbook data. This fishery is proposed to be placed in Category III due to an infrequent take of marine mammals (California sea lion takes are at a level less than 1 percent of PBR).

Alaska Metlakatla fish trap. No marine mammal mortalities or serious injuries have been recorded for this fishery. Therefore, this fishery is proposed to be placed in Category III.

California squid dip net. This fishery is categorized based on logbook data. This fishery is proposed to be placed in Category III due to an infrequent take of marine mammals (no marine mammal takes have been recorded in logbooks).

Washington, Oregon salmon net pens. This fishery is categorized based on logbook data. This fishery is proposed to be placed in Category III due to an infrequent take of marine mammals (California sea lion takes are at a level less than 1 percent of the PBR).

Oregon salmon ranch. This fishery is categorized based on logbook data. This fishery is proposed to be placed in Category III due to an infrequent take of marine mammals (no marine mammal takes have been recorded in logbooks).

Miscellaneous finfish/groundfish longline/set line. This fishery is renamed from the 1994 LOF designation "Alaska groundfish long line/set line (except sablefish in the Bering Sea-Aleutian Islands/Gulf of Alaska)" to correspond with the fishery name as specified in the State of Alaska records and to include both miscellaneous finfish and groundfish (rockfish). This

fishery is classified based on observer data. This fishery is proposed to remain in Category III due to an infrequent take of marine mammals (all incidental takes are at a level less than 1 percent of the PBR).

Hawaii swordfish, tuna, billfish, mahi mahi, wahoo, oceanic sharks longline/set line. Categorization of this fishery is based on observer data. Because there have been no records of incidental serious injury and mortality of marine mammals, this fishery is proposed to remain in Category III.

Alaska Gulf of Alaska groundfish trawl. This fishery is classified based on extrapolations from observer data. This fishery is proposed to remain in Category III due to an infrequent take of marine mammals (all incidental takes are at a level less than 1 percent of the PBR).

Alaska roe herring and food/bait herring gillnet. The name of this fishery has been modified from "Alaska herring gill net" in the 1994 LOF to include two different fisheries on herring. Alaska roe herring and food/bait herring purse seine. This fishery is renamed from the 1994 LOF designation of "Alaska salmon/herring beach or purse seine" to separate out the two target species and gear types.

Alaska roe herring and food/bait herring beach seine. This fishery is renamed from the 1994 LOF designation of "Alaska salmon/herring beach or purse seine" to separate out the two target species and gear types.

Washington, Oregon, California albacore, groundfish, bottom fish, California halibut nonsalmonid troll fisheries. This fishery is renamed from the 1994 LOF designation of "Alaska North Pacific halibut, Alaska bottom fish, Washington, Oregon, California albacore, groundfish, bottom fish, California halibut nonsalmonid troll fisheries" to separate the Alaska fisheries from the fisheries of other states.

Alaska halibut longline/set line (state and Federal waters). This fishery is renamed from the 1994 LOF designation of "Alaska, Washington, Oregon North Pacific halibut longline/set line" to separate the Alaska fisheries from the fisheries of other states. Washington, Oregon North Pacific halibut longline/set line. This fishery is renamed from the 1994 LOF designation of "Alaska, Washington, Oregon North Pacific halibut longline/set line" to separate the Alaska fisheries from the fisheries of other states. Alaska miscellaneous finfish purse seine. This fishery is renamed from the 1994 LOF designation of "Alaska other finfish beach or purse seine" to separate the beach and purse seine fisheries.

Alaska miscellaneous finfish beach seine. This fishery is renamed from the 1994 LOF designation of "Alaska other finfish beach or purse seine" to separate the beach and purse seine fisheries.

Washington, Oregon, California shrimp trawl. This fishery is renamed from the 1994 LOF designation of "Alaska, Washington, Oregon shrimp trawl" to separate the Alaska fisheries from the fisheries of other states.

Alaska shrimp otter trawl and beam trawl (statewide; includes Cook Inlet). This fishery is renamed from the 1994 LOF designation of "Alaska, Washington, Oregon shrimp trawl" to separate the Alaska fisheries from the fisheries of other states.

Alaska miscellaneous finfish otter and beam trawl—new fishery. This is proposed to be a new fishery to the LOF.

Alaska crustacean/octopus/squid pot. This fishery is renamed from the 1994 LOF designation of "Alaska shellfish pot" to more accurately describe this fishery. This fishery includes the crab pot fisheries, the shrimp pot fisheries, and the octopus/squid pot fisheries.

Oregon developmental fishery bottom longline/set line—new fishery. This fishery is classified based on analogy to other bottom longline/setline fisheries such as the Alaska sablefish longline fishery. This fishery is considered separate from the Oregon developmental longline fishery for shark/swordfish, which is classified into Category II based on analogy with surface longline fisheries for similar species in the Atlantic Ocean. Oregon developmental fishery round haul (purse seine and lampara) beach seine and throw net. This fishery is proposed to be classified in Category III based on analogy with similar fisheries in the Pacific Ocean. This fishery may target any or all of the following: Pacific sardine or saury, whitebait, eulachon, night smelt, longfin smelt, surf smelt, sandfish, pomfret, and slender sole.

Oregon developmental fishery trawl—new fishery. This fishery is proposed to be classified in Category III based on analogy with similar fisheries in the Pacific Ocean. This fishery may target any or all of the following: Pacific sardine or saury, whitebait, eulachon, night smelt, longfin smelt, surf smelt, sandfish, pomfret, and slender sole.

Oregon developmental fishery pots, ring nets, and traps—new fishery. This fishery is proposed to be classified in Category III based on analogy with similar fisheries in the Pacific Ocean. This fishery may target any or all of the following: Pacific sardine or saury, whitebait, eulachon, night smelt, longfin smelt, surf smelt, sandfish, pomfret, and slender sole.

Oregon developmental fishery handline and jig—new fishery. This fishery is proposed to be classified in Category III based on analogy with similar fisheries in the Pacific Ocean. This fishery may target any or all of the following: Pacific sardine or saury, whitebait, eulachon, night smelt, longfin smelt, surf smelt, sandfish, pomfret, and slender sole.

Oregon developmental fishery dive, hand, mechanical collection—new fishery. This fishery is proposed to be classified in Category III based on analogy with similar fisheries in the Pacific Ocean. This fishery may target any or all of the following: Pacific sardine or saury, whitebait, eulachon, night smelt, longfin smelt, surf smelt, sandfish, pomfret, and slender sole.

New Pacific Fisheries

The following fisheries are new Pacific fisheries proposed to be placed in Category III, because they are expected to have a remote likelihood of incidental serious injury or mortality of marine mammals:

California bait pen
California finfish and shellfish live trap/hook-and-line
Alaska spawn-on-kelp empoundment
California salmon enhancement rearing pen
Oregon shrimp trawl
Alaska octopus/squid purse seine
Alaska octopus/squid handline
Alaska octopus/squid longline
Alaska octopus/squid other gear

Fisheries Removed From the LOF

The following fisheries have been removed from the proposed LOF:

Northern Washington coastal (area 4 and 4A) salmon set gillnet. This fishery has been removed from the proposed LOF, because it is a fishery conducted by a Northwest Treaty Tribe. The provisions of 50 CFR part 229, including the LOF, do not apply to Northwest treaty Indian tribal members exercising treaty fishing rights.

Washington coastal river set gillnet. This fishery has been removed from the proposed LOF, because it is a fishery conducted by a Northwest Treaty Tribe. The provisions of part 229, including the LOF, do not apply to Northwest treaty Indian tribal members exercising treaty fishing rights.

Washington tribal ranch. This fishery has been removed from the proposed LOF, because it is a fishery conducted by a Northwest Treaty Tribe. The provisions of part 229, including the LOF, do not apply to Northwest treaty Indian tribal members exercising treaty fishing rights.

Washington Puget Sound region and inland waters south of the U.S.-Canada border, including the Strait of Juan de Fuca, Hood Canal and estuaries and lower river areas (subject to tidal action) set and drift gillnet. The name of this fishery has been modified from the name in the 1994 LOF in order to exclude set gillnet gear and commercial steelhead fishing since these fisheries are conducted only by treaty Indian fishers. The provisions of part 229, including the LOF, do not apply to Northwest treaty Indian tribal members exercising treaty fishing rights.

California Klamath River gill net. This fishery is proposed for removal from the LOF, because no commercial fishing has been conducted in recent years.

Washington, Oregon Upper Columbia River Basin (above Bonneville Dam) salmon and other finfish gillnet. This fishery is proposed to be removed from the LOF, because no marine mammals are expected to be encountered.

Other fisheries. There are many fisheries in Category III that were not mentioned above. Because no additional information is available that warrants reclassification for these fisheries, they are proposed to remain in Category III.

Commercial Fisheries in the Atlantic Ocean and the Gulf of Mexico

Category I

Atlantic Ocean, Caribbean, Gulf of Mexico swordfish, tuna, shark pair trawl. This fishery was classified based on observer data. This fishery is proposed to be placed in Category I, because the annual estimated take of common dolphins (an average of 1992 and 1993 data was used) is equal to the PBR for this stock (PBR = 33). In addition, the annual estimated take of the offshore stock of bottlenose dolphin (79 animals) is 95 percent of PBR (83).

Atlantic Ocean, Caribbean, Gulf of Mexico swordfish, tuna, shark drift gill net. This fishery was classified based on observer data. This fishery was placed in Category I, because the annual estimated takes of common dolphins (424 animals), pilot whales (61 animals), spotted dolphins (23 animals), right whales (1 animal) and sperm whales (1 animal) exceed the PBRs for these stocks.

New England multispecies sink gill net. This fishery is directed primarily towards species covered by the Multispecies Fishery Management Plan and spiny dogfish. It was classified based on observer data. This fishery is proposed to remain in Category I, because the annual estimated take of harbor porpoise (an average of 1,300 animals for 1992 and 1993; average of 1,875 animals for 1990–93) exceeds the PBR for this stock (403 animals).

Gulf of Maine small pelagics. This fishery has been directed towards small pelagics including mackerel and herring, primarily for bait. Although there has been little or no effort in this fishery in recent years, this fishery is proposed to be retained in Category I, because there is no information currently available to place this fishery in a different category.

Atlantic Ocean, Caribbean, Gulf of Mexico tuna, shark, swordfish longline. This fishery was classified based on observer data. In 1994, this fishery was classified in Category II based on the classification system in section 114. Based on the proposed fishery classification criteria, this fishery is proposed to be placed in Category I, because the annual estimated take of pilot whales (26 animals) is at least 93 percent of the PBR (between 4 and 28 animals), an amount greater than the lower threshold for classification as a Category I fishery, this fishery is proposed to be placed in Category I.

Category II

U.S. Mid-Atlantic coastal gillnet. This fishery was categorized based on stranding information curated by the NMFS Northeast and Southeast Regions. The NMFS Northeast Fisheries Science Center has been focusing observer effort on this fishery from 1993 to the present but has not recorded any interactions. Classification of this fishery is based on the necropsy results of the harbor porpoise stranded in the mid-Atlantic in 1993–94. Of the 68 animals examined, 41 (59 percent) were in good enough condition to be evaluated as to whether or not they had been involved in a human interaction. Twenty-one of the 41 (51 percent) exhibited no signs of human interaction, and 19 (46 percent) were evaluated as having been involved in human interaction, based in each case on the presence of net marks. Therefore, approximately half of the stranded harbor porpoise in that area showed signs of having been involved in human interaction believed to be some kind of net gear. The average annual take of harbor porpoise in this fishery is then calculated at a minimum of ten animals, which is 2.5 percent of PBR. Because the annual take is between 1 percent and 50 percent of the PBR, this fishery is proposed to be placed in Category II.

U.S. South Atlantic shark gillnet fishery. Categorization of this fishery is based on a Category III report from a limited observer program. In 1992, one bottlenose dolphin was captured in this fishery. No takes were observed in 1993. This fishery is proposed to be placed in Category II, because the annual take of the Western North Atlantic coastal bottlenose dolphin averaged over 1992 and 1993 is between 1 percent and 50 percent of the PBR (25 animals).

Atlantic mid-water trawl fishery. This fishery is directed towards species included in the Atlantic Mackerel, Squid and Butterfish Fishery Management Plan and other species. This fishery is proposed to be renamed and would include the 1994 LOF descriptions "Mid-Atlantic squid trawl" and "Mid-Atlantic mackerel trawl". The fishery is renamed, because the gear type and probability for interactions is similar for these mid-water trawl fisheries.

Categorization of this fishery is based on logbook data. Observer data exist for this fishery but are not currently available. In 1994, this fishery was classified in Category III based on the section 114 classification system. Based on the proposed fishery classification criteria, this fishery is proposed to be placed in Category II, because the annual take of pilot whales is between 1 percent and 50 percent of the PBR.

North Carolina roe mullet stop net. Categorization of this fishery is based on stranding information and visual observations. This is a new fishery proposed to be added to the LOF; stop nets for other target species and in other locations are included under Category III. This fishery is proposed to be placed in Category II, because the take of bottlenose dolphins (3 animals per year since 1990) is between 1 percent and 50 percent of the PBR for this stock (25 animals).

North Carolina haul seine fishery—new fishery. This fishery has the potential to take harbor porpoise and U.S. western North Atlantic coastal bottlenose dolphins. Because it is a new fishery to the LOF, and because of the high probability of takes of the above two stocks, this fishery is proposed to be classified in Category II.

Gulf of Maine, U.S. mid-Atlantic menhaden purse seine. This fishery is categorized based on Category III reports. This fishery is proposed to be placed in Category II due to mortality and serious injury of western North Atlantic coastal bottlenose dolphins (1.75 animals per year) that is 6 percent of the PBR for that stock. Because western North Atlantic coastal bottlenose dolphins do not occur in the Gulf of Maine, it may be appropriate to separate this fishery into northern and southern components.

Category III

North Atlantic bottom trawl. This fishery targets species included in, but

not limited to, all species described in the Multispecies, Summer Flounder, and Scup and Sea Bass Fishery Management Plans. This fishery is renamed from the 1994 LOF designation "Gulf of Maine, Mid-Atlantic groundfish trawl" to include a specific list of species targeted. This fishery was classified based on observer data.

Six takes of marine mammals incidental to this fishery have been observed from 1989 to 1992. Three of the takes were marine mammals known or suspected to have been dead prior to being caught in the bottom trawl gear. Two takes of striped dolphin were observed in December 1991 along the continental shelf edge off Rhode Island in 50 fathoms of water. Extrapolation of these takes to the entire groundfish bottom trawl fishery generate an estimated mortality level of 45 animals which is 62 percent of this species' PBR. However, several complicating factors exist:

- The observed coverage in the Category III groundfish bottom trawl fishery is small (under 1 percent) and was designed to monitor fishery management related issues. Therefore, the coefficient of variation of the mortality estimate is very high and is derived from nonrandom observer effort.
- The known distribution of the striped dolphin is along the shelf edge from Georges Bank to Cape Hatteras and extends further south.
- Since the species only exists in a small portion of the area fished by North Atlantic Bottom Trawl gear, extrapolation of the observed mortality to the entire fishery produces a substantial overestimate of the total mortality.
- Fishing effort in this fishery will be reduced by 50 percent in 5 years under Amendment nos. 5 and 7 to the Fishery Management Plan for the Northeast Multispecies Fishery, which may be implemented as early as next year, may reduce effort by 80 percent in the first year of implementation.

The mortality estimates derived from two takes of striped dolphin over 4 years of less than 10 percent observer effort are statistically weak and, due to the marginal overlap of the fishery with this species distribution, likely to be an overestimate. The fishery is facing severe cutbacks in effort under ongoing and proposed Magnuson Act actions, further reducing the likelihood of interactions. Therefore, the fishery is proposed to remain in Category III.

U.S. Mid-Atlantic, U.S. South Atlantic, Gulf of Mexico shrimp trawl. Categorization of this fishery is based on observer data. There has been one observed serious injury or mortality in this fishery from 1979 to 1993. Because this is a low level of mortality, this fishery is proposed to be placed in Category III.

Finfish aquaculture. The name of this fishery is proposed to be changed from the 1994 LOF designation "Gulf of Maine Atlantic salmon" to broaden the definition to include other regions and species. Classification of this fishery is based on logbook data and the proposed reclassification due to the prohibition of intentional lethal takes. Incidental takes of harbor seals are less than 1 percent of the PBR. Thus, this fishery is proposed to be placed in Category III.

Shellfish aquaculture. This is a new fishery that is proposed to be added to the LOF. This fishery is classified by analogy to other aquaculture fisheries that have a remote likelihood of serious injury and mortality of marine mammals.

Gulf of Mexico inshore gillnet (black drum, sheepshead). This is a new fishery proposed to be added to the LOF. This fishery is classified by analogy to other inshore gillnet fisheries, specifically the inshore fisheries that occur in the U.S. mid-Atlantic.

U.S. mid-Atlantic hand seine. This is a new fishery proposed to be added to the LOF. This fishery is placed in Category III by analogy with other hand seine fisheries.

Offshore monkfish bottom gillnet. This is a new fishery that is proposed to be added to the LOF. This fishery involves a small number (under 50) of vessels operating along the shelf edge off Rhode Island. Because this fishery uses gear that is set very deep and a remote likelihood of serious injury and mortality of marine mammals is expected, it is proposed to be placed in Category III.

Georgia, South Carolina, Maryland whelk trawl. This fishery is renamed from the 1994 LOF designation "Georgia, South Carolina whelk trawl" to include the extended range of the fishery.

U.S. mid-Atlantic offshore surfclam and quahog dredge. This fishery is renamed from the 1994 LOF designation "Mid-Atlantic offshore clam" to include the dredge fishery for quahogs.

U.S. mid-Atlantic/Gulf of Mexico oyster. This fishery is renamed from the 1994 LOF designation "Mid-Atlantic oyster" to include the Gulf of Mexico oyster fishery.

U.S. mid-Atlantic mixed species stop/seine/weir (except the North Carolina roe mullet stop net). This fishery includes all fixed or staked net fisheries from Nantucket Sound to the Chesapeake Bay. One bottlenose dolphin was found entangled in a pound net lead during the five years of data collection under the Exemption Program. This occurred in a Chesapeake Bay fishery for which bycatch survey information has been available throughout the 5-year Exemption Program. Bycatch surveys are also carried out in other regions where this gear is used. Therefore, we believe that the remote possibility of marine mammal mortality and serious injury occurring in these fisheries is verifiable, and the fishery remain in Category III.

Gulf of Mexico menhaden purse seine. This fishery is proposed to be defined as separate from the U.S. South Atlantic menhaden purse seine fishery. This fishery is proposed to be placed in Category III based on an expectation of low levels of interaction with marine mammals.

U.S. South Atlantic menhaden purse seine. This fishery is proposed to be defined as separate from the Gulf of Mexico menhaden purse seine fishery. This fishery is proposed to be placed in Category III based on an expectation of low levels of interaction with marine mammals.

Proposed List of Fisheries

The following two tables list the commercial fisheries of the United States in their proposed categories. The estimated number of vessels is expressed in terms of the number of active participants in the fishery, when possible, and,as the estimated number of vessels or persons when information on the number of active participants is not available, these values have been updated from the 1994 LOF when possible. The information on which marine mammal species/stocks are involved in interactions with the fishery is based on observer data, logbook data, stranding reports, fisher's reports, and the 1994 LOF. If there is no information indicating which stocks of marine mammals might be involved in fishery interactions, analogy is used to provide a list of stocks with which interactions may occur, if appropriate. An asterisk (*) indicates that the stock is a strategic stock; a plus (+) indicates that the stock is listed as threatened or endangered under the ESA.

Pursuant to section 101(a)(5)(E), NMFS must determine which fisheries have a negligible impact on species or stocks of marine mammals that are listed under the ESA. NMFS is therefore specifically seeking public comments that address those fisheries in the proposed LOF (Tables 1 and 2) that interact with species or stocks of marine mammals listed under the ESA and the information on the magnitude of the

takes of such species or stocks found in the EA that accompanies this proposed rule.

TABLE 1.—PROPOSED LIST OF FISHERIES

[Commercial Fisheries in the Pacific Ocean]

Fishery description	Estimated No. of vessels/persons	Marine mammal species/stocks involved
Category I:		
CA angel shark/halibut and other species large mesh (>3.5in) set gillnet fishery	520	99, 109, 110, 138, 139, 142.
CA/OR/WA thresher shark/swordfish/blue shark (blue shark OR only) drift gillnet fishery	150	2*+, 92*+, 103, 104, 105, 107, 109, 110, 111, 113*, 117*, 142.
Category II:		
AK Prince William Sound salmon drift gillnet	509	1*+, 5, 19.
AK Peninsula/Aleutians salmon drift gillnet fishery	107	3*, 5, 6, 7, 19, 20, 154.
Southeast Alaska salmon drift gillnet fishery	443	2*+, 4, 18, 19, 20.
AK Cook Inlet drift gillnet	554	1*+, 5, 19, 20.
AK Yakutat salmon set gillnet	152	4, 7.
AK Cook Inlet salmon set gillnet	633	1*+, 5, 19, 20.
AK Peninsula/Aleutian Island salmon set gillnet	120	1*+, 19.
AK Kodiak salmon set gillnet	162	5, 19.
AK Bristol Bay drift gillnet	1,741	1*+, 3*, 6, 7, 8, 14, 18, 25.
AK Bristol Bay set gillnet	888	6, 14.
AK Metlakatla/Annette Island salmon drift gillnet	60	4, 19.
WA Puget Sound Region salmon drift gillnet fishery (includes all inland waters south of US-Canada border and eastward of the Bonilla-Tatoosh line—Treaty Indian fishing is excluded).	1,044	2*+, 103, 102, 138, 141.
CA anchovy, mackerel, tuna purse seine	150	107, 138, 139.
AK Southeast salmon purse seine	443	27*+, 19.
AK Bering Sea and Aleutian Islands groundfish trawl	490	1*+, 2*+, 3*, 17, 18, 19, 6, 7, 8, 9, 10, 20, 142, 155.
AK pair trawl	2	5, 6, 18, 20.
AK southern Bering Sea, Aleutian Islands, and Western Gulf of Alaska sablefish longline/set line (federally regulated waters).	226	16, 142.
OR swordfish/blue shark surface longline fishery	30	unknown.
Category III:		
AK Prince William Sound set gillnet	29	1*+, 19.
AK Kuskokwim, Yukon, Norton Sound, Kotzebue salmon gillnet	1,651	7, 12, 13, 14, 19.
AK roe herring and food/bait herring gillnet	162	19, 4, 5, 6.
WA, OR herring, smelt, shad, sturgeon, bottom fish, mullet, perch, rockfish gillnet	913	138, 140, 141.
WA Willapa Bay drift gillnet	82	2*+, 138, 141, 142.
WA Grays Harbor salmon drift gillnet (excluding treaty Tribal fishing)	24	2*+, 138, 141.
WA, OR lower Columbia River (includes tributaries) drift gillnet	40	2*+, 138, 140, 141.
CA set and drift gillnet fisheries that use a stretched mesh size of 3.5 in or less	341	2*+, 25, 99, 100, 103, 109, 110, 138, 139.
AK miscellaneous finfish set gillnet	9	1*+, 2*+, 19, 4, 5, 6.
Hawaii gillnet	115	145*+.
AK salmon purse seine (except Southeast Alaska, which is in Category II)	1,053	1*+, 2*+, 3, 19, 155.
AK salmon beach seine	34	1*+, 2*+, 4, 5, 6, 19.
AK roe herring and food/bait herring purse seine	866	1*+, 2*+, 4, 5, 6, 19.
AK roe herring and food/bait herring beach seine	14	1*+, 2*+, 4, 5, 6, 19.
AK octopus/squid purse seine	3	1*+, 2*+, 4, 5, 6, 19.
CA herring purse seine	100	106, 138, 139.
CA sardine purse seine	120	138.
CA squid purse seine	145	105, 113, 138.
CA squid dip net	115	113, 138.
WA, OR salmon net pens	21	2*+, 138, 140, 141.
OR salmon ranch	1	138, 141.
AK salmon troll	1,450	1*+, 2*+, 3*, 5, 6, 33*+.
CA/OR/WA salmon troll	4,300	2*+, 138, 139, 141.
AK north Pacific halibut, AK bottom fish, WA, OR, CA albacore, groundfish, bottom fish, CA halibut non-salmonid troll fisheries.	1,354	4, 5, 6, 139, 140, 141.
HI trolling, rod and reel	1,795	127, 131, 132.
Guam tuna troll	50	None documented.
Commonwealth of the Northern Mariana Islands tuna troll	50	None documented.
American Samoa tuna troll	<50	None documented.
AK miscellaneous finfish purse seine	6	1*+, 2*+, 4, 5, 6, 19.

TABLE 1.—PROPOSED LIST OF FISHERIES—Continued

[Commercial Fisheries in the Pacific Ocean]

Fishery description	Estimated No. of vessels/persons	Marine mammal species/stocks involved
AK miscellaneous finfish beach seine	4	1*+, 2*+, 4, 5, 6, 19.
WA salmon purse seine	440	103, 140, 141.
WA salmon reef net	53	140, 141.
WA, OR herring, smelt, squid purse seine or lampara	130	138, 140, 141.
WA (all species) beach seine or drag seine	235	None documented.
HI purse seine	18	None documented.
HI opelu/akule net	16	None documented.
HI throw net, cast net	47	None documented.
HI net unclassified	106	None documented.
AK state waters sablefish long line/set line	240	5, 6, 16, 142.
Miscellaneous finfish/groundfish longline/set line	838	5, 6, 142.
HI swordfish, tuna, billfish, mahi mahi, wahoo, oceanic sharks longline/set line	140	127, 131.
WA, OR North Pacific halibut longline/set line	5,364	16, 21*+.
AK halibut longline/set line (state and Federal waters)	213	1*+, 2*+, 5, 6, 26, 27, 142.
WA, OR, CA groundfish, bottomfish longline/set line	367	2*+, 18, 138, 139, 141.
AK octopus/squid longline	1	None documented.
CA shark/bonito longline/set line	10	138.
WA, OR, CA shrimp trawl	300	None documented.
AK shrimp otter trawl and beam trawl (statewide and Cook Inlet)	48	None documented.
AK Gulf of Alaska groundfish trawl	490	1*+, 2*+, 3*, 5, 7, 8, 9, 10, 16, 17, 20, 142.
AK state-managed waters of Cook Inlet, Kachemak Bay, Prince William Sound, Southeast AK groundfish trawl.	8	20.
AK miscellaneous finfish otter or beam trawl	324	None documented.
AK food/bait herring trawl	2	None documented.
WA, OR, CA groundfish trawl	585	1*+, 3*, 18, 103, 138, 139, 141.
AK crustacean pot	1,951	None documented.
AK Bering Sea, Gulf of Alaska finfish pot	226	5, 6, 155.
WA, OR, CA sablefish pot	176	139, 140, 141.
WA, OR, CA crab pot	1,478	25, 28, 139, 140, 141.
WA, OR shrimp pot & trap	254	None documented.
CA lobster, prawn, shrimp, rock crab, fish pot	608	None documented.
OR, CA hagfish pot or trap	25	None documented.
HI lobster trap	15	145*+.
HI crab trap	22	None documented.
HI fish trap	19	None documented.
HI shrimp trap	5	None documented.
AK North Pacific halibut handline and mechanical jig	84	None documented.
AK other finfish handline and mechanical jig	474	None documented.
AK octopus/squid handline	2	None documented.
WA groundfish, bottomfish jig	679	2*+, 138, 140, 141.
HI aku boat, pole and line	54	None documented.
HI inshore handline	650	132.
HI deep sea bottomfish	434	132, 145*+.
HI tuna	144	131, 132, 145*+.
Guam bottomfish	<50	None documented.
Commonwealth of the Northern Mariana Islands bottomfish	<50	None documented.
American Samoa bottomfish	<50	None documented.
WA, OR smelt, herring dip net	119	None documented.
CA swordfish harpoon	228	None documented.
AK Southeast Alaska herring food/bait pound net	7	None documented.
WA herring brush	1	None documented.
WA/OR/CA bait pens	13	25, 141.
Coastwide scallop dredge	106	None documented.
AK abalone	177	None documented.
AK dungeness crab	1	None documented.
AK herring spawn-on-kelp	306	2*+.
AK urchin and other fish/shellfish	127	None documented.
AK clam hand shovel	125	None documented.
AK clam mechanical/hydraulic fishery	3	None documented.
WA herring spawn-on-kelp	4	None documented.
WA/OR sea urchin, other clam, octopus, oyster, sea cucumber, scallop, ghost shrimp hand, dive, or mechanical collection.	637	None documented.
CA abalone	111	None documented.

TABLE 1.—PROPOSED LIST OF FISHERIES—Continued

[Commercial Fisheries in the Pacific Ocean]

Fishery description	Estimated No. of vessels/persons	Marine mammal species/stocks involved
CA sea urchin	583	None documented.
HI squiding, spear	267	None documented.
HI lobster diving	6	None documented.
HI coral diving	2	None documented.
HI handpick	135	None documented.
WA shellfish aquaculture	684	None documented.
WA, CA kelp	4	None documented.
HI fish pond	10	None documented.
AK, WA OR, CA commercial passenger fishing vessel	1,243	4, 5, 6, 138, 139, 140, 141.
AK octopus/squid "other"	19	None documented.
HI "other"	114	None documented.
AK Metlakatla purse seine	3	4, 19.
CA finfish and shellfish live trap/hook-and-line	93	None documented.
CA salmon enhancement rearing pen	>1	None documented.

TABLE 2.—PROPOSED LIST OF FISHERIES

[Commercial Fisheries in the Atlantic Ocean, Gulf of Mexico, and Caribbean]

Fishery description	Estimated No. of vessels/persons	Marine mammal species/stocks involved
Category I:		
Atlantic Ocean, Caribbean, Gulf of Mexico swordfish, tuna, shark pair trawl	7	49, 50*, 51*, 54*, 59*.
Atlantic Ocean, Caribbean, Gulf of Mexico swordfish, tuna, shark drift gillnet	75	33*+, 37, 38*, 49, 50*, 51*, 52, 54*, 57, 58, 59*.
New England multispecies sink gillnet	341	32*, 33*+, 36, 50*, 51*, 52, 61, 62.
Gulf of Maine small pelagics surface gillnet	133	33*+, 36, 52, 61*, 62, 63.
Atlantic Ocean, Caribbean, Gulf of Mexico tuna, shark, swordfish longline	830	33*+, 36, 50, 51, 54*.
Category II:		
U.S. mid-Atlantic coastal gillnet fishery	>655	33*+, 36, 60*, 61*.
U.S. South Atlantic shark gillnet fishery	10	60*.
Gulf of Maine, Mid-Atlantic menhaden purse seine	10	36, 60*.
Atlantic mid-water trawl	620	49, 50*, 51*, 52, 54*.
North Carolina haul seine	unknown	60*, 61*.
North Carolina roe mullet stop net	13	60*.
Category III:		
North Atlantic bottom trawl	1,052	50*, 51*, 52, 57, 60*.
Mid-Atlantic, U.S. South Atlantic, Gulf of Mexico shrimp trawl	>18,000	71, 72, 73, 74, 75, 76.
Finfish aquaculture	48	62, 63.
Shellfish aquaculture	unknown	None documented.
Rhode Island, southern Massachusetts (to Monomoy Island), and New York Bight (Raritan and Lower New York Bays) inshore gillnet.	32	33*+, 36, 60*, 61*.
Long Island Sound inshore gillnet	20	33*+, 36, 60*, 61*.
Delaware Bay inshore gillnet	60	33*+, 36, 60*, 61*.
North Carolina inshore gillnet	94	33*+, 36, 60*, 61*.
Gulf of Mexico inshore gillnet (black drum, sheepshead)	unknown	None documented.
Offshore monkfish bottom gillnet	<50	None documented.
Gulf of Maine northern shrimp trawl	320	None documented.
Gulf of Maine mackerel trawl	30	None documented.
Gulf of Maine, Mid-Atlantic sea scallop trawl	215	None documented.
Gulf of Maine, Southern North Atlantic, Gulf of Mexico coastal herring trawl	5	55, 56.
Mid-Atlantic mixed species trawl	>1,000	None documented.
Gulf of Mexico butterfish trawl	2	55, 56.
Georgia, South Carolina, Maryland whelk trawl	25	None documented.
Calico scallops trawl	200	None documented.
Bluefish, croaker, flounder trawl	550	None documented.
Crab trawl	400	None documented.
Gulf of Maine Atlantic herring purse seine	30	61*, 62, 63.
Gulf of Mexico menhaden purse seine	51	73, 74, 75, 76.
U.S. South Atlantic menhaden purse seine	51	60*.
Florida west coast sardine purse seine	16	73.

TABLE 2.—PROPOSED LIST OF FISHERIES—Continued

[Commercial Fisheries in the Atlantic Ocean, Gulf of Mexico, and Caribbean]

Fishery description	Estimated No. of vessels/persons	Marine mammal species/stocks involved
U.S. mid-Atlantic hand seine	> 250	None documented.
Gulf of Maine tub trawl groundfish bottom longline/hook-and-line	46	62, 63.
U.S. South Atlantic, Gulf of Mexico snapper-grouper and other reef fish bottom longline/hook-and-line	1,944	None documented.
U.S. South Atlantic, Gulf of Mexico shark bottom longline/hook-and-line	124	None documented.
Gulf of Maine, U.S. mid-Atlantic tuna, shark swordfish hook-and-line/harpoon	26,223	None documented.
U.S. South Atlantic, Gulf of Mexico & U.S. mid-Atlantic pelagic hook-and-line/harpoon	1,446	None documented.
Gulf of Maine, U.S. South Atlantic coastal shad, sturgeon gillnet	1,285	36, 61*.
U.S. South Atlantic, Gulf of Mexico coastal gillnet	4,000	73, 74, 75.
Florida east coast, Gulf of Mexico pelagics king and Spanish mackerel gillnet	271	71, 72, 73, 74, 75.
Florida mullet gillnet	unknown	None documented.
Gulf of Maine, U.S. mid-Atlantic mixed species trap/pot	100	33*+, 36, 61*, 62, 63.
U.S. mid-Atlantic black sea bass trap/pot	30	None documented.
U.S. mid-Atlantic eel trap/pot	>700	None documented.
Gulf of Maine, U.S. mid-Atlantic inshore lobster trap/pot	10,613	32*, 33*+, 36, 52, 62.
Gulf of Maine, U.S. mid-Atlantic offshore lobster trap/pot	2,902	None documented.
Atlantic Ocean, Gulf of Mexico blue crab trap/pot	20,500	73, 74, 75, 153+.
U.S. South Atlantic, Gulf of Mexico, Caribbean spiny lobster trap/pot	736	73, 74, 75, 153+.
Gulf of Maine herring and Atlantic mackerel stop seine/weir	50	32*, 33*+, 36, 61*, 62, 63.
U.S. mid-Atlantic mixed species stop/seine/weir (except the North Carolina roe mullet stop net)	500	None documented.
U.S. mid-Atlantic crab stop seine/weir	2,600	None documented.
Gulf of Maine, U.S. mid-Atlantic sea scallop dredge	233	33*+.
U.S. mid-Atlantic offshore surfclam and quahog dredge	100	None documented.
Gulf of Maine mussel	> 50	None documented.
U.S. mid-Atlantic/Gulf of Mexico oyster	7,000	None documented.
U.S. South Atlantic, Caribbean haul seine	150	None documented.
Caribbean beach seine	15	153+.
Gulf of Maine urchin dive, hand/mechanical collection	> 50	None documented.
Atlantic Ocean, Gulf of Mexico, Caribbean shellfish dive, hand/mechanical collection	20,000	None documented.

SPECIES AND STOCK CODES FOR MARINE MAMMALS OCCURRING IN U.S. WATERS

[Some, but not all stocks listed are taken in the course of commercial fishing operations]

Code	Common name	Stock designation
1	Steller sea lion	Western U.S.*
2	Steller sea lion	Eastern U.S.*
3	Northern fur seal.	North Pacific*
4	Harbor seal	Southeast Alaska.
5	Harbor seal	Gulf of Alaska.
6	Harbor seal	Bering Sea.
7	Spotted seal	Alaska.
8	Bearded seal	Alaska.
9	Ringed seal	Alaska.
10	Ribbon seal	Alaska.
11	Beluga	Beaufort Sea.
12	Beluga	Eastern Chukchi Sea.
13	Beluga	Norton Sound.
14	Beluga	Bristol Bay.
15	Beluga	Cook Inlet.
16	Killer whale	Alaska and Washington Inland Waters—Resident.

SPECIES AND STOCK CODES FOR MARINE MAMMALS OCCURRING IN U.S. WATERS—Continued

[Some, but not all stocks listed are taken in the course of commercial fishing operations]

Code	Common name	Stock designation
17	Killer whale	Alaska and Washington Inland Waters—Transient.
18	Pacific white-sided dolphin.	North Pacific.
19	Harbor porpoise.	Alaska.
20	Dall's porpoise	Alaska.
21	Sperm whale	Alaska*.
22	Baird's beaked whale.	Alaska.
23	Cuvier's beaked whale.	Alaska.
24	Stejnerger's beaked whale.	Alaska.
25	Gray whale	Eastern North Pacific.
26	Humpback whale.	Western North Pacific*.
27	Humpback whale.	Central North Pacific*.
28	Fin whale	N. Pacific*.
28	Minke whale	Alaska.

SPECIES AND STOCK CODES FOR MARINE MAMMALS OCCURRING IN U.S. WATERS—Continued

[Some, but not all stocks listed are taken in the course of commercial fishing operations]

Code	Common name	Stock designation
29	Northern right whale.	North Pacific*.
31	Bowhead whale.	Western Arctic Stock*.
32	North Atlantic right whale.	Western North Atlantic*.
33	Humpback whale.	Western North Atlantic*.
34	Fin whale	Western North Atlantic*.
35	Sei whale	Western North Atlantic*.
36	Minke whale	Canadian east coast.
37	Blue whale	Western North Atlantic*.
38	Sperm whale	Western North Atlantic*.
39	Dwarf sperm whale.	Western North Atlantic*.
40	Pygmy sperm whale.	Western North Atlantic*.
41	Killer whale	Western North Atlantic.
42	Pygmy killer whale.	Northern Gulf of Mexico.

SPECIES AND STOCK CODES FOR MARINE MAMMALS OCCURRING IN U.S. WATERS—Continued

[Some, but not all stocks listed are taken in the course of commercial fishing operations]

Code	Common name	Stock designation
43	Northern bottlenose whale.	Western North Atlantic.
44	Cuvier's beaked whale.	Western North Atlantic*.
45	True's beaked whale.	Western North Atlantic*.
46	Gervais' beaked whale.	Western North Atlantic*.
47	Blainville's beaked whale.	Western North Atlantic*.
48	Sowerby's beaked whale.	Western North Atlantic*.
49	Risso's dolphin	Western North Atlantic.
50	Pilot whale, long-finned.	Western North Atlantic*.
51	Pilot whale, short-finned.	Western North Atlantic*.
52	Atlantic white-sided dolphin.	Western North Atlantic.
53	White-beaked dolphin.	Western North Atlantic.
54	Common dolphin.	Western North Atlantic*.
55	Atlantic spotted dolphin.	Western North Atlantic*.
56	Pantropical spotted dolphin.	Western North Atlantic*.
57	Striped dolphin	Western North Atlantic.
58	Spinner dolphin	Western North Atlantic.
59	Bottlenose dolphin.	Mid-Atlantic offshore*.
60	Bottlenose dolphin.	Western North Atlantic Coastal*.
61	Harbor porpoise.	Gulf of Maine/Bay of Fundy*.
62	Harbor seal	Western North Atlantic.
63	Gray seal	Northwest North Atlantic.
64	Harp seal	Northwestern North Atlantic.
65	Hooded seal northwestern.	North Atlantic.
66	Sperm whale ..	Northern Gulf of Mexico*.
67	Bryde's whale .	Northern Gulf of Mexico.
68	Cuvier's beaked whale.	Northern Gulf of Mexico.
69	Blainville's beaked whale.	Northern Gulf of Mexico.
70	Gervais' beaked whale.	Northern Gulf of Mexico.
71	Bottlenose dolphin.	Gulf of Mexico Outer Continental Shelf.
72	Bottlenose dolphin.	Gulf of Mexico Continental Shelf Edge and Slope.
73	Bottlenose dolphin.	Western Gulf of Mexico Coastal.
74	Bottlenose dolphin.	Northern Gulf of Mexico Coastal.
75	Bottlenose dolphin.	Eastern Gulf of Mexico Coastal.
76	Bottlenose dolphin.	Gulf of Mexico Bay & Sound*.
77	Atlantic spotted dolphin.	Northern Gulf of Mexico.
78	Pantropical spotted dolphin.	Northern Gulf of Mexico.
79	Striped dolphin	Northern Gulf of Mexico.
80	Spinner dolphin	Northern Gulf of Mexico.
81	Rough-toothed dolphin.	Northern Gulf of Mexico.
82	Clymene dolphin.	Northern Gulf of Mexico.
83	Fraser's dolphin.	Northern Gulf of Mexico.
84	Killer whale	Northern Gulf of Mexico.
85	False Killer whale.	Northern Gulf of Mexico.
86	Pygmy killer whale.	Atlantic EEZ.
87	Dwarf sperm whale.	Northern Gulf of Mexico*.
88	Pygmy sperm whale.	Northern Gulf of Mexico*.
89	Melon-headed whale.	Northern Gulf of Mexico.
90	Risso's dolphin	Northern Gulf of Mexico.
91	Pilot whale, short-finned.	Northern Gulf of Mexico*.
92	Sperm whale ..	California to Washington*.
93	Humpback whale.	California/Mexico*.
94	Blue whale	California/Mexico*.
95	Fin whale	California to Washington*.
96	Brydes whale ..	Eastern Tropical Pacific.
97	Sei whale	Eastern North Pacific*.
98	Minke whale ...	California/Oregon/Washington.
99	Harbor porpoise.	Central California*.
100	Harbor porpoise.	Northern California.
101	Harbor porpoise.	Oregon/Washington coast.
102	Harbor porpoise.	Inland Washington.
103	Dall's porpoise	California/Oregon/Washington.
104	Pacific white sided dolphin.	California/Oregon/Washington.
105	Risso's dolphin	California/Oregon/Washington.
106	Bottlenose dolphin.	California coastal.
107	Bottlenose dolphin.	California/Oregon/Washington Offshore.
108	Striped dolphin	California.
109	Common dolphin, short-beaked.	California/Oregon/Washington.
110	Common dolphin, long-beaked.	California.
111	Northern right whale dolphin.	California/Oregon/Washington.
112	Killer whale	California/Oregon/Washington.
113	Pilot whale—short-finned.	California/Oregon/Washington*.
114	Baird's beaked whale.	California to Washington*.
115	Mesoplodont beaked whales.	California to Washington*.
116	Cuvier's beaked whale.	California/Oregon/Washington*.
117	Pygmy sperm whale.	California/Oregon/Washington*.
118	Dwarf sperm whale.	California/Oregon/Washington.
119	Brydes whale ..	Hawaii.
120	Blue whale	Hawaii*.
121	Fin whale	Hawaii*.
122	Pygmy killer whale.	Hawaii.
123	Pilot whale—short-finned.	Hawaii.
124	Risso's dolphin	Hawaii.
125	Killer whale	Hawaii.

SPECIES AND STOCK CODES FOR MARINE MAMMALS OCCURRING IN U.S. WATERS—Continued

[Some, but not all stocks listed are taken in the course of commercial fishing operations]

Code	Common name	Stock designation
126	Melon-headed whale.	Hawaii.
127	False killer whale.	Hawaii.
128	Pantropical spotted dolphin.	Hawaii.
129	Striped dolphin	Hawaii.
130	Spinner dolphin	Hawaii.
131	Rough-Toothed dolphin.	Hawaii.
132	Bottlenose dolphin.	Hawaii.
133	Pygmy sperm whale.	Hawaii.
134	Dwarf sperm whale.	Hawaii.
135	Sperm whale ..	Hawaii*.
136	Cuvier's beaked whale.	Hawaii.
137	Blainville's beaked whale.	Hawaii.
138	California sea lion.	U.S.
139	Harbor seal	California.
140	Harbor seal	Washington Inland waters.
141	Harbor seal	Oregon/Washington coast.
142	Northern elephant seal.	California breeding.
143	Guadalupe fur seal.	Mexico to California*.
144	Northern fur seal.	San Miguel Island.
145	Hawaiian monk seal.	Hawaii*.
146	Beaked whale, all stocks.	Pacific.
147	Harbor seal, all stocks.	Pacific.
148	Beaked whale, all stocks.	Atlantic.
149	Spotted dolphin, all stocks.	Atlantic.
150	Pilot whale, all stocks.	Atlantic.
151	Bottlenose dolphin, all stocks.	Gulf of Mexico.
152	Southern (Calif.) sea otter.	California*.
153	Florida manatee.	Florida*.
154	Walrus	Pacific.
155	Northern (Alaska) sea otter.	Pacific.

Take Reduction Plans

New section 118(f) of the MMPA requires NMFS to develop and implement take reduction plans designed to assist in the recovery or prevent the depletion of each strategic stock that interacts with a Category I or II fishery. NMFS may also develop and implement a take reduction plan for any other marine mammal stock that interacts with a Category I fishery that NMFS determines, after notice and opportunity for public comment, has a high level of mortality and serious injury across a number of such marine mammal stocks. Under these proposed regulations, a Category I fishery would be considered to have a high level of mortality and serious injury across a number of marine mammal stocks, if its annual incidental mortality and serious injury exceeds or equals 50 percent of two or more marine mammal stocks' PBRs.

As required by section 118(f)(2), the immediate goal of a take reduction plan is to reduce, within 6 months of its implementation, the incidental mortality or serious injury of marine mammals from commercial fishing operations to levels less than the PBR established for a stock under the SAR developed pursuant to section 117, and the long-term goal is to reduce, within 5 years of its implementation, the incidental mortality or serious injury of marine mammals from commercial fishing operations to insignificant levels approaching a zero mortality and serious injury rate, taking into account the economics of the fishery, the availability of existing technology, and existing state or regional fishery management plans. Failure of a plan to meet these goals may result in a revision of the plan and implementation of regulations necessary to achieve these goals. Priority for development and implementation of these plans will be accorded to stocks whose level of incidental mortality and serious injury exceeds the PBR, those that have a small population size, and those that are declining rapidly.

Each take reduction plan is required by section 118(f)(4) of the MMPA to include a review of information in the final SAR and any substantial new information. In addition, each plan is required to include recommended regulatory or voluntary measures for the reduction of incidental mortality and serious injury and recommended dates for achieving the specific objectives of the plan. Regulations implementing take reduction plans may: (1) Establish fishery-specific limits on incidental mortality and serious injury of marine mammals in commercial fisheries or restrict commercial fisheries by time or area; (2) require the use of alternative fishing gear or techniques and new technologies, encourage the development of such gear or technology, or convene skipper's panels; and (3) provide for monitoring of the effectiveness of measures taken to reduce the level of incidental mortality and serious injury of marine mammals. Plans would not necessarily include each of these types of measures, rather they would be flexible and designed to address specific problems.

Section 118(f)(6) requires NMFS to establish a take reduction team to develop a draft take reduction plan within 30 days after the publication of a final SAR for a strategic stock. These teams will consist of a balance of representatives of the fishing industry and non-resource user interests. Section 118(f)(6) of the MMPA requires that members represent a diversity of interests including those of Federal agencies, appropriate states and regional fishery management councils, interstate fishery commissions, academic and scientific organizations, environmental groups, all commercial and recreational fisheries groups and gear types which take the species or stock, Alaska Native organizations or Indian tribal organizations, and others as NMFS deems appropriate. By including all interested parties on take reduction teams, a fair and reasonable plan designed to reduce incidental takes of marine mammals during commercial fishing operations should be developed. Take reduction team meetings will be open to the public.

Within 6 months after establishment of the take reduction teams for strategic stocks that interact with Category I or II fisheries and where mortality exceeds PBR, the team must submit a draft take reduction plan for such stock to NMFS. NMFS must take the draft plan into consideration and must publish in the **Federal Register**, for public review and comment, the plan proposed by the team, any changes proposed by NMFS, the rationale for such changes, and proposed regulations to implement such a plan. NMFS must issue a final take reduction plan and implementing regulations within 60 days after the close of the comment period.

Emergency Regulations

New section 118(g) of the MMPA provides NMFS with authority to issue emergency regulations to reduce incidental mortality and serious injury of marine mammals if the incidental mortality and serious injury of marine mammals from commercial fisheries is having, or is likely to have, an immediate and significant adverse impact on a stock or species. Emergency regulations can apply to Category I, II,

or III fisheries. This emergency authority will be used only when no alternative is available to prevent an immediate and significant adverse impact. In the case of a marine mammal population for which a take reduction plan, developed under subpart B, is in effect, section 118(g)(1)(A) requires that the emergency regulations be to reduce incidental mortality and serious injury consistent with the plan, to the maximum extent practicable and that, NMFS, concurrently, approve and implement, on an expedited basis, any amendments to such plan that are recommended by the take reduction team to address such adverse impact.

In the case of a marine mammal population for which a take reduction plan is being prepared, section 118(g)(1)(B) requires NMFS to approve and implement the plan on an expedited basis, which would provide methods to address such adverse impact if still necessary.

In the case of a marine mammal population for which a take reduction plan does not exist, or is not being developed, or in the case of a Category III fishery that NMFS believes may be contributing to such adverse impact, section 118(g)(1)(C) requires NMFS to immediately review the SAR for such population and the classification of such commercial fishery to determine if a take reduction team should be established.

As required by section 118(g)(2) of the MMPA, NMFS must consult with the regional fishery management councils, state fishery agencies, and treaty Indian tribal governments, where appropriate, before taking any emergency action. Emergency actions must, to the maximum extent practicable, avoid interfering with existing regional, state, or tribal fishery management or conservation programs, and must be as brief in duration and nonintrusive as possible. Emergency actions could include, but would not necessarily be limited to: Quotas on the number of marine mammals that may be taken; restrictions on the time, manner and location where the fishery may operate; and prohibitions on the use of fishing techniques or gear which are found to cause excessive marine mammal injuries or mortalities. Emergency regulations would expire at the end of the applicable commercial fishing season or at the end of 180 days, whichever is earlier. However, they could be extended for an additional 90-day period, if needed to address a continuing threat. If NMFS finds that the incidental morality and serious injury is not having an immediate and significant adverse impact over a period of time longer than 1 year, NMFS would develop and implement a take reduction plan under proposed § 229.14 instead of prescribing emergency regulations.

Takes of Listed Marine Mammals

Section 101(a)(5)(E) was added to the MMPA in 1994 to authorize NMFS to issue permits to commercial fishing vessels of the United States allowing for up to 3 years, incidental takes of marine mammals listed as threatened species or endangered species under the ESA. A permit may be issued only if NMFS determines that the total incidental mortality and serious injury from commercial fisheries would have a negligible impact on the species or stock (proposed § 229.2), and that a recovery plan has been, or is in the process of being, developed for that stock under the ESA. Furthermore, any applicable requirements of section 118 (e.g., registration, monitoring, and take reduction plans) must also be met before NMFS could authorize the incidental taking of listed marine mammals by any Category I or II fishery. NMFS will publish a list identifying the Category I, II and III fisheries for which such determinations were made. However, only Category I and II vessels require permits under section 101(a)(5)(E); vessels fishing in either a Category I or II fishery must receive authorizations under both section 118 and section 101(a)(5)(E) in order to legally engage in the incidental taking of listed marine mammals.

Vessels in Category III fisheries that are not required to register under section 118 but which are included in the list published pursuant to section 101(a)(5)(E) will not be subject to the penalties of the MMPA for the incidental taking of marine mammals that are listed as endangered or threatened species under the ESA, as long as the vessel owner or operator of such vessel, in accordance with the requirements of proposed § 229.6, reports any incidental mortality or injury within 48 hours of the end of the fishing trip where the incidental taking occurred.

The MMPA states that after opportunity for public comment, NMFS must determine which fisheries that have interaction with ESA-listed marine mammals have a negligible impact on those stocks. NMFS must then publish a list of those fisheries for which such a determination has been made. Because the proposed LOF (Tables 1 and 2 in this rule) specifies which fisheries have interactions with species or stocks listed under the ESA, and because the associated Environmental Assessment provides the data on which a negligible determination will be made, NMFS is now requesting public comment specifically regarding this issue; such comments will be considered and a final list of those fisheries for which takes have been determined to be negligible will be published in the **Federal Register.**

The section 101(a)(5)(E) authorization in the MMPA to incidentally take marine mammals listed under the ESA will include appropriate terms and conditions made necessary by the associated ESA section 7 consultation. These conditions and restrictions may include actions to reduce the incidental taking or may prohibit any taking of an endangered or threatened species.

NMFS may issue permits under section 101(a)(5)(E) of the MMPA to an identifiable group of vessels, rather than to individuals when possible. Whenever possible, NMFS will issue permits issued under section 101(a)(5)(E) of the MMPA simultaneously with authorizations under section 118 in order not to delay fishing activities. Thus, fishers will not have to apply for a permit under section 101(a)(5)(E). When the level of incidental taking is more than negligible, NMFS may modify, suspend, or revoke such permits. In cases where an individual fisher has a record of excessive incidental takes, NMFS may revoke the permit from that fisher and not from the entire group of vessels in the fishery. For fisheries that have incidental takes of more than one ESA-listed stock, a permit under section 101(a)(5)(E) may be issued to authorize the takes of one stock but not necessarily other stocks.

Penalties

Except as otherwise provided, violations of section 118, the implementing regulations, Authorization Certificates, or permits issued to fishers authorizing the incidental taking of listed marine mammals during commercial fishing operations would subject vessel owners and fishers to the penalties provided in the MMPA and in NOAA regulations governing administrative procedures for the assessment of penalties (15 CFR part 904).

In addition, as noted above, Certificates may be revoked, suspended, or denied for violations of the MMPA, the regulations, take reduction plans, permits issued to fishers to authorize the incidental taking of listed marine mammals during commercial fishing operations, or emergency regulations issued under this part 229. For fishers operating in Category I or II fisheries, failure to report all incidental injuries and mortalities within 48 hours of the

end of the fishing trip during which such taking occurred, will result in suspension or revocation of an Authorization Certificate until such requirements have been fulfilled. For fisheries operating in Category III fisheries, failure to report all incidental injuries and mortalities within 48 hours of the end of the fishing trip during which such taking occurred, will subject such persons to the full penalties of the Act.

An owner of a vessel engaged in a Category I or II fishery who fails to obtain from the NMFS an authorization for such vessel under this section, or fails to maintain a current and valid authorization for such vessel will be deemed to have violated this part and will be subject to the penalties of sections 105, 106, and 107 of the MMPA. An owner of a vessel engaged in a Category I or II fishery who fails to ensure that a decal or other physical evidence of such authorization issued by NMFS is displayed on or is in possession of the operator of the vessel, will be deemed to have violated this part and will be subject to a fine of not more than $100 for each offense.

Owners or operators of vessels or nonvessel fisheries that fail to comply with a take reduction plan or implementing regulations issued under subpart C of this part will be subject to the penalties in sections 105 and 107 of the Act, and may be subject to the penalties of section 106 of the Act.

Classification

This action 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 Small Business Administration that this proposed rule, if adopted, would not have a significant economic impact on a substantial number of small entities since it would establish a process for issuance of authorizations for the incidental taking of marine mammals while conducting commercial fishing in waters of the U.S. exclusive economic zone. Without these authorizations, the taking of marine mammals would be prohibited and fishers could be subject to fines when takings occur in the course of commercial fishing operations. The payment of a fee set to recover the costs of certificate issuance would be required to obtain an Authorization Certificate. While the amount of such fee has not yet been determined, it would cost no more than approximately $30. Approximately 20,000 fishers are currently required to register under the old interim exemption regime and pay a similar fee. This number is not expected to increase under the new regime.

This proposed rule does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under E.O. 12612.

This proposed rule contains collection-of-information requirements subject to the provisions of the Paperwork Reduction Act. Although these collections have been approved previously by OMB under OMB control numbers 0648–0224 and 0648–0225, because of new collection requirements for commercial fishing in § 229.6 and slightly modified registration requirements under § 229.4, these collection requirements are being resubmitted to OMB for review and approval.

The average reporting burden for these collections is estimated to be approximately 0.25 hours for each of approximately 13,000 fishers to register each year and 0.17 hours for each report of marine mammal injury or mortality. Because fishers would be required to submit a report for each occurrence of marine mammal injury or mortality, there may be multiple reports required per fisher.

Send comments regarding these burden estimates or any other aspect of these collection of information requirements, including suggestions for reducing the burden, to the Chief, Marine Mammals Division, Office of Protected Resources, and to the Office of Information and Regulatory Affairs, OMB (see ADDRESSES).

National Environmental Policy Act

The Assistant Administrator for Fisheries, NOAA (AA) has determined, based upon an EA prepared under the National Environmental Policy Act, that implementation of these regulations would not have a significant impact on the human environment. As a result of this determination, an environmental impact statement is not required. A copy of the EA is available upon request (see ADDRESSES).

List of Subjects

50 CFR Part 216

Administrative practice and procedure, Imports, Indians, Marine Mammals, Penalties, Reporting and recordkeeping requirements, Transportation

50 CFR Part 229

Administrative practice and procedure, Confidential business information, Fisheries, Marine mammals, Reporting and recordkeeping requirements.

Dated: June 13, 1995.

Gary Matlock,

Acting Assistant Administrator for Fisheries, National Marine Fisheries Service.

For reasons set out in the preamble, 50 CFR parts 216 and 229 are proposed to be amended as follows:

PART 216—REGULATIONS GOVERNING THE TAKING AND IMPORTING OF MARINE MAMMALS

1. The authority citation for part 216 continues to read as follows:

Authority: 16 U.S.C. 1361 *et seq.*, unless otherwise noted.

2. Section 216.24 is amended by removing the phrase, under the Note to § 216.24: "for the period from June 17, 1994, through September 1, 1995".

3. Part 229 is revised to read as follows:

PART 229—AUTHORIZATION FOR COMMERCIAL FISHERIES UNDER THE MARINE MAMMAL PROTECTION ACT OF 1972

Subpart A—General Provisions

Authority: 16 U.S.C. 1361 et seq., unless otherwise noted.

Subpart A—General Provisions

§ 229.1 Purpose and scope.

(a) The regulations in this part implement sections 101(a)(5)(E) and 118 of the Marine Mammal Protection Act of 1972, as amended (16 U.S.C. 1371(a)(5)(E) and 1387) that provide exceptions from the Act's moratorium on the taking of marine mammals incidental to certain commercial fishing operations.

(b) Section 118 of the Act, rather than sections 103 and 104, governs the incidental taking of marine mammals in the course of commercial fishing operations by persons using vessels of the United States, other than vessels fishing for yellowfin tuna in the eastern tropical Pacific Ocean purse seine fishery, and vessels that have valid fishing permits issued in accordance with section 204(b) of the Magnuson Fishery Conservation and Management Act (16 U.S.C. 1824(b)).

(c) The regulations of this part also govern the incidental taking by commercial fishers of marine mammals from species or stocks designated under the Act as depleted on the basis of their listing as threatened species or endangered species under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.).

(d) The regulations of this part do not apply to the incidental taking of California sea otters or to Northwest treaty Indian tribal members exercising treaty fishing rights.

(e) Authorizations under subpart A of this part are exemptions only from the taking prohibitions under the Act and not those under the Endangered Species Act of 1973. To be exempt from the taking prohibitions under the Endangered Species Act, specific authorization under subpart B of this part is required.

(f) Authorizations under this part do not apply to the intentional lethal taking of marine mammals in the course of commercial fishing operations.

(g) The purpose of the regulations in this part is to reduce the incidental mortality or serious injury of marine mammals occurring in the course of commercial fishing operations to insignificant levels approaching a zero mortality and serious injury rate by the statutory deadline of April 30, 2001.

§ 229.2 Definitions.

In addition to the definitions contained in the Act and § 216.3 of this chapter, and unless the context otherwise requires, in this part 229:

Act or *MMPA* means the Marine Mammal Protection Act of 1972, as amended (16 U.S.C. 1361 *et seq.*).

Authorization Certificate means a document issued by the Assistant Administrator, or designee, under the authority of section 118 of the Act that authorizes the incidental, but not intentional, taking of marine mammals in Category I or II fisheries.

Category I fishery means a commercial fishery determined by the Assistant Administrator to have frequent incidental mortality and serious injury of marine mammals. A commercial fishery that frequently causes mortality or serious injury of marine mammals is one that is by itself responsible for the annual removal of 50 percent or more of any stock's potential biological removal level.

Category II fishery means a commercial fishery determined by the Assistant Administrator to have occasional incidental mortality and serious injury of marine mammals. A commercial fishery that occasionally causes mortality or serious injury of marine mammals is one that, collectively with other fisheries, is responsible for the annual removal of more than 10 percent of any marine mammal stock's potential biological removal level and that is by itself responsible for the annual removal of between 1 and 50 percent, exclusive, of any stock's potential biological removal level. In the absence of information indicating the frequency of incidental mortality and serious injury of marine mammals by a commercial fishery, the Assistant Administrator will determine whether the taking is "occasional" by analogy or, if an analogy is not possible, the Assistant Administrator may, after public notice and opportunity for public comment regarding a fishery's incidental mortality and serious injury on a stock of marine mammals, place that fishery in Category II. Eligible commercial fisheries not specifically identified in the list of fisheries are deemed to be Category II fisheries until the next annual list of fisheries is published.

Category III fishery means a commercial fishery determined by the Assistant Administrator to have a remote likelihood of, or no known incidental mortality and serious injury of marine mammals. A commercial fishery that has a remote likelihood of causing incidental mortality and serious injury of marine mammals is one that collectively with other fisheries is responsible for the annual removal of:

(1) 10 percent or less of any marine mammal stock's potential biological removal level, or

(2) More than 10 percent of any marine mammal stock's potential biological removal level, yet that fishery by itself is responsible for the annual removal of 1 percent or less of that stock's potential biological removal level. In the absence of information indicating the frequency of incidental mortality and serious injury of marine mammals by a commercial fishery, the Assistant Administrator will determine whether the taking is "remote" by analogy or, if an analogy is not possible, the Assistant Administrator may, after public notice and opportunity for public comment regarding a fishery's incidental mortality and serious injury on a stock of marine mammals, place that fishery in Category III.

Commercial fishing operation means the catching, taking, or harvesting of fish from the marine environment (or other areas where marine mammals occur) that results in the sale or barter of all or part of the fish harvested. The term includes licensed commercial passenger fishing vessel (as defined in § 216.3 of this chapter) activities and aquaculture activities.

Depleted species means any species or population that has been designated as depleted under the Act and is listed in § 216.15 of this chapter or part 18, subpart E of this title, or any endangered or threatened species of marine mammal.

Fishery has the same meaning it does in section 3 of the Magnuson Fishery Conservation and Management Act (16 U.S.C. 1802).

Fishing trip means any time spent away from port actively engaged in commercial fishing operations. The end of a fishing trip will be the time of a fishing vessel's return to port.

Fishing vessel or *vessel* means any vessel, boat, ship, or other craft that is used for, equipped to be used for, or of a type normally used for, fishing.

Incidental, but not intentional, take means the non-intentional or accidental taking of a marine mammal that results from, but is not the purpose of, carrying out an otherwise lawful action.

Incidental mortality means the non-intentional or accidental death of a marine mammal that results from, but is not the purpose of, carrying out an otherwise lawful action.

Injury means a wound or other physical harm. Signs of injury to a marine mammal include, but are not limited to visible blood flow, loss of or damage to an appendage or jaw, inability to use one or more appendages, asymmetry in the shape of the body or body position, noticeable swelling or hemorrhage, laceration, puncture or rupture of eyeball, listless appearance or inability to defend itself, inability to swim or dive upon release from fishing gear, or signs of equilibrium imbalance. Any animal that ingests fishing gear or requires assistance to escape from entanglement in fishing gear will be considered injured regardless of the absence of any wound or other evidence of an injury.

Interaction means coming in contact with. An interaction may be characterized by a marine mammal entangled, hooked, or otherwise trapped in fishing gear, regardless of whether injury or mortality occur, or situations

where marine mammals are preying on catch. Catch means fish or shellfish that has been hooked, entangled, snagged, trapped or otherwise captured by commercial fishing gear.

List of Fisheries means the most recent final list of commercial fisheries published in the **Federal Register** by the Assistant Administrator, categorized according to the likelihood of incidental mortality and serious injury of marine mammals during commercial fishing operations.

Minimum population estimate means an estimate of the number of animals in a stock that:

(1) Is based on the best available scientific information on abundance, incorporating the precision and variability associated with such information; and

(2) Provides reasonable assurance that the stock size is equal to or greater than the estimate.

NMFS means the National Marine Fisheries Service.

Negligible impact has the same meaning as in § 228.3 of this chapter.

Net productivity rate means the annual per capita rate of increase in a stock resulting from additions due to reproduction, less losses due to mortality.

Nonvessel fishery means a commercial fishing operation that uses fixed or other gear without a vessel, such as gear used in set gillnet, trap, beach seine, weir, ranch, and pen fisheries.

Observer means an individual authorized by NMFS, or a designated contractor, to record information on marine mammal interactions, fishing operations, marine mammal life history information, and other scientific data, and collect biological specimens during commercial fishing activities.

Potential biological removal level means the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. The potential biological removal level is the product of the following factors:

(1) The minimum population estimate of the stock;

(2) One-half the maximum theoretical or estimated net productivity rate of the stock at a small population size; and

(3) A recovery factor of between 0.1 and 1.0.

Regional Fishery Management Council means a regional fishery management council established under section 302 of the Magnuson Fishery Conservation and Management Act.

Serious injury means any injury that will likely result in mortality.

Strategic stock means a marine mammal stock:

(1) For which the level of direct human-caused mortality exceeds the potential biological removal level;

(2) Which, based on the best available scientific information, is declining and is likely to be listed as a threatened species under the Endangered Species Act of 1973 within the foreseeable future;

(3) Which is listed as a threatened species or endangered species under the Endangered Species Act of 1973; or

(4) Which is designated as depleted under the Marine Mammal Protection Act of 1972, as amended.

Take Reduction Plan means a plan developed to reduce the incidental mortality and serious injury of marine mammals during commercial fishing operations in accordance with section 118 of the Marine Mammal Protection Act of 1972, as amended.

Take Reduction Team means a team established to review methods of reducing the incidental mortality and serious injury of marine mammals due to commercial fishing operations, in accordance with section 118 of the Marine Mammal Protection Act of 1972, as amended.

Vessel owner or operator means the owner or operator of:

(1) A fishing vessel that engages in a commercial fishing operation; or

(2) Fixed or other commercial fishing gear that is used in a nonvessel fishery.

Vessel of the United States has the same meaning it does in section 3 of the Magnuson Fishery Conservation and Management Act (16 U.S.C. 1802).

Zero mortality rate goal is the reduction of the annual number of incidental mortalities and serious injuries in each fishery to insignificant levels approaching a zero mortality and serious injury rate. A fishery will have reached this goal when it is responsible for, collectively with other fisheries, the annual removal of:

(1) 10 percent or less of any marine mammal stock's potential biological removal level, or

(2) more than 10 percent of any marine mammal stock's potential biological removal level, but that fishery by itself is responsible for the annual removal of 1 percent or less of that stock's potential biological removal level and does not seriously injure or kill species listed as endangered or threatened under the Endangered Species Act or depleted under the MMPA. In addition, those fisheries that kill or seriously injure declining, depleted, threatened, or endangered stocks of marine mammals would have to be examined separately to determine that the incidental take is insignificant.

§ 229.3 Prohibitions.

(a) It is prohibited to take any marine mammal incidental to commercial fishing operations except as otherwise provided in part 216 of this chapter or in this part 229.

(b) It is prohibited to assault, harm, harass (including sexually harass), oppose, impede, intimidate, impair, or in any way influence or interfere with an observer. This prohibition includes, but is not limited to, any action that interferes with an observer's responsibilities, or that creates an intimidating, hostile, or offensive environment.

(c) It is prohibited to provide false information when registering for an Authorization Certificate, applying for renewal of the Authorization Certificate, reporting the taking of any marine mammal, or providing information to any observer.

(d) It is prohibited to tamper with or destroy observer equipment in any way.

(e) It is prohibited to intentionally lethally take any marine mammal in the course of commercial fishing operations unless imminently necessary in self-defense or to save the life of a person in immediate danger, and such taking is reported in accordance with the requirements of § 229.6.

(f) It is prohibited to willfully discard any fishing gear at sea, in whole or in part.

(g) It is prohibited to violate any regulation in this part.

§ 229.4 Requirements for Category I and II fisheries.

(a) *General.* For a vessel owner or crew members to lawfully incidentally take marine mammals in the course of commercial fishing operations in a Category I or II fishery, the owner or authorized representative of a fishing vessel or non vessel fishing gear must annually register for and receive an Authorization Certificate. The granting and administration of authorizations under this part 229 may be integrated and coordinated with existing fishery license, registration, or permit systems and related programs, wherever possible. These programs may include, but are not limited to, state or interjurisdictional fisheries programs. If the administration of authorizations is integrated into an existing program, NMFS will publish a notice in the **Federal Register** of where to register and efforts will be made to contact affected fishers via other appropriate means of notification.

(b) *Required information.* Owners of vessels or, for nonvessel fisheries, gear, must submit the following information when registering for an Authorization Certificate:

(1) Name, address, and phone number of owner;

(2) Name, address, and phone number of operator, if different from owner and if known, unless the name of the operator is not known or has not been established at the time the registration is submitted;

(3) Vessel name, length and home port; U.S. Coast Guard documentation number, or state registration number, state commercial vessel license number, and/or Tribal Permit number (as applicable);

(4) A list of all Category I and II fisheries in which the fisher will actively engage in during the calendar year;

(5) The approximate time, duration, and location of each such fishery operation, and the general type and nature of use of the fishing gear and techniques used; and

(6) A certification, signed and dated by the vessel owner or authorized representative, as follows: "I hereby certify that I am the owner of the vessel, that I have reviewed all information contained on this document, and that it is true and complete to the best of my knowledge."

(c) *Fee.* A check or money order made payable to NMFS in the amount specified in the notice of the final List of Fisheries must accompany each registration submitted to NMFS. The amount of this fee will be based on recovering the administrative costs incurred in granting an authorization. The Assistant Administrator may waive the fee requirement for good cause upon the recommendation of the Regional Director.

(d) *Address.* Unless the granting and administration of authorizations under part 229 is integrated and coordinated with existing fishery licenses, registrations, or related programs pursuant to (a) of this section, requests for registration forms and completed registration forms should be sent to one of the following NMFS Regional Offices:

(1) Alaska Region, NMFS, P.O. Box 21668, 709 West 9th Street, Juneau, AK 99802; telephone: 907–586–7235;

(2) Northwest Region, NMFS, 7600 Sand Point Way NE., Seattle, WA 98115–0070; telephone: 206–526–4353;

(3) Southwest Region, NMFS, 501 West Ocean Blvd., Suite 4200, Long Beach, CA 90802–4213; telephone: 310–980–4001;

(4) Northeast Region, NMFS, 1 Blackburn Drive, Gloucester, MA 01930; telephone: 508–281–9254; or

(5) Southeast Region, NMFS, 9721 Executive Center Drive North, St. Petersburg, FL 33702; telephone: 813–570–5301.

(e) *Issuance.* After receipt of a completed initial registration form and the required fee, NMFS will issue an Authorization Certificate and annual decal to the vessel owner. The Authorization Certificate will be renewed annually, and an annual decal issued, after receipt of an updated registration form, required fee, and statement (yes/no) regarding whether any marine mammals were incidentally killed or injured during the previous calendar year.

(f) *Authorization Certificate and decal requirements.* (1) The annual decal must be attached to the vessel on the port side of the cabin or, in the absence of a cabin, on the forward port side of the hull, and must be free of obstruction and in good condition. The decal must be attached to the Authorization Certificate for nonvessel fisheries.

(2) The Authorization Certificate, or a copy, must be on board the vessel while it is operating in a Category I or II fishery, or, in the case of nonvessel fisheries, the Authorization Certificate with decal attached, or copy must be in the possession of the person in charge of the fishing operation. The Authorization Certificate, or copy, must be made available upon request to any state or Federal enforcement agent authorized to enforce the Act, any designated agent of NMFS, or any contractor providing observer services to NMFS.

(3) Authorization Certificates and annual decals are not transferable. In the event of the sale or change in ownership of the vessel, the Authorization Certificate is void and the new owner must register for an Authorization Certificate and decal.

(4) An Authorization Certificate holder must notify the issuing office in writing:

(i) If the vessel or nonvessel fishing gear will engage in any Category I or II fishery not listed on the initial registration form at least 30 days prior to engaging in that fishery; and,

(ii) If there are any changes in the mailing address or vessel ownership within 30 days of such change.

(g) *Reporting.* Any Authorization Certificate holders must comply with the reporting requirements specified under § 229.6.

(h) *Disposition of marine mammals.* Any marine mammal incidentally taken must be immediately returned to the sea with a minimum of further injury, unless directed otherwise by NMFS personnel, a designated contractor or an official onboard observer, or by a scientific research permit that is in the possession of the operator.

(i) *Monitoring.* Authorization Certificate holders must comply with the observer or other monitoring requirements specified under § 229.7.

(j) *Deterrence.* When necessary to deter a marine mammal from damaging fishing gear, catch, or other private property, or from endangering personal safety, vessel owners and crew members engaged in a Category I or II fishery must comply with the guidelines for use in safely deterring marine mammals proposed at 60 FR 22345, May 5, 1995, § 216.29(c) of this chapter and are prohibited from using any deterrence measure proposed at FR 22345, May 5, 1995, § 216.29(d) of this chapter.

(k) *Self defense.* When imminently necessary in self-defense or to save the life of a person in immediate danger, a marine mammal may be lethally taken if such taking is reported to NMFS in accordance with the requirements of § 229.6.

(l) *Take reduction plans and emergency regulations.* Authorization Certificate holders must comply with any applicable take reduction plans and emergency regulations.

(m) *Expiration.* Authorization Certificates and annual decals expire at the end of each calendar year.

§ 229.5 Requirements for Category III fisheries.

(a) *General.* Vessel owners and crew members of such vessels engaged only in Category III fisheries may incidentally take marine mammals without registering for or receiving an Authorization Certificate.

(b) *Reporting.* Vessel owners engaged in a Category III fishery must comply with the reporting requirements specified in § 229.6.

(c) *Disposition of marine mammals.* Any marine mammal incidentally taken must be immediately returned to the sea with a minimum of further injury unless directed otherwise by NMFS personnel, a designated contractor, or an official onboard observer, or by a scientific research permit in the possession of the operator.

(d) *Monitoring.* Vessel owners engaged in a Category III fishery must comply with the observer requirements specified under § 229.7(f).

(e) *Deterrence.* When necessary to deter a marine mammal from damaging fishing gear, catch or other private property, or from endangering personal safety, vessel owners engaged in a

Category III fishery must comply with the guidelines for use in safely deterring marine mammals proposed at § 216.29(c) of this chapter and are prohibited from using any deterrence measure proposed at § 216.29(d) of this part.

(f) *Self-defense.* When imminently necessary in self-defense or to save the life of a person in immediate danger, a marine mammal may be lethally taken if such taking is reported to NMFS in accordance with the requirements of § 229.6.

(g) *Emergency regulations.* Vessel owners engaged in a Category III fishery must comply with any applicable emergency regulations.

§ 229.6 Reporting requirements.

(a) Vessel owners or operators engaged in any Category I, II, or III fishery must report all incidental mortality and injury of marine mammals in the course of commercial fishing operations to the Assistant Administrator, or appropriate Regional Office, by mail or other means, such as FAX or overnight mail specified by the Assistant Administrator. Reports must be sent within 48 hours after the end of each fishing trip during which the incidental mortality or injury occurred, or, for nonvessel fisheries, within 48 hours of an occurrence of an incidental mortality or serious injury. Reports must be submitted on a standard postage-paid form as provided by the Assistant Administrator. The vessel owner or operator must provide the following information on this form:

(1) The vessel name, and Federal, state, or tribal registration numbers of the registered vessel;

(2) The name and address of the vessel owner or operator;

(3) The name and description of the fishery, including gear type and target species; and

(4) The species and number of each marine mammal incidentally killed or injured, and the date, time, and approximate geographic location of such occurrence. A description of the animal(s) killed or injured must be provided if the species is unknown.

(b) Participants in nonvessel fisheries must include all of the information in paragraphs (a)(1) through (a)(4) of this section with the exception of the vessel name and registration number.

§ 229.7 Monitoring of incidental mortalities and serious injuries.

(a) *Purpose.* The Assistant Administrator will establish a program to monitor incidental mortality and serious injury of marine mammals during the course of commercial fishing operations in order to:

(1) Obtain statistically reliable estimates of incidental mortality and serious injury;

(2) Determine the reliability of reports of incidental mortality and injury under § 229.6; and

(3) Identify changes in fishing methods or technology that may increase or decrease incidental mortality and serious injury.

(b) *Observer program.* Pursuant to paragraph (a) of this section, the Assistant Administrator may place observers aboard Category I and II vessels as necessary. Observers may, among other tasks:

(1) Record incidental mortality and injury, or bycatch of other target species;

(2) Record numbers of marine mammals sighted; and

(3) Perform other scientific investigations, which may include, but are not limited to, sampling and photographing incidental mortalities and serious injuries.

(c) *Observer requirements for Authorization Certificate holders.* (1) If requested by NMFS or a designated contractor providing observer services to NMFS, an Authorization Certificate holder engaged in a Category I or II fishery must take aboard an observer to accompany the vessel on fishing trips.

(2) After being notified by NMFS, or by a designated contractor providing observer services to NMFS, that the vessel is required to carry an observer, the Authorization Certificate holder must comply with the notification by providing information requested within the specified time on scheduled or anticipated fishing trips.

(3) NMFS, or a designated contractor providing observer services to NMFS, may waive the observer requirement based on a finding that the facilities for housing the observer or for carrying out observer functions are so inadequate or unsafe that the health or safety of the observer or the safe operation of the vessel would be jeopardized.

(4) The Authorization Certificate holder and crew must cooperate with the observer in the performance of the observer's duties including:

(i) Providing adequate accommodations;

(ii) Allowing for the embarking and debarking of the observer as specified by NMFS personnel or designated contractors. The operator of a vessel must ensure that transfers of observers at sea are accomplished in a safe manner, via small boat or raft, during daylight hours if feasible as weather and sea conditions allow, and with the agreement of the observer involved;

(iii) Allowing the observer access to all areas of the vessel necessary to conduct observer duties;

(iv) Allowing the observer access to communications equipment and navigation equipment, when available on the vessel, as necessary to perform observer duties;

(v) Providing true vessel locations by latitude and longitude, accurate to the minute, or by loran coordinates, upon request by the observer;

(vi) Sampling marine mammal specimens, upon request by NMFS personnel;

(vii) Sampling, retaining and storing mammal specimens, upon request by NMFS personnel, designated contractors, or the onboard observer if adequate facilities are available and if feasible;

(viii) Notifying the observer in a timely fashion of when all commercial fishing operations are to begin and end;

(ix) Not impairing or in any way interfering with the research or observations being carried out; and

(x) Complying with other guidelines or regulations that NMFS may develop to ensure the effective deployment and use of observers.

(5) Marine mammals incidentally killed during fishing operations that are readily accessible to crew members must be brought aboard the vessel as biological specimens and retained for the purposes of scientific research if feasible and requested by NMFS personnel, designated contractors, or the aboard observer. Marine mammals so collected and retained as biological specimens must, upon request by NMFS personnel, designated contractors, or the aboard observer, be retained in cold storage aboard the vessel, if feasible, until removed at the request of NMFS personnel, designated contractors, or the aboard observer, retrieved by authorized personnel of NMFS, or released by the observer for return to the ocean. Such biological specimens may be transported on board the vessel during the fishing trip and back to port under this authorization.

(6) Any marine mammal incidentally taken may be retained only if authorized by NMFS personnel, designated contractors or an official onboard observer, or by a scientific research permit that is in the possession of the operator.

(d) *Observer requirements for Category III fisheries.* (1) The Assistant Administrator may place observers on Category III vessels if the Assistant Administrator:

(i) Believes that the incidental mortality and serious injury of marine mammals from such fishery may be

contributing to the immediate and significant adverse impact on a species or stock listed as a threatened species or endangered species under the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*); and

(ii) Has complied with § 229.9(a)(3)(i) and (ii); or

(iii) Has the consent of the vessel owner.

(2) If an observer is placed on a Category III vessel, the vessel owner must comply with the requirements of § 229.7(c).

(e) *Alternative observer program.* The Assistant Administrator may establish an alternative observer program to provide statistically reliable information on the species and number of marine mammals incidentally taken in the course of commercial fishing operations. The alternative observer program may include direct observation of fishing activities from vessels, airplanes, or points on shore.

§ 229.8 Publication of list of fisheries.

(a) The Assistant Administrator will publish in the **Federal Register** notice of a proposed revised List of Fisheries on or about July 1 of each year for the purpose of receiving public comment. Each year, on or about October 1, the Assistant Administrator will publish a final revised List of Fisheries, which will become effective January 1 of the next calendar year.

(b) The proposed and final revised List of Fisheries will:

(1) Categorize each commercial fishery based on the definitions for Category I, II, and III fisheries set forth in § 229.2; and

(2) List the marine mammals that interact with commercial fishing operations and the estimated number of vessels or persons involved in each commercial fishery.

(c) The Assistant Administrator may publish a revised List of Fisheries at other times, after notice and opportunity for public comment. The revised final List of Fisheries will become effective no sooner than 30 days after publication in the **Federal Register**.

§ 229.9 Emergency regulations.

(a) If the Assistant Administrator finds that the incidental mortality or serious injury of marine mammals from commercial fisheries is having, or is likely to have, an immediate and significant adverse impact on a stock or species, the Assistant Administrator will:

(1) In the case of a stock or species for which a take reduction plan is in effect,

(i) Prescribe emergency regulations that, consistent with such plan to the maximum extent practicable, reduce incidental mortality and serious injury in that fishery; and

(ii) Approve and implement on an expedited basis, any amendments to such plan that are recommended by the Take Reduction Team to address such adverse impact;

(2) In the case of a stock or species for which a take reduction plan is being developed,

(i) Prescribe emergency regulations to reduce such incidental mortality and serious injury in that fishery; and

(ii) Approve and implement, on an expedited basis, such plan, which will provide methods to address such adverse impact if still necessary;

(3) In the case of a stock or species for which a take reduction plan does not exist and is not being developed, or in the case of a Category III fishery that the Assistant Administrator believes may be contributing to such adverse impact,

(i) Prescribe emergency regulations to reduce such incidental mortality and serious injury in that fishery, to the extent necessary to mitigate such adverse impact;

(ii) Immediately review the stock assessment for such stock or species and the classification of such commercial fishery under this section to determine if a take reduction team should be established; and

(iii) Where necessary to address such adverse impact on a species or stock listed as a threatened species or endangered species under the Endangered Species Act (16 U.S.C. 1531 *et seq.*), place observers on vessels in a Category III fishery if the Assistant Administrator has reason to believe such vessels may be causing the incidental mortality and serious injury to marine mammals from such stock.

(b) Prior to taking any action under § 229.9(a)(1) through (3), the Assistant Administrator will consult with the Marine Mammal Commission, all appropriate Regional Fishery Management Councils, state fishery managers, and the appropriate take reduction team, if established.

(c) Any emergency regulations issued under this section:

(1) Will take effect immediately upon publication in the **Federal Register** and will remain in effect for no more than 180 days or until the end of the applicable commercial fishing season, whichever is earlier, except as provided in subsection (d); and

(2) May be terminated by notice in the **Federal Register** at an earlier date if the Assistant Administrator determines that the reasons for the emergency regulations no longer exist.

(d) If the Assistant Administrator finds that incidental mortality and serious injury of marine mammals in a commercial fishery is continuing to have an immediate and significant adverse impact on a stock or species, the Assistant Administrator may extend the emergency regulations for an additional period of not more than 90 days or until reasons for the emergency regulations no longer exist, whichever is earlier.

§ 229.10 Penalties.

(a) Except as provided for in paragraphs (b) and (c) of this section, any person who violates any regulation under this Part shall be subject to all penalties set forth in the Act.

(b) The owner or master of a vessel that fails to comply with a take reduction plan shall be subject to the penalties of sections 105 and 107 of the Act, and may be subject to the penalties of section 106 of the Act.

(c) The owner of a vessel engaged in a Category I or II fishery who fails to ensure that a decal, or other physical evidence of such authorization issued by NMFS, is displayed on, or is in possession of the operator of the vessel shall be subject to a penalty of not more than $100.

(d) Failure to comply with take reduction plans or emergency regulations issued under part 229 may result in suspension or revocation of an Authorization Certificate, and failure to comply with a take reduction plan is also subject to penalties of 105 and 107 of the Act, and may be subject to the penalties of section 106 of the Act.

(e) For fishers operating in Category I or II fisheries, failure to report all incidental injuries and mortalities within 48 hours of the end of each fishing trip, or to comply with requirements to carry an observer, will result in suspension, revocation, or denial of an Authorization Certificate until such requirements have been fulfilled.

(f) For fishers operating in Category III fisheries, failure to report all incidental injuries and mortalities within 48 hours of the end of each fishing trip will subject such persons to the full penalties of the Act.

(g) *Suspension, revocation or denial of Authorization Certificates.* (1) Until the Authorization Certificate holder complies with the regulations under this part, the Assistant Administrator shall suspend or revoke an Authorization Certificate or deny an annual renewal of an Authorization Certificate in accordance with the provisions in 15 CFR part 904 if the Authorization Certificate holder:

(i) Fails to report all incidental mortality and serious injury of marine mammals as required under § 229.6;

(ii) Fails to take aboard an observer, if requested by NMFS or its designated contractors.

(2) The Assistant Administrator may suspend or revoke an Authorization Certificate or deny an annual renewal of an Authorization Certificate in accordance with the provisions in 15 CFR part 904 if the Authorization Certificate holder fails to comply with any applicable take reduction plan, take reduction regulations, or emergency regulations developed under this subpart or subparts B and C of this part or if the Authorization Certificate holder fails to comply with other requirements of these regulations;

(3) A suspended Authorization Certificate may be reinstated at any time at the discretion of the Assistant Administrator provided the Assistant Administrator has determined that the reasons for the suspension no longer apply or corrective actions have been taken.

§ 229.11 Confidential fisheries data.

(a) Proprietary information collected under this part is confidential and includes information, the unauthorized disclosure of which could be prejudicial or harmful, such as information or data that are identifiable with an individual fisher. Proprietary information obtained under part 229 will not be disclosed, in accordance with NOAA Administrative Order 216–100, except:

(1) To Federal employees whose duties require access to such information;

(2) To state employees under an agreement with NMFS that prevents public disclosure of the identity or business of any person;

(3) When required by court order; or

(4) In the case of scientific information involving fisheries, to employees of Regional Fishery Management Councils who are responsible for fishery management plan development and monitoring.

(5) To other individuals or organizations authorized by the Assistant Administrator to analyze this information, so long as the confidentiality of individual fishers is not revealed.

(b) Information will be made available to the public in aggregate, summary, or other such form that does not disclose the identity or business of any person in accordance with NOAA Administrative Order 216–100. Aggregate or summary form means data structured so that the identity of the submitter cannot be determined either from the present release of the data or in combination with other releases.

§ 229.12 Consultation with the Secretary of the Interior.

The Assistant Administrator will consult with the Secretary of the Interior prior to taking actions or making determinations under this part that affect or relate to species or population stocks of marine mammals for which the Secretary of the Interior is responsible under the Act.

Subpart B—Takes of Endangered and Threatened Marine Mammals

§ 229.20 Issuance of Permits.

(a) *Determinations.* During a period of up to 3 consecutive years, NMFS will allow the incidental, but not the intentional, taking by persons using vessels of the United States or foreign vessels which have valid fishing permits issued by the Assistant Administrator in accordance with section 204(b) of the Magnuson Fishery Conservation and Management Act (16 U.S.C. 1824(b)), while engaging in commercial fishing operations, of marine mammals from a species or stock designated as depleted because of its listing as an endangered species or threatened species under the Endangered Species Act of 1973 if the Assistant Administrator determines that:

(1) The incidental mortality and serious injury from commercial fisheries will have a negligible impact on such species or stock;

(2) A recovery plan has been developed or is being developed for such species or stock pursuant to the Endangered Species Act of 1973; and

(3) Where required under regulations in subpart A of this part:

(i) A monitoring program has been established under § 229.7;

(ii) Vessels engaged in such fisheries are registered in accordance with § 229.4; and

(iii) A take reduction plan has been developed or is being developed for such species or stock in accordance with regulations at subpart C of this part.

(b) *Procedures for making determinations.* In making any of the determinations listed in paragraph (a) of this section, the Assistant Administrator will publish a notice in the **Federal Register** of fisheries having takes of marine mammals listed under the Endangered Species Act, including a summary of available information regarding the fisheries interactions with listed species. Any interested party may, within 45 days of such publication, submit to the Assistant Administrator written data or views with respect to the listed fisheries. As soon as practicable after the end of the 45 days following publication, NMFS will publish in the **Federal Register** a list of the fisheries for which the determinations listed in paragraph (a) of this section have been made. This publication will set forth a summary of the information used to make the determinations.

(c) *Issuance of authorization.* The Assistant Administrator will issue appropriate permits for vessels in fisheries that are required to register under § 229.4 for which determinations under the procedures of paragraph (b) of this section.

(d) *Category III fisheries.* Vessel owners engaged only in Category III fisheries for which determinations are made under the procedures of paragraph (b) of this section will not be subject to the penalties of this Act for the incidental taking of marine mammals to which this subpart applies, as long as the vessel owner or operator of such vessel reports any incidental mortality or injury of such marine mammals in accordance with the requirements of § 229.6.

(e) *Emergency authority.* During the course of the commercial fishing season, if the Assistant Administrator determines that the level of incidental mortality or serious injury from commercial fisheries for which such a determination was made under this section has resulted or is likely to result in an impact that is more than negligible on the endangered or threatened species or stock, the Assistant Administrator will use the emergency authority under § 229.9 to protect such species or stock, and may modify any permit granted under this paragraph as necessary.

(f) *Suspension, revocation, modification and amendment.* The Assistant Administrator may temporarily suspend or revoke a permit granted under this section if the Assistant Administrator determines that the conditions or limitations set forth in such permit are not being complied with. The Assistant Administrator may amend or modify, after notice and opportunity for public comment, the list of fisheries published in accordance with § 229.21(b) whenever the Assistant Administrator determines there has been a significant change in the information or conditions used to determine such a list.

(g) *Southern sea otters.* This subpart does not apply to the taking of Southern (California) sea otters.

Subpart C—Take Reduction Plan Regulations and Emergency Regulations [Reserved]

[FR Doc. 95–14828 Filed 6–15–95; 8:45 am]
BILLING CODE 3510–22–W

50 CFR Part 227

[Docket No. 950427119–5149–03; I.D.060195E]

RIN 0648–AH98

Sea Turtle Conservation: Restrictions Applicable to Shrimp Trawling Activities; Additional Turtle Excluder Device Requirements Within Certain Statistical Zones; Hearings

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; notice of hearings.

SUMMARY: NMFS is proposing to impose, for a 30-day period beginning with the reopening of the waters off Texas, additional restrictions on shrimp trawlers fishing in Gulf of Mexico offshore waters out to 10 nautical miles (nm)(18.5 km) from the COLREGS line, along a portion of the Texas coast, between the Texas-Louisiana border and the line along 27° N. lat. This area includes nearshore waters in shrimp fishery statistical Zones 18, 19, and 20 and the westernmost portion of Zone 17 east to Sabine Pass, TX. The restrictions would include prohibitions on the use by shrimp trawlers of soft turtle excluder devices (TEDs), bottom-opening TEDs, flaps completely covering the escape opening of TEDs, and try nets with a headrope length greater than 12 ft (3.6 m) or a footrope length greater than 15 ft (4.5 m), unless the try nets are equipped with approved TEDs other than soft or bottom-opening TEDs. These restrictions would prevent the reoccurrence of high levels of mortality and strandings of threatened and endangered sea turtles documented in Texas after the waters off Texas are reopened to shrimping.

DATES: Comments on this proposed rule must be submitted by July 3, 1995.

The hearings are scheduled as follows:

1. June 19, 1995, at 7 p.m., Galveston, TX
2. June 20, 1995, at 5 p.m., Rockport, TX

ADDRESSES: Comments on this proposed rule and requests for a copy of the environmental assessment (EA) or supplemental Biological Opinion prepared for this proposed rule should be addressed to the Chief, Endangered Species Division, Office of Protected Resources, NMFS, 1315 East-West Highway, Silver Spring, MD 20910.

The hearings will be held at the following locations:

1. Texas-Galveston County Court House, (Jury room, 1st floor), 722 Moody Street, Galveston, TX 77550
2. Texas-Aransas County Court House (Commissioners Courtroom), 301 North Live Oak Street, Rockport, TX 78382.

FOR FURTHER INFORMATION CONTACT: Charles A. Oravetz, 813–570–5312, FAX: 813–570–5300 or Russell J. Bellmer, 301–713–1401.

SUPPLEMENTARY INFORMATION:

Background

All sea turtles that occur in U.S. waters are listed as either endangered or threatened under the Endangered Species Act of 1973 (ESA). The Kemp's ridley (*Lepidochelys kempi*), leatherback (*Dermochelys coriacea*), and hawksbill (*Eretmochelys imbricata*) are listed as endangered. Loggerhead (*Caretta caretta*) and green (*Chelonia mydas*) turtles are listed as threatened, except for breeding populations of green turtles in Florida and on the Pacific coast of Mexico, which are listed as endangered.

The incidental take and mortality of sea turtles as a result of shrimp trawling activities have been documented in the Gulf of Mexico and along the Atlantic seaboard. Under the ESA and its implementing regulations, taking sea turtles is prohibited, with exceptions set forth at 50 CFR 227.72. The incidental taking of turtles during shrimp trawling in the Gulf and Atlantic Areas is excepted from the taking prohibition, if the sea turtle conservation measures specified in the sea turtle conservation regulations (50 CFR part 227, subpart D) are employed. The regulations require most shrimp trawlers operating in the Gulf of Mexico and Southeast U.S. Atlantic to have a NMFS-approved TED installed in each net rigged for fishing, year round.

Recent Events

On April 30, 1995 (60 FR 21741, May 3, 1995), the sea turtle conservation measures were revised, for a 30-day period expiring on May 30, 1995, for shrimp trawlers fishing in nearshore waters along two sections of the Texas and Louisiana coast (statistical Zones 18 and 20, and a portion of Zone 17) in order to ensure that ongoing shrimp fishing would not likely jeopardize the continued existence of listed species of sea turtles and that the incidental take level identified in the incidental take statement (ITS) accompanying the Biological Opinion issued November 14, 1994 (BO) on shrimp fishing would not be exceeded, which would require reinitiation of consultation pursuant to 50 CFR 402.16. The revisions were imposed as temporary additional restrictions pursuant to 50 CFR 227.72(e)(6). This provision states that such restrictions may be imposed upon the determination of the Assistant Administrator for Fisheries, NOAA (AA), that continued takings of sea turtles by shrimp fishing are unauthorized, because they would violate the restrictions, terms and conditions of the ITS issued with the BO or would likely jeopardize the continued existence of a listed species. The BO specifically requires that such restrictions be imposed immediately when sea turtle takings, indicated or documented, reach 75 percent of the established incidental take levels. The restrictions imposed were necessitated by the continued high rates of sea turtle strandings occurring along areas of the Texas coast, and were consistent with the BO and the NMFS Shrimp Fishery Emergency Response Plan (ERP).

The BO required the development of a plan to respond to elevated stranding levels. The ERP provides a general statement of policy with respect to NMFS' enforcement practice and use of future rulemaking in response to elevated sea turtle strandings associated with shrimping effort and ensures compliance with sea turtle conservation regulations. The ERP was signed by the AA on March 14, 1995, and was immediately distributed widely among industry and environmental groups. A notice of availability of the ERP was published in the Federal Register on April 21, 1995 (60 FR 19885), and comments are being accepted. In addition, NMFS distributes weekly reports of stranding events and notices of enforcement efforts and restrictions being implemented. NMFS is currently in the process of revising the ERP based on comments received.

A complete discussion of sea turtle strandings in Texas was contained in the temporary restrictions published on May 3, 1995 (60 FR 21741), and only a summary of strandings is provided here. For the 3 consecutive weeks from April 9 through April 29, strandings in Zone 18 were 12, 16, 6 turtles per week, respectively. The temporary restrictions went into effect on April 30, and strandings for the 2 consecutive weeks beginning April 30 through May 13 were 8, and 8 turtles per week, respectively. Forty of the 50 total turtles stranded during this 5-week period were Kemp's ridleys. Texas offshore waters