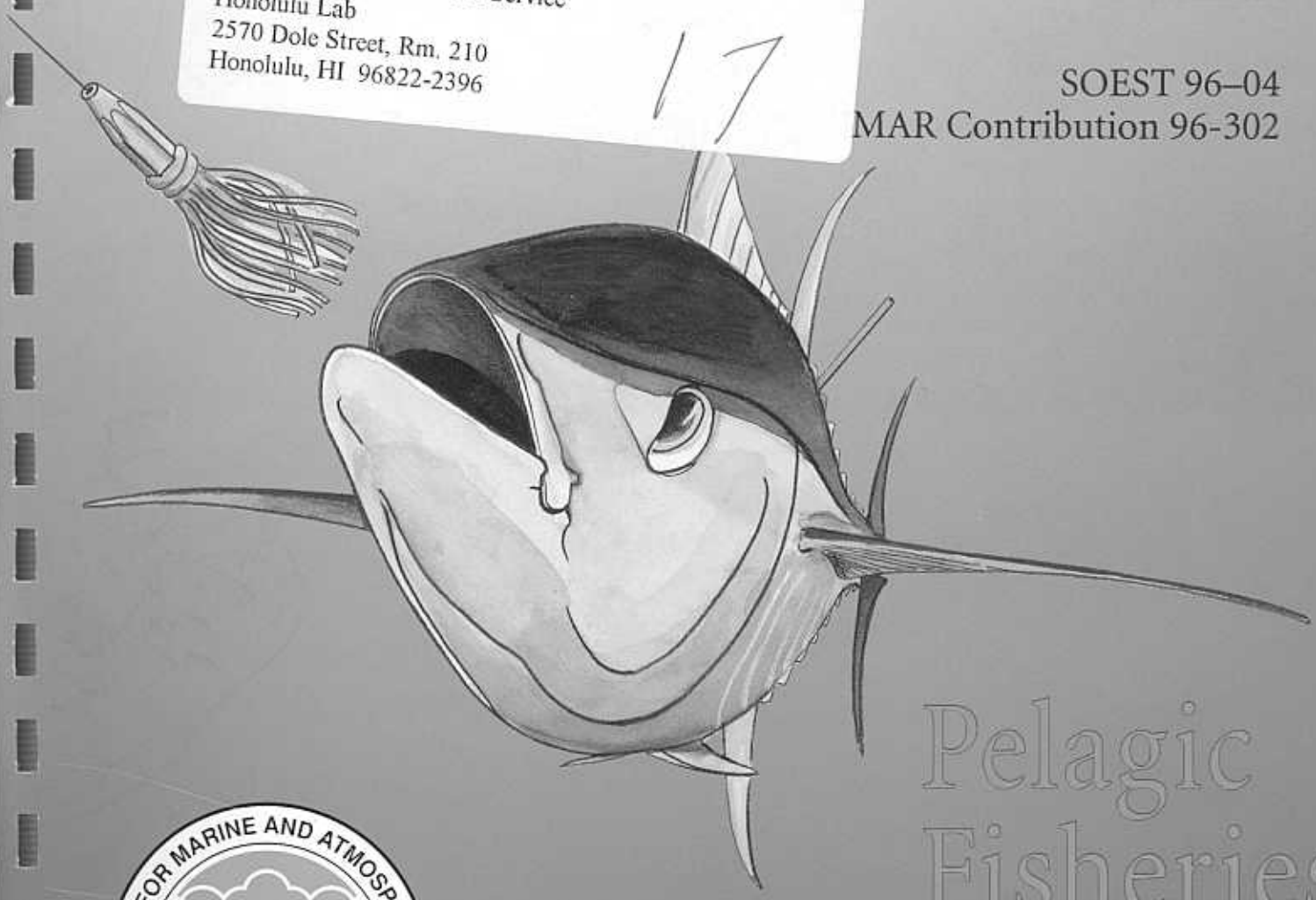
Social Aspects of Pacific Pelagic Fisheries

Phase I: The Hawai`i Troll and Handline Fishery

Dan Curran
JIMAR
National Marine Fisheries Service
Honolulu Lab
2570 Dole Street, Rm. 210
Honolulu, HI 96822-2396

Marc L. Miller

SOEST 96–04
JIMAR Contribution 96-302



Pelagic Fisheries Research Program

JOINT INSTITUTE FOR MARINE AND ATMOSPHERIC RESEARCH ~UH-NOAA~
JIMAR

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Marc L. Miller
School of Marine Affairs, Box 355685
University of Washington
Seattle, WA 98195
email: mlmiller@u.washington.edu

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EXECUTIVE SUMMARY

A prerequisite for the development of marine fishery management objectives and regulations to achieve these is an understanding of the human and biological components of fishery systems and their environments. Fishery science—an applied field involving the disciplines of fishery biology, oceanography, mathematics, statistics, and more recently, economics, cultural anthropology, and sociology—contributes to fishery management with analyses of fishery structures and processes.

The research reported here was designed to meet the needs of the Western Pacific Regional Fishery Management Council (WPRFMC). The Council, created with the passage of the Magnuson Fishery Conservation and Management Act (MFCMA) of 1976, has jurisdiction for fisheries conducted in the 3-200 nautical mile US Exclusive Economic Zone encompassing waters surrounding the islands of Hawai`i, Guam, American Samoa, and the Commonwealth of the Northern Marianas.

One of the fisheries managed by the Council concerns the harvest of large pelagic species including tunas, billfish, *mahimahi, ono,* and sharks. In accordance with the MFCMA, *optimum yield* is prescribed on the basis of maximum sustainable yield "as modified by any relevant economic, social or ecological factor." In making policy, the Council determines the amount of fish that can be harvested and how opportunities to access fish should be distributed among elements of industry.

The fishery management problem addressed in this *Phase I* report is that virtually nothing is documented about the human component of the Hawai`i offshore troll and handline pelagic fishery. This sector is composed of up to 10,000 small boat (under 45') vessels registered with the Hawaii Department of Land and Natural Resources. Of these, only 2,000 to 3,000 boat owners have commercial marine licenses required for the sale of fish.

The overarching goal of this multi-phase project is a baseline sociocultural case study of the Hawai`i troll and handline pelagic fishery. Specific *Phase I* objectives were to 1) describe the *institutional environment* of the fishery, 2) reveal the *social organization* of the fishery, and 3) identify fishermen's perceptions of *fishery issues*. Another major research goal was to develop a *conceptual framework* for the continuation of cultural and social studies of the fishery.

This document consists of six major sections. Section 1.0 is an introduction; Section 2.0 presents research goals, Section 3.0 presents a conceptual framework in which the human component of the fishery is defined as a system of harvesting, distribution, management, and public elements. Section 4.0 describes the institutional structure of the fishery with reference to an array of federal, state, county, and traditional authorities that achieve social control through laws, regulations, and customs.

Section 5.0 reports on the harvesting sector of the troll and handline pelagic fishery. Field data were collected through informal, open-ended ethnographic interviews conducted with well over a hundred fishermen and an exploratory survey (N=54) of fishermen on the islands of O`ahu and

Hawai`i. A first subsection presents *geartype and seasonable patterns* of fishing; a second subsection reports species patterns.

The third harvesting sector subsection describes the social and cultural patterns that characterize Hawai`i styles of troll and handline fishing. The importance of fishing in Hawai`i transcends the fishing trip and extends to the selling and sharing of fish, and also to talk story discourse. The *social organization* of pelagic crews show `*ohana* ("family"), *hui* ("firm"), *hoaloha* ("friendship"), and *combination* structures.

The *social and cultural processes* that shape troll and handline fishing are described by a ritual model of fishing production. With this model, fishing generates sacred objects and moral and social solidarity within the fishing community. In providing the opportunity for the development and maintenance of relationships, fishing brings people together and gives meaning to the lives of fishermen, their family, and friends.

Hawai`i styles of pelagic fishing are shown to have *profit*, *holoholo* ("recreational"), *kaukau* ("subsistence"), and *expense* variants. Troll and handline fishing *motivations* are described by a model of fishing action. *Fishing action* is a problematic and consequential activity engaged in for its own sake. Phases of generic and tournament fishing action are illustrated. Fishing *reputation* and character are demonstrated to be of central importance in the pursuit of fishing action.

In the second section, fishery management issues are defined as a mixture of problems and opportunities. A conceptual model of the natural history of fishery management problems is discussed. Fishermen's perceptions of management issues are presented against this framework. Problem categories include overfishing, resource depletion, competition, and pollution and waste. Finally, fishermen's cognitions of pelagic species are reported. Results suggest that cognitive differences mirror fishing styles.

Section 6.0 remarks on the relevance of findings for management of the pelagic fishery. Results are pertinent to WPRFMC social science research priorities. In particular, this study will be useful in the development of a monitoring system for classifying fishing styles and motivations. This is needed to improve measurements of fishing activities required for the determination of optimum yield, and also to determine the consequences of policy decisions for the cultural and social condition of the fishery. It is further hoped that concepts presented in this study will be of use to social scientists who plan fishery research in the Western Pacific.

Appendices to this report include an annotated bibliography of related troll and handline surveys in Hawai`i and reproductions of corresponding survey instruments, and an introduction to the study of local knowledge, among other materials.

ACKNOWLEDGMENTS

This project is supported by the Pelagic Fisheries Research Program. The research team for Phase I of this project was composed of Marc L. Miller, Julie K. Walker, Alistair Letham, Michael K. Orbach, Nina Hadley, Annie L. Rice, and Scot Copeland.

In particular, we thank Kitty Simonds and the staff of the Western Pacific Regional Fishery Management Council, members of the Council, Dr. Craig J. Severance, Dr. John Sibert, and the many Hawai`i fishermen, scientists and observers of the scene who took time to participate in the study.

This paper is funded by Cooperative Agreement Number NA37RJ0199 from the National Oceanic and Atmospheric Administration. The views expressed herein are those of the authors and do not necessarily reflect the views of NOAA or any of its subdivisions.

LIST OF ACRONYMS AND ABBREVIATIONS

DAR	Division of Aquatic Resources
DBEDT	Department of Business, Economic Development and Tourism
DLNR	Department of Land and Natural Resources
DOCARE	Division of Conservation and Resource Enforcement
DOT	Department of Transportation
ESA	Endangered Species Act of 1973
FAD	Fish Aggregation Device
FMP	Fishery Management Plan
MFCMA	Magnuson Fishery Conservation and Management Act of 1976
MHI	Main Hawaiian Islands
MMPA	Marine Mammal Protection Act of 1972
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NWHI	Northwest Hawaiian Islands
OCRM	Ocean and Coastal Resources Management (NOAA)
OY	optimum yield
PPFRP	Pelagic Pacific Fisheries Research Program
PPMUS	Pacific Pelagic Management Unit Species
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
WPacFIN	Western Pacific Fishery Information Network
WPRFMC	Western Pacific Regional Fishery Management Council

1.0 INTRODUCTION

1.1 Background

Fishery management is an exercise in which an authority develops and implements policies in the best interests of its citizenry. In the federal context, eight regional fishery management councils established with passage of the Magnuson Fishery Conservation and Management Act (MFCMA) of 1976 determine optimum yields for fisheries conducted within the 3-200 nautical mile US Exclusive Economic Zone.

In accordance with the MFCMA mandate, the regional councils rely heavily on multidisciplinary fishery science. Part of this applied science is organized to inform councils about the present condition of fisheries, about trends, and about possible futures. Some analyses go beyond description, simulation and prediction and provide normative guidance.

Fishery management policies require answers to two interlocking questions. The first of these—sometimes termed the *conservation question*—is "How many fish can be harvested on a sustainable basis without undue hardship to other important species and the environment?" Disciplines addressing this question are fishery biology and oceanography.

The second question—often called the *allocation question*—is "How should the opportunities to harvest fish be allocated to elements of the fishing industry?" Sociology, cultural anthropology, economics and the other disciplines of the social sciences address this question

Perhaps the fundamental question to be answered as a prerequisite to any final allocation decision (concerning, for example, the imposition of a moratorium on fleet size, a license limitation or individual fishermen's quota regime, or the allocation of access through time and area closures) is the following: "What is the importance of fishing to fishermen and to society?" This question can be approached in two complementary, but different ways. Economic studies of fisheries commonly utilize the notion of economic value. Cultural and social research examines the significance of fishing in generating social and moral solidarity critical for the sustainability of fishing communities, and in providing lifestyle and fishing identity options that give meaning to life. In this research, we make terminological distinctions adopted by the Western Pacific Regional Fishery Management Council concerning the application of the social sciences:

> "The term *cultural* pertains to what it is (*e.g.,* mores, rules, facts) that people 'know' in order to behave in society. [T]hese knowledge bases are the essence of what is often called custom or tradition. The term *social* refers to human behavior that has 'meaning' for the actor or for others. [T]he term *economic* refers to the 'decisions' that people make... arising from a consideration of various means and ends, given a set of actor preferences." (WPFRMC, 1995)

Cultural and social studies of fisheries generally emphasize the roles of *convention* and *situational context* in explaining what people do. In a complementary way, economic studies focus on the many *choices* that people make.

1.2 Plan of This Report

The research discussed in this document is the first part of a multi-phase project that seeks to display the social and cultural order characterizing the Hawai`i troll and handline fishery.

This report consists of six major parts accompanied by appendices and references. Section 1.0 introduces the general research opportunity. Section 2.0 identifies project goals and objectives. Section 3.0 presents the conceptual framework of the project in which the human component of fisheries is seen to have harvesting, distribution, management, and public elements. Section 4.0 describes the institutional environment of the Hawai`i troll and handline fishery. Section 5.0 examines the harvesting sector, addressing geartype and seasonal fishing patterns, social organization, social and cultural processes, motivation, fishing action, fishermen's perceptions of management issues, and fishermen's cognitions of major pelagic species. In each of the subsections of 5.0, a theoretical orientation precedes questionnaire and interview findings. Finally, Section 6.0 discusses the fishery management implications of project results.

Appendices include an annotated bibliography of related troll and handline surveys in Hawaii and reproductions of corresponding survey instruments, and an introduction to the study of local knowledge, among other materials.

2.0 RESEARCH GOALS

The overarching goal of this multi-phase project was a baseline sociocultural case study of the Hawai`i troll and handline pelagic fishery. The case study approach was organized to generate a sociocultural description of the condition of the fishery and a foundation for monitoring. In Ragin's (1992a) terminology, the project is designed to begin by taking "fishery" as a specific-empirical category, seeking to determine inductively the boundaries of the Hawai`i example.

Using White's (1992) methodological vocabulary, the study is primarily driven by a concern for resolving the practical questions of fishery *identity* and *control*. More strictly academic questions of *explanation* are of secondary importance. Justification for this weighting of priorities is provided by Ragin (1992: 94):

> "If you want to understand control, you should not turn to the comparative/statistical case study, which explains so nicely—which to be precise, explains away so nicely."

For discussion of social science case study research, see *Social Science Research Priorities for the Western Pacific Council Fisheries* (WPRFMC, 1995).

Specific Phase-I objectives were to:

1. describe the *institutional environment* in which pelagic fishery management policies are designed and implemented,
2. reveal the *social organization* of the troll and handline fishery, and
3. identify *fishery issues* and problems perceived by the harvesting sector.

An additional and continuing research goal is to develop a *sociological vocabulary of fishing* that would both 1) fit with the way fisheries are discussed and experienced by Hawai`i troll and handline fishermen, and 2) establish a conceptual foundation for assessments of the human condition of the fishery complementary to the microeconomic framework and of practical value to the Western Pacific Regional Fishery Management Council community.
Throughout this report, terminology with technical meaning appears in *italics*. For a fishery social science glossary, see attached Glossary of Fishery Social Science Terms.

3.0 CONCEPTUAL FRAMEWORK

3.1 The Hawai`i Troll and Handline Pelagic Fishery

In elementary terms, a *fishery* exists when a human population purposively engages in a relationship with a "fish" population. It is common for fisheries to be labeled by such criteria as geartype, principal species, fishing region, and port of landing. Accordingly, the "Hawai`i troll and handline pelagic fishery" is used here to denote fishing operations targeting tuna, billfish, *mahimahi*, *ono*, and other large pelagic species within the US Exclusive Economic Zone in waters off the coastline of the Hawaiian Islands. Of focal interest is the Pacific Pelagic Management Unit Species (PPMUS) complex under the purview of the Western Pacific Regional Fishery Management Council (Table 3.1).

From an applied sociological perspective, the human organization of the Hawai`i troll and handline pelagic fishery (Figure 3.1) is composed of four parts—a harvesting element, a distribution element, a management element, and a public element (see Miller and Gale, 1986, and WPRFMC, 1995).

3.1.1 Harvesting Element

In this report, we follow local convention and use the term "fisherman" to include both men and women who fish. We note that the term "fisher" is objected to by many participants on the grounds that the term a) already denotes a large dark brown North American arboreal carnivorous mammal related to the weasels, and b) has bureaucratic origins.

The harvesting element of the troll and handline fishery consists of fishermen with combinations of commercial, charter (*i.e.,* service), recreational, and subsistence motivations (Table 3.2). Harbors and launching sites used by these fishermen on the main Hawaiian islands are shown in Maps 3.1 through 3.6. A profile of the Kewalo Basin (Honolulu) charterboat fleet is found in Appendix 1.

The careers of pelagic fishermen show that some individuals use both troll and handline gear and participate in other fisheries, and that others have non-fishing occupational commitments as well. The patterns of this diversification are an important topic of this report.

Table 3.1 Pacific Pelagic Management Unit Species (PPMUS)[1]

	Common Name	Scientific Name	Hawaiian or Local Name	Season Peak
Billfish	Blue Marlin	*Makaira mazara*	A`u	May-September
	Black Marlin	*M. indica*	Kajiki, A`u	May-July
	Striped Marlin	*Tetrapturus audax*	Nairagi, A`u, A`uki	February - June
	Broadbill Swordfish	*Xiphias gladius*	Broadbill, Shutome, A`u ku	April- July
	Shortbill Spearfish	*T. angustirostris*	Hebi, A`u	June-December
	Indo-Pacific Sailfish	*Istiophorus platypterus*	A`u lepe	
Tunas	Albacore	*Thunnus alalunga*	Ahi palaha, Tombo	July-September
	Bigeye Tuna	*Thunnus obesus*	Mebachi, Ahi po`o nui	October-May
	Yellowfin Tuna	*Thunnus albacares*	Ahi, Shibi	May-September
	Northern Bluefin Tuna	*Thunnus thynnus*	Maguro	
	Skipjack Tuna	*Katsuwonus pelamis*	Aku	May-September
	Black Skipjack/ Mackerel Tuna	*Euthynnus affinis*	Kawakawa	
	Dogtooth Tuna	*Gymnosarda unicolor*	Hagatsuo	
	Frigate Tuna	*Auxis spp.*		
Sharks	Blue Shark	*Prionace glauca*		
	Mako Shark (short-fin)	*Isurus oxyrinchus*		
	Mako Shark (long-fin)	*Isurus paucus*		
	Oceanic White-tip Shark	*Carcharhinus longimanus*		
	Thresher Shark	*Alopias superciliosus*	Mano Hi`uka	
	Tiger Shark	*Galeocerdo cuvieri*		
Other Pelagics	Dolphinfish	*Coryphaena hippurus*	Mahimahi, Lapalapa	peaks in April and October
	Wahoo	*Acanthocybium solandri*	Ono	
	Moonfish[2]	*Lampris spp.*	Opah	
	Oilfish	*Ruvettus pretosus; Lepidocybium flavobrunneum*	Walu, Escolar	
	Pomfret	*Bramidae*	Manchong	

Sources: Hawaii Fishing News Tide-Moon and Hawaii Fishing Almanac, 1994.
Western Pacific Regional Fishery Management Council Annual Report, 1993.
Pacific Fisheries Consultants Report: *Native Hawaiian Fishing Rights,* 1990.

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[1] Until the 1990 amendments to the Magnuson Act (P.L. 101-627), Pelagic Management Unit Species (PMUS) did not include tunas. Note that the term PPMUS does include the tunas, and the *Fishery Management Plan* has been amended to reflect the change (57 FR 48564).

[2] Moonfish, Oilfish and Pomfret were added as PPMUS in Amendment 7 to the *Fishery Management Plan for the Pelagic Fisheries of the Western Pacific Region*, January 1994.

Figure 3.1 Human Organization of the Hawai`i Troll and Handline Fishery

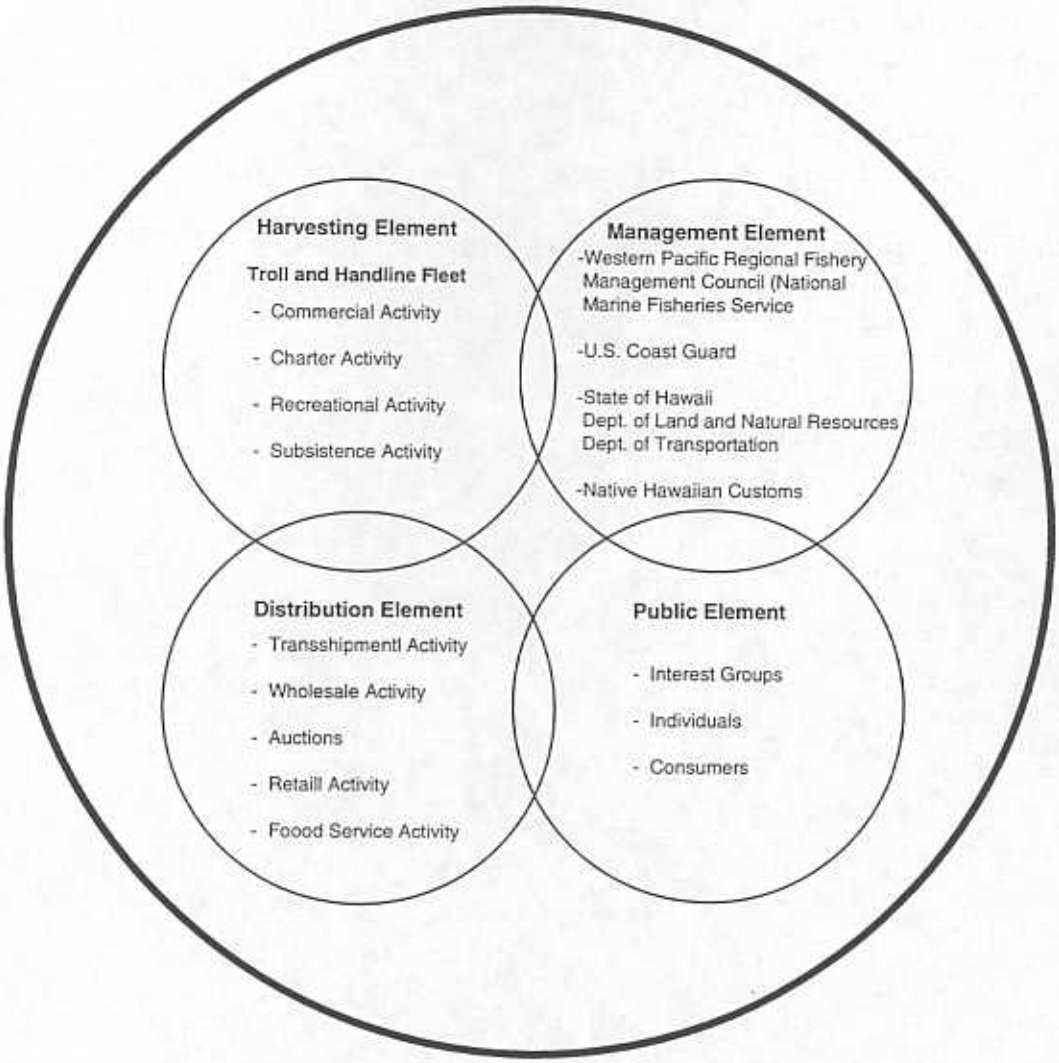


Table 3.2 Components of the Hawai`i Troll and Handline Pelagic Fleet [1]

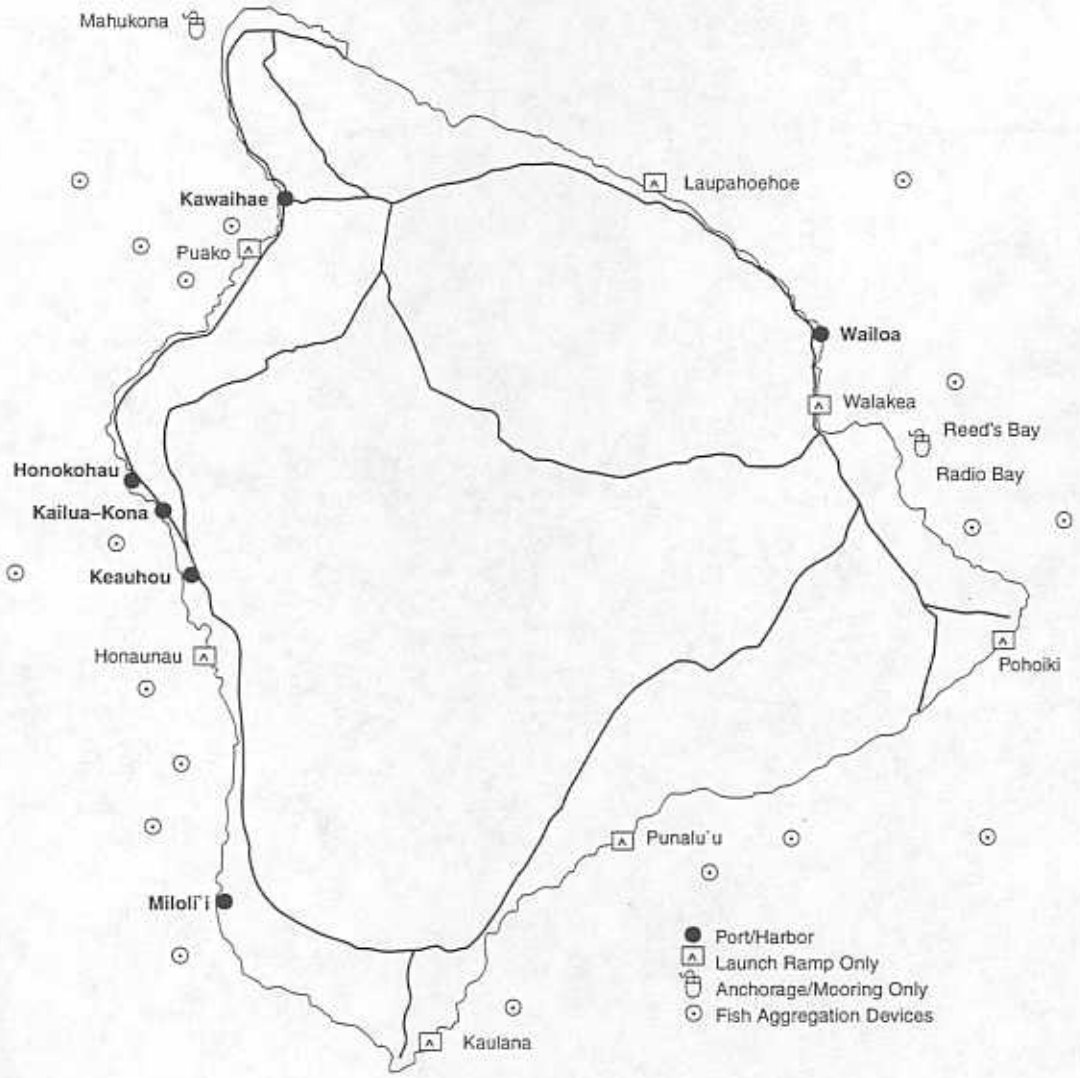
I. **Troll Component**
   1. Charterboat element
   2. Commercial element
      a. full-time vessels
      b. part-time vessels
   3. Recreational and subsistence element

II. **Handline Component** (some vessels engage in the troll fisheries)
   1. Commercial element
      a. full-time vessels
      b. part-time vessels
   3. Recreational and subsistence element
      a. full-time vessels
      b. part-time vessels

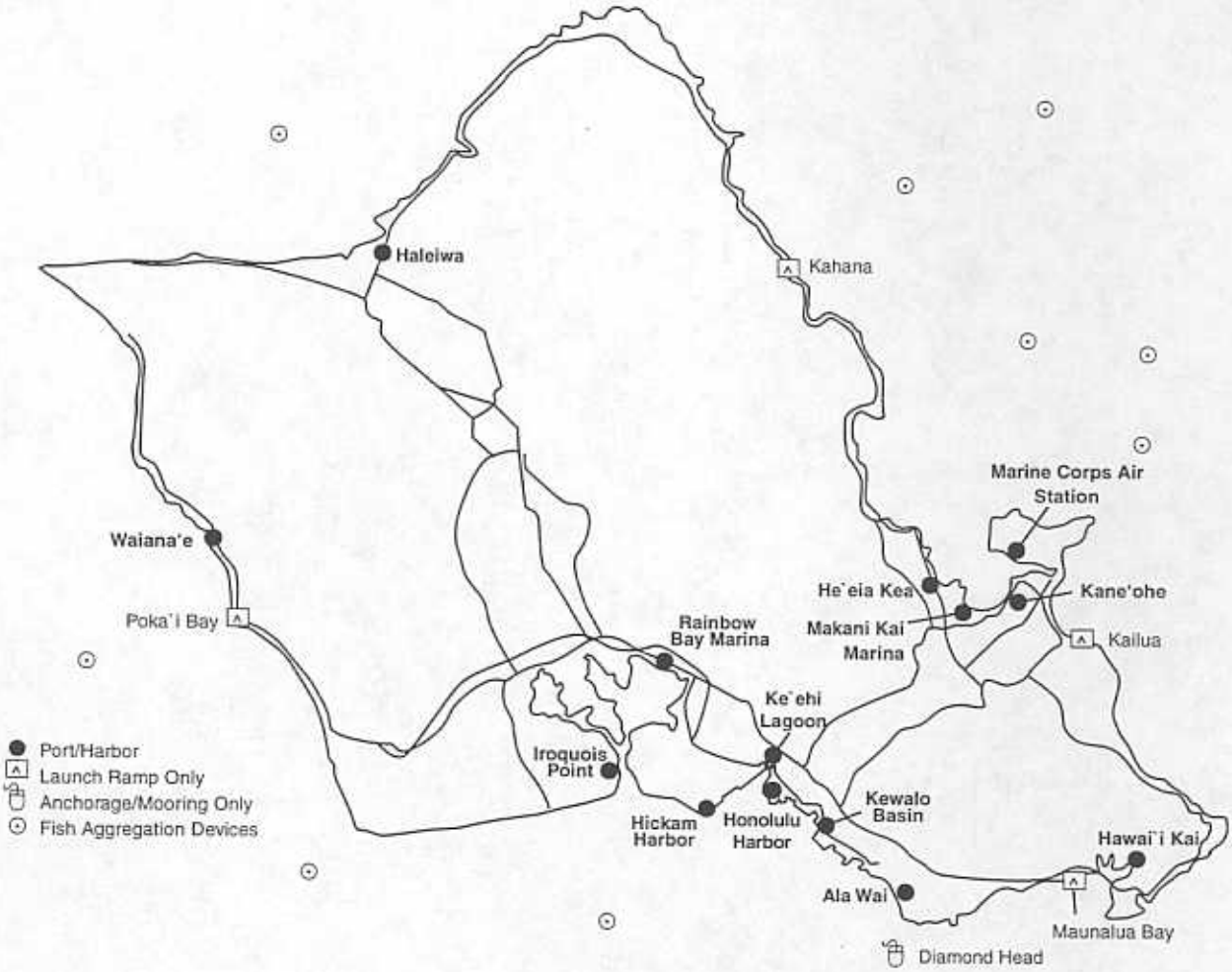
---

[1] Includes roughly 1,900 "troll and handline combined" commercial vessels and an unknown number of recreational and subsistence vessels: Some vessels are used for mixes of commercial recreational and subsistence purposes: Some troll vessels also engage in handline, bottomfish, and lobster fisheries: Components of the fleets are found an all islands. Other components of the pelagic fleet are the longline fleet (roughly 170 interim entry permits have been issued to date), the skipjack baitboat (*aku* vessel) fleet, and a few West Coast vessels that land swordfish and albacore on the West Coast.

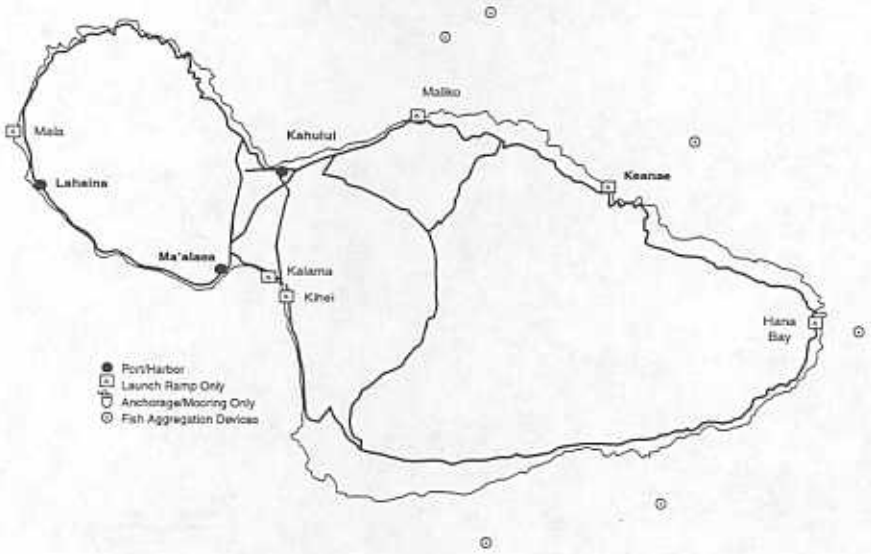
Map 3.1 Hawai`i Troll and Handline Fishery: Hawai`i Boat Facilities and Access Points



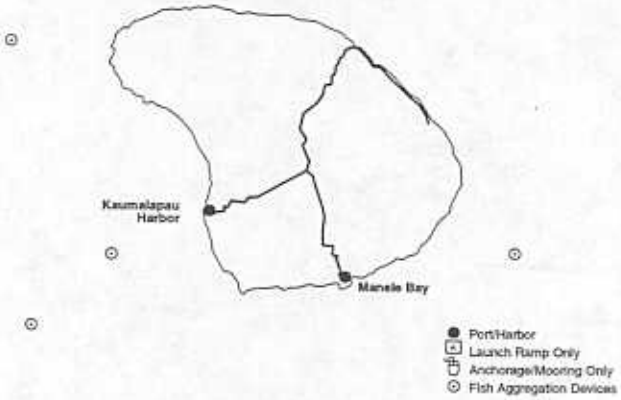
Map 3.2 Hawai`i Troll and Handline Fishery: O`ahu Boat Facilities and Access Points



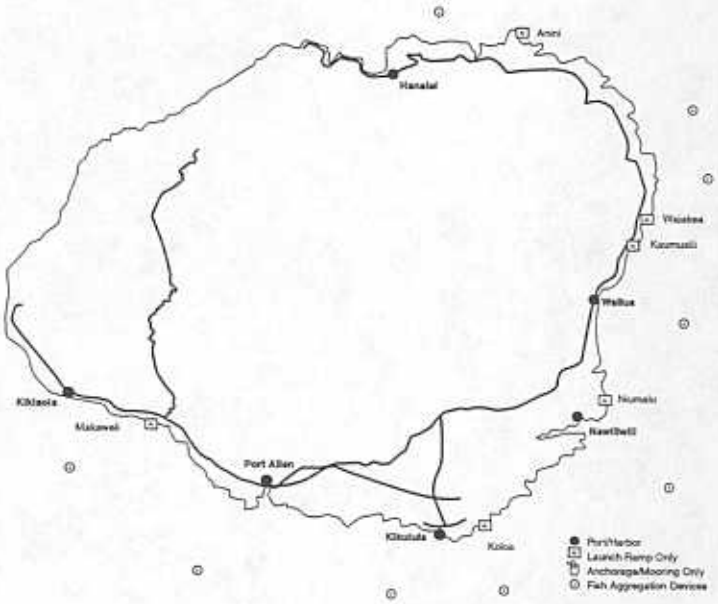
Map 3.3 Hawai`i Troll and Handline Fishery: Maui Boat Facilities and Access Points



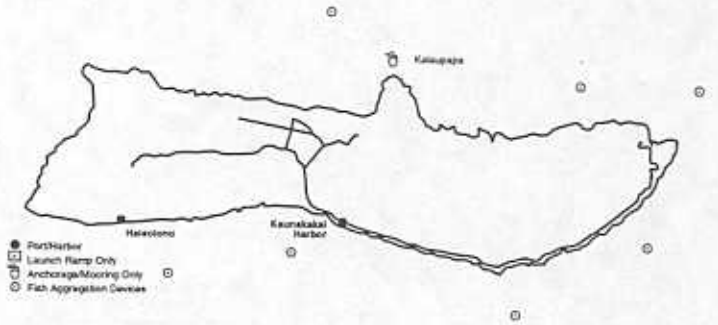
Map 3.4 Hawai`i Troll and Handline Fishery: Lana`i Boat Facilities and Access Points



Map 3.5 Hawai`i Troll and Handline Fishery: Kaua`i Boat Facilities and Access Points



Map 3.6 Hawai`i Troll and Handline Fishery: Moloka`i Boat Facilities and Access Points



3.1.2 Management Element

The management element of the Hawai`i troll and handline fishery consists of government and cultural entities with the authority to directly and indirectly influence fishery policies.

3.1.3 Distribution Element

The distribution element of the troll and handline fishery encompasses the processing and marketing sectors and involves transshipment, wholesale, auction, retail, and food service activities. The distribution of troll and handline fish—whether by the fishermen themselves or by others—is outside the scope of the Phase I of research discussed in this report.

3.1.4 Public Element

The public element of the troll and handline fishery consists of people who themselves do not fish. The fishery public includes a mixture of interest groups (*e.g.*, environmental and other organized constituencies) and individuals (*e.g.*, consumers, visitors) with a hinterland connection to the harvest activities. The structure of the public element of the Hawai`i troll and handline fishery is outside the scope of this Phase I report.

3.2 The Pacific Pelagic Fishery System

Fisheries, of course, are often interconnected and the Hawai`i troll and handline pelagic fishery is no exception. The pelagic system is an example of what has been termed a "natural resource management system" (Miller *et al.* 1986 and Miller and Francis, 1989). Target pelagics have ecological linkages to other living things and the environment. Similarly, troll and handline fishermen are seen to co-exist with fishermen who harvest other species in the same area, or who fish elsewhere (for example, inshore or onshore) but share a community of residence. In this context, the Hawai`i troll and handline fleet and associated fleets can be described as falling within the harvesting component of the complex Pacific pelagic fishery management system.

4.0 MANAGEMENT ELEMENT

This section describes the condition of the *management element* of the troll and handline fishery depicted in Figure 3.1. *Fishery management* is a human endeavor in which both sides of the fishery equation (*i.e.*, populations of fish and people) are subject to a regulatory authority. Fishery sanctions can be formally implemented by federal, state, county and traditional entities, and informally imposed by the local community, the family, and other social networks.

The institutional environment of the Hawai`i troll and handline fishery consists of laws, regulations, and customs, and the elements of government and society with responsibilities for these (Tables 4.1 and 4.2). Regulatory entities with direct pelagic fishery management functions are embedded in a larger institutional structure. Management entities in the Hawai`i *marine affairs system* have policy design, implementation, and enforcement powers over a broad range of ocean and coastal zone activities that have the potential to affect pelagic and other fisheries.

4.1 Federal Management Entities

Fisheries in the 3 to 200 nautical mile US Exclusive Economic Zone around the Hawaiian Islands are regulated under the Magnuson Fishery Conservation and Management Act of 1976 (MFCMA). This act created eight regional fishery management councils responsible for the

development of fishery management plans (FMPs) for selected fisheries within their jurisdictions. The councils cooperate with one another in the management of fisheries conducted in multiple jurisdictions.

The Western Pacific Regional Fishery Management Council (WPRFMC), based in Honolulu, oversees fisheries in waters surrounding the islands of Hawai`i, Guam, American Samoa, and the Commonwealth of the Northern Marianas, as well as other US islands in the Pacific (*i.e.*, Johnston Atoll, Kingman Reef and Palmyra Island, Jarvis Island, Howland and Baker Islands, and Wake Island). WPRFMC utilizes the advice of industry advisory panels, a scientific and statistical committee, and the public. The Honolulu Laboratory of the Southwest Fisheries Research Center (National Marine Fisheries Service[NMFS]) and the State of Hawaii Division of Aquatic Resources (DAR) work closely with WPRFMC in developing fishery management plans. For a summary of database categories and reporting requirements for the troll and handline fishery, see Table 4.3.

Western Pacific Council fishery management plan teams focus on pelagic and other important fisheries. FMPs are forwarded by the Council for approval and implementation to the head of the Department of Commerce. In the case of the WPRFMC, FMPs are submitted through the Southwest Regional Office (located in Long Beach, California) of NMFS. The Southwest Region in turn forwards these with advice to the Washington, DC office of NMFS to which authority to approve plans has been delegated by the Secretary of Commerce subject to Secretarial notice and review. Enforcement of the fishery management plans is provided by NMFS's Southwest Enforcement Office and the US Coast Guard.

Until 1990, highly migratory species were specifically excluded from the Magnuson Act. When Congress amended the MFCMA by striking the original language, "except highly migratory species," WPRFMC was given the responsibility to address tuna issues, and tunas were added to the Pacific Pelagic Management Unit Species complex (see Table 3.1) and incorporated in the *Fishery Management Plan for the Pelagic Fisheries of the Western Pacific Region* (WPRFMC, 1987). The Council is presently in the process of negotiating an agreement with the Pacific and Northern Pacific Regional Fishery Management Councils whereby WPRFMC would possibly be designated the lead council for all US tuna fishery management in the Pacific. For a brief listing of recent WPRFMC pelagic management actions and activities, see Table 4.4.

At the federal level, agencies in the Hawai`i marine affairs system that have regulatory powers over activities that affect Hawai`i fishermen include, the US Fish and Wildlife Service, the Office of Coastal and Ocean Resource Management, the Minerals Management Service, the National Park Service and the US Army Corps of Engineers.

4.2 State of Hawai`i Management Entities

Fishermen in Hawai`i state waters are subject to regulations from the Division of Aquatic Resources (DAR) within the Department of Land and Natural Resources (DLNR), the principal fishery management agency in the executive branch of government. DAR issues commercial fishing licenses, collects monthly catch reports from license holders, prohibits fishing in special conservation districts and harbors and prohibits certain gear and procedures. DAR regulations are enforced by the Division of Conservation and Resource Enforcement (DOCARE) in DLNR and

the Marine Patrol in the Public Safety Department. The Hawai`i State Legislature also performs an unusual amount of detailed rule-making, which in most other states is delegated to state administrative agencies or commissions through enabling legislation.

At the state level, the Hawai`i marine affairs system encompasses agencies whose regulations are not narrowly confined to matters of fishery management, but which nonetheless can directly affect troll and handline fishermen. For example, the Department of Transportation, Harbors Division, develops and manages harbors, access points, and launch ramp rules, and the Division of Boating and Ocean Recreation in DLNR establishes boating use regulations. The State of Hawai`i Department of Transportation and the US Coast Guard regulate and enforce marine safety. The DAR deploys and maintains fish aggregation devices (FADs) and the Department of Business, Economic Development and Tourism (DBEDT) encourages investment in fisheries and oversees boat loan programs.

4.3 County Fishery Management Entities

The eight local county planning and public works departments have regulatory powers over ocean and coastal activities which directly or indirectly involve or affect troll and handline fishermen.

4.4 Native Hawaiian Fishery Management

In this section, we follow convention and use the term "Hawaiian" to refer exclusively to indigenous Pacific cultural groups and their descendants. We use the term "Hawai`i" (as in "Hawai`i fisherman") as an adjective in some instances to mean any resident of the State of Hawai`i who fishes. (Hawaii Ocean and Marine Resources Council (1991), *Hawaii Ocean Resources Management Plan Technical Supplement*).

There is considerable archaeological, historical and ethnographic evidence that Native Hawaiian fishermen have been dependent on the fishery resources in Hawai`i for several centuries. There is a expansive set of traditional fishing rules, or *kapu,* that provided guidelines for fishing behavior.

These rules cover various components of the fishing experience, ranging from techniques to gear, to individual behavior on the water. One example of a fishing kapu (or taboo) is "Don't ask idle questions of canoe-men getting ready to go out fishing; they consider this an omen of bad luck." (Kawaharada, p.112.)

Kapu are either based on the injunctions of fishing gods (sometimes communicated through religious leaders), chiefly authority, or the transmission of *local knowledge* of the environment. (For additional information on local knowledge, see Appendix 2. For additional information on *kapu* systems, fishing legends and practices, see Kalakaua, p. 1-65; Malo, p. 208-213; Kamakau, p. 59-89.)

Traditional *konohiki* fishing practices in Hawai`i provided for a shared right to fishery resources years before western legal systems were imposed. The *Konohiki* system provided that landlords or chiefs established fishing practices within self-sustaining units. (For additional information on *konohiki* systems, see Murakami, p. 174-177.).

While these practices are no longer the dominant framework for fishing management, Native Hawaiians still participate in fishery activities, many of which are governed by federal and state laws. The MFCMA currently mandates the regional fishery management councils to take "historical fishing practices" into account when developing fishery management plans, but does not provide Native Hawaiians with rights of access to certain fisheries. Although there is currently no direct conflict between Native Hawaiian fishing access rights and federal and state regulations, Native Hawaiian rights are increasingly discussed and may provide future challenges to existing fishery regulations.

Table 4.1 Hawai`i Troll and Handline Fishery: Major Federal and State Fishing Laws and Codes

TITLE	FEDERAL CODE	CFR	PRINCIPAL AGENCY
Management Laws[1]			
Magnuson Fishery Conservation and Management Act of 1976 (MFCMA)	PL 94-265 as amended through November 1990.		
	16 *USC* §1801- et seq.	50 Parts 268, 298, 299, 600, 601, 602, 604, 605, 611, 619, 620, 625, 630, 638, 640, 641, 642, 644-647, 649-654, 655, 657, 658, 661-663, 669, 672, 674, 675, 676, 680, 681, 683, 685, 695	NMFS[2]
	16 *USC* §1801-1882	15 Part 904 50 Part 621	
	16 *USC* §1851	50 Part 656	
	16 *USC* §1851 note	15 Part 904	
	16 *USC* §1853	50 Part 603, 605	
Marine Mammal Protection Act of 1972 (MMPA)	PL 95-522 as amended through 23 Nov. 1988		NMFS and USFWS[3]
	16 *USC* §1361 et seq.	50 Parts 18, 216, 229, 230, 403, 611	
	16 *USC* §1361-1407	15 Part 904 50 Parts 17, 82, 216	
	16 *USC* §1361-1384	50 Parts 10, 215	
	16 *USC* §1361	36 Part 13	
	16 *USC* §1371-1372	50 Part 228	
	16 *USC* §1374-1375	50 Part 17	
	16 *USC* §1375 et seq.	50 Part 10	
	16 *USC* §1375-1377	50 Part 12	
	16 *USC* §1382	50 Parts 11-14, 17	
	16 *USC* §1385	50 Part 247	
	16 *USC* §1401-1407	50 Part 10	

[1] Legal references for MFCMA, MMPA, and ESA can be found in several sources. Public Law (PL) citations trace the origins of the laws to bills passed by Congress. Statutory citations in the United States Code (USC) indicate the most current codification of the laws. Corresponding Code of Federal Regulations (CFR) regulations are developed and promulgated by administrative agencies in the executive branch of government. For a detailed comparison of the MFCMA, the MMPA and the ESA with respect to conservation ethic, statute type, purposes, activities subject to regulation, policy system, supporting entities, functions, key concepts, policy process, scientific and public advice and judicial review, see Miller, M.L. and Broches, C.F., "North Pacific Fisheries and Reauthorization of the Magnuson Fishery Conservation and Management Act, Marine Mammal Protection Act, and Endangered Species Act" Northwest Environmental Journal, 9(1-2):1993.

[2] National Marine Fisheries Service, Department of Commerce.

[3] US Fish and Wildlife Service, Department of Interior.

Table 4.1 Hawai`i Troll and Handline Fishery: Major Federal and State Fishing Laws and Codes (cont.)

TITLE	FEDERAL CODE	CFR	PRINCIPAL AGENCY
Endangered Species Act of 1973	PL 93-205 as amended through 7 Oct. 1988		NMFS and USFWS
	16 *USC* 1531-1543	50 Part 217	
	16 *USC* 1531 et seq.	7 Part 650 19 Parts 10, 12 30 Part 773 32 Part 190 43 Parts 3480, 8340 50 Parts 23, 227 230, 402, 424, 450-453	
	16 *USC* 1531-1543	50 Part 17	
	16 *USC* 1531-1543	15 Part 904 50 Parts 10, 23, 81, 222, 225	
	16 *USC* 1531	36 Part 13 49 Part 1105	
	16 *USC* 1532	7 Part 355	
	16 *USC* 1533	50 Parts 17,226	
	16 *USC* 1538-1540	50 Part 13	
	16 *USC* 1538	7 Part 355 50 Parts 14, 17, 24	
	16 *USC* 1540	7 Parts 1,355, 356, 380 50 Parts 11, 12, 14, 17, 24, 217	
Vessel Registration and Safety Laws			
	46 *USC* 4505, 5101, 8103,8304,10601-2, 11101	30 Part 130 33 Parts 5, 26, 81, 88, 95, 151, 155, 156, 159, 173 46 Parts 4, 16, 25, 26, 28, 30, 67-69, 105 47 Part 80	US Coast Guard
Management Laws			
Aquatic Resources: Part I - General Provisions	187A	§13-74-1-4,10,22	DLNR-DAR[4]
Aquatic Resources: Part II - Fishing Rights	187A		
Fishing Rights and Regulations, Generally	188, Part II[5]	§13-74-1,4,10,21,40,41	
Hawai`i Fisheries Coordinating Council	188E		
Marine Life Conservation Program	190		

[4] Department of Land and Natural Resources, Division of Aquatic Resources.

[5] Part I of 188 repealed.

Table 4.1 Hawai`i Troll and Handline Fishery: Major Federal and State Fishing Laws and Codes (cont.)

TITLE	STATE LAW (*HRS*)[6]	ADMINISTRATIVE RULE	PRINCIPAL AGENCY
Licensing and Financial Requirements			
Commercial Fishing - License and Regulation Section	189, Part I	§13-74-1-4,20,42	DLNR-DAR
Large Fishing Vessel Loan Program	189, Part II		
Small Fishing Vessel Loan Program	189, Part IV[7]		
Harbors and Launch Rules			
			DOT[8]- Harbors Division

[6] *HRS* refers to *Hawaii Revised Statutes.*

[7] Part III of 189 repealed.

[8] Department of Transportation.

Table 4.2. Hawai`i Troll and Handline Fishery: Management Entities[1]

Level	Entity	Responsibilities	Jurisdiction[2]
International	Inter-American Tropical Tuna Commission	• No regulations in place	
	Forum Fisheries Agency	• Negotiation and coordination of member states fishery management efforts	
	South Pacific Commission Fisheries Program	• Research support for the FFA	
Federal	Western Pacific Regional Fishery Management Council	• Conservation and management of fishery resources through fishery plans • Encouragement of the development of fisheries which are currently underutilized	US Fishery Conservation Zone[3]
	US Coast Guard	• Licensing of vessels over 5 net tons • Inspection of all commercial fishing (CF) vessels for safety compliance • Oil/hazardous material response	State Marine Waters, US EEZ and High Seas
	Department of Commerce-National Marine Fisheries Service	• Implementation and enforcement of WPRFMC fishery management plans • Data collection for WPRFMC use • Endangered species and marine mammal protection	US Fishery Conservation Zone
	Department of Commerce-Ocean and Coastal Resources Management	• Coastal zone management • National estuarine research reserves • Marine sanctuaries	
	Department of Interior-Fish and Wildlife Service	• Marine mammal and endangered species protection • Federal aid in sport fish restoration account • National wildlife refuges	
	National Pollution Elimination Discharge System	• Hazardous waste permits • Nonpoint source pollution program • Wastewater treatment systems rules	
	Department of Interior-Minerals Management Service	• Administration of OCSLA oil and gas leases	
	International Trade Administration	• Fisheries export market information	

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[1] The shaded regions on this chart reflect entities with primary fishery management authority. Those areas that are not shaded show the entities which regulate ocean resources (not specifically fishery resources) and thus may have effects on the troll and handline pelagic fishery.

[2] For further information on laws granting these jurisdiction, see Table 4.1.

[3] The Fishery Conservation and Management Act of 1976 declares that the US shall exercise exclusive fishery management authority over all fish within the *fishery conservation zone* (defined as a line coterminous with the seaward boundary the each of the coastal states, and the outer boundary of such zone is a line drawn in such a manner that each point on it is 200 nautical miles from the baseline from which the territorial sea is measured), over all anadromous species through out the migratory range of each such species, and all continental shelf fishery resources beyond the fishery conservation zone. 16 *USC* §1811-1812.

Table 4.2 Hawai`i Troll and Handline Fishery: Management Entities (cont.)

Level	Entity	Responsibilities	Jurisdiction[4]
Federal	National Park Service	• Marine areas adjacent to coastal national parks	
	Corps of Engineers	• Harbor Facilities • Permits for activities in navigable waters • Offshore mooring permits	
State	Department of Land and Natural Resources-Division of Aquatic Resources	• Issuance of Commercial Marine Licenses (see Table 4.3) • Collection of Fish Catch Reports (see Table 4.3) • Compiling summary commercial landing trend reports • Completing installation and testing of statewide computerized commercial marine licensing system • Aquaculture	
	DLNR-Hawai`i Fisheries Coordinating Council	• Advise the DLNR on fisheries and coordination of fisheries among various federal, state, and county agencies and private industry	
	DLNR-Division of Boats and Ocean Recreation	• Issuance of Certificates of Number to vessels in state under 5 tons (see Table 4.3) • Investigation of boating accidents of recreational vessels • Issuance of marine/ shore water events permits, including vessels and participants • Issuance of revocable use permits for various small boat harbors • Fish Aggregation Devices (FADs) • Deepwater habitat enhancement • Fish toxicity tests	State marine waters
	Department of Transportation-Harbors Division	• Harbor facilities • Marine and Harbor Patrol officers • Launch ramp rules	State marine waters
	Department of Business, Economic Development and Tourism-Ocean Resources Branch	• Hawaii Ocean Resources Management Plan • Fisheries market promotions • Aquaculture	State marine waters
	Department of Agriculture	• Seafood Promotion • Non-indigenous species importation	State marine waters
	Hawai`i State Legislature Committees	• Rule-making through the Committee on Ocean Recreation and Marine Resources, Committee on Hawaiian Affairs	State marine waters
	Department of Health	• Water Quality Monitoring Program • Seafood Safety • Shellfish regulation and inspection	State marine waters
Local	County Parks and Recreation	• Facilities, Access and Service	County
	County-Public Works Department	• Wastewater treatment plants	County
Traditional[5]			

[4] For further information on laws granting these jurisdiction, see Table 4.1.

[5] See report text on Native Hawaiian Fishery Management (section 4.4).

Table 4.3 Hawai`i Troll and Handline Fishery: Databases and Reporting Requirements

I. Persons or Legal Entities

Data	Commercial Marine License[1] Database	Fish Catch Report[2] Database	Commercial Marine Dealer[3] Database	State Vessel, Registration Numbering Database	US Coast Guard Database[4]
CM License #	X	X	X		
Licensee Name	X	X			
Address	X			X	
Island Office	X				
Soc.Sec.#	X				
Sex	X				
Birthdate	X			X	
Height	X				
Weight	X				
Hair	X				
Eyes	X				
Resident Status	X				
Citizen Status	X				
Phone	X			X	
Fulltime Status	X			X	
Crew Status	X				
Charter Status	X				
Vessel Owner	X			X	X
Ves. Manag.Owner					X
Restrictions					X
Entitlements					X
Captain Name	X				
CML# of seller				X	

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[1] Hawai`i laws require that "no person shall take marine life for commercial purposes...without first obtaining a commerical marine license." *Hawaii Code 189-2* (where 'commercial purpose' is defined as the taking of marine life for profit or gain or as a means of livlihood where the marine life is taken in or outside the state, or where the marine life is sold, offered for sale, landed, or transported for sale anywhere in the state.)

[2] Every commercial marine licensee shall furnish to the department a report with respect to the marine life taken and any live, fresh, or frozen bait used for each month upon a form prescribed by the Hawai`i Division of Aquatic Resources. *Hawaii Code 189-3.*

[3] Every commercial marine dealer who engages in the business of buying or selling marine life or products taken within, or adjacent to, the waters of the state, shall render to the department...on or before the tenth day of each month on blanks to be furnished by the department, a true and correct statement showing the weight, number, and value of each of the species of marine life purchased, received or sold during the previous month. *Hawaii Code 189-10.* (Commercial marine dealer means any person who sells or exchanges, or who is an agent in the transfer of marine life obtained directly from a commercial marine licensee, or any commercial marine licensee who sells or exchanges marine life at retail.).

[4] With a few exceptions, all commercial vessels of 5 or more net tons which are used on the navigable waters of the U.S. must be documented by the U.S. Coast Guard. A recreational vessel may be documented if it is 5 or more net tons.

Table 4.3 Hawai`i Troll and Handline Fishery: Databases and Reporting Requirements (Cont.)

II. Vessels

Data	Commercial Marine License Database	Fish Catch Report Database	Commercial Marine Dealer Database	Vessel Numbering Database	US Coast Guard Database
Vessel Name		X		X	X
Vessel Reg. #	X	X		X	
USCG Vessel #	X				X
Homeport (place kept)	X	X		X	X
Gear	X	X			
Gross Weight					X
Net Weight				X	X
Length				X	X
Breadth					X
Depth				X	X
Hull Material					X
Place Built				X	X
Mortgage Info.				X	X
Type of Vessel				X	
Hull I.D. Number				X	
Hull Manufacturer				X	
Type of Fuel				X	
Principal Use					X
Radio Comm.					X
Number of Hulls					X
Colors					X
Engine					X
Propulsion					X
Sell Catch?					X
Trailer Boat?					X
Avg. # Passengers					X