THE SOCIO-ECONOMIC RESPONSE OF COASTAL COMMUNITIES TO THE FISHERIES CONSERVATION AND MANAGEMENT ACT OF 1976

Public Law 94-265, April 13, 1976

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ABSTRACT

The Fisheries Conservation & Management Act (FCMA) is an important and wide-ranging law which in the coming years may significantly affect coastal communities in a variety of ways. The particular task of this study has been to define and establish the traditional social and economic patterns among fishermen; to analyze and discuss the possible ramifications of the FCMA upon these socio-economic patterns; and to make substantive policy recommendations based on our findings.

The geographic range of our research encompassed coastal towns lying between Newburyport, Ma. and Kittery, Me., inclusive. Traditional socio-economic patterns investigated included variables such as: the relative economic importance of fishing within every town; the age, education, and general socio-economic status of fishermen; and other factors such as primary and secondary social relationships, organizations, and socio-economic relations with larger society.

Our methodology consisted primarily of: 1) searches of previous literature and pertinent research materials; and 2) personal interviews with fishermen and others involved with the local fishing industry.

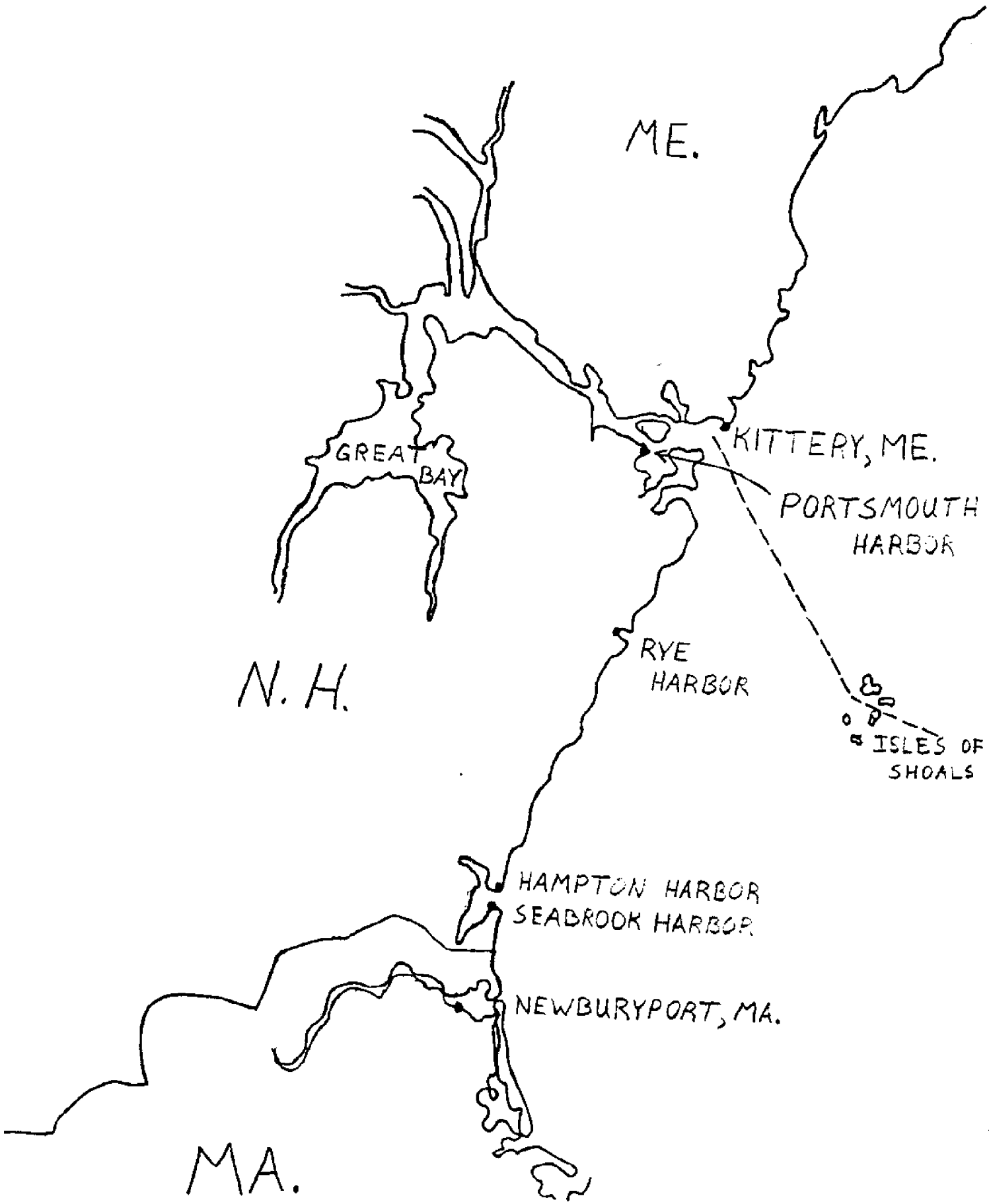
Our most significant findings follow. 1) There is an increase in economic competition and fishing effort diversification since the act has gone into effect. 2) The regulations are unenforcable, hence most fishermen are ignoring the regulations. Fishermen are highly skeptical of the biologist's findings and the New England Regional Fisheries Management Council's decisions, consequently there is a high degree of animosity toward governmental institutions. 3) Fishermen in the area studied have little socio-economic effect upon the communities in which they reside, and rarely interact in the social and political activities of their communities.

INTRODUCTION

Implementation of the Fisheries Conservation and Management Act of 1976 (PL-94-265) with its ensuing regulation of domestic fisheries has created many conflicts and problems within the U.S. Fishing Industry. The act has, without a doubt, revitalized the Industry. The great reduction of foreign fishing has allowed domestic fishermen a greater share of the fish catch. However, management of domestic fisheries (access limitations, catch limits, vessel limits and reporting requirements) has encountered stiff resistance from New England fishermen.

This paper attempts to address this issue several ways. 1) Establishing traditional socio-economic patterns and recent trends within the New Hampshire fishing industry will allow a greater understanding of fishermen's values, beliefs and practices, and of their relation to Governmental regulation and management. 2) Identifying the ramifications of the Act upon these patterns will enable us to generate substantive policy recommendations which should reduce these conflicts and aid in implementation of the act during its turbulent transition period.

It should be noted that lobstering is a more widespread activity than fishing in the New Hampshire coastal area. However, lobstering is not currently included in the management plan mandated by the act, and therefore is not the concern of this study.


ME.
GREAT BAY
KITTERY, ME.
PORTSMOUTH HARBOR
N. H.
RYE HARBOR
ISLES OF SHOALS
HAMPTON HARBOR
SEABROOK HARBOR
NEWBURYPORT, MA.
MA.

HISTORY OF FISHING IN THE N.H. COASTAL AREA

The coast of New Hampshire was discovered and explored during the early 1600s by the English and the French. The very first settlements - Panaway, on Ordiorne Point, Strawberry Banke, in Portsmouth, and Gossport, in the Isles of Shoals - were exclusively fishing communities. The other coastal communities which were occupied only a few years later - in the Seabrook, Hampton, and Rye areas - were primarily agricultural communities.

Seabrook and Hampton have similar fishing histories. The towns were settled in the 1630s by Puritans moving up the coast from the Plymouth-Boston area. Probably none of the early settlers were fishermen by trade. The first inhabitants were farmers. However, with an abundance of fish in the coastal waters, it is certain that many farmers fished part-time for supplemental food and income. During the 1700s there developed a small number of full-time fishermen; this trend continued during the century, growing in size and importance. For example, in the mid-1700s, the town of Hampton gave Sargents Island to the fishermen for their exclusive use.

The peak of prosperity for fishermen in the Seabrook-Hampton area was between 1840 to 1850, when 80 to 90 men were employed as full-time fishermen. These men caught hake, cod, haddock, some mackerel and halibut, and also did some whaling during the summer. However, fishing diminished during the next 20 years, then rapidly declined during the 1880s and 1890s. This was due to several social, economic, and technological changes, and poor fishery management in coastal waters. At this time, lobster became the dominant and most profitable catch in the area.

Rye, while going through similar development during the course of its history, has been more closely associated with fishing. Rye was originally

part of Portsmouth, and most of its first settlers were from Panaway, on Ordiorne Point. From the time of initial settlement in the 1630s, there was a greater balance between agriculture and fishing. There were a number of full-time fishermen and a majority of farmers fished part-time. Fishing peaked in the 1850s when approximately one quarter of the population was dependent upon fishing as a means of livelihood. However, during the latter part of the 19th century Rye's economy quickly became geared toward beach hotels, resorts and tourism. Fishing then declined, as it did in Hampton and Seabrook.

Gossport, on Star Island, in the Isles of Shoals is unique because it was a complete New Hampshire fishing community. A permanent settlement based solely on fishing was established early in the 1600s. During the 1700s, fish was often used as a monetary unit and standard of exchange. Most of the town's social and economic dealings with the mainland came through Rye. Gossport thrived and peaked in the late 1850s, with 30-35 vessels in the harbor. As in Rye, Seabrook, and Hampton, fishing declined in the 1860s - though it was not as drastic as on the mainland. In the early 1870s the townspeople sold the islands to John Poor, who planned an elaborate resort area. Most of its inhabitants moved to Portsmouth.

Members of the Panaway settlement who did not go to Rye, established Strawberry Banke, which in 1652, became Portsmouth. Portsmouth was, for a number of years, a fishing village. However, its location lent itself also to commerce. Therefore, during the 18th century Portsmouth became the social, economic, and cultural center of New Hampshire. According to historical journals, fishing activity peaked during the 1820s. Approximately 500 men, and 150-200 vessels were employed in fishing. From the 1830s until

1900, Portsmouth slowly declined in fishing activity and importance. It should also be noted that fishing in Portsmouth had, since the early 1700s, been overshadowed by trade, commerce, industry and the Navy Yard in terms of economic importance.

In 1900, Seabrook, Hampton and Rye were all in basically the same position: agriculture, tourism and a small fishing industry existed. In Portsmouth, industry and the Navy Yard were king, while a small fishing industry also existed. Fishing communities were cohesive, and the occupation passed through generations from father to son. Throughout World War I, the depression, and World War II, fishing in the area could be described as stagnant, remaining small but fairly consistent. Much effort was put into lobstering and inshore day fishing. During the war, fishermen enjoyed stable prices and markets. However, after the war the fishing industry found itself at the tail end of the general economic boom in the post-war U.S. economy. By the late 1960s aging equipment, industry stagnation, atrophy and overfishing - particularly by foreign fleets - brought about the situation which the FCMA seeks to redress.

Thus, the history of the New Hampshire coast shows fishing to have been initially an important, often vital, enterprise, peaking in importance during the 1840s and 1850s. It is interesting to note that the U.S. fishing industry as a whole had lost its European export market during the 1830s. Fishing then suffered a steady decline throughout the rest of the 19th century. Lobstering became an important resource, and by the 1960s, most fishing effort in New Hampshire was in lobstering, with the fishing industry reduced to no more than a handful of gillnetters and draggers.

Today Seabrook, Hampton and Rye could be catagorized as primarily

bedroom communities to industrial New Hampshire and Massachusetts areas. Tourism is also important, as is light industrial and commercial activity. Fishing and agriculture round out the picture. Portsmouth has become an industrial and commercial area. There is some tourism and related services, since it is the largest city in the seacoast area. Fishing remains small and relatively unimportant. Agriculture is gone, as the last remaining farm in Portsmouth was sold for an industrial park in 1978.

However, within the last five years, there has been a general upsurge in fishing activity on the New Hampshire coast. There are more vessels, and more men fishing full-time than there have been for upwards of 60 years. This shall be detailed further in the Physical Characteristics of New Hampshire Fishing section of this report.

HISTORY OF THE ACT

The signing of the Fisheries Conservation & Management Act (FCMA) by President Ford on April 13, 1976, was the culmination of years of effort by the fishing industry, Congress, and the governments of several nations.

The controversy surrounding sovereign rights to coastal waters began in the 1960s in response to the growing domination of international fisheries by a small number of nations. These nations, primarily Russia, Japan, Poland, East Germany and Portugal, were able to efficiently exploit coastal fisheries with the use of large autonomous fleets. Their large vessels could land, process and freeze their catch in a manner that far outstripped the capabilities of the fishermen who traditionally fished those waters.

The best example of this occurred on Georges Bank, off the coast of New England. This is considered one of the richest grounds in the world, and was the scene of an extensive and intensive fishing effort by large foreign fleets, leaving the native U.S. fishing industry in a severe economic depression.

The U.S. coastal waters were not the only targets of this trend; coastal nations around the world were being affected and international pressures to preserve and protect coastal waters grew. This was induced by an increase in territorial jurisdiction in the mid 60s, from the traditional three miles to twelve miles. National security was a prime consideration factor in the extension of coastal waters.

This international pressure was heightened by the prospect of world food shortages, which prompted the non-industrialized nations to seek total control of resources in their adjacent areas.

The United Nations, in response to this international outcry, proposed that a third Law of the Sea Conference be held to settle these problems in a unified and cohesive manner. This international convention was to consider the establishment of a twelve-mile limit for territorial waters, free passage of all ships through straits used for international shipping, settlement of problems related to fishing and the establishment of economic zones extending 200 miles out to sea, freedom of navigation and marine research, freedom of the open seas and prevention of pollution in the world's oceans.

The first convention, held in Caracas, Venzuela, ended in a virtual stalemate. Lines of conflict were drawn between two divergent forces.

1. The developed nations, including the U.S. and Russia wanted a limited 200-mile economic zone, allowing freedom of transit, freedom to conduct research and the right to fish for species not being utilized by the coastal state.

2. The undeveloped nations felt total control over a 200-mile limit was necessary because they lacked the technical knowledge of developed nations.

Second, and third conventions were held, but individual nations, including the U.S., became increasingly impatient and disillusioned with these world conferences. Those nations soon began to formulate and implement their own solutions.

In the U.S. the long-dormant fishing industry began to lobby effectively for protection from foreign fishing. The industry had been neglected and had little capital investment and low profits. It was considered by many to be a dying industry, unable to compete with foreign nations' super fleets.

Coinciding with the greatly increased foreign fishing effort (often visible from shore), public opinion began to favor the protection of our fishing industry, and the elimination of foreign competition. Domestic fishermen, who seldom agreed on anything except the weather, were united in their opposition to the foreigners. In June, 1974, northeastern fishermen staged a demonstration for their support of the 200-mile limit by converging en mass, in their fishing vessels, on Washington.

Congressional activity quickly followed the fishermen's demonstration. Congressman Gerry Studds (D-Mass) and Senator Warren Magnuson (D-Wash) led the fight to give the Federal Government increased power to control foreign fishing fleets. Studds and Magnuson co-sponsored a bill entitled, "Interim Fisheries Zone Extension and Management Act of 1973", which was proposed to serve during the interim until the third U.N. Law of the Sea Conference reached agreement. In 1974, the Senate passed this bill, but no action was taken in the House.

Opposition to these bills came from all sides. The State, Commerce, and Defense Departments and the White House agreed that a unilateral U.S. act would have a far-reaching negative impact on U.S. national security on the high seas, and on the U.S. Law of the Sea Conference which was still in progress. The tuna and shrimp industry, which frequently fish far from U.S. waters and feared retaliatory action by foreign nations, also opposed these bills.

The final act was, again, sponsored by Rep. Studds and Sen. Magnuson and was passed in the House on October 9, 1975, by a 2 to 1 margin. Action by the Senate was not taken until 1976, when on January 28 it voted to pass the bill. The principal reasons for the passage of the bill after several

attempts were: first, the inability of the U.N. conference to reach a consensus regarding international fishing rights; and second, the stipulation that the bill will expire when and if an international agreement is reached.

The act is broken down into four major titles. The following is a summary.

Title I - Fishing Zone

Established a fisheries conservation zone extending 200 nautical miles from the U.S. coast;

gave the U.S. exclusive rights to all fish except highly migratory species such as tuna;

beyond that zone, the nation's exclusive rights would extend to andronomous species - those that are spawned in fresh waters and then migrate to the ocean;

set March 1, 1977, as effective date for fishing in the 200-mile zone.

Title II - Fishing Agreement

Gave the Secretary of State three roles: 1) to begin negotiations with countries fishing off the U.S. coast to phase out or reduce fishing levels permitted by HR 200; 2) to negotiate arrangements with neighboring countries whose borders were within 200 miles of the U.S.; 3) to allocate access to under-fished species among foreign nations.

Agreed that the U.S. would not recognize the fishing zones of other nations which imposed on U.S. fishermen conditions unrelated to fish conservation.

Foreign Fishing

Limited by foreign vessels within zone to those species that U.S.

fishermen could not or would not fish;

Denied foreign vessels rights to fish in U.S. waters unless reciprocal rights were given to U.S. fishermen in their coastal waters;

Required that foreign vessels have valid permits issued by the Secretary of Commerce;

Prohibited imports of fish from those nations that barred U.S. ships from their waters.

Title III - Fishery Management Programs

Established eight regional fishery management councils to prepare plans and recommend management regulations to the Commerce Secretary to conserve fish resources for all U.S. coastal areas;

Directed each council to prepare a fishery management plan related to fishing seasons, access limitations, catch limits, vessel limits and reporting requirements;

Gave the Secretary of Commerce authority to approve the plans provided for judicial review of new fishing regulations contested within 30 days to promulgation;

Gave the Secretary emergency authority to save fish stocks that were endangered.

Enforcement

Empowered the Commerce Dept. and the Coast Guard to enforce the law;

Authorized enforcement personnel to board and inspect fishing vessels of any nation in the zone;

Authorized criminal penalties of up to $100,000 or one year in prison or both for each violation and a civil penalty of forfeiture of the fishing vessel and gear.

Title IV - Other Provisions, Authorizations

Authorized the Secretary of Commerce to initiate changes in the regulations if and when necessary to conform with a comprehensive treaty drawn up by the third U.N. Law of the Sea Conference;

Authorized through the Commerce Department expenditure of monies for administration of the law;

Budget requests for the Coast Guard were to be included in the annual Coast Guard authorization legislation.

NEW ENGLAND REGIONAL FISHERY
MANAGEMENT COUNCIL
FUNCTIONS

The New England Regional Fishery Management Council is an independent agency, created by Congress, to take responsibility for managing the fisheries in the 200-mile fisheries zone off the New England Coast from Maine to Connecticut.

There are 21 members on the regional council. Law requires that the members be, "knowledgeable or experienced in the conservation, management, or harvesting of marine fisheries." The Governors of each New England Coastal state submit three names to the Secretary of Commerce when vacancies arise. The Secretary then makes the final determination of appointment to the Council. Members serve three year terms.

The function of the New England Regional Fishery Management Council is to decide how the fisheries zone under their jurisdiction should be managed (i.e., how many fish should be taken, location of fishing effort, types of fish to be taken). Management plans are the vehicle used to determine this. A management plan describes the problems of the fishery and methods to be used in solving the problems. This plan then serves in formulating recommended regulations.

Public hearings are held and all regular Council meetings are open to the public. In addition, over 100 people - Industrial Advisors who are experts in fishing - advise the council on writing the plans and regulations.

The recommended regulations are sent to the Secretary of Commerce, who, through the National Marine Fisheries Service, makes final regulations. If the plan is disapproved, partially or completely, the plan goes back to the

Council for changes to meet the objections. If the Council, and the Secretary can't agree on a final plan, the Department of Commerce can put its own plan into effect. However, it cannot "establish any kind of limited entry system unless it is approved by a majority of voting members."

Presently cod, haddock, and yellowtail flounder are species which the New England Regional Fishery Management Council has regulated. Any fishermen, U.S. or foreign, commercial or recreational, who fishes between three miles and the 200-mile limit is affected by the management plan. The regulations of the management plan are not enforced by the management plan. The regulations of the management plan are not enforced by the Council, but by the National Marine Fisheries Service and the U.S. Coast Guard.

ASPECTS OF THE NH FISHING INDUSTRY

New Hampshire has four ports located along its 18 mile coastline. Though this is the shortest coastline of all the New England states, it has the highest fishing activity per mile of coastline. Despite this fishing intensity, the state has the second lowest revenue generated by the industry.[1]

It is difficult to determine the actual numbers of fishermen and boats actively contributing to the NH fishing effort because many part-time fishermen work only during certain times of the year. Many hold other jobs and pursue fishing only as a sideline.

The majority of NH fishermen have lobstered at one time or another during their careers. Currently there are 237 licensed lobstermen with more than 5 lobster pots, and 85 with less that 5 pots. Most work only part-time, from June to August. Some lobstermen have expanded their operations to include gillnetting.

There are about 20 boats in the state exclusively involved either full or part-time with gillnetting. These boats range in size from 38 to 55 ft. and fish mainly inshore. Due to the size of these boats, fishermen fish during the day and return to port every night.

In addition to gillnetters, five boats are involved exclusively in dragging. Boats of 55 to 70 ft. are employed in this type of fishing. Like gillnetters, they are day fishermen who usually return to port at night but sometimes remain out when weather permits. Rarely do vessels venture out further than 20 miles, fishing primarily in the Gulf of Maine around the Isles of Shoals and Jeffries Ledge.

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[1] Brownell. See Tables 1 & 2.

Table 1. 1977 Preliminary New Hampshire Landings.

Species	Pounds	$
Atlantic Mackeral	2,000	1,000
Cod	951,000	234,000
Cusk	17,000	3,000
Flounder		
Atlantic	242,000	79,000
Blackbacked	32,000	71,000
Yellowtail	84,000	31,000
Haddock	224,000	90,000
Halibut	3,000	3,000
Pollock	1,208,000	191,000
White Hake	360,000	54,000
Whiting	40,000	3,000
Lobster	475,000	807,000
Other	689,000	50,000
Total	4,327,000	1,617,000

Table 2. 1978 Preliminary New Hampshire Landings.

Species	Pounds	$
Atlantic Mackeral	3,000	1,000
Cod	1,180,000	283,000
Cusk	164,000	30,000
Flounder		
Atlantic	316,000	112,000
Blackbacked	40,000	14,000
Yellowtail	18,000	7,000
Haddock	340,000	111,000
Halibut	3,000	4,000
Pollock	1,510,000	242,000
White Hake	494,000	82,000
Whiting	60,000	5,000
Lobster	469,000	820,000
Other	265,000	39,000
Total	4,862,000	1,750,000

The species caught by gillnetters and draggers are, in order of importance, pollack, codfish, haddock and yellowtail flounder. There are incidental catches of other fishes such as whiting (silver hake), cusk and herring.

Portsmouth

Of the four New Hampshire seaports, the largest number of commercial and recreational vessels are moored in Portsmouth Harbor. There are ten commercial fishing vessels, most of which are small - none larger than 70 ft., that lobster, gillnet or drag. Cod, pollock, haddock and yellowtail flounder are the most actively pursued species. The total landings of species have increased since 1976 but landings per boat have decreased. This is a reflection of the number of boats fishing out of the harbor.

There are no party boats stationed in Portsmouth Harbor. However, there are a considerable number of recreational fishermen. The number of these private fishermen has been declining over the years. Some suggest it was partially due to the increase of gillnetters who are setting their nets in the inlets and bays, invading the traditional recreational fishermen. The number of these private fishermen has been declining over the years. Some suggest it was partially due to the increase of gillnetters who are setting their nets in the inlets and bays, invading the traditional recreational fisherman's fishing ground.

To meet the rising demand for moorings by both recreational and commercial boats, Portsmouth has built a new pier. This pier has attracted much interest in the commercial fishing sector - mainly for its potential to serve them.

Rye

The fishing done out of Rye Harbor is mainly gillnetting and lobstering. There are six gillnetters, with boats ranging from 38 ft. to 55 ft., thirty-one lobstermen (10 full-time) and three party boats.

The species fished are cod, pollock, haddock and flounder. Landings in Rye have significantly decreased since 1976. At that time landings were over one million pounds but have decreased significantly since then to half that total in 1978. It should be noted, however, that 1976 was a banner year with catch totals exceeding all pre-1976 and post-1976 amounts.

There are approximately twenty-five recreational fishermen in the harbor and many more launch from the public dock. There does not appear to be a conflict between commercial and recreational fishermen as there is in Portsmouth.

Hampton

Approximately 100 boats fish from Hampton Harbor, seven of which are party boats. Most operate on a seasonal basis. Despite these numbers, only four fishermen attempt a year-round operation, mainly because during the winter the harbor often freezes over.

Lobstering is the main commercial venture in Hampton. There is also some gillnetting and tub trawling. Boats range in size from 16 ft. skiffs to 42 ft. boats and they fish in varying intensity. Some of the 16 ft. skiffs fish 4-5 traps all summer. Other lobstermen fish a couple of hundred traps for the good months of the year and then pull their boats from the water when bad weather arrives in the fall. Several fishermen adapt their fishing methods to what is available and profitable at the

time - i.e., lobster when lobstering is good, gillnet or tub trawl when the groundfish are prolific and some even change to tuna fishing to capitalize on that industry.

Fish landings haven't changed noticeably since 1976. Mooring applications are on the rise but this doesn't guarantee an increase in fishing vessels because they are on a first come, first served basis.

As a result of pressure from the fishermen, the state built a 300' wall on the waterside, equipped with two electric winches for off-loading catches. Both Hampton and Seabrook fishermen use this wall to land their catches. This wall has its problems though - it isn't protected from the elements and on windy days, boats can be severely damaged trying to unload their catches.

Seabrook

Seventeen full-time commercial fishing boats in Seabrook harbor are engaged in lobstering, gillnetting and trawling. None of these boats is longer than 50 ft. Several of the boats are outfitted for multiple uses to take advantage of the different fishing types. Seabrook also has six party boats.

Total landings have increased since 1976, as they have in Portsmouth, while landings per boat have decreased. Mooring applications have also increased during this same time period. Both of these facts indicate that there are more commercial vessels fishing now than in 1976.

The channel into Seabrook and Hampton harbors is extremely shallow at low tide which limits the size of boats mooring in both harbors.

The majority of New Hampshire fish goes to the Boston market via a

broker located in southern Maine. Some fish, however, is sold in Newburyport, Gloucester and Portland. The existence of only two fresh fish markets in New Hampshire shows that very little fresh fish is sold in the state. These markets are both owned and supplied by New Hampshire fishermen.

Related Industries

Since the New Hampshire fishing industry is small, there are not many local support industries. There are, however, two which should be mentioned. T. G. Tobey Supply Co., located in Kittery, Maine, supplies southern Maine and many New Hampshire fishermen with gear and supplies. The other related industry is boatbuilding. Bruno & Stillman Yacht Co. in Newington, New Hampshire is a major producer of commercial fishing vessels in the area. Although many sales are outside the state, Bruno & Stillman does contribute boats to the New Hampshire fishing fleet.

METHODOLOGY

The particular tasks of this study are: to define and establish the traditional social and economic patterns among fishermen; to analyze and discuss the possible ramifications of the FCMA upon these socio-economic patterns; and to make substantive policy recommendations based on our findings.

Our general knowledge of the fishery was small. We needed to obtain a basic understanding of the fishery's problems and perspectives in an attempt to identify traditional patterns within the fishing industry. There is no literature specifically about the New Hampshire fishery. Most of the existent literature focuses on large centralized operations and extrapolating to the small decentralized New Hampshire fishing industry would be of limited validity.

Given those limitations, we approached the problem in two ways: first, by attending the monthly meetings of the New England Regional Fishery Management Council, which is responsible for the development and direction of the management plan. Secondly, through interviews with Robin Peters, a liasion between the fishermen and the New England Regional Management Council, Professor Acheson of the University of Maine and Dr. Emory Anderson of the National Marine Fisheries Service at Woods Hole, Ma. Peters provided insight to the approach of our study, which included fishermen's fears of the regulations, uncertainty in the industry, and what some effects of the FCMA might be. Acheson critiqued our draft survey questions and discussed interview strategies, research difficulties, and management problems of the FCMA. Anderson discussed the role of the biologist in stock assessments and biologists'

opinions on the management of the fisheries. This information gave us a framework on which to build our investigation.

We developed a research question to provide the structure around which our study could be developed. The research question is:

"What have been the ramifications of the FCMA upon the traditional socio-economic patterns of New Hampshire area fishermen?"

Operational definitions were assigned to the concepts used in the research question. They are:

Traditional: Order, code practice, etc.; accepted from the past; long established; conventional; more generally any belief, custom, way of life, etc. which has its roots in one's family or social past; an inherited culture, attitude, or the like.

Economic: The ways and means of fishing and of directly related industries in terms of labor, capital and renewable water resources.

Social: The non-economic networks that exist between fishermen; and secondarily, political, social, and economic interactions among fishermen and non-fishermen.

We then selected variables to act as indicators in answering the research question. These variables are:

Generations in the family
Length of time in the industry
Attitudes toward their children fishing
Years of education
Fishing as a desirable lifestyle
Independence
Competition
Territoriality
Conflicts among fishermen

Social solidarity
Income
Vessel type
Type of fishing effort
Diversification
Investment patterns
Days worked per year
Decision making processes
Political solidarity
Political influence
View of government
Attitudes toward the Coast Guard

The questions were designed to eliminate our bias. Questions that were condusive to time periods were put into categories of pre-act and post-act to indicate any effect due to the act. We addressed our questions to groups in their particular area of expertise (e.g., harbormasters about the physical aspects of the port, selectmen about the importance of fishing to the town, and the Coast Guard concerning enforcement). Questions were open ended, direct and either behavioral or attitudinal. Our primary source was fishermen and secondary sources were harbormasters, boatbuilders, the Coast Guard, fish markets, town selectmen, town historians, and biologists for the National Marine Fisheries Service.

A sample was then chosen and field work began. Our study area included Portsmouth, Rye, Hampton, and Seabrook, New Hampshire and Newburyport, Ma., and Kittery, Me. In New Hampshire we chose to interview the harbormaster, one selectman and the historian from each town. Only one historian was actually interviewed, however, because we found that historians lacked information about the New Hampshire fishery in the post World War II years and were of little use. Bruno & Stillman Yacht Co. of Newington was the boatbuilder that we interviewed. Our sample of fishermen was a convenience sample. A list of New Hampshire fishermen was secured from a private source, but this list was incomplete and dated, so dockside contacts were used to

supplement the list. Our goal was to survey the entire number of full-time commercial fishermen in New Hampshire. Only fishermen were interviewed in Newburyport, Ma. and Kittery, Me. These were dockside contacts with the objective of comparison analysis with the attitudes of New Hampshire fishermen.

We contacted 32 fishermen, and only one refused, giving us 31 valid interviews. Twenty-four of the 31 interviews were of New Hampshire fishermen on 20 boats. We estimate a total of 26 full-time fishing boats in New Hampshire. This figure is a composite of figures provided by the harbormasters, and the number of boats found through interviews of the fishermen. Our interviews covered 76% of New Hampshire's fishing fleet. This included 100% of the draggers (N=5) and 71% of the gillnetters (Total N-21). These figures closely correspond to the estimates provided by the Chief of Fisheries, New Hampshire Fish and Game Department. He estimated a total of 31 commercial fishermen with 6 draggers and 25 gillnetters. We also covered 38% (Total N=16) of the Newburyport, Ma. fishing boats (see Table 1).

Interviews were of three types: phone interviews (only one); interview by appointment; and dockside interviews. They were conducted by one or two group members. The interviewers also used two techniques. They were either structural, i.e., questions read from the survey with responses recorded immediately, or anthropological, i.e., a conversational interview with the responses recorded after the interview was completed. Both techniques appear to work equally well in gaining responses.

Table 3. Sample Size and Coverage of the New Hampshire Area Fishery.

Harbor	# of Boats Interviewed			# of Boats Known			% Interviewed to Known Boats			# of Interviews (includes crew)		
	Dragging	Gillnetting	Total	Dragging	Gillnetting	Total	Dragging	Gillnetting	Total	Dragging	Gillnetting	Total
Kittery, Me.	0	1	1	0	3	3	--	33%	33%	0	1	1
Portsmouth, N.H.	3	4	7	3	7	10	100%	57%	70%	5	5	10
Rye, N.H.	0	5	5	0	6	6	--	83%	83%	0	6	6
Hampton, N.H.	1	3	4	1	3	4	100%	100%	100%	1	3	4
Seabrook, N.H.	1	3	4	1	5	6	100%	60%	67%	1	3	4
Newburyport, Ma.	5	1	6	8	8	16	62%	12%	38%	5	1	6
Area Total	10	17	27	13	32	45	76%	53%	60%	12	19	31
N.H. Total	5	15	20	5	21	26	100%	71%	76%	7	17	24

We experienced difficulty in arranging interviews with the fishermen. Numerous telephone calls were often required before contact or an appointment was made. Dockside contacts were difficult due to the unpredictability of the fishermen's schedules. We were unable to interview several of the boats because of our inability of find the fishermen at home, the harbor, or their "hang-outs." Once contact was made, we were often required to establish a rapport with the fishermen to relieve their suspicions that we were from the IRS or some other governmental agency. Interviews generally averaged one hour in length. Several lasted more than two hours.

Several problems appeared during the field work. The first was difficulty the respondent had in understanding some questions. The second was that to, clarify responses, follow-up questions were needed for some questions in our structured survey.

Upon completion of the fieldwork, we began data analysis in order to address the research question. A coding scheme was designed and the data from the surveys were coded. Fishermen were analyzed from three directions: the "traditional" fishermen, i.e., fishing had been in the family one generation or longer; the "new" fishermen,i.e., fishing had never been in the family before; and the total sample. Frequencies were calculated for each variable of the data for the three samples. Since traditional socio-economic patterns for the New Hampshire area fishery have not been documented, we developed our own analysis that identifies these patterns. Fishermen who had inherited their occupation from a family member were used as our primary source of data to test variables for traditionality. Building upon this base, we compared the new fishermen with the traditional fishermen as well as with the whole sample, to identify traditional patterns, ramifications

of the FCMA on those patterns, and general trends and observations. Supplementary information provided by the interviews from other sources, e.g., selectmen, was woven into the analysis. The following discussion presents the results of our analysis.

TRADITIONAL PATTERNS & TRENDS

The Fisheries Conservation and Management Act of 1976 has had both positive and negative effects on the traditional patterns of fishermen as established by our research. We tested for traditional patterns, ramifications of the act upon these patterns, and general trends and observations. Results of our data analysis are discussed below.

The popular stereotype of the uneducated Yankee fisherman is false. The vast majority of traditional New Hampshire fishermen have at least a high school education. One quarter of these fishermen have completed college. First time fishermen, i.e., those who have not inherited fishing from a previous generation, are entering the industry with more years of schooling than their traditional peers. Sixty-six percent of the new fishermen have over 12 years of education, while 25% of the traditional fishermen have education levels above high school. This is significant because the median educational level in New Hampshire according to the 1970 U.S. Census was 12.1 years. The median educational level for all fishermen combined is 13.0 years. This indicates that fishermen, as a group, have a higher educational level than the general populace.

Two thirds of those interviewed, are fishing for the first time, with no previous history of fishing in their family. In addition, the majority of fishermen who have inherited the occupation, have done so from only one previous generation (70%). Therefore, the view that fishermen pass their occupation down from father to son for many generations is not consistant with our findings.

The major reason that fishermen have entered the industry is indicated as being the romantic lure of the ocean - i.e., enjoyment of the ocean,

boats, the atmosphere, sense of freedom, etc. Sixty percent of the traditional fishermen, and 63% of the first time fishermen identified that variable as a major factor in their decision to fish. The historical trend of the lure of the ocean then continues to be the primary factor in attracting persons into the industry. Once fishermen have entered the industry, they tend to remain in the occupation for many years. This also is a traditional pattern which is reinforced by the newer fishermen. Eighty percent of all traditional fishermen interviewed have fished ten or more years, while 52% of the first time fishermen have fished ten or more years. Whether or not this will change as a result of the Act remains to be seen.

In terms of fishermen's attitudes towards their children entering the industry, no traditional patterns were discernable, nor was there any trend among new fishermen. Opinion was split equally.

Fishing has historically been a demanding, but highly independent occupation. Because they are their own bosses, they are free to make their own decisions regarding all aspects of their business. Our findings indicate this to be both a traditional pattern and a trend which is continuing amongst newer fishermen. The Act has had an effect upon these patterns, and they will be discussed later.

Ninety-five percent of all fishermen interviewed outfit and maintain their own vessels. The majority of fishermen, own and operate their own vessels. In addition, most use wooden vessels and are reluctant to change from wood to fiberglass. Therefore, the historical pattern of wooden boats, and owner-operator, individually outfitted and maintained vessels is still strongly prevalent.

High degrees of competition among the fishermen has traditionally been absent. This is indicative of their social relations with one another, which can be characterized as social businessmen. This means that while on shore, they socialize together and spend much of their spare time on the docks. When out on the water fishing, they compete as businessmen, but they will immediately come to each others aid if necessary. Well over half of all traditional, and first time fishermen indicated that their relations with other fishermen are largely social.

Historically territoriality and conflicts among fishermen have also been absent. However, harbormasters and many fishermen indicated that traditionally there has been some conflict between commercial and recreational fishing.

Recently, some of these patterns have undergone change. With the implementation of the FCMA, a 200 mile fishing limit was established. This effectively eliminated foreign fishing efforts in the U.S. fisheries areas. As a result, there was great optimism amongst fishermen at the outset that a fishing bonanza would take place. Because of this feeling, competition has increased considerably.

The most significant increase has been in the number of gillnetters despite no additional moorings within the various ports. This indicated that a large number of fishermen, currently holding moorings, have diversified to include combinations of fishing efforts. Traditionally fishermen were noted to have only one area of fishing effort. Presently one quarter of the New Hampshire fishermen both gillnet and lobster and another quarter do other various combinations such as tuna handlining, herring, and trawling.

Three main reasons are apparent, especially for lobstermen, to diversify their fishing efforts. First, there has been a significant decline in lobster catches for this area in the past few years. Second, with the enactment of the 200-mile limit, foreign competition ceased and the opportunity arose for American fishermen to take advantage of the increased fish stocks. Finally, lobster boats can easily use gillnetting equipment. Traditionally, there has been no pattern of diversification and we can conclude this trend was developed due to the implementation of the quotas system of the FCMA.

Diversification has resulted in increased congestion and competition in areas commonly fished by gillnetters and recreational fishermen. Traditionally, as we stated earlier, there has been some conflict between the commercial and recreational fishermen but not to the same degree as today. Three-quarters of the fishermen responded that there has been a significant rise in the competition level since the FCMA went into effect. Recreational fishermen contend that gillnets, now placed in inlets and estuaries, have wiped out all their fish. Gillnetters also have some conflicts with draggers. These overcrowded fishing grounds have also pushed gillnetters nearer the trawlers territory causing gear conflicts.

According to over 75% of the fishermen, their decision about when to go to sea has traditionally been based on weather, environmental factors, and the state of repair of the boat, so that they fish as many days as possible. Since the FCMA has gone into effect an additional criterion has been added to the fishermen's decision. When closings of a species are enacted by the Regional Council, fishermen can either go out and fish another species or sit out until the closing is lifted. Fishermen need

to continue to fish as often as weather and other factors permit to keep their income flow constant. Twenty percent of the fishermen who said the FCMA has limited their fishing days make up for it by going out in worse weather and 40% said they fish less, some of whom take on other part-time jobs. The majority of the fishermen, 60%, continue to fish as they have done historically.

This leads to the problem of the by-catch regulation. Nets show no discrimination for fish caught and quite often fish that are closed are caught. It is against the law both to throw the fish back and to land them. Either way fish die. The majority admitted to bringing in some closed fish with the argument that it is extremely wasteful to throw them back, and the nets cannot discriminate between species in the first place. Many fishermen admit breaking the law, mainly by fishing over their quota, and feel guilty about their actions. The reasons for their unlawful actions are many and complicated. Whether these reasons are justified or not is a difficult question to address.

The Federal Government has determined that fishing grounds are a public resource and must be managed to provide for future generations. However, there is some question as to whether the means (regulations) justify the ends (abundant resources). The main problem seems to be one of differing opinions between the regulators and those being regulated in regards to stock assessments and associated regulations. The former group is made up of the Department of Commerce, NEFMC, NMFS, and members of the scientific community. The latter group is comprised of fishermen.

The main reason for these differing opinions is one of biological skepticism regarding stock assessments. Fishermen contest that the

fish stocks are in no danger of being depleted and reject the scientific view that fish stocks need to be managed. One quarter of the fishermen feel the fishing grounds are not depleted and another quarter feel the elimination of foreign vessels is all the management they need. Their belief is that their catches are of minor significance when compared to the foreign vessels. Therefore, their effort will not contribute very much to the depletion of the stocks.

This skepticism regarding the fishermen's impact on the stocks, coupled with doubts about the biologist's findings, is the basis for much of the controversy relating to the Act. Almost 80% of all fishermen feel that the regulations imposed on the industry aren't necessary to save the New England fishing grounds. The major reasons given for this feeling are that the stocks are not depleted, the U.S. fishing effort is small, and there is no large foreign competition problem. Consequently, there is a loss of respect for the regulations based on these questionable stock assessments. Several fishermen commented that since the regulations are wrong, it is not wrong to violate the regulations.

Violating the regulations brings the Coast Guard into the picture. This agency has traditionally had a good rapport with fishermen. Their image has always been one of search and rescue. Now however, the Coast Guard is often thought of as a search and seizure operation. More often than not, when they arrive on the scene it is for their enforcement duties under the Act. This infringement upon the freedom of the fishermen has strained relations between the two groups.

The government - including the NMFS and the NEFMC - appears to be a large opponent of many fishermen. As one fisherman stated, "We can't

compete against the government." This reflects fishermen's attitudes about their political influence. Over 70% of the fishermen felt they had no political influence whatsoever. Complimenting this is the fact that over one-half of all fishermen know of none of their peers in any political position - town, state or federal.

This lack of political influence has led to some frustration among the fishermen. They believe the "feds" are against the fishermen and have no consideration for them as a group. However, fishermen in this area have never been able to organize as a group or agree on many issues. Even now, only one-third of the fishermen agree on why they disagree with the FCMA and its regulations. There does seem to be a trend towards some group organization even though it is not pervasive among all fishermen.

CONCLUSIONS

In the small segment of the New England Coast addressed by this study, we have found that the economic and social contributions of fishing to coastal communities have been minor. Fishermen contribute little tax revenue, employment opportunities and tourist revenue to the towns. Also, very few industries related to fishing exist.

Although the importance of the industry is not large, and the impact of the FCMA on the communities is practically non-existent, the effects felt by individual fishermen are significant. Fishermen who have freely fished on the open seas are now faced with a myriad of government regulations. The repercussions of these regulations have not been fully realized by the fishermen nor by the officials implementing the regulations. However, it is clear that the tradition of fishing as we know it is undergoing change brought on by the regulations.

First, we must summarize the major traditional socio-economic patterns that were found to be prevalent among N.H. Coastal area fishermen. The lure of the ocean, and a high degree of independence have traditionally been the two major factors in attracting persons into the industry. Competition among fishermen has historically been low, while social solidarity, as a group, has been high. Politically, fishermen have traditionally been able to agree on a few issues, and have not involved themselves in the political process. Concurrent with this traditional pattern is the fact that fishermen have been either apathetic or antagonistic towards all levels of government and bureaucracy in general.

In terms of fishing effort, fishermen have traditionally used only

one type of gear in primarily owner-operated, wooden vessels. In addition, territorial conflicts have been absent.

Fishermen have traditionally fished as many days during the year as possible. Decisions to fish have historically been based upon the weather and other environmental factors.

A number of these traditional socio-economic patterns have been affected by the implementation of the FCMA. Our reserach indicates that there are five major ramifications of the Act upon traditional patterns. Fishermen feel that, due to the restrictions and regulations imposed upon them by the FCMA, they have experienced a general loss of job independence. Regulations are infringing upon the fishermen's right to decide when to fish. As a result of closures, many fishermen, in order to fish as many days as possible, are fishing in worse weather than they would have normally fished. Also, as a result of the Act, there has been a diversification of fishing effort both as an economic necessity, due to closures, and as an investment opportunity, as fishermen take advantage of the reduction of foreign fishing.

Competition and territoriality have significantly increased since the implementation of the FCMA. In spite of these increases, social solidarity among fishermen has not changed. Political solidarity has changed somewhat. The Act has increased their political awareness, and for the first time in many years, fishermen have come to agreement on a substantial issue: opposition to the FCMA regulations. Also, the Act has intensified their distrust, dislike, and lack of faith in the government.

RELATED ISSUES

Quotas, Limited Entry & Effort

When the FCMA was passed in 1976, many fishermen were surprised by the inclusion of management regulations. They strongly favored - and still do favor - the 200 mile fishing limit, but most are strongly opposed to all management regulations, and have mixed emotions about the future success of the industry. Two areas of future concern are limited entry and limited effort. Limited entry would limit the number of vessels permitted to fish within a given area. Limited effort would modify and restrict fishing gear to obtain a maximum optimum yield.

The institution of limited entry as a management tool would require making value judgements based on the following question: do we want to preserve the historic, small-scale, laissez-faire fisheries or change to economies of scale in fisheries development management policy, which would result in the elimination of labor intensive effort being replaced by capital intensive modes of fishing which would emphasize efficiency?

Two-thirds of the New Hampshire fishermen believe limited entry is unfair and unnecessary because it limits freedom of choice to freely pursue an occupation of the own choosing. Comments such as "unconstitutional", "against tradition", and "survival of the fittest" readily support this.

Limited effort is currently used as a means of regulation, primarily through regulation controlling mesh size. One hundred percent of the New Hampshire fishermen believe it to be a viable alternative in lieu of quotas and limited entry.

Related Industries

Bruno & Stillman Yacht Co. of Newington, New Hampshire has been in the boatbuilding business for over eight years. They are involved almost exclusively in the production of fiberglass commercial fishing vessels. These boats range in size from 35 ft. to 94 ft.; the majority of boats sold are 42 ft. models. These 42 ft. boats are popular because fishermen can easily modify them for other fishing such as gillnetting.

Of the approximately 100 boats sold during 1978, about 10 percent of these went to New Hampshire fishermen. Most sales go to Massachusetts fishermen, who are involved in the same type of fishing as is done in New Hampshire. The relatively small number of boats sold in New Hampshire is attributable to the small nature of the fishing industry in the state. Also, New Hampshire fishermen have traditionally used wooden boats and are therefore reluctant to change over to the more modern fiberglass models.

In the past year sales at Bruno and Stillman's have increased tremendously. A 94 foot model is now being fabricated to keep up with an increasing demand for larger boats. The company attributes this boom in business to the implementation of the Fisheries Conservation Management Act. With more fishermen entering the industry the demand for new boats has risen dramatically. Existing fishermen are also investing in new vessels. Many of these fishermen are lobstermen, who are diversifying their fishing efforts to include gillnetting.

As an established part of the New Hampshire fishing industry, Bruno & Stillman Yacht Co. has felt noticable effects of the Fisheries Conservation Management Act. Increased demand for fishing boats has resulted in

increased employment and expansion of their facilities. Bruno and Stillman's optimism about the future of the New Hampshire fishing industry is reflected in their plans to build a fish processing plant for New Hampshire. This plant would serve the coastal area from Portland to Newburyport. Fishermen of this region will be able to sell their fish to a local buyer rather than having to truck their fish to Gloucester or Boston at added expense.

Bruno and Stillman see the New Hampshire fishermen as very supportive of their proposed plant. The company plans to have a small fleet of their own boats (probably four) to help supply the processing plant as soon as it is built.

New England Fishing Gear of Kittery, Maine supplies many New Hampshire area fishermen with needed gear and provisions. They have noted a slight increase in their sales during the past few years as a result of the 200 mile limit. An increased abundance of fish has resulted in an influx of fishermen and boats into the industry. Many of these new entrants who are primarily gillnetters, rely on NEFG for gear and supplies. Quotas however have at times hurt their sales. Without quotas, they believe business would increase significantly.

RECOMMENDATIONS

Policy recommendations cover a wide range and include the following specific areas: 1. increasing New England Fisheries management's councils' effectiveness along with incorporation of New Hampshire area fishermen in policy development; 2. legitimization of regulatory methods; 3. standardization of enforcement procedures; 4. improvements in marketing.

The widening credibility gap between governmental institutions and fishermen must be reduced. This is a two-way process, including change in both the Government's and New Hampshire area fishermen's structural and behavioral patterns as follows:

* The NERFMC must be made aware of the needs and desires of their constituencies.

* Additional funds must be allocated for the institution of liasons to act as intermediaries between the NERFMC and local fishermen.

* Structural procedures within the NERFMC bureaucracy must be altered to increase effectiveness. Rigid schedules, strict deadlines, and highly structured meetings will have a two-fold effect: 1. The council's ability to act in crisis periods will be greatly improved; 2. Public attendance will increase as fishermen believe attending is no longer "a day's loss of fishing."

* Public hearings must play a greater role in policy development. At present, feedback has often occurred after most decisions have been finalized; fishermen must have greater input in the embryonic stages of policy formation.

* Public information regarding council meetings, actions, and stock assessments must be increased through the following methods: 1. Use of

existing information channels (periodic mailings, newspapers, and radio); 2. Public posting of relevant materials to insure maximum exposure (fish markets, harbors, gear supply stores, and any other areas where fishermen congregate).

* Fishermen must increase their lobbying power. They must take initiative to overcome their traditional inability to effectively voice a collective opinion. The increased use of liasons will help, but consensus among fishermen is of paramount importance.

* The industry must also accept the reality of the regulations; to insure adequate development of fisheries for future generations, some regulatory measures must be instituted.

Legitimization of Regulatory Methods

Regulatory means and ends must be legitimized to insure maximum compliance with the regulations and development of the fishing industry.

* Stock assessment methods must be legitimized in the eyes of the fishermen.

* Increase by-catch quotas to a more realistic number to decrease unnecessary waste of valuable fish.

* Complete reevaluation of by-catch and species quotas as a viable management tool.

* Investigate the feasibility of increasing the use of limited effort as an alternative to quotas.

* Investigate the feasibility of limited entry on a conditional basis, requiring vessels to be owner-operated to maintain the labor-intensive character of New Hampshire Area fishing.

Standardization of Enforcement Procedures

* Regardless of methods used, enforcement of regulations should be uniformly applied and strictly adhered to.

* Increase the Coast Guard's police power through additional manpower and equipment.

Improvements in Marketing Procedures

Marketing procedures must be improved to insure economic stability.

* Use the following two methods to internalize the market: 1. Establish a cooperative for New Hampshire area fishermen; 2. Reduce the periodic floods of Canadian fish which serve to disrupt price structures.

* Encourage the establishment of decentralized fish processing plants.

* Increase the use of underutilized species to: 1. Relieve pressure and competition on traditional fisheries; 2. Open new markets.

These factors, if implemented, would allow an increased profit margin for fishermen, and a stable price for consumers.

APPENDIX I

INTERVIEW QUESTIONAIRES

INTERVIEW QUESTIONNAIRE

Fishermen:

1. How long have you been in the commercial fishing industry?

   a. How long has fishing been in your family?

2. Why did you become a fisherman?

3. What type of fishing do you do?

4. What type and size boat do you have?

   a. Is it wood, fiberglass or steel? (Why?)
   b. How old is it?
   c. Where did you buy it?
   d. How much did it cost?

5. What type of gear does your boat have?

   a. Did you outfit the boat yourself?

6. Have you made any modifications in your gear since 1976?

   a. If so, what are the modifications?
   b. Why were they made?

7. Before 1976 (pre-Act) how many days a year would you fish?

   a. Since 1976 (post-Act) how many days a year do you fish?

8. Before 1976, what factors entered your decision making process of when and where to fish?

   a. Since 1976, has this decision-making process changed any?
   b. If yes, why? What other factors are involved?

9. Before 1976, what was fishing like?

   a. Has any of this changed since 1976? (i.e. more or less competition)

10. Do fishermen consider one another to be close friends or is there an attitude that fishermen are simply competing businessmen?

Fishermen (cont.):

11. Do you know of any fishermen holding any town or state offices or positions? (eg. selectmen, representatives, etc.)

12. Is the town in any way dependent on the fishing industry for its will being? (eg. tourist money, employment possibilities, etc.)

13. Are the fishermen in your town influential (either socially or politically) in town affairs; state affairs, or political affairs?

    a. Are there any issues at these levels in which the fishing community generally agrees on?

14. What types of lives have fishermen traditionally led at work and at home?

    a. What types of lives have the wives and families of fishermen traditionally led?
    b. Has any of this been upset or strengthened by the FMCA?

15. Is there any evidence of independence and/or territoriality among fishermen?

16. Has the Act affected the social aspects of your port (e.g. Is there more or less competition; more or less solidarity, etc.?)

17. Has the Act affected the physical aspects of your port? (e.g. Are there more or less boats, more or less fishermen?)

18. Do you feel your income level has been affected by the Act?

    a. Has it increased or decreased?
    b. If it has increased, what type of things does this income go to - e.g. savings, fishing, family, etc.
    c. If it has decreased, what areas of your life are suffering - e.g. savings, fishing, family, etc.

19. Has the Act affected your attitudes (or your children's) about the future success of the fishing industry?

20. Do you want your children to follow in your footsteps?
    Do they want to?

21. Has the Act affected your future livelihood plans in any way?
    If so, how?
    If so, why?

22. Do you believe the 1976 regulations, as a whole, are necessary and reasonable to save the New England fishing grounds?
    If yes, why?
    If no, why?

Fishermen (cont.):

23. How do you feel about:

    a. limited entry into the industry?
    b. limited effort (gear restrictions)?
    c. quotas?

24. How do you feel about the regualtion of the by-catch?

    a. Is there any feeling in the industry about becoming quasi-criminals?

25. Do you believe the regional council is doing its best to represent and care for your needs?

*26. What suggestions, if any, do you have to offer to help the fishing industry of today?

Harbor Masters:

1. How long have you held your present position?

2. Why did you take on your present position?

3. How many commercial fishermen work out of the harbor?

   a. What types of fishing do they do?
   b. What are the sizes of boats they use?
   c. What type of gear do these fishermen use?
   d. Are their boats wooden, fiberglass or steel?
   e. What is the range of ages of fishermen owning boats?

4. How many fishermen made modifications of their gear and boats since 1976. What modifications if any, are most prevalent?

5. Are there any new fishing vessels in the harbor (in the last 5 years)?

   a. If so, are these boats wood, fiberglass or steel?
   b. What are the ages of the owners of these boats (generally)?

6. How many recreational fishermen work out of the harbor?

7. Are there any conflicts between commercial and recreational fishermen? If so, what are they?

8. Since 1976 have applications for moorings by commercial fishermen vessels increased or decreased? If so, what do you contribute this increase to?

9. Since 1976, have landings increased or decreased. If so, what reasons can you give for this?

10. Do fishermen socialize with one another?

11. What are the general feelings of fishermen towards the FCMA?

12. What are your general impressions or feelings regarding the FCMA?

13. Are there any fishermen you know, who would be willing to talk to us regarding the FCMA?

Selectmen:

1. What is your perspective of the fishing industry in your town?

2. How important is the fishermen to the welfare of the community? (i.e. what effect do they have in terms of tourist money, employment possibilities, etc.?)

3. Do you know of any fishermen that hold official town positions? If so, what are these positions?

4. Do you know of any fishermen's wives who hold town positions? If yes, are they active or passive in their roles?

5. Are you aware of any issues that fishermen tend to be in agreement or disagreement upon? If so, what are these issues?

6. Are you familiar with the FCMA? If yes, how do you feel it has affected or will affect the fishermen in your community?

Fish markets:

1. How long have you been in the business?

2. Why did you enter the business?

3. Why did you locate here?

4. Where do you get your fish? (i.e. from what fishermen in what ports?)

5. What sort of marketing channels exist between you and the fishermen?
   a. Is there a middleman?
   b. Do you deal directly with the fishermen?

6. Since 1976 has there been a difference in the number of fish caught?

   a. Are fish caught larger or smaller than previous years?
   b. Are different varieties being caught now?

7. Since 1976 have you made any business operation changes?
   If yes, what changes have you made? Why were these changes made?

8. What plans do you have for the future?

9. Do you have any general opinions related to the FCMA and the fishing industry?

   a. What changes have fishermen observed?
   b. What are the feelings of fishermen toward the act?

Historian:

1. Historically, how important has fishing (commercial) been to this community?

   a. What types of roles have the fishermen played?

2. To what degree have fishermen been involved in the community?

   a. What are noticeable interactions?

3. Since 1976, what type of relations have fishermen had with the community?

4. Traditionally, what types of roles have the wives and families of fishermen played?

   a. Has this changed since 1976?

Coast Guard:

1. What exactly is the Coast Guard empowered to do under the Act?

2. What facility/man power/administrative problems (if any) have you encountered while carrying out your duties under the Act?

3. How much time and effort does the Coast Guard put towards their duties?

4. How many foreign boats do you catch with violations?

   a. What types of violations do you encounter most often among foreign vessels?

5. How many domestic boats do you catch with violations?

   a. What are the most common violations?
   b. What type of fishermen do you catch most often - e.g. draggers, gill netters, etc.?
   c. What reasons, if any, are given for violating the Act?

6. Are domestic fishermen trying to circumnavigate the regulations?

   a. If yes, could you state how?

7. Is there a difference in fishermen/Coast Guard relations from pre-Act to post-Act (present)?

   a. What were the relations like before 1976?
   b. What are the relations like now?

8. What aspects of the Act (or what regulations) are the most difficult to enforce?

   a. Why?

9. From the experience gained in the past few years, what recommendations, if any, would you have for improvement while maintaining the spirit of the Act?

10. Any opinion questions relating to the fishing industry and the Act.

    1. What effects have you seen?
       What are fishermen's feelings - especially to the thought of being turned into quasi-criminals? etc.

Tackle and Bait Shops:

1. How long have you been in the business?

2. Why did you enter this business (or why did you locate here)?

3. Do you cater to commercial fishermen?

4. If yes (to #3),

    a. What type of gear did you sell to fishermen before 1976?
    b. What type of gear did you sell to fishermen after 1976?

5. If no (to #3),

    a. Why?
    b. What kind of recreational business is there?

5a. Since 1976, how have your business plans been affected?

    a. To what do you attribute these effects?

6. Any opinion questions related to the fishing industry and/or the Act.

APPENDIX II

DATA SUMMARY

Responses of Fishermen to Questionaire

	All Fishermen		1st Time Fishermen		Traditional Fishermen (1 + generations)	
Age:	25-34	32.3%		31.6%		40%
	35-44	38.7%		42.1%		40%
MS:	M	78.6%		72.2%		100%
	S	21.4%		27.8%		
FAMNUM:	4	33.3%	2,4	22.2%	4	55.6%
	5	18.5%	1,5,6	16.7%	5	22.2%
	2	14.8%				
ED:	12	40.7%	12	33.3%	12	25%
	13-15	18.5%	13-15	27.8%	12	50%
	16	29.6%	16	33.3%	16	25%
			16+	5.6%		
Resid:	Ports	20%	Ports	21.1%	Seab	50%
	Hamp	20%	Rye	21.1%	Hamp	20%
	New	20%	Hamp	21.1%	All rest	10%
			New	26.3%		

Questions

	All Fishermen		1st Time Fishermen		Traditional Fishermen (1+ generations)	
(1)	10+ yrs.	61.3%	10+ yrs.	52.6%	10+ yrs.	80%
	2-5 yrs.	19.4%	2-5 yrs.	31.6%	6-10 yrs.	20%
(1A)	1st time	65.5%	1st time	100. %	1 gen.	70%
	1 gen.	24.1%			2 gen.	20%
					3 gen.	10%
(2)	romance	63.3%	romance	63.2%	romance	60%
	inherited	13.3%	independence	15.8%	inherited	40%
	independence	10.0%	money	15.8%		
	money	10.0%				
(3)	drag	25.8%	drag	26.3%	drag	10%
	gill	22.6%	gill	21.1%	gill	30%
	lob	6.5%	lob	10.5%	gill & lob	30%
	gill & lob	22.6%	gill & lob	21.1%	comb.	30%
	other comb.	22.6%	other comb.	21.1%		
(3A)	Gulf of Me	27.6%	Gulf of Me	21.1%	Gulf of Me	50%
	inshore	27.6%	inshore	31.6%	inshore	12.5%
	both	44.8%	both	47.4%	both	37.5%
(4AM)	Bruno	66.7%	Bruno	75.0%	Bruno	60%
			Mako	25.0%	Novi	20%
(4AS)	30'-40'	36.0%	30'-40'	50.0%	30'-40'	20%
	40'-45'	38.0%	40'-45'	21.4%	40'-45'	40%
	46'+	24.0%			45'+	20%
(4A)	wood	65.4%	wood	66.7%	wood	55.6%
	fiberglass	34.6%	fiberglass	33.3%	fiberglass	44.4%
(4B)	2 yrs	10.0%	2 - 5 yrs.	60.0%	2 yrs.	25%
	2 - 5 yrs.	45.0%	5 - 10 yrs.	10.0%	2 - 5 yrs.	25%
	5 - 10 yrs.	25.0%	10+ yrs.	30.0%	5 - 10 yrs.	50%
	10 + yrs.	20.0%				
(4C)	ME	25.0%	ME	27.3%	ME	25%
	NH	35.0%	NH	36.4%	MA	12.5%
	Nova Scotia	20.0%	Nova Scotia	18.2%	NH	37.5%
					Nova Scotia	25%
(4D)	10,000 - 20,000	26.7%	10,000 - 20,000	22.2%	10,000 - 20,000	33.3%
	50,000+	26.7%	31,000 - 40,000	22.2%	50,000+	33.3%
			50,000 +	22.2%		
			all others	11.1%ea.		
(5)	electronics	63.0%	electronics	68.8%	electronics	66.7%
	other	29.6%	other	25.0%	other	33.3%

	All Fishermen		1st Time Fishermen		Traditional Fishermen (1+ generations)	
(5A)	yes	95.5%	yes	93.3%	yes	100.0%
(6)	yes	72.0%	yes	75.0%	yes	66.7%
	no	28.0%	no	25.0%	no	33.3%
(6A)	nets & gear	77.8%	nets & gear	81.8%	nets & gear	66.7%
	other	11.1%	other	18.2%	other	16.7%
					traps	16.7%
(6B)	normal maintenance	15.8%	normal maintenance	16.7%	normal maintenance	16.7%
	FCMA regulations	21.1%	FCMA regulations	25.0%	FCMA regulations	16.7%
	Increased efficiency & production	42.1%	Increased efficiency & production	33.3%	Increased efficiency & production	50.0%
			Diversification	16.7%	Other	16.7%
(7)	as much as possible	21.7%	as much as possible	21.4%	as much as possible	25.0%
	151-200	17.4%	151-200	24.4%	200+	25.0%
	200+	26.1%	200+	21.4%	other	50.0%
			other	14.3%		
(7A)	same	79.2%	same	78.6%	same	87.5%
	less	8.3%	less, more, other	21.3%	less	12.5%
(7B)	100-150	26.7%	100-150	30.0%	100-150	25.0%
	151-200	26.7%	151-200	30.0%	151-200	25.0%
	200+	40.0%	200+	30.0%	200+	50.0%
			other	10.0%		
(8)	weather	34.6%	weather	35.3%	weather	37.5%
	weather+	42.3%	weather+	47.1%	weather+	37.5%
	other factors	19.2%	other factors	17.6%	other factors	24.0%
(8A)	yes	40.0%	yes	40.0%	yes	50.0%
	no	60.0%	no	60.0%	no	50.0%
(8B)	go out in worse weather	20.0%	go out in worse weather	16.7%	go out in worse weather	25.0%
	fishing less	40.0%	fishing less	33.3%	fishing less	50.0%
			change type of fishing	16.7%		
	other	30.0%	other	33.0%	other	25.0%
(8C)	change because of quotas & closings	90.9%	quotas & closings	87.5%	quotas & closings	100.0%
	competition	9.1%	competition	12.5%		

	All Fishermen		1st Time Fishermen		Traditional Fishermen (1+ generations)	
(9)	responses dealt with:					
	quality of fishing	81.0%	quality of fishing	72.7%	quality of fishing	87.5%
	competition	14.3%	competition	18.2%	competition	12.5%
(9A)	yes, has changed	84.0%	yes, has changed	80.0%	yes, has changed	87.5%
	no	16.0%	no	20.0%	no	12.5%
(9B)	how has it changed					
	more fish	41.7%	more fish	53.8%	more fish	33.3%
	more competition	33.3%	more competition	38.5%	more competition	22.2%
					less secure	11.1%
	other	20.8%			other	33.3%
(9C)	why did it change					
	200 limit	38.9%	200 limit	41.7%	200 limit	33.3%
	cyclic nature	27.8%	cyclic nature	25.0%	cyclic nature	33.3%
	other	27.8%	other	25.0%	other	33.3%
(10)			social friend	15.8%	social friend	12.5%
	competing businessmen	41.4%	competing businessmen	26.3%	competing businessmen	25.0%
	social businessmen	41.4%	social businessmen	42.1%	social businessmen	50.0%
	other	20.7%	other	15.8%	other	12.5%
(11)	no	55.6%	no	50.0%	no	66.7%
	yes	44.4%	yes	38.9%	yes	22.2%
(12)	none	60.0%	none	52.9%	none	75.0%
	little	20.0%	little	23.5%	little	12.5%
	some	16.0%	some	17.6%	some	12.5%
(13S)	no	100.0%	no	100.0%	no	100.0%
(13P)	no	71.4%	no	77.8%	no	66.7%
	yes	25.0%	yes	22.2%		
(13A)	agree on act	31.6%	agree on act	25.0%	agree on act	50.0%
	no agreement on anything	26.3%	no agreement on anything	33.3%	no agreement on anything	16.7%
	agree on local issue	21.0%	other	25.0%	agree on local issue	16.7%
(14)	demanding & hardworking	54.8%	demanding & hardworking	57.9%	demanding & hardworking	40.0%
	independent	19.4%	independent	21.1%	independent	20.0%
					other	30.0%

	All Fishermen		1st Time Fishermen		Traditional Fishermen (1+ generations)	
(14A)	same as other families	27.3%	same as other families	28.6%	same as other families	25.0%
	less time at home	27.3%	less time at home	28.6%	less time at home	25.0%
	other	45.5%	other	42.9%	other	50.0%
(14B)	weaken	42.9%	weaken	50.0%	weaken	20.0%
	no change	50.0%	no change	37.5%	no change	80.0%
			strengthened	12.5%		
(15I)	independence, yes	100.0%	independence, yes	100.0%	independence, yes	100.0%
(15T)	territoriality, yes	30.0%	territoriality, yes	33.3%	territoriality, yes	28.6%
	gillnetters & lobstermen	25.0%	gillnetters & lobstermen	16.7%	gillnetters & lobstermen	28.6%
			everyone	16.7%	everyone	14.3%
			lobster	25.0%	no	14.3%
(16C)	more	75.0%	more	73.3%	more	71.4%
	same	75.0%	same	26.7%	same	20.6%
(16S)	more	40.0%	more	40.0%	more	40.0%
	same	40.0%	same	40.0%	same	40.0%
	less	20.0%	less	20.0%	less	20.0%
(17)	more boats	62.0%	more boats	50.0%	more boats	77.8%
	no change	20.7%	no change	22.2%	no change	22.2%
	improved facilities	10.3%	improved facilities	16.7%		
(18)	up	38.5%	up	60.0%	up	10.0%
	same	34.6%	same	20.0%	same	50.0%
	down	26.9%	down	20.0%	down	40.0%
(18A)	boat maintenance	33.3%	boat maintenance	25.0%	boat maintenance	42.9%
	savings	26.7%	savings	25.0%	savings	28.6%
	increased fish equipment	13.3%	increased fish equipment	12.5%	increased fish equipment	14.3%
	other	26.7%	other	37.5%	other	14.3%
(19)						
(19)	pessimistic	46.2%	pessimistic	50.0%	pessimistic	37.5%
	optimistic	30.8%	optimistic	25.0%	optimistic	37.5%
	no effect	23.1%	no effect	25.0%	no effect	25.0%
(20)	yes	38.5%	yes	42.9%	yes	33.3%
	no	23.1%	no	14.3%	no	33.3%
	not sure	30.8%	not sure	28.6%	not sure	33.3%

	All Fishermen		1st Time Fishermen		Traditional Fishermen (1+ generations)	
(20W)	good way of life	37.5%	good way of life	40.0%	good way of life	33.3%
	the Act	12.5%	the Act	20.0%		
	make a living	12.5%			make a living	33.0%
	other	37.5%	other	40.0%	other	33.3%
(20A)	yes	67.7%	yes	75.0%	yes	60.0%
	no	27.2%	no	25.0%	no	20.0%
					don't know	20.0%
(21)	no	53.8%	no	46.7%	no	66.7%
	yes	46.2%	yes	53.3%	yes	33.3%
(21H)	expand effort	30.8%	expand effort	37.5%	expand effort	20.0%
	stop fishing	23.1%	stop fishing	37.5%		
	continue fishing	23.1%			continue fishing	40.0%
					shrink effort	20.0%
					seek extra work	20.0%
(21W)	effect of FCMA	50.0%	effect of FCMA	66.7%	effect of FCMA	25.0%
	economic uncertainty	10.0%	economic uncertainty	16.7%	economic uncertainty	75.0%
	competition	10.0%	competition	16.7%		
(22)	no	76.7%	no	83.3%	no	70.0%
	yes	20.0%	yes	16.7%	yes	20.0%
(22A)	other	50.0%	other	53.3%	other	50.0%
	not depleted	26.9%	not depleted	13.3%	not depleted	40.0%
	no foreign competition	11.5%	no foreign competition	13.3%	no foreign competition	10.0%
			stocks depleted	13.3%		
(23A)	no	34.5%	no	27.8%	no	50.0%
	not fair	17.2%	not fair	11.1%	not fair	20.0%
	necessary	17.2%	necessary	16.7%	necessary	20.0%
	fair with conditions	17.2%	fair with conditions	22.2%	fair with conditions	10.0%
(23B)	no	24.0%	no	18.8%	no	33.3%
	fair with conditions	24.0%	fair with conditions	25.0%	fair with conditions	22.2%
	necessary	20.0%	necessary	18.8%	necessary	22.2%
	fair	20.0%	fair	25.0%		

	All Fishermen		1st Time Fishermen		Traditional Fishermen (1+ generations)	
(23C)	no	56.7%	no	50.0%	no	60.0%
	not fair	16.7%	not fair	22.2%	not fair	10.0%
	not necessary	13.3%	not necessary	16.7%	not necessary	10.0%
	fair with conditions	13.3%	fair with conditions	11.1%	fair with conditions	20.0%
(24)	against	78.6%	against	70.6%	against	88.9%
	unenforceable	10.7%	unenforceable	11.8%	unenforceable	11.1%
(24A)	yes	77.3%	yes	91.7%	yes	62.5%
	indifferent	13.6%	indifferent	8.3%	indifferent	12.5%
					no	25.0%
(24W)	government made us	30.0%	government made us	25.0%	government made us	33.3%
	catch 22	30.0%	catch 22	25.5%	catch 22	33.3%
	risks/benefit	30.0%	risks/benefit	41.7%	risks/benefit	16.7%
					follow regulations	16.7%
(25)	no	69.2%	no	76.5%	no	71.4%
	yes	30.8%	yes	23.5%	yes	28.6%
(25W)	special interests	30.0%	special interests	33.3%	special interests	16.7%
	no knowledge of fishermen	30.0%	no knowledge of fishermen	25.0%	no knowledge of fishermen	33.3%
	other	20.0%	other	16.7%	other	33.3%
	trying their best	15.0%	trying their best	16.7%	trying their best	16.7%
(26)	stop regulations, leave us alone	50.0%	stop regulations, leave us alone	42.1%	stop regulations, leave us alone	55.6%
	limit effort or entry	10.0%	limit effort or entry	10.5%	limit effort or entry	11.1%
	subsidize	10.0%	subsidize	10.5%	subsidize	11.1%
	other	10.0%	other	15.8%		
			expand Councils power & enforcement	10.5%		
					more personal attention to fishermen	11.1%
					improve stock assessment & credibility	11.1%

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