1 Introduction and Overview

This document describes the human environment associated with groundfish fisheries managed by the National Marine Fisheries Service (NMFS) under the Bering Sea and Aleutian Islands (BSAI) and Gulf of Alaska (GOA) Groundfish Fishery Management Plans (FMPs). The sector and regional profiles included in this section were first prepared by Northern Economics, Inc. for the Alaska Groundfish Fisheries Draft Programmatic Supplemental Environmental Impact Statement published by the National Marine Fisheries Services-Alaska Region (NMFS-AKR) in January 2001. These initial profiles contained fishery data up through 1998. For this revised SEIS, Northern Economics updated the profiles by adding data for 1999 and 2000.

Several classes or groups were developed to organize and present fisheries data for the updated profiles. These divisions are summarized below:

- Nine catcher vessel classes were defined based on fishing activities in a given year and vessel size.
- Five classes of catcher processors were defined based on the predominant product type or gear type associated with these vessels.
- Six classes of inshore processors and a mothership class were defined, primarily based on the regional location of the facilities.
- Groundfish species were aggregated into four main groups to provide a relatively uniform description of activities by vessel class and to report as much catch data as possible without violating NMFS restrictions pertaining to release of confidential data.[1] Less inclusive species aggregations are also reported on a class by class basis.
- Seven geographic regions were defined to enhance the presentation of information on the linkages between the fishing and processing industry and the communities affected by fishery management decisions.

More detailed descriptions of each of these groupings are presented in Table 1.1-1. through Table 1.1-4

Table 1.1-1. Catcher Vessel Groupings Identified for Sector and Regional Profiles

ACRONYM	CATCHER VESSEL CLASSES (all mutually exclusive)
TCV BSP ≥ 125	Bering Sea Pollock Trawl Catcher Vessels Greater than or Equal to 125 Feet in Length
TCV BSP 60-124	Bering Sea Pollock Trawl Catcher Vessels 60 to 125 Feet in Length
TCV Div. AFA	Diversified AFA-Eligible Trawl Catcher Vessels Greater than or Equal to 60 Feet in Length
TCV Non-AFA	Non-AFA Trawl Catcher Vessels Greater than or Equal to 60 Feet in Length
TCV < 60	Trawl Catcher Vessels Less than 60 Feet in Length
PCV	Pot Catcher Vessels
LCV	Longline Catcher Vessels
FGCV 33-59	Fixed Gear Catcher Vessels 33 Feet to 59 Feet in Length
FGCV ≤ 32	Fixed Gear Catcher Vessels Less Than or Equal to 32 Feet in Length

[1] NMFS and NOAA policies regarding the protection of confidential data require that fisheries operations data be aggregated to include information from at least four individual catcher vessels. Because of the limited activity of some types of vessels in some regions, disclosure of less aggregated species data would have violated this confidentiality limitation.

Table 1.1-2. Processor Groupings Identified for Sector and Regional Profiles

ACRONYM	INSHORE PROCESSOR AND MOTHERSHIP CLASSES (all mutually exclusive)
BSP-SP	Bering Sea pollock inshore plant
APAI-SP	Alaska Peninsula and Aleutian Islands inshore plant
K-SP	Kodiak inshore plant
SC-SP	Southcentral Alaska inshore plant
SE-SP	Southeast Alaska inshore plant
FLT	Floating inshore plant
MS	Motherships
ACRONYM	**CATCHER PROCESSOR CLASSES** (all mutually exclusive)
ST-CP	surimi trawl catcher processor
FT-CP	fillet trawl catcher processor
HT-CP	head and gut trawl catcher processor
L-CP	longline catcher processor
P-CP	pot catcher processor

Table 1.1-3. Regional Groupings Identified for Sector and Regional Profiles

ACRONYM	REGIONS (Boroughs, Census Areas, Municipalities, and Counties Included)
AKAPAI	**Alaska Peninsula and Aleutian Islands Region.** Includes the Aleutians East Borough and the Aleutians West Census Area.
AKSC	**Southcentral Alaska Region.** Includes Valdez-Cordova Census Area, Kenai Peninsula Borough, Matanuska-Susitna Borough, and the Municipality of Anchorage.
AKKO	**Kodiak Region.** Includes the Kodiak Island Borough and other parts of the Kodiak archipelago.
AKSE	**Southeast Alaska Region**. Includes Yakutat Borough, Skagway-Hoonah-Angoon Borough, Haines Borough, City and Borough of Juneau, City and Borough of Sitka, Wrangell-Petersburg Census Area, Prince of Wales-Outer Ketchikan Census Area, and Ketchikan Gateway Borough.
WAIW	**Washington Inland Waters Region**. All counties bordering Puget Sound and the Strait of Juan de Fuca, including Clallum, Island, Jefferson, King, Kitsap, Mason, Pierce, San Juan, Skagit, Snohomish, Thurston, and Whatcom.
ORCO	**Oregon Coast Region.** Counties bordering the Northern Oregon coast including Lincoln, Tillamook, and Clatsop.
OTHER	Includes all other boroughs, census areas, municipalities and counties in the United States.

Table 1.1-4. Species and Areas Used in the Sector and Regional Profiles

ACRONYM	SPECIES AGGREGATIONS
ARSO	Atka mackerel, all rockfish species, sablefish, and other groundfish
FLAT	all flatfish species (excludes halibut, which is not a groundfish)
PCOD	Pacific cod
PLCK	Pollock
GFSH	all groundfish species, including PLCK, PCOD, FLAT, and ARSO
OT-AM	other groundfish and Atka mackerel combined
OTHR	other groundfish species (skates, sculpin, squid, and other miscellaneous species)
SABL	Sablefish
AMCK	Atka mackerel
ROCK	all rockfish
non-GFSH	all non-groundfish species harvested in Alaska commercial fisheries, including salmon, crab, halibut, and herring
CRAB	all crab species
HALB	Halibut
HERR	Herring
SALM	all salmon species
Other	all other species
ACRONYM	**FMP SUBAREAS**
BSAI	Bering Sea and Aleutian Islands
AI	Aleutian Islands
BS	Bering Sea
GOA	Gulf of Alaska
WG	Western Gulf
CG	Central Gulf
EG	Eastern Gulf

Chapter 2 contains profiles of nine classes of catcher vessel, five catcher processor classes, six inshore processing plant classes, including inshore floating processors, and a mothership class. The profiles provide detail on each class's involvement and dependence on the groundfish fisheries of the North Pacific and link fishing and processing activities to communities and regions in Alaska, Washington, and Oregon.

Chapter 3 contains profiles of six regions in Alaska, Washington, and Oregon that have particular interest in the harvesting and processing of groundfish from the North Pacific. Four of the regions are in Alaska and cover the coastal areas including the Alaska Peninsula and Aleutian Islands, Kodiak, Southcentral Alaska, and Southeast Alaska. A single region in Washington is defined that includes counties that border that state's inland marine waters. The Oregon Coast Region includes three coastal counties in Northwest Oregon. A final regional class includes all other boroughs, census areas, municipalities and counties in the United States.

Chapter 3 also contains profiles of the Community Development Quota (CDQ) communities involved in the groundfish fisheries, summaries of groundfish product flows and markets, and a brief description of the involvement in Alaska groundfish of domestic secondary processors and the transportation industry.

1.1 History

This introductory section provides a brief history of the groundfish fisheries in the North Pacific after the enactment of the Magnuson Fishery Conservation and Management Act in 1976 (renamed the Magnuson-Stevens Fishery Conservation and Management Act when amended in 1996). The history includes a discussion of the groundfish fisheries as they evolved from fisheries dominated by large offshore foreign fishing and processing vessels, through the days of the joint venture fisheries, to the modern era characterized by U.S.-owned fishing and processing vessels and processing plants located in the coastal regions of Alaska. The overview also provides a brief discussion of major amendments and initiatives that, from the analysts' perspective, have had a significant influence on the domestic groundfish fisheries. The overview ends with a summary of the activities of catcher vessels, catcher processors, inshore processors, and motherships from 1992 to 2000.

The Magnuson Act assigned NMFS and the regional fishery management councils the responsibility of managing the fisheries in the U.S. Exclusive Economic Zone (EEZ) that extended out 200 miles from the seaward boundaries of all coastal states. In the North Pacific NMFS and NPFMC took over management of a groundfish fishery that was largely an unmanaged fishery, open to all who wished to participate.

In the Magnuson Act Congress declared that "A national program for the development of fisheries which are underused or not used by the United States fishing industry, including bottomfish off Alaska, is necessary to assure that our citizens benefit from the employment, food supply, and revenue which could be generated thereby." (Sec 2(a)(7)). The FMP for the GOA, approved by NPFMC and adopted and implemented by NMFS on December 1, 1978, established broad management goals and principles. The FMP provided regulations that defined groundfish species and prohibited species, and established a process for determining optimal yields (OY) and setting harvest guidelines. In addition to establishing fishery regulations, one of the primary goals of the GOA FMP was to develop a domestic fishing and processing industry. A similar FMP for the BSAI was approved by NPFMC and implemented by NMFS on January 1, 1982.

As indicated in the goals and objectives of MSFCMA and the GOA and BSAI Groundfish FMPs, the development of the domestic groundfish fishing and processing industries was a high priority of Congress and NPFMC, and therefore, of NMFS. The objectives of the BSAI Groundfish FMP, which are similar to those of the GOA Groundfish FMP, are shown below.

BSAI FMP Plan and Management Objectives

Primary Plan Objectives:

1. Promote conservation while providing for optimum yield.
2. Promote efficient use of fishery resources but not solely for economic purposes.
3. Promote fair resource allocation without allowing excessive privileges.
4. Use best scientific data available.

Secondary Plan Objectives:

1. Conservation and management measures must be flexible enough to account for unpredictable variations in resource and industry.
2. Manage stocks throughout their range.
3. Promote rebuilding if stocks are less than Maximum Sustainable Yield.
4. Promote efficiency while avoiding disruption of existing social and economic structures.
5. Management measures should contain a safety margin in setting Acceptable Biological Catches when the quality of information concerning the resource and the ecosystem is questionable.
6. Minimize impacts of fishing strategies on other fisheries and environment.

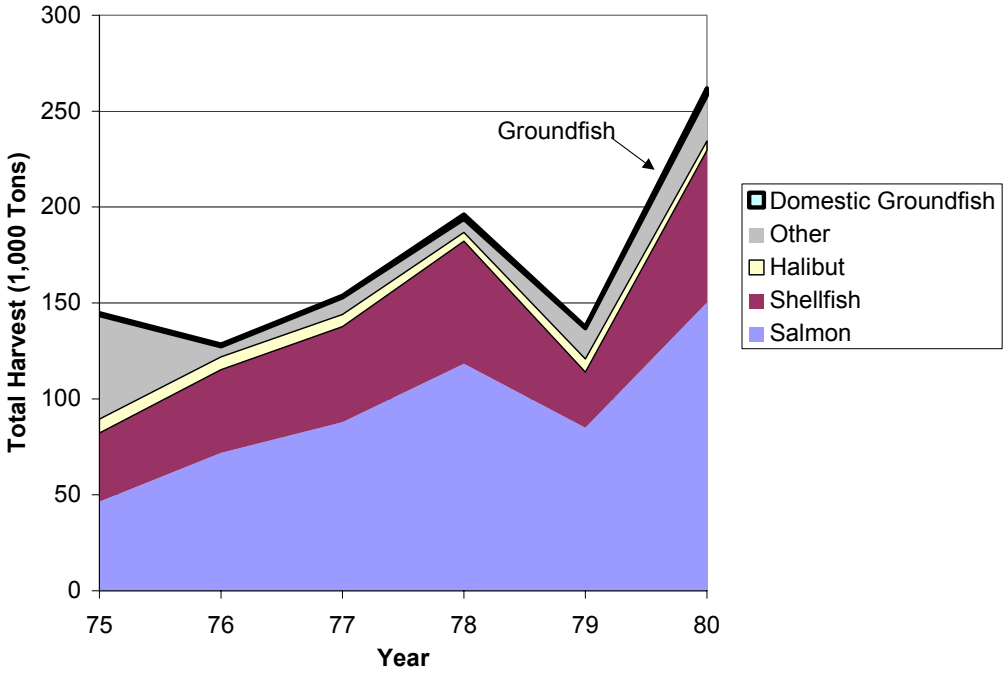
Management Objectives:

1. Rational and optimal biological and socioeconomic use of resource.
2. Minimize impact on prohibited species and rebuild halibut stocks.
3. Provide for the orderly development of domestic groundfish fisheries consistent with objectives 1 and 2 at expense of foreign participation.
4. Provide for foreign fisheries consistent with objectives 1, 2, and 3.
5. Seek to maintain the productive capacity of the habitat required to support the groundfish fishery.

Figure 1.1-1 shows total harvests of all major Alaska fisheries by the domestic fishing and processing industry from 1975 through 1980. Domestic harvests were minimal for groundfish, compared to salmon and crab, accounting for less than 6,000 of the 262,000 tons harvested in domestic fisheries. The value of groundfish harvests is estimated to have accounted for only 0.2 percent of the total value of domestic fisheries in Alaska in 1980. Figure 1.1-2 shows the same data for 1977–1980, but adds the harvests of groundfish in the EEZ by foreign fishing vessels. The Figure dramatically demonstrates the magnitude of the foreign fisheries in the Alaska EEZ and provides an indication of the development of domestic fishing and processing infrastructure that would be necessary to fully Americanize the groundfish fisheries off Alaska.

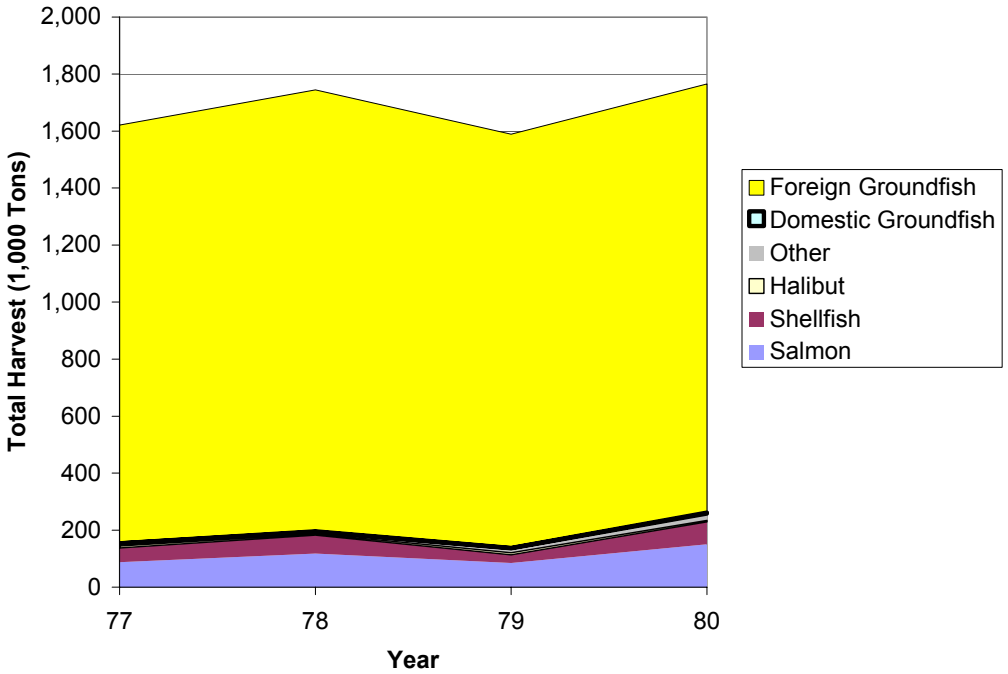
Americanization of the groundfish fisheries was enhanced by actions of NPFMC and NMFS that provided domestic harvesters and processors a priority over foreign interests. Domestic processors were surveyed in the fall each year prior to the setting of total allowable level of foreign fishing (TALFF) to estimate the amount of domestic annual processing (DAP) for the year. Domestic processors were generally allocated the DAP from survey results if it was less than the total allowable harvest (TAC) whether or not domestic processors had a track record proving they could process that level of the TAC. The DAP directly reduced the TALFF. In addition to domestic processing priority, a domestic annual harvesting (DAH) priority was created. If U.S. fishing vessels wished to participate in groundfish fisheries, they were also given a priority over TALFF regardless of whether domestic processors were involved. The creation of the DAH led to joint venture processing (JVP) operations between U.S. fishing vessels and foreign motherships.

Figure 1.1-1. Domestic Harvests in Major Alaska Fisheries, 1975–1980



Source: Commercial Operator Annual Reports 1975–1980 supplied by ADFG, June 2000.

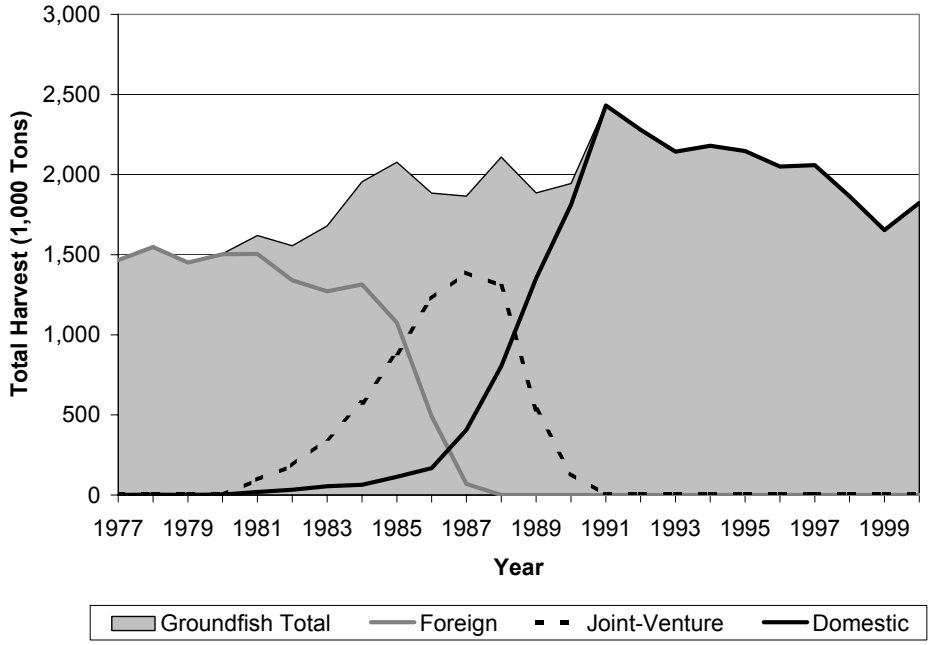
Figure 1.1-2. Foreign and Domestic Harvests in Major Alaska Fisheries, 1977–1980



Source: Commercial Operator Annual Reports 1975–1980, supplied by the Alaska Department of Fish and Game (ADFG), June 2000; Foreign Fisheries Data, NMFS Observer Program, June 2000.

Under these incentives, the U.S. groundfish fishery off Alaska moved from almost entirely foreign to joint ventures to a completely domestic fishery by 1991, with 100 percent of groundfish harvested and processed by U.S.-owned vessels or shorebased processing plants in Alaska communities.[2] The transition from foreign fishing and processing to domestic and processing is demonstrated in Figure 1.1-3.

Figure 1.1-3. Foreign, Joint Venture, and Domestic Groundfish Fishing and Processing, 1977–2000



Source: Economic Status of the Groundfish Fisheries off Alaska, 1991 and 1995, R.K. Kinoshita, et al, April 1997; and NMFS and NMFS Blend Data, June 2001.

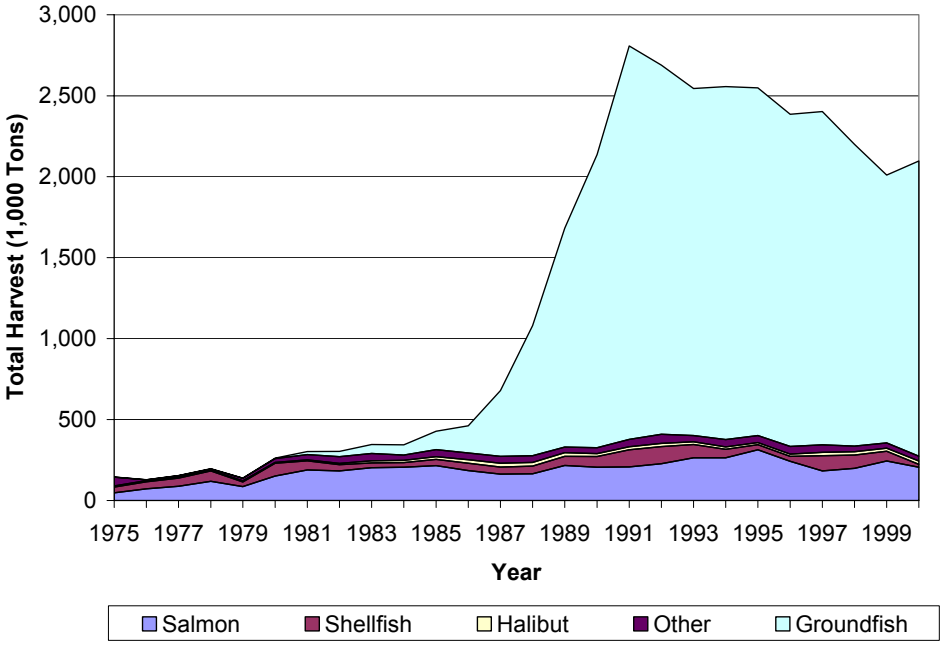
As shown in Figure 1.1-3, the transition from foreign fishing and processing to U.S. fishing and foreign processing with JVPs occurred in the early 1980s. JVP operations peaked in 1987 and TALFFs were eliminated by 1988. In 1986 the transition to domestic processing began to accelerate, and by 1989 DAP exceed JVPs. The last JVP operations terminated in 1990.

Much of the early development of domestic processing came in the form of U.S.-owned catcher processors and offshore motherships. In 1990, nearly 1.37 million tons of groundfish were processed at sea by domestic catcher processors and motherships, compared to 0.44 million tons processed by shorebased processing facilities. By 1991, the amount of groundfish handled by domestic processors was nearly 10 times greater than the amount of salmon, crab, halibut, and other species combined.

The growth and relative importance of the domestic processing of groundfish fisheries is demonstrated in Figure 1.1-4. Between 1992 and 2000, groundfish accounted for approximately 85 percent of the total volume of fishery resources harvested in the commercial fisheries of Alaska. Figure 1.1-5 shows the growth and relative importance of the domestic groundfish fisheries in terms of wholesale value. From 1977 through 2000 groundfish has developed to be the single most valuable resource for domestic processors, accounting for more than 45 percent of total wholesale value of all Alaska fishery resources.

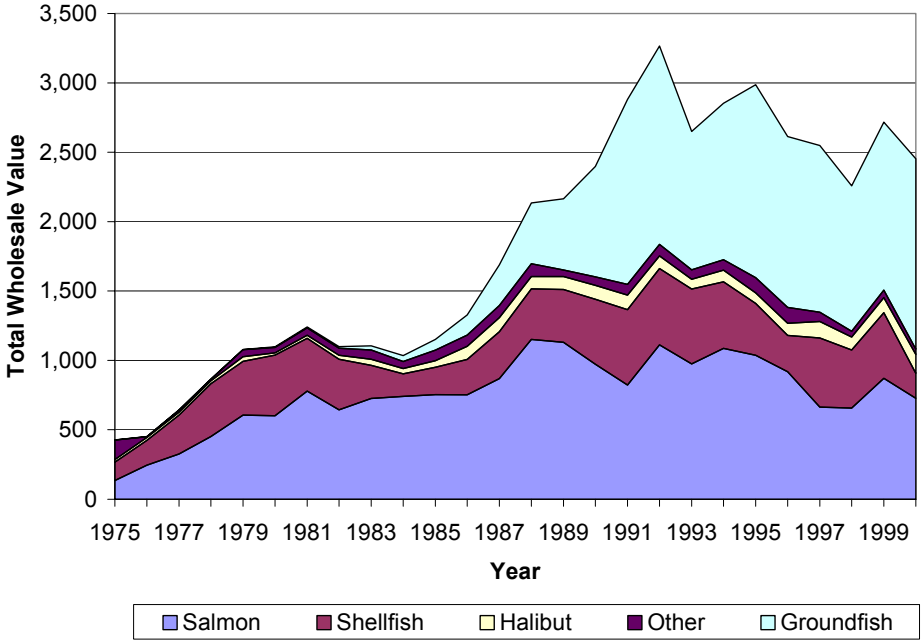
[2] Fishing and processing vessels were required to have at least 50 percent U.S. ownership, but no similar ownership requirements were imposed on shorebased processors—all shorebased processors in Alaska were considered domestic regardless of the actual ownership of the facility.

Figure 1.1-4. Volume of Domestic Processing of Groundfish and Non-Groundfish Species from Alaska Waters, 1975–2000



Sources: Commercial Operator Annual Reports 1975-1984 supplied by ADFG, June 2000; Commercial Operator Annual Report Summaries 1985-1998 supplied by NPFMC, July 2000; and Alaska Commercial Fisheries Entry Commission (CFEC)/ADFG Fish Ticket Data provided by NPFMC, June 2000 and updated in June 2001.

Figure 1.1-5. Value of Domestic Processing of Groundfish and Non-Groundfish Species from Alaska Waters, 1975–2000



Sources: Commercial Operator Annual Reports 1975-1984 supplied by ADFG, June 2000; Commercial Operator Annual Report Summaries 1985-1998 supplied by NPFMC, July 2000; and CFEC/ADFG Fish Ticket Data provided by NPFMC, June 2000 and updated in June 2001.

The transition of groundfish from a foreign fishery to a domestic fishery occurred very rapidly. During the transition, NPFMC and NMFS became increasingly aware that managing a largely foreign fishery and allocating fishery resources among foreign and domestic interests was much easier than managing a purely domestic fishery and allocating fishery resources among competing U.S. interests.

When the fishery was largely foreign, it was relatively easy to reduce harvest levels or change regulations. With a largely domestic fishery, every management action was more likely to negatively affect at least some part of the U.S. constituency. It was becoming increasingly clear that rapid expansion of the domestic fleet under open access was creating conditions that led to a race for fish. The race exacerbated bycatch and encouraged discards of less valuable portions of the catch. If a processor chose to use these less valuable fish, the extra time spent would reduce its ability to catch more valuable portions of the allowable harvest—other U.S. competitors who chose not to process less valuable products would be able to garner larger shares. Under TALFF and JVP fisheries, open access and the race for fish was not a problem. Each country was allocated a portion of the TALFF or the JVP—allocations included amounts of directed fisheries and estimated amounts necessary to cover bycatch of non-target and prohibited species. Each country's allocation was subdivided to individual participants—methods used by each country to internally subdivide its allocation were not a concern of NMFS. Each country knew that if it reached its allocation of any species it would not be allowed to catch any more of that species. With U.S. fishery observers on every foreign vessel, NMFS was reasonably assured of compliance and accurate reporting. The penalties were swift and sure if observers were mistreated or catches were misreported . From the perspective of NMFS, the foreign fishery was essentially managed with individual quotas and a race for fish did not exist.

With a fully domestic fishery and a democratic allocation, process developed by NPFMC that invited and encouraged public comment and review, management and allocation among participants was no longer a matter of government edict. A fully domestic fishery meant that management decisions would likely cause some level of economic harm to one or more sectors of U.S. fishers or processors.

Allocation decisions would soon evolve into increasingly bitter disputes. The first hint of these consequences occurred with the allocation of sablefish (often called "black cod") among gear types in the GOA under Amendment 14. Although not directly an allocation issue, the ban on roe stripping (Amendment 19 to the GOA FMP and Amendment 14 to the BSAI FMP), also indicated the level of antagonism that could be generated in the domestic fishing and processing industry when fishery managers impose regulations that may have negative economic consequence for one sector while providing positive economic consequences for another.[3]

The development of an Individual Fishing Quota (IFQ) system for sablefish and halibut (a species not covered by the FMPs of interest in this document) and the allocation of pollock between inshore and offshore processors fully demonstrated the acrimony that can occur when management decisions allocate resources between domestic users.[4] Following its decisions to implement IFQs in the sablefish and halibut longline fisheries and allocate pollock between inshore and offshore processors, NPFMC realized that the rapid Americanization of groundfish had created an overcapitalized, open access fishery that generated a profusion of fishery management issues. In response, NPFMC initiated a Comprehensive Rationalization Program (CRP) in December 1992 and published the problem statement shown below.

[3] The ban on roe stripping made it impractical for head and gut factory trawlers to participate in the pollock fishery. The loss incurred by the head and gut factory trawler translated to a gain for other factory trawlers as well as inshore processors that could continue to operate profitably in pollock fisheries under the roe stripping prohibition.

[4] The sablefish and halibut IFQ program approved by NPFMC in 1991 included provisions for development of halibut and sablefish CDQs for disadvantaged Western Alaska communities. CDQs for pollock were included in the initial inshore-offshore allocation approved by the Council in 1992. The inshore-offshore and pollock CDQs were implemented by NMFS in 1992. CDQs for sablefish and halibut were not implemented until 1995.

NPFMC Comprehensive Rationalization Program Problem Statement

Expansion of the domestic fleet harvesting fish in the EEZ off Alaska, in excess of that needed to harvest the optimum yield efficiently, has made compliance with the Magnuson Act's National Standards and achievement of the Council's comprehensive goals, adopted December 7, 1984, more difficult under current management regimes. In striving to achieve its comprehensive goals, the Council is committed to: (1) assure the long-term health and productivity of fish stocks, and other living marine resources of the North Pacific and Bering Sea ecosystem, (2) support the stability, economic well-being and diversity of the seafood industry, and provide for the economic and social needs of the communities dependent on that industry, and (3) efficiently manage the resources in its jurisdiction to reduce bycatch, minimize waste, and improve utilization of fish resources to provide the maximum benefit to the present and future generations of fishers, associated fishing industry sectors, communities, consumers, and the nation as a whole.

The Council's overriding concern is to maintain the health of the marine ecosystem to ensure the long-term conservation and abundance of the groundfish and crab resources. In addition, the Council must address the competing and oftentimes conflicting needs of the domestic fisheries that have developed rapidly under open access, fisheries which have become over-capitalized and mismatched to the finite fishery resources available. Symptomatic of the intense pressures in the over-capitalized groundfish and crab fisheries under the Council jurisdiction off Alaska are the following problems:

1. Harvesting capacity in excess of that required to harvest the available resource.
2. Allocation and preemption conflicts between and in industry sectors, such as with inshore and offshore components.
3. Preemption conflicts between gear types.
4. Gear conflicts in fisheries where there is overcrowding of fishing gear due to excessive participation and surplus fishing effort on limited grounds.
5. Dead-loss such as with ghost fishing by lost or discarded gear
6. Bycatch loss of groundfish, crab, herring, salmon, and other non-target species, including bycatch, which is not landed for regulatory reasons.
7. Economic loss and waste associated with discard mortality of target species harvested but not retained for economic reasons.
8. Concerns regarding vessel and crew safety, which are often compromised in the race for fish.
9. Economic instability in various sectors of the fishing industry, and in fishing communities caused by short and unpredictable fishing seasons, or preemption which denies access to fisheries resources.
10. Inability to provide for long-term, stable fisheries based economy in small economically disadvantaged adjacent coastal communities.
11. Reduction in ability to provide a quality product to consumers at a competitive price, and thus maintain the competitiveness of seafood products from the EEZ off Alaska on the world market.
12. Possible impacts on marine mammals and seabirds, and marine habitat.
13. Inability to achieve long-term sustainable economic benefits to the Nation.
14. A complex enforcement regimen for fishers and management alike, which inhibits the achievement of the Council's comprehensive goals.

In the years following the initiation of the CRP, NPFMC and NMFS, whether intentionally or unintentionally, have progressively limited the number of participants and the types of activities in which they can engage. Many of the plan amendments have in one way or another reduced the

possibility that the actions of one group of fishers or processors can negatively affect the opportunities of other fishers or processors. In other words, the plan amendments approved since the Americanization of the fisheries have generally reduced or eliminated one or more of the externalities caused by the open access management system that evolved with the Americanization of the groundfish fishery. Major issues included the following:

- IFQs for sablefish and halibut were approved by NPFMC in 1991 and implemented by NMFS in 1995—GOA FMP Amendment 20 and BSAI FMP Amendment 15. IFQs eliminated the open access fishery for sablefish and halibut and led to the establishment of CDQs for sablefish and halibut.
- Allocations of pollock between inshore and offshore sectors were approved and implemented in 1992 through GOA FMP Amendment 23 and BSAI FMP Amendment 18. Allocations were reauthorized in 1995. The inshore-offshore allocations reduced the possibility that processing by one sector (inshore or offshore) could negatively affect harvesting and processing by the other sector.
- The moratorium on new harvesting vessels entering the groundfish fisheries was implemented through GOA Amendment 28 and BSAI Amendment 23. The moratorium reduced the possibility of significant increases in the number of large-capacity harvesting vessels actively participating in the groundfish fisheries.
- An allocation of the BSAI Pacific cod harvests between jig, fixed gear, and trawl fisheries was implemented through BSAI Amendment 24. This amendment was reauthorized in 1996 (Amendment 46) with changes in the allocation and an additional split between trawl catcher vessels and trawl catcher processors. Amendment 64, approved in 1999, further subdivided the fixed gear portion of the BSAI Pacific cod fishery among longline catcher processors, longline catcher vessels, and pot gear vessels. The Pacific cod allocations in the BSAI provided trawlers and fixed gear vessels a fixed percentage of the fishery, and eliminated the threat that the harvests of one gear group would impinge on the harvests of the other.
- The NPFMC Groundfish License Limitation Program (LLP) was approved in 1995, further reducing the number of vessels eligible to participate in the groundfish fisheries. The LLP also added the remaining groundfish species in the BSAI to the CDQ program. Amendments in 1998 and 2000 have placed additional restrictions and qualification criteria on licenses. The CDQ portion of the LLP was implemented in 1998 and the first licenses were issued in 2000. The LLP removed additional amounts of the groundfish harvest from the open access fishery and further reduced the possibility of an increase in harvesting capacity that could erode the expectations of currently participating vessels.
- With the approval and implementation of the American Fisheries Act (AFA) of 1998, the open access nature of the pollock fishery in the BSAI was virtually eliminated. The vessels and processors allowed to participate in the fishery was fixed, and each provided access to a fixed portion of the pollock resource through a cooperative. The possibility that an AFA vessel or processor can have negative impacts on the ability of another AFA vessel or processor to participate in the BSAI pollock fishery was minimized.

1.2 Profiles Summary

Table 1.2-1 is a summary of domestic harvesting and processing of groundfish during the 1992 to 2000 period. Information presented in the table was derived from a variety of data sources, including CFEC/ADFG Fish Ticket Data, NMFS Observer Data, NMFS Blend Data, and NMFS Weekly Production Report Data. NMFS and NPFMC provided all data in June 2001.

The first section of Table 1.2-1 shows numbers of domestic vessels and processors that participated in groundfish fisheries during the 1992-2000 period. The numbers are from official data sources, but exclude catcher vessels and processors that were only incidental participants. An average of 1,101 catcher vessels made landings above threshold levels. In the same period, an average of 109 catcher processors and 69 motherships and inshore processors participated in the groundfish fisheries.

The second section shows the importance of groundfish fisheries relative to other major Alaska fisheries, including salmon, crab, herring, and halibut. The data show total ex-vessel values for groundfish and non-groundfish species delivered to processors. Values for non-groundfish species include only deliveries to groundfish processors considered in this report. Values of non-groundfish species delivered to processors that do not process groundfish are excluded. Between 1992 and 2000, processors received groundfish with an average annual ex-vessel value of $245 million. This Figure represents approximately 60 percent of the total ex-vessel value for groundfish and non-groundfish species delivered to the same processors.

The third and fourth sections show the total groundfish tons reported by North Pacific processors. These data include discards and retained groundfish. Between 1992 and 2000, total groundfish harvests ranged from a high of 2.8 million tons in 1992 to 1.7 million tons in 1999. Pollock accounted for approximately 66 percent of total reported harvests. Approximately 85 percent of total reported groundfish harvests were in the BSAI.

An average of 572 thousand tons of product was produced from groundfish between 1992 and 2000. This equated to an average utilization rate (product tons ÷ reported tons) of 29 percent. The estimated average wholesale value of production was $1.2 billion between 1992 and 2000 or $608 per reported metric ton (MT) of harvest. The groundfish fishing and processing industry generated an estimated average of 4,642 FTE jobs[5] in Alaska and 5,449 FTE jobs in the Washington Inland Waters Region (WAIW) with an estimated total average payment to labor of $581 million.

[5] Jobs are estimated as position counts on catcher vessels and full-time equivalents (FTEs) at processors.

Table 1.2-1. Summary of Domestic Groundfish Fishing and Processing, 1992–2000

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000
Groundfish Vessels and Processors									
No. of Catcher Vessels [a]	1,658	1,339	1,437	1,334	1,278	1,332	1,177	1,223	1,261
No. of Catcher Processors	136	120	116	118	112	106	98	88	90
No. of Inshore Processors and Motherships [b]	77	69	73	77	67	64	62	61	69
All Vessels & Processors	1,871	1,528	1,626	1,529	1,457	1,502	1,337	1,372	1,420
Total Ex-Vessel Value in Major Alaska Fisheries ($Millions and Percent of Total)									
Groundfish	266.2	172.9	197.6	261.3	232.4	334.7	181.0	247.4	308.3
Non-Groundfish [c]	180.5	134.0	166.1	193.1	154.8	170.6	139.4	250.7	107.5
Groundfish (Percent of Total)	59.6	56.3	54.3	57.5	60.0	66.2	56.5	49.7	74.1
Total Groundfish Tons and Species Groups as a Percent of Total Groundfish									
Groundfish Tons (1,000) [d]	2,275	2,139	2,178	2,140	2,048	2,057	1,864	1,654	1,823
ARSO (Percent of GFSH)	9.7	11.0	9.8	10.2	11.6	10.5	9.1	11.1	10.5
FLAT (Percent of GFSH)	10.4	8.9	10.5	9.8	11.2	13.5	10.2	8.8	9.8
PCOD (Percent of GFSH)	12.5	10.4	11.0	14.6	15.0	15.9	13.8	14.6	13.4
PLCK (Percent of GFSH)	67.3	69.7	68.6	65.4	62.1	60.2	67.0	65.5	66.3
Reported tons from FMP Subareas as a Percent of Total Groundfish									
BSAI (Percent of Groundfish)	85.5	84.6	85.9	87.4	87.7	85.1	82.3	83.0	86.0
GOA (Percent of Groundfish)	14.5	15.4	14.1	12.6	12.3	14.9	17.7	17.0	14.0
Total Production, Product Utilization Rate, Product Value, and Value per MT of Round Weight									
Product Tons (1,000)	565.7	544.9	569.8	594.6	598.1	598.5	550.7	533.2	593.8
Utilization Rate (Percent)	25.1	25.5	26.2	27.9	29.3	29.2	29.6	32.3	32.9
Product Value ($Millions)	1,411.3	990.3	1,124.1	1,381.4	1,224.0	1,194.7	1,048.6	1,210.9	1,371.6
Value per Round Ton ($)	620.2	463.0	516.2	645.5	597.6	580.7	562.5	732.0	752.3
Total Employment by Region (Catcher Vessel Positions Plus Processor FTEs) [e]									
Alaska [f]	4,483	3,953	4,302	4,814	4,686	4,833	4,527	4,817	5,369
WAIW [g]	5,520	5,430	5,076	6,109	6,706	5,508	5,569	4,473	4,638
Total [h]	10,404	9,682	9,680	11,205	11,651	10,640	10,371	9,664	10,379
Total Payments to Labor by Region ($Millions)									
Alaska [f]	194.8	143.1	174.3	207.8	183.3	191.1	159.3	200.6	225.7
WAIW [g]	428.9	293.1	326.1	412.1	368.6	387.8	308.0	347.4	410.1
Total [h]	652.2	494.0	547.4	646.8	585.3	573.0	517.1	578.5	645.3

Sources: CFEC/ADF&G Fish Tickets, NMFS Observer Data, NMFS Blend Data and NMFS Weekly Production Report Data, June 2001.

[a] The count of catcher vessels excludes vessels that made only incidental landings or could not be classified. Since 1992, there have been an average of 408 such vessels. The annual deliveries of these vessels have averaged less than 70 tons and generated an average of only $87,000 in ex-vessel revenues.

[b] The count of processors does not include facilities that acted as buying stations or inshore processors that were not identified with a specific port. There were an average of 53 excluded facilities, which accounted for an average of 0.3 percent of total groundfish processing since 1992.

[c] Includes all deliveries of salmon, crab, halibut, and other non-groundfish species to groundfish processors.

[d] Includes all groundfish reported by processors including discards.

[e] Includes skippers, fishing crew, processing crew, managers, and home office support staff. Total employment estimates combine FTEs from all processors with position counts from catcher vessels.

[f] Includes coastal boroughs and census areas from the Aleutians southward and eastward through Southeast Alaska.

[g] Includes coastal counties in Washington that border on Puget Sound and the Strait of Juan de Fuca.

[h] Totals include all areas of the U.S. not included in Alaska and WAIW.

Table 1.2-2 provides additional details for 2000, the most recent year for which complete data are available for all sectors.

Table 1.2-2.Summary of Groundfish Fishing and Processing, 2000

Vessel Class	No. of Facilities	Harvest (Thousands of MT)				Payments for Output ($Millions)	Payments to Labor ($Millions)	Total Employment
		PLCK	PCOD	ARSO	FLAT			
Catcher Vessels [a]	1,078	686.48	108.58	22.69	15.89	308.34	123.33	4,312
Catcher Processors [b]	90	519.54	142.47	157.36	157.11	699.25	263.14	3,787
Inshore Processors & Mothershipsb	69	689.61	102.73	33.19	21.32	693.20	393.99	4,537
Total [c]	**1,237**	**1,895.63**	**353.78**	**213.24**	**194.32**	**1,700.79**	**780.46**	**12,636**

Sources: CFEC/ADF&G Fish Tickets, NMFS Observer Data, NMFS Blend Data and NMFS Weekly Production Report Data, June 2001.
[a] For catcher vessels harvests are retained catches, payments for output are ex-vessel values, and total employment is the estimate of total positions, which vary only by the number of vessels in the fishery.
[b] For all processors, harvests are total reported catches (retained and discarded), payments for output are first wholesale product values, and total employment is the estimate of total FTE positions.
[c] The total row avoids double counting. Therefore, total harvest and total payment for output is the sum of catcher processors, inshore processors, and motherships. Number of facilities, payments to labor, and total employment include all three sectors so that catcher vessel employment is the number of positions and employment for processors is the number of FTE positions. Therefore, the estimate of total employment should be viewed only as an indicator.

Figure 1.2-1 through Figure 1.2-7 show the primary fishing locations of vessels using trawl gear. Each Figure reflects catch data averaged over 1997-1999 for ADFG 6-digit statistical areas for the seven major fisheries targeted by vessels using trawl gear. Data for each statistical area are sorted by size and classified into one of five different bins. Bins sizes differ by species with darker bins representing significantly higher catches than lighter bins. Figure 1.2-8 through Figure 1.2-10 show the primary fishing locations of vessels using non-trawl gear. Vessels using non-trawl gear target a less diverse mix of higher value species than are targeted by trawl vessels. Similar figures are developed for each of the individual catcher vessels and catcher processor sectors.

Figure 1.2-1. Primary Fishing Locations of Pollock with Trawl Gear, 1997-1999

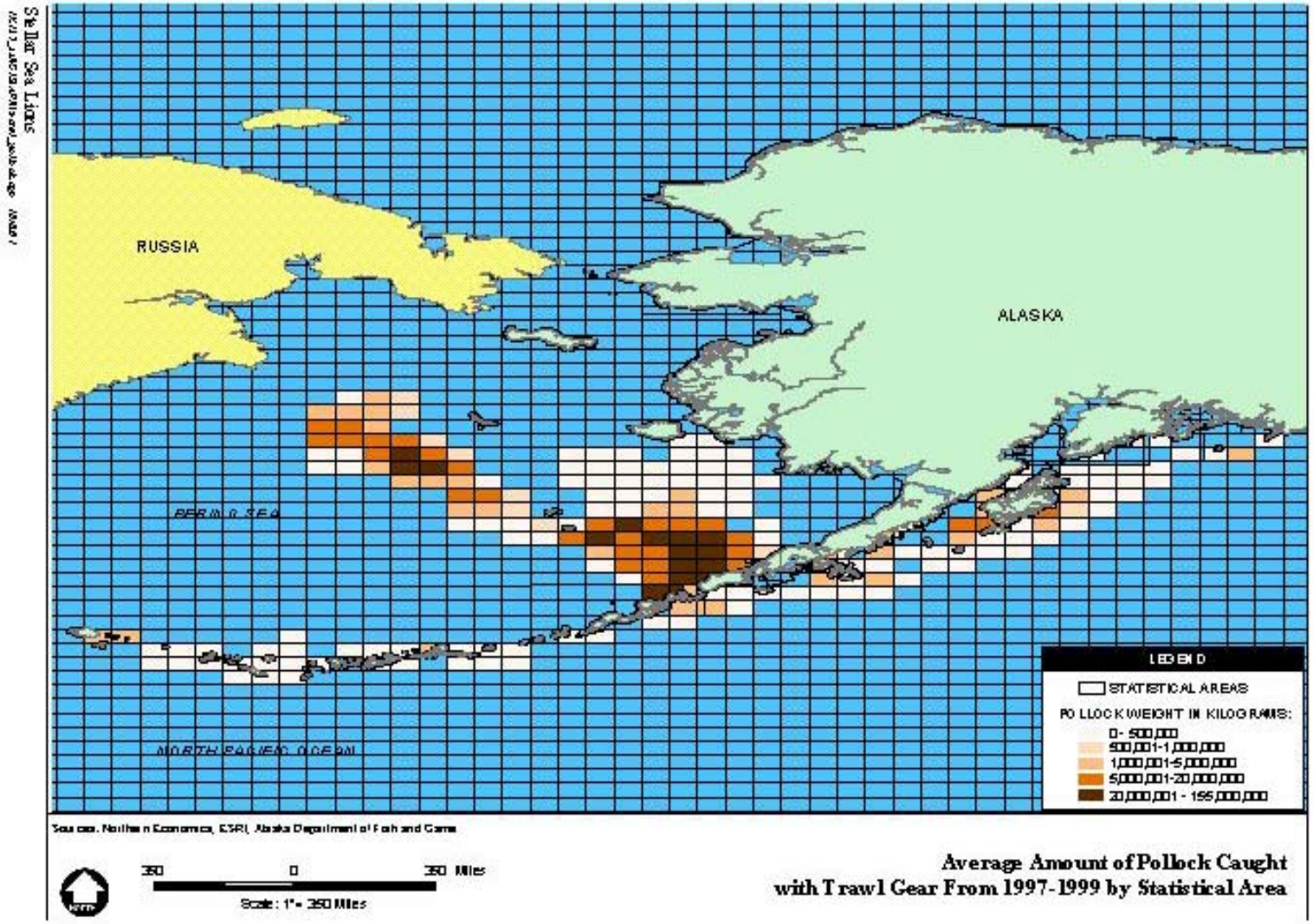


Figure 1.2-2. Primary Fishing Locations of Pacific Cod with Trawl Gear, 1997-1999

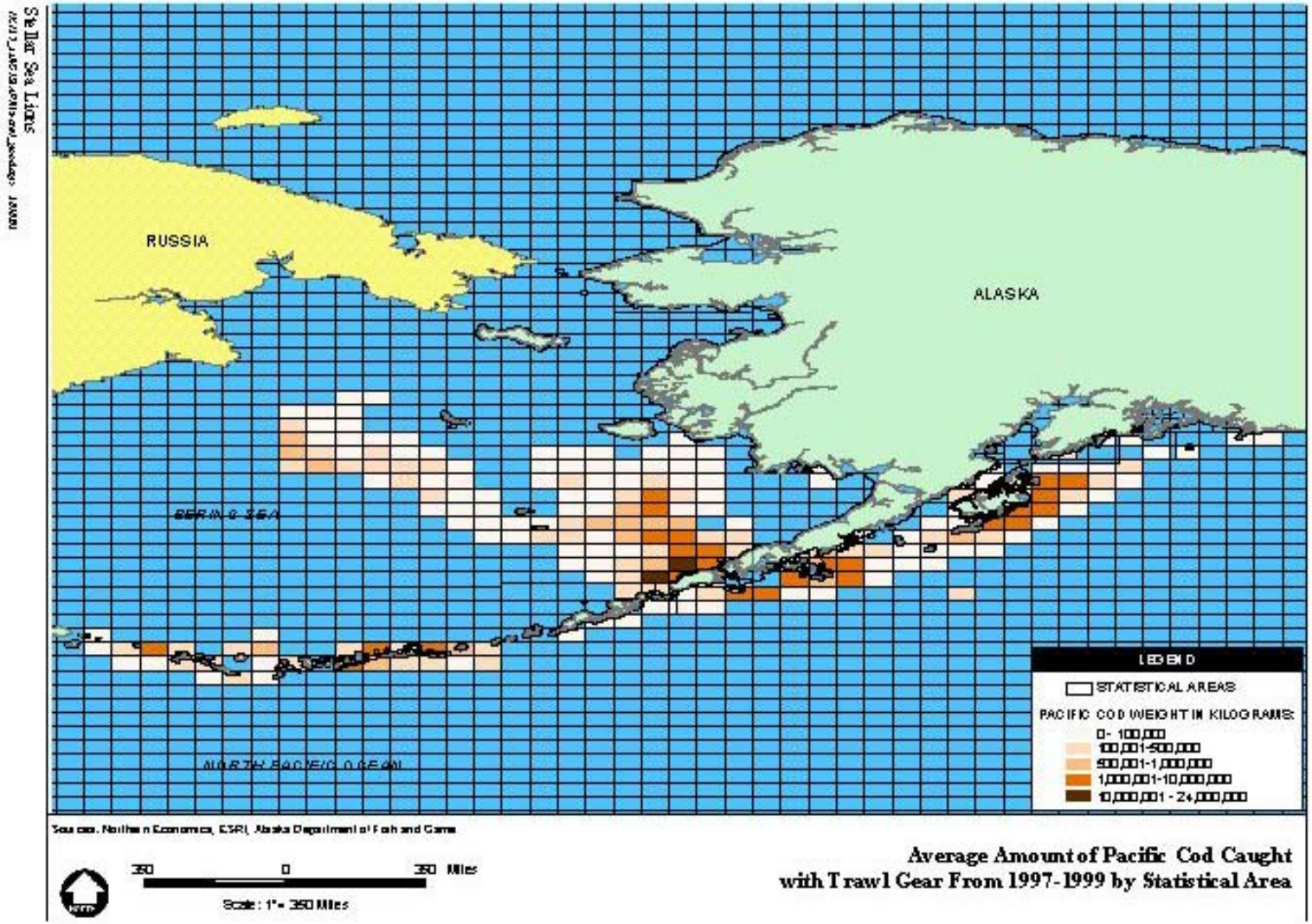


Figure 1.2-3. Primary Fishing Locations of Atka Mackerel with Trawl Gear, 1997-1999

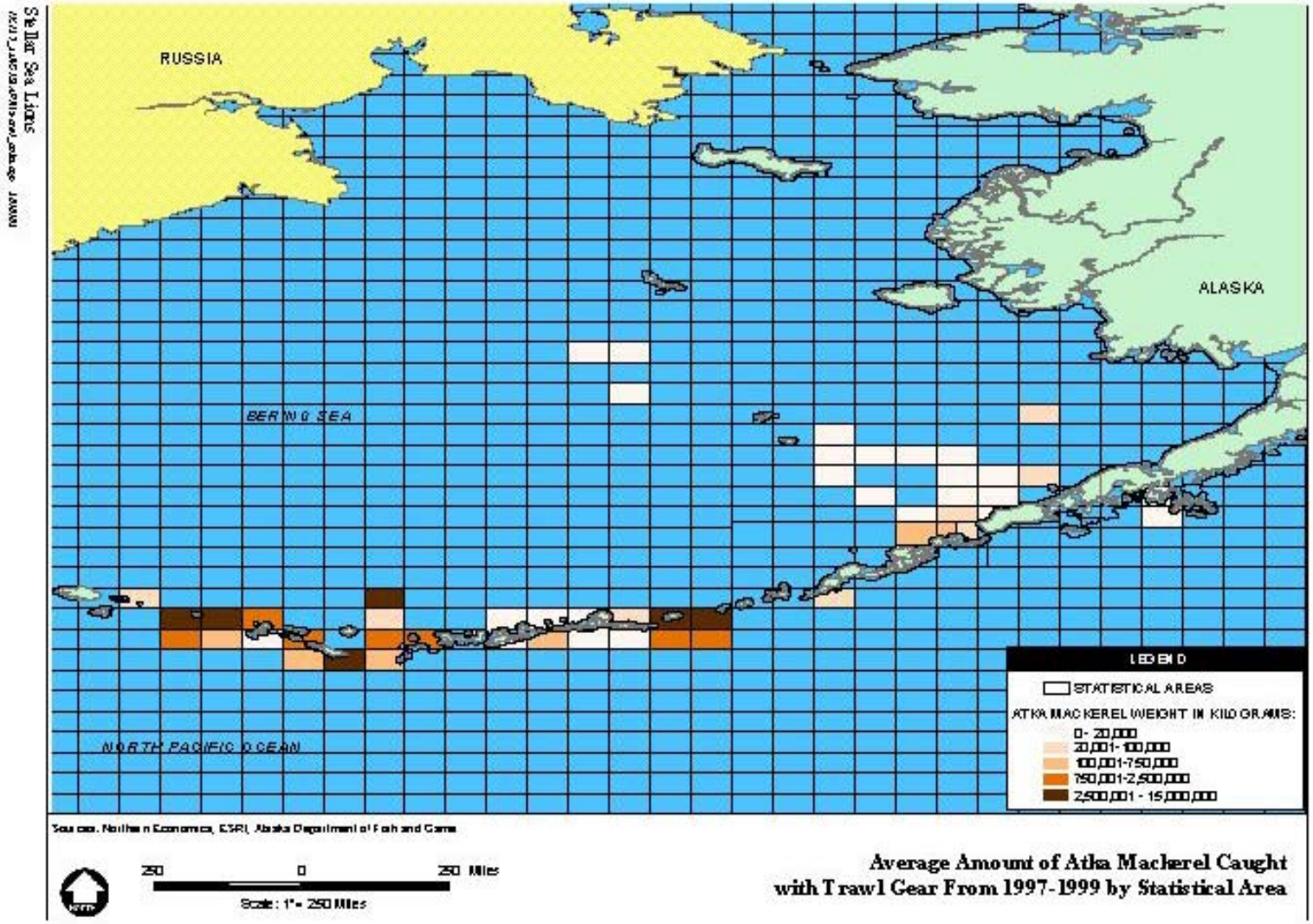


Figure 1.2-4. Primary Fishing Locations of Rock Sole with Trawl Gear, 1997-1999

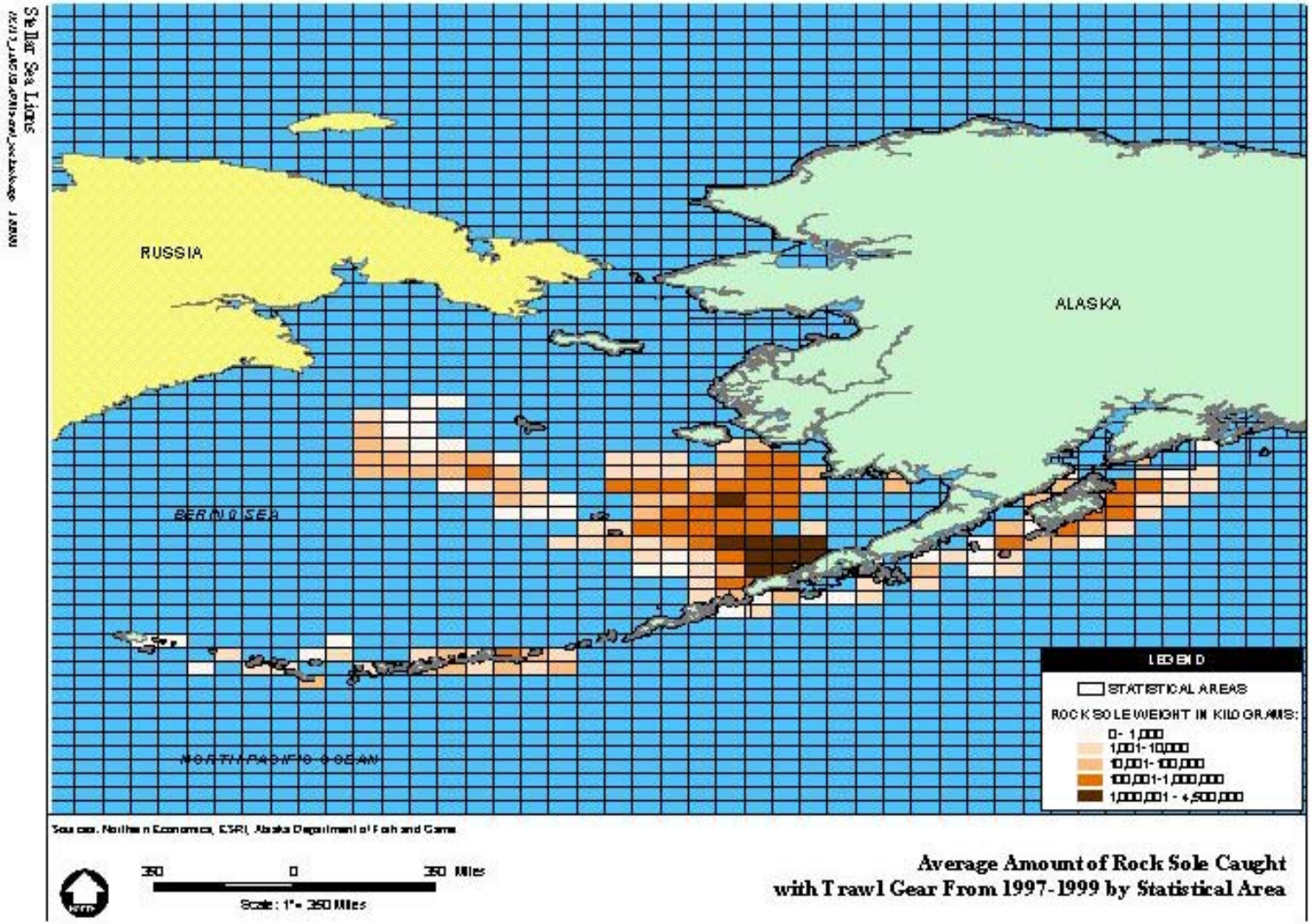


Figure 1.2-5. Primary Fishing Locations of Yellowfin Sole with Trawl Gear, 1997-1999

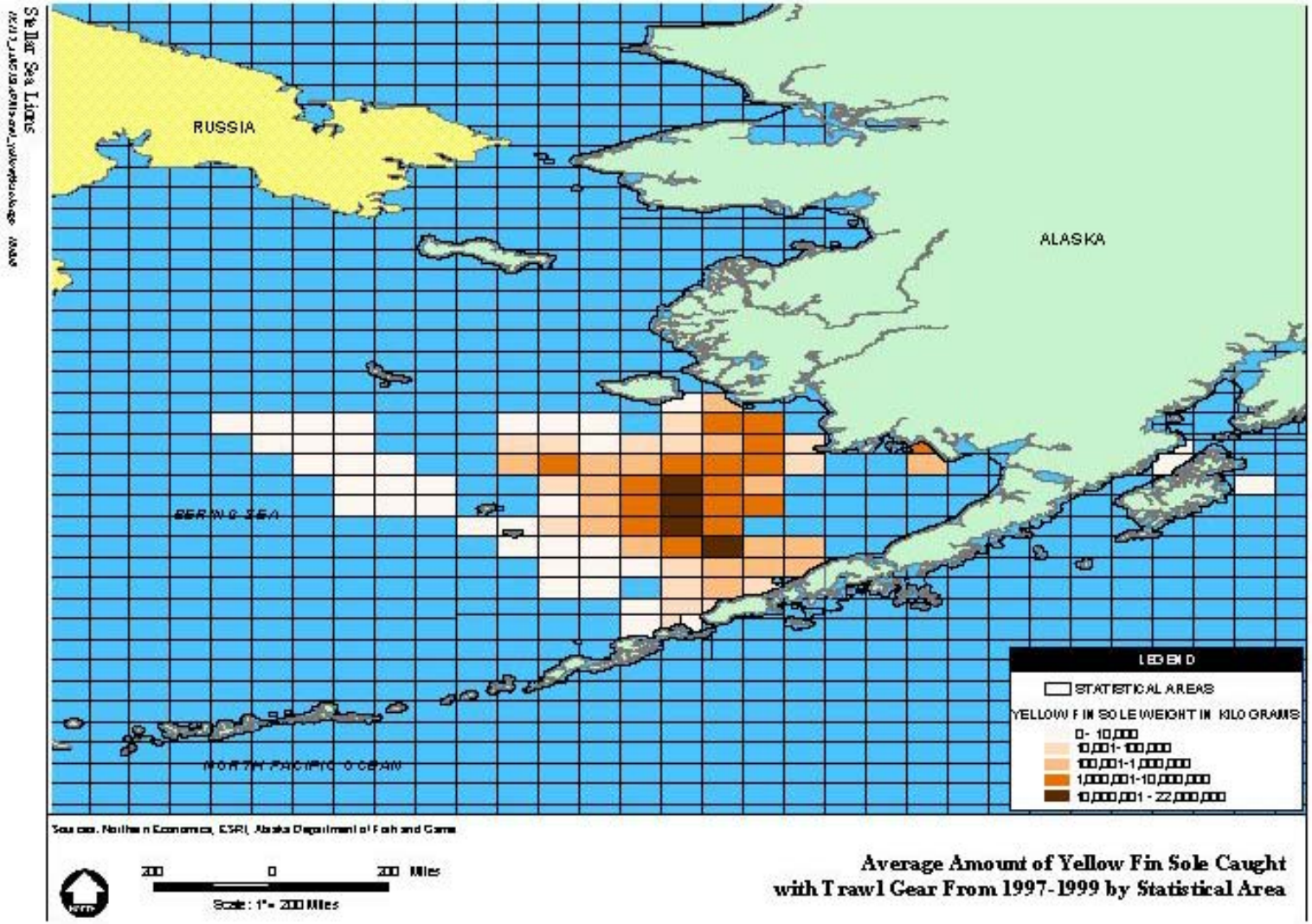


Figure 1.2-6. Primary Fishing Locations of Other Flatfish with Trawl Gear, 1997-1999

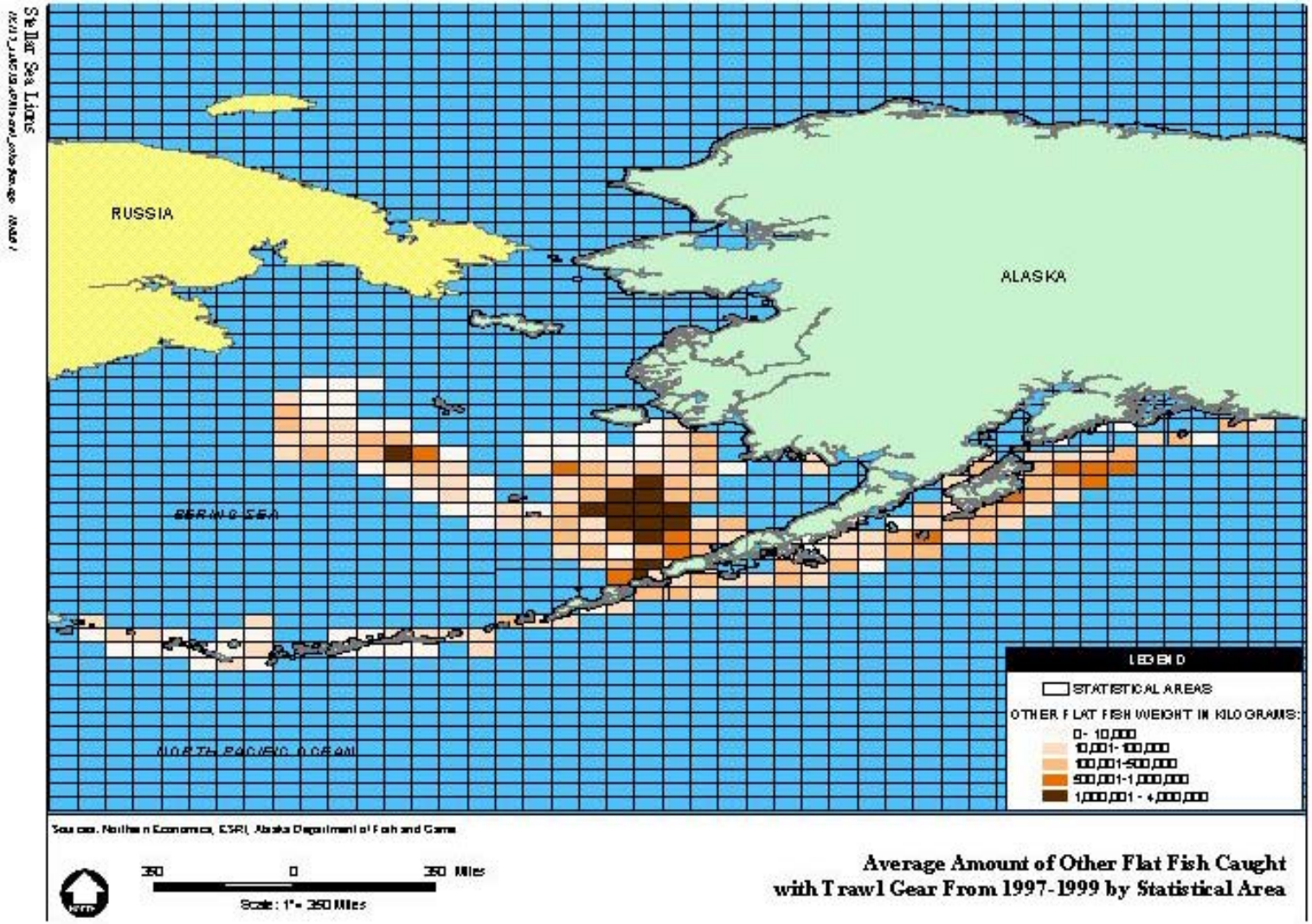


Figure 1.2-7. Primary Fishing Locations of Rockfish with Trawl Gear, 1997-1999

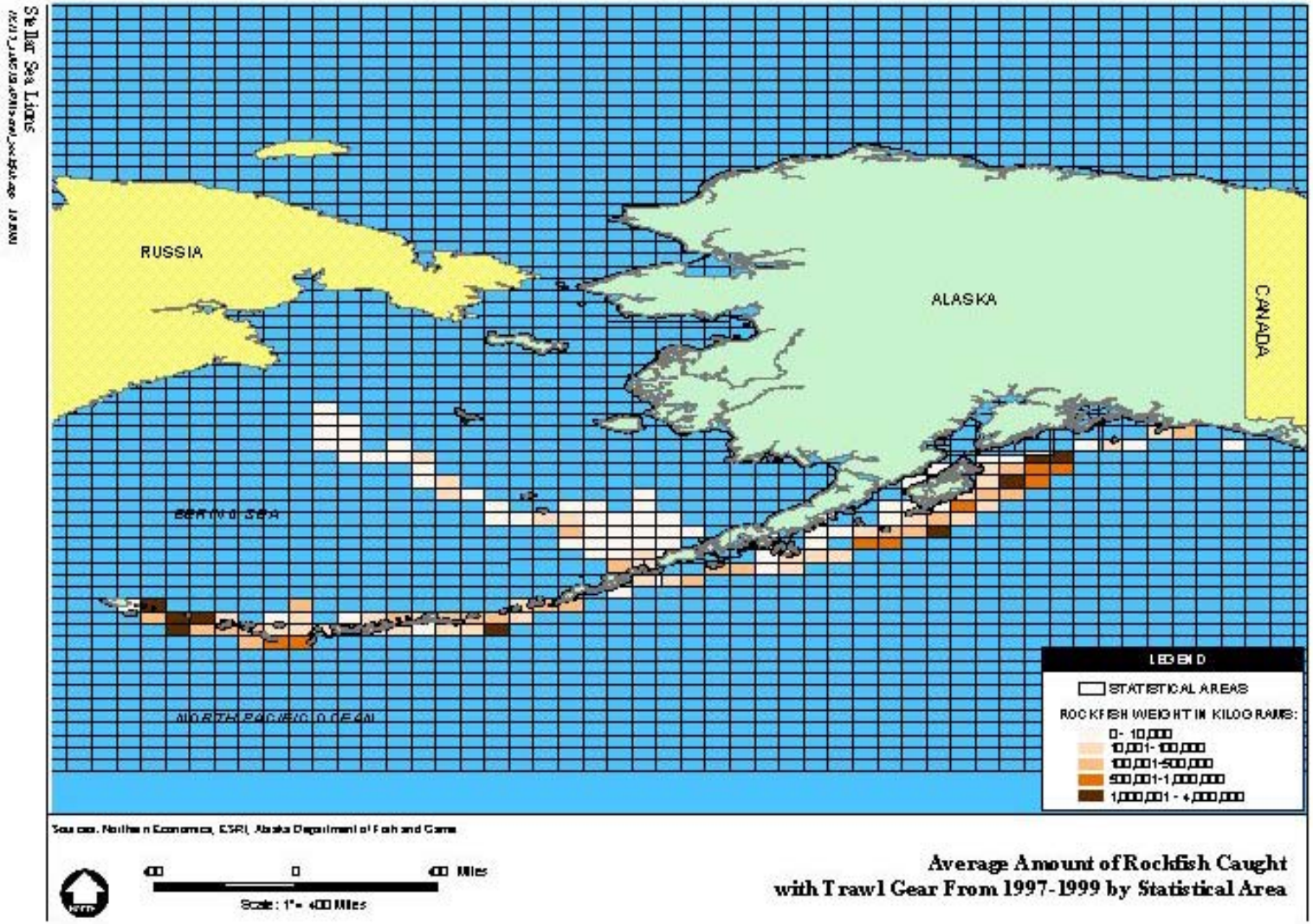


Figure 1.2-8. Primary Fishing Locations of Pacific Cod with Non-Trawl Gear, 1997-1999

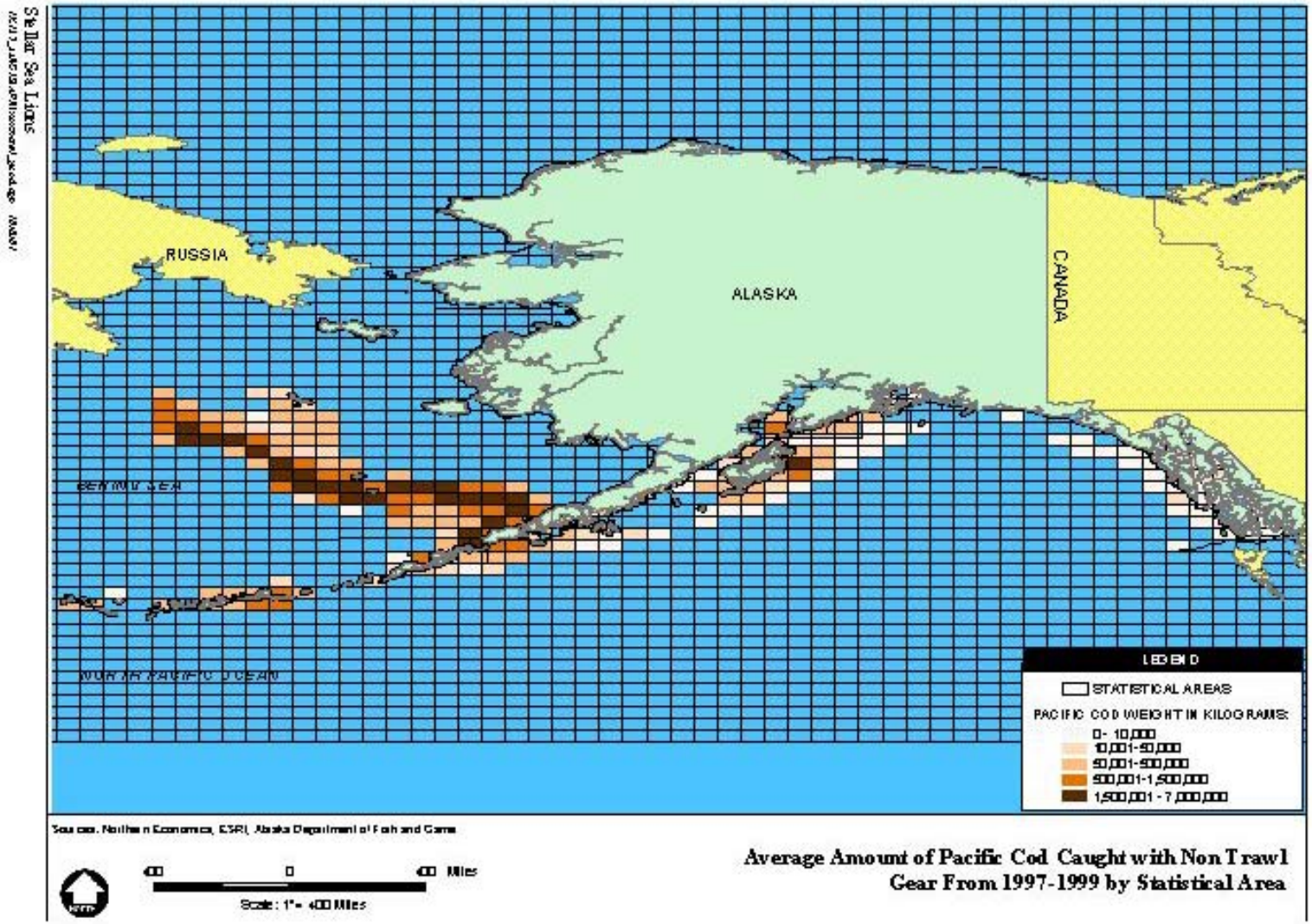


Figure 1.2-9. Primary Fishing Locations of Sablefish with Non-Trawl Gear, 1997-1999

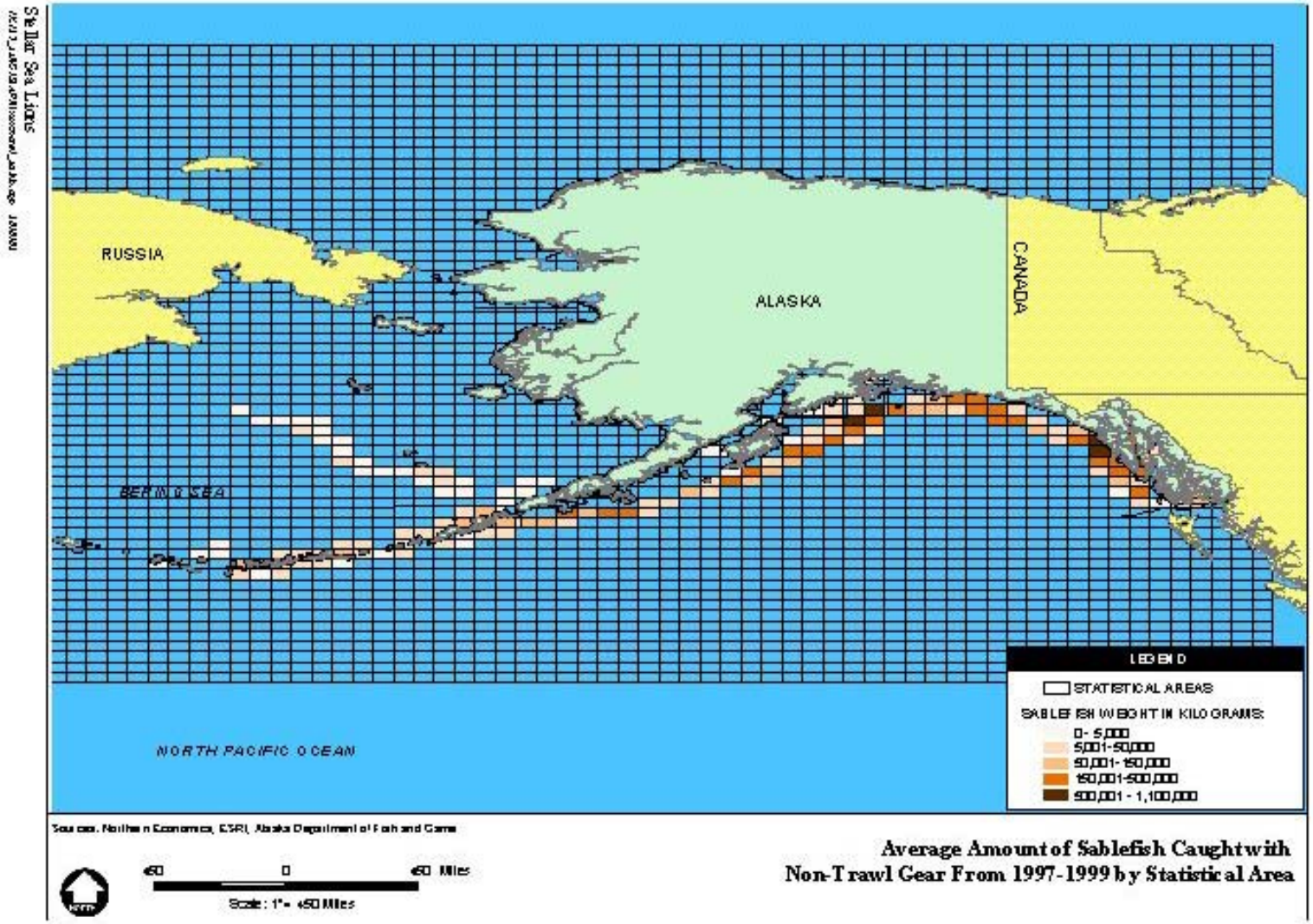
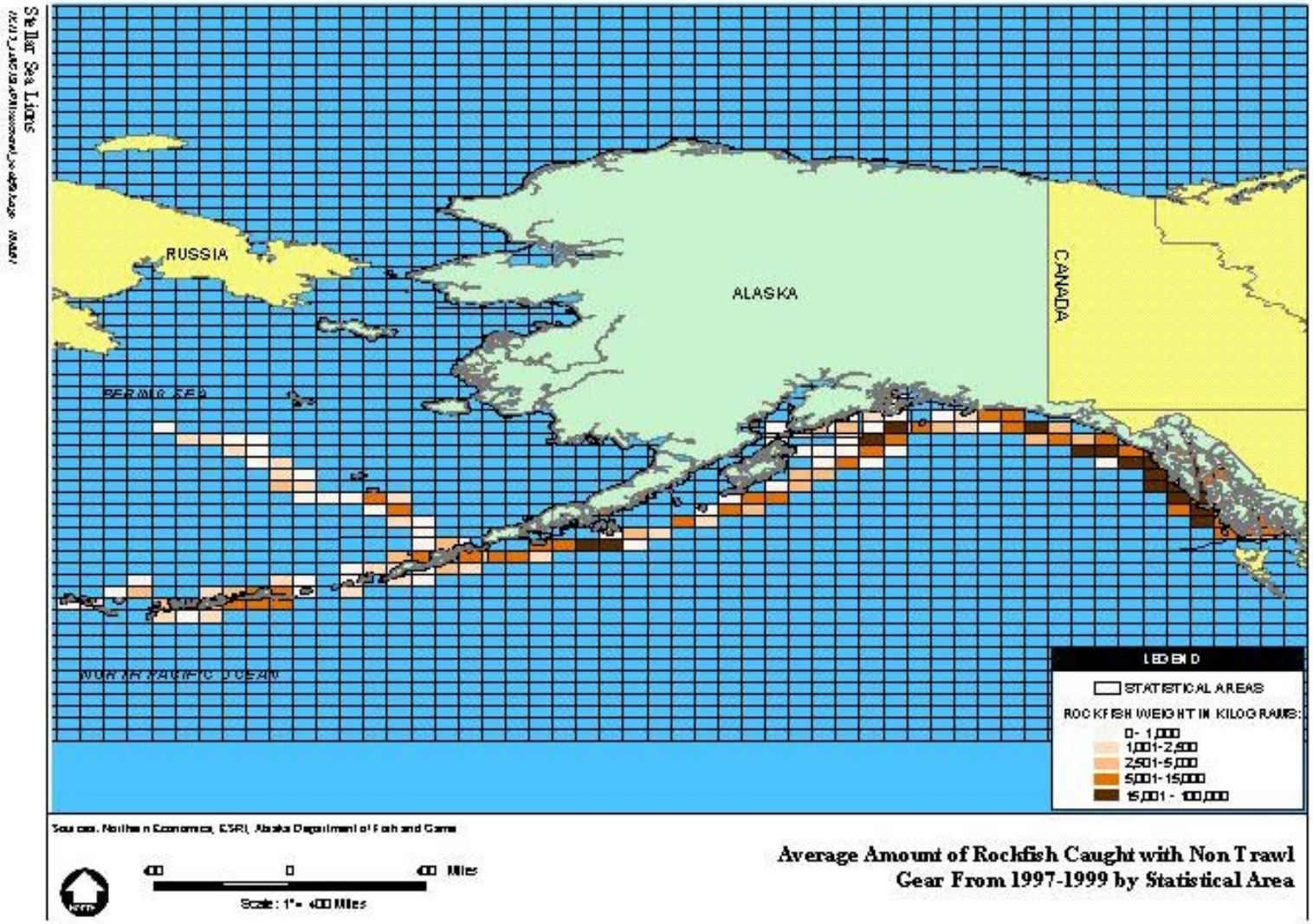


Figure 1.2-10. Primary Fishing Locations of Rockfish with Non-Trawl Gear, 1997-1999



2 Fishing and Processing Sector Profiles

The groundfish fishery supports a number of different types of vessels, gear types, and processing plants. This analysis has categorized these various groundfish industry participants as catcher vessels, catcher processors, and a third category that encompasses inshore processing plants and motherships. These categories have been further subdivided into nine classes of catcher vessels, five classes of catcher processors, and seven classes of inshore processors and motherships, as identified in Table 1.1-1. Each class is treated in a discrete subsection that profiles the number of active facilities in the class, ex-vessel values paid to catcher vessels from motherships and inshore processors, the relative dependence on groundfish, total groundfish harvests with percentages by species and FMP subareas, processed product and values, and employment and payments to labor by region.
Data for catcher vessels that delivered to shore plants or inshore floating processors are primarily from Fish Tickets collected by ADFG and augmented by CFEC. Analysts from NPFMC parsed the Fish Ticket records such that only records of deliveries to shorebased plants or inshore plants were included. These data were available for 1988 through 2000.[6] Data for the years before 1988 were not made available because it was not feasible to adequately parse the data of information voluntarily submitted by catcher processors and motherships. Inclusion of such information may have resulted in double counting of data. Fish Ticket data do not fully include information on fish that have been discarded. Therefore, to provide a consistent set of information only harvests retained by the processor have been included in the catcher vessel profiles. The Fish Ticket information provided by NPMFC included estimates of ex-vessel value paid for each delivery.

While deliveries to inshore plants are recorded by ADFG Fish Tickets, at-sea deliveries to motherships are monitored by observers deployed on the MSs. However, these observers do not routinely record the species composition of deliveries made by individual catcher vessels.

To estimate the species composition of deliveries to motherships, NMFS Observer Data for individual catcher vessels were combined with NMFS Blend Data for motherships. The Blend Data were used to estimate the monthly average species composition for each mothership, while the NMFS Observer Data were used to estimate the monthly catch delivered by each catcher vessel. The average species composition of each mothership was assigned to the catch of each of its catcher vessels so that the sum of the amount of each species delivered by all of the catcher vessels equaled the total quantity of fish received by the mothership. Ex-vessel revenue for at-sea deliveries must be estimated. Unlike data for deliveries to inshore plants, there were no regular data collected on prices paid for deliveries at sea prior to 2000.[7] Therefore, the analysis uses the formulaic approach shown below to estimate at-sea ex-vessel revenues. This approach was validated by industry sources in June and July 2000.

1. The at-sea ex-vessel price of pollock and Pacific cod is 87.5 percent of the price paid for deliveries inshore. Payments are only for the portion of catch retained by the mothership.
2. The at-sea ex-vessel price of all other species is estimated at 40 percent of the first wholesale value of the mothership's final product. Very limited amounts of groundfish other than pollock and Pacific cod have been retained by motherships between 1991 and 2000.

Data for processors are from NMFS Weekly Production data and NMFS Blend Data. Analysts from the NMFS Alaska Fishery Science Center assembled these data sets for use in the SEIS. Blend Data used for total reported harvest tables and figures were available for 1992 through 2000. Blend Data

[6] The catcher vessel profiles use fish-ticket data from 1992 to 2000 in order to be consistent with processor profiles. The previous version of these profiles included catcher vessel data from 1988 to 1998 and can be referred to if information for that specific period as needed.

[7] Beginning in 2000 at-sea deliveries by catcher vessels are required to be reported on fish tickets. Total catch estimates of deliveries to motherships was (and will continue to be) estimated by NMFS in their Blend Data.

combine reports submitted by each processor with NMFS Observer Data for the same period to provide NMFS with an estimated total harvest delivered to each processor for the week. NMFS uses the Blend Data as its official catch monitoring data set.

NMFS Weekly Production Report Data, which were used in this analysis for final product estimates of wholesale value, were available for 1992 through 2000. Product price information for processors was provided by NMFS in June 2000, based on data collected by the State of Alaska in the Commercial Operators Annual Reports.

Catcher vessel ownership and address information from CFEC vessel registration files and NMFS Permit Data was used to assign income and employment estimates from the groundfish fisheries to regions in Alaska, Oregon, and Washington. Processor ownership and address information from NFMS Processor Permit data and from ADFG Intent to Operate data was used to assign processors to regions. Because of inconsistencies in the ownership data in data in early years, the analysis assigns processor ownership to the region indicated in the most recent data available for each processor.

The complete landings data sets contain many instances of incidental groundfish catch reported by catcher vessels and processors participating in non-groundfish fisheries. Vessels fishing for halibut for example are required to land incidental catches Pacific cod and rockfish. In an effort to focus the analysis on participants with a significant involvement in the groundfish fisheries, threshold limits were established for catcher vessels. The threshold limits varied by gear and vessel length. Vessels that had landings below these limits were excluded from this report. In addition, inshore processors that acted as buying stations or were not associated with a given port were excluded. The percent of groundfish landings and value associated with non-groundfish targets fisheries with unknown, unidentified, and minor catcher vessels is approximately 0.6 percent of the value of the groundfish fisheries from 1992 through 2000.

In general, the fishery data used in the profiles are from official agency sources. Major exceptions are found in estimates of employment for catcher vessels and inshore processors, and for payments to labor for all sectors. Because data on these critical economic parameters are typically not collected, they must be estimated based on secondary information.

Employment estimates for catcher processors and motherships are collected by NMFS in Weekly Production Reports. NMFS provided information on average crew size from those files for each processing vessel and the number of weeks that each vessel in the sector was active between 1993 through 2000. Multiplying crew size by number of weeks provided an estimate of the number of crewmember weeks for each vessel, and for each catcher processor class and mothership. Assuming a work year of 52 weeks, crewmember weeks were translated into an estimate of FTE employment. An additional five percent of the catcher processor and mothership employment was added to each estimate to account for corporate office staff.

Employment estimates for inshore plants were derived in a different manner since these facilities are not required to submit the same information as catcher processors and motherships. Weekly Production Reports provided information on the volume of processed product for each inshore processor. These values were summed to obtain totals for each processor class. These product volumes were multiplied by coefficients representing the average number of tons of each product type that could be produced for each labor hour.[8] The result is the number of labor hours to produce the product volumes. Using 2,080 hours as a standard work year (because many plant employees do not

[8] These coefficients had their origins in the Fisheries Economic Assessment Model for Alaska (Jensen and Radtke, 1990), updated by Northern Economics as part of its Fisheries Industry Model (FIM) for the U.S. Department of Interior, Minerals Management Service (MMS) (Northern Economics, 1990 and 1994), and updated more recently in work by Northern Economics for the City of Unalaska and the City of King Cove (both unpublished). For the two cities, Northern Economics uses the FIM as part of a revenue forecasting system for each community. Coefficients represent an average for processing plants throughout the state, and substantial variations can occur for any specific plant or processor class.

qualify for vacations and work on holidays), the FTE employment for each inshore processor class was estimated. An additional five percent of the inshore processing employment was added to each estimate to account for corporate office staff.

Inshore processing plant employment was assigned to the region in which the plant is located, with corporate office staff allocated to the region of the plant owner's residence. Because catcher processors and motherships generally operate beyond the jurisdiction of the State of Alaska, their total employment (vessel and corporate office staff) was allocated to the region of the vessel owner's residence. The methods employed by this analysis to assign employment to regions are similar to those used by state and federal agencies.

Estimates of employment on catcher vessels were based on crew-size factors for each vessel class derived from previous studies and interviews with knowledgeable industry members. Estimates of employment were made by multiplying the crew-size factor by the number of active vessels in the class during each month. The number of crewmember months was used to estimate catcher vessels FTE employment based on the assumption that crewmembers work an average of 16 hours per day for an average 15 days for every month their vessel is active. The total number of estimated crewmember hours is then divided by the 2080 hours per year.

Payments to labor for processors were estimated by multiplying total wholesale production value by the percent of that value accounted for by processing labor. The labor percentages were based on previous studies by Northern Economics (1990 and 1994). Processing labor accounts for 20 to 30 percent of total wholesale production value for the various processor classes. An additional 10 percent of the payments to processing labor was added to account for the salaries of corporate office staff. Payments to labor for catcher vessels for all classes were estimated using 40 percent of ex-vessel value. All payments to labor for these vessels have been assumed to accrue to the vessel owner's region of residence. Payments to labor for inshore processing plants, catcher processors and motherships have been regionally distributed in the same manner as described above for employment.

In addition to official data sources and interviews with members of the industry, the sector and regional profiles included in this analysis rely heavily on social and economic information developed for and by NPFMC during analyses of amendments to the groundfish FMPs. Two documents developed by Impact Assessment Incorporated (IAI) entitled *Sector Description and Preliminary Social Impact Assessment of the North Pacific Fishery Management Council Regulatory Changes in the Groundfish and Crab in the GOA and Bering Sea/Aleutian Islands* (IAI, 1994) and *Inshore/Offshore-3 Socioeconomic Description and Social Impact Assessment* (IAI, 1998) provided much of the social economic information that is not routinely collected by fishery management agencies.

2.1 Catcher Vessels

Catcher vessels harvest groundfish by using various gear types and deliver their catch to inshore processing plants or motherships. Catcher vessels can be divided into two general categories—trawl vessels and fixed gear vessels. This analysis creates five classes of trawl vessels based on participation patterns and vessel length. Four classes of fixed gear vessels are defined based on primary gears and vessel length. Each vessel participating in the groundfish fisheries of the North Pacific was assigned to one of these classes during a given year according to its fishing activities in that year and its size. The classes were developed specifically for use in this SEIS to enhance the differences and similarities among the catcher vessels that participate in the groundfish fisheries. Table 2.1-1 provides details about the catcher vessel classes developed.

Table 2.1-1. Catcher Vessel Classes

Class	Acronym	Description
Bering Sea Pollock Trawl Catcher Vessels Greater than or Equal to 125 Feet in Length	TCV BSP ≥ 125	Includes all vessels for which trawl catch accounts for more than 15% of total catch value, value of Bering Sea pollock catch is greater than value of catch of all other species combined, vessel length is greater than or equal to 125 ft., and total value of groundfish catch is greater than $5000. All of these vessels fishing after 1998 are AFA-eligible.
Bering Sea Pollock Trawl Catcher Vessels 60 to 124 Feet in Length	TCV BSP 60-124	Includes all vessels for which trawl catch accounts for more than 15% of total catch value, value of Bering Sea pollock catch is greater than value of catch of all other species combined, vessel length is 60 ft. to 124 ft., and total value of groundfish catch is greater than $5000. All of these vessels fishing after 1998 are AFA-eligible.
Diversified AFA-Eligible Trawl Catcher Vessels	TCV Div. AFA	Includes all vessels that are AFA-eligible for which trawl catch accounts for more than 15% of total catch value, value of Bering Sea pollock catch is less than value of catch of all other species combined, vessel length is greater than or equal to 60 ft., and total value of groundfish catch is greater than $5000.
Non-AFA Trawl Catcher Vessels	TCV Non-AFA	Includes all vessels that are not AFA-eligible for which trawl catch accounts for more than 15% of total catch value, value of Bering Sea pollock catch is less than value of catch of all other species combined, vessel length is greater than or equal to 60 ft., and total value of groundfish catch is greater than $5000.
Trawl Catcher Vessels Less than 60 Feet in Length	TCV < 60	Includes all vessels for which trawl catch accounts for more than 15% of total catch value, vessel length is less than 60 ft., and total value of groundfish catch is greater than $2500.
Pot Catcher Vessels	PCV	Includes all vessels that are not trawl catcher vessels for which value of pot catch is greater than15% of total catch value, vessel length is greater than or equal to 60 ft., and total value of groundfish catch is greater than $5000.
Longline Catcher Vessels	LCV	Includes all vessels that are not trawl catcher vessels or pot catcher vessels for which vessel length is greater than or equal to 60 ft. and total value of groundfish catch is greater than $2000, excluding halibut and state water sablefish.
Fixed Gear Catcher Vessels 33 Feet to 59 Feet in Length	FGCV 33-59	Includes all vessels that are not trawl catcher vessels for which vessel length is 33 to 59 ft., and total value of groundfish catch is greater than $2000.
Fixed Gear Catcher Vessels Less Than or Equal to 32 Feet in Length	FGCV ≤ 32	Includes all vessels that are not trawl catcher vessels for which vessel length is less than or equal to 32 ft., and total value of groundfish catch is greater than $1000.
Ghost Vessels		Includes all vessels that catch groundfish but do not target groundfish or that do not meet threshold landings levels.

Note: For a given year each vessel participating in the groundfish fisheries was assigned to one vessel class. The class to which a vessel was assigned could change from year to year based on the vessel's fishing activities.

The vessels in the first two trawl catcher vessel classes (TCV BSP ≥ 125 and TCV BSP 60-124) are all eligible to harvest the directed fishing allowance under Section (b)(1) of the American Fisheries Act and focus almost exclusively on Bering Sea pollock. The two classes differ in that the larger vessels can carry significantly more fish in their holds and are able to fish much farther from shore. The third class of trawl catcher vessels (TCV Div. AFA) are also AFA eligible, but they generate less total revenue in the BSAI pollock fisheries than they do in other trawl fisheries, such as those occurring in the GOA. This class generally consisted of vessels between 60 and 124 feet in length (LOA), but in some years included one or two vessels longer than 124 feet. The fourth class of trawl catcher vessels (TCV Non-AFA) are not AFA eligible and therefore do not have access to the lucrative BSAI pollock fisheries. Instead, these vessels focus their fishing effort in the GOA. These vessels are all greater than 60 feet long. The final class of trawl vessels (TCV < 60) are all less than 60 feet in length and fish almost exclusively in the GOA. Most of these vessels also participate in Alaska salmon fisheries with purse seine gear. State regulations prohibit the use of vessels longer than 58 feet in salmon seine fisheries.

Pot catcher vessels (PCVs) traditionally have focused on crab fisheries. Recently, these vessels have developed a secondary source of income between crab fishing seasons by using pot fishing techniques to harvest Pacific cod. Longline catcher vessels (LCVs) concentrate their fishing effort in sablefish and halibut IFQ fisheries. Although the groundfish harvests of LCVs are substantially less than those of trawl catcher vessels, the value of their harvests are significant because of the relatively high ex-vessel value of sablefish. Both PCVs and LCVs are longer than 60 feet.

There are far more vessels in the class comprised of fixed gear catcher vessels from 33 feet to 59 feet in length (FGCV 33-59) than in any other class. This class has the third highest harvest value of groundfish among the catcher vessel classes. These vessels obtain most of their groundfish revenues from harvests of Pacific cod and high-valued species in the ARSO group, primarily sablefish and rockfish. Fixed gear catcher vessels less than or equal to 32 feet in length (FGCV ≤ 32) have limited activity in groundfish fisheries, as most of these vessels were constructed specifically to harvest salmon. They often harvest higher-value groundfish such as Pacific cod, rockfish and sablefish when not engaged in salmon fisheries. Vessel size restricts the effectiveness of the FGCV ≤ 32 class in groundfish fisheries.

The profiles of each of the nine catcher vessel classes contain the following elements:

- A description of the class in terms of size and the number vessels
- An overview of participation of the class in Alaska groundfish fisheries and other Alaska and Pacific Northwest fisheries
- A more detailed look at the Alaska groundfish fisheries important to the class
- Estimates of employment and payments to labor in the class from Alaska groundfish fisheries

To focus the analysis on vessel participating in groundfish fisheries, incidental landing of groundfish by vessels participating in non-groundfish fisheries were not included in the catcher vessel profile data set. Thus vessels that landed groundfish only while participating in salmon or halibut fisheries were not included in the catcher vessel profiles. In addition, catcher vessels that had landings below a certain threshold limit were excluded from the analysis. Different threshold harvest levels were used for different types of vessels (Table 2.1-1). In general, larger vessels have larger threshold harvest levels, and trawl vessels have higher threshold harvest levels than fixed gear vessels.

Fish Ticket data received from NPFMC for use in this analysis indicated that 4,403 vessels made groundfish landings from 1992 through 2000. During the same period, 2,376 target groundfish and met threshold-landings levels for at least 1 year, while the remaining 2,037 were not included for any year in any of the nine vessel classes. An analysis of landings and value associated with the minor participants that did not meet the threshold levels revealed that these vessels accounted for less than

0.1 percent of the total volume and 0.6 percent of the ex-vessel value of the groundfish harvests by all catcher vessels from 1992 through 2000. In other words, at least 99 percent of the catcher vessel harvests of groundfish by volume and value are accounted for by the vessels included in the analysis.

Catcher vessels operate in different regions of Alaska, and their owners and crew reside in communities located in or out of the state. Table 1.1-1 lists the geographic regions that were defined specifically for this socioeconomic analysis. Catcher vessels harvest a number of species, including both groundfish and non-groundfish. In an effort to provide a relatively uniform description of the activities of each of the nine types of catcher vessels and to report as much catch data as possible under NMFS data confidentiality restrictions, this analysis aggregated the groundfish species into four main groups, as shown in Table 1.1-1. Confidentiality restrictions require that any disclosure of harvest data be aggregated to include the operations of at least four catcher vessels.

Two of the groundfish groups are single species—pollock and Pacific cod. The other two groups are aggregations of species. All flatfish species are included in a single group defined as FLAT. FLAT does not include halibut, as the fishery for this species is not managed under the BSAI and GOA groundfish FMPs. All other groundfish species are aggregated into a single group defined as ARSO. ARSO includes Atka mackerel, all rockfish species, sablefish, and other groundfish species as defined in the FMPs. Groundfish as a whole are designated as GFSH and all other non-groundfish species such as salmon, halibut, herring, and crab are identified as non-GFSH.

Table 2.1-2 summarizes the activities of catcher vessels in the North Pacific groundfish fisheries during the 1992-2000 period. Major findings presented in the table are as follows:

- The number of catcher vessels in the groundfish fisheries declined from 1658 in 1992 to 1261in 2000. Groundfish landings by catcher vessels remained relatively steady, fluctuating between a high of 970 thousand tons in 1997 and a low of 772 thousand tons in 1993. Harvest tonnage was sTable in comparison to the number of participating vessels because most vessels that exited the fisheries were small fixed gear vessels (FGCV 33-59 and FGCV ≤ 32) that tend to harvest less fish on average. Furthermore, total groundfish landings depend less on the number of vessels than on the allowable harvest levels and allocations among sectors established by NMFS and NPFMC.
- In some years non-groundfish species are nearly as important as groundfish to catcher vessels in terms of ex-vessel value. Over the 9-year period, non-groundfish accounted for 26 to 50 percent of the total ex-vessel value harvested by all catcher vessels.
- As a result of the high ex-vessel value of Pacific cod and species in the ARSO complex, which includes sablefish and rockfish, the revenues from landings of these species were approximately equal to those from pollock. In 2000, for example, pollock accounted for 55 percent of total ex-vessel value of groundfish landings, while the ARSO group and Pacific cod, accounted for 20 and 24 percent, respectively.
- Between 51 and 64 percent of groundfish revenues came from catches in the BSAI, which is where the large trawlers harvest pollock. A significant amount of catcher vessel revenues also came from harvests in the GOA, which is a major source of Pacific cod and ARSO species.
- As would be expected from the revenue distribution by harvest location, the largest groundfish revenues are from Bering Sea Shore Plants (BSP-SP) processing pollock. These plants accounted for 47 percent of all groundfish revenues in 2000.
- In 2000, the Washington Inland Waters Region (WAIW) accounted for about 25 percent of the total employment in the catcher vessel sector and 61 percent of the total payments to labor.

Table 2.1-2. Summary of North Pacific Groundfish Catcher Vessel Activities, 1992–2000

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000
Vessels Landing Groundfish and Retained Groundfish Tons [a]									
No. of Vessels	1,374	1,142	1,240	1,076	1,002	1,032	961	1,005	1,078
Thousands of Tons	823.59	771.93	790.75	834.32	813.72	969.93	809.61	785.06	833.62
Total Ex-Vessel Value in Major Alaska Fisheries ($Millions and Percent of Total)									
GFSH	266.24	172.86	197.58	261.29	232.45	334.67	181.00	247.40	308.34
Non-GFSH[b]	176.73	130.00	161.83	190.94	153.13	168.31	137.56	247.74	107.16
GFSH (% of Total)	60%	57%	55%	58%	60%	67%	57%	50%	74%
Ex-Vessel Value of Species Groups as a Percent of Total Groundfish [a]									
ARSO	19	25	29	28	29	21	24	19	20
FLAT	4	2	2	2	3	5	1	1	1
PCOD	15	17	14	18	22	22	23	28	24
PLCK	62	56	55	52	47	53	51	53	55
Ex-Vessel Value from FMP Subareas as a Percent of Total Groundfish [a]									
AI	3	2	2	3	2	3	2	3	3
BS	60	52	53	56	55	61	49	53	58
WG	7	5	4	6	7	6	8	8	7
CG	21	27	21	21	22	20	28	26	21
EG	9	14	20	15	15	11	12	9	10
Ex-Vessel Value Paid from Processor Types as a Percent of Total Groundfish [a]									
ST-CP	2	2	2	3	3	9	2	1	0
FTP	0	2	0	2	3	6	2	1	0
HT-CP	0	0	0	0	0	2	0	0	0
P-CP	0	0	0	0	0	0	0	0	0
L-CP	0	0	0	0	0	4	0	0	0
BSP-SP	46	40	42	41	38	31	37	43	47
APA-SP	6	6	6	8	9	7	9	10	8
K-SP	14	18	15	12	12	11	18	18	15
SC-SP	6	9	8	10	11	8	11	8	6
SE-SP	8	13	17	14	15	12	13	10	9
MS	15	9	8	9	8	8	9	7	12
FLT	2	2	1	0	0	1	0	1	2
Total Groundfish Employment by Region (FTE) [c]									
AKAPAI	103	63	83	129	133	142	143	128	132
AKKO	290	182	198	262	270	308	289	301	361
AKSC	574	403	419	432	362	377	323	324	370
AKSE	693	503	525	552	552	531	462	470	449
WAIW	459	308	339	437	440	470	434	496	508
ORCO	71	46	53	69	69	69	68	75	79
Total [d]	2,328	1,599	1,714	1,960	1,908	1,987	1,813	1,926	2,026
Total Groundfish Payments to Labor by Region ($Millions) [c]									
AKAPAI	2.30	1.39	1.75	1.99	3.21	3.95	2.96	4.05	3.94
AKKO	11.39	8.46	8.94	11.02	11.33	15.85	9.09	12.02	12.03
AKSC	6.89	4.89	4.47	4.93	3.67	4.48	2.99	4.12	5.50
AKSE	7.95	7.70	10.58	10.66	10.11	9.77	6.53	7.07	9.40
WAIW	61.02	36.21	42.64	59.17	50.91	84.92	39.88	55.99	75.18
ORCO	9.13	5.96	5.84	8.96	7.59	8.75	6.38	9.11	9.63
Total [d]	106.56	69.19	79.07	104.58	93.05	133.94	72.46	99.07	123.41

Source: CFEC/ADF&G Fish Tickets provided by NPFMC, June 2001.

[a] Does not includes information from GHOST vessels, or from landings of groundfish in non-groundfish fisheries.

[b] Salmon, crab, halibut, and other.

[c] Includes skipper, crew, and support staff.

[d] Includes estimates for residents of other regions.