



NOAA Technical Memorandum NMFS-AFSC-48

Summary of Observer Sampling of Domestic Groundfish Fisheries in the Northeast Pacific Ocean and Eastern Bering Sea, 1991

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Alaska Fisheries Science Center

December 1994

NOAA Technical Memorandum NMFS

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This document should be cited as follows:

Narita, R., M. Guttormsen, J. Gharrett, G. Tromble, and J. Berger. 1994. Summary of observer sampling of domestic groundfish fisheries in the northeast Pacific Ocean and eastern Bering Sea, 1991. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-48, 540 p.

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by
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December 1994

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ABSTRACT

This report summarizes the 1991 United States domestic groundfish observer program and domestic groundfish activities in three major regions: the eastern Bering Sea and Aleutian Islands region, the Gulf of Alaska region, and off the Washington-Oregon-California coast. Data contained herein include the amount of observer sampling coverage, and estimates of domestic groundfish catches, their species composition, distribution, and timing, by gear type and target fishery. Also included are estimates of incidental bycatch of prohibited species of Pacific salmon (Oncorhynchus spp.), Pacific halibut (Hippoglossus stenolepis), Tanner (snow) crabs (Chionoecetes spp.), king crabs (Paralithodes and Lithodes spp.), and Pacific herring (Clupea pallasii).

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INTRODUCTION

The year 1991 was the second full year of Federally mandated observer coverage in the U.S. domestic groundfish fishery off Alaska. The domestic observer program for groundfish was implemented as a result of amendments to the fishery management plans for the Bering Sea and Aleutian Islands and Gulf of Alaska regions. Previously, amendments to the Marine Mammal Protection Act in 1988 that were implemented in August 1989 had mandated between 20 and 35% observer coverage of the Alaskan trawl fisheries. Observer coverage in 1991 of the U.S. domestic trawl fishery for offshore processing operations off the Washington, Oregon, and California coasts was voluntary; however, all catcher-processors and motherships involved in this fishery had observers aboard during their entire fishing operations.

The observers' objectives were to 1) determine the incidental catches of marine mammals and other species whose retention is prohibited by U.S. regulations; 2) determine the total catch and catch composition of groundfish; 3) provide information needed to assess the biological status of the various stocks of fish; and 4) report possible violations of U.S. fishing regulations. This report summarizes observer data collected aboard domestic groundfish vessels operating within the U.S. 200-mile Exclusive Economic Zone (EEZ) of the northeast Pacific Ocean and eastern Bering Sea in 1991. The report also provides catch statistics on groundfish and prohibited species taken in the groundfish fisheries of the Bering Sea and Aleutian Islands and Gulf of Alaska regions and in the offshore Pacific whiting fishery of the Washington-Oregon-California region. A description of gear types mentioned in this paper is presented in Table 1. While aboard vessels, observers obtained information on the location, duration, average depth, and catch weight of each trawl haul, longline set, or pot set made. They sampled several hauls or portions of longline or pot sets each day to determine species composition by weight, the incidence of species whose retention was prohibited, incidental take of marine mammals, and the age and length composition of designated species. In addition, observers described fishing strategies and sampling methods used.

HISTORY OF U.S. GROUND FISH FISHERIES

U.S. fishermen made only limited use of groundfish resources in the Bering Sea and the northeast Pacific Ocean prior to extensive fishing by foreign nations in these regions. Virtually ignored by the U.S. fishing industry were the expansive groundfish stocks of walleye pollock (*Theragra chalcogramma*) and flatfish (Pleuronectidae), which in recent years have made up a significant percentage of the world's groundfish catch (Marasco and Aron 1991). Domestic fishermen in small owner-operated vessels traditionally fished in coastal waters. With the exception of handline fishing for Pacific cod which began in Alaska waters in the late 1880s (Cobb 1927), domestic fishermen concentrated fishing effort on species of high market value. In Alaska, primary catch species were Pacific salmon (*Oncorhynchus* spp.), Pacific halibut (*Hippoglossus stenolepis*), Pacific herring (*Clupea pallasii*) for roe, sablefish (*Anoplopoma fimbria*), pink shrimp (*Pandalus* spp.), king crabs (*Paralithodes* spp. and *Lithodes* spp.), and snow (Tanner) crabs (*Chionoecetes* spp.). As late as 1980, major groundfish species (walleye pollock, flatfish, and rockfish) made up less than 1% of the U.S. commercial catch in Alaska (Huppert 1991). In the Washington-Oregon-California region, demersal trawling for rockfish (*Sebastes* spp.) and flatfish (Pleuronectidae) and pot fishing for sablefish were the major domestic fisheries prior to 1980.

Large-scale commercial groundfish fisheries were pioneered by foreign nations, led by Japan, which expended the most effort of any nation in Alaska waters (Chitwood 1969; Bakkala et al. 1979). In 1930, Japan initiated limited mothership fisheries in the eastern Bering Sea, harvesting for the first time large quantities of walleye pollock and flatfish for reduction into fish meal. These fisheries ceased during World War II but were resumed by Japan from 1954 to 1957 when the flatfish catch, composed mainly of yellowfin sole (*Pleuronectes asper*), was caught and stored frozen.

In 1958, the U.S.S.R. joined Japan in the Bering Sea fishery for flatfish, initiating fish meal operations. The total flatfish catch peaked at 610,000 metric tons (t) in 1961 and then suddenly declined to 114,000 t in 1963. During the period from 1958 to 1963, Japan's flatfish freezing fleets and longline-gillnet mothership fleets expanded fishing effort along the entire continental slope of the Bering Sea. Both nations expanded fishing operations into the Gulf of Alaska and along the Washington-Oregon-California coast. Principal species harvested were Pacific halibut, Pacific ocean perch (*Sebastes alutus*), other rockfish, and sablefish.

In 1964, during the decline of Bering Sea yellowfin sole catches, a new automated process was developed to convert walleye pollock into surimi, a minced fish meat used to make a variety of fish-based seafood products. Large Japanese mothership processors with their fleets of catcher boats began shifting their main fishing effort to walleye pollock, the largest single fish resource in the North Pacific Ocean. Walleye pollock catches reached a peak of 1.9 million t in 1972. In 1973 and 1974, the United States negotiated catch quotas with Japan and the U.S.S.R., and restrictions on fishing were enacted due to evidence of declining walleye pollock abundance (Alton and Bakkala 1966).

Meanwhile, foreign vessels using bottom trawls in the Gulf of Alaska and along the Washington-Oregon-California coast quickly depleted the limited and vulnerable rockfish stocks. In the Gulf of Alaska, Soviet fishing shifted to walleye pollock, Atka mackerel (*Pleurogrammus monopterygius*), and flatfish, while Japan began to concentrate on the sablefish resource with pot and longline gear. For 1966, the first year of foreign fishing off the U.S. West Coast, Japan's annual rockfish catch was 8,000 t, but by 1968, its annual catch for rockfish had dropped to only a few hundred metric tons. Also in 1966, the U.S.S.R. caught 24,000 t of Pacific ocean perch and 136,000 t of Pacific whiting (*Merluccius productus*), initiating the important mothership Pacific whiting fishery. Later, when rockfish catches declined drastically and fishing effort for those stocks ceased, the Pacific whiting catch of the U.S.S.R. increased to a record 231,000 t in 1976 (Nelson et al. 1981).

During the late 1970s and early 1980s, Japan and the U.S.S.R. were joined by six other countries which participated in the foreign fishery on a smaller scale: the Republic of Korea, Poland, Taiwan, West Germany, Bulgaria, and Mexico.

The first steps toward Americanization of the groundfish fisheries were taken in 1976 when the United States enacted the Magnuson Fishery Conservation Management Act (MFCMA) to conserve U.S. fishery resources and promote development of the U.S. domestic groundfish fishing industry. The Act established the fishery conservation zone, later to become the U.S. Exclusive Economic Zone (EEZ), extending jurisdiction from U.S. coastlines seaward to 200 miles. In 1978, U.S. fishing vessels initiated joint venture fishing, delivering their Pacific whiting catch to Soviet processor vessels in the Washington-Oregon-California region. When red king crab catches dwindled in the early 1980s, many U.S. crab fishermen turned to joint venture groundfish fishing (Marasco and Aron 1991). During the 1980s, joint venture fisheries developed between the United States and 11 foreign nations and by 1987 it virtually displaced foreign-directed fishing.

In the late 1980s, capital investment in Alaskan fisheries increased domestic harvesting and processing capabilities. As a result, domestic fisheries began to displace joint venture operations. U.S. groundfish catches rose dramatically, from 14,000 t in 1981 to 2.1 million t in 1991 in the Bering Sea and Aleutian Islands region, and from 4,500 t in 1981 to 275,900 t in 1991 in the Gulf of Alaska (Table 2). Domestic catch totals in the Washington-Oregon-California region remained constant at about 100,000 t over the same period until 1991, when the entire Pacific whiting quota was allocated to U.S. processing operations.

In 1991, for the first time since the inception of the MFCMA, no groundfish resources were allocated to foreign processing operations in the Bering Sea and Aleutian Islands and Washington-Oregon-California regions. Joint venture fishing ended in 1990 in the Bering Sea-Aleutian Islands and the Washington-Oregon-California regions; and in 1988 in the Gulf of Alaska region.

OBSERVER SAMPLING PROCEDURES

The sampling procedures used by observers in 1991 on domestic catcher/processors and mothership vessels were similar to those used in foreign and joint venture fisheries and have been described previously by Nelson et al. (1981) and French et al. (1981). While on vessels using trawl gear, observers determined the species composition of the catch by taking representative basket samples of selected hauls. Individuals of each species in the samples were then counted and weighed. If the catch was composed of a high percentage of one species, the observer often determined the composition of the entire haul by separating, counting, and weighing all nontarget species. The weight of the target species was calculated by subtracting the weight of the other species from the total haul weight. The number of the target species was obtained by dividing the total weight of the species catch by the average weight per fish, determined from a sample of the catch. Observers aboard vessels using longline or pot gear determined the species composition by sampling several pots or sections of the longline, then expanded the sampling results to the entire number of pots or hooks in the set.

Observers aboard catcher vessels frequently had to use different sampling methods to collect species composition information. These vessels frequently made several hauls, dumping them all together into one large bin for later delivery to a shore plant or floating processor. On the vessels which sorted out unwanted species while at sea, observers were able to collect preliminary species composition data by haul while at sea. Then, upon delivery of the mixed hauls, further sorting took

place, and the at-sea information was used to apportion total tonnage and species composition to each haul. For vessels that made no attempt to sort at sea, the entire catch was dumped directly into the fish bin, and no sampling could occur until the fish were delivered. Observers then determined an overall species composition which was applied to each of the hauls in that delivery. Haul weight information from each of these hauls was applied to the total delivery tonnage to estimate the weight of each haul.

For those species for which additional biological information was desired, observers took length measurements from random samples and collected otoliths or scales from subsamples stratified by length and sex. They also recorded the incidental catch by number and weight for four species groups that cannot be retained due to U.S. regulations. These designated "prohibited species" are Pacific salmon, Pacific halibut, snow (Tanner) crabs, and king crabs. The weight of a fifth prohibited species, Pacific herring, was determined through species composition sampling. For Pacific salmon and Pacific herring, the chance of survival was judged to be zero. For halibut and the crab species, individual specimens were observed, and their viability condition (excellent, poor, dead) was recorded. Observers also collected data on the sightings and incidental catch of marine mammals, the design and dimensions of fishing gear, and methods of fish processing. Some observers conducted additional special studies.

OBSERVER COVERAGE OF FISHING FLEETS

Observer coverage requirements of domestic fishing vessels were dependent on length overall (LOA), which is the horizontal distance, rounded to the nearest foot, between the foremost part of the stem and the aftermost part of the stern, excluding bowsprits, rudders, outboard motor brackets, and similar fittings or attachments. Prior to 2 July, domestic fishing vessels and motherships 125 feet LOA or greater required an observer at all times when fishing for groundfish. Vessels between 60 feet and 125 feet LOA required observer coverage 30% of the time while engaged in groundfish fishing each quarter of the fishing year. The 30% coverage requirements were suspended if the vessel fished less than 10 days in the quarter. Vessels less than 60 feet LOA required no observer coverage unless so requested by the National Marine Fisheries Service (NMFS) Regional Director. Vessels delivering unsorted catch to motherships were exempt from coverage requirements. For the purposes of the coverage requirements, the first fishing day of a trip was defined to be the first day gear was fished or set, and every succeeding day was counted until the vessel returned to port.

On 2 July 1991, coverage requirements changed. After 2 July, motherships could give up their Federal permit number and be subject to observer coverage requirements in place for floating processors (see below). All other coverage requirements for vessels remained the same.

Prior to 2 July, required observer coverage of the processing plants and floating processors was based on annual production. Plants annually processing 10,000 t or more of groundfish were required to have an observer at the facility each day the plant received or processed groundfish during any month that they received 1,000 t or more of groundfish. Plants annually processing between 1,000 and 10,000 t were required to have an observer 30% of the days the plant received or processed fish during any month that they received at least 500 t or more of groundfish. Plants receiving less than 1,000 t annually did not require any coverage. Additionally, the NMFS Regional Director had the authority to alter these requirements if warranted by special circumstances. After 2 July 1991, coverage was based strictly on the delivered tonnage for the month. Plants receiving more than 1,000 t in a month required 100% observer coverage during that month. Plants receiving 500 t to 1,000 t in a month required 30% coverage for that month. For any month that a plant received less than 500 t of groundfish, no observer coverage was required.

Waivers to these requirements were sought throughout the year on a case-by-case basis, but were rarely granted. In 1991, observer coverage totaled 22,470 days on fishing vessels greater than 125 feet LOA, 7,124 on fishing vessels between 60 and 125 feet LOA (Table 3), and 2,862 in plants and aboard floating processors.

Contractors for the Alaska Fisheries Science Center placed 429 observers aboard vessels and at processing plants which participated in domestic groundfish fisheries in the Bering Sea and Aleutian Islands and Gulf of Alaska groundfish fisheries. Observers sampled aboard three types of vessels which caught fish using various gear: 1) catcher/processors (trawl-72, longline-41, pot-10); 2) vessels delivering to plants (trawl-118, longline-86, pot-24); 3) vessels delivering to processing vessels (trawl-29, longline-8). Observers sampled aboard 7 motherships and 16 floaters which processed unsorted catch delivered by other vessels. Observers also sampled at 23 processing plants which accepted sorted catch.

In the Washington-Oregon-California region where the Pacific whiting fishery was conducted entirely offshore, 31 observers were placed aboard 15 catcher/processors and 7 vessels acting as motherships.

METHODS OF CALCULATION

Estimates of Domestic Groundfish Catches

In this report, estimates of U.S. domestic groundfish catches for the Bering Sea/Aleutian Islands and Gulf of Alaska regions were based on blend estimates. During 1991, management decisions were based on industry production reports and observer-reported prohibited species rates. In 1993, this method was changed to use a system of blending observer reports with production reports for groundfish estimation. Thus, this method of estimation is used in this report.

The data sources used to determine catch for at-sea processing operations were weekly industry production reports and observer reports. Each provided an estimate of the total catch (retained plus discarded amounts) of each species or species group by week, gear, and reporting area. For shoreside processing plants and floating processor vessels, groundfish catch estimates came primarily from production reports.

On a weekly basis, catcher/processor vessels, motherships, shoreside processing plants, and floating processor vessels were required to submit production reports containing product weights and discard estimates of all allocated fish species or species groups to the NMFS Regional Office in Juneau, Alaska. Standard recovery rates were then applied by product type to estimate round weights of retained groundfish catch by species and species group. These amounts were then combined with the reported discard amounts to provide total groundfish catch. For each catcher/processor vessel and mothership, the total groundfish catch reported weekly was compared with the catch reported by the vessel's observer. If the vessel's reported total groundfish catch was within 10% of the observer-reported catch total for the week and region, the vessel's production report was used as the data source; otherwise the observer report was used. The only exception was if the total catch for an observer report was less than 20% of the production report, in which case it was assumed that the observer did not adequately sample the total catch for the week. All the detailed data from the chosen report was entered into the blend database to represent the catch for the vessel during that week within that region. For shoreside processing operations, total catch was computed by adding landed catch from weekly production reports to at-sea discard estimates reported by observers aboard the catcher vessels. For offshore processing operations in the Washington-Oregon-California region, groundfish catches were based on observer estimates of total catch.

Estimates of Domestic Bycatch of
Pacific Salmon, Pacific Halibut,
Snow (Tanner) Crabs, King Crabs, and Pacific Herring

The mean incidence rates of prohibited species in the groundfish catch were estimated using haul-by-haul observer data in the Observer Program database (NORPAC). Incidence rates for Pacific salmon, snow (Tanner) crab, and king crab species were calculated as the average number of individuals caught per metric ton of groundfish; the rates of Pacific halibut and Pacific herring were calculated as the average kilograms of bycatch per metric ton of groundfish. The rates were estimated by area, gear type, and target fishery. Estimates of the entire catch of the prohibited species were then made by applying these observed bycatch rates to blend data by area, gear type, and target. The rates for crab species were calculated for C. bairdi and red king crab (the only two crab species for which monitoring is required by regulations), and for "other" snow crabs and "other" king crabs. "Other" snow crabs include C. opilio, C. angulatus, C. tanneri, and the C. bairdi X C. opilio hybrid. "Other" king crabs include blue king crab (Paralithodes platypus), golden king crab (Lithodes aequispina), and couesi king crab (L. couesi). Post-season estimates were made using the same method described above.

Target Fisheries

In 1991, target fisheries were defined using the criteria given in Tables 4 and 5. Both the reported catches of groundfish and bycatch rates were stratified by these target fisheries, along with gear types and areas, to estimate prohibited species catches. These estimates were used to monitor fisheries on which prohibited species bycatch limits were in effect (discussed later in the "Restrictions" section of this report).

Target criteria used for tables in this report providing bycatch rates, average weight information, and plots providing relative bycatch rates are somewhat different than the criteria given in Tables 4 and 5. Calculations were based on total catches rather than on retained catches because species-specific data were reported only as total catch, and did not specify retained or discarded catch. Targets were also assigned on a haul-by-haul basis rather than weekly basis. Rates in the walleye pollock fishery were calculated on gear type rather than on composition of catch. To simplify reporting, bottom trawl fisheries targeting the following species were combined with the "other species" bottom trawl fisheries: Greenland turbot (Reinhardtius hippoglossoides), sablefish, and Atka mackerel. Fishing activities of pot vessels were not divided into specific target fisheries. These vessels harvested primarily Pacific cod

(Gadus macrocephalus), though a number of operations were observed that concentrated on sablefish.

Estimates of Rockfish and Flatfish Catch by Species

In 1991, specific catch allocations were set for Pacific ocean perch, yellowfin sole, rock sole (Pleuronectes bilineatus), and Greenland turbot in the Bering Sea and Aleutian Islands region and Pacific ocean perch, arrowtooth flounder (Atheresthes stomias), and flathead sole (Hippoglossoides elassodon) in the Gulf of Alaska region; thus, catch estimates for these species were prepared by summing the blend estimates for these species. Estimated catches of rockfish species and other species of flatfish were calculated by applying average monthly percent species composition by area and gear type from data collected by observers to rockfish and flatfish blend catch estimates. It should be noted that even though all observers were trained in species identification and instructed in the use of identification keys, errors in identification of some species could have been made, and any errors would affect individual species estimates, as would identification errors included in vessel-reported catches.

Table 1.--Definition of observed gear types used in U.S. domestic groundfish fisheries in the Bering Sea and Aleutian Islands, Gulf of Alaska, and Washington-Oregon-California regions in 1991.

Gear type	Definition
Pelagic trawl	Trawls which do not have any discs, bobbins, rollers, or other chafe protection gear and having stretched mesh sizes of at least 64 inches at all points on the fishing line and extending aft for a distance of at least 10 meshes.
Non-pelagic trawl	Any trawl not satisfying the pelagic trawl definition.
Longline	A stationary, buoyed, and anchored line containing baited hooks.
Pot	A string of individual baited pots.

Table 2.--Estimated groundfish landings (in 1,000s of metric tons) taken in domestic groundfish fisheries by region, 1981-91. Source: PacFIN*.

Species group	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Bering Sea and Aleutians Islands region											
Walleye pollock	0.2	0.2	1.1	7.3	30.8	57.9	215.5	522.6	993.7	1,390.9	1,628.5
Pacific cod	14.1	24.9	42.0	38.7	45.8	34.2	44.7	87.2	123.8	167.5	217.3
Sablefish	<0.1	0.2	0.1	1.1	3.4	6.0	7.8	6.6	4.5	4.5	3.4
Atka mackerel	0.0	0.0	0.0	0.0	0.0	<0.1	0.1	1.9	18.3	23.3	26.7
All rockfish	<0.1	<0.1	<0.1	1.3	0.9	1.1	2.7	2.6	7.3	23.7	10.6
Yellowfin sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4	1.7	16.0	117.7
Turbots and other flatfish	0.0	<0.1	<0.1	<0.1	0.1	6.6	24.2	31.1	35.4	59.1	122.4
Other fish	0.0	0.0	3.3	0.0	0.5	0.2	0.9	0.3	0.3	20.8	26.4
Squid	0.0	0.0	0.0	0.0	0.0	<0.1	<0.1	0.2	0.2	0.6	0.9
Total	14.4	25.2	46.5	48.4	81.5	106.0	295.9	659.9	1,185.1	1,706.4	2,154.0
Gulf of Alaska region											
Walleye pollock	0.6	2.2	0.1	1.0	15.4	21.3	39.9	55.7	66.6	80.6	107.5
Pacific cod	1.1	2.2	4.2	3.2	3.0	8.0	29.5	30.9	41.7	70.8	77.0
Sablefish	1.9	2.9	3.8	8.9	11.4	21.7	26.3	31.0	29.8	25.8	23.1
All rockfish	0.4	0.3	0.4	1.1	2.7	7.9	12.7	18.4	23.4	24.7	21.2
All flounders	0.4	0.3	0.4	0.4	0.5	1.5	2.7	7.0	5.2	34.7	40.0
Other fish	<0.1	<0.1	<0.1	0.1	0.1	0.1	0.3	0.6	0.5	7.8	7.1
Unspecified groundfish	<0.1	<0.1	<0.1	<0.1	0.0	<0.1	<0.1	0.3	<0.1	0.0	0.0
Total	4.5	8.0	9.1	14.8	33.2	61.0	111.4	143.8	167.4	244.4	275.9
Washington-Oregon-California region											
Pacific whiting	0.8	1.0	1.1	2.7	3.9	3.5	4.8	6.9	7.4	12.8	210.4
Walleye pollock	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Jack mackerel	<0.1	<0.1	<0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Pacific cod	1.3	0.9	0.6	0.6	0.4	0.3	2.3	3.3	2.2	1.1	1.8
Sablefish	11.4	18.5	14.5	14.1	14.3	13.2	12.7	10.8	10.3	9.1	9.5
Lingcod	3.3	3.8	4.1	4.1	3.9	1.9	2.6	2.7	3.6	2.9	3.2
Pacific ocean perch	1.4	0.9	1.8	1.6	1.4	1.3	1.0	0.8	1.4	1.0	1.4
Other rockfish	57.9	60.6	45.7	38.4	36.2	35.5	39.3	40.1	43.8	42.3	34.1
All flounders	25.9	32.6	29.4	27.7	30.5	26.0	28.9	27.0	29.9	27.7	30.5
Other fish	0.6	0.4	0.3	0.6	0.6	0.4	0.5	0.5	0.5	0.8	1.3
Unspecified groundfish	0.5	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.2	0.1
Squid	0.0	0.0	<0.1	0.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2
Total	103.2	119.0	97.6	89.9	91.3	82.3	92.3	92.4	99.3	97.8	292.4

*Pacific Coast Fisheries Information Network.

Note: 1990-91 Bering Sea and Aleutian Islands and Gulf of Alaska data provided by NMFS Regional Office, Juneau, AK. Discarded amounts are included in NMFS Regional Office data but not in PacFIN data. All catches include only U.S.-caught and -processed amounts.

Table 3.--Summary of observer coverage days in U.S. domestic groundfish fisheries in the Bering Sea and Aleutian Islands and Gulf of Alaska regions, 1991¹.

Vessel length/type	Observer coverage days
Vessels 125 feet and longer LOA ²	22,470
Vessels between 60 and 125 feet LOA ²	7,124
Plants and floaters	2,862
Total	32,456

¹Coverage days begin on the first day a vessel sets its fishing gear and end when it returns to port.

²Length overall (LOA) is the horizontal distance, rounded to the nearest foot, between the foremost part of the stem and the aftermost part of the stern, excluding bowsprits, rudders, outboard motor brackets, and similar fittings or attachments.

Table 4.--Definitions of target fisheries used for inseason management in the Bering Sea and Aleutian Islands region in 1991.

Target ¹	Criteria ² (in descending priority)
Turbot	Greenland turbot $\geq 35\%$.
Pacific cod	Pacific cod $\geq 45\%$.
Rock sole	Sum of rock sole, yellowfin sole, and "other" flatfish species $\geq 40\%$ and the sum of rock sole exceeds the sum of yellowfin sole, and "other" flatfish species.
Flatfish	Sum of rock sole, yellowfin sole, and "other" flatfish species $\geq 40\%$.
Arrowtooth	Sum of arrowtooth flounder and Kamchatka flounder $\geq 20\%$.
Rockfish	All species of rockfish $\geq 20\%$.
Sablefish	Sablefish $\geq 20\%$.
Atka mackerel	Atka mackerel $\geq 20\%$.
Pollock bottom	Pollock $\geq 20\%$ (Bottom trawl only.)
Pollock midwater	Pollock $\geq 95\%$. (Pelagic trawl only.)
Other	Fails to meet any of the above criteria.

¹Targets were calculated for weekly processor and observer reports for each area fished and gear type used.

²Based on total weight of the species groups in relation to total catch of allocated species.

Table 5.--Definitions of target fisheries used for inseason management in the Gulf of Alaska region in 1991.

Target ¹	Criteria ² (in descending priority)
Pacific cod	Pacific cod $\geq 45\%$.
Rockfish	All species of rockfish $\geq 30\%$.
Deep-water flatfish	Sum of deep-water flatfish species $\geq 20\%$
Shallow-water flatfish	Sum of shallow-water flatfish species $\geq 20\%$
Sablefish	Sablefish $\geq 20\%$.
Pollock bottom	Pollock $\geq 20\%$ (Bottom trawl only.)
Pollock mid-water	Pollock $\geq 95\%$. (Pelagic trawl only.)
Other	Fails to meet any of the above criteria.

¹Targets were calculated for weekly processor and observer reports for each area fished and gear type used.

²Based on total weight of the species groups in relation to total catch of allocated species.

SUMMARY OF OBSERVER SAMPLING FOR BERING SEA AND ALEUTIAN
ISLANDS DOMESTIC GROUND FISH FISHERIES

Area of Sampling

The area sampled by observers in the eastern Bering Sea lies within the U.S. EEZ off the Alaska coastline and the Aleutian Islands. In 1991, zones and areas defined by the North Pacific Fishery Management Council (NPFMC) in the Bering Sea Groundfish Fishery Management Plan Amendment 16 were used and are shown in Fig. 1. Zones 1, 2, and 3 are regions designated in management plan Amendment 16 protecting crab and Pacific halibut stocks. These three zones are further divided into NPFMC regulatory and reporting areas: Zone 1 = Areas 511, 512, and 516; Zone 2 = Areas 513, 517 (also designated as Zone 2H), and 521; Zone 3 = Areas 514, 515, 518, 519, 530, and 540¹. No fishing occurred in Area 530, thus this area is not included in the tables in this report.

Estimates of Domestic Groundfish Catches

Domestic annual processing (DAP) received the entire 2 million t allocation of fish to be taken within the U.S. EEZ in the Bering Sea and Aleutian Islands region. Groundfish vessels caught an estimated 2.15 million t or 112.3% of the final DAP allocation of 1.92 million t in 1991 (Table 6). Walleye pollock, the major target fishery of the groundfish fleet, accounted for 75.6% or 1,629,074 t of this amount. For walleye pollock, 117.6% of the allocation was caught, and 9.7% of the total catch was discarded. Pacific cod accounted for 217,295 t or 10.1% of the total groundfish catch. For Pacific cod, 111.6% of the allocation was caught, and 8.0% of the total catch was discarded. Yellowfin sole accounted for 117,767 t or 5.5% of the total groundfish catch. For yellowfin sole, 102.6% of the allocation was caught, and 24.4% of the total catch was discarded. The remaining 11 species or species groups accounted for 8.8% of the total catch. None of the 11 groups individually accounted for more than 2.6% of the total groundfish catch. Percentage of the allocation taken, ranged from 30.1% for red rockfish to 147.0% for the "other fish" category. Discard amounts were similarly variable, ranging from 1.9% of the sablefish catch to 88.8% of

¹Areas 518 and 519 were in effect from 1 January through 30 April, then were combined into Area 515 for the remainder of 1991. This change is reflected in tables derived from the blend data, providing total catches of groundfish and bycatch species. Monthly and quarterly bycatch rates derived from NORPAC, the Observer Program haul-by-haul database, are calculated for only Areas 518 and 519 for the entire year.

the "other fish" category. Overall, 14.6% of the allocated groundfish caught in 1991 was discarded.

The distribution of groundfish catch by species or species group and NPFMC area is presented in Table 7. About 64% of the groundfish were caught in three areas: Area 521 (646,700 t, 30% of the total catch); Area 517 (417,500 t, 19%); and Area 518 (318,500 t, 15%).

Groundfish catch by species or species group and gear is given in Table 8. The largest amount of groundfish was caught by trawl vessels, which took 2.05 million t (or 95.2%) of the total allocated groundfish catch. Walleye pollock was the primary target species of trawlers, accounting for 79.3% of their total catch. Longline vessels caught 97,236 t or 4.5% and pot vessels caught 6,944 t or 0.3% of the total catch. Pacific cod was the primary target species of longline and pot vessels, accounting for 81.2% and 96.1% of their respective total catches.

Restrictions

In 1991, bycatches of Pacific halibut, red king crab, and Chionoecetes bairdi Tanner crab were controlled by NPFMC Bering Sea Groundfish FMP Amendment 16. Carried over from earlier amendments were the use of bycatch limits and designated zones which could be closed to a fishery whenever specified bycatch limits were attained (Fig. 1). Bycatch limits applied only to trawl fisheries in the Bering Sea and Aleutian Islands region. Pacific halibut bycatch was accumulated over the entire Bering Sea region; attainment of the primary quota closed Zones 1 and 2H, while attainment of the secondary quota closed the entire Bering Sea and Aleutian Islands region.

The flatfish fishery received limits of 40,000 red king crab and 100,000 C. bairdi in Zone 1; 825,000 C. bairdi in Zone 2; and 83 t of Pacific herring for the entire Bering Sea and Aleutian Islands region. The flatfish fishery also received primary and secondary quotas of Pacific halibut of 660 t and 800 t, respectively. The rock sole fishery received limits of 150,000 red king crab and 700,000 C. bairdi in Zone 1; 300,000 C. bairdi in Zone 2; primary and secondary quotas of Pacific halibut of 908 t and 1,100 t, respectively. The Greenland turbot/arrowtooth flounder fishery received limits of 0 red king crab and 0 C. bairdi in Zone 1; 50,000 C. bairdi in Zone 2; and 8 t of Pacific herring for the entire Bering Sea and Aleutian Islands region. The turbot fishery received primary and secondary quotas of Pacific halibut of 165 t and 200 t, respectively. The remaining fisheries (primarily walleye pollock and Pacific cod) received limits of 10,000 red king crab and 200,000 C. bairdi in Zone 1; 1,825,000 C. bairdi in Zone 2; and 83 t of Pacific herring (also including the rock sole fishery but excluding the walleye pollock fishery) for the entire Bering Sea

and Aleutian Islands region. These remaining fisheries also received primary and secondary quotas of Pacific halibut of 2,667 t and 3,233 t, respectively, which were allocated by quarter as follows: 45% for the first quarter, 40% for the second quarter, 15% for the third quarter, with any remainder to be allotted in the fourth quarter. The walleye pollock fishery received a limit of 584 t of Pacific herring for the entire Bering Sea and Aleutian Islands region.

All prohibited species zone closures in 1991 Bering Sea groundfish fisheries occurred due to attainment of Pacific halibut quotas. Closures due to attainment of primary and secondary quotas for rock sole occurred on 15 March and 6 June, respectively. For flatfish, closures due to attainment of primary and secondary quotas occurred on 16 September and 15 October, respectively. Attainment of the Greenland turbot/arrowtooth flounder secondary quota resulted in the closure of directed fishing for arrowtooth flounder on October 21; the Greenland turbot fishery had closed earlier due to attainment of its Total Allowable Catch. Attainment of the first quarter primary and secondary quotas restricted walleye pollock and Pacific cod trawling to the use of pelagic trawl gear on 17 February and 8 March, respectively. Attainment of the second quarter primary and secondary quotas restricted walleye pollock and Pacific cod trawling to the use of pelagic trawl gear on 19 April and 8 May. On 13 May, a revision to Amendment 16 resulted in the closure of Zones 1 and 2H for the remainder of the year to bottom trawling for walleye pollock and the Pacific cod fishing with any trawl gear. The same gear restrictions also applied to the second quarter secondary quota. Attainment of the annual secondary quota occurred on 8 July.

Summary of Data Collected

In the Bering Sea and Aleutian Islands region, observers sampled 28,090 trawl hauls, 7,050 longline sets, and 1,117 pot sets for groundfish composition and prohibited species incidence. Among biological data collected by observers in 1991 were 1,754,747 lengths from 15 groundfish species and 15,103 age structures from 7 species (Table 9). These data and specimens were used by scientists of the Status of Stocks Task at the Alaska Fisheries Science Center for use in determining biomass estimates and year-class strengths. Their findings are reported in "Stock Assessment and Fishery Evaluation for the Groundfish Resources of the Bering Sea/Aleutian Islands Region as Projected for 1992²".

Observers collected stomachs from 998 walleye pollock,

²Available from the North Pacific Fishery Management Council, P.O. Box 103136, Anchorage, AK 99510.

518 Pacific cod, 179 yellowfin sole, and 88 arrowtooth flounder, and they also scanned the stomach contents of 855 Pacific cod. Stomach content analysis was used to provide estimates of predation mortalities of groundfish and crab species, and as input for multispecies models.

From prohibited species, observers recorded 44,464 Tanner crab carapace widths; 1,156 king crab carapace lengths; 8,661 Pacific salmon lengths; 133,405 Pacific halibut lengths; and 1,195 Pacific herring lengths. Viability was recorded for 191,569 Pacific halibut, 66,986 snow crabs, and 3,750 king crabs. Only 1 tagged chinook (Oncorhynchus tshawytscha) was recovered.

Observations of Fishing Gear-Marine Mammal Interactions

Observers monitored 1,067,003 t of groundfish taken in 31,954 trawl hauls, 46,410 t taken in 4,252 longline sets, and 972 t taken in 515 pot sets for fishing gear-marine mammal interactions in Bering Sea and Aleutian Islands groundfish fisheries in 1991 (Table 10). Of the 68 observed interactions, 16 were acts of deterrence which occurred mainly to protect the catch from these animals, 24 animals died from being caught in fishing gear (freshly dead), 25 animals were decomposed, 1 animal was caught and released unharmed, and 2 animals were caught but released without the condition being noted. Nineteen Steller sea lions (Eumetopias jubatus) were encountered, 10 of which were freshly dead. Another 5 of these animals were deterred, 3 were decomposed, and 1 was released unharmed. Other species encountered were 12 walruses (Odobenus rosmarus, 4 freshly dead), 9 killer whales (Orcinus orca, 1 freshly dead), 6 northern fur seals (Callorhinus ursinus, 3 freshly dead), 2 Dall's porpoises (Phocoenoides dalli, 1 freshly dead), 3 bearded seal (Erignathus barbatus, all freshly dead), 1 spotted seal (Phoca largha), and 1 harbor seal (Phoca vitulina). Of the 15 marine mammals not identified to species, 2 were freshly dead.

Observations of Fishing Gear-Seabird Interactions

Seabirds were observed in 19 trawl hauls, 821 longline sets, and 4 pot sets. Numbers extrapolated from sample weight to haul and set weight yielded 1,516 birds (1,458 kg) in sampled trawl hauls, 9,941 seabirds (13,849 kg) in sampled longline sets, and 8 seabirds (10 kg) in sampled pot sets. Because of the difficulty associated with seabird identification and the lack of identification guides, observers were instructed to record all seabird catch as the single category "birds".

Distribution of Observed Fishing Effort

The numbers of observed trawl hauls, longline sets, or groups of pots in groundfish fisheries are plotted by $1/2^\circ$ latitude and 1° longitude areas by gear type, target fishery, and quarter in Fig. 2. These plots reflect effort of observed vessels only, and only those hauls/sets/groups sampled for species composition.

For bottom trawl fisheries targetting flatfish, walleye pollock, and Pacific cod, first quarter fishing was concentrated in Areas 511, 516, and 517 (Zones 1 and 2H) and in Area 513, ranging from south of the Pribilof Islands to Unimak Island and along the eastern Aleutian Islands. After 15 March, Zones 1 and 2H were closed to rock sole fishing, but remained open to other bottom trawl fisheries. For the "other species" fishery, Area 540 was the primary fishing area during the first quarter. In the second quarter, bottom trawl vessels targetting walleye pollock, Pacific cod, rockfish, and "other species" moved in a northwest direction along the outer continental shelf into Area 521 and moved west into the Aleutian region (Area 540). Meanwhile flatfish vessels moved north, and during the second, third, and fourth quarters fished primarily in Area 513 and the southwestern corner of Area 514. Flatfish fishing also was observed in the eastern portion of Area 514 in Bristol Bay during the second and third quarters.

Observed pelagic trawl effort targetting walleye pollock in the first quarter was concentrated along the eastern Aleutian Island chain, primarily within three blocks in each of which more than 500 hauls were observed (Areas 518 and 540). During the second quarter, effort extended northwestwardly from Unimak Island, along the outer slope into Areas 517 and 521, and to the northwest corner of Area 521 during the third quarter. Third quarter effort centered around two blocks with more than 500 hauls each in central Area 521 and in Area 517 near Unimak Island. Observed pelagic trawl effort for "other species" in the first through third quarters was clustered in three spots along the outer slope; the northwest corner of Area 521, south of the Pribilof Islands, and along the extreme eastern Aleutian Islands. No sampling of pelagic fisheries occurred during the fourth quarter.

Observed pot fishing effort for the first quarter was limited to a single block in eastern Bristol Bay. Pot fisheries were not sampled during the second quarter. Most of the observed pot fishing effort occurred during the third quarter and was centered in three locations; along the eastern Aleutian Islands, around the western Aleutian Islands, and in the central portion of Area 521 on the outer slope. Some pot fishing also was observed west of St. Matthew Island and south of the Pribilof Islands. Fourth quarter effort was limited to the extreme western and eastern ends of the Aleutian Island chain (Areas 517,

518, and 540), with lesser effort occurring on the shelf in Areas 511 and 516.

Most observed longline effort was expended by vessels targetting Pacific cod along the outer continental slope and the central and eastern Aleutian Islands throughout the year. During the fourth quarter, cod longlining was also observed in the western Aleutian Islands. Most blocks with cod longline effort had more than 25 sets per quarter; effort of greater than 200 sets was seen in each of two blocks in Area 521 on the outer shelf during the third quarter, and in a single block in southern Area 517 during the fourth quarter. The distribution of observed sablefish longline effort spanned the entire length of the Aleutian Islands in all quarters, with no block exceeding 25 sets in quarterly effort. The "other species" longline effort distribution resembled the combined distribution of the Pacific cod and sablefish fisheries, but with less than five observed sets in most blocks.

Bycatch of Prohibited Species

Pacific Salmon

Bycatch rates and average weights of Pacific salmon by gear type, target fishery, NPFMC area, and month are shown in Table 11. The three highest annual rates occurred in Area 521 for vessels using bottom trawl gear, targetting rockfish (0.179 fish/t of groundfish), "other species" (0.116 fish/t), and Pacific cod (0.106 fish/t). Most of the fishing effort and all salmon bycatch of these trawl fisheries occurred in the first half of the year. For the walleye pollock trawl fisheries, the highest salmon bycatch rates occurred for pelagic trawl gear in Area 517 (0.101 fish/t) and for bottom trawl gear in Area 514 (0.048 fish/t). In the longline fisheries, salmon bycatch rates were low, ranging from 0.000 to 0.007 fish/t in all areas, except in Area 518, where four observed sets meeting the sablefish target criteria had an average rate of 0.517 kg/t. The largest average salmon weight for vessels using longline gear was 6.40 kg in the "other species" fishery in Area 521; for trawlers, it was 6.14 kg in the rockfish fishery using bottom trawl gear, also in Area 521. No salmon were observed in the pot fishery.

The highest salmon bycatch rates of all gear types and target fisheries occurred in the pelagic (midwater) trawl fishery targetting on pollock (greater than 0.05 fish/t). The high rates coincided with most of the highest effort rates (greater than 5 observed hauls/quarter), located along the outer shelf south of lat. 57°00' in Areas 517, 518, and 521 in the first quarter (Fig. 3). During the second quarter, when trawling expanded northwestwardly along the outer continental shelf, rates declined all along the outer slope to less than 0.01 fish/t. In the third quarter pelagic pollock fishery, salmon bycatch rates were again

greater than 0.05 fish/t in the southern outer slope of Areas 511 and 517 but were generally less than 0.05 fish/t in Areas 521 and 522. In the "other species" pelagic fishery and the non-flatfish bottom trawl fisheries, rates greater than 0.05 fish/t occurred along the outer continental slope from Areas 517 and 521 during the first and second quarters. Rates for bottom trawl fisheries targetting rockfish in Area 540 were virtually zero. In areas of primary effort in the flatfish fisheries, a rate of greater than 0.05 salmon/t occurred in a single block north of Unimak Island in Area 511 during the first quarter, and in three blocks in Area 514 during the third quarter. Longline fisheries caught almost no salmon, except in the Pacific cod longline fishery during the third quarter, which encountered salmon at rates greater than 0.01 fish/t along the outer slope and eastern Aleutian Islands chain in Areas 517, 519, 521, and 522.

The estimated bycatch of Pacific salmon in 1991 was 79,134 fish (Table 12). Chinook salmon accounted for approximately 61.8% of this amount (48,873 fish), and "other" salmon (primarily chum salmon, *Oncorhynchus keta*) accounted for 38.2% (30,261 fish). By gear type, 99.9% of the chinook salmon were caught with trawl gear and 0.1% with longline gear. "Other" salmon were also taken only with trawl gear (99.8%) and longline gear (0.2%). By NPFMC area, more than one-half of the salmon bycatch was taken in Area 517 (67.0% of the chinook salmon; 51.5% of the "other" salmon). The next highest catches were taken in Area 511 (21.5% of "other" salmon) and in Area 521 (10.9% of chinook salmon; 11.8% of "other" salmon).

Bycatch of Pacific salmon by target fishery, zone, and species are presented in Table 13. The walleye pollock fishery (pelagic and bottom gear combined) accounted for 88.3% of the bycatch. Overall, 72.6% of all salmon were caught in Zone 2. The highest rate by zone occurred in the "other species" trawl fishery in Zone 2 (0.551 fish/t); for all zones combined, the highest rate also occurred in "other species" trawl fisheries (0.503 fish/t).

The species composition, sex composition, average weight, and average length of incidentally caught Pacific salmon are given in Table 14. Chinook (61.8%) and chum salmon (37.5%) accounted for most of the salmon bycatch, with the remainder made up of coho (*O. kisutch*; 0.5%), sockeye (*O. nerka*; 0.1%), pink salmon (*O. gorbuscha*; 0.1%). One steelhead (*O. mykiss*) was observed in 1991.

Pacific Halibut

Bycatch rates and average weights for Pacific halibut are presented in Table 15. The highest annual rates for trawl gear were observed for bottom trawl gear in Area 517 in the "other species" fishery (84 kg/t of groundfish catch) and the flatfish

fishery (61 kg/t). The highest annual bycatch rates in the walleye pollock trawl fisheries were 14 kg/t using bottom trawl gear also in Area 517 and 3 kg/t using pelagic trawl gear in Area 516. In the pot fisheries, the highest annual rates occurred in Area 518 (29 kg/t) and Area 517 (27 kg/t). In the longline fisheries, the highest halibut bycatch rates occurred in the Pacific cod fishery in Area 518 (462 kg/t) and in the sablefish fishery in Area 517 (311 kg/t). Other rates exceeding 100 kg/t were also observed in the sablefish longline fisheries in Area 518 (239 kg/t) and Area 519 (133 kg/t) and in the Pacific cod fisheries in Area 519 (179 kg/t), Area 511 (166 kg/t), and Area 540 (104 kg/t). However, in the Pacific cod fishery in Areas 521 and 522, where the majority of groundfish caught by longline vessels was taken, the second and third lowest annual rates were observed--27 kg/t in Area 522 and 28 kg/t in Area 521. The lowest observed rate of 24 kg/t was for five observed sets in the Pacific cod longline fishery in Area 516.

The average weights and lengths of Pacific halibut by gear type were 1.37 kg and 46.0 cm in bottom trawls, 1.71 kg and 52.1 cm in pelagic trawls, 5.90 kg and 68.3 cm in longline sets, and 6.08 kg and 76.4 cm in pot sets. A comparison of annual longline and trawl average weights by fishery and NPFMC area shows that the size range on longline vessels varied between 4.00 and 21.85 kg, while the corresponding range for the trawl fisheries varied between 0.51 and 11.72 kg. The smallest annual average weights were observed in the flatfish fishery using bottom trawl gear in Area 522 (0.51 kg), in the walleye pollock fishery using pelagic trawl gear in Area 516 (0.52 kg), and in the "other species" fishery using pelagic trawl gear in Area 516 (0.54 kg). The largest annual average weights were observed in the longline fisheries targetting "other species" in Area 513 (21.85 kg), sablefish in Area 540 (15.46 kg), and sablefish in Area 518 (11.50 kg).

Pacific halibut incidence rates (kilograms of Pacific halibut per metric ton of groundfish catch) are plotted in $1/2^\circ$ latitude by 1° longitude blocks by gear type, target fishery, and quarter in Fig. 4. First quarter flatfish bottom trawl effort centered around southeastern Bering Sea (Areas 511, 516, 517) and the Pribilof Islands; the highest rates (greater than 25 kg/t) were north of Unimak Island in Area 511 and eastern Area 517. Second quarter flatfish trawling effort expanded to include most of the shelf, plus the outer shelf in Area 521; the highest rates occurred in blocks along the outer shelf and 100 m contour line in Areas 511, 513, 517, and 521, plus one block west of Nunivak Island in Area 514. Third quarter effort was confined to the central and inner shelf, primarily in Areas 513 and 514; the highest incidence rates were located in the central portion of Area 514, although the main flatfish fishing effort occurred in western and eastern Area 514. In the rest of the bottom trawl fisheries, the area of concentrated effort shifted along the outer slope from Areas 511 and 517 in the first

quarter, to include Areas 513, 517, and 521 during the remainder of the year. Rates of greater than 25 kg/t were observed in all non-flatfish bottom trawl fisheries along the outer slope south of lat. 57°00', except in the "other species" bottom trawl fishery, which had similar rates extending into northern Area 521. In the rockfish bottom trawl fishery, rates of greater than 25 kg/t were observed along the Aleutian Islands (Area 540) during the second and third quarters. Pelagic trawling for walleye pollock generally produced bycatch rates of less than 5 kg/t for all areas and quarters, except for single block rates greater than 10 kg/t which occurred in Area 521 during the first and third quarters. "Other species" fisheries using pelagic trawl gear showed some rates greater than 25 kg/t along outer slope in Areas 511, 517, 518, and 521 during the first and second quarters. Pot fishing effort occurred from Unalaska Island to Unimak Pass in Areas 517, 518, and 519 during the third and fourth quarters; halibut bycatch rates of greater than 25 kg/t were observed. Other main areas of pot fishing in the northwest outer shelf in Area 521 and the western Aleutian Islands in Area 540 had rates less than 5 kg/t. Most rates were greater than 25 kg/t for the longline fisheries, especially in the Pacific cod fisheries, along the outer shelf area (Areas 521, 522, 517, 518, and 519) and along the eastern Aleutian Islands chain (Area 540).

The estimated bycatch of Pacific halibut was 10,602 t in 1991 (Table 16). By contrast, the largest amount by weight of combined foreign and U.S. joint venture totals since the inception of the MFCMA was only 4,597 t (Guttormsen et al. 1990), which was taken in 1980. Trawl vessels caught 7,114 t or 67.1% of the total, followed by longliners, which caught 3,433 t or 32.4%. Pot vessels accounted for the remaining bycatch (0.5%).

Due to a prior lack of information about mortality of Pacific halibut taken incidentally in the Bering Sea and Aleutian Islands region in the domestic groundfish fisheries, bycatch in 1991 was managed as total bycatch and not by mortality. However, Williams and Wildebuer (1991) examined Pacific halibut viability data from 8,504 trawls, 3,542 longline sets, and 230 pot sets sampled by observers in 1990 and found that short-term mortality ranged from 74 to 78% for trawls, from 13 to 18% for longlines, and from 6 to 10% for pots. Based on the results of this analysis, they recommended a 75% mortality rate be used to manage Pacific halibut bycatch for trawl vessels, a 10% mortality rate for pot vessels, and a 16% rate for longline vessels. In 1992, Pacific halibut bycatch for trawl vessels was managed by these recommendations.

The bycatch of Pacific halibut by target fishery and NPFMC zone is presented in Table 17. Trawl and longline fisheries for Pacific cod took 5,406 t or 51.0% of the total amount of incidentally taken Pacific halibut, with trawl vessels taking 2.3%, 15.0%, and 4.7% of the bycatch in Zone 1, Zone 2, and

Zone 3, respectively, with longline vessels taking 0.05%, 22.1%, and 6.8% of the bycatch in Zone 1, Zone 2, and Zone 3, respectively. The following list gives the name of the species or species group which satisfied target species criteria for longline sets, and their Pacific halibut bycatch incidence rates (in descending order): arrowtooth flounder (253.9 kg of Pacific halibut per metric ton of groundfish), rockfish (81.3 kg/t), turbot (66.2 kg/t), "other species" (60.5 kg/t), and sablefish (58.8 kg/t).

Snow (Tanner) Crabs

Bycatch rates and average weights for C. bairdi are presented in Table 18. Annual rates exceeding 10 crab/t were also observed for bottom trawl hauls targetting flatfish in Area 513 (15.3 crab/t), Area 511 (14.2 crab/t), Area 517 (13.1 crab/t), and Area 521 (10.5 crab/t). Other annual rates of greater than 10 crab/t were observed in the "other species" fishery using bottom trawl gear in Area 513 (15.6 crab/t) and Area 511 (11.4 crab/t). Rates for vessels fishing for walleye pollock were low, with annual rates for bottom trawlers ranging from 0.0 crab/t to 7.8 crab/t and rates for pelagic trawlers ranging from 0.0 to 1.7 crab/t. Pot fishery vessels showed high annual rates of greater than 100 crab/t in Area 516 (167.7 crab/t) and Area 511 (129.8 crab/t), but much lower rates where sampled effort was greatest, in Area 540 (0.07 crab/t) and Area 519 (0.01 crab/t). For longline fisheries, annual rates by NPFMC area were less than 1 crab/t, with the exception of the Pacific cod fishery in Area 511 (6.9 crab/t) and Area 513 (1.6 crab/t).

The annual bycatch rates for "other" snow crabs greater than 10 crab/t occurred in flatfish fisheries using bottom trawl gear (Table 19) at rates of 78.2 crab/t in Area 513; 77.1 crab/t in Area 522; 32.7 crab/t in the NPFMC area of greatest sampled effort, Area 514; and 16.1 crab/t in Area 521. Annual rates exceeding 10 crab/t were also observed in bottom trawl fisheries targetting walleye pollock in Area 514 (67.5 crab/t) and Area 513 (15.6 crab/t), and "other species" in Area 518 (48.9 crab/t) and Area 513 (46.6 crab/t). The highest "other" snow crab bycatch rates in the walleye pollock fishery using pelagic trawl gear were in Area 521 (5.9 crab/t) and Area 513 (4.9 crab/t). Low rates ranging from 0.0 to 2.7 crab/t occurred for all fisheries in Areas 511, 512, and 516. For longline vessels, annual rates for all target fisheries and NPFMC areas were 1.0 crab/t or less. Annual rates for pot vessels varied widely by NPFMC area, ranging from 1,306.2 crab/t in Area 522 to 0 crab/t in Areas 513, 519, and 540.

Bycatch rates of C. bairdi in groundfish catches are shown by 1/2° latitude and 1° longitude statistical areas, gear type,

target fishery, and quarter in Fig. 5. Generally, the highest rates were observed in the bottom trawl flatfish fishery and in the pot fishery. The primary sampled fishing effort of both fisheries was observed on the continental shelf where C. bairdi crab are prevalent. During the first quarter, when bottom trawl fishing began along the outer shelf from the Pribilof Islands to Unimak Pass in the southeastern Bering Sea, many rates for all target fisheries, except rockfish, were greater than 10 crab/t in Areas 511 and 517. After Zone 1 and Zone 2H were closed to bottom trawling for rock sole, the flatfish fishery relocated during the second through fourth quarters to the central shelf (Areas 513, 514, and 516) where observed bycatch rates were greater than 10 crab/t within a zone extending from the southwest corner of Area 514 to the northern half of Area 511. Similarly high rates occurred south and east of the Pribilof Islands in the second quarter and west of the Pribilofs in Areas 521 and 522 during the third quarter. High effort but low rates were observed during the third and fourth quarters west of Nunivak Island (western Area 514) and in Bristol Bay (eastern Area 514) where rates were less than 1 crab/t. Rates in the walleye pollock fishery using bottom trawl gear were similar to those of the flatfish bottom trawl fishery, except that bottom trawling for pollock continued through the second quarter in Areas 511 and 517, where some rates exceeding 10 crab/t were observed. Pelagic trawl bycatch rates for vessels targetting walleye pollock were generally less than 1 crab/t during the first and second quarters and less than 10 crab/t in the third quarter along the outer shelf and slope (where most of this fishery's catch occurred), although rates of greater than 25 crab/t was observed in two blocks near the Pribilof Islands (Area 521) in the third quarter. Some rates in southern portion of Area 511 were also greater than 25 crab/t during the second and third quarters. C. bairdi bycatch rates in the pelagic trawl fishery targetting on "other groundfish species" were higher, with rates of greater than 10 crab/t occurring in Areas 511 and 517 during the first and second quarters. The pot fishery, during the third and fourth quarters, caught C. bairdi at rates generally less than 10 crab/t in the western Aleutian Islands and along the eastern Aleutian Islands chain in Areas 511, 517, 518, and 519, where most of the pots were fished, but exceeded 25 crab/t in other blocks of Areas 511 and 516 on the inner shelf and of Areas 517 and 521 on the outer shelf. In the longline fisheries, crab bycatch rates for the sablefish and "other species" target fisheries were virtually zero. Tanner crab rates of less than 1 crab/t were observed in the Pacific cod longline fishery in most areas along the outer shelf, but rates greater than 1 crab/t were observed in blocks of low effort east and west of the Pribilof Islands and in Area 511.

The bycatch rates of "other" snow crabs species are plotted by $1/2^\circ$ latitude and 1° longitude statistical areas by gear type, target fishery, and quarter in Fig.6. The highest "other" snow crab bycatch rates (greater than 25 crab/t) were observed on the central and outer continental shelf in Areas 513, 514, and 521

and in the bottom trawl fisheries for flatfish, pollock, and "other species", as well as in the pot fishery. In the "other species" fishery using bottom trawl gear, rates greater than 25 crab/t were seen in Area 518 during the second quarter and in Area 540 in the third quarter. However, high rates for "other" snow crab rarely were observed along the eastern Aleutian Islands or Alaska Peninsula. The pollock fishery using pelagic trawl gear in Area 521 during the third quarter caught more "other" snow crab than C. bairdi crab where most fishing effort was expended; of the statistical blocks where sampled effort was greater than 100 hauls, 9 blocks had bycatch rates exceeding 10 "other" snow crab/t, while only 2 blocks had a rate greater than 10 C. bairdi crab/t. In the pot fishery, rates greater than 25 crab/t were observed during the third quarter west of St. Matthew Island in Area 522, on the outer slope of Area 521, south of the Pribilof Islands in Area 517, and in Area 518. Among longliners, those targeting Pacific cod caught "other" snow crab at rates greater than 10 crab/t along the outer slope, with rates exceeding 10 crab/t scattered throughout the shallower depths nearest the 100 m contour.

An estimated bycatch of C. bairdi of 3,611,744 crab was taken in 1991 (Table 20). Trawl vessels caught about 3,548,426 or 98.2% of the estimated 3,611,744 C. bairdi take. By NPFMC area, the highest bycatch occurred in Areas 511 (27.5%), 513 (22.4%), 517 (18.0%), and 521 (17.3%). The 1991 C. bairdi bycatch more than doubled the 1990 catch of 1,792,026 (Guttormsen et al. 1992a).

Groundfish fisheries caught an estimated 10,512,191 "other" snow crabs in 1991 (Table 21), over three times greater than the 1990 bycatch of 3,054,602 crab (Guttormsen et al. 1992a). These crabs were primarily C. opilio. Trawl vessels caught about 10,429,597 or 99.2% of the total bycatch. By NPFMC area, the highest bycatch occurred in Areas 521 (35.3% of the total amount caught), 513 (29.5%), and 514 (26.7%).

The bycatch of C. bairdi by target fishery and zone is presented in Table 22. Most of the crab bycatch was taken by bottom trawlers targeting pollock (31.8%), flatfish (27.1%), rock sole (16.7%), and Pacific cod (13.8%). By zone, 30.6% of the bycatch was caught in Zone 1, 57.7% in Zone 2, and 11.7% in Zone 3.

The flatfish fishery accounted for 45.4% of the incidentally caught "other" snow crabs (Table 23). High percentages of "other" snow crab bycatch also occurred in the walleye pollock bottom trawl fishery (25.6%), and the pollock midwater trawl fishery (16.0%). By zone, 1.3% occurred in Zone 1, 67.2% of the bycatch occurred in Zone 2, and 31.6% occurred in Zone 3.

The observed condition of snow crabs is shown in Table 24. In the pot fishery, 87.7% of the C. bairdi and 73.8% of the C. opilio crabs were observed to be in excellent condition. Mortality was highest in trawl fisheries, especially for C. opilio (60.3% dead) and C. bairdi X C. opilio hybrids (67.5% dead). For the remaining snow crabs species, 35.4% of the C. bairdi, 37.7% of the C. tanneri, and 45.0% of the C. angulatus were dead in observed trawl catches. For longline vessels, mortality rates ranged from 8.6% for C. bairdi to 14.8% for C. bairdi X C. opilio hybrid crab.

The species composition, sex composition, average weight, and average carapace width of incidentally caught snow crabs are presented in Table 25. All four species of snow crabs, plus the C. bairdi X C. opilio hybrid crab, were observed in groundfish catches sampled by observers. Of these crabs, C. opilio (69.8%) and C. bairdi (25.6%) made up the largest portion of the observed crabs caught, with the C. bairdi X C. opilio hybrid (3.8%), C. angulatus (0.8%), and C. tanneri (0.1%) making up the remainder.

King Crabs

Bycatch rates and average weights of red king crab by gear type, target fishery, NPFMC area, and month are shown in Table 26. The highest annual rates for red king crab were associated with vessels using bottom trawl and pot gear. The highest red king crab bycatch rates were observed in bottom trawl fisheries targetting flatfish in Area 516 (2.8 crab/t), walleye pollock in Area 516 (2.3 crab/t) and flatfish in Area 521 (1.0 crab/t). In pollock fisheries using pelagic trawl gear, the highest annual rates by NPFMC area were 0.394 crab/t in Area 516 and 0.001 crab/t in Area 521, while all other rates were less than 0.001 crab/t. In the "other species" fishery using pelagic gear, the highest observed rates were 1.5 crab/t in Area 516, 0.042 crab/t in Area 511, and 0.011 crab/t in Area 521. All other rates were zero or near zero. Pot fishery vessels caught red king crab at a rate of 100.0 crab/t in Area 516, 5.9 crab/t in Area 511, and 0.08 crab/t in Area 540; no red king crab were caught by pots in other areas. For longline vessels, the highest annual rate occurred in the Pacific cod fishery in Area 516 (0.441 crab/t). Red king crab, when caught by longliners, was taken at low rates along the continental slope (Areas 521, 522, and 518) and the Aleutian Islands (Area 540), during August through December.

Annual bycatch rates of "other" king crabs were lower than the corresponding rates for red king crab, except in Areas 513 and 540 (Table 27). For vessels using bottom trawl gear, the three highest annual rates were all in Area 540 targetting Pacific cod (0.595 crab/t), rockfish (0.510 crab/t), and "other species" (0.403 crab/t). The next highest rate was observed in

the "other species" fishery using pelagic trawl gear in Area 513 (0.392 crab/t). In the pollock fishery, the highest rate for pelagic trawlers (0.212 crab/t, in Area 513) exceeded the highest rate for bottom trawlers (0.114 crab/t, also in Area 513); but only two other rates for pelagic trawl fisheries exceeded 0.001 crab/t, both in Area 521 (pollock target--0.014 crab/t; "other species" target--0.031 crab/t). The highest annual rate for longline vessels occurred in Area 540 (0.148 crab/t in the sablefish target fishery). For pot fisheries, the highest rate observed was 196.7 crab/t in Area 522, where five hauls were observed during August. However, rates for pot fisheries in all other areas were zero, except in Area 540 (0.004 crab/t).

Bycatch rates of red king crab by $1/2^\circ$ latitude by 1° longitude areas are plotted in Fig. 7 and were generally zero in all fisheries, with the following exceptions: 1) bottom trawlers targetting flatfish in Area 511 had rates greater than 1 crab/t during the first and second quarter and one block in Area 521 with greater than 10 crab/t in the first quarter; 2) bottom trawlers, targetting walleye pollock during the first and second quarters had rates greater than 1 crab/t in Zone 1 and near the Pribilof Islands; 3) the rockfish fishery had a rate greater than 5 crab/t in one block south of the central Aleutian Island chain during the second quarter; 4) the pot fishery in the third and fourth quarters had bycatch rates greater than 10 crab/t in Zone 1.

The bycatch rates of "other" king crabs are given by $1/2^\circ$ latitude by 1° longitude areas in Fig. 8. Rates were generally zero in all fisheries except in bottom trawl and pot fisheries. Rates ranging from greater than 1 to less than 10 crab/t were observed in eastern Area 540 for the rockfish bottom trawl fishery during the first and second quarters, for the "other species" bottom trawl fishery during the second quarter, and the Pacific cod fishery during the second and third quarter. Similar rates were observed in Area 517 for the rockfish and "other species" bottom trawl fisheries during the fourth quarter. Rates less than 5 crab/t also occurred near the Pribilof Islands in Areas 513 in the flatfish fishery in the second and third quarters, in the pollock fishery in the second quarter, and in the pelagic trawl fishery targeting pollock also in the third quarter. In the pot fisheries, "other" king crab bycatch rates were greater than 10 crab/t in four statistical blocks west of St. Matthew Island in Area 522, and one block east of the Commander Islands in the western part of the Aleutian Islands chain during the third quarter.

Trawl vessels caught about 116,411 of the estimated 121,700 red king crab incidentally taken in 1991 (Table 28). The bycatch of red king crab occurred mostly in Areas 516, 511, 514, and 521, accounting for 90.4% of the total number taken by the fishery in 1991.

An estimated 81,053 "other" king crabs were taken as bycatch in 1991 (Table 29), of which 79,460 or 98% was taken by vessels using trawl gear. The 1991 domestic "other" king crab bycatch was more than three times that of 1990 (25,308 crab) (Guttormsen et al. 1992a). Nearly 90% of the "other" king crab bycatch was taken in the combined Areas 513, 521, and 540. When comparing 1990 and 1991 domestic bycatch numbers and percentages for these areas, the dramatic increase in "other" king crab bycatch appears to have been largely due to increased bycatch in Areas 513 and 521:

	<u>1990</u>	<u>1991</u>
Area 513	2,627 (10.4%)	39,748 (49.0%)
Area 521	1,051 (4.2%)	13,705 (16.9%)
Area 540	13,337 (52.7%)	19,073 (23.5%).

Trawl fisheries for rock sole took an estimated 70,332 crab or 57.8% of the total bycatch (Table 30). Significant bycatch was observed in the "other" flatfish trawl fishery (21.5%) and the pollock bottom trawl fishery (14.2%). The rock sole trawl fishery had the highest rate of bycatch with 1.107 crab/t. The Pacific cod pot fishery, which caught red king crab at an overall rate of 0.758 crab/t, was the only other fishery to exceed 0.200 crab/t.

The bycatch of "other" king crabs (Table 31) occurred primarily in the pollock fisheries (22.8% in the bottom trawl and 18.5% in the pelagic trawl fisheries, respectively), and the bottom trawl fisheries targetting "other flatfish" (18.5%), turbot (13.8%), and rock sole (11.3%). The highest overall bycatch rate was observed on trawl vessels targetting turbot (1.463 crab/t). The only other rates which exceeded 0.200 crab/t were for longliners targetting rockfish (0.600 crab/t) and trawlers with catches composed predominantly of arrowtooth flounder (0.533 crab/t).

All red king crab observed for condition in pot sets were in excellent condition (Table 32). In trawl fisheries, condition varied among species. For golden king crab and blue king crab, 52.7% and 49.4%, respectively, of the observed crab were in excellent condition, but only 36.2% of the red king crab were in excellent condition.

The species composition, sex composition, average weight, and average carapace length of incidentally caught king crabs are given in Table 33. Of the king crabs sampled by observers in groundfish catches, red king crab were the most common (60.0%), followed in order by blue king crab (22.7%), golden king crab (17.0%), and couesi king crab (0.3%). The percentages of red king crab in the catches decreased from the 1990 level of 80.9%, while blue king crab correspondingly increased from the 1990 level of 1.7% (Guttormsen et al. 1992a).

Pacific Herring

The estimated bycatch of Pacific herring was 3,761 t (Table 34). All of the bycatch was taken with trawl gear. The highest bycatch amount by target fishery and area was 2,464 t and was caught in Area 519 by the pelagic pollock fishery. However, 2,297 t of this amount was attributable to the application of the high bycatch rate of the only observed haul for a mothership operation to the weekly groundfish catch. High catches also occurred in the "other" flatfish fishery in Area 514 (525 t) and in the pelagic pollock fishery in Areas 517 (324 t) and 521 (276 t).

Annual bycatch rates of Pacific herring per metric ton of groundfish are shown by 1/2° latitude by 1° longitude statistical blocks in Fig. 9. Rates exceeding 5.0 kg/t occurred primarily in four concentrations described here from west to east: 1) five statistical blocks in or near the southeastern strip of Area 522, adjacent to the 170°00'W longitude, including single blocks in northeastern Area 521 and western Area 514; 2) one statistical block in eastern Area 517; 3) three blocks spanning the border between south-central Area 514 to northwestern Area 511; and 4) two blocks in eastern Area 514 in or near Togiak Bay.

Rockfish Catch by Species

Fourteen species of rockfish were identified by observers in groundfish catches in the Bering Sea and Aleutian Islands region in 1991 (Table 35). The "other rockfish" group refers to the seven species that each made up less than 0.1% of the rockfish catch. In 1991, groundfish fisheries caught 10,627 t of rockfish, of which 77.0% or 8,180 t was Pacific ocean perch (Table 36). Pacific ocean perch was the primary rockfish species caught in all NPFMC areas, except in Areas 512 and 516 where no rockfish were caught, and Area 514 where dusky rockfish (Sebastes ciliatus) comprised the majority of the rockfish catch. Over three-quarters of the total rockfish catch was taken in the combined Areas 521 and 540 (40.5% and 36.3% of the catch, respectively). Other species making up a substantial portion of the Bering Sea and Aleutian Islands region rockfish catch were northern rockfish (S. polyspinus, 826 t), shortraker rockfish (S. borealis, 495 t), dusky rockfish (393 t), shortspine thornyhead (Sebastolobus altivelis, 388 t), and roughey rockfish (Sebastes aleutianus, 304 t).

Flatfish Catch by Species

Seventeen species of flatfish were identified by observers in 1991 (Table 37). The "other flatfish" group refers to the six species that each made up less than 0.1% of the flatfish catch. Nearly one-half (46.8%) of the total flatfish catch was taken in

Area 514, with substantial portions also taken in Areas 513 (14.6%) and 511 (12.9%) (Table 38). Yellowfin sole was the major species taken (117,767 t), followed in importance by rock sole (56,849 t), arrowtooth flounder (19,370 t), flathead sole (16,704 t), Alaska plaice (Pleuronectes quadrituberculatus, 15,152 t), and Greenland turbot (8,273 t). Yellowfin sole was the major flatfish species taken in Areas 514 (89,573 t), 513 (18,342 t) and 512 (179 t). Rock sole was the predominant flatfish species caught in Areas 511 (19,666 t) and 516 (7,996 t). Greenland turbot was the major species taken in Areas 540 (3,555 t) and 515 (2,235 t), and arrowtooth flounder was the major species taken in Areas 521 (7,146 t), 517 (5,357 t), and 522 (1,403 t).

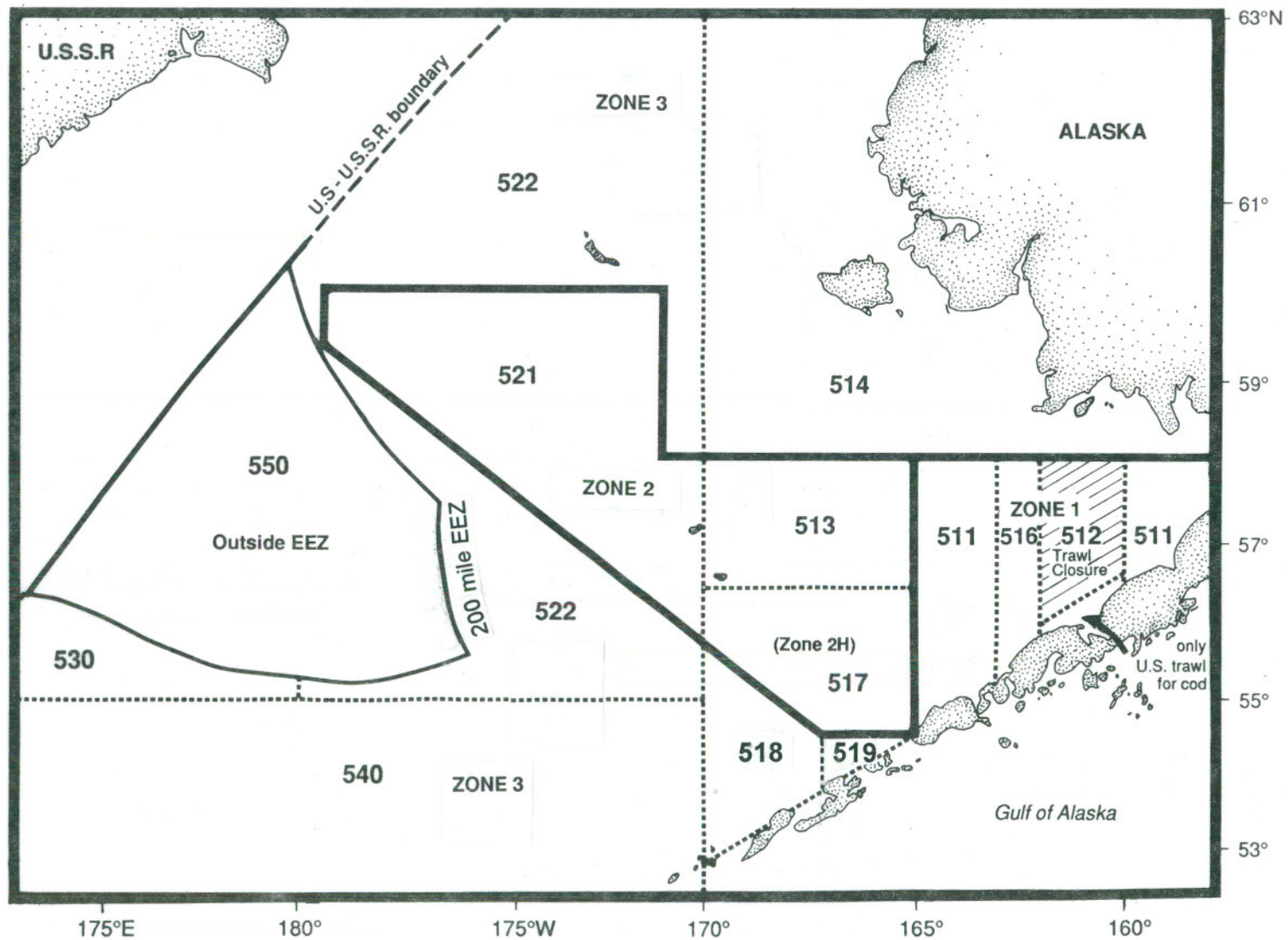


Figure 1.--Bering Sea and Aleutian Islands zones and areas defined by the North Pacific fishery Management Council (NPFMC) for use in placing restrictions on the incidental catch of crab and Pacific halibut.

Table 6.—Estimated groundfish catches (in metric tons) taken by domestic fishing operations in the Bering Sea and Aleutian Islands region, 1991.

Species group	Retained catch	Discarded catch	Total catch	Percent by species	Percent discarded	DAP	Percent caught of DAP	ABC
Pollock	1,470,678.6	158,395.4	1,629,074.0	75.6%	9.7%	1,385,000	117.6%	1,777,460
Pacific cod	199,987.8	17,307.5	217,295.3	10.1%	8.0%	194,650	111.6%	229,000
Sablefish	3,382.9	65.8	3,448.7	0.2%	1.9%	5,834	59.1%	6,300
Yellowfin sole	89,053.6	28,713.1	117,766.7	5.5%	24.4%	114,750	102.6%	250,600
Rock sole	25,410.6	31,438.0	56,848.6	2.6%	55.3%	76,500	74.3%	246,500
Other flounders	9,227.9	27,138.2	36,366.1	1.7%	74.6%	54,974	66.2%	219,700
Greenland turbot	5,368.8	2,904.6	8,273.4	0.4%	35.1%	5,950	139.0%	7,000
Arrowtooth flounder	3,320.8	17,746.3	21,067.1	1.0%	84.2%	17,000	123.9%	116,400
Pacific ocean perch	5,963.9	2,215.8	8,179.7	0.4%	27.1%	13,729	59.6%	15,345
Red rockfish	1,178.4	447.6	1,626.0	0.1%	27.5%	5,402	30.1%	6,355
Other rockfish	375.6	445.5	821.1	0.0%	54.3%	1,186	69.2%	1,325
Atka mackerel	23,487.4	3,252.9	26,740.3	1.2%	12.2%	24,000	111.4%	24,000
Squid	243.8	694.0	937.8	0.0%	74.0%	1,200	78.2%	3,800
Other fish	2,975.0	23,483.5	26,458.5	1.2%	88.8%	18,000	147.0%	28,700
Total	1,840,655.1	314,248.2	2,154,903.3		14.6%	1,918,175	112.3%	2,932,485

DAP = Domestic annual processing is the estimated portion of the U.S. groundfish harvest which will be utilized by domestic processors, including catches of U.S. factory trawlers, and also groundfish that will enter nonprocessed fish markets such as those for bait in crab and longline fisheries.

ABC = Allowable biological catch is a seasonally determined catch that may be higher or lower than the maximum sustainable yield (MSY) in some years for species with fluctuating recruitment.

Table 7.--Estimated groundfish catches (in metric tons) taken by domestic fishing operations in the Bering Sea and Aleutian Islands region by species and North Pacific Fishery Management Council (NPFMC) area, 1991.

Species	Area 511	Area 512	Area 513	Area 514	Area 515	Area 516	Area 517	Area 518	Area 519	Area 521	Area 522	Area 540	Total
Pollock	113,061.3	0.1	86,746.3	6,365.7	19,468.1	2,424.9	341,408.6	315,077.1	102,814.7	520,062.2	23,145.5	98,499.6	1,629,074.1
Pacific cod	19,908.2	1.9	5,760.6	3,656.5	7,816.4	810.8	58,010.5	1,236.1	9,937.9	90,146.3	10,325.5	9,684.5	217,295.2
Sablefish	21.4	0.0	12.4	0.5	456.9	0.0	227.5	170.8	119.2	138.7	52.5	2,248.7	3,448.6
Yellowfin sole	4,322.7	179.2	18,341.8	89,573.4	149.8	1,649.7	216.0	1.1	2.9	2,417.0	913.0	0.1	117,766.7
Rock sole	19,666.0	4.9	11,439.9	10,839.4	200.5	7,995.6	2,084.7	77.0	415.2	3,873.5	110.7	141.1	56,848.5
Other flounders	5,372.4	8.4	4,843.4	11,909.5	232.1	1,737.2	4,405.9	28.8	654.0	6,602.4	496.9	75.2	36,366.2
Greenland turbot	61.9	0.0	18.4	1.1	1,180.6	0.0	1,488.4	497.5	556.5	775.5	138.5	3,554.9	8,273.3
Arrowtooth flounder	1,561.5	0.0	493.7	82.8	537.9	103.4	5,512.9	1,053.9	849.7	7,654.4	1,538.8	1,678.1	21,067.1
Pacific ocean perch	77.9	0.0	69.4	8.9	338.8	0.0	285.1	45.4	128.8	3,655.4	730.5	2,839.6	8,179.8
Red rockfish	26.0	0.0	25.9	0.2	81.5	0.0	276.0	19.9	34.9	460.2	31.8	669.6	1,626.0
Other rockfish	22.7	0.0	4.7	27.5	58.0	0.0	101.5	21.4	39.5	192.0	7.5	346.4	821.2
Atka mackerel	28.3	0.0	20.4	0.5	697.0	0.0	193.4	15.4	1,480.4	160.7	0.3	24,143.9	26,740.3
Squid	44.6	0.0	12.3	0.6	100.3	0.0	296.2	77.6	116.9	132.3	7.4	149.5	937.7
Other fish	2,345.5	0.9	3,258.1	3,473.8	348.8	250.5	3,017.3	129.0	347.5	10,420.3	1,500.3	1,366.6	26,458.6
Total	166,520.4	195.4	131,047.3	125,940.4	31,666.7	14,972.1	417,524.0	318,451.0	117,498.1	646,690.9	38,999.2	145,397.8	2,154,903.3
Percent by area	8%	<0.01%	6%	6%	1%	1%	19%	15%	5%	30%	2%	7%	

Table 8.--Estimated retained, discarded, and total catches in metric tons (t) taken by domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by species and gear, 1991.

Species	Gear	Retained	Discarded	Total	% of gear catch by gear	% of species catch by gear
Pollock	Trawl	1,470,204.7	155,971.5	1,626,176.2	79.3%	99.8%
	Longline	474.0	2,421.3	2,895.3	3.0%	0.2%
	Pot	0.0	2.5	2.6	0.0%	0.0%
	Total	1,470,678.7	158,395.3	1,629,074.1		
Pacific cod	Trawl	116,126.1	15,562.7	131,688.8	6.4%	60.6%
	Longline	77,363.6	1,570.1	78,933.7	81.2%	36.3%
	Pot	6,498.1	174.7	6,672.8	96.1%	3.1%
	Total	199,987.8	17,307.5	217,295.3		
Sablefish	Trawl	508.5	35.3	543.9	0.0%	15.8%
	Longline	2,874.3	30.4	2,904.7	3.0%	84.2%
	Pot	0.1	0.0	0.1	0.0%	0.0%
	Total	3,382.9	65.7	3,448.7		
Yellowfin sole	Trawl	89,053.6	28,670.6	117,724.2	5.7%	100.0%
	Longline	0.0	3.1	3.1	0.0%	0.0%
	Pot	0.0	39.3	39.3	0.6%	0.0%
	Total	89,053.6	28,713.0	117,766.6		
Rock sole	Trawl	25,405.9	31,420.4	56,826.4	2.8%	100.0%
	Longline	4.7	17.2	21.9	0.0%	0.0%
	Pot	0.0	0.3	0.3	0.0%	0.0%
	Total	25,410.6	31,437.9	56,848.6		
Other flounders	Trawl	9,122.1	26,890.2	36,012.3	1.8%	99.0%
	Longline	105.8	247.4	353.2	0.4%	1.0%
	Pot	0.0	0.6	0.6	0.0%	0.0%
	Total	9,227.9	27,138.2	36,366.1		
Greenland turbot	Trawl	5,240.9	1,136.9	6,377.7	0.3%	77.1%
	Longline	128.0	1,767.3	1,895.3	1.9%	22.9%
	Pot	0.0	0.4	0.4	0.0%	0.0%
	Total	5,368.9	2,904.6	8,273.4		
Arrowtooth	Trawl	3,211.3	15,506.5	18,717.8	0.9%	88.8%
	Longline	109.5	2,239.0	2,348.5	2.4%	11.1%
	Pot	0.0	0.7	0.7	0.0%	0.0%
	Total	3,320.8	17,746.2	21,067.0		
Pacific ocean perch	Trawl	5,914.7	2,208.9	8,123.6	0.4%	99.3%
	Longline	49.3	6.9	56.2	0.1%	0.7%
	Pot	0.0	0.1	0.1	0.0%	0.0%
	Total	5,964.0	2,215.9	8,179.9		
Red rockfish	Trawl	1,003.1	401.7	1,404.9	0.1%	86.4%
	Longline	175.3	45.4	220.7	0.2%	13.6%
	Pot	0.0	0.5	0.5	0.0%	0.0%
	Total	1,178.4	447.6	1,626.1		
Other rockfish	Trawl	167.0	349.1	516.1	0.0%	62.9%
	Longline	208.6	95.5	304.1	0.3%	37.0%
	Pot	0.0	0.9	0.9	0.0%	0.1%
	Total	375.6	445.5	821.1		
Atka mackerel	Trawl	23,487.4	3,247.9	26,735.3	1.3%	100.0%
	Longline	0.0	3.5	3.5	0.0%	0.0%
	Pot	0.0	1.5	1.5	0.0%	0.0%
	Total	23,487.4	3,252.9	26,740.3		

Table 8.--Continued.

Species	Gear	Retained	Discarded	Total	% of gear catch by gear	% of species catch by gear
Squid	Trawl	243.6	693.9	937.6	0.0%	100.0%
	Longline	0.2	0.0	0.2	0.0%	0.0%
	Pot	0.0	0.0	0.0	0.0%	0.0%
	Total	243.8	693.9	937.8		
Other fish	Trawl	1,593.4	17,344.6	18,938.1	0.9%	71.6%
	Longline	1,349.4	5,946.7	7,296.1	7.5%	27.6%
	Pot	32.2	192.1	224.3	3.2%	0.8%
	Total	2,975.0	23,483.4	26,458.5		
Total	Trawl	1,751,282.3	299,440.2	2,050,722.9		95.2%
	Longline	82,842.7	14,393.8	97,236.5		4.5%
	Pot	6,530.4	413.6	6,944.1		0.3%
	Total	1,840,655.4	314,247.6	2,154,903.5		

Table 9.--Summary of data collected by U.S. groundfish observers in the Bering Sea and Aleutian Islands region, 1991.

Species	Lengths ¹	Age structures ²	Viability
Groundfish species			
Walleye pollock	887,354	8,814	--
Pacific cod	358,955	3,144	--
Sablefish	22,189	168	--
Atka mackerel	46,775	356	--
Pacific ocean perch	18,476	--	--
Rougheye rockfish	144	--	--
Shortraker rockfish	576	--	--
Northern rockfish	145	--	--
Greenland turbot	13,181	--	--
Flathead sole	12,398	154	--
Rock sole	83,923	1,146	--
Yellowfin sole	306,062	1,321	--
Alaska plaice	102	--	--
Arrowtooth flounder	4,113	--	--
Kamchatka flounder	354	--	--
Totals	1,754,747	15,103	--
Prohibited species			
<u>C. bairdi</u>	22,356	--	33,765
<u>C. opilio</u>	20,162	--	30,898
<u>C. angulatus</u>	803	--	1,367
<u>C. tanneri</u>	18	--	53
<u>C. bairdi</u> x <u>C. opilio</u> hybrid	1,125	--	903
Red king crab	819	--	2,718
Golden king crab	116	--	686
Blue king crab	219	--	336
Couesi king crab	2	--	10
Chinook salmon	5,742	--	--
Chum salmon	2,831	--	--
Coho salmon	43	--	--
Sockeye salmon	36	--	--
Pink salmon	9	--	--
Pacific halibut	133,405	--	191,569
Pacific herring	1,195	--	--
Totals	188,881	--	262,305

¹Fork lengths were collected from fish, carapace widths from snow (Tanner) crabs, and carapace lengths from king crabs.

²Otoliths were collected from most groundfish species, and scales were collected from Pacific salmon and Pacific cod.

Table 10.--Observed marine mammal-fishing gear interactions in U.S. domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, species, and condition of animal, 1991.

Gear type	Species	Condition ¹	Number
Trawl ²	Steller sea lion	Freshly dead	10
Trawl	Steller sea lion	Decomposed	3
Trawl	Steller sea lion	Unharmed	1
Trawl	Steller sea lion	Deterred	2
Trawl	Northern fur seal	Freshly dead	3
Trawl	Northern fur seal	Deterred	3
Trawl	Bearded seal	Freshly dead	3
Trawl	Walrus	Freshly dead	4
Trawl	Walrus	Decomposed	8
Trawl	Dall's porpoise	Freshly dead	1
Trawl	Dall's porpoise	Decomposed	1
Trawl	Harbor seal	Decomposed	1
Trawl	Killer whale	Freshly dead	1
Trawl	Spotted seal	Unknown	1
Trawl	Unidentified pinniped	Freshly dead	1
Trawl	Unidentified pinniped	Decomposed	7
Trawl	Unidentified pinniped	Unknown	1
Trawl	Unidentified whale	Decomposed	5
Trawl	Unidentified dolphin	Freshly dead	1
Longline ³	Steller sea lion	Deterred	3
Longline	Killer whale	Deterred	8
Pot ⁴	None	--	-

¹"Freshly dead" refers to dead animals not decomposed or shot that were brought onboard or released from fishing gear. "Decomposed" refers to animals obviously dead prior to contact with fishing gear. "Unharmed" refers to animals entrapped by fishing gear but released without apparent injury. "Injured" refers to animals entrapped by fishing gear that were released with an apparent injury. "Unknown" refers to animals entrapped by fishing gear but released before the observer could determine the animal's condition. "Deterred" refers to animals that were not entrapped but were subjected to harrassment such as seal bombs.

²Observers sampled 1,067,003 metric tons (t) of groundfish taken in 31,954 trawls.

³Observers sampled 46,410 t of groundfish taken in 4,252 longline sets.

⁴Observers sampled 972 t of groundfish taken in 515 pot sets.

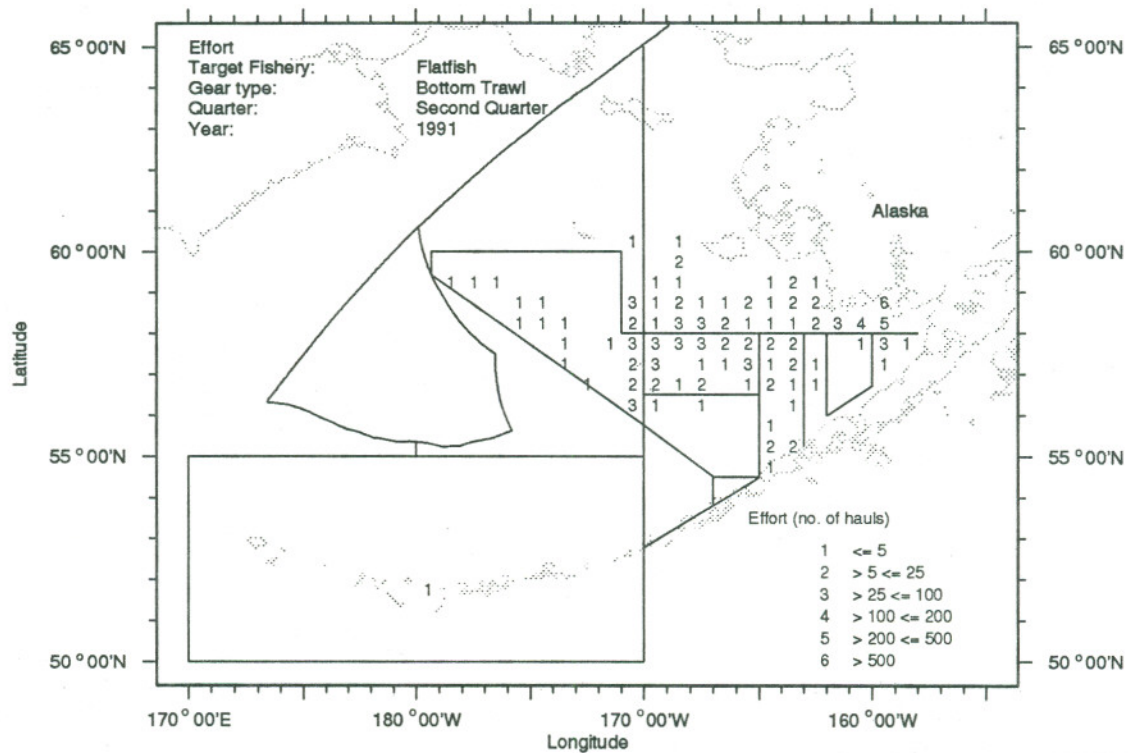
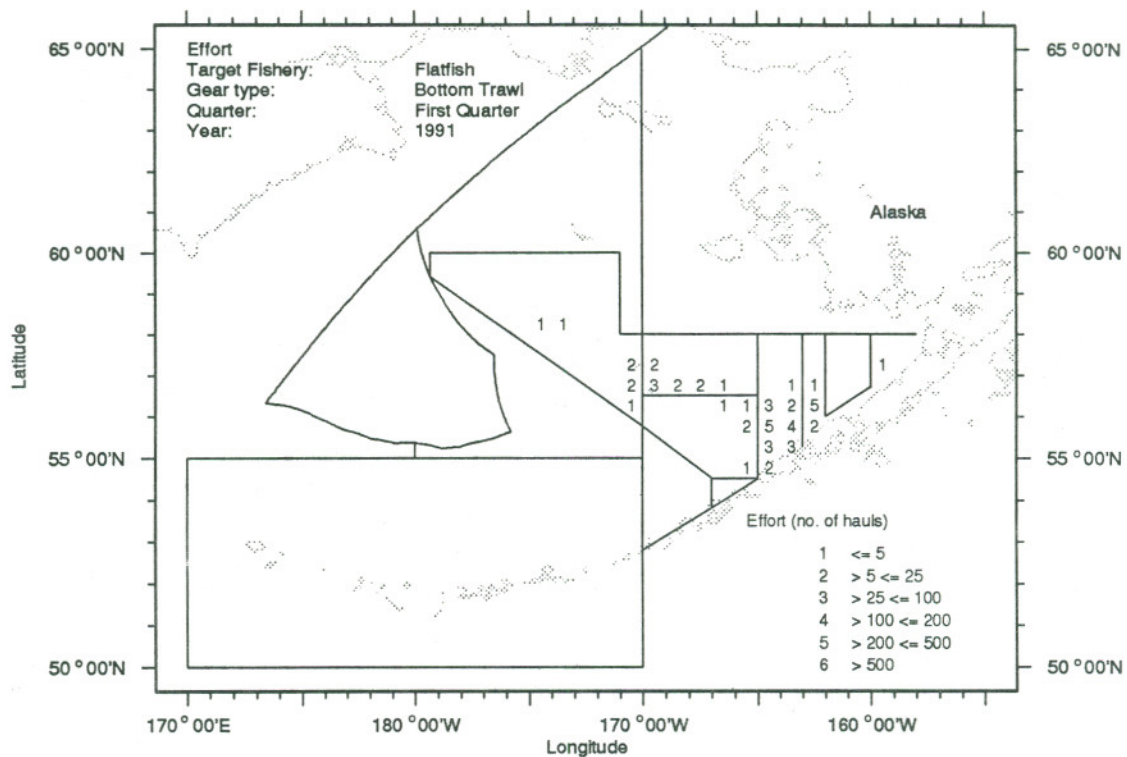


Figure 2.--Effort (no. of observed hauls, sets, or groups of pots) in U.S. domestic fisheries by quarter, target fishery, gear type, and $\frac{1}{2}^\circ$ latitude by 1° longitude areas in the Bering Sea/Aleutian Islands region 1991.

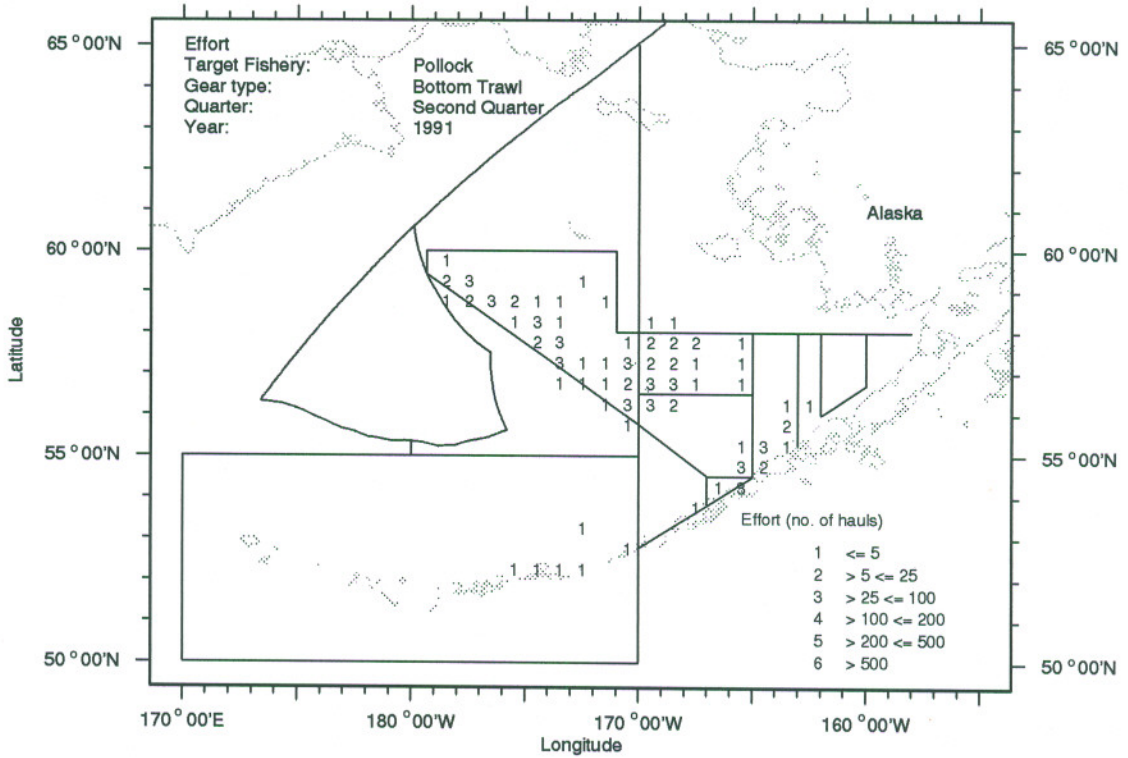
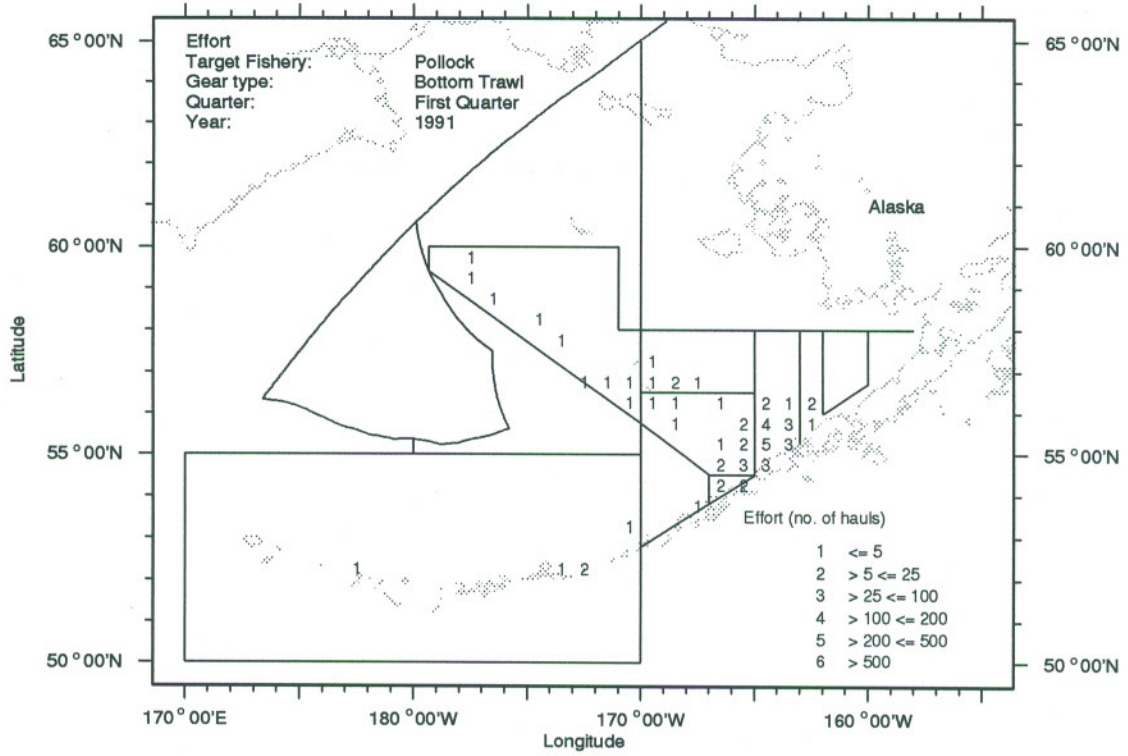


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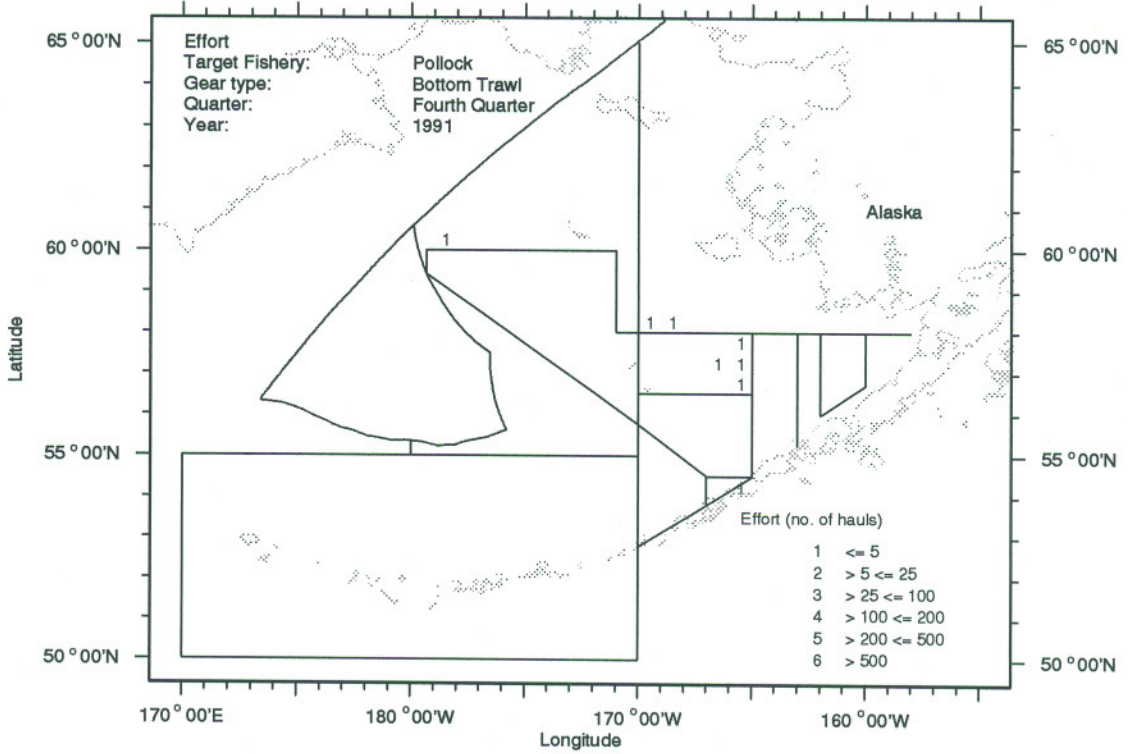
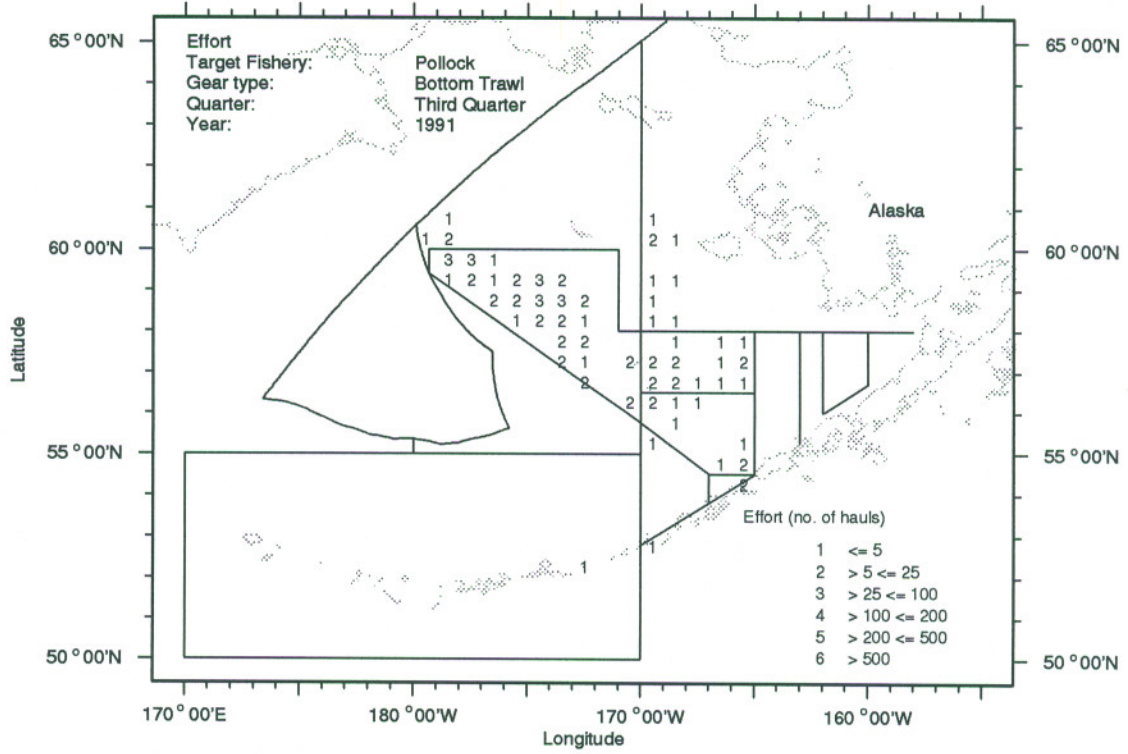


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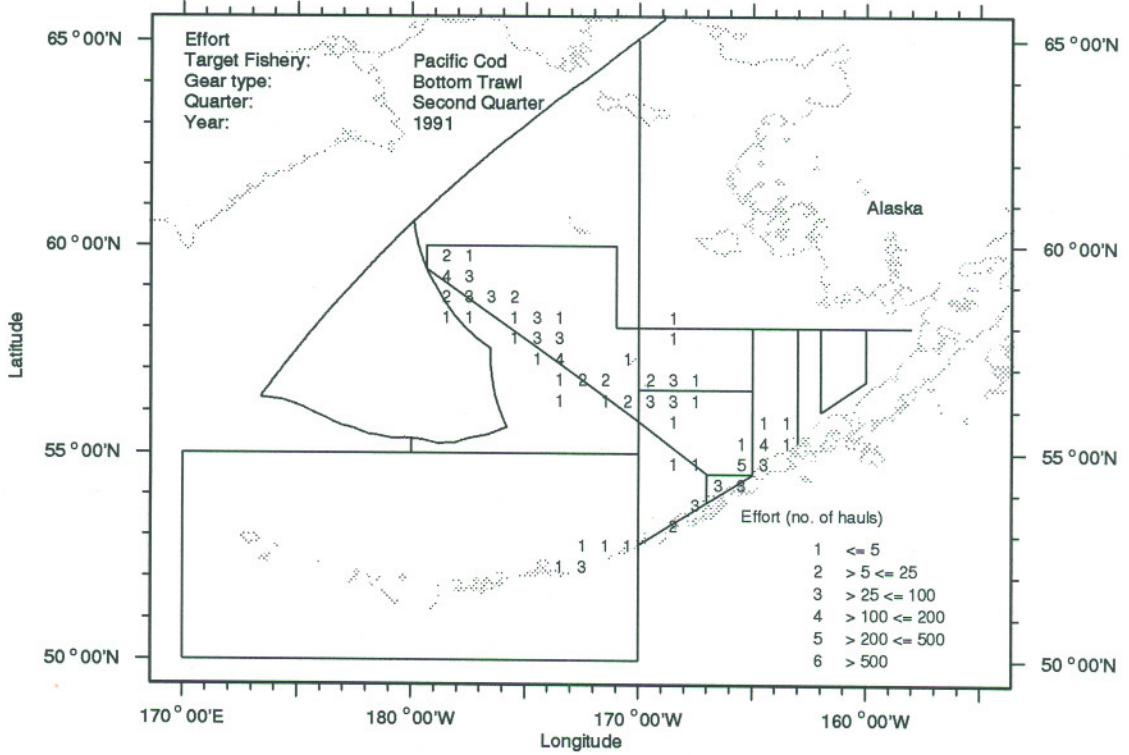
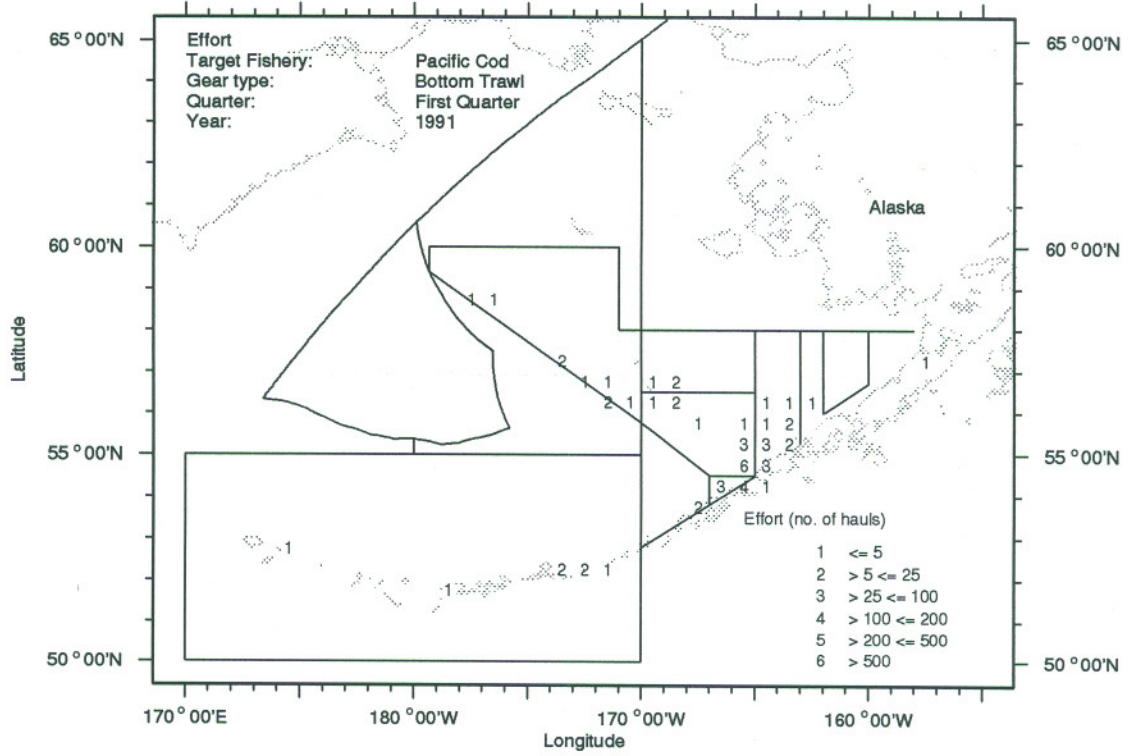


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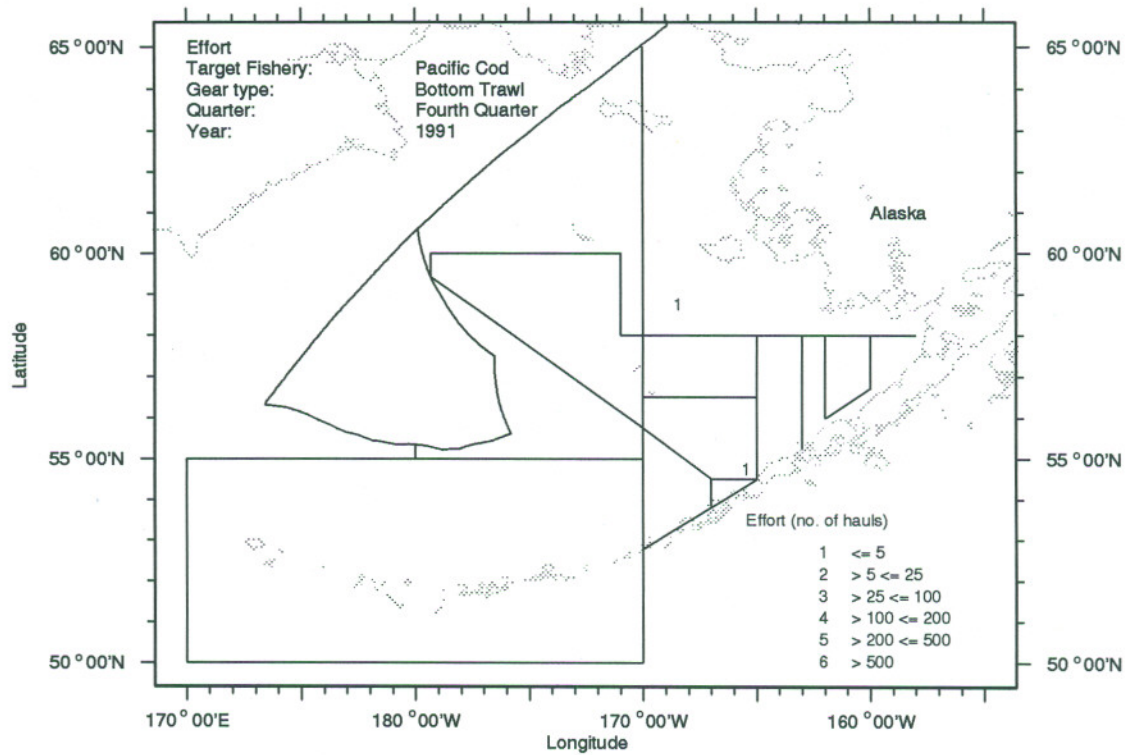
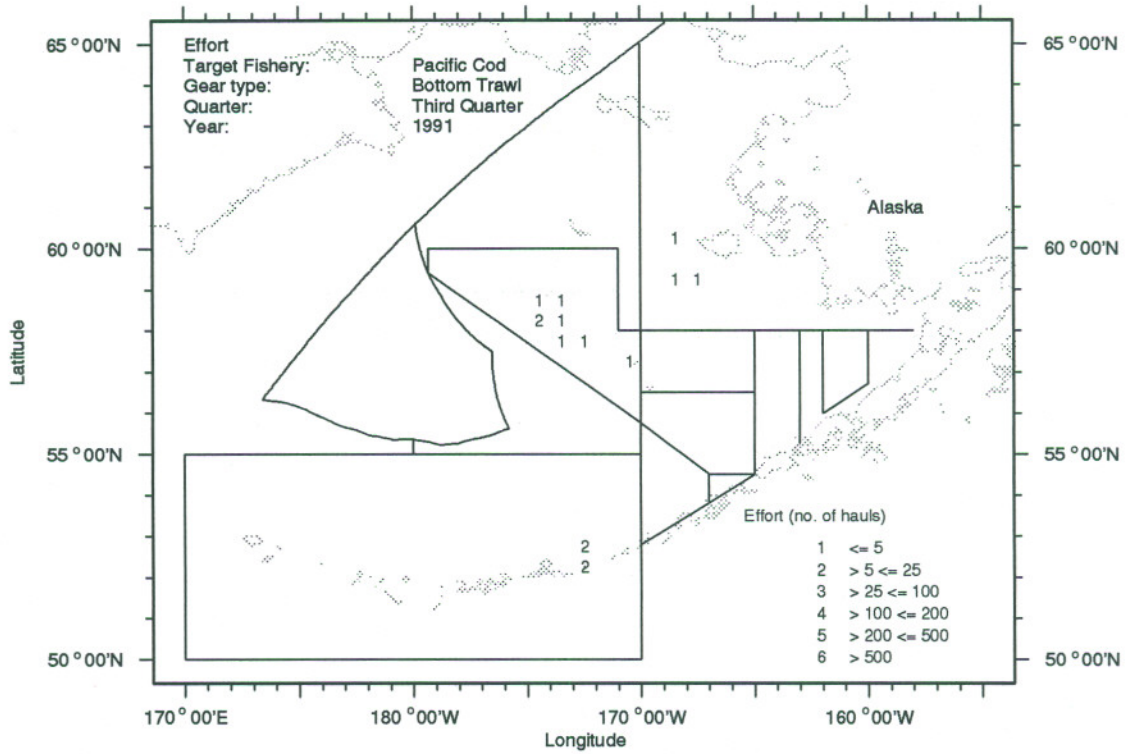


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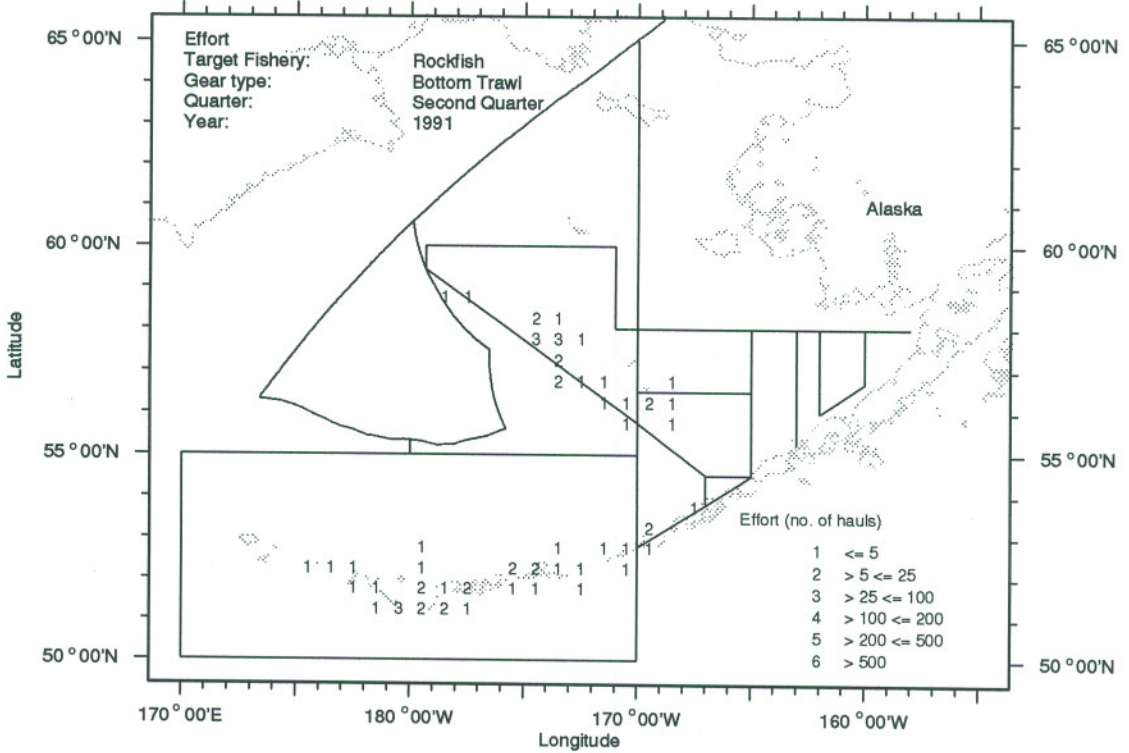
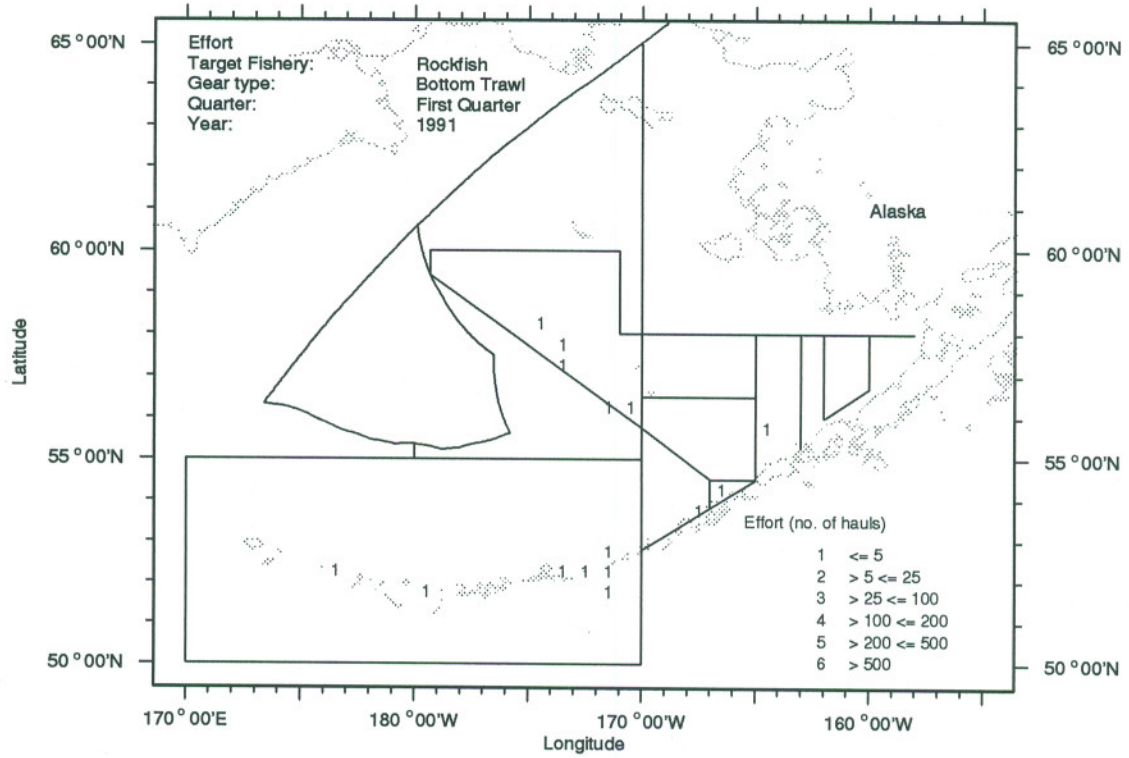


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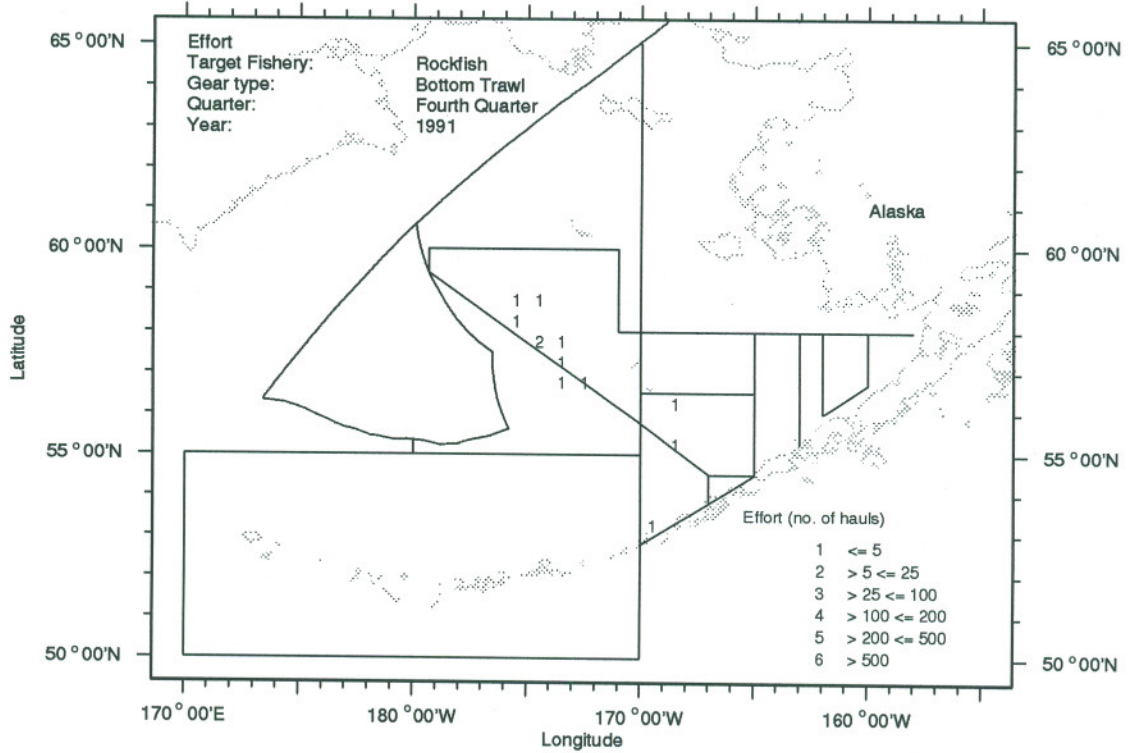
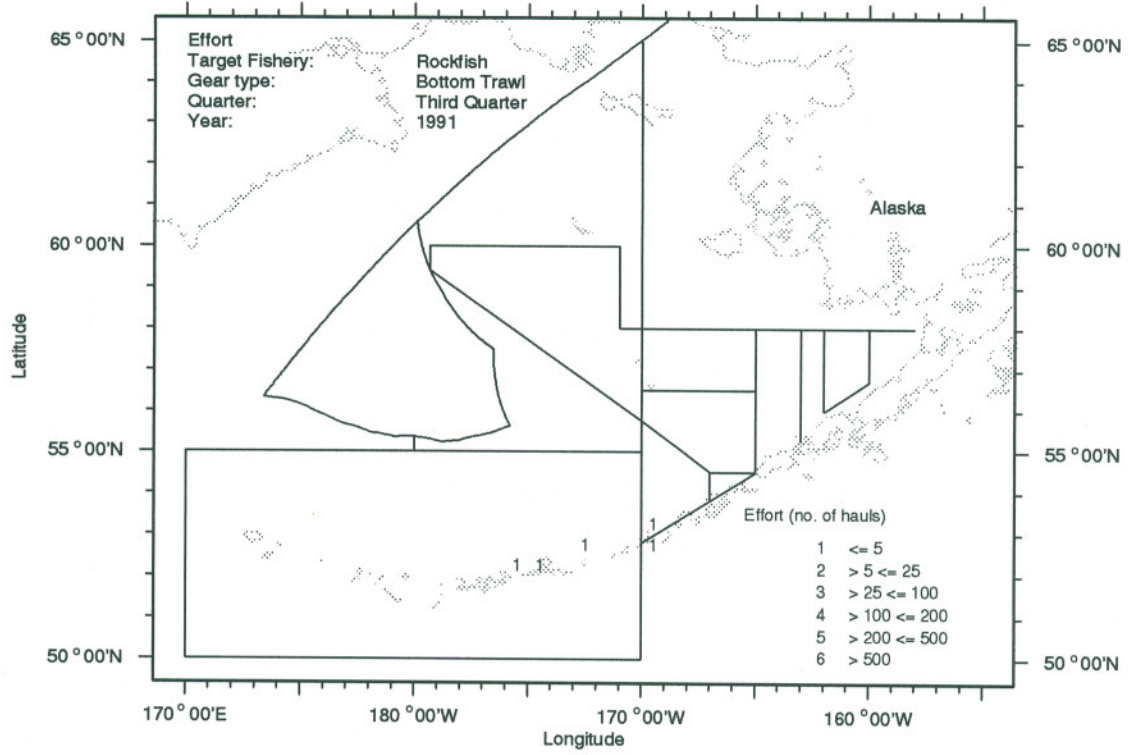


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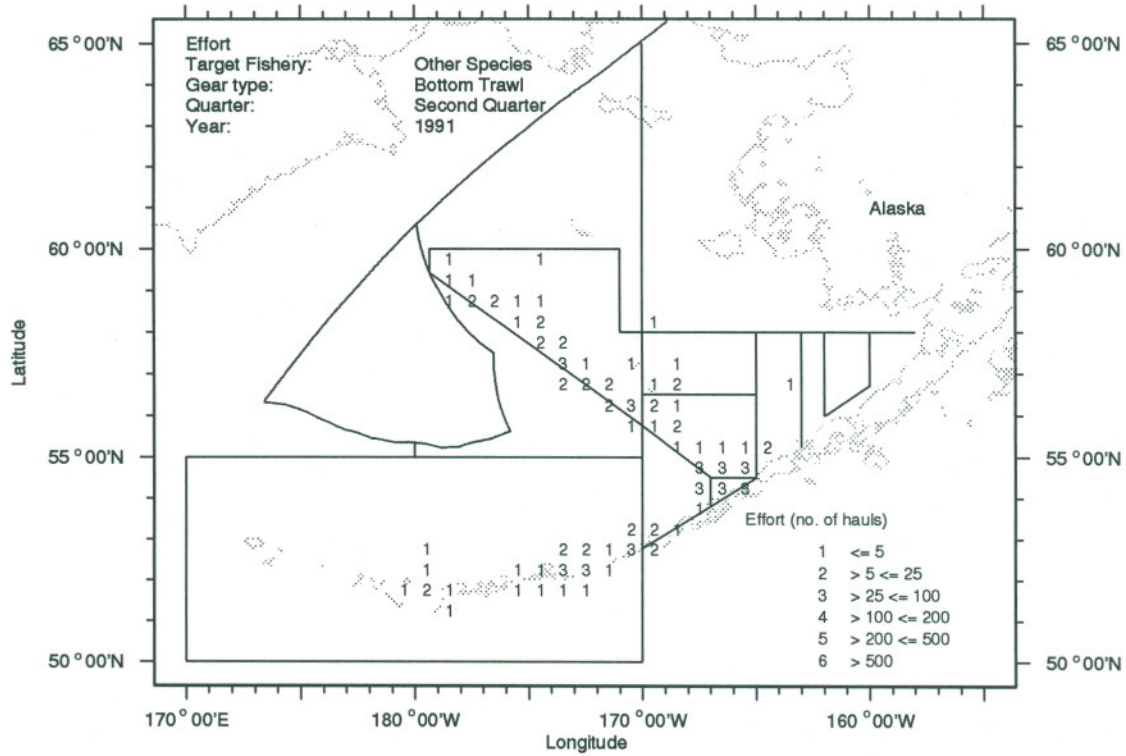
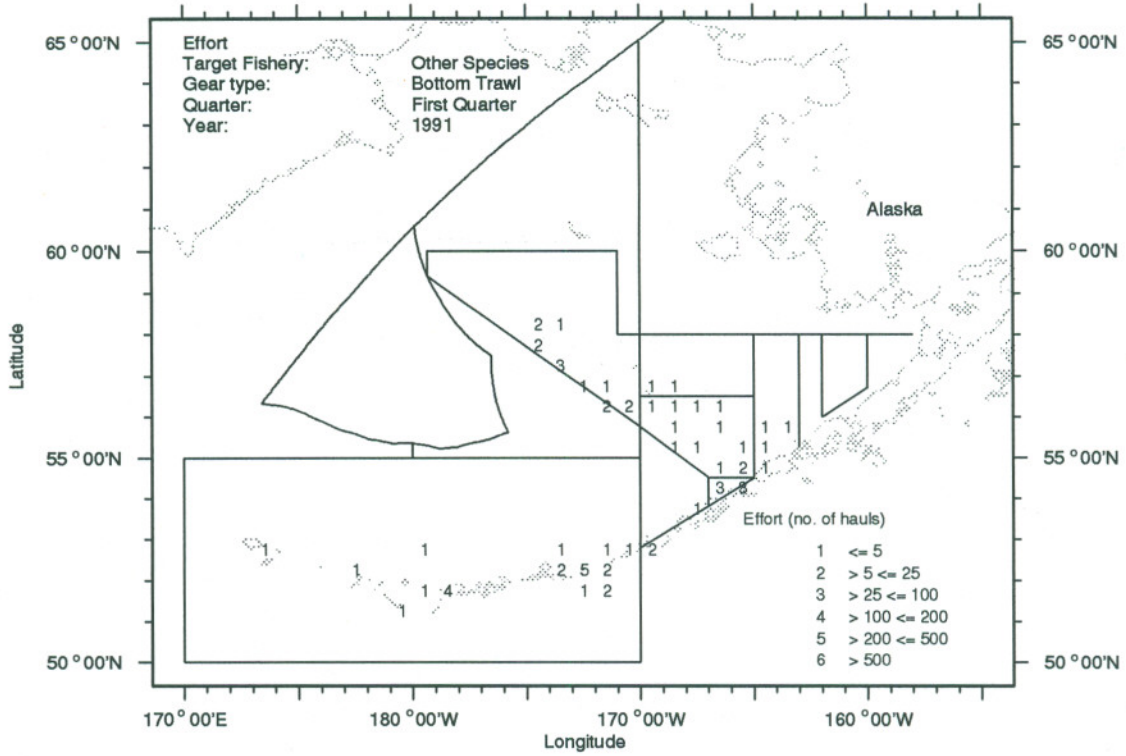


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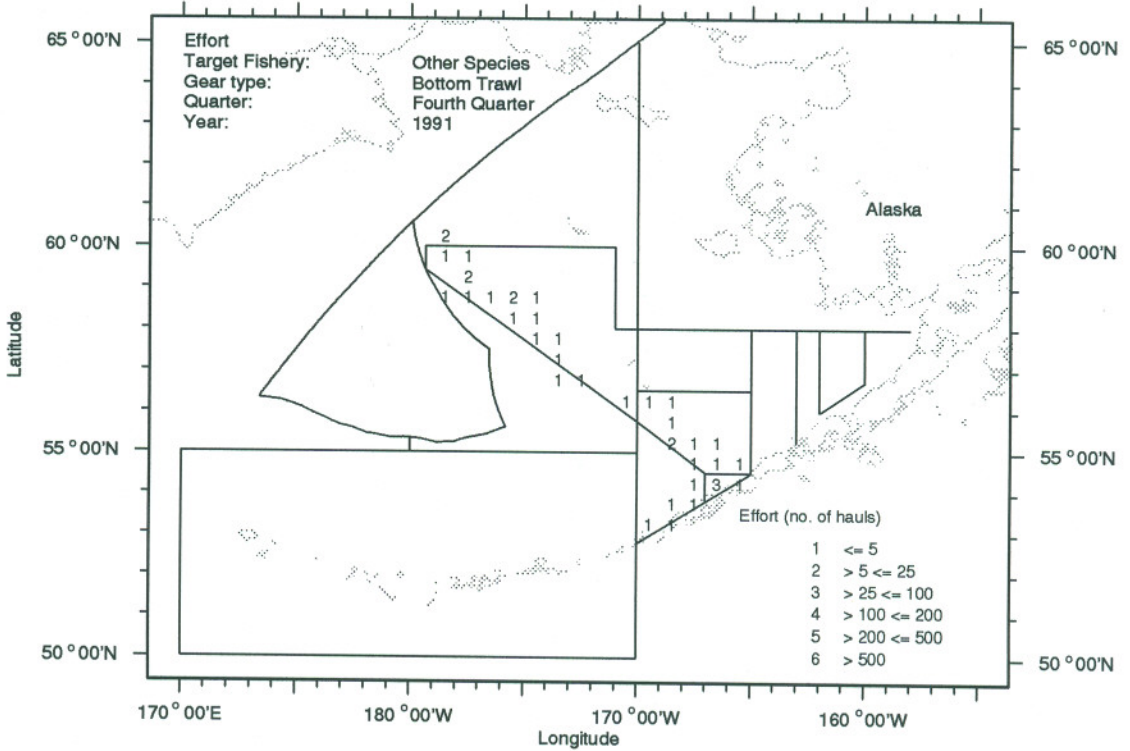
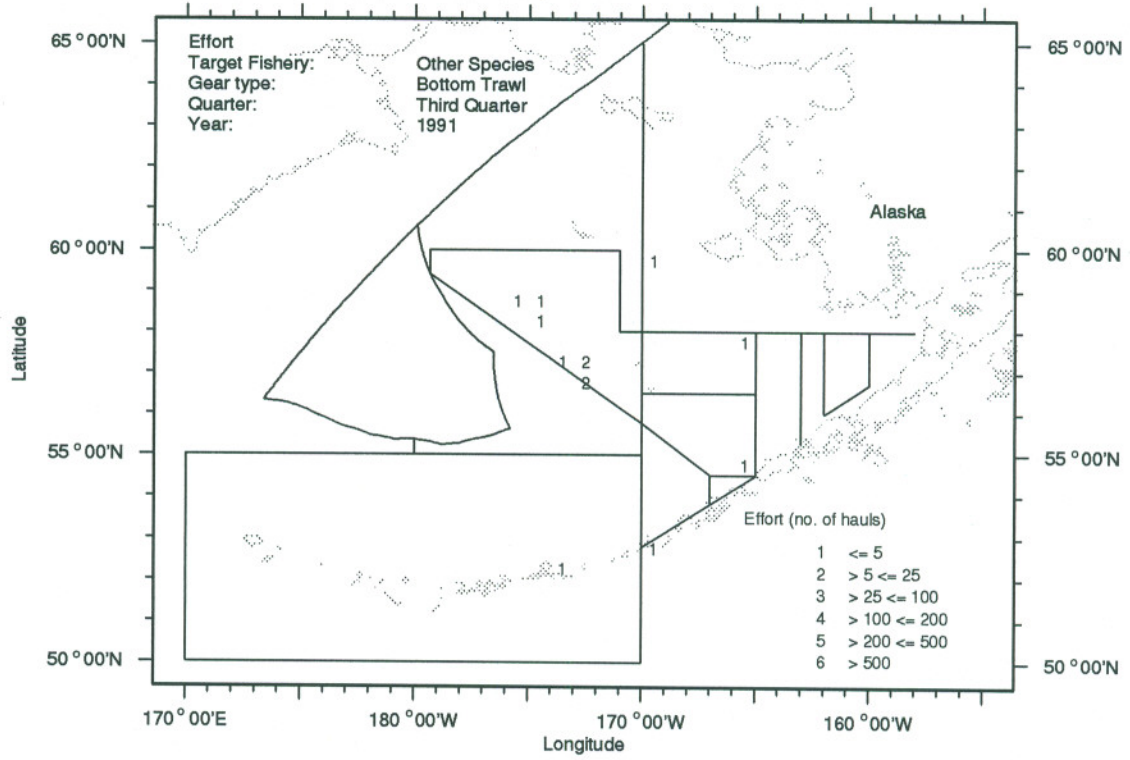


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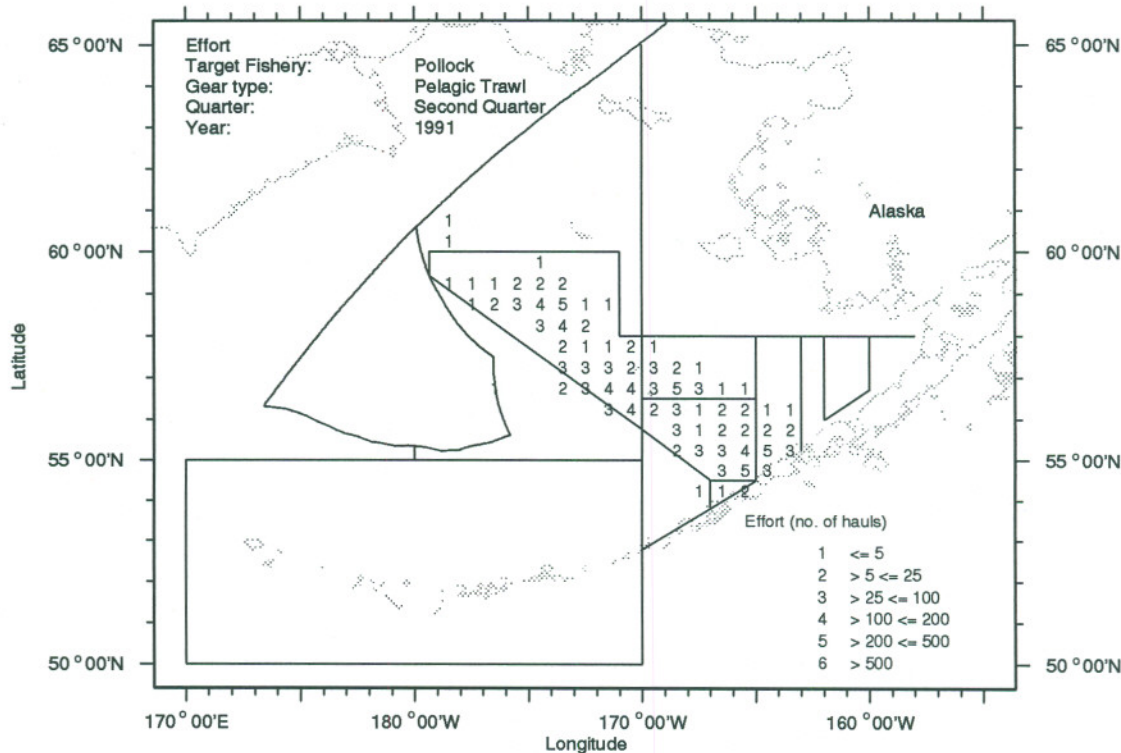
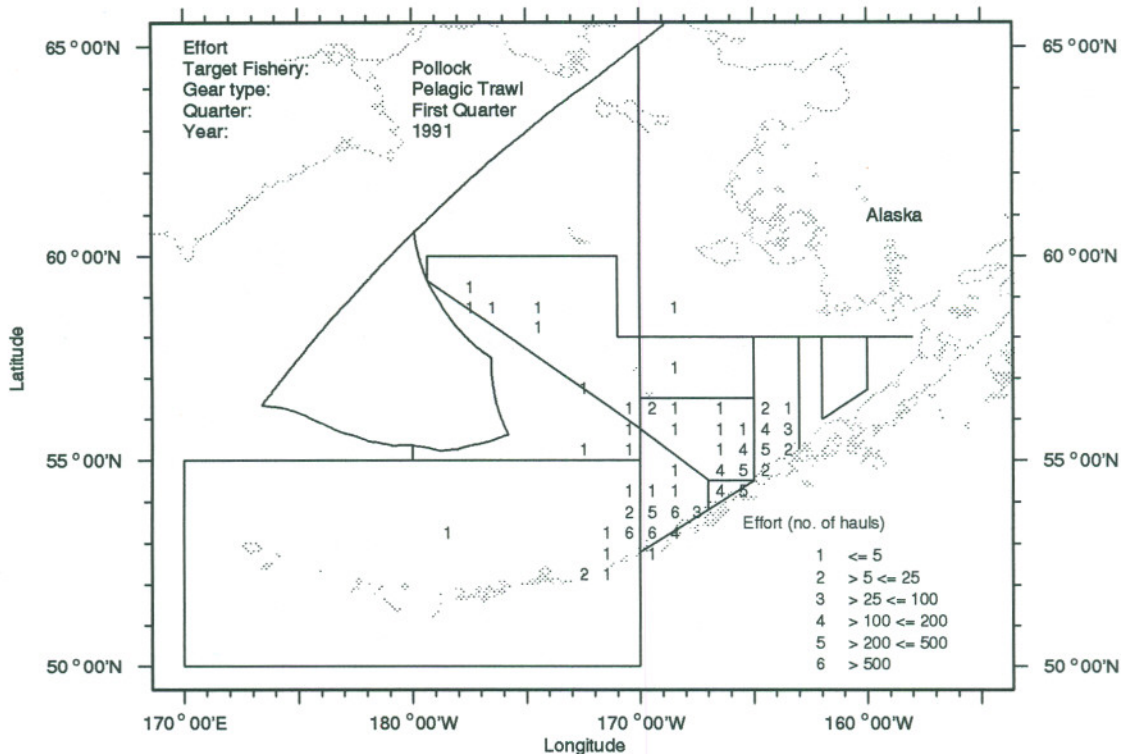


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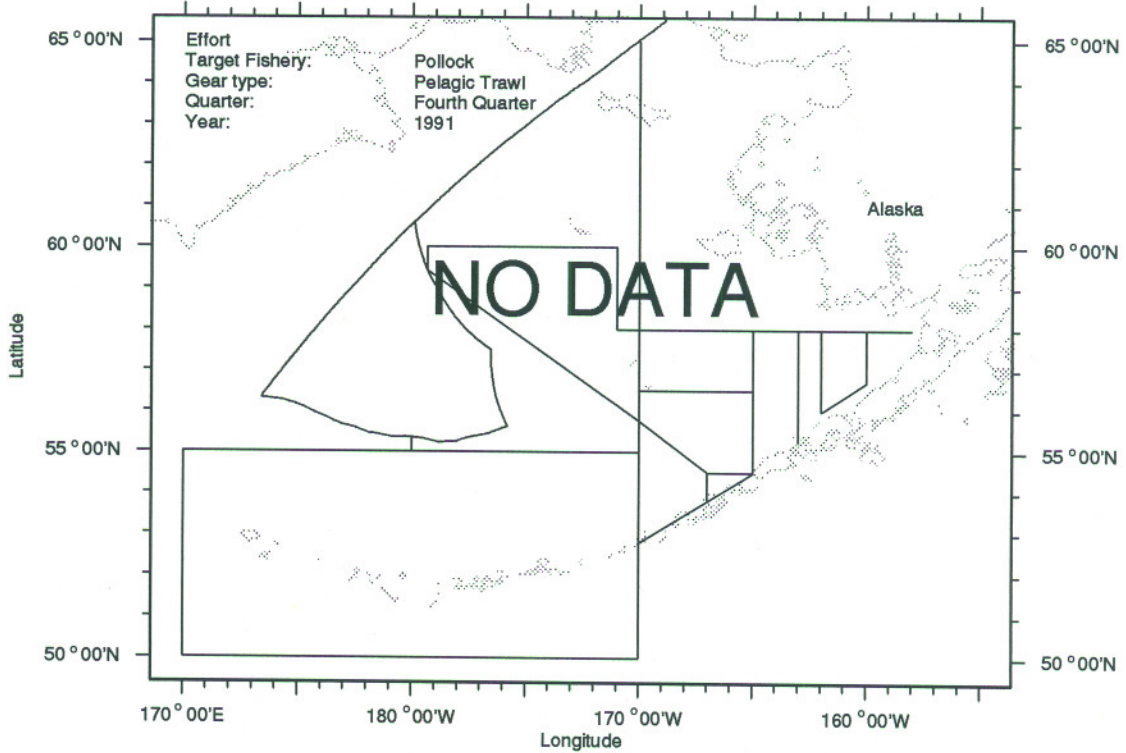
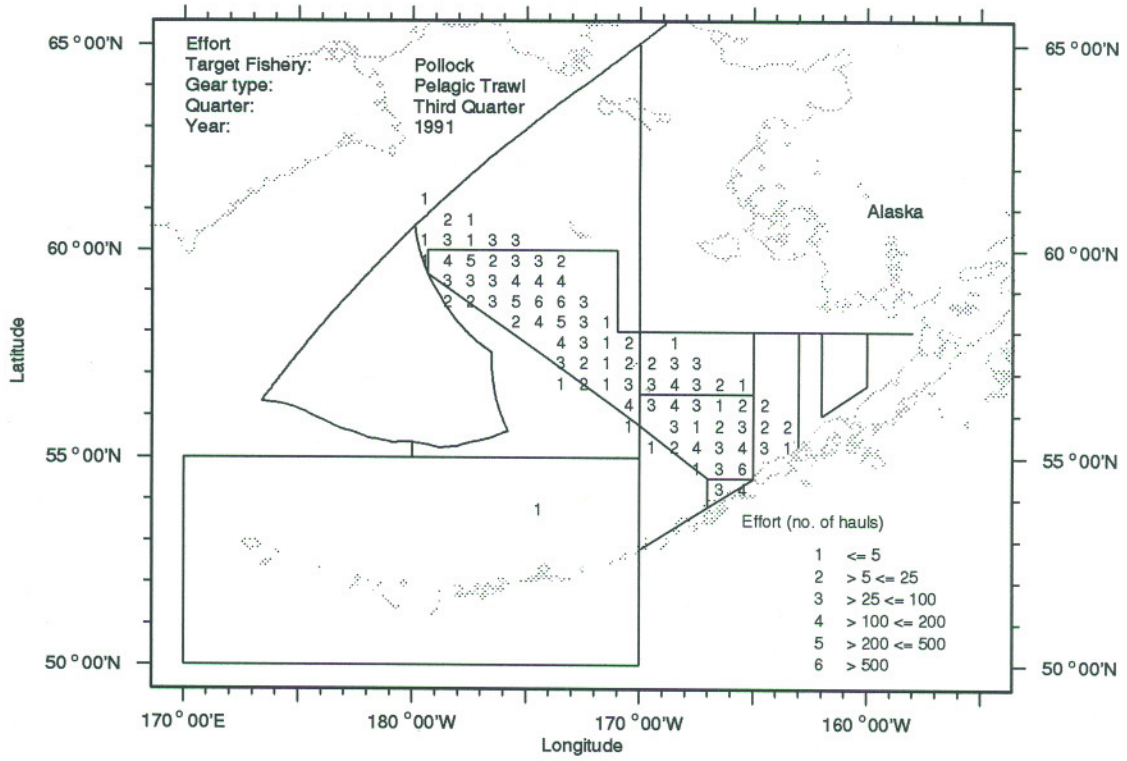


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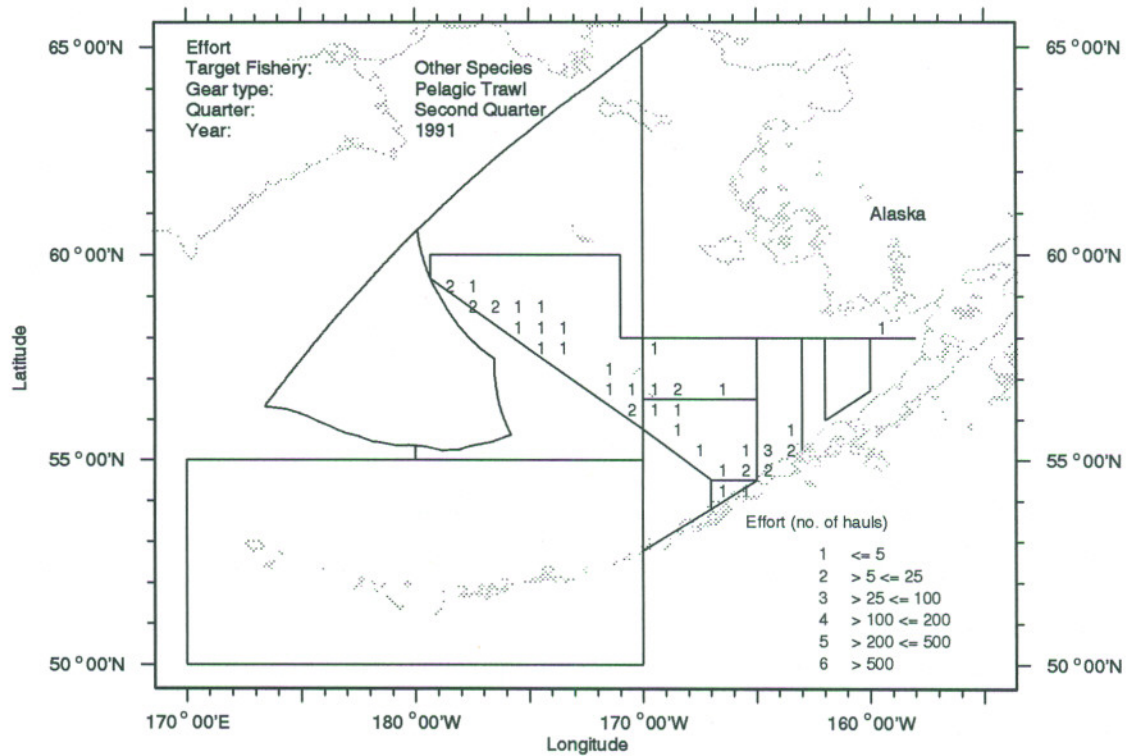
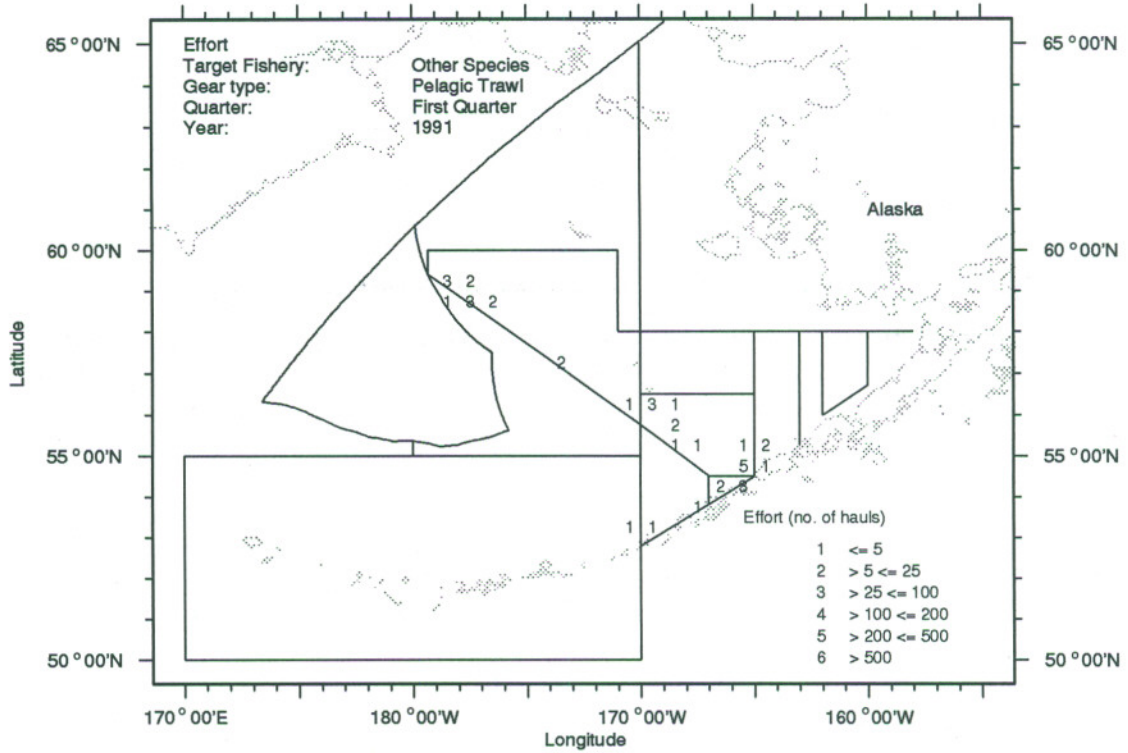


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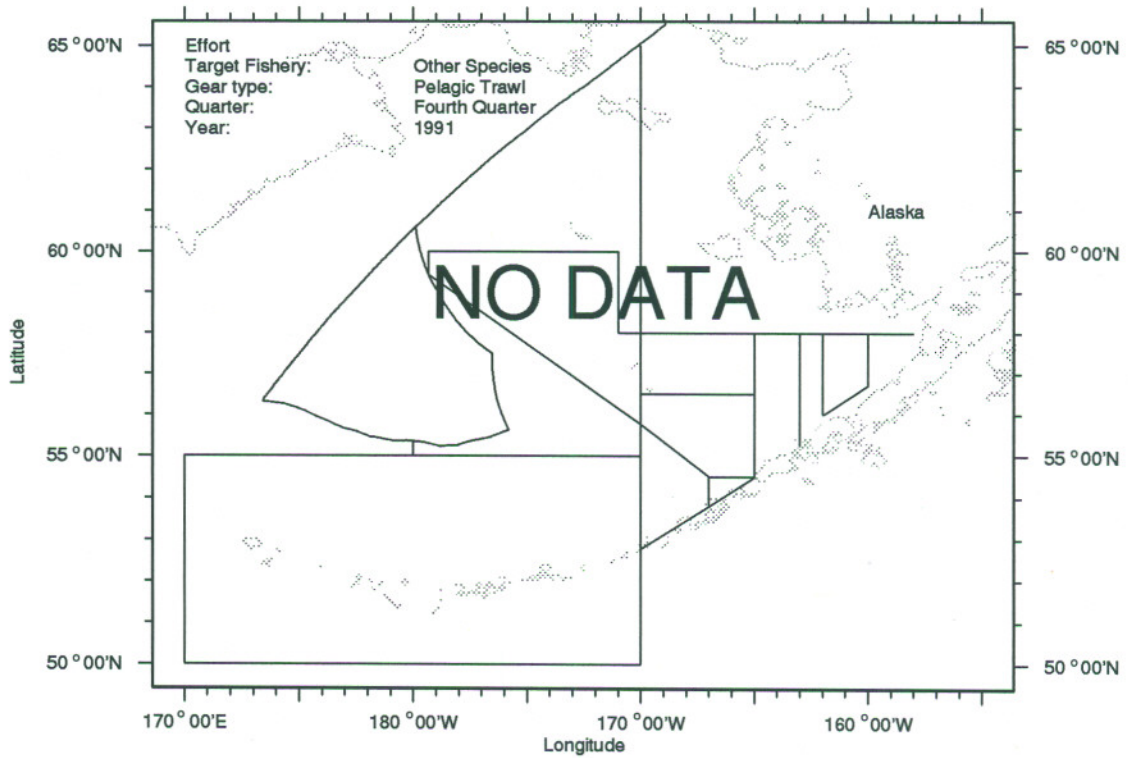
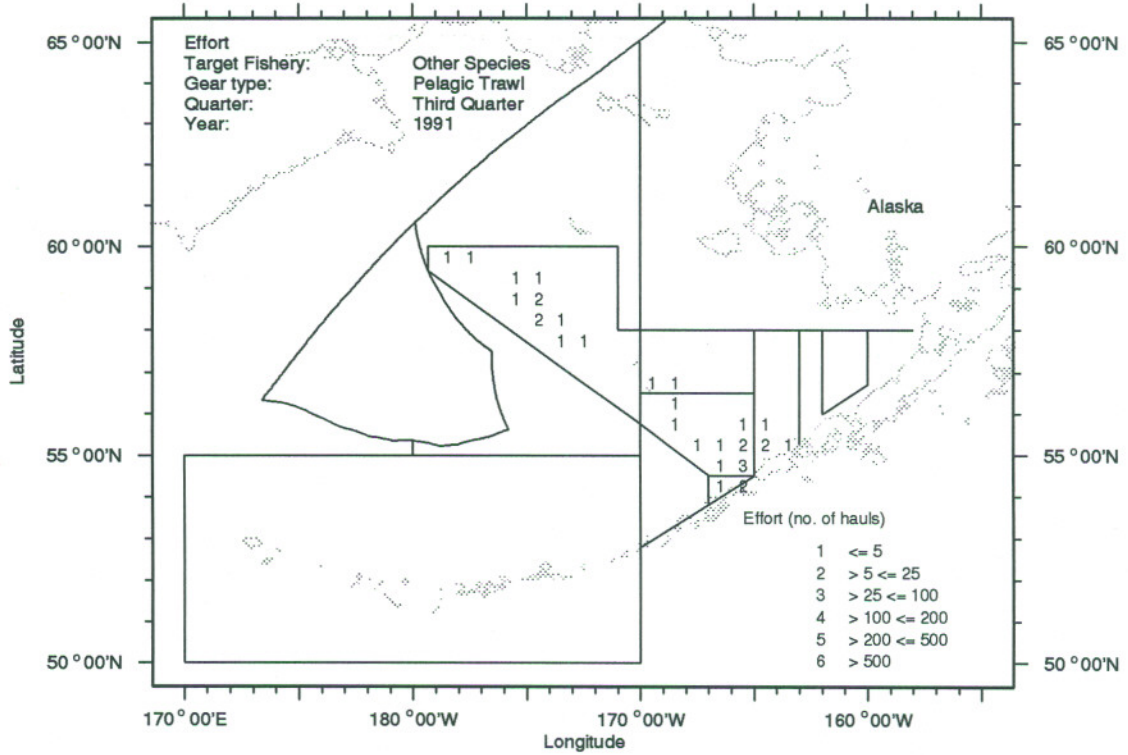


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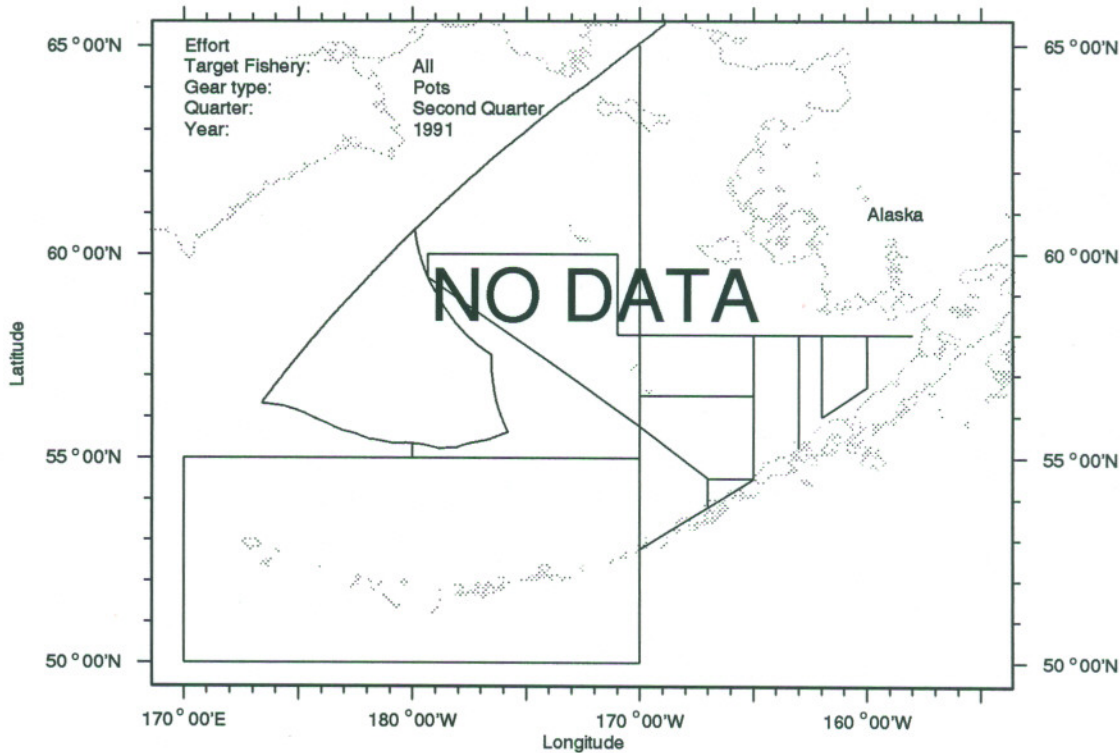
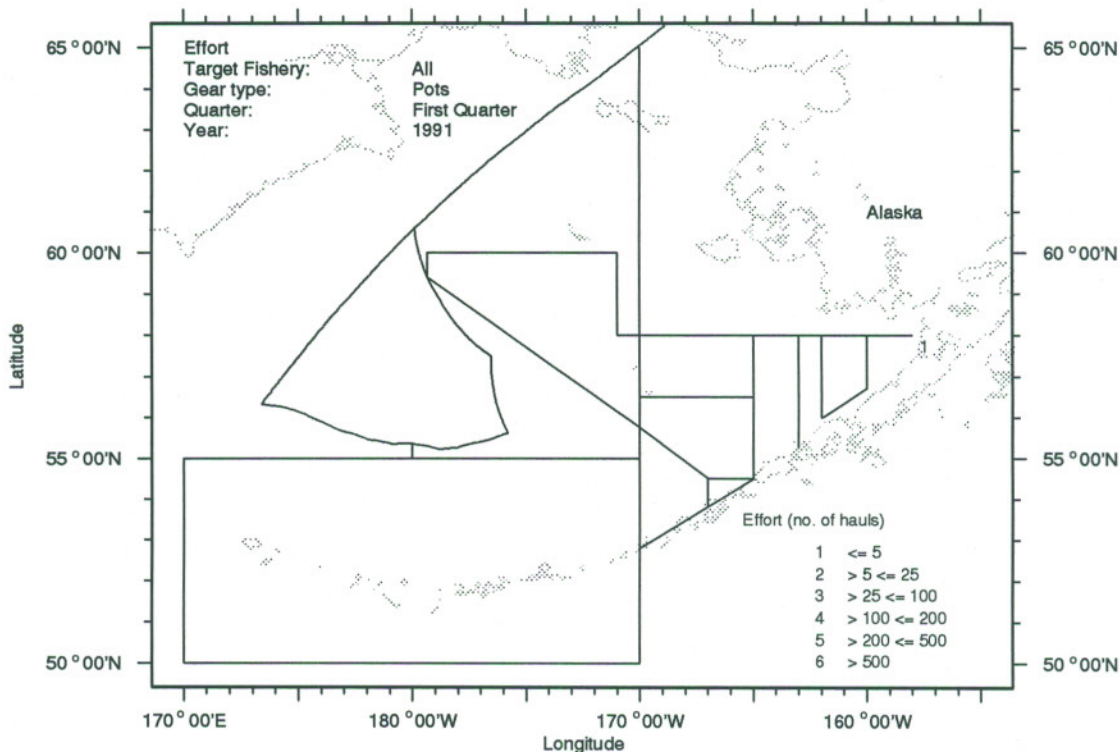


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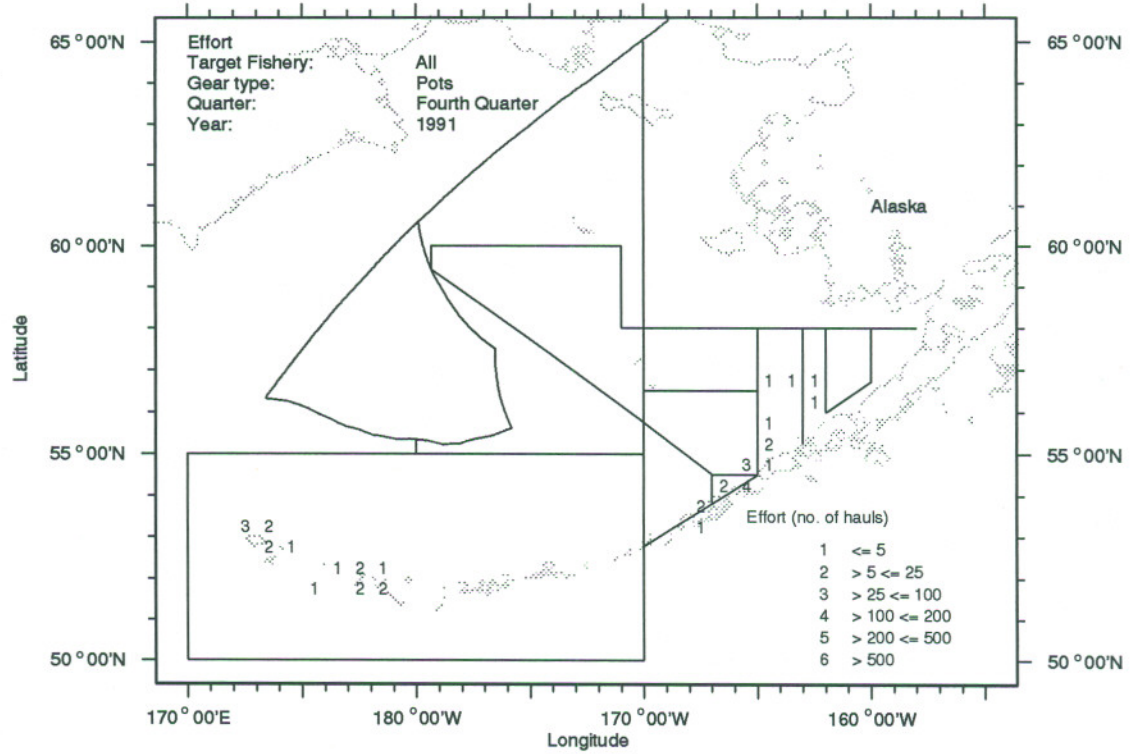
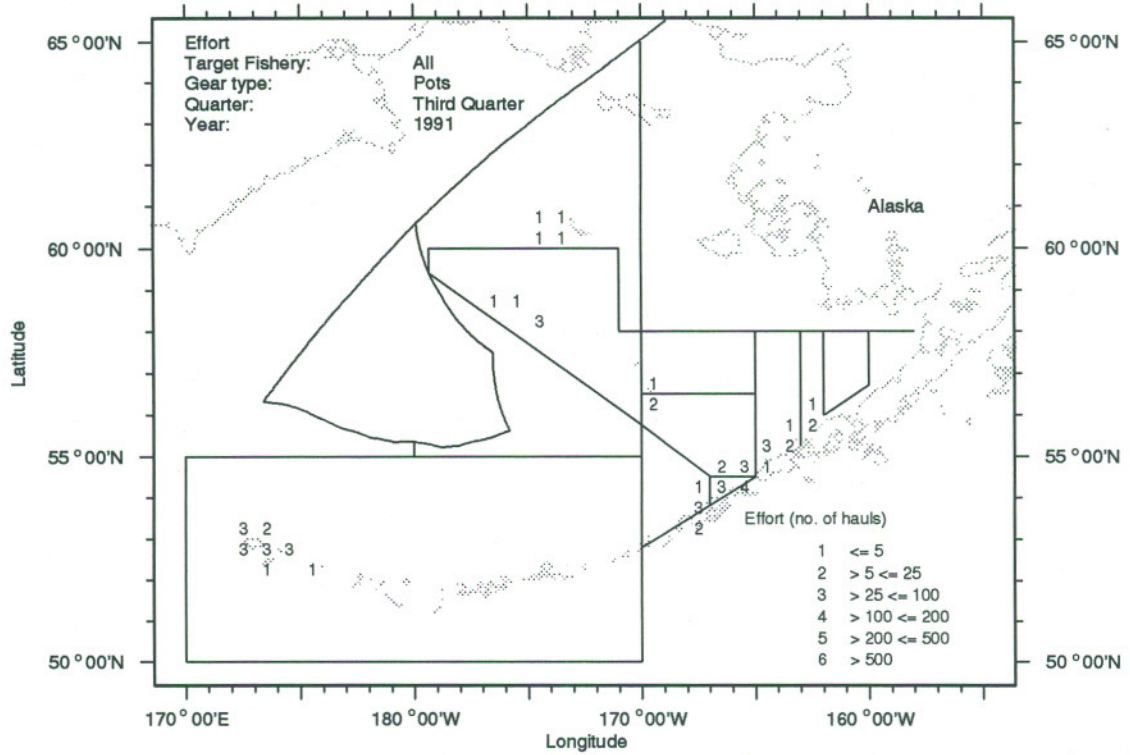


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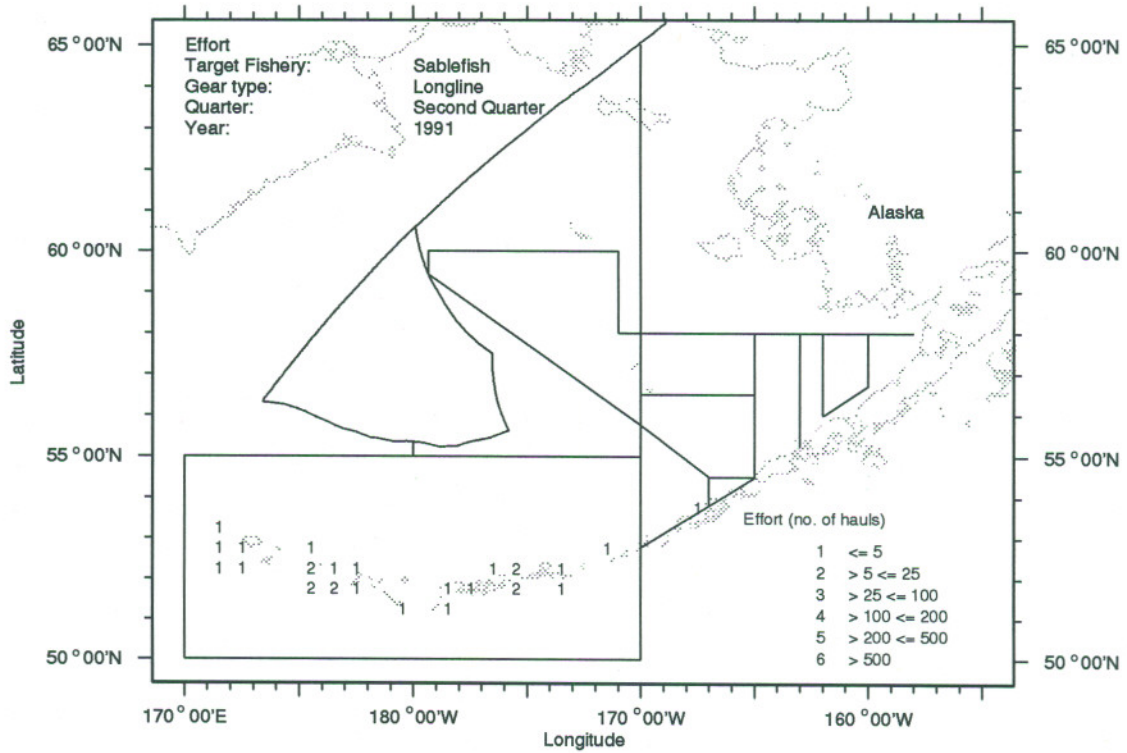
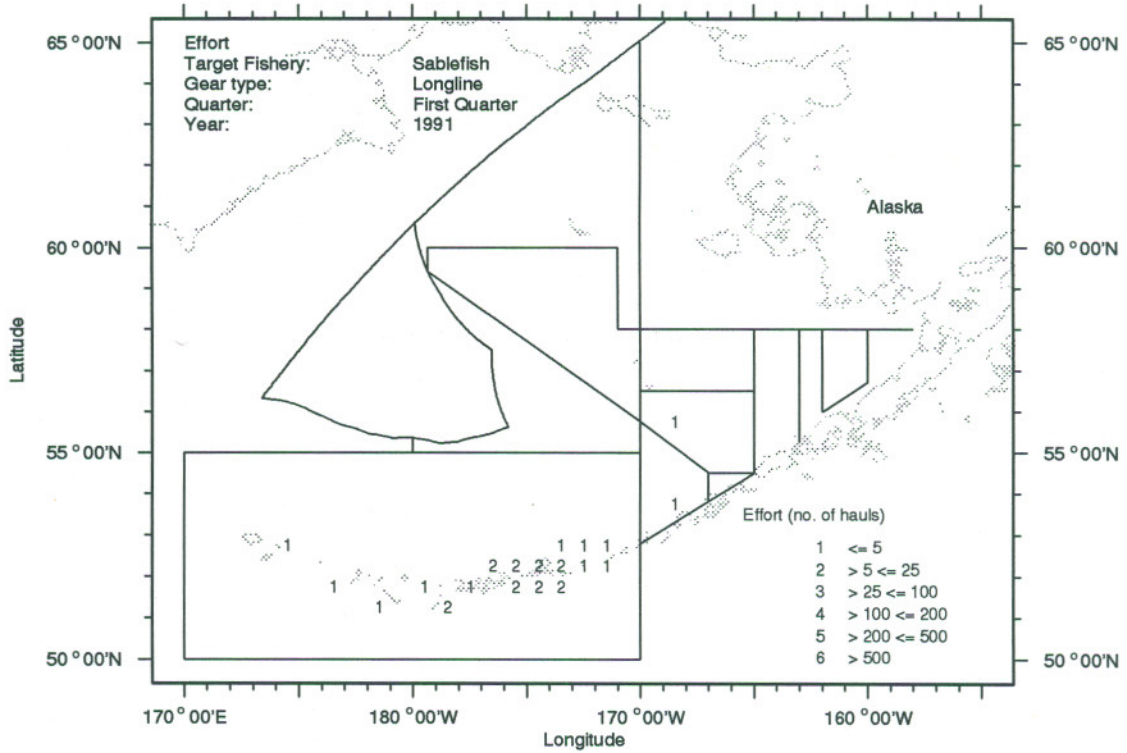


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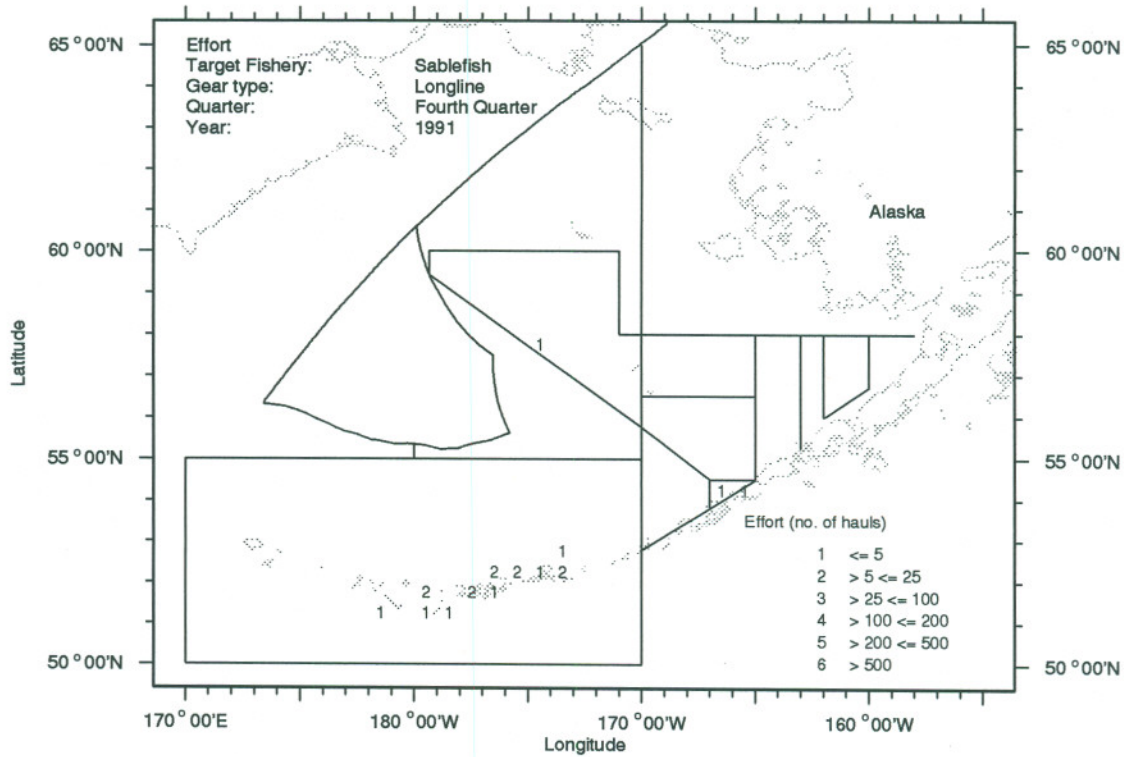
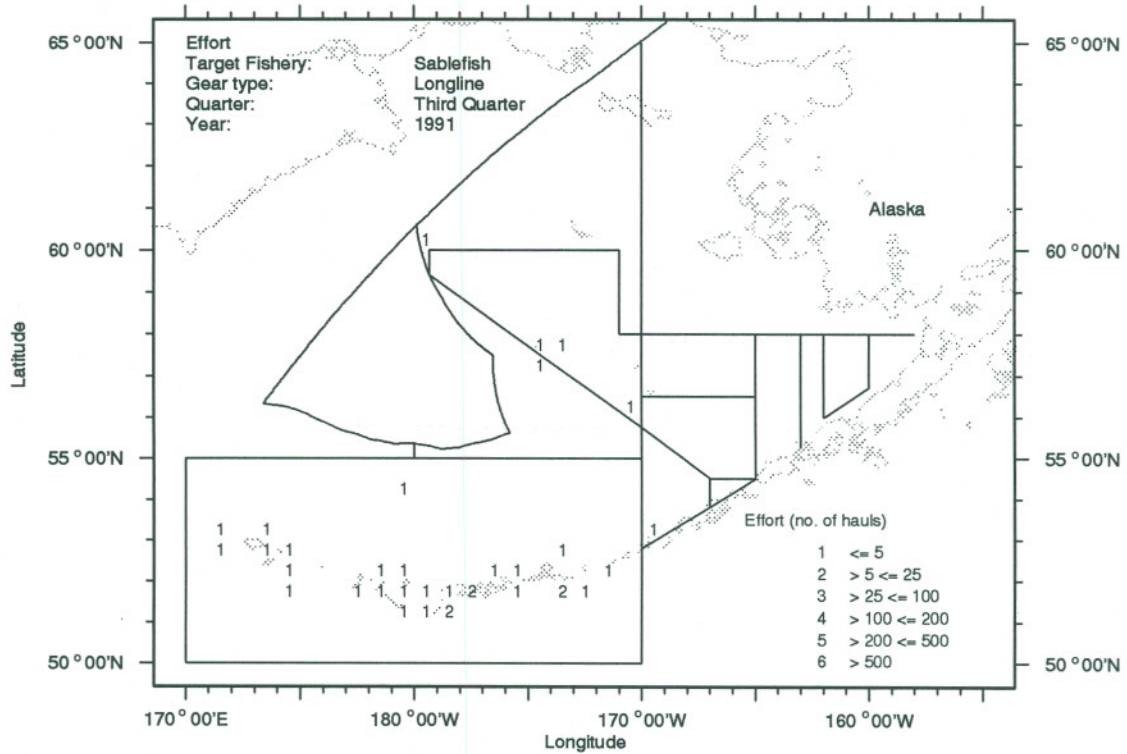


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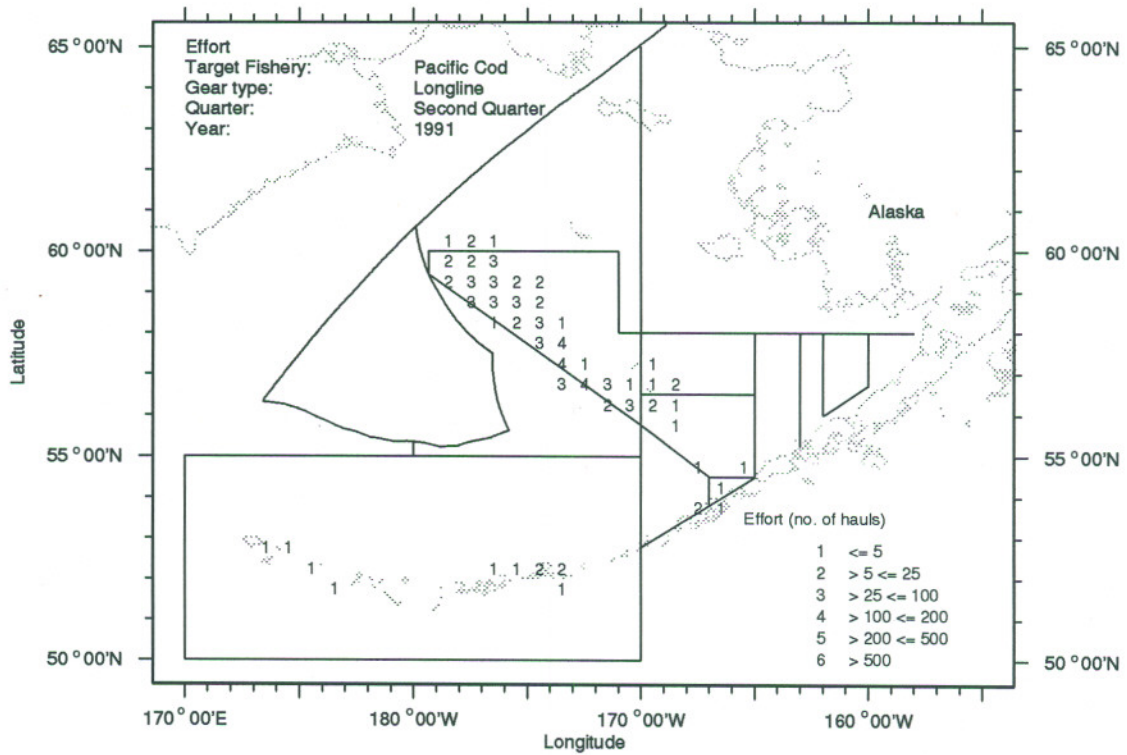
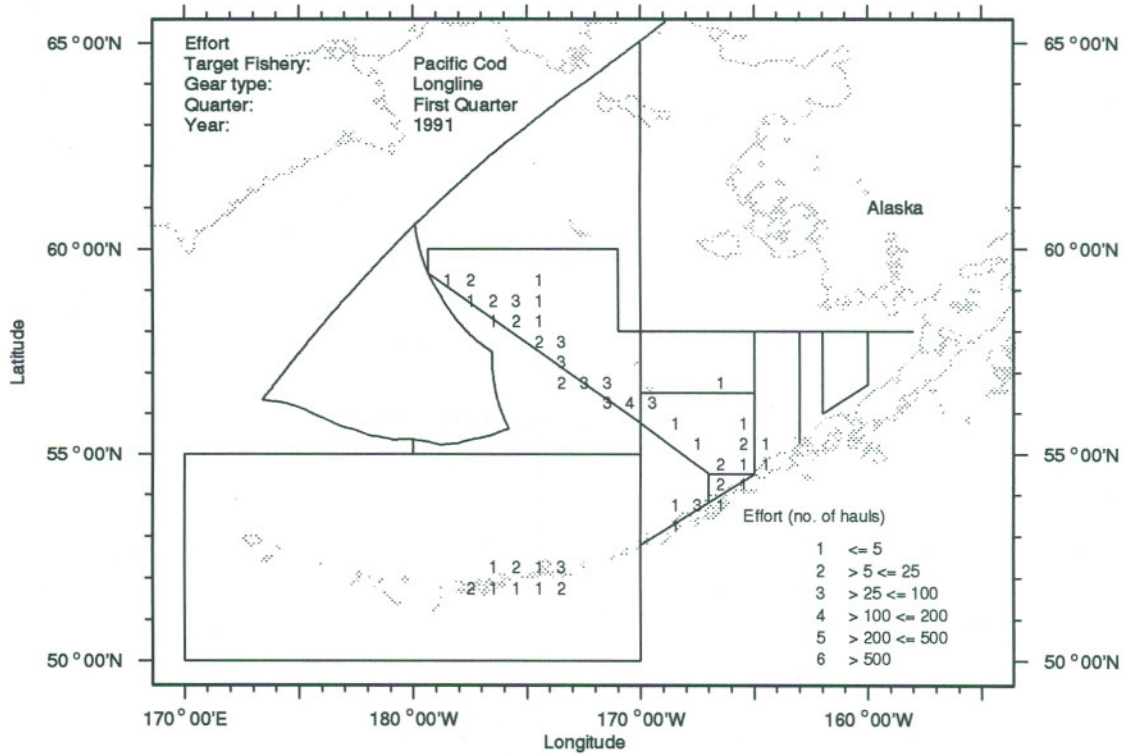


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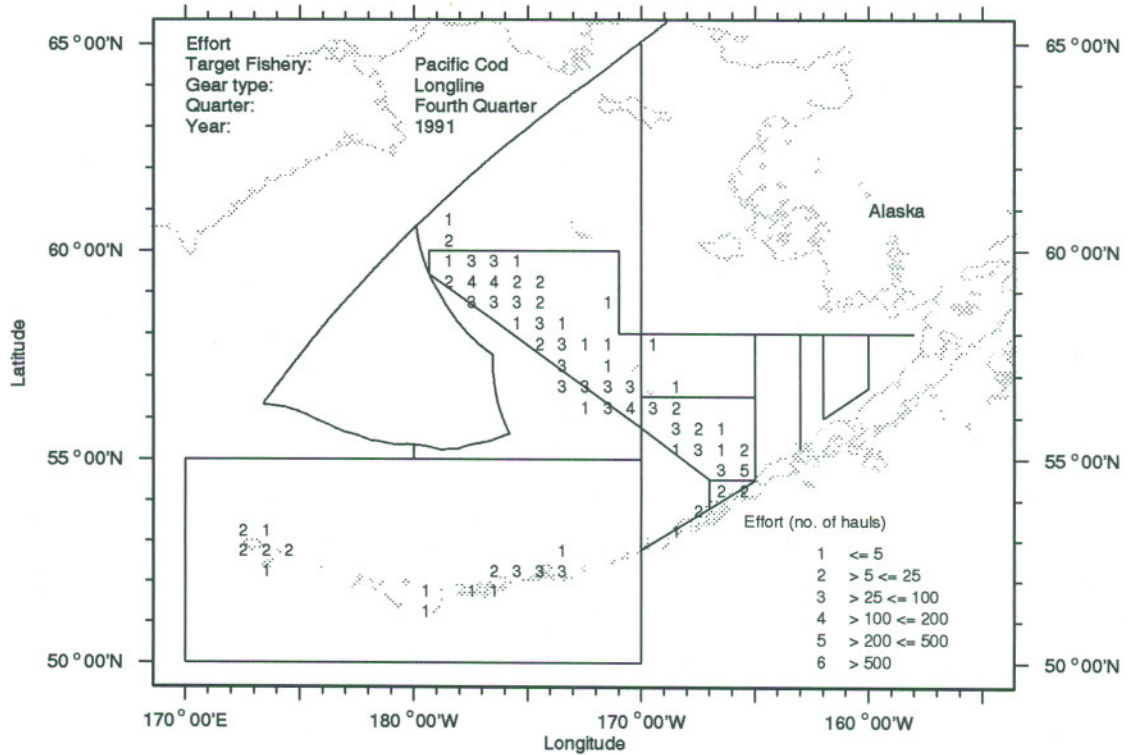
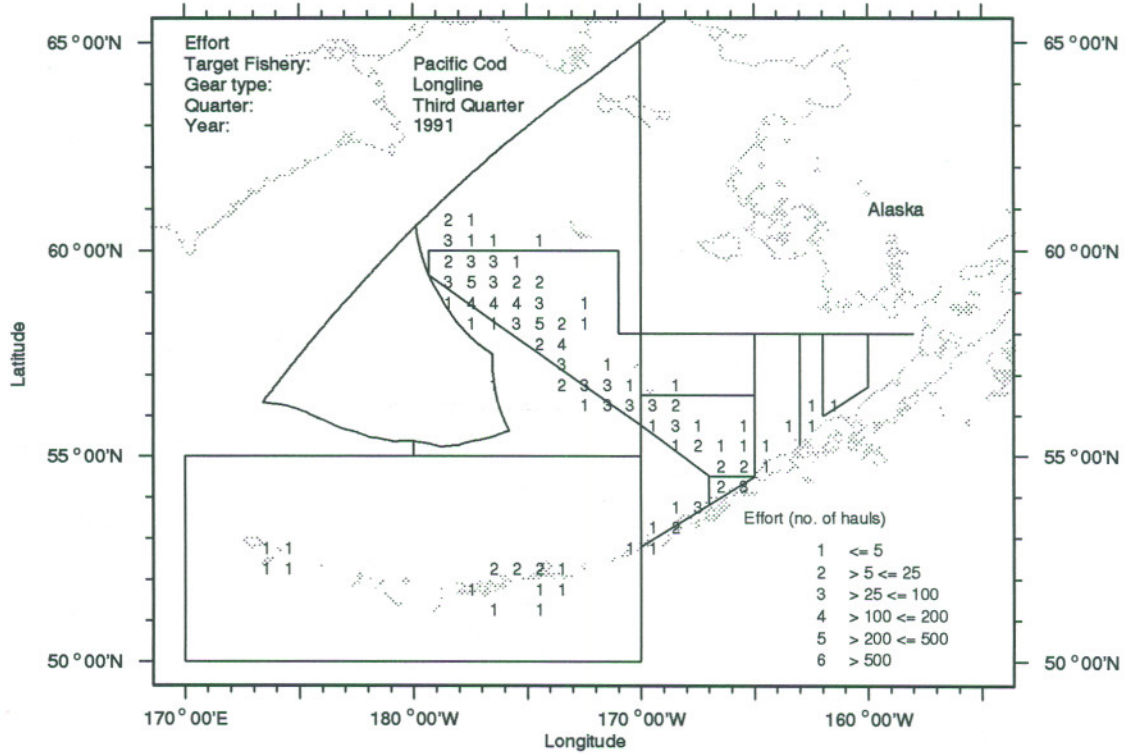


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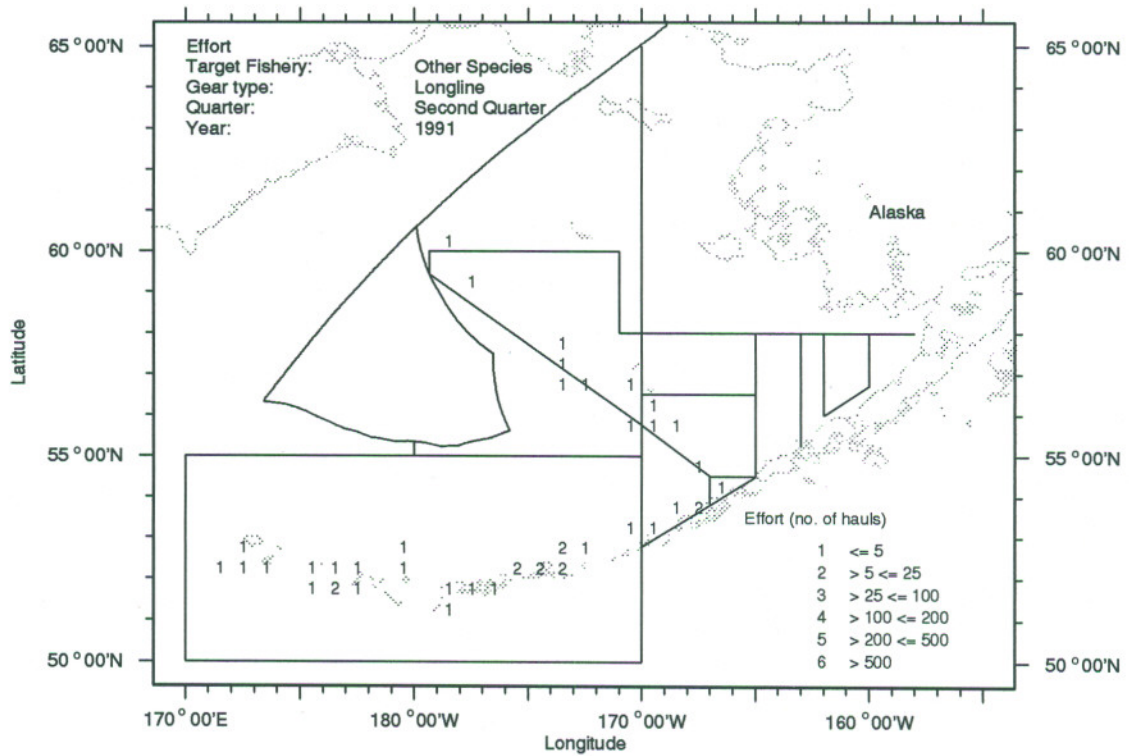
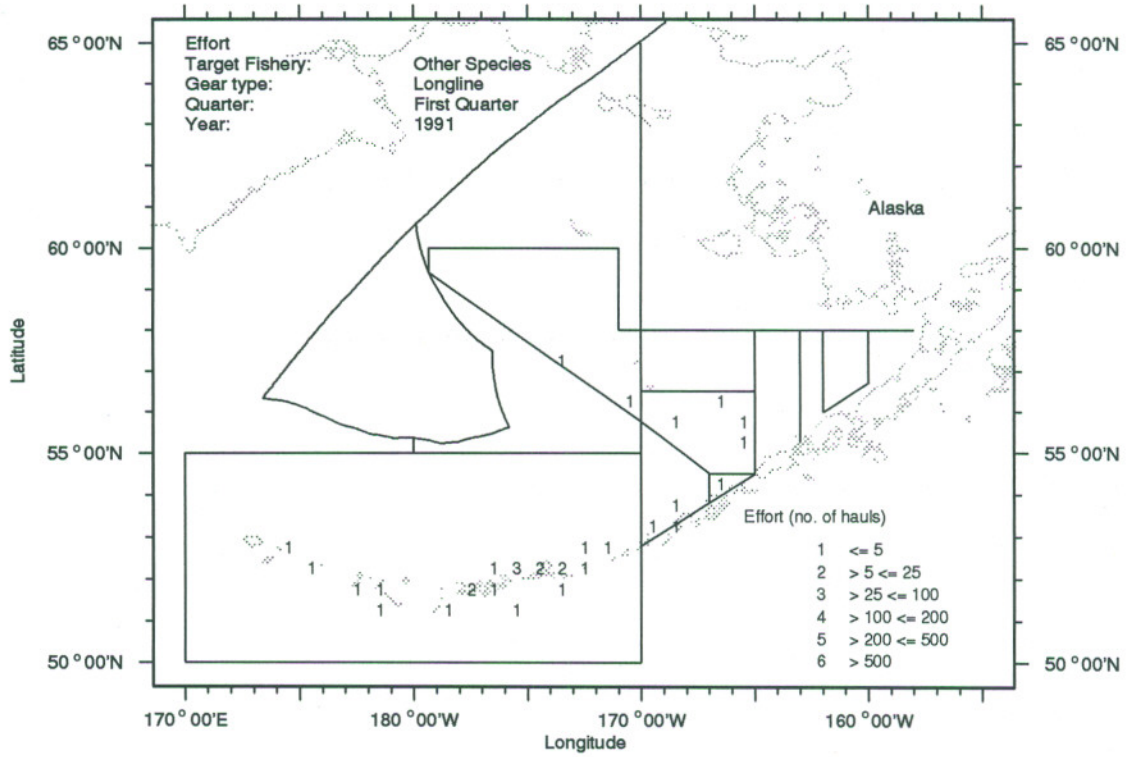


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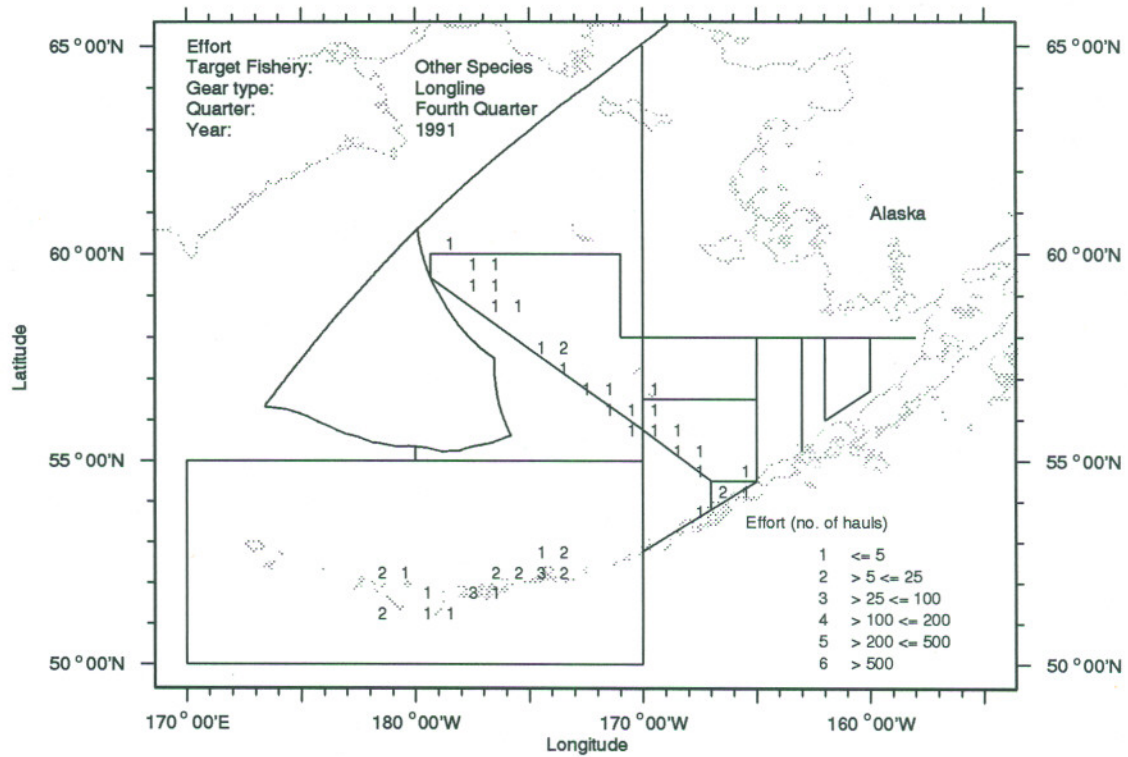
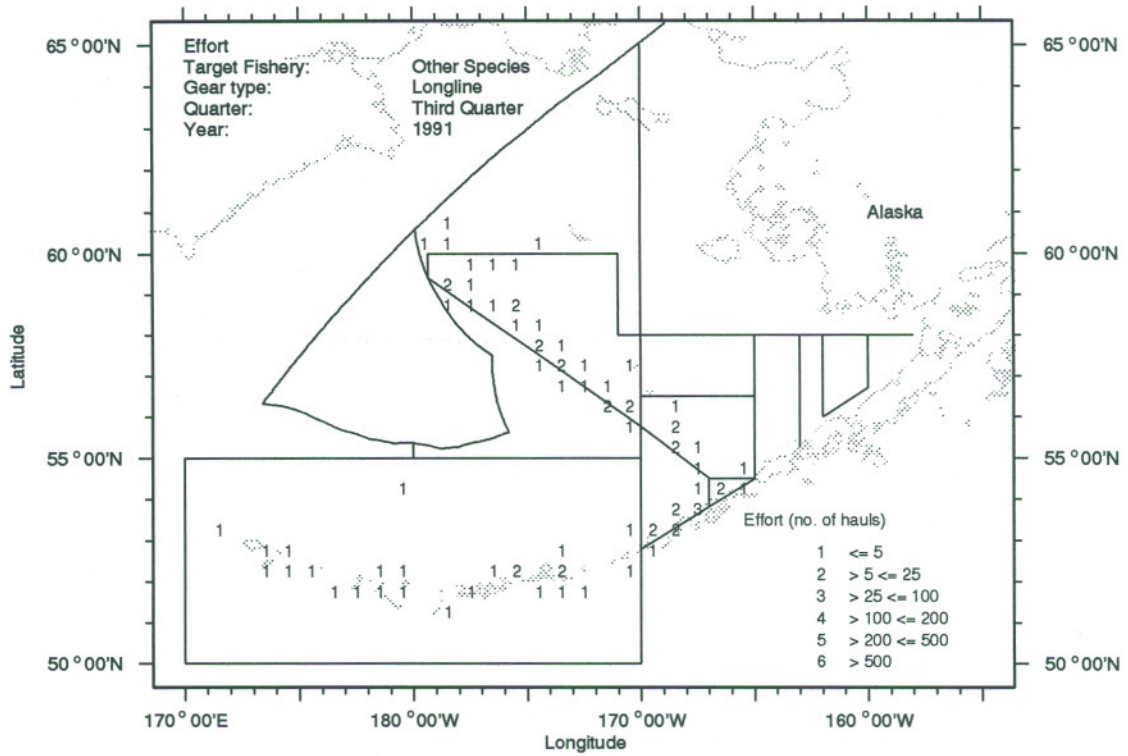


Figure 2.--Continued.

Table 11.-- Monthly bycatch rates (no./t) and average weights (kg) of Pacific salmon and number of hauls sampled in the U.S. 1991.

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	ate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target																		
Ja	0.000	0.00	26	--	--	--	0.000	0.00	65	--	--	--	0.001	3.67	143	0.000	0.00	4
Fe	0.024	0.59	426	--	--	--	0.002	9.75	61	--	--	--	0.000	6.00	123	0.000	0.00	15
Mr	0.011	7.27	152	--	--	--	0.000	0.00	6	--	--	--	--	--	--	0.000	0.00	2
Ap	0.041	11.29	27	--	--	--	0.000	0.00	13	ns	ns	ns	--	--	--	0.000	0.00	2
My	0.000	0.00	128	0	0	5	0.000	0.00	232	0.000	6.50	889	0.000	0.00	4	0.000	0.00	1
Jn	0.000	0.00	8	--	--	--	0.000	0.00	95	0.021	8.33	638	--	--	--	ns	ns	ns
Jl	0.000	0.00	3	--	--	--	0.000	0.00	30	0.025	2.62	566	ns	ns	ns	ns	ns	ns
Au	0.000	0.00	9	--	--	--	0.000	0.00	172	0.028	3.45	737	0.000	0.00	1	--	--	--
Se	0.000	0.00	2	--	--	--	0.012	3.92	384	0.006	6.52	733	--	--	--	--	--	--
Oc	--	--	--	--	--	--	0.000	0.00	217	0.000	0.00	182	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.018	1.69	781	0	0	5	0.004	4.06	1275	0.013	4.72	3745	0.001	4.25	271	0.000	0.00	24
Bottom trawl - Pollock target																		
Ja	0.003	5.76	194	--	--	--	0.000	0.00	5	--	--	--	0.000	0.00	12	0.031	3.13	82
Fe	0.002	4.91	215	--	--	--	0.000	0.00	1	--	--	--	0.000	0.00	10	0.006	5.00	26
Mr	0.001	7.70	55	--	--	--	0.000	0.00	9	--	--	--	--	--	--	0.000	0.00	4
Ap	0.005	7.04	112	--	--	--	0.002	9.57	88	--	--	--	--	--	--	0.034	5.00	111
My	0.000	0.00	6	--	--	--	0.003	5.93	71	0.000	0.00	5	0.000	0.00	1	0.002	2.60	9
Jn	0.025	2.00	3	--	--	--	0.000	0.00	16	--	--	--	--	--	--	0.014	1.92	9
Jl	ns	ns	ns	--	--	--	0.000	0.00	39	0.000	0.00	3	--	--	--	0.005	3.00	6
Au	--	--	--	--	--	--	0.000	0.00	5	0.244	1.40	10	--	--	--	0.008	2.30	18
Se	ns	ns	ns	--	--	--	0.000	0.00	14	0.000	0.00	6	--	--	--	0.038	4.77	2
Oc	--	--	--	--	--	--	0.000	0.00	5	0.000	0.00	7	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.003	5.74	585	--	--	--	0.001	8.01	253	0.048	1.40	31	0.000	0.00	23	0.023	4.17	267
Bottom trawl - Pacific cod target																		
Ja	0.015	3.76	105	--	--	--	0.000	0.00	2	--	--	--	0.000	0.00	1	0.035	4.68	334
Fe	0.010	6.47	54	--	--	--	0.000	0.00	1	--	--	--	0.000	0.00	1	0.033	4.16	272
Mr	0.000	0.00	5	--	--	--	0.000	0.00	6	--	--	--	--	--	--	0.000	0.00	27
Ap	0.008	8.79	200	--	--	--	0.003	11.00	34	--	--	--	--	--	--	0.008	5.85	366
My	0.000	0.00	1	--	--	--	0.005	5.70	8	0.000	0.00	1	--	--	--	0.000	0.00	1
Jn	0.000	0.00	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	--	--	--	0.000	0.00	2	--	--	--	--	--	--
Au	--	--	--	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	0.000	0.00	1	--	--	--	0.000	0.00	1
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.010	6.29	366	--	--	--	0.003	8.35	51	0.000	0.00	5	0.000	0.00	2	0.024	4.60	1001

domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, and NPFMC area, ("Rate" = no./t of groundfish; "Wt" = average wt (kg); "Hl" = no. of hauls; "ns" = no observer sampling; "--" = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl
Bottom trawl - Flatfish target															
Ja	--	--	--	--	--	--	0.000	0.00	21	--	--	--	--	--	--
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	ns	ns	ns	0.000	0.00	8	--	--	--	--	--	--
Ap	--	--	--	--	--	--	0.010	2.67	31	0.157	2.72	3	ns	ns	ns
My	--	--	--	--	--	--	0.000	0.00	69	0.000	0.00	80	0.000	0.00	1
Jn	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--
Jl	--	--	--	--	--	--	0.000	0.00	8	--	--	--	--	--	--
Au	--	--	--	--	--	--	0.000	0.00	26	--	--	--	--	--	--
Se	--	--	--	--	--	--	ns	ns	ns	0.000	0.00	2	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	--	--	--	ns	ns	ns	0.001	2.67	163	0.004	2.72	85	0.000	0.00	1
Bottom trawl - Pollock target															
Ja	ns	ns	ns	0.017	4.37	5	ns	ns	ns	--	--	--	0.000	0.00	2
Fe	0.000	0.00	2	0.004	3.50	11	0.015	5.00	4	--	--	--	0.070	5.29	15
Mr	--	--	--	0.000	0.00	8	0.002	6.00	11	0.000	0.00	1	0.000	0.00	4
Ap	--	--	--	0.000	0.00	17	0.029	3.35	267	0.286	3.00	9	0.000	0.00	1
My	0.000	0.00	1	0.000	0.00	12	0.008	5.57	93	0.000	0.00	4	0.000	0.00	8
Jn	--	--	--	0.000	0.00	1	0.000	0.00	6	--	--	--	--	--	--
Jl	0.000	0.00	1	0.000	0.00	2	0.023	3.50	212	0.000	0.00	4	0.000	0.00	2
Au	0.000	0.00	1	0.000	0.00	4	0.005	2.59	155	0.000	0.00	10	--	--	--
Se	--	--	--	0.045	3.40	5	0.000	0.00	11	0.000	0.00	4	--	--	--
Oc	--	--	--	0.000	0.00	1	--	--	--	0.000	0.00	1	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	5	0.007	3.64	66	0.017	3.42	759	0.027	3.00	33	0.044	5.29	32
Bottom trawl - Pacific cod target															
Ja	ns	ns	ns	0.004	4.40	33	--	--	--	--	--	--	0.000	0.00	4
Fe	0.000	0.00	6	0.069	3.34	125	0.426	3.96	2	--	--	--	0.010	7.00	7
Mr	0.000	0.00	9	0.018	4.33	51	0.422	4.43	22	0.035	3.87	7	0.030	4.78	25
Ap	0.038	3.37	57	0.019	6.27	90	0.093	4.37	608	0.010	3.84	79	0.092	5.07	28
My	0.040	7.80	7	0.033	2.80	29	0.197	3.64	32	0.000	0.00	5	0.035	3.80	9
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	0.000	0.00	22	--	--	--	0.000	0.00	33
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.034	3.65	79	0.037	3.74	328	0.106	4.34	686	0.013	3.85	91	0.033	5.03	106

Table 11.-- Monthly bycatch rates (no./t) and average weights (kg) of Pacific salmon and number of hauls sampled in the U.S. 1991 (Continued).

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	ate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Rockfish target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	0.000	0.00	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Ap	--	--	--	--	--	--	0.000	0.00	3	--	--	--	--	--	--	0.000	0.00	11
My	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	1
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	2	--	--	--	0.000	0.00	3	--	--	--	--	--	--	0.000	0.00	14
Bottom trawl - Other species target																		
Ja	0.000	0.00	3	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.325	3.19	20
Fe	0.026	6.50	5	--	--	--	0.000	0.00	3	--	--	--	--	--	--	0.000	0.00	3
Mr	0.000	0.00	3	--	--	--	0.000	0.00	2	--	--	--	--	--	--	0.181	1.85	12
Ap	0.000	0.00	6	--	--	--	0.000	0.00	5	--	--	--	--	--	--	0.000	0.00	17
My	0.000	0.00	5	--	--	--	0.000	0.00	4	0.000	0.00	1	--	--	--	0.031	2.18	142
Jn	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	12
Jl	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	1
Au	--	--	--	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--
Se	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	29
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.004	6.50	22	--	--	--	0.000	0.00	16	0.000	0.00	2	--	--	--	0.062	2.54	238

domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, and NPFMC area, ("Rate" = no./t of groundfish; "Wt" = average wt (kg); "Hl" = no. of hauls; "ns" = no observer sampling; " - " = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl
Bottom trawl -Rockfish target															
Ja	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	6
Fe	0.000	0.00	1	--	--	--	--	--	--	--	--	--	0.000	0.00	2
Mr	--	--	--	0.000	0.00	1	0.802	2.95	6	0.000	0.00	2	0.007	3.00	10
Ap	0.000	0.00	12	--	--	--	0.150	6.29	134	0.098	2.88	24	0.000	0.00	9
My	--	--	--	--	--	--	0.758	8.57	6	--	--	--	0.000	0.00	94
Jn	--	--	--	--	--	--	--	--	--	--	--	--	0.002	1.60	62
Jl	0.000	0.00	2	--	--	--	--	--	--	--	--	--	0.000	0.00	4
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	0.000	0.00	2	--	--	--	0.000	0.00	10	0.000	0.00	4	--	--	--
No	--	--	--	--	--	--	0.000	0.00	13	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	17	0.000	0.00	1	0.179	6.14	169	0.089	2.88	30	0.001	2.53	187
Bottom trawl - Other species target															
Ja	0.000	0.00	2	0.000	0.00	4	2.097	1.94	1	--	--	--	0.001	5.99	106
Fe	--	--	--	0.009	3.26	17	--	--	--	--	--	--	0.003	5.38	65
Mr	0.000	0.00	15	0.002	3.27	82	0.093	3.69	44	0.258	4.03	27	0.005	3.39	349
Ap	0.000	0.00	14	0.000	0.00	12	0.211	4.47	96	0.026	5.54	53	0.000	0.00	8
My	0.043	4.40	71	0.000	0.00	54	0.000	0.00	47	0.010	3.50	18	0.007	6.90	259
Jn	--	--	--	--	--	--	0.000	0.00	1	--	--	--	0.000	0.00	3
Jl	0.000	0.00	2	--	--	--	0.000	0.00	4	0.000	0.00	1	0.000	0.00	1
Au	--	--	--	--	--	--	0.000	0.00	18	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	0.000	0.00	18	0.000	0.00	27	0.007	3.75	24	0.000	0.00	21	--	--	--
No	0.000	0.00	1	0.000	0.00	11	0.000	0.00	12	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.023	4.40	123	0.002	3.27	207	0.116	4.26	247	0.060	4.24	120	0.004	4.31	791

Table 11.-- Monthly bycatch rates (no./t) and average weights (kg) of Pacific salmon and number of hauls sampled in the U.S. 1991 (Continued).

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	ate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target																		
Ja	0.010	3.77	282	--	--	--	0.000	0.00	1	0.000	0.00	1	0.000	0.00	2	0.261	2.15	465
Fe	0.009	4.02	300	--	--	--	--	--	--	--	--	--	0.000	0.00	1	0.091	3.18	191
Mr	0.000	0.00	14	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.074	4.23	60
Ap	0.002	4.70	22	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	6
My	0.001	10.30	69	--	--	--	0.000	0.00	7	--	--	--	--	--	--	0.006	4.40	23
Jn	0.008	3.10	235	--	--	--	0.001	4.91	431	--	--	--	--	--	--	0.008	3.34	839
Jl	0.085	2.31	46	--	--	--	0.002	2.09	432	--	--	--	--	--	--	0.034	2.69	405
Au	1.002	2.75	92	--	--	--	0.000	0.00	7	--	--	--	--	--	--	0.084	2.64	943
Se	1.763	3.07	8	--	--	--	--	--	--	--	--	--	--	--	--	0.044	3.65	78
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.072	2.88	1068	--	--	--	0.001	3.32	879	0.000	0.00	1	0.000	0.00	3	0.101	2.43	3010
Pelagic trawl - Other species target																		
Ja	0.000	0.00	2	--	--	--	0.000	0.00	21	--	--	--	0.000	0.00	5	1.313	2.03	3
Fe	0.000	0.00	26	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	26	0.009	4.65	131
Mr	0.000	0.00	12	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.036	4.81	302
Ap	0.006	4.70	31	--	--	--	--	--	--	--	--	--	--	--	--	0.006	4.15	27
My	0.000	0.00	47	--	--	--	0.011	7.00	8	0.000	0.00	1	--	--	--	1.183	2.88	4
Jn	0.000	0.00	14	--	--	--	0.000	0.00	2	ns	ns	ns	--	--	--	0.000	0.00	7
Jl	0.000	0.00	4	--	--	--	0.000	0.00	2	ns	ns	ns	--	--	--	0.000	0.00	5
Au	0.000	0.00	10	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.004	2.45	35
Se	6.530	2.60	1	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	0.000	0.00	3
Oc	--	--	--	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.028	2.67	147	--	--	--	0.002	7.00	33	0.000	0.00	1	0.000	0.00	31	0.026	4.46	517
Pots - All targets																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	0.000	0.00	1	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	0.000	0.00	4	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	45
Au	0.000	0.00	22	--	--	--	--	--	--	--	--	--	0.000	0.00	12	0.000	0.00	44
Se	0.000	0.00	9	--	--	--	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	12
Oc	0.000	0.00	25	--	--	--	--	--	--	ns	ns	ns	0.000	0.00	5	0.000	0.00	12
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	8
De	0.000	0.00	11	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	30
Yr	0.000	0.00	72	--	--	--	0.000	0.00	1	ns	ns	ns	0.000	0.00	17	0.000	0.00	151

domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, and NPFMC area, ("Rate" = no./t of groundfish; "Wt" = average wt (kg); "Hl" = no. of hauls; "ns" = no observer sampling; "--" = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl
Pelagic trawl - Pollock target															
Ja	0.006	1.98	1107	0.013	2.65	214	--	--	--	--	--	--	0.022	1.65	96
Fe	0.019	1.59	830	0.027	3.53	287	0.000	0.00	1	0.000	0.00	1	0.011	1.80	169
Mr	--	--	--	--	--	--	0.011	4.05	13	0.000	0.00	1	0.019	3.96	361
Ap	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--
My	--	--	--	0.000	0.00	1	0.001	5.75	73	ns	ns	ns	--	--	--
Jn	0.000	0.00	1	0.010	2.60	16	0.003	3.88	1278	0.001	4.45	43	--	--	--
Jl	0.000	0.00	2	1.132	2.87	15	0.002	2.37	1552	0.000	0.00	6	--	--	--
Au	--	--	--	0.047	5.05	225	0.008	2.30	2040	0.004	4.14	141	0.000	0.00	1
Se	--	--	--	0.011	1.73	16	0.027	4.86	164	0.058	0.78	12	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.012	1.70	1940	0.032	3.66	774	0.005	2.89	5122	0.007	2.24	204	0.018	3.18	627
Pelagic trawl - Other species target															
Ja	0.083	3.82	2	ns	ns	ns	0.000	0.00	10	--	--	--	ns	ns	ns
Fe	0.000	0.00	1	0.000	0.00	2	--	--	--	--	--	--	0.000	0.00	1
Mr	0.000	0.00	2	0.000	0.00	37	0.079	4.24	125	0.030	3.80	5	ns	ns	ns
Ap	--	--	--	--	--	--	0.257	4.35	13	--	--	--	--	--	--
My	ns	ns	ns	0.000	0.00	5	0.006	4.30	34	--	--	--	--	--	--
Jn	--	--	--	--	--	--	0.000	0.00	8	ns	ns	ns	--	--	--
Jl	--	--	--	0.000	0.00	1	0.000	0.00	6	--	--	--	--	--	--
Au	--	--	--	0.009	2.15	9	0.008	1.33	20	ns	ns	ns	--	--	--
Se	--	--	--	0.000	0.00	1	0.000	0.00	5	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.015	3.82	5	0.004	2.15	55	0.065	4.22	221	0.030	3.80	5	0.000	0.00	1
Pots - All targets															
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--
Mr	--	--	--	--	--	--	ns	ns	ns	--	--	--	ns	ns	ns
Ap	--	--	--	--	--	--	ns	ns	ns	--	--	--	ns	ns	ns
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	0.000	0.00	18	0.000	0.00	30	0.000	0.00	14	ns	ns	ns	0.000	0.00	40
Au	0.000	0.00	37	0.000	0.00	95	0.000	0.00	79	0.000	0.00	5	0.000	0.00	79
Se	0.000	0.00	6	0.000	0.00	67	--	--	--	--	--	--	0.000	0.00	127
Oc	0.000	0.00	2	0.000	0.00	75	--	--	--	--	--	--	0.000	0.00	76
No	0.000	0.00	5	0.000	0.00	47	--	--	--	--	--	--	0.000	0.00	31
De	--	--	--	0.000	0.00	22	--	--	--	--	--	--	0.000	0.00	20
Yr	0.000	0.00	68	0.000	0.00	336	0.000	0.00	93	0.000	0.00	5	0.000	0.00	373

Table 11.-- Monthly bycatch rates (no./t) and average weights (kg) of Pacific salmon and number of hauls sampled in the U.S. 1991 (Continued).

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	ate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Jl	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Au	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
Longline - Pacific cod target																		
Ja	0.000	0.00	2	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	24
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	40
Mr	0.000	0.00	4	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	21
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	3
My	--	--	--	--	--	--	0.000	0.00	3	--	--	--	--	--	--	0.000	0.00	13
Jn	--	--	--	--	--	--	0.000	0.00	7	--	--	--	--	--	--	0.000	0.00	8
Jl	0.000	0.00	3	0	0	2	ns	ns	ns	--	--	--	0.000	0.00	5	0.014	3.00	84
Au	0.000	0.00	2	--	--	--	0.000	0.00	1	ns	ns	ns	--	--	--	0.000	0.00	34
Se	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	42
Oc	ns	ns	ns	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	93
No	ns	ns	ns	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	173
De	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	145
Yr	0.000	0.00	11	0	0	2	0.000	0.00	14	ns	ns	ns	0.000	0.00	5	0.001	3.00	680
Longline - Other species target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	3
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	5
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	7
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	5
Jl	ns	ns	ns	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	14
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	12
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	3
Oc	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	13
No	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	3
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Yr	ns	ns	ns	--	--	--	0.000	0.00	2	ns	ns	ns	--	--	--	0.000	0.00	65

domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, and NPFMC area, ("Rate" = no./t of groundfish; "Wt" = average wt (kg); "Hl" = no. of hauls; "ns" = no observer sampling; "--" = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl
Longline - Sablefish target															
Ja	ns	ns	ns	--	--	--	--	--	--	--	--	--	ns	ns	ns
Fe	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	14
Mr	0.000	0.00	1	--	--	--	--	--	--	--	--	--	0.000	0.00	87
Ap	ns	ns	ns	--	--	--	ns	ns	ns	ns	ns	ns	0.000	0.00	64
My	--	--	--	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	28
Jn	0.000	0.00	1	--	--	--	--	--	--	--	--	--	0.000	0.00	7
Jl	1.165	3.10	2	ns	ns	ns	0.000	0.00	1	0.000	0.00	1	0.109	2.40	23
Au	ns	ns	ns	ns	ns	ns	0.000	0.00	2	0.000	0.00	5	0.000	0.00	18
Se	--	--	--	--	--	--	0.000	0.00	1	ns	ns	ns	0.000	0.00	22
Oc	--	--	--	0.000	0.00	3	0.000	0.00	1	--	--	--	0.000	0.00	28
No	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	23
De	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	23
Yr	0.517	3.10	4	0.000	0.00	4	0.000	0.00	5	0.000	0.00	6	0.005	2.40	337
Longline - Pacific cod target															
Ja	0.000	0.00	10	--	--	--	0.000	0.00	113	0.000	0.00	4	0.000	0.00	19
Fe	0.000	0.00	13	0.000	0.00	5	0.000	0.00	127	0.003	9.30	23	0.000	0.00	35
Mr	0.000	0.00	10	0.000	0.00	6	0.000	0.00	152	0.000	0.00	47	0.000	0.00	20
Ap	0.000	0.00	5	--	--	--	0.001	5.80	219	0.002	6.80	94	0.000	0.00	33
My	--	--	--	--	--	--	0.001	12.50	282	0.000	0.00	41	0.000	0.00	1
Jn	0.000	0.00	4	0.000	0.00	2	0.001	5.70	354	0.000	0.00	35	ns	ns	ns
Jl	0.000	0.00	35	0.000	0.00	17	0.002	2.02	485	0.000	0.00	38	0.000	0.00	22
Au	0.000	0.00	25	0.031	3.00	24	0.006	2.95	618	0.002	1.49	49	0.000	0.00	26
Se	0.000	0.00	3	0.000	0.00	18	0.001	3.32	597	0.000	0.00	32	0.000	0.00	11
Oc	0.000	0.00	10	0.000	0.00	38	0.000	0.00	685	0.000	0.00	41	0.000	0.00	69
No	0.000	0.00	6	0.000	0.00	1	0.000	0.00	260	0.000	0.00	53	0.000	0.00	95
De	0.000	0.00	10	0.000	0.00	9	0.000	0.00	223	0.000	0.00	21	0.000	0.00	20
Yr	0.000	0.00	131	0.007	3.00	120	0.001	3.58	4115	0.001	6.36	478	0.000	0.00	351
Longline - Other species target															
Ja	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	ns	ns	ns
Fe	0.000	0.00	3	0.000	0.00	1	0.031	6.40	2	--	--	--	0.000	0.00	30
Mr	0.000	0.00	5	--	--	--	--	--	--	--	--	--	0.000	0.00	64
Ap	0.000	0.00	1	ns	ns	ns	0.000	0.00	2	0.000	0.00	1	0.000	0.00	57
My	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	9
Jn	0.000	0.00	12	0.000	0.00	5	0.000	0.00	4	0.000	0.00	4	0.000	0.00	29
Jl	0.000	0.00	57	0.000	0.00	11	0.000	0.00	26	0.000	0.00	6	0.000	0.00	43
Au	0.028	2.70	18	0.000	0.00	15	0.000	0.00	34	0.000	0.00	17	0.000	0.00	26
Se	--	--	--	--	--	--	0.000	0.00	12	0.000	0.00	2	0.000	0.00	6
Oc	0.000	0.00	6	0.000	0.00	7	0.000	0.00	25	0.000	0.00	1	0.000	0.00	38
No	--	--	--	0.000	0.00	3	0.000	0.00	8	0.000	0.00	1	0.000	0.00	96
De	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	28
Yr	0.007	2.70	102	0.000	0.00	43	0.004	6.40	113	0.000	0.00	32	0.000	0.00	426

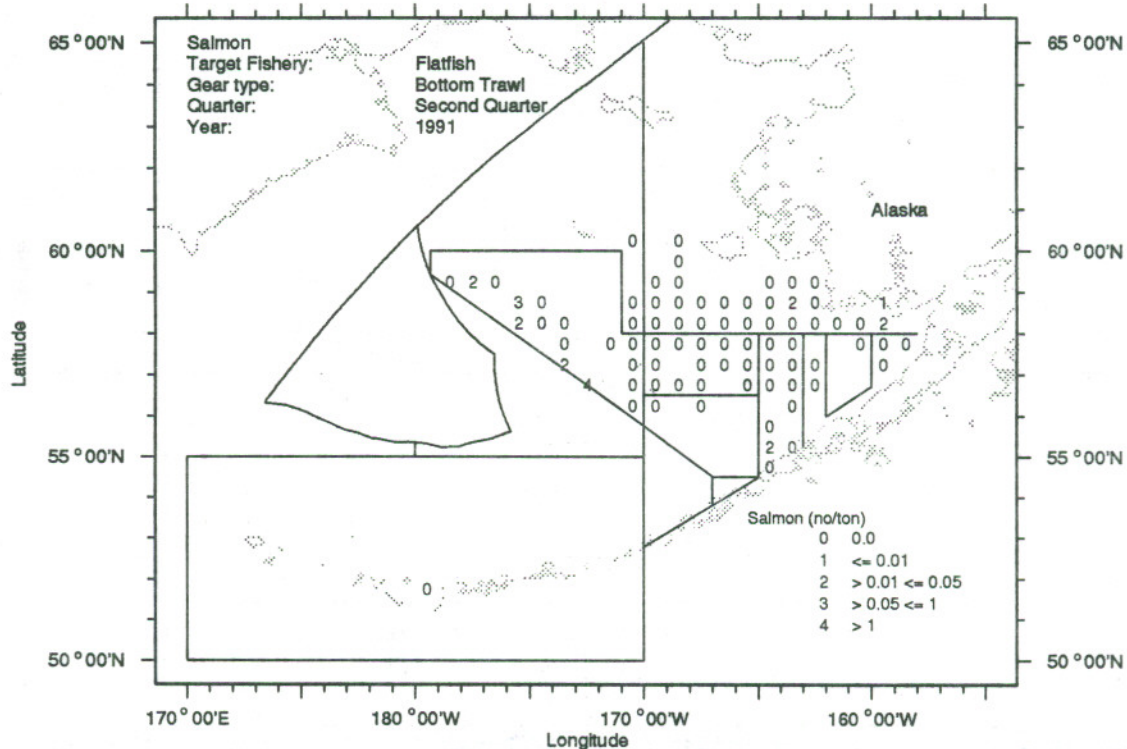
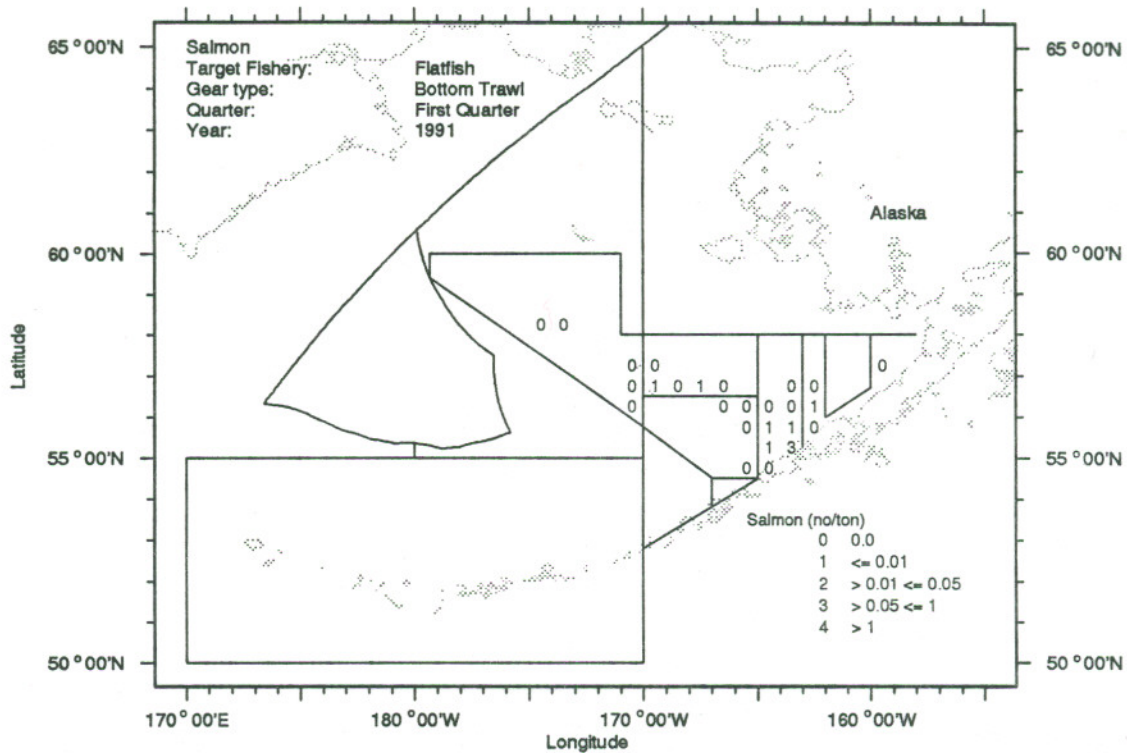


Figure 3.--Bycatch (no./metric ton (t)) of Pacific salmon in the U.S. domestic groundfish fisheries by quarter, target fishery, gear type, and ½° latitude and 1° longitude areas in the Bering Sea/Aleutian Islands region, 1991.

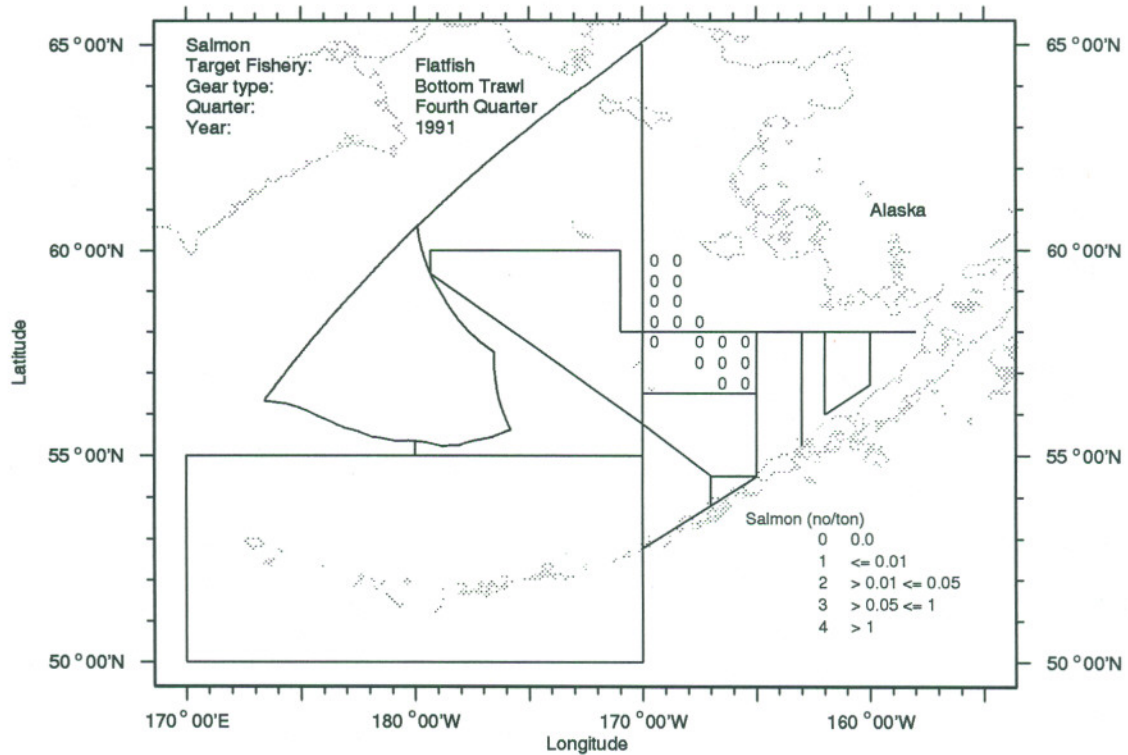
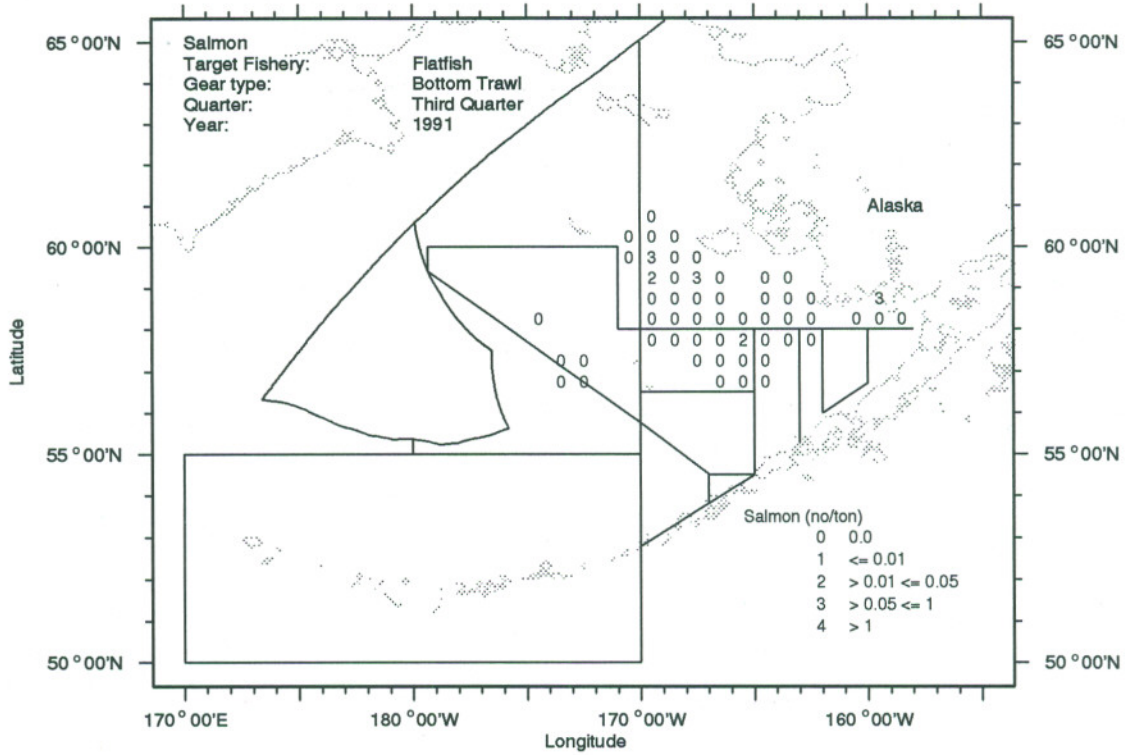


Figure 3.--Continued.

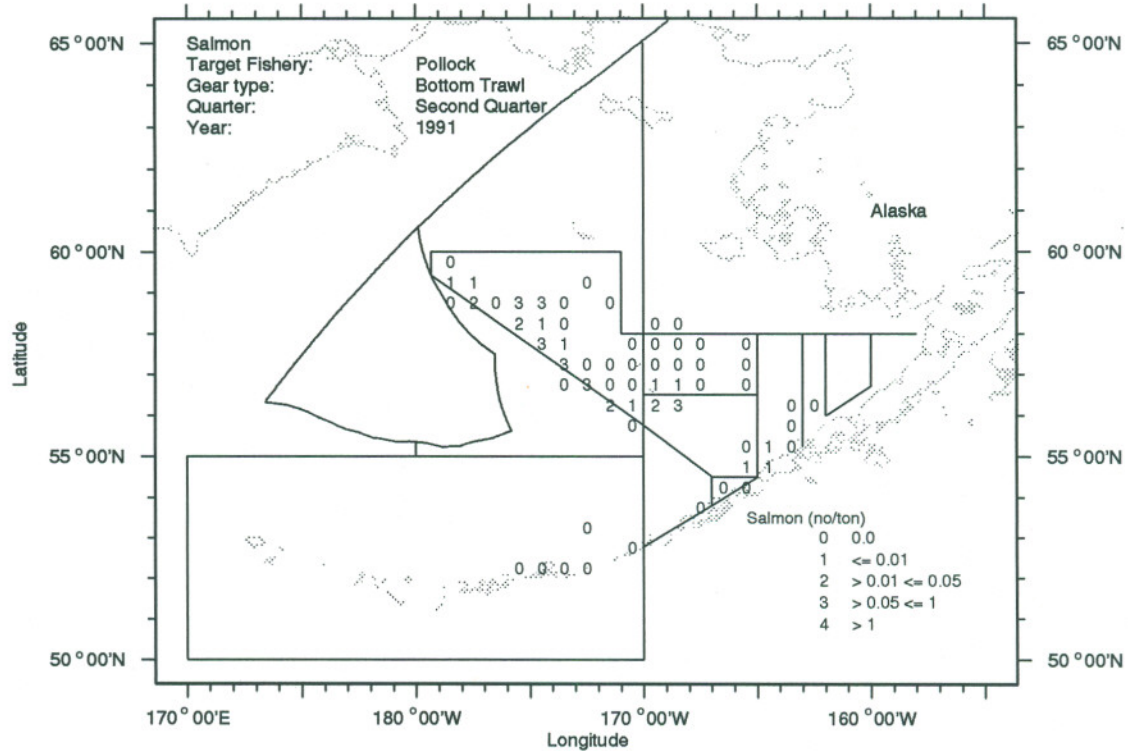
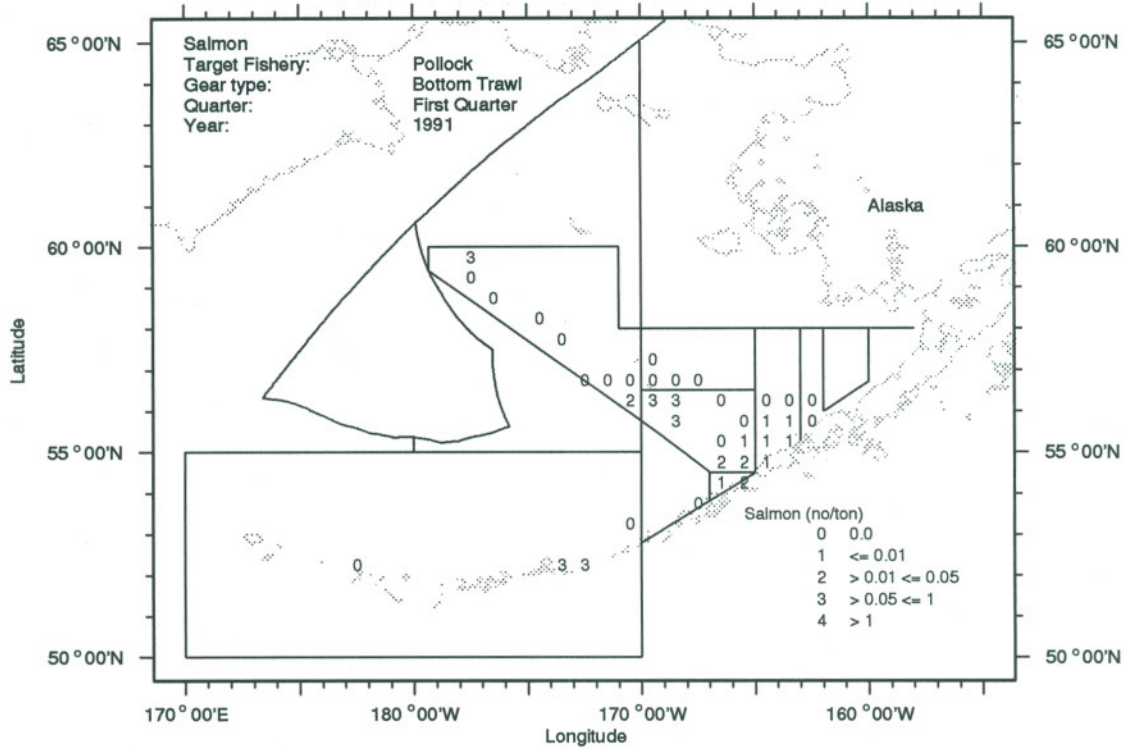


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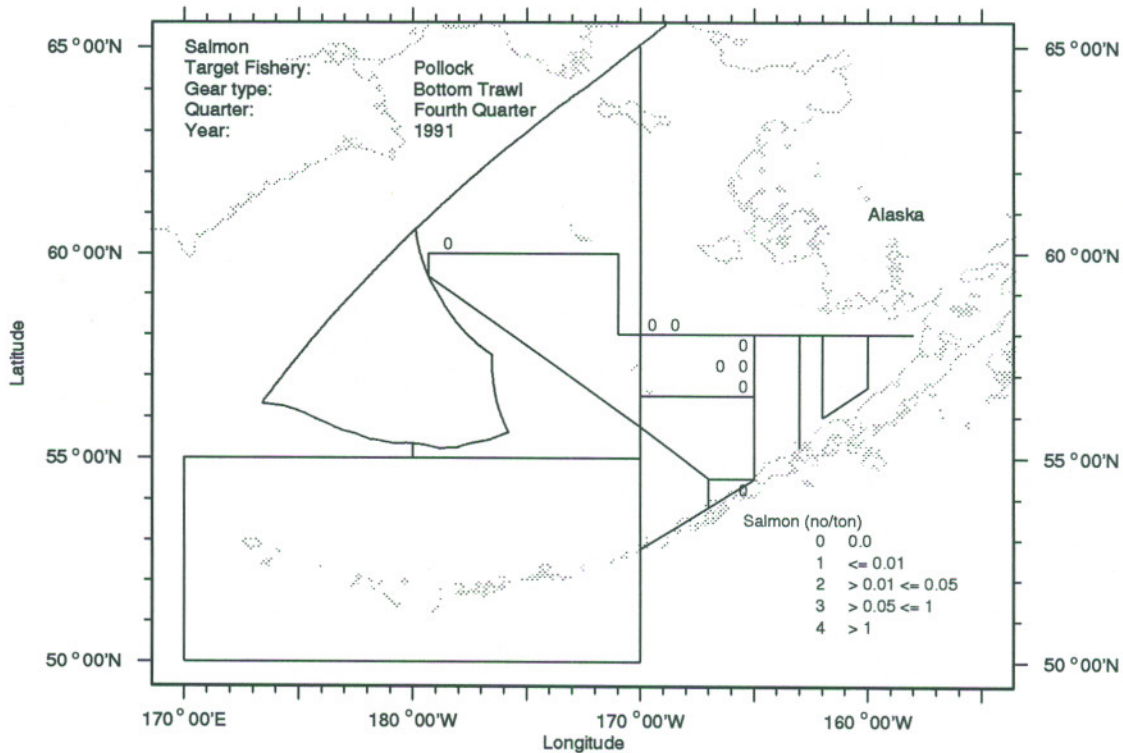
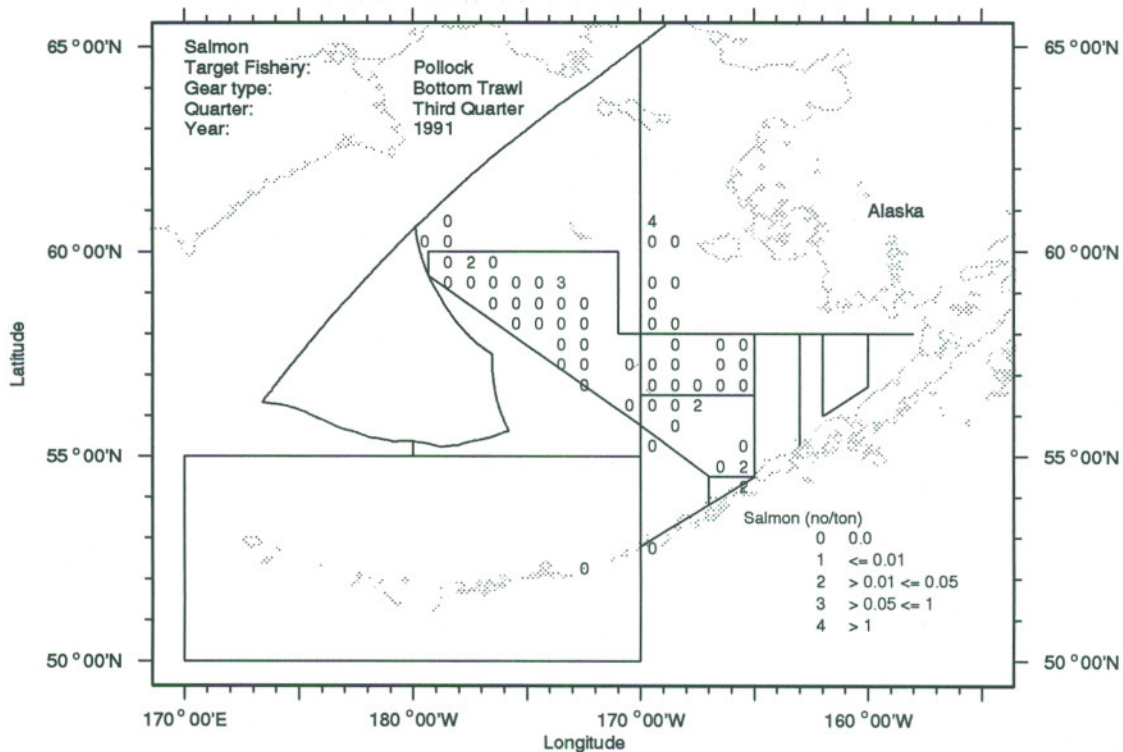


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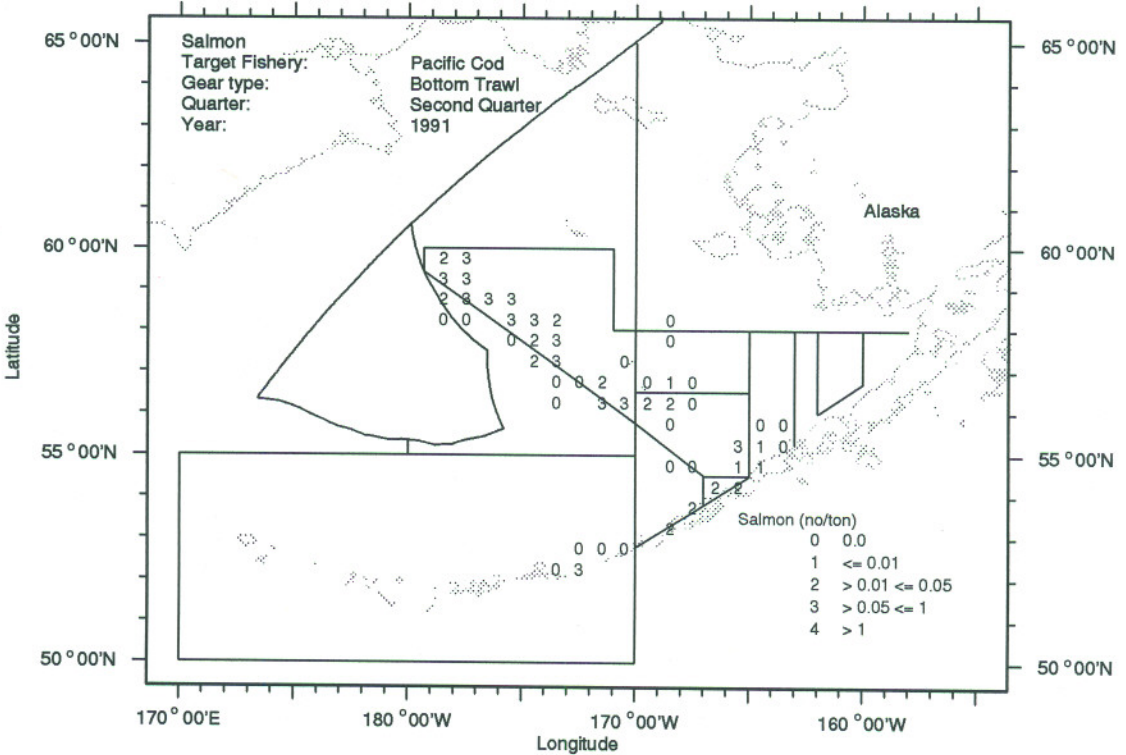
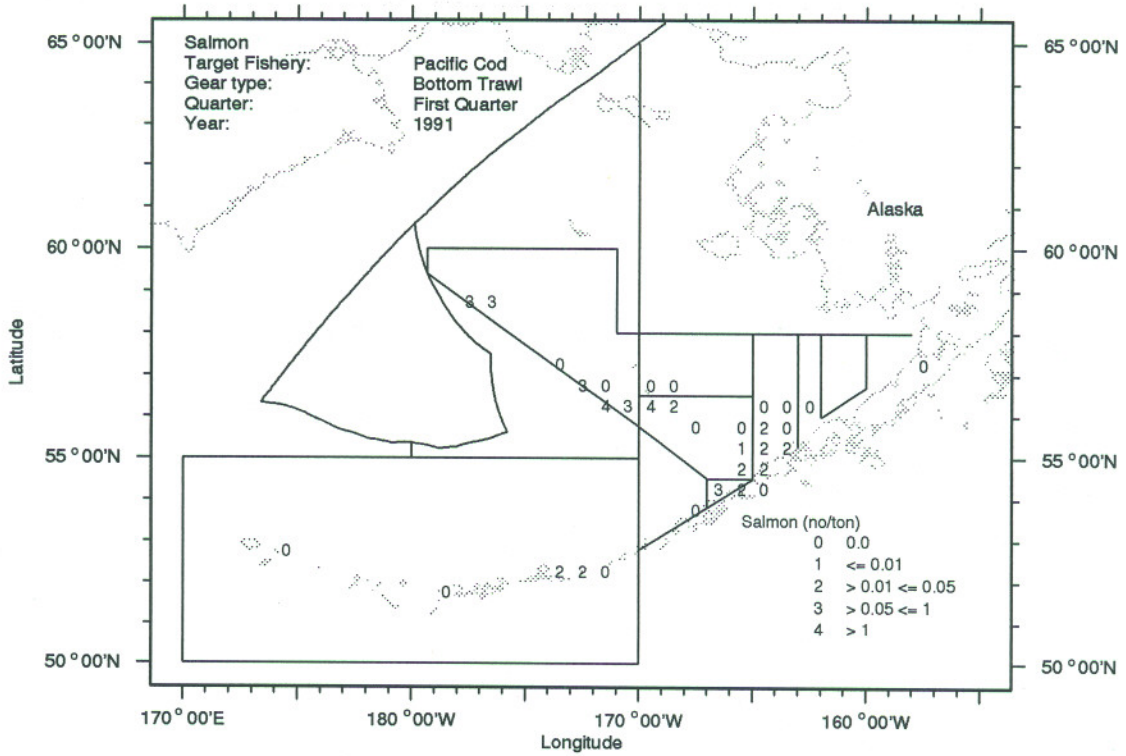


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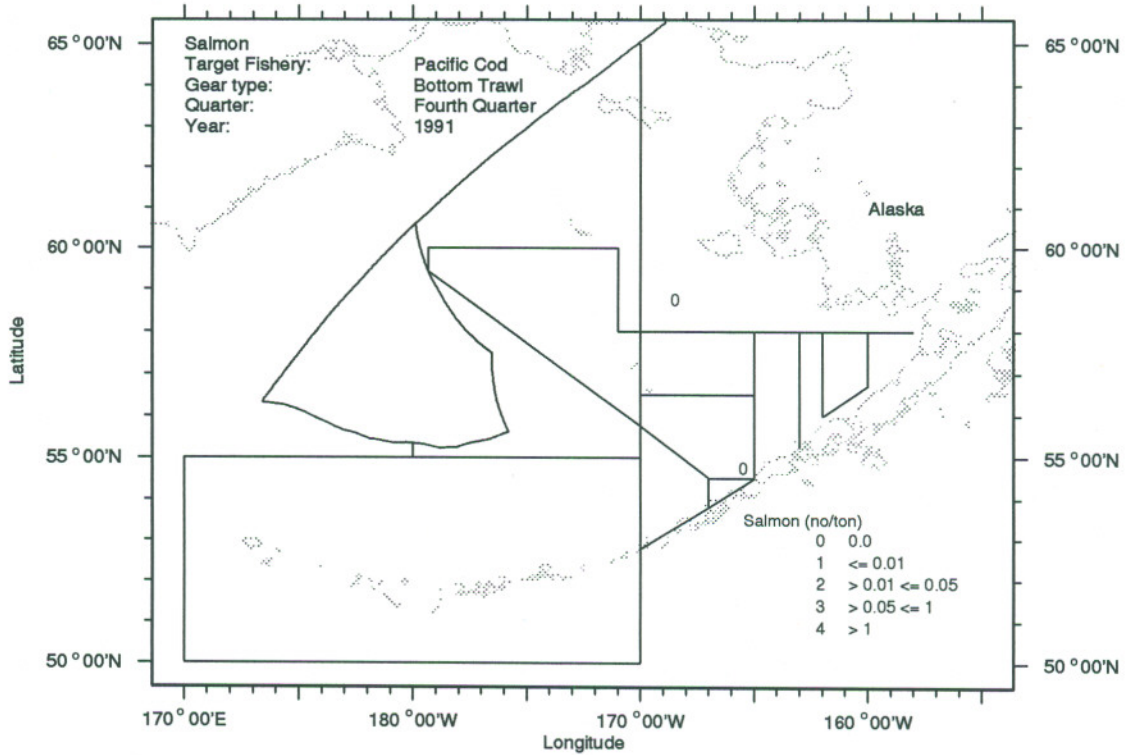
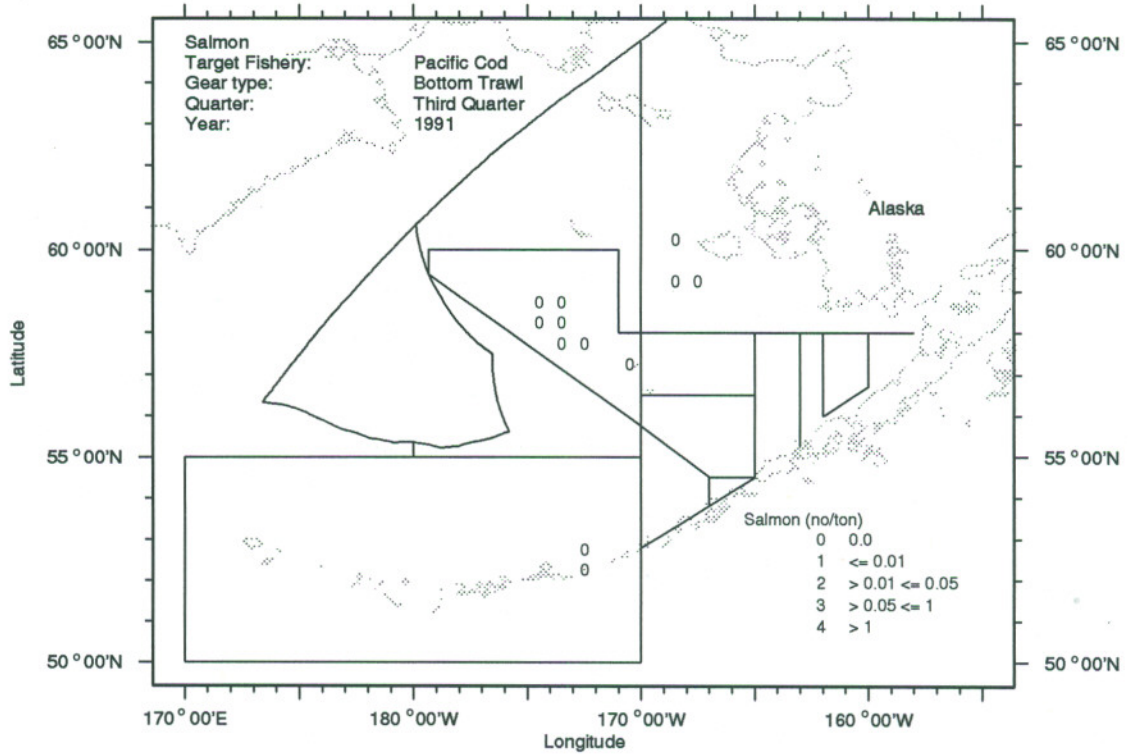


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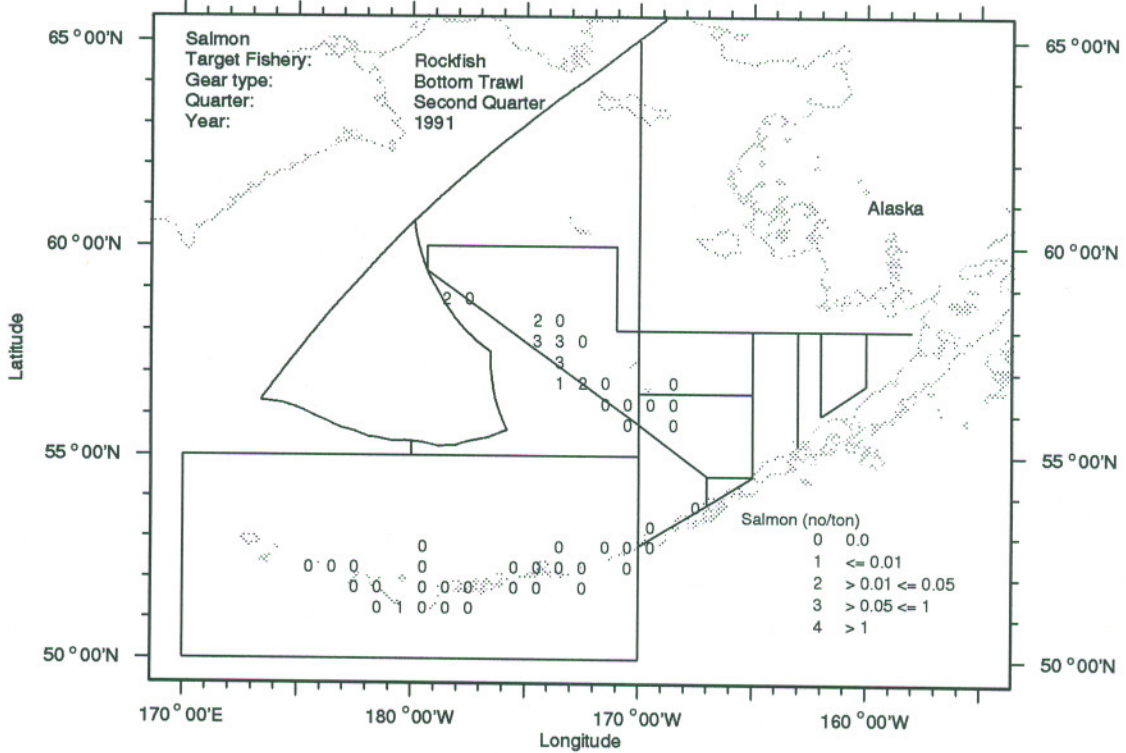
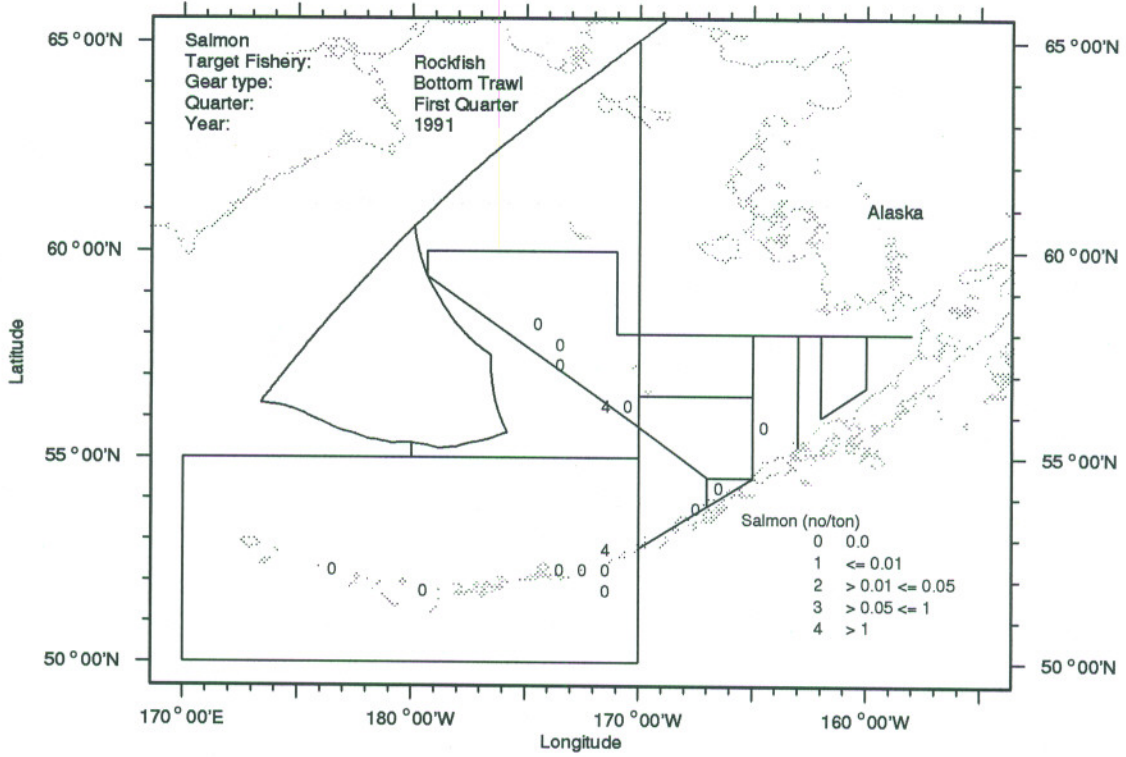


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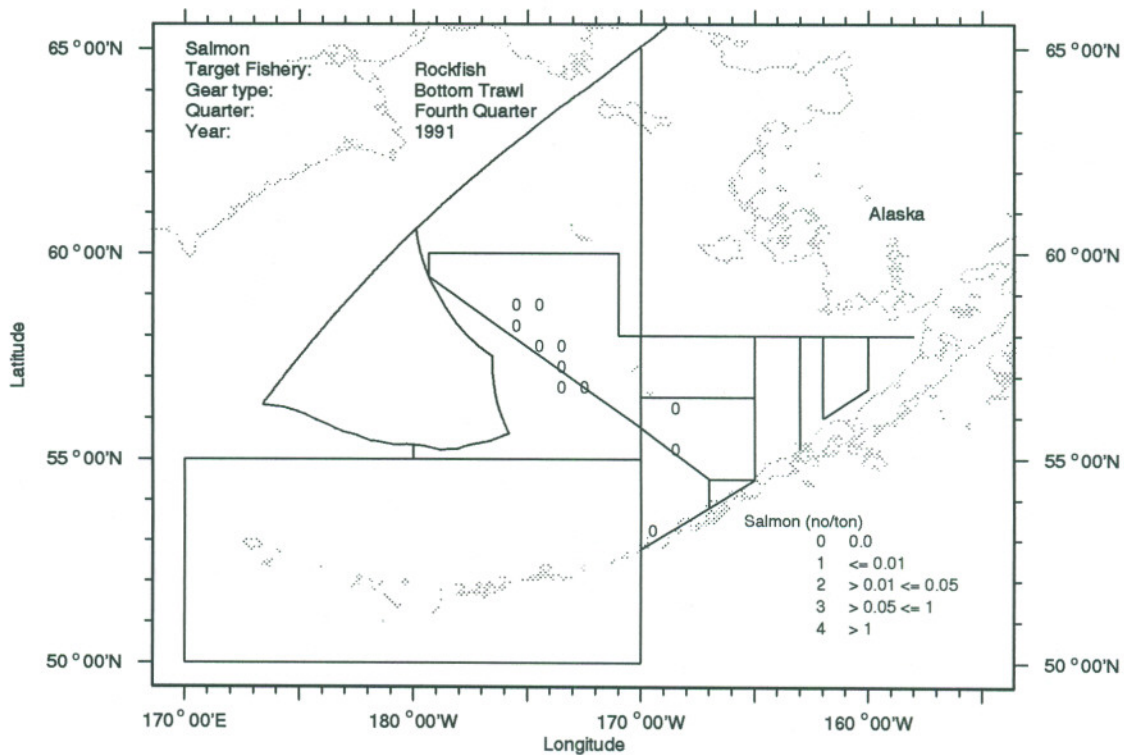
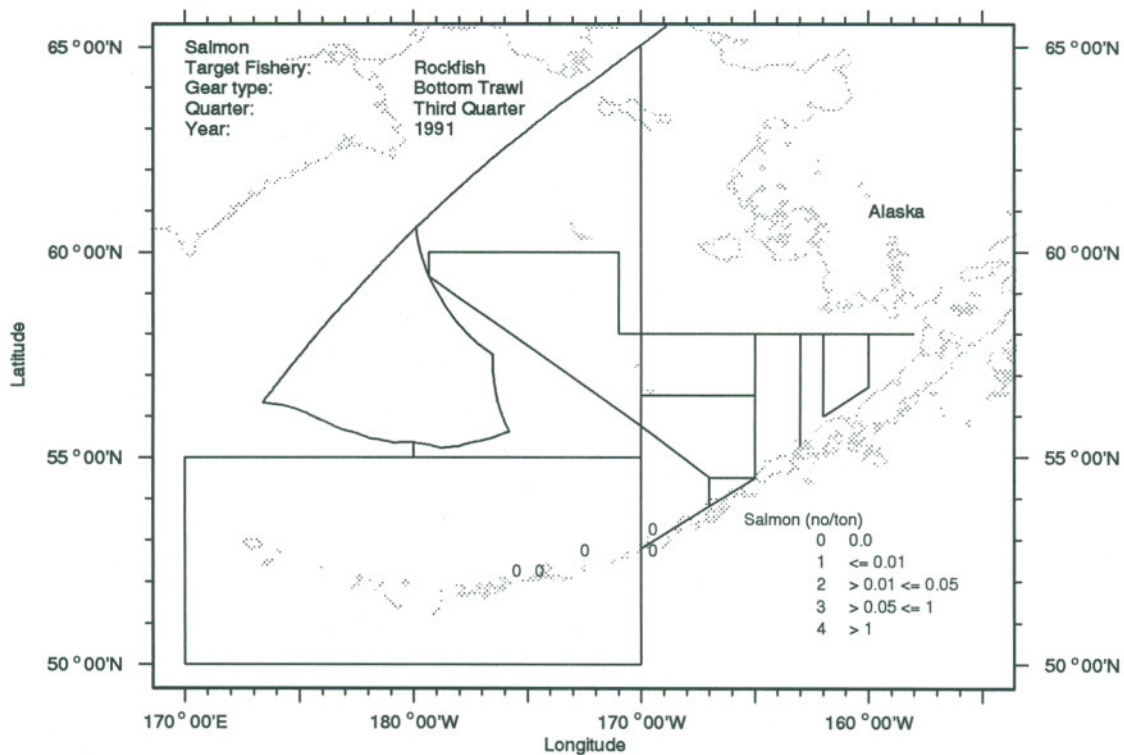


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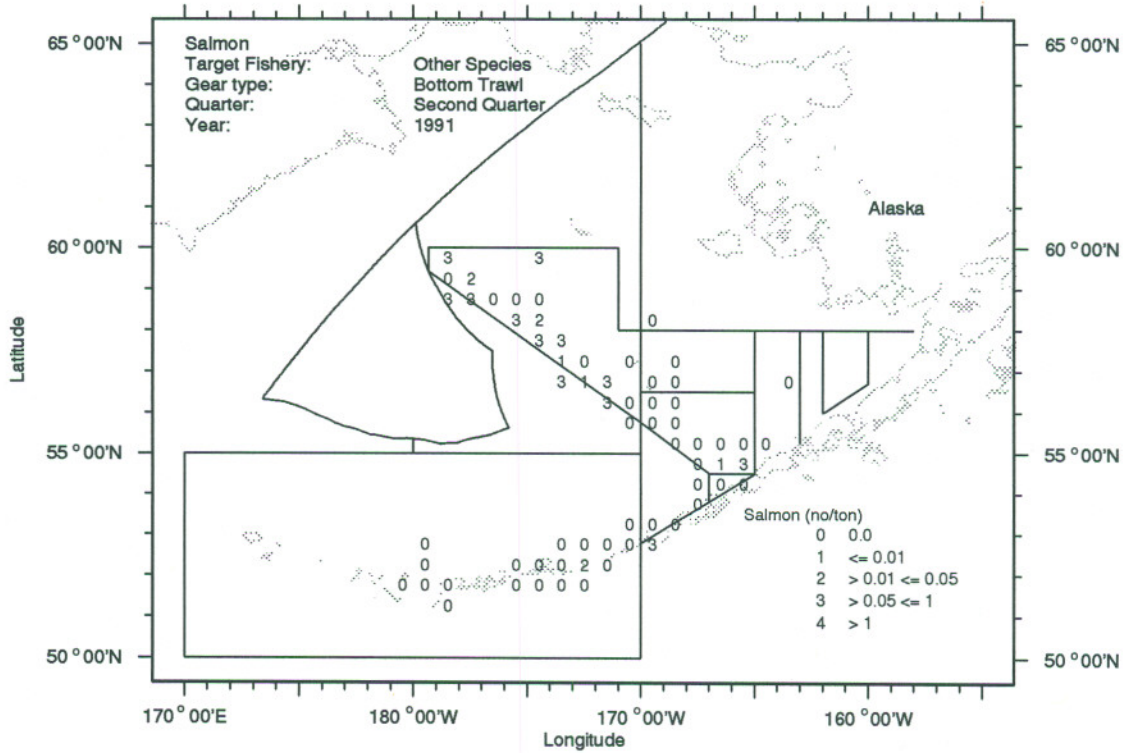
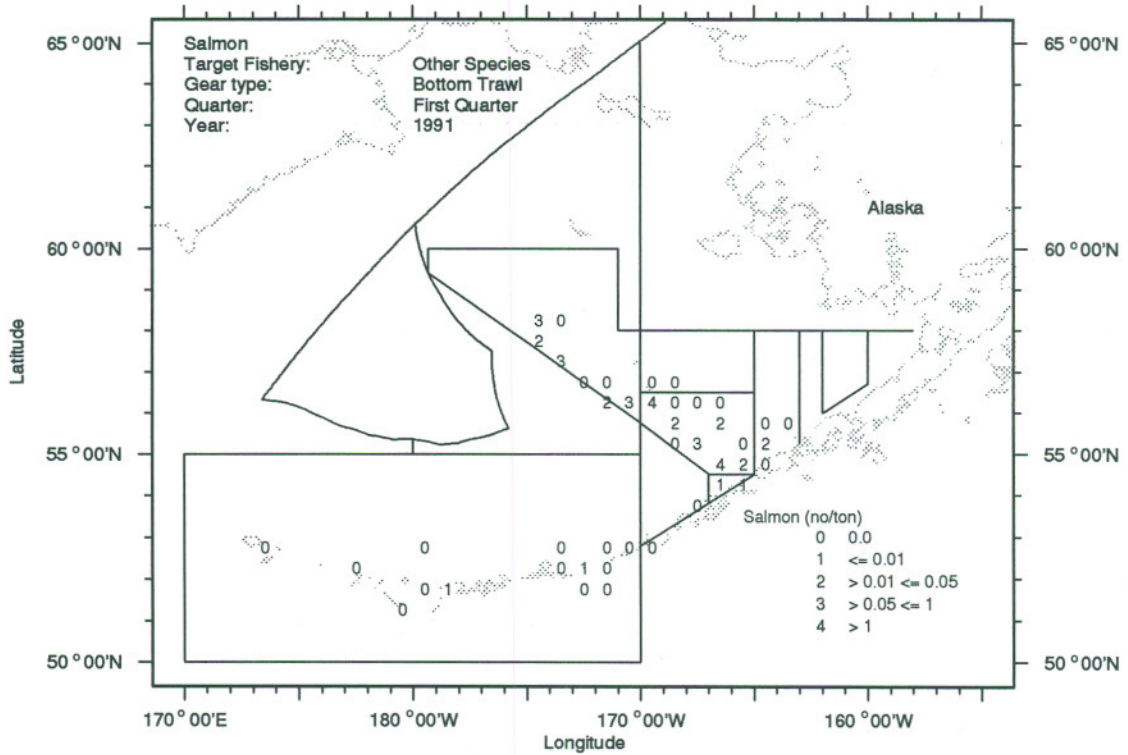


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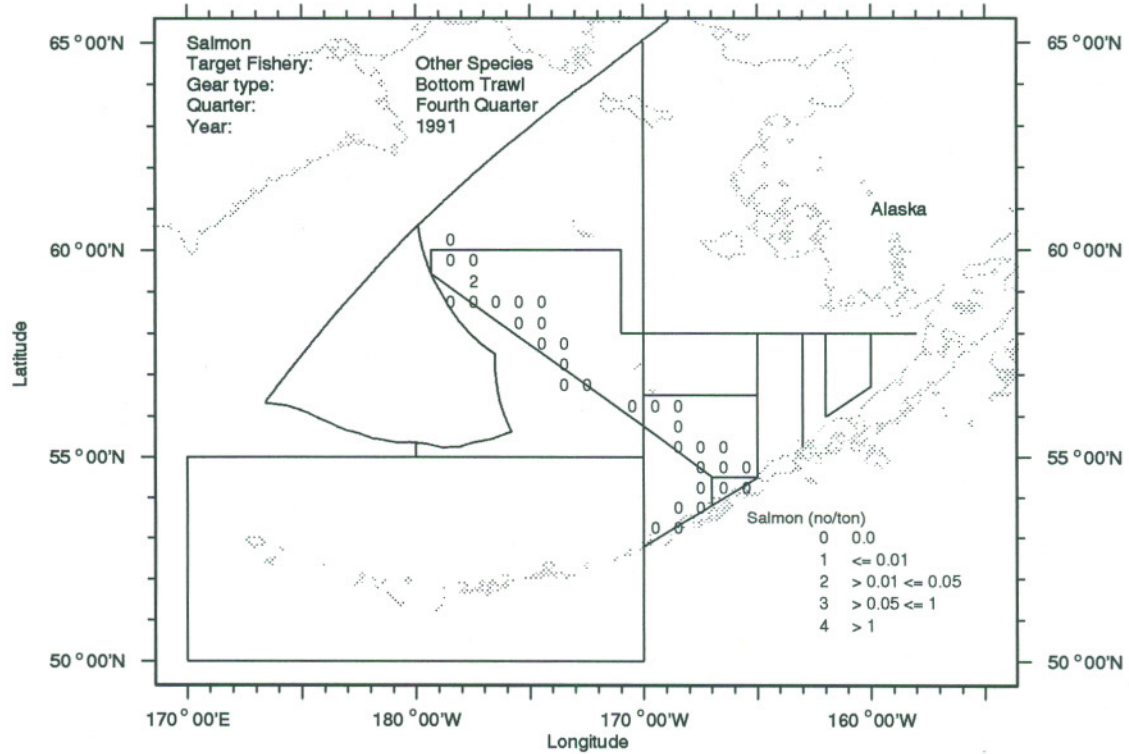
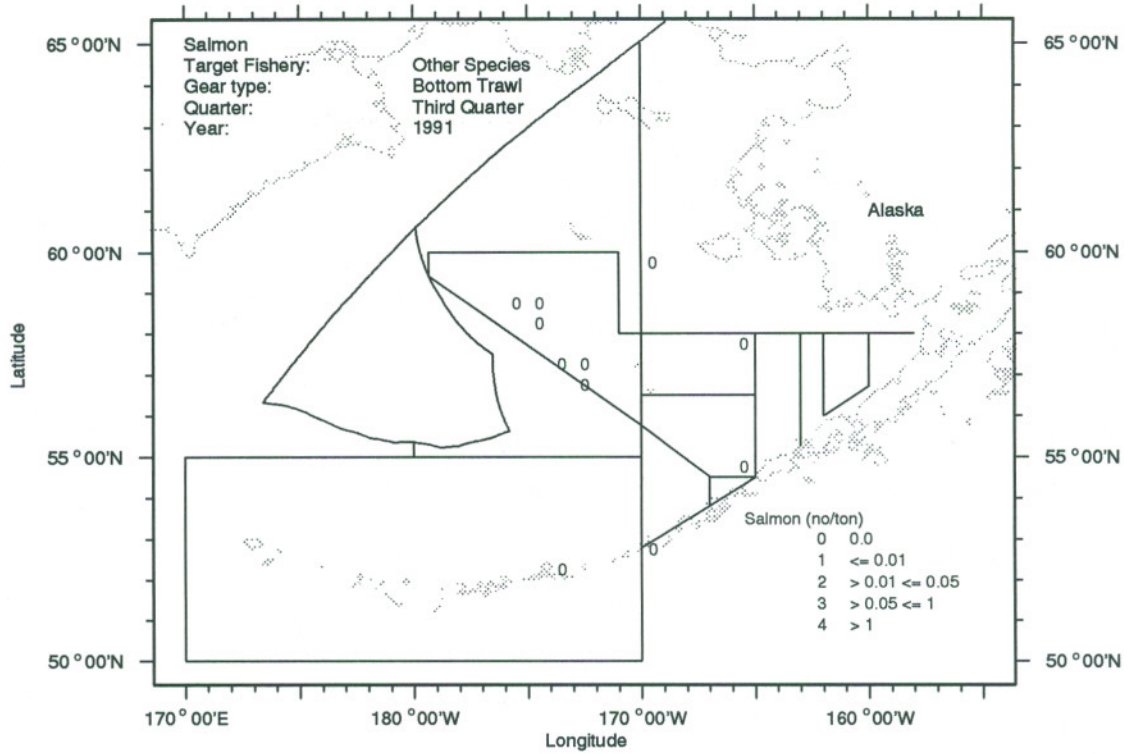


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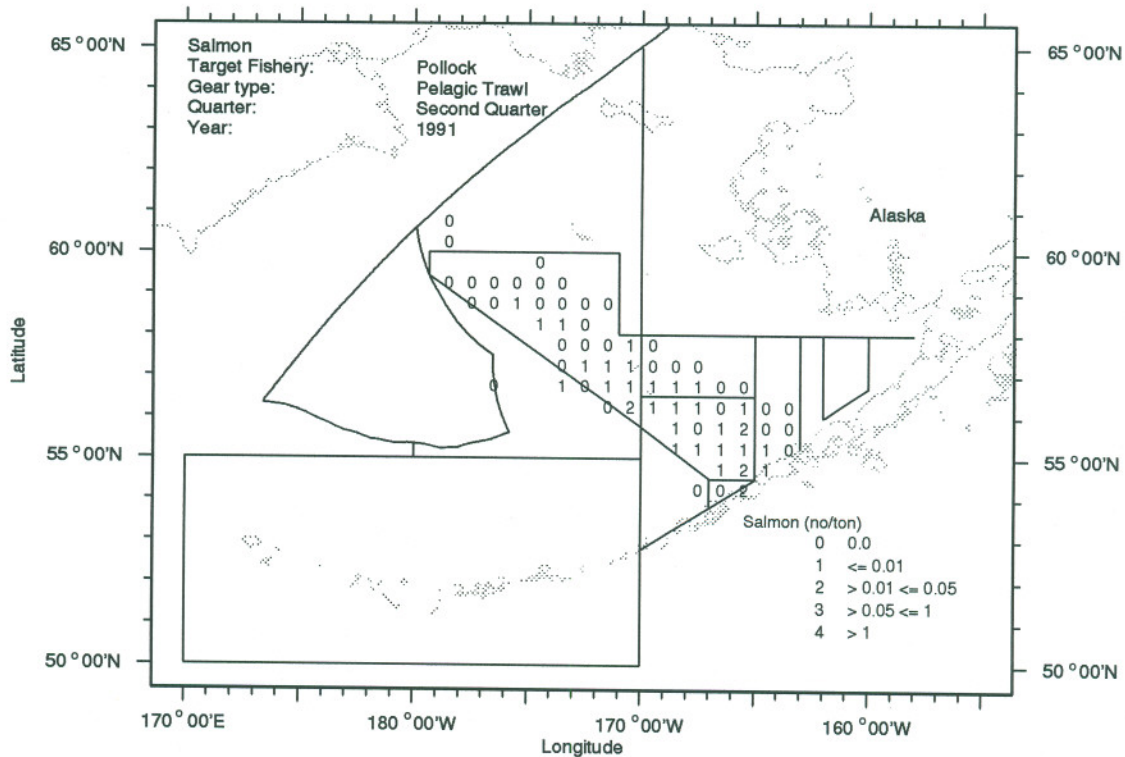
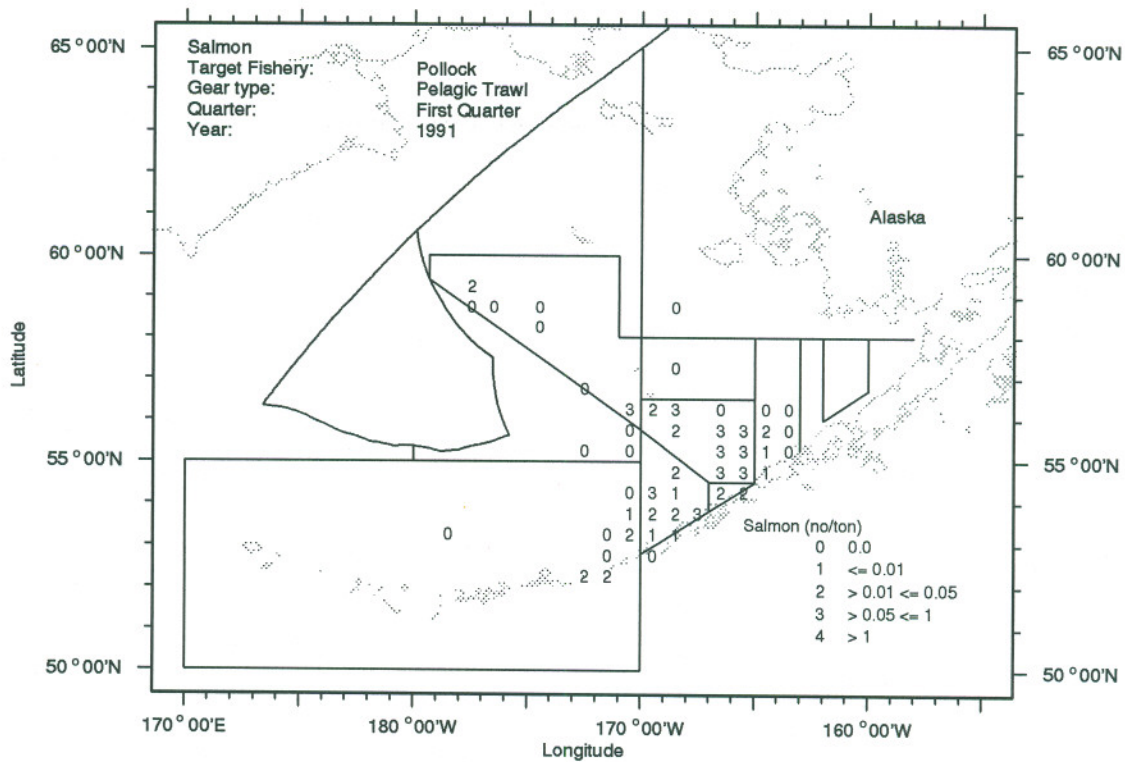


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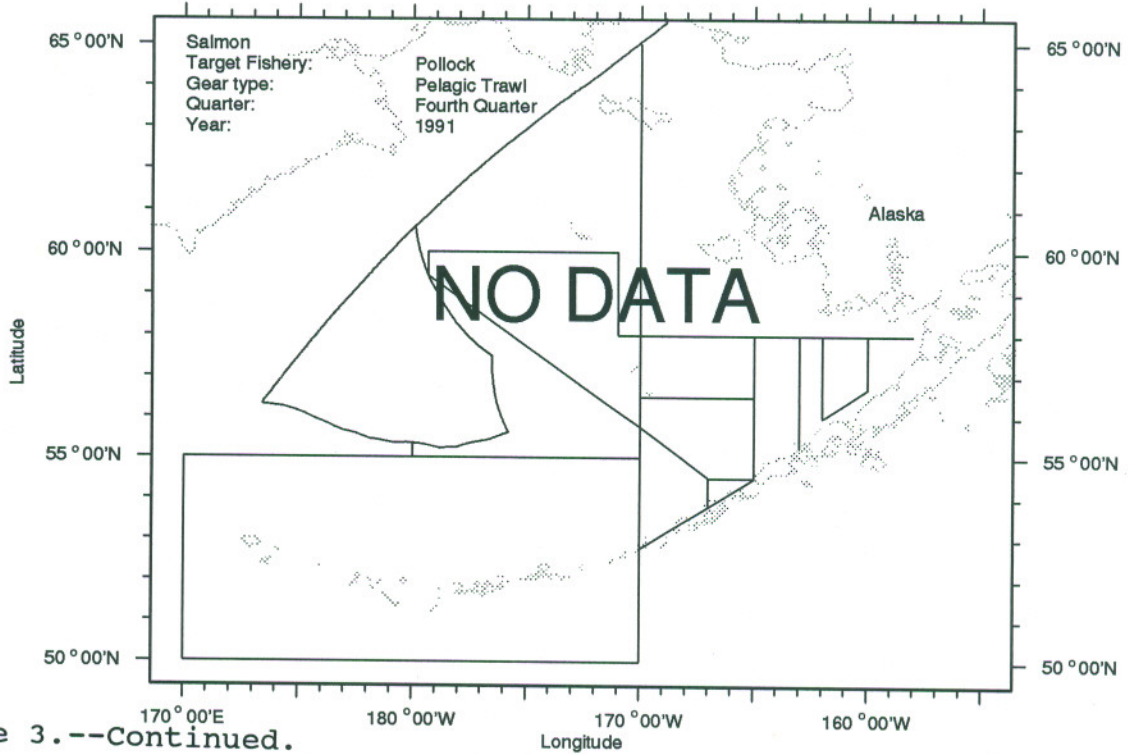
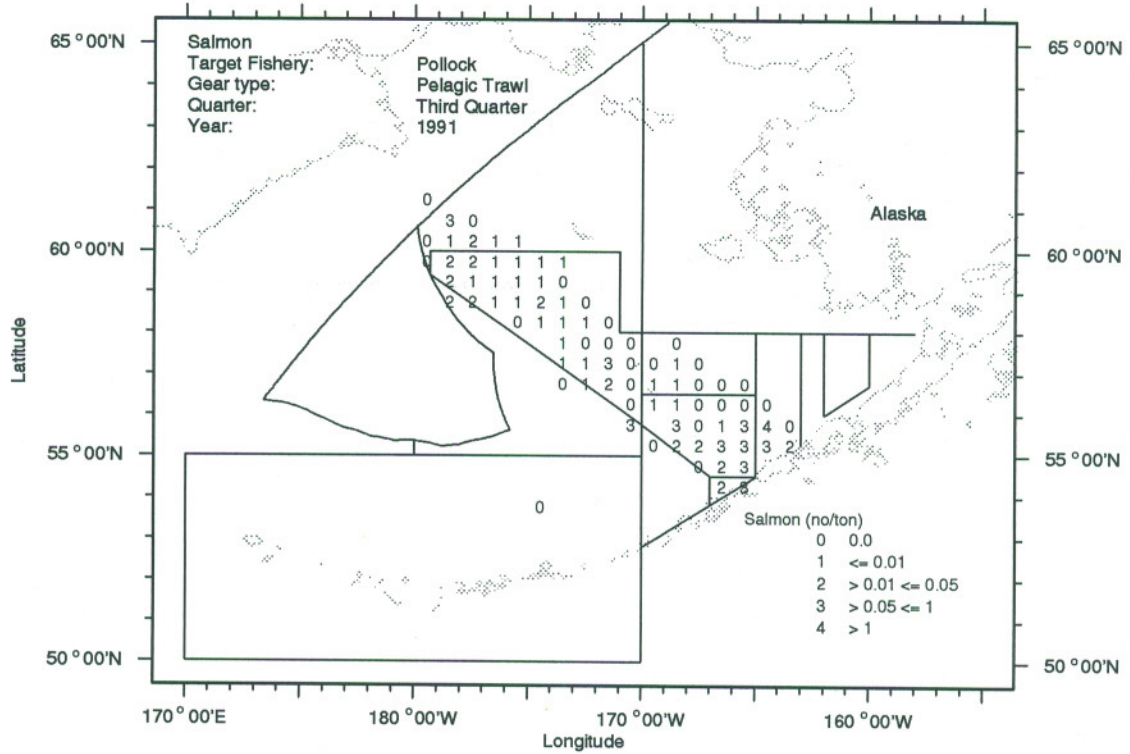


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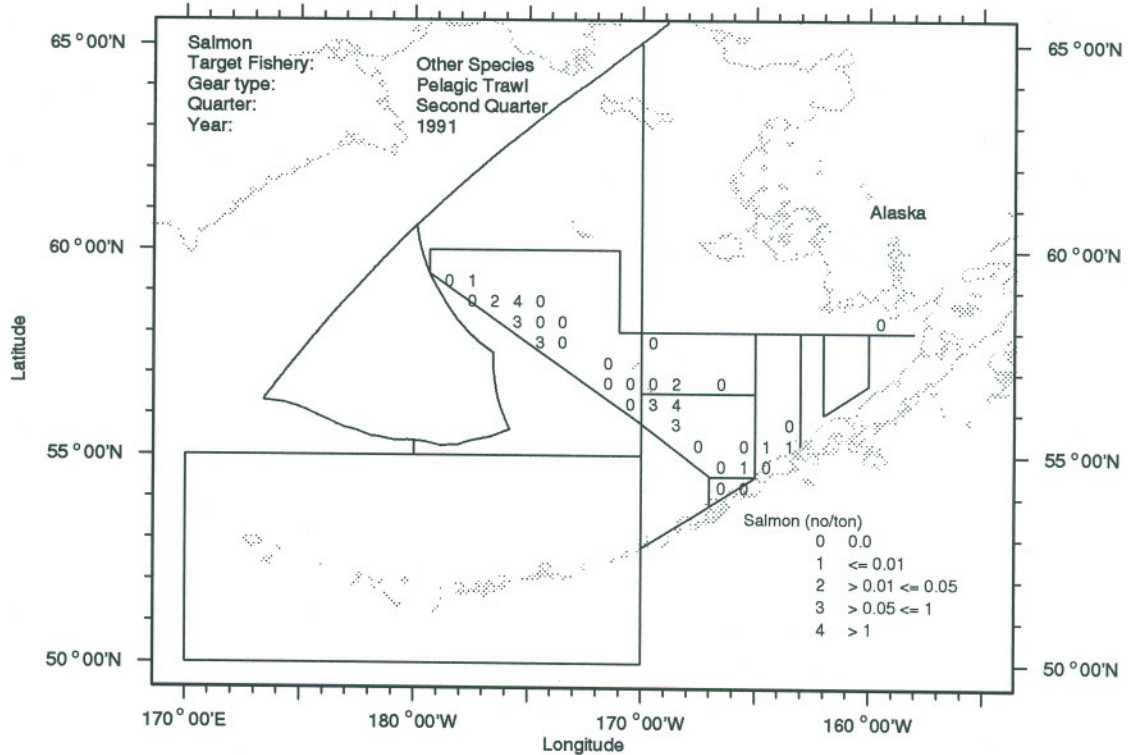
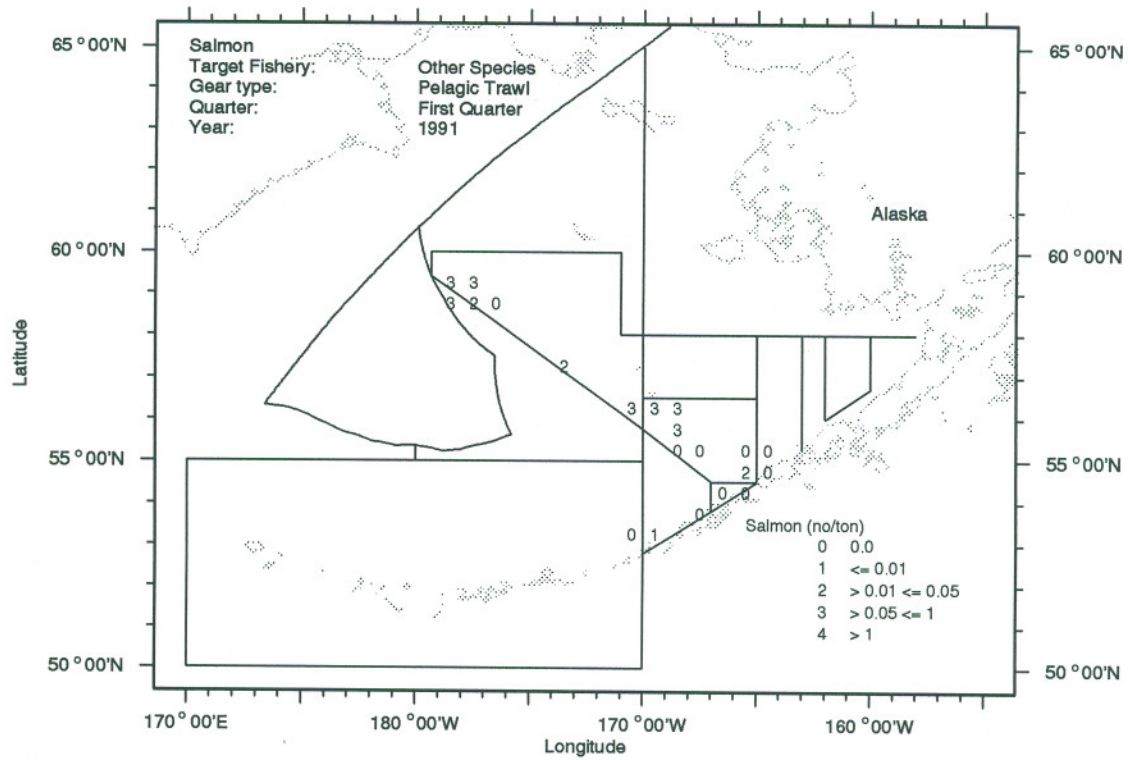


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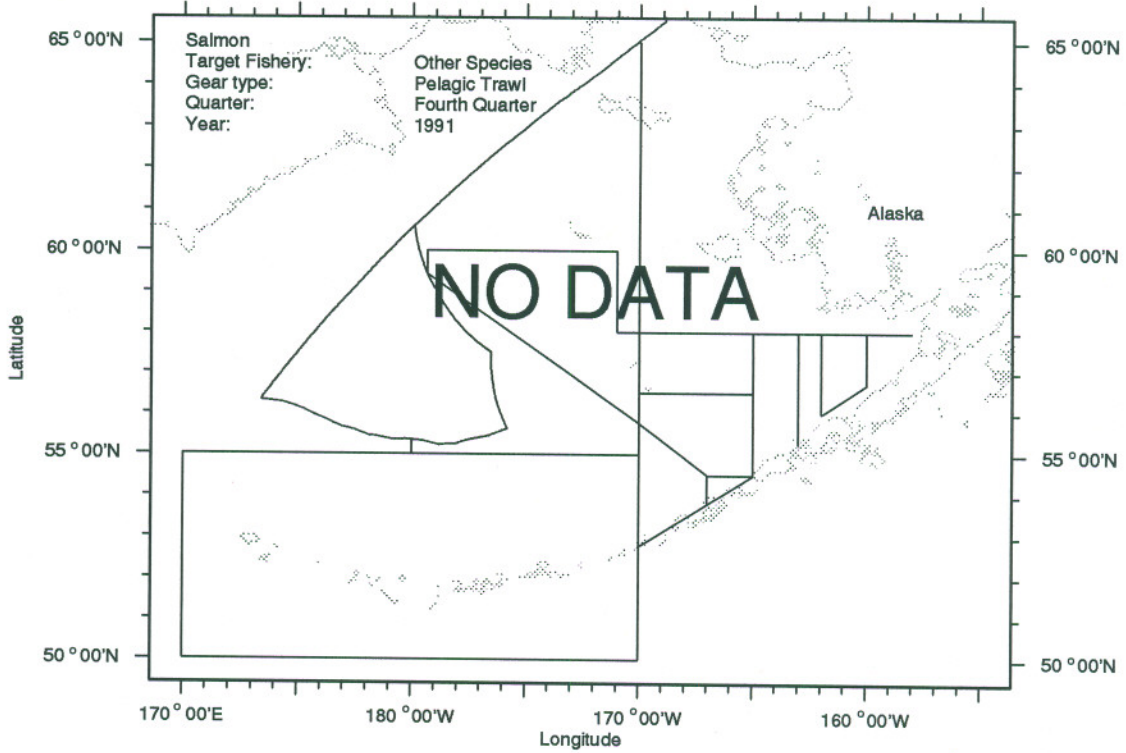
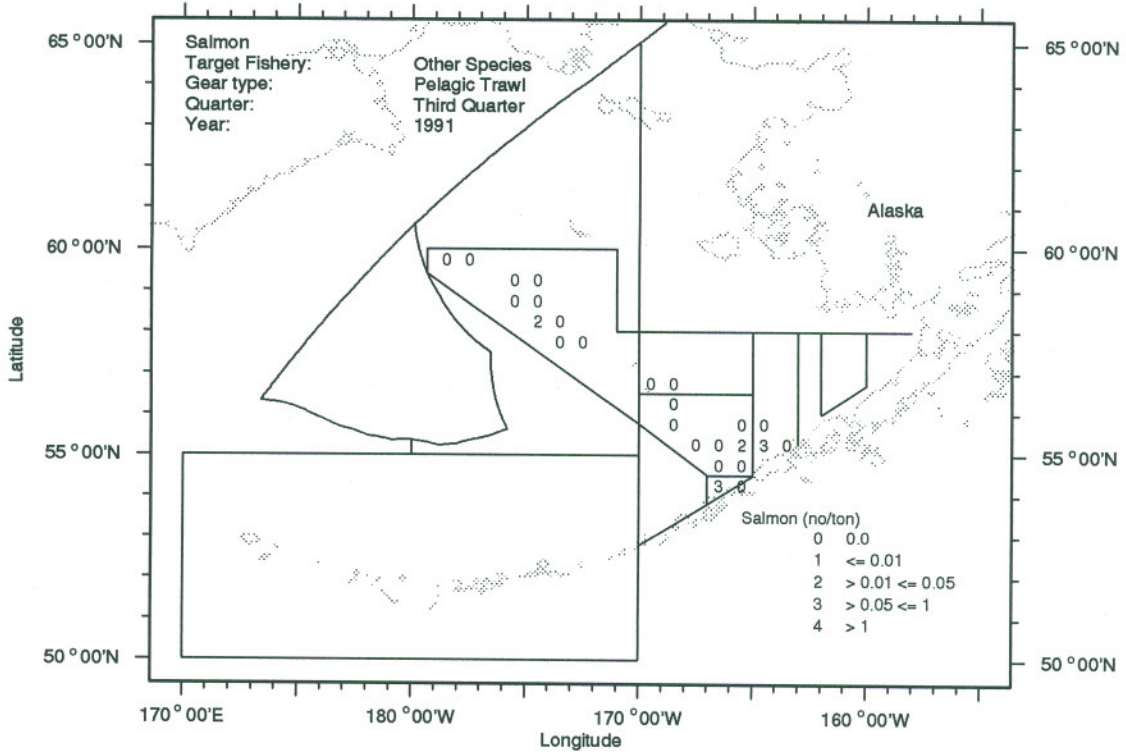


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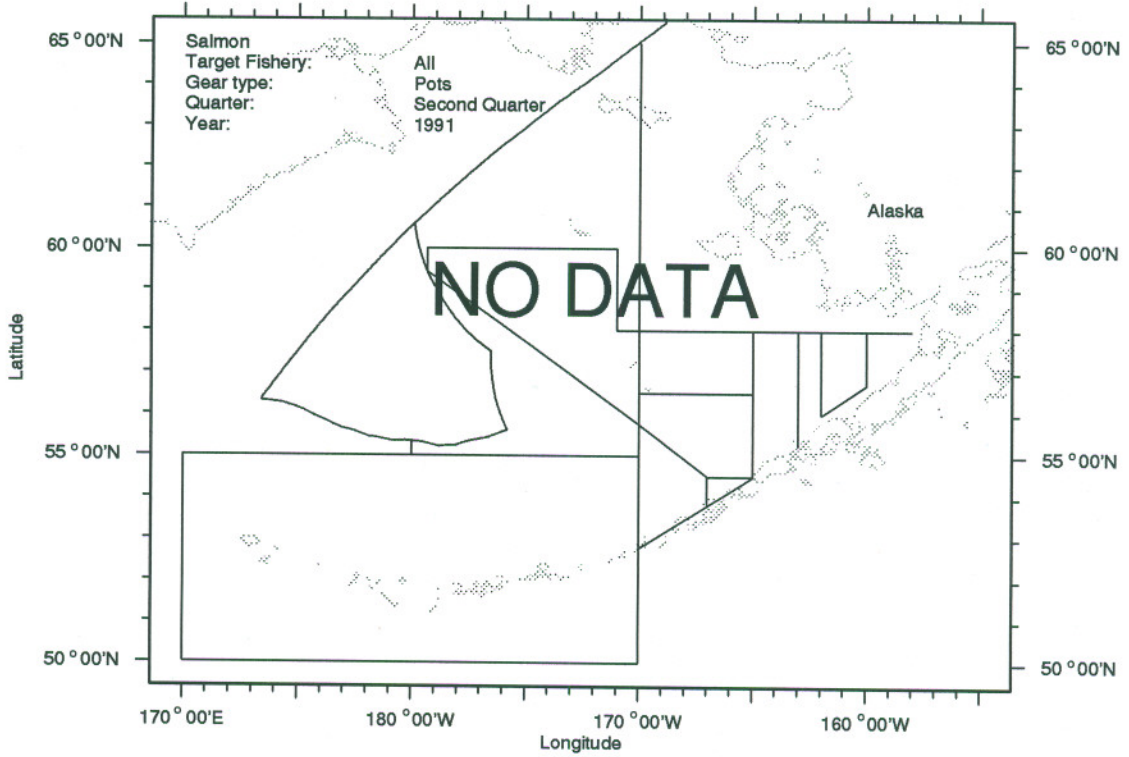
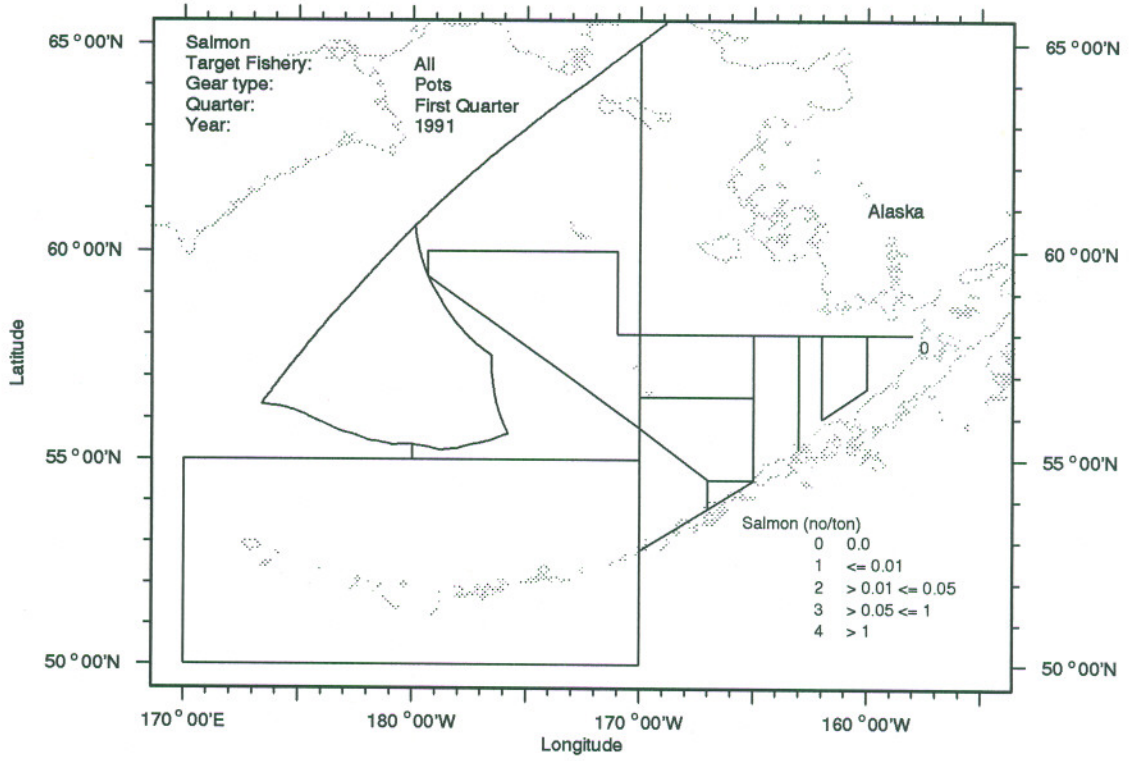


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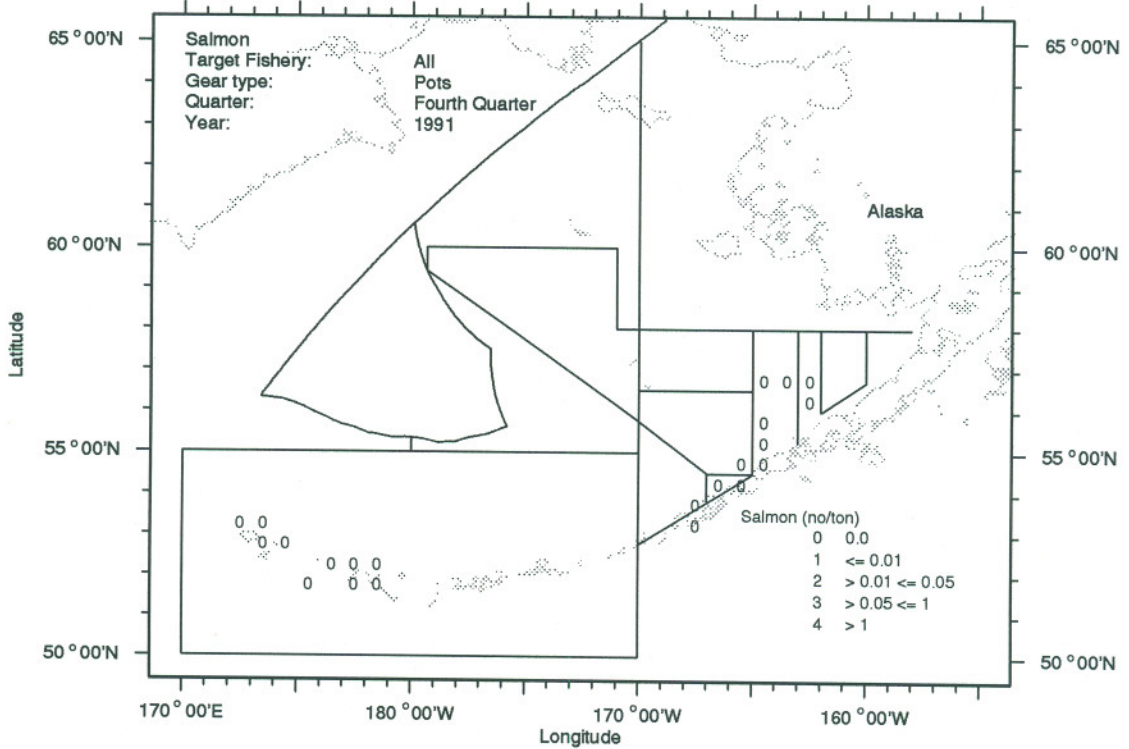
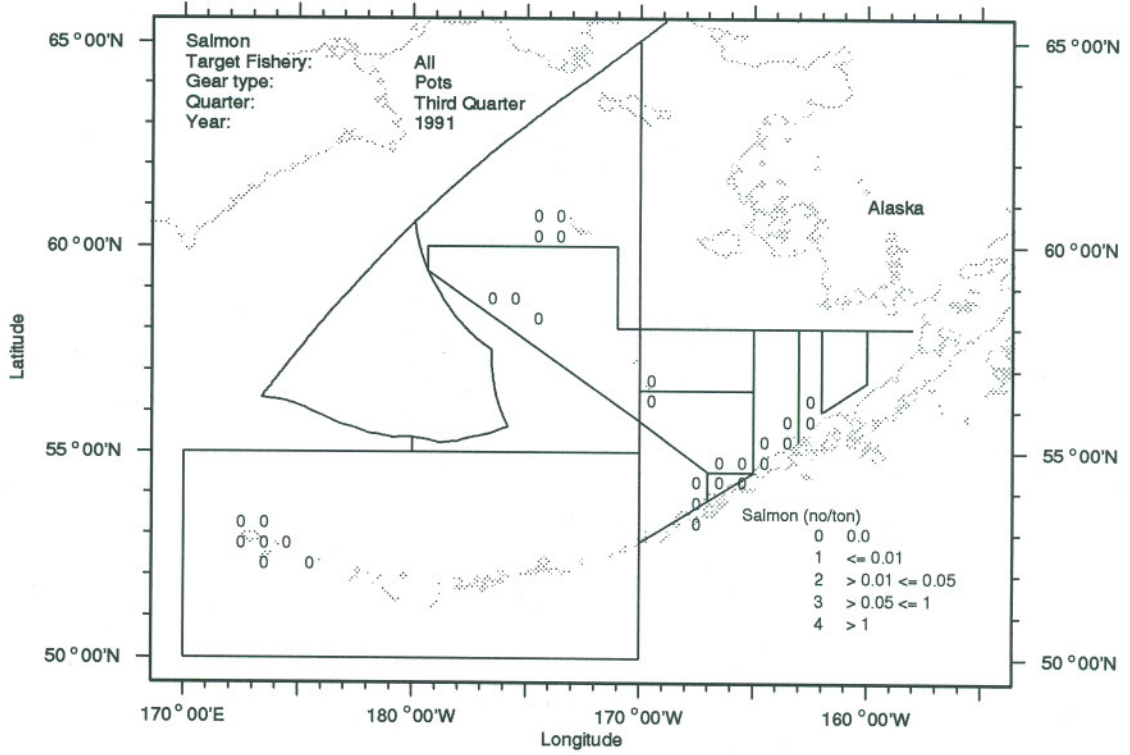


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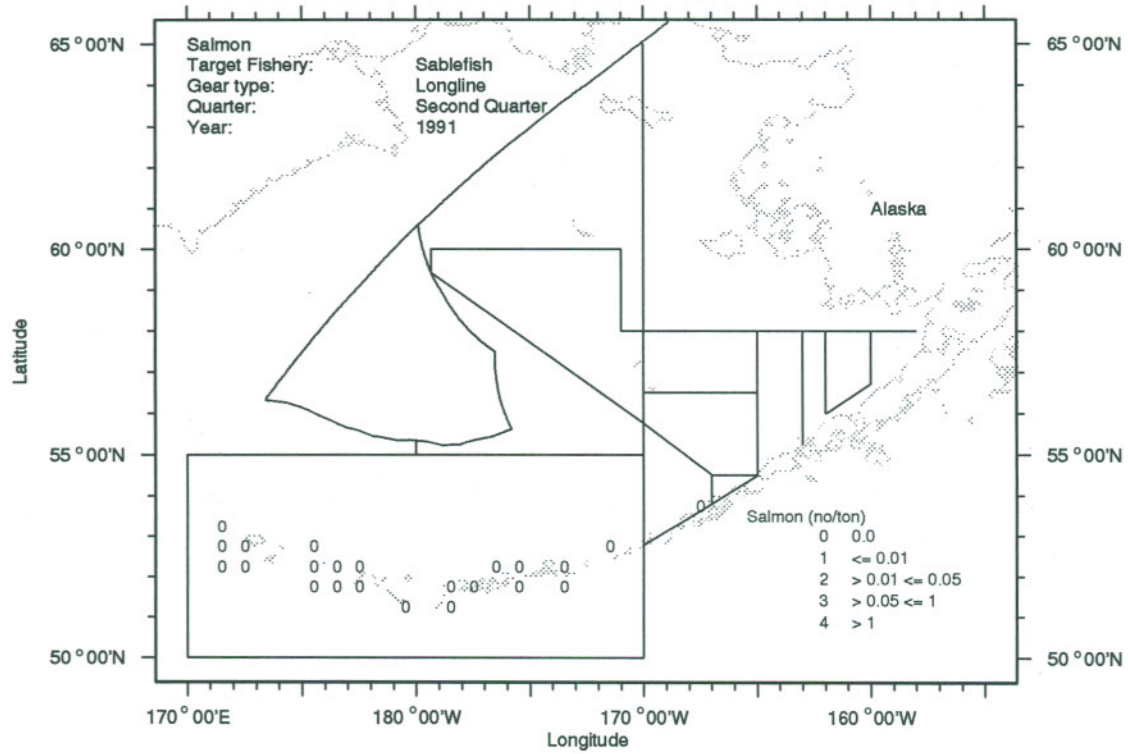
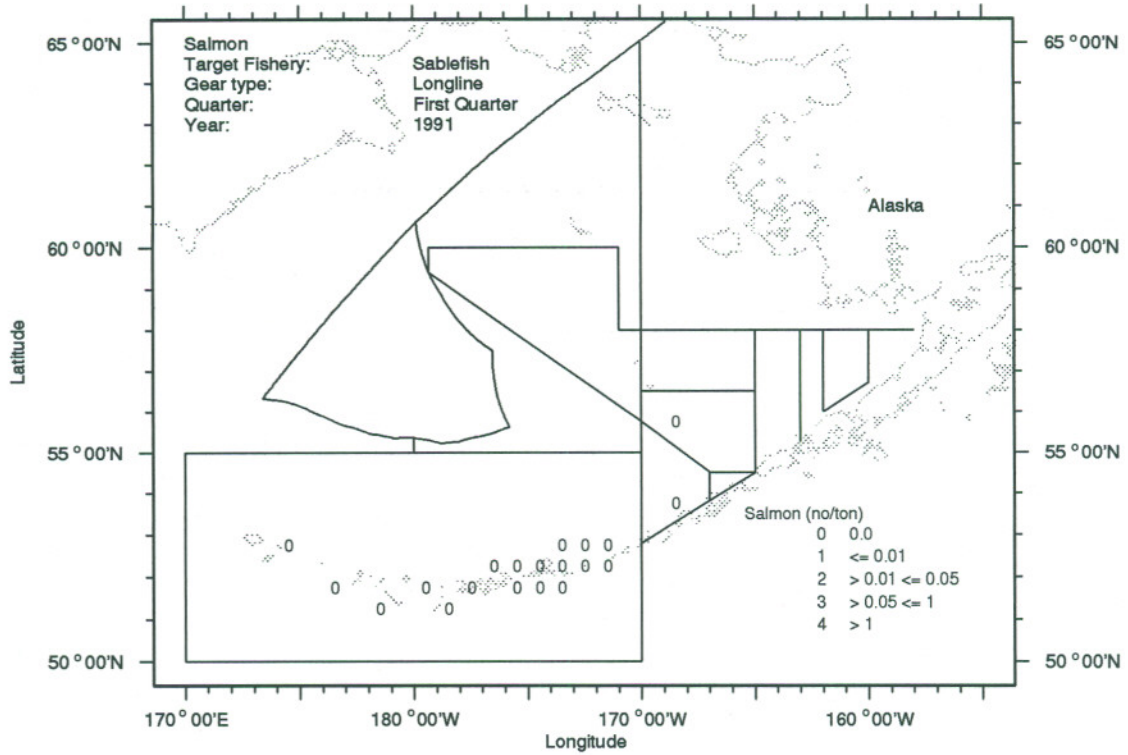


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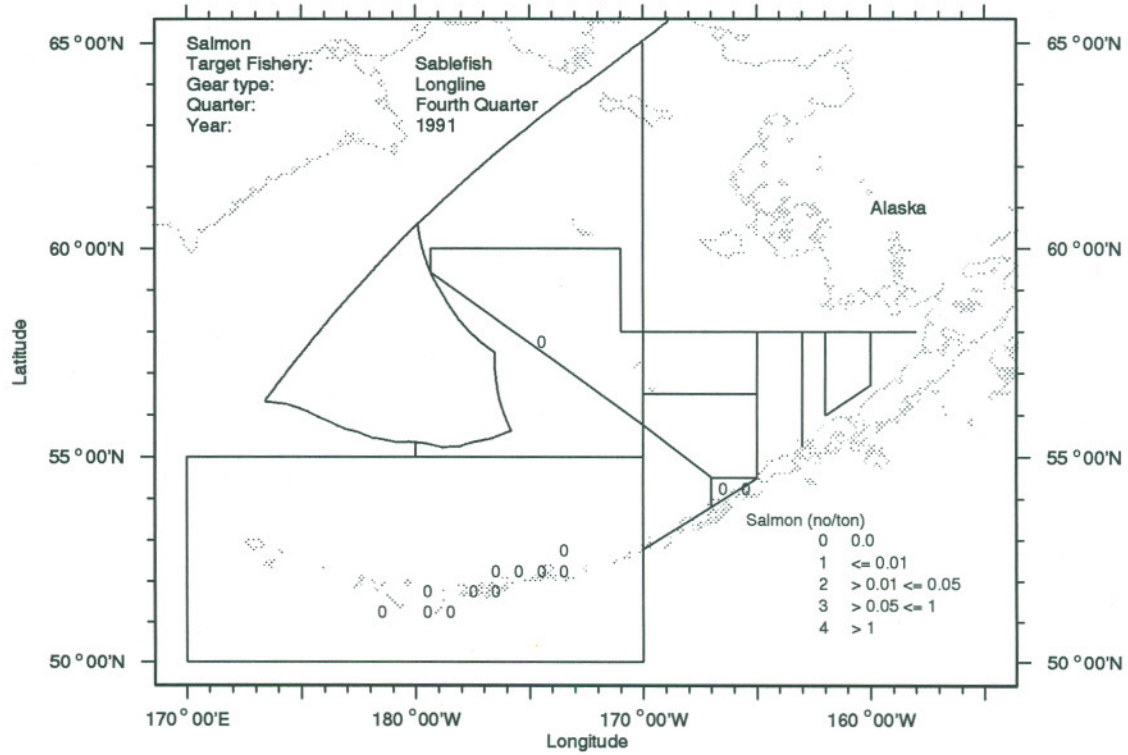
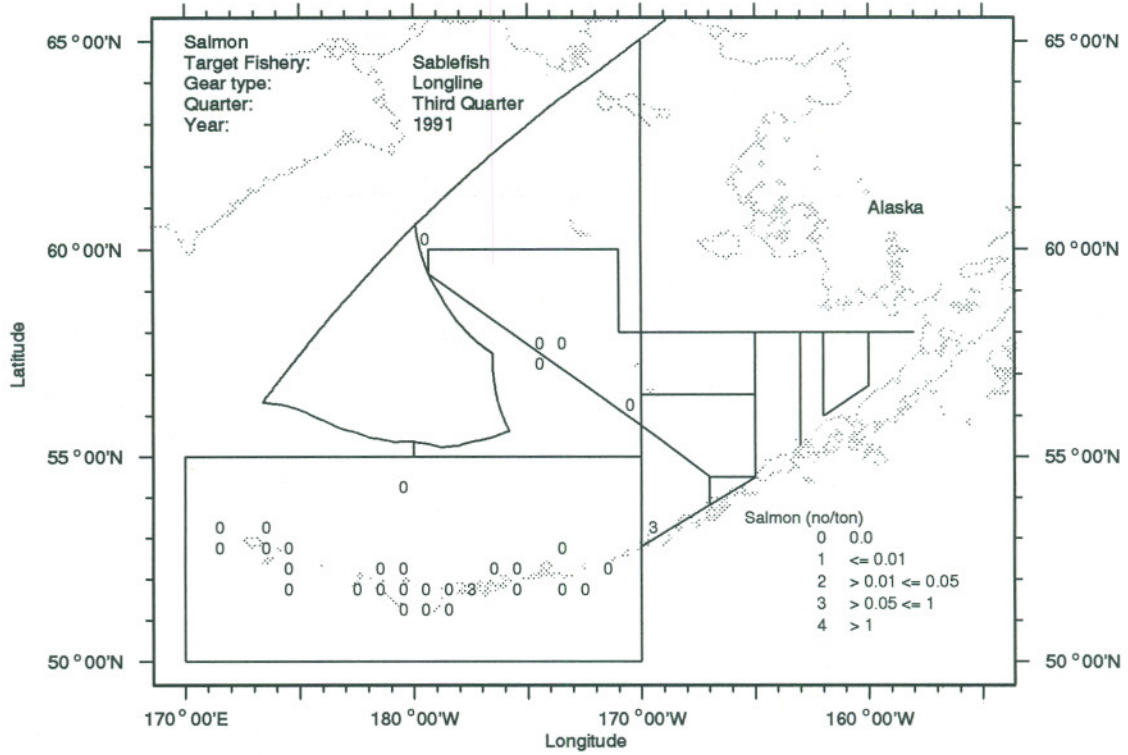


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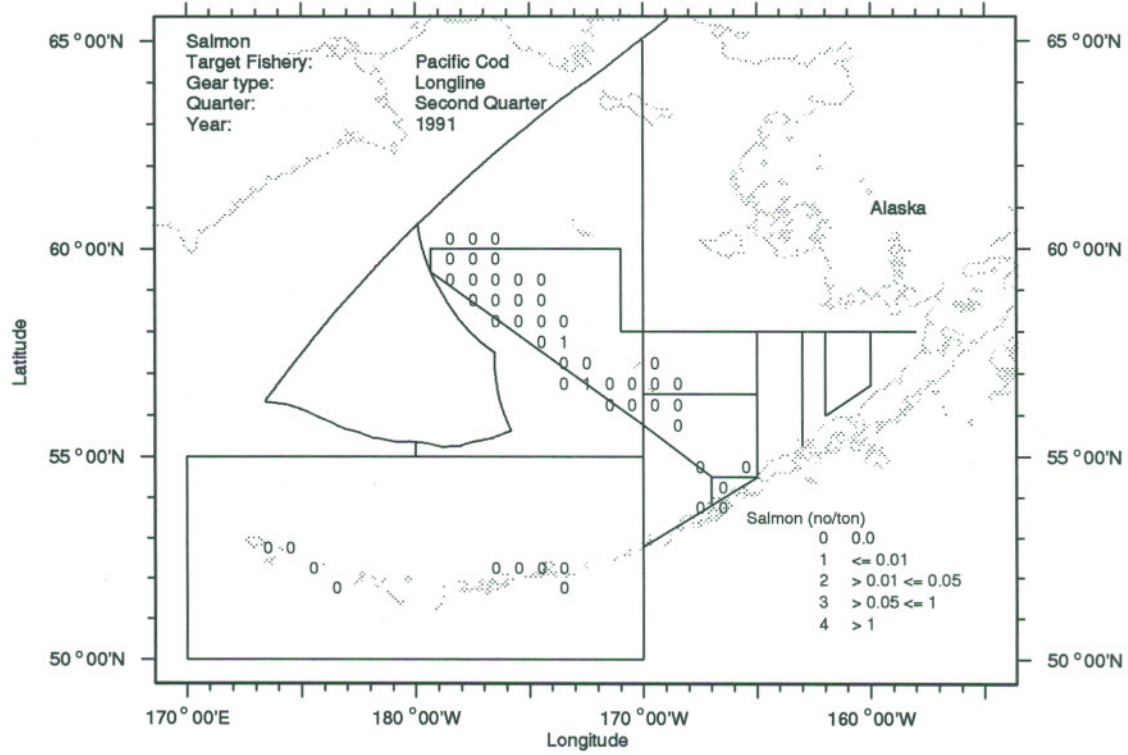
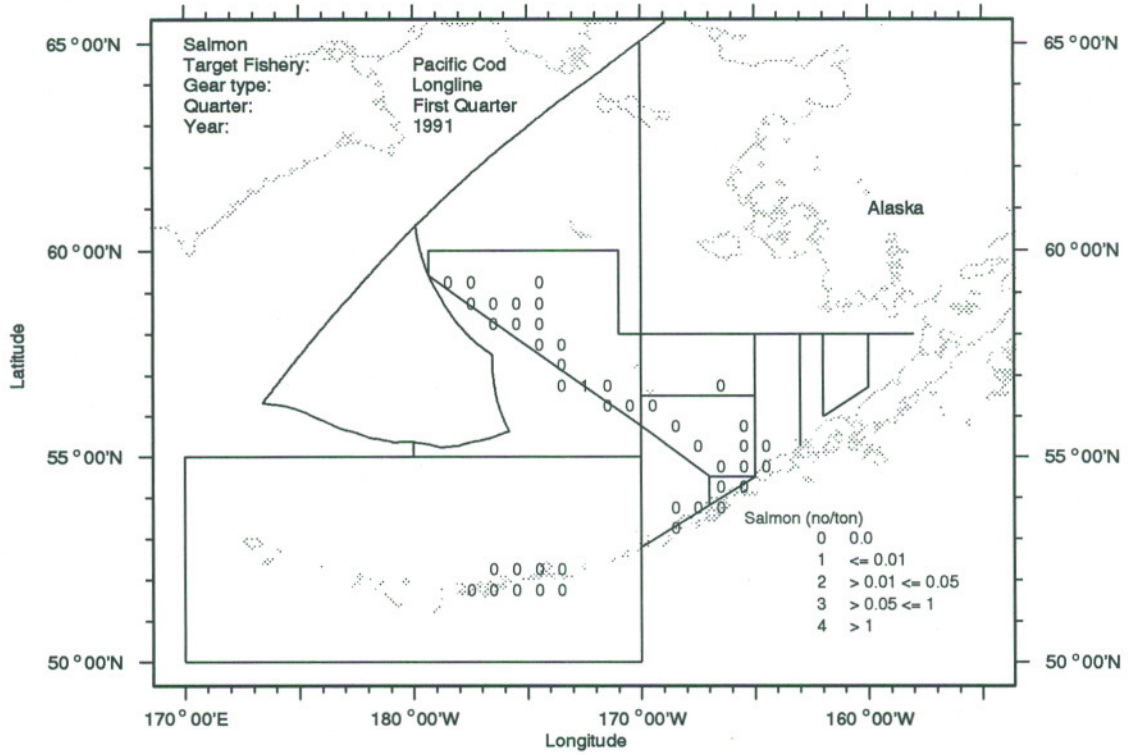


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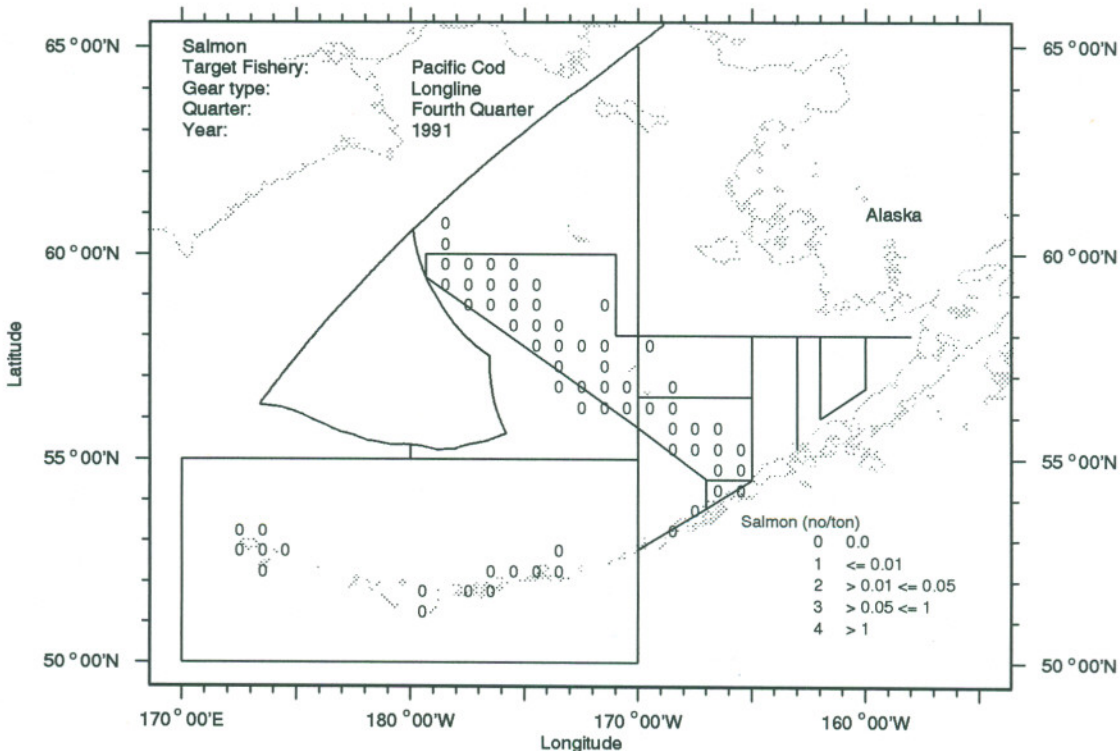
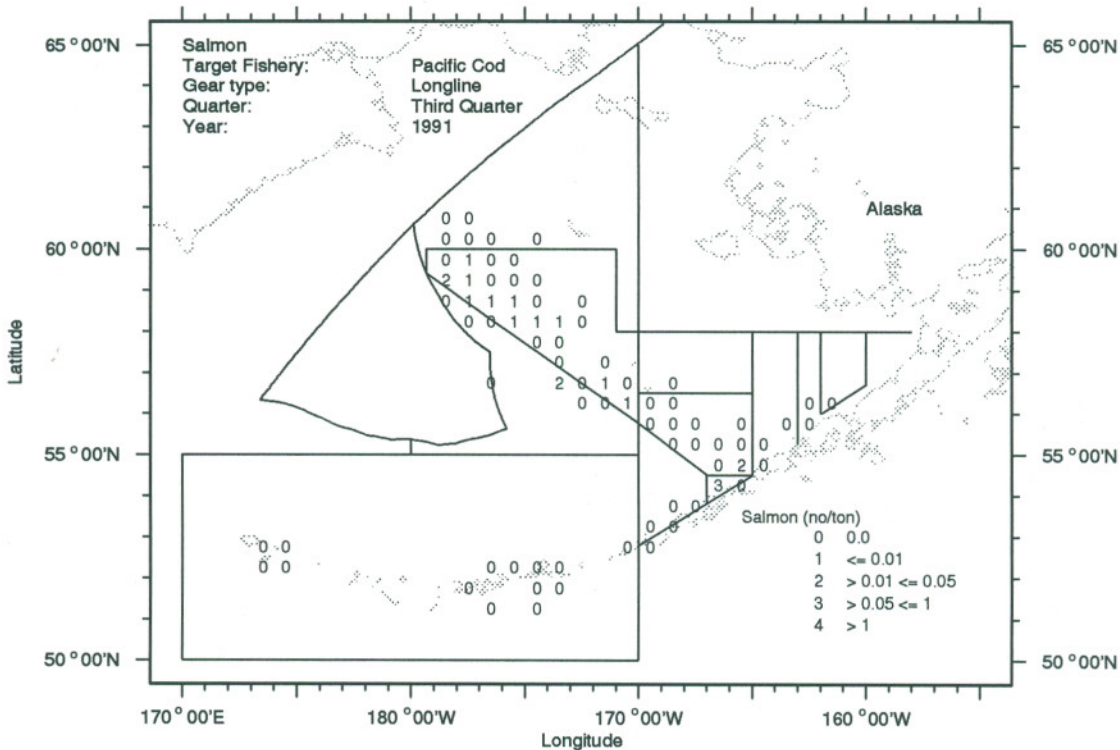


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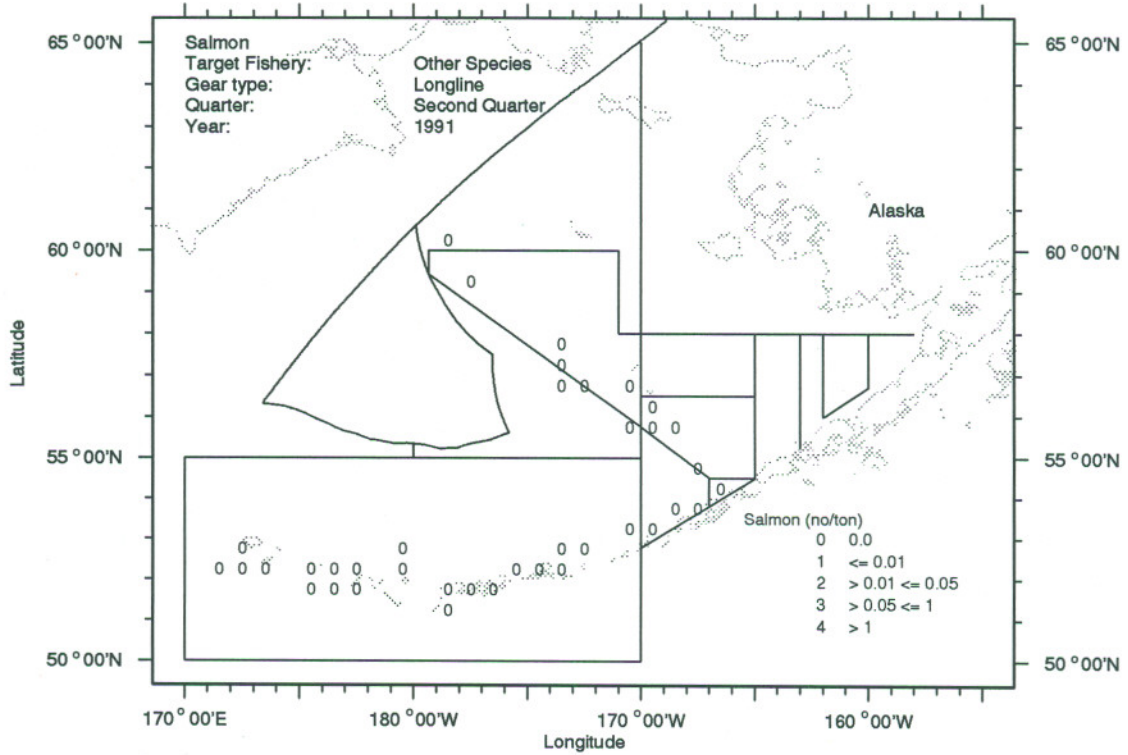
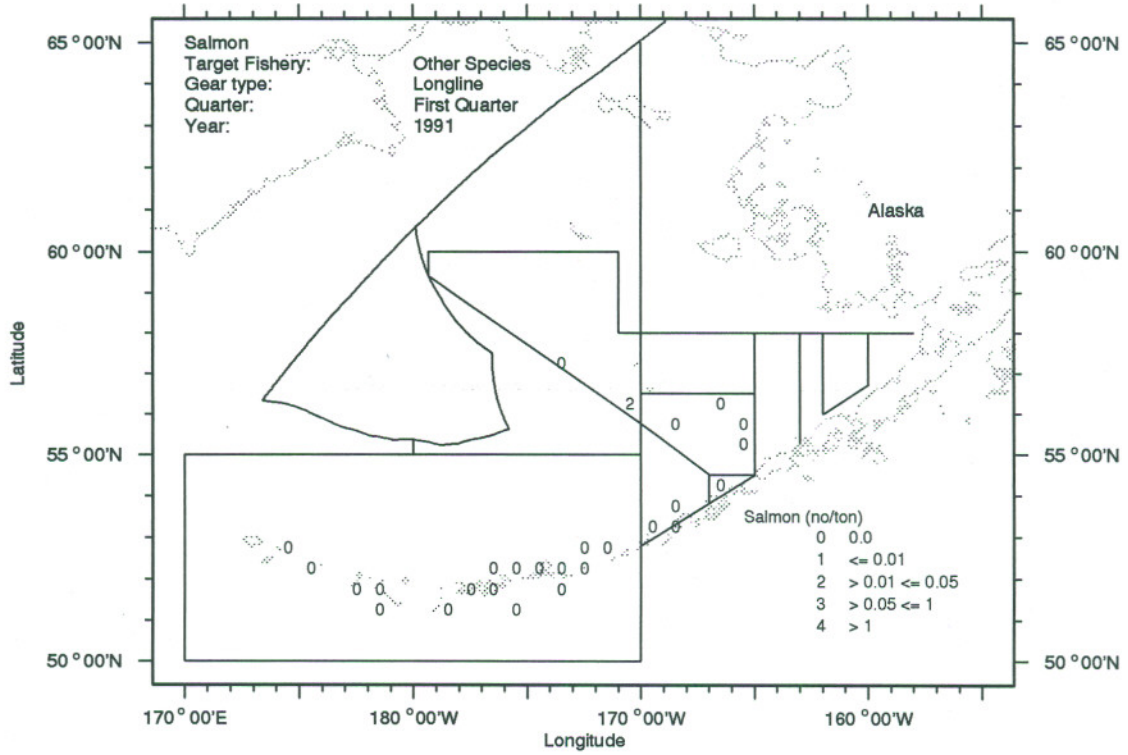


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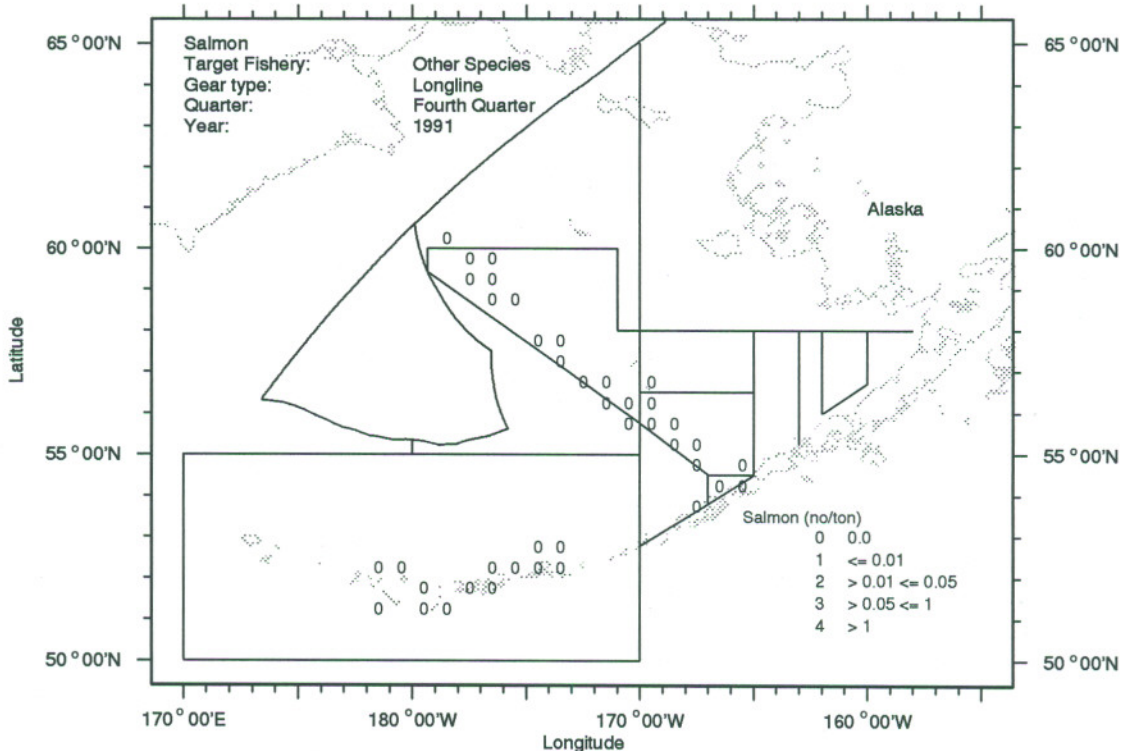
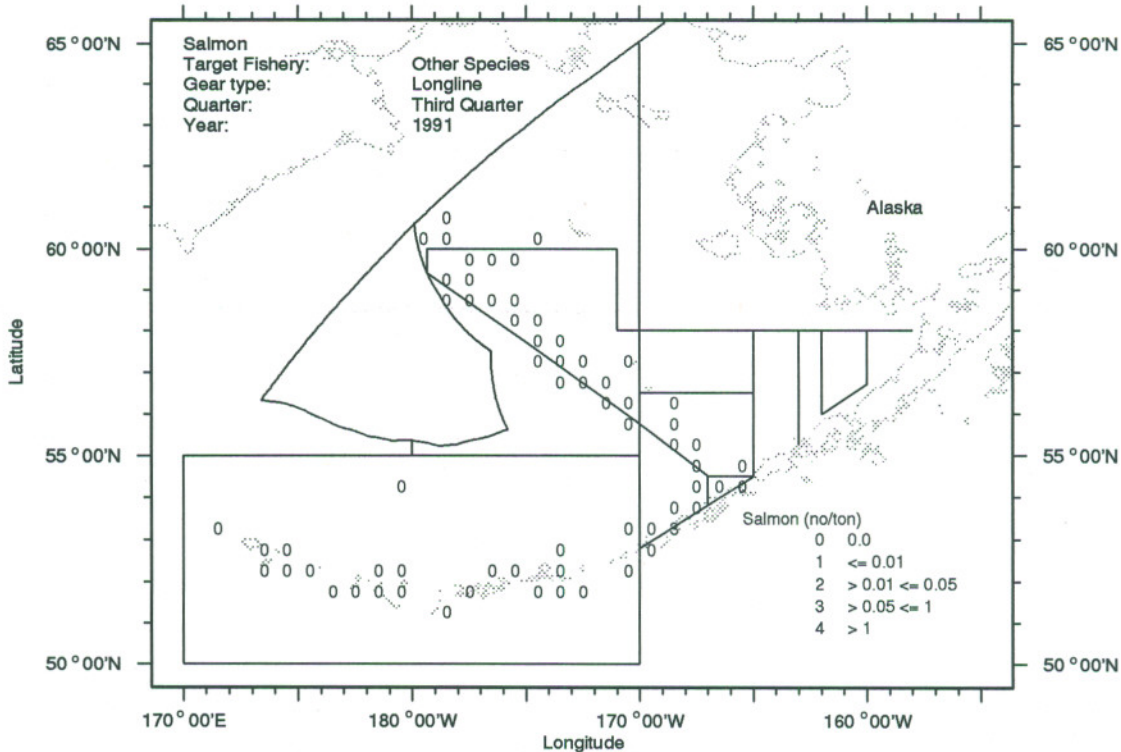


Figure 3.--Continued.

Table 12.--Estimated bycatch of Pacific salmon (by number of fish) by U.S. domestic groundfish vessels in the Bering Sea and Aleutian Islands region by species, NPFMC area, and gear type, 1991. (Dashes indicate area not fished.)

Gear type	Chinook salmon (numbers)												Total
	Area 511	Area 512	Area 513	Area 514	Area 515	Area 516	Area 517	Area 518	Area 519	Area 521	Area 522	Area 540	
Trawl	1,006	0	134	550	515	15	32,746	2,756	2,940	5,264	868	2,020	48,814
Longline	0	0	0	0	0	0	0	0	0	54	5	0	59
Pot	0	--	0	0	0	0	0	0	0	0	0	0	0
Total	1,006	0	134	550	515	15	32,746	2,756	2,940	5,318	873	2,020	48,873
Percent by area	2.1%	0.0%	0.3%	1.1%	1.1%	<0.1%	67.0%	5.6%	6.0%	10.9%	1.8%	4.1%	

Gear type	"Other" salmon* (numbers)												Total
	Area 511	Area 512	Area 513	Area 514	Area 515	Area 516	Area 517	Area 518	Area 519	Area 521	Area 522	Area 540	
Trawl	6,500	0	107	1,019	250	1	15,591	52	2,790	3,525	114	259	30,208
Longline	0	0	0	0	0	0	8	2	0	42	1	0	53
Pot	0	--	0	0	0	0	0	0	0	0	0	0	0
Total	6,500	0	107	1,019	250	1	15,599	54	2,790	3,567	115	259	30,261
Percent by area	21.5%	0.0%	0.4%	3.4%	0.8%	<0.1%	51.5%	0.2%	9.2%	11.8%	0.4%	0.9%	

Gear type	Total salmon (numbers)												Total
	Area 511	Area 512	Area 513	Area 514	Area 515	Area 516	Area 517	Area 518	Area 519	Area 521	Area 522	Area 540	
Trawl	7,506	0	241	1,569	765	16	48,337	2,808	5,730	8,789	982	2,279	79,022
Longline	0	0	0	--	0	0	8	2	0	96	6	0	112
Pot	0	--	0	--	0	0	0	0	0	0	0	0	0
Total	7,506	0	241	1,569	765	16	48,345	2,810	5,730	8,885	988	2,279	79,134
Percent by area	9.5%	0.0%	0.3%	2.0%	1.0%	<0.1%	61.1%	3.6%	7.2%	11.2%	1.2%	2.9%	

*Species in this group include chum, coho, sockeye, and pink salmon.

Table 13.--U.S. domestic groundfish catch (in metric tons (t)) and Pacific salmon bycatch (in numbers) by target fishery, NPFMC zone , and species in the Bering Sea and Aleutian Islands region, 1991.

Fishery	Gear	Zone	Groundfish catch	Pacific salmon					
				Chinook	Other	Total salmon	Per t of groundfish	% within zone	% of total salmon catch
Atka mackerel	Trawl	1	nf	nf	nf	nf	nf	nf	nf
		2	94.95	0	0	0	0.000	0.0%	0.0%
		3	29,879.73	127	16	143	0.005	1.0%	0.2%
		Total	29,974.68	127	16	143	0.005		0.2%
Pacific cod	Longline	1	70.60	0	0	0	0.000	0.0%	0.0%
		2	70,373.46	54	50	104	0.001	0.2%	0.1%
		3	13,612.25	5	2	7	0.001	0.0%	0.0%
		Total	84,056.31	59	52	111	0.001		0.1%
Pacific cod	Pot	1	858.81	0	0	0	0.000	0.0%	0.0%
		2	426.68	0	0	0	0.000	0.0%	0.0%
		3	5,433.42	0	0	0	0.000	0.0%	0.0%
		Total	6,718.91	0	0	0	0.000		0.0%
Pacific cod	Trawl	1	16,171.60	104	0	104	0.006	1.4%	0.1%
		2	79,496.71	2,666	47	2,713	0.034	4.7%	3.4%
		3	20,439.79	1,511	5	1,516	0.074	10.7%	1.9%
		Total	116,108.10	4,281	52	4,333	0.037		5.5%
Other Flatfish	Trawl	1	4,148.21	3	3	6	0.001	0.1%	0.0%
		2	34,231.40	8	64	72	0.002	0.1%	0.1%
		3	121,068.32	551	1,020	1,571	0.013	11.1%	2.0%
		Total	159,447.93	562	1,087	1,649	0.010		2.1%
Rockfish	Longline	1	nf	nf	nf	nf	nf	nf	nf
		2	0.10	0	0	0	0.000	0.0%	0.0%
		3	171.57	0	0	0	0.000	0.0%	0.0%
		Total	171.67	0	0	0	0.000		0.0%
Rockfish	Trawl	1	0.78	0	0	0	0.000	0.0%	0.0%
		2	3,224.96	306	0	306	0.095	0.5%	0.4%
		3	3,220.02	8	0	8	0.002	0.1%	0.0%
		Total	6,445.76	314	0	314	0.049		0.4%
Other	Longline	1	2.82	0	0	0	0.000	0.0%	0.0%
		2	547.00	0	0	0	0.000	0.0%	0.0%
		3	127.76	0	0	0	0.000	0.0%	0.0%
		Total	677.58	0	0	0	0.000		0.0%
Other	Trawl	1	196.61	8	0	8	0.041	0.1%	0.0%
		2	2,396.55	1,320	0	1,320	0.551	2.3%	1.7%
		3	65.11	9	0	9	0.138	0.1%	0.0%
		Total	2,658.27	1,337	0	1,337	0.503		1.7%
Pollock midwater	Trawl	1	71,279.08	700	4,026	4,726	0.066	62.8%	6.0%
		2	705,769.76	28,457	16,422	44,879	0.064	78.1%	56.7%
		3	539,335.46	7,056	3,154	10,210	0.019	72.2%	12.9%
		Total	1,316,384.30	36,213	23,602	59,815	0.045		75.6%
Pollock bottom	Trawl	1	40,670.57	118	2,472	2,590	0.064	34.4%	3.3%
		2	258,828.21	4,367	2,596	6,963	0.027	12.1%	8.8%
		3	18,300.26	210	286	496	0.027	3.5%	0.6%
		Total	317,799.04	4,695	5,354	10,049	0.032		12.7%
Rock sole	Trawl	1	45,337.10	87	0	87	0.002	1.2%	0.1%
		2	15,483.92	712	0	712	0.046	1.2%	0.9%
		3	2,692.53	5	0	5	0.002	0.0%	0.0%
		Total	63,513.55	804	0	804	0.013		1.0%

Table 13.--Continued.

Fishery	Gear	Zone	Groundfish catch	Pacific salmon					
				Chinook	Other	Total salmon	Per t of groundfish	% within zone	% of total salmon catch
Sablefish	Longline	1	24.21	0	0	0	0.000	0.0%	0.0%
		2	294.96	0	0	0	0.000	0.0%	0.0%
		3	3,219.19	0	0	0	0.000	0.0%	0.0%
		Total	3,538.36	0	0	0	0.000		0.0%
Sablefish	Pot	1	nf	nf	nf	nf	nf	nf	nf
		2	0.03	0	0	0	0.000	0.0%	0.0%
		3	0.04	0	0	0	0.000	0.0%	0.0%
		Total	0.07	0	0	0	0.000		0.0%
Sablefish	Trawl	1	nf	nf	nf	nf	nf	nf	nf
		2	nf	nf	nf	nf	nf	nf	nf
		3	27.98	0	0	0	0.000	0.0%	0.0%
		Total	27.98	0	0	0	0.000		0.0%
Turbot	Longline	1	nf	nf	nf	nf	nf	nf	nf
		2	249.96	0	0	0	0.000	0.0%	0.0%
		3	981.44	0	1	1	0.001	0.0%	0.0%
		Total	1,231.40	0	1	1	0.001		0.0%
Turbot	Pot	1	nf	nf	nf	nf	nf	nf	nf
		2	nf	nf	nf	nf	nf	nf	nf
		3	0.22	0	0	0	0.000	0.0%	0.0%
		Total	0.22	0	0	0	0.000		0.0%
Turbot	Trawl	1	nf	nf	nf	nf	nf	nf	nf
		2	2,064.91	44	5	49	0.024	0.1%	0.1%
		3	5,565.60	26	0	26	0.005	0.2%	0.0%
		Total	7,630.51	70	5	75	0.010		0.1%
Arrowtooth	Longline	1	nf	nf	nf	nf	nf	nf	nf
		2	19.12	0	0	0	0.000	0.0%	0.0%
		3	25.43	0	0	0	0.000	0.0%	0.0%
		Total	44.55	0	0	0	0.000		0.0%
Arrowtooth	Pot	1	nf	nf	nf	nf	nf	nf	nf
		2	0.14	0	0	0	0.000	0.0%	0.0%
		3	nf	nf	nf	nf	nf	nf	nf
		Total	0.14	0	0	0	0.000		0.0%
Arrowtooth	Trawl	1	304.90	1	0	1	0.003	0.0%	0.0%
		2	4,302.46	264	89	353	0.082	0.6%	0.4%
		3	5,783.45	146	3	149	0.026	1.1%	0.2%
		Total	10,390.81	411	92	503	0.048		0.6%
Total		1	179,065.29	1,021	6,501	7,522	0.042		9.5%
		2	1,177,805.28	38,198	19,273	57,471	0.049		72.6%
		3	769,949.57	9,654	4,487	14,141	0.018		17.9%
		Total	2,126,820.14	48,873	30,261	79,134	0.037		

Table 14.--Biological data on the bycatch of Pacific salmon in U.S. domestic groundfish fisheries in the Bering Sea and Aleutian Islands region, 1991.

Species	Percent by species	Sex	Sex composition	Average weight (kg)	Average length (cm)
Chinook	61.8%	Male	45.7	2.83	57.9
		Female	54.3	3.03	59.3
Chum	37.5%	Male	52.4	2.44	55.9
		Female	47.6	2.29	55.4
Coho	0.5%	Male	63.2	3.29	63.2
		Female	36.8	3.45	61.1
Sockeye	0.1%	Male	45.7	2.80	58.7
		Female	54.3	2.75	57.8
Pink	0.1%	Male	75.0	1.09	42.3
		Female	25.0	0.73	39.5
Steelhead	<0.1%	Male	100.0	5.40	71.0

Table 15.-- Monthly bycatch rates (kg/t) and average weights (kg) of Pacific halibut and number of hauls sampled in the domestic

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target																		
Ja	22.034	0.70	26	--	--	--	4.112	0.58	65	--	--	--	12.749	0.60	143	47.931	1.88	4
Fe	23.736	0.65	426	--	--	--	10.654	0.89	61	--	--	--	6.395	0.70	123	68.128	0.98	15
Mr	21.083	0.75	152	--	--	--	4.689	0.82	6	--	--	--	--	--	--	2.475	0.40	2
Ap	25.560	0.72	27	--	--	--	26.998	1.56	13	ns	ns	ns	--	--	--	21.746	3.02	2
My	2.392	1.15	128	0	0	5	19.866	1.05	232	3.548	0.87	889	1.542	0.53	4	12.947	1.21	1
Jn	73.515	0.65	8	--	--	--	7.315	1.38	95	2.381	1.34	638	--	--	--	ns	ns	ns
Jl	0.000	0.00	3	--	--	--	2.367	2.62	30	8.884	1.32	566	ns	ns	ns	ns	ns	ns
Au	2.650	1.24	9	--	--	--	1.297	3.94	172	11.275	1.30	737	2.195	0.50	1	--	--	--
Se	3.279	2.35	2	--	--	--	1.608	7.15	384	7.092	1.91	733	--	--	--	--	--	--
Oc	--	--	--	--	--	--	2.902	7.42	217	3.027	2.53	182	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	20.160	0.67	781	0	0	5	6.303	1.24	1275	6.219	1.34	3745	9.560	0.63	271	60.871	1.00	24
Bottom trawl - Pollock target																		
Ja	10.704	0.87	194	--	--	--	5.239	1.25	5	--	--	--	7.682	0.53	12	25.379	1.08	82
Fe	14.880	0.68	215	--	--	--	7.740	0.52	1	--	--	--	6.586	0.88	10	35.595	1.29	26
Mr	12.589	0.84	55	--	--	--	2.275	0.54	9	--	--	--	--	--	--	15.147	0.90	4
Ap	8.099	0.80	112	--	--	--	10.336	2.23	88	--	--	--	--	--	--	9.433	1.00	111
My	8.004	1.19	6	--	--	--	22.489	0.97	71	22.400	1.81	5	0.000	0.00	1	3.209	1.77	9
Jn	0.161	3.20	3	--	--	--	6.631	1.38	16	--	--	--	--	--	--	0.113	2.84	9
Jl	ns	ns	ns	--	--	--	5.299	7.35	39	14.547	1.60	3	--	--	--	0.600	6.92	6
Au	--	--	--	--	--	--	0.000	0.00	5	7.560	12.15	10	--	--	--	0.000	0.00	18
Se	ns	ns	ns	--	--	--	0.000	0.00	14	1.763	3.90	6	--	--	--	7.954	3.60	2
Oc	--	--	--	--	--	--	0.000	0.00	5	4.960	8.89	7	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	12.319	0.75	585	--	--	--	10.059	1.42	253	9.092	2.45	31	6.957	0.68	23	14.069	1.12	267
Bottom trawl - Pacific cod target																		
Ja	21.889	0.84	105	--	--	--	16.607	0.70	2	--	--	--	9.308	1.40	1	30.574	0.89	334
Fe	20.809	0.71	54	--	--	--	29.303	0.98	1	--	--	--	3.354	1.34	1	20.427	0.78	272
Mr	12.082	0.67	5	--	--	--	9.812	0.66	6	--	--	--	--	--	--	15.651	0.84	27
Ap	12.302	0.85	200	--	--	--	23.465	1.87	34	--	--	--	--	--	--	21.713	1.07	366
My	2.074	0.80	1	--	--	--	8.250	1.03	8	0.000	0.00	1	--	--	--	20.898	2.30	1
Jn	27.638	2.35	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	--	--	--	51.363	4.07	2	--	--	--	--	--	--
Au	--	--	--	--	--	--	--	--	--	38.513	0.89	1	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	0.000	0.00	1	--	--	--	50.722	1.15	1
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	16.533	0.81	366	--	--	--	17.315	1.45	51	22.507	2.35	5	7.266	1.39	2	24.173	0.90	1001

groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, and NPFMC area, 1991.
 ("Rate" = no./t of groundfish; "Wt" = average weight; "Hl" = no. of hauls; "ns" = no observer sampling; " -- " = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl
Bottom trawl - Flatfish target															
Ja	--	--	--	--	--	--	8.067	0.56	21	--	--	--	--	--	--
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	ns	ns	ns	5.184	0.47	8	--	--	--	--	--	--
Ap	--	--	--	--	--	--	10.860	0.93	31	21.319	1.25	3	ns	ns	ns
My	--	--	--	--	--	--	8.260	1.82	69	1.829	0.43	80	0.000	0.00	1
Jn	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--
Jl	--	--	--	--	--	--	2.156	4.80	8	--	--	--	--	--	--
Au	--	--	--	--	--	--	0.167	1.20	26	--	--	--	--	--	--
Se	--	--	--	--	--	--	ns	ns	ns	0.000	0.00	2	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	--	--	--	ns	ns	ns	7.779	1.17	163	2.307	0.51	85	0.000	0.00	1
Bottom trawl - Pollock target															
Ja	ns	ns	ns	18.799	1.36	5	ns	ns	ns	--	--	--	35.125	7.70	2
Fe	16.486	2.78	2	3.744	1.50	11	1.649	2.08	4	--	--	--	4.563	4.35	15
Mr	--	--	--	23.923	1.18	8	1.563	0.85	11	0.000	0.00	1	1.249	5.36	4
Ap	--	--	--	6.429	1.23	17	4.288	1.16	267	3.798	1.20	9	0.000	0.00	1
My	0.000	0.00	1	20.915	1.65	12	20.237	2.36	93	35.177	4.55	4	9.035	2.26	8
Jn	--	--	--	0.000	0.00	1	3.496	1.85	6	--	--	--	--	--	--
Jl	0.000	0.00	1	0.000	0.00	2	2.494	8.80	212	0.000	0.00	4	15.882	2.82	2
Au	0.000	0.00	1	0.183	7.08	4	1.159	5.94	155	0.000	0.00	10	--	--	--
Se	--	--	--	0.688	1.95	5	1.984	3.67	11	0.000	0.00	4	--	--	--
Oc	--	--	--	0.000	0.00	1	--	--	--	20.875	5.09	1	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	7.455	2.78	5	7.080	1.38	66	3.308	2.33	759	0.757	1.96	33	8.258	5.00	32
Bottom trawl - Pacific cod target															
Ja	ns	ns	ns	28.457	0.89	33	--	--	--	--	--	--	1.576	2.77	4
Fe	6.969	1.50	6	28.683	0.81	125	5.926	1.01	2	--	--	--	2.147	8.35	7
Mr	24.019	2.05	9	18.836	0.93	51	5.103	1.17	22	3.098	3.32	7	0.859	4.14	25
Ap	12.440	1.84	57	32.056	1.34	90	4.277	1.15	608	7.266	1.01	79	5.584	5.63	28
My	42.201	2.22	7	60.841	1.38	29	54.541	1.91	32	24.023	1.12	5	18.978	6.97	9
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	17.250	3.25	22	--	--	--	10.130	5.97	33
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	14.330	1.90	79	28.650	0.97	328	5.917	1.33	686	7.380	1.06	91	4.446	5.79	106

Table 15.-- Monthly bycatch rates (kg/t) and average weights (kg) of Pacific halibut and number of hauls sampled in the domestic

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Rockfish target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	16.227	0.64	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Ap	--	--	--	--	--	--	21.461	2.38	3	--	--	--	--	--	--	37.102	3.84	11
My	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--	31.776	8.50	1
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	16.227	0.64	2	--	--	--	21.461	2.38	3	--	--	--	--	--	--	33.038	3.94	14
Bottom trawl - Other species target																		
Ja	15.680	0.79	3	--	--	--	0.607	1.13	1	--	--	--	--	--	--	56.890	1.25	20
Fe	61.315	0.70	5	--	--	--	27.631	0.67	3	--	--	--	--	--	--	169.827	0.87	3
Mr	11.537	1.15	3	--	--	--	43.957	0.56	2	--	--	--	--	--	--	27.768	1.20	12
Ap	21.813	0.54	6	--	--	--	43.303	1.79	5	--	--	--	--	--	--	116.033	2.22	17
My	9.854	1.42	5	--	--	--	8.888	1.05	4	0.000	0.00	1	--	--	--	103.848	7.69	142
Jn	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	12.514	6.41	12
Jl	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	1
Au	--	--	--	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--
Se	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.803	6.47	29
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	32.860	14.35	2
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	22.660	0.73	22	--	--	--	30.214	0.91	16	0.000	0.00	2	--	--	--	83.541	4.52	238

groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, and NPFMC area, 1991 (Continued).
 ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl -Rockfish target															
Ja	--	--	--	--	--	--	--	--	--	--	--	--	1.393	5.96	6
Fe	2.583	1.00	1	--	--	--	--	--	--	--	--	--	4.062	9.57	2
Mr	--	--	--	14.989	1.75	1	8.853	2.86	6	0.411	0.50	2	11.221	6.81	10
Ap	8.038	4.94	12	--	--	--	11.216	1.48	134	17.716	2.35	24	17.199	177.35	9
My	--	--	--	--	--	--	18.075	1.38	6	--	--	--	4.512	5.73	94
Jn	--	--	--	--	--	--	--	--	--	--	--	--	1.694	4.86	62
Jl	1.957	8.98	2	--	--	--	--	--	--	--	--	--	55.029	5.45	4
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	5.128	22.50	2	--	--	--	0.000	0.00	10	0.000	0.00	4	--	--	--
No	--	--	--	--	--	--	0.000	0.00	13	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	7.515	4.89	17	14.989	1.75	1	10.946	1.49	169	16.112	2.34	30	6.277	8.98	187
Bottom trawl - Other species target															
Ja	2.152	2.00	2	33.793	1.36	4	19.025	1.03	1	--	--	--	1.474	4.64	106
Fe	--	--	--	60.735	0.86	17	--	--	--	--	--	--	2.977	7.78	65
Mr	0.900	3.78	15	12.609	1.34	82	17.048	1.89	44	16.359	2.46	27	1.248	10.38	349
Ap	7.322	2.67	14	45.492	2.01	12	34.687	2.51	96	26.346	2.12	53	1.360	4.90	8
My	44.647	13.56	71	43.729	6.32	54	11.178	1.83	47	124.993	9.36	18	4.064	9.22	259
Jn	--	--	--	--	--	--	1.200	0.81	1	--	--	--	7.562	7.48	3
Jl	0.000	0.00	2	--	--	--	0.789	1.82	4	0.000	0.00	1	590.273	5.67	1
Au	--	--	--	--	--	--	0.000	0.00	18	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	55.878	12.37	18	156.184	17.95	27	66.836	8.58	24	12.164	5.25	21	--	--	--
No	0.000	0.00	1	77.462	14.49	11	2.640	3.40	12	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	26.663	11.72	123	30.772	1.85	207	28.727	2.90	247	25.285	3.48	120	1.818	7.73	791

Table 15.-- Monthly bycatch rates (kg/t) and average weights (kg) of Pacific halibut and number of hauls sampled in the domestic

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target																		
Ja	0.239	1.82	282	--	--	--	0.000	0.00	1	0.000	0.00	1	2.665	0.50	2	0.256	3.82	465
Fe	0.064	0.87	300	--	--	--	--	--	--	--	--	--	2.272	0.80	1	0.205	1.44	191
Mr	9.783	0.67	14	--	--	--	0.000	0.00	1	--	--	--	--	--	--	19.704	0.85	60
Ap	9.037	0.77	22	--	--	--	--	--	--	--	--	--	--	--	--	10.837	0.90	6
My	22.973	1.20	69	--	--	--	6.834	1.41	7	--	--	--	--	--	--	0.089	2.58	23
Jn	3.061	2.00	235	--	--	--	0.059	2.86	431	--	--	--	--	--	--	0.322	3.71	839
Jl	1.826	2.85	46	--	--	--	1.029	9.36	432	--	--	--	--	--	--	0.190	6.40	405
Au	2.200	3.29	92	--	--	--	0.523	8.80	7	--	--	--	--	--	--	0.431	3.47	943
Se	1.700	2.12	8	--	--	--	--	--	--	--	--	--	--	--	--	1.154	5.11	78
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	1.680	1.33	1068	--	--	--	0.583	7.51	879	0.000	0.00	1	2.610	0.52	3	0.497	1.70	3010
Pelagic trawl - Other species target																		
Ja	12.480	2.07	2	--	--	--	7.683	0.75	21	--	--	--	7.099	0.42	5	9.293	0.83	3
Fe	31.468	0.54	26	--	--	--	ns	ns	ns	--	--	--	6.611	0.57	26	24.866	0.83	131
Mr	9.603	0.52	12	--	--	--	ns	ns	ns	--	--	--	--	--	--	29.416	0.93	302
Ap	17.546	0.92	31	--	--	--	--	--	--	--	--	--	--	--	--	19.784	0.92	27
My	34.757	1.39	47	--	--	--	7.755	1.00	8	0.000	0.00	1	--	--	--	22.905	2.04	4
Jn	3.493	1.11	14	--	--	--	12.293	1.35	2	ns	ns	ns	--	--	--	2.686	3.38	7
Jl	13.359	4.62	4	--	--	--	0.000	0.00	2	ns	ns	ns	--	--	--	2.604	4.01	5
Au	12.683	2.78	10	--	--	--	ns	ns	ns	--	--	--	--	--	--	19.452	11.79	35
Se	0.000	0.00	1	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	0.000	0.00	3
Oc	--	--	--	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	24.465	0.85	147	--	--	--	6.569	0.82	33	0.000	0.00	1	6.667	0.54	31	25.823	0.94	517
Pots - All targets																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	0.000	0.00	1	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	3.792	9.69	4	--	--	--	0.000	0.00	1	--	--	--	--	--	--	50.781	5.89	45
Au	3.326	4.19	22	--	--	--	--	--	--	--	--	--	0.621	2.98	12	54.008	6.79	44
Se	4.125	6.03	9	--	--	--	--	--	--	ns	ns	ns	--	--	--	4.700	3.75	12
Oc	0.821	4.46	25	--	--	--	--	--	--	ns	ns	ns	0.000	0.00	5	5.362	3.54	12
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.788	3.88	8
De	0.817	2.28	11	--	--	--	--	--	--	--	--	--	--	--	--	3.065	5.65	30
Yr	2.123	4.46	72	--	--	--	0.000	0.00	1	ns	ns	ns	0.504	2.98	17	27.340	6.12	151

groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, and NPFMC area, 1991 (Continued).
 ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target															
Ja	0.000	3.40	1107	0.061	4.01	214	--	--	--	--	--	--	0.000	0.00	96
Fe	0.000	0.00	830	0.094	6.35	287	0.000	0.00	1	0.000	0.00	1	0.000	0.00	169
Mr	--	--	--	--	--	--	1.029	1.26	13	0.000	0.00	1	0.000	0.00	361
Ap	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--
My	--	--	--	17.533	1.30	1	0.201	1.90	73	ns	ns	ns	--	--	--
Jn	0.000	0.00	1	0.269	5.60	16	0.314	7.80	1278	0.104	1.69	43	--	--	--
Jl	0.000	0.00	2	0.607	1.43	15	0.420	5.03	1552	0.159	4.90	6	--	--	--
Au	--	--	--	0.219	2.91	225	1.203	5.78	2040	0.279	5.78	141	0.000	0.00	1
Se	--	--	--	0.426	1.63	16	1.502	5.91	164	0.016	3.77	12	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	3.40	1940	0.118	3.45	774	0.768	5.71	5122	0.237	5.12	204	0.000	0.00	627
Pelagic trawl - Other species target															
Ja	0.000	0.00	2	ns	ns	ns	10.384	0.64	10	--	--	--	ns	ns	ns
Fe	0.000	0.00	1	23.023	0.75	2	--	--	--	--	--	--	0.000	0.00	1
Mr	1.872	0.97	2	28.601	0.87	37	0.625	1.37	125	11.087	2.13	5	ns	ns	ns
Ap	--	--	--	--	--	--	0.876	1.44	13	--	--	--	--	--	--
My	ns	ns	ns	86.008	1.19	5	14.048	1.79	34	--	--	--	--	--	--
Jn	--	--	--	--	--	--	4.192	2.42	8	ns	ns	ns	--	--	--
Jl	--	--	--	0.000	0.00	1	0.424	2.55	6	--	--	--	--	--	--
Au	--	--	--	6.400	3.81	9	2.735	4.27	20	ns	ns	ns	--	--	--
Se	--	--	--	25.273	11.80	1	7.783	4.57	5	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.221	0.97	5	19.208	1.06	55	2.840	1.57	221	11.087	2.13	5	0.000	0.00	1
Pots - All targets															
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--
Mr	--	--	--	--	--	--	ns	ns	ns	--	--	--	ns	ns	ns
Ap	--	--	--	--	--	--	ns	ns	ns	--	--	--	ns	ns	ns
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	24.992	4.79	18	27.838	5.39	30	7.575	9.39	14	ns	ns	ns	2.294	5.74	40
Au	13.287	6.24	37	43.279	6.22	95	2.605	9.31	79	0.000	0.00	5	1.448	7.43	79
Se	11.385	4.79	6	6.313	4.66	67	--	--	--	--	--	--	1.600	8.96	127
Oc	74.954	6.28	2	9.050	4.21	75	--	--	--	--	--	--	2.695	8.58	76
No	187.112	6.44	5	1.748	4.48	47	--	--	--	--	--	--	0.000	0.00	31
De	--	--	--	5.215	5.05	22	--	--	--	--	--	--	0.000	0.00	20
Yr	28.760	6.04	68	18.380	5.63	336	3.891	9.35	93	0.000	0.00	5	1.548	7.57	373

Table 15.-- Monthly bycatch rates (kg/t) and average weights (kg) of Pacific halibut and number of hauls sampled in the domestic

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	310.855	6.66	2
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Jl	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Au	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	310.855	6.66	2
Longline - Pacific cod target																		
Ja	12.799	0.92	2	--	--	--	--	--	--	--	--	--	--	--	--	28.071	3.27	24
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.776	3.87	40
Mr	0.000	0.00	4	--	--	--	59.265	2.62	1	--	--	--	--	--	--	49.817	7.26	21
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	65.070	2.39	3
My	--	--	--	--	--	--	12.185	3.82	3	--	--	--	--	--	--	33.013	4.25	13
Jn	--	--	--	--	--	--	140.060	11.84	7	--	--	--	--	--	--	43.363	5.45	8
Jl	943.398	4.76	3	39	2	2	ns	ns	ns	--	--	24.081	4.30	5	89.694	5.93	84	
Au	518.521	3.29	2	--	--	--	0.000	0.00	1	ns	ns	ns	--	--	--	55.720	6.42	34
Se	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--	54.590	7.60	42
Oc	ns	ns	ns	--	--	--	ns	ns	ns	--	--	--	--	--	--	73.954	6.75	93
No	ns	ns	ns	--	--	--	18.712	2.41	1	--	--	--	--	--	--	87.281	5.42	173
De	--	--	--	--	--	--	21.179	3.96	1	--	--	--	--	--	--	87.112	3.26	145
Yr	166.323	4.00	11	39	2	2	47.187	8.05	14	ns	ns	ns	24.081	4.30	5	64.476	4.69	680
Longline - Other species target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	733.016	4.88	3
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	53.702	2.55	5
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	ns	ns	ns	--	--	--	149.186	6.26	7
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	49.202	15.15	5
Jl	ns	ns	ns	--	--	--	ns	ns	ns	--	--	--	--	--	--	16.888	10.91	14
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16.356	7.33	12
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	30.089	13.27	3
Oc	--	--	--	--	--	--	74.976	19.11	1	--	--	--	--	--	--	56.163	7.84	13
No	--	--	--	--	--	--	77.642	24.28	1	--	--	--	--	--	--	57.444	1.57	3
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Yr	ns	ns	ns	--	--	--	76.524	21.85	2	ns	ns	ns	--	--	--	56.213	5.77	65

groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, and NPFMC area, 1991 (Continued).
 ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target															
Ja	ns	ns	ns	--	--	--	--	--	--	--	--	--	ns	ns	ns
Fe	--	--	--	--	--	--	--	--	--	--	--	--	42.325	10.80	14
Mr	961.644	8.91	1	--	--	--	--	--	--	--	--	--	26.395	20.00	87
Ap	ns	ns	ns	--	--	--	ns	ns	ns	ns	ns	ns	4.394	5.48	64
My	--	--	--	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	28
Jn	217.262	20.22	1	--	--	--	--	--	--	--	--	--	13.254	14.99	7
Jl	20.079	17.24	2	ns	ns	ns	0.000	0.00	1	0.000	0.00	1	183.669	29.57	23
Au	ns	ns	ns	ns	ns	ns	0.000	0.00	2	0.000	0.00	5	38.582	8.93	18
Se	--	--	--	--	--	--	0.000	0.00	1	ns	ns	ns	0.537	12.64	22
Oc	--	--	--	148.499	5.63	3	0.000	0.00	1	--	--	--	14.553	7.29	28
No	--	--	--	58.218	7.20	1	--	--	--	--	--	--	68.941	12.98	23
De	--	--	--	--	--	--	--	--	--	--	--	--	51.260	13.08	23
Yr	239.286	11.50	4	133.124	5.72	4	0.000	0.00	5	0.000	0.00	6	33.795	15.46	337
Longline - Pacific cod target															
Ja	92.628	3.78	10	--	--	--	16.364	3.35	113	22.442	3.44	4	29.999	4.98	19
Fe	37.923	3.68	13	15.602	2.86	5	14.852	3.78	127	3.967	2.83	23	99.847	5.57	35
Mr	9.969	2.54	10	97.027	2.77	6	2.919	2.73	152	3.089	3.02	47	188.158	6.21	20
Ap	233.751	4.16	5	--	--	--	4.875	2.96	219	5.536	5.50	94	111.016	4.07	33
My	--	--	--	--	--	--	18.862	3.97	282	12.218	2.43	41	311.776	1.52	1
Jn	276.359	5.23	4	576.696	2.79	2	38.951	5.89	354	93.500	8.69	35	ns	ns	ns
Jl	1035.507	7.31	35	216.056	3.25	17	47.133	6.60	485	79.471	5.65	38	257.576	7.41	22
Au	679.237	10.40	25	153.335	3.58	24	30.617	6.70	618	34.669	6.29	49	120.681	8.77	26
Se	1171.839	6.63	3	321.659	3.40	18	26.173	7.04	597	35.489	4.79	32	80.098	5.96	11
Oc	980.543	21.31	10	193.300	3.60	38	48.039	8.72	685	31.300	6.18	41	157.592	7.90	69
No	265.265	3.62	6	74.734	2.44	1	46.041	5.55	260	14.570	5.13	53	60.688	5.92	95
De	62.087	3.43	10	105.200	1.61	9	29.241	5.11	223	20.790	2.72	21	39.588	4.44	20
Yr	461.541	7.80	131	179.207	3.12	120	28.420	5.90	4115	27.361	5.67	478	104.262	6.10	351
Longline - Other species target															
Ja	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	ns	ns	ns
Fe	57.028	5.02	3	1080.540	7.20	1	2.810	2.09	2	--	--	--	285.677	8.13	30
Mr	163.509	7.46	5	--	--	--	--	--	--	--	--	--	23.216	11.00	64
Ap	7557.631	4.84	1	ns	ns	ns	28.376	2.94	2	1.192	5.30	1	79.668	5.79	57
My	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	9
Jn	28.997	15.90	12	30.456	6.49	5	85.800	8.88	4	128.582	4.05	4	33.717	17.20	29
Jl	52.865	9.06	57	34.584	5.40	11	86.182	8.94	26	1.301	2.24	6	160.697	21.75	43
Au	73.910	12.33	18	18.976	7.43	15	21.487	8.97	34	141.622	9.09	17	17.057	5.92	26
Se	--	--	--	--	--	--	84.416	12.69	12	0.000	0.00	2	12.633	17.78	6
Oc	254.408	12.82	6	23.223	5.10	7	15.889	6.42	25	46.693	3.11	1	26.815	7.18	38
No	--	--	--	184.084	19.78	3	53.593	9.57	8	3.241	0.65	1	19.856	13.63	96
De	--	--	--	458.767	5.49	1	--	--	--	--	--	--	235.828	34.27	28
Yr	78.822	8.55	102	51.167	8.32	43	39.702	8.79	113	98.141	6.57	32	65.467	11.49	426

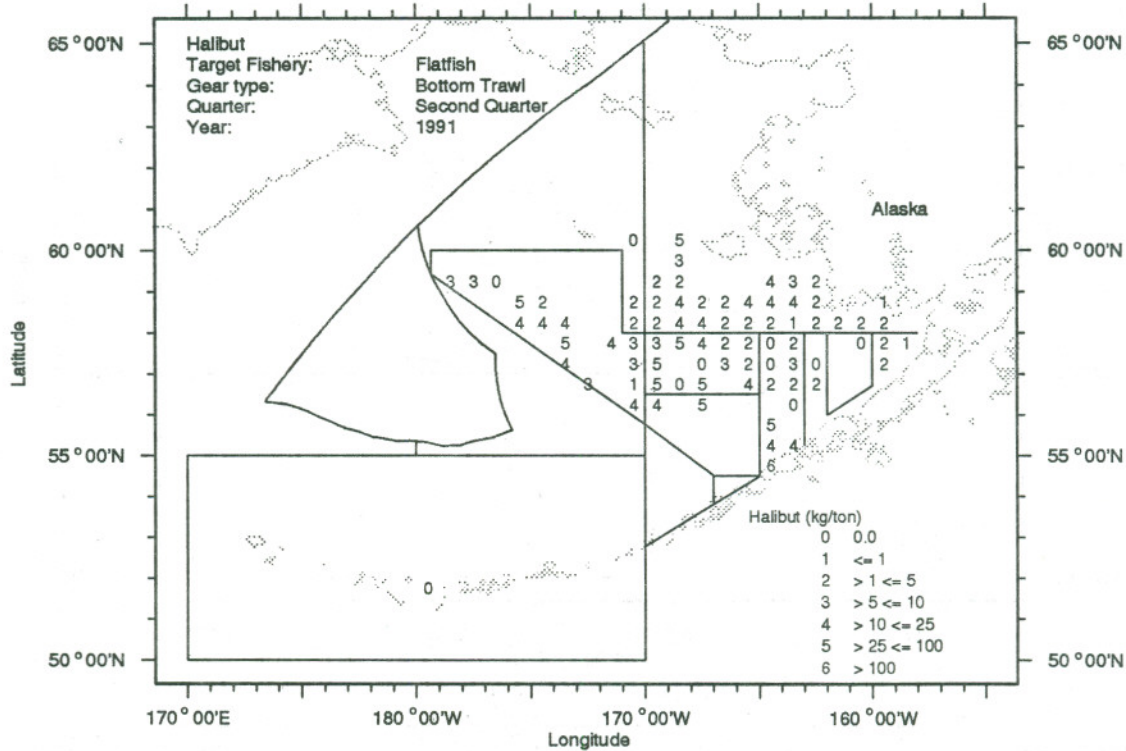
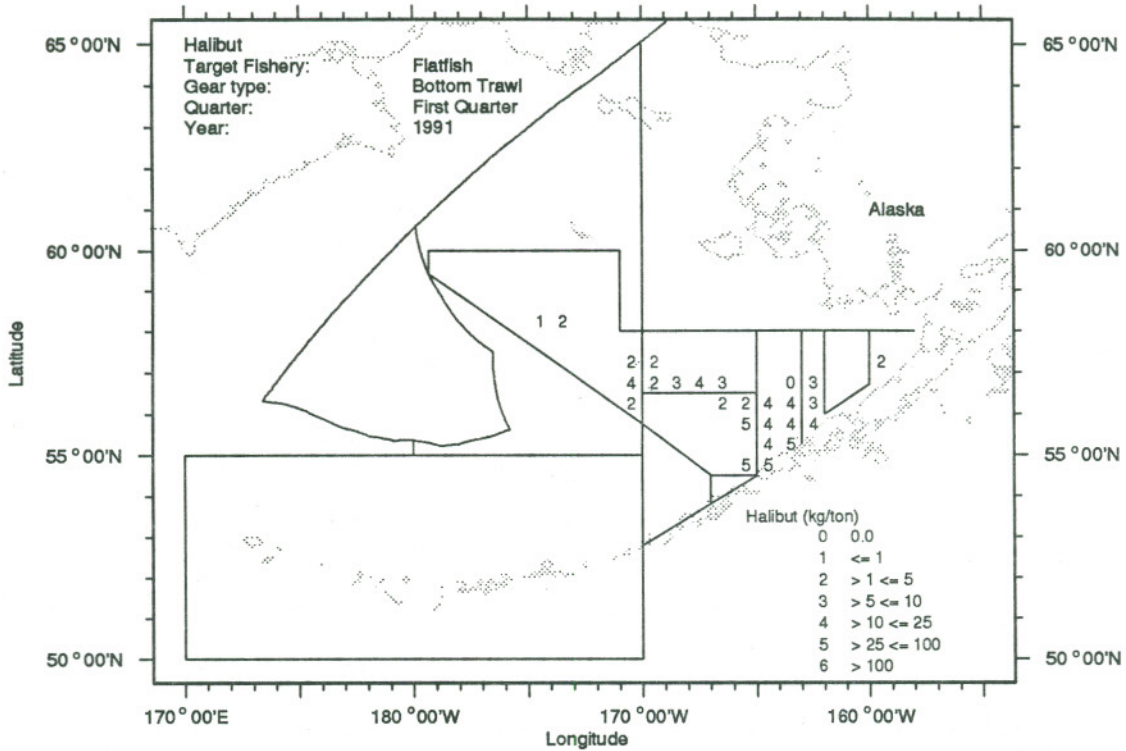


Figure 4.--Bycatch (kg/metric ton (t)) of Pacific halibut in the U.S. domestic groundfish fisheries by quarter, target fishery, gear type, and 1/2° latitude and 1° longitude areas in the Bering Sea/Aleutian Islands region, 1991.

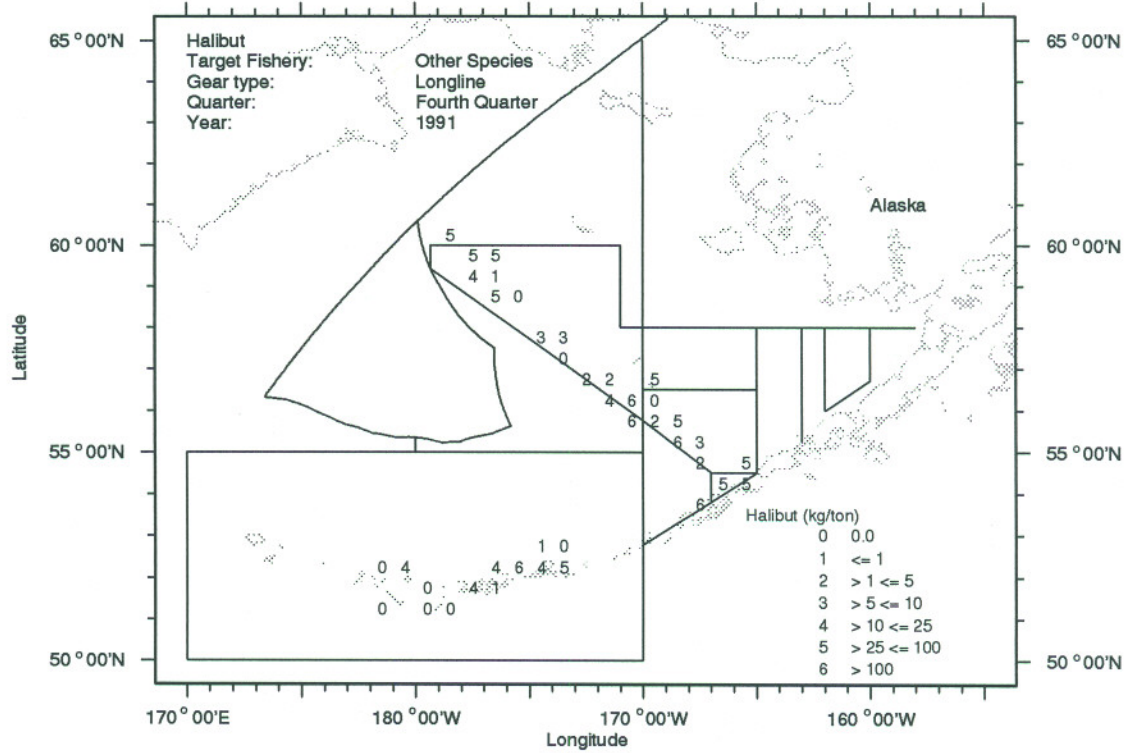
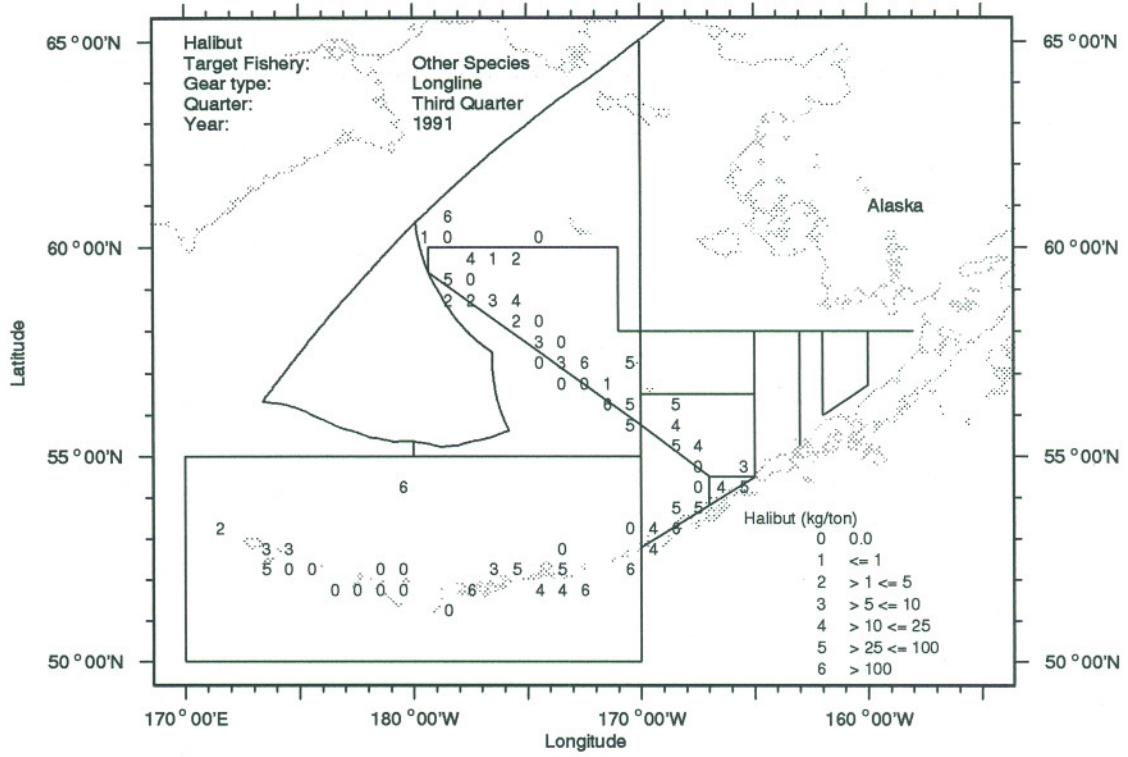


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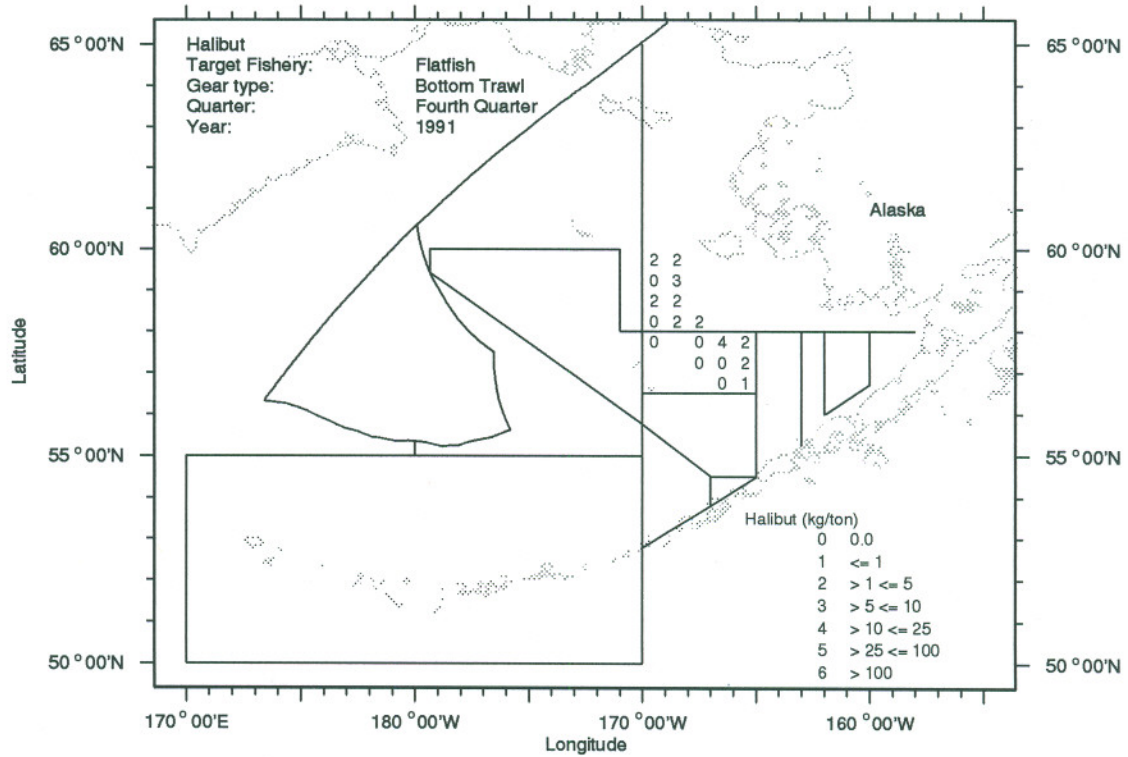
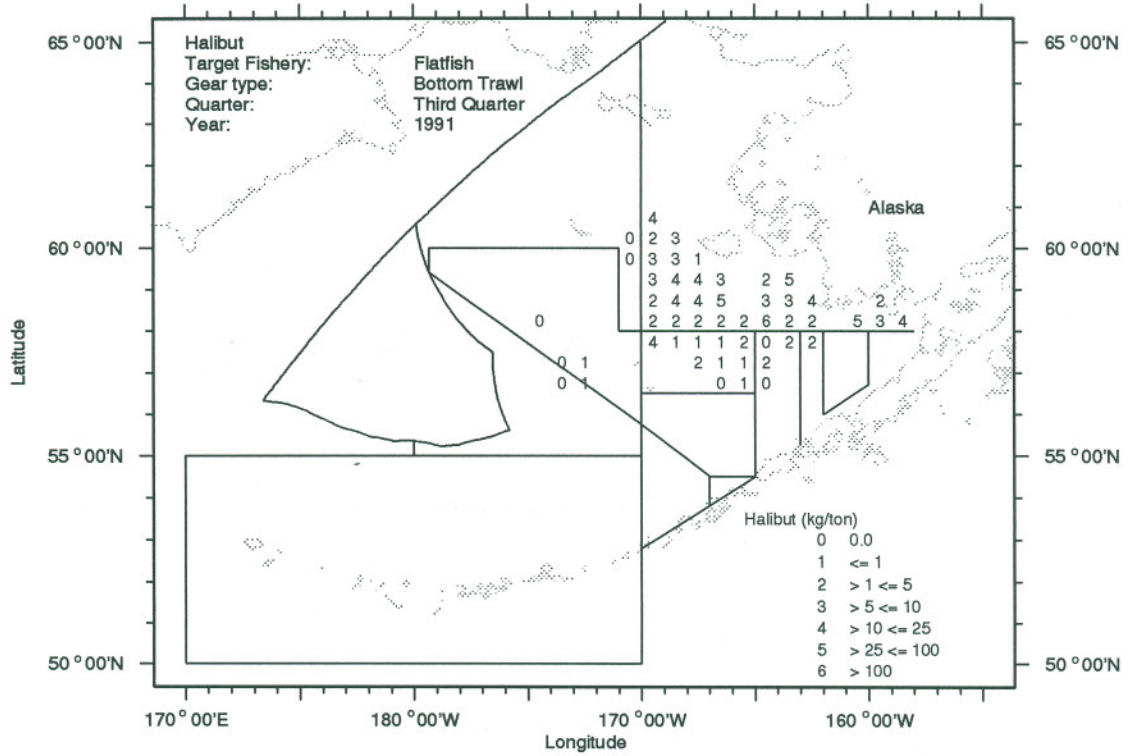


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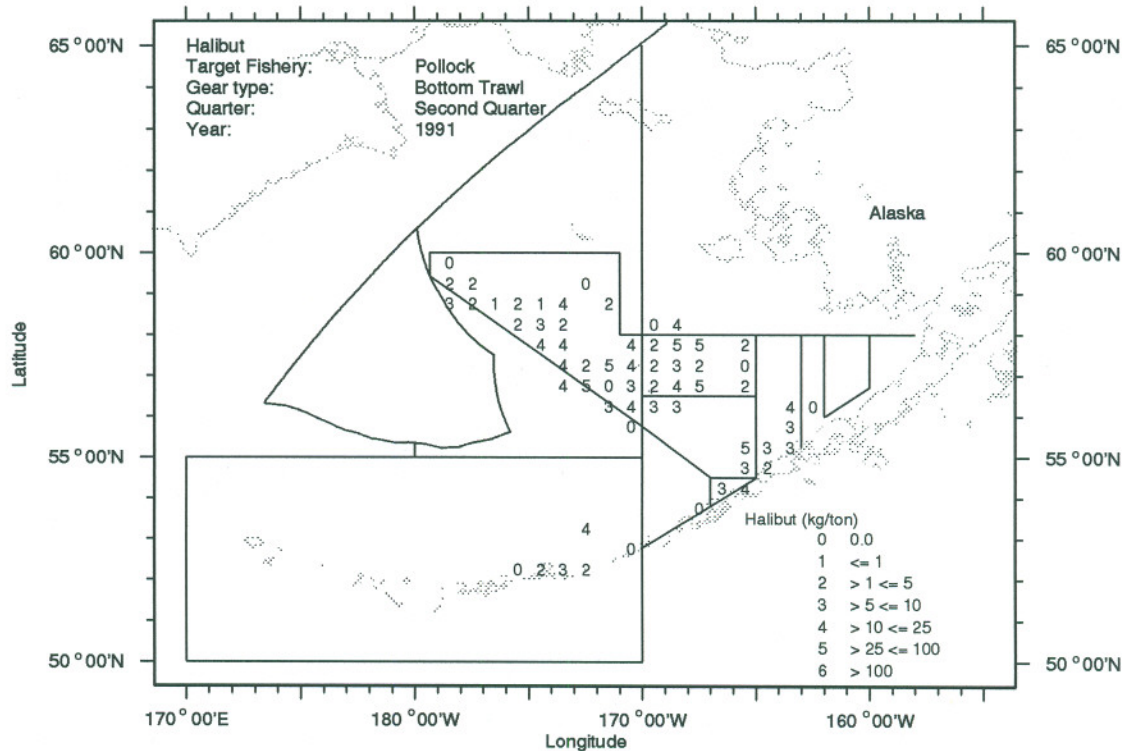
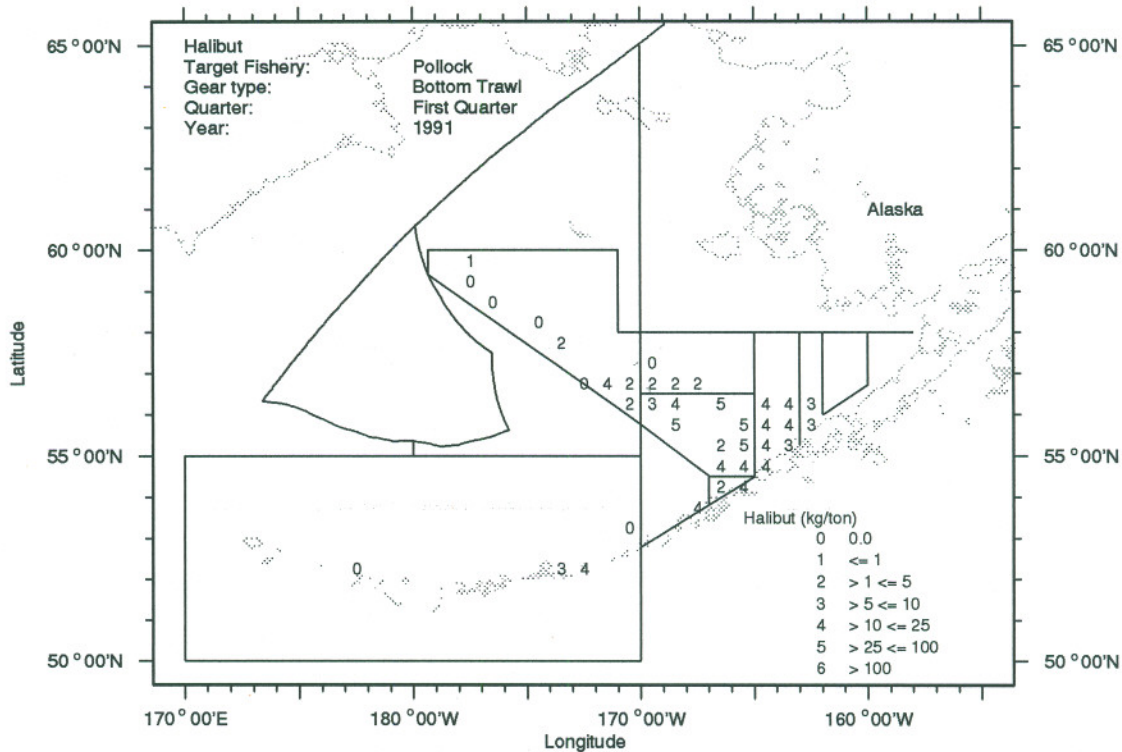


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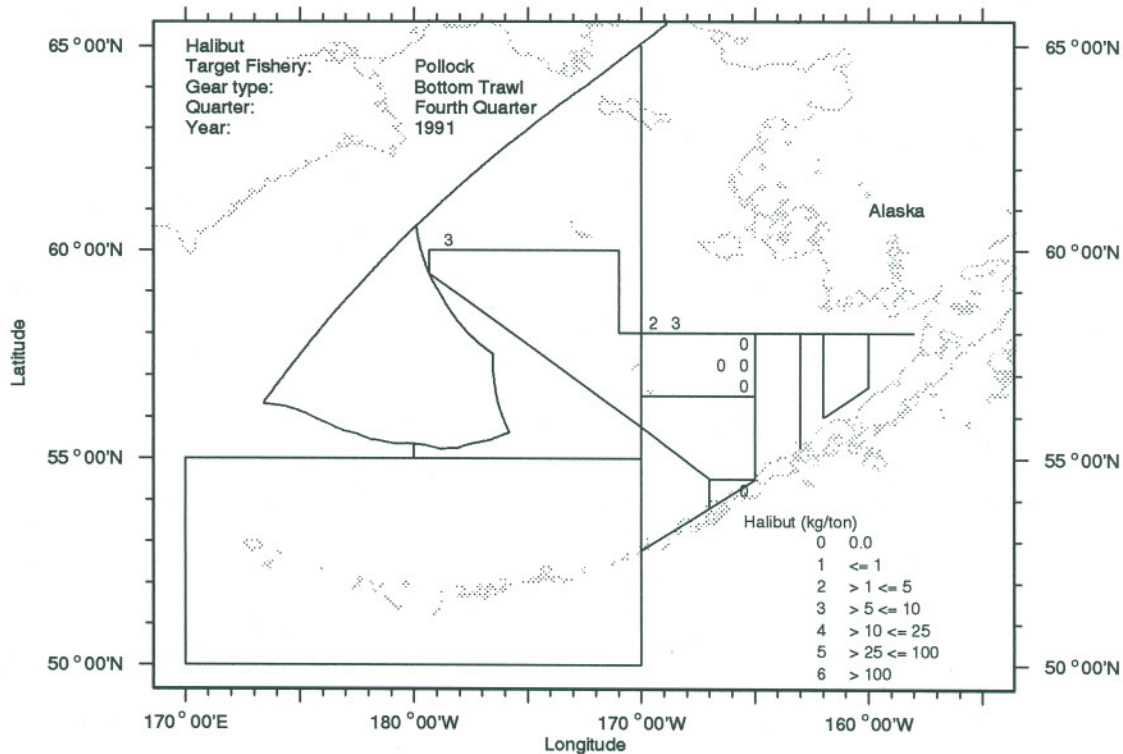
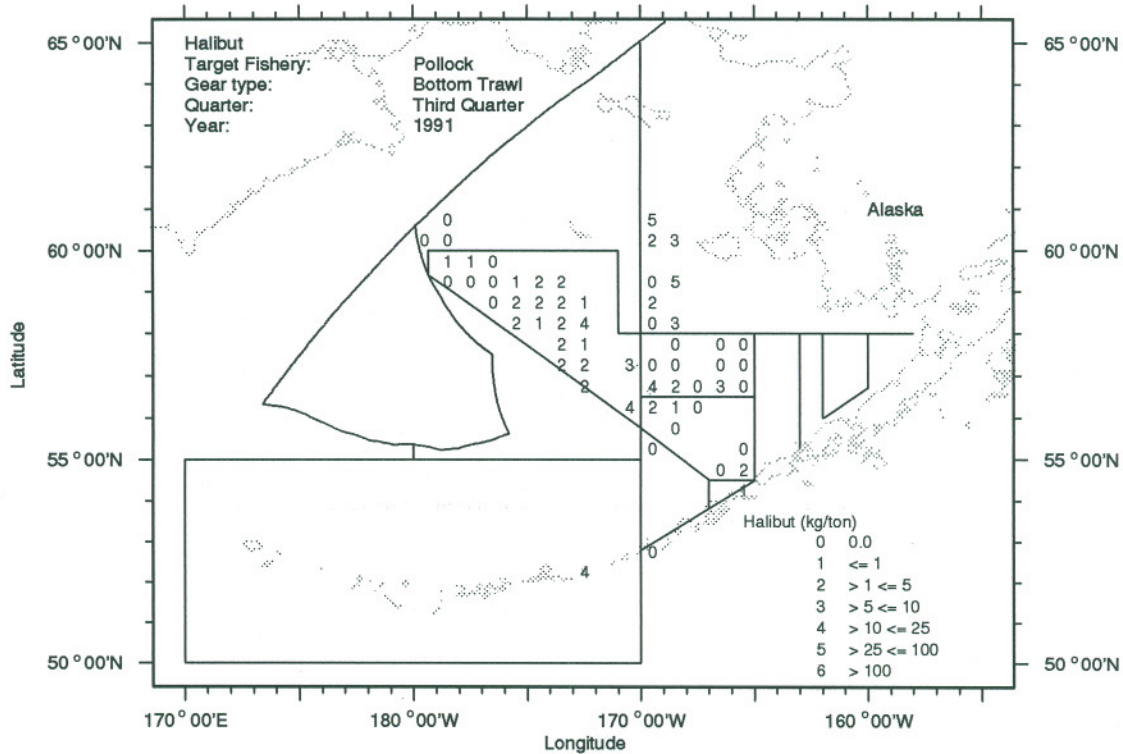


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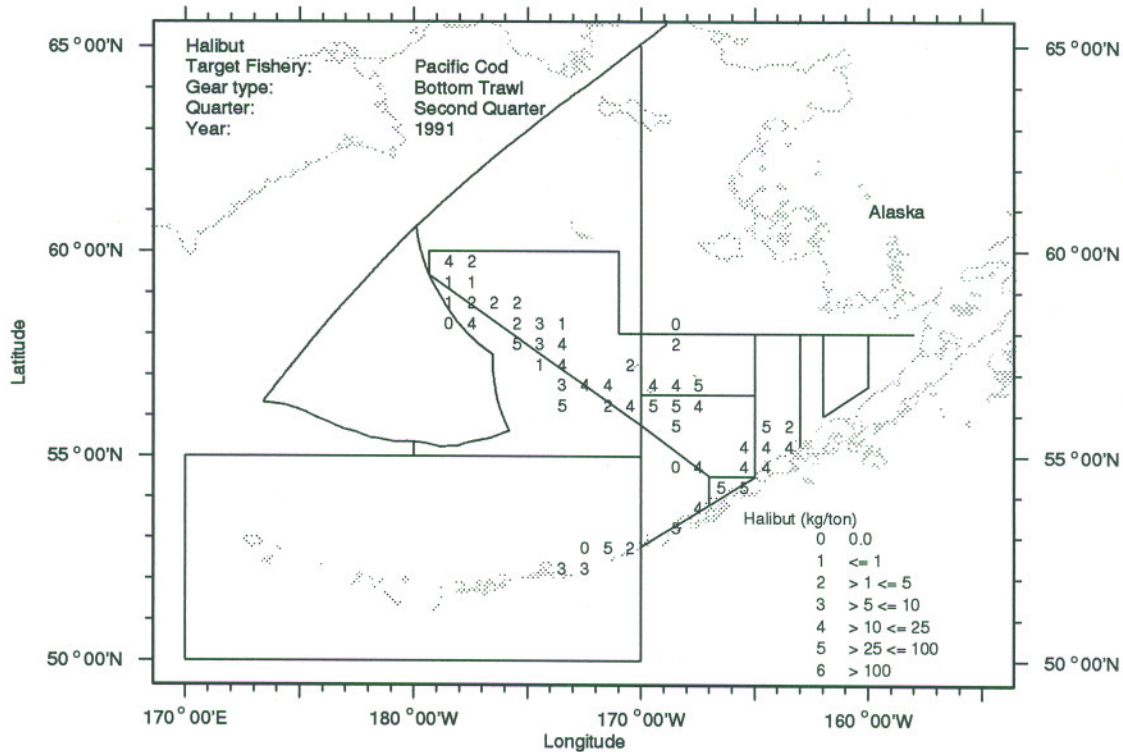
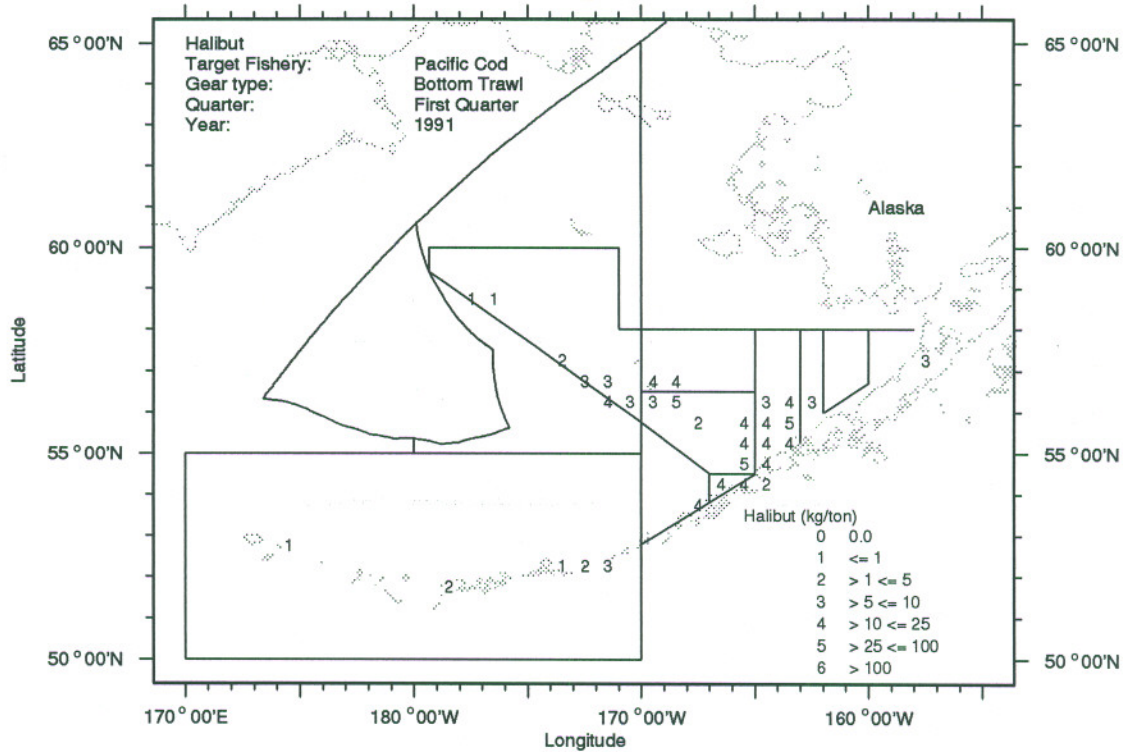


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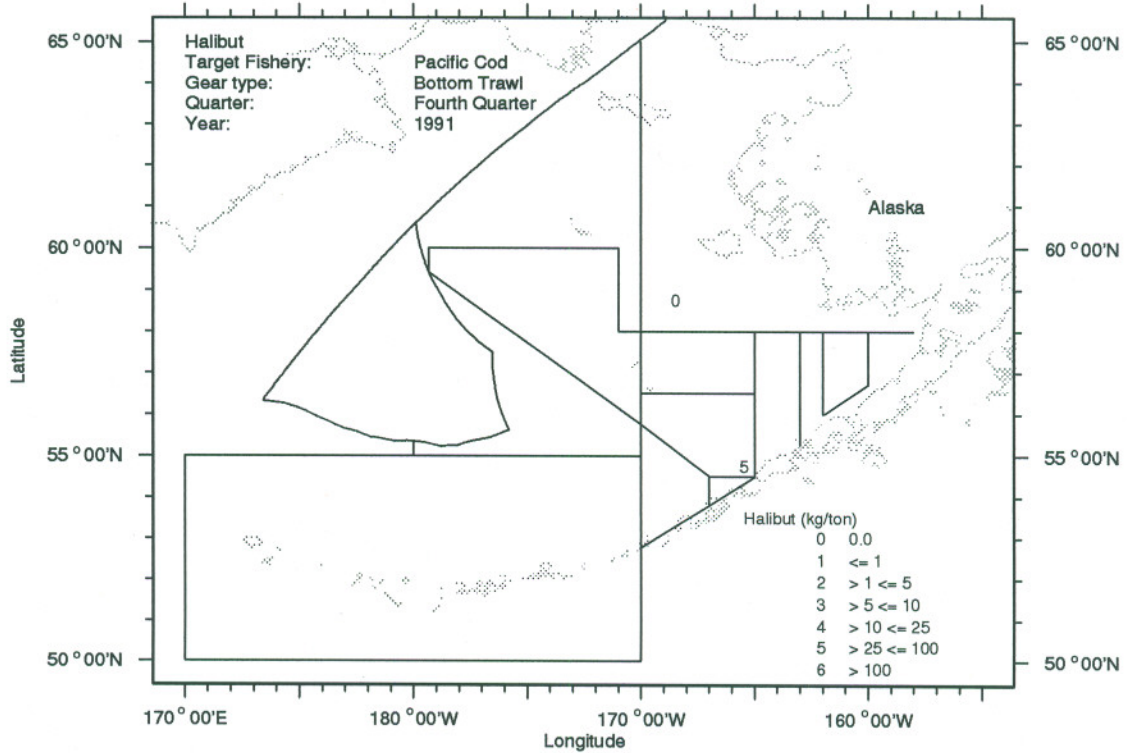
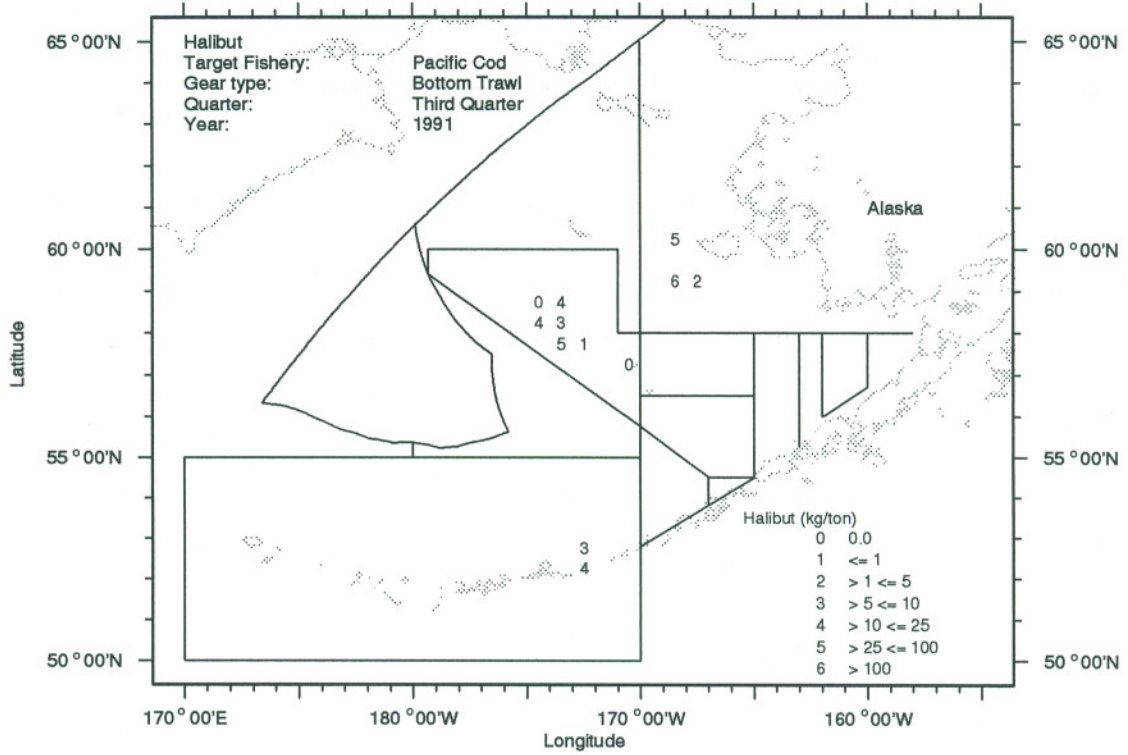


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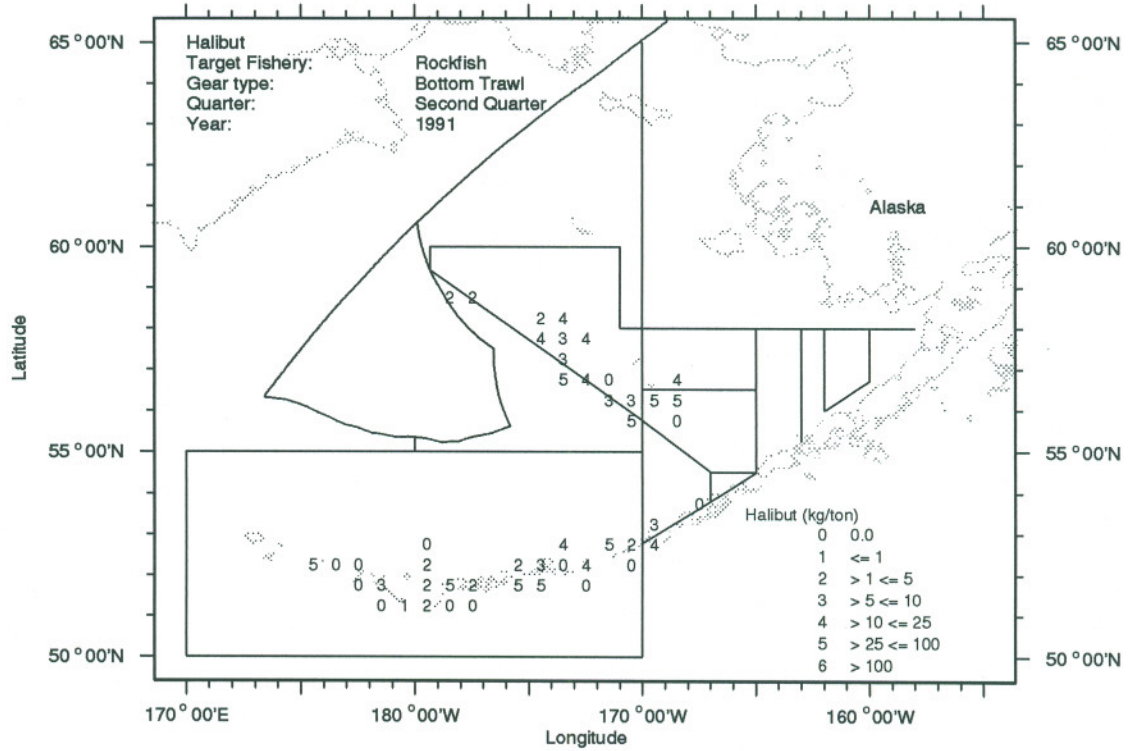
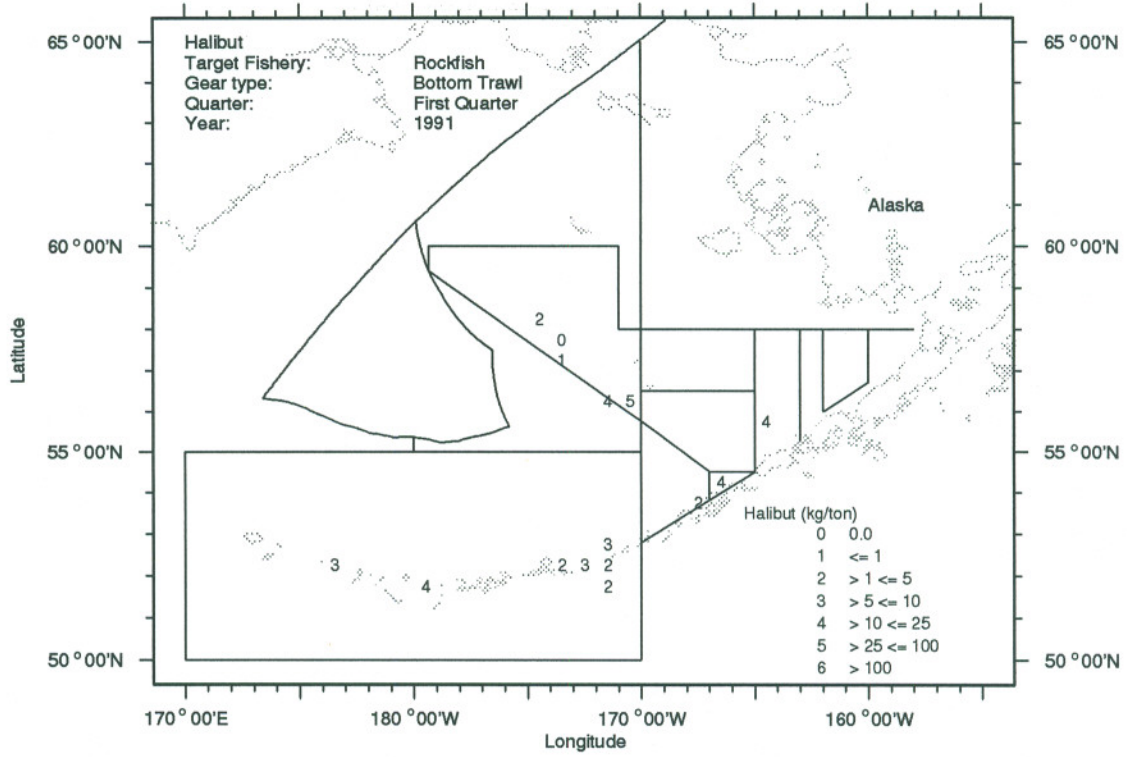


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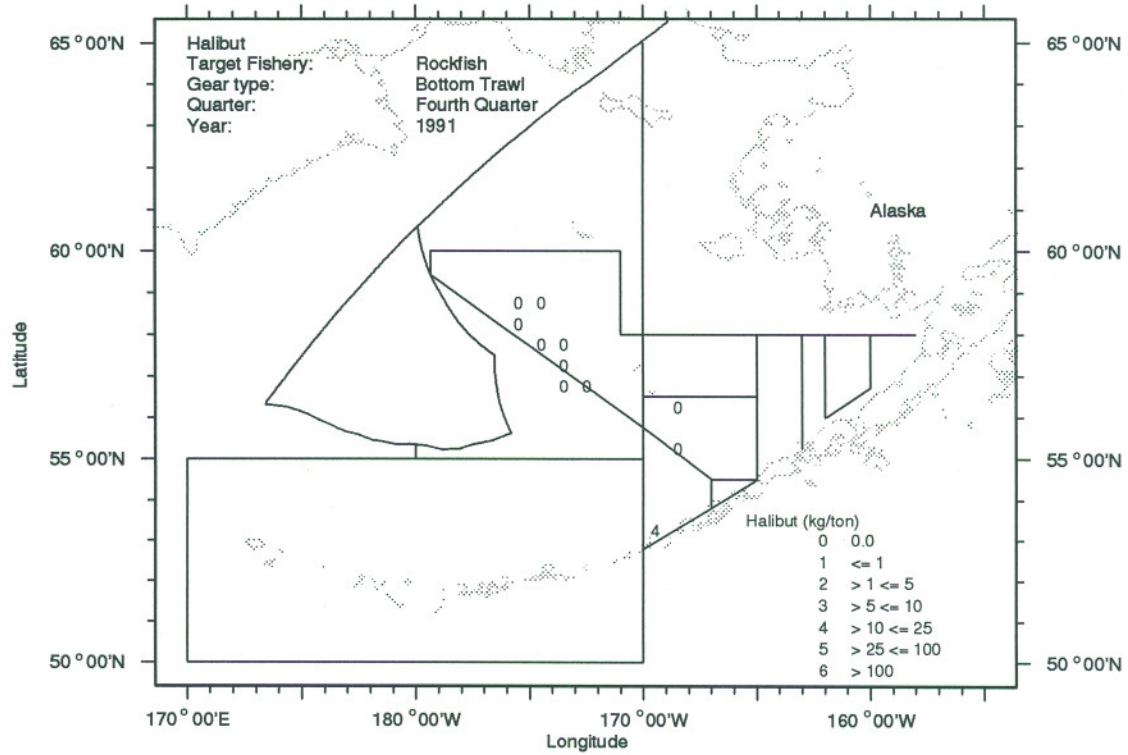
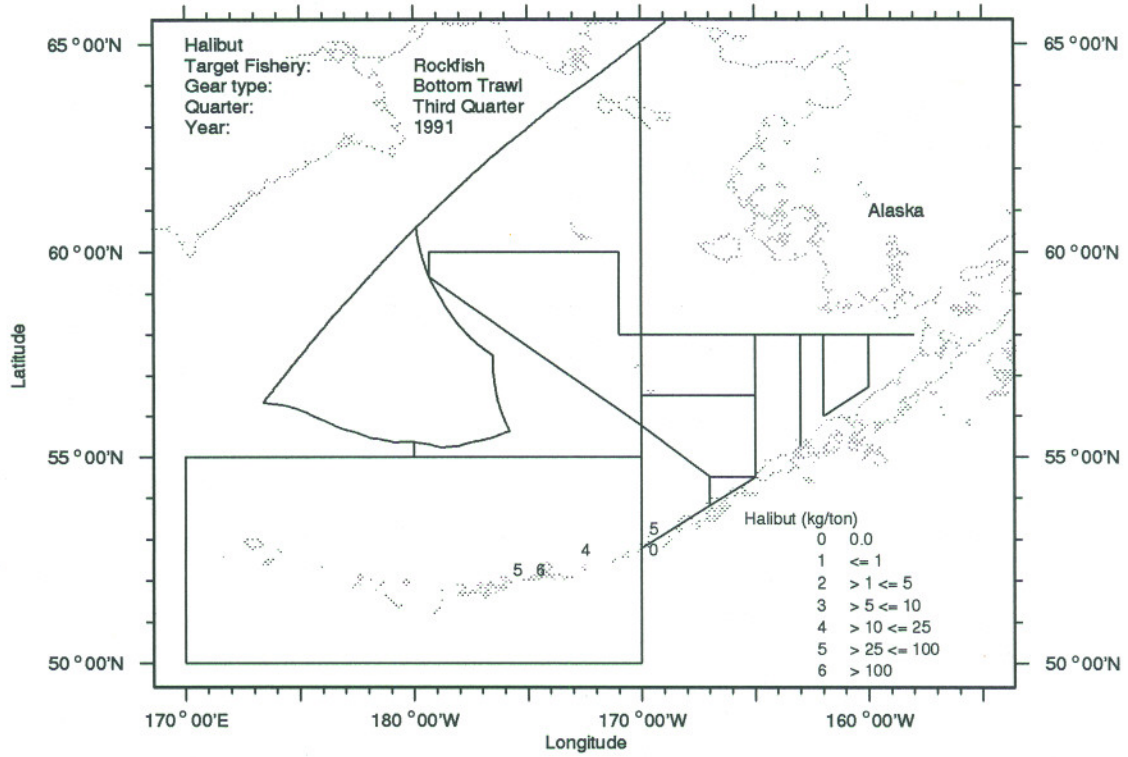


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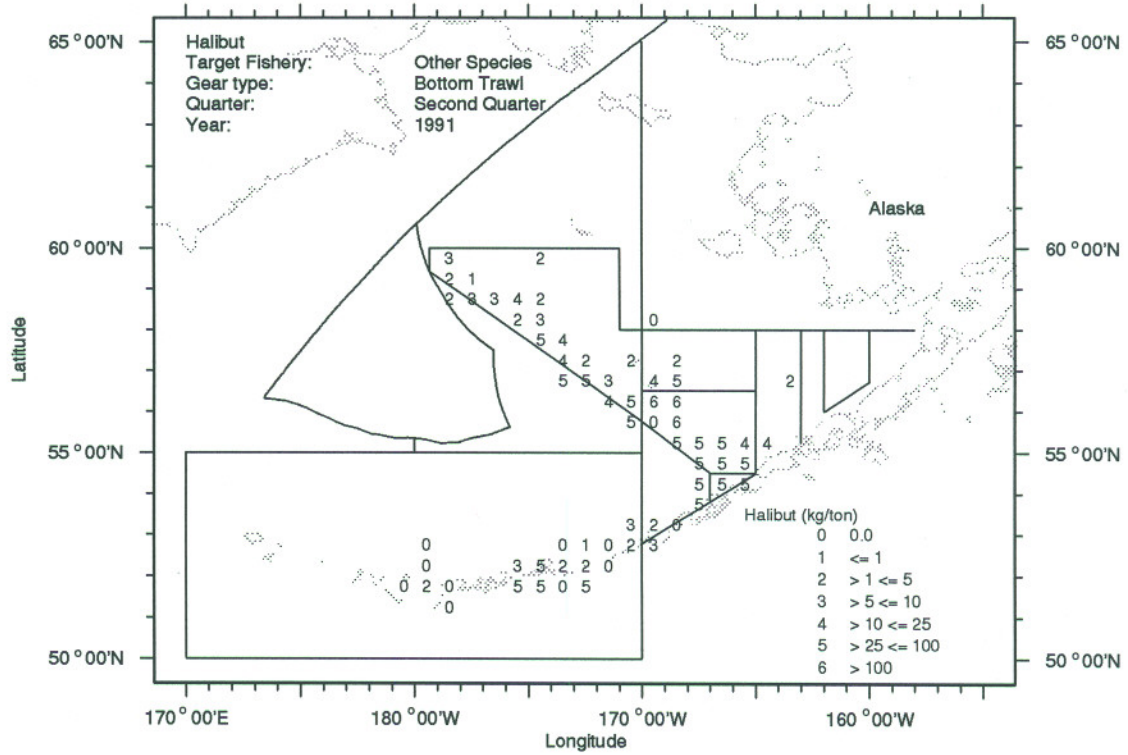
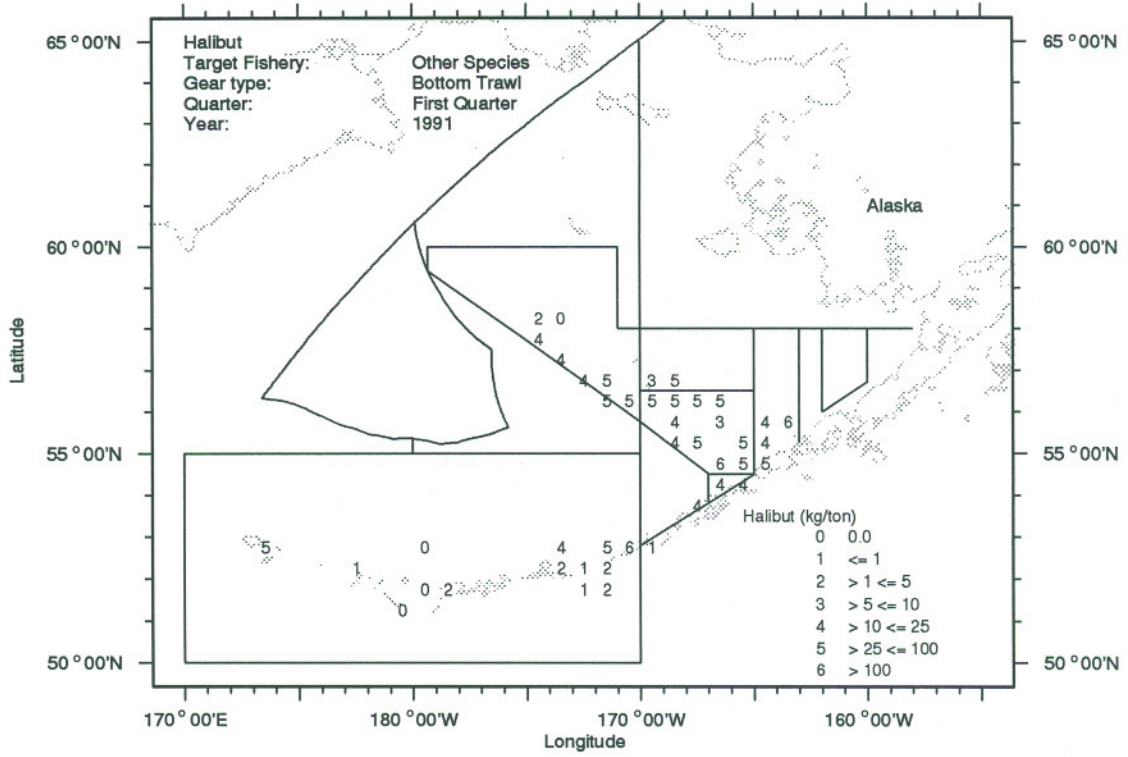


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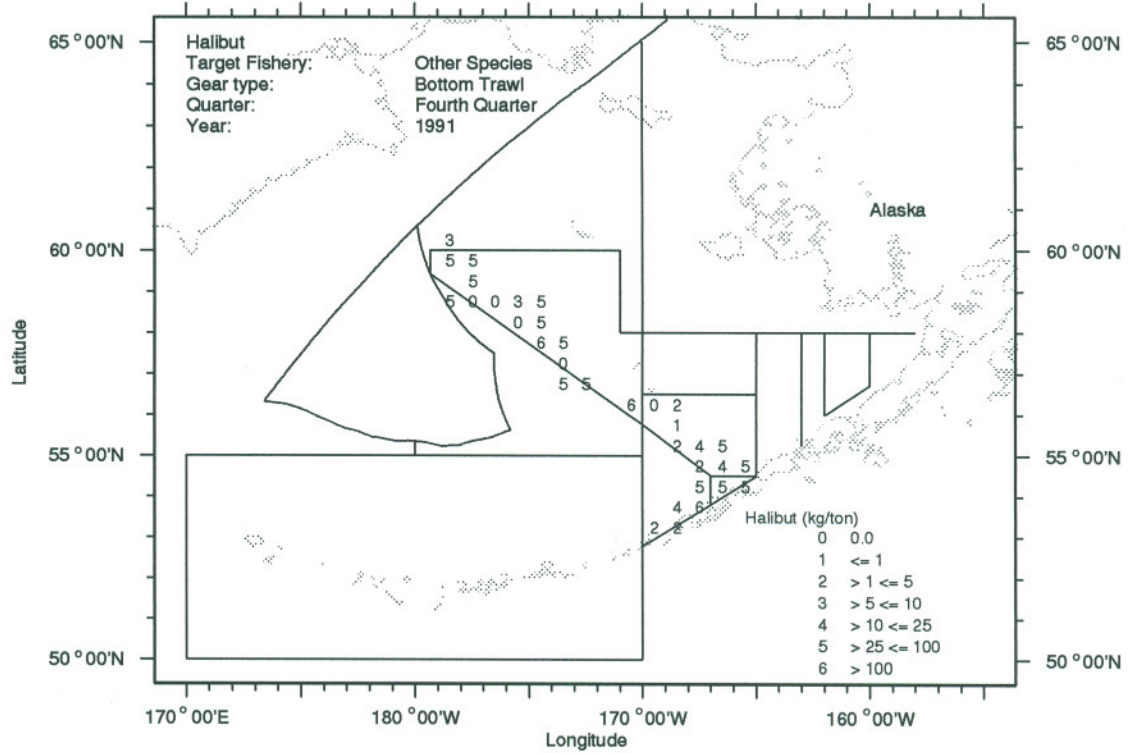
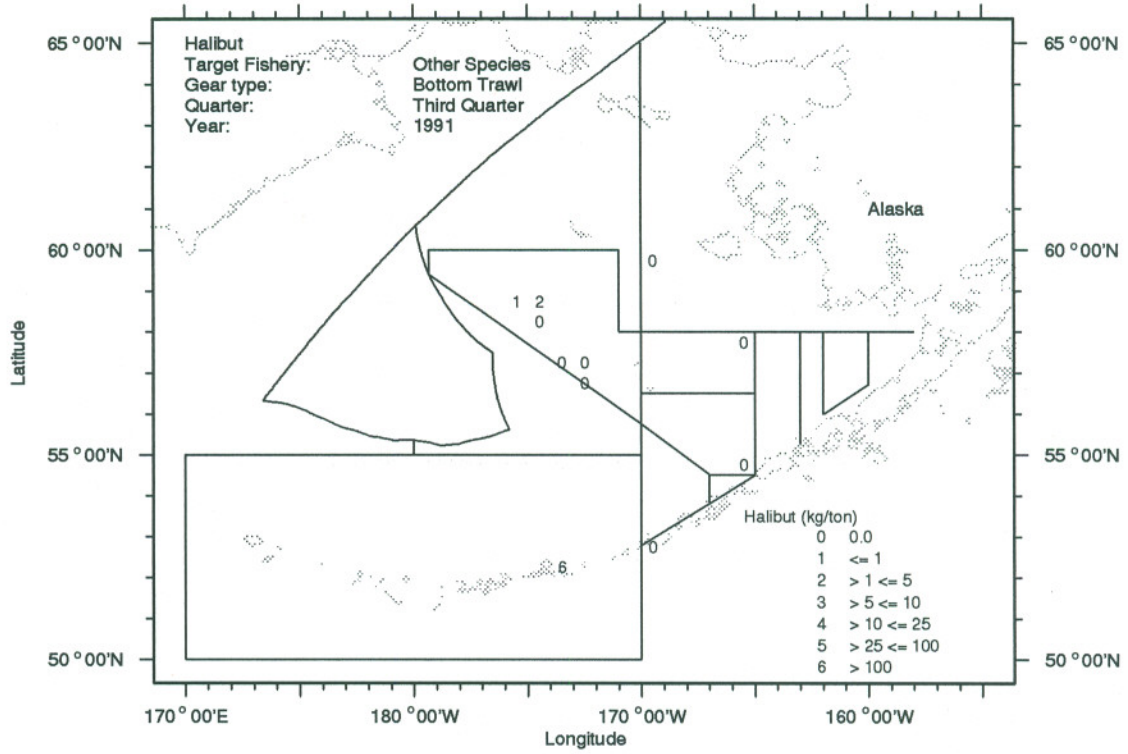


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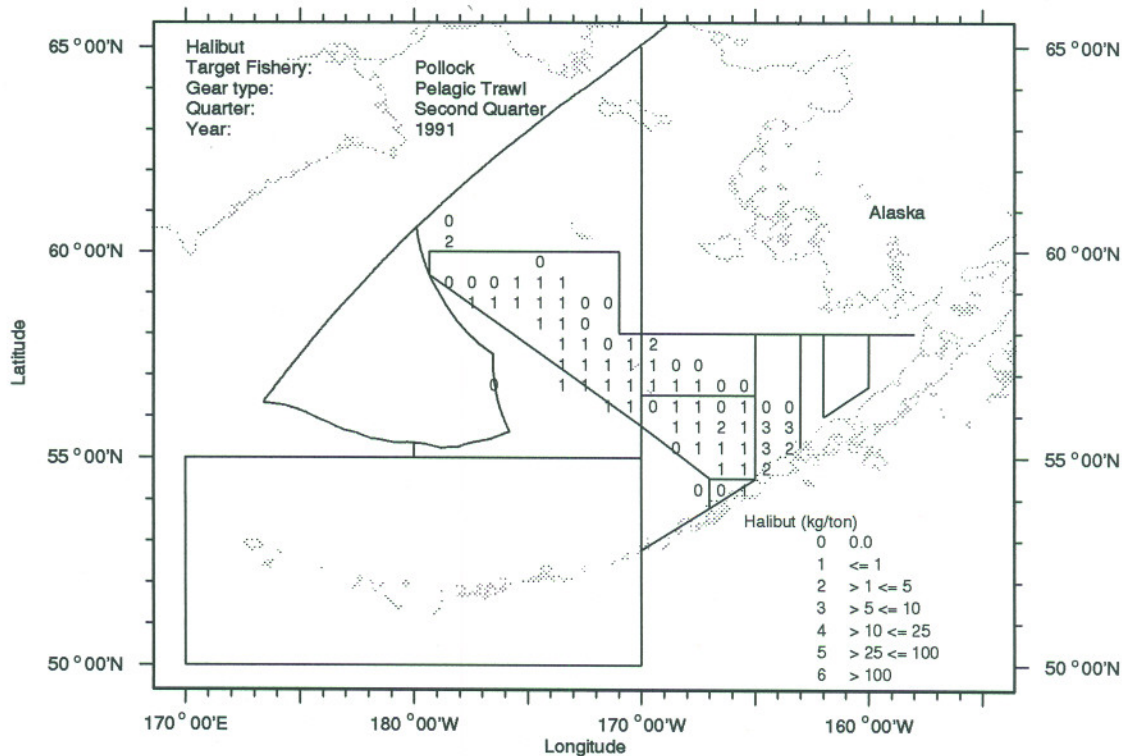
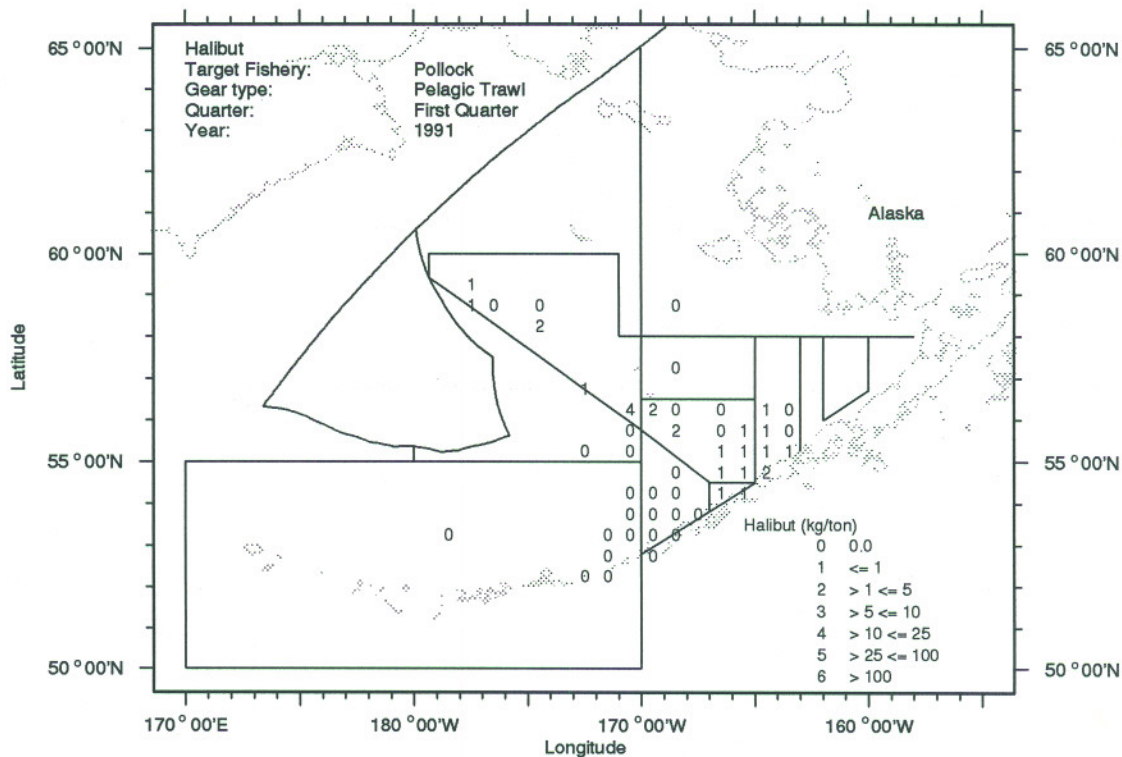


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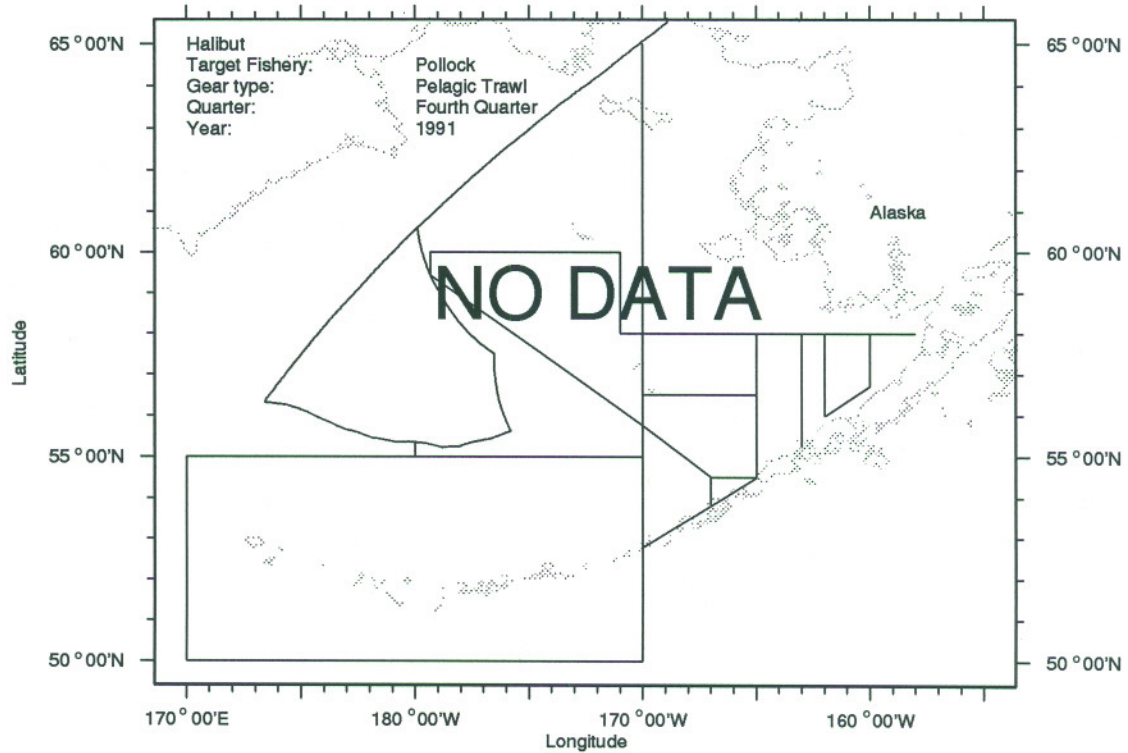
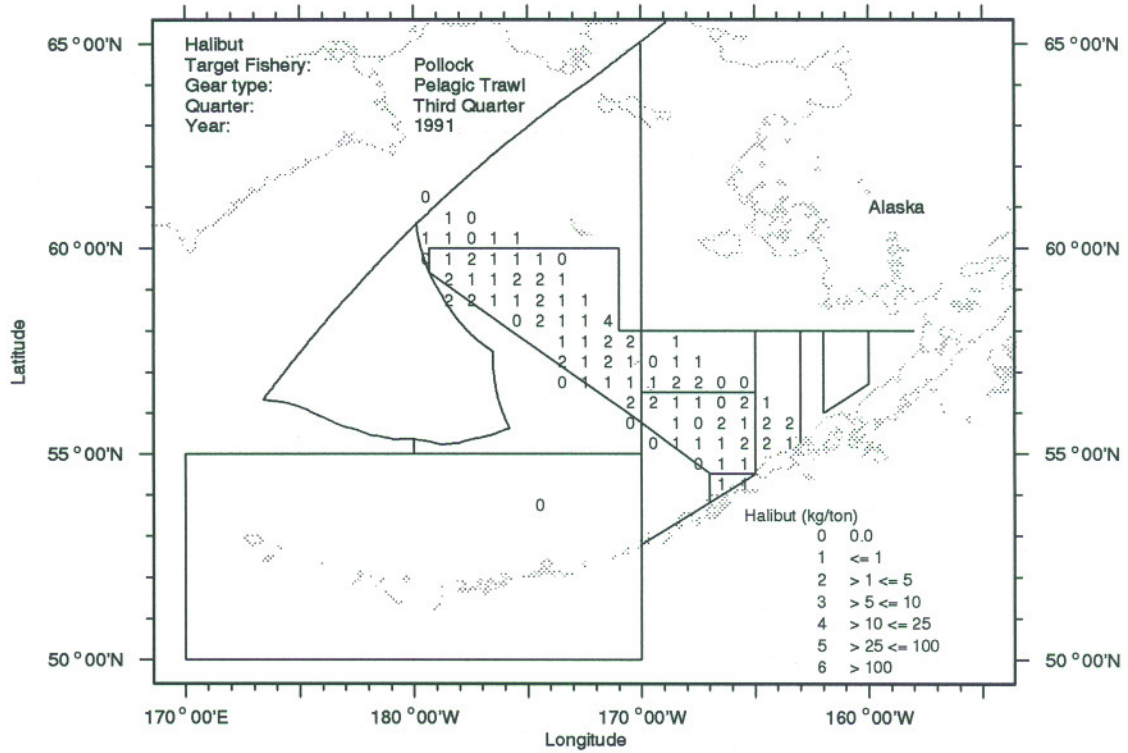


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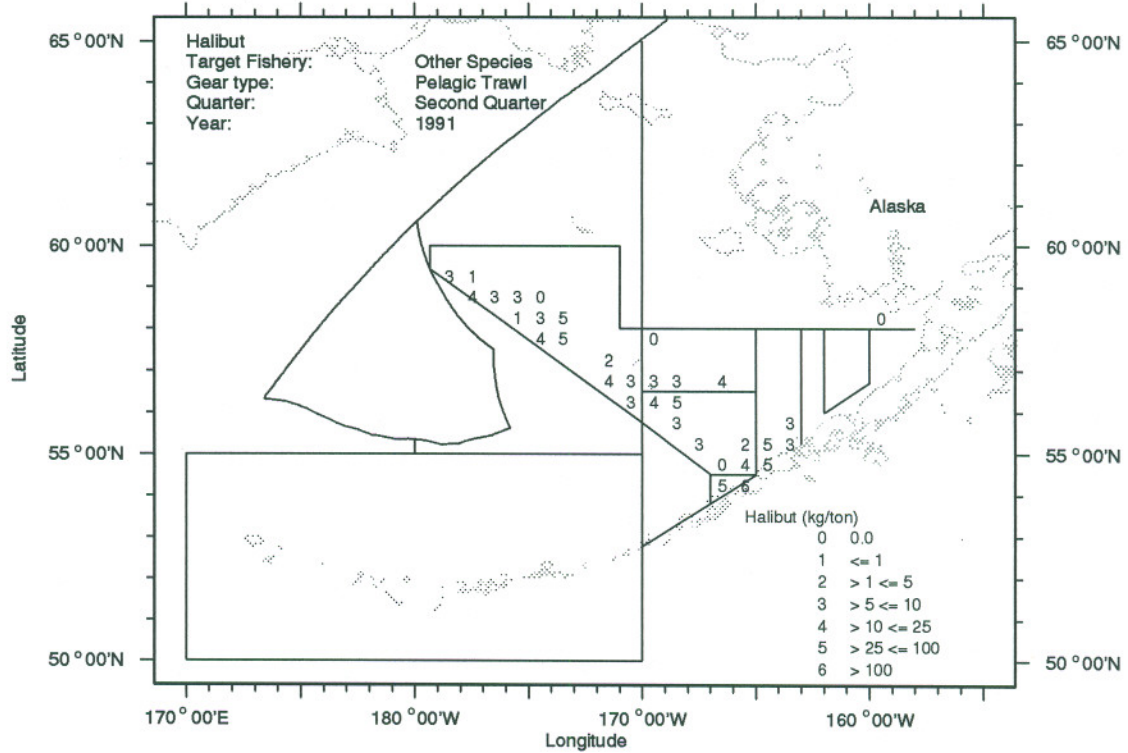
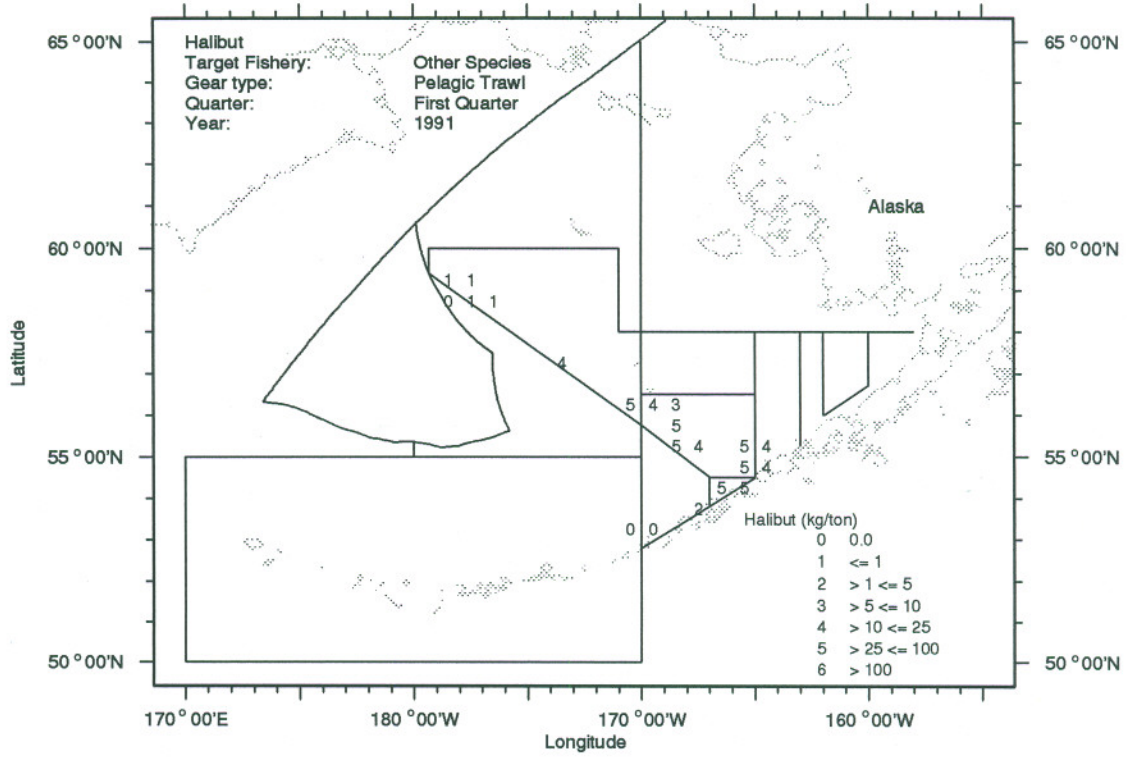


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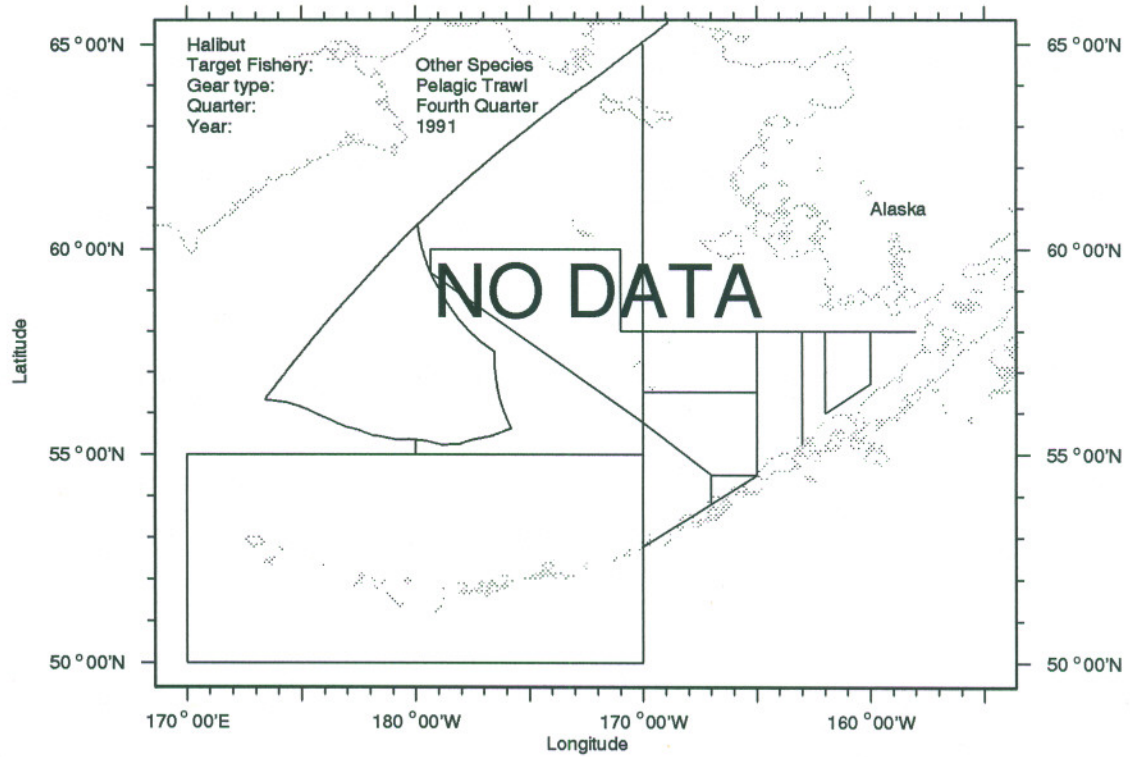
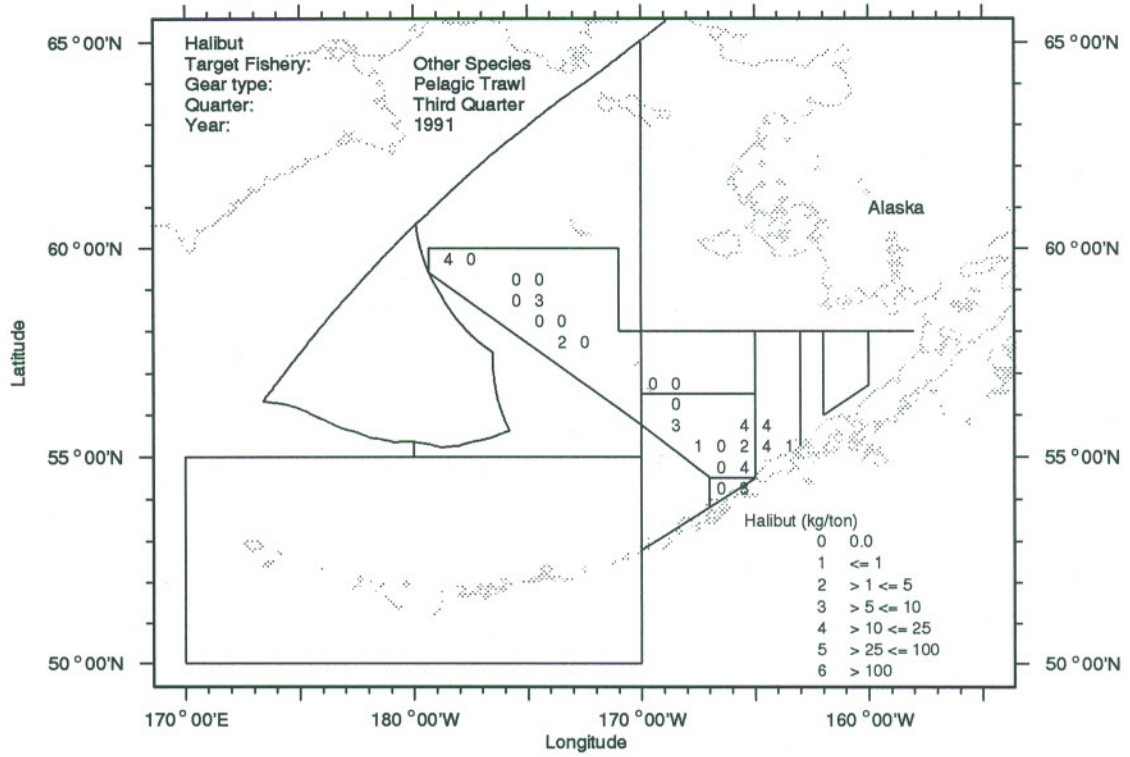


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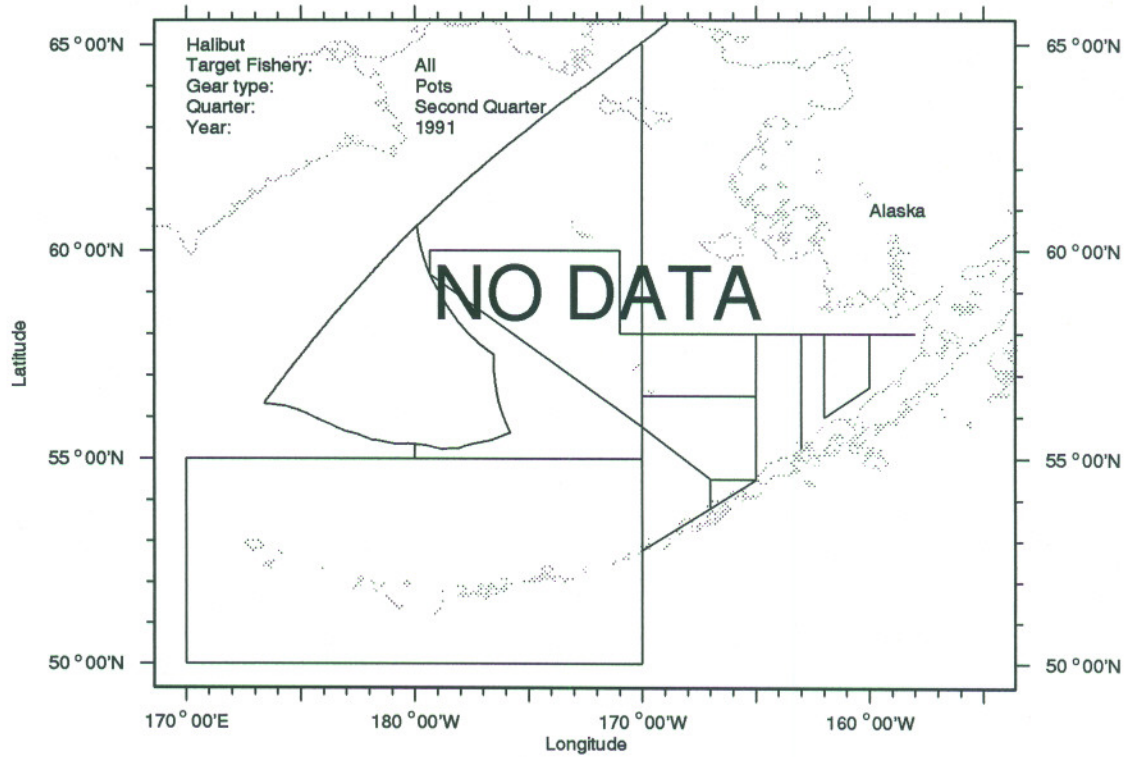
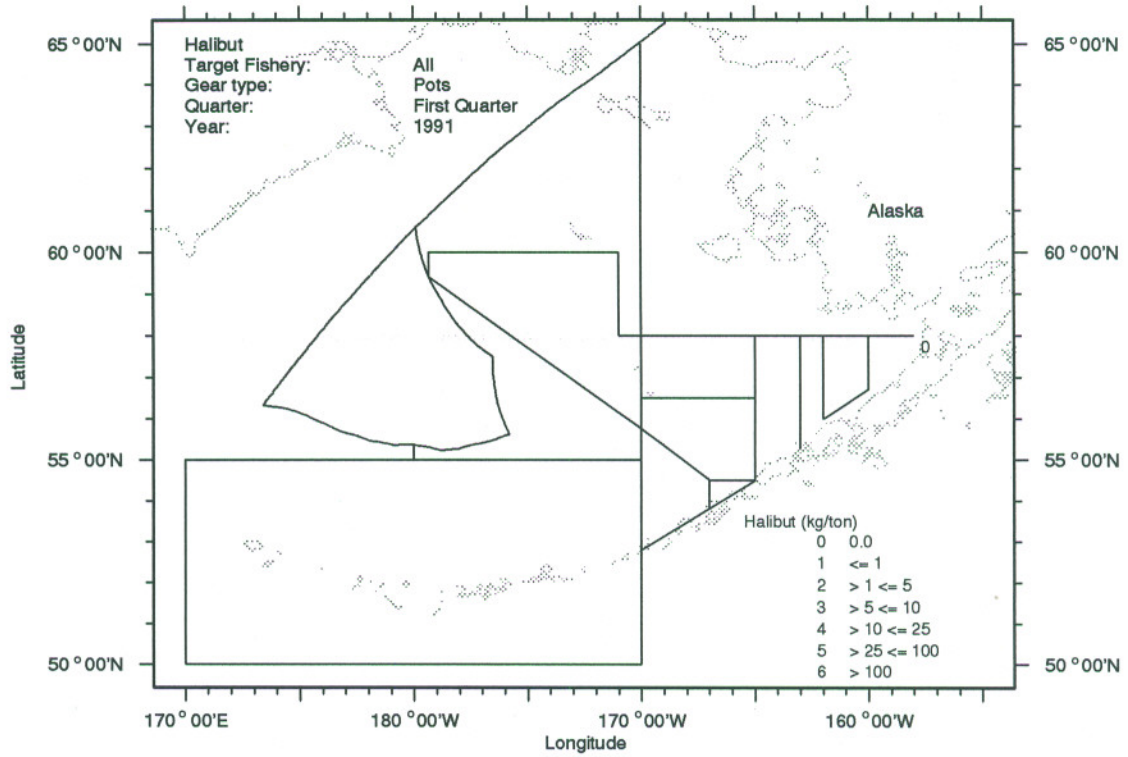


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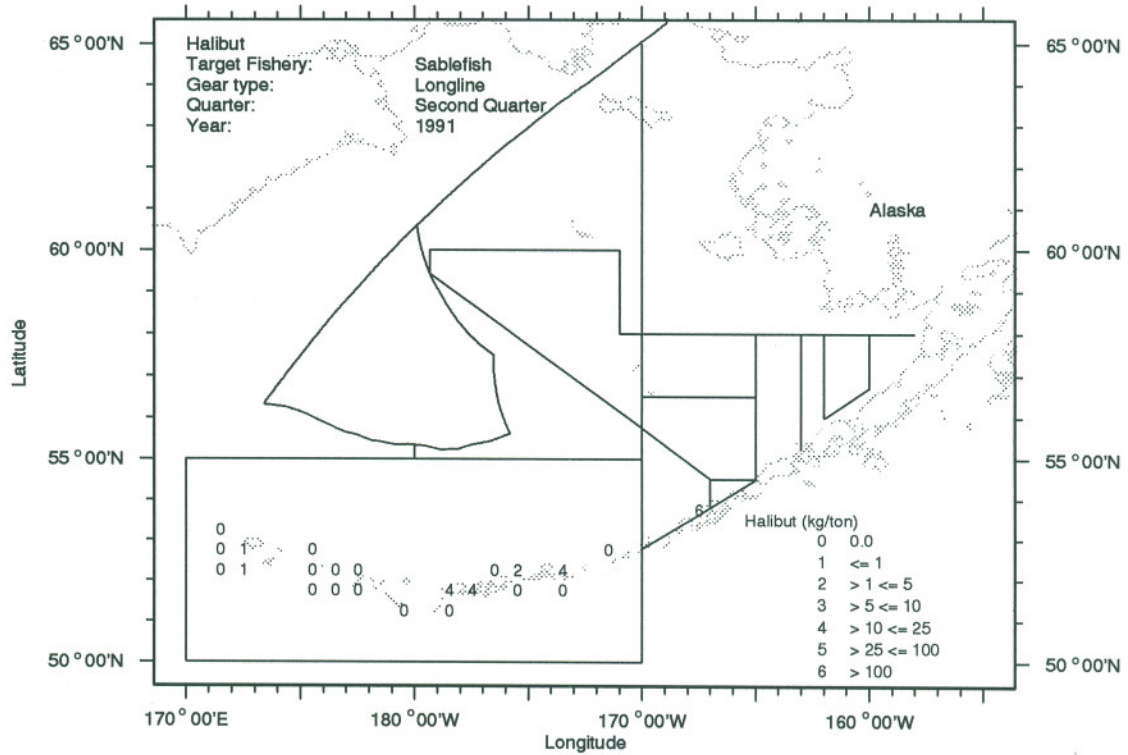
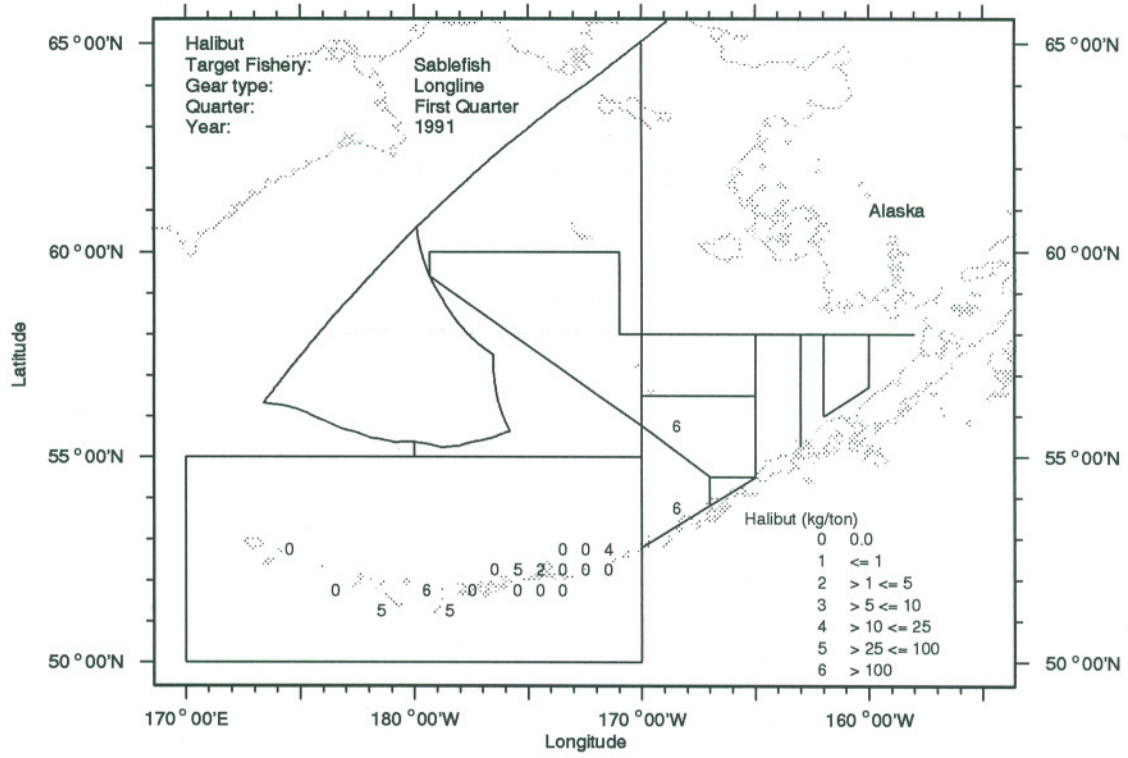


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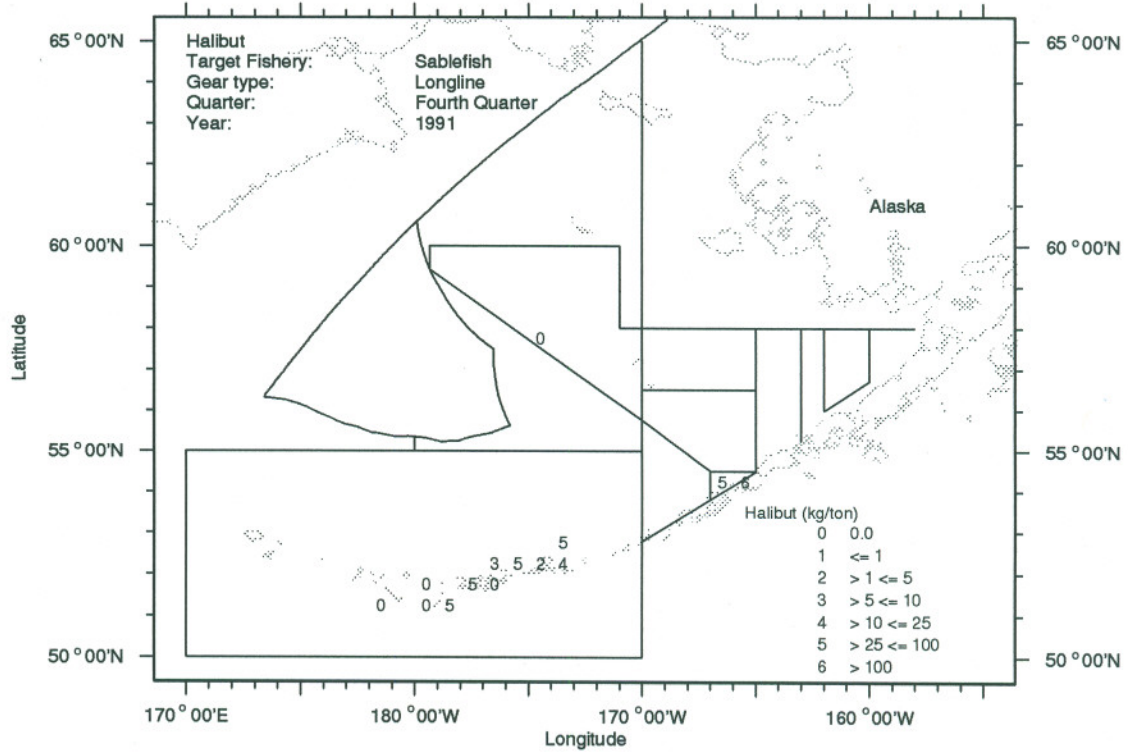
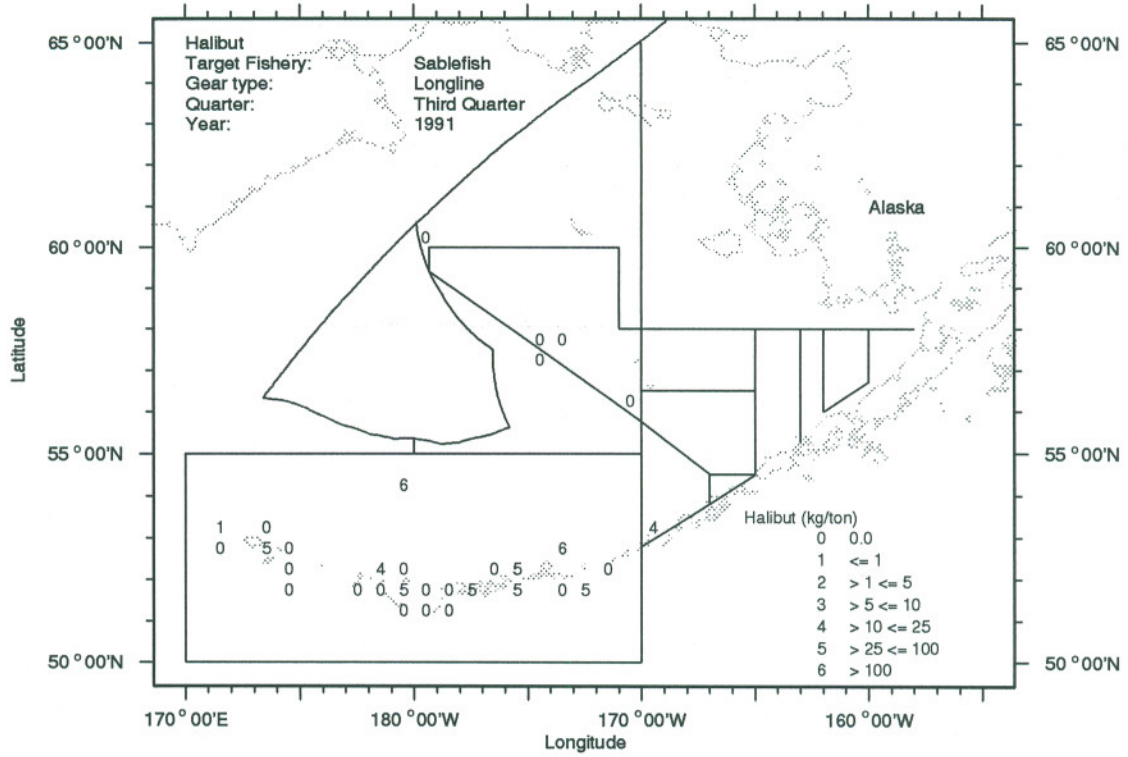


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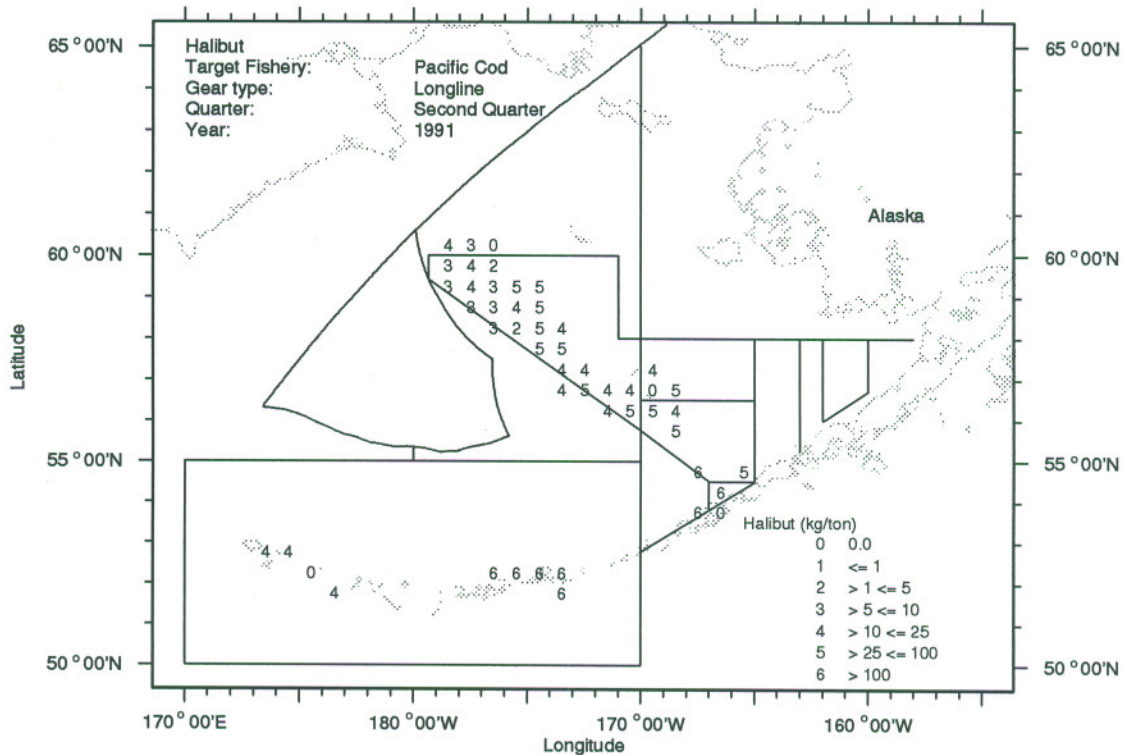
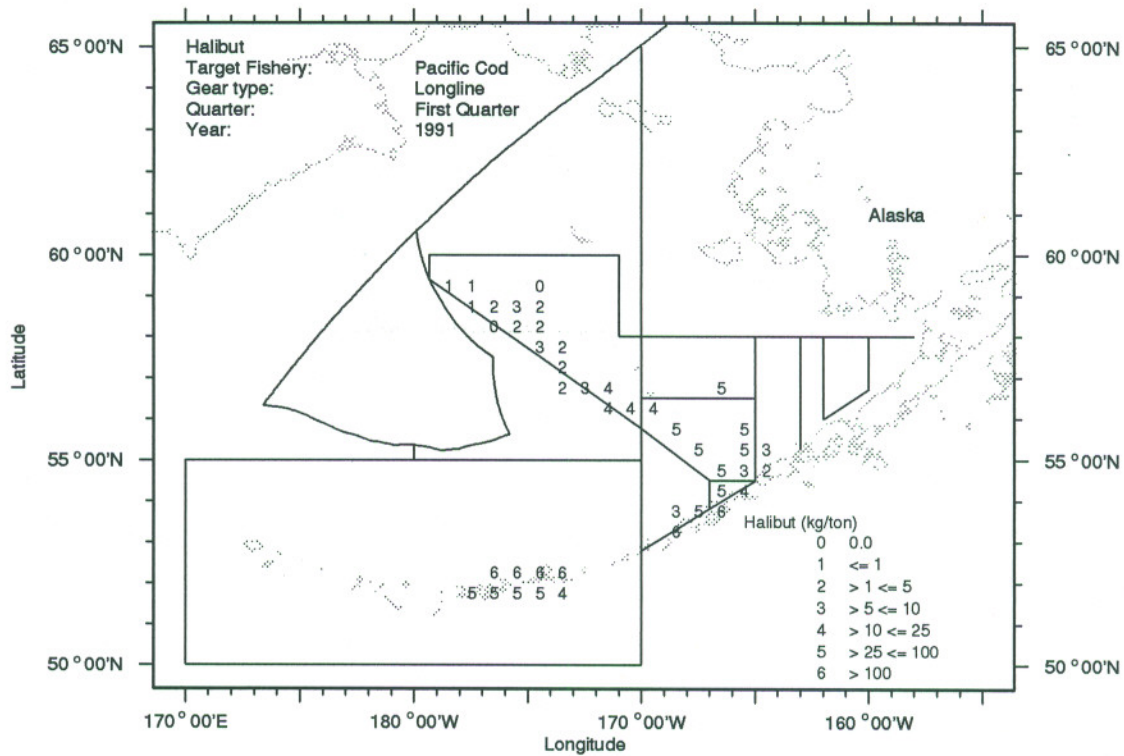


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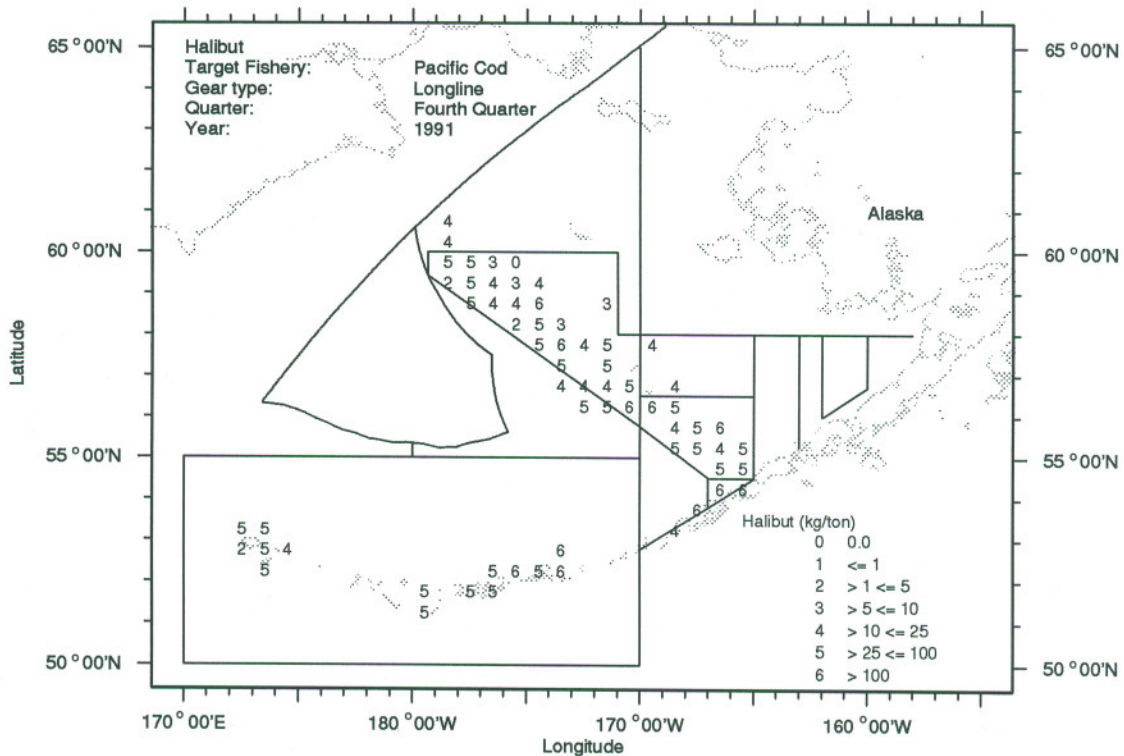
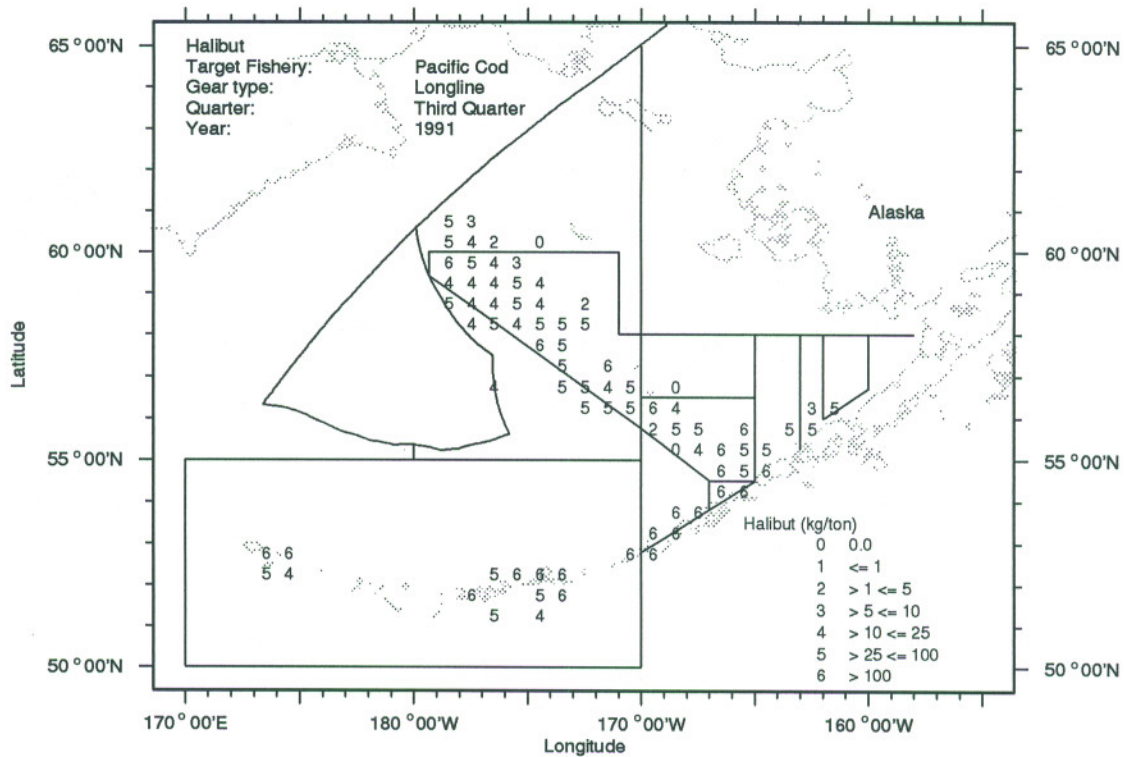


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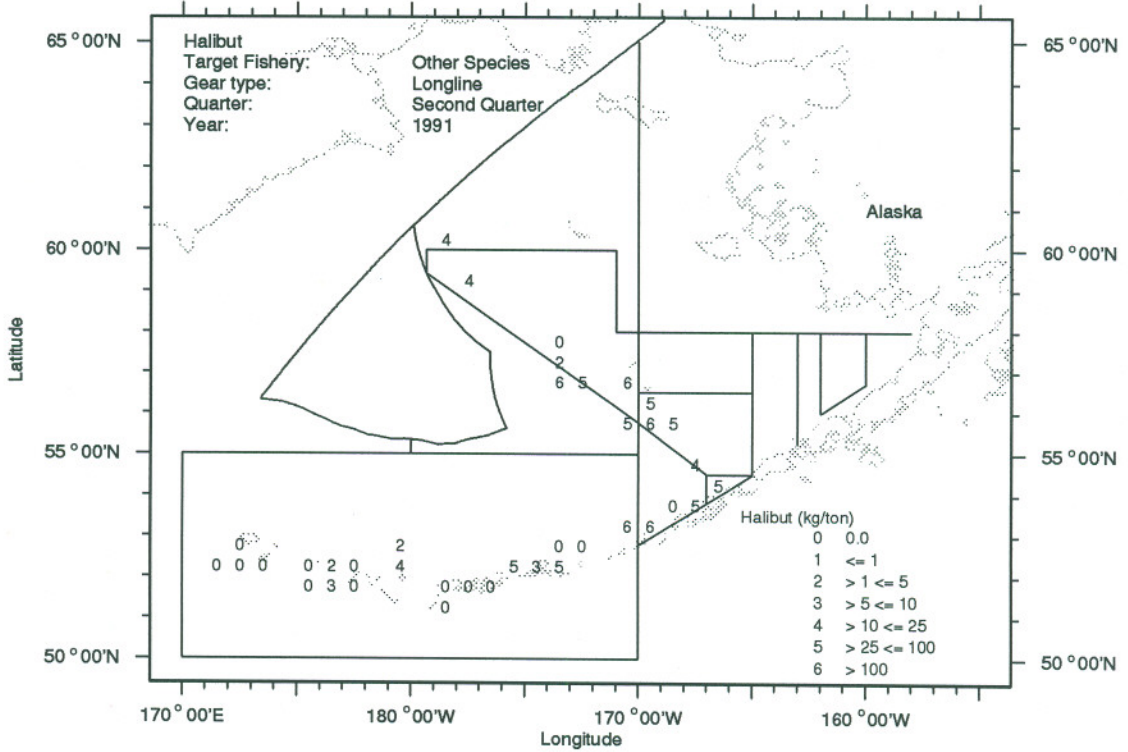
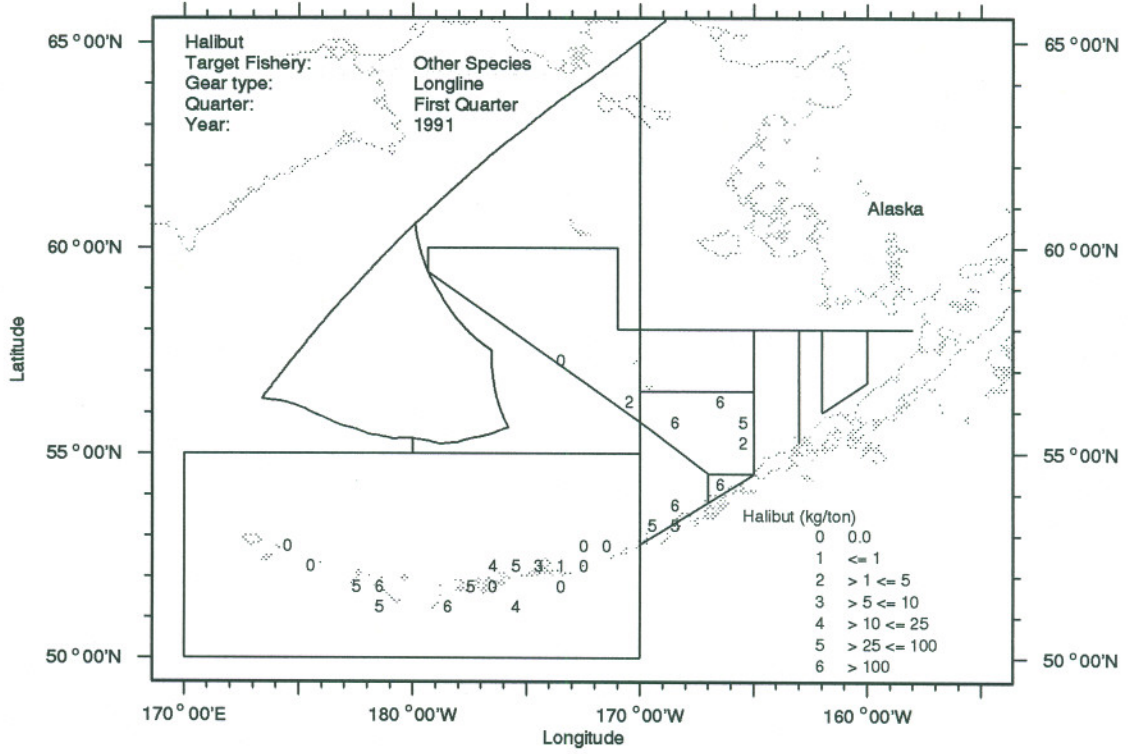


Figure 4.--Continued.

Table 16.--Estimated bycatch of Pacific halibut (in metric tons) by U.S. domestic groundfish vessels in the Bering Sea and Aleutian Islands region by NPFMC area and gear type, 1991. (Dashes indicate area not fished.)

Gear type	Area 511	Area 512	Area 513	Area 514	Area 515	Area 516	Area 517	Area 518	Area 519	Area 521	Area 522	Area 540	Total
Trawl	1453.18	0.00	473.92	761.00	213.50	140.35	2303.81	47.20	461.21	1038.58	112.34	109.18	7114.27
Longline	6.72	0.10	6.08	0.42	107.20	0.34	646.58	138.99	47.40	1774.46	224.47	480.23	3432.99
Pot	0.93	--	0.00	0.10	9.28	0.01	5.51	1.61	29.34	0.81	0.05	7.01	54.65
Total	1460.83	0.10	480.00	761.52	329.98	140.70	2955.90	187.80	537.95	2813.85	336.86	596.42	10601.91
Percent by area	13.8%	<0.1%	4.5%	7.2%	3.1%	1.3%	27.9%	1.8%	5.1%	26.5%	3.2%	5.6%	

Table 17.--U.S. domestic groundfish catch and Pacific halibut bycatch (in metric tons (t)) by target fishery, NPFMC zone, and species in the Bering Sea and Aleutian Islands region, 1991.

Fishery	Gear	Zone	Groundfish catch	Pacific halibut			
				Bycatch (weight)	kg per t of groundfish	% within zone	% of total bycatch
Atka mackerel	Trawl	1	nf	nf	nf	nf	nf
		2	94.95	0.79	8.3	0.0%	0.0%
		3	29,879.73	79.42	2.7	1.3%	0.7%
		Total	29,974.68	80.21	2.7		0.8%
Pacific cod	Longline	1	70.60	5.14	72.8	0.3%	0.0%
		2	70,373.46	2,347.76	33.4	37.6%	22.1%
		3	13,612.25	724.31	53.2	26.3%	6.8%
		Total	84,056.31	3,077.21	36.6		29.0%
Pacific cod	Pot	1	858.81	0.94	1.1	0.1%	0.0%
		2	426.68	6.32	14.8	0.1%	0.1%
		3	5,433.42	47.39	8.7	1.7%	0.4%
		Total	6,718.91	54.65	8.1		0.5%
Pacific cod	Trawl	1	16,171.60	240.26	14.9	15.0%	2.3%
		2	79,496.71	1,586.02	20.0	25.4%	15.0%
		3	20,439.79	502.84	24.6	18.3%	4.7%
		Total	116,108.10	2,329.12	20.1		22.0%
Flatfish	Trawl	1	4,148.21	13.52	3.3	0.8%	0.1%
		2	34,231.40	102.00	3.0	1.6%	1.0%
		3	121,068.32	716.68	5.9	26.1%	6.8%
		Total	159,447.93	832.20	5.2		7.8%
Rockfish	Longline	1	nf	nf	nf	nf	nf
		2	0.10	0.10	1000.0	0.0%	0.0%
		3	171.57	13.86	80.8	0.5%	0.1%
		Total	171.67	13.96	81.3		0.1%
Rockfish	Trawl	1	0.78	0.01	12.8	0.0%	0.0%
		2	3,224.96	43.16	13.4	0.7%	0.4%
		3	3,220.02	21.45	6.7	0.8%	0.2%
		Total	6,445.76	64.62	10.0		0.6%
Other	Longline	1	2.82	0.42	148.9	0.0%	0.0%
		2	547.00	28.30	51.7	0.5%	0.3%
		3	127.76	12.30	96.3	0.4%	0.1%
		Total	677.58	41.02	60.5		0.4%
Other	Trawl	1	196.61	1.13	5.7	0.1%	0.0%
		2	2,396.55	60.06	25.1	1.0%	0.6%
		3	65.11	0.68	10.4	0.0%	0.0%
		Total	2,658.27	61.87	23.3		0.6%
Pollock midwater	Trawl	1	71,279.08	56.56	0.8	3.5%	0.5%
		2	705,769.76	437.61	0.6	7.0%	4.1%
		3	539,335.46	22.46	0.0	0.8%	0.2%
		Total	1,316,384.30	516.63	0.4		4.9%
Pollock bottom	Trawl	1	40,670.57	623.76	15.3	38.9%	5.9%
		2	258,828.21	930.74	3.6	14.9%	8.8%
		3	18,300.26	75.41	4.1	2.7%	0.7%
		Total	317,799.04	1,629.91	5.1		15.4%
Rock sole	Trawl	1	45,337.10	654.07	14.4	40.8%	6.2%
		2	15,483.92	274.44	17.7	4.4%	2.6%
		3	2,692.53	50.35	18.7	1.8%	0.5%
		Total	63,513.55	978.86	15.4		9.2%

Table 17.--Continued.

Fishery	Gear	Zone	Pacific halibut				
			Groundfish catch	Bycatch (weight)	kg per t of groundfish	% within zone	% of total bycatch
Sablefish	Longline	1	24.21	1.60	66.1	0.1%	0.0%
		2	294.96	26.21	88.9	0.4%	0.2%
		3	3,219.19	180.21	56.0	6.6%	1.7%
		Total	3,538.36	208.02	58.8		2.0%
Sablefish	Pot	1	nf	nf	nf	nf	nf
		2	0.03	0.00	0.0	0.0%	0.0%
		3	0.04	0.00	0.0	0.0%	0.0%
		Total	0.07	0.00	0.0		0.0%
Sablefish	Trawl	1	nf	nf	nf	nf	nf
		2	nf	nf	nf	nf	nf
		3	27.98	0.93	33.2	0.0%	0.0%
		Total	27.98	0.93	33.2		0.0%
Turbot	Longline	1	nf	nf	nf	nf	nf
		2	249.96	14.16	56.6	0.2%	0.1%
		3	981.44	67.31	68.6	2.4%	0.6%
		Total	1,231.40	81.47	66.2		0.8%
Turbot	Pot	1	nf	nf	nf	nf	nf
		2	nf	nf	nf	nf	nf
		3	0.22	0.00	0.0	0.0%	0.0%
		Total	0.22	0.00	0.0		0.0%
Turbot	Trawl	1	nf	nf	nf	nf	nf
		2	2,064.91	223.33	108.2	3.6%	2.1%
		3	5,565.60	149.61	26.9	5.4%	1.4%
		Total	7,630.51	372.94	48.9		3.5%
Arrowtooth	Longline	1	nf	nf	nf	nf	nf
		2	19.12	10.59	553.9	0.2%	0.1%
		3	25.43	0.72	28.3	0.0%	0.0%
		Total	44.55	11.31	253.9		0.1%
Arrowtooth	Pot	1	nf	nf	nf	nf	nf
		2	0.14	0.00	0.0	0.0%	0.0%
		3	nf	nf	nf	nf	nf
		Total	0.14	0.00	0.0		0.0%
Arrowtooth	Trawl	1	304.90	4.22	13.8	0.3%	0.0%
		2	4,302.46	158.16	36.8	2.5%	1.5%
		3	5,783.45	84.60	14.6	3.1%	0.8%
		Total	10,390.81	246.98	23.8		2.3%
Total		1	179,065.29	1,601.63	8.9		15.1%
		2	1,177,805.28	6,249.75	5.3		58.9%
		3	769,949.57	2,750.53	3.6		25.9%
		Total	2,126,820.14	10,601.91	5.0		

Table 18.-- Monthly bycatch rates (no./t) and average weights (kg) of *C. bairdi* snow (Tanner) crab and number of hauls sampled and NPFMC area, 1991.

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target																		
Ja	13.632	0.61	26	--	--	--	4.807	0.38	65	--	--	--	8.528	0.48	143	26.515	0.18	4
Fe	16.688	0.41	426	--	--	--	5.799	0.49	61	--	--	--	5.936	0.56	123	13.678	0.49	15
Mr	16.511	0.35	152	--	--	--	13.660	0.57	6	--	--	--	--	--	--	0.000	0.00	2
Ap	4.811	0.42	27	--	--	--	0.507	0.31	13	ns	ns	ns	--	--	--	3.069	0.05	2
My	2.602	0.24	128	0	0	5	8.089	0.24	232	1.279	0.09	889	15.761	0.28	4	5.173	0.27	1
Jn	14.928	0.22	8	--	--	--	11.752	0.13	95	0.071	0.14	638	--	--	--	ns	ns	ns
Jl	9.481	0.75	3	--	--	--	14.591	0.18	30	0.788	0.15	566	ns	ns	ns	ns	ns	ns
Au	0.000	0.00	9	--	--	--	19.894	0.16	172	0.648	0.10	737	0.000	0.00	1	--	--	--
Se	6.977	0.28	2	--	--	--	19.467	0.24	384	10.108	0.13	733	--	--	--	--	--	--
Oc	--	--	--	--	--	--	19.861	0.19	217	8.786	0.13	182	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	14.205	0.40	781	0	0	5	15.273	0.22	1275	3.180	0.13	3745	7.329	0.51	271	13.123	0.45	24
Bottom trawl - Pollock target																		
Ja	4.609	0.38	194	--	--	--	5.789	0.44	5	--	--	--	8.822	0.33	12	2.587	0.38	82
Fe	8.726	0.35	215	--	--	--	0.000	0.00	1	--	--	--	4.637	0.51	10	13.822	0.38	26
Mr	7.260	0.36	55	--	--	--	1.299	0.68	9	--	--	--	--	--	--	19.598	0.20	4
Ap	10.905	0.29	112	--	--	--	0.471	0.43	88	--	--	--	--	--	--	2.010	0.12	111
My	22.115	0.35	6	--	--	--	5.842	0.31	71	1.651	0.11	5	0.000	0.00	1	4.264	0.29	9
Jn	1.466	0.31	3	--	--	--	7.559	0.08	16	--	--	--	--	--	--	0.000	0.00	9
Jl	ns	ns	ns	--	--	--	2.467	0.91	39	0.000	0.00	3	--	--	--	0.150	0.12	6
Au	--	--	--	--	--	--	3.595	0.20	5	0.000	0.00	10	--	--	--	1.231	0.16	18
Se	ns	ns	ns	--	--	--	13.317	0.17	14	25.720	0.22	6	--	--	--	6.629	0.12	2
Oc	--	--	--	--	--	--	3.761	0.23	5	1.759	0.32	7	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	7.592	0.34	585	--	--	--	3.433	0.38	253	7.841	0.22	31	6.297	0.40	23	3.559	0.29	267
Bottom trawl - Pacific cod target																		
Ja	8.706	0.39	105	--	--	--	0.000	0.00	2	--	--	--	0.000	0.00	1	2.146	0.38	334
Fe	2.160	0.27	54	--	--	--	0.000	0.00	1	--	--	--	0.000	0.00	1	2.624	0.24	272
Mr	3.531	0.29	5	--	--	--	0.169	0.50	6	--	--	--	--	--	--	21.931	0.21	27
Ap	1.500	0.15	200	--	--	--	0.369	0.56	34	--	--	--	--	--	--	1.522	0.20	366
My	0.000	0.00	1	--	--	--	0.313	0.46	8	0.000	0.00	1	--	--	--	0.000	0.00	1
Jn	0.000	0.00	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	--	--	--	0.000	0.00	2	--	--	--	--	--	--
Au	--	--	--	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	6.540	0.07	1	--	--	--	0.000	0.00	1
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	3.753	0.33	366	--	--	--	0.315	0.53	51	1.430	0.07	5	0.000	0.00	2	2.366	0.27	1001

in the U.S. domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery,
 ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; "--" = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target															
Ja	--	--	--	--	--	--	8.888	0.40	21	--	--	--	--	--	--
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	ns	ns	ns	18.281	0.49	8	--	--	--	--	--	--
Ap	--	--	--	--	--	--	3.498	0.45	31	1.219	0.34	3	ns	ns	ns
My	--	--	--	--	--	--	3.644	0.20	69	0.568	0.12	80	0.000	0.00	1
Jn	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--
Jl	--	--	--	--	--	--	113.847	0.17	8	--	--	--	--	--	--
Au	--	--	--	--	--	--	52.006	0.15	26	--	--	--	--	--	--
Se	--	--	--	--	--	--	ns	ns	ns	0.000	0.00	2	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	--	--	--	ns	ns	ns	10.503	0.23	163	0.571	0.14	85	0.000	0.00	1
Bottom trawl - Pollock target															
Ja	ns	ns	ns	0.026	0.25	5	ns	ns	ns	--	--	--	0.000	0.00	2
Fe	0.000	0.00	2	0.002	1.60	11	0.732	0.49	4	--	--	--	0.000	0.00	15
Mr	--	--	--	0.029	0.09	8	0.848	0.32	11	0.000	0.00	1	0.000	0.00	4
Ap	--	--	--	0.000	0.00	17	2.627	0.18	267	0.000	0.00	9	0.000	0.00	1
My	0.000	0.00	1	0.000	0.00	12	6.640	0.25	93	15.557	0.07	4	0.017	0.11	8
Jn	--	--	--	0.000	0.00	1	0.685	0.58	6	--	--	--	--	--	--
Jl	0.000	0.00	1	0.000	0.00	2	1.606	0.19	212	0.000	0.00	4	0.000	0.00	2
Au	0.000	0.00	1	0.000	0.00	4	2.617	0.21	155	0.000	0.00	10	--	--	--
Se	--	--	--	0.000	0.00	5	1.276	0.24	11	0.000	0.00	4	--	--	--
Oc	--	--	--	0.000	0.00	1	--	--	--	0.000	0.00	1	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	5	0.005	0.42	66	2.360	0.21	759	0.140	0.07	33	0.001	0.11	32
Bottom trawl - Pacific cod target															
Ja	ns	ns	ns	0.060	0.70	33	--	--	--	--	--	--	0.000	0.00	4
Fe	0.035	1.75	6	0.162	0.14	125	0.095	0.80	2	--	--	--	0.000	0.00	7
Mr	0.521	0.22	9	0.133	0.26	51	1.295	0.36	22	0.044	0.30	7	0.000	0.00	25
Ap	0.314	0.32	57	0.062	0.62	90	1.467	0.14	608	0.290	0.11	79	0.000	0.00	28
My	0.000	0.00	7	0.000	0.00	29	1.471	0.13	32	0.000	0.00	5	9.239	0.04	9
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	0.231	0.53	22	--	--	--	0.000	0.00	33
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.293	0.32	79	0.114	0.26	328	1.432	0.15	686	0.251	0.12	91	0.458	0.04	106

Table 18.-- Monthly bycatch rates (no./t) and average weights (kg) of C. bairdi snow (Tanner) crab and number of hauls sampled and NPFMC area, 1991 (Continued).

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Rockfish target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	9.555	0.45	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Ap	--	--	--	--	--	--	6.170	0.55	3	--	--	--	--	--	--	0.862	0.08	11
My	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	1
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	9.555	0.45	2	--	--	--	6.170	0.55	3	--	--	--	--	--	--	0.732	0.08	14
Bottom trawl - Other species target																		
Ja	5.085	0.38	3	--	--	--	0.000	0.00	1	--	--	--	--	--	--	23.350	0.16	20
Fe	1.958	0.52	5	--	--	--	82.527	0.36	3	--	--	--	--	--	--	37.046	0.12	3
Mr	5.652	0.37	3	--	--	--	1.153	0.65	2	--	--	--	--	--	--	2.838	0.26	12
Ap	1.132	0.30	6	--	--	--	2.350	0.30	5	--	--	--	--	--	--	0.790	0.20	17
My	39.279	0.38	5	--	--	--	0.781	0.50	4	0.000	0.00	1	--	--	--	2.493	0.24	142
Jn	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	2.229	0.19	12
Jl	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.315	0.06	1
Au	--	--	--	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--
Se	--	--	--	--	--	--	3.499	0.35	1	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.301	0.22	29
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	11.402	0.38	22	--	--	--	15.627	0.36	16	0.000	0.00	2	--	--	--	4.276	0.20	238

in the U.S. domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery,
("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; "--" = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl -Rockfish target															
Ja	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	6
Fe	0.000	0.00	1	--	--	--	--	--	--	--	--	--	0.000	0.00	2
Mr	--	--	--	0.000	0.00	1	0.000	0.00	6	0.000	0.00	2	0.000	0.00	10
Ap	0.000	0.00	12	--	--	--	1.573	0.11	134	0.000	0.00	24	0.000	0.00	9
My	--	--	--	--	--	--	0.000	0.00	6	--	--	--	2.322	0.05	94
Jn	--	--	--	--	--	--	--	--	--	--	--	--	0.061	0.10	62
Jl	0.000	0.00	2	--	--	--	--	--	--	--	--	--	0.000	0.00	4
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	0.000	0.00	2	--	--	--	0.000	0.00	10	0.000	0.00	4	--	--	--
No	--	--	--	--	--	--	0.000	0.00	13	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	17	0.000	0.00	1	1.432	0.11	169	0.000	0.00	30	0.793	0.05	187
Bottom trawl - Other species target															
Ja	0.000	0.00	2	0.203	0.66	4	0.000	0.00	1	--	--	--	0.000	0.55	106
Fe	--	--	--	0.068	0.19	17	--	--	--	--	--	--	0.000	0.00	65
Mr	0.012	0.70	15	0.110	0.25	82	2.013	0.24	44	0.071	0.15	27	0.000	0.00	349
Ap	0.036	0.50	14	0.000	0.00	12	3.397	0.12	96	0.777	0.10	53	0.000	0.00	8
My	1.495	0.66	71	0.435	0.31	54	11.808	0.23	47	2.244	0.11	18	0.203	0.16	259
Jn	--	--	--	--	--	--	8.319	0.29	1	--	--	--	0.112	0.20	3
Jl	0.000	0.00	2	--	--	--	0.000	0.00	4	20.493	0.20	1	0.000	0.00	1
Au	--	--	--	--	--	--	71.007	0.12	18	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	0.000	0.00	18	0.000	0.00	27	1.956	0.15	24	0.293	0.10	21	--	--	--
No	0.000	0.00	1	0.000	0.00	11	0.000	0.00	12	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.803	0.66	123	0.164	0.29	207	7.037	0.16	247	0.577	0.11	120	0.019	0.16	791

Table 18.-- Monthly bycatch rates (no./t) and average weights (kg) of *C. bairdi* snow (Tanner) crab and number of hauls sampled and NPFMC area, 1991 (Continued).

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target																		
Ja	0.069	0.12	282	--	--	--	55.494	0.34	1	0.000	0.00	1	0.000	0.00	2	0.000	0.44	465
Fe	0.056	0.30	300	--	--	--	--	--	--	--	--	--	5.682	0.50	1	0.272	0.18	191
Mr	7.020	0.26	14	--	--	--	5.441	0.01	1	--	--	--	--	--	--	14.603	0.17	60
Ap	7.493	0.19	22	--	--	--	--	--	--	--	--	--	--	--	--	3.588	0.15	6
My	13.211	0.24	69	--	--	--	1.634	0.49	7	--	--	--	--	--	--	0.000	0.00	23
Jn	2.617	0.38	235	--	--	--	0.076	0.35	431	--	--	--	--	--	--	0.068	0.39	839
Jl	0.647	0.57	46	--	--	--	0.815	0.51	432	--	--	--	--	--	--	0.967	0.32	405
Au	10.307	0.34	92	--	--	--	1.425	0.42	7	--	--	--	--	--	--	0.876	0.26	943
Se	36.195	0.30	8	--	--	--	--	--	--	--	--	--	--	--	--	0.404	0.19	78
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	1.717	0.31	1068	--	--	--	0.480	0.49	879	0.000	0.00	1	0.788	0.50	3	0.534	0.25	3010
Pelagic trawl - Other species target																		
Ja	29.879	0.26	2	--	--	--	14.187	0.44	21	--	--	--	22.813	0.19	5	0.094	0.30	3
Fe	11.552	0.23	26	--	--	--	ns	ns	ns	--	--	--	4.727	0.44	26	27.257	0.14	131
Mr	3.978	0.45	12	--	--	--	ns	ns	ns	--	--	--	--	--	--	12.974	0.17	302
Ap	10.540	0.16	31	--	--	--	--	--	--	--	--	--	--	--	--	3.421	0.16	27
My	8.618	0.26	47	--	--	--	1.890	0.39	8	0.000	0.00	1	--	--	--	0.710	0.08	4
Jn	15.319	0.26	14	--	--	--	1.851	0.46	2	ns	ns	ns	--	--	--	6.556	0.30	7
Jl	15.103	0.54	4	--	--	--	0.000	0.00	2	ns	ns	ns	--	--	--	0.237	0.50	5
Au	21.448	0.21	10	--	--	--	ns	ns	ns	--	--	--	--	--	--	12.274	0.32	35
Se	108.838	0.32	1	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	3.986	0.09	3
Oc	--	--	--	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	11.746	0.25	147	--	--	--	9.092	0.44	33	0.000	0.00	1	6.817	0.34	31	16.308	0.16	517
Pots - All targets																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	10.966	0.50	1	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	66.610	0.30	4	--	--	--	0.000	0.00	1	--	--	--	--	--	--	1.759	0.49	45
Au	71.902	0.39	22	--	--	--	--	--	--	--	--	--	125.010	0.36	12	0.476	0.26	44
Se	1.889	0.21	9	--	--	--	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	12
Oc	220.369	0.58	25	--	--	--	--	--	--	ns	ns	ns	351.698	0.89	5	0.000	0.00	12
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	8
De	178.719	0.50	11	--	--	--	--	--	--	--	--	--	--	--	--	31.551	0.69	30
Yr	129.766	0.52	72	--	--	--	0.000	0.00	1	ns	ns	ns	167.747	0.57	17	8.603	0.68	151

in the U.S. domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, ("Rate" = no./t of groundfish; "Wt" = average weight; "Hl" = no. of hauls; "ns" = no observer sampling; "--" = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl
Pelagic trawl - Pollock target															
Ja	0.000	0.00	1107	0.000	0.00	214	--	--	--	--	--	--	0.000	0.00	96
Fe	0.000	0.00	830	0.000	0.50	287	0.000	0.00	1	0.000	0.00	1	0.000	0.00	169
Mr	--	--	--	--	--	--	1.322	0.71	13	0.000	0.00	1	0.000	0.00	361
Ap	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--
My	--	--	--	0.000	0.00	1	0.095	0.33	73	ns	ns	ns	--	--	--
Jn	0.000	0.00	1	0.007	0.45	16	0.204	0.34	1278	0.137	0.16	43	--	--	--
Jl	6.806	0.10	2	0.000	0.00	15	1.230	0.26	1552	0.175	0.17	6	--	--	--
Au	--	--	--	0.022	0.18	225	1.007	0.19	2040	0.009	0.25	141	0.000	0.00	1
Se	--	--	--	0.051	0.40	16	1.119	0.24	164	0.000	0.00	12	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.005	0.10	1940	0.005	0.22	774	0.902	0.23	5122	0.027	0.19	204	0.000	0.00	627
Pelagic trawl - Other species target															
Ja	0.000	0.00	2	ns	ns	ns	11.505	0.62	10	--	--	--	ns	ns	ns
Fe	0.000	0.00	1	4.885	0.09	2	--	--	--	--	--	--	0.000	0.00	1
Mr	1.144	0.56	2	1.319	0.11	37	0.208	0.34	125	0.000	0.00	5	ns	ns	ns
Ap	--	--	--	--	--	--	0.958	0.13	13	--	--	--	--	--	--
My	ns	ns	ns	1.302	0.13	5	0.808	0.25	34	--	--	--	--	--	--
Jn	--	--	--	--	--	--	0.000	0.00	8	ns	ns	ns	--	--	--
Jl	--	--	--	0.000	0.00	1	5.801	0.14	6	--	--	--	--	--	--
Au	--	--	--	0.944	0.14	9	4.165	0.31	20	ns	ns	ns	--	--	--
Se	--	--	--	0.000	0.00	1	2.624	0.11	5	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.135	0.56	5	1.230	0.12	55	1.455	0.36	221	0.000	0.00	5	0.000	0.00	1
Pots - All targets															
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--
Mr	--	--	--	--	--	--	ns	ns	ns	--	--	--	ns	ns	ns
Ap	--	--	--	--	--	--	ns	ns	ns	--	--	--	ns	ns	ns
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	1.186	1.08	18	0.000	0.00	30	2.699	0.51	14	ns	ns	ns	0.106	0.32	40
Au	0.000	0.00	37	0.009	0.40	95	1.485	0.36	79	0.000	0.00	5	0.006	0.40	79
Se	0.000	0.00	6	0.000	0.00	67	--	--	--	--	--	--	0.023	0.40	127
Oc	0.543	0.30	2	0.025	0.24	75	--	--	--	--	--	--	0.268	0.29	76
No	0.000	0.00	5	0.000	0.00	47	--	--	--	--	--	--	0.000	0.00	31
De	--	--	--	0.067	0.25	22	--	--	--	--	--	--	0.000	0.00	20
Yr	0.208	0.96	68	0.012	0.28	336	1.799	0.42	93	0.000	0.00	5	0.071	0.30	373

Table 18.-- Monthly bycatch rates (no./t) and average weights (kg) of *C. bairdi* snow (Tanner) crab and number of hauls sampled and NPFMC area, 1991 (Continued).

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Jl	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Au	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
Longline - Pacific cod target																		
Ja	0.000	0.00	2	--	--	--	--	--	--	--	--	--	--	--	--	0.259	0.66	24
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.242	0.61	40
Mr	0.000	0.00	4	--	--	--	3.772	0.60	1	--	--	--	--	--	--	0.117	0.57	21
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	3
My	--	--	--	--	--	--	0.090	0.70	3	--	--	--	--	--	--	0.202	0.59	13
Jn	--	--	--	--	--	--	0.000	0.00	7	--	--	--	--	--	--	0.714	0.59	8
Jl	49.321	0.49	3	0	0	2	ns	ns	ns	--	--	--	0.000	0.00	5	0.374	0.72	84
Au	0.000	0.00	2	--	--	--	2.620	0.70	1	ns	ns	ns	--	--	--	0.158	0.67	34
Se	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	42
Oc	ns	ns	ns	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.050	0.63	93
No	ns	ns	ns	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.164	0.70	173
De	--	--	--	--	--	--	11.284	0.62	1	--	--	--	--	--	--	0.424	0.63	145
Yr	6.891	0.49	11	0	0	2	1.589	0.63	14	ns	ns	ns	0.000	0.00	5	0.218	0.65	680
Longline - Other species target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	3
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	5
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	7
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	5
Jl	ns	ns	ns	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	14
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	12
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.676	0.75	3
Oc	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	13
No	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.382	0.80	3
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Yr	ns	ns	ns	--	--	--	0.000	0.00	2	ns	ns	ns	--	--	--	0.096	0.76	65

in the U.S. domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery,
 ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; "--" = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target															
Ja	ns	ns	ns	--	--	--	--	--	--	--	--	--	ns	ns	ns
Fe	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	14
Mr	0.000	0.00	1	--	--	--	--	--	--	--	--	--	0.000	0.00	87
Ap	ns	ns	ns	--	--	--	ns	ns	ns	ns	ns	ns	0.000	0.00	64
My	--	--	--	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	28
Jn	0.000	0.00	1	--	--	--	--	--	--	--	--	--	0.000	0.00	7
Jl	0.000	0.00	2	ns	ns	ns	0.000	0.00	1	0.000	0.00	1	0.000	0.00	23
Au	ns	ns	ns	ns	ns	ns	0.000	0.00	2	0.000	0.00	5	0.000	0.00	18
Se	--	--	--	--	--	--	0.000	0.00	1	ns	ns	ns	0.000	0.00	22
Oc	--	--	--	0.000	0.00	3	0.000	0.00	1	--	--	--	0.000	0.00	28
No	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	23
De	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	23
Yr	0.000	0.00	4	0.000	0.00	4	0.000	0.00	5	0.000	0.00	6	0.000	0.00	337
Longline - Pacific cod target															
Ja	0.000	0.00	10	--	--	--	0.608	0.84	113	0.000	0.00	4	0.000	0.00	19
Fe	0.000	0.00	13	0.000	0.00	5	0.133	0.91	127	0.034	0.93	23	0.048	0.40	35
Mr	0.000	0.00	10	0.000	0.00	6	0.064	0.91	152	0.004	1.00	47	0.000	0.00	20
Ap	0.000	0.00	5	--	--	--	0.022	0.66	219	0.000	0.00	94	0.000	0.00	33
My	--	--	--	--	--	--	0.014	0.84	282	0.000	0.00	41	0.000	0.00	1
Jn	0.000	0.00	4	0.000	0.00	2	0.032	0.48	354	0.011	0.75	35	ns	ns	ns
Jl	0.000	0.00	35	0.000	0.00	17	0.055	0.63	485	0.164	0.28	38	0.000	0.00	22
Au	0.000	0.00	25	0.000	0.00	24	0.013	0.55	618	0.155	0.44	49	0.000	0.00	26
Se	0.000	0.00	3	0.000	0.00	18	0.035	0.57	597	0.399	0.42	32	0.000	0.00	11
Oc	0.000	0.00	10	0.000	0.00	38	0.054	0.79	685	0.153	0.49	41	0.000	0.00	69
No	0.000	0.00	6	0.000	0.00	1	0.373	0.79	260	0.216	0.58	53	0.000	0.00	95
De	0.000	0.00	10	0.000	0.00	9	0.045	0.60	223	0.609	0.32	21	0.000	0.00	20
Yr	0.000	0.00	131	0.000	0.00	120	0.085	0.78	4115	0.099	0.44	478	0.005	0.40	351
Longline - Other species target															
Ja	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	ns	ns	ns
Fe	0.000	0.00	3	0.000	0.00	1	0.061	1.00	2	--	--	--	0.000	0.00	30
Mr	0.000	0.00	5	--	--	--	--	--	--	--	--	--	0.000	0.00	64
Ap	0.000	0.00	1	ns	ns	ns	0.000	0.00	2	0.000	0.00	1	0.000	0.00	57
My	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	9
Jn	0.000	0.00	12	0.000	0.00	5	0.000	0.00	4	0.000	0.00	4	0.000	0.00	29
Jl	0.000	0.00	57	0.000	0.00	11	0.000	0.00	26	0.000	0.00	6	0.000	0.00	43
Au	0.000	0.00	18	0.000	0.00	15	0.000	0.00	34	0.000	0.00	17	0.000	0.00	26
Se	--	--	--	--	--	--	0.040	0.70	12	0.000	0.00	2	0.000	0.00	6
Oc	0.000	0.00	6	0.000	0.00	7	0.000	0.00	25	0.000	0.00	1	0.000	0.00	38
No	--	--	--	0.000	0.00	3	0.000	0.00	8	0.000	0.00	1	0.000	0.00	96
De	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	28
Yr	0.000	0.00	102	0.000	0.00	43	0.012	0.90	113	0.000	0.00	32	0.000	0.00	426

Table 19.-- Monthly bycatch rates (no./t) and average weights (kg) of "other" snow (Tanner) crab and number of hauls sampled and NPFMC area, 1991.

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target																		
Ja	0.087	0.49	26	--	--	--	7.701	0.46	65	--	--	--	0.075	0.23	143	8.222	0.24	4
Fe	1.955	0.35	426	--	--	--	28.745	0.39	61	--	--	--	0.118	0.62	123	8.466	0.55	15
Mr	0.867	0.25	152	--	--	--	6.902	0.86	6	--	--	--	--	--	--	21.659	0.57	2
Ap	0.164	0.05	27	--	--	--	19.457	0.28	13	ns	ns	ns	--	--	--	0.499	0.22	2
My	1.055	0.31	128	0.000	0.00	5	41.635	0.18	232	41.808	0.07	889	1.461	0.20	4	0.000	0.00	1
Jn	0.000	0.00	8	--	--	--	216.562	0.05	95	3.794	0.04	638	--	--	--	ns	ns	ns
Jl	0.000	0.00	3	--	--	--	287.981	0.12	30	2.133	0.06	566	ns	ns	ns	ns	ns	ns
Au	0.000	0.00	9	--	--	--	179.477	0.17	172	10.714	0.10	737	0.000	0.00	1	--	--	--
Se	26.570	0.58	2	--	--	--	52.543	0.35	384	62.652	0.15	733	--	--	--	--	--	--
Oc	--	--	--	--	--	--	20.659	0.47	217	108.432	0.11	182	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	1.592	0.34	781	0.000	0.00	5	78.195	0.20	1275	32.683	0.11	3745	0.109	0.43	271	8.854	0.54	24
Bottom trawl - Pollock target																		
Ja	0.869	0.38	194	--	--	--	17.396	0.47	5	--	--	--	0.000	0.00	12	0.432	0.67	82
Fe	1.123	0.41	215	--	--	--	11.058	0.40	1	--	--	--	0.000	0.00	10	4.254	0.57	26
Mr	0.804	0.29	55	--	--	--	63.494	0.20	9	--	--	--	--	--	--	1.541	0.40	4
Ap	0.907	0.35	112	--	--	--	2.247	0.42	88	--	--	--	--	--	--	0.235	0.21	111
My	4.069	0.36	6	--	--	--	34.808	0.17	71	110.278	0.08	5	0.000	0.00	1	1.291	0.43	9
Jn	0.733	0.05	3	--	--	--	61.184	0.08	16	--	--	--	--	--	--	0.000	0.00	9
Jl	ns	ns	ns	--	--	--	2.252	1.25	39	17.881	0.38	3	--	--	--	0.430	0.09	6
Au	--	--	--	--	--	--	34.360	0.63	5	0.885	0.09	10	--	--	--	0.000	0.00	18
Se	ns	ns	ns	--	--	--	14.302	0.35	14	140.568	0.19	6	--	--	--	0.000	0.00	2
Oc	--	--	--	--	--	--	2.619	0.75	5	11.343	0.45	7	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.995	0.38	585	--	--	--	15.645	0.24	253	67.476	0.17	31	0.000	0.00	23	0.783	0.51	267
Bottom trawl - Pacific cod target																		
Ja	0.760	0.33	105	--	--	--	0.000	0.00	2	--	--	--	0.000	0.00	1	0.285	0.35	334
Fe	0.446	0.31	54	--	--	--	0.000	0.00	1	--	--	--	0.000	0.00	1	0.700	0.36	272
Mr	0.000	0.00	5	--	--	--	1.857	0.61	6	--	--	--	--	--	--	1.771	0.20	27
Ap	0.175	0.25	200	--	--	--	2.074	0.44	34	--	--	--	--	--	--	0.345	0.19	366
My	0.000	0.00	1	--	--	--	4.297	0.13	8	8.688	0.08	1	--	--	--	0.000	0.00	1
Jn	0.000	0.00	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	--	--	--	0.000	0.00	2	--	--	--	--	--	--
Au	--	--	--	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	16.351	0.06	1	--	--	--	0.000	0.00	1
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.389	0.30	366	--	--	--	2.639	0.30	51	6.300	0.07	5	0.000	0.00	2	0.455	0.30	1001

in the U.S. domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery,
("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; "--" = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target															
Ja	--	--	--	--	--	--	10.176	0.38	21	--	--	--	--	--	--
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	ns	ns	ns	11.076	0.58	8	--	--	--	--	--	--
Ap	--	--	--	--	--	--	6.177	0.43	31	0.000	0.00	3	ns	ns	ns
My	--	--	--	--	--	--	16.171	0.20	69	80.712	0.13	80	0.000	0.00	1
Jn	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--
Jl	--	--	--	--	--	--	66.537	0.31	8	--	--	--	--	--	--
Au	--	--	--	--	--	--	33.681	0.34	26	--	--	--	--	--	--
Se	--	--	--	--	--	--	ns	ns	ns	24.613	0.06	2	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	--	--	--	ns	ns	ns	16.091	0.27	163	77.092	0.13	85	0.000	0.00	1
Bottom trawl - Pollock target															
Ja	ns	ns	ns	0.000	0.00	5	ns	ns	ns	--	--	--	0.000	0.00	2
Fe	0.000	0.00	2	0.000	0.00	11	0.851	0.50	4	--	--	--	0.000	0.00	15
Mr	--	--	--	0.000	0.00	8	1.279	0.53	11	0.000	0.00	1	0.000	0.00	4
Ap	--	--	--	0.083	0.70	17	4.261	0.29	267	0.000	0.00	9	0.000	0.00	1
My	0.000	0.00	1	0.000	0.00	12	4.540	0.25	93	0.000	0.00	4	0.034	0.72	8
Jn	--	--	--	0.000	0.00	1	1.645	0.32	6	--	--	--	--	--	--
Jl	0.000	0.00	1	0.000	0.00	2	12.843	0.21	212	0.000	0.00	4	0.000	0.00	2
Au	0.000	0.00	1	0.000	0.00	4	8.256	0.28	155	0.000	0.00	10	--	--	--
Se	--	--	--	0.000	0.00	5	4.954	0.33	11	0.000	0.00	4	--	--	--
Oc	--	--	--	0.000	0.00	1	--	--	--	0.000	0.00	1	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	5	0.015	0.70	66	8.762	0.24	759	0.000	0.00	33	0.003	0.72	32
Bottom trawl - Pacific cod target															
Ja	ns	ns	ns	0.000	0.00	33	--	--	--	--	--	--	0.000	0.00	4
Fe	0.000	0.00	6	0.000	0.00	125	0.000	0.00	2	--	--	--	0.000	0.00	7
Mr	0.000	0.00	9	0.000	0.00	51	1.381	0.47	22	0.000	0.00	7	0.000	0.00	25
Ap	0.000	0.00	57	0.000	0.00	90	0.370	0.41	608	0.085	0.53	79	0.000	0.00	28
My	0.000	0.00	7	0.000	0.00	29	0.834	0.26	32	0.000	0.00	5	0.000	0.00	9
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	10.133	0.37	22	--	--	--	0.000	0.00	33
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	79	0.000	0.00	328	0.626	0.39	686	0.072	0.53	91	0.000	0.00	106

Table 19.-- Monthly bycatch rates (no./t) and average weights (kg) of "other" snow (Tanner) crab and number of hauls sampled and NPFMC area, 1991 (Continued).

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Rockfish target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	0.000	0.00	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Ap	--	--	--	--	--	--	2.244	0.35	3	--	--	--	--	--	--	0.000	0.00	11
My	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	1
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	2	--	--	--	2.244	0.35	3	--	--	--	--	--	--	0.000	0.00	14
Bottom trawl - Other species target																		
Ja	0.064	1.17	3	--	--	--	0.000	0.00	1	--	--	--	--	--	--	14.401	0.30	20
Fe	0.825	0.26	5	--	--	--	220.185	0.33	3	--	--	--	--	--	--	17.186	0.27	3
Mr	1.085	0.51	3	--	--	--	0.679	0.36	2	--	--	--	--	--	--	0.000	0.00	12
Ap	0.000	0.00	6	--	--	--	7.564	0.39	5	--	--	--	--	--	--	2.414	0.22	17
My	4.150	0.52	5	--	--	--	36.234	0.40	4	58.340	0.08	1	--	--	--	3.665	0.36	142
Jn	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	9.533	0.25	12
Jl	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	1
Au	--	--	--	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--
Se	--	--	--	--	--	--	6.999	0.90	1	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.086	0.42	29
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.936	0.35	2
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	1.279	0.50	22	--	--	--	46.613	0.35	16	2.258	0.08	2	--	--	--	4.729	0.33	238

in the U.S. domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery,
 ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; "--" = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl -Rockfish target															
Ja	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	6
Fe	0.000	0.00	1	--	--	--	--	--	--	--	--	--	0.000	0.00	2
Mr	--	--	--	0.000	0.00	1	0.000	0.00	6	0.000	0.00	2	0.000	0.00	10
Ap	0.000	0.00	12	--	--	--	0.046	0.26	134	0.000	0.00	24	0.000	0.00	9
My	--	--	--	--	--	--	0.870	0.25	6	--	--	--	0.015	0.29	94
Jn	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	62
Jl	0.000	0.00	2	--	--	--	--	--	--	--	--	--	0.000	0.00	4
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	0.000	0.00	2	--	--	--	0.000	0.00	10	20.638	0.82	4	--	--	--
No	--	--	--	--	--	--	0.000	0.00	13	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	17	0.000	0.00	1	0.066	0.26	169	0.374	0.82	30	0.005	0.29	187
Bottom trawl - Other species target															
Ja	0.000	0.00	2	0.000	0.00	4	0.000	0.00	1	--	--	--	0.000	0.00	106
Fe	--	--	--	0.000	0.00	17	--	--	--	--	--	--	0.001	0.28	65
Mr	0.005	0.05	15	0.088	0.26	82	2.014	0.53	44	0.000	0.00	27	0.010	0.15	349
Ap	0.000	0.00	14	0.617	0.25	12	2.214	0.38	96	3.253	0.35	53	0.000	0.00	8
My	91.836	0.23	71	2.199	0.18	54	26.894	0.17	47	0.030	0.54	18	0.668	0.38	259
Jn	--	--	--	--	--	--	1.783	0.25	1	--	--	--	0.000	0.00	3
Jl	0.000	0.00	2	--	--	--	17.752	0.32	4	0.000	0.00	1	0.000	0.00	1
Au	--	--	--	--	--	--	12.784	0.40	18	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	0.557	0.33	18	10.827	0.30	27	0.678	0.14	24	0.218	0.17	21	--	--	--
No	0.000	0.00	1	12.171	0.32	11	0.000	0.00	12	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	48.876	0.23	123	0.932	0.24	207	6.993	0.24	247	1.171	0.34	120	0.069	0.36	791

Table 19.-- Monthly bycatch rates (no./t) and average weights (kg) of "other" snow (Tanner) crab and number of hauls sampled and NPFMC area, 1991 (Continued).

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target																		
Ja	0.000	0.52	282	--	--	--	33.297	0.60	1	0.000	0.00	1	0.000	0.00	2	0.000	0.00	465
Fe	0.000	0.00	300	--	--	--	--	--	--	--	--	--	0.000	0.00	1	0.001	0.58	191
Mr	0.770	0.29	14	--	--	--	0.000	0.00	1	--	--	--	--	--	--	4.184	0.35	60
Ap	5.516	0.28	22	--	--	--	--	--	--	--	--	--	--	--	--	2.513	0.18	6
My	3.953	0.39	69	--	--	--	3.917	0.37	7	--	--	--	--	--	--	0.068	0.36	23
Jn	0.309	0.39	235	--	--	--	0.258	0.28	431	--	--	--	--	--	--	0.146	0.51	839
Jl	0.562	0.63	46	--	--	--	9.140	0.27	432	--	--	--	--	--	--	0.777	0.26	405
Au	0.962	0.51	92	--	--	--	6.239	0.49	7	--	--	--	--	--	--	0.779	0.23	943
Se	3.391	0.25	8	--	--	--	--	--	--	--	--	--	--	--	--	0.493	0.22	78
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.332	0.39	1068	--	--	--	4.944	0.27	879	0.000	0.00	1	0.000	0.00	3	0.394	0.27	3010
Pelagic trawl - Other species target																		
Ja	3.612	0.22	2	--	--	--	10.098	0.50	21	--	--	--	1.292	0.80	5	0.000	0.00	3
Fe	2.412	0.35	26	--	--	--	ns	ns	ns	--	--	--	0.677	0.55	26	5.563	0.22	131
Mr	0.000	0.00	12	--	--	--	ns	ns	ns	--	--	--	--	--	--	2.954	0.28	302
Ap	3.991	0.28	31	--	--	--	--	--	--	--	--	--	--	--	--	1.583	0.30	27
My	3.642	0.36	47	--	--	--	2.001	0.35	8	0.000	0.00	1	--	--	--	0.237	0.45	4
Jn	3.388	0.61	14	--	--	--	0.705	0.54	2	ns	ns	ns	--	--	--	7.060	0.67	7
Jl	0.000	0.00	4	--	--	--	0.000	0.00	2	ns	ns	ns	--	--	--	1.485	1.42	5
Au	0.195	0.70	10	--	--	--	ns	ns	ns	--	--	--	--	--	--	2.918	0.34	35
Se	4.354	0.30	1	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	0.000	0.00	3
Oc	--	--	--	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	2.738	0.35	147	--	--	--	6.556	0.49	33	0.000	0.00	1	0.748	0.60	31	3.676	0.28	517
Pots - All targets																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	0.000	0.00	1	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	0.000	0.00	4	--	--	--	0.000	0.00	1	--	--	--	--	--	--	1.990	0.49	45
Au	0.576	0.08	22	--	--	--	--	--	--	--	--	--	0.077	0.60	12	0.000	0.00	44
Se	0.000	0.00	9	--	--	--	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	12
Oc	3.245	0.78	25	--	--	--	--	--	--	ns	ns	ns	4.766	0.47	5	0.000	0.00	12
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	8
De	0.116	1.03	11	--	--	--	--	--	--	--	--	--	--	--	--	1.903	0.74	30
Yr	1.321	0.68	72	--	--	--	0.000	0.00	1	ns	ns	ns	0.961	0.47	17	1.002	0.61	151

in the U.S. domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery,
("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; "--" = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target															
Ja	0.000	0.00	1107	0.000	0.00	214	--	--	--	--	--	--	0.000	0.00	96
Fe	0.000	0.00	830	0.000	0.00	287	0.000	0.00	1	0.000	0.00	1	0.000	0.00	169
Mr	--	--	--	--	--	--	22.355	0.37	13	0.000	0.00	1	0.000	0.00	361
Ap	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--
My	--	--	--	0.000	0.00	1	0.032	0.40	73	ns	ns	ns	--	--	--
Jn	0.000	0.00	1	0.002	0.95	16	2.025	0.18	1278	0.788	0.12	43	--	--	--
Jl	0.000	0.00	2	0.000	0.00	15	8.966	0.19	1552	2.530	0.21	6	--	--	--
Au	--	--	--	<0.001	0.60	225	5.760	0.22	2040	1.268	0.31	141	8.516	0.28	1
Se	--	--	--	0.001	0.45	16	4.535	0.29	164	0.000	0.00	12	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	1940	<0.001	0.67	774	5.905	0.20	5122	1.143	0.29	204	0.009	0.28	627
Pelagic trawl - Other species target															
Ja	0.000	0.00	2	ns	ns	ns	9.037	0.63	10	--	--	--	ns	ns	ns
Fe	0.000	0.00	1	0.000	0.00	2	--	--	--	--	--	--	0.000	0.00	1
Mr	0.000	0.00	2	0.000	0.00	37	0.193	0.44	125	0.000	0.00	5	ns	ns	ns
Ap	--	--	--	--	--	--	0.046	0.51	13	--	--	--	--	--	--
My	ns	ns	ns	0.065	0.20	5	0.151	0.44	34	--	--	--	--	--	--
Jn	--	--	--	--	--	--	2.795	0.30	8	ns	ns	ns	--	--	--
Jl	--	--	--	0.000	0.00	1	29.385	0.20	6	--	--	--	--	--	--
Au	--	--	--	0.000	0.00	9	55.805	0.30	20	ns	ns	ns	--	--	--
Se	--	--	--	0.000	0.00	1	131.390	0.28	5	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	5	0.002	0.20	55	13.363	0.30	221	0.000	0.00	5	0.000	0.00	1
Pots - All targets															
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--
Mr	--	--	--	--	--	--	ns	ns	ns	--	--	--	ns	ns	ns
Ap	--	--	--	--	--	--	ns	ns	ns	--	--	--	ns	ns	ns
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	9.038	0.16	18	0.000	0.00	30	100.431	0.33	14	ns	ns	ns	0.000	0.00	40
Au	0.000	0.00	37	0.000	0.00	95	284.850	0.40	79	1306.222	0.26	5	0.000	0.00	79
Se	0.000	0.00	6	0.000	0.00	67	--	--	--	--	--	--	0.000	0.00	127
Oc	0.000	0.00	2	0.000	0.00	75	--	--	--	--	--	--	0.000	0.00	76
No	0.000	0.00	5	0.000	0.00	47	--	--	--	--	--	--	0.000	0.00	31
De	--	--	--	0.000	0.00	22	--	--	--	--	--	--	0.000	0.00	20
Yr	1.332	0.16	68	0.000	0.00	336	237.150	0.39	93	1306.222	0.26	5	0.000	0.00	373

Table 19.-- Monthly bycatch rates (no./t) and average weights (kg) of "other" snow (Tanner) crab and number of hauls sampled and NPFMC area, 1991 (Continued).

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Jl	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Au	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
Longline - Pacific cod target																		
Ja	0.000	0.00	2	--	--	--	--	--	--	--	--	--	--	--	--	0.329	0.38	24
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.441	0.57	40
Mr	0.000	0.00	4	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.117	0.62	21
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	3
My	--	--	--	--	--	--	0.000	0.00	3	--	--	--	--	--	--	1.766	0.39	13
Jn	--	--	--	--	--	--	0.000	0.00	7	--	--	--	--	--	--	0.475	0.51	8
Jl	0.000	0.00	3	0.000	0.00	2	ns	ns	ns	--	--	--	0.000	0.00	5	0.780	0.61	84
Au	0.000	0.00	2	--	--	--	11.791	0.49	1	ns	ns	ns	--	--	--	0.526	0.61	34
Se	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	42
Oc	ns	ns	ns	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.244	0.54	93
No	ns	ns	ns	--	--	--	7.761	0.45	1	--	--	--	--	--	--	0.128	0.59	173
De	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.059	0.71	145
Yr	0.000	0.00	11	0.000	0.00	2	0.287	0.48	14	ns	ns	ns	0.000	0.00	5	0.301	0.52	680
Longline - Other species target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	3
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	5
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	ns	ns	ns	--	--	--	0.097	0.95	7
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	5
Jl	ns	ns	ns	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.081	0.50	14
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.018	0.40	12
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.301	0.37	3
Oc	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	13
No	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	3
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Yr	ns	ns	ns	--	--	--	0.000	0.00	2	ns	ns	ns	--	--	--	0.065	0.45	65

in the U.S. domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery,
 ("Rate" = no./t of groundfish; "Wt" = average weight; "Hl" = no. of hauls; "ns" = no observer sampling; "--" = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl
Longline - Sablefish target															
Ja	ns	ns	ns	--	--	--	--	--	--	--	--	--	ns	ns	ns
Fe	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	14
Mr	0.000	0.00	1	--	--	--	--	--	--	--	--	--	0.000	0.00	87
Ap	ns	ns	ns	--	--	--	ns	ns	ns	ns	ns	ns	0.000	0.00	64
My	--	--	--	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	28
Jn	0.000	0.00	1	--	--	--	--	--	--	--	--	--	0.000	0.00	7
Jl	0.000	0.00	2	ns	ns	ns	0.000	0.00	1	0.000	0.00	1	0.000	0.00	23
Au	ns	ns	ns	ns	ns	ns	0.000	0.00	2	0.000	0.00	5	0.052	0.90	18
Se	--	--	--	--	--	--	0.000	0.00	1	ns	ns	ns	0.000	0.00	22
Oc	--	--	--	0.000	0.00	3	0.000	0.00	1	--	--	--	0.000	0.00	28
No	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.076	1.20	23
De	--	--	--	--	--	--	--	--	--	--	--	--	0.249	0.81	23
Yr	0.000	0.00	4	0.000	0.00	4	0.000	0.00	5	0.000	0.00	6	0.026	0.91	337
Longline - Pacific cod target															
Ja	0.000	0.00	10	--	--	--	1.411	0.51	113	0.000	0.00	4	0.000	0.00	19
Fe	0.000	0.00	13	0.000	0.00	5	1.068	0.54	127	0.291	0.46	23	0.000	0.00	35
Mr	0.000	0.00	10	0.000	0.00	6	1.057	0.46	152	0.184	0.75	47	0.000	0.00	20
Ap	0.000	0.00	5	--	--	--	0.175	0.49	219	0.000	0.00	94	0.000	0.00	33
My	--	--	--	--	--	--	0.184	0.46	282	0.259	0.54	41	0.000	0.00	1
Jn	0.000	0.00	4	0.000	0.00	2	0.292	0.47	354	0.107	0.48	35	ns	ns	ns
Jl	0.000	0.00	35	0.000	0.00	17	0.791	0.49	485	0.130	0.57	38	0.000	0.00	22
Au	0.000	0.00	25	0.000	0.00	24	0.821	0.53	618	2.564	0.52	49	0.000	0.00	26
Se	0.000	0.00	3	0.000	0.00	18	0.239	0.49	597	0.877	0.44	32	0.000	0.00	11
Oc	0.000	0.00	10	0.000	0.00	38	0.954	0.56	685	2.955	0.56	41	0.000	0.00	69
No	0.000	0.00	6	0.000	0.00	1	0.919	0.49	260	0.619	0.59	53	0.000	0.00	95
De	0.000	0.00	10	0.000	0.00	9	2.638	0.59	223	0.271	0.42	21	0.000	0.00	20
Yr	0.000	0.00	131	0.000	0.00	120	0.749	0.52	4115	0.644	0.54	478	0.000	0.00	351
Longline - Other species target															
Ja	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	ns	ns	ns
Fe	0.000	0.00	3	0.000	0.00	1	0.000	0.00	2	--	--	--	0.000	0.00	30
Mr	0.000	0.00	5	--	--	--	--	--	--	--	--	--	0.005	1.30	64
Ap	0.000	0.00	1	ns	ns	ns	0.000	0.00	2	0.000	0.00	1	0.000	0.00	57
My	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	9
Jn	0.000	0.00	12	0.000	0.00	5	0.000	0.00	4	0.070	0.70	4	0.000	0.00	29
Jl	0.000	0.00	57	0.000	0.00	11	0.088	0.76	26	0.456	1.13	6	0.000	0.00	43
Au	0.000	0.00	18	0.000	0.00	15	0.117	1.06	34	0.602	0.67	17	0.000	0.00	26
Se	--	--	--	--	--	--	0.000	0.00	12	0.000	0.00	2	0.000	0.00	6
Oc	0.000	0.00	6	0.000	0.00	7	0.277	0.38	25	1.365	0.51	1	0.000	0.00	38
No	--	--	--	0.000	0.00	3	4.065	0.43	8	0.000	0.00	1	0.005	1.00	96
De	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.111	0.92	28
Yr	0.000	0.00	102	0.000	0.00	43	0.478	0.47	113	0.400	0.72	32	0.010	0.98	426

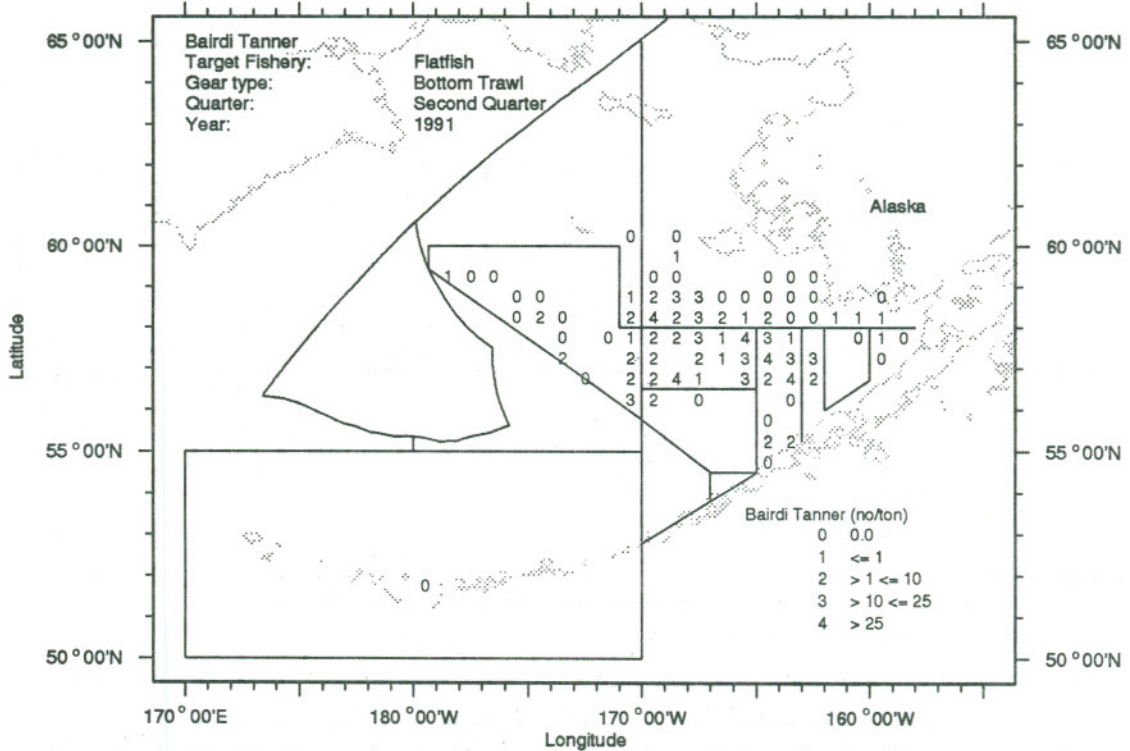
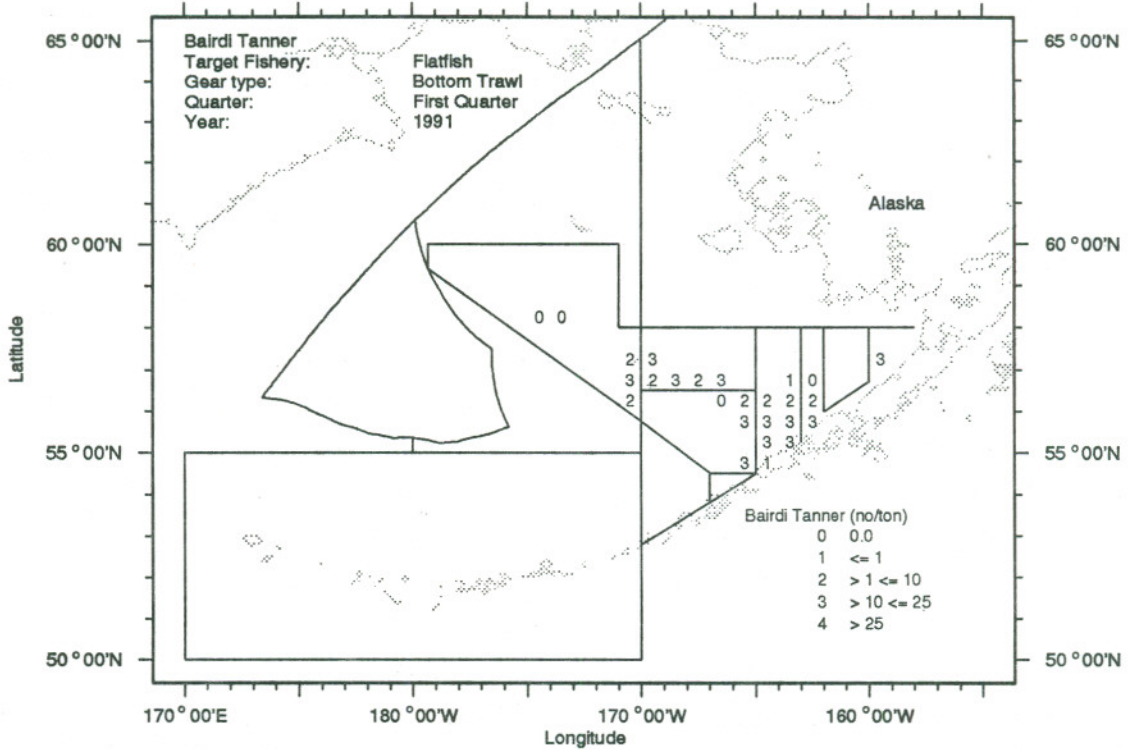


Figure 5.--Bycatch (no./metric ton (t)) of *C. bairdi* snow (Tanner) crab in the U.S. domestic groundfish fisheries by quarter, target fishery, gear type, and ½° latitude and 1° longitude areas in the Bering Sea/Aleutian Islands region, 1991.

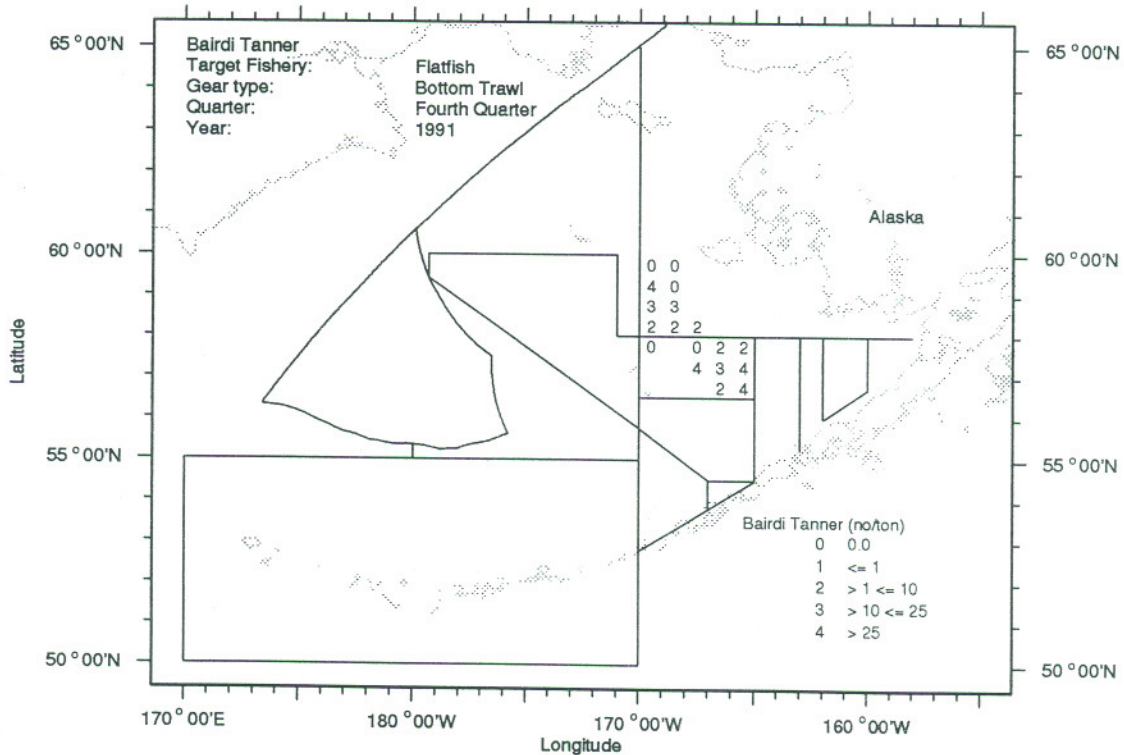
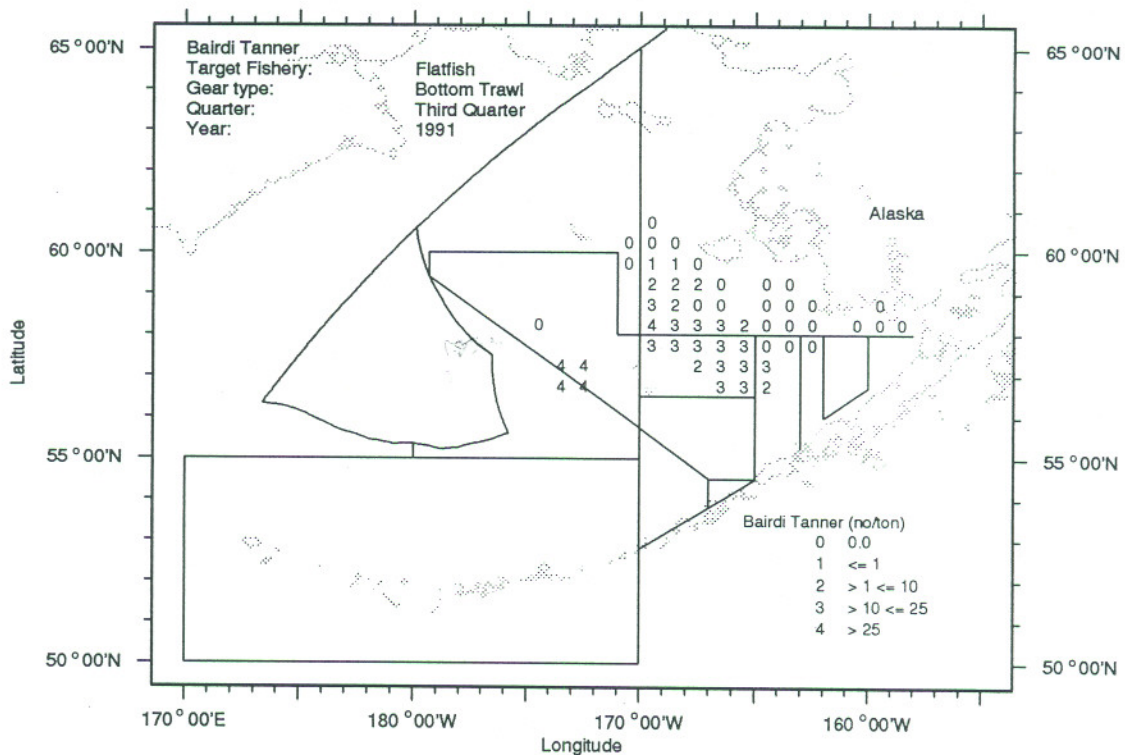


Figure 5.--Continued.

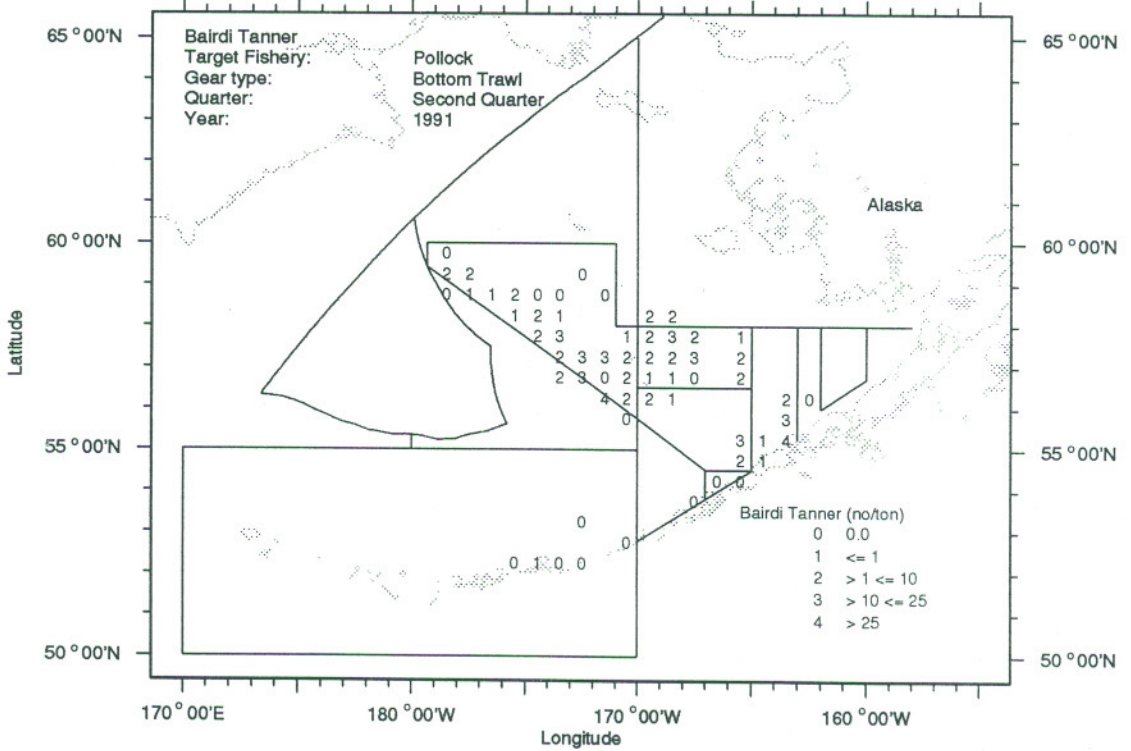
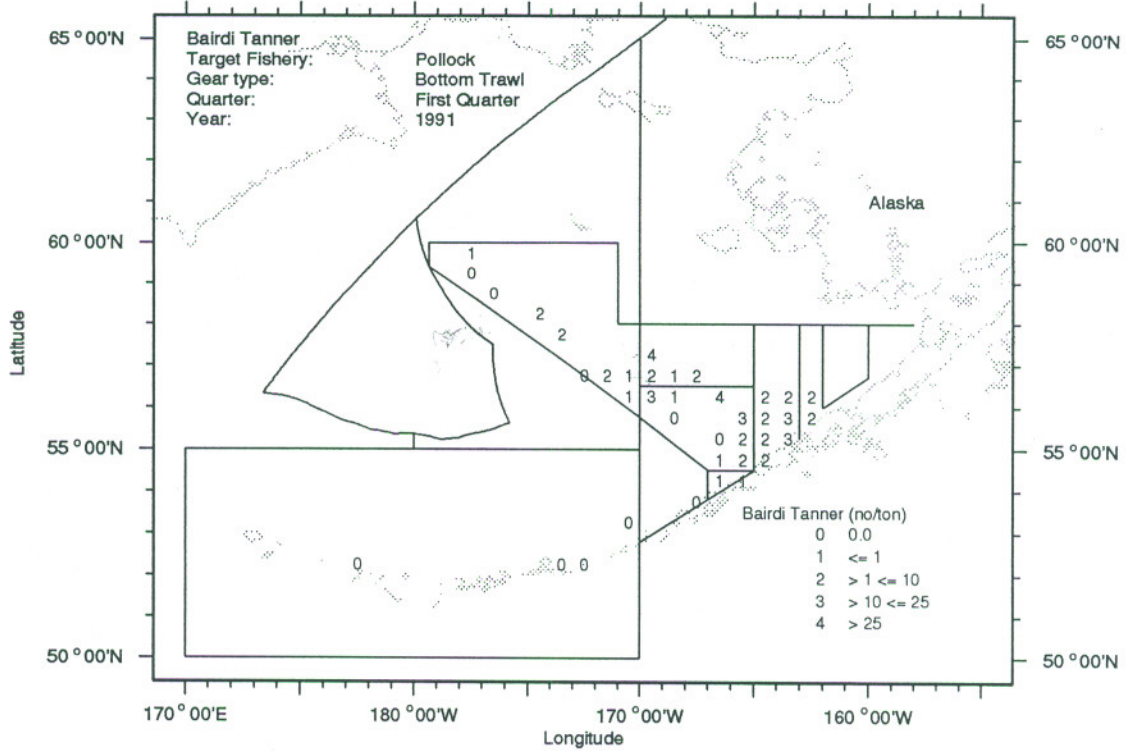


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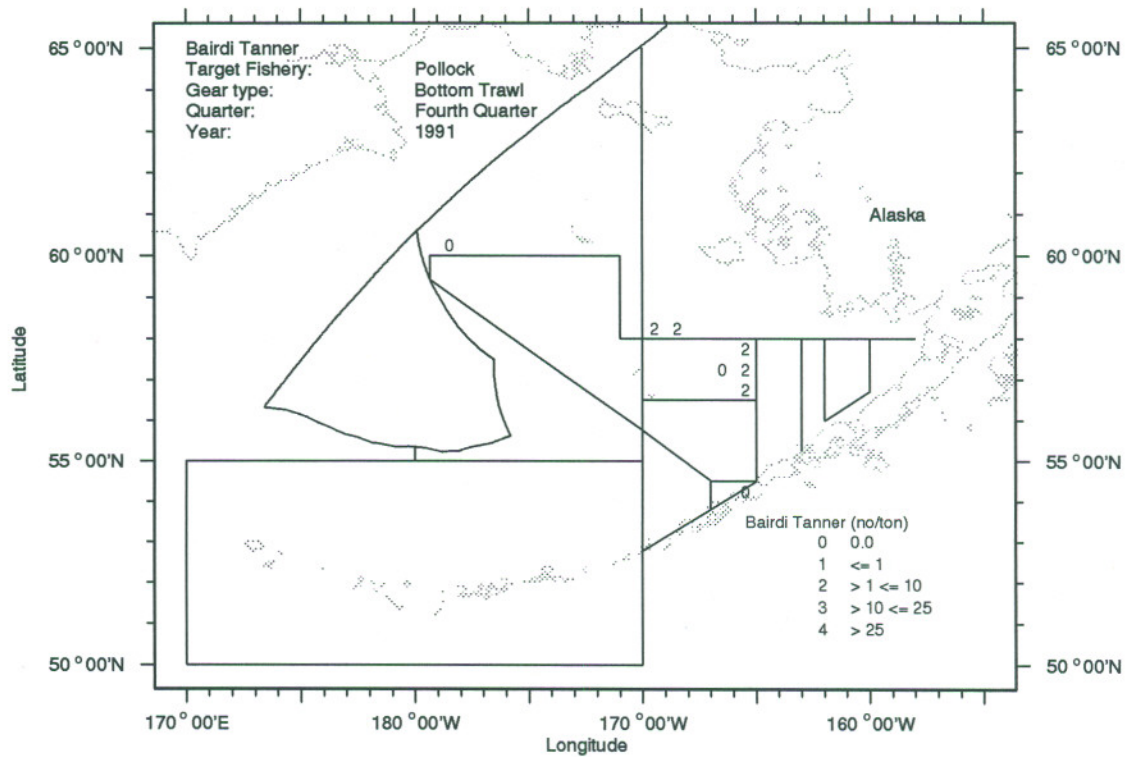
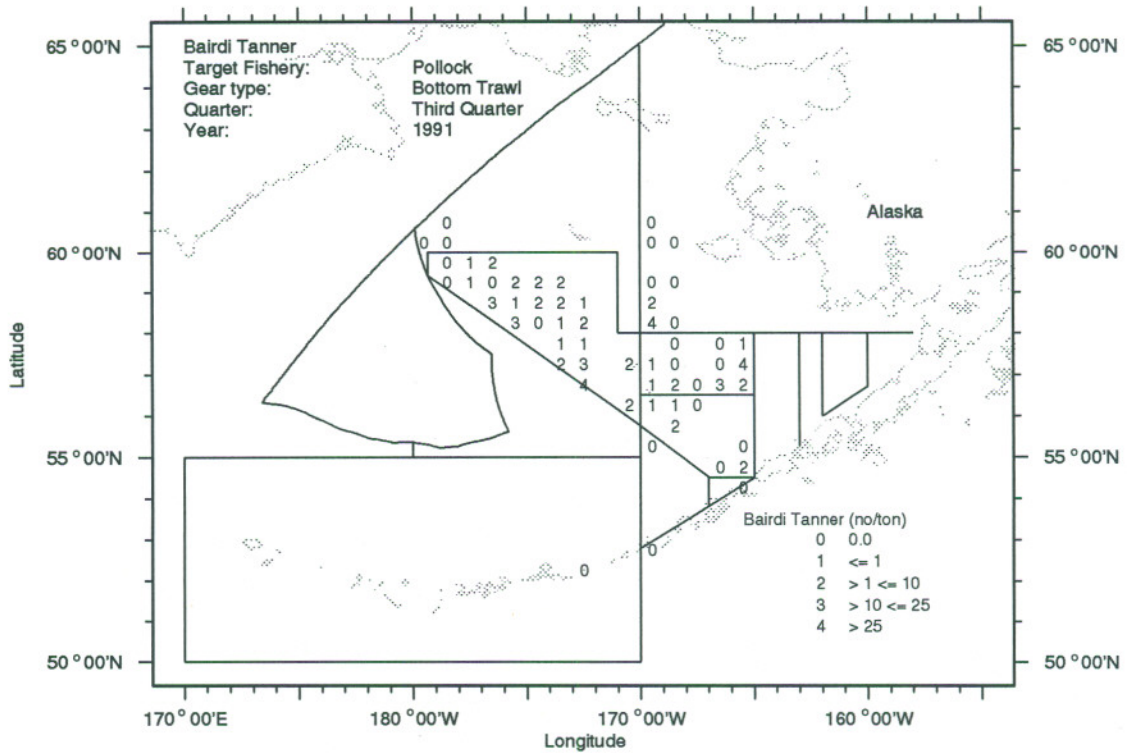


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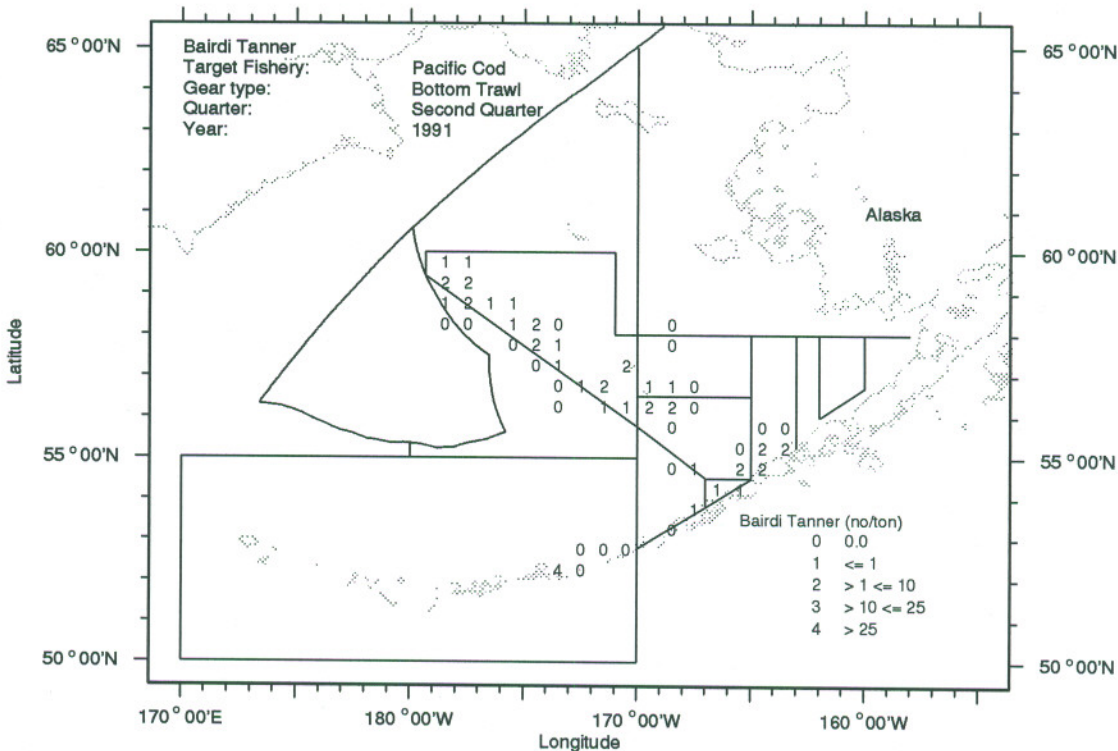
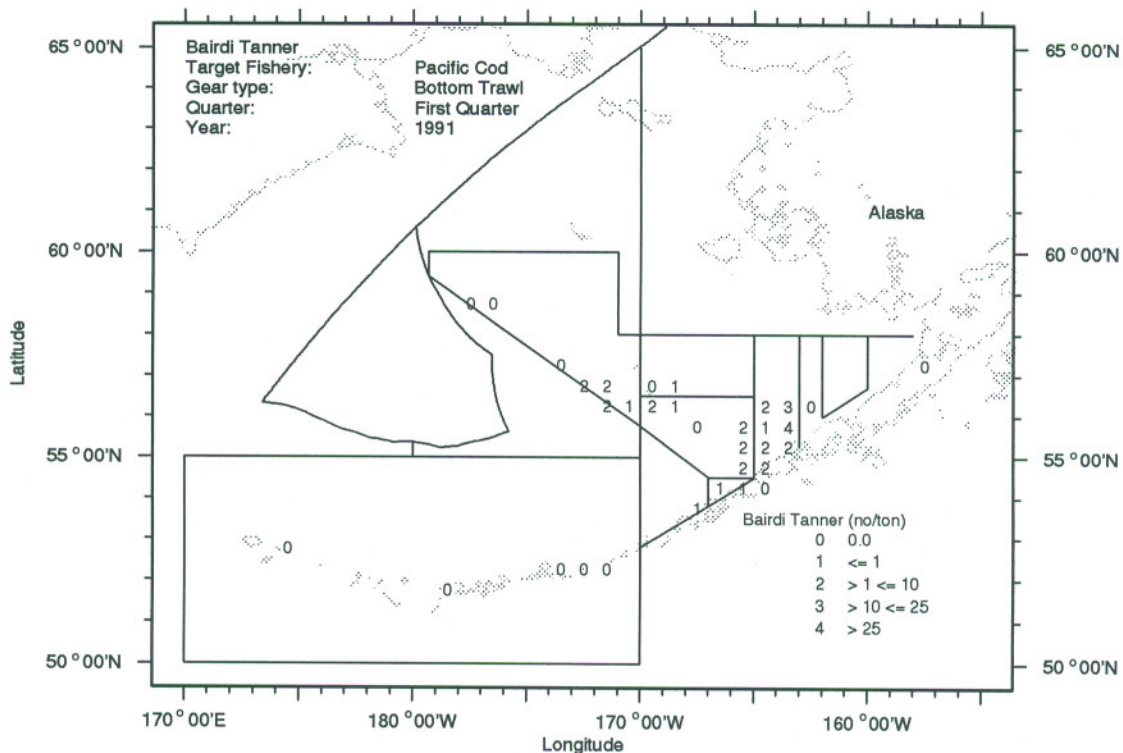


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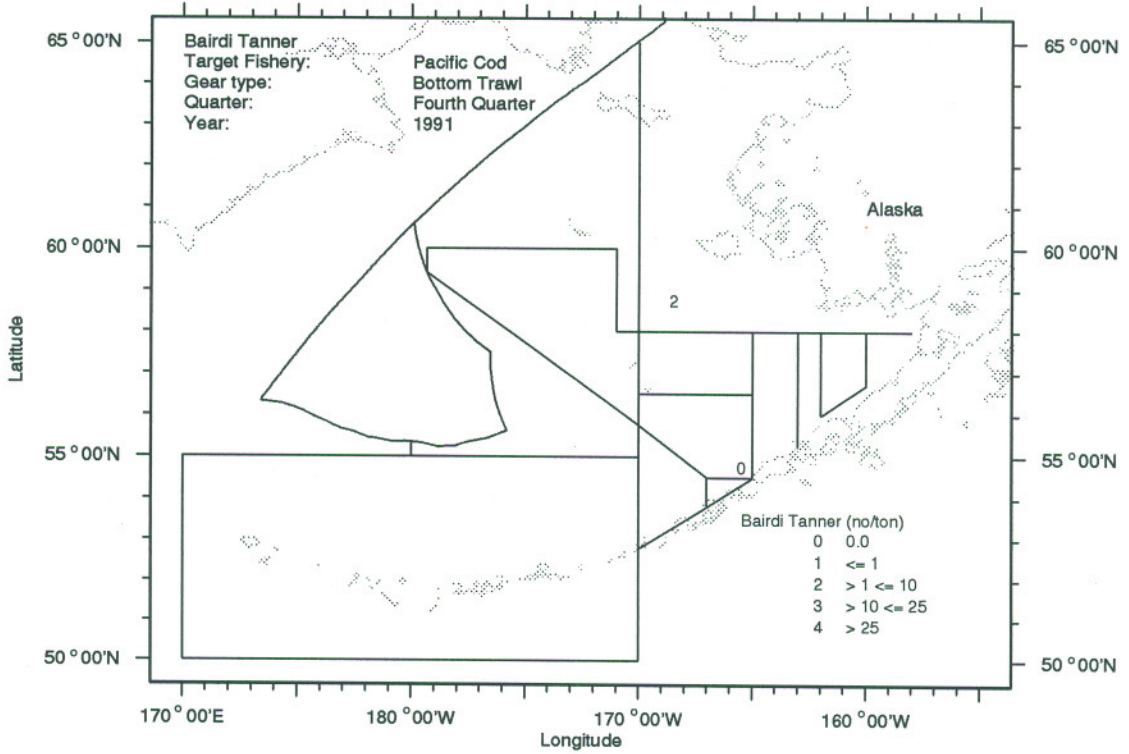
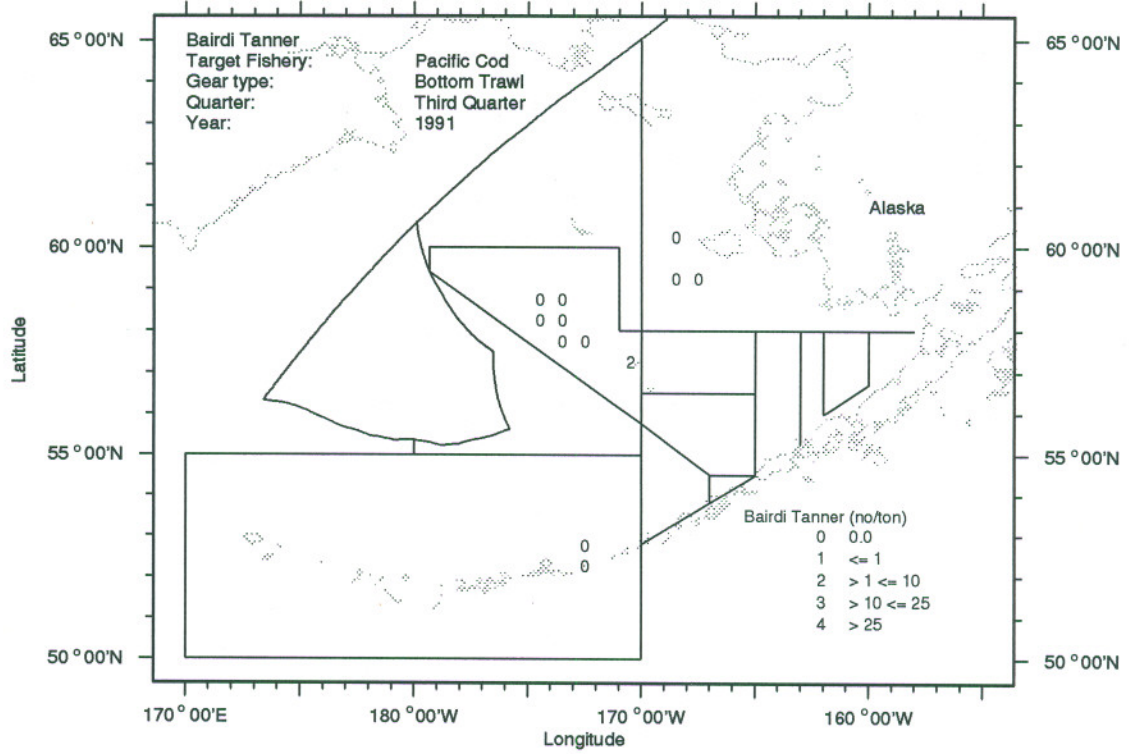


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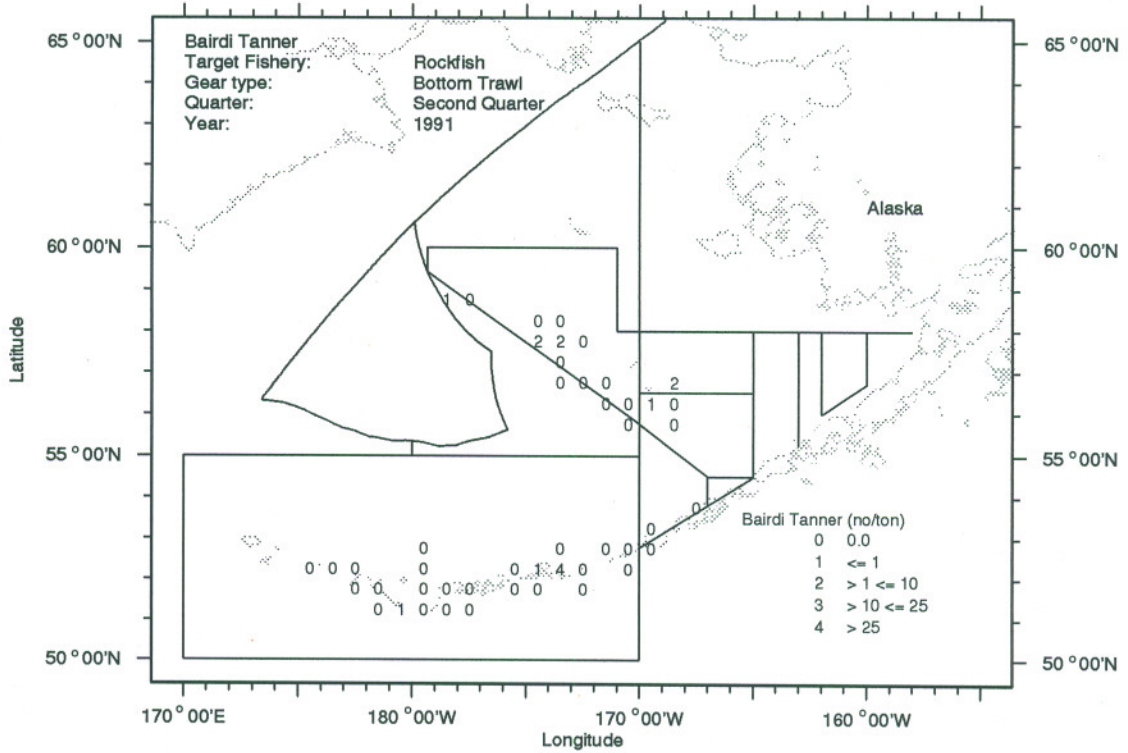
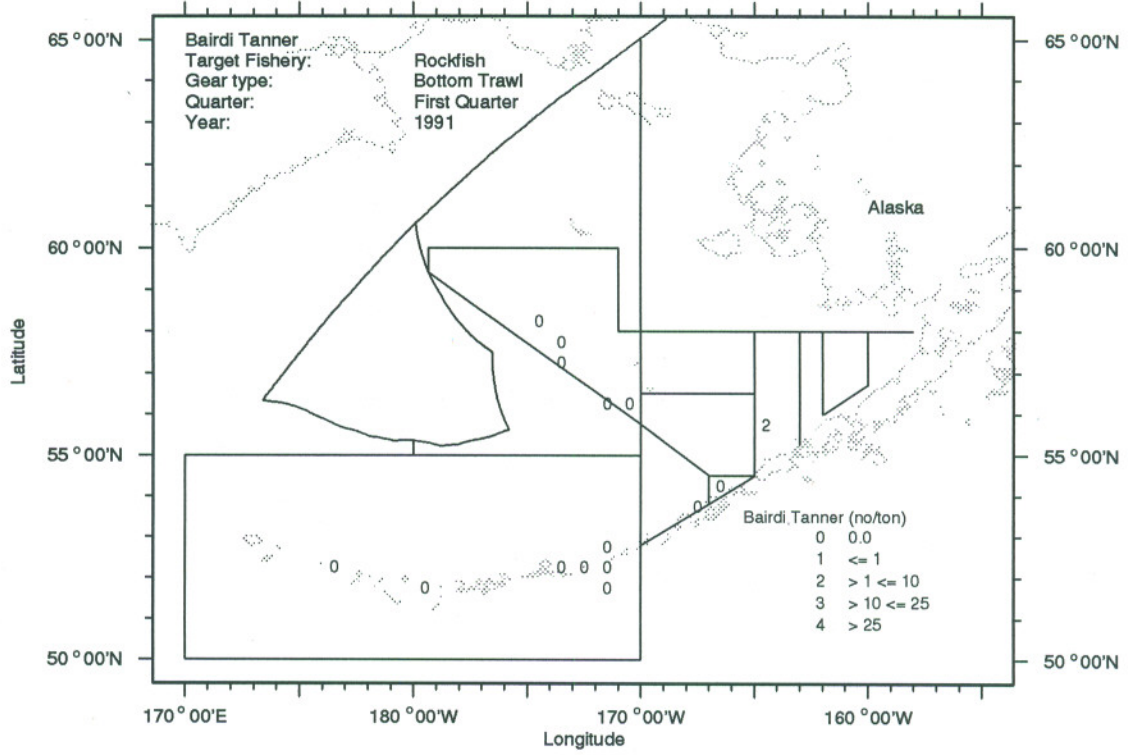


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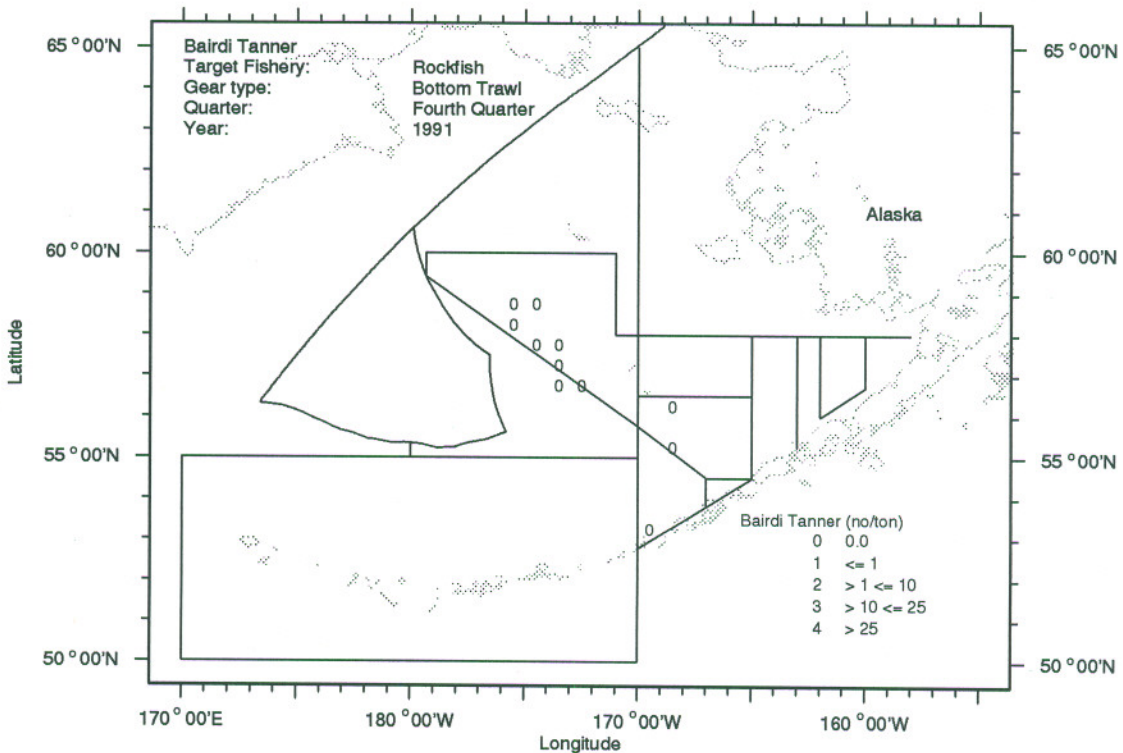
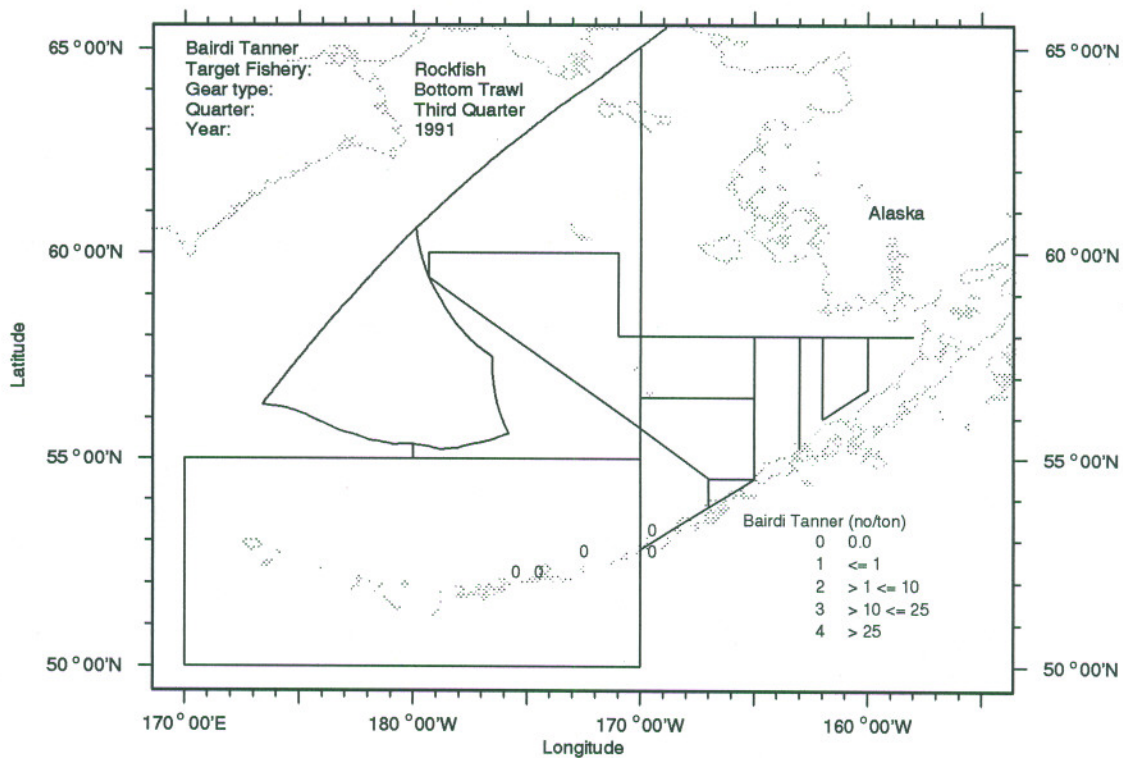


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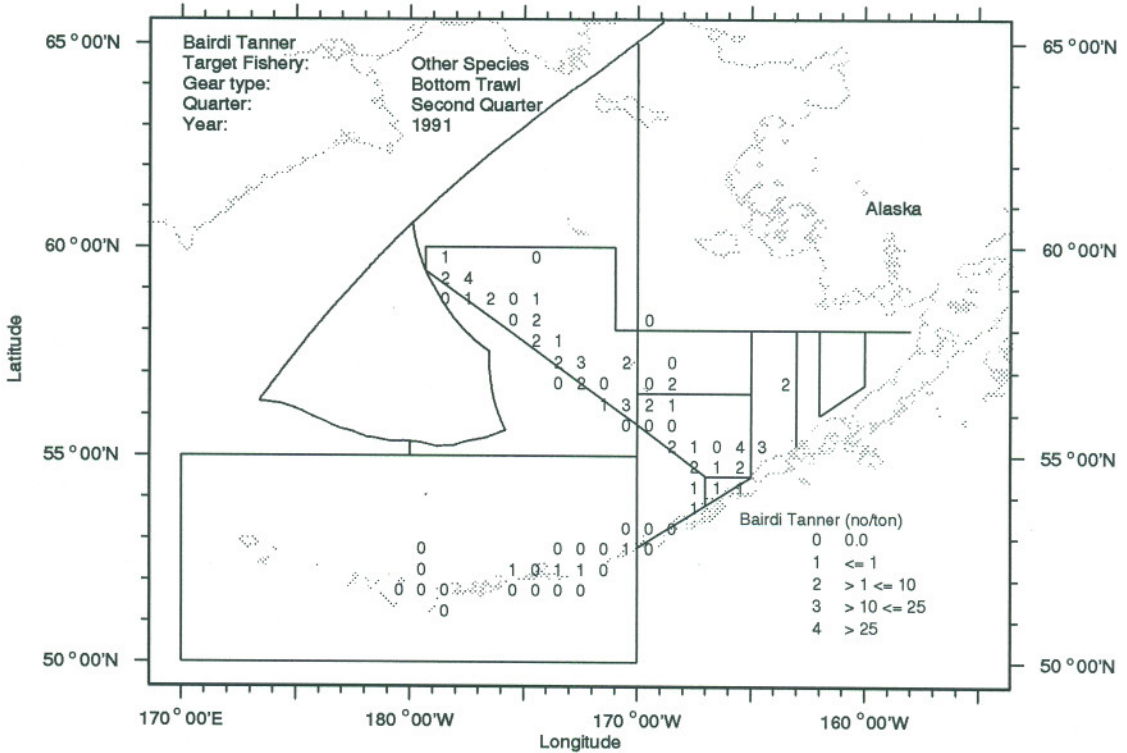
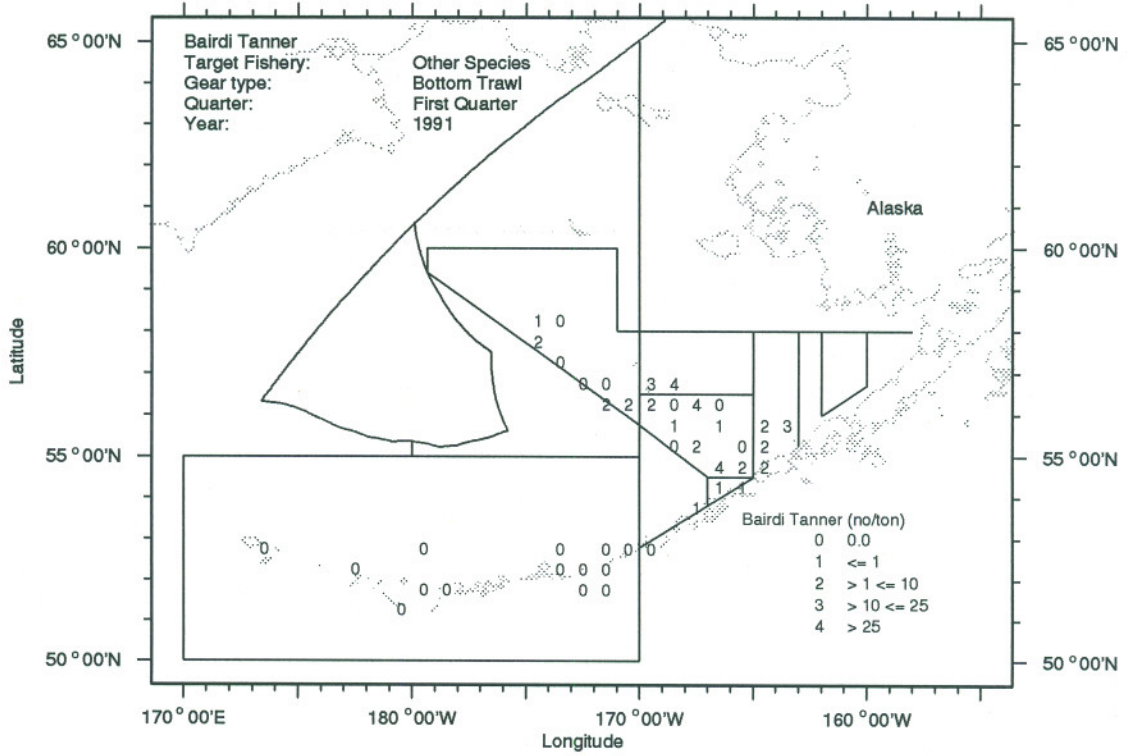


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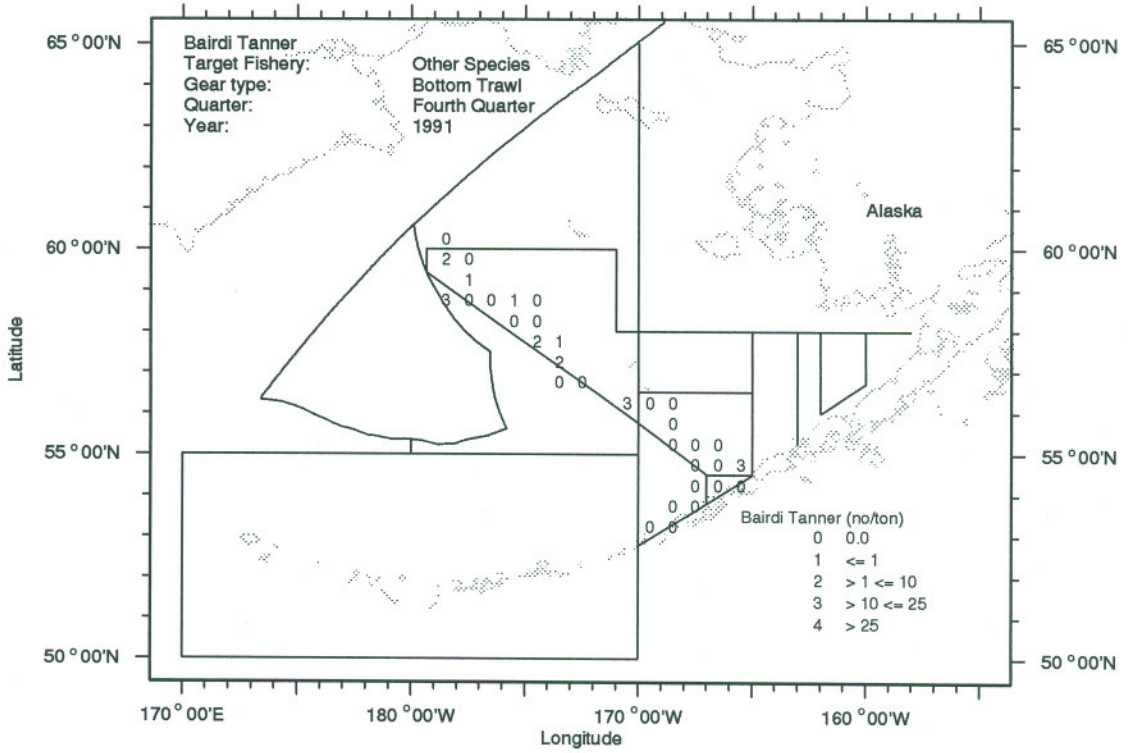
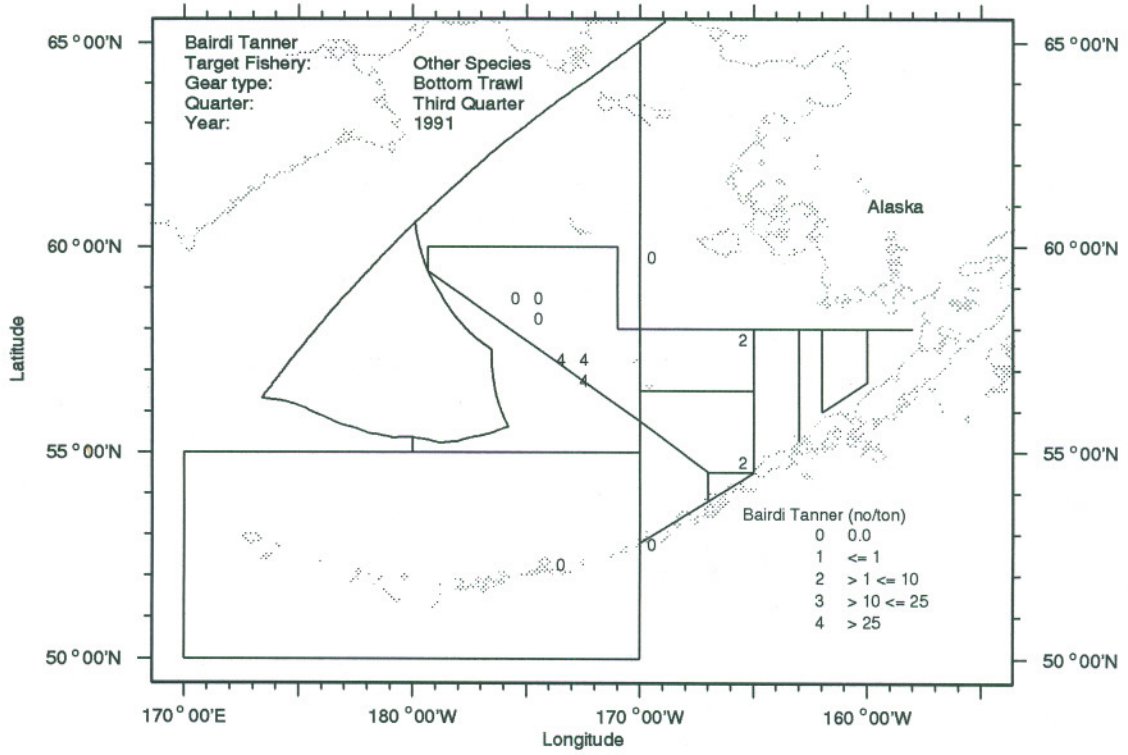


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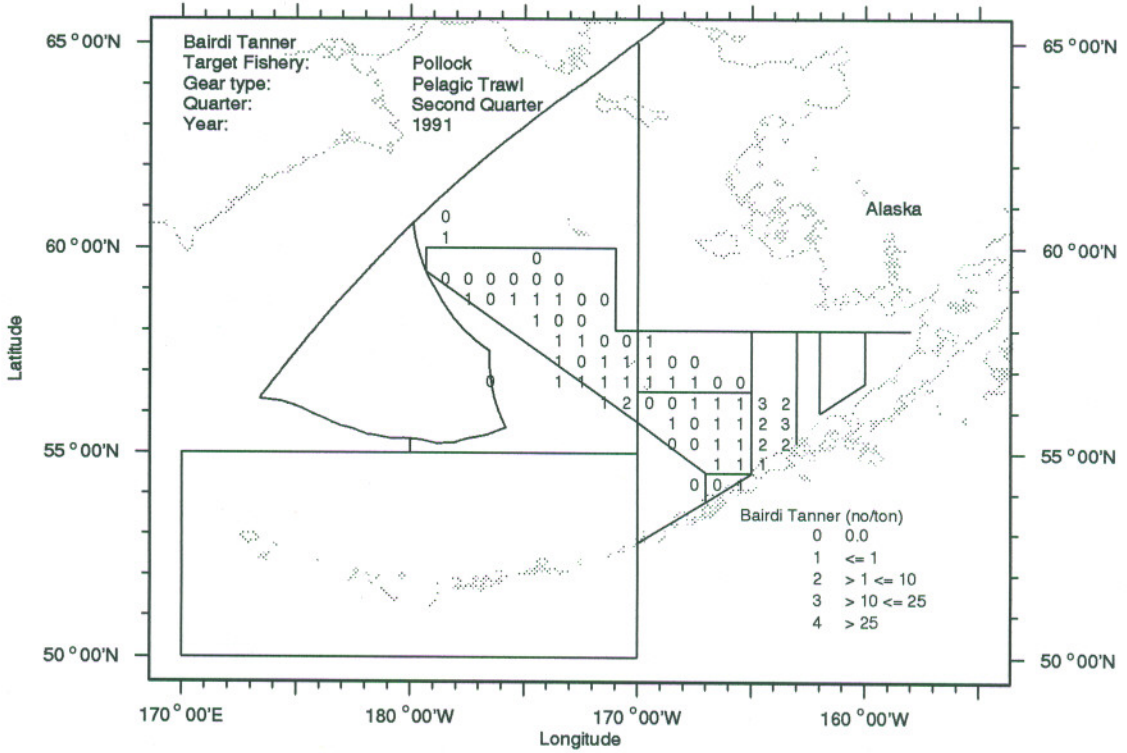
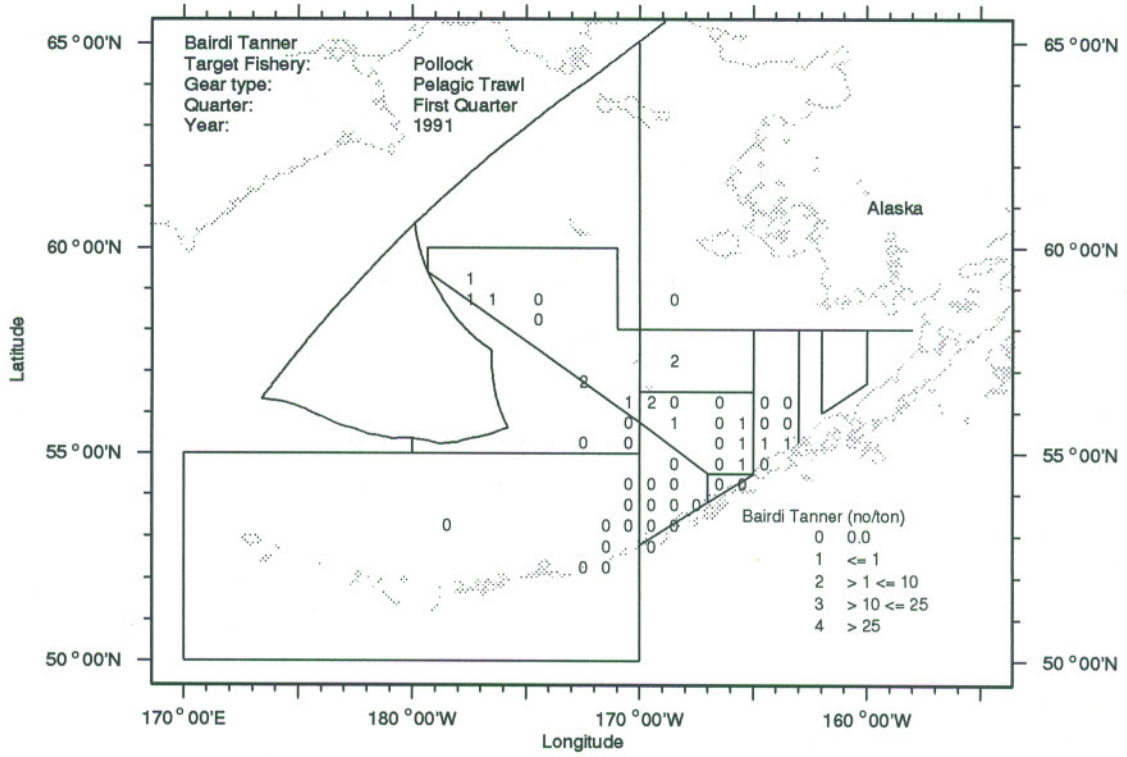


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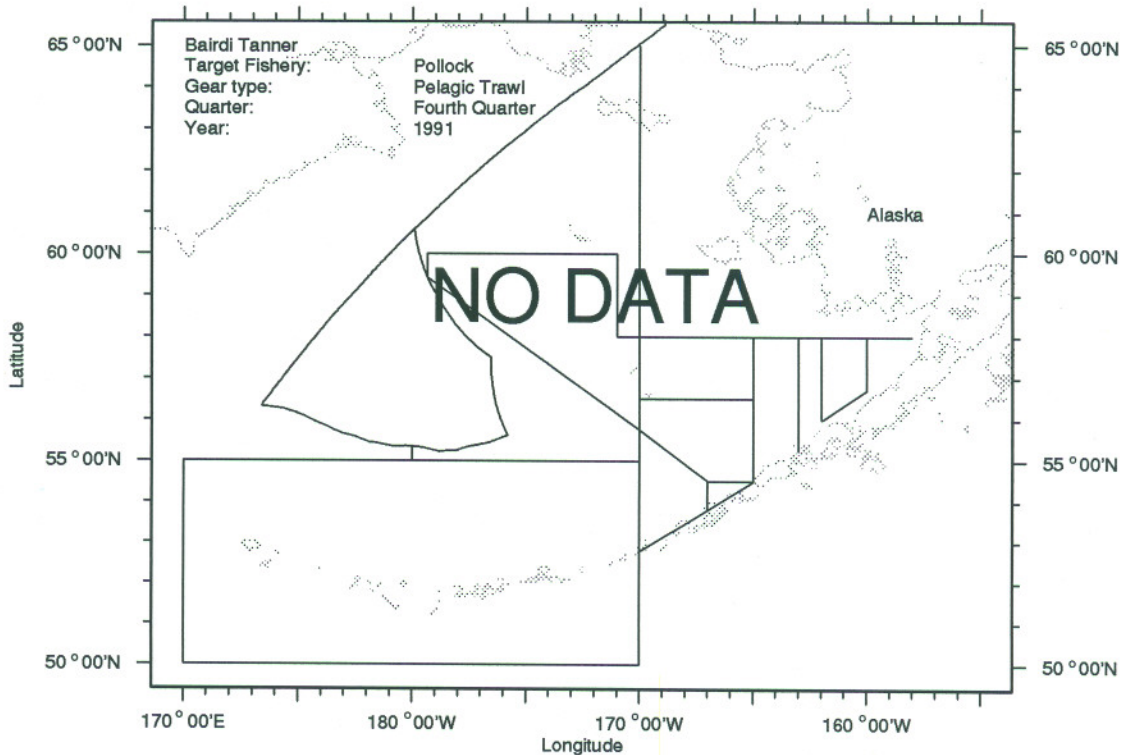
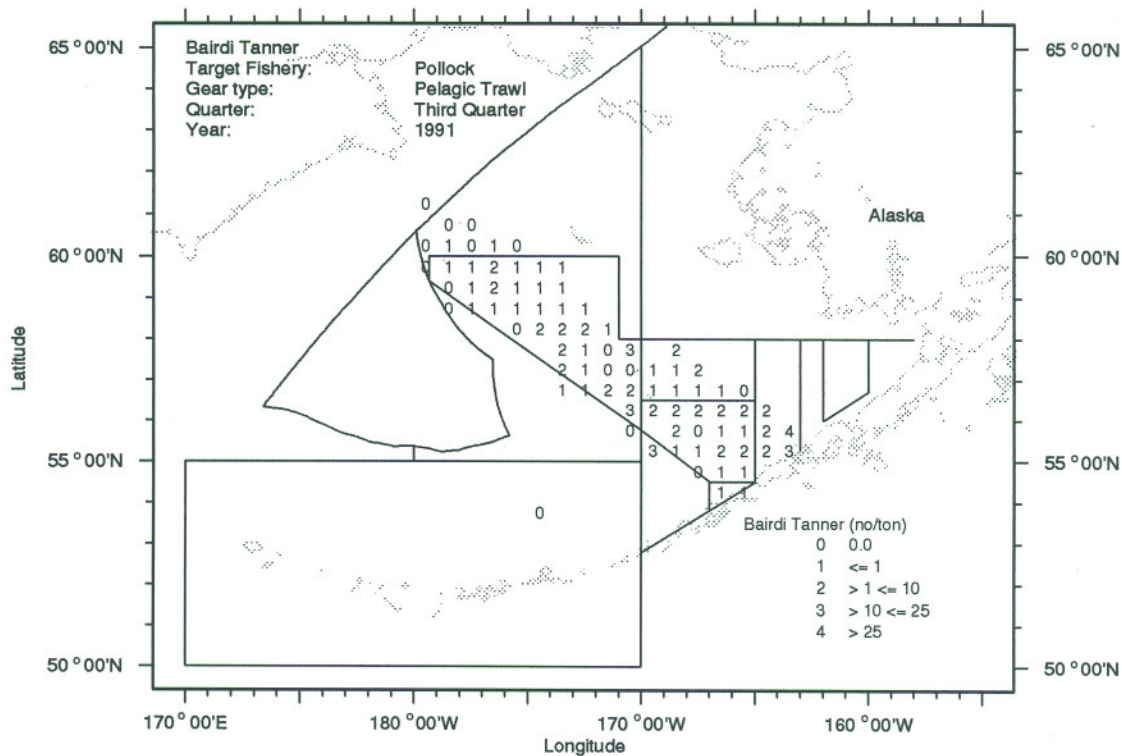


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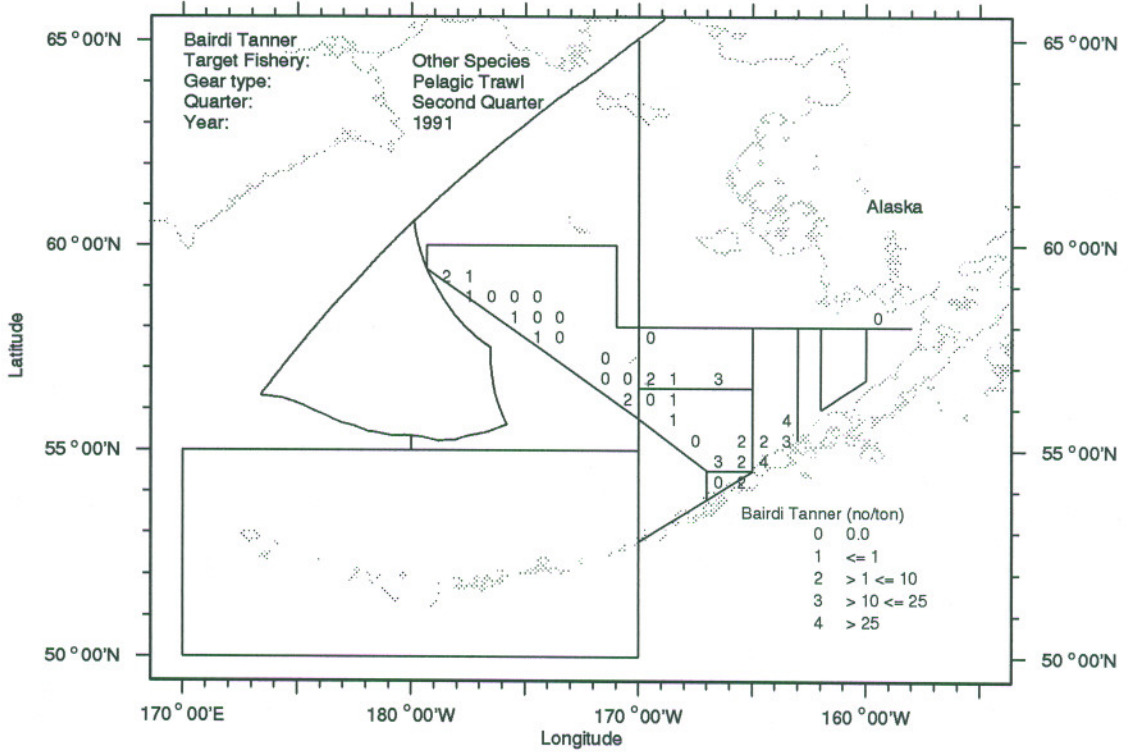
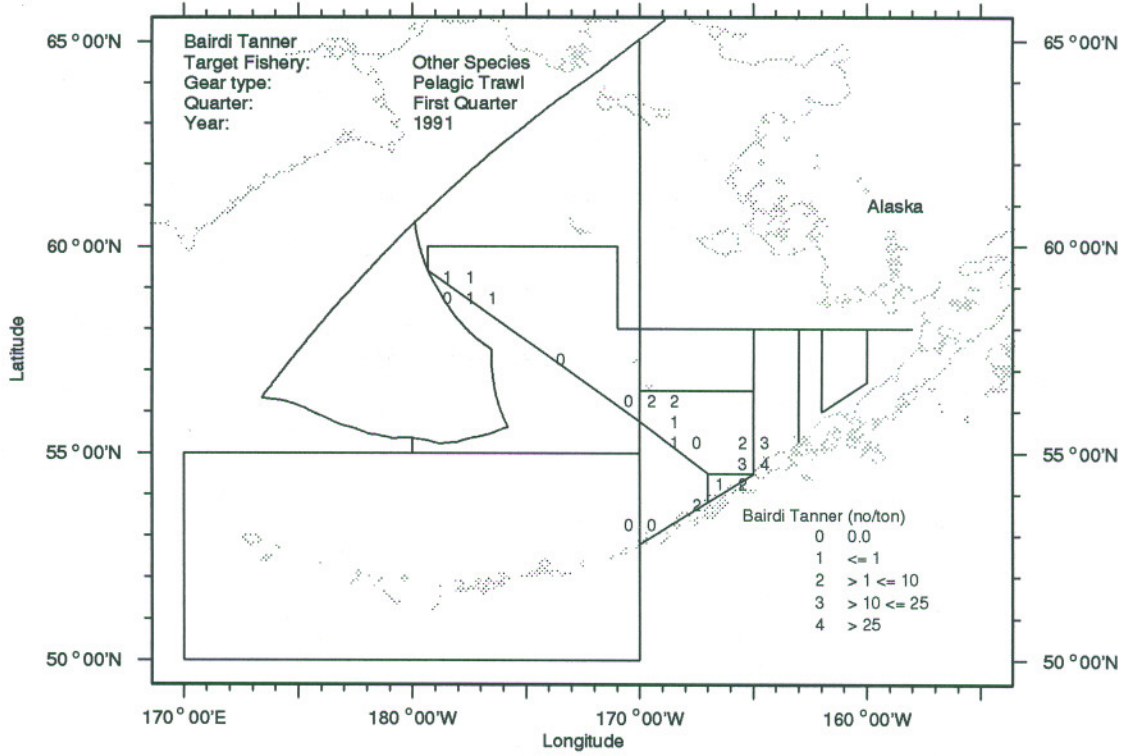


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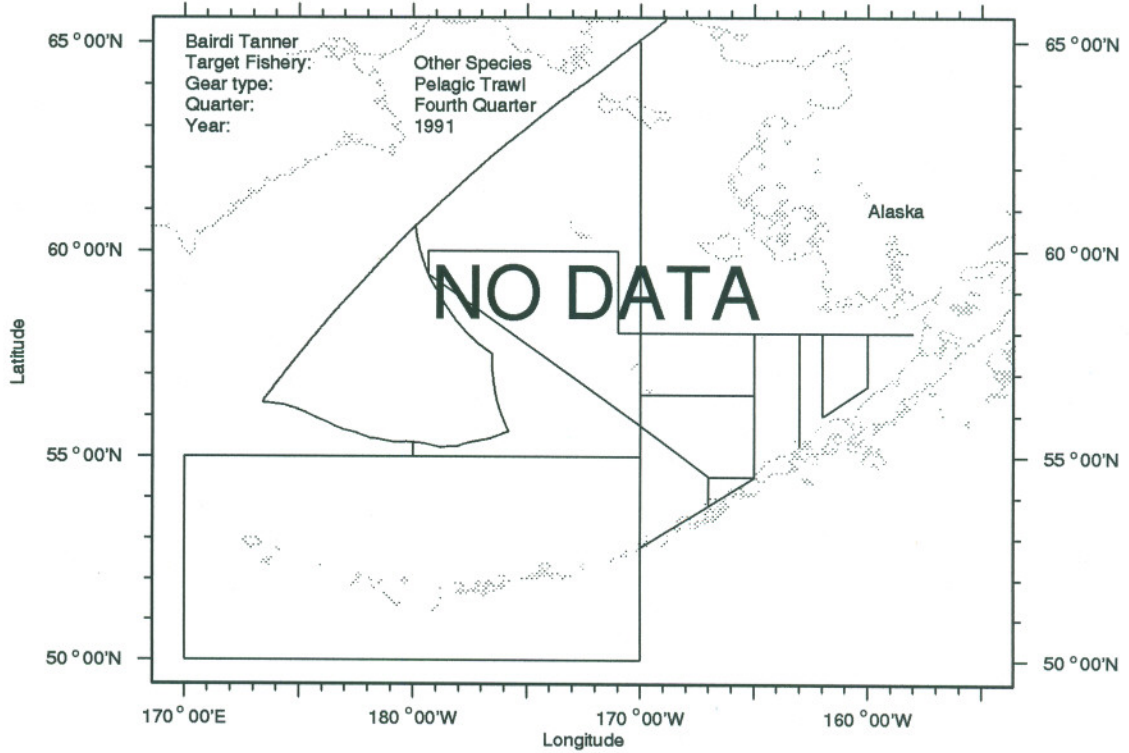
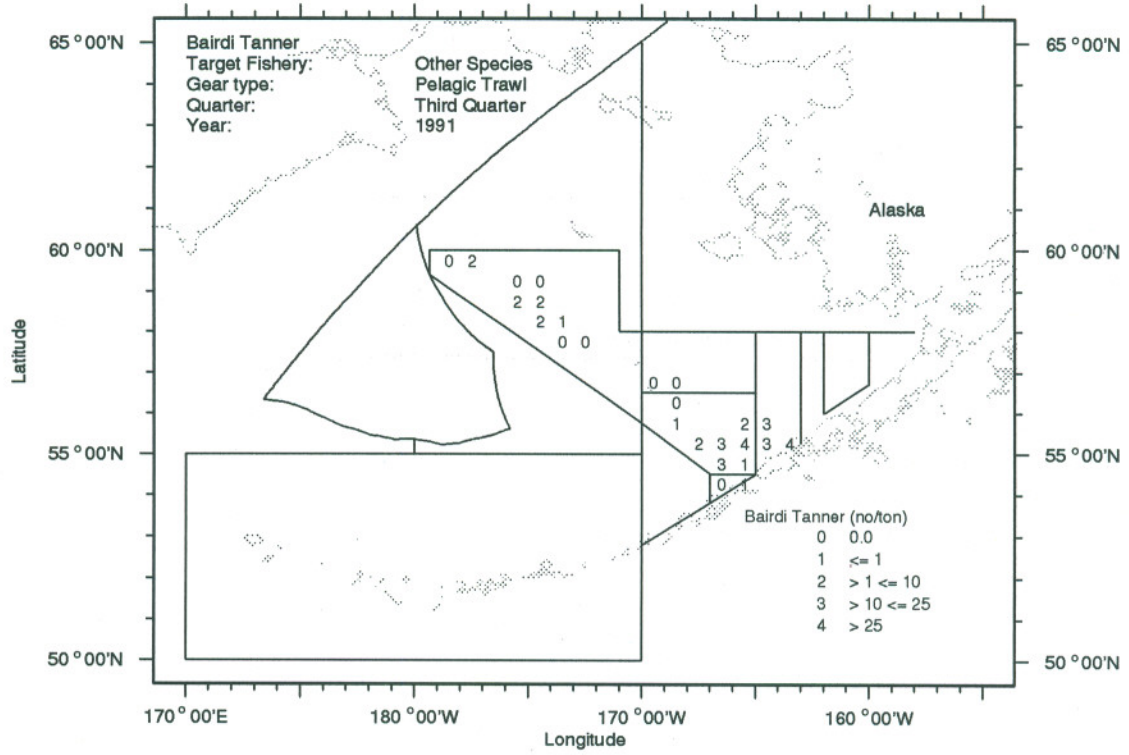


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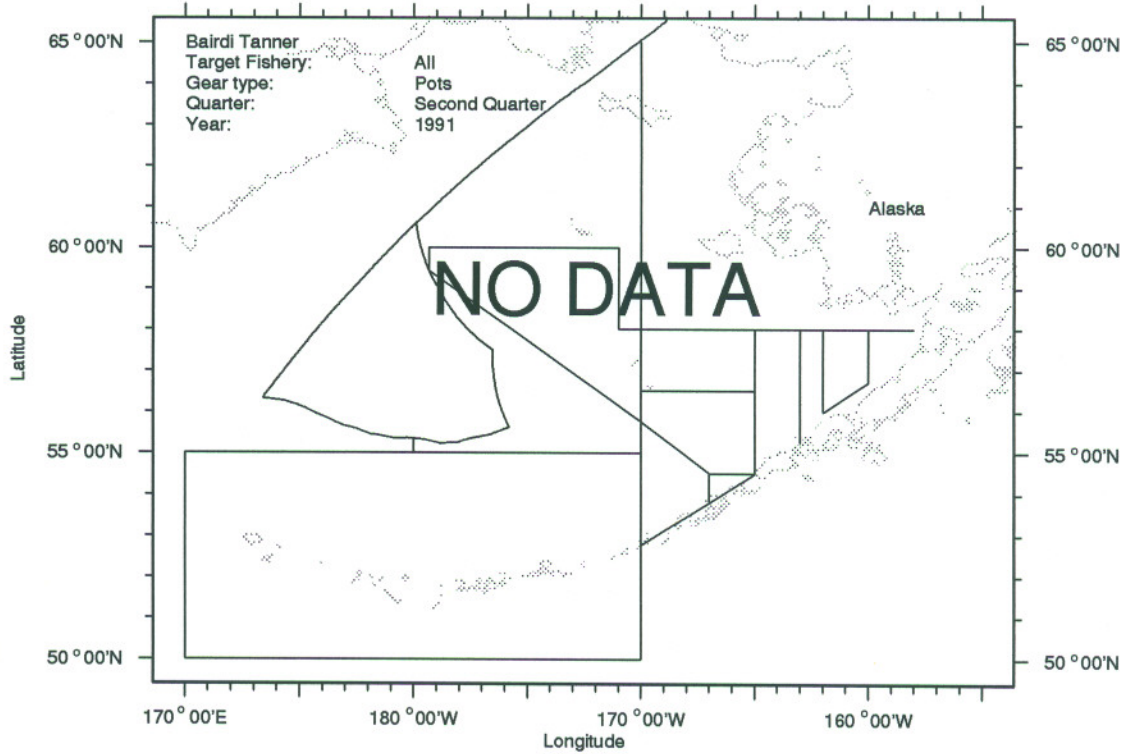
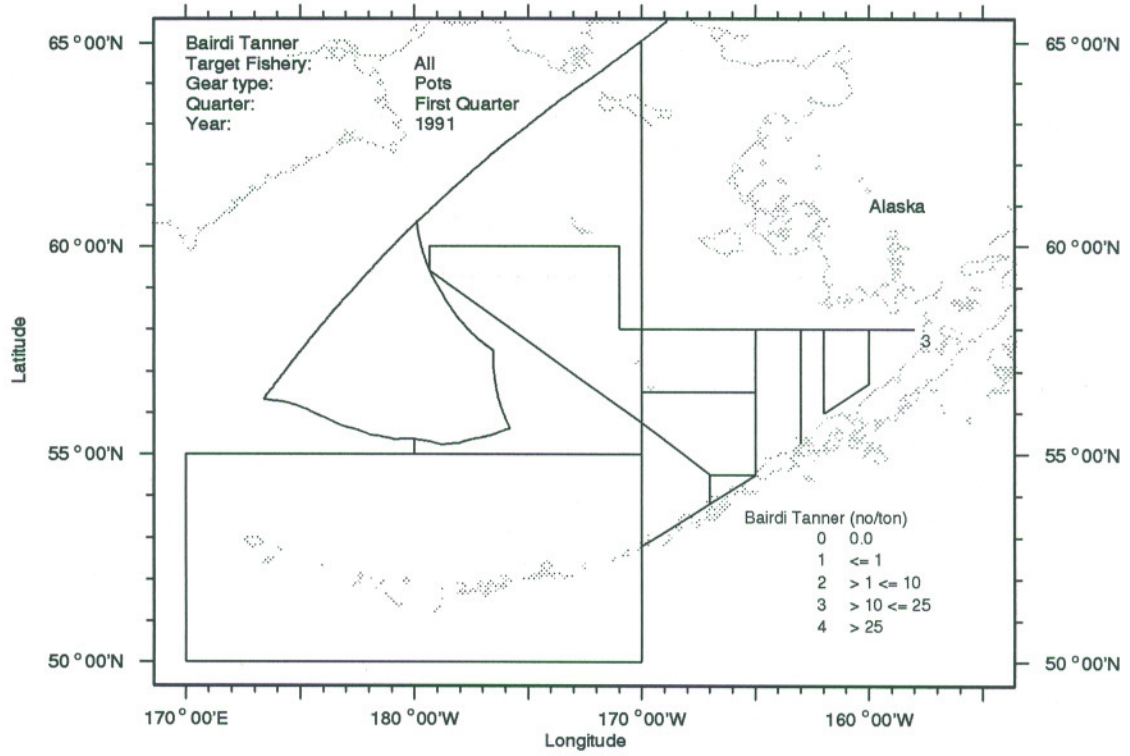


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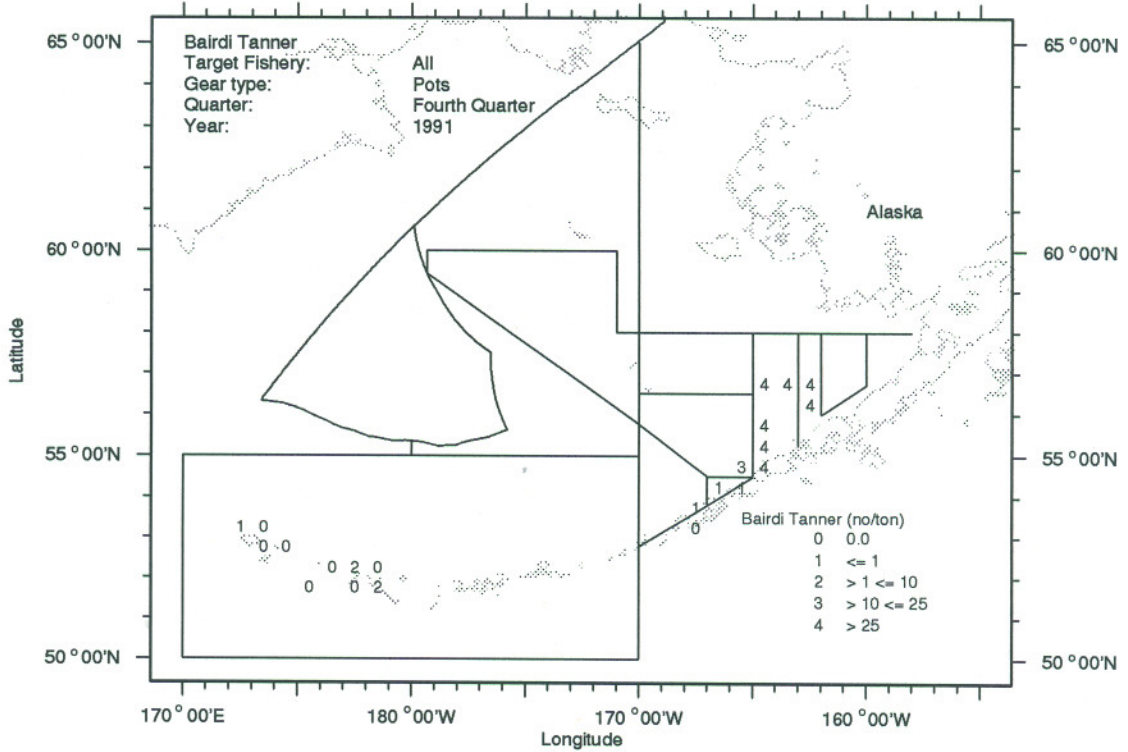
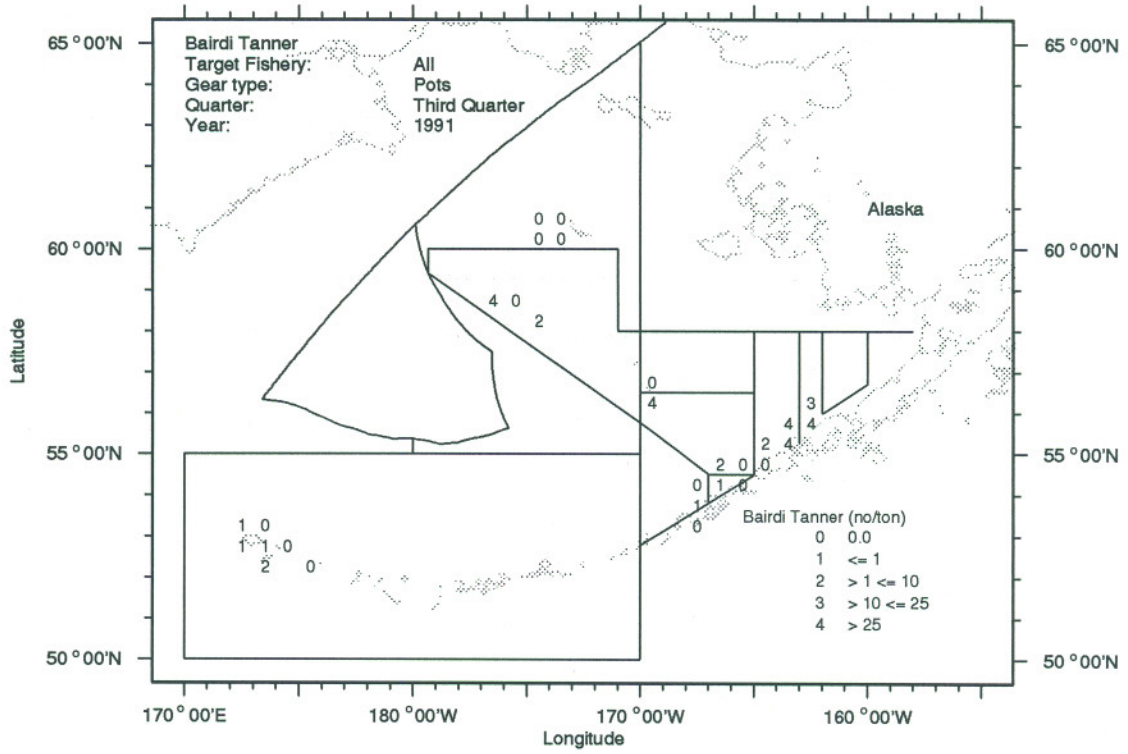


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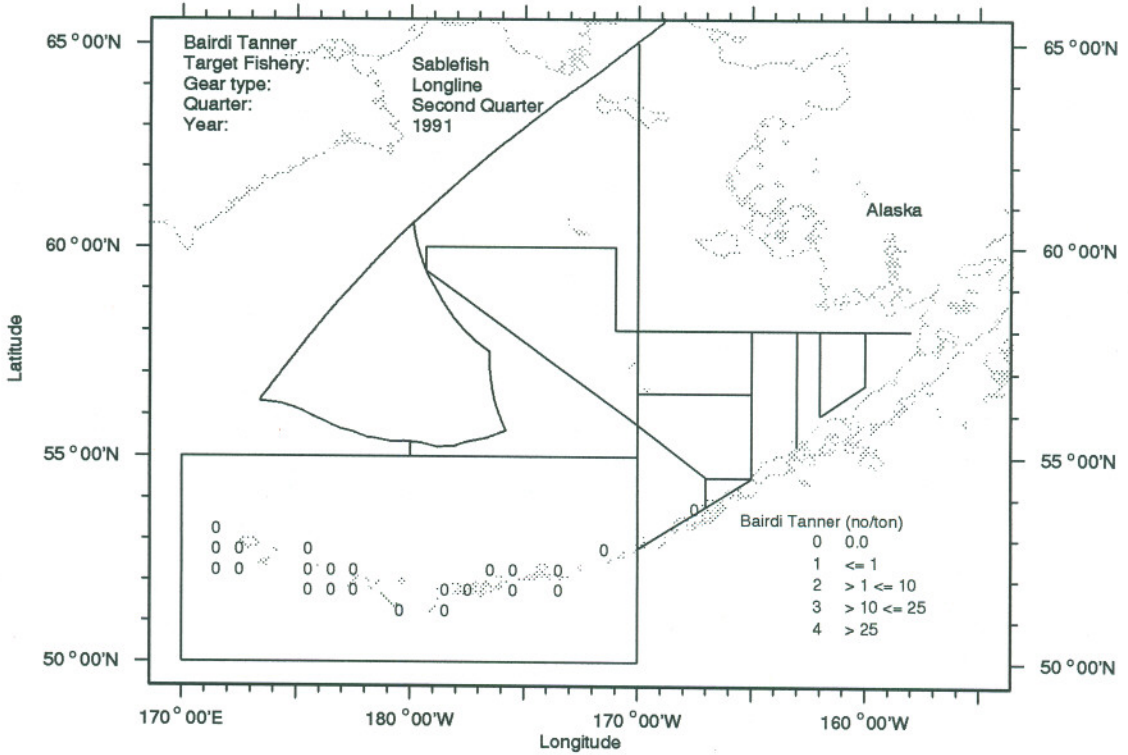
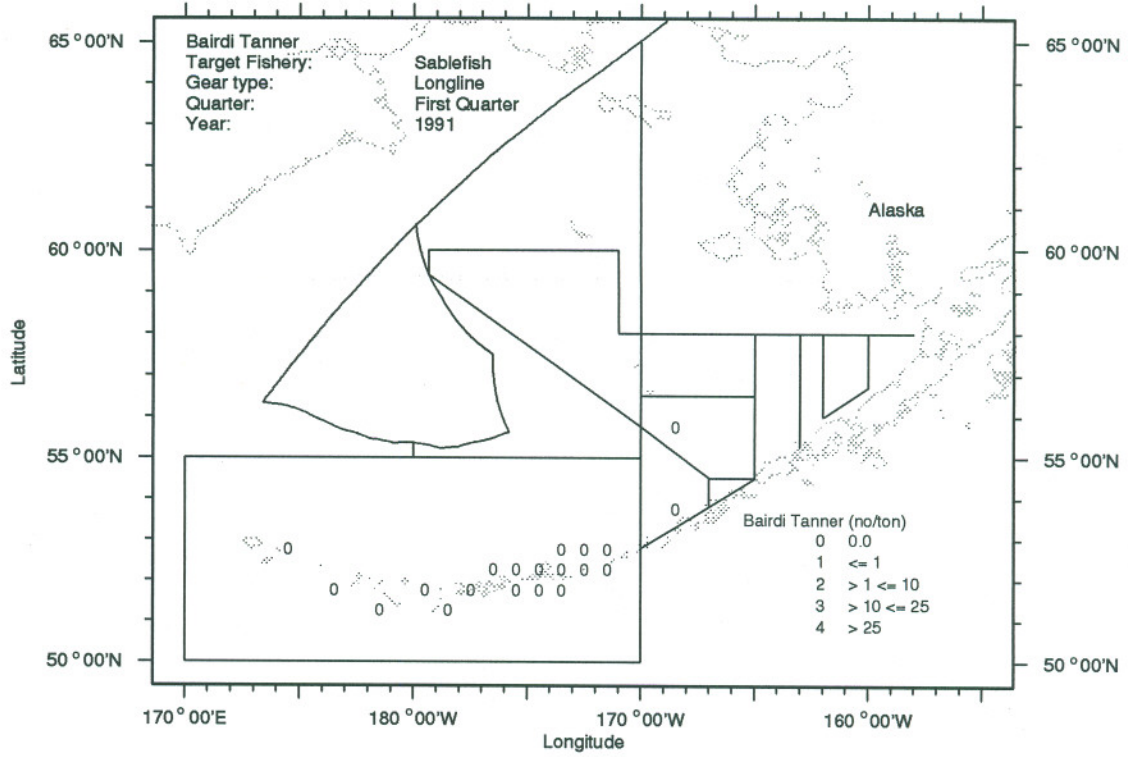


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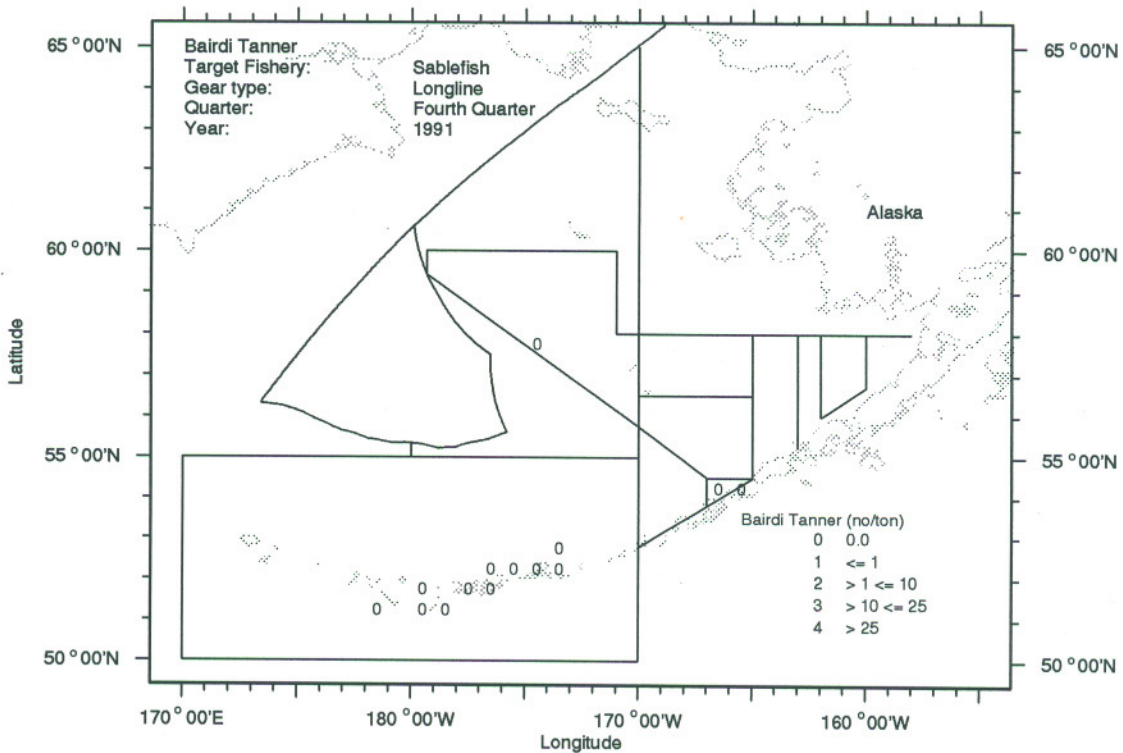
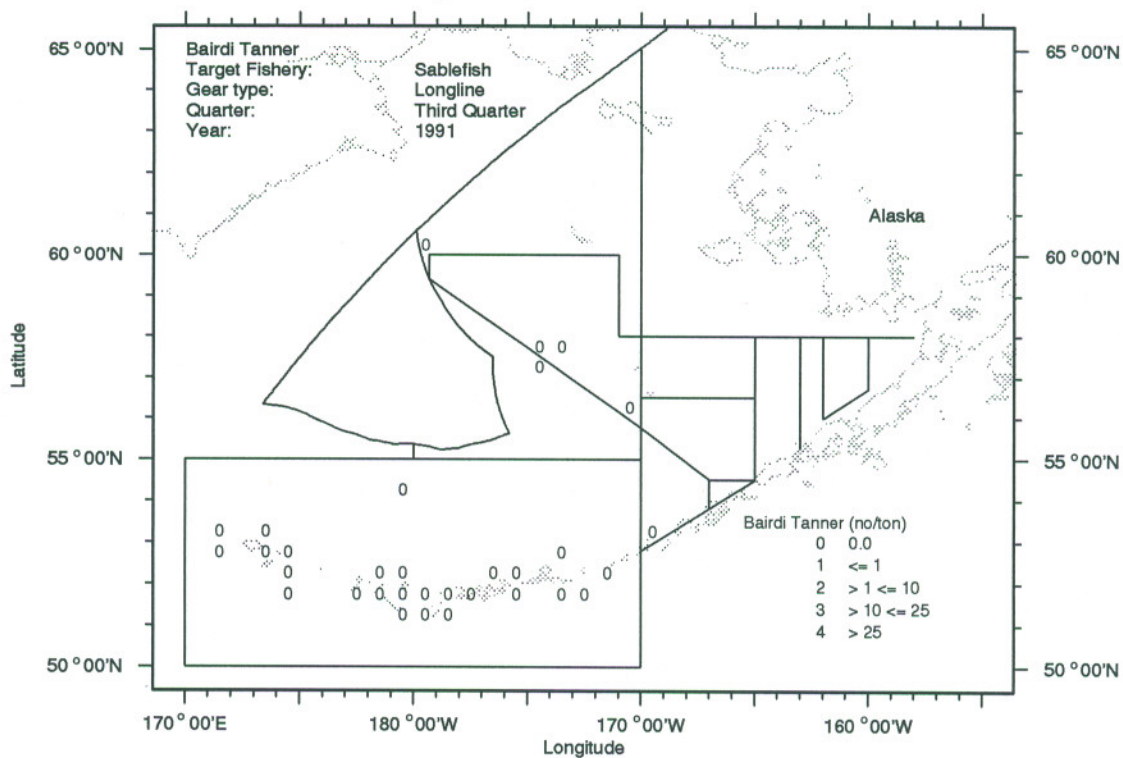


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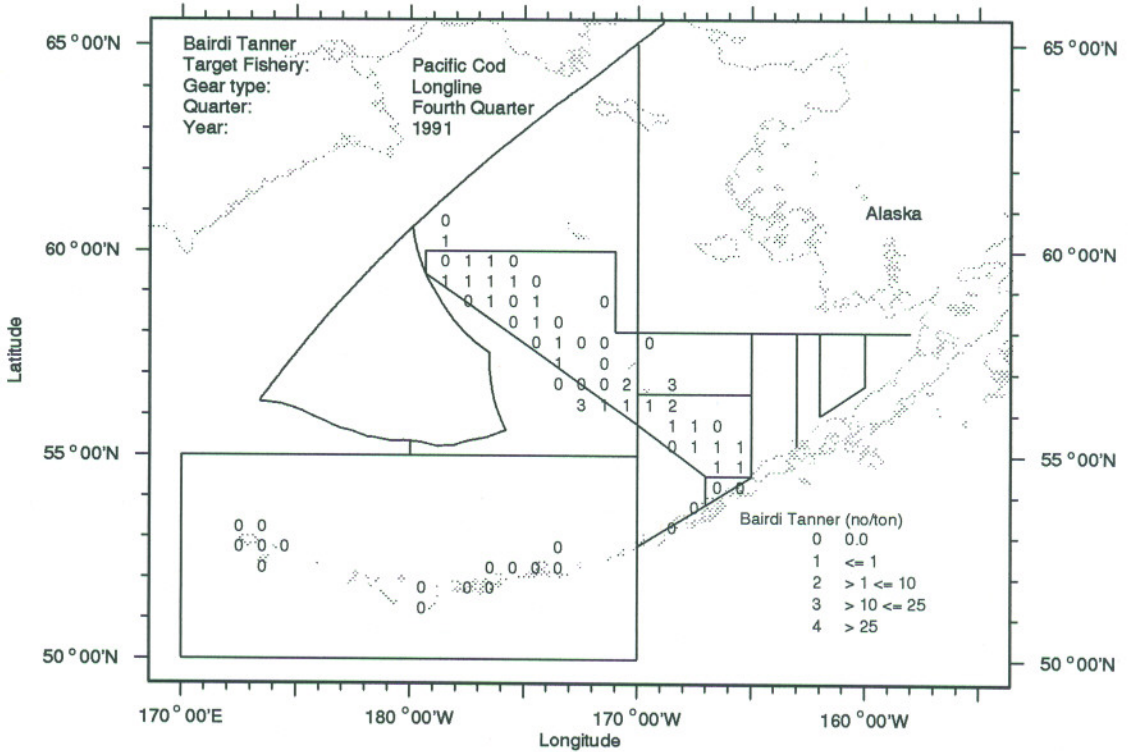
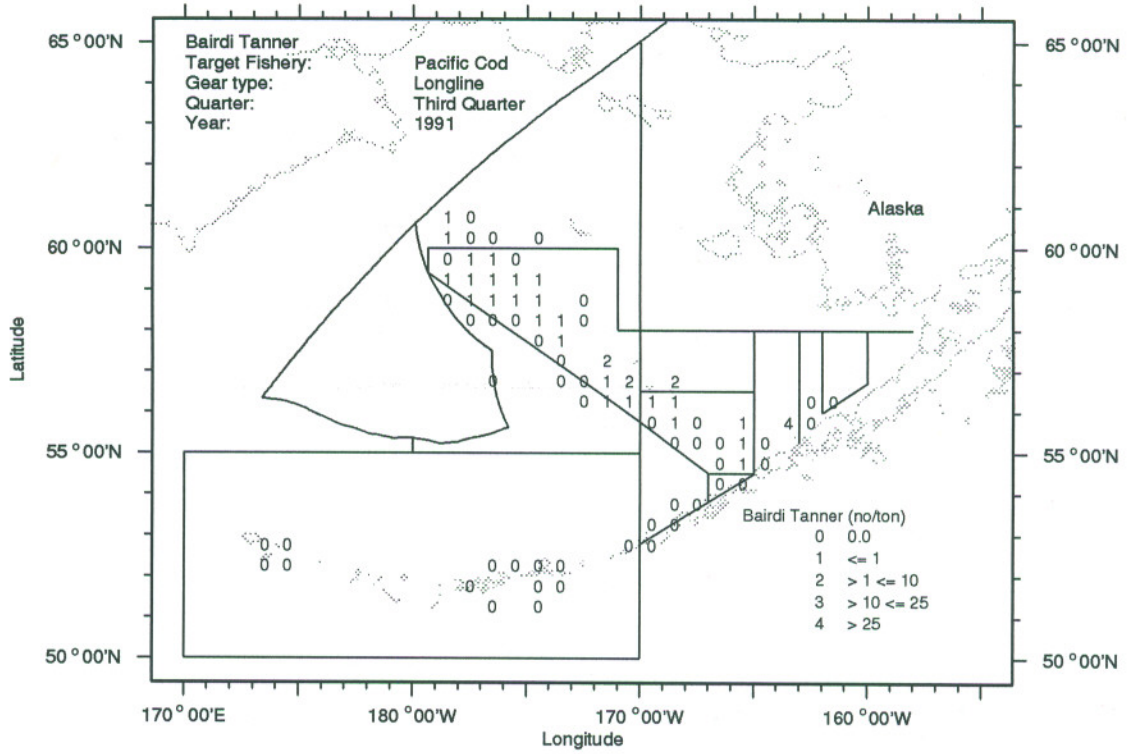


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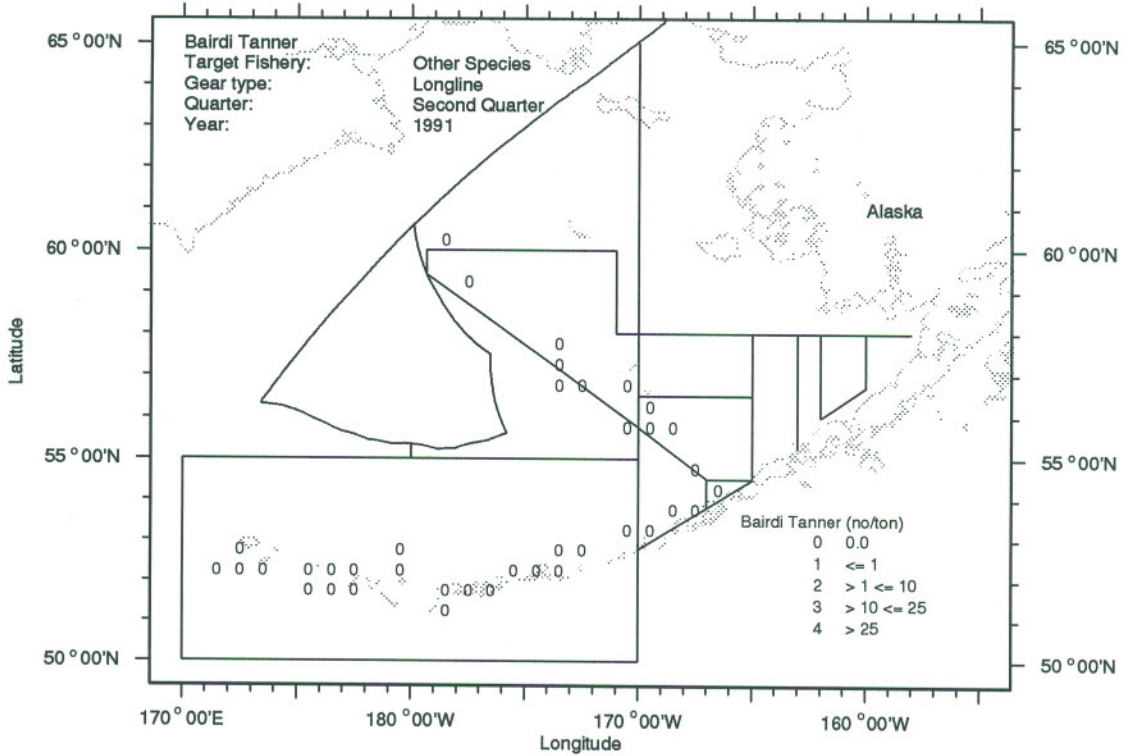
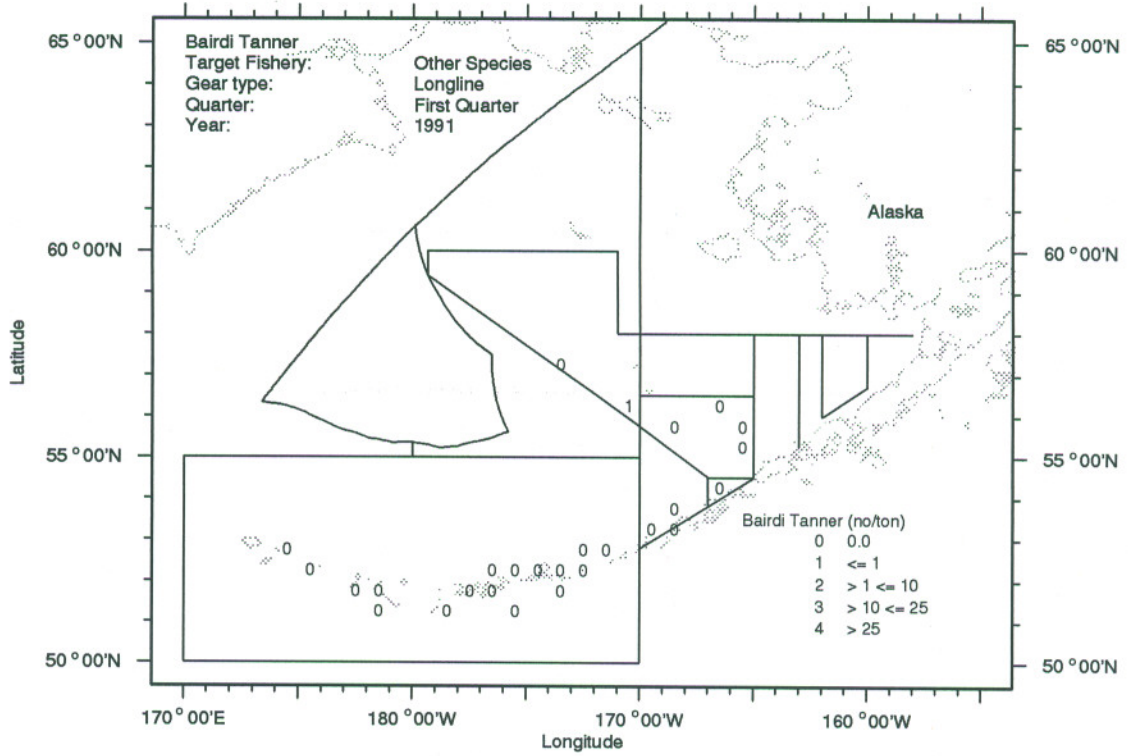


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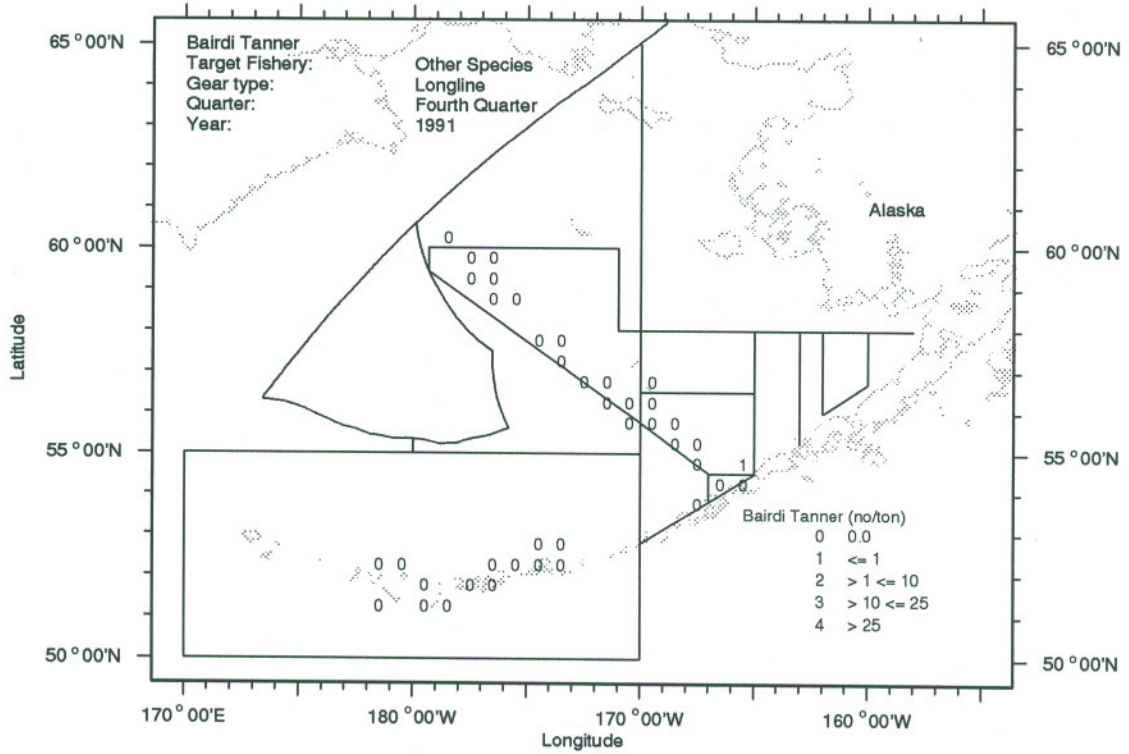
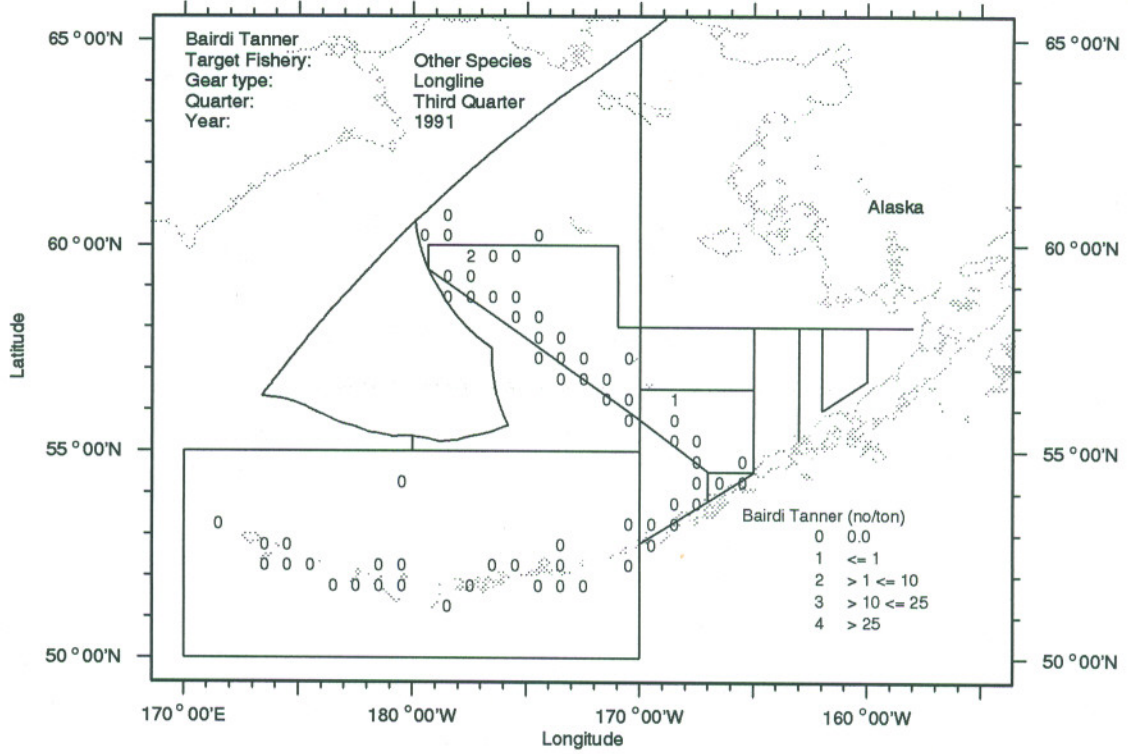


Figure 5.--Continued.

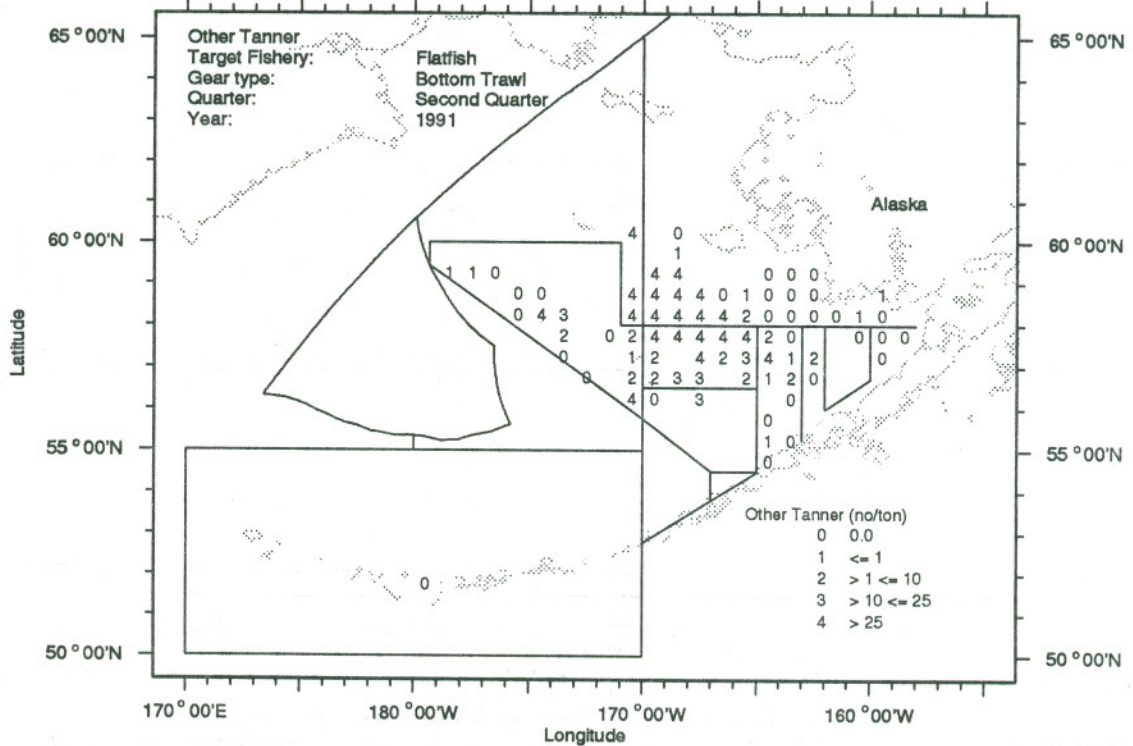
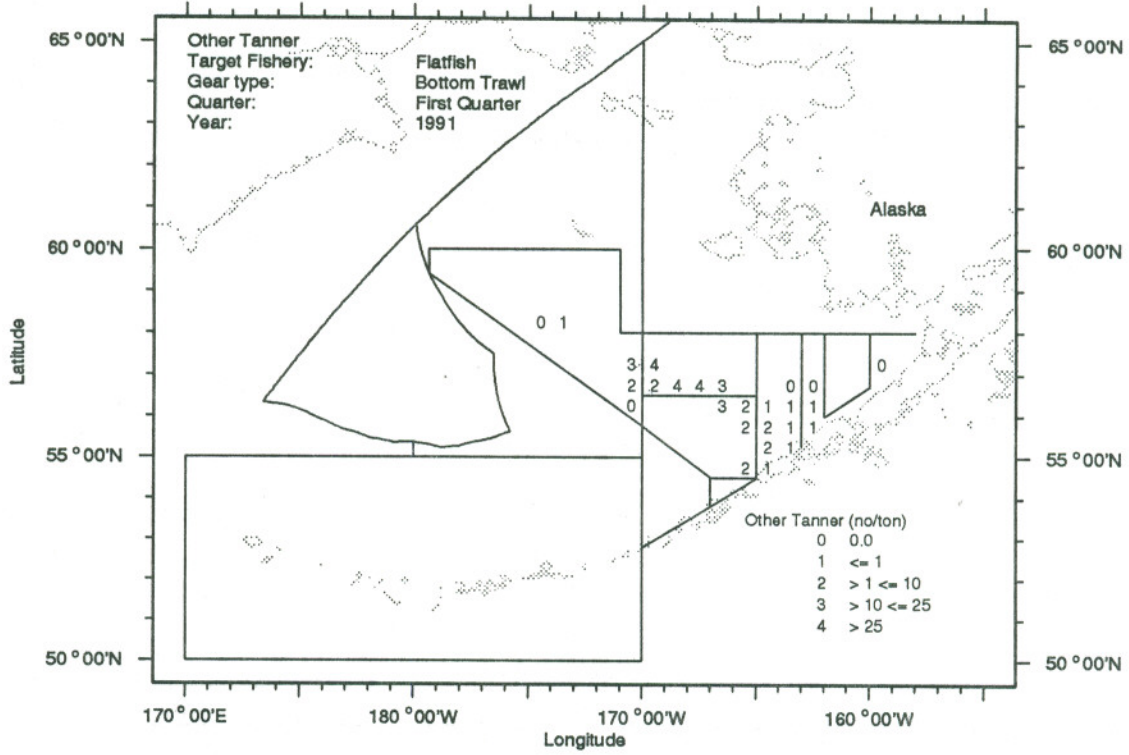


Figure 6.--Bycatch (no./metric ton (t)) of "other" Tanner crab in the U.S. domestic groundfish fisheries by quarter, target fishery, gear type, and 1/2° latitude and 1° longitude areas in the Bering Sea/Aleutian Islands region, 1991.

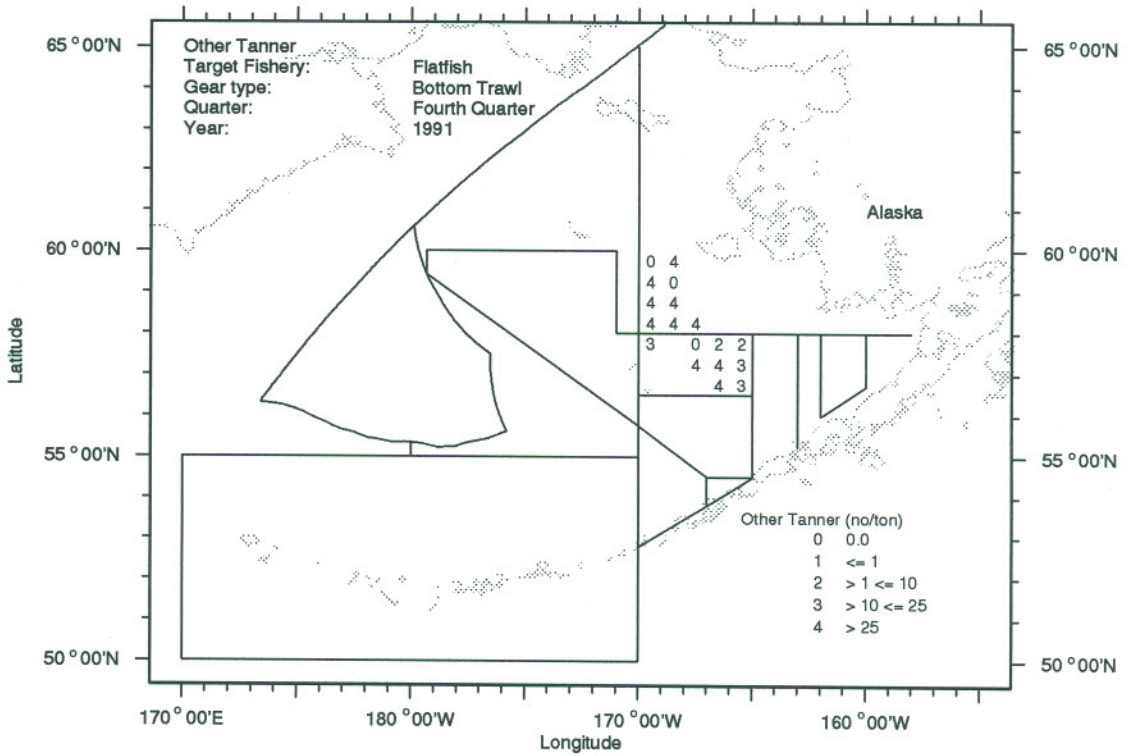
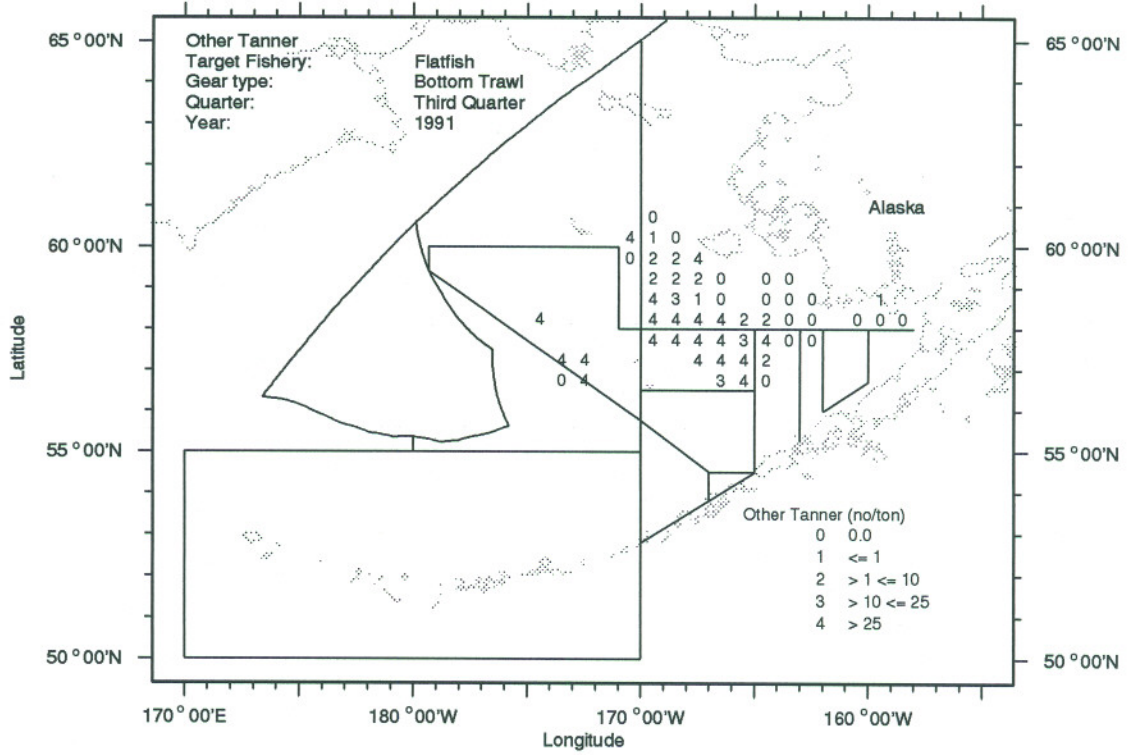


Figure 6.--Continued.

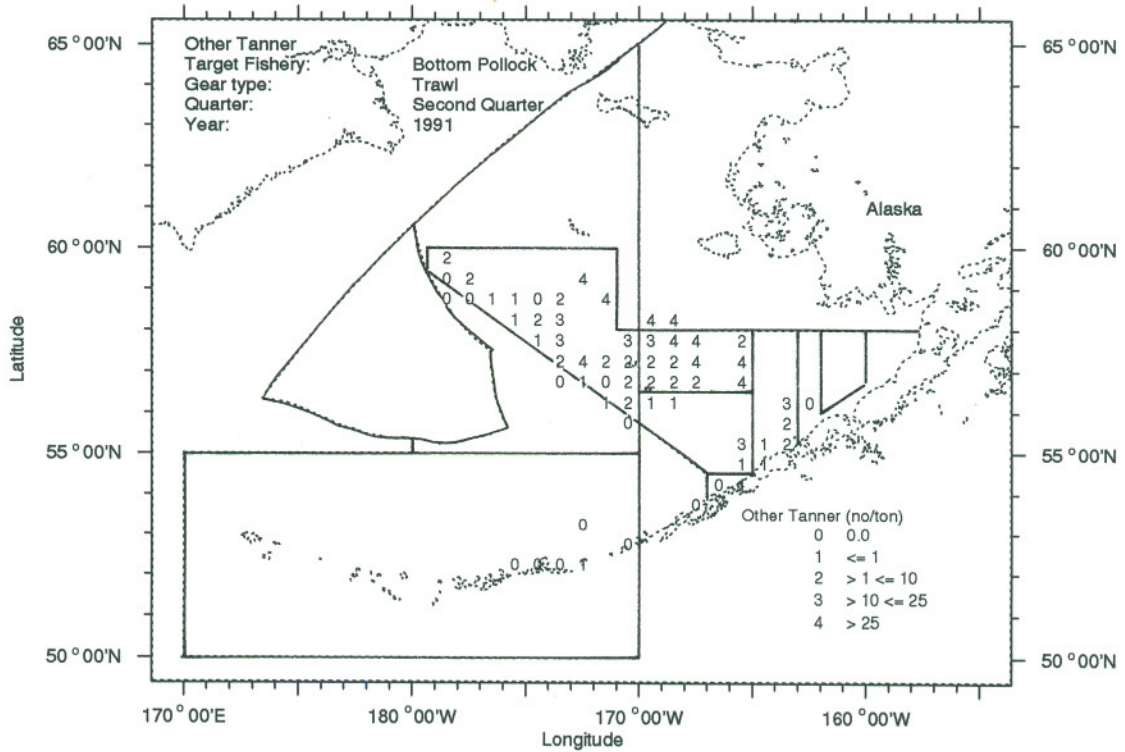
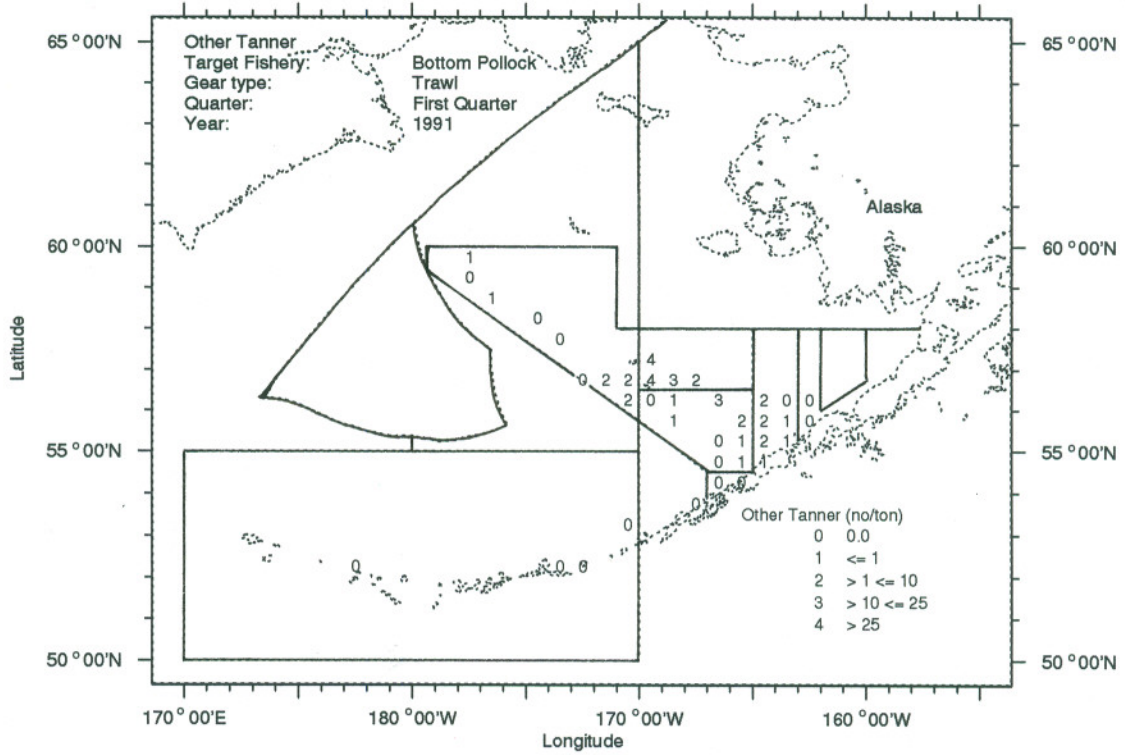


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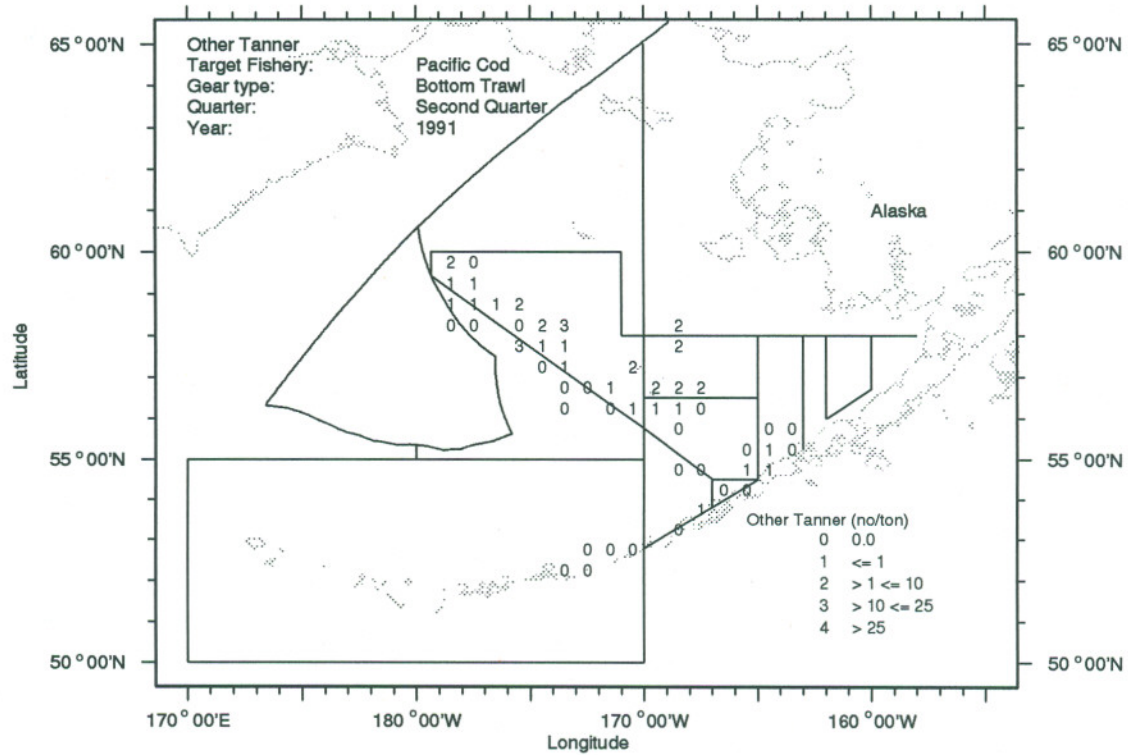
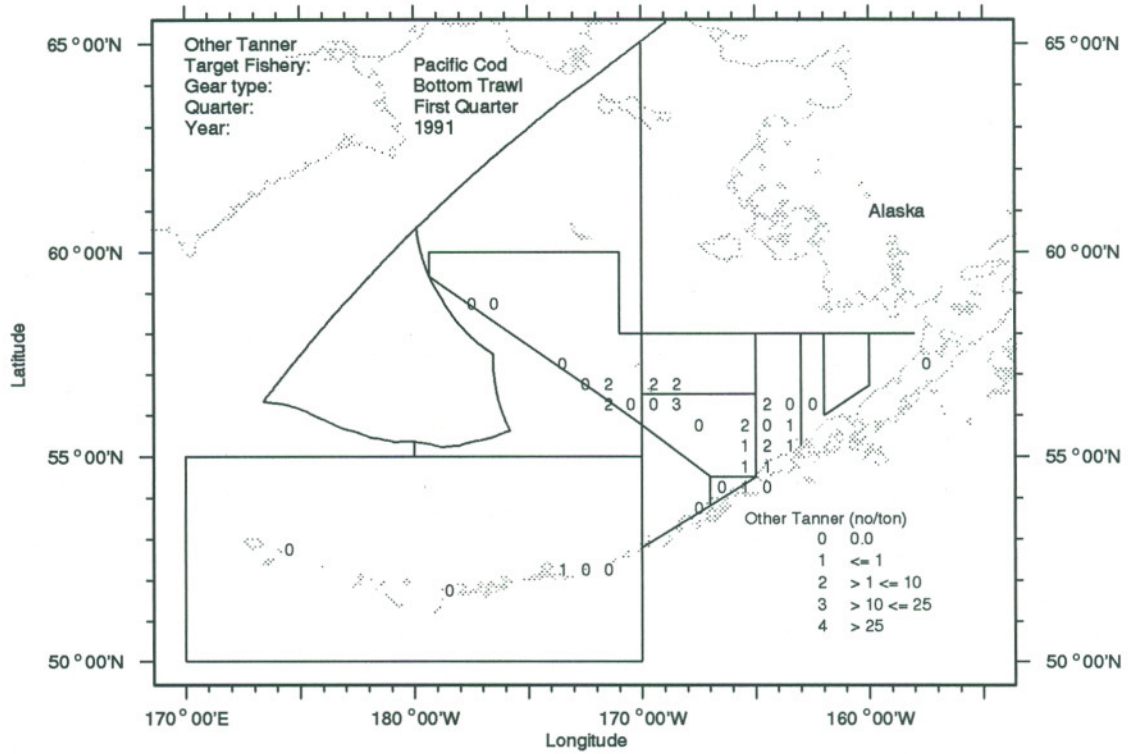


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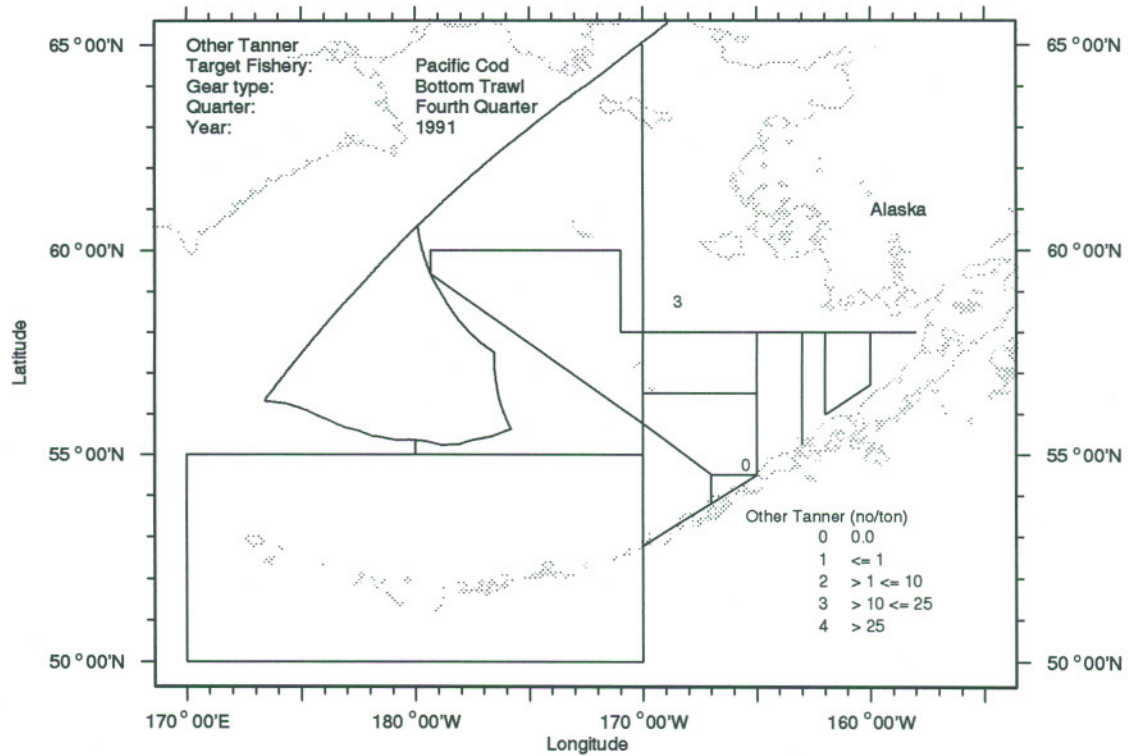
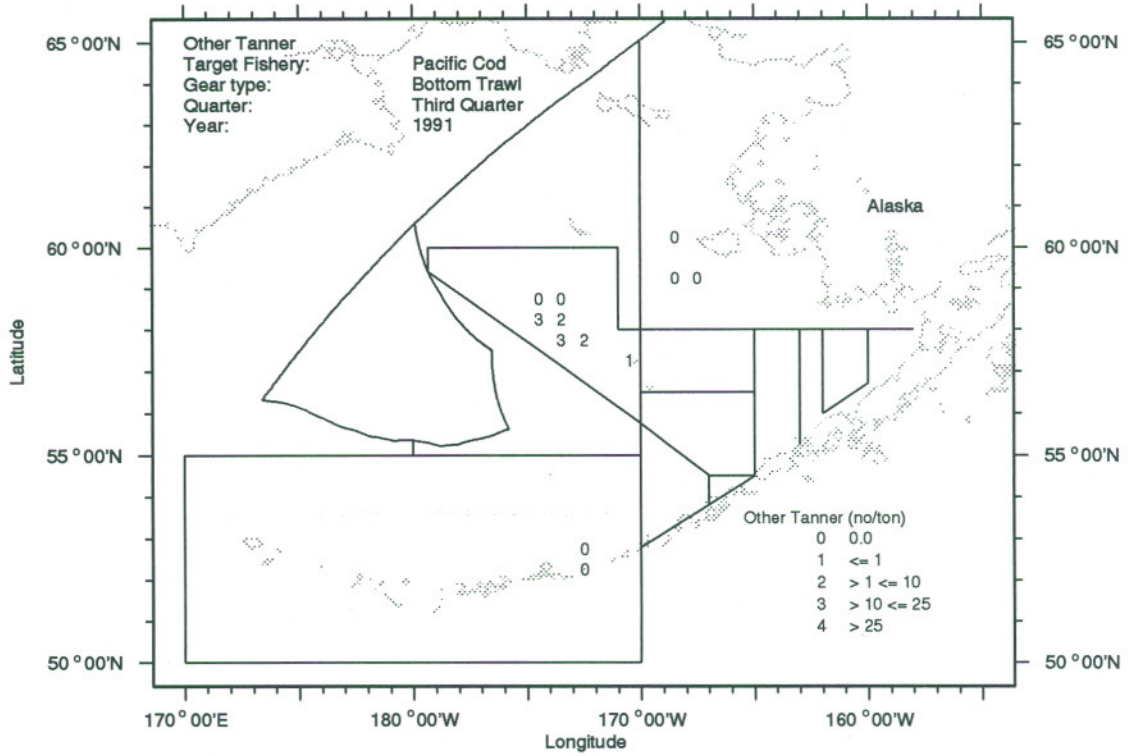


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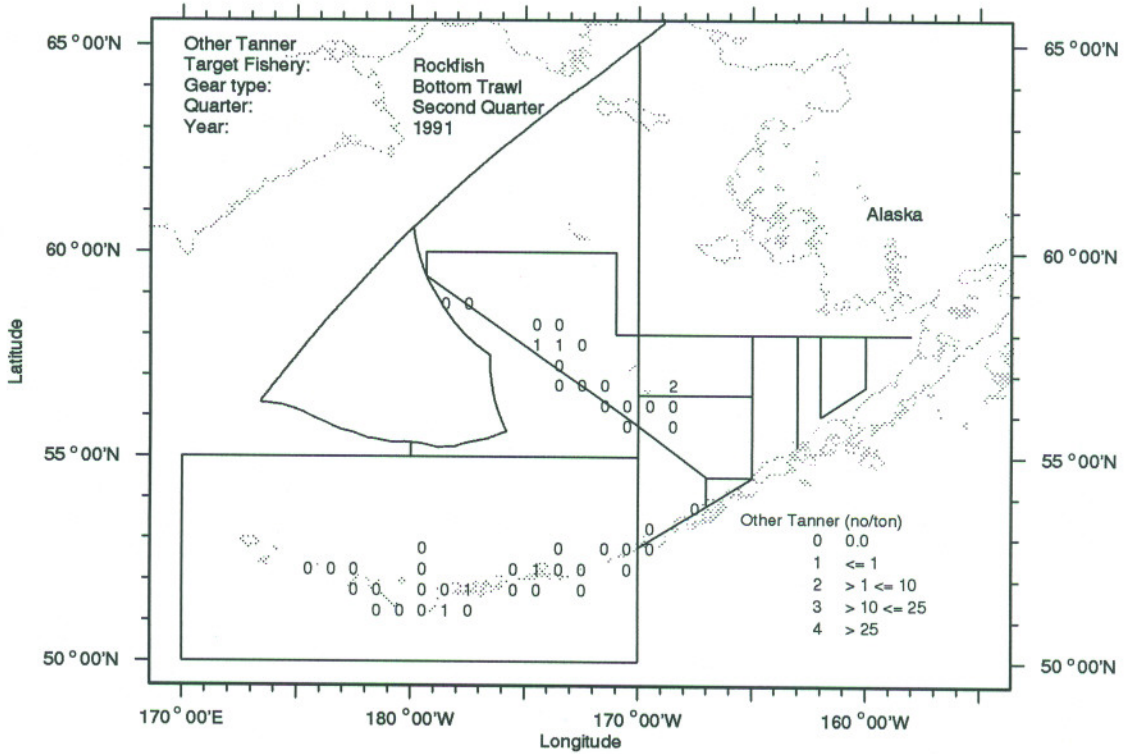
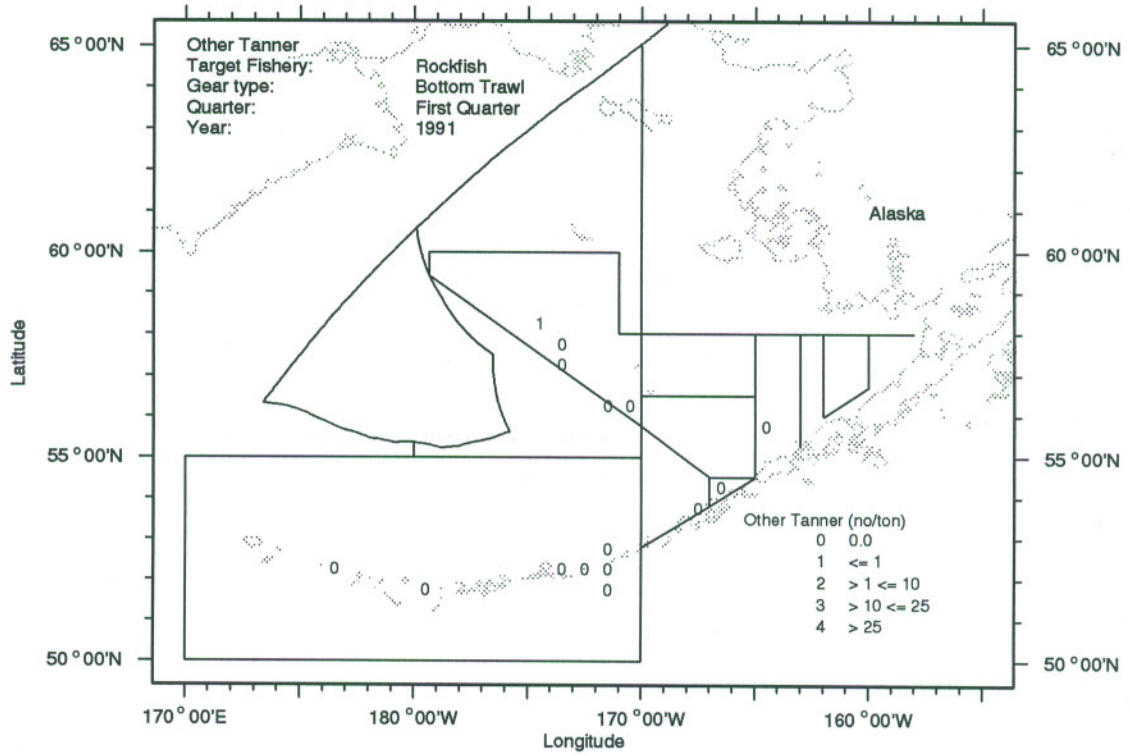


Figure 6.--Continued.

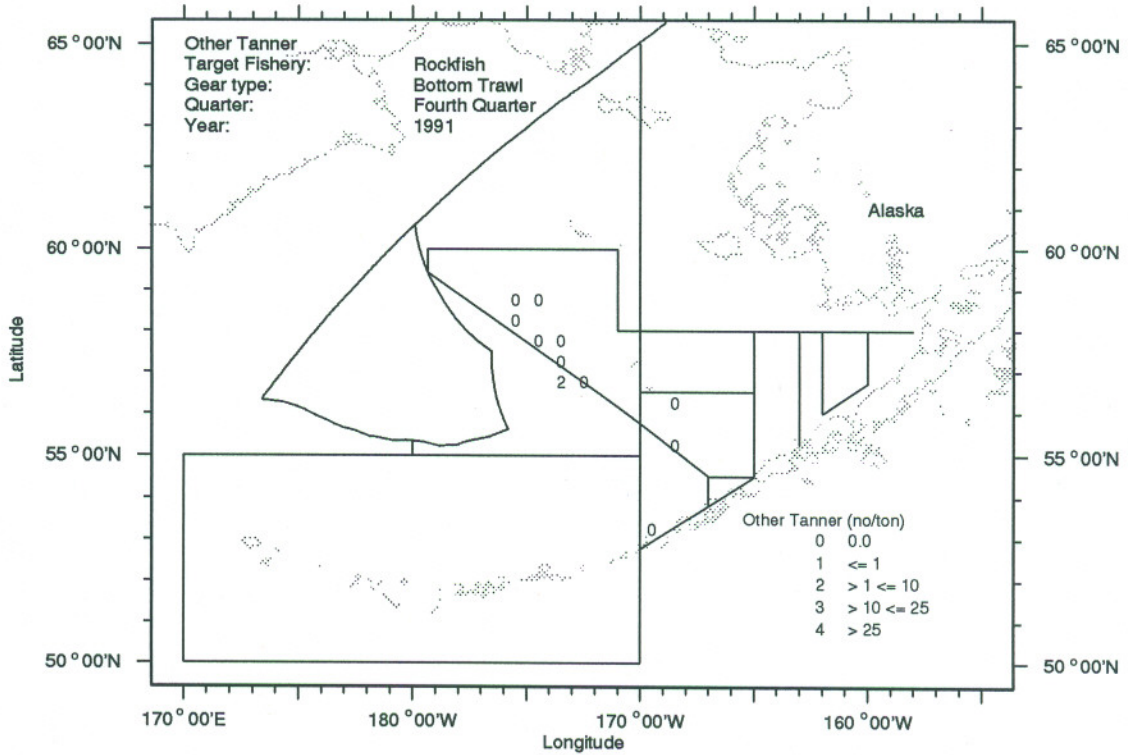
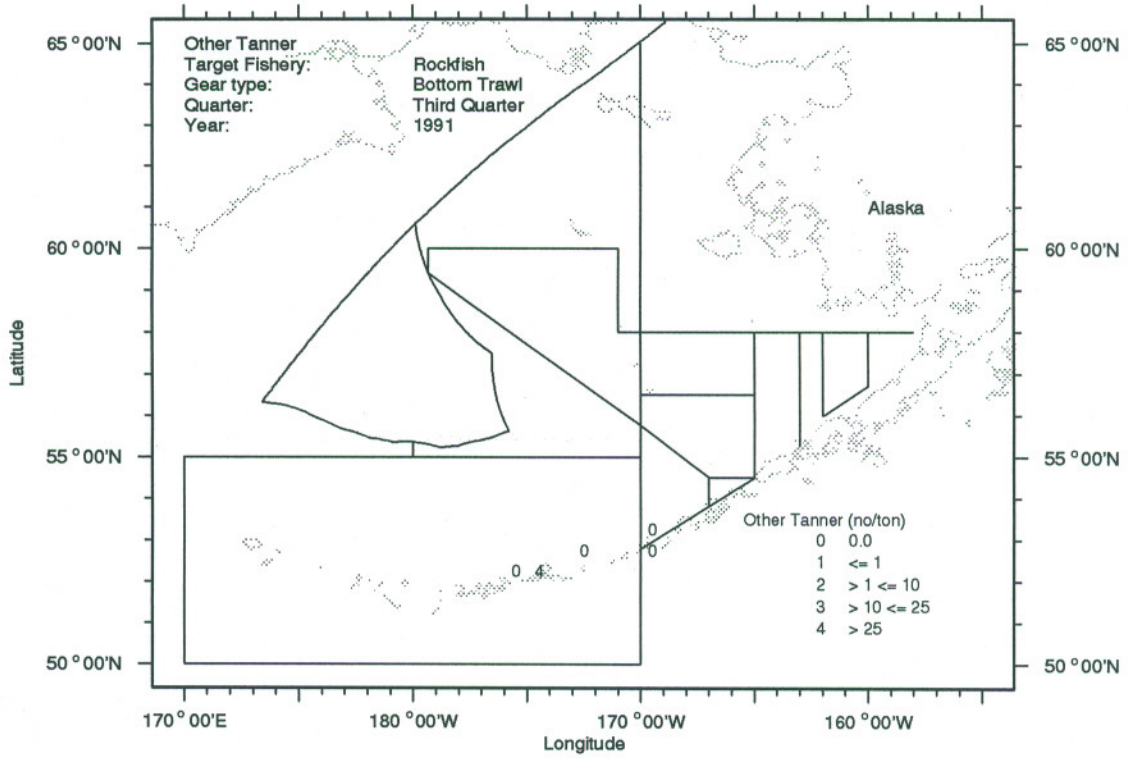


Figure 6.--Continued.

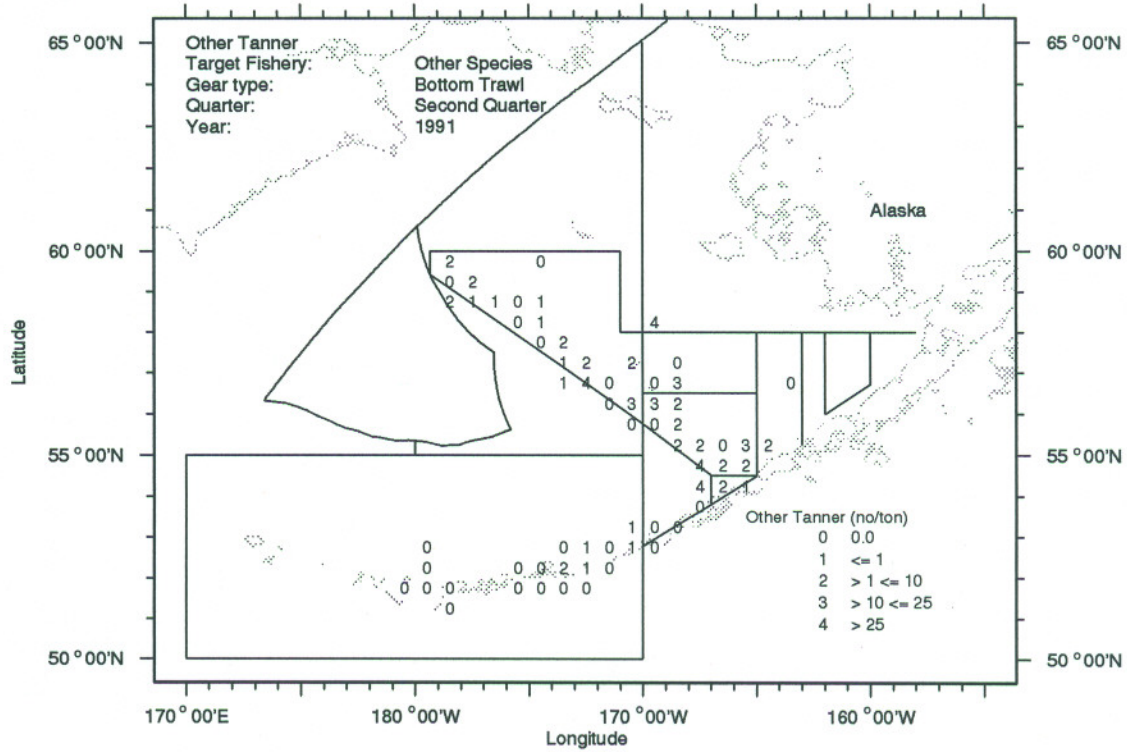
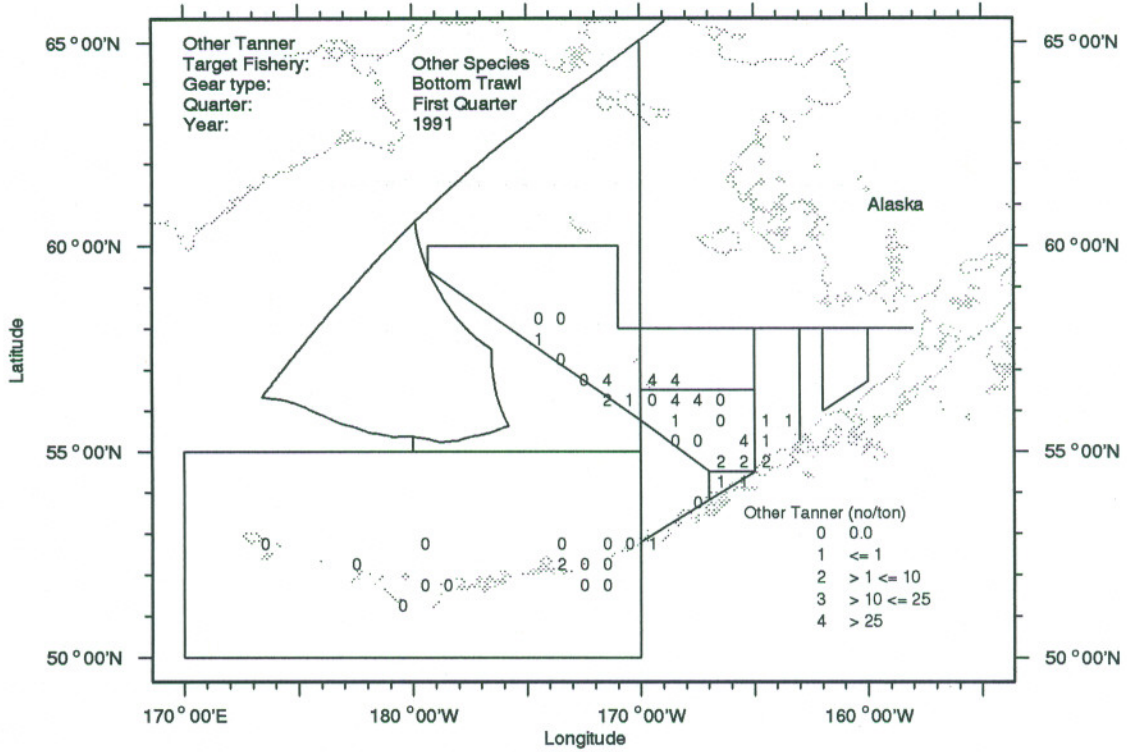


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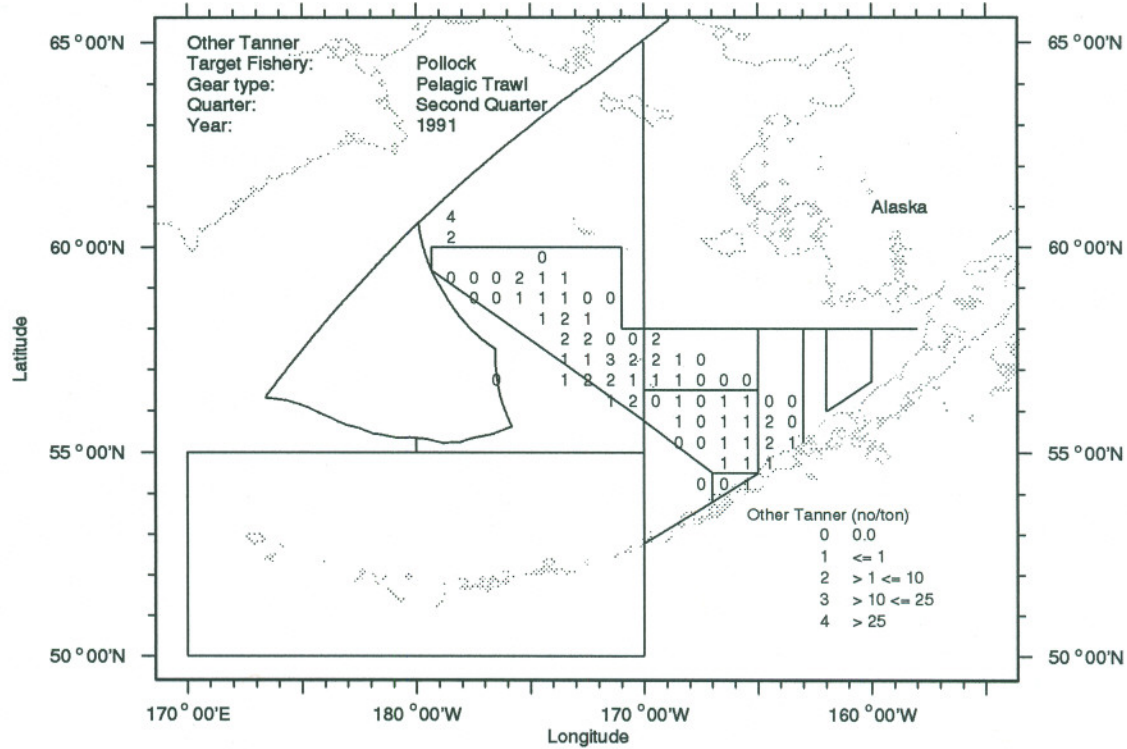
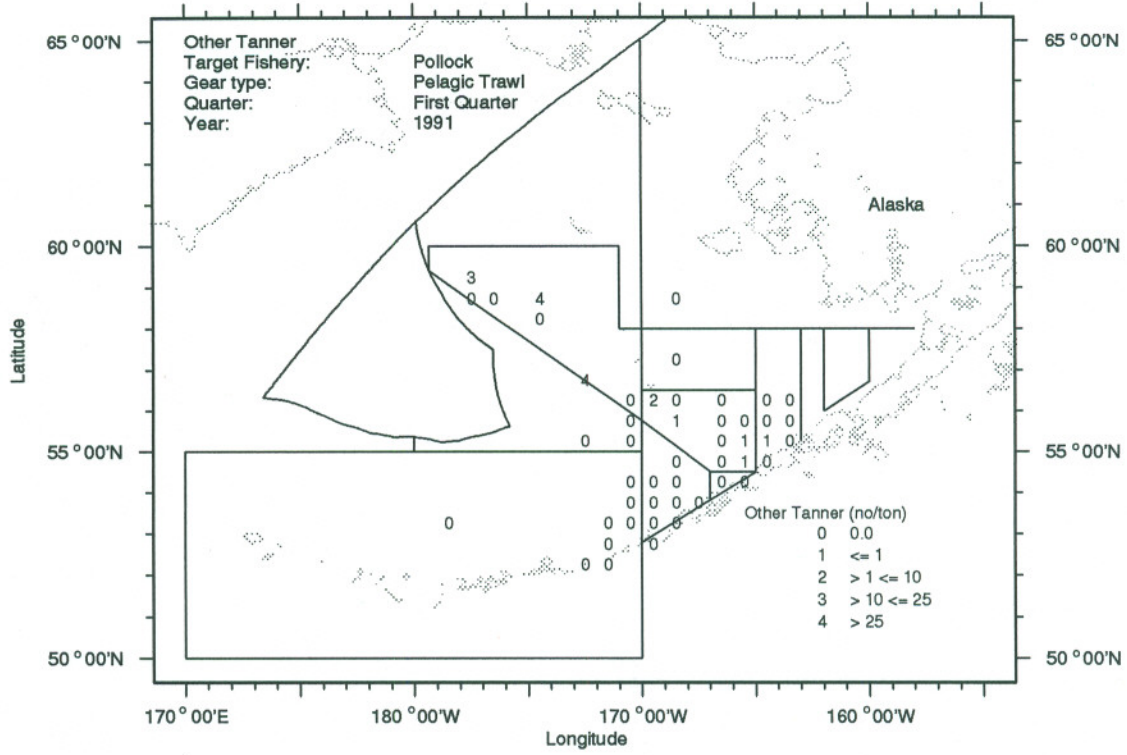


Figure 6.--Continued.

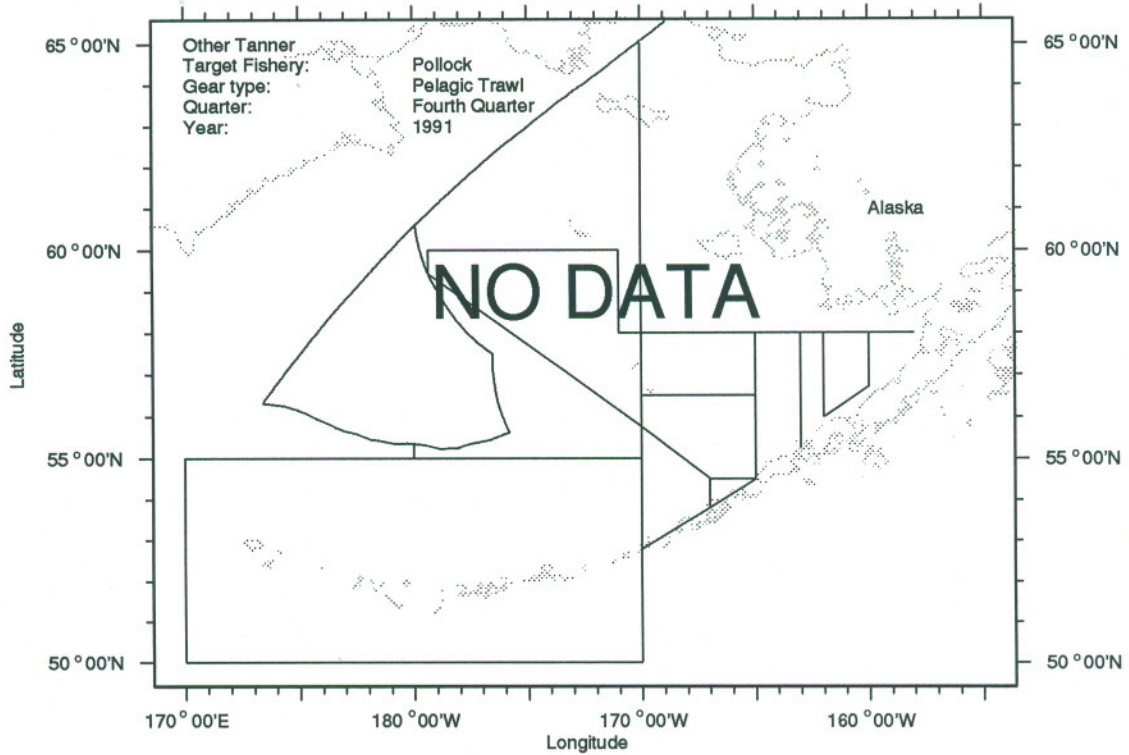
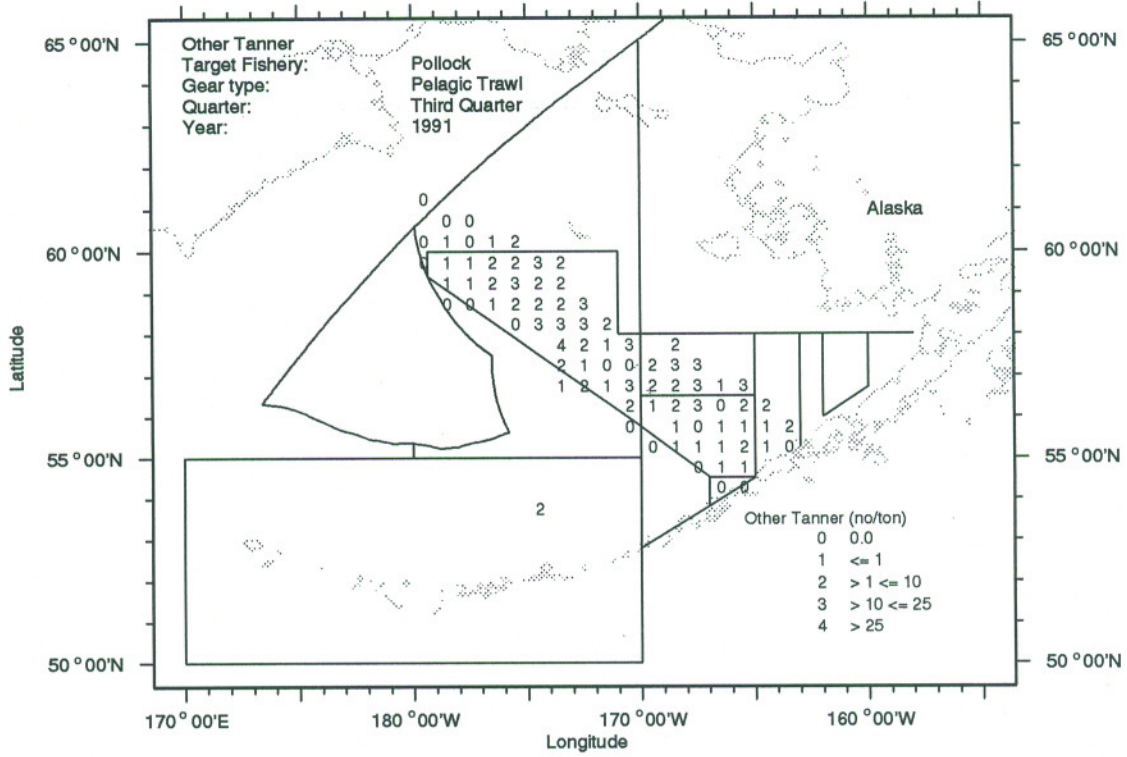


Figure 6.--Continued.

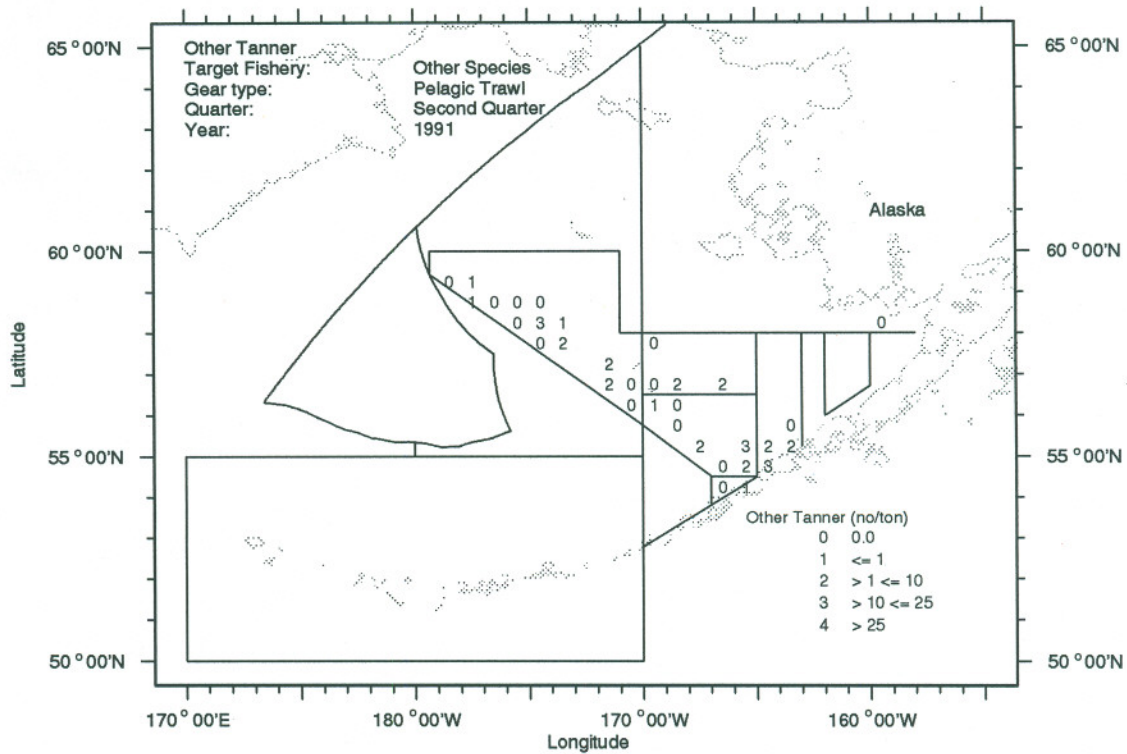
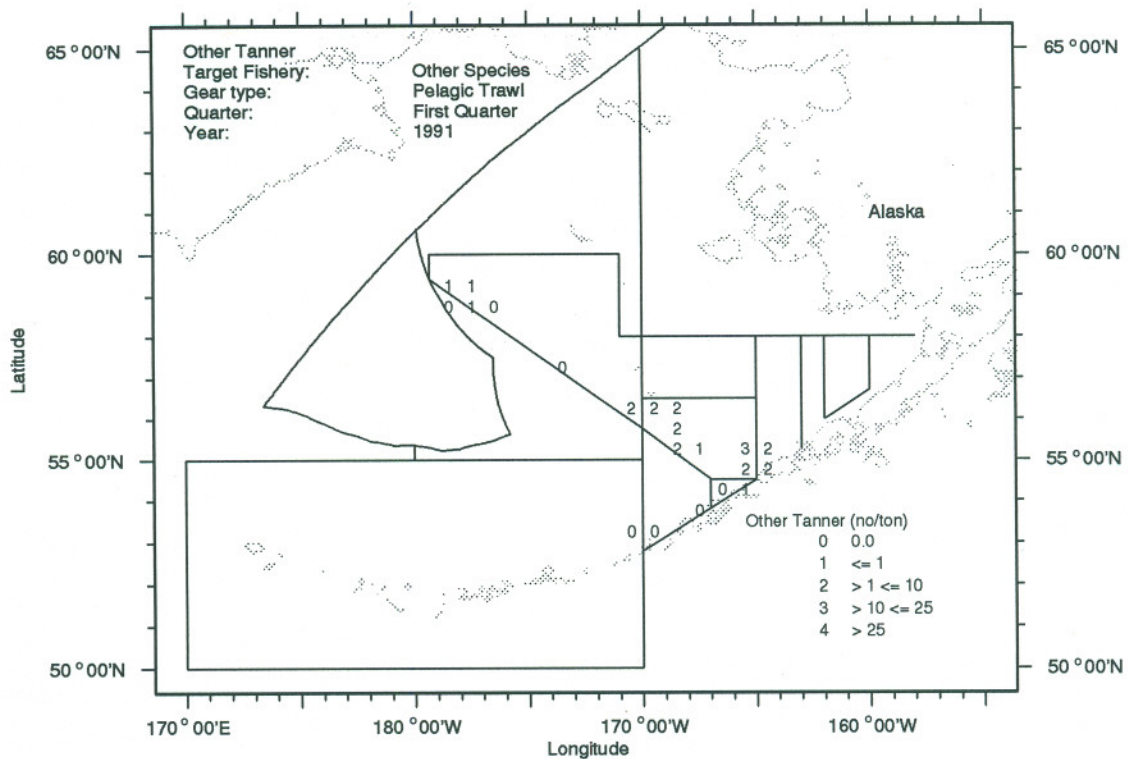


Figure 6.--Continued.

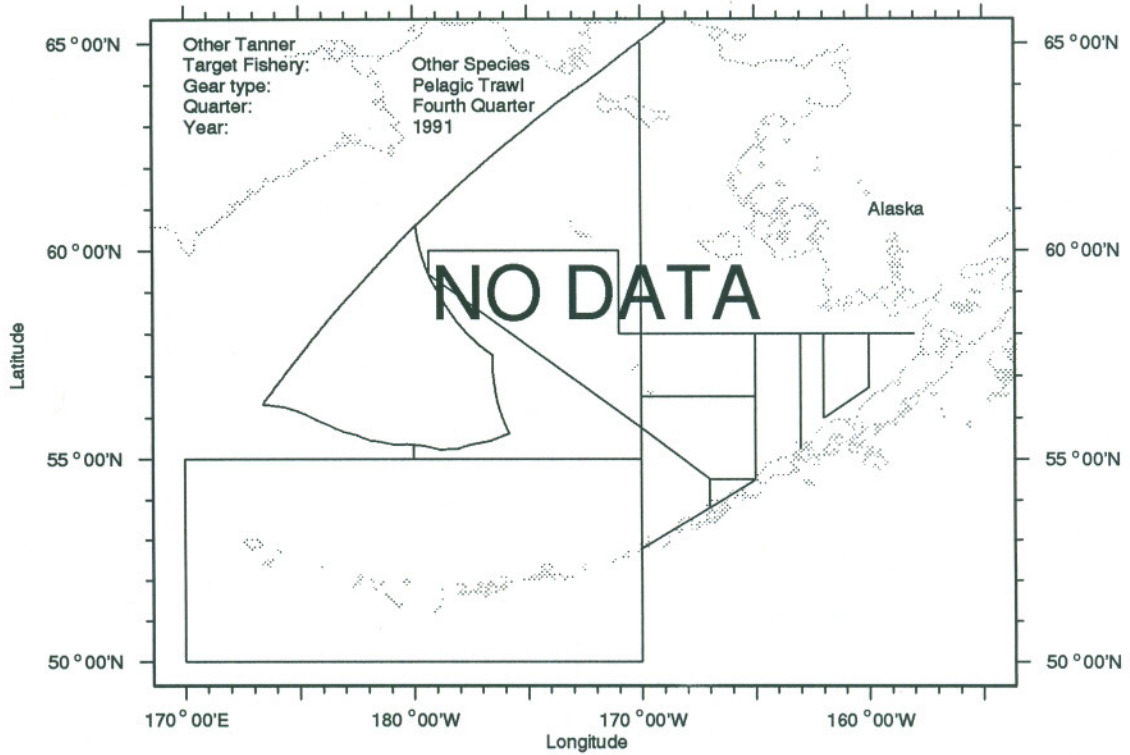
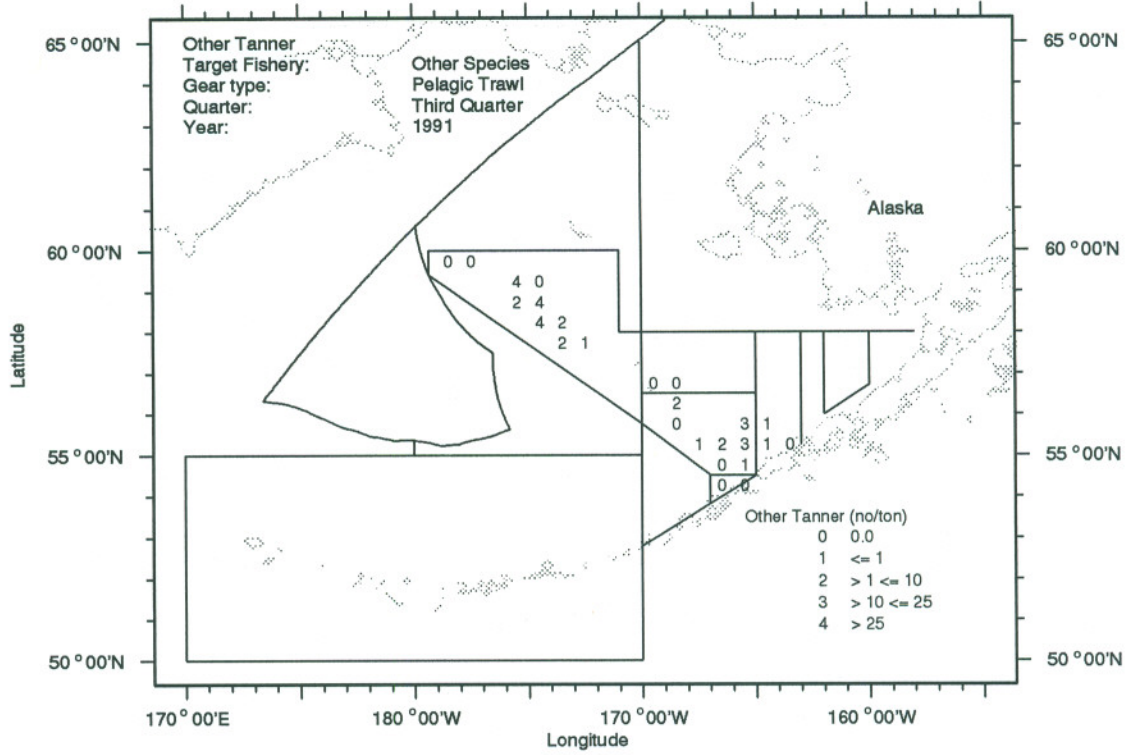


Figure 6.--Continued.

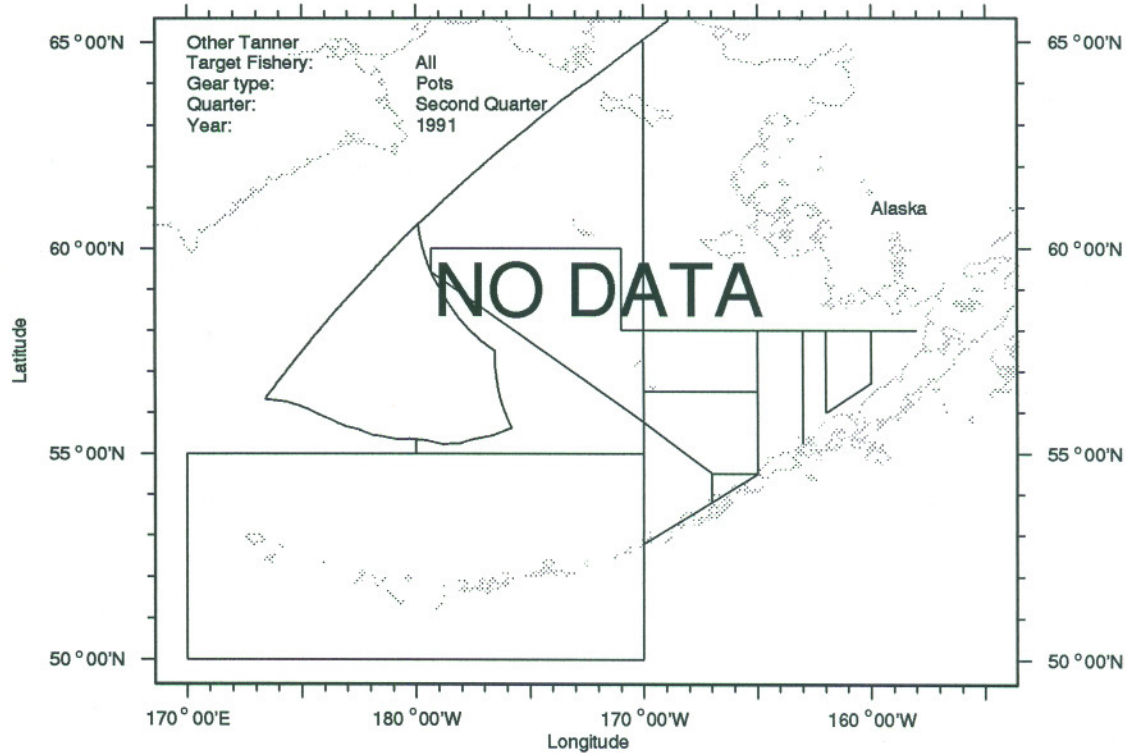
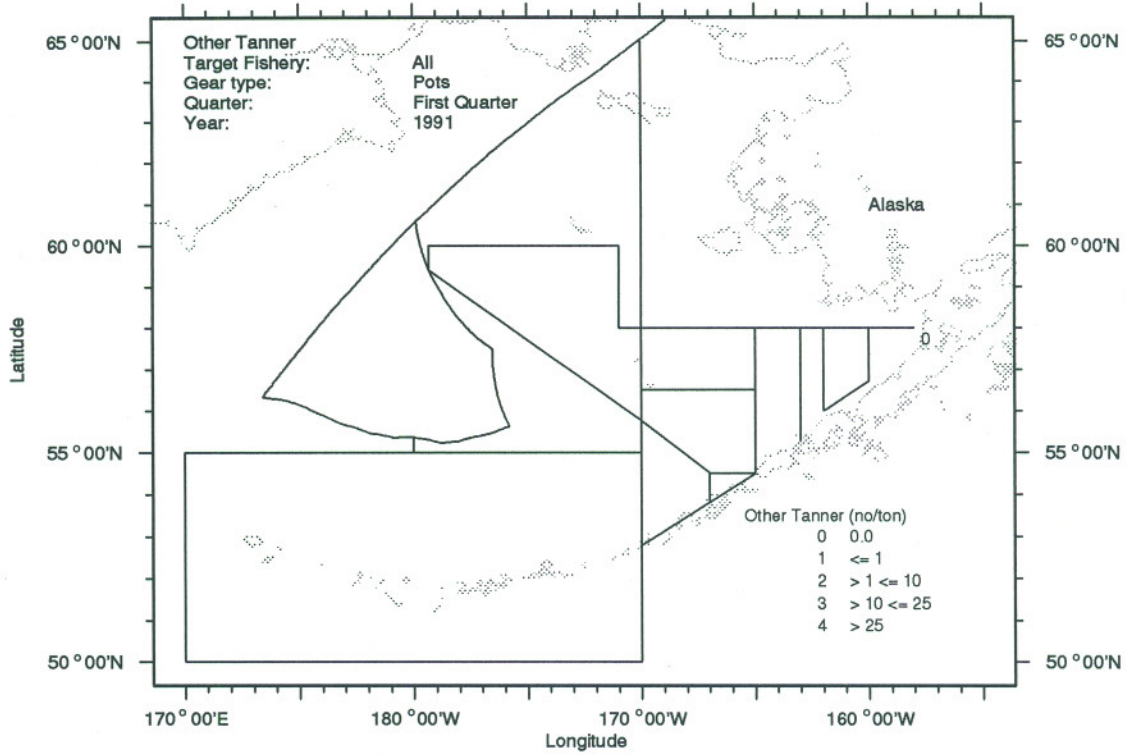


Figure 6.--Continued.

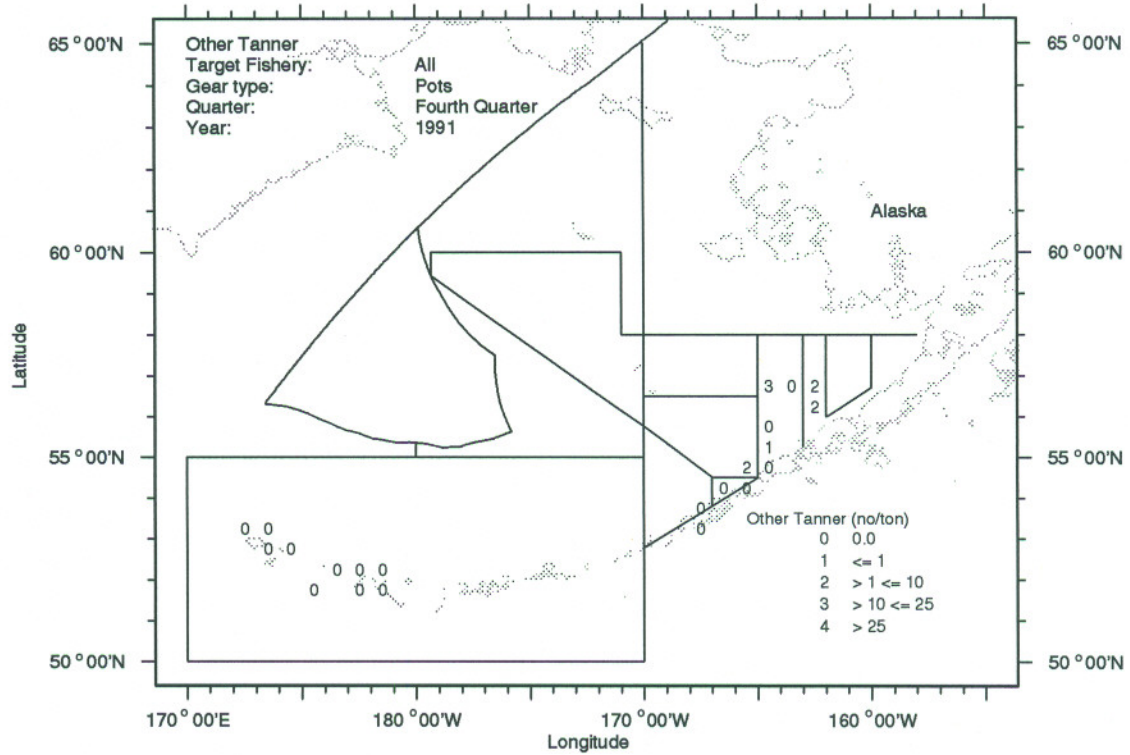
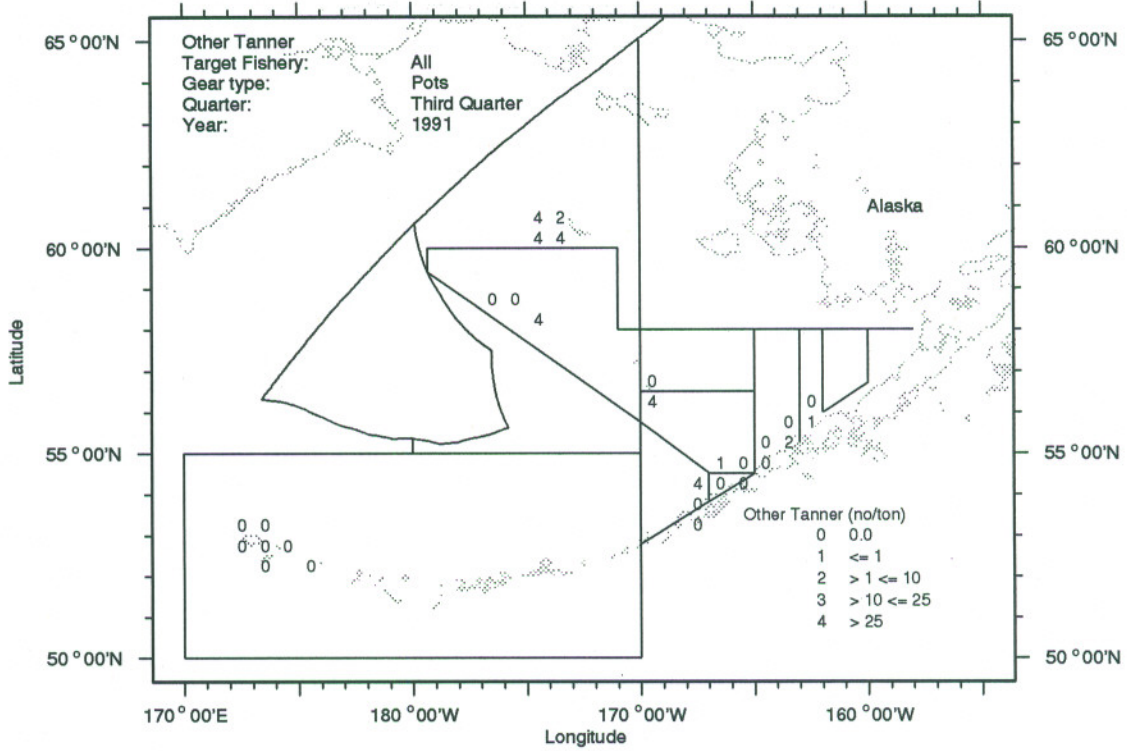


Figure 6.--Continued.

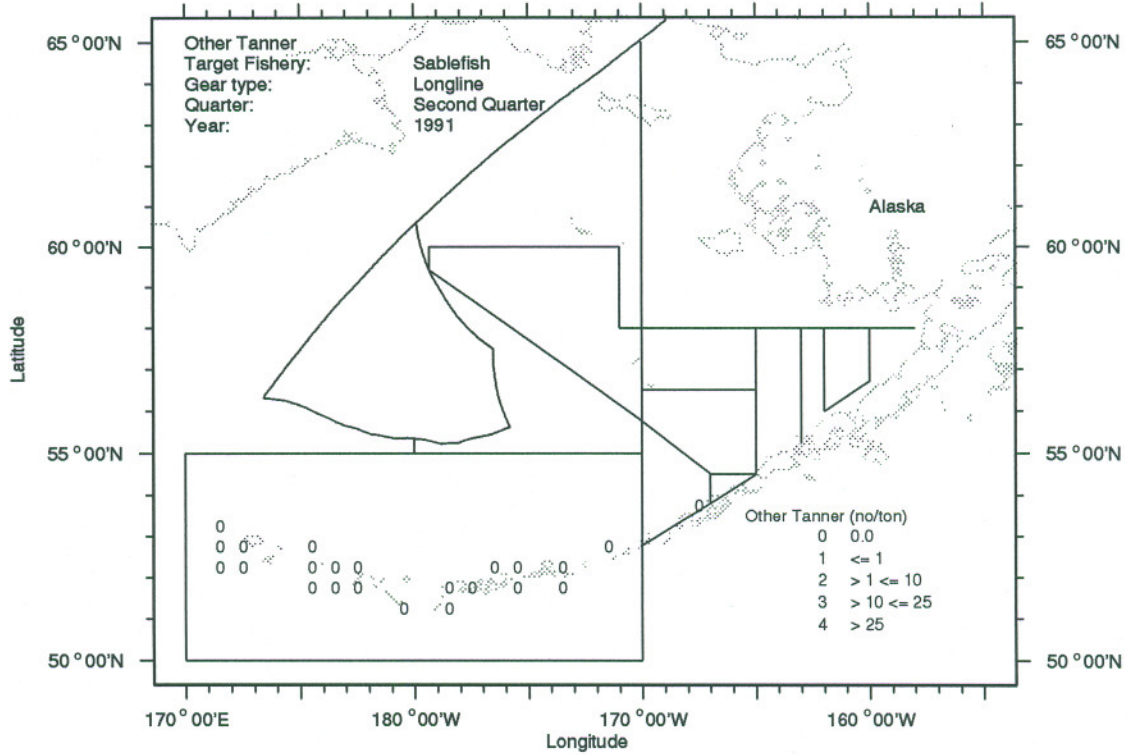
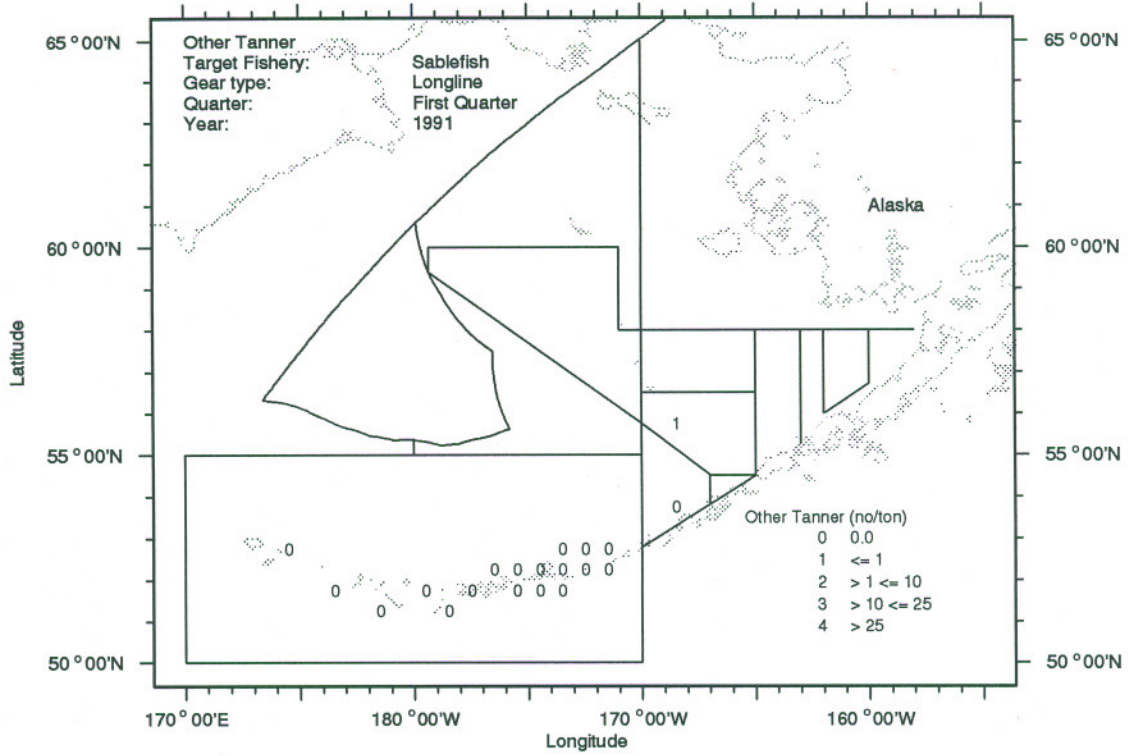


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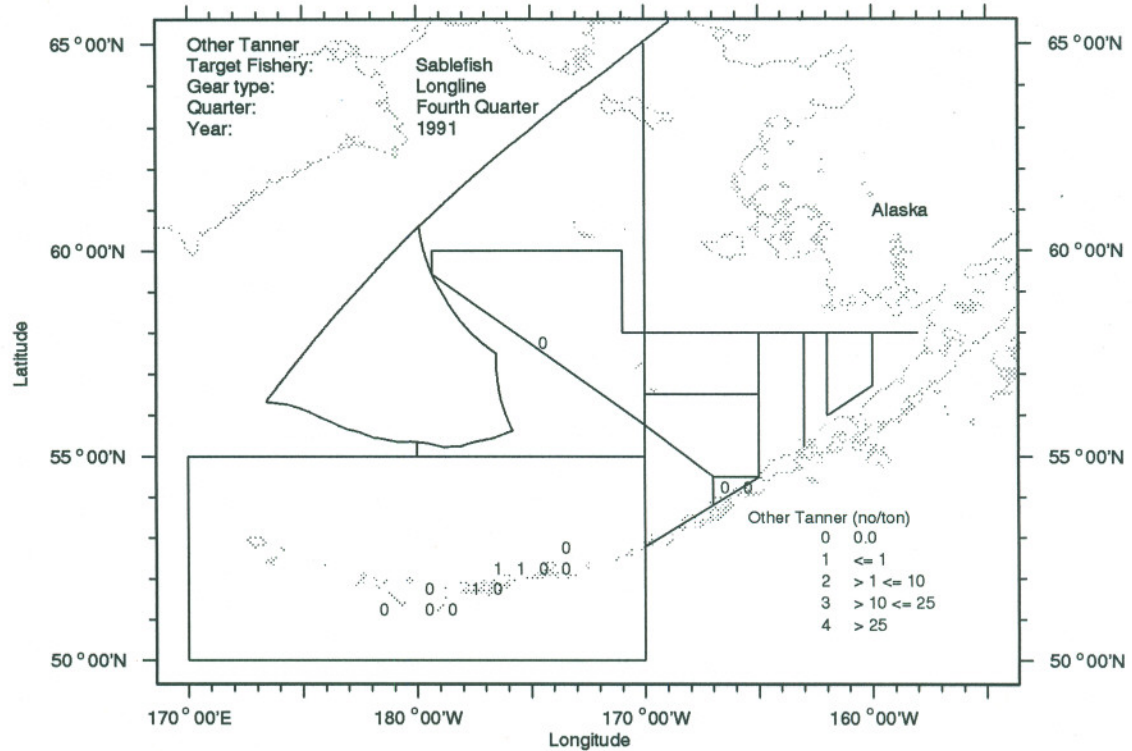
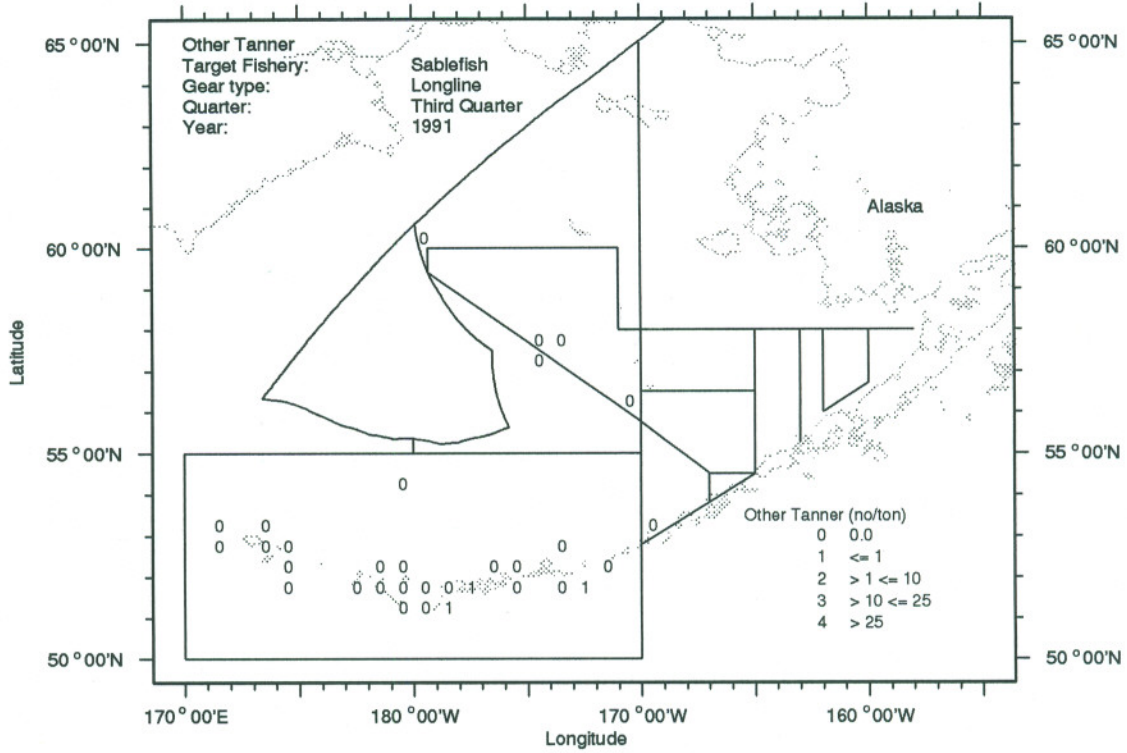


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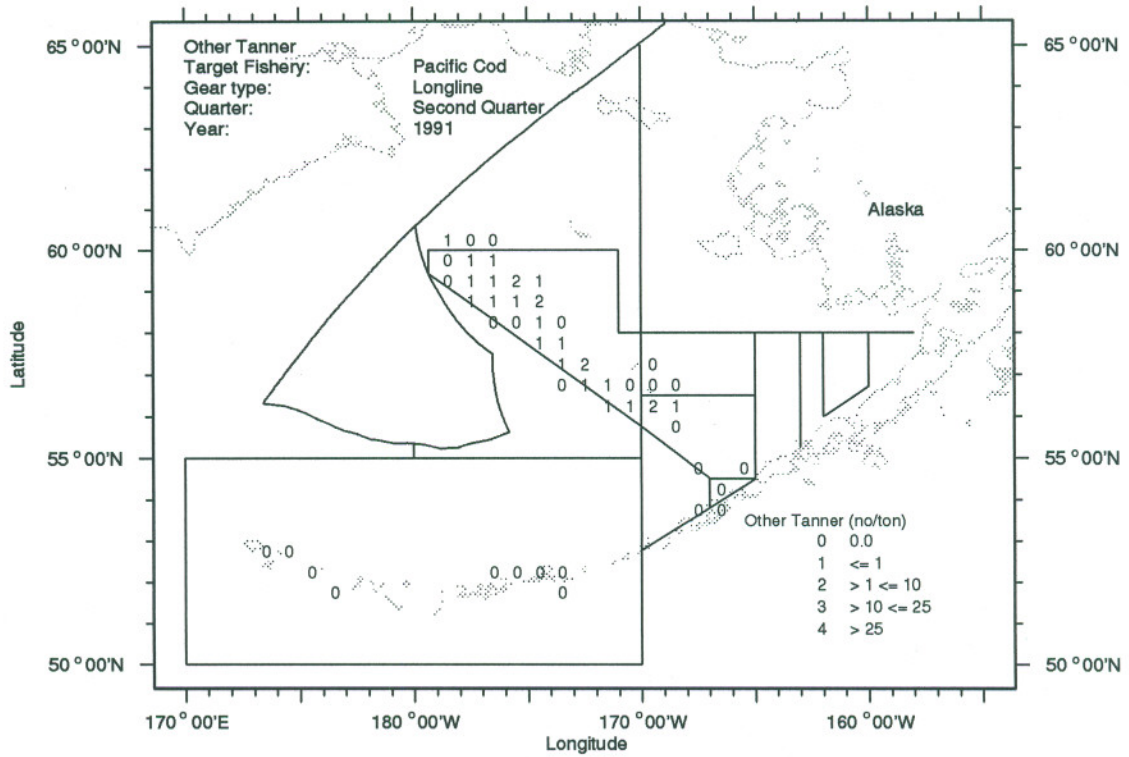
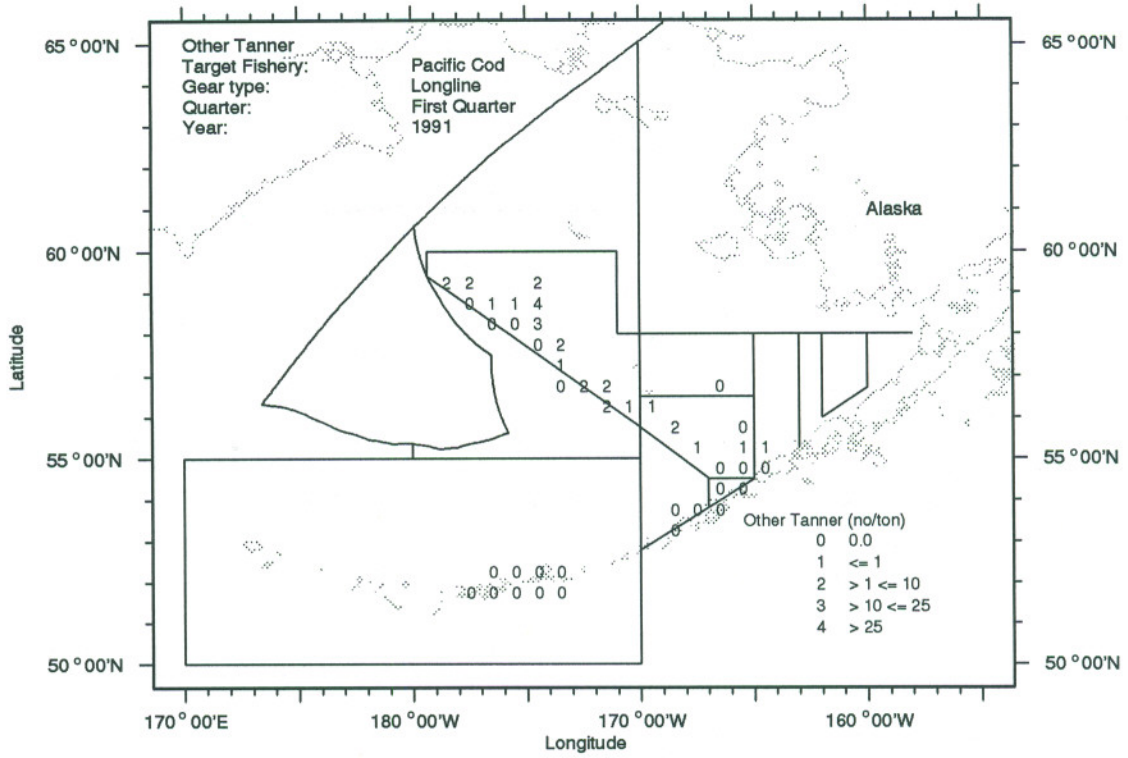


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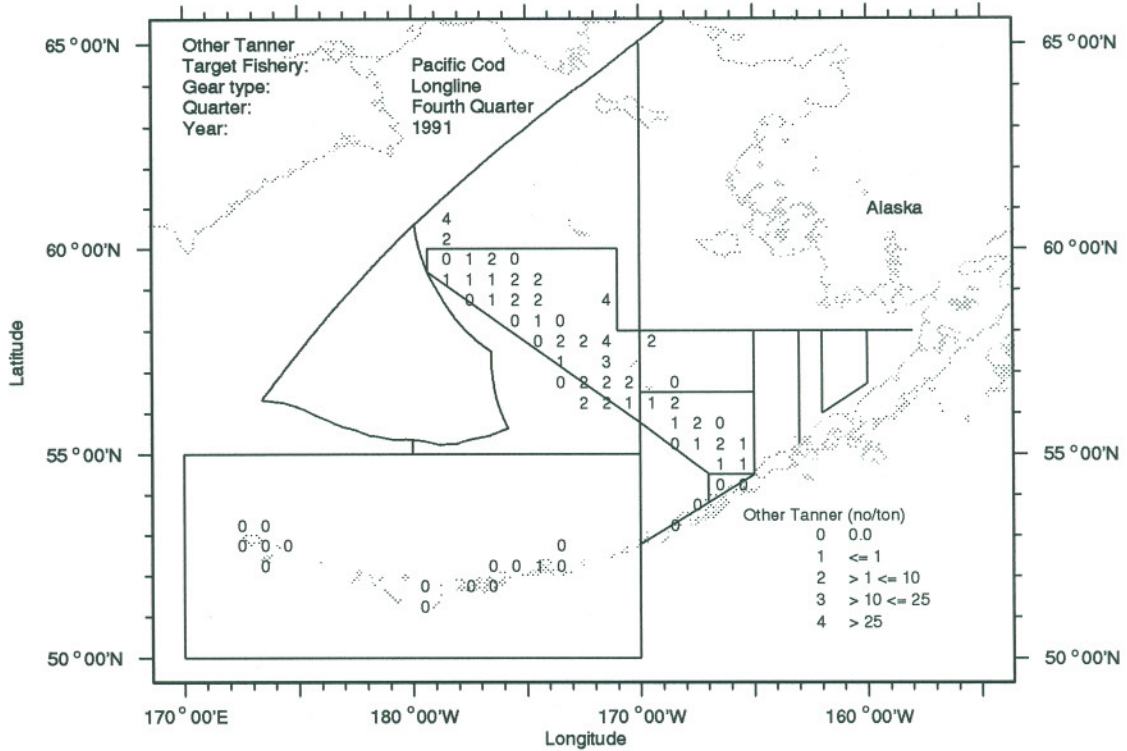
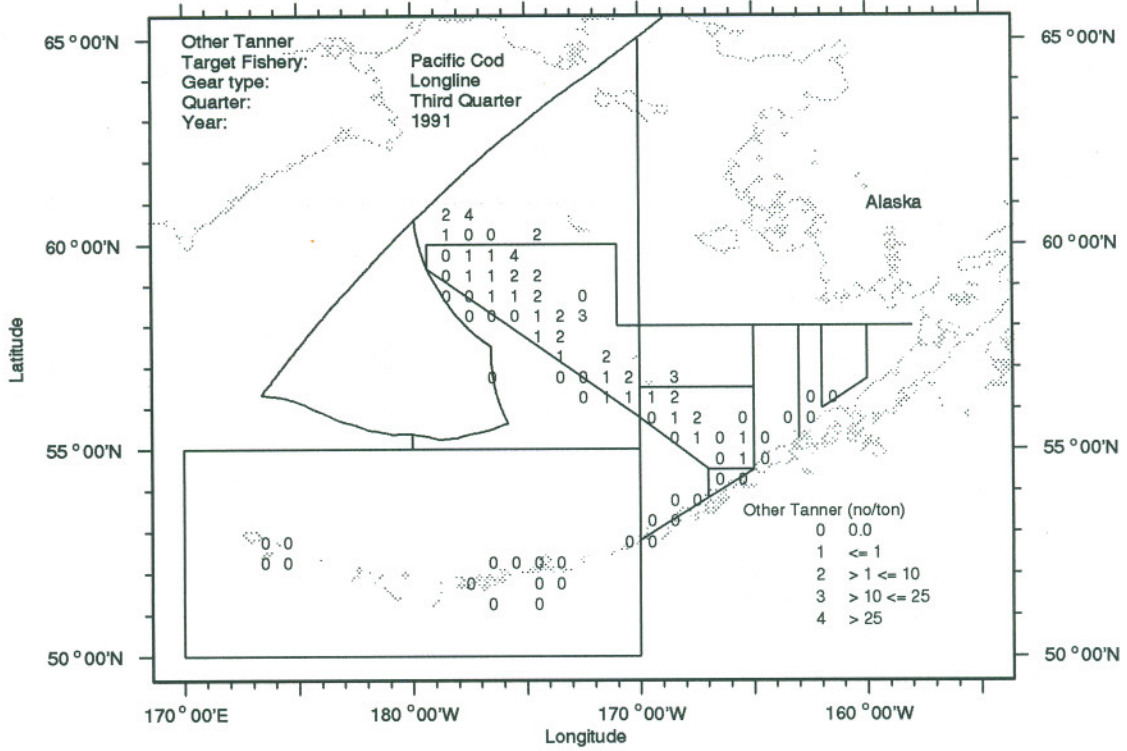


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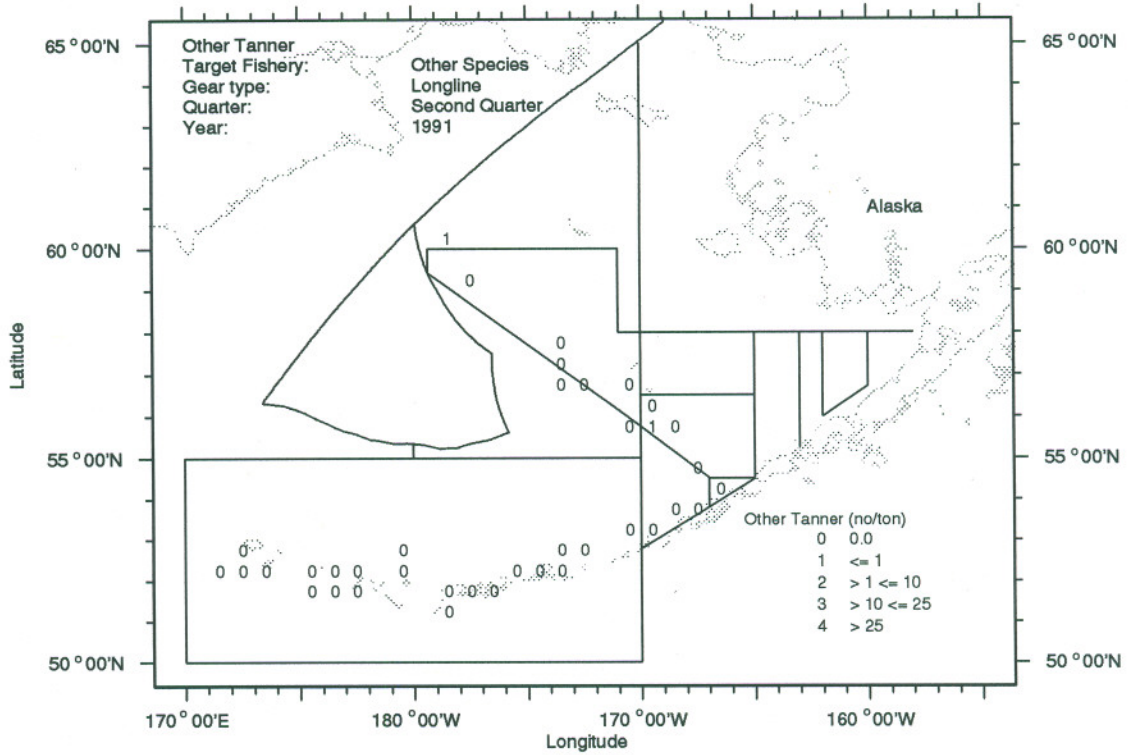
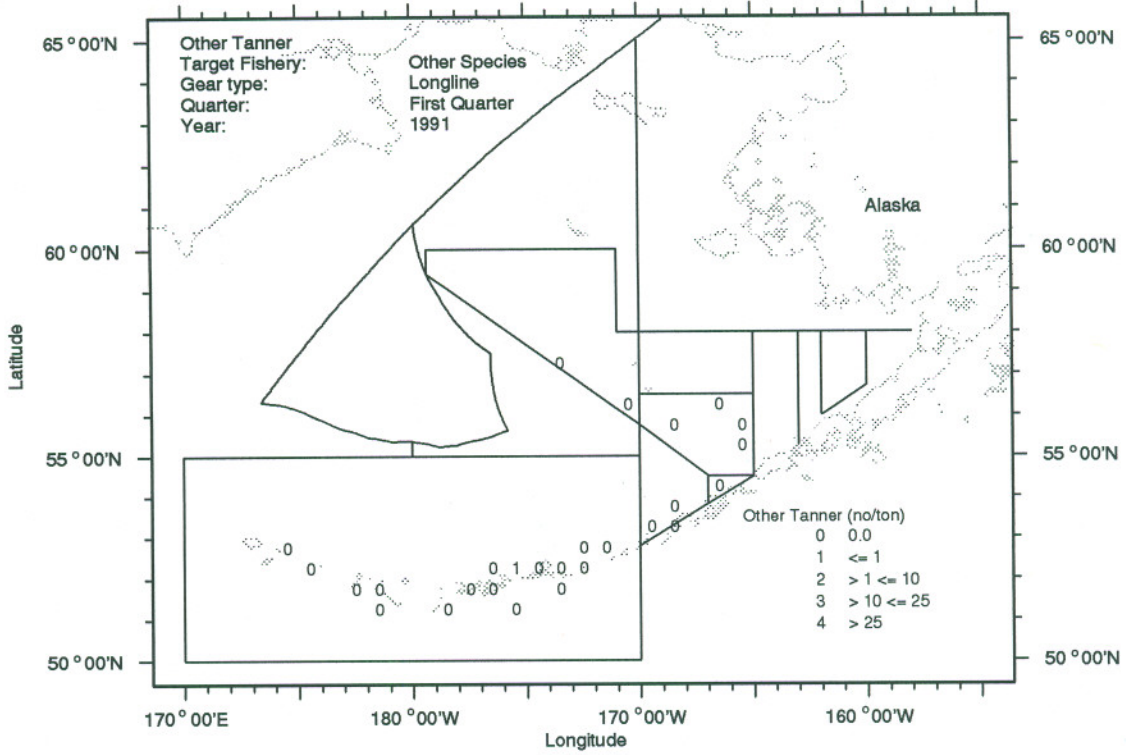


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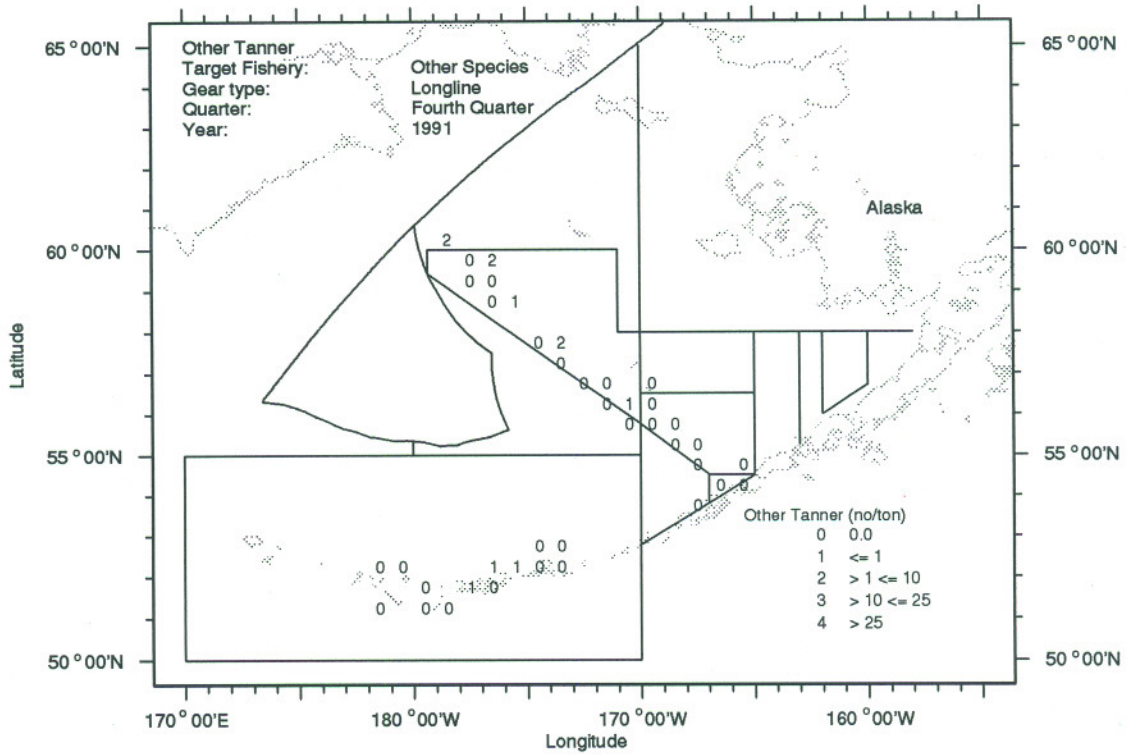
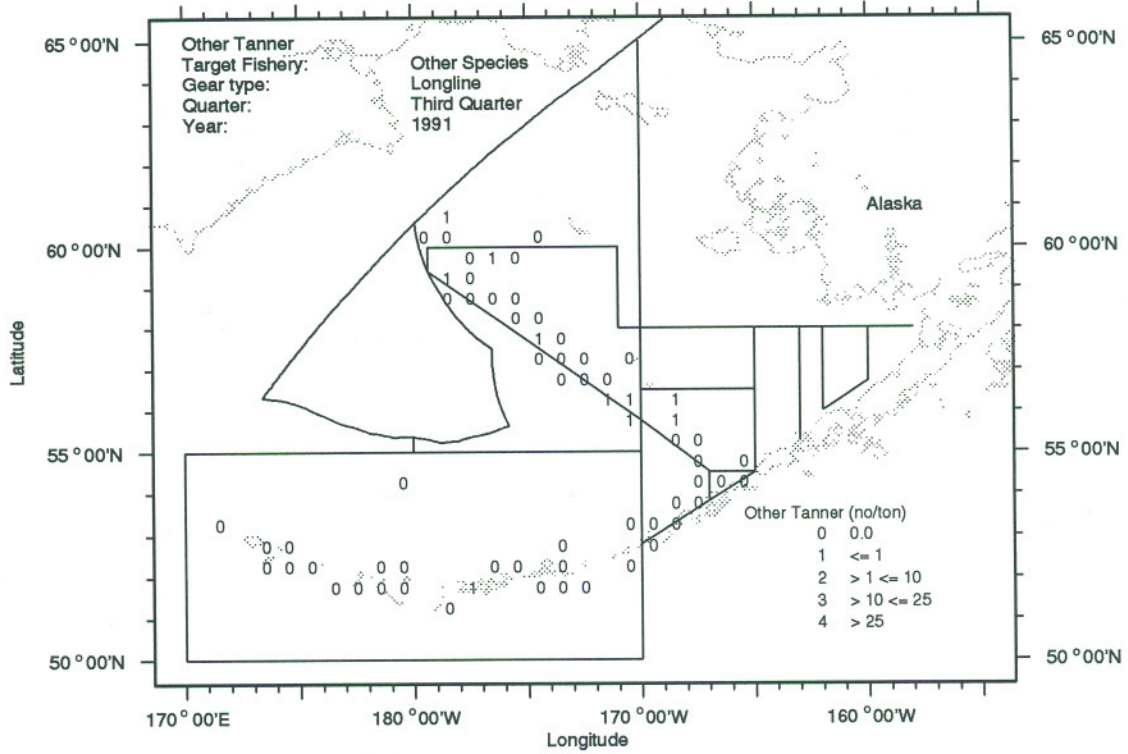


Figure 6.--Continued.

Table 20.--Estimated bycatch of *Chionoecetes bairdi* (by number of crab) by U.S. domestic groundfish vessels in the Bering Sea and Aleutian Islands region by NPFMC area and gear type, 1991. (Dashes indicate area not fished.)

Gear type	Area 511	Area 512	Area 513	Area 514	Area 515	Area 516	Area 517	Area 518	Area 519	Area 521	Area 522	Area 540	Total
Trawl	952,331	0	809,593	327,958	46,021	110,238	642,826	545	31,992	617,843	4,848	4,231	3,548,426
Longline	412	0	11	0	95	0	2,670	17	12	4,779	743	53	8,792
Pot	40,256	--	0	87	1,523	3,333	4,077	1,200	2,121	458	42	1,429	54,526
Total	992,999	0	809,604	328,045	47,639	113,571	649,573	1,762	34,125	623,080	5,633	5,713	3,611,744
Percent by area	27.5%	0.0%	22.4%	9.1%	1.3%	3.1%	18.0%	<0.1%	0.9%	17.3%	0.2%	0.2%	

Table 21.--Estimated bycatch of "other" snow (Tanner) crabs* (by number of crabs) by U.S. domestic groundfish vessels in the Bering Sea and Aleutian Islands region by NPFMC area and gear type, 1991. (Dashes indicate area not fished.)

Gear type	Area 511	Area 512	Area 513	Area 514	Area 515	Area 516	Area 517	Area 518	Area 519	Area 521	Area 522	Area 540	Total
Trawl	128,214	0	3,099,530	2,809,327	283,998	4,418	250,787	8,059	86,742	3,646,439	109,548	2,535	10,429,597
Longline	31	0	68	3	735	0	3,250	122	83	43,540	5,353	387	53,572
Pot	729	--	0	95	1,668	12	2,470	1,385	2,324	16,072	2,888	1,379	29,022
Total	128,974	0	3,099,598	2,809,425	286,401	4,430	256,507	9,566	89,149	3,706,051	117,789	4,301	10,512,191
Percent by area	1.2%	0.0%	29.5%	26.7%	2.7%	<0.1%	2.4%	0.1%	0.8%	35.3%	1.1%	<0.1%	

*Species in this group include *Chionoecetes opilio*, *C. angulatus*, *C. tanneri*, and *C. bairdi* X *C. opilio* hybrid snow (Tanner) crabs.

Table 22.--U.S. domestic groundfish catch (in metric tons (t)) and *C. bairdi* bycatch (in numbers) by target fishery, NPFMC zone, and species in the Bering Sea and Aleutian Islands region, 1991.

Fishery	Gear	Zone	<i>C. bairdi</i>				
			Groundfish catch	Bycatch (numbers)	Per t of groundfish	% within zone	% of total bycatch
Atka mackerel	Trawl	1	nf	nf	nf	nf	nf
		2	94.95	0	0.000	0.0%	0.0%
		3	29,879.73	48	0.002	0.0%	0.0%
		Total	29,974.68	48	0.002		0.0%
Pacific cod	Longline	1	70.60	412	5.836	0.0%	0.0%
		2	70,373.46	7,453	0.106	0.4%	0.2%
		3	13,612.25	914	0.067	0.2%	0.0%
		Total	84,056.31	8,779	0.104		0.2%
Pacific cod	Pot	1	858.81	43,589	50.755	3.9%	1.2%
		2	426.68	4,482	10.504	0.2%	0.1%
		3	5,433.42	6,402	1.178	1.5%	0.2%
		Total	6,718.91	54,473	8.107		1.5%
Pacific cod	Trawl	1	16,171.60	76,563	4.734	6.9%	2.1%
		2	79,496.71	397,397	4.999	19.1%	11.0%
		3	20,439.79	22,946	1.123	5.4%	0.6%
		Total	116,108.10	496,906	4.280		13.8%
Other Flatfish	Trawl	1	4,148.21	14,452	3.484	1.3%	0.4%
		2	34,231.40	639,159	18.672	30.7%	17.7%
		3	121,068.32	323,754	2.674	76.6%	9.0%
		Total	159,447.93	977,365	6.130		27.1%
Rockfish	Longline	1	nf	nf	nf	nf	nf
		2	0.10	0	0.000	0.0%	0.0%
		3	171.57	0	0.000	0.0%	0.0%
		Total	171.67	0	0.000		0.0%
Rockfish	Trawl	1	0.78	0	0.000	0.0%	0.0%
		2	3,224.96	1,473	0.457	0.1%	0.0%
		3	3,220.02	184	0.057	0.0%	0.0%
		Total	6,445.76	1,657	0.257		0.0%
Other	Longline	1	2.82	0	0.000	0.0%	0.0%
		2	547.00	7	0.013	0.0%	0.0%
		3	127.76	6	0.047	0.0%	0.0%
		Total	677.58	13	0.019		0.0%
Other	Trawl	1	196.61	25	0.127	0.0%	0.0%
		2	2,396.55	14,228	5.937	0.7%	0.4%
		3	65.11	545	8.370	0.1%	0.0%
		Total	2,658.27	14,798	5.567		0.4%
Pollock midwater	Trawl	1	71,279.08	48,446	0.680	4.4%	1.3%
		2	705,769.76	199,146	0.282	9.6%	5.5%
		3	539,335.46	2,516	0.005	0.6%	0.1%
		Total	1,316,384.30	250,108	0.190		6.9%
Pollock bottom	Trawl	1	40,670.57	485,410	11.935	43.9%	13.4%
		2	258,828.21	619,192	2.392	29.7%	17.1%
		3	18,300.26	43,397	2.371	10.3%	1.2%
		Total	317,799.04	1,147,999	3.612		31.8%
Rock sole	Trawl	1	45,337.10	432,510	9.540	39.1%	12.0%
		2	15,483.92	164,070	10.596	7.9%	4.5%
		3	2,692.53	6,989	2.596	1.7%	0.2%
		Total	63,513.55	603,569	9.503		16.7%

Table 22.--Continued.

Fishery	Gear	Zone	Groundfish catch	C. bairdi			
				Bycatch (numbers)	Per t of groundfish	% within zone	% of total bycatch
Sablefish	Longline	1	24.21	0	0.000	0.0%	0.0%
		2	294.96	0	0.000	0.0%	0.0%
		3	3,219.19	0	0.000	0.0%	0.0%
		Total	3,538.36	0	0.000		0.0%
Sablefish	Pot	1	nf	nf	nf	nf	nf
		2	0.03	0	0.000	0.0%	0.0%
		3	0.04	0	0.000	0.0%	0.0%
		Total	0.07	0	0.000		0.0%
Sablefish	Trawl	1	nf	nf	nf	nf	nf
		2	nf	nf	nf	nf	nf
		3	27.98	445	15.904	0.1%	0.0%
		Total	27.98	445	15.904		0.0%
Turbot	Longline	1	nf	nf	nf	nf	nf
		2	249.96	0	0.000	0.0%	0.0%
		3	981.44	0	0.000	0.0%	0.0%
		Total	1,231.40	0	0.000		0.0%
Turbot	Pot	1	nf	nf	nf	nf	nf
		2	nf	nf	nf	nf	nf
		3	0.22	0	0.000	0.0%	0.0%
		Total	0.22	0	0.000		0.0%
Turbot	Trawl	1	nf	nf	nf	nf	nf
		2	2,064.91	1,768	0.856	0.1%	0.0%
		3	5,565.60	13,149	2.363	3.1%	0.4%
		Total	7,630.51	14,917	1.955		0.4%
Arrowtooth	Longline	1	nf	nf	nf	nf	nf
		2	19.12	0	0.000	0.0%	0.0%
		3	25.43	0	0.000	0.0%	0.0%
		Total	44.55	0	0.000		0.0%
Arrowtooth	Pot	1	nf	nf	nf	nf	nf
		2	0.14	53	378.571	0.0%	0.0%
		3	nf	nf	nf	nf	nf
		Total	0.14	53	378.571		0.0%
Arrowtooth	Trawl	1	304.90	5,163	16.933	0.5%	0.1%
		2	4,302.46	33,829	7.863	1.6%	0.9%
		3	5,783.45	1,622	0.280	0.4%	0.0%
		Total	10,390.81	40,614	3.909		1.1%
Total		1	179,065.29	1,106,570	6.180		30.6%
		2	1,177,805.28	2,082,257	1.768		57.7%
		3	769,949.57	422,917	0.549		11.7%
		Total	2,126,820.14	3,611,744	1.698		

Table 23.--U.S. domestic groundfish catch (in metric tons (t)) and "other" Tanner (snow) crab bycatch (in numbers) by target fishery, NPFMC zone, and species in the Bering Sea and Aleutian Islands region, 1991.

Fishery	Gear	Zone	Groundfish catch	"Other" Tanner (snow) crab			
				Bycatch (numbers)	Per t of groundfish	% within zone	% of total bycatch
Atka mackerel	Trawl	1	nf	nf	nf	nf	nf
		2	94.95	685	7.214	0.5%	0.0%
		3	29,879.73	163	0.005	0.0%	0.0%
		Total	29,974.68	848	0.028		0.0%
Pacific cod	Longline	1	70.60	30	0.425	0.0%	0.0%
		2	70,373.46	46,810	0.665	0.7%	0.4%
		3	13,612.25	5,650	0.415	0.2%	0.1%
		Total	84,056.31	52,490	0.624		0.5%
Pacific cod	Pot	1	858.81	741	0.863	0.6%	0.0%
		2	426.68	18,541	43.454	0.3%	0.2%
		3	5,433.42	9,668	1.779	0.3%	0.1%
		Total	6,718.91	28,950	4.309		0.3%
Pacific cod	Trawl	1	16,171.60	14,102	0.872	10.6%	0.1%
		2	79,496.71	101,844	1.281	1.4%	1.0%
		3	20,439.79	5,076	0.248	0.2%	0.0%
		Total	116,108.10	121,022	1.042		1.2%
Other Flatfish	Trawl	1	4,148.21	10,593	2.554	7.9%	0.1%
		2	34,231.40	2,163,067	63.190	30.6%	20.6%
		3	121,068.32	2,594,498	21.430	78.2%	24.7%
		Total	159,447.93	4,768,158	29.904		45.4%
Rockfish	Longline	1	nf	nf	nf	nf	nf
		2	0.10	0	0.000	0.0%	0.0%
		3	171.57	0	0.000	0.0%	0.0%
		Total	171.67	0	0.000		0.0%
Rockfish	Trawl	1	0.78	0	0.000	0.0%	0.0%
		2	3,224.96	869	0.269	0.0%	0.0%
		3	3,220.02	191	0.059	0.0%	0.0%
		Total	6,445.76	1,060	0.164		0.0%
Other	Longline	1	2.82	0	0.000	0.0%	0.0%
		2	547.00	0	0.000	0.0%	0.0%
		3	127.76	903	7.068	0.0%	0.0%
		Total	677.58	903	1.333		0.0%
Other	Trawl	1	196.61	3	0.015	0.0%	0.0%
		2	2,396.55	30,957	12.917	0.4%	0.3%
		3	65.11	315	4.838	0.0%	0.0%
		Total	2,658.27	31,275	11.765		0.3%
Pollock midwater	Trawl	1	71,279.08	3,000	0.042	2.2%	0.0%
		2	705,769.76	1,642,328	2.327	23.3%	15.6%
		3	539,335.46	38,352	0.071	1.2%	0.4%
		Total	1,316,384.30	1,683,680	1.279		16.0%
Pollock bottom	Trawl	1	40,670.57	63,522	1.562	47.6%	0.6%
		2	258,828.21	2,503,308	9.672	35.4%	23.8%
		3	18,300.26	129,504	7.077	3.9%	1.2%
		Total	317,799.04	2,696,334	8.484		25.6%
Rock sole	Trawl	1	45,337.10	40,718	0.898	30.5%	0.4%
		2	15,483.92	521,820	33.701	7.4%	5.0%
		3	2,692.53	299,117	111.091	9.0%	2.8%
		Total	63,513.55	861,655	13.566		8.2%

Table 23.--Continued.

Fishery	Gear	Zone	"Other" Tanner (snow) crab				
			Groundfish catch	Bycatch (numbers)	Per t of groundfish	% within zone	% of total bycatch
Sablefish	Longline	1	24.21	1	0.041	0.0%	0.0%
		2	294.96	8	0.027	0.0%	0.0%
		3	3,219.19	99	0.031	0.0%	0.0%
		Total	3,538.36	108	0.031		0.0%
Sablefish	Pot	1	nf	nf	nf	nf	nf
		2	0.03	0	0.000	0.0%	0.0%
		3	0.04	0	0.000	0.0%	0.0%
		Total	0.07	0	0.000		0.0%
Sablefish	Trawl	1	nf	nf	nf	nf	nf
		2	nf	nf	nf	nf	nf
		3	27.98	0	0.000	0.0%	0.0%
		Total	27.98	0	0.000		0.0%
Turbot	Longline	1	nf	nf	nf	nf	nf
		2	249.96	33	0.132	0.0%	0.0%
		3	981.44	31	0.032	0.0%	0.0%
		Total	1,231.40	64	0.052		0.0%
Turbot	Pot	1	nf	nf	nf	nf	nf
		2	nf	nf	nf	nf	nf
		3	0.22	71	322.727	0.0%	0.0%
		Total	0.22	71	322.727		0.0%
Turbot	Trawl	1	nf	nf	nf	nf	nf
		2	2,064.91	10,227	4.953	0.1%	0.1%
		3	5,565.60	227,725	40.917	6.9%	2.2%
		Total	7,630.51	237,952	31.184	2.3%	2.3%
Arrowtooth	Longline	1	nf	nf	nf	nf	nf
		2	19.12	7	0.366	0.0%	0.0%
		3	25.43	0	0.000	0.0%	0.0%
		Total	44.55	7	0.157		0.0%
Arrowtooth	Pot	1	nf	nf	nf	nf	nf
		2	0.14	1	7.143	0.0%	0.0%
		3			nf	nf	nf
		Total	0.14	1	7.143		0.0%
Arrowtooth	Trawl	1	304.90	694	2.276	0.5%	0.0%
		2	4,302.46	21,651	5.032	0.3%	0.2%
		3	5,783.45	5,268	0.911	0.2%	0.1%
		Total	10,390.81	27,613	2.657		0.3%
Totals		1	179,065.29	133,404	0.745		1.3%
		2	1,177,805.28	7,062,156	5.996		67.2%
		3	769,949.57	3,316,631	4.308		31.6%
		Total	2,126,820.14	10,512,191	4.943		

Table 24.--Condition of snow (Tanner) crabs examined by observers in U.S. domestic groundfish catches in the Bering Sea and Aleutian Islands region by species and gear type, 1991.

Species	Gear type	Excellent		Poor		Dead	
		numbers	%	numbers	%	numbers	%
<u>Chionoecetes bairdi</u>	Trawl	8,902	29.6%	10,507	34.9%	10,659	35.4%
	Pot	2,937	87.7%	12	0.4%	399	11.9%
	Longline	179	51.3%	140	40.1%	30	8.6%
<u>C. opilio</u>	Trawl	2,899	10.2%	8,393	29.5%	17,139	60.3%
	Pot	353	73.8%	53	11.9%	72	15.1%
	Longline	990	49.8%	768	38.6%	231	11.6%
<u>C. tanneri</u>	Trawl	8	15.1%	25	47.2%	20	37.7%
	Pot	0	0.0%	0	0.0%	0	0.0%
	Longline	0	0.0%	0	0.0%	0	0.0%
<u>C. angulatus</u>	Trawl	344	25.2%	407	29.8%	615	45.0%
	Pot	0	0.0%	0	0.0%	0	0.0%
	Longline	1	100.0%	0	0.0%	0	0.0%
<u>C. bairdi</u> X <u>C. opilio</u> hybrid	Trawl	84	9.6%	201	22.9%	591	67.5%
	Pot	0	0.0%	0	0.0%	0	0.0%
	Longline	6	22.2%	17	63.0%	4	14.8%
All species	Trawl	12,237	73.3%	19,533	95.2%	29,024	97.5%
	Pot	3,290	19.7%	65	0.3%	471	1.6%
	Longline	1,176	7.0%	925	4.5%	265	0.9%

Table 25.--Biological data on the bycatch of snow (Tanner) crabs in the U.S. domestic groundfish fisheries in the Bering Sea and Aleutian Islands region, 1991.

Species	Percent by species	Sex	Sex composition	Average weight (kg)	Average width (mm)
<u>Chionoecetes</u> <u>opilio</u>	69.8%	Male	73.6%	0.35	88.7
		Female	26.4%	0.11	58.6
<u>C. bairdi</u>	25.6%	Male	73.3%	0.43	92.5
		Female	26.7%	0.17	68.2
<u>C. angulatus</u>	0.8%	Male	44.1%	0.34	74.5
		Female	55.9%	0.14	34.7
<u>C. bairdi</u> x <u>C. opilio</u> hybrid	3.8%	Male	69.1%	0.25	57.0
		Female	30.9%	0.08	40.0
<u>C. tanneri</u>	0.1%	Male	70.9%	0.39	61.8
		Female	29.1%	0.19	25.5

Table 26.-- Monthly bycatch rates (no./t) and average weights (kg) of red king crab and number of hauls sampled in the U.S. 1991.

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	ate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target																		
Ja	0.470	1.21	26	--	--	--	0.303	0.96	65	--	--	--	3.885	1.96	143	0.000	0.00	4
Fe	1.021	1.63	426	--	--	--	0.000	0.00	61	--	--	--	1.662	2.04	123	0.000	0.00	15
Mr	0.028	1.93	152	--	--	--	6.706	1.12	6	--	--	--	--	--	--	0.000	0.00	2
Ap	0.000	0.00	27	--	--	--	0.040	2.09	13	ns	ns	ns	--	--	--	0.000	0.00	2
My	1.746	1.42	128	0	0	5	0.625	1.41	232	0.402	1.45	889	3.341	2.08	4	0.000	0.00	1
Jn	0.243	1.20	8	--	--	--	0.083	1.65	95	0.048	1.43	638	--	--	--	ns	ns	ns
Jl	0.000	0.00	3	--	--	--	0.000	0.00	30	0.129	1.28	566	ns	ns	ns	ns	ns	ns
Au	0.000	0.00	9	--	--	--	0.000	0.00	172	0.045	1.47	737	0.000	0.00	1	--	--	--
Se	0.000	0.00	2	--	--	--	0.026	3.10	384	0.047	1.32	733	--	--	--	--	--	--
Oc	--	--	--	--	--	--	0.106	3.44	217	0.000	0.00	182	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.903	1.57	781	0	0	5	0.179	1.61	1275	0.142	1.42	3745	2.802	1.98	271	0.000	0.00	24
Bottom trawl - Pollock target																		
Ja	<0.001	2.20	194	--	--	--	0.603	1.30	5	--	--	--	1.684	2.20	12	0.000	0.00	82
Fe	0.071	1.96	215	--	--	--	0.000	0.00	1	--	--	--	2.863	1.92	10	0.000	0.00	26
Mr	0.003	1.75	55	--	--	--	0.000	0.00	9	--	--	--	--	--	--	0.000	0.00	4
Ap	0.001	3.60	112	--	--	--	0.003	1.82	88	--	--	--	--	--	--	0.001	0.50	111
My	0.525	1.40	6	--	--	--	0.026	1.46	71	0.000	0.00	5	0.000	0.00	1	0.000	0.00	9
Jn	0.000	0.00	3	--	--	--	0.603	1.96	16	--	--	--	--	--	--	0.000	0.00	9
Jl	ns	ns	ns	--	--	--	0.000	0.00	39	0.000	0.00	3	--	--	--	0.000	0.00	6
Au	--	--	--	--	--	--	0.000	0.00	5	0.000	0.00	10	--	--	--	0.000	0.00	18
Se	ns	ns	ns	--	--	--	0.213	3.40	14	0.000	0.00	6	--	--	--	0.000	0.00	2
Oc	--	--	--	--	--	--	0.000	0.00	5	0.046	5.10	7	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.034	1.92	585	--	--	--	0.055	2.17	253	0.011	5.10	31	2.346	2.00	23	<0.001	0.50	267
Bottom trawl - Pacific cod target																		
Ja	0.013	1.37	105	--	--	--	0.000	0.00	2	--	--	--	0.000	0.00	1	0.001	2.52	334
Fe	0.000	0.00	54	--	--	--	0.000	0.00	1	--	--	--	1.435	0.80	1	0.000	0.00	272
Mr	0.000	0.00	5	--	--	--	0.000	0.00	6	--	--	--	--	--	--	0.000	0.00	27
Ap	0.009	2.54	200	--	--	--	0.000	0.00	34	--	--	--	--	--	--	0.000	0.00	366
My	0.000	0.00	1	--	--	--	0.000	0.00	8	0.000	0.00	1	--	--	--	0.000	0.00	1
Jn	0.000	0.00	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	--	--	--	0.000	0.00	2	--	--	--	--	--	--
Au	--	--	--	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	3.270	3.00	1	--	--	--	0.000	0.00	1
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.009	2.01	366	--	--	--	0.000	0.00	51	0.715	3.00	5	0.492	0.80	2	<0.001	2.52	1001

domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, and NPFMC area, ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target															
Ja	--	--	--	--	--	--	7.374	1.05	21	--	--	--	--	--	--
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	ns	ns	ns	0.000	0.00	8	--	--	--	--	--	--
Ap	--	--	--	--	--	--	0.000	0.00	31	0.000	0.00	3	ns	ns	ns
My	--	--	--	--	--	--	0.131	1.07	69	0.003	2.50	80	0.000	0.00	1
Jn	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--
Jl	--	--	--	--	--	--	0.000	0.00	8	--	--	--	--	--	--
Au	--	--	--	--	--	--	0.000	0.00	26	--	--	--	--	--	--
Se	--	--	--	--	--	--	ns	ns	ns	0.000	0.00	2	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	--	--	--	ns	ns	ns	1.013	1.05	163	0.003	2.50	85	0.000	0.00	1
Bottom trawl - Pollock target															
Ja	ns	ns	ns	0.000	0.00	5	ns	ns	ns	--	--	--	0.000	0.00	2
Fe	0.000	0.00	2	0.000	0.00	11	0.000	0.00	4	--	--	--	0.000	0.00	15
Mr	--	--	--	0.000	0.00	8	0.000	0.00	11	0.000	0.00	1	0.000	0.00	4
Ap	--	--	--	0.000	0.00	17	0.000	0.00	267	0.000	0.00	9	0.000	0.00	1
My	0.000	0.00	1	0.000	0.00	12	1.968	1.03	93	0.000	0.00	4	0.000	0.00	8
Jn	--	--	--	0.000	0.00	1	0.498	1.45	6	--	--	--	--	--	--
Jl	0.000	0.00	1	0.000	0.00	2	0.000	0.00	212	0.000	0.00	4	0.000	0.00	2
Au	0.000	0.00	1	0.000	0.00	4	0.000	0.00	155	0.000	0.00	10	--	--	--
Se	--	--	--	0.000	0.00	5	0.000	0.00	11	0.000	0.00	4	--	--	--
Oc	--	--	--	0.000	0.00	1	--	--	--	0.000	0.00	1	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	5	0.000	0.00	66	0.101	1.04	759	0.000	0.00	33	0.000	0.00	32
Bottom trawl - Pacific cod target															
Ja	ns	ns	ns	0.000	0.00	33	--	--	--	--	--	--	0.000	0.00	4
Fe	0.000	0.00	6	0.000	0.00	125	0.000	0.00	2	--	--	--	0.000	0.00	7
Mr	0.000	0.00	9	0.000	0.00	51	0.000	0.00	22	0.000	0.00	7	0.000	0.00	25
Ap	0.003	2.70	57	0.000	0.00	90	0.001	1.53	608	0.000	0.00	79	0.000	0.00	28
My	0.000	0.00	7	0.000	0.00	29	0.182	0.87	32	0.000	0.00	5	0.000	0.00	9
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	0.000	0.00	22	--	--	--	0.211	1.10	33
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.002	2.70	79	0.000	0.00	328	0.005	0.94	686	0.000	0.00	91	0.029	1.10	106

Table 26.-- Monthly bycatch rates (no./t) and average weights (kg) of red king crab and number of hauls sampled in the U.S. 1991 (Continued).

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	ate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Rockfish target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	0.000	0.00	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Ap	--	--	--	--	--	--	0.000	0.00	3	--	--	--	--	--	--	0.000	0.00	11
My	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	1
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	2	--	--	--	0.000	0.00	3	--	--	--	--	--	--	0.000	0.00	14
Bottom trawl - Other species target																		
Ja	0.000	0.00	3	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	20
Fe	0.000	0.00	5	--	--	--	0.000	0.00	3	--	--	--	--	--	--	0.000	0.00	3
Mr	0.000	0.00	3	--	--	--	0.000	0.00	2	--	--	--	--	--	--	0.000	0.00	12
Ap	0.000	0.00	6	--	--	--	0.000	0.00	5	--	--	--	--	--	--	0.000	0.00	17
My	0.000	0.00	5	--	--	--	0.000	0.00	4	0.000	0.00	1	--	--	--	0.000	0.00	142
Jn	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	12
Jl	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	1
Au	--	--	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	29
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	22	--	--	--	0.000	0.00	16	0.000	0.00	2	--	--	--	0.000	0.00	238

domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, and NPFMC area, ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " -- " = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl -Rockfish target															
Ja	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	6
Fe	0.000	0.00	1	--	--	--	--	--	--	--	--	--	0.000	0.00	2
Mr	--	--	--	0.000	0.00	1	0.000	0.00	6	0.000	0.00	2	0.101	1.20	10
Ap	0.000	0.00	12	--	--	--	0.000	0.00	134	0.000	0.00	24	0.215	1.09	9
My	--	--	--	--	--	--	0.000	0.00	6	--	--	--	0.045	1.49	94
Jn	--	--	--	--	--	--	--	--	--	--	--	--	0.002	1.90	62
Jl	0.000	0.00	2	--	--	--	--	--	--	--	--	--	0.000	0.00	4
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	0.000	0.00	2	--	--	--	0.000	0.00	10	0.000	0.00	4	--	--	--
No	--	--	--	--	--	--	0.000	0.00	13	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	17	0.000	0.00	1	0.000	0.00	169	0.000	0.00	30	0.057	1.23	187
Bottom trawl - Other species target															
Ja	0.000	0.00	2	0.090	2.25	4	0.000	0.00	1	--	--	--	0.008	0.38	106
Fe	--	--	--	0.000	0.00	17	--	--	--	--	--	--	0.000	0.00	65
Mr	0.000	0.00	15	0.000	0.00	82	0.000	0.00	44	0.000	0.00	27	0.000	0.00	349
Ap	0.157	1.75	14	0.000	0.00	12	0.001	1.50	96	0.000	0.00	53	0.000	0.00	8
My	0.000	0.00	71	0.000	0.00	54	0.326	0.77	47	0.000	0.00	18	0.254	1.09	259
Jn	--	--	--	--	--	--	4.813	1.19	1	--	--	--	0.000	0.00	3
Jl	0.000	0.00	2	--	--	--	0.000	0.00	4	0.000	0.00	1	0.000	0.00	1
Au	--	--	--	--	--	--	0.000	0.00	18	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	0.000	0.00	18	0.000	0.00	27	0.000	0.00	24	0.000	0.00	21	--	--	--
No	0.000	0.00	1	0.000	0.00	11	0.000	0.00	12	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.016	1.75	123	0.002	2.25	207	0.094	0.93	247	0.000	0.00	120	0.026	1.04	791

Table 26.-- Monthly bycatch rates (no./t) and average weights (kg) of red king crab and number of hauls sampled in the U.S. 1991 (Continued).

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	ate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target																		
Ja	0.000	0.00	282	--	--	--	0.000	0.00	1	0.000	0.00	1	0.000	0.00	2	0.000	0.00	465
Fe	0.000	0.00	300	--	--	--	--	--	--	--	--	--	2.841	1.20	1	<0.001	0.63	191
Mr	0.000	0.00	14	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	60
Ap	0.000	0.00	22	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	6
My	0.000	0.00	69	--	--	--	0.000	0.00	7	--	--	--	--	--	--	0.000	0.00	23
Jn	<0.001	3.20	235	--	--	--	<0.001	3.00	431	--	--	--	--	--	--	0.000	0.00	839
Jl	0.000	0.00	46	--	--	--	0.001	2.18	432	--	--	--	--	--	--	0.000	0.00	405
Au	0.000	0.00	92	--	--	--	0.000	0.00	7	--	--	--	--	--	--	0.000	0.00	943
Se	0.000	0.00	8	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	78
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	<0.001	3.20	1068	--	--	--	<0.001	2.24	879	0.000	0.00	1	0.394	1.20	3	<0.001	0.63	3010
Pelagic trawl - Other species target																		
Ja	0.000	0.00	2	--	--	--	0.000	0.00	21	--	--	--	2.004	0.98	5	0.000	0.00	3
Fe	0.154	2.18	26	--	--	--	ns	ns	ns	--	--	--	1.413	1.71	26	<0.001	4.00	131
Mr	0.000	0.00	12	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	302
Ap	0.006	2.00	31	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	27
My	0.000	0.00	47	--	--	--	0.000	0.00	8	0.000	0.00	1	--	--	--	0.000	0.00	4
Jn	0.000	0.00	14	--	--	--	0.000	0.00	2	ns	ns	ns	--	--	--	0.000	0.00	7
Jl	0.000	0.00	4	--	--	--	0.000	0.00	2	ns	ns	ns	--	--	--	0.000	0.00	5
Au	0.000	0.00	10	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	35
Se	0.000	0.00	1	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	0.000	0.00	3
Oc	--	--	--	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.042	2.17	147	--	--	--	0.000	0.00	33	0.000	0.00	1	1.481	1.60	31	<0.001	4.00	517
Pots - All targets																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	0.000	0.00	1	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	0.000	0.00	4	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	45
Au	0.176	1.63	22	--	--	--	--	--	--	--	--	--	19.581	1.35	12	0.000	0.00	44
Se	0.000	0.00	9	--	--	--	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	12
Oc	17.044	3.10	25	--	--	--	--	--	--	ns	ns	ns	446.135	1.86	5	0.000	0.00	12
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	8
De	0.000	0.00	11	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	30
Yr	5.868	3.09	72	--	--	--	0.000	0.00	1	ns	ns	ns	99.999	1.78	17	0.000	0.00	151

domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, and NPFMC area, ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target															
Ja	0.000	0.00	1107	0.000	0.00	214	--	--	--	--	--	--	0.000	0.00	96
Fe	0.000	0.00	830	0.000	0.00	287	0.000	0.00	1	0.000	0.00	1	0.000	0.00	169
Mr	--	--	--	--	--	--	0.000	0.00	13	0.000	0.00	1	0.000	0.00	361
Ap	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--
My	--	--	--	0.000	0.00	1	0.000	0.00	73	ns	ns	ns	--	--	--
Jn	0.000	0.00	1	0.000	0.00	16	0.001	1.90	1278	0.000	0.00	43	--	--	--
Jl	0.000	0.00	2	0.000	0.00	15	0.000	0.00	1552	0.000	0.00	6	--	--	--
Au	--	--	--	0.000	0.00	225	0.001	1.17	2040	0.000	0.00	141	0.000	0.00	1
Se	--	--	--	0.000	0.00	16	0.000	0.00	164	0.000	0.00	12	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	1940	0.000	0.00	774	0.001	1.56	5122	0.000	0.00	204	0.000	0.00	627
Pelagic trawl - Other species target															
Ja	0.000	0.00	2	ns	ns	ns	0.058	1.30	10	--	--	--	ns	ns	ns
Fe	0.000	0.00	1	0.000	0.00	2	--	--	--	--	--	--	0.000	0.00	1
Mr	0.000	0.00	2	0.000	0.00	37	0.016	0.60	125	0.000	0.00	5	ns	ns	ns
Ap	--	--	--	--	--	--	0.000	0.00	13	--	--	--	--	--	--
My	ns	ns	ns	0.000	0.00	5	0.000	0.00	34	--	--	--	--	--	--
Jn	--	--	--	--	--	--	0.000	0.00	8	ns	ns	ns	--	--	--
Jl	--	--	--	0.000	0.00	1	0.000	0.00	6	--	--	--	--	--	--
Au	--	--	--	0.000	0.00	9	0.001	1.10	20	ns	ns	ns	--	--	--
Se	--	--	--	0.000	0.00	1	0.000	0.00	5	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	5	0.000	0.00	55	0.011	0.74	221	0.000	0.00	5	0.000	0.00	1
Pots - All targets															
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--
Mr	--	--	--	--	--	--	ns	ns	ns	--	--	--	ns	ns	ns
Ap	--	--	--	--	--	--	ns	ns	ns	--	--	--	ns	ns	ns
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	0.000	0.00	18	0.000	0.00	30	0.000	0.00	14	ns	ns	ns	0.009	2.71	40
Au	0.000	0.00	37	0.000	0.00	95	0.000	0.00	79	0.000	0.00	5	0.034	2.70	79
Se	0.000	0.00	6	0.000	0.00	67	--	--	--	--	--	--	0.008	1.45	127
Oc	0.000	0.00	2	0.000	0.00	75	--	--	--	--	--	--	0.353	1.84	76
No	0.000	0.00	5	0.000	0.00	47	--	--	--	--	--	--	0.000	0.00	31
De	--	--	--	0.000	0.00	22	--	--	--	--	--	--	0.000	0.00	20
Yr	0.000	0.00	68	0.000	0.00	336	0.000	0.00	93	0.000	0.00	5	0.076	1.94	373

Table 26.-- Monthly bycatch rates (no./t) and average weights (kg) of red king crab and number of hauls sampled in the U.S. 1991 (Continued).

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	ate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Jl	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Au	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
Longline - Pacific cod target																		
Ja	0.000	0.00	2	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	24
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	40
Mr	0.000	0.00	4	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	21
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	3
My	--	--	--	--	--	--	0.000	0.00	3	--	--	--	--	--	--	0.000	0.00	13
Jn	--	--	--	--	--	--	0.000	0.00	7	--	--	--	--	--	--	0.000	0.00	8
Jl	0.000	0.00	3	1	2	2	ns	ns	ns	--	--	--	0.441	3.10	5	0.000	0.00	84
Au	0.000	0.00	2	--	--	--	0.000	0.00	1	ns	ns	ns	--	--	--	0.000	0.00	34
Se	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	42
Oc	ns	ns	ns	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	93
No	ns	ns	ns	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	173
De	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	145
Yr	0.000	0.00	11	1	2	2	0.000	0.00	14	ns	ns	ns	0.441	3.10	5	0.000	0.00	680
Longline - Other species target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	3
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	5
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	7
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	5
Jl	ns	ns	ns	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	14
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	12
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	3
Oc	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	13
No	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	3
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Yr	ns	ns	ns	--	--	--	0.000	0.00	2	ns	ns	ns	--	--	--	0.000	0.00	65

domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, and NPFMC area, ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " -- " = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target															
Ja	ns	ns	ns	--	--	--	--	--	--	--	--	--	ns	ns	ns
Fe	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	14
Mr	0.000	0.00	1	--	--	--	--	--	--	--	--	--	0.000	0.00	87
Ap	ns	ns	ns	--	--	--	ns	ns	ns	ns	ns	ns	0.000	0.00	64
My	--	--	--	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	28
Jn	0.000	0.00	1	--	--	--	--	--	--	--	--	--	0.000	0.00	7
Jl	0.000	0.00	2	ns	ns	ns	0.000	0.00	1	0.000	0.00	1	0.000	0.00	23
Au	ns	ns	ns	ns	ns	ns	0.506	0.80	2	0.000	0.00	5	0.000	0.00	18
Se	--	--	--	--	--	--	0.000	0.00	1	ns	ns	ns	0.000	0.00	22
Oc	--	--	--	0.000	0.00	3	0.000	0.00	1	--	--	--	0.000	0.00	28
No	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	23
De	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	23
Yr	0.000	0.00	4	0.000	0.00	4	0.167	0.80	5	0.000	0.00	6	0.000	0.00	337
Longline - Pacific cod target															
Ja	0.000	0.00	10	--	--	--	0.000	0.00	113	0.000	0.00	4	0.000	0.00	19
Fe	0.000	0.00	13	0.000	0.00	5	0.000	0.00	127	0.000	0.00	23	0.000	0.00	35
Mr	0.000	0.00	10	0.000	0.00	6	0.000	0.00	152	0.000	0.00	47	0.000	0.00	20
Ap	0.000	0.00	5	--	--	--	0.000	0.00	219	0.000	0.00	94	0.000	0.00	33
My	--	--	--	--	--	--	0.000	0.00	282	0.000	0.00	41	0.000	0.00	1
Jn	0.000	0.00	4	0.000	0.00	2	0.000	0.00	354	0.000	0.00	35	ns	ns	ns
Jl	0.000	0.00	35	0.000	0.00	17	0.000	0.00	485	0.000	0.00	38	0.000	0.00	22
Au	0.077	1.56	25	0.000	0.00	24	0.000	0.00	618	0.000	0.00	49	0.014	1.99	26
Se	0.000	0.00	3	0.000	0.00	18	0.001	2.80	597	0.007	2.60	32	0.000	0.00	11
Oc	0.000	0.00	10	0.000	0.00	38	0.000	0.00	685	0.000	0.00	41	0.090	2.75	69
No	0.000	0.00	6	0.000	0.00	1	0.000	0.00	260	0.000	0.00	53	0.000	0.00	95
De	0.000	0.00	10	0.000	0.00	9	0.000	0.00	223	0.000	0.00	21	0.000	0.00	20
Yr	0.019	1.56	131	0.000	0.00	120	0.000	2.80	4115	0.001	2.60	478	0.013	2.70	351
Longline - Other species target															
Ja	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	ns	ns	ns
Fe	0.000	0.00	3	0.000	0.00	1	0.000	0.00	2	--	--	--	0.000	0.00	30
Mr	0.000	0.00	5	--	--	--	--	--	--	--	--	--	0.000	0.00	64
Ap	0.000	0.00	1	ns	ns	ns	0.000	0.00	2	0.000	0.00	1	0.000	0.00	57
My	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	9
Jn	0.000	0.00	12	0.000	0.00	5	0.000	0.00	4	0.000	0.00	4	0.000	0.00	29
Jl	0.000	0.00	57	0.000	0.00	11	0.000	0.00	26	0.000	0.00	6	0.000	0.00	43
Au	0.190	1.99	18	0.000	0.00	15	0.016	2.10	34	0.000	0.00	17	0.020	1.30	26
Se	--	--	--	--	--	--	0.000	0.00	12	0.000	0.00	2	0.000	0.00	6
Oc	0.000	0.00	6	0.000	0.00	7	0.000	0.00	25	0.000	0.00	1	0.000	0.00	38
No	--	--	--	0.000	0.00	3	0.000	0.00	8	0.000	0.00	1	0.000	0.00	96
De	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.022	1.00	28
Yr	0.050	1.99	102	0.000	0.00	43	0.004	2.10	113	0.000	0.00	32	0.004	1.18	426

Table 27.-- Monthly bycatch rates (no./t) and average weights (kg) of "other" king crab and number of hauls sampled in the U.S. 1991.

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	ate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target																		
Ja	0.000	0.00	26	--	--	--	0.736	1.61	65	--	--	--	0.000	0.00	143	0.000	0.00	4
Fe	<0.001	1.20	426	--	--	--	0.365	1.39	61	--	--	--	<0.001	2.80	123	0.000	0.00	15
Mr	0.000	0.00	152	--	--	--	0.000	0.00	6	--	--	--	--	--	--	0.000	0.00	2
Ap	0.009	2.00	27	--	--	--	0.182	1.78	13	ns	ns	ns	--	--	--	0.000	0.00	2
My	0.003	1.20	128	0	0	5	0.584	1.62	232	0.002	1.43	889	0.000	0.00	4	0.000	0.00	1
Jn	0.000	0.00	8	--	--	--	1.688	2.12	95	0.000	0.00	638	--	--	--	ns	ns	ns
Jl	0.000	0.00	3	--	--	--	0.000	0.00	30	0.007	0.80	566	ns	ns	ns	ns	ns	ns
Au	0.000	0.00	9	--	--	--	0.069	2.10	172	0.000	0.00	737	0.000	0.00	1	--	--	--
Se	1.481	2.40	2	--	--	--	0.048	1.48	384	0.030	1.12	733	--	--	--	--	--	--
Oc	--	--	--	--	--	--	0.000	0.00	217	0.011	3.80	182	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.004	2.22	781	0	0	5	0.320	1.83	1275	0.008	1.33	3745	<0.001	2.80	271	0.000	0.00	24
Bottom trawl - Pollock target																		
Ja	0.000	0.00	194	--	--	--	0.000	0.00	5	--	--	--	0.000	0.00	12	0.000	0.00	82
Fe	<0.001	1.80	215	--	--	--	0.000	0.00	1	--	--	--	0.000	0.00	10	0.000	0.00	26
Mr	0.000	0.00	55	--	--	--	0.000	0.00	9	--	--	--	--	--	--	0.000	0.00	4
Ap	0.000	0.00	112	--	--	--	0.099	1.05	88	--	--	--	--	--	--	0.000	0.00	111
My	0.000	0.00	6	--	--	--	0.206	1.48	71	0.000	0.00	5	0.000	0.00	1	0.000	0.00	9
Jn	0.000	0.00	3	--	--	--	0.504	2.39	16	--	--	--	--	--	--	0.000	0.00	9
Jl	ns	ns	ns	--	--	--	0.043	0.98	39	0.000	0.00	3	--	--	--	0.000	0.00	6
Au	--	--	--	--	--	--	0.000	0.00	5	0.000	0.00	10	--	--	--	0.000	0.00	18
Se	ns	ns	ns	--	--	--	0.000	0.00	14	0.000	0.00	6	--	--	--	0.000	0.00	2
Oc	--	--	--	--	--	--	0.000	0.00	5	0.000	0.00	7	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	<0.001	1.80	585	--	--	--	0.114	1.52	253	0.000	0.00	31	0.000	0.00	23	0.000	0.00	267
Bottom trawl - Pacific cod target																		
Ja	0.000	0.00	105	--	--	--	0.000	0.00	2	--	--	--	0.000	0.00	1	0.000	0.00	334
Fe	0.000	0.00	54	--	--	--	0.000	0.00	1	--	--	--	0.000	0.00	1	0.000	0.00	272
Mr	0.000	0.00	5	--	--	--	0.000	0.00	6	--	--	--	--	--	--	0.000	0.00	27
Ap	<0.001	1.20	200	--	--	--	0.027	1.34	34	--	--	--	--	--	--	<0.001	1.10	366
My	0.000	0.00	1	--	--	--	0.033	1.19	8	0.000	0.00	1	--	--	--	0.000	0.00	1
Jn	0.000	0.00	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	--	--	--	0.000	0.00	2	--	--	--	--	--	--
Au	--	--	--	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	0.000	0.00	1	--	--	--	0.000	0.00	1
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	<0.001	1.20	366	--	--	--	0.025	1.28	51	0.000	0.00	5	0.000	0.00	2	<0.001	1.10	1001

domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, and NPFMC area, ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target															
Ja	--	--	--	--	--	--	0.000	0.00	21	--	--	--	--	--	--
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	ns	ns	ns	0.000	0.00	8	--	--	--	--	--	--
Ap	--	--	--	--	--	--	0.000	0.00	31	0.000	0.00	3	ns	ns	ns
My	--	--	--	--	--	--	0.021	2.08	69	0.000	0.00	80	0.000	0.00	1
Jn	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--
Jl	--	--	--	--	--	--	0.000	0.00	8	--	--	--	--	--	--
Au	--	--	--	--	--	--	0.000	0.00	26	--	--	--	--	--	--
Se	--	--	--	--	--	--	ns	ns	ns	0.000	0.00	2	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	--	--	--	ns	ns	ns	0.013	2.08	163	0.000	0.00	85	0.000	0.00	1
Bottom trawl - Pollock target															
Ja	ns	ns	ns	0.000	0.00	5	ns	ns	ns	--	--	--	0.000	0.00	2
Fe	0.000	0.00	2	0.000	0.00	11	0.000	0.00	4	--	--	--	0.005	0.50	15
Mr	--	--	--	0.000	0.00	8	0.000	0.00	11	0.000	0.00	1	0.000	0.00	4
Ap	--	--	--	0.000	0.00	17	0.001	1.33	267	0.000	0.00	9	0.000	0.00	1
My	0.000	0.00	1	0.000	0.00	12	0.056	1.44	93	0.000	0.00	4	0.496	0.90	8
Jn	--	--	--	0.000	0.00	1	0.285	1.38	6	--	--	--	--	--	--
Jl	0.000	0.00	1	0.000	0.00	2	0.011	1.53	212	0.000	0.00	4	0.000	0.00	2
Au	0.000	0.00	1	0.000	0.00	4	0.065	1.34	155	0.000	0.00	10	--	--	--
Se	--	--	--	0.000	0.00	5	0.000	0.00	11	0.000	0.00	4	--	--	--
Oc	--	--	--	0.000	0.00	1	--	--	--	26.265	1.01	1	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	5	0.000	0.00	66	0.029	1.38	759	0.099	1.01	33	0.045	0.87	32
Bottom trawl - Pacific cod target															
Ja	ns	ns	ns	0.000	0.00	33	--	--	--	--	--	--	0.000	0.00	4
Fe	0.000	0.00	6	0.000	0.00	125	0.000	0.00	2	--	--	--	0.000	0.00	7
Mr	0.000	0.00	9	0.000	0.00	51	0.000	0.00	22	0.000	0.00	7	0.000	0.00	25
Ap	0.001	1.50	57	0.000	0.00	90	0.012	1.12	608	0.000	0.00	79	0.404	1.79	28
My	0.000	0.00	7	0.000	0.00	29	0.130	0.90	32	0.000	0.00	5	1.163	1.08	9
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	0.347	1.74	22	--	--	--	3.182	0.92	33
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.001	1.50	79	0.000	0.00	328	0.022	1.30	686	0.000	0.00	91	0.595	1.07	106

Table 27.-- Monthly bycatch rates (no./t) and average weights (kg) of "other" king crab and number of hauls sampled in the U.S. 1991 (Continued).

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	ate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Rockfish target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	0.000	0.00	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Ap	--	--	--	--	--	--	0.000	0.00	3	--	--	--	--	--	--	0.000	0.00	11
My	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	1
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.966	1.60	2
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	2	--	--	--	0.000	0.00	3	--	--	--	--	--	--	0.304	1.60	14
Bottom trawl - Other species target																		
Ja	0.000	0.00	3	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	20
Fe	0.000	0.00	5	--	--	--	0.000	0.00	3	--	--	--	--	--	--	0.000	0.00	3
Mr	0.000	0.00	3	--	--	--	0.000	0.00	2	--	--	--	--	--	--	0.000	0.00	12
Ap	0.000	0.00	6	--	--	--	0.000	0.00	5	--	--	--	--	--	--	0.573	0.50	17
My	0.000	0.00	5	--	--	--	0.000	0.00	4	0.000	0.00	1	--	--	--	0.307	1.07	142
Jn	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	12
Jl	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	1
Au	--	--	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.825	0.81	29
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	22	--	--	--	0.000	0.00	16	0.000	0.00	2	--	--	--	0.335	0.94	238

domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, and NPFMC area, ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl -Rockfish target															
Ja	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	6
Fe	0.000	0.00	1	--	--	--	--	--	--	--	--	--	0.000	0.00	2
Mr	--	--	--	0.000	0.00	1	0.000	0.00	6	0.000	0.00	2	0.107	0.76	10
Ap	0.000	0.00	12	--	--	--	0.000	0.00	134	0.000	0.00	24	0.000	0.00	9
My	--	--	--	--	--	--	0.000	0.00	6	--	--	--	0.778	1.03	94
Jn	--	--	--	--	--	--	--	--	--	--	--	--	0.526	0.35	62
Jl	3.130	0.10	2	--	--	--	--	--	--	--	--	--	10.475	0.51	4
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	0.000	0.00	2	--	--	--	0.000	0.00	10	0.000	0.00	4	--	--	--
No	--	--	--	--	--	--	0.000	0.00	13	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.093	0.10	17	0.000	0.00	1	0.000	0.00	169	0.000	0.00	30	0.510	0.73	187
Bottom trawl - Other species target															
Ja	2.409	0.72	2	0.000	0.00	4	0.000	0.00	1	--	--	--	0.000	0.00	106
Fe	--	--	--	0.000	0.00	17	--	--	--	--	--	--	0.000	0.45	65
Mr	0.138	0.87	15	0.001	0.40	82	0.000	0.00	44	0.000	0.00	27	0.015	0.45	349
Ap	0.021	0.33	14	5.884	0.15	12	0.005	1.66	96	0.000	0.00	53	0.045	0.33	8
My	0.460	0.68	71	0.165	0.10	54	0.005	0.91	47	0.000	0.00	18	4.146	0.53	259
Jn	--	--	--	--	--	--	0.000	0.00	1	--	--	--	0.112	2.00	3
Jl	0.000	0.00	2	--	--	--	0.000	0.00	4	0.000	0.00	1	0.000	0.00	1
Au	--	--	--	--	--	--	0.000	0.00	18	--	--	--	--	--	--
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	0.023	1.80	18	0.317	0.89	27	0.472	0.83	24	0.118	0.35	21	--	--	--
No	0.000	0.00	1	0.129	0.77	11	0.000	0.00	12	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.329	0.71	123	0.371	0.16	207	0.060	0.86	247	0.047	0.35	120	0.403	0.53	791

Table 27.-- Monthly bycatch rates (no./t) and average weights (kg) of "other" king crab and number of hauls sampled in the U.S. 1991 (Continued).

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	ate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target																		
Ja	0.000	0.00	282	--	--	--	0.000	0.00	1	0.000	0.00	1	0.000	0.00	2	0.000	0.00	465
Fe	0.000	0.00	300	--	--	--	--	--	--	--	--	--	0.000	0.00	1	0.000	0.00	191
Mr	0.000	0.00	14	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	60
Ap	0.000	0.00	22	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	6
My	0.000	0.00	69	--	--	--	0.195	1.56	7	--	--	--	--	--	--	0.000	0.00	23
Jn	0.000	0.00	235	--	--	--	0.024	1.29	431	--	--	--	--	--	--	0.000	0.00	839
Jl	0.000	0.00	46	--	--	--	0.382	1.41	432	--	--	--	--	--	--	0.000	0.00	405
Au	0.000	0.00	92	--	--	--	0.015	3.60	7	--	--	--	--	--	--	0.000	0.00	943
Se	0.000	0.00	8	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	78
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	1068	--	--	--	0.212	1.41	879	0.000	0.00	1	0.000	0.00	3	0.000	0.00	3010
Pelagic trawl - Other species target																		
Ja	0.000	0.00	2	--	--	--	0.583	1.37	21	--	--	--	0.000	0.00	5	0.000	0.00	3
Fe	0.000	0.00	26	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	26	0.000	0.00	131
Mr	0.000	0.00	12	--	--	--	ns	ns	ns	--	--	--	--	--	--	<0.001	1.25	302
Ap	0.000	0.00	31	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	27
My	0.000	0.00	47	--	--	--	0.204	1.18	8	0.000	0.00	1	--	--	--	0.000	0.00	4
Jn	0.000	0.00	14	--	--	--	0.000	0.00	2	ns	ns	ns	--	--	--	0.000	0.00	7
Jl	0.000	0.00	4	--	--	--	0.000	0.00	2	ns	ns	ns	--	--	--	0.000	0.00	5
Au	0.000	0.00	10	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	35
Se	0.000	0.00	1	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	0.000	0.00	3
Oc	--	--	--	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	147	--	--	--	0.392	1.35	33	0.000	0.00	1	0.000	0.00	31	<0.001	1.25	517
Pots - All targets																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	0.000	0.00	1	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	0.000	0.00	4	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	45
Au	0.000	0.00	22	--	--	--	--	--	--	--	--	--	0.000	0.00	12	0.000	0.00	44
Se	0.000	0.00	9	--	--	--	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	12
Oc	0.000	0.00	25	--	--	--	--	--	--	ns	ns	ns	0.000	0.00	5	0.000	0.00	12
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	8
De	0.000	0.00	11	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	30
Yr	0.000	0.00	72	--	--	--	0.000	0.00	1	ns	ns	ns	0.000	0.00	17	0.000	0.00	151

domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, and NPFMC area, ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " -- " = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target															
Ja	0.000	0.00	1107	0.000	0.03	214	--	--	--	--	--	--	0.000	0.00	96
Fe	0.000	0.00	830	0.000	0.00	287	0.000	0.00	1	0.000	0.00	1	0.000	0.00	169
Mr	--	--	--	--	--	--	0.000	0.00	13	0.000	0.00	1	0.000	0.00	361
Ap	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--
My	--	--	--	0.000	0.00	1	0.000	0.00	73	ns	ns	ns	--	--	--
Jn	0.000	0.00	1	0.000	0.00	16	0.000	1.02	1278	0.001	3.20	43	--	--	--
Jl	0.000	0.00	2	0.000	0.00	15	0.004	1.35	1552	0.000	0.00	6	--	--	--
Au	--	--	--	0.000	0.00	225	0.029	1.26	2040	0.000	1.10	141	0.000	0.00	1
Se	--	--	--	0.000	0.00	16	0.002	1.26	164	0.000	0.00	12	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	1940	0.000	0.03	774	0.014	1.27	5122	0.000	1.80	204	0.000	0.00	627
Pelagic trawl - Other species target															
Ja	0.000	0.00	2	ns	ns	ns	0.000	0.00	10	--	--	--	ns	ns	ns
Fe	0.000	0.00	1	0.000	0.00	2	--	--	--	--	--	--	0.000	0.00	1
Mr	0.000	0.00	2	0.000	0.00	37	0.000	0.00	125	0.000	0.00	5	ns	ns	ns
Ap	--	--	--	--	--	--	0.003	2.20	13	--	--	--	--	--	--
My	ns	ns	ns	0.000	0.00	5	0.000	0.00	34	--	--	--	--	--	--
Jn	--	--	--	--	--	--	0.000	0.00	8	ns	ns	ns	--	--	--
Jl	--	--	--	0.000	0.00	1	0.000	0.00	6	--	--	--	--	--	--
Au	--	--	--	0.000	0.00	9	0.230	2.40	20	ns	ns	ns	--	--	--
Se	--	--	--	0.000	0.00	1	0.000	0.00	5	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	0.000	0.00	5	0.000	0.00	55	0.031	2.39	221	0.000	0.00	5	0.000	0.00	1
Pots - All targets															
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fe	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--
Mr	--	--	--	--	--	--	ns	ns	ns	--	--	--	ns	ns	ns
Ap	--	--	--	--	--	--	ns	ns	ns	--	--	--	ns	ns	ns
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jl	0.000	0.00	18	0.000	0.00	30	0.000	0.00	14	ns	ns	ns	0.000	0.00	40
Au	0.000	0.00	37	0.000	0.00	95	0.000	0.00	79	196.671	1.39	5	0.000	0.00	79
Se	0.000	0.00	6	0.000	0.00	67	--	--	--	--	--	--	0.013	1.12	127
Oc	0.000	0.00	2	0.000	0.00	75	--	--	--	--	--	--	0.003	4.01	76
No	0.000	0.00	5	0.000	0.00	47	--	--	--	--	--	--	0.000	0.00	31
De	--	--	--	0.000	0.00	22	--	--	--	--	--	--	0.000	0.00	20
Yr	0.000	0.00	68	0.000	0.00	336	0.000	0.00	93	196.671	1.39	5	0.004	1.64	373

Table 27.-- Monthly bycatch rates (no./t) and average weights (kg) of "other" king crab and number of hauls sampled in the U.S. 1991 (Continued).

	Area 511			Area 512			Area 513			Area 514			Area 516			Area 517		
	Rate	Wt	HI	ate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jn	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Jl	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Au	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oc	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
No	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yr	ns	ns	ns	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	2
Longline - Pacific cod target																		
Ja	0.000	0.00	2	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	24
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	40
Mr	0.000	0.00	4	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	21
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	3
My	--	--	--	--	--	--	0.000	0.00	3	--	--	--	--	--	--	0.000	0.00	13
Jn	--	--	--	--	--	--	0.000	0.00	7	--	--	--	--	--	--	0.000	0.00	8
Jl	0.000	0.00	3	0	0	2	ns	ns	ns	--	--	--	0.000	0.00	5	0.000	0.00	84
Au	0.000	0.00	2	--	--	--	1.308	2.41	1	ns	ns	ns	--	--	--	0.000	0.00	34
Se	--	--	--	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	42
Oc	ns	ns	ns	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	93
No	ns	ns	ns	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	173
De	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	145
Yr	0.000	0.00	11	0	0	2	0.024	2.41	14	ns	ns	ns	0.000	0.00	5	0.000	0.00	680
Longline - Other species target																		
Ja	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	3
Fe	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mr	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	5
Ap	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
My	--	--	--	--	--	--	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	7
Jn	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	5
Jl	ns	ns	ns	--	--	--	ns	ns	ns	--	--	--	--	--	--	0.000	0.00	14
Au	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	12
Se	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	3
Oc	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	13
No	--	--	--	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.000	0.00	3
De	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ns	ns	ns
Yr	ns	ns	ns	--	--	--	0.000	0.00	2	ns	ns	ns	--	--	--	0.000	0.00	65

domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by gear type, target fishery, and NPFMC area, ("Rate" = no./t of groundfish; "Wt" = average weight; "Hl" = no. of hauls; "ns" = no observer sampling; " -- " = no fishing).

	Area 518			Area 519			Area 521			Area 522			Area 540		
	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl
Longline - Sablefish target															
Ja	ns	ns	ns	--	--	--	--	--	--	--	--	--	ns	ns	ns
Fe	--	--	--	--	--	--	--	--	--	--	--	--	0.150	0.80	14
Mr	0.000	0.00	1	--	--	--	--	--	--	--	--	--	0.192	0.46	87
Ap	ns	ns	ns	--	--	--	ns	ns	ns	ns	ns	ns	0.257	0.32	64
My	--	--	--	--	--	--	ns	ns	ns	--	--	--	0.000	0.00	28
Jn	0.000	0.00	1	--	--	--	--	--	--	--	--	--	0.000	0.00	7
Jl	0.000	0.00	2	ns	ns	ns	0.000	0.00	1	0.000	0.00	1	0.000	0.00	23
Au	ns	ns	ns	ns	ns	ns	0.000	0.00	2	0.000	0.00	5	0.062	1.40	18
Se	--	--	--	--	--	--	0.000	0.00	1	ns	ns	ns	0.213	2.02	22
Oc	--	--	--	0.000	0.00	3	0.000	0.00	1	--	--	--	0.255	1.16	28
No	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.035	1.60	23
De	--	--	--	--	--	--	--	--	--	--	--	--	0.038	1.61	23
Yr	0.000	0.00	4	0.000	0.00	4	0.000	0.00	5	0.000	0.00	6	0.148	0.68	337
Longline - Pacific cod target															
Ja	0.000	0.00	10	--	--	--	0.000	0.00	113	0.000	0.00	4	0.056	1.25	19
Fe	0.000	0.00	13	0.000	0.00	5	0.000	0.00	127	0.000	0.00	23	0.236	0.64	35
Mr	0.000	0.00	10	0.000	0.00	6	0.000	0.00	152	0.000	0.00	47	0.000	0.00	20
Ap	0.000	0.00	5	--	--	--	0.000	0.00	219	0.000	0.00	94	0.084	0.80	33
My	--	--	--	--	--	--	0.000	3.50	282	0.005	1.93	41	0.000	0.00	1
Jn	0.000	0.00	4	0.000	0.00	2	0.000	2.20	354	0.007	1.75	35	ns	ns	ns
Jl	0.021	1.41	35	0.000	0.00	17	0.004	1.90	485	0.026	1.67	38	0.000	0.00	22
Au	0.000	0.00	25	0.000	0.00	24	0.001	2.05	618	0.071	1.47	49	0.000	0.00	26
Se	0.000	0.00	3	0.000	0.00	18	0.000	2.30	597	0.009	1.00	32	0.000	0.00	11
Oc	0.000	0.00	10	0.000	0.00	38	0.021	1.23	685	0.046	1.71	41	0.000	0.00	69
No	0.000	0.00	6	0.000	0.00	1	0.000	0.00	260	0.004	1.20	53	0.000	0.00	95
De	0.000	0.00	10	0.000	0.00	9	0.000	0.00	223	0.000	0.00	21	0.000	0.00	20
Yr	0.004	1.41	131	0.000	0.00	120	0.003	1.42	4115	0.014	1.56	478	0.033	0.72	351
Longline - Other species target															
Ja	--	--	--	ns	ns	ns	ns	ns	ns	--	--	--	ns	ns	ns
Fe	0.665	0.70	3	0.000	0.00	1	0.000	0.00	2	--	--	--	0.964	0.65	30
Mr	0.145	1.20	5	--	--	--	--	--	--	--	--	--	0.052	1.05	64
Ap	0.000	0.00	1	ns	ns	ns	0.000	0.00	2	0.000	0.00	1	0.112	1.10	57
My	--	--	--	--	--	--	--	--	--	--	--	--	0.000	0.00	9
Jn	0.000	0.00	12	0.000	0.00	5	0.000	0.00	4	0.000	0.00	4	0.031	1.20	29
Jl	0.013	1.40	57	0.000	0.00	11	0.027	2.00	26	0.000	0.00	6	0.000	0.00	43
Au	0.030	1.10	18	0.000	0.00	15	0.000	0.00	34	0.065	1.30	17	0.000	0.00	26
Se	--	--	--	--	--	--	0.000	0.00	12	0.000	0.00	2	1.755	1.31	6
Oc	0.000	0.00	6	0.000	0.00	7	0.000	0.00	25	0.000	0.00	1	0.114	1.40	38
No	--	--	--	0.000	0.00	3	0.000	0.00	8	0.000	0.00	1	0.020	2.00	96
De	--	--	--	0.000	0.00	1	--	--	--	--	--	--	0.089	0.83	28
Yr	0.027	1.05	102	0.000	0.00	43	0.004	2.00	113	0.032	1.30	32	0.112	0.90	426

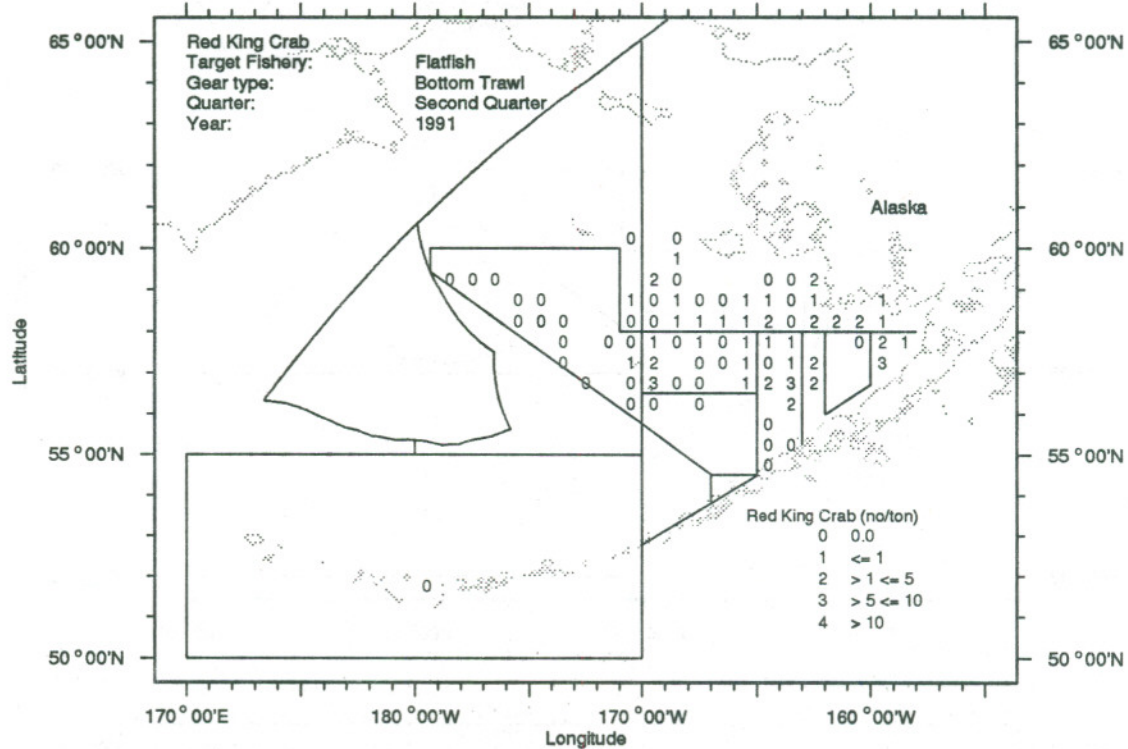
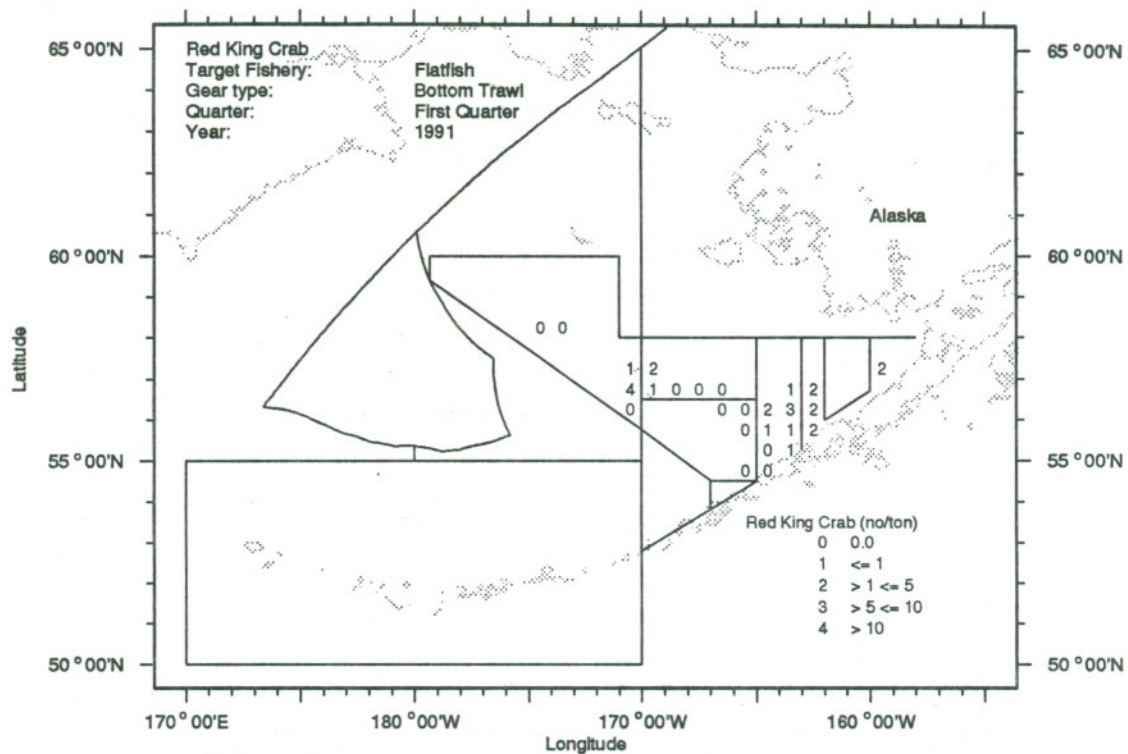


Figure 7.--Bycatch (no./metric ton (t)) of red king crab in the U.S. domestic groundfish fisheries by quarter, target fishery, gear type, and $\frac{1}{2}^\circ$ latitude and 1° longitude areas in the Bering Sea/Aleutian Islands region, 1991.

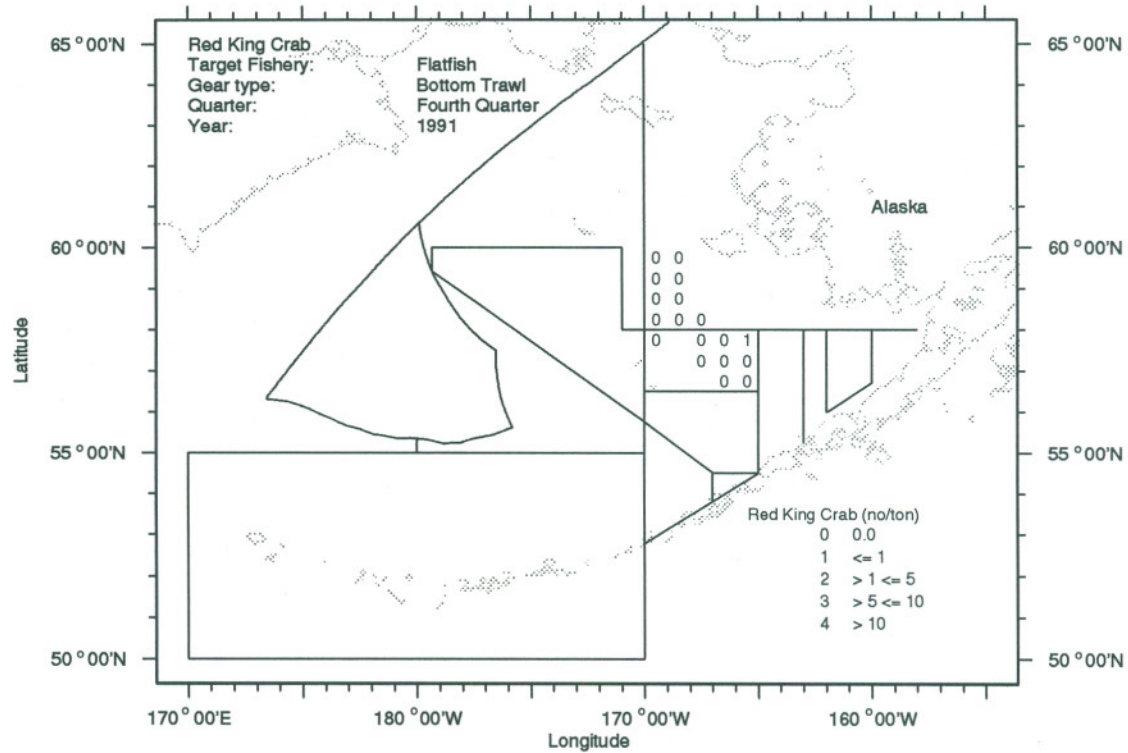
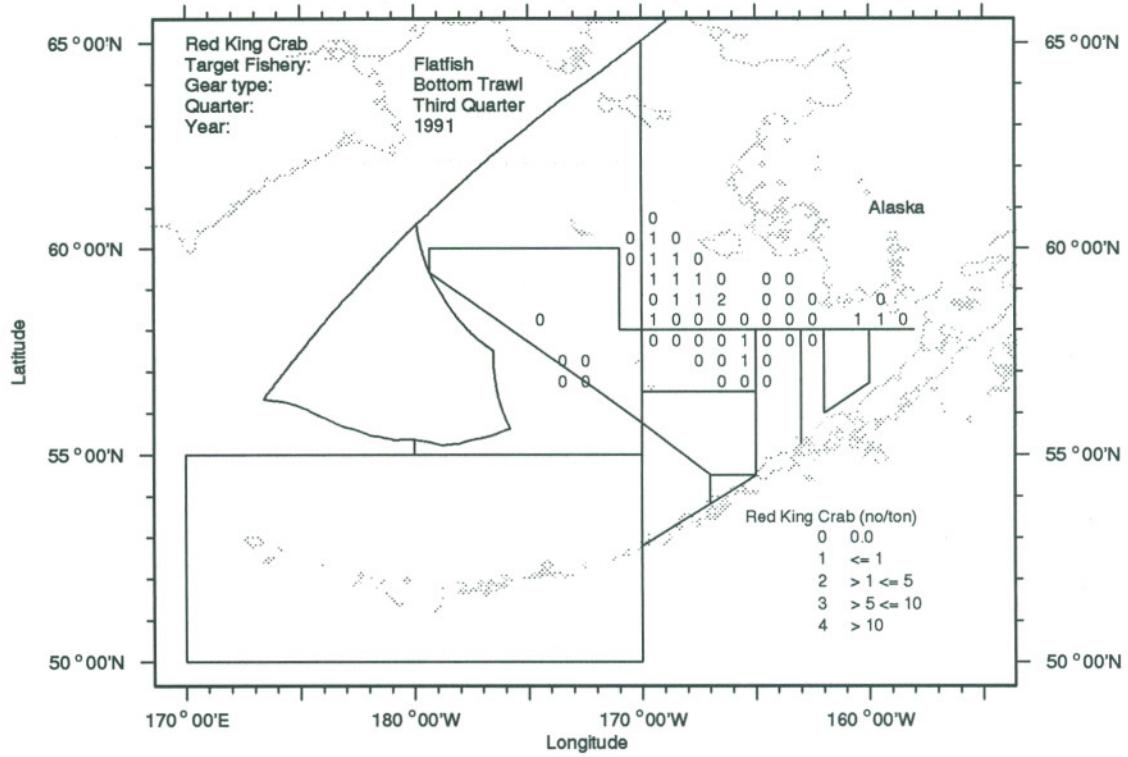


Figure 7.--Continued.

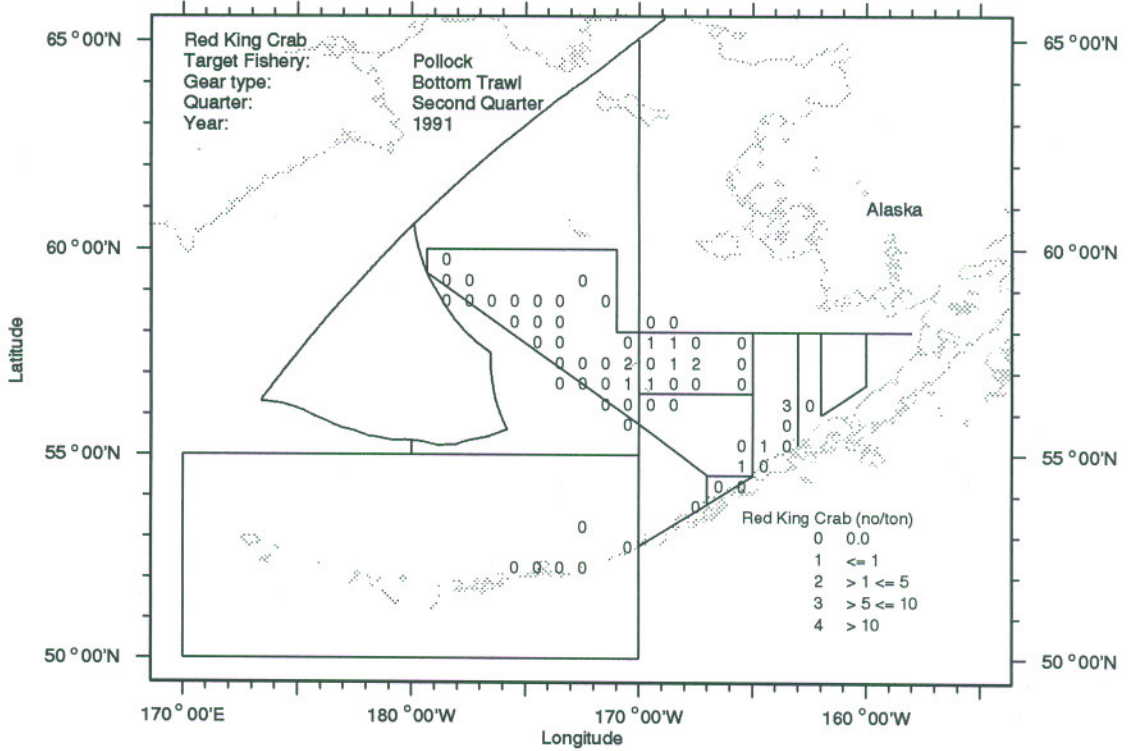
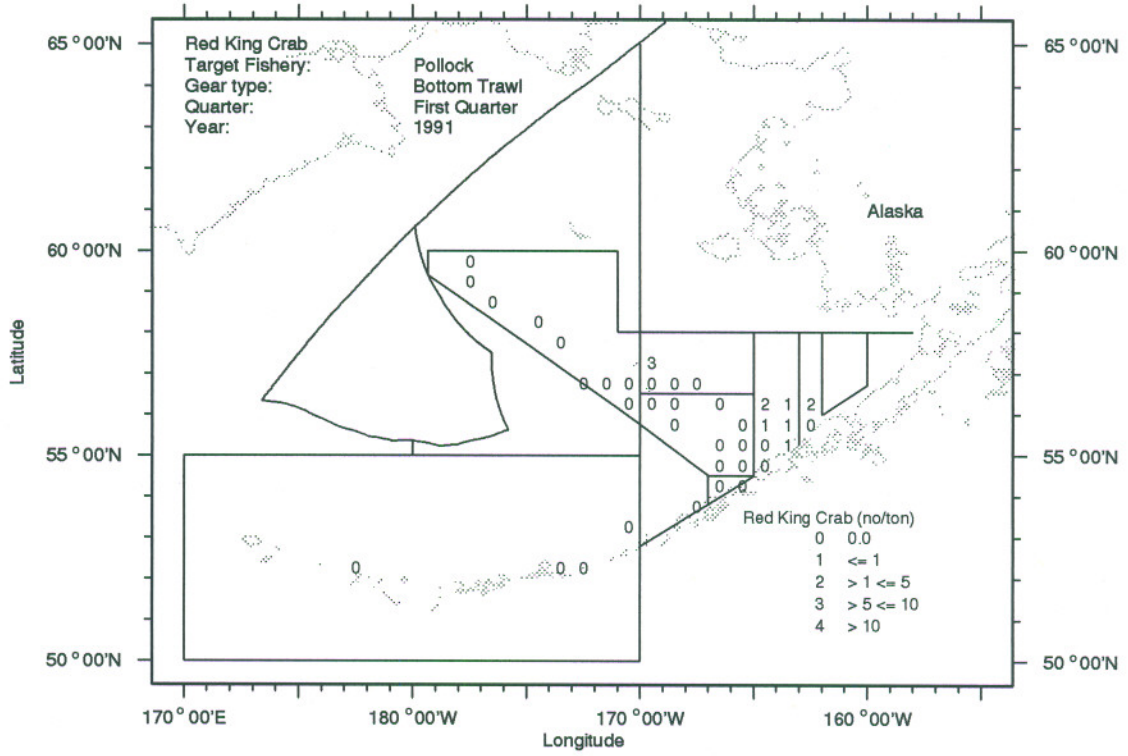


Figure 7.--Continued.

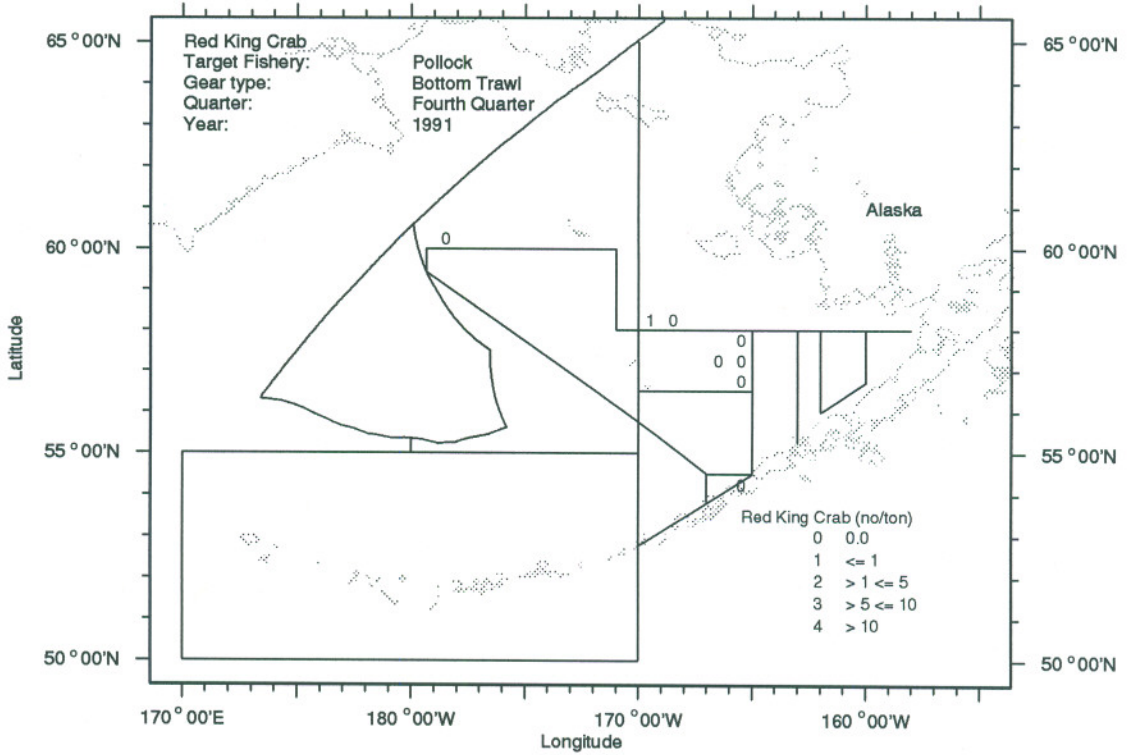
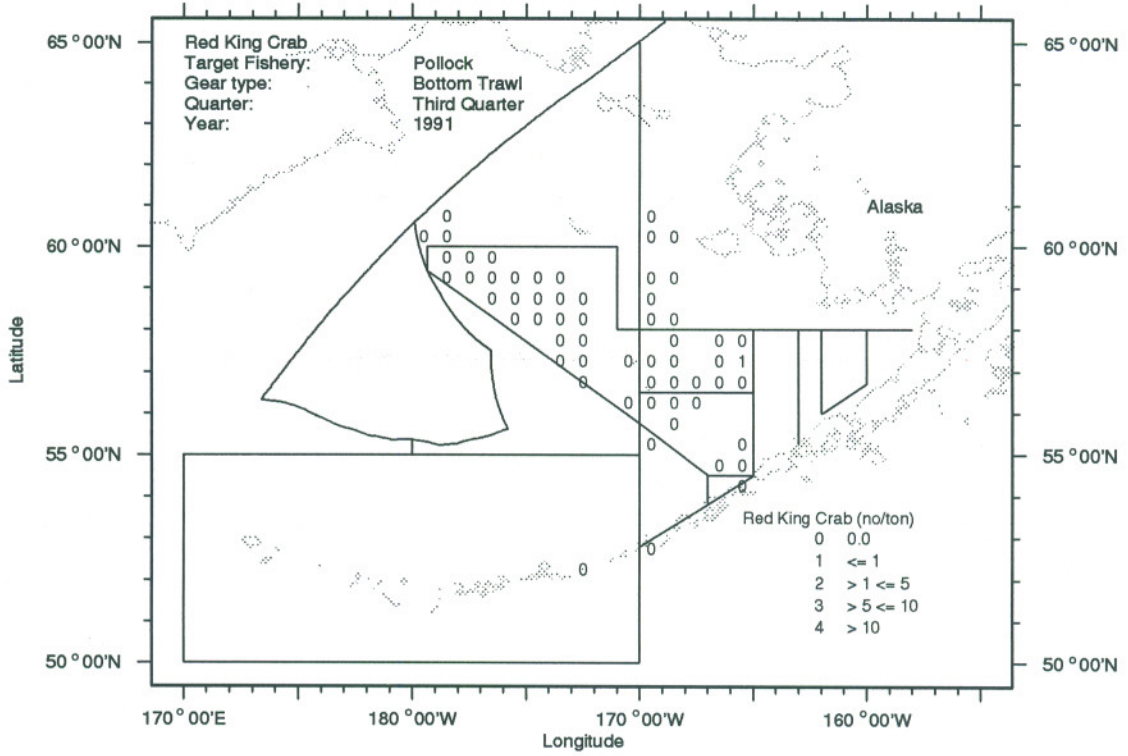


Figure 7.--Continued.

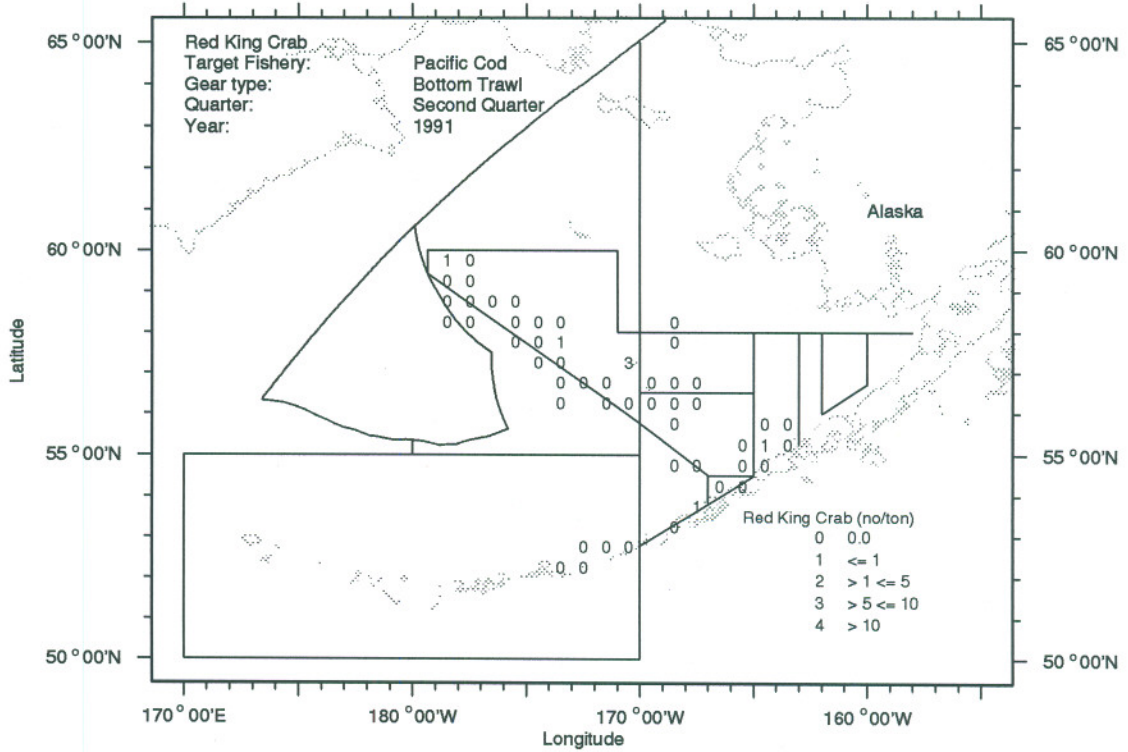
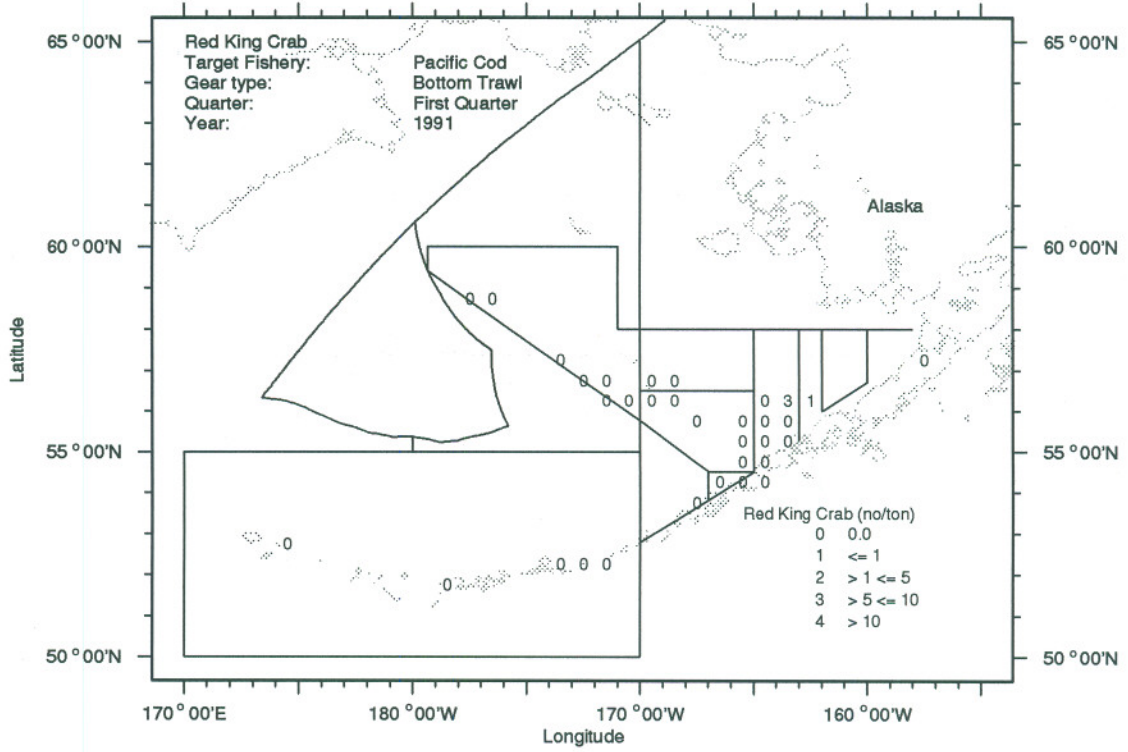


Figure 7.--Continued.

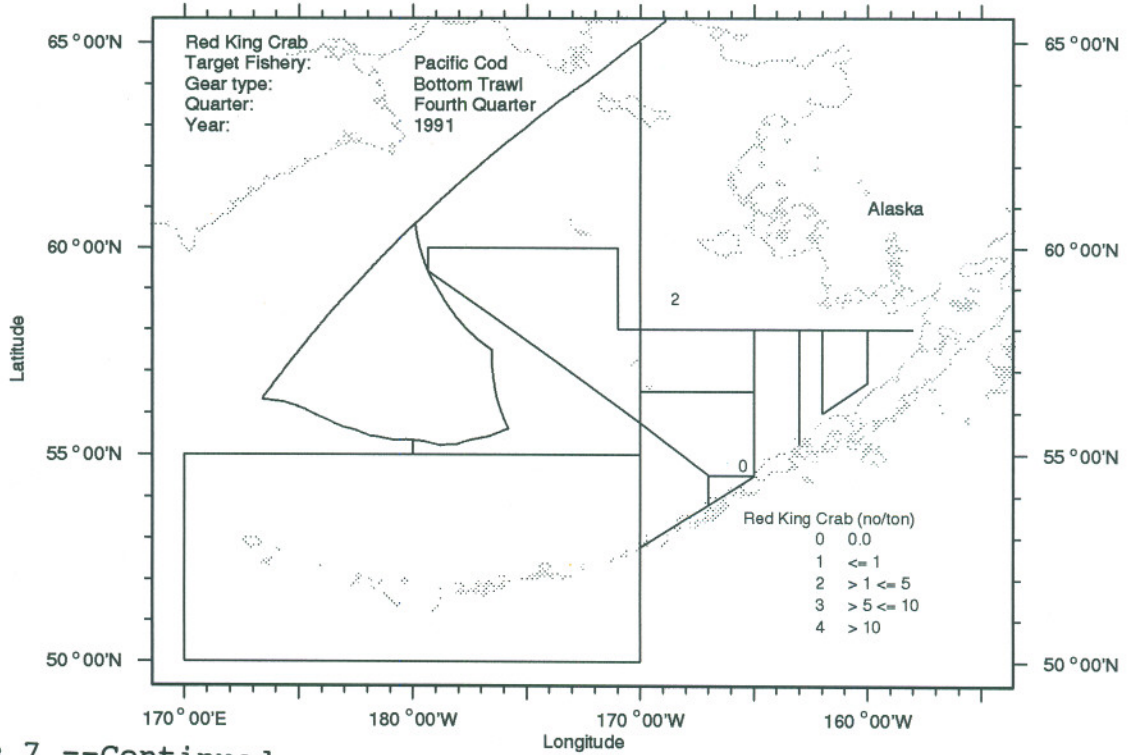
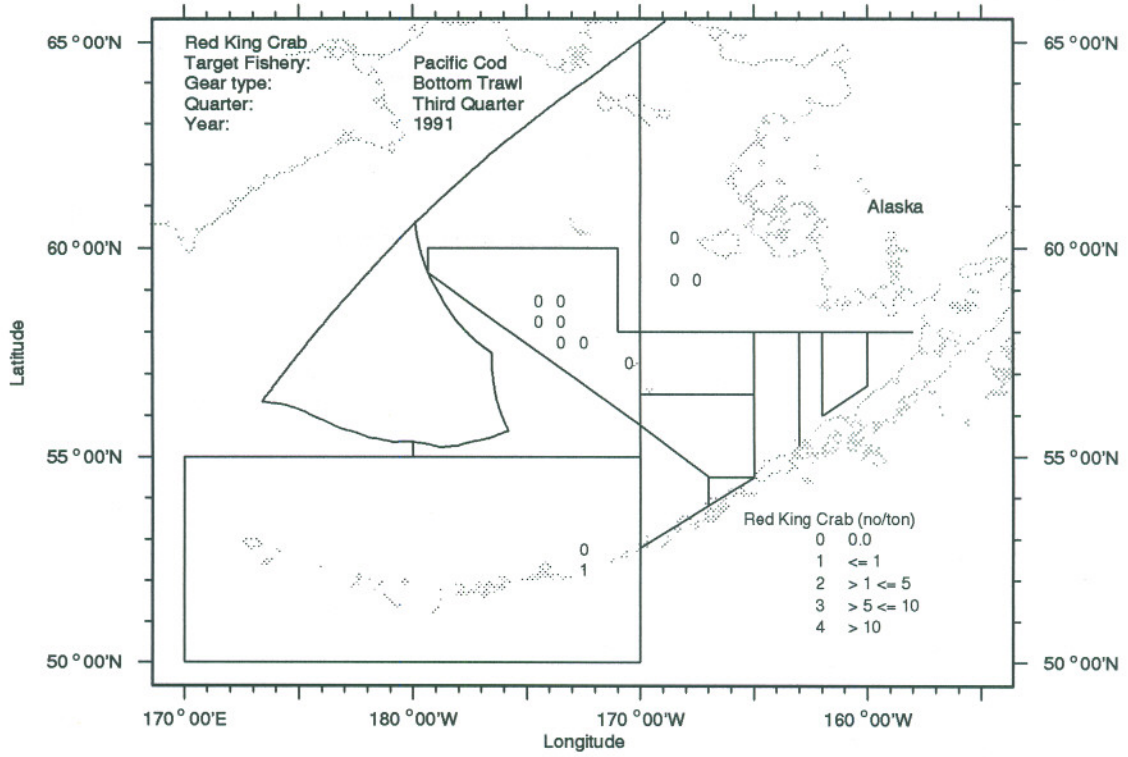


Figure 7.--Continued.

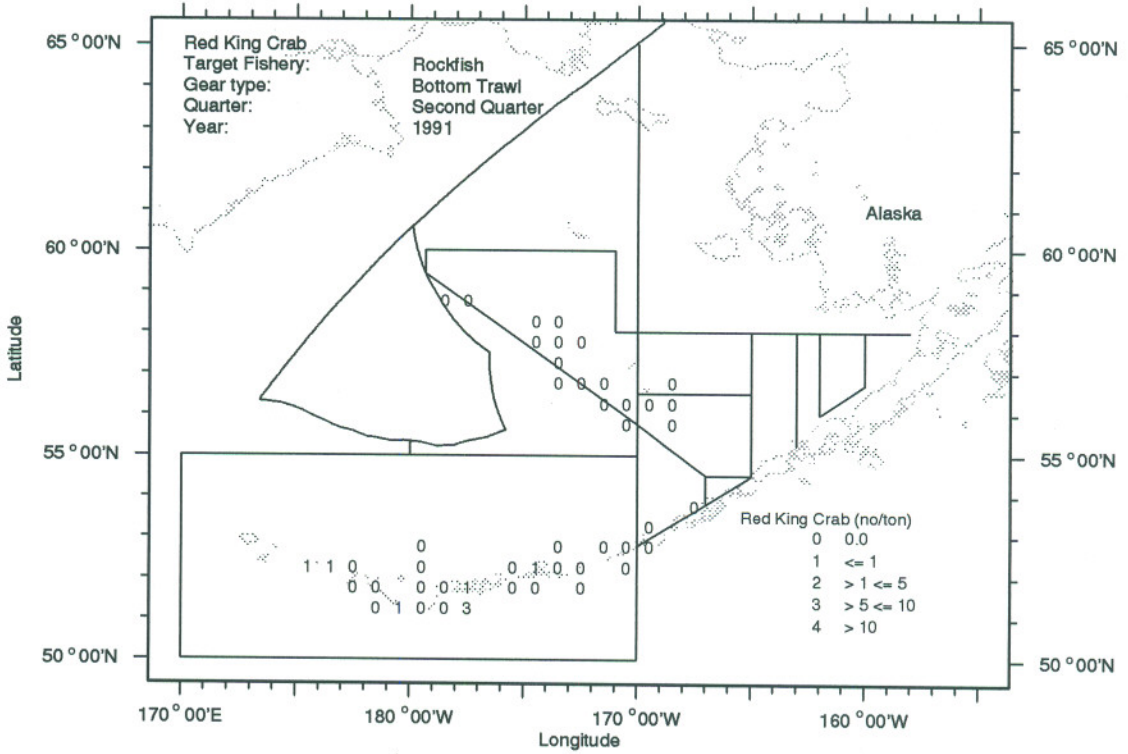
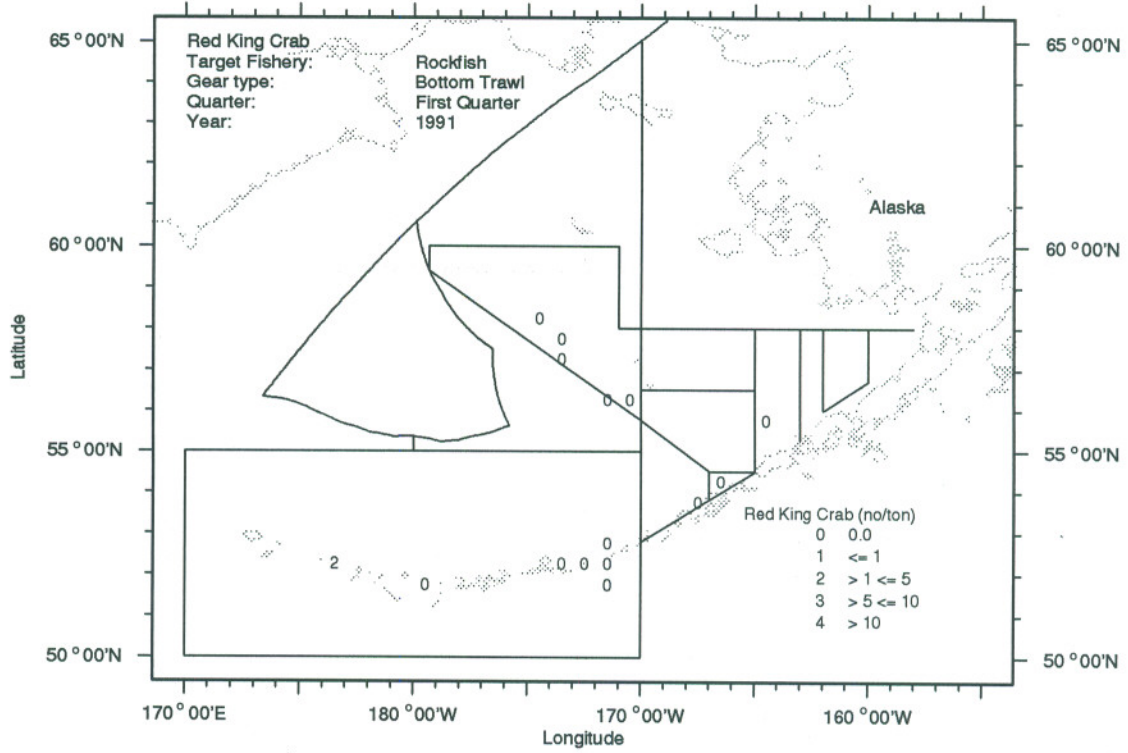


Figure 7.--Continued.

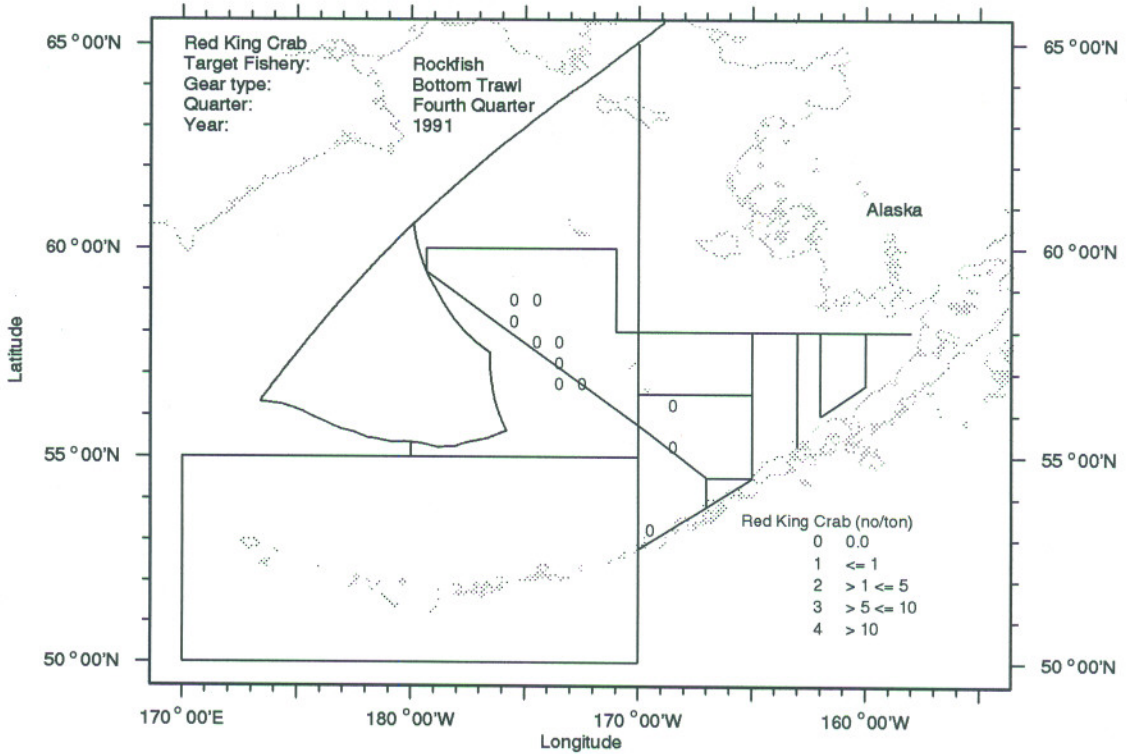
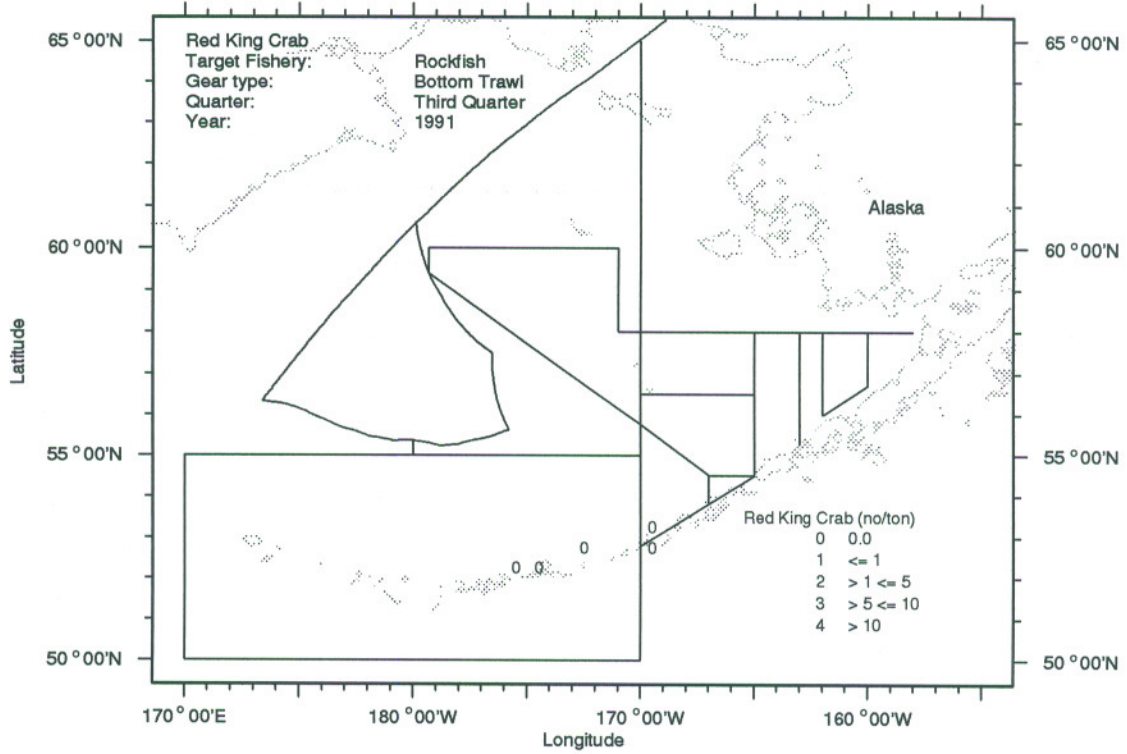


Figure 7.--Continued.

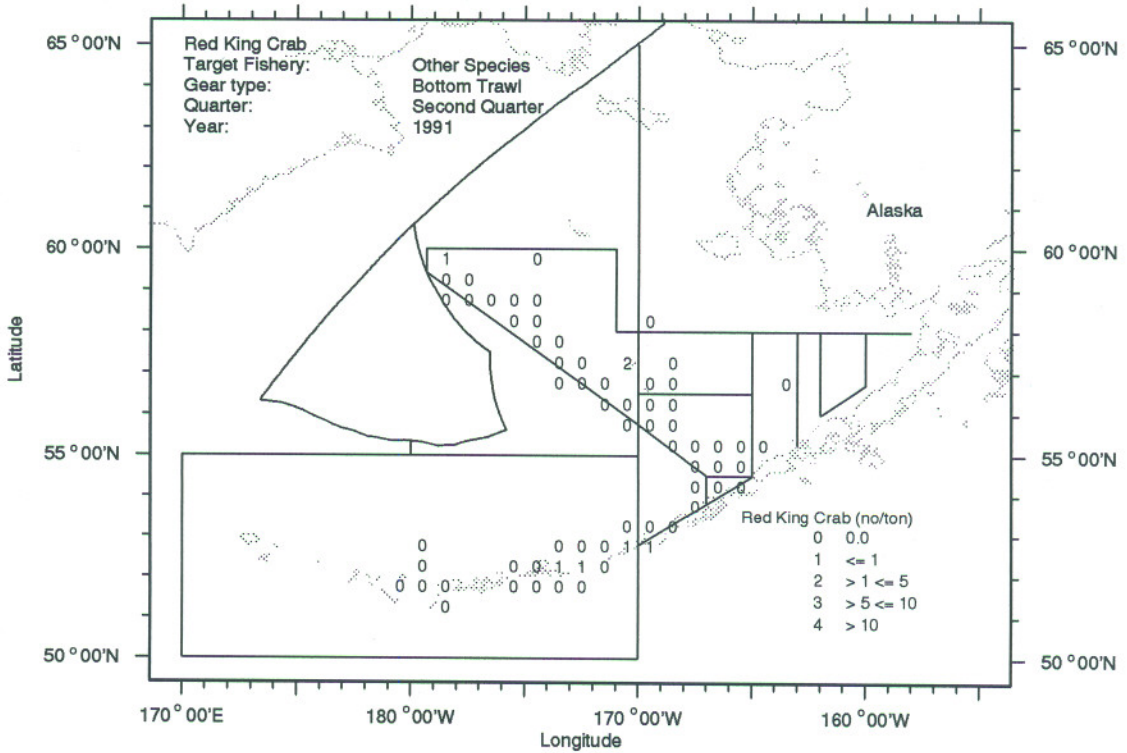
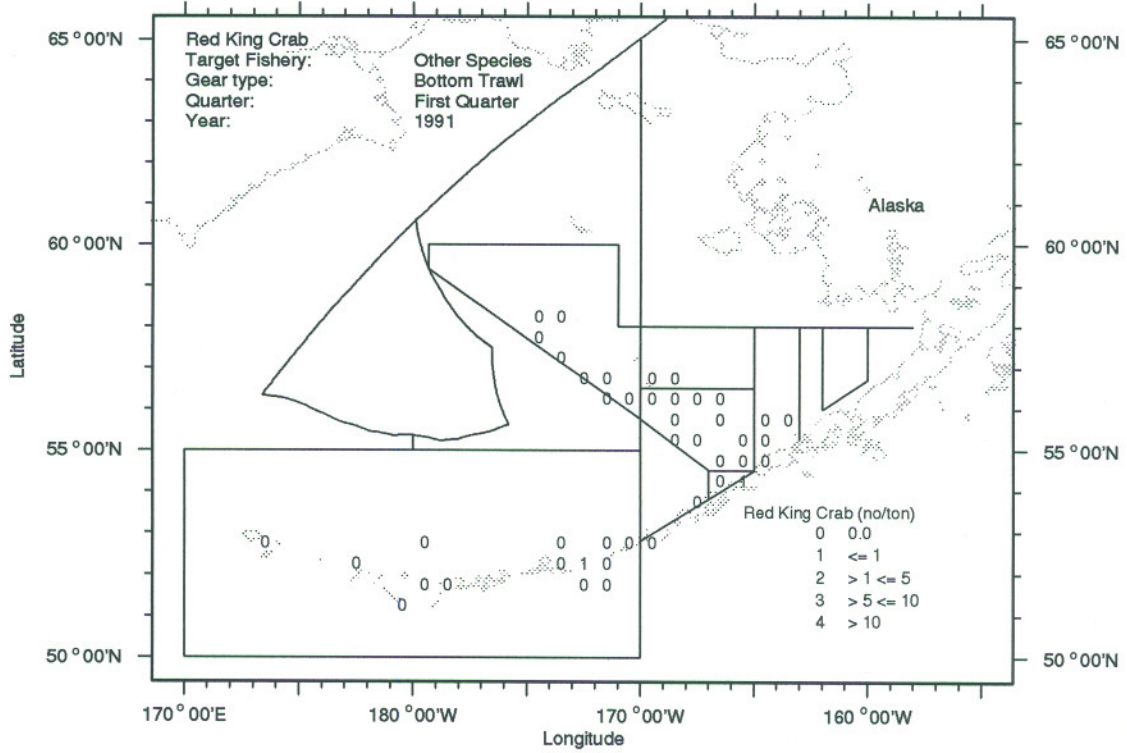


Figure 7.--Continued.

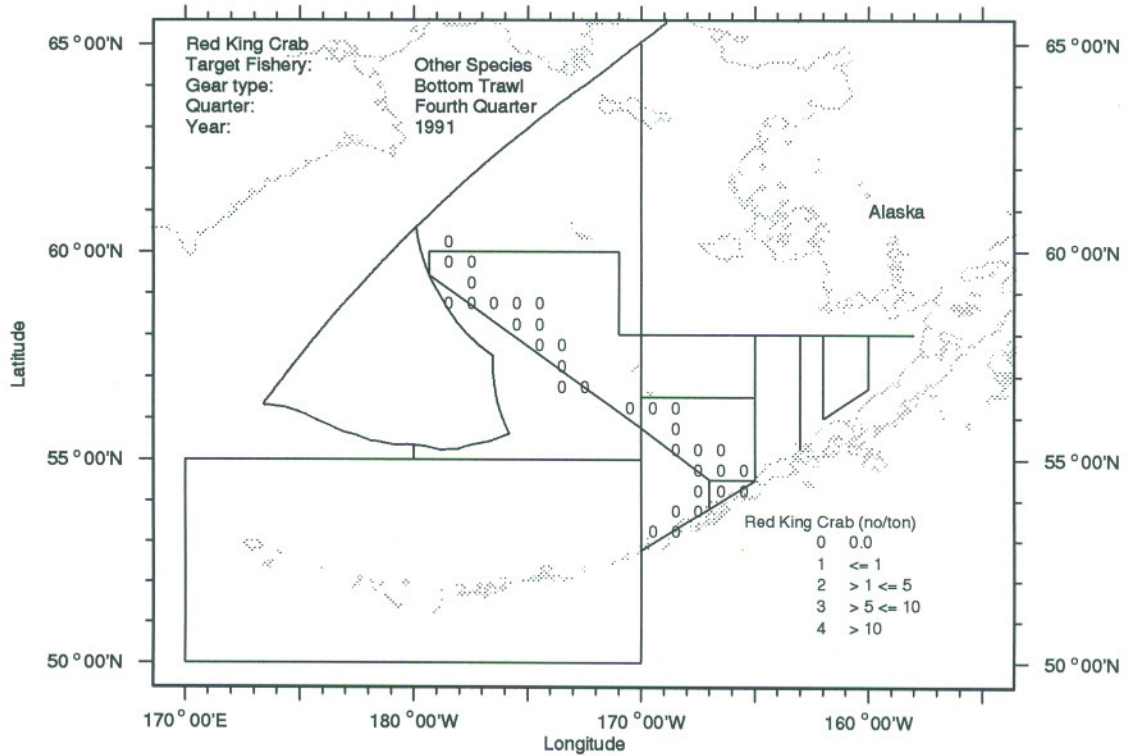
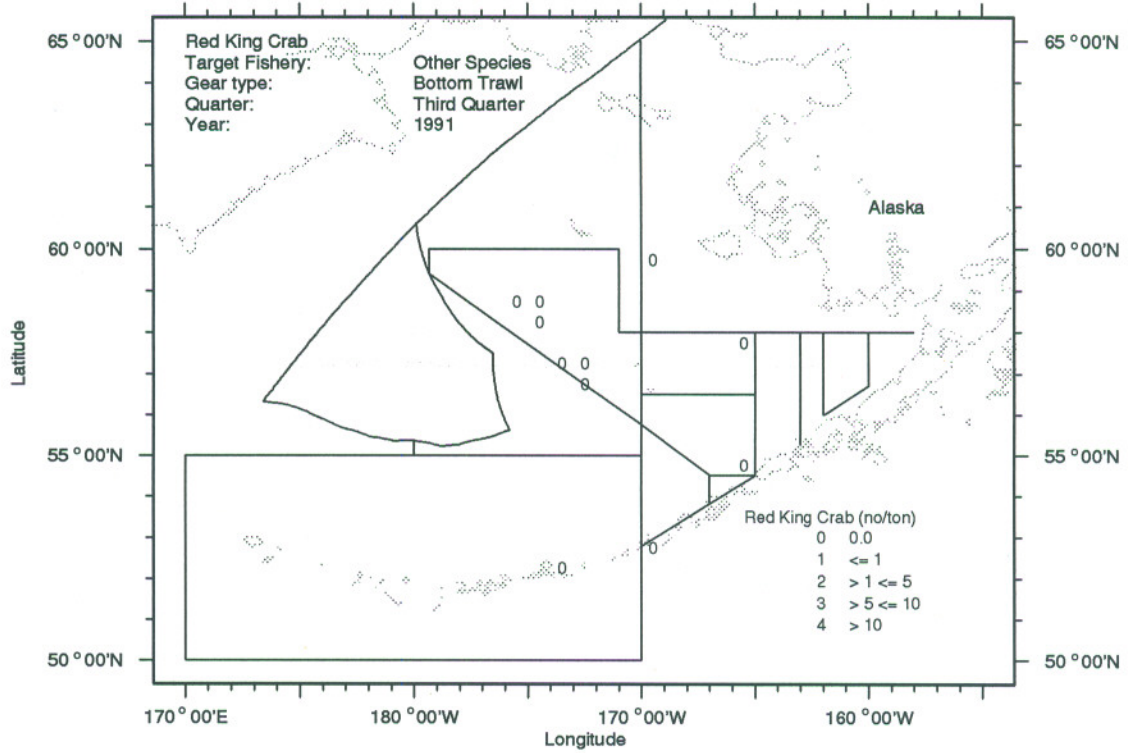


Figure 7.--Continued.

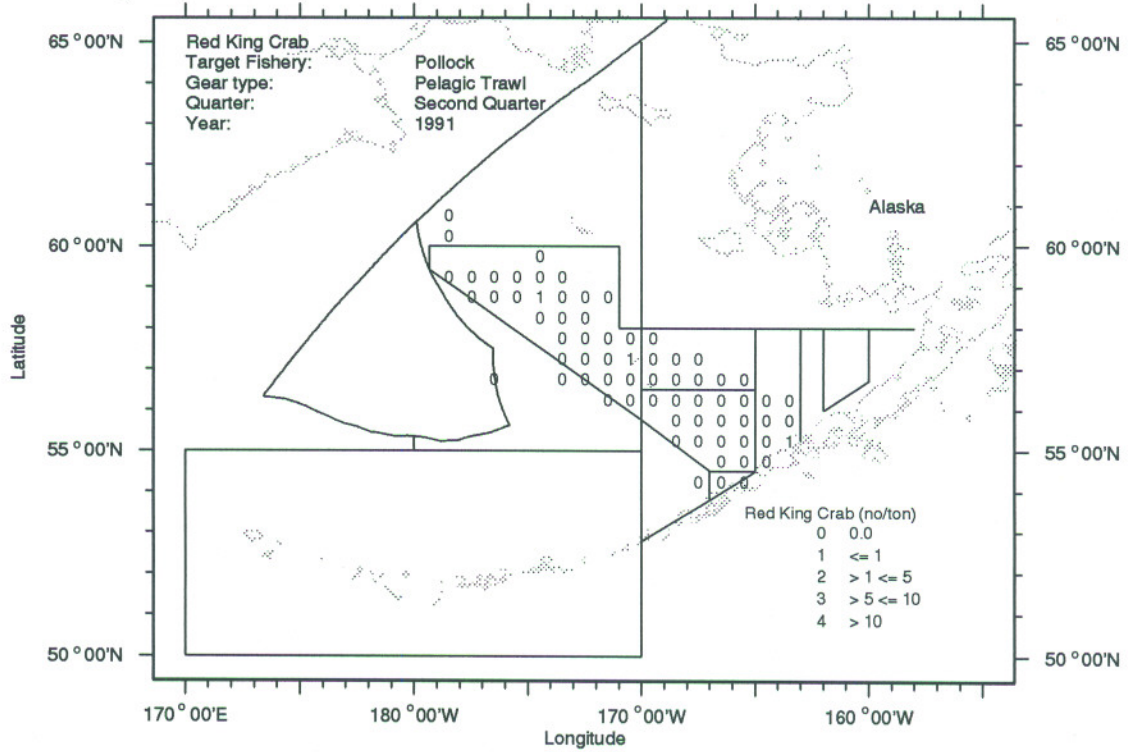
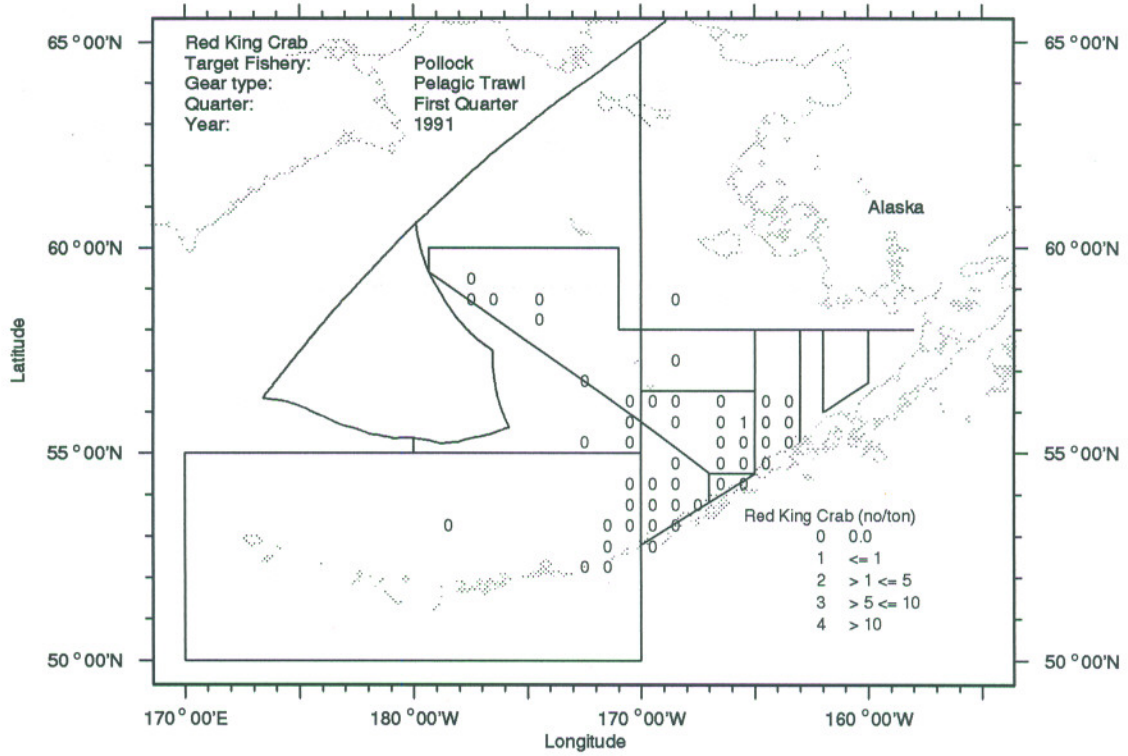


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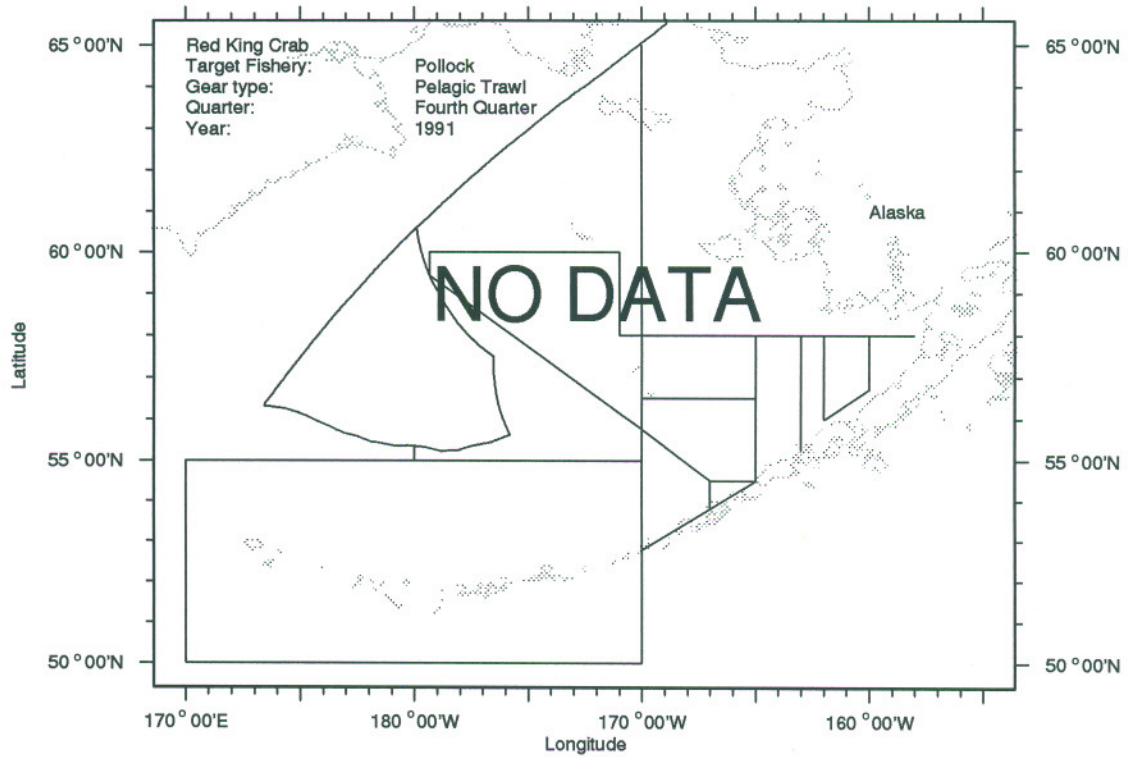
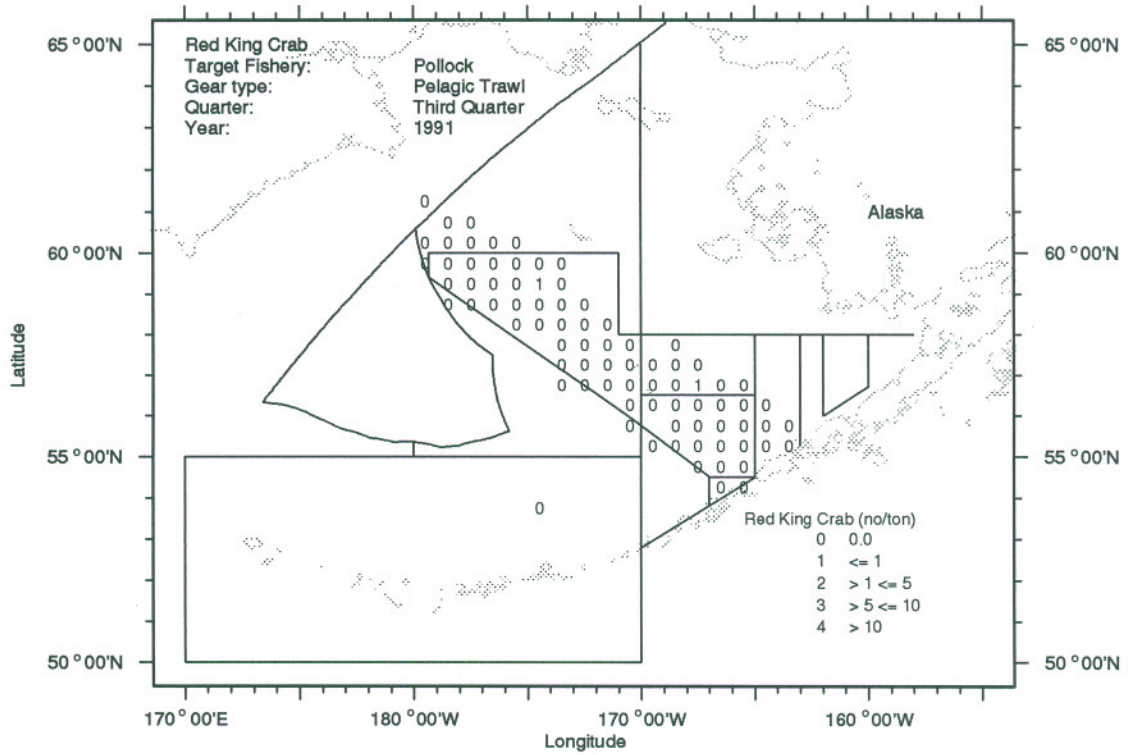


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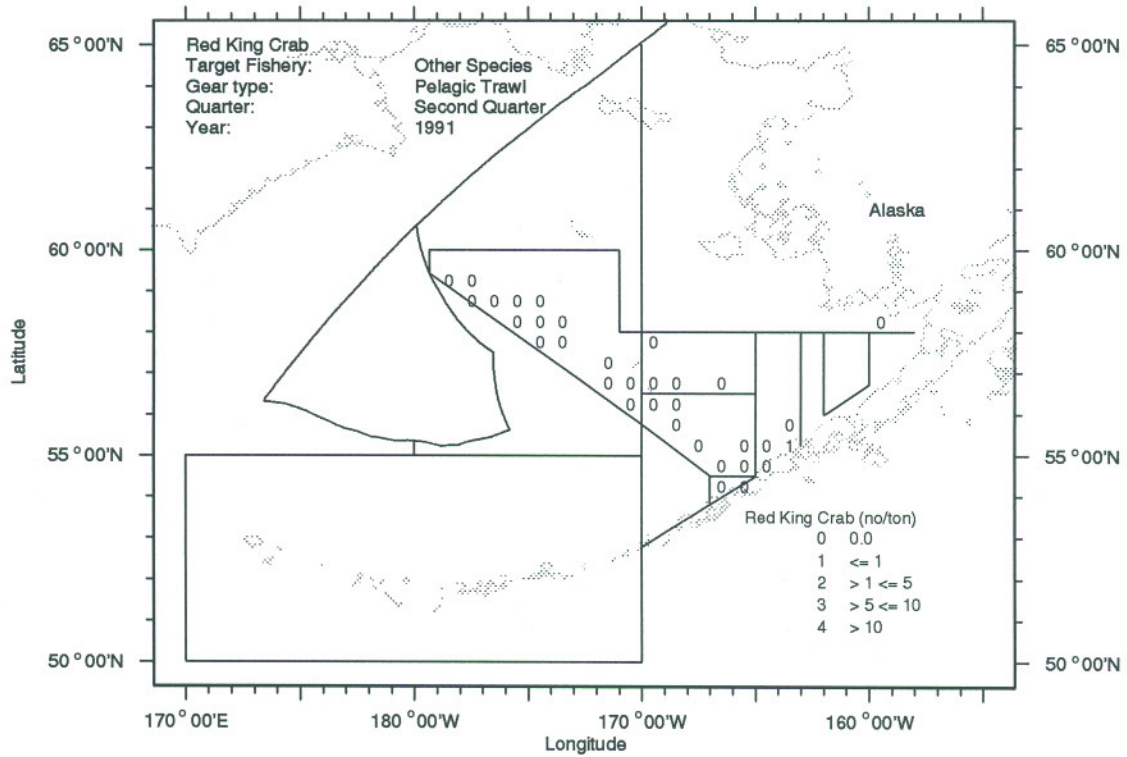
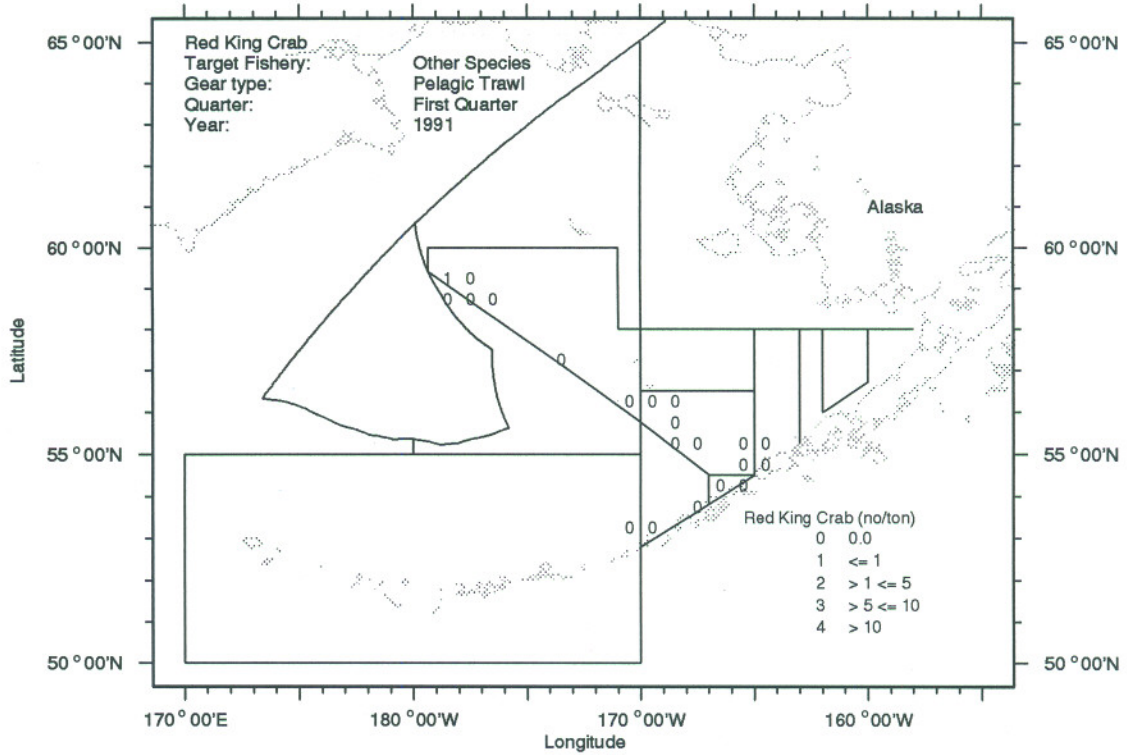


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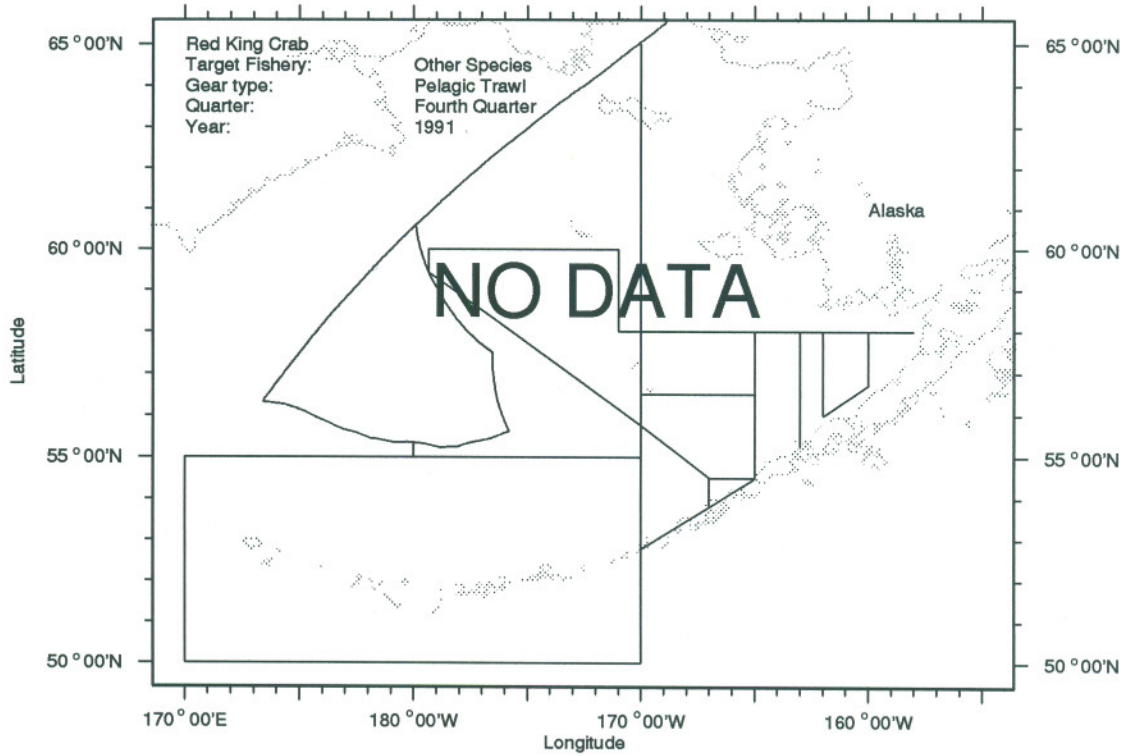
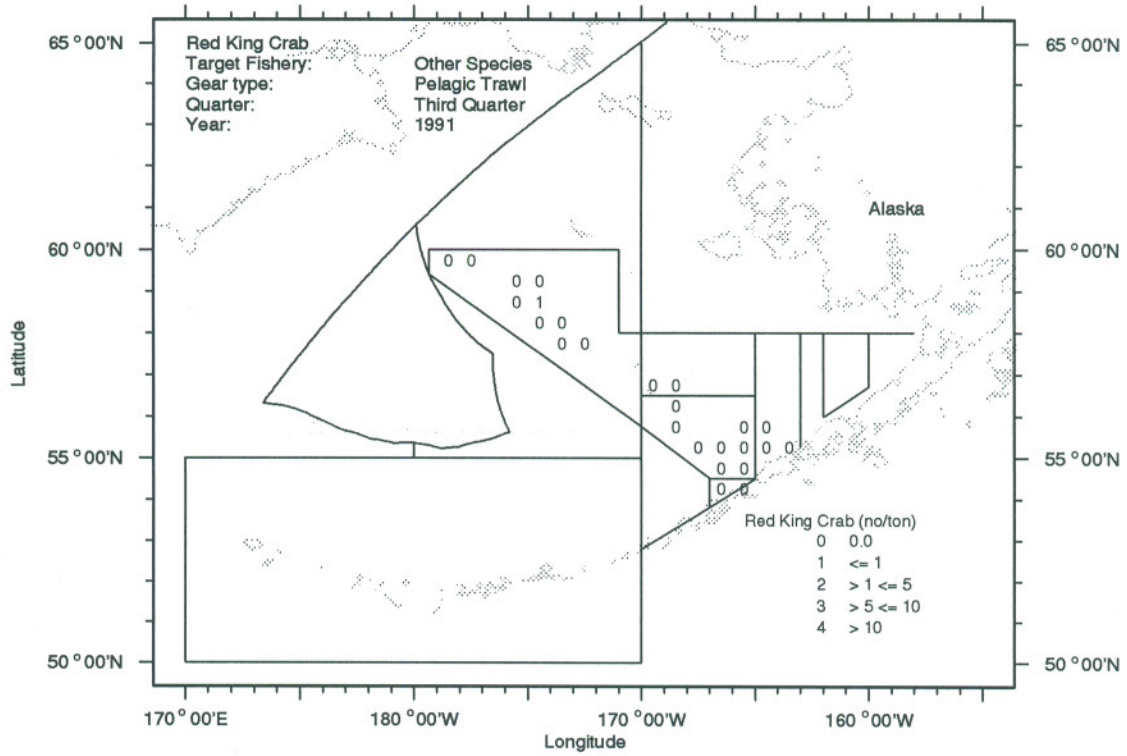


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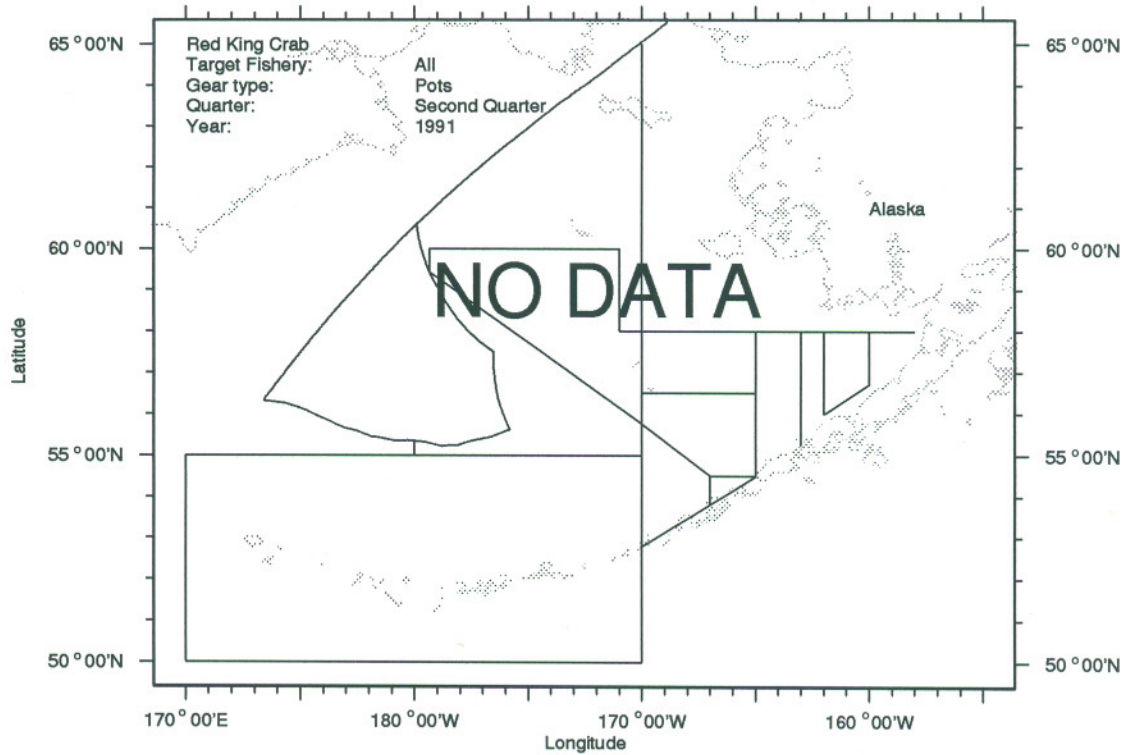
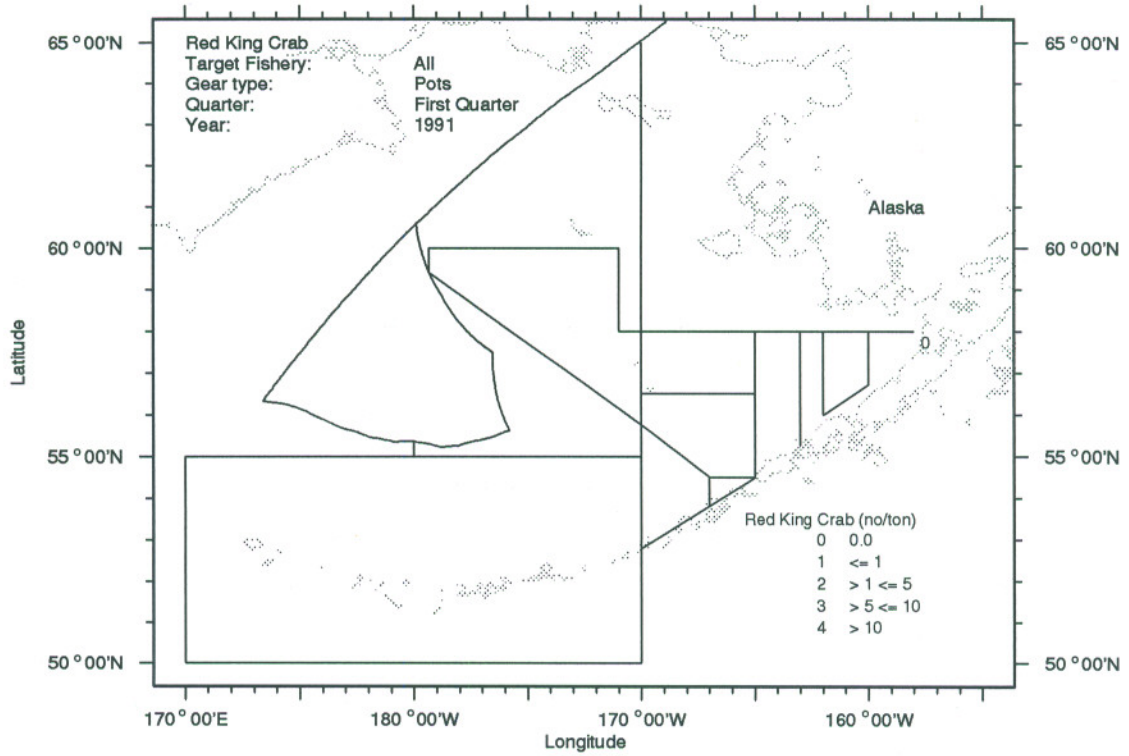


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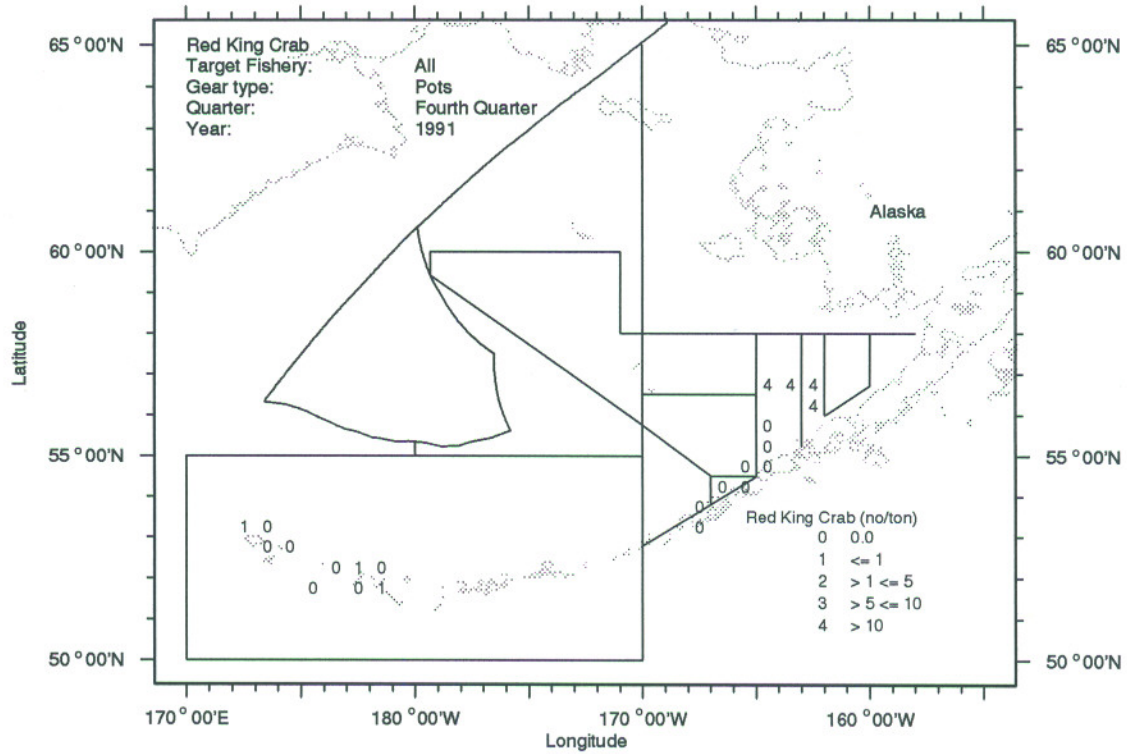
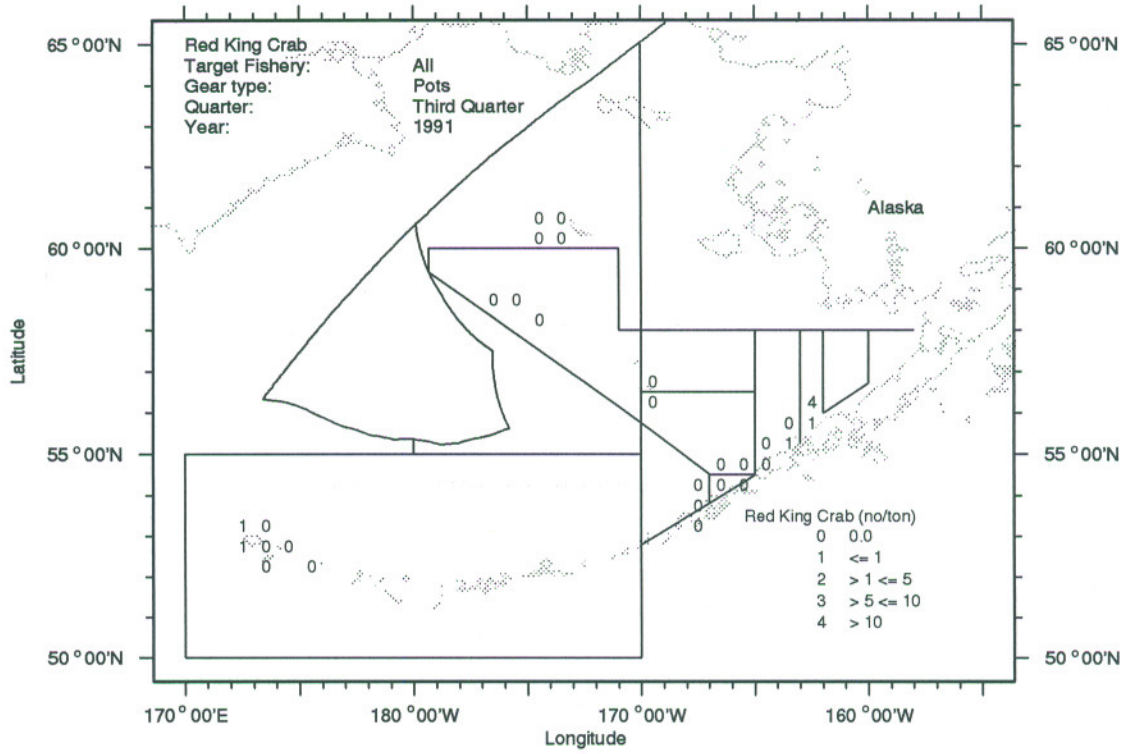


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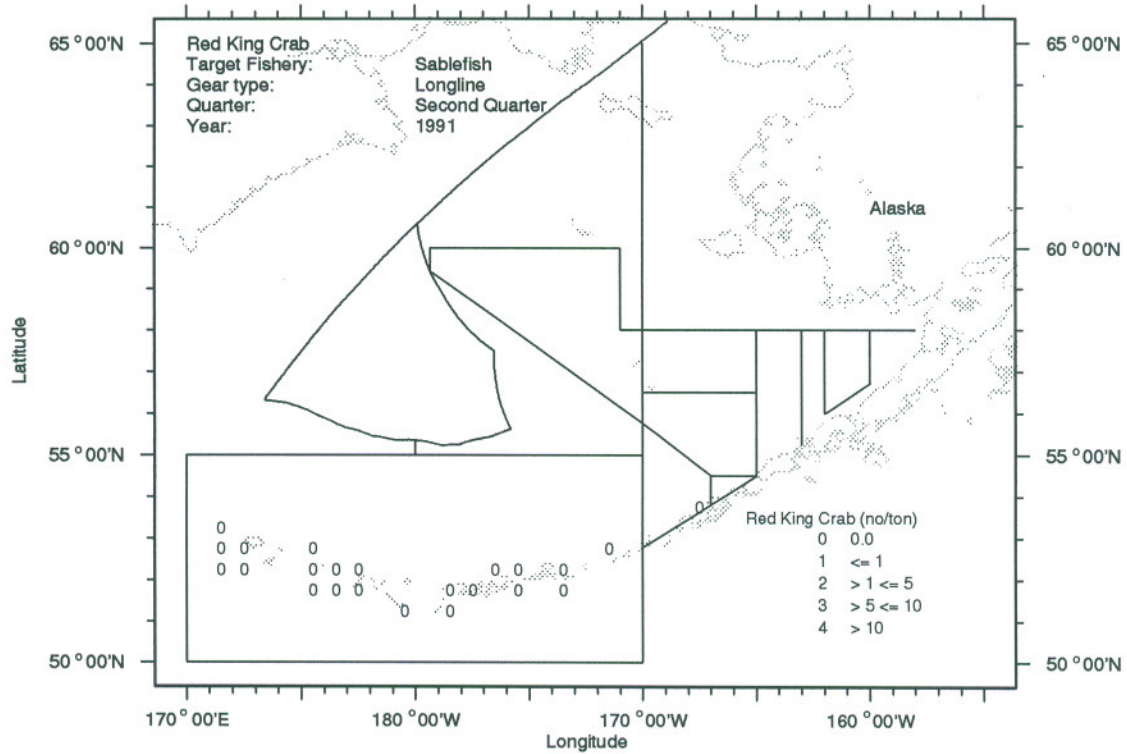
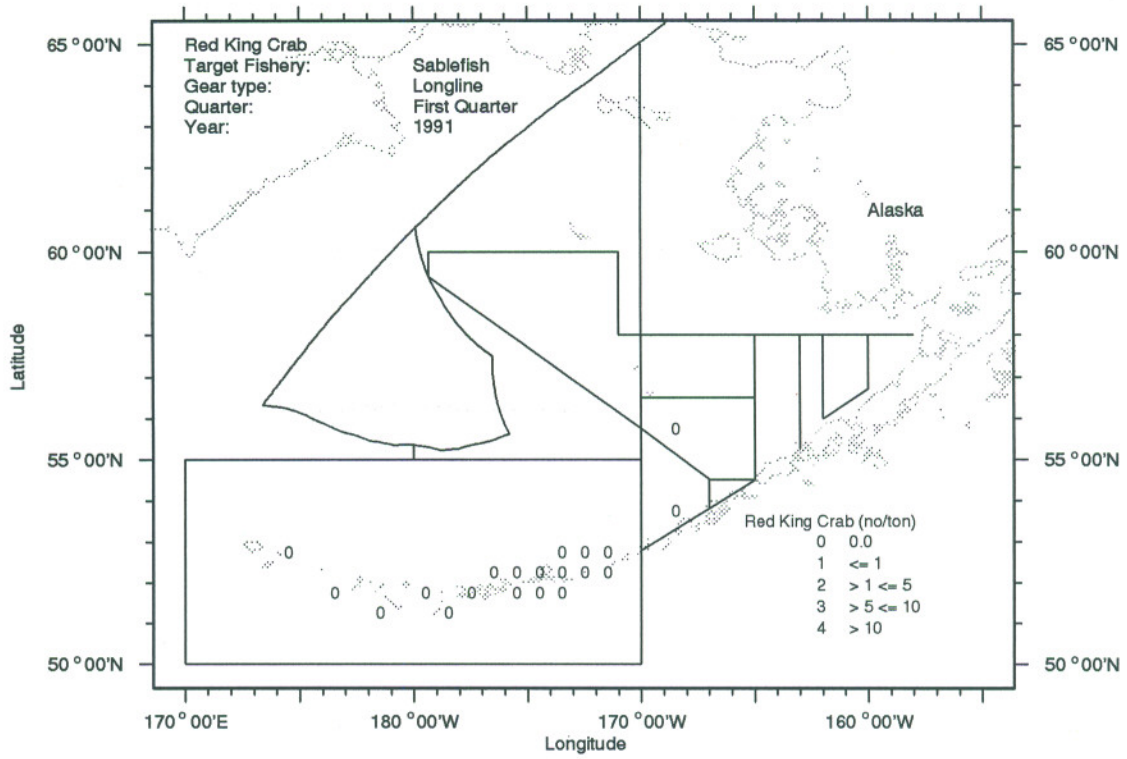


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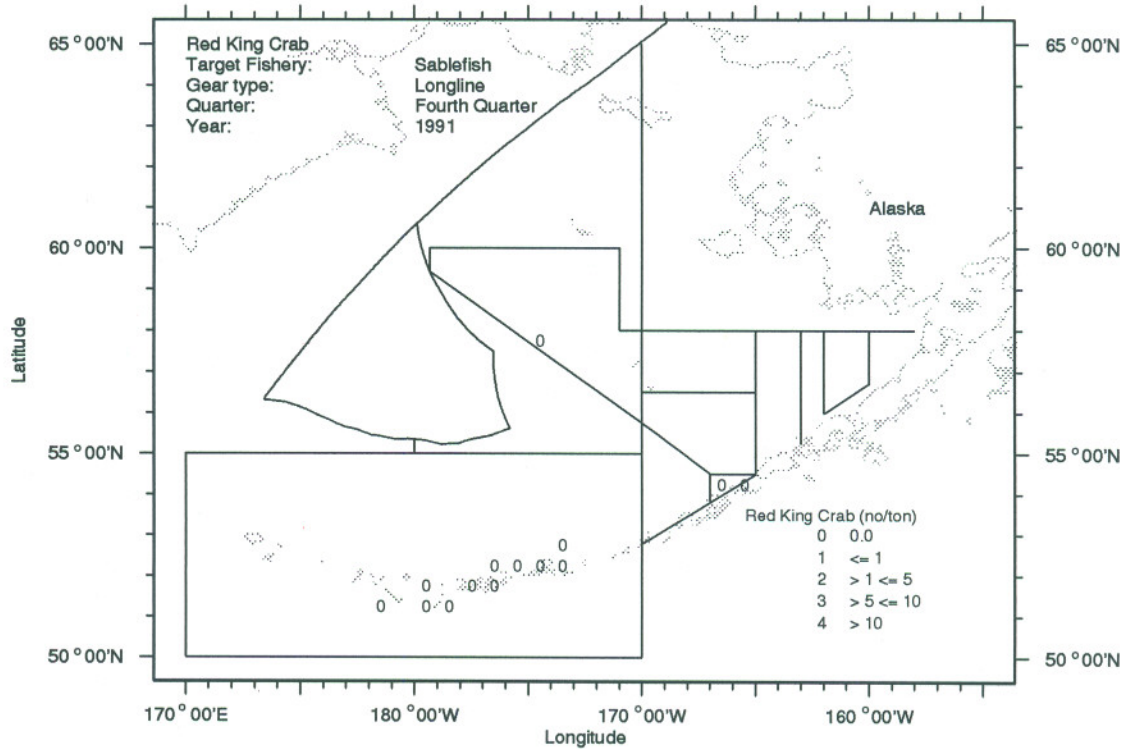
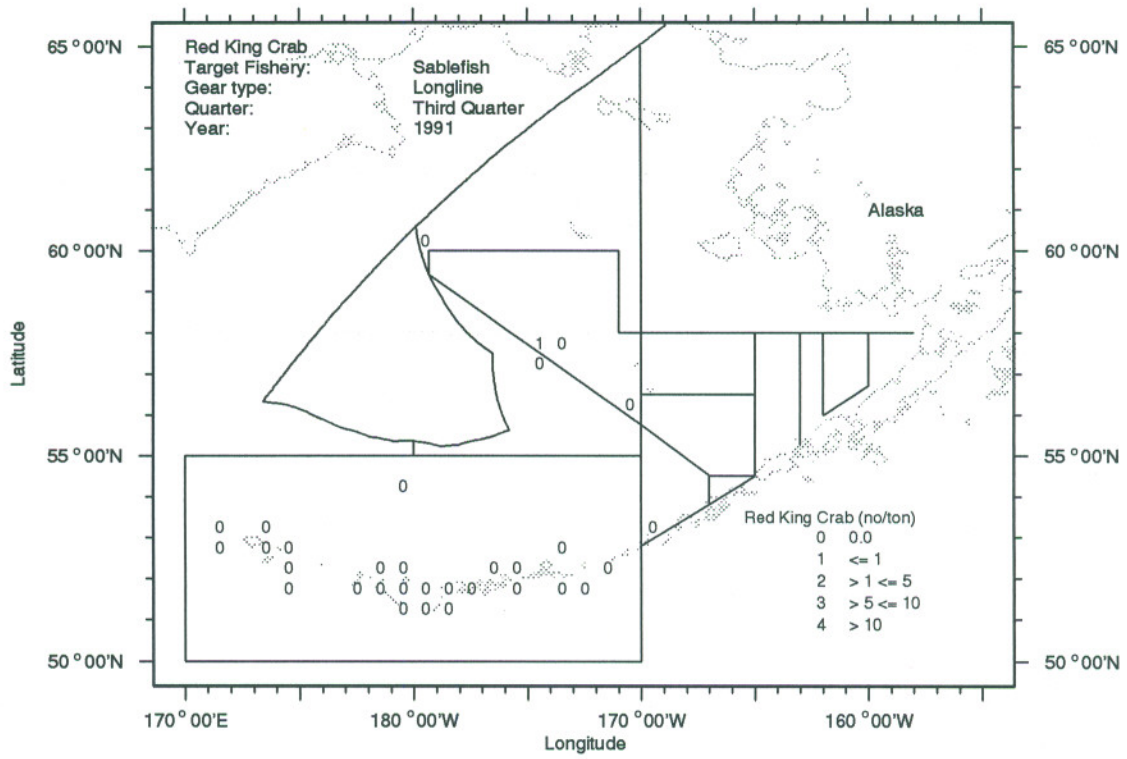


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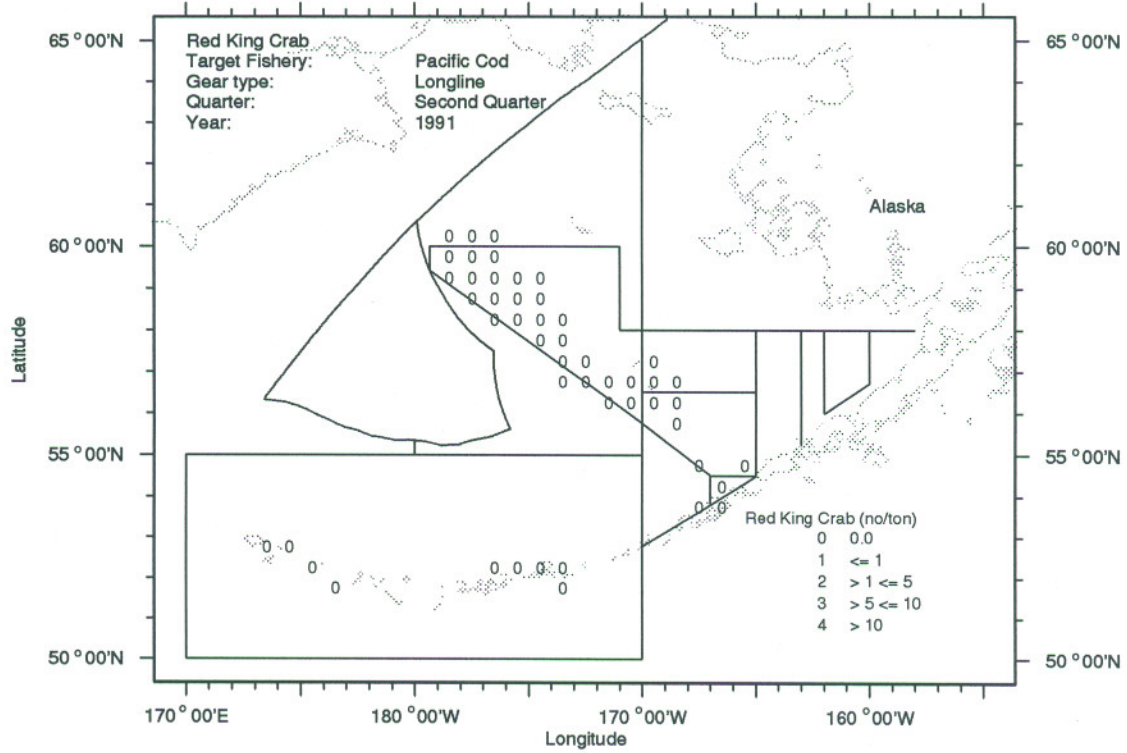
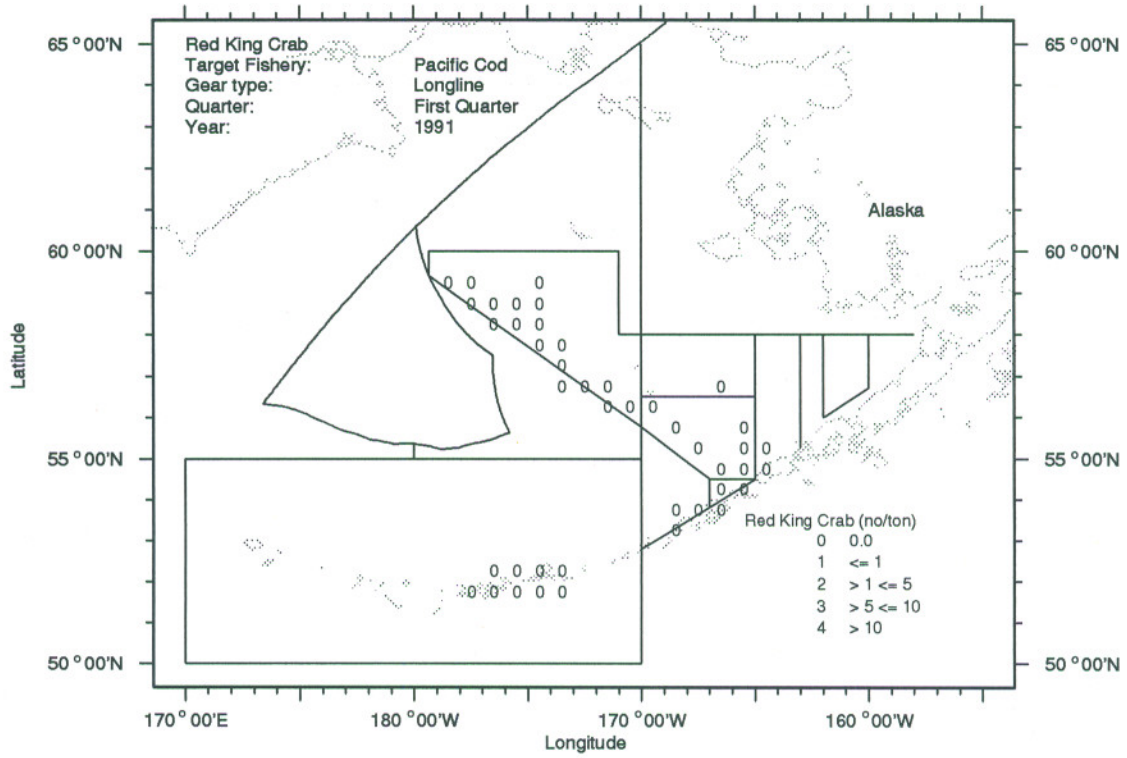


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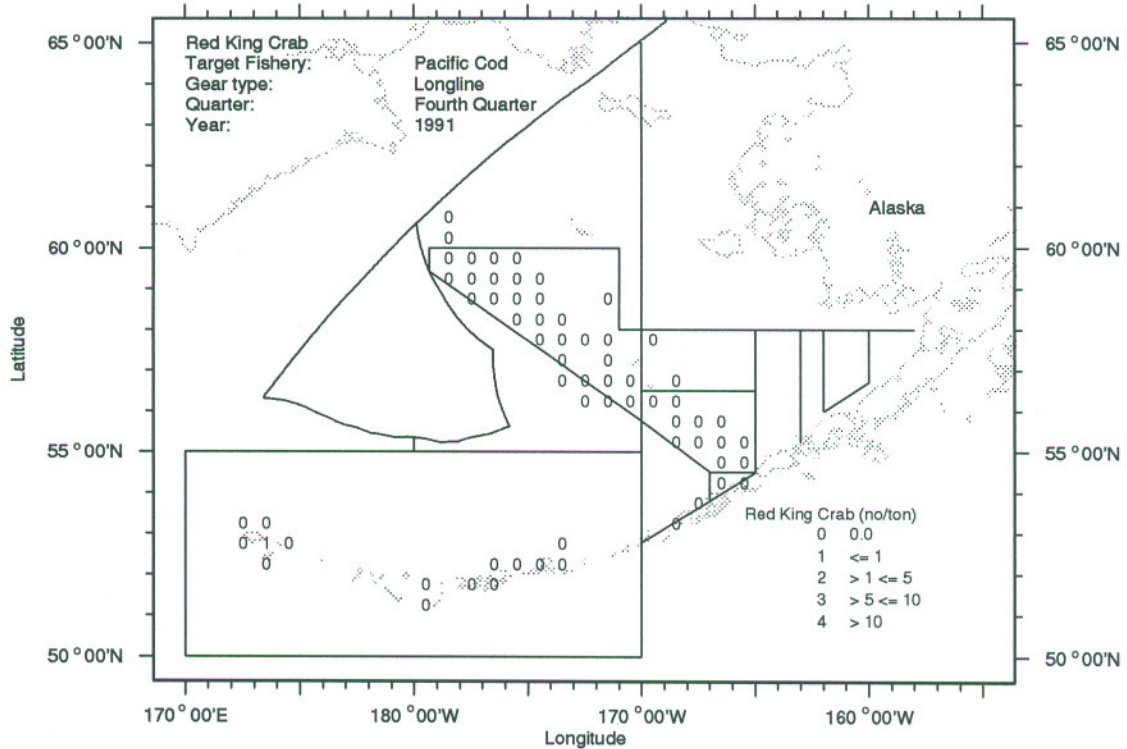
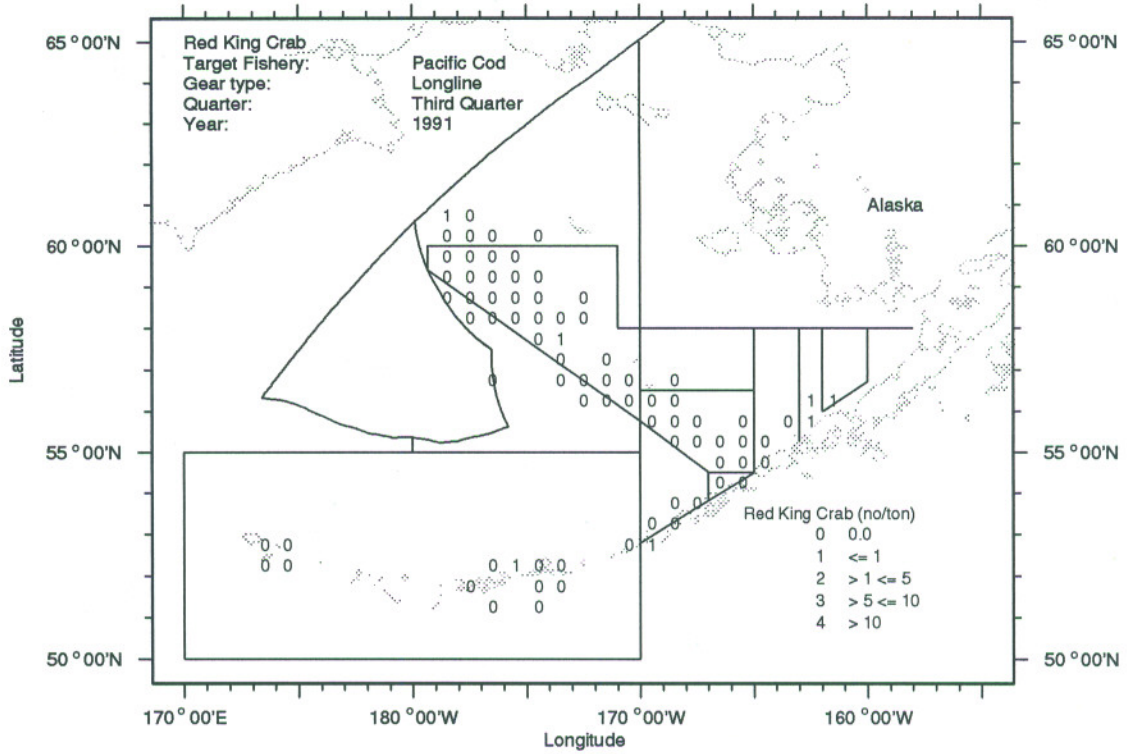


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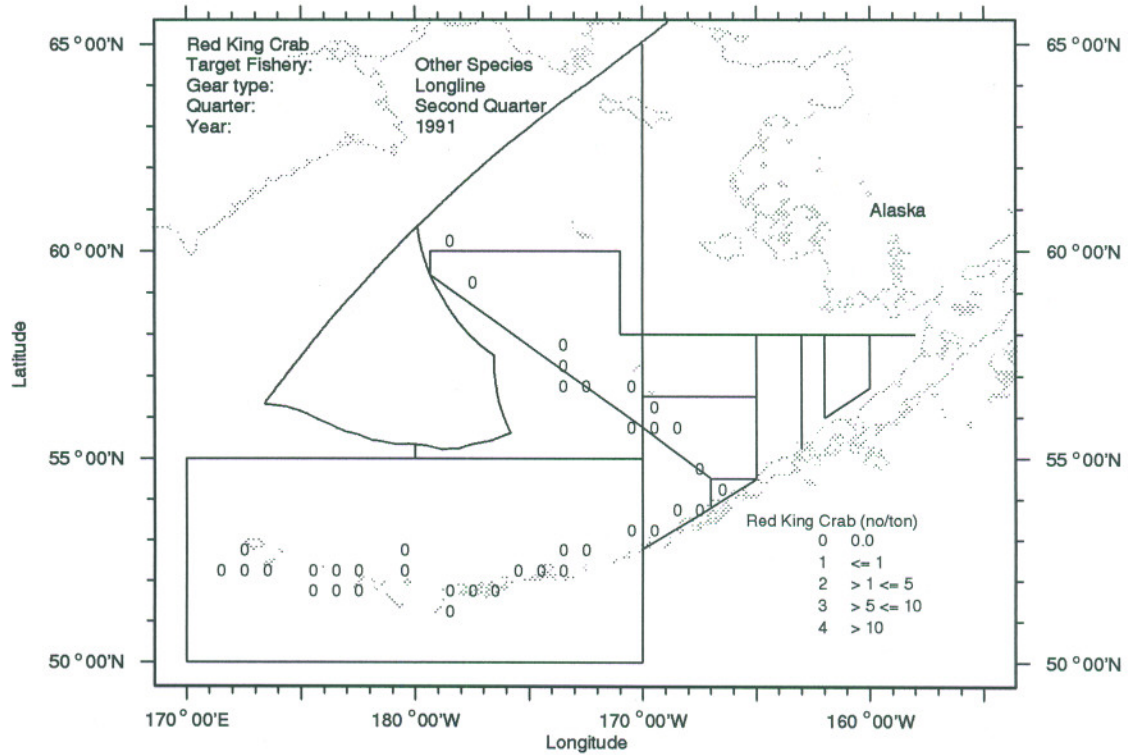
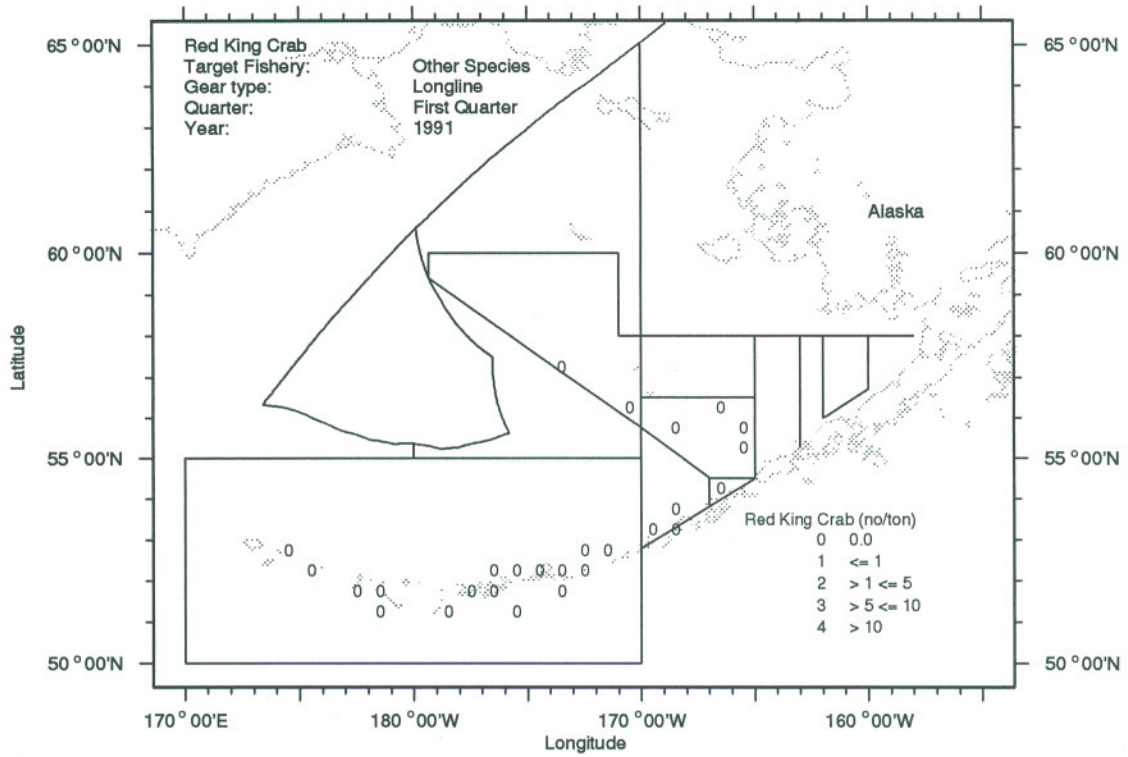


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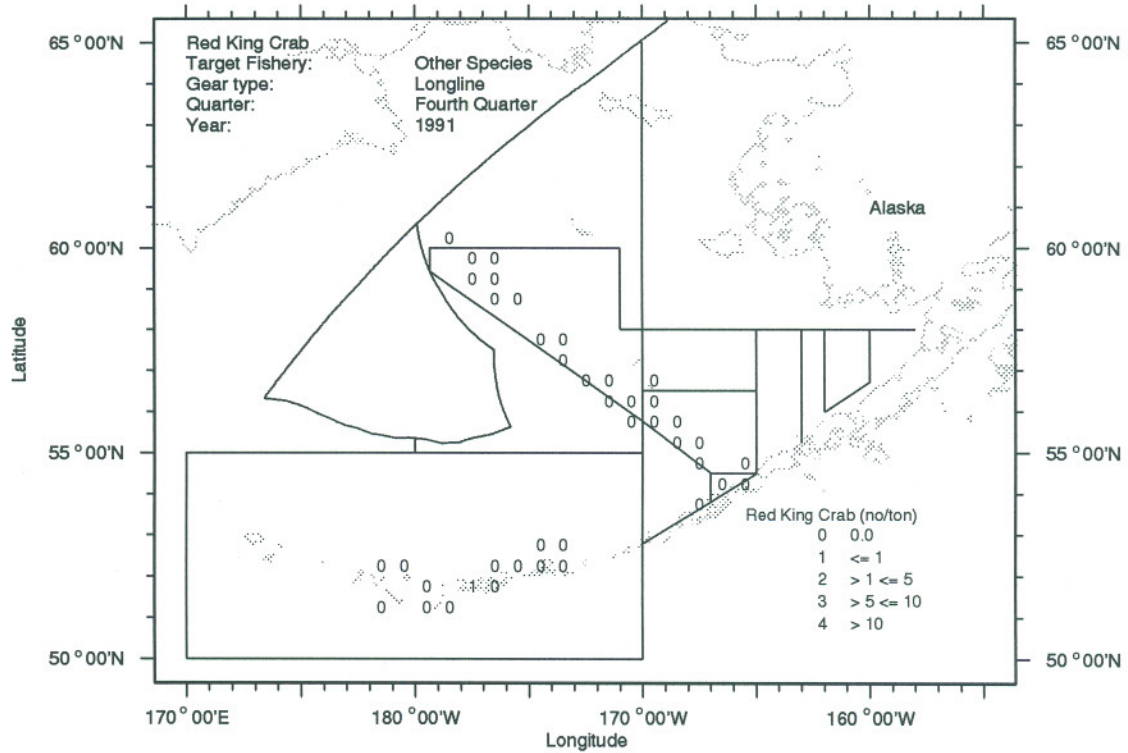
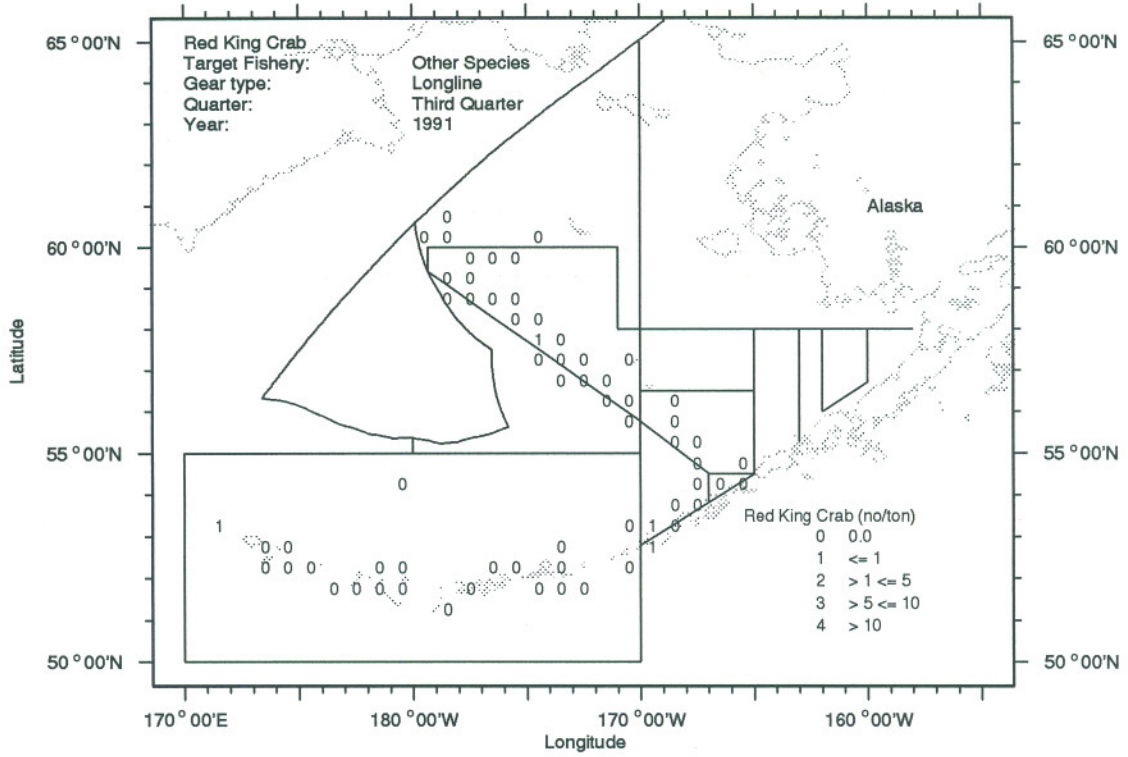


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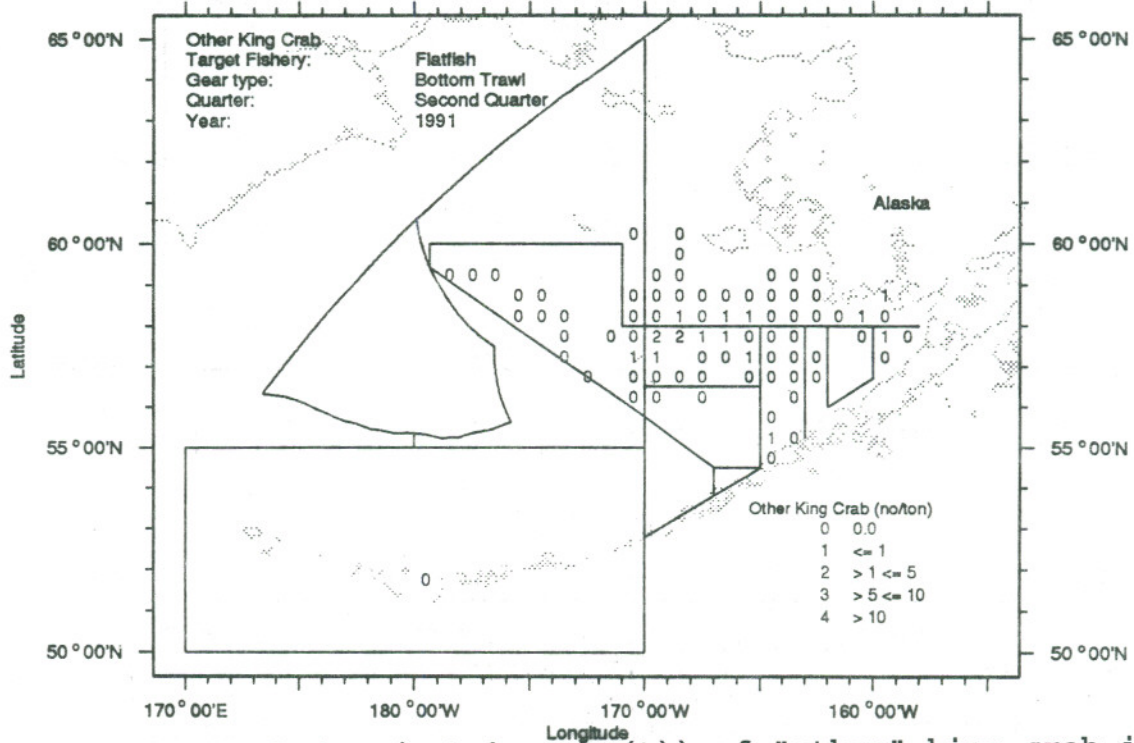
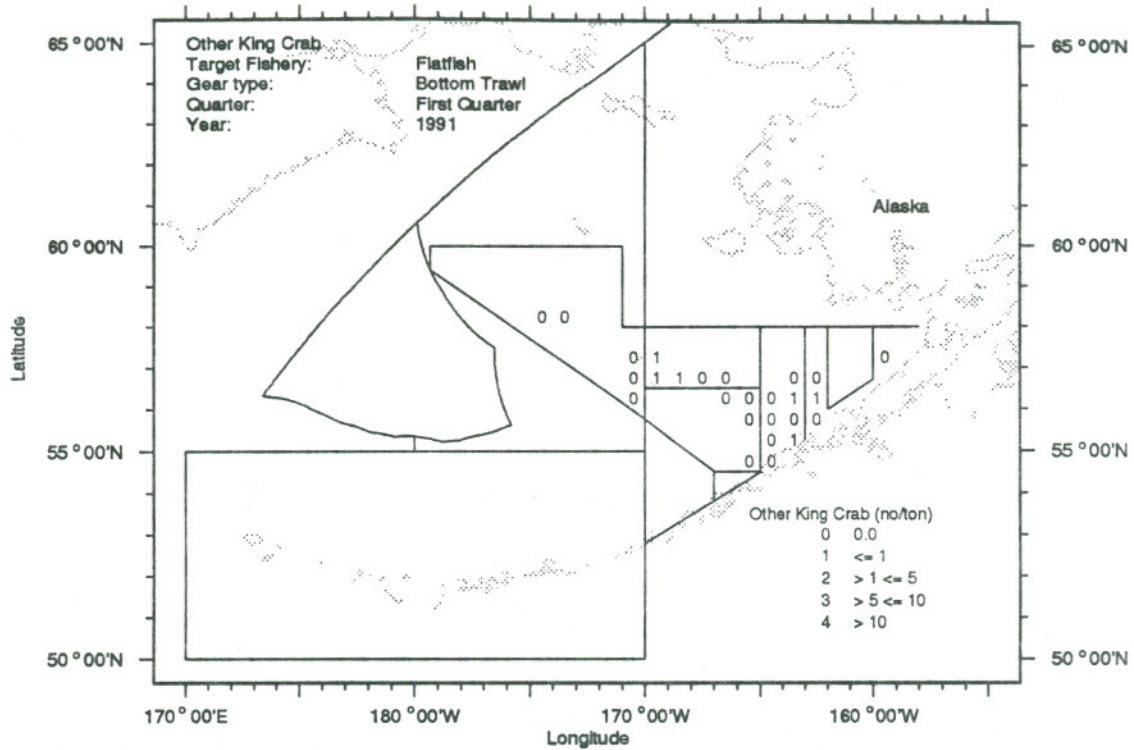


Figure 8.--Bycatch (no./metric ton (t)) of "other" king crab in the U.S. domestic groundfish fisheries by quarter, target fishery, gear type, and 1/2° latitude and 1° longitude areas in the Bering Sea/Aleutian Islands region, 1991.

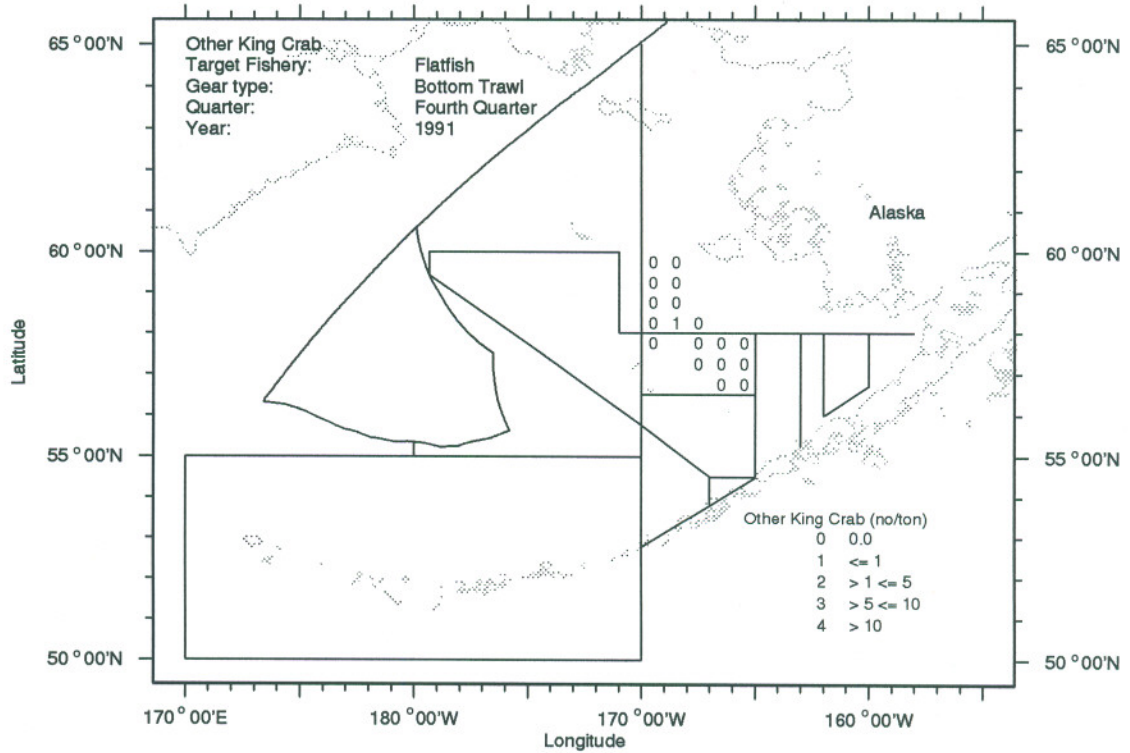
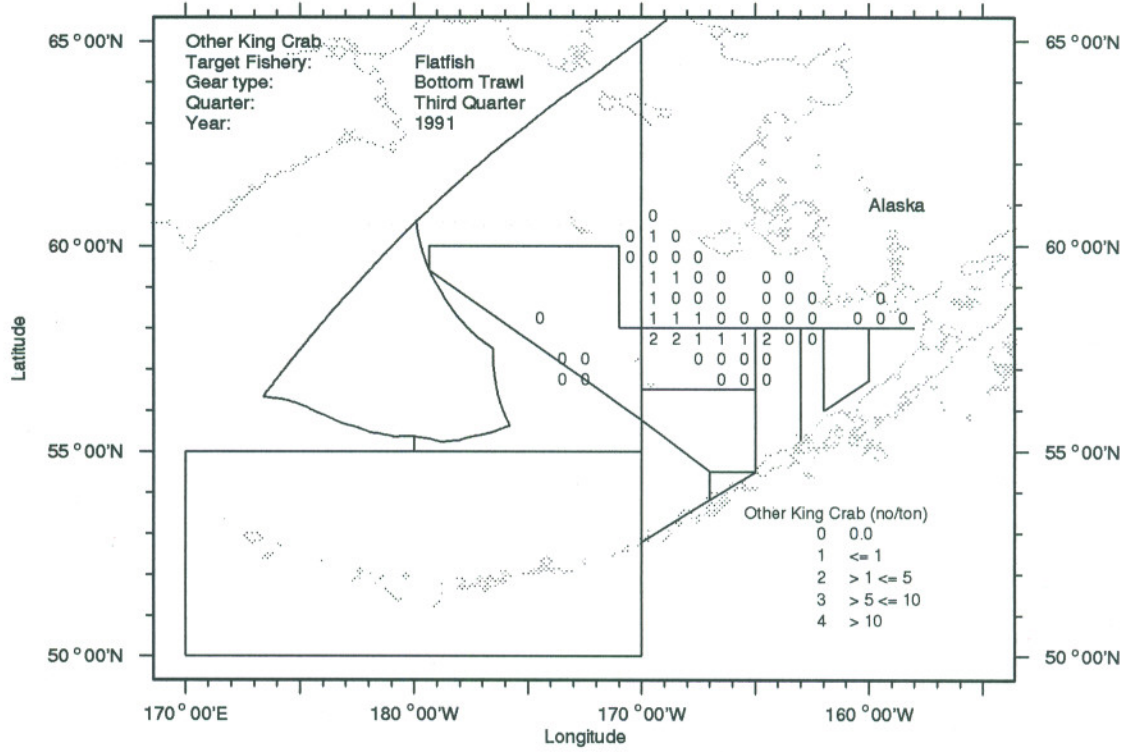


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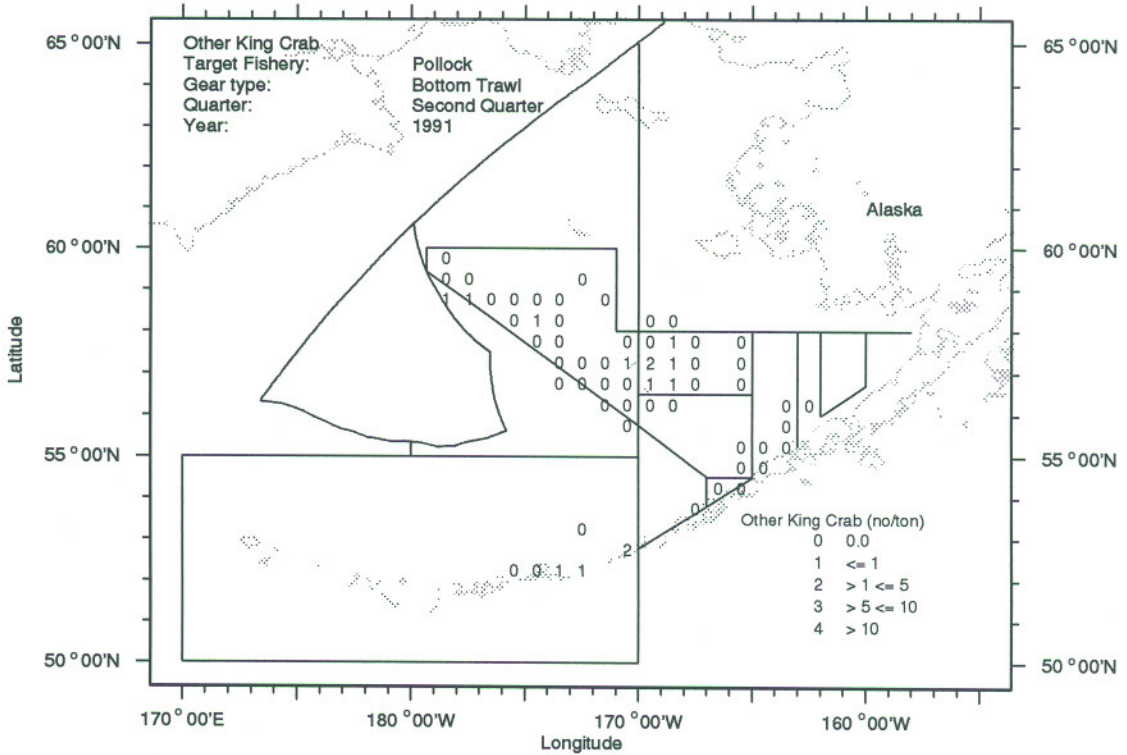
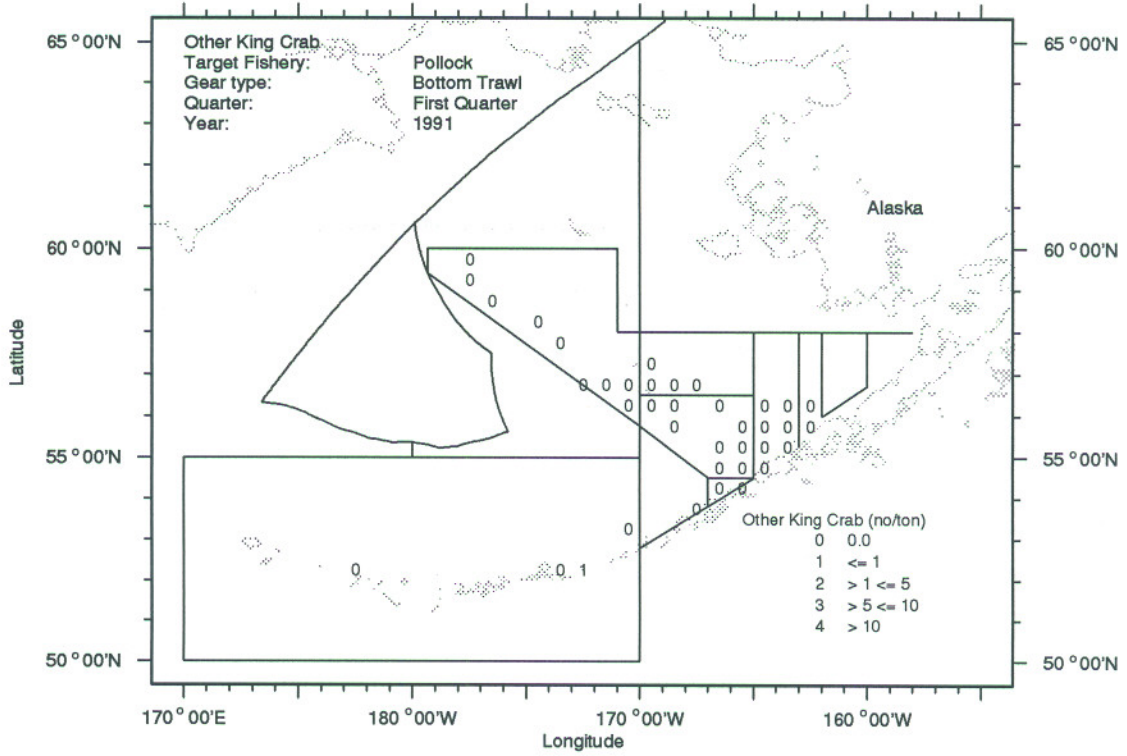


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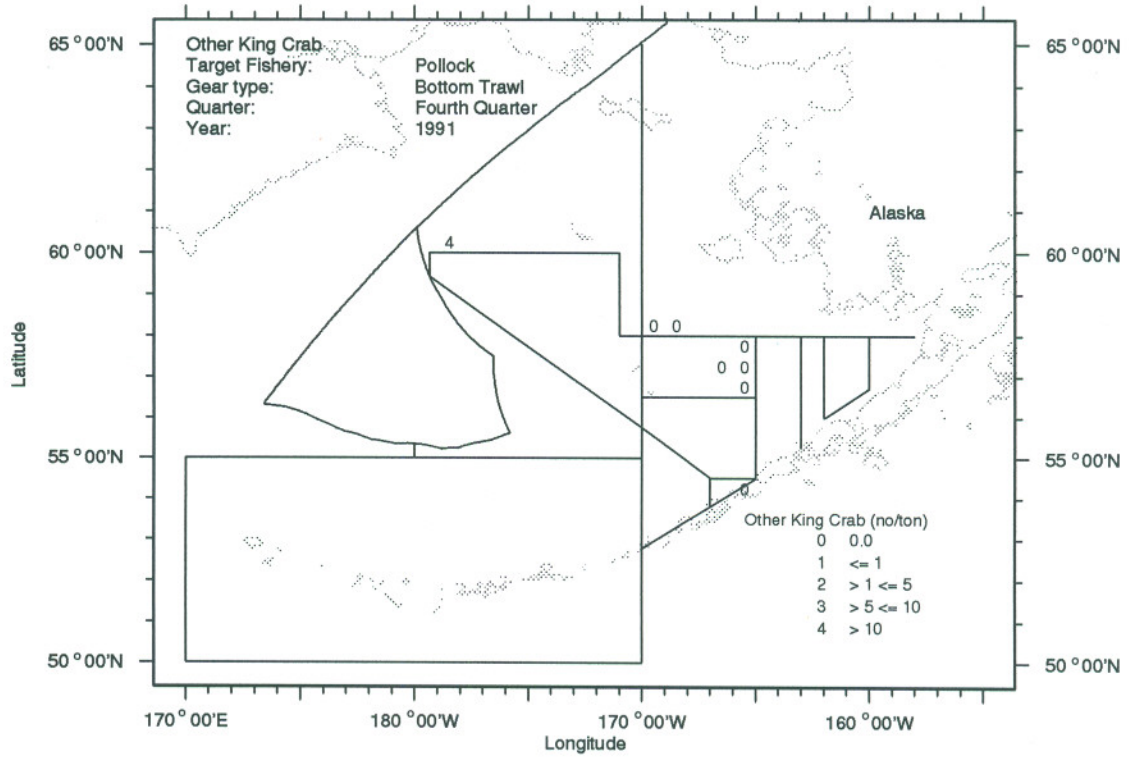
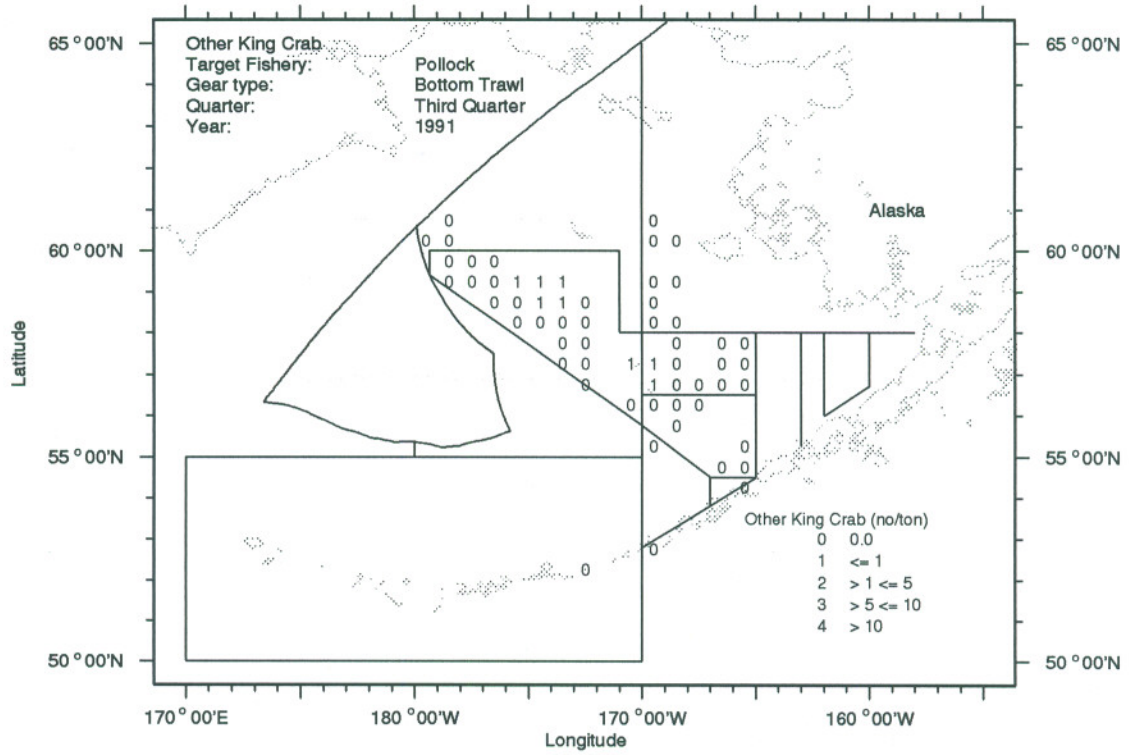


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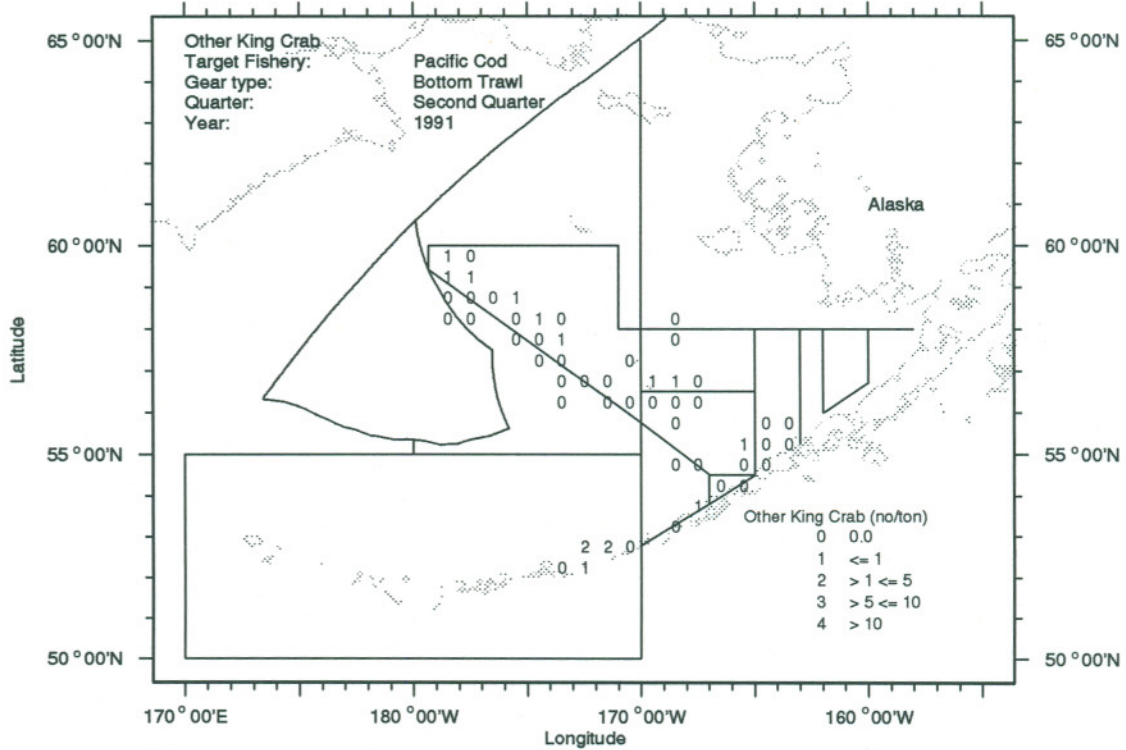
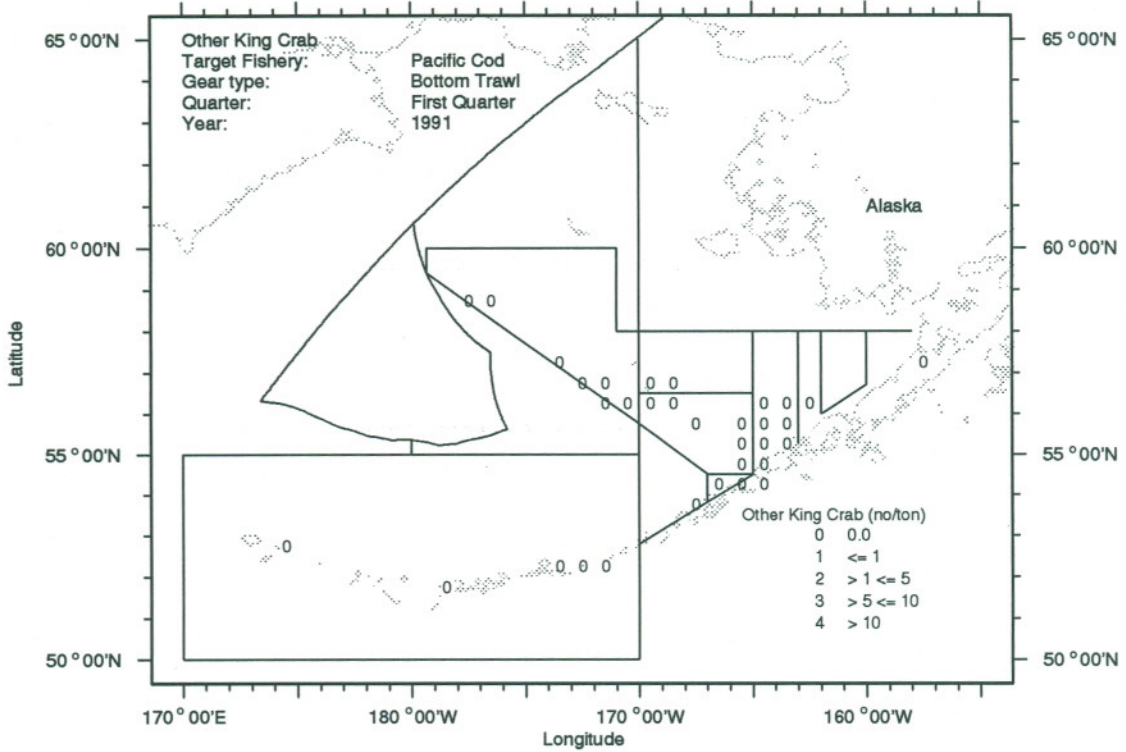


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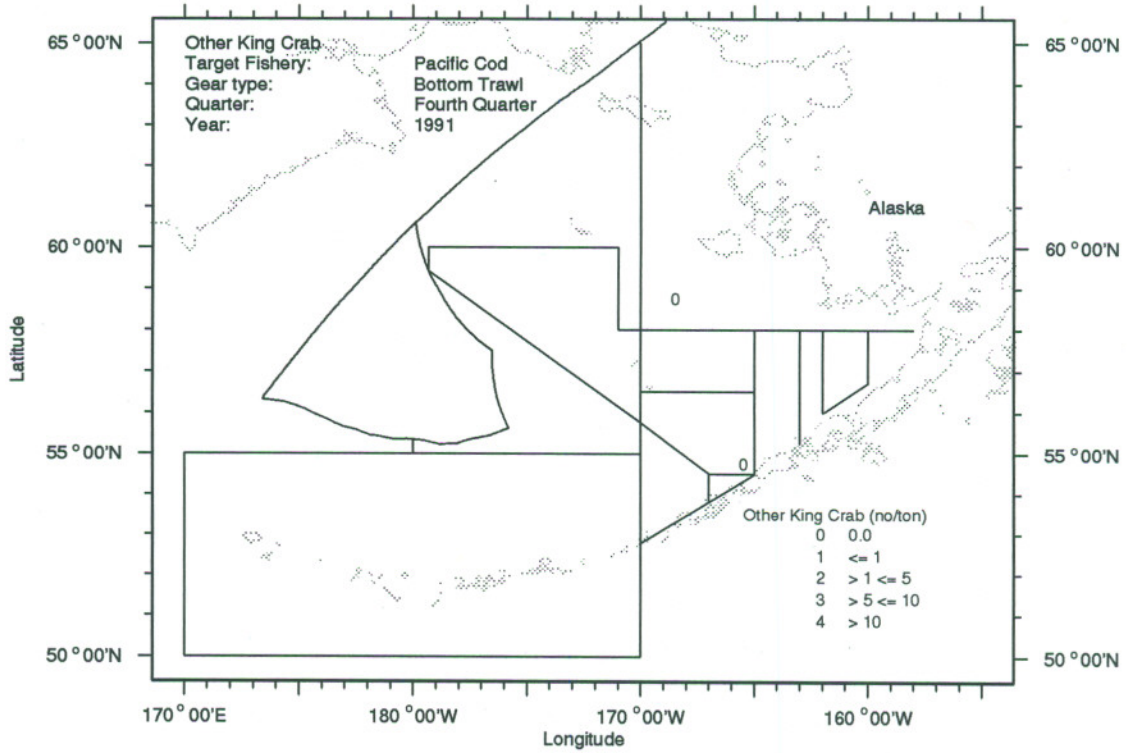
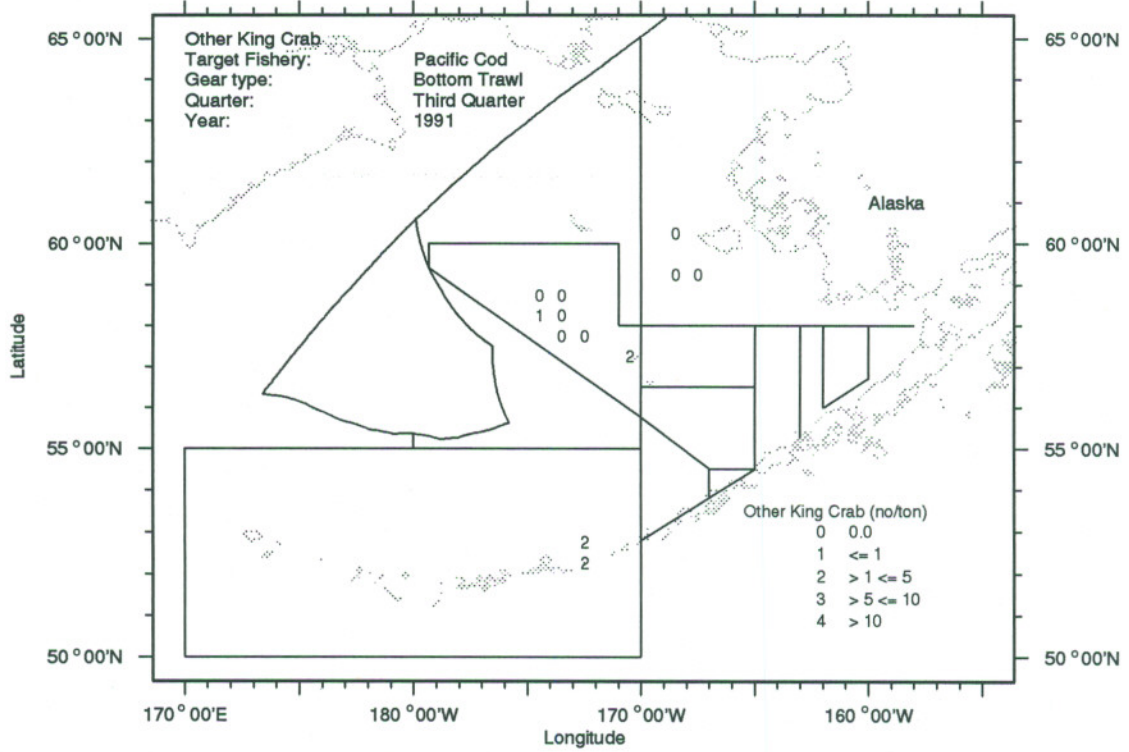


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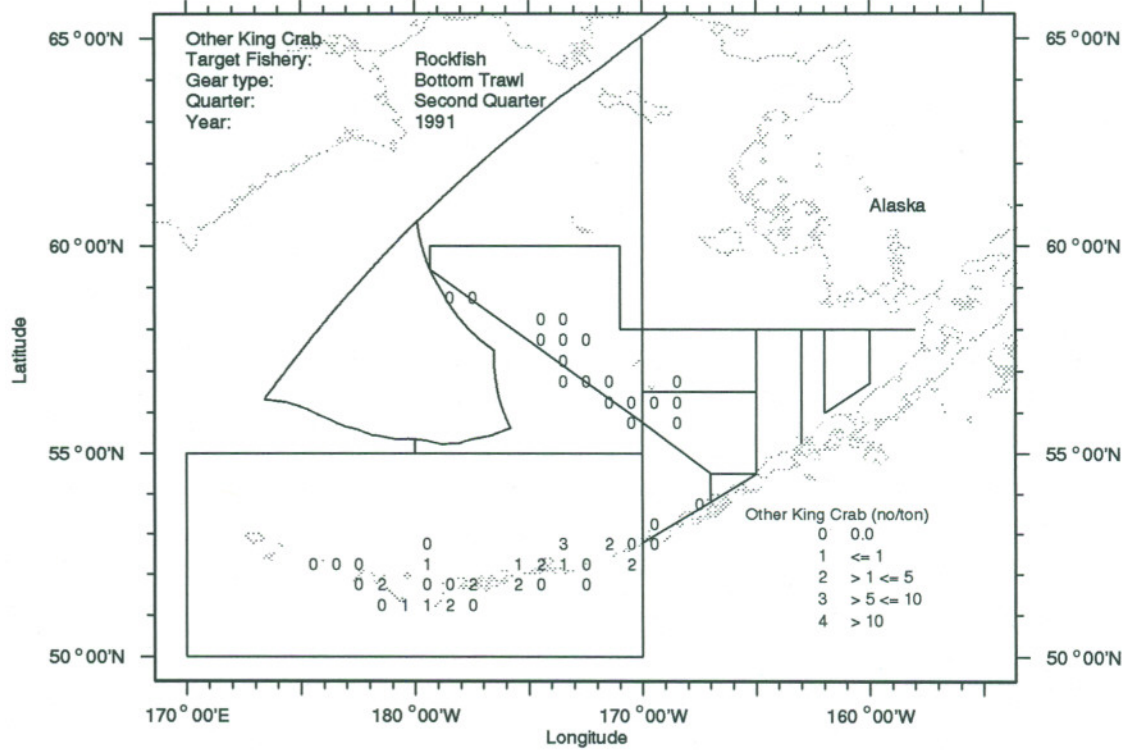
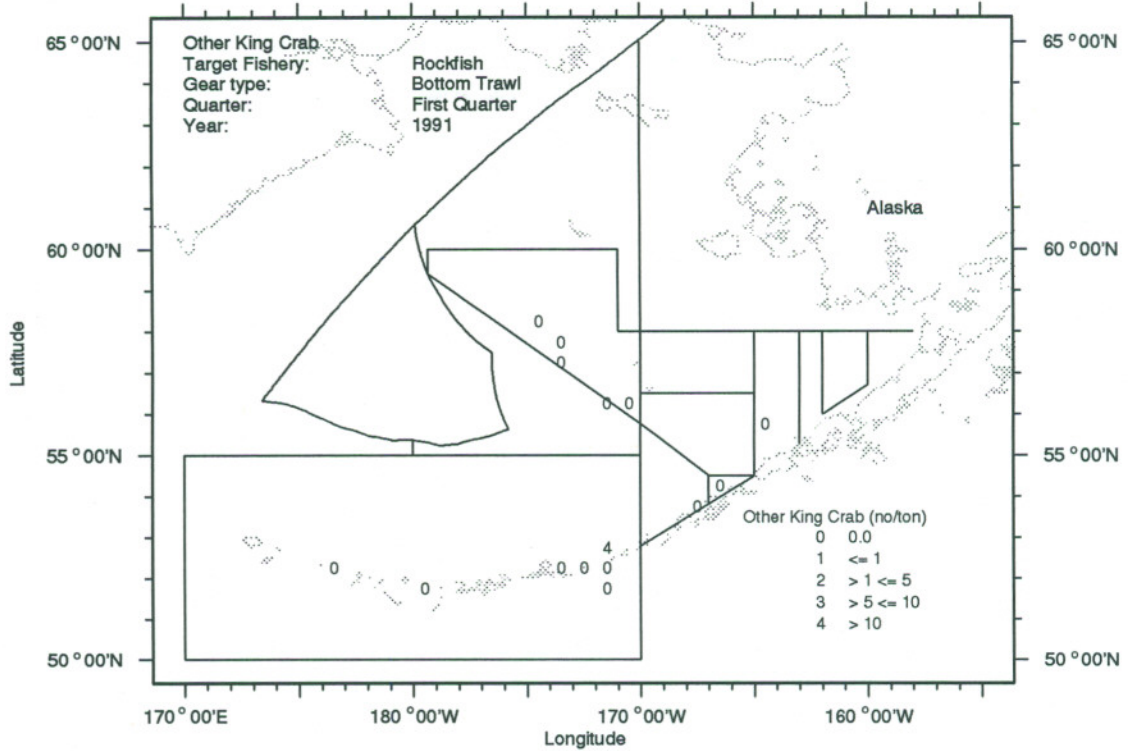


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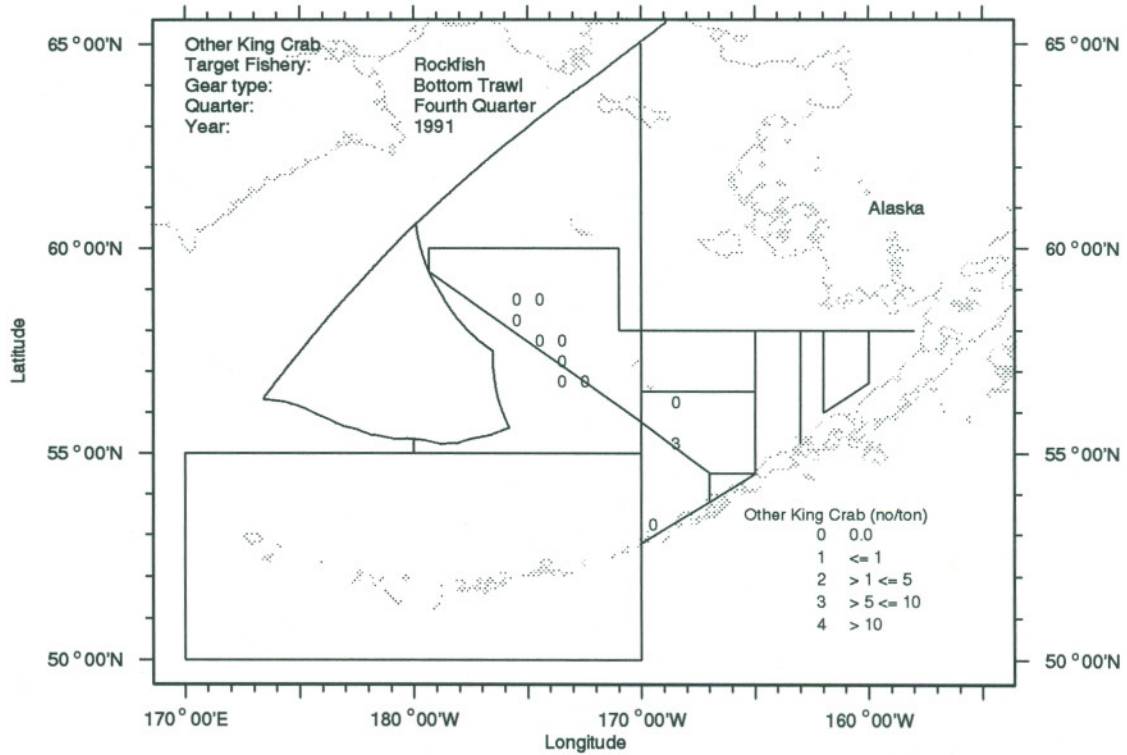
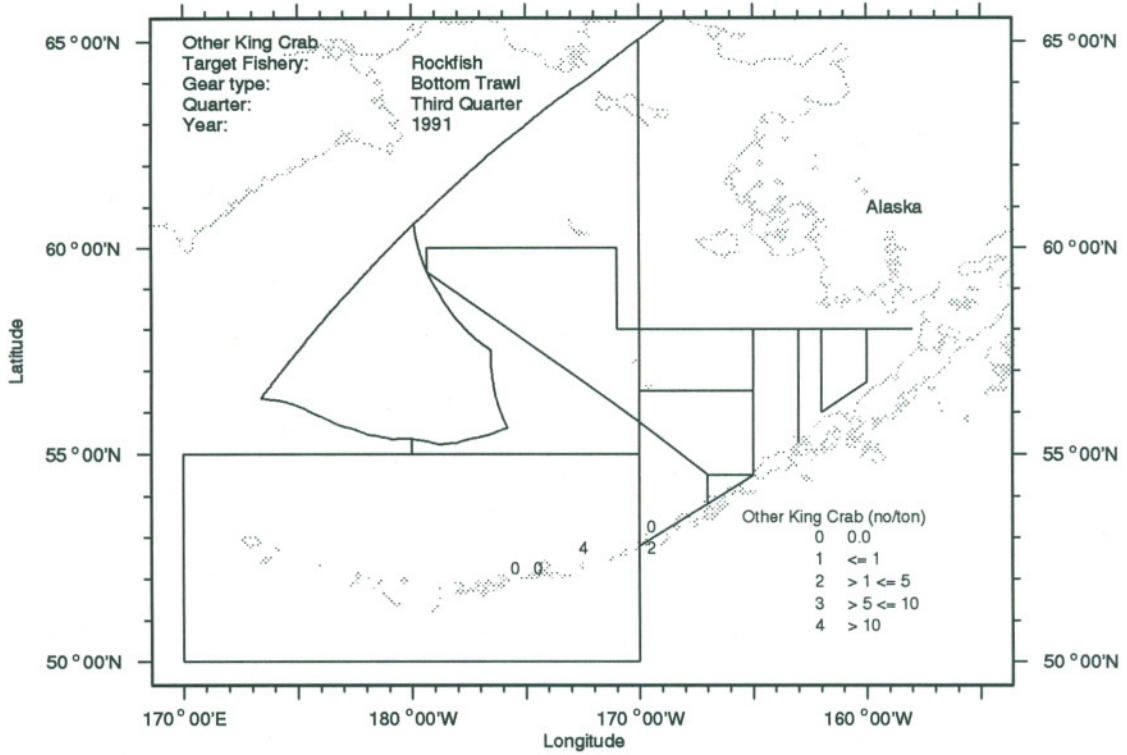


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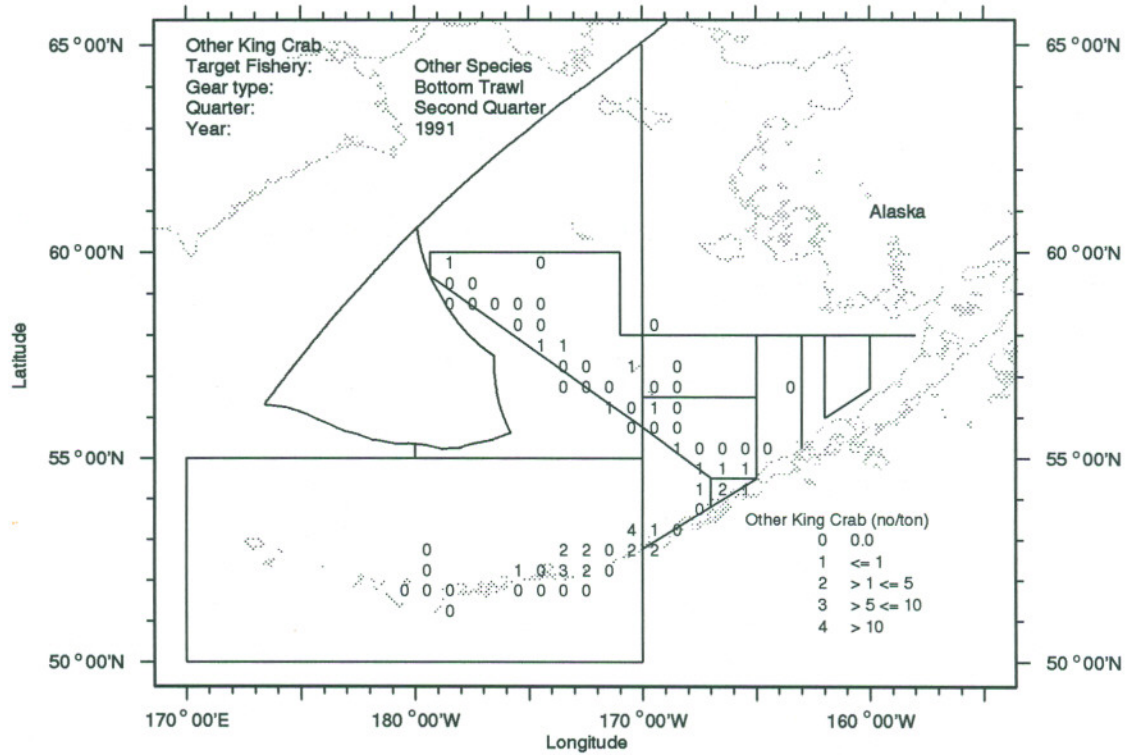
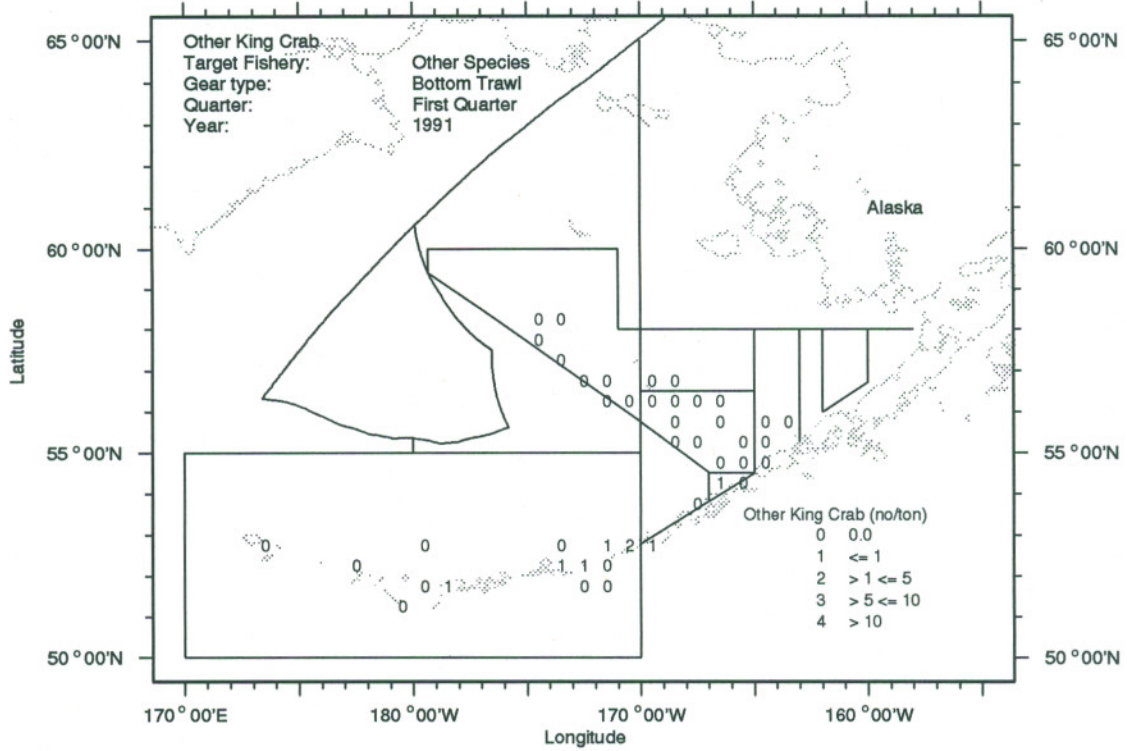


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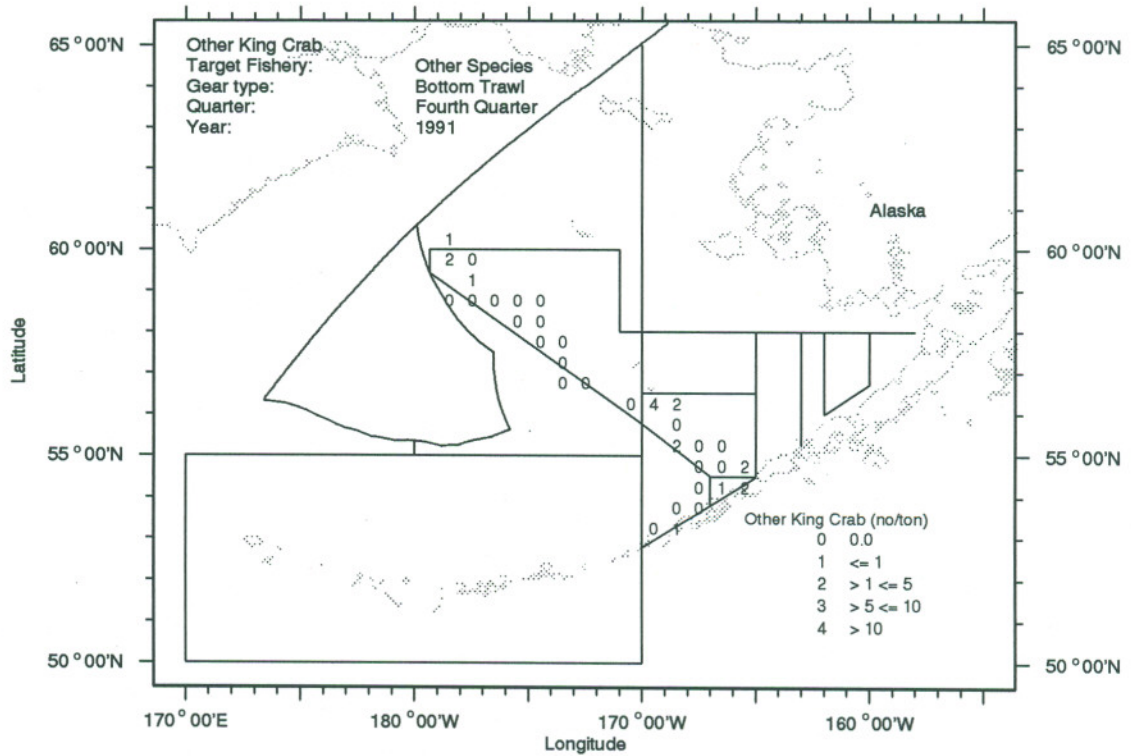
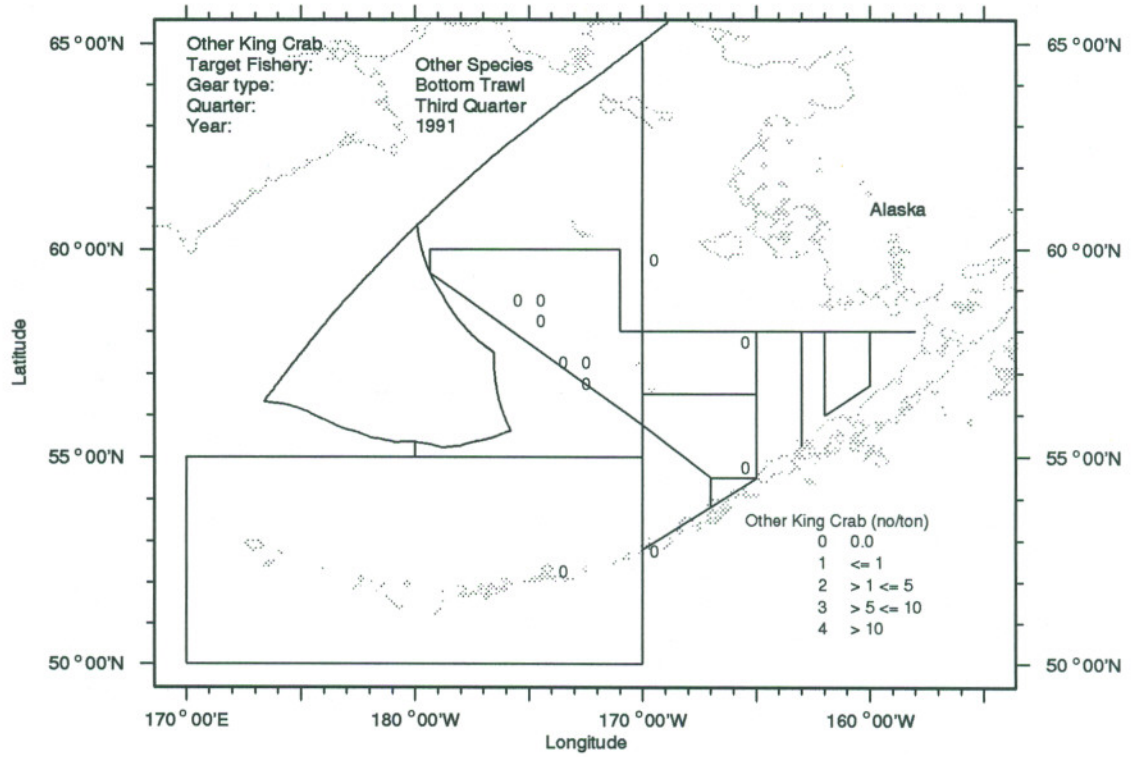


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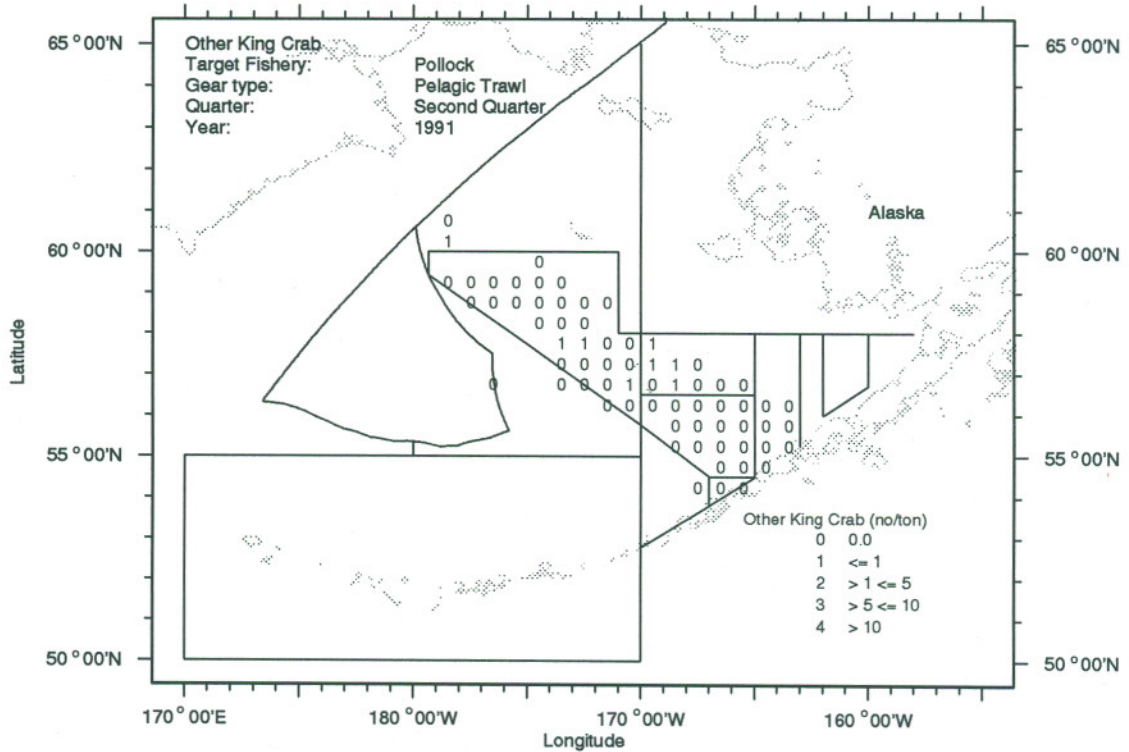
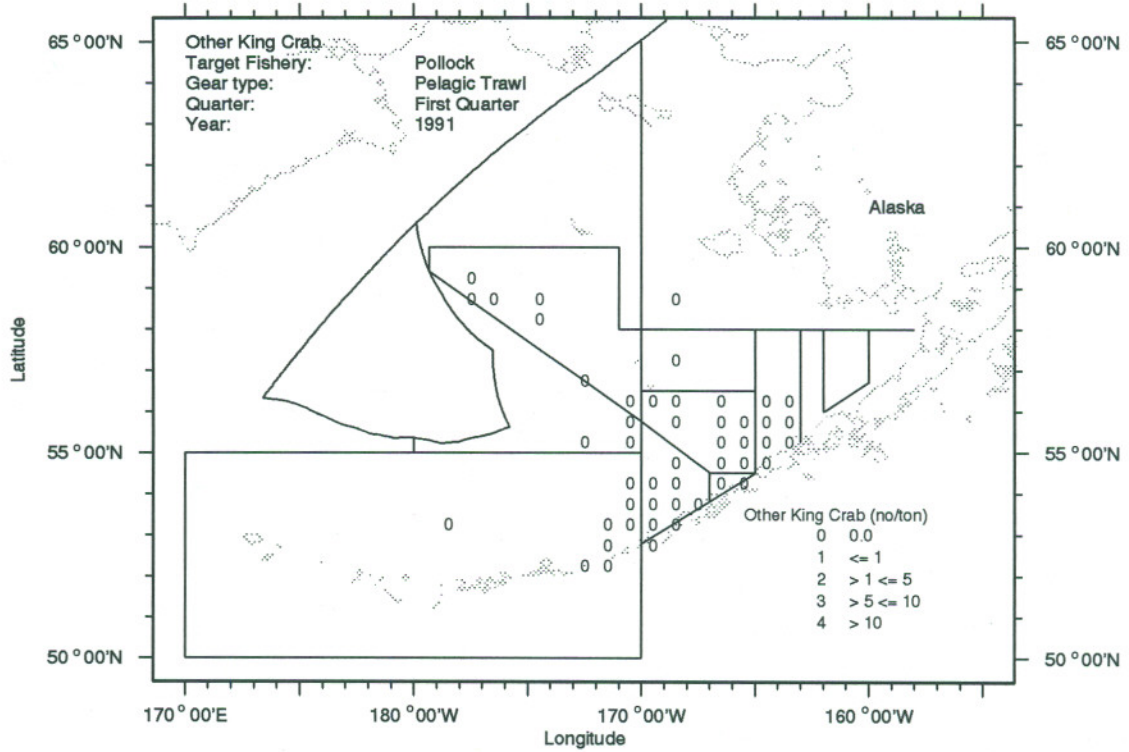


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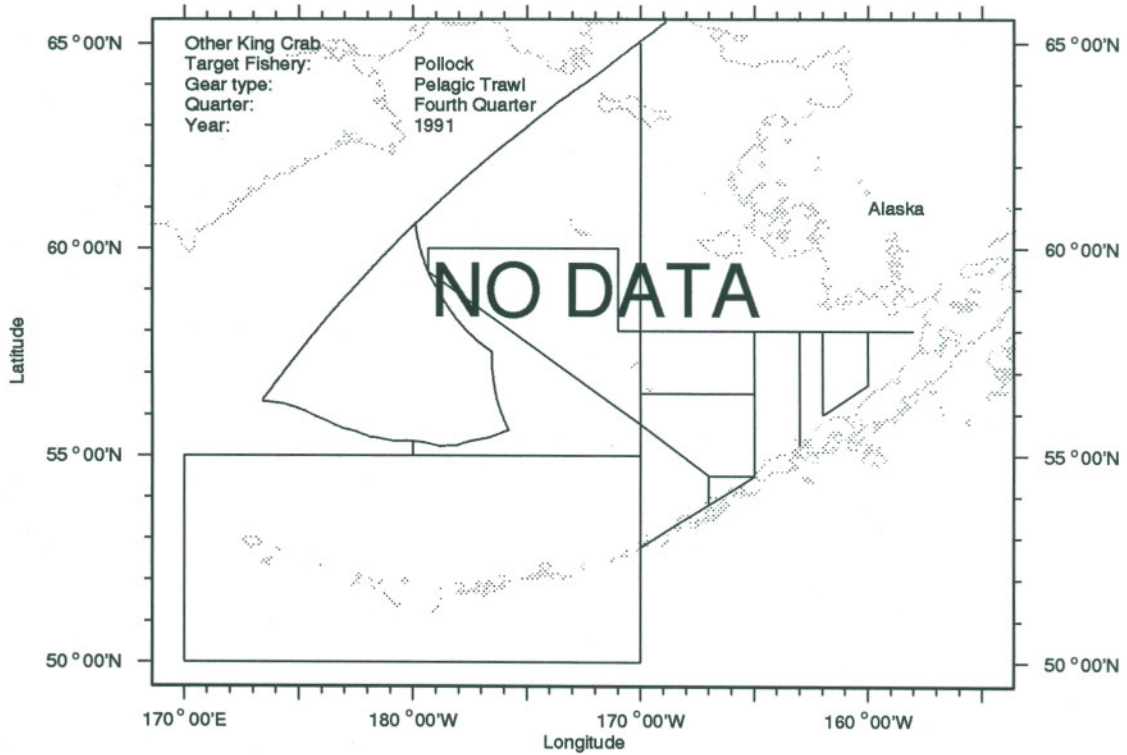
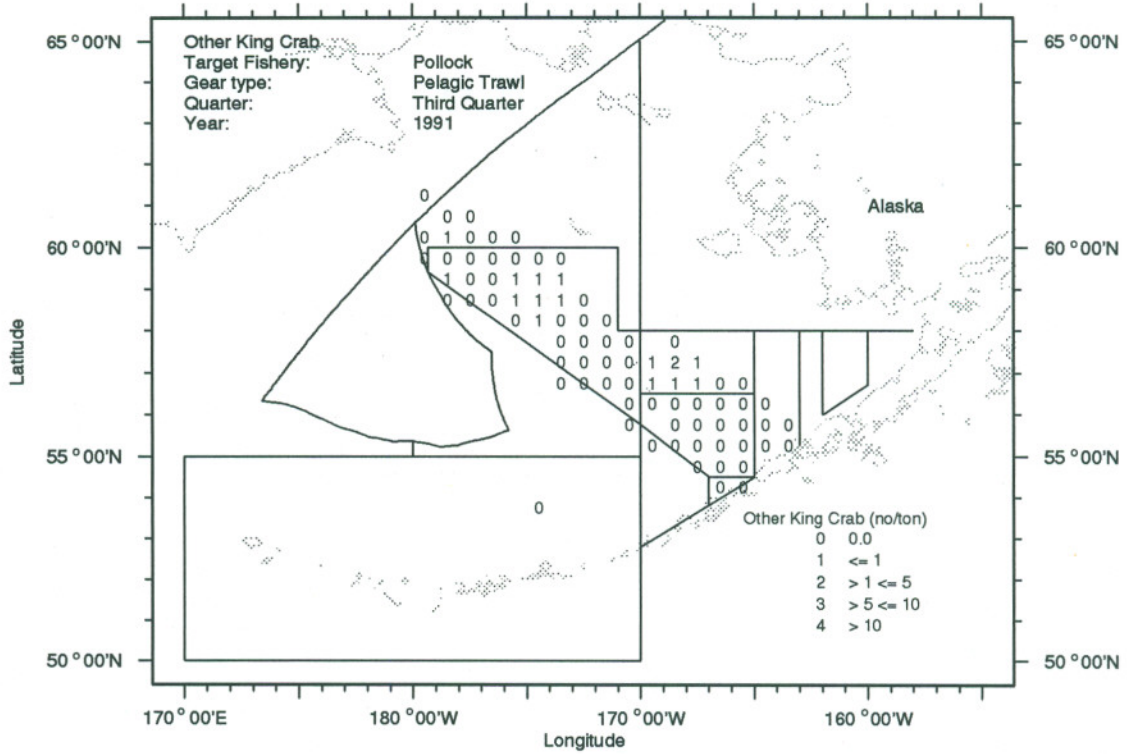


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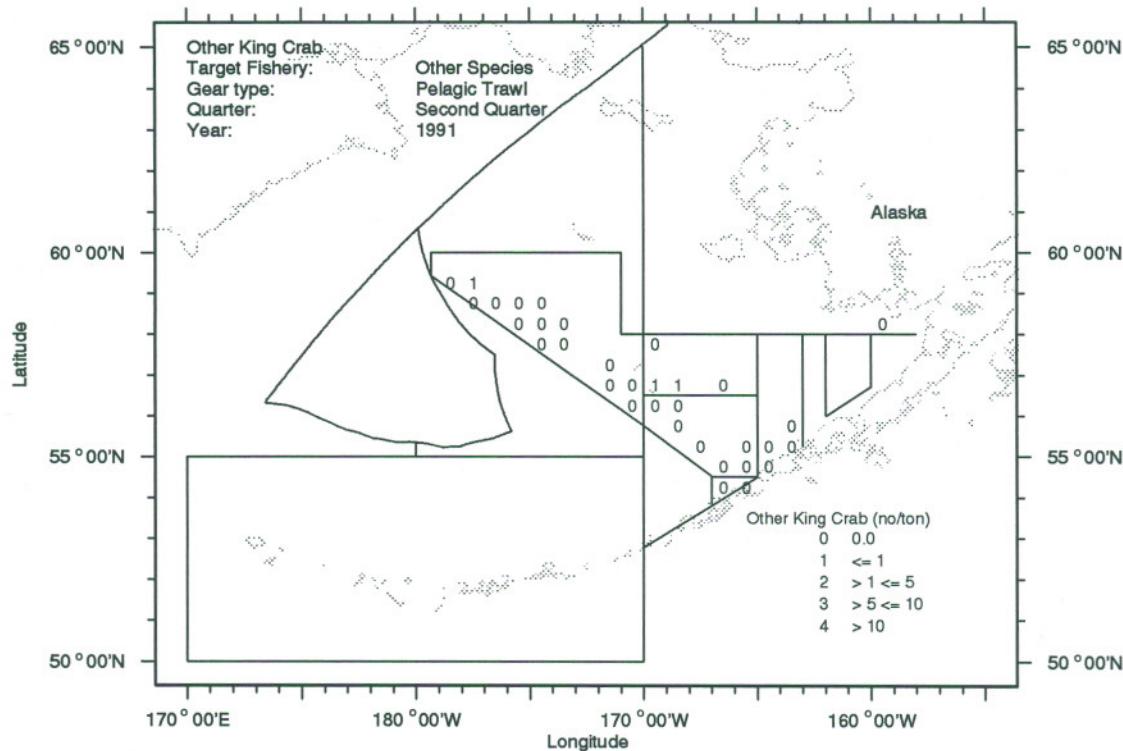
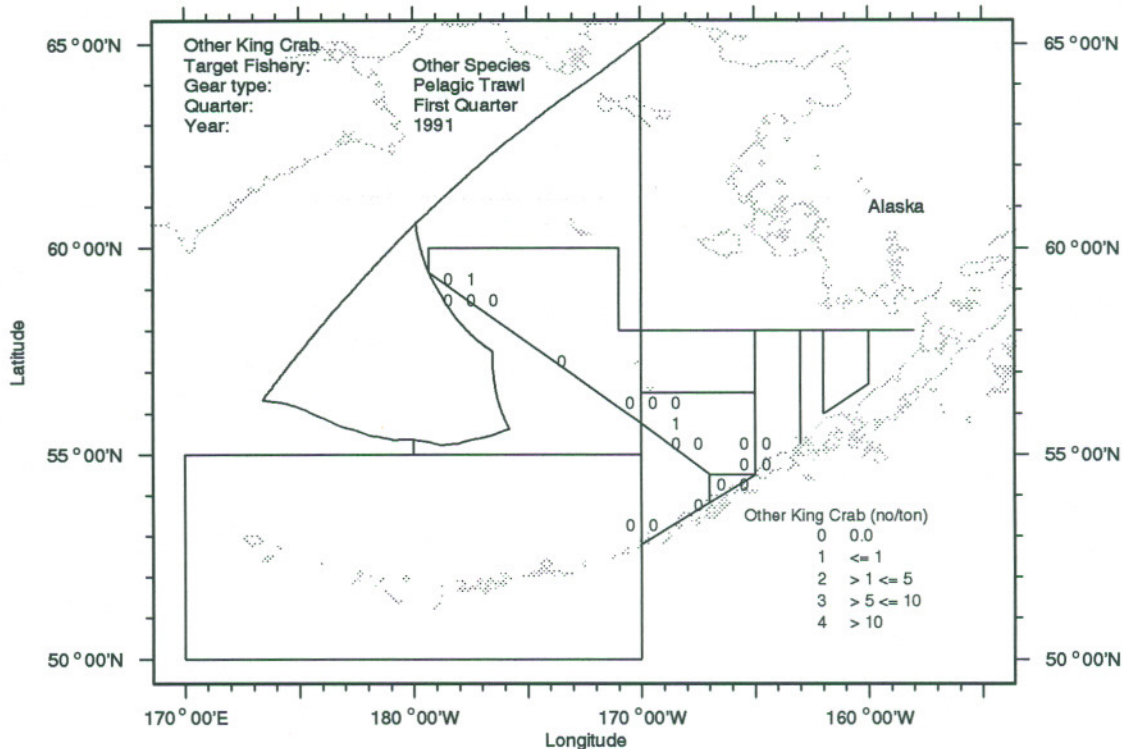


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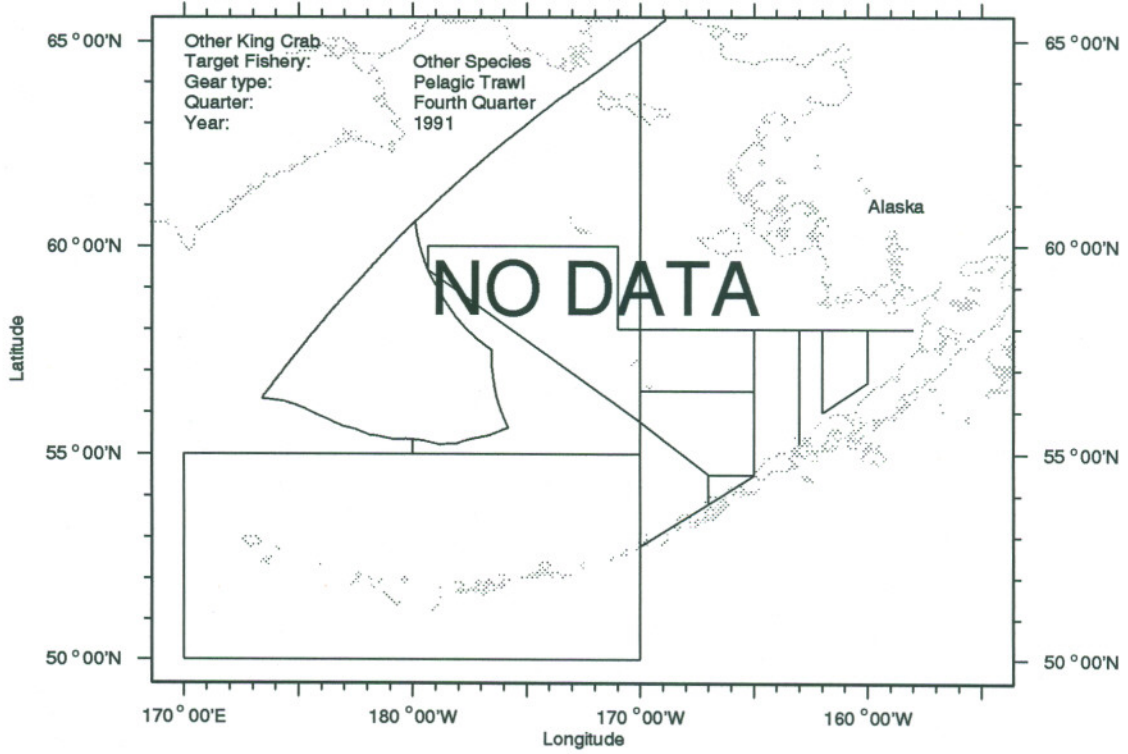
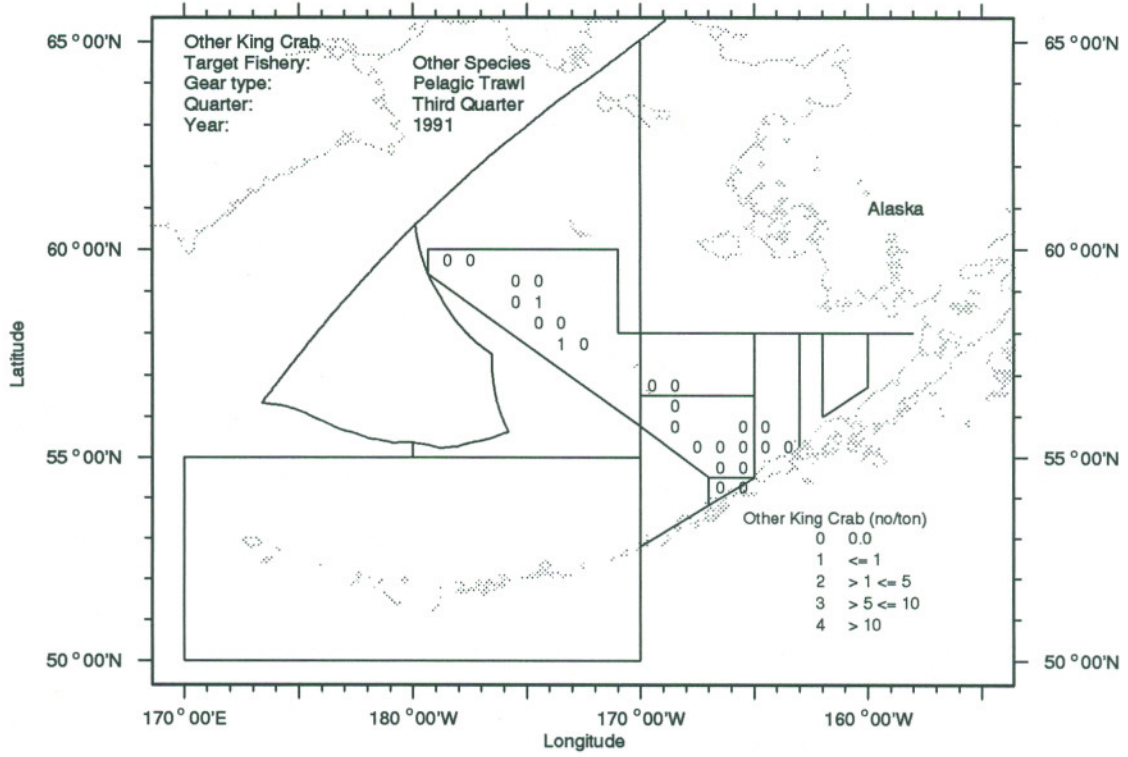


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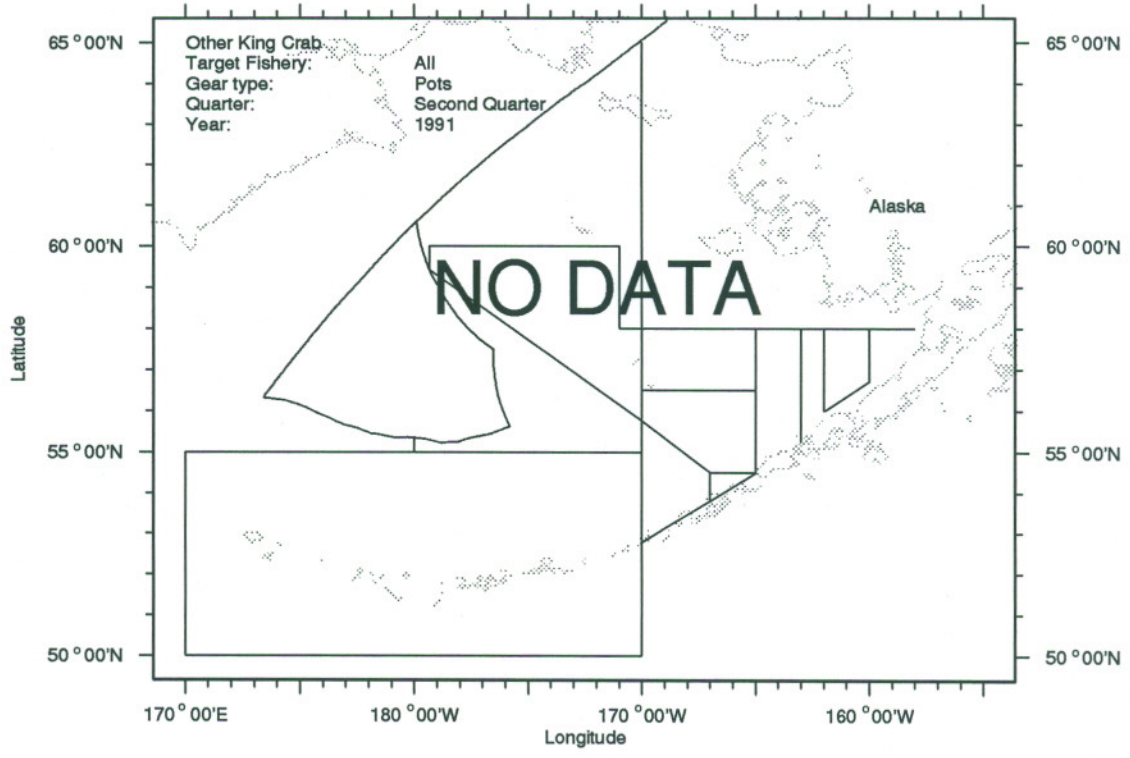
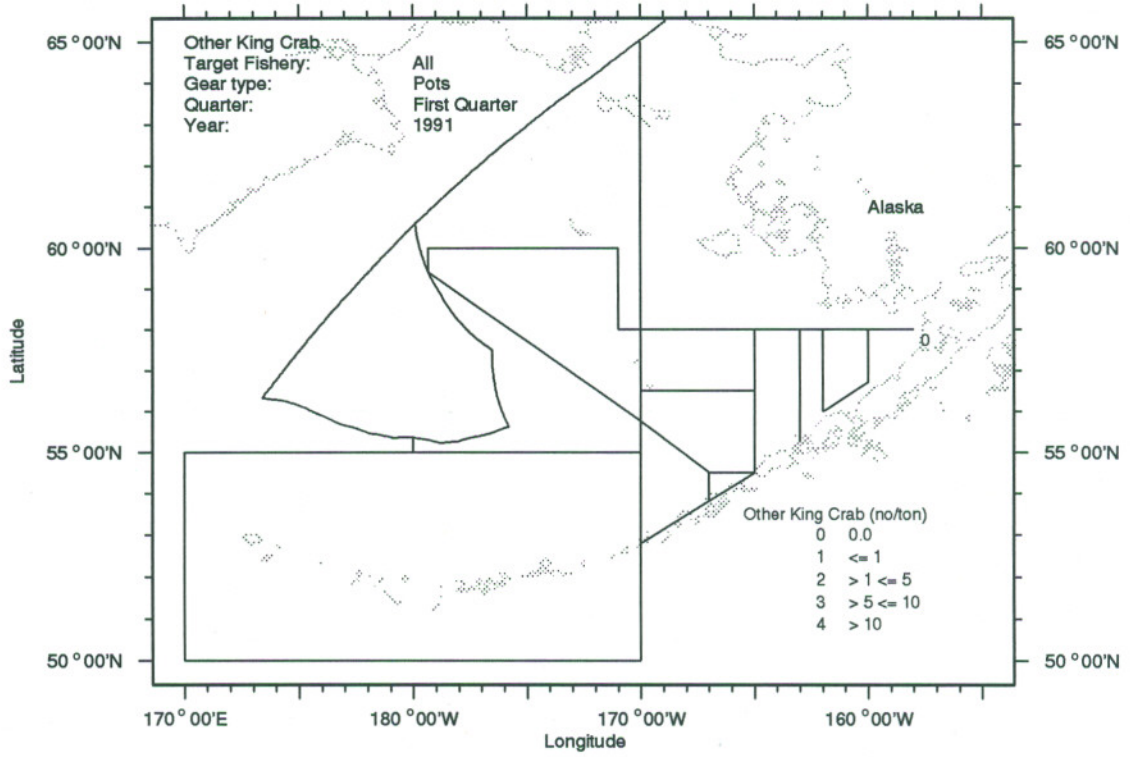


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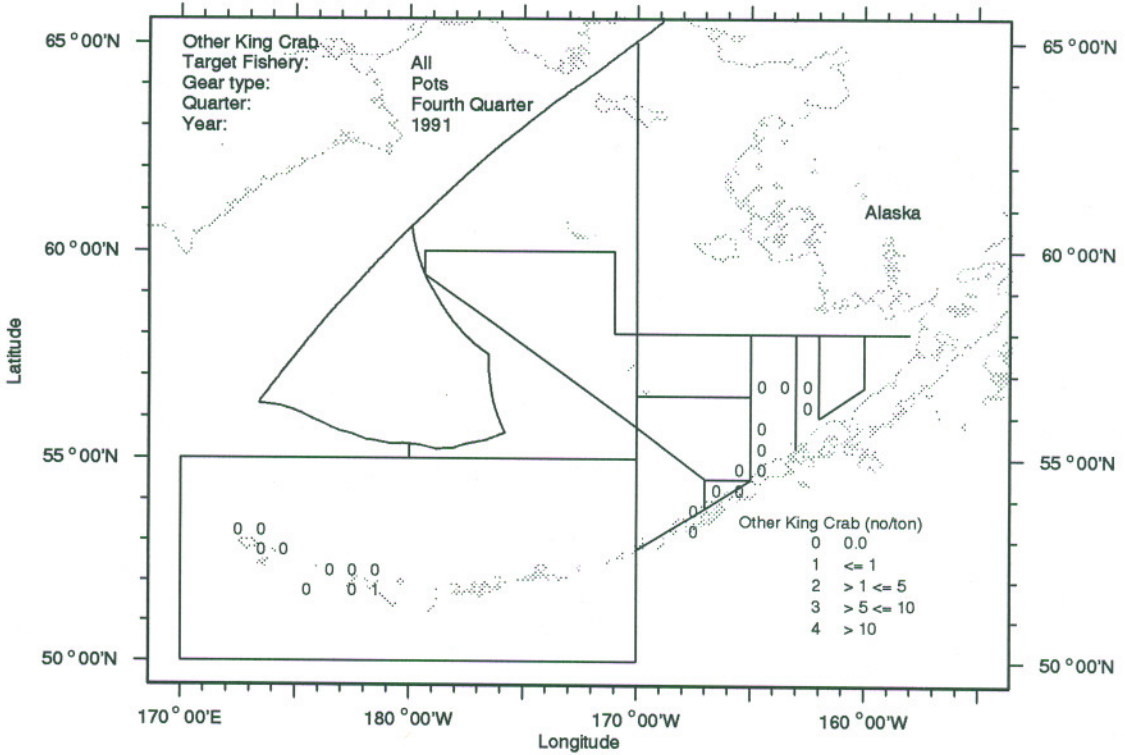
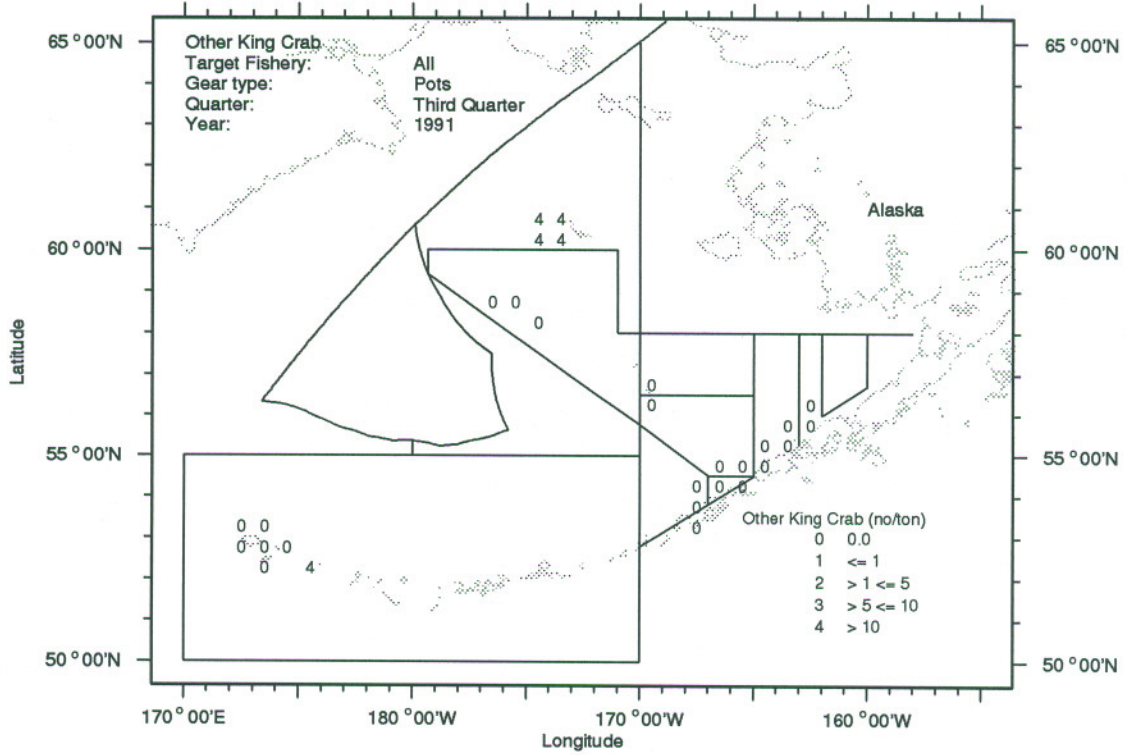


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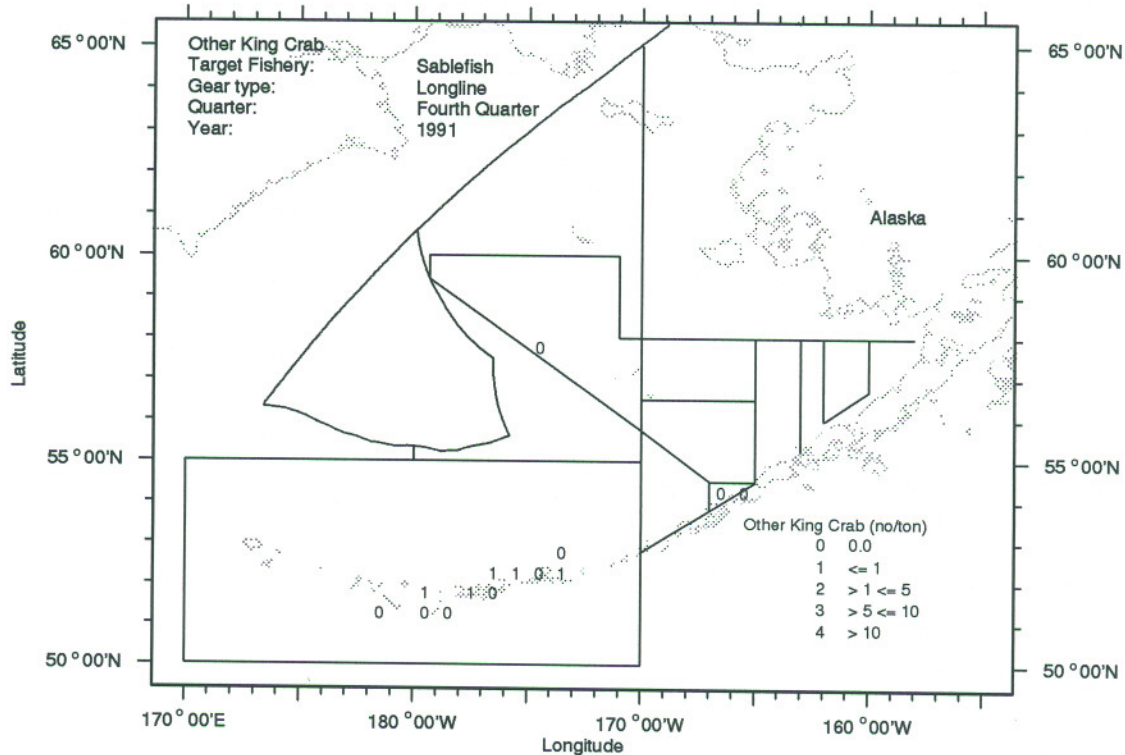
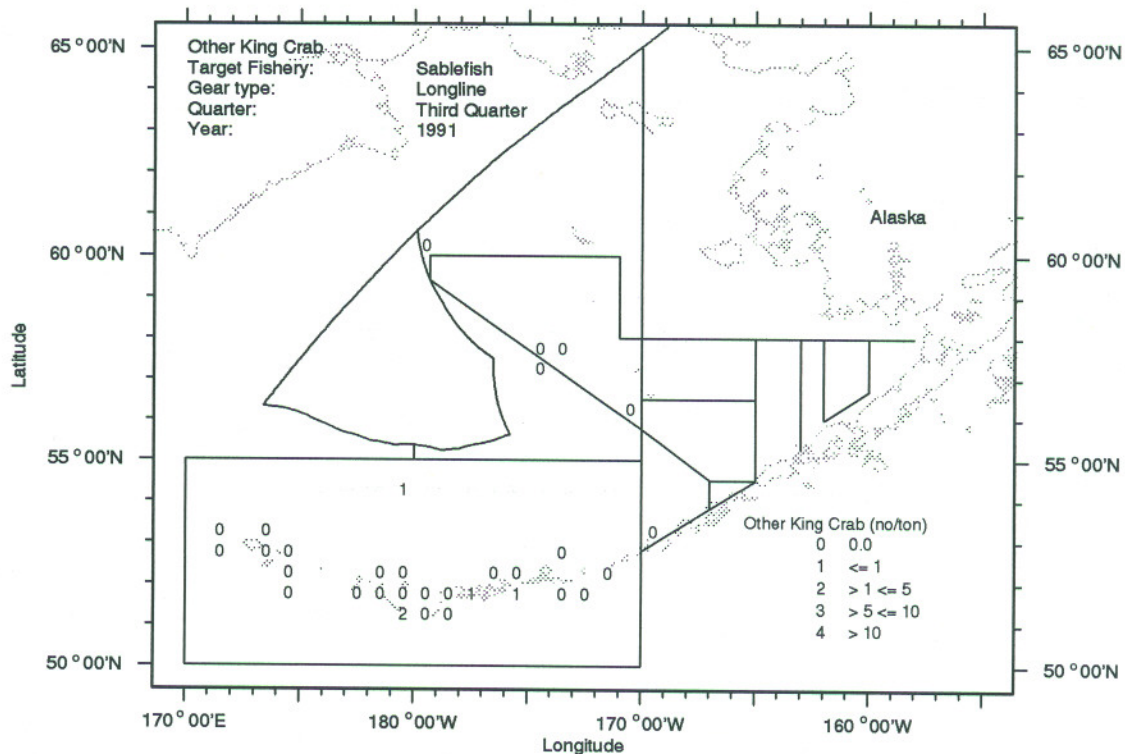


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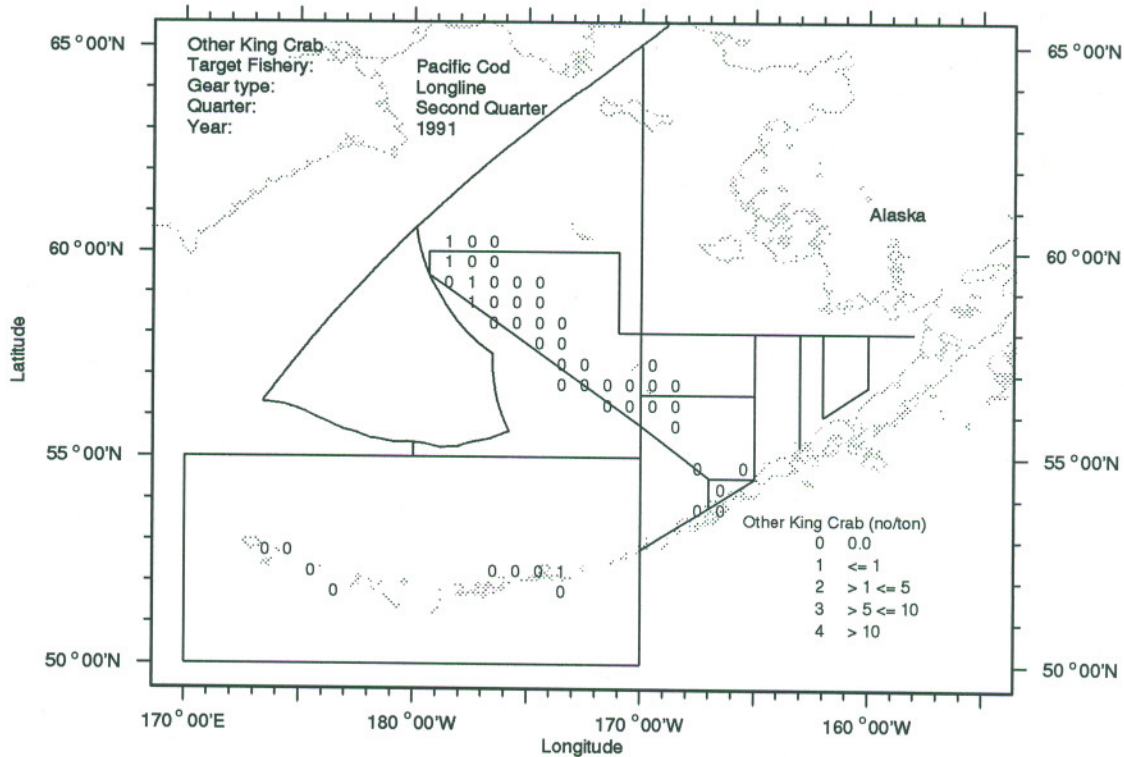
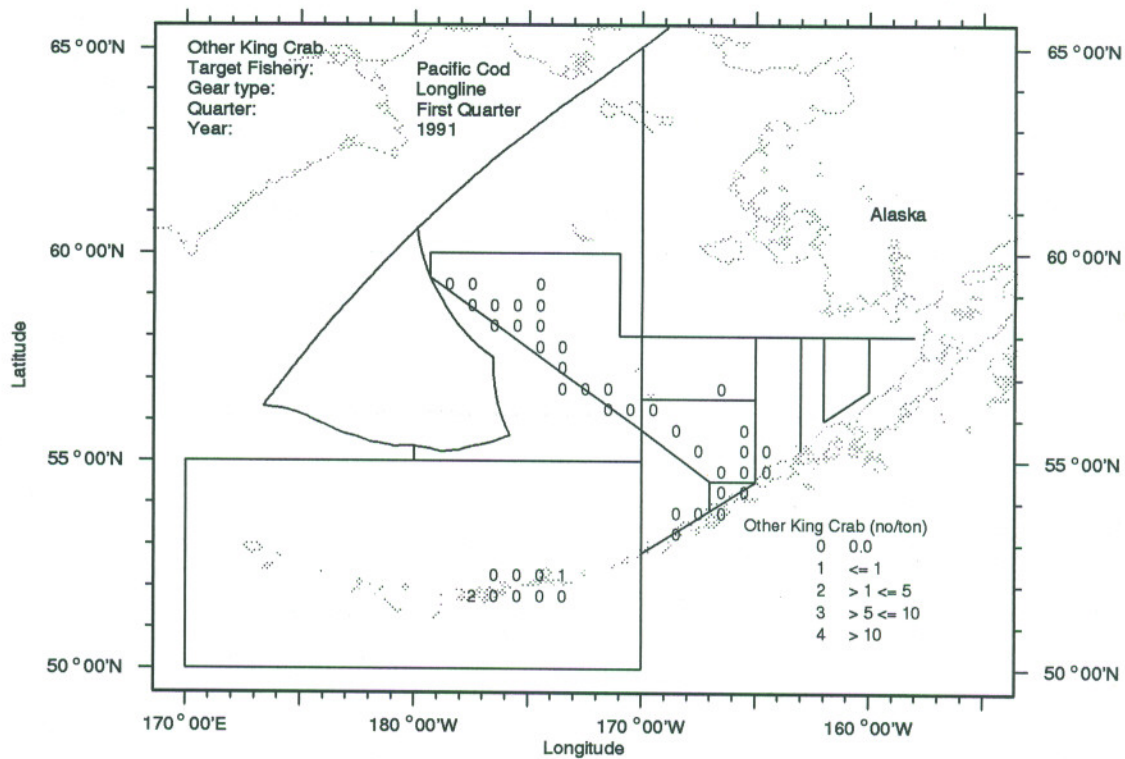


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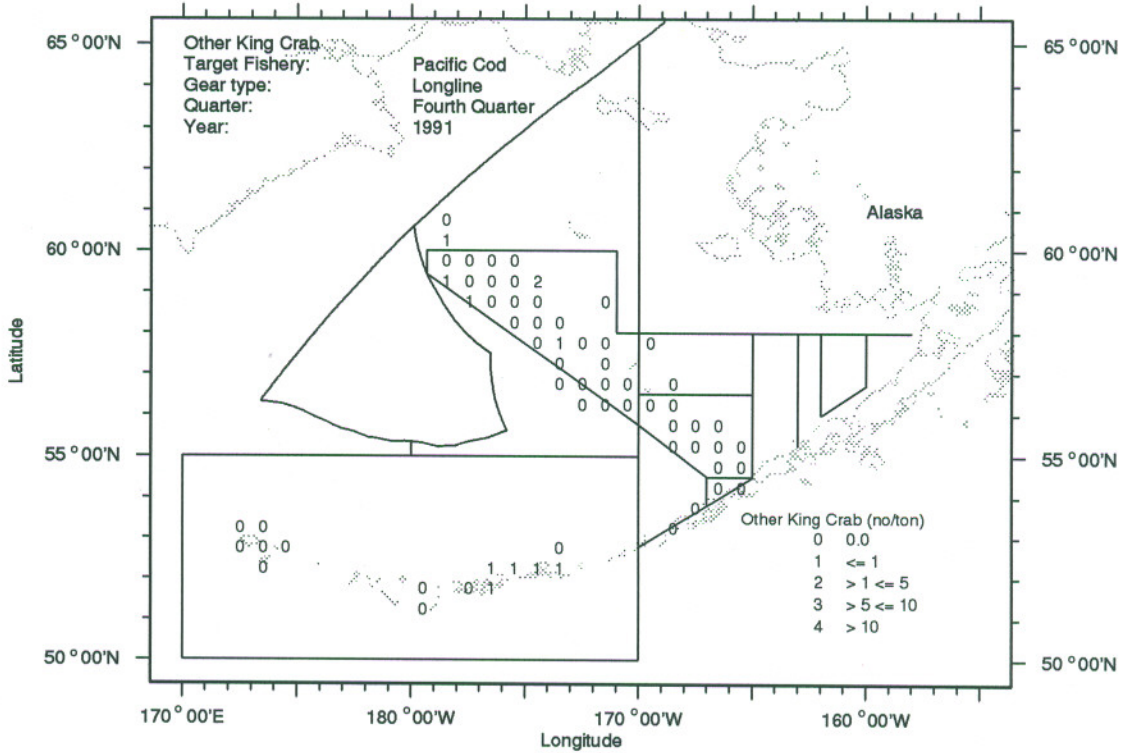
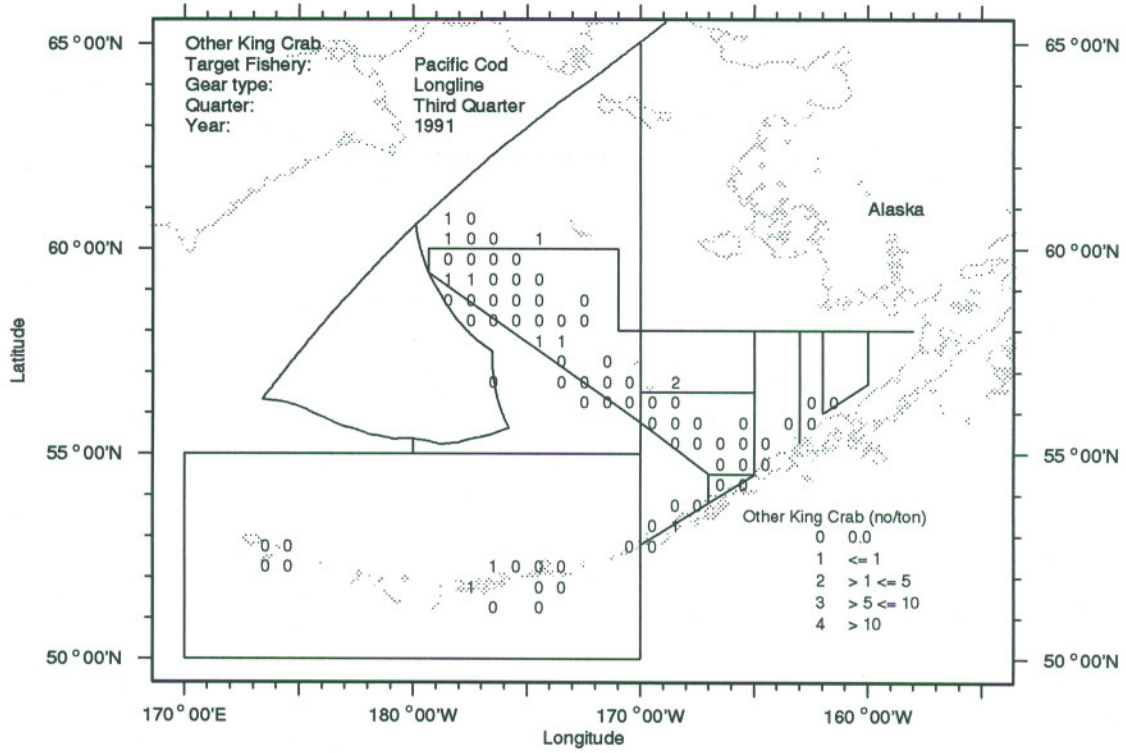


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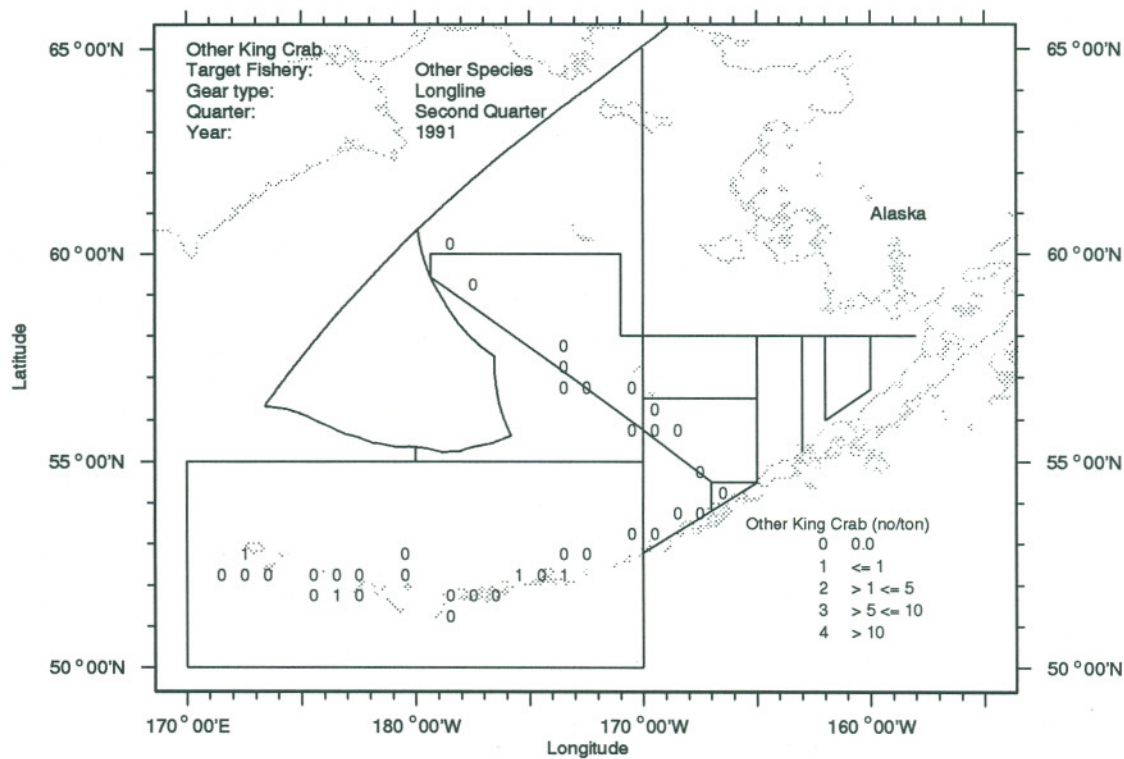
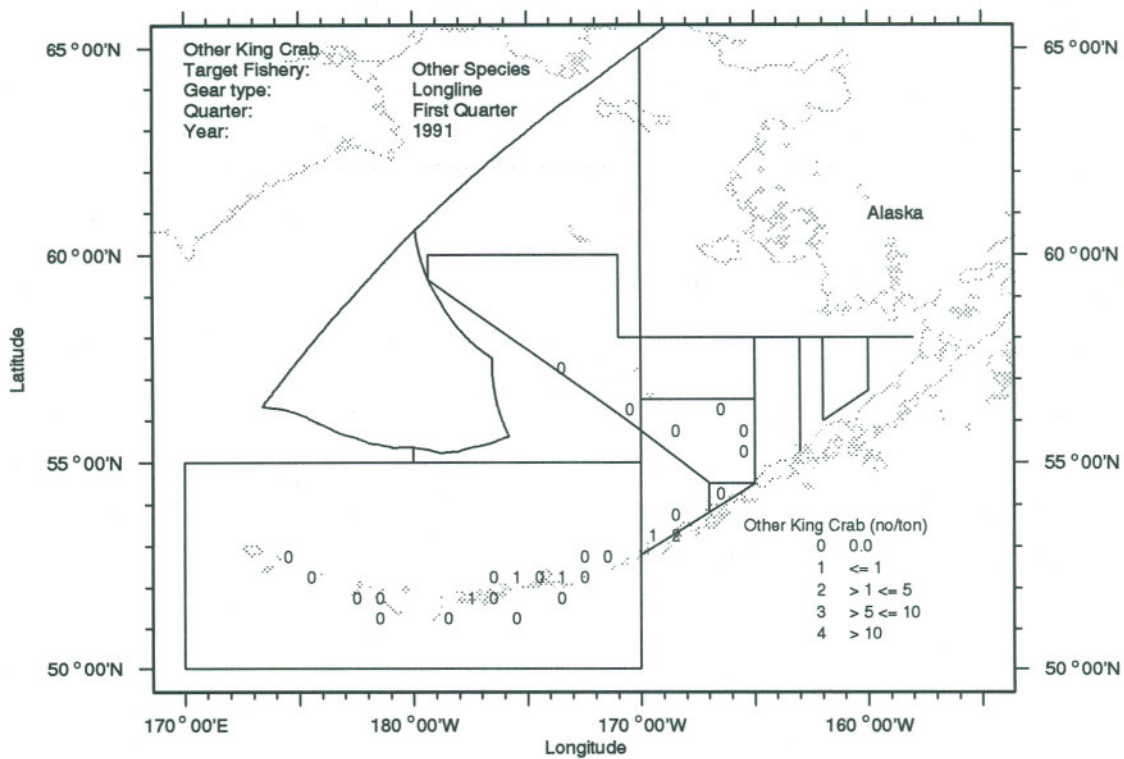


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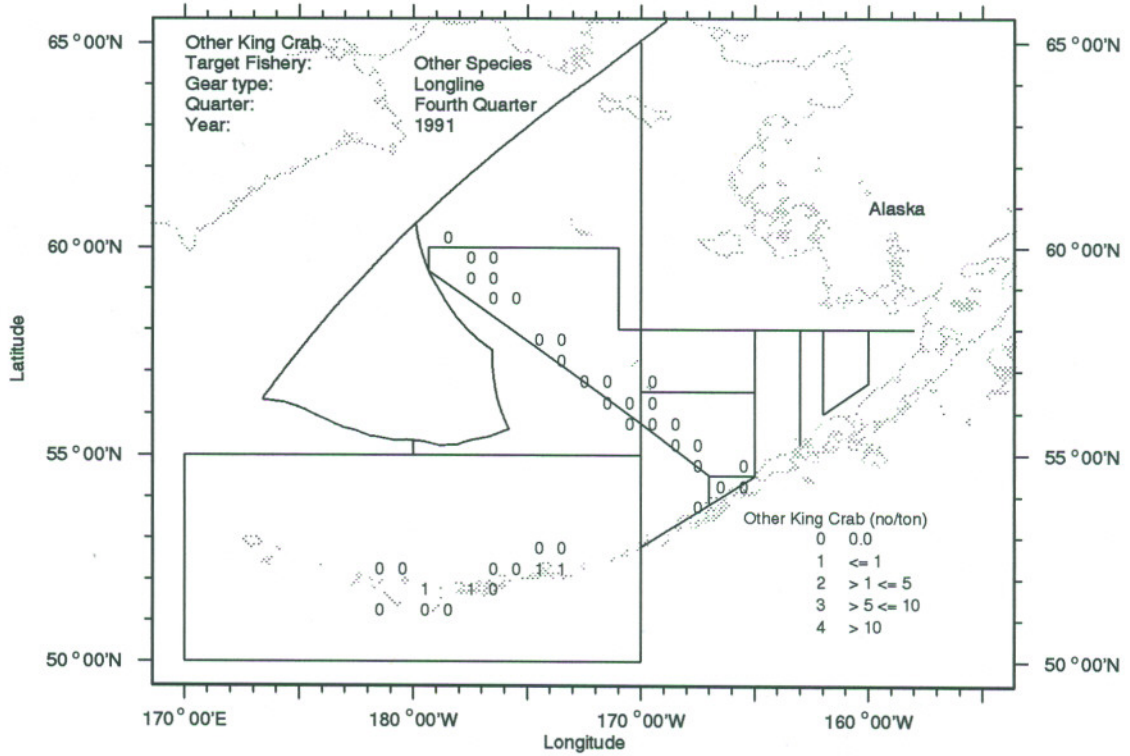
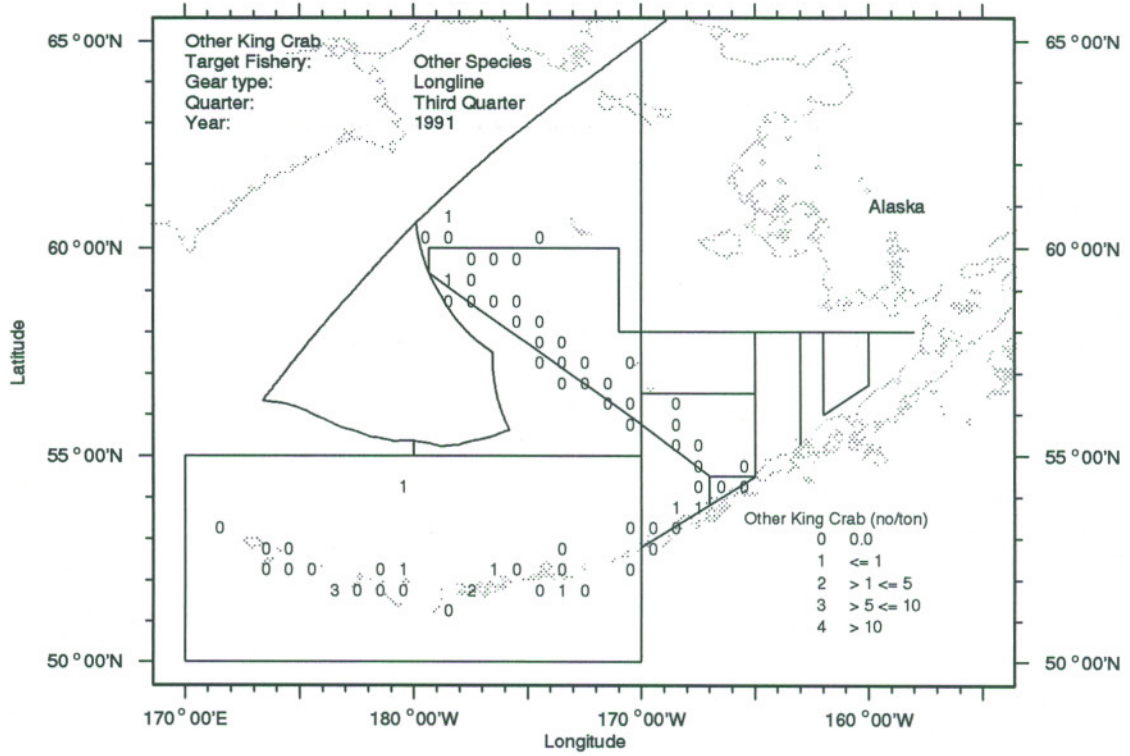


Figure 8.--Continued.

Table 28.--Estimated bycatch of red king crab (by number of crab) by U.S. domestic groundfish vessels in the Bering Sea and Aleutian Islands region by NPFMC area and gear type, 1991. (Dashes indicate area not fished.)

Gear type	Area 511	Area 512	Area 513	Area 514	Area 515	Area 516	Area 517	Area 518	Area 519	Area 521	Area 522	Area 540	Total
Trawl	29,105	0	7,968	19,427	221	44,485	38	3	383	12,966	105	1,710	116,411
Longline	1	1	0	0	42	4	4	4	0	10	4	126	196
Pot	2,228	--	0	12	216	1,772	14	170	301	45	6	329	5,093
Total	31,334	1	7,968	19,439	479	46,261	56	177	684	13,021	115	2,165	121,700
Percent by area	25.7%	<0.1%	6.5%	16.0%	0.4%	38.0%	<0.1%	0.1%	0.6%	10.7%	0.1%	1.8%	

Table 29.—Estimated bycatch of "other" king crabs* (by number of crabs) by U.S. domestic groundfish vessels in the Bering Sea and Aleutian Islands region by NPFMC area and gear type, 1991. (Dashes indicate area not fished.)

Gear type	Area 511	Area 512	Area 513	Area 514	Area 515	Area 516	Area 517	Area 518	Area 519	Area 521	Area 522	Area 540	Total
Trawl	333	0.00	39,747	956	792	2,056	1,273	239	1,901	13,535	211	18,417	79,460
Longline	2	0.00	1	2	51	0	13	22	2	164	111	616	984
Pot	9	--	0	2	31	0	2	25	42	6	452	40	609
Total	344	0.00	39,748	960	874	2,056	1,288	286	1,945	13,705	774	19,073	81,053
Percent by area	0.4%	0.0%	49.0%	1.2%	1.1%	2.5%	1.6%	0.4%	2.4%	16.9%	1.0%	23.5%	

*Species in this group include golden king crab (*Lithodes aequispina*), blue king crab (*Paralithodes platypus*), and couesi king crab (*Lithodes couesi*).

Table 30.—U.S. domestic groundfish catch (in metric tons (t)) and red king crab bycatch (in numbers) by target fishery, NPFMC zone, and species in the Bering Sea and Aleutian Islands region, 1991.

Fishery	Gear	Zone	Groundfish catch	Bycatch (numbers)	Red king crab		
					Per t of groundfish	% within zone	% of total bycatch
Atka mackerel	Trawl	1	nf	nf	nf	nf	nf
		2	94.95	0	0.000	0.0%	0.0%
		3	29,879.73	136	0.005	0.6%	0.1%
		Total	29,974.68	136	0.005		0.1%
Pacific cod	Longline	1	70.60	5	0.071	0.0%	0.0%
		2	70,373.46	4	0.000	0.0%	0.0%
		3	13,612.25	88	0.006	0.4%	0.1%
		Total	84,056.31	97	0.001		0.1%
Pacific cod	Pot	1	858.81	4,000	4.658	5.2%	3.3%
		2	426.68	59	0.138	0.3%	0.0%
		3	5,433.42	1,034	0.190	4.5%	0.8%
		Total	6,718.91	5,093	0.758		4.2%
Pacific cod	Trawl	1	16,171.60	54	0.003	0.1%	0.0%
		2	79,496.71	75	0.001	0.4%	0.1%
		3	20,439.79	55	0.003	0.2%	0.0%
		Total	116,108.10	184	0.002		0.2%
Other Flatfish	Trawl	1	4,148.21	6,030	1.454	7.8%	5.0%
		2	34,231.40	1,281	0.037	6.1%	1.1%
		3	121,068.32	18,818	0.155	81.6%	15.5%
		Total	159,447.93	26,129	0.164		21.5%
Rockfish	Longline	1	nf	nf	nf	nf	nf
		2	0.10	0	0.000	0.0%	0.0%
		3	171.57	2	0.012	0.0%	0.0%
		Total	171.67	2	0.012		0.0%
Rockfish	Trawl	1	0.78	0	0.000	0.0%	0.0%
		2	3,224.96	315	0.098	1.5%	0.3%
		3	3,220.02	145	0.045	0.6%	0.1%
		Total	6,445.76	460	0.071		0.4%
Other	Longline	1	2.82	0	0.000	0.0%	0.0%
		2	547.00	0	0.000	0.0%	0.0%
		3	127.76	0	0.000	0.0%	0.0%
		Total	677.58	0	0.000		0.0%
Other	Trawl	1	196.61	0	0.000	0.0%	0.0%
		2	2,396.55	0	0.000	0.0%	0.0%
		3	65.11	0	0.000	0.0%	0.0%
		Total	2,658.27	0	0.000		0.0%
Pollock midwater	Trawl	1	71,279.08	313	0.004	0.4%	0.3%
		2	705,769.76	223	0.000	1.1%	0.2%
		3	539,335.46	0	0.000	0.0%	0.0%
		Total	1,316,384.30	536	0.000		0.4%
Pollock bottom	Trawl	1	40,670.57	12,039	0.296	15.5%	9.9%
		2	258,828.21	4,655	0.018	22.1%	3.8%
		3	18,300.26	543	0.030	2.4%	0.4%
		Total	317,799.04	17,237	0.054		14.2%
Rock sole	Trawl	1	45,337.10	55,154	1.217	71.1%	45.3%
		2	15,483.92	14,423	0.931	68.5%	11.9%
		3	2,692.53	755	0.280	3.3%	0.6%
		Total	63,513.55	70,332	1.107		57.8%

Table 30.--Continued.

Fishery	Gear	Zone	Groundfish catch	Red king crab			
				Bycatch (numbers)	Per t of groundfish	% within zone	% of total bycatch
Sablefish	Longline	1	24.21	1	0.041	0.0%	0.0%
		2	294.96	5	0.017	0.0%	0.0%
		3	3,219.19	86	0.027	0.4%	0.1%
		Total	3,538.36	92	0.026		0.1%
Sablefish	Pot	1	nf	nf	nf	nf	nf
		2	0.03	0	0.000	0.0%	0.0%
		3	0.04	0	0.000	0.0%	0.0%
		Total	0.07	0	0.000		0.0%
Sablefish	Trawl	1	nf	nf	nf	nf	nf
		2	nf	nf	nf	nf	nf
		3	27.98	0	0.000	0.0%	0.0%
		Total	27.98	0	0.000		0.0%
Turbot	Longline	1	nf	nf	nf	nf	nf
		2	249.96	5	0.020	0.0%	0.0%
		3	981.44	0	0.000	0.0%	0.0%
		Total	1,231.40	5	0.004		0.0%
Turbot	Pot	1	nf	nf	nf	nf	nf
		2	nf	nf	nf	nf	nf
		3	0.22	0	0.000	0.0%	0.0%
		Total	0.22	0	0.000		0.0%
Turbot	Trawl	1	nf	nf	nf	nf	nf
		2	2,064.91	0	0.000	0.0%	0.0%
		3	5,565.60	1,397	0.251	6.1%	1.1%
		Total	7,630.51	1,397	0.183	1.1%	1.1%
Arrowtooth	Longline	1	nf	nf	nf	nf	nf
		2	19.12	0	0.000	0.0%	0.0%
		3	25.43	0	0.000	0.0%	0.0%
		Total	44.55	0	0.000		0.0%
Arrowtooth	Pot	1	nf	nf	nf	nf	nf
		2	0.14	0	0.000	0.0%	0.0%
		3	nf	nf	nf	nf	nf
		Total	0.14	0	0.000		0.0%
Arrowtooth	Trawl	1	304.90	0	0.000	0.0%	0.0%
		2	4,302.46	0	0.000	0.0%	0.0%
		3	5,783.45	0	0.000	0.0%	0.0%
		Total	10,390.81	0	0.000		0.0%
Total		1	179,065.29	77,596	0.433		63.8%
		2	1,177,805.28	21,045	0.018		17.3%
		3	769,949.57	23,059	0.030		18.9%
		Total	2,126,820.14	121,700	0.057		

Table 31.--U.S. domestic groundfish catch (in metric tons (t)) and "other" king crab bycatch (in numbers) by target fishery, NPFMC zone, and species in the Bering Sea and Aleutian Islands region, 1991.

Fishery	Gear	Zone	Groundfish catch	Bycatch (numbers)	"Other" king crab		
					Per t of groundfish	% within zone	% of total bycatch
Atka mackerel	Trawl	1	nf	nf	nf	nf	nf
		2	94.95	0	0.000	0.0%	0.0%
		3	29,879.73	2,314	0.077	4.2%	2.9%
		Total	29,974.68	2,314	0.077		2.9%
Pacific cod	Longline	1	70.60	0	0.000	0.0%	0.0%
		2	70,373.46	160	0.002	0.3%	0.2%
		3	13,612.25	390	0.029	1.6%	0.5%
		Total	84,056.31	550	0.007		0.7%
Pacific cod	Pot	1	858.81	9	0.010	0.4%	0.0%
		2	426.68	8	0.019	0.0%	0.0%
		3	5,433.42	592	0.109	2.5%	0.7%
		Total	6,718.91	609	0.091		0.8%
Pacific cod	Trawl	1	16,171.60	3	0.000	0.1%	0.0%
		2	79,496.71	149	0.002	0.3%	0.2%
		3	20,439.79	1,389	0.068	5.8%	1.7%
		Total	116,108.10	1,541	0.013		1.9%
Other Flatfish	Trawl	1	4,148.21	47	0.011	2.0%	0.1%
		2	34,231.40	13,995	0.409	25.6%	17.3%
		3	121,068.32	963	0.008	4.0%	1.2%
		Total	159,447.93	15,005	0.094		18.5%
Rockfish	Longline	1	nf	nf	nf	nf	nf
		2	0.10	0	0.000	0.0%	0.0%
		3	171.57	103	0.600	0.4%	0.1%
		Total	171.67	103	0.600		0.1%
Rockfish	Trawl	1	0.78	0	0.000	0.0%	0.0%
		2	3,224.96	2	0.001	0.0%	0.0%
		3	3,220.02	1,263	0.392	5.3%	1.6%
		Total	6,445.76	1,265	0.196		1.6%
Other	Longline	1	2.82	0	0.000	0.0%	0.0%
		2	547.00	0	0.000	0.0%	0.0%
		3	127.76	3	0.023	0.0%	0.0%
		Total	677.58	3	0.004		0.0%
Other	Trawl	1	196.61	3	0.015	0.1%	0.0%
		2	2,396.55	0	0.000	0.0%	0.0%
		3	65.11	0	0.000	0.0%	0.0%
		Total	2,658.27	3	0.001		0.0%
Pollock midwater	Trawl	1	71,279.08	6	0.000	0.3%	0.0%
		2	705,769.76	14,781	0.021	27.0%	18.2%
		3	539,335.46	177	0.000	0.7%	0.2%
		Total	1,316,384.30	14,964	0.011		18.5%
Pollock bottom	Trawl	1	40,670.57	953	0.023	39.7%	1.2%
		2	258,828.21	16,473	0.064	30.1%	20.3%
		3	18,300.26	1,041	0.057	4.4%	1.3%
		Total	317,799.04	18,467	0.058		22.8%
Rock sole	Trawl	1	45,337.10	1,377	0.030	57.4%	1.7%
		2	15,483.92	7,801	0.504	14.3%	9.6%
		3	2,692.53	20	0.007	0.1%	0.0%
		Total	63,513.55	9,198	0.145		11.3%

Table 31.--Continued.

Fishery	Gear	Zone	Groundfish catch	"Other" king crab			
				Bycatch (numbers)	Per t of groundfish	% within zone	% of total bycatch
Sablefish	Longline	1	24.21	2	0.083	0.1%	0.0%
		2	294.96	16	0.054	0.0%	0.0%
		3	3,219.19	263	0.082	1.1%	0.3%
		Total	3,538.36	281	0.079		0.3%
Sablefish	Pot	1	nf	nf	nf	nf	nf
		2	0.03	0	0.000	0.0%	0.0%
		3	0.04	0	0.000	0.0%	0.0%
		Total	0.07	0	0.000		0.0%
Sablefish	Trawl	1	nf	nf	nf	nf	nf
		2	nf	nf	nf	nf	nf
		3	27.98	0	0.000	0.0%	0.0%
		Total	27.98	0	0.000		0.0%
Turbot	Longline	1	nf	nf	nf	nf	nf
		2	249.96	2	0.008	0.0%	0.0%
		3	981.44	45	0.046	0.2%	0.1%
		Total	1,231.40	47	0.038		0.1%
Turbot	Pot	1	nf	nf	nf	nf	nf
		2	nf	nf	nf	nf	nf
		3	0.22	0	0.000	0.0%	0.0%
		Total	0.22	0	0.000		0.0%
Turbot	Trawl	1	nf	nf	nf	nf	nf
		2	2,064.91	755	0.366	1.4%	0.9%
		3	5,565.60	10,405	1.870	43.5%	12.8%
		Total	7,630.51	11,160	1.463	13.8%	13.8%
Arrowtooth	Longline	1	nf	nf	nf	nf	nf
		2	19.12	0	0.000	0.0%	0.0%
		3	25.43	0	0.000	0.0%	0.0%
		Total	44.55	0	0.000		0.0%
Arrowtooth	Pot	1	nf	nf	nf	nf	nf
		2	0.14	0	0.000	0.0%	0.0%
		3	nf	nf	nf	nf	nf
		Total	0.14	0	0.000		0.0%
Arrowtooth	Trawl	1	304.90	0	0.000	0.0%	0.0%
		2	4,302.46	599	0.139	1.1%	0.7%
		3	5,783.45	4,944	0.855	20.7%	6.1%
		Total	10,390.81	5,543	0.533		6.8%
Total		1	179,065.29	2,400	0.013		3.0%
		2	1,177,805.28	54,741	0.046		67.5%
		3	769,949.57	23,912	0.031		29.5%
		Total	2,126,820.14	81,053	0.038		

Table 32.--Condition of king crabs examined by observers in U.S. domestic groundfish catches in the Bering Sea and Aleutian Islands region by species and gear type, 1991.

Species	Gear type	Excellent		Poor		Dead	
		numbers	%	numbers	%	numbers	%
Red king crab	Trawl	825	36.2%	994	43.7%	457	20.1%
	Pot	430	100.0%	0	0.0%	0	0.0%
	Longline	10	83.3%	2	16.7%	0	0.0%
Blue king crab	Trawl	166	49.4%	100	29.5%	70	20.8%
	Pot	0	0.0%	0	0.0%	0	0.0%
	Longline	0	0.0%	0	0.0%	0	0.0%
Golden king crab	Trawl	336	52.7%	192	30.1%	109	17.1%
	Pot	3	100.0%	0	0.0%	0	0.0%
	Longline	39	84.8%	6	13.0%	1	2.2%
Cousi king crab	Trawl	1	25.0%	2	50.0%	1	25.0%
	Pot	0	0.0%	0	0.0%	0	0.0%
	Longline	4	66.7%	2	33.3%	0	0.0%
All species	Trawl	1,328	73.2%	1,288	99.2%	637	99.8%
	Pot	433	7.3%	0	0.0%	0	0.0%
	Longline	53	2.9%	10	0.8%	1	0.2%

Table 33.--Biological data on the bycatch of king crabs in U.S. domestic groundfish fisheries in the Bering Sea and Aleutian Islands region, 1991.

Species	Percent by species	Sex	Sex composition	Average weight (kg)	Average length (mm)
Red king crab	60.0%	Male	59.8	2.18	126.6
		Female	40.2	1.40	107.6
Blue king crab	22.7%	Male	59.0	1.59	134.2
		Female	41.0	1.29	113.3
Golden king crab	17.0%	Male	33.5	0.87	123.4
		Female	66.5	0.71	115.4
Cousesi king crab	0.3%	Male	46.8	0.86	*
		Female	53.2	0.65	118.0

*Length data not collected.

Table 34.--Estimated bycatch of Pacific herring (in metric tons) by U.S. domestic groundfish vessels in the Bering Sea and Aleutian Islands region by NPFMC area and target fishery, 1991.

Gear type	Area 511	Area 512	Area 513	Area 514	Area 515	Area 516	Area 517	Area 518	Area 519	Area 521	Area 522	Area 540	Total
Pollock (pelagic)	15	0	2	0	7	0	324	1	2,464	276	6	0	3,096
Pollock (bottom)	1	0	3	0	2	0	2	0	7	47	1	0	63
Other Flatfish	19	0	31	525	<1	<1	<1	0	0	7	10	0	592
Pacific cod	<1	0	0	0	0	0	<1	0	0	<1	0	0	<1
Rock sole	<1	0	1	7	0	<1	<1	0	<1	<1	<1	0	9
Rockfish	0	0	0	0	0	0	0	0	0	<1	0	0	<1
Greenland turbot	0	0	0	0	0	0	<1	0	0	0	0	0	<1
Total	35	0	37	532	10	<1	327	1	2,471	330	17	0	3,761

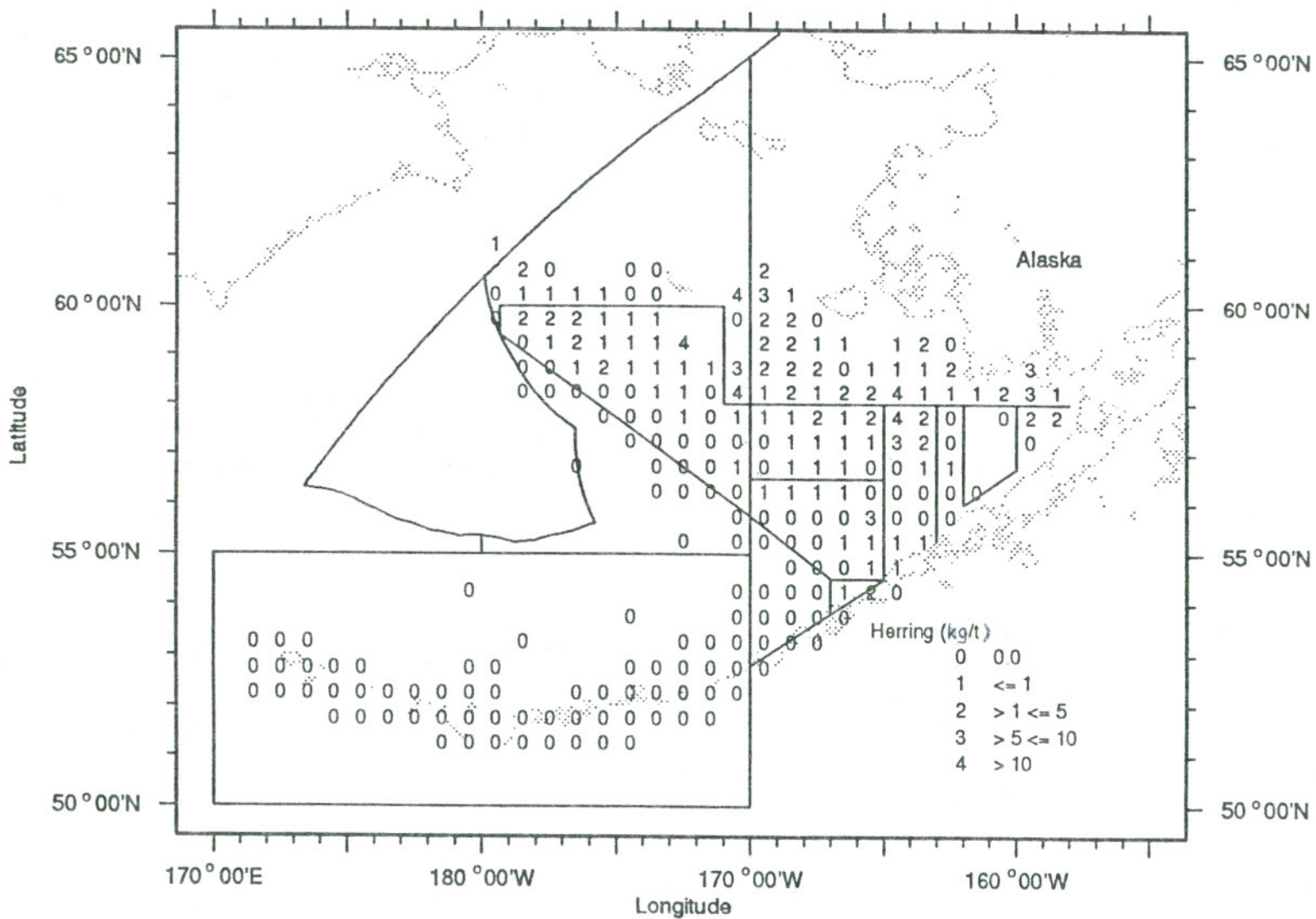


Figure 9.--Pacific herring bycatch (kg/metric ton of groundfish) in U.S. domestic groundfish fisheries in the Bering Sea and Aleutian Islands region by $\frac{1}{2}^\circ$ latitude by 1° longitude blocks (all gears combined), 1991.

Table 35.--Common and scientific names of rockfish identified in U.S. domestic groundfish catches in the Bering Sea and Aleutian Islands region, 1991.

Common name	Scientific name
Darkblotched rockfish	<u>Sebastes</u> <u>crameri</u>
Dusky rockfish	<u>Sebastes</u> <u>ciliatus</u>
Northern rockfish	<u>Sebastes</u> <u>polyspinis</u>
Pacific ocean perch	<u>Sebastes</u> <u>alutus</u>
Rougheye rockfish	<u>Sebastes</u> <u>aleutianus</u>
Shortraker rockfish	<u>Sebastes</u> <u>borealis</u>
Shortspine thornyhead	<u>Sebastolobus</u> <u>alascanus</u>
Other rockfish*	
Black rockfish	<u>Sebastes</u> <u>melanops</u>
Blue rockfish	<u>Sebastes</u> <u>mystinus</u>
Harlequin rockfish	<u>Sebastes</u> <u>variegatus</u>
Longspine thornyhead	<u>Sebastolobus</u> <u>altivelis</u>
Redbanded rockfish	<u>Sebastes</u> <u>babcocki</u>
Redstripe rockfish	<u>Sebastes</u> <u>proriger</u>
Silvergray rockfish	<u>Sebastes</u> <u>brevispinus</u>

*The seven species listed under "other rockfish" each made up less than 0.1% of the rockfish catch in U.S. domestic groundfish catches.

Table 36.--Estimated U.S. domestic rockfish catch (in metric tons) by species and North Pacific Fishery Management Council (NPFMC) area in the Bering Sea and Aleutian Islands region, 1991.

Species	Area 511	Area 512	Area 513	Area 514	Area 515	Area 516	Area 517	Area 521	Area 522	Area 540	All areas	% of rockfish catch
Pacific ocean perch	77.9	0.0	69.4	8.9	513.0	0.0	285.1	3,655.4	730.5	2,839.6	8,179.8	76.97%
Northern rockfish	23.8	0.0	25.7	0.2	59.6	0.0	204.5	341.4	11.7	159.5	826.4	7.78%
Shortraker rockfish	0.0	0.0	0.0	0.0	26.5	0.0	59.3	89.3	12.9	307.0	495.0	4.66%
Dusky rockfish	22.7	0.0	4.7	27.5	25.9	0.0	49.3	159.9	2.1	101.3	393.4	3.70%
Shortspine thornyhead	0.0	0.0	0.0	0.0	80.8	0.0	43.8	16.0	5.2	241.7	387.5	3.65%
Rougeye rockfish	2.2	0.0	0.2	0.0	50.2	0.0	12.2	29.5	7.2	203.1	304.6	2.87%
Darkblotched rockfish	0.0	0.0	0.0	0.0	10.9	0.0	0.9	0.1	0.0	0.2	12.1	0.11%
Other rockfish species*	0.0	0.0	0.0	0.0	1.3	0.0	7.5	16.0	0.2	3.2	28.2	0.27%
Total	126.6	0.0	100.0	36.6	768.2	0.0	662.6	4,307.6	769.8	3,855.6	10,627.0	
Percent by area	1.2%	0.0%	0.9%	0.3%	7.2%	0.0%	6.2%	40.5%	7.2%	36.3%		

*Species included in this category each made up less than 0.10% of the total rockfish catch and are listed in Table 35.

Table 37.--Common and scientific names of flatfish identified in U.S. domestic groundfish catches in the Bering Sea and Aleutian Islands region, 1991.

Common name	Scientific name
Alaska plaice	<u>Pleuronectes quadrituberculatus</u>
Arrowtooth flounder	<u>Atheresthes stomias</u>
Butter sole	<u>Pleuronectes isolepis</u>
Dover sole	<u>Microstomus pacificus</u>
Flathead sole	<u>Hippoglossoides elassodon</u>
Greenland turbot	<u>Reinhardtius hippoglossoides</u>
Kamchatka flounder	<u>Atheresthes evermanni</u>
Rex sole	<u>Errex zachirus</u>
Rock sole	<u>Pleuronectes bilineatus</u>
Starry flounder	<u>Platichthys stellatus</u>
Yellowfin sole	<u>Pleuronectes asper</u>
Other flatfish*	
Bering flounder	<u>Hippoglossoides robustus</u>
Deepsea sole	<u>Embassichthys bathybius</u>
English sole	<u>Pleuronectes vetulus</u>
Longhead dab	<u>Pleuronectes proboscideus</u>
Petrale sole	<u>Eopsetta jordani</u>
Sand sole	<u>Psettichthys melanostictus</u>

* The six species listed under "other flatfish" each made up less than 0.1% of the flatfish catch in U.S. domestic groundfish catches.

Table 38.--Estimated U.S. domestic flatfish catch (in metric tons) by species and North Pacific Fishery Management Council (NPFMC) area in the Bering Sea and Aleutian Islands region, 1991.

Species	Area 511	Area 512	Area 513	Area 514	Area 515	Area 516	Area 517	Area 521	Area 522	Area 540	All areas	% of flatfish catch
Yellowfin sole	4,322.7	179.2	18,341.8	89,573.4	153.8	1,649.7	216.0	2,417.0	913.0	0.1	117,766.7	49.00%
Rock sole	19,666.0	4.9	11,439.9	10,839.4	692.7	7,995.6	2,084.7	3,873.5	110.7	141.1	56,848.5	23.66%
Arrowtooth flounder	1,483.9	0.0	473.6	70.4	2,169.9	100.4	5,357.0	7,145.5	1,402.9	1,166.0	19,369.6	8.06%
Flathead sole	3,029.1	0.0	2,176.1	329.9	697.1	350.8	3,567.5	6,079.1	446.1	27.8	16,703.5	6.95%
Alaska plaice	1,786.4	6.8	2,647.1	9,189.5	0.0	946.5	149.5	399.1	27.5	0.0	15,152.4	6.31%
Greenland turbot	61.9	0.0	18.4	1.1	2,234.6	0.0	1,488.4	775.5	138.5	3,554.9	8,273.3	3.44%
Starry flounder	286.4	1.5	10.5	1,917.6	2.6	366.7	117.3	1.0	9.9	7.6	2,721.1	1.13%
Kamchatka flounder	77.6	0.0	20.1	12.4	271.6	3.0	155.9	508.9	135.9	512.1	1,697.5	0.71%
Rex sole	166.0	0.0	8.4	0.5	202.1	14.7	477.4	95.0	10.8	23.6	998.5	0.42%
Longhead dab	21.3	0.1	0.2	469.1	0.0	1.7	0.0	1.5	0.0	0.0	493.9	0.21%
Other flatfish species*	83.2	0.0	1.1	2.9	13.1	56.8	94.2	26.7	0.6	16.2	294.8	0.12%
Total	30,984.5	192.5	35,137.2	112,406.2	6,437.5	11,485.9	13,707.9	21,322.8	3,195.9	5,449.4	240,319.8	
Percent by area	12.9%	0.1%	14.6%	46.8%	2.7%	4.8%	5.7%	8.9%	1.3%	2.3%		

*Species included in this category each made up less than 0.10% of the total flatfish catch and are listed in Table 37.

SUMMARY OF OBSERVER SAMPLING FOR GULF OF ALASKA DOMESTIC GROUND FISH FISHERIES

Area of Sampling

In 1991, observer sampling was conducted in the seven fishery management areas defined by the NPFMC in the Gulf of Alaska (Areas 610, 620, 621, 630, 640, 650, and 680) (Fig. 10). These areas were sometimes grouped in three subregions: Western (Area 610); Central (Areas 620, 621, and 630); and Eastern (Areas 640, 650, and 680). The distribution of catch in the Gulf of Alaska was concentrated in Areas 630 (123,783 t or 45% of the total catch) and 610 (94,933 t or 34%) (Table 40). The numbers and percentages of the total groundfish catch in the other NPFMC areas was 24,387 t (9%) in Area 620, 12,840 t (5%) in Area 640, 10,875 t (4%) in Area 621, 7,530 t (3%) in Area 650, and 1,691 t (1%) in Area 680.

Catch Allocations

U.S. domestic fishing operations in the Gulf of Alaska region received an allocation of 298,216 t of groundfish in 1991 and caught 92.5% of this amount (276,039 t) (Table 39). Walleye pollock and Pacific cod were the primary target fisheries, accounting for 39.0% and 27.9%, respectively, of the total groundfish catch. Significant fisheries were also conducted for sablefish and slope rockfish. Overall, 19.3% of the groundfish caught in 1991 was reported discarded, a large part of which was attributed to arrowtooth flounder. The large discard of arrowtooth flounder (89.9%) was due to limited markets for products made from this species.

Estimates of Domestic Groundfish Catches

Groundfish catch by species or species group and gear is given in Table 41. The largest amount of groundfish was caught by trawl vessels, which caught 232,130 t (or 84.1%) of the total groundfish catch of allocated species. Walleye pollock and Pacific cod were the major target species, accounting for 46.3% and 25.1% of the trawl catch. Longline vessels caught 32,662 t or 11.8%, pot vessels caught 10,723 t or 3.9%, and other gears caught 524 t or 0.2% of the total catch. Sablefish and Pacific cod were the primary target species of longline vessels, accounting for 62.5% and 25.0% of the total longline catch. Pacific cod was the primary target species of pot vessels, accounting for 97.8% of the total pot catch. Pelagic rockfish (72.8%) and Pacific cod (21.5%) were the primary targets for other gear types.

Restrictions

In the Gulf of Alaska, bycatch limits only applied to Pacific halibut taken in trawl and longline fisheries. Unlike the Bering Sea and Aleutian Islands regions, where Pacific halibut bycatch were managed by total bycatch, Pacific halibut bycatch in the Gulf of Alaska region was managed by mortality. A mortality rate of 50% was applied for trawl fisheries, which were restricted to a limit of 2,000 t of Pacific halibut mortality. This amount was divided into quarterly limits of 600 t each for the first and second quarters and 400 t each for the third and fourth quarters. A mortality rate of 13% was used for longline fisheries, which had a mortality limit of 750 t. The longline mortality limit was divided among three trimesters: 200 t for 1 January through 14 May, 500 t from 15 May through 31 August, and 50 t for 1 September through 31 December.

The Gulf of Alaska trawl fishery was closed from 8 May through 30 June for bottom trawling due to attainment of the second quarter Pacific halibut mortality limit of 600 t. Attainment of the total longline Pacific halibut mortality quota closed the Gulf of Alaska to longline fishing on 8 July through the end of the year. Attainment of the total trawl Pacific halibut mortality quota closed the Gulf of Alaska to trawling (with the exception of pelagic trawling for pollock) on 10 October through the end of the year.

Summary of Data Collected

In the Gulf of Alaska region, observers sampled 5,132 trawl hauls, 1,573 longline sets, and 778 pot sets for groundfish composition and prohibited species bycatch. Among the biological data collected by observers in 1991 were 252,416 lengths and 14,377 otoliths from 19 groundfish species (Table 42). These data were used by scientists of the Status of Stocks Task at the Alaska Fisheries Science Center for use in determining biomass estimates and year-class strengths. The results are reported in "Stock Assessment and Fishery Evaluation Report for the 1992 Gulf of Alaska Groundfish Fishery³."

From prohibited species, observers collected 3,573 Tanner (snow) crab carapace widths, 107 king crab carapace lengths, 4,676 Pacific salmon lengths, and 39,954 Pacific halibut lengths. Condition was recorded for 61,899 Pacific halibut, 5,416 snow crabs, and 132 king crabs. Observers also recovered 28 tagged chinook salmon and scanned the stomach contents of 96 walleye pollock. No stomach samples were collected.

³Available from the North Pacific Fishery Management Council, P.O. Box 103136, Anchorage, AK 99510.

Observations of Fishing Gear-Marine Mammal Interactions

Observers monitored 88,239 t of groundfish taken in 6,164 trawl hauls, 4,326 t of groundfish taken in 1,592 longline sets, and 987 t of groundfish taken in 841 pot sets for fishing gear-marine mammal interactions in Gulf of Alaska groundfish fisheries in 1991 (Table 43). Four animals were involved in interactions: 1 harbor seal was freshly dead, 1 Steller sea lion was injured, and 2 unidentified whales were decomposed. All animals were observed in trawls only.

Observations of Fishing Gear-Seabird Interactions

In longline sets sampled for groundfish species and prohibited species incidence, seabirds were observed in 34 (2.2%) sets. Numbers extrapolated from sample weight to set weight yielded 140 birds (182 kg) in sampled longline sets. No seabirds were observed in the sampled portions of trawl hauls or pot sets.

Distribution of Observed Fishing Effort

The number of observed hauls, sets, or groups of pots in groundfish fisheries are plotted by 1/2° latitude and 1° longitude areas by gear type, target fishery, and quarter in Fig. 11. Users of these data need to realize that much of the fishing effort was unobserved, and these data may not be representative of the fleet as a whole.

Most observed bottom and pelagic trawl effort (number of hauls) occurred in the Kodiak and Shumagin areas (Area 630 and Area 610). The greatest number of observed hauls were in the Pacific cod bottom trawl fishery, most of which took place in the first quarter and in the western (Area 610) and central (Areas 620 and 630) Gulf of Alaska regions. The bottom trawl fishery targetting flatfish ranked second in observed effort, with most effort expended in Area 630 during all quarters. The rockfish bottom trawl fishery ranked third in observed effort and fished in all areas except Area 621, mostly in Areas 630 and 610. Levels of effort were low in both the bottom trawl pollock and "other species" fisheries; during the first and second quarters no block exceeded 5 observed hauls, and during the fourth quarter only a single block had greater than 25 observed hauls (in Area 610). No bottom trawling occurred during June, November, or December.

Almost all observed pelagic trawl effort targetted pollock in Area 630 around Kodiak Island and in Area 610. The greatest number of observed hauls (greater than 100 hauls) occurred in a block east of Kodiak Island (lat. 57°00', long. 152°00') during the third and fourth quarters.

Most of the observed pot fishing occurred during the first and second quarters in the vicinity of Kodiak Island in Areas 621 and 630. Observed effort was generally greater than 25 hauls per block and was as high as greater than 100 hauls west of Kodiak Island (lat. 57°30', long. 151°00') and in Shelikof Strait (lat. 58°00', long. 153°00'). Other fishing was observed in a single block in Area 620 during the first quarter and in a single block in Area 610 during the third and fourth quarters.

Longline effort was dominated by vessels targetting sablefish, which fished in all areas except Area 621, and fished almost exclusively in the second quarter. The observed effort distribution and timing of the "other species" target fisheries were similar to those of the sablefish fishery. The Pacific cod longline fishery fished in Areas 610 and 620 during the first quarter.

Bycatch of Prohibited Species

Pacific Salmon

Bycatch rates and average weights of Pacific salmon for trawl vessels are presented in Table 44. The highest annual rates were observed in the rockfish bottom trawl fishery in Areas 620 (10.6 fish/t) and 621 (1.1 fish/t). All other rates ranged from 0.0 to 0.6 fish/t. In the rockfish fishery in Area 620, the highest rate was observed for March (14.854 fish/t), but this rate was derived from only 39 hauls. No salmon were observed in the pot fishery. In the longline fishery, all salmon bycatch rates were zero, except in the sablefish fishery in Area 640 (0.009 fish/t) and Area 610 (0.004 fish/t). The largest average weight of salmon occurred in Area 621 in the bottom trawl pollock fishery (8.00 kg).

Bycatch rates of Pacific salmon are plotted by 1/2° latitude and 1° longitude statistical areas in Fig. 12 by gear type and quarter. Rates in all areas and fisheries were generally less than 1 fish/t and rates in all areas of highest observed effort (greater than 100 hauls) were less than 1 fish/t. Only three rates greater than 2 salmon/t occurred where observed effort was greater than 5 hauls. These rates all occurred in bottom trawl fisheries in the first quarter, and were rates of greater than 3 fish/t; one in the flatfish bottom trawl fishery in Area 610 south of Unimak Island (lat. 54°00', long. 163°00'); and two in the rockfish fishery in Area 620 off the continental slope (lat. 55°00', long. 155°00' and lat. 54°30', long. 158°00').

The estimated U.S. domestic bycatch of Pacific salmon in 1991 was 53,844 fish (Table 45), of which 38,894 (72.2%) were chinook salmon. Areas 630 and 620 accounted for 42.7% and 41.5%, respectively, of the salmon bycatch. All salmon were taken by

vessels using trawl gear, except four "other" salmon which were caught with longline gear.

Most of the bycatch of Pacific salmon was taken by the following, listed by target fishery and gear type: rockfish bottom trawl (22,650 fish), pollock midwater trawl (18,824 fish), Pacific cod bottom trawl (5,482 fish), deepwater flatfish bottom trawl (4,079 fish), and pollock bottom trawl (2,673 fish) (Table 46). Similarly, the overall bycatch rates were also highest in the rockfish bottom trawl fishery (0.938 fish/t), the walleye pollock midwater trawl fishery (0.221 fish/t), and the deepwater flatfish bottom trawl fishery (0.201 fish/t).

The species composition, sex composition, average weight, and average length of incidentally caught Pacific salmon are given in Table 47. Chinook salmon made up 72.2% of the total salmon bycatch, followed by chum (25.5%), coho (2.1%), sockeye (0.1%) and pink salmon (0.1%). No steelhead were observed taken in 1991.

Pacific Halibut

Bycatch rates and average weights for Pacific halibut are listed in Table 48. The highest bycatch rates occurred in longline fisheries⁴, with annual rates exceeding 70 kg/t in all NPFMC areas except Area 680 in the sablefish fishery (2 kg/t). There was one occurrence where Pacific halibut was caught at a higher rate than was the catch of allocated groundfish-- (1,655 kg/t) in the Pacific cod target fishery in Area 621 for an effort of three sets. For vessels using bottom trawl gear (exclusive of those fishing pollock), rates exceeded 10 kg/t in all NPFMC areas sampled by observers, except in the Pacific cod fishery in Area 621 (8 kg/t) and in the "other species" fishery in Area 610 (9 kg/t). The walleye pollock bottom trawl fishery had the lowest rates of any bottom trawl fishery in each NPFMC area (ranging from 5 to 22 kg/t), with only one annual bycatch rate exceeding 10 kg/t (in Area 630, 22 kg/t). For vessels using pelagic gear to target pollock, annual rates were less than 1 kg/t in all areas. For the "other species" pelagic trawl fishery, which represents far less effort than the pollock pelagic trawl fishery, rates of halibut bycatch ranged from 7 kg/t in Area 610 to 38 kg/t in Area 630. For pot fishery vessels, the highest annual rate was observed in Area 610 (24 kg/t); all other rates were less than 6 kg/t.

⁴It should be noted that large Pacific halibut caught by longline vessels are usually not landed. Observers estimate the weight of these fish, but frequently are not able to measure their length. As a result, the size of these unlanded Pacific halibut are reflected in average weight but not average length data.

The smallest average weights for Pacific halibut all occurred in the bottom trawl fishery: in Areas 610 and 621 in the Pacific cod fishery (1.65 kg and 2.07 kg, respectively); and in Area 610 in the flatfish fishery (2.23 kg). Small Pacific halibut also occurred in the pelagic trawl walleye pollock fishery in Area 621 (2.49 kg), and in the pot fishery in Area 620 (2.50 kg). The largest average weight (19.65 kg) occurred in Area 640 in the bottom trawl flatfish fishery, the second largest (17.48 kg) in Area 640 in the longline "other species" fishery, the third largest (15.95 kg) in Area 620 in the longline sablefish fishery.

Pacific halibut bycatch rates are plotted in $1/2^\circ$ latitude by 1° longitude statistical blocks by target fishery, gear type and quarter in Fig. 13. In bottom trawl, longline, and pot fisheries, bycatch rates greater than 10 kg/t occurred throughout the Gulf of Alaska on the continental shelf, with the highest rates of greater than 25 kg/t located off the east and northeast coast of Kodiak Island. For the walleye pollock midwater trawl fishery, nearly all rates were less than 1 kg/t.

Groundfish fisheries in the Gulf of Alaska caught an estimated 10,069 t of Pacific halibut in 1991 (Table 49). By comparison, the highest bycatch ever taken by the combined foreign and joint venture fisheries was 3,592 t, which was taken in 1983 (Guttormsen et al. 1992b). Longline vessels took 5,616 t (or 55.8%), and trawl vessels took 4,346 t (or 43.2%), and pot and jig vessels took about 100 t, combined. By weight, 59% of the incidentally caught Pacific halibut in 1991 were taken in Area 630. The estimated weight of Pacific halibut mortality in 1991 was 2,961 t. The amount of mortality was highest for vessels using trawl gear (2,173 t). For the other gear types, estimated mortality was 730 t for longline vessels, 51 t for jig vessels, and 7 t for pot vessels.

Williams and Wilderbuer (1991) examined Pacific halibut viability data from 3,874 trawls, 985 longline sets, and 441 pot sets sampled by observers in the Gulf of Alaska region in 1991 and found that mortality ranged from 70 to 72% for trawls, 13 to 18% for longlines, and 6 to 10% for pots. Based on the results of this analysis, they recommended a 65% mortality rate for the management of Pacific halibut bycatch for trawl vessels. They also recommended a 10% mortality rate for pot vessels and found that the 16% rate for longline vessels was appropriate for use in future years.

The sablefish longline fishery caught 45.1% of the Pacific halibut bycatch taken in the Gulf of Alaska region in 1991 (Table 50). In terms of total mortality, however, the fishery accounted for only 19.9% of the bycatch, which was similar to the total mortality percentage of the rockfish trawl fishery (22.9%), the deepwater flatfish fishery (19.6%), and the Pacific cod fishery (18.3%). The amount of Pacific halibut bycatch per

metric ton of groundfish was also highest in the sablefish longline fishery, in terms of total Pacific halibut bycatch (193.6 kg/t) and in the jig fisheries in terms of mortality (about 98.0 kg/t).

Snow (Tanner) Crabs

Bycatch rates and average weights for C. bairdi are listed in Table 51. The four highest annual bycatch rates for C. bairdi were observed in four different groundfish fisheries: the pelagic trawl fishery for "other species" in Area 630 (11.107 crab/t); the pot fishery in Area 621 (5.051 crab/t); the bottom trawl fishery for flatfish in Area 621 (5.045 crab/t); and the bottom trawl fishery for Pacific cod in Area 630 (2.425 crab/t). All other rates were less than 2 crab/t. In the sablefish longline fishery, C. bairdi bycatch rates ranged from 0.000 crab/t in Area 610 to 0.037 crab/t in Area 640. In the Pacific cod longline fishery, C. bairdi were observed only in Area 610 (0.009 crab/t). No C. bairdi were observed in the "other species" longline fisheries.

The annual bycatch rates for "other" snow crabs are given in Table 52. Rates greater than 0.1 crab/t were observed in the bottom trawl fisheries targeting on "other species" in Area 620 (0.810 crab/t), flatfish in Area 640 (0.578 crab/t), rockfish in Area 610 (0.193 crab/t), and "other species" in Area 640 (0.126 crab/t). The only "other" snow crabs taken by pelagic gear were observed in Area 610 at a rate lower than 0.001 crab/t. None were observed taken by pot gear. Only in the sablefish longline fishery were "other" snow crabs observed in all sampled NPFMC areas, with rates ranging from 0.022 crab/t in Area 630 to 0.706 crab/t in Area 680. The bycatch rates in the "other" species longline fishery varied from 0.000 crab/t in Areas 630, 640, and 650 to 0.692 crab/t in Area 620.

C. bairdi bycatch rates are plotted in 1/2° latitude by 1° longitude statistical blocks by target fishery, gear type, and quarter in Fig. 14. Rates were generally less than 10.0 crab/t in all fisheries and NPFMC areas. Rates of greater than 1 crab/t occurred in the bottom trawl fisheries in Area 610, 620, and 630 during the first and third quarters. The "other species" pelagic trawl fisheries had rates greater than 10 crab/t in Area 630 during the third and fourth quarters. The pot fishery during the first and second quarters had rates greater than 1 crab/t in the vicinity of Kodiak Island in Area 630.

"Other" snow crab bycatch rates are given by 1/2° latitude by 1° longitude statistical blocks in Fig. 15. Nearly all rates were zero or less than 1 crab/t throughout the Gulf of Alaska, with a few scattered rates greater than 1 crab/t in the flatfish, rockfish, and "other species" target fisheries using bottom trawl gear. For the longline fisheries, rates greater than 1 crab/t

occurred in the sablefish fishery in the first quarter in the southern part of Area 640 and in the "other species" fishery in Area 610 in the third quarter.

An estimated 142,224 C. bairdi were caught in U.S. groundfish fisheries in 1991 (Table 53). The bycatch was taken mostly by two gear types--trawl, which caught 76.9% of the C. bairdi, and pot, which accounted for 22.8% of the total bycatch. Bycatch was mostly confined to Areas 630, 620, and 610, where 62.4%, 16.4%, and 13.9%, respectively, of the take occurred.

An estimated 9,280 "other" snow crabs were incidentally caught in 1991 (Table 54), of which 81.4% was taken by vessels using trawl gear. Longline vessels caught 18.6% and no "other" snow crabs were observed caught in pot or jig fisheries. In Areas 610 and 620, 40.9% and 34.6% of the bycatch were taken, respectively.

Estimated bycatch of C. bairdi by target fishery are given in Table 55. Over 60% of the bycatch occurred in the cod fisheries using trawl and pot gear (53,388 and 32,467 crab, respectively), while most of the remainder of the bycatch was taken by bottom trawl fisheries targetting pollock (22,809 crab), shallow-water flatfish (11,478 crab), rockfish (11,091 crab), and deepwater flatfish (10,080 crab). Over 85% of the total bycatch was taken in the central Gulf. The highest crab bycatch rate estimates were for bottom trawl vessels targetting shallow-water flatfish (6.343 crab/t) and pollock (1.063 crab/t).

Bycatch of "other" snow crabs were highest in the bottom trawl fisheries targetting rockfish (3,220 crab) the deepwater flatfish trawl fishery (2,864 crab), the sablefish longline fishery (1,694 crab), and the pollock bottom trawl fishery (998 crab) (Table 56). The only average bycatch rate exceeding 0.200 crab/t of groundfish was observed in the bottom trawl fisheries targetting sablefish (0.263 crab/t).

Observers examined 5,416 snow crab for condition in 1991, 5,357 or 98.9% of which were C. bairdi (Table 57). Nearly 60% of the crab were caught by trawl vessels, 39% by pot vessels. Of the crab taken by trawl vessels, 44.7% were judged to be in excellent condition, 27.6% in poor condition, and 27.7% were dead. Of the crab taken by pot vessels, 85.4% were observed to be in excellent condition, 12.2% in poor condition, and 2.4% were dead.

Of the snow crab recorded by observers in groundfish catches in the Gulf of Alaska region, 93.9% were C. bairdi (Table 58). Other species caught were C. tanneri (4.7%) and C. opilio (0.9%), and C. angulatus (0.5%). The ratio of males to females ranged from 2:1 for C. angulatus to 26:1 for C. opilio.

King Crabs

Incidental bycatch rates and average weights of red king crab taken in groundfish fisheries in the Gulf of Alaska are given in Table 59. The highest annual rate was observed in the flatfish bottom trawl fishery in Area 610 (0.042 crab/t). Annual rates of 0.004 crab/t in Area 620 and 0.003 in Area 630 were also observed for this fishery. The only other trawl fisheries in which red king crab were observed were the Pacific cod bottom trawl fishery in Areas 610, 620, 621, and 630, and the rockfish fishery in Area 630; rates for these fisheries were 0.002 crab/t or less. No red king crab were observed in the pelagic trawl or longline fisheries. In the pot fishery, red king crab were taken only in Area 621 (0.018 crab/t).

Of the bycatch rates for "other" king crabs presented in Table 60, the highest rates occurred in the "other species" fishery using bottom trawl gear in Areas 620 (0.837 crab/t) and 640 (0.130 crab/t). All other rates for bottom trawl fisheries were 0.062 crab/t or less. No "other" king crabs were observed in the pelagic trawl fisheries. In the pot fisheries, "other" king crabs were observed only in Area 630 (0.005 crab/t). In longline fisheries, the highest "other" king crabs bycatch rates were observed in the sablefish fishery in Area 620 (0.062 crab/t) and in the "other species" fishery in Area 630 (0.049 crab/t).

Red king crab bycatch rates are plotted in $1/2^\circ$ latitude by 1° longitude statistical blocks by target fishery, gear type, and quarter in Fig. 16. Rates were zero in all fisheries and NPFMC areas, except for eleven non-zero red king crab bycatch rates (one was less than 5 crab/t; ten were less than 1.0 crab/t) observed in the bottom trawl fisheries targetting on flatfish, Pacific cod, and rockfish, and one rate less than 1 crab/t for pot vessels in the first quarter.

"Other" king crab bycatch rates are given by $1/2^\circ$ latitude by 1° longitude statistical blocks in Fig. 17. Rates were generally less than 1 crab/t throughout the Gulf of Alaska in all fisheries. The only exception was a rate of less than 5 crab/t during the second quarter of the "other species" bottom trawl fishery in Area 620 ($55^\circ 00'$, $156^\circ 00'$).

The estimated bycatch of red king crab was 205 crab (Table 61). Trawl vessels caught 108 crab, and pot vessels caught 97 crab. In Areas 630, 610, and 620, 64.9%, 15.6% and 15.6% of the bycatch were taken, respectively.

An estimated 2,159 "other" king crabs were incidentally caught in the Gulf of Alaska in 1991 (Table 62). The bycatch was taken by vessels using trawl gear (1,698 crab) and by longline vessels (461 crab). In Areas 630, 620, and 610, 33.9%, 27.9% and 26.2% of the bycatch were taken, respectively.

The low total bycatch of 205 red king crab for the Gulf of Alaska is tabulated by target fishery in Table 63. The Pacific cod pot fishery, which had the highest number of crab and bycatch rate, caught 97 red king crab at a rate of 0.009 crab per metric ton of groundfish. No other fishery caught red king crab at a rate higher than 0.003 crab/t.

Most of the bycatch of "other" king crabs were taken by the deepwater flatfish fishery, both in terms of total amount (1,094 crab or 50.7% of the bycatch) and crab per metric ton of groundfish (0.054 crab/t) (Table 64). Other significant crab bycatch numbers were observed in the bottom trawl fishery targetting rockfish (594 crab, 27.5%) and longline vessels targetting sablefish (461 crab, 21.4%)

For all fisheries, 140 king crab were observed for condition (87 golden king crab, 44 red king crab, 8 couesi king crab, and 1 blue king crab) (Table 65). For trawl fisheries, 116 crab were observed for condition (77 golden, 37 red, and 1 couesi, and 1 blue) of which 10.3% were in excellent condition, 48.3% were in poor condition, and 41.4% were dead. Of the 15 king crab taken by longline fisheries and observed for condition, 13 were in excellent condition, and 1 was in poor condition and 1 was dead. All 9 king crab observed for condition in catches of pot vessels were considered to be in excellent condition.

Of the king crabs seen by observers in groundfish catches, 62.5% were golden, 22.0% were couesi, 8.7% were red, and 6.8% were blue (Table 66). With the exception of couesi king crab, the average weight and carapace length for each species-sex group was greater than its counterpart in the Bering Sea and Aleutian Islands region.

Rockfish Catch by Species

Twenty-six species of rockfish were identified by observers in U.S. domestic catches in the Gulf of Alaska region in 1991 (Table 67). The "other rockfish" group refers to the 10 species that each made up less than 0.1% of the rockfish catch. For allocation and catch-reporting purposes, rockfish were separated into various groups, which are defined in Table 68. In 1991, 21,200 t of rockfish were taken by U.S. groundfish fisheries (Table 69). Northern rockfish and Pacific ocean perch were the predominant rockfish species taken, accounting for 33.3% and 31.3%, respectively, of the rockfish catch, followed by dusky rockfish (9.6%), shortspine thornyhead (9.5%), roughey rockfish (4.2%), and shortraker rockfish (4.1%). Pacific ocean perch was the most commonly caught rockfish in all reporting areas except Areas 630 (northern rockfish) and 621 (dusky rockfish). By NPFMC area, 47.9% of the rockfish catch occurred in Area 630, 18.3% in Area 610, 11.5% in Area 640, 10.1% in Area 620, and 9.6% in Area 650, 2.2% in Area 680, and 0.4% in Area 621.

Flatfish Catch by Species

Sixteen species of flatfish were identified by observers in 1991 (Table 70). The "other flatfish" group refers to the six species that each made up less than 0.1% of the flatfish catch. Flatfish groups designated for allocation and catch-reporting purposes are shown in Table 71. The majority of the catch occurred in Area 630 (26,008 t or 64.9% of the flatfish catch. Substantial amounts were also taken in Area 610 (8,209 t or 20.5%) and 620 (4,900 t or 12.2%). Arrowtooth flounder accounted for 21,572 t (53.8%) of the 40,079 t of flatfish taken in the Gulf of Alaska region and was the most commonly taken flatfish in all NPFMC areas (Table 72). Of the remaining species of flatfish caught in the Gulf of Alaska groundfish fisheries, rex sole (Errex zachirus) made up 16.5% of the flatfish catch, followed in order by rock sole (14.6%), Dover sole (Microstomus pacificus, 8.9%), flathead sole (3.1%), and butter sole (Pleuronectes isolepis, 1.5%). The largest portion of catches of rex sole (4,585 t), Dover sole (2,840 t), flathead sole (949 t), and butter sole (492 t) were taken in Area 630. The largest catch of rock sole (2,799 t) was taken in Area 610.

Table 39.--Estimated groundfish catches (in metric tons) taken by domestic fishing operations in the Gulf of Alaska region, 1991.

Species group	Retained catch	Discarded catch	Total catch	Percent by species	Percent discarded	DAP	Percent caught of DAP	ABC
Pollock	91,489.1	16,053.6	107,542.7	39.0%	14.9%	100,527	107.0%	133,400
Pacific cod	74,319.5	2,672.3	76,991.8	27.9%	3.5%	77,900	98.8%	77,900
Sablefish	22,561.9	548.7	23,110.6	8.4%	2.4%	22,500	102.7%	22,500
Deep-water flatfish	8,562.4	1,727.6	10,290.0	3.7%	16.8%	15,000	68.6%	50,500
Shallow-water flatfish	2,791.4	4,184.5	6,975.9	2.5%	60.0%	12,000	58.1%	74,000
Flathead sole	834.7	401.7	1,236.4	0.4%	32.5%	10,000	12.4%	50,300
Arrowtooth flounder	2,175.2	19,401.4	21,576.6	7.8%	89.9%	20,000	107.9%	340,100
Pacific ocean perch	5,321.6	1,309.9	6,631.5	2.4%	19.8%	5,800	114.3%	5,800
Shortraker/rougheye	1,390.2	368.9	1,759.1	0.6%	21.0%	2,000	88.0%	2,000
Slope rockfish	6,667.8	1,624.5	8,292.3	3.0%	19.6%	10,100	82.1%	10,100
Demersal rockfish	76.3	131.4	207.7	0.1%	63.3%	425	48.9%	445
Pelagic rockfish	2,031.2	261.2	2,292.4	0.8%	11.4%	4,800	47.8%	4,800
Thornyheads	1,447.8	568.8	2,016.6	0.7%	28.2%	1,398	144.2%	1,798
Other fish	3,004.2	4,111.2	7,115.4	2.6%	57.8%	15,766	45.1%	0
Total	222,673.3	53,365.7	276,039.0		19.3%	298,216	92.5%	773,643

DAP = Domestic annual processing is the estimated portion of the U.S. groundfish harvest which will be utilized by domestic processors, including catches of U.S. factory trawlers, and also groundfish that will enter nonprocessed fish markets such as those for bait in crab and longline fisheries.

ABC = Allowable biological catch is a seasonally determined catch that may be higher or lower than the maximum sustainable yield (MSY) in some years for species with fluctuating recruitment.

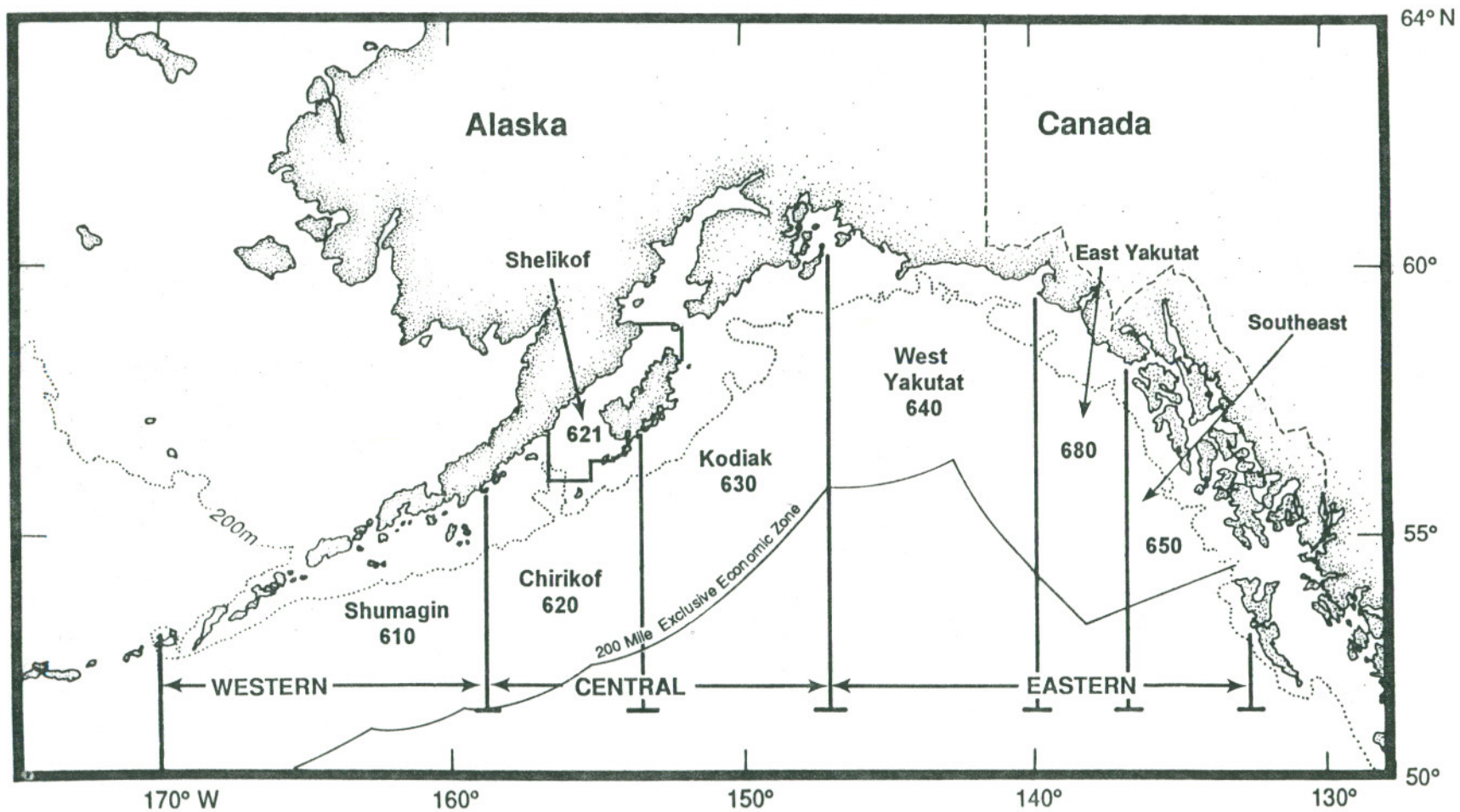


Figure 10.--Gulf of Alaska reporting area defined by the North Pacific Fishery Management Council (NPFMC).

Table 40.--Estimated groundfish catches (in metric tons) taken by domestic fishing operations in the Gulf of Alaska region by species and North Pacific Fishery Management (NPFMC) area, 1991.

Species	Area 610	Area 620	Area 621	Area 630	Area 640	Area 650	Area 680	Total
Pollock	43,190.1	1,336.7	7,068.8	50,232.6	5,684.4	24.1	5.9	107,542.6
Pacific cod	32,890.6	14,111.5	3,530.5	26,020.1	188.7	219.1	31.4	76,991.9
Sablefish	1,949.4	1,544.6	2.0	9,766.0	3,873.8	4,846.9	1,127.9	23,110.6
Deep-water flatfish	1,199.9	1,420.0	27.0	7,457.1	97.7	76.9	11.4	10,290.0
Shallow-water flatfish	2,841.1	588.2	25.7	3,516.9	0.7	3.1	0.3	6,976.0
Flathead sole	219.2	63.8	2.0	949.2	2.1	0.0	0.2	1,236.5
Arrowtooth flounder	3,948.4	2,828.3	65.3	14,084.7	411.7	201.5	36.7	21,576.6
Pacific ocean perch	1,589.2	1,340.5	6.0	1,609.2	857.4	1,060.0	169.1	6,631.4
Shortraker/roughey	164.9	143.5	1.2	948.1	179.9	273.5	48.0	1,759.1
Slope rockfish	1,112.8	387.2	2.1	5,796.5	414.1	419.4	160.2	8,292.3
Demersal rockfish	38.1	9.6	1.1	114.9	19.5	19.2	5.4	207.8
Pelagic rockfish	251.4	119.6	69.7	983.0	744.7	75.0	49.1	2,292.5
Thornyheads	723.8	147.2	3.0	703.5	222.9	188.9	27.4	2,016.7
Other fish	4,814.3	346.6	70.9	1,600.9	142.4	122.2	18.0	7,115.3
Total	94,933.2	24,387.3	10,875.3	123,782.7	12,840.0	7,529.8	1,691.0	276,039.3
Percent by area	34%	9%	4%	45%	5%	3%	1%	

Table 41.--Estimated retained, discarded, and total catches in metric tons (t) taken by domestic groundfish fisheries in the Gulf of Alaska region by species and gear, 1991.

Species	Gear	Retained	Discarded	Total	% of gear catch by gear	% of species catch by gear
Pollock	Trawl	91,480.7	15,920.1	107,400.9	46.3%	99.9%
	Longline	6.4	38.8	45.2	0.1%	0.0%
	Pot	0.9	94.4	95.3	0.9%	0.1%
	Other*	1.1	0.3	1.4	0.3%	0.0%
	Total	91,489.1	16,053.6	107,542.8		
Pacific cod	Trawl	56,358.5	1,881.2	58,239.7	25.1%	75.6%
	Longline	7,412.4	739.4	8,151.7	25.0%	10.6%
	Pot	10,436.1	51.7	10,487.8	97.8%	13.6%
	Other	112.6	0.0	112.6	21.5%	0.1%
	Total	74,319.6	2,672.3	76,991.8		
Sablefish	Trawl	2,394.8	286.1	2,680.9	1.2%	11.6%
	Longline	20,161.0	262.7	20,423.6	62.5%	88.4%
	Pot	0.0	0.0	0.0	0.0%	0.0%
	Other	6.0	0.0	6.0	1.1%	0.0%
	Total	22,561.8	548.8	23,110.5		
Deep-water flounders	Trawl	8,552.8	1,589.6	10,142.4	4.4%	98.6%
	Longline	9.6	138.0	147.6	0.5%	1.4%
	Pot	0.0	0.0	0.0	0.0%	0.0%
	Other	0.0	0.0	0.0	0.0%	0.0%
	Total	8,562.4	1,727.6	10,290.0		
Shallow-water flounders	Trawl	2,789.7	4,179.0	6,968.7	3.0%	99.9%
	Longline	1.0	3.5	4.5	0.0%	0.1%
	Pot	0.7	2.0	2.7	0.0%	0.0%
	Other	0.0	0.0	0.0	0.0%	0.0%
	Total	2,791.4	4,184.5	6,975.9		
Flathead sole	Trawl	834.2	399.7	1,233.9	0.5%	99.8%
	Longline	0.5	2.0	2.5	0.0%	0.2%
	Pot	0.0	0.0	0.0	0.0%	0.0%
	Other	0.0	0.0	0.0	0.0%	0.0%
	Total	834.7	401.7	1,236.4		
Arrowtooth	Trawl	2,173.7	18,286.5	20,460.2	8.8%	94.8%
	Longline	1.5	1,113.9	1,115.4	3.4%	5.2%
	Pot	0.0	0.7	0.7	0.0%	0.0%
	Other	0.0	0.3	0.3	0.1%	0.0%
	Total	2,175.2	19,401.4	21,576.6		
Pacific ocean perch	Trawl	5,312.8	1,306.3	6,619.1	2.9%	99.8%
	Longline	8.7	3.6	12.3	0.0%	0.2%
	Pot	0.0	0.0	0.0	0.0%	0.0%
	Other	0.0	0.0	0.0	0.0%	0.0%
	Total	5,321.5	1,309.9	6,631.4		
Shortraker/Rougheye	Trawl	1,301.6	226.4	1,528.0	0.7%	86.9%
	Longline	88.6	142.6	231.1	0.7%	13.1%
	Pot	0.0	0.0	0.0	0.0%	0.0%
	Other	0.0	0.0	0.0	0.0%	0.0%
	Total	1,390.2	369.0	1,759.1		
Slope rockfish	Trawl	5,929.7	1,547.8	7,477.5	3.2%	90.2%
	Longline	723.7	76.0	799.7	2.4%	9.6%
	Pot	1.2	0.6	1.8	0.0%	0.0%
	Other	13.3	0.0	13.3	2.5%	0.2%
	Total	6,667.9	1,624.4	8,292.3		

Table 41.--Continued.

Species	Gear	Retained	Discarded	Total	% of gear catch by gear	% of species catch by gear
Demersal rockfish	Trawl	33.1	27.1	60.2	0.0%	83.4%
	Longline	0.3	11.7	12.0	0.0%	16.6%
	Pot	0.0	0.0	0.0	0.0%	0.0%
	Other	0.0	0.0	0.0	0.0%	0.0%
	Total	33.4	38.8	72.2		
Other rockfish	Trawl	22.0	57.9	79.9	0.0%	59.0%
	Longline	18.2	34.7	52.8	0.2%	39.0%
	Pot	0.0	0.0	0.0	0.0%	0.0%
	Other	2.8	0.0	2.8	0.5%	2.1%
	Total	43.0	92.6	135.5		
Pelagic rockfish	Trawl	1,547.5	259.2	1,806.6	0.8%	78.8%
	Longline	102.3	1.3	103.7	0.3%	4.5%
	Pot	0.0	0.7	0.7	0.0%	0.0%
	Other	381.4	0.0	381.4	72.8%	16.6%
	Total	2,031.2	261.2	2,292.4		
Thornyheads	Trawl	1,210.0	71.8	1,281.8	0.6%	63.6%
	Longline	232.1	496.9	729.1	2.2%	36.2%
	Pot	0.0	0.0	0.0	0.0%	0.0%
	Other	5.6	0.0	5.6	1.1%	0.3%
	Total	1,447.7	568.7	2,016.5		
Other fish	Trawl	2,963.2	3,186.9	6,150.1	2.6%	86.4%
	Longline	5.6	824.8	830.5	2.5%	11.7%
	Pot	35.4	99.0	134.3	1.3%	1.9%
	Other	0.0	0.4	0.4	0.1%	0.0%
	Total	3,004.2	4,111.1	7,115.3		
Total	Trawl	182,904.3	49,225.6	232,129.9		84.1%
	Longline	28,771.9	3,889.9	32,661.7		11.8%
	Pot	10,474.3	249.1	10,723.3		3.9%
	Other	522.8	1.0	523.8		0.2%
	Total	222,673.3	53,365.6	276,038.7		

*Other gears include jigs and gillnets.

Table 42.--Summary of data collected by U.S. groundfish observers in the Gulf of Alaska region, 1991.

Species	Lengths ¹	Age structures ²	Viability
Groundfish species			
Walleye pollock	80,031	6,734	--
Pacific cod	61,164	5,129	--
Sablefish	35,404	465	--
Atka mackerel	6,031	--	--
Pacific ocean perch	13,907	288	--
Northern rockfish	14,831	--	--
Rougheye rockfish	959	70	--
Shortraker rockfish	571	--	--
Yelloweye rockfish	184	--	--
Dusky rockfish	2,012	100	--
Shortspine thornyhead	785	--	--
Flathead sole	4,593	359	--
Rock sole	4,104	476	--
Butter sole	78	99	--
Rex sole	18,748	262	--
Dover sole	2,539	295	--
Deepsea sole	312	--	--
Yellowfin sole	108	--	--
Arrowtooth flounder	6,055	100	--
Totals	252,416	14,377	--
Prohibited species			
<u>Chionoecetes bairdi</u>	3,563	--	5,357
<u>C. angulatus</u>	1	--	2
<u>C. tanneri</u>	9	--	57
Red king crab	39	--	44
Golden king crab	67	--	87
Blue king crab	1	--	1
Chinook salmon	2,649	--	--
Chum salmon	1,982	--	--
Silver salmon	22	--	--
Sockeye salmon	11	--	--
Pink salmon	12	--	--
Pacific halibut	39,954	--	61,899
Totals	48,310	--	67,447

¹Fork lengths were collected from fish, carapace widths from snow (Tanner) crabs, and carapace lengths from king crabs.

²Otoliths were collected from most groundfish species, and scales were collected from Pacific salmon and Pacific cod.

Table 43.--Observed marine mammal-fishing gear interactions in U.S. domestic groundfish fisheries in the Gulf of Alaska region by gear type, species, and condition of animal, 1991.

Gear type	Species	Condition ¹	Number
Trawl ²	Steller sea lion	Injured	1
Trawl	Harbor seal	Freshly dead	1
Trawl	Unidentified whale	Decomposed	1
Trawl	Unidentified small whale	Decomposed	1
Longline ³	None	--	-
Pot ¹	None	--	-

¹"Freshly dead" refers to animals not decomposed or shot that were brought onboard or released from fishing gear. "Decomposed" refers to animals obviously dead prior to contact with fishing gear. "Injured" refers to animals entrapped by fishing gear with apparent injury.

²Observers sampled 88,239 metric tons (t) of groundfish taken in 6,164 trawls.

³Observers sampled 4,326 (t) of groundfish taken in 1,592 longline sets.

⁴Observers sampled 987 (t) of groundfish taken in 841 pot sets.

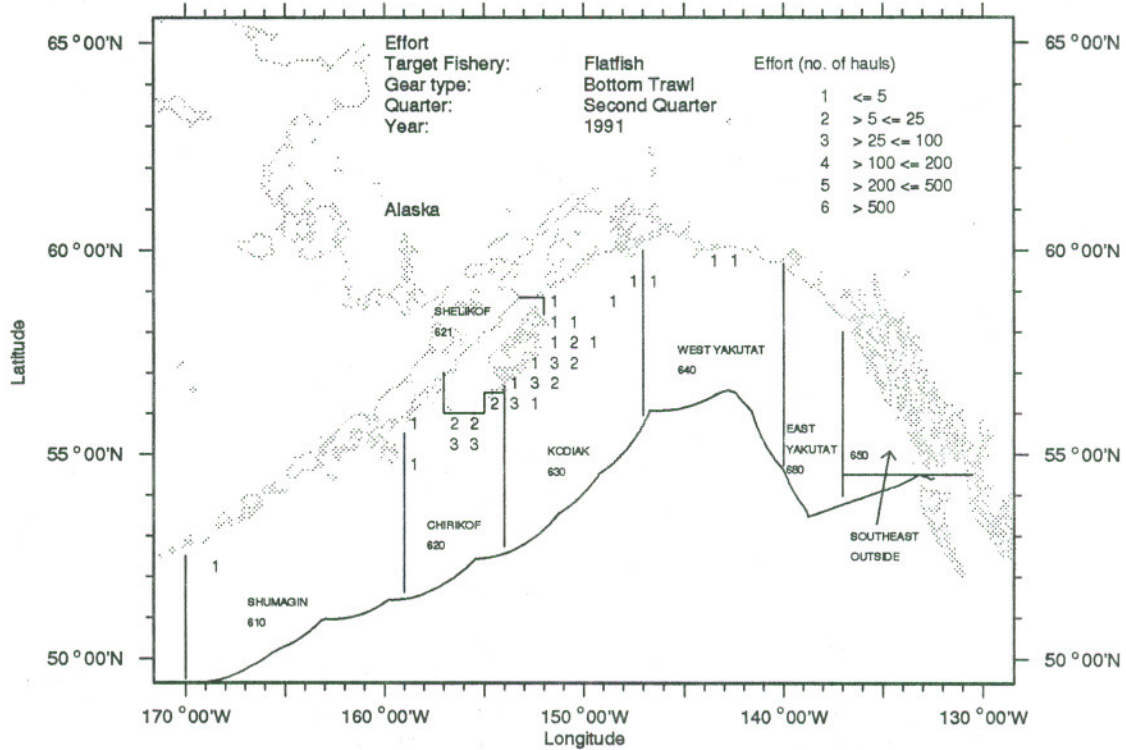
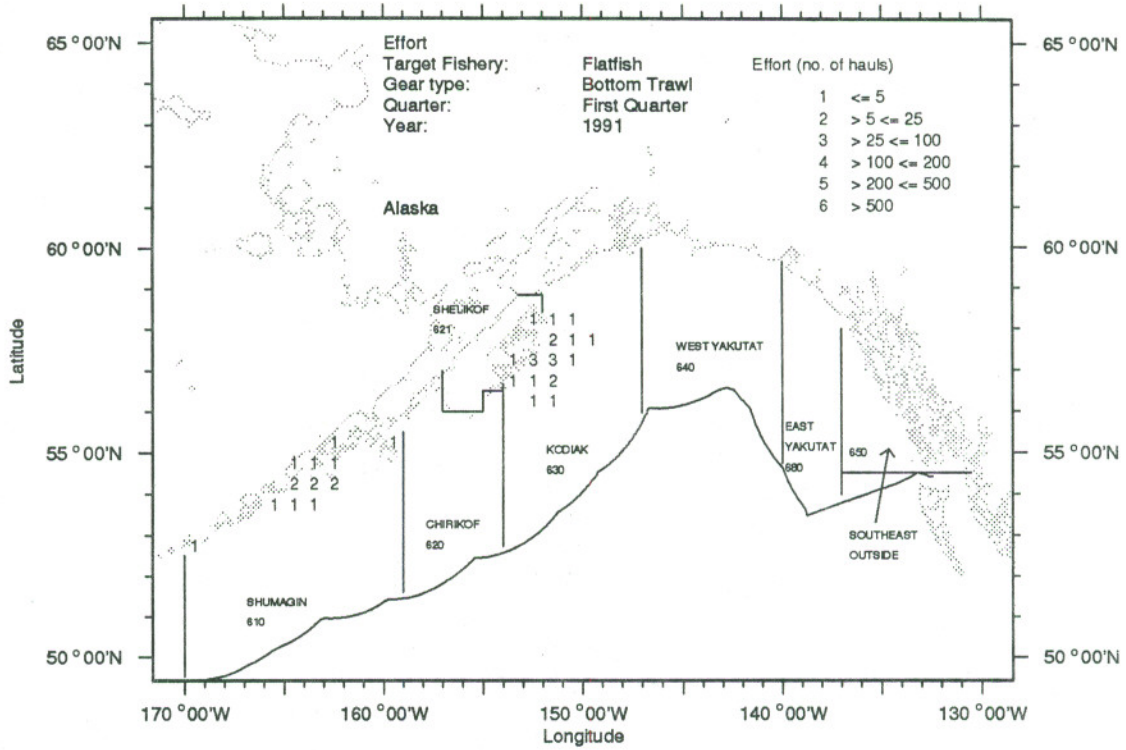


Figure 11.--Effort (no. of observed hauls, sets, or groups of pots) in U.S. domestic fisheries by quarter, target fishery, gear type, and ½° latitude by 1° longitude areas in the Gulf of Alaska region, 1991.

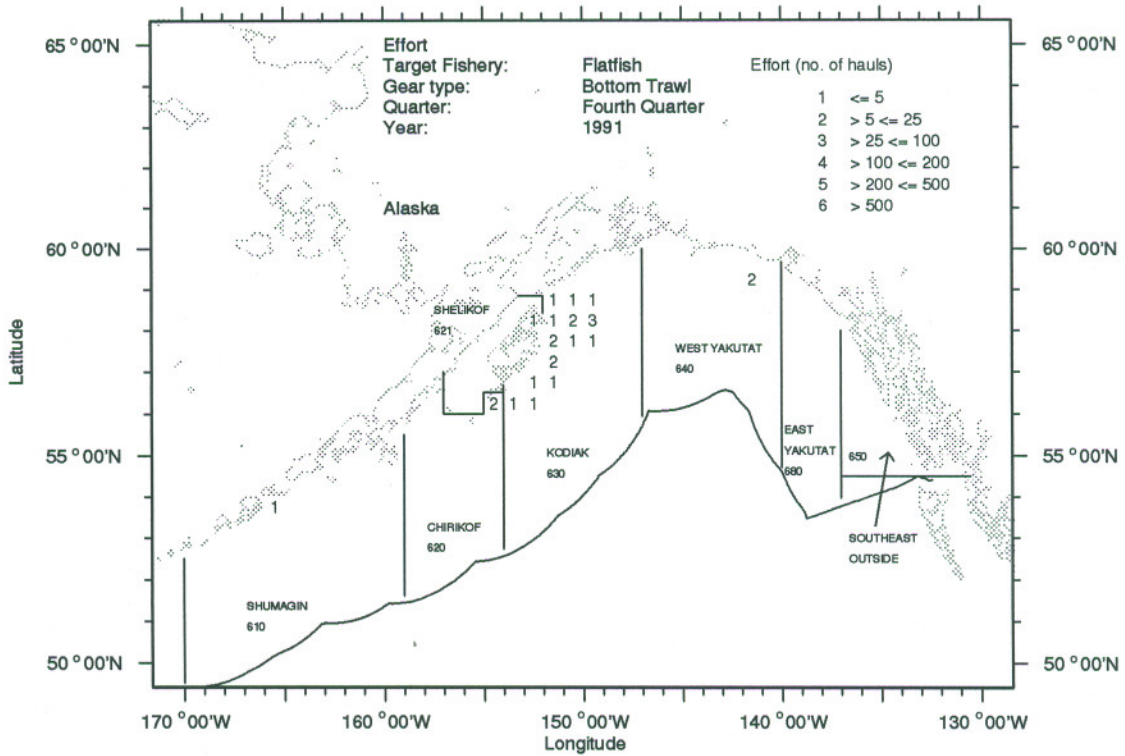
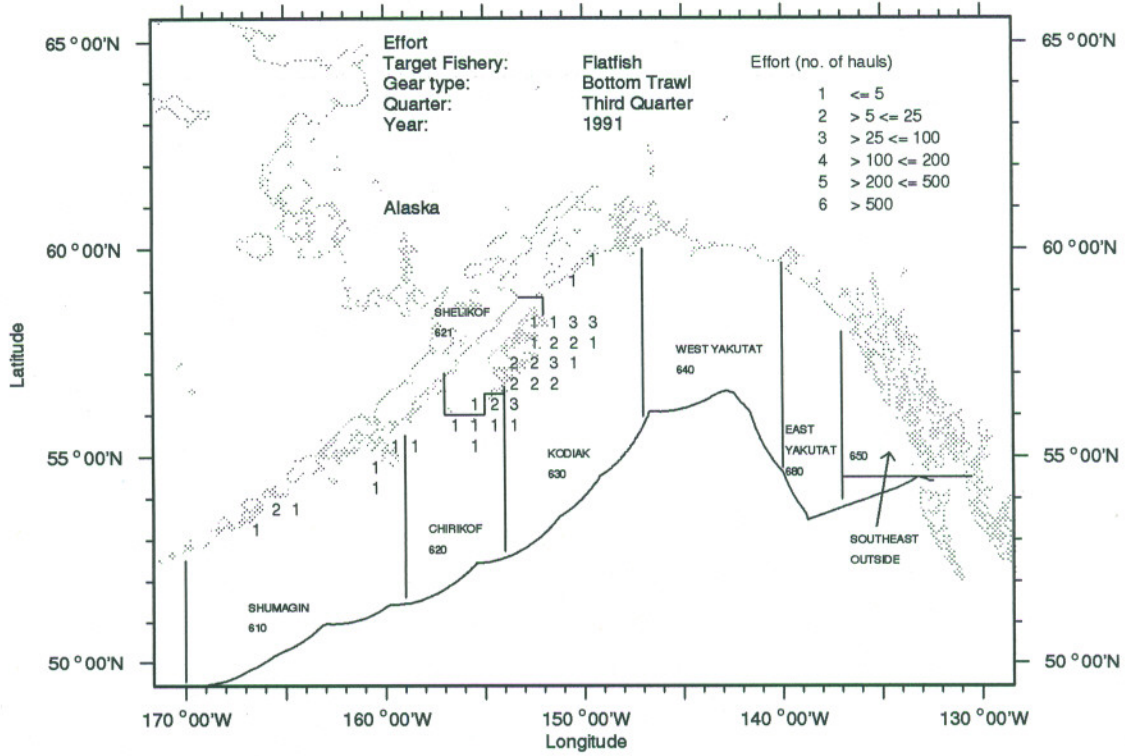


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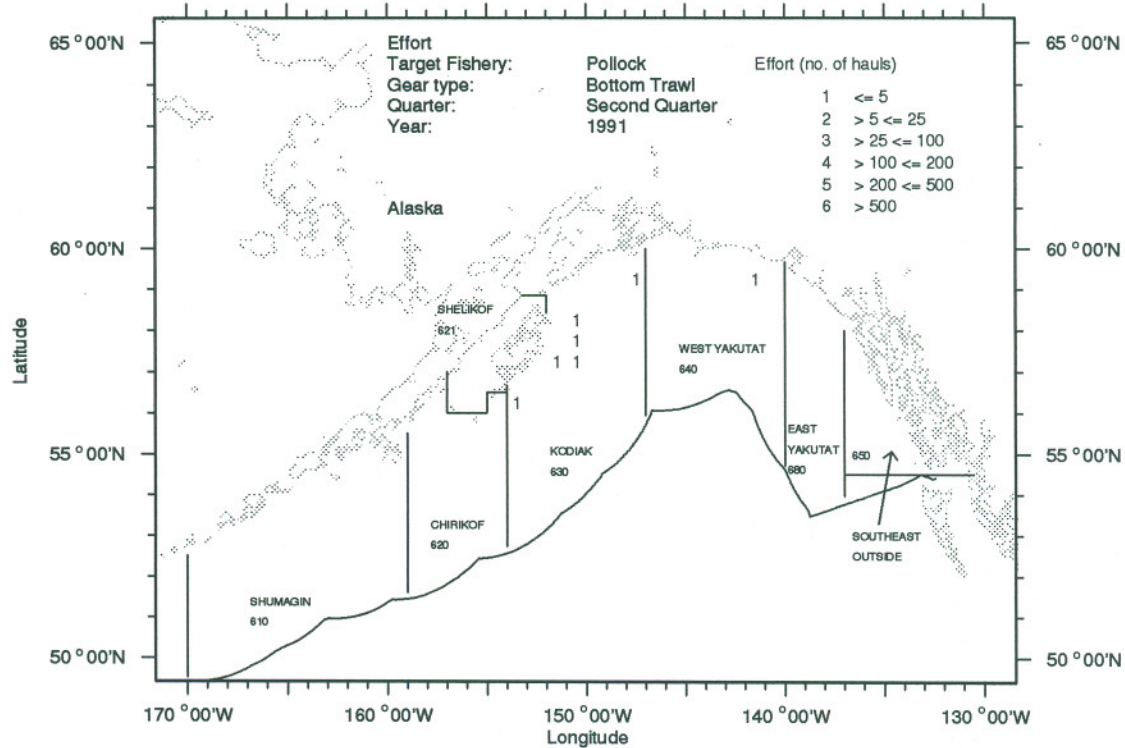
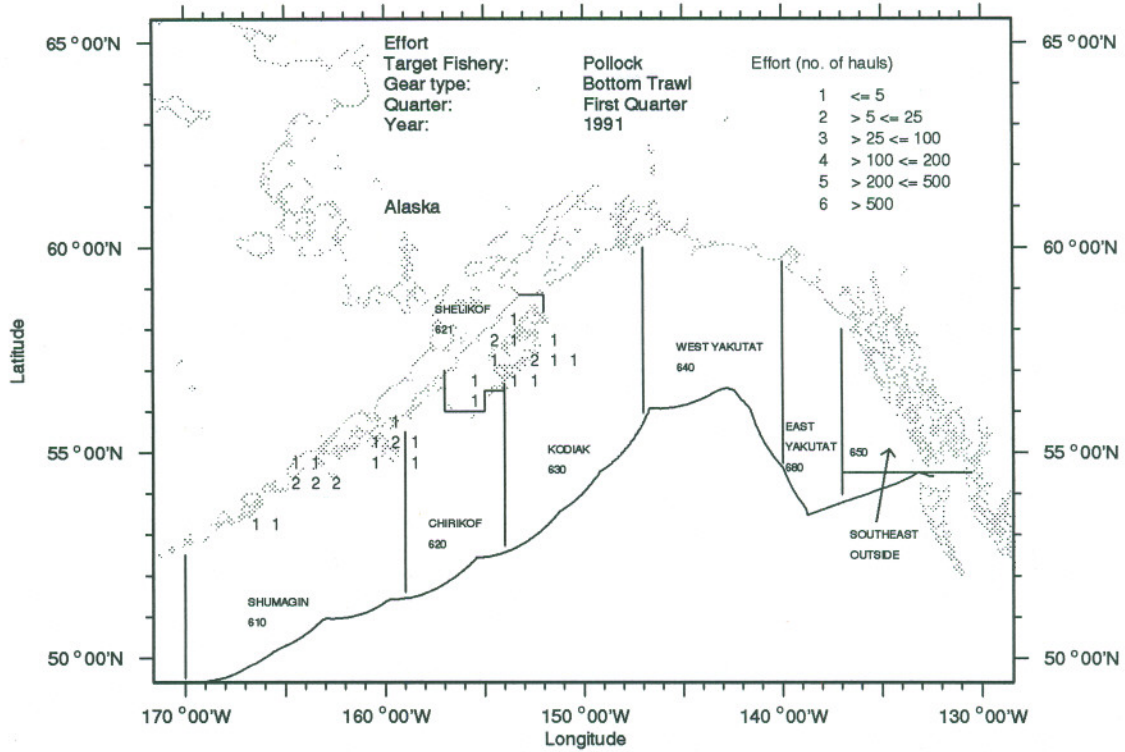


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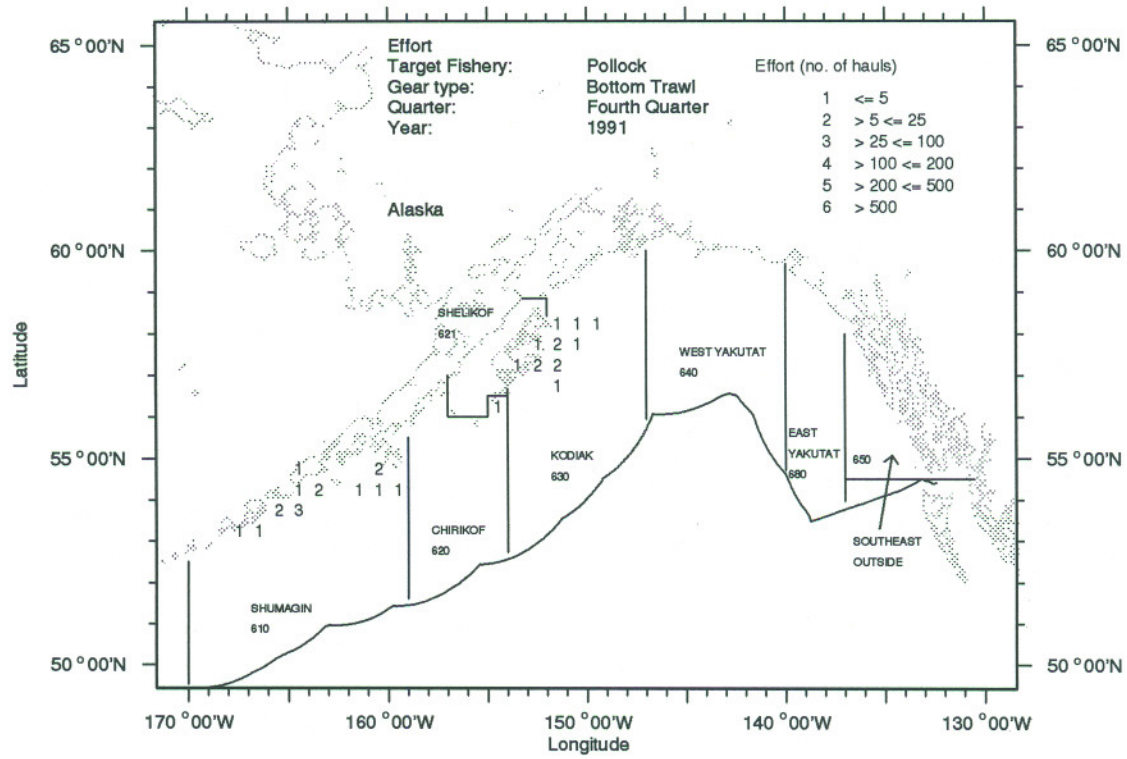
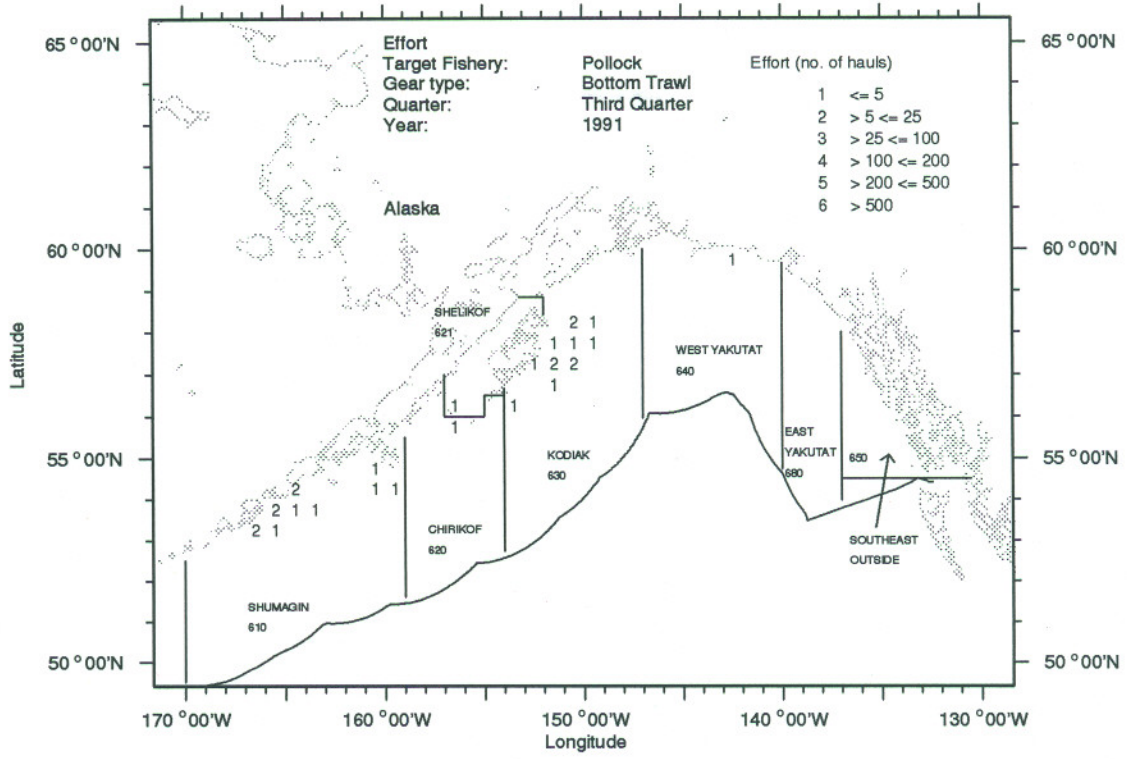


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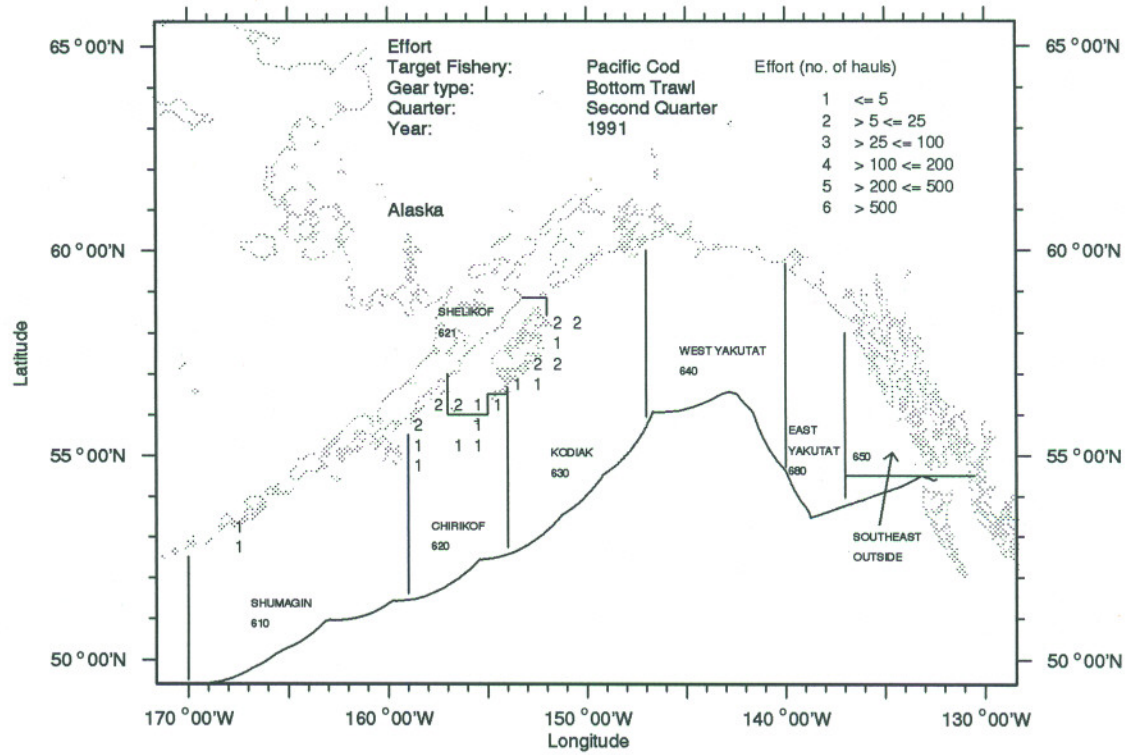
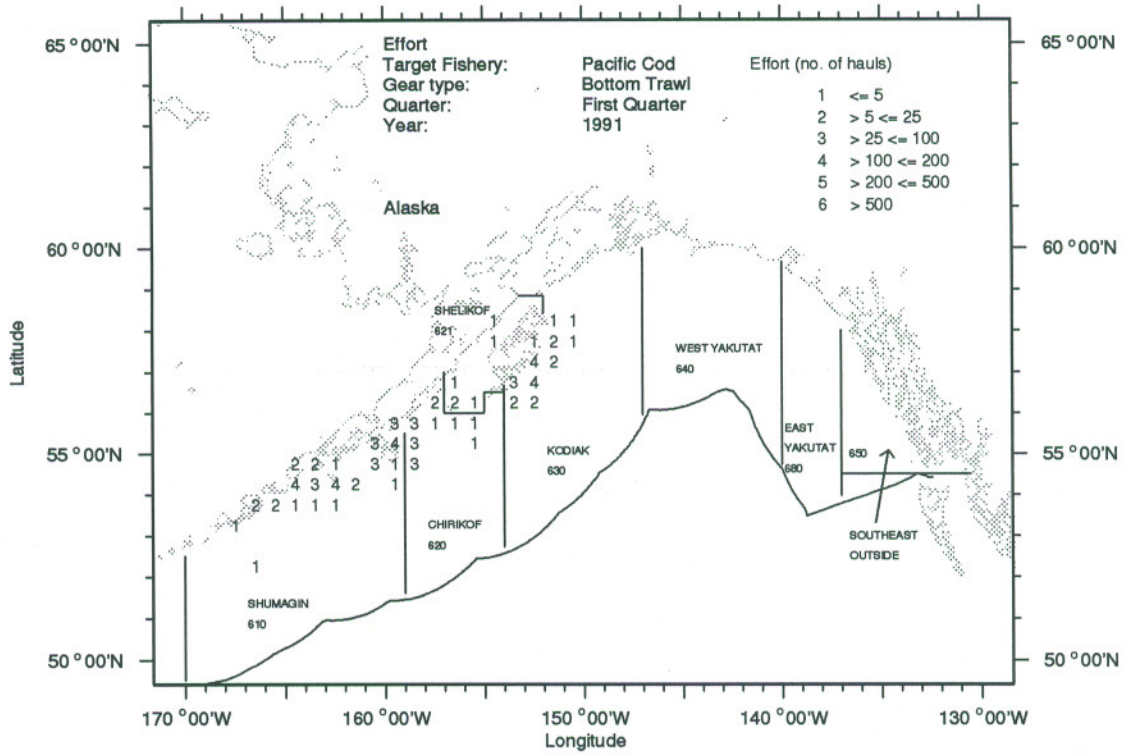


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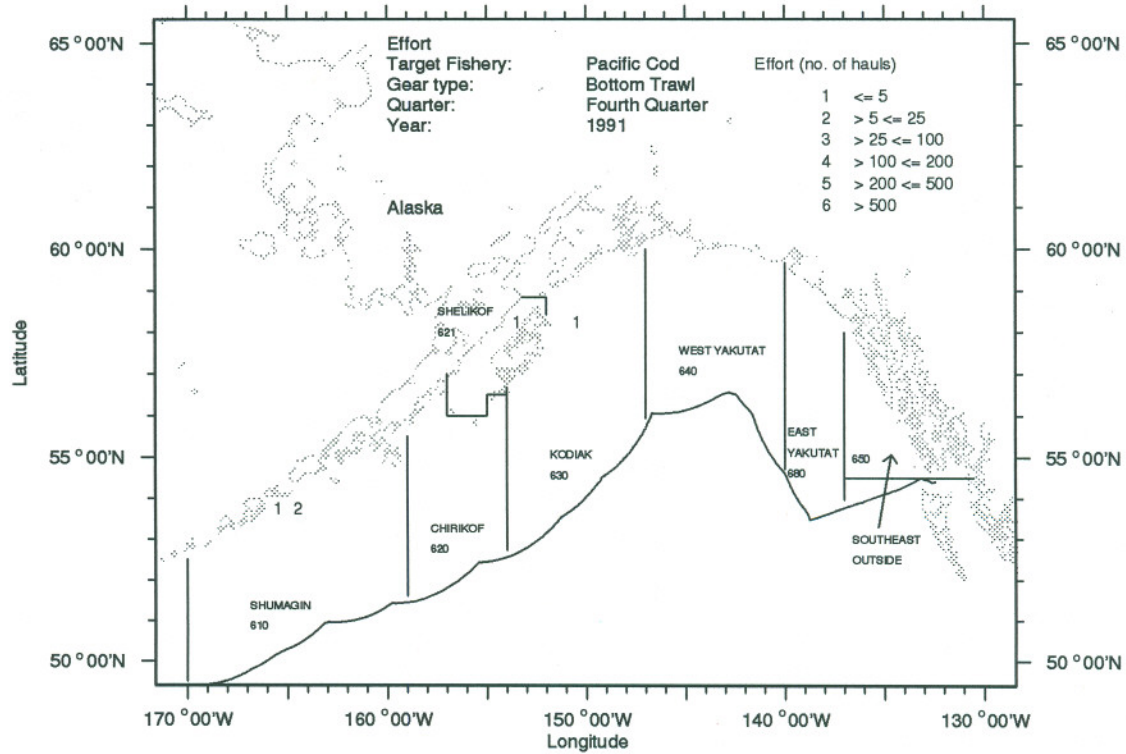
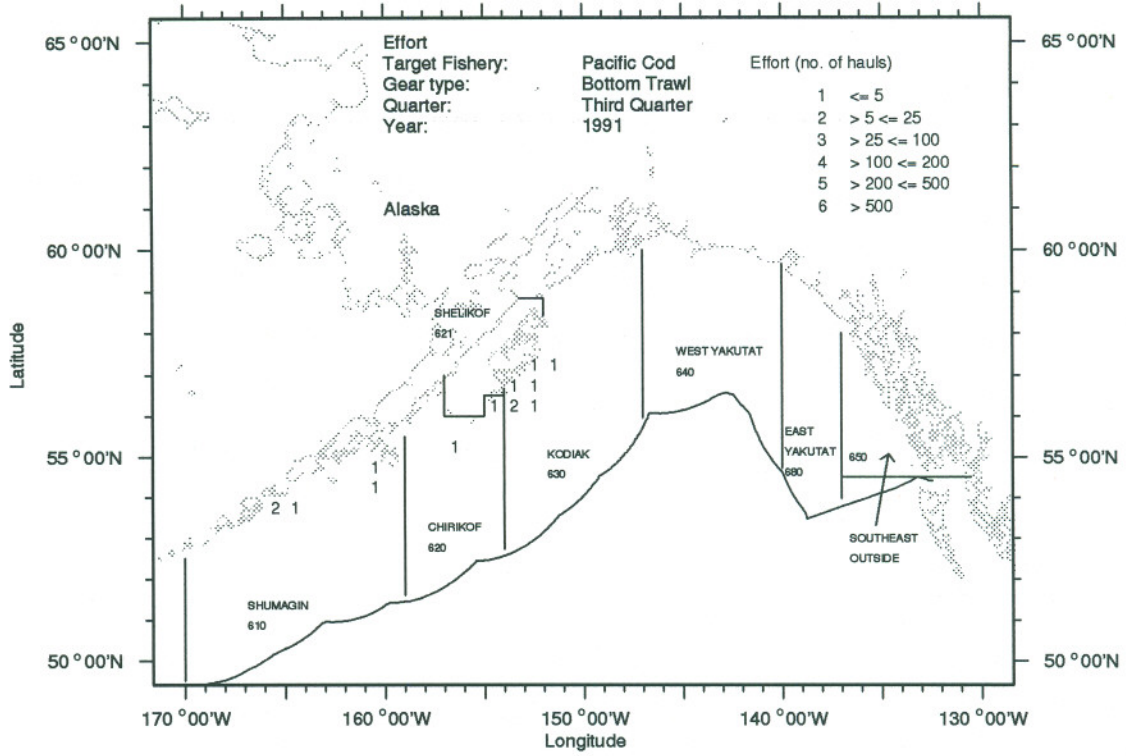


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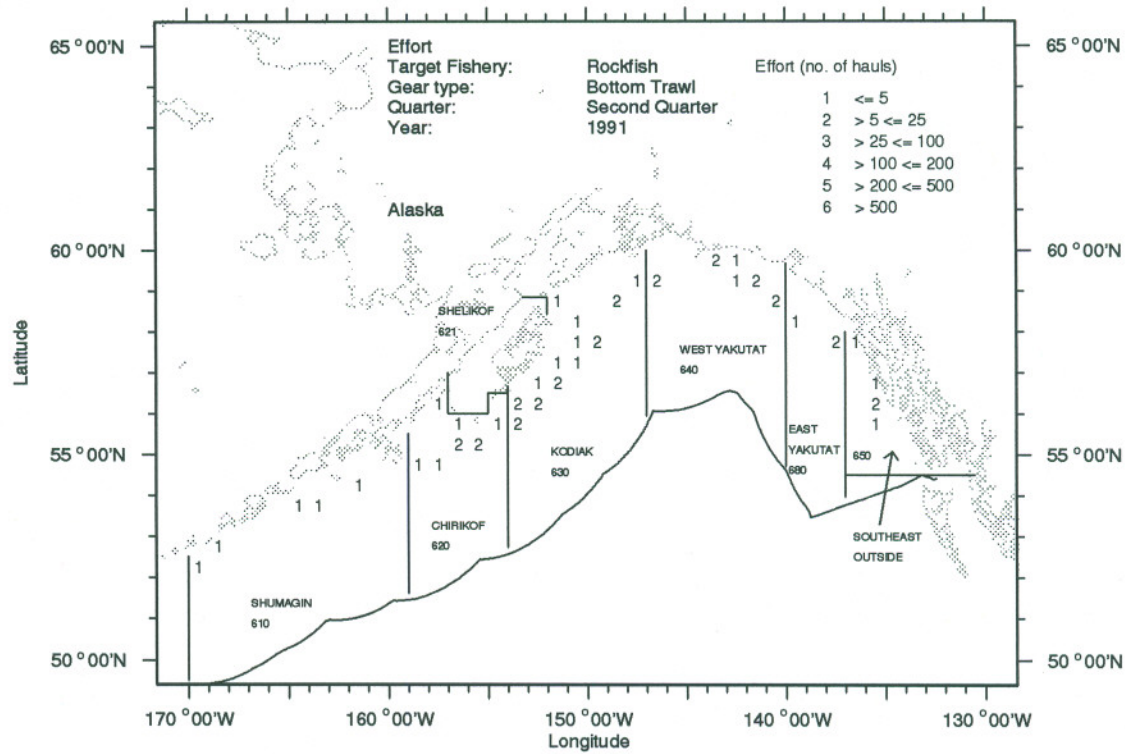
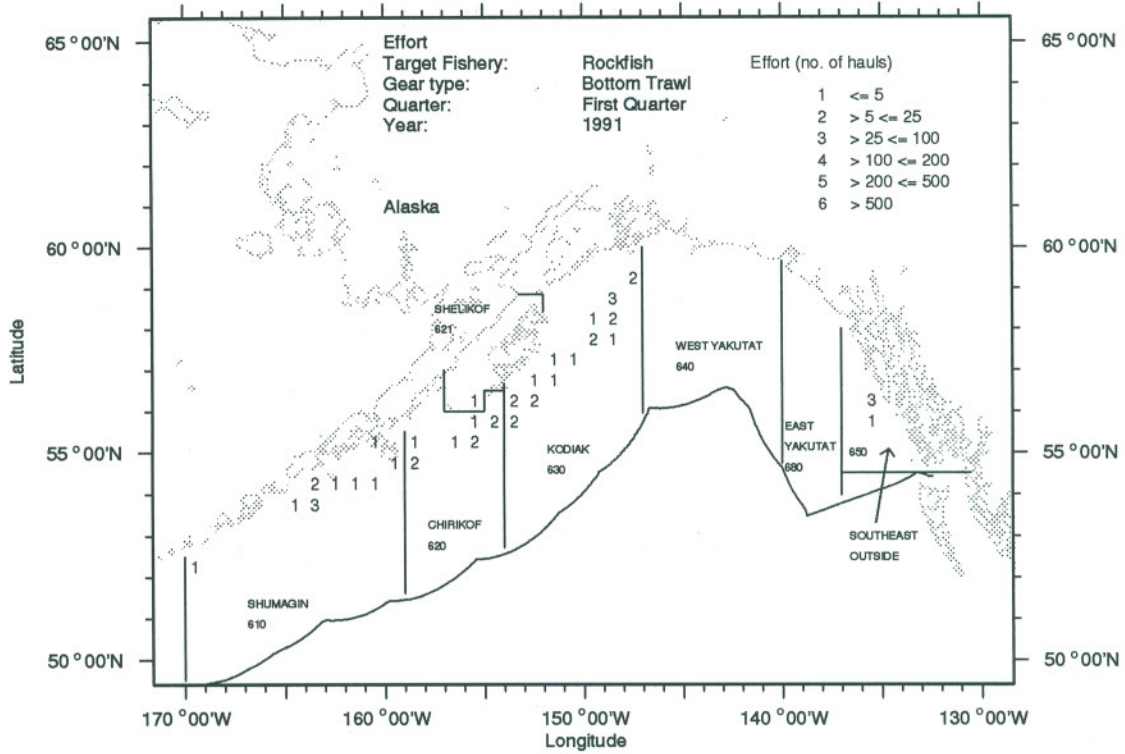


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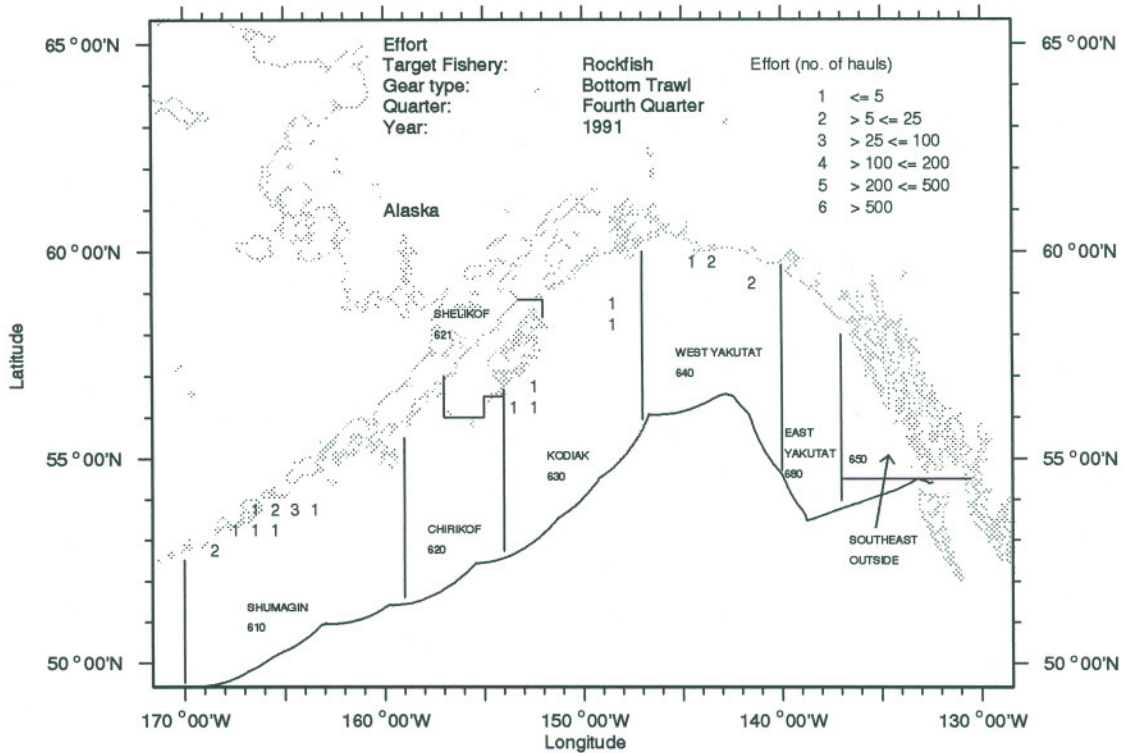
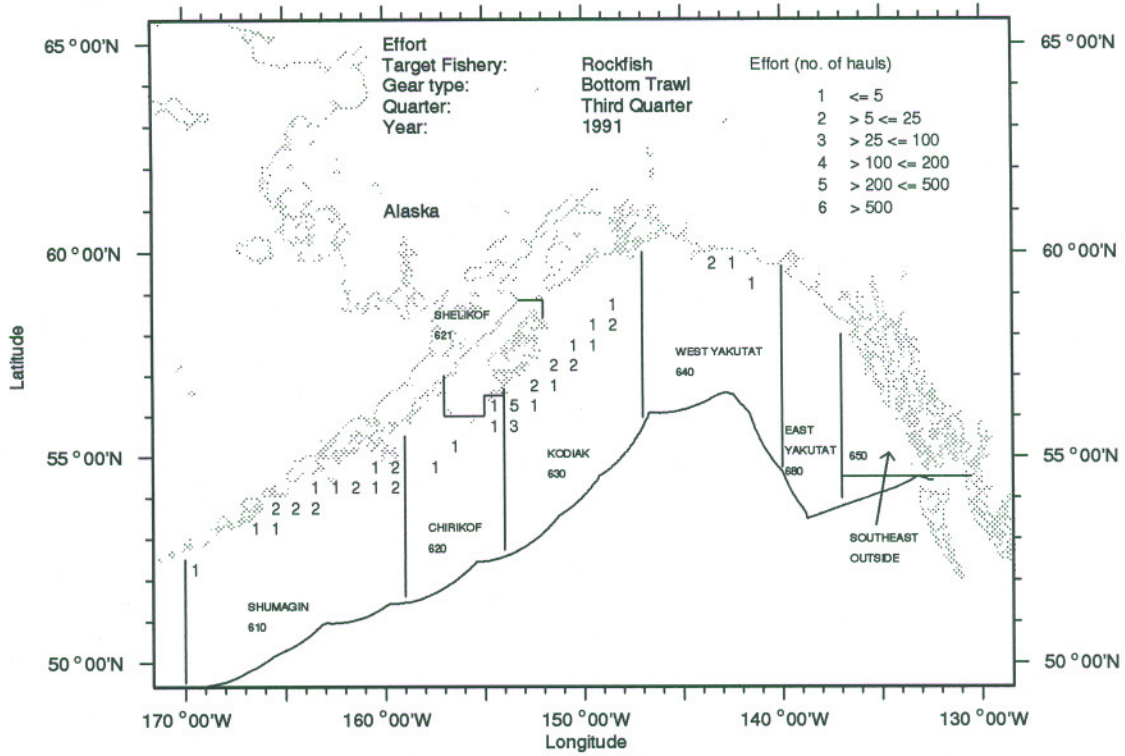


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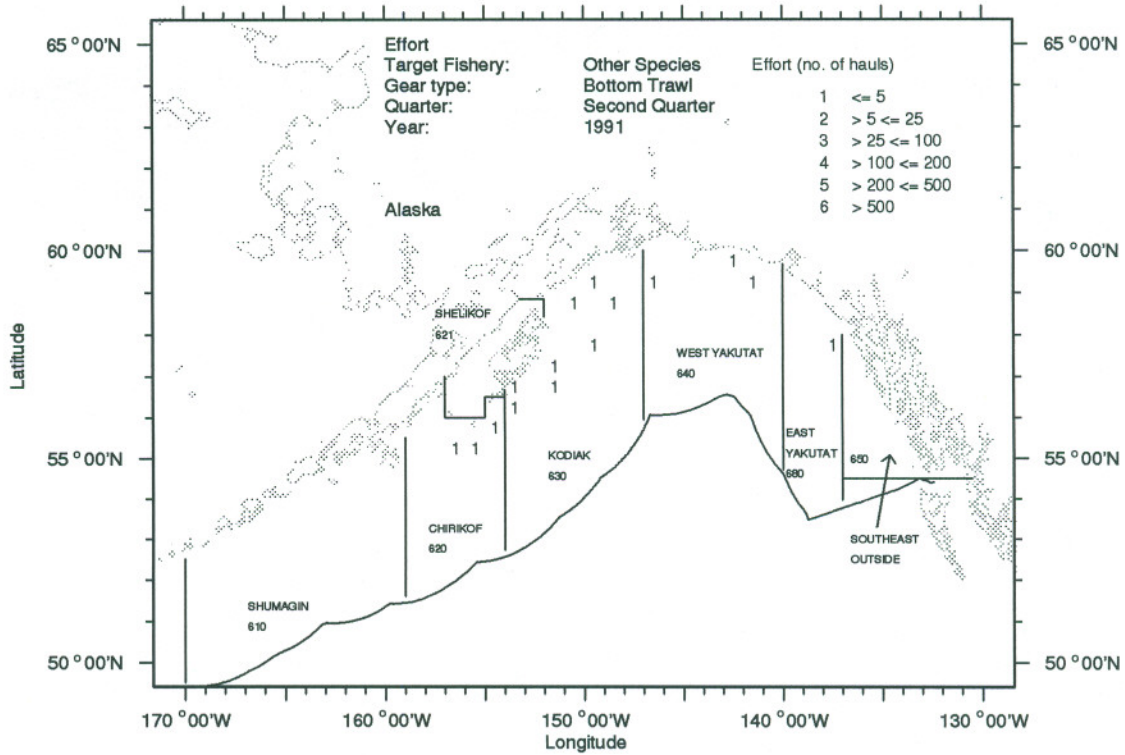
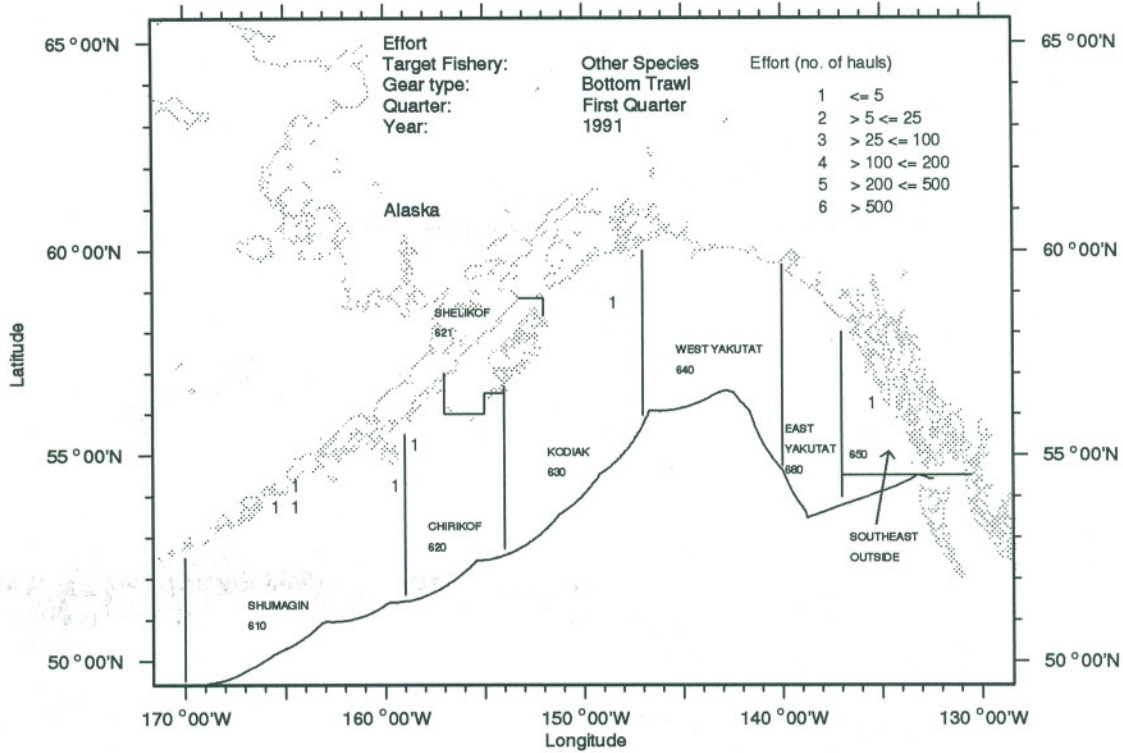


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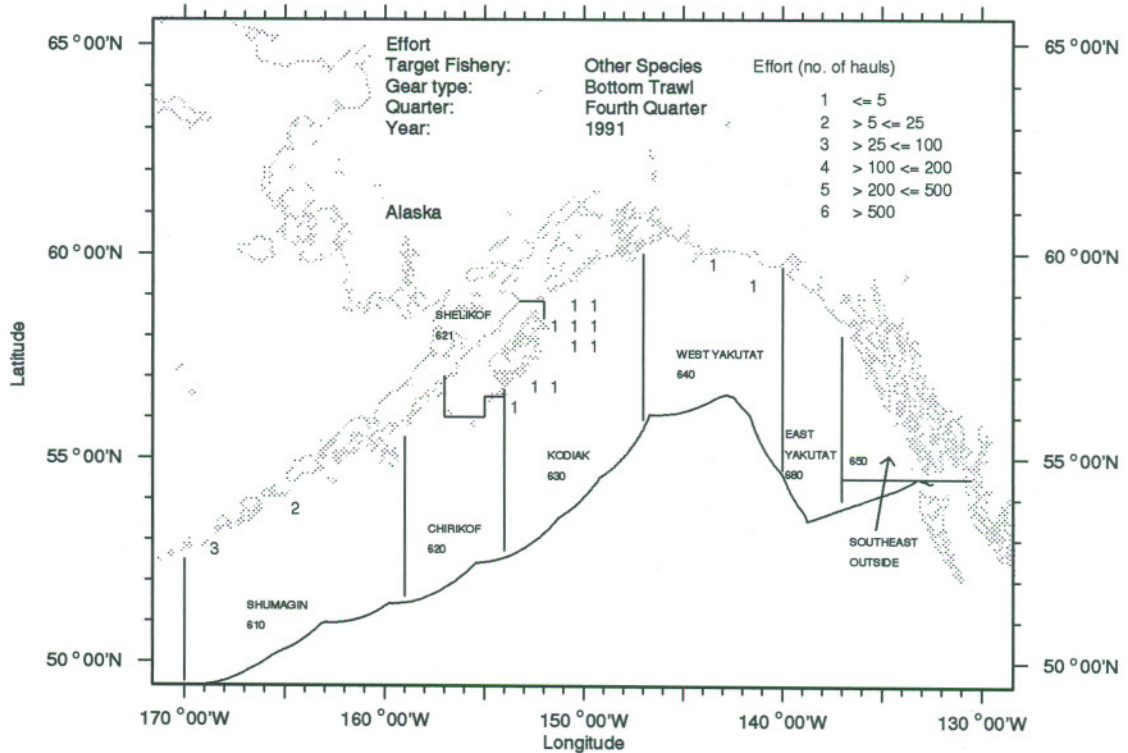
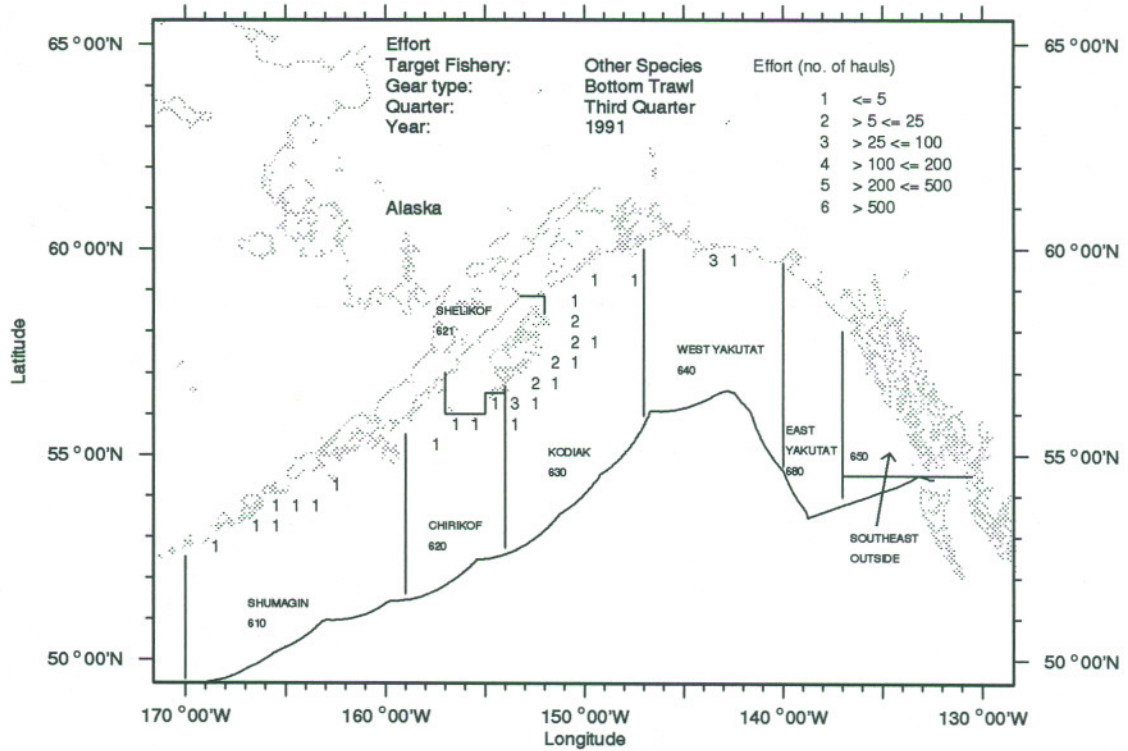


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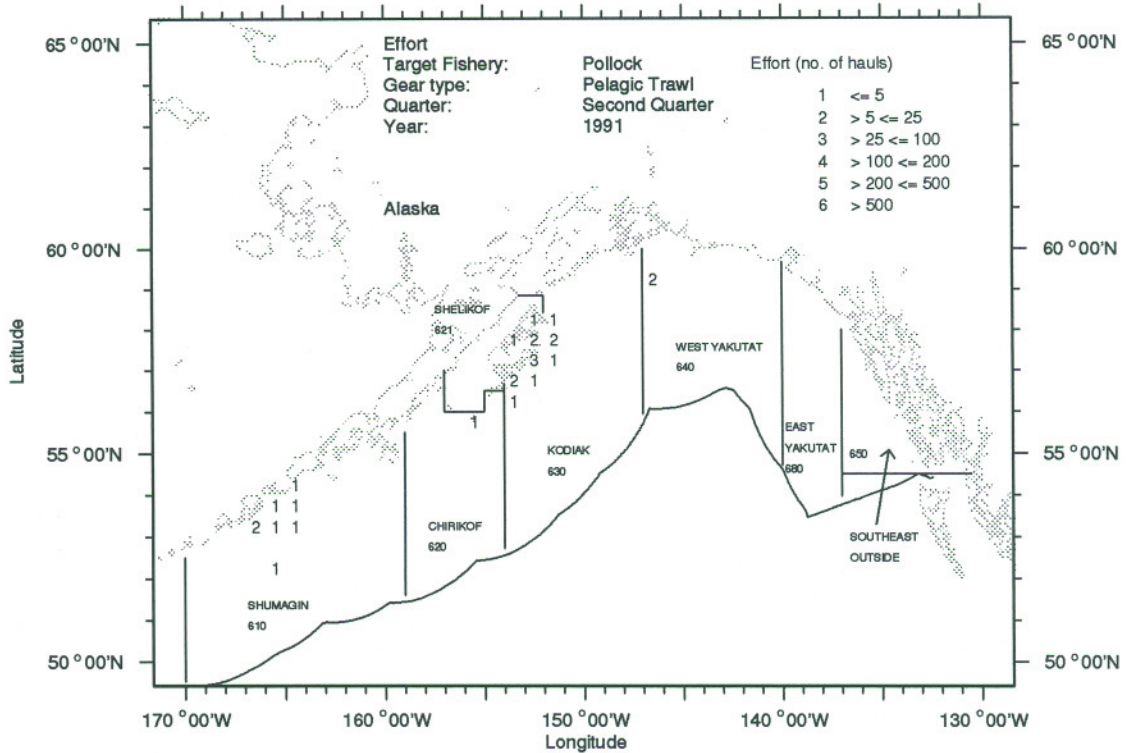
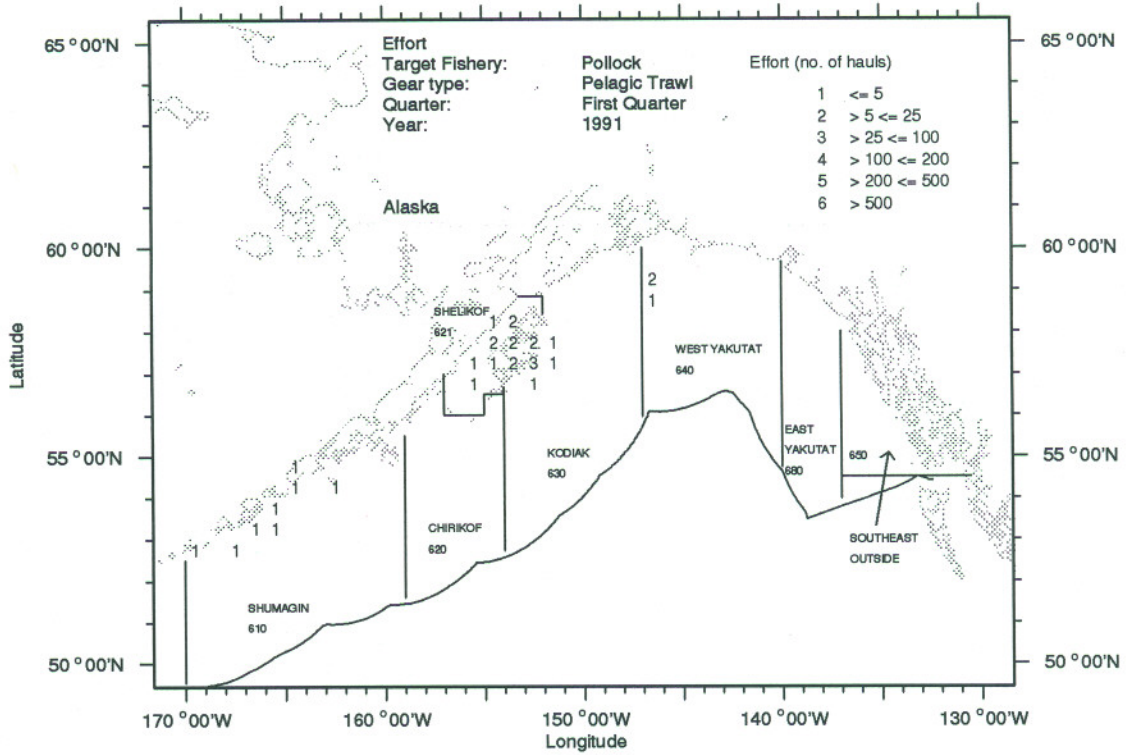


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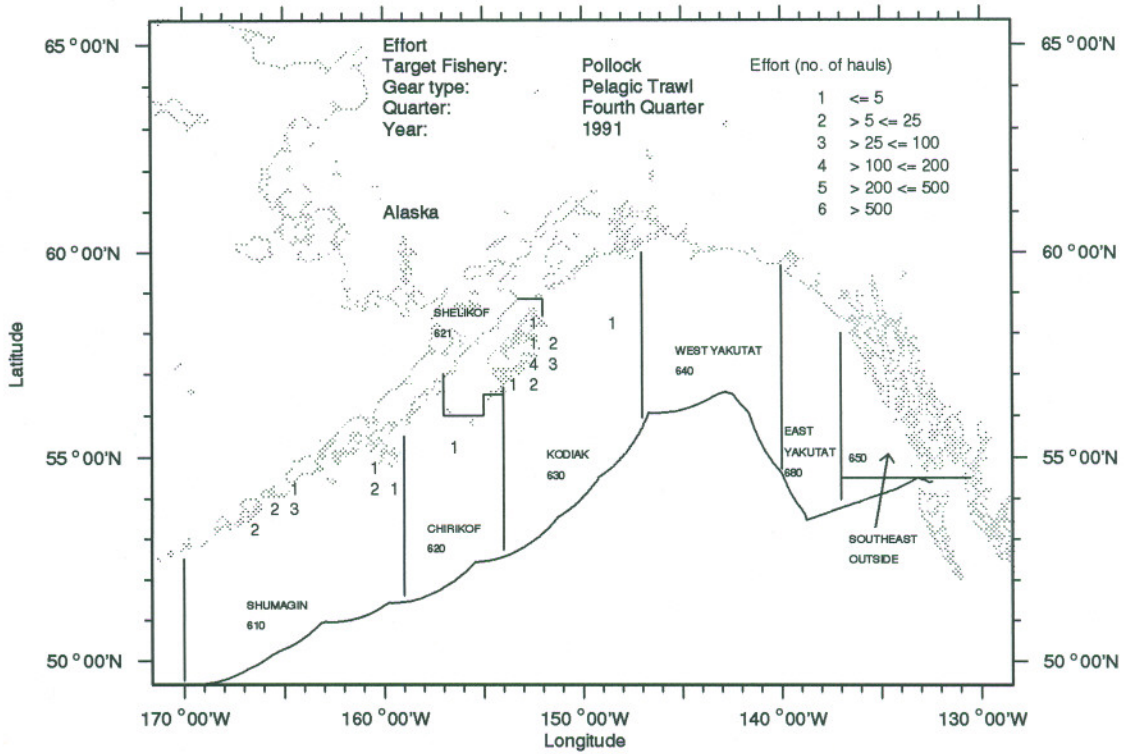
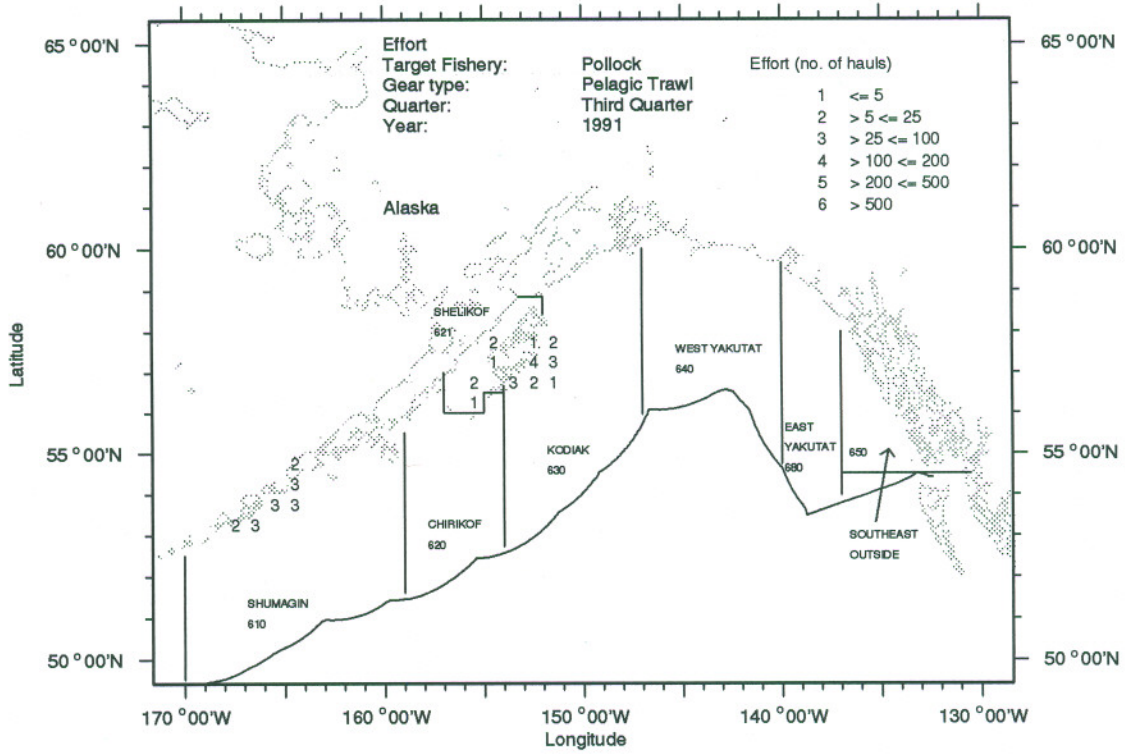


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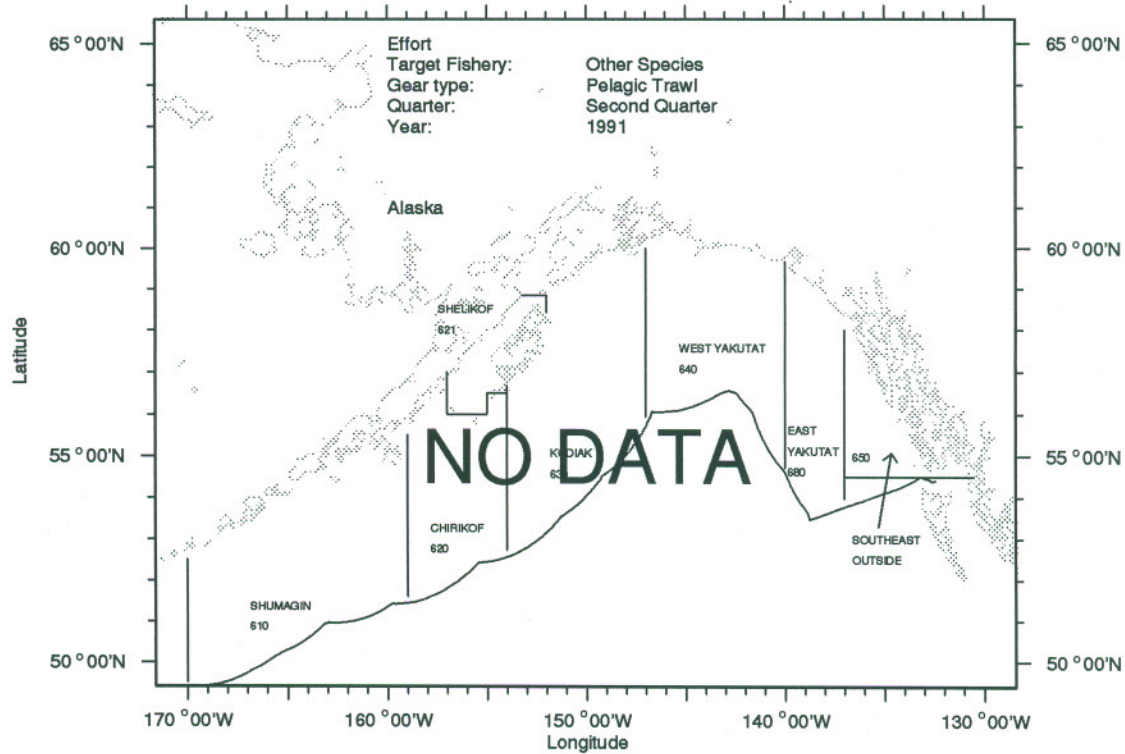
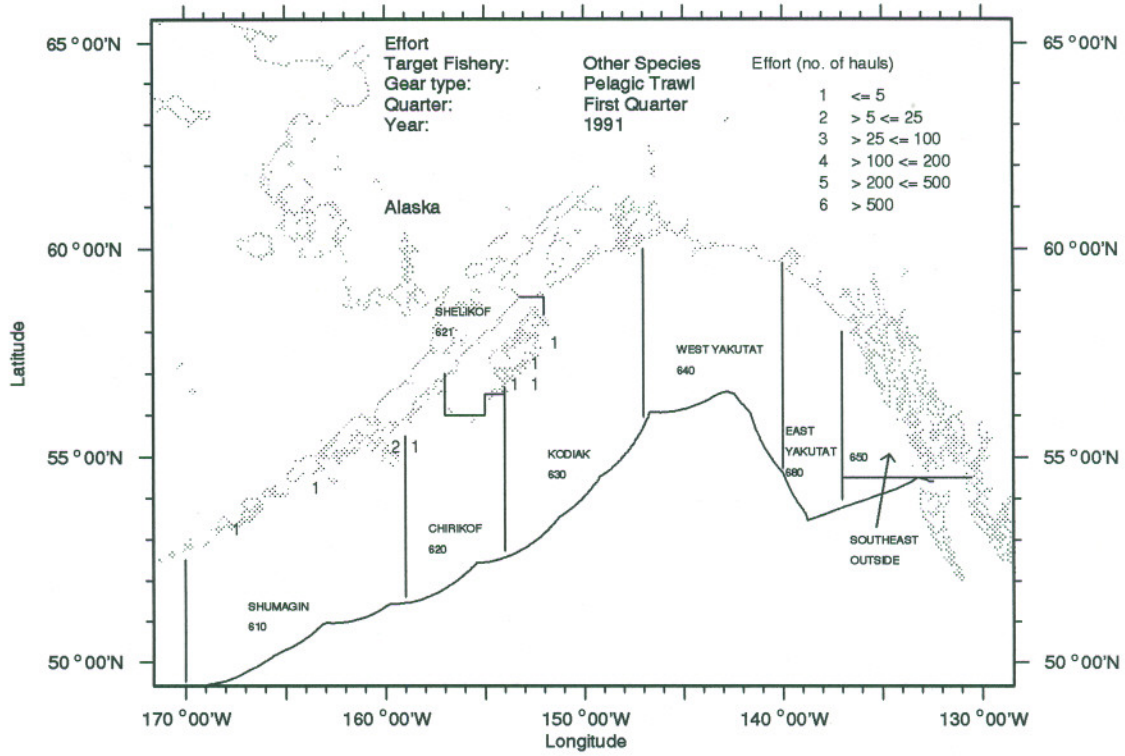


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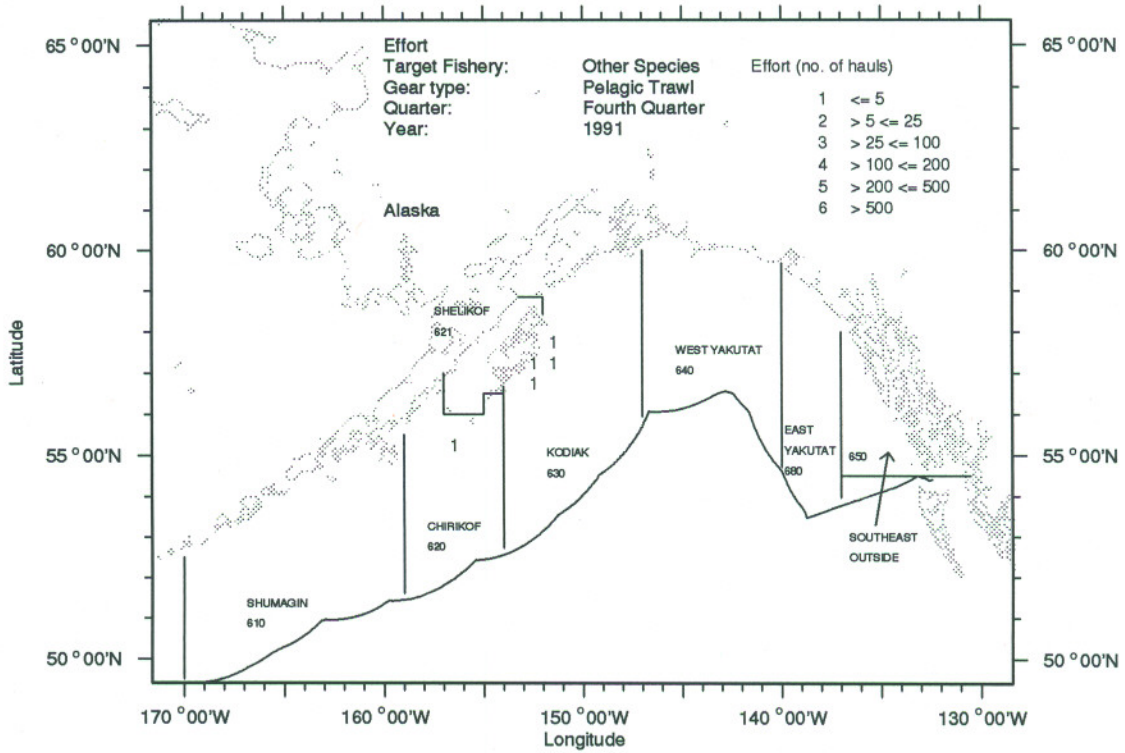
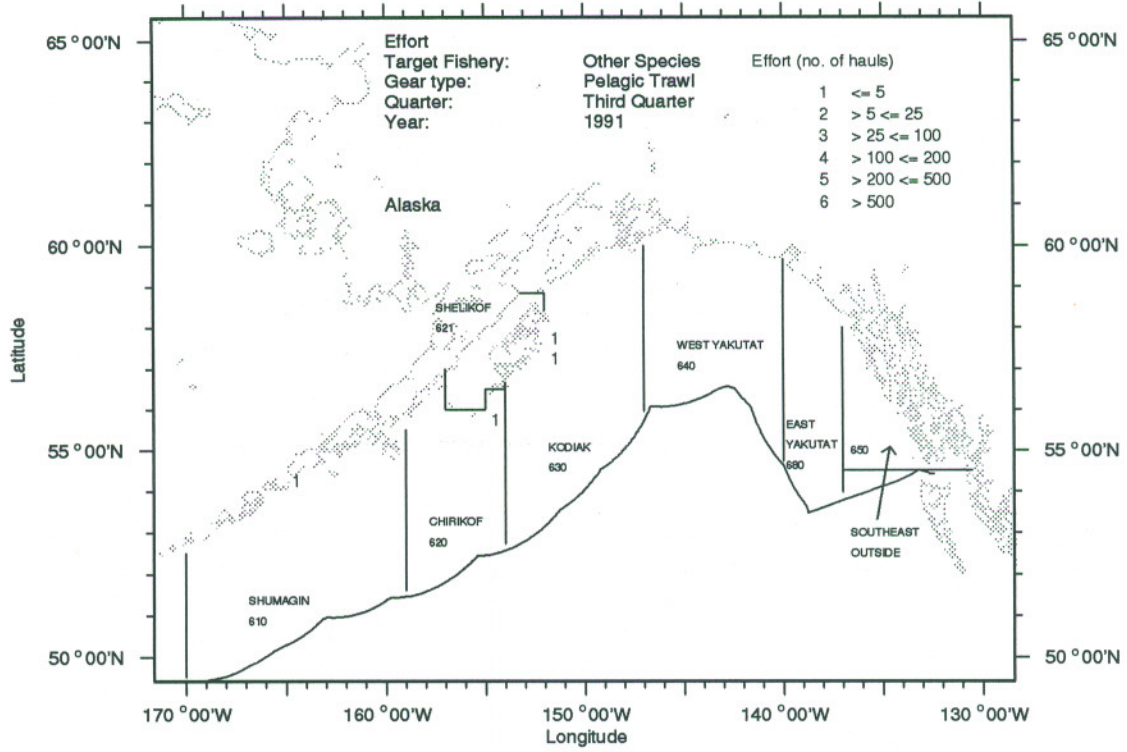


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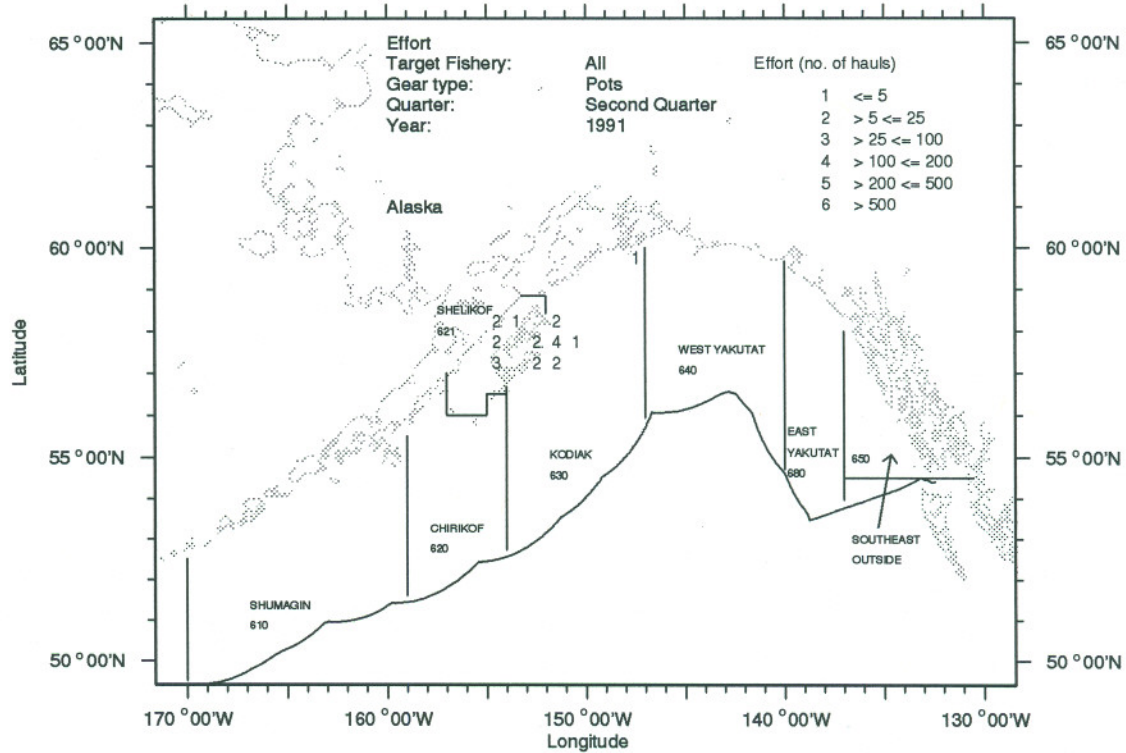
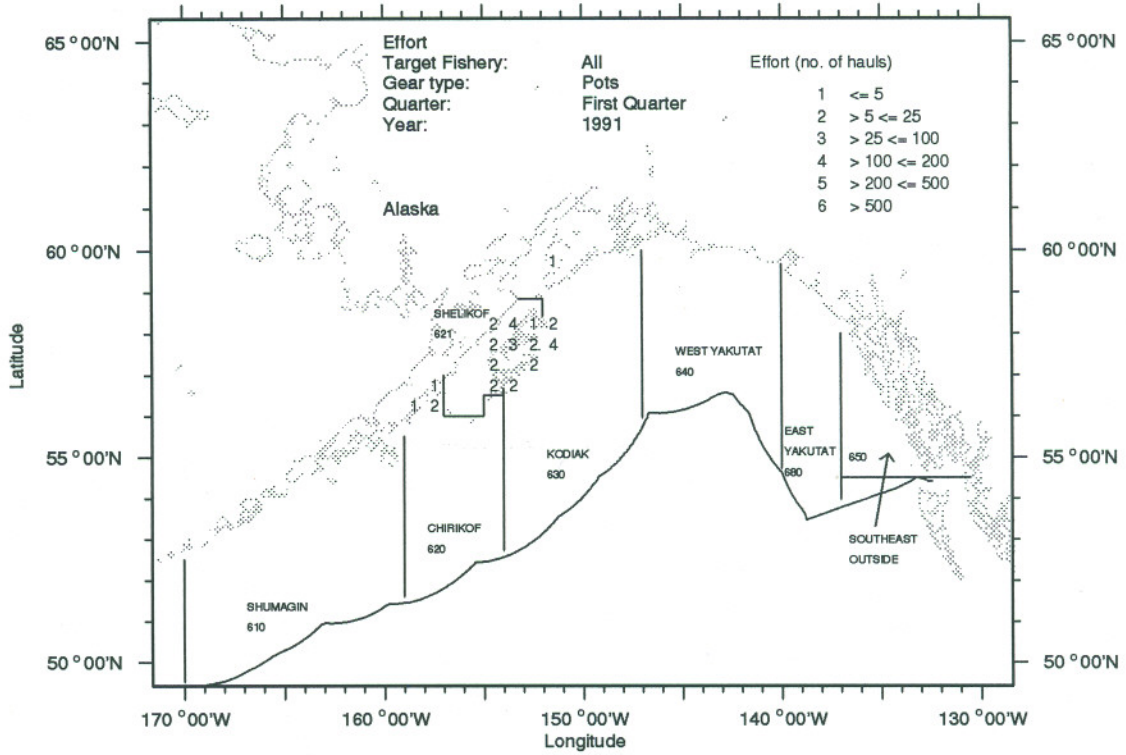


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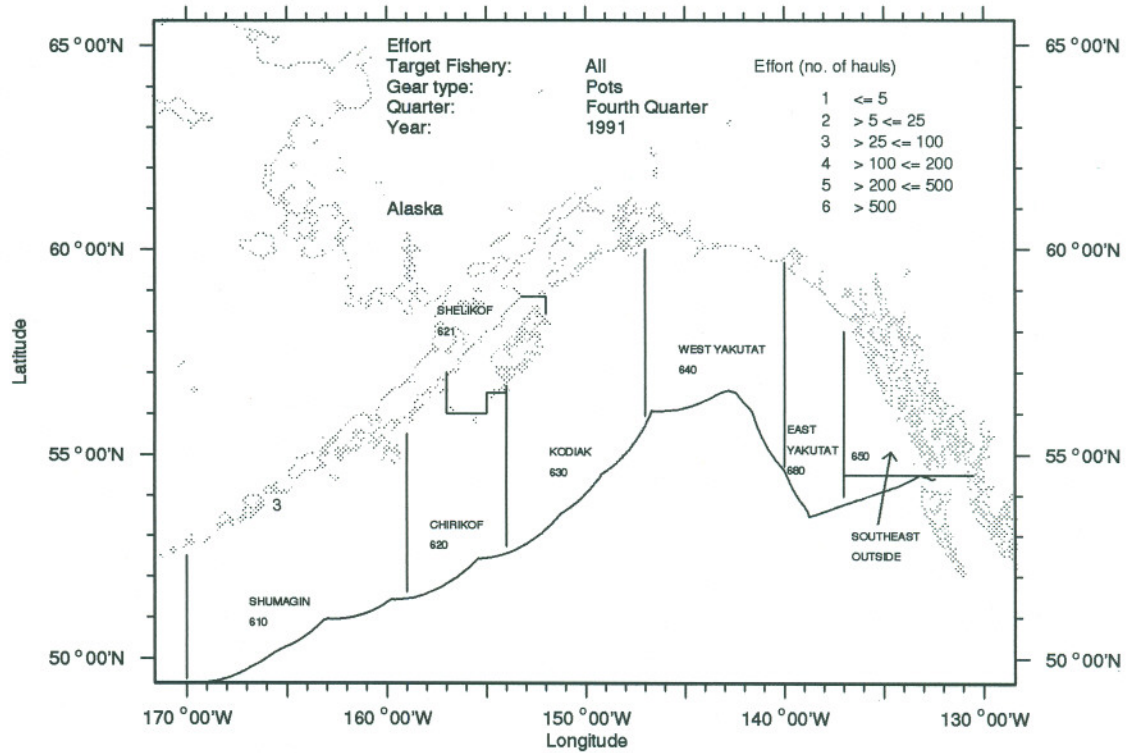
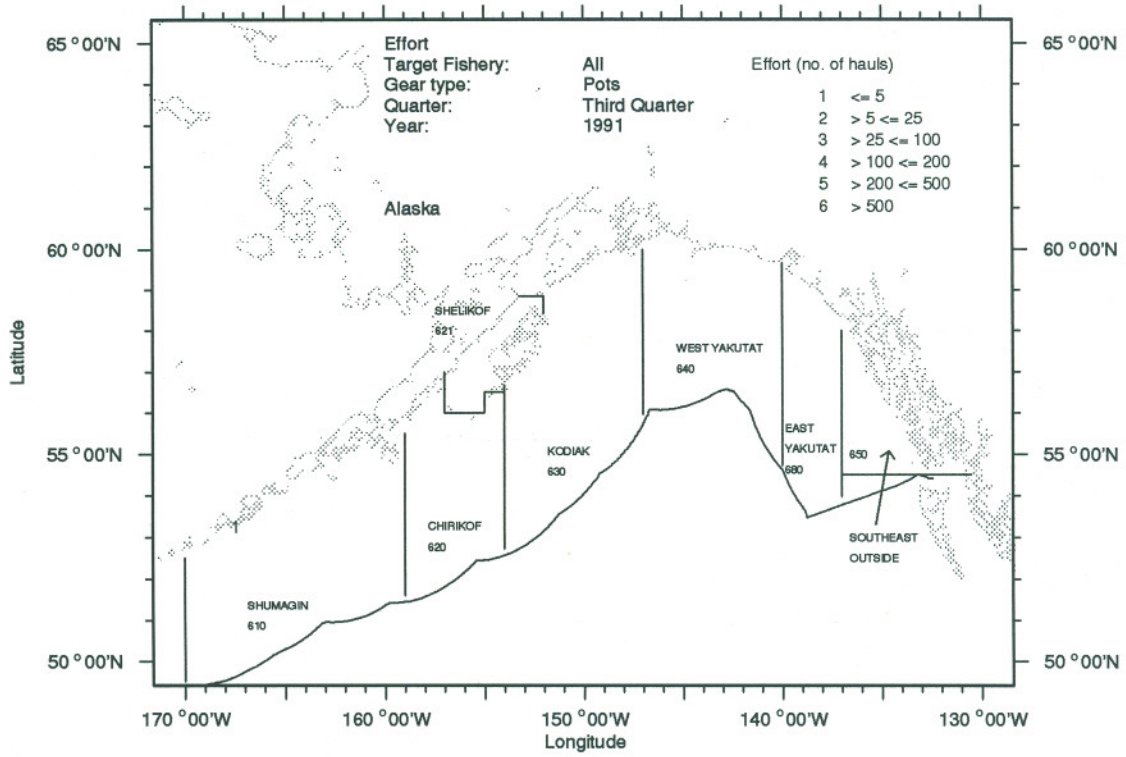


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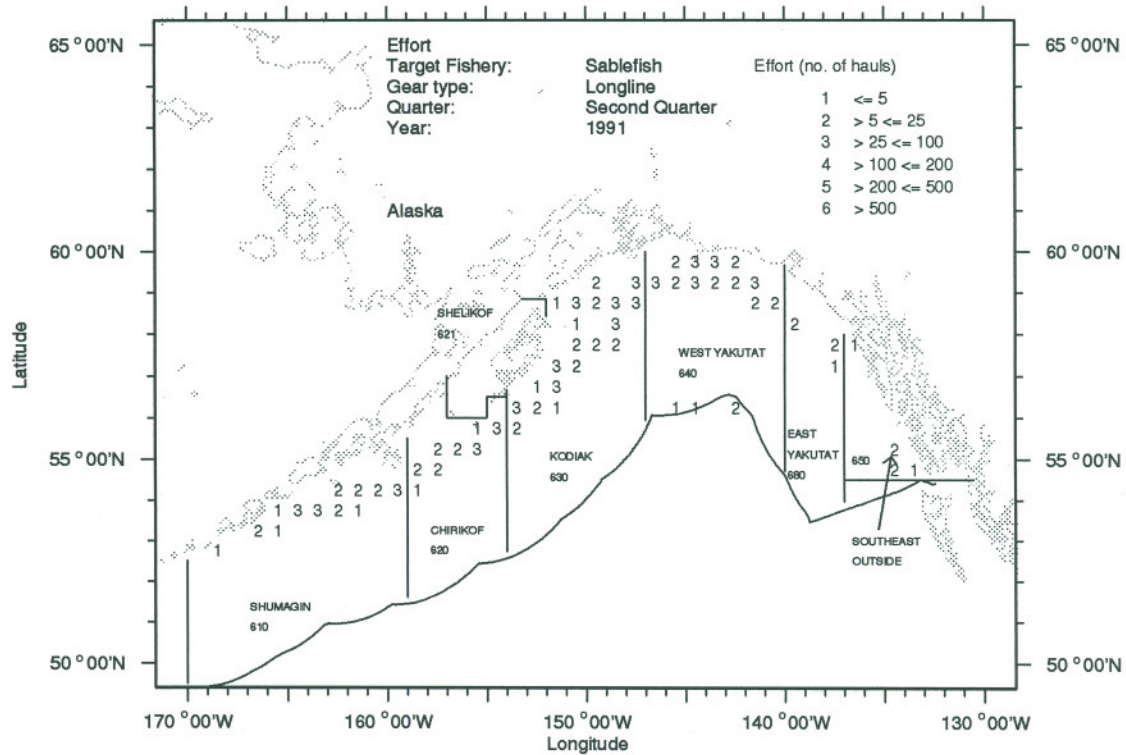
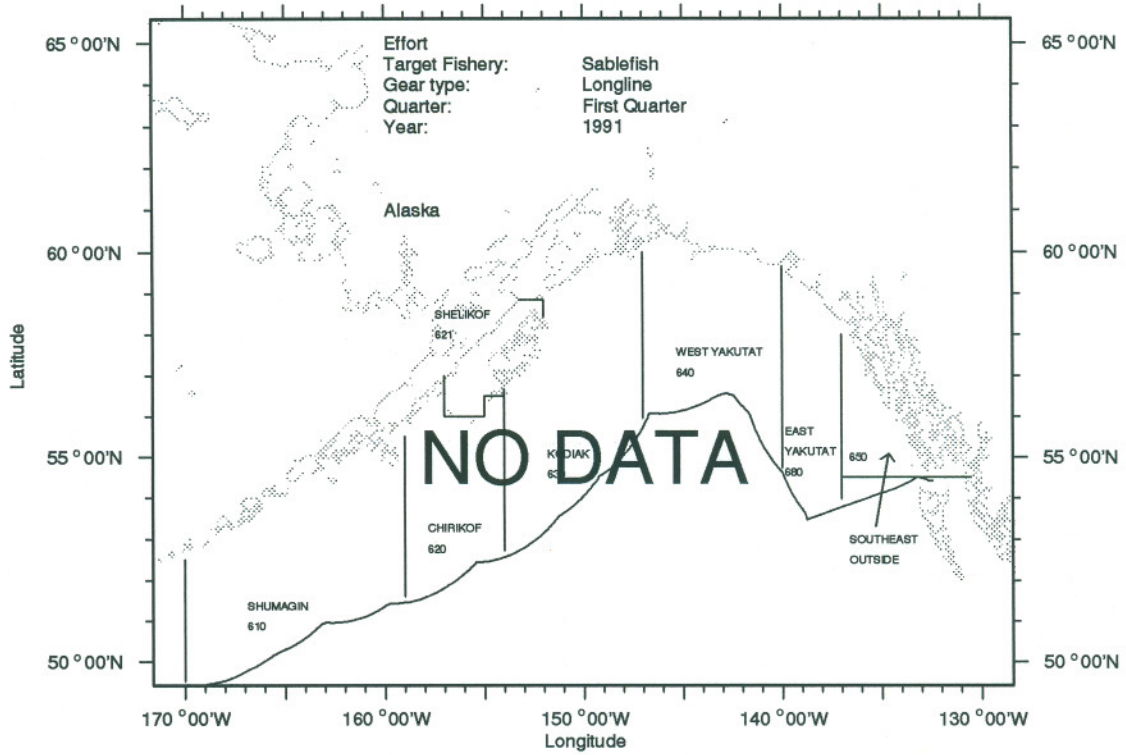


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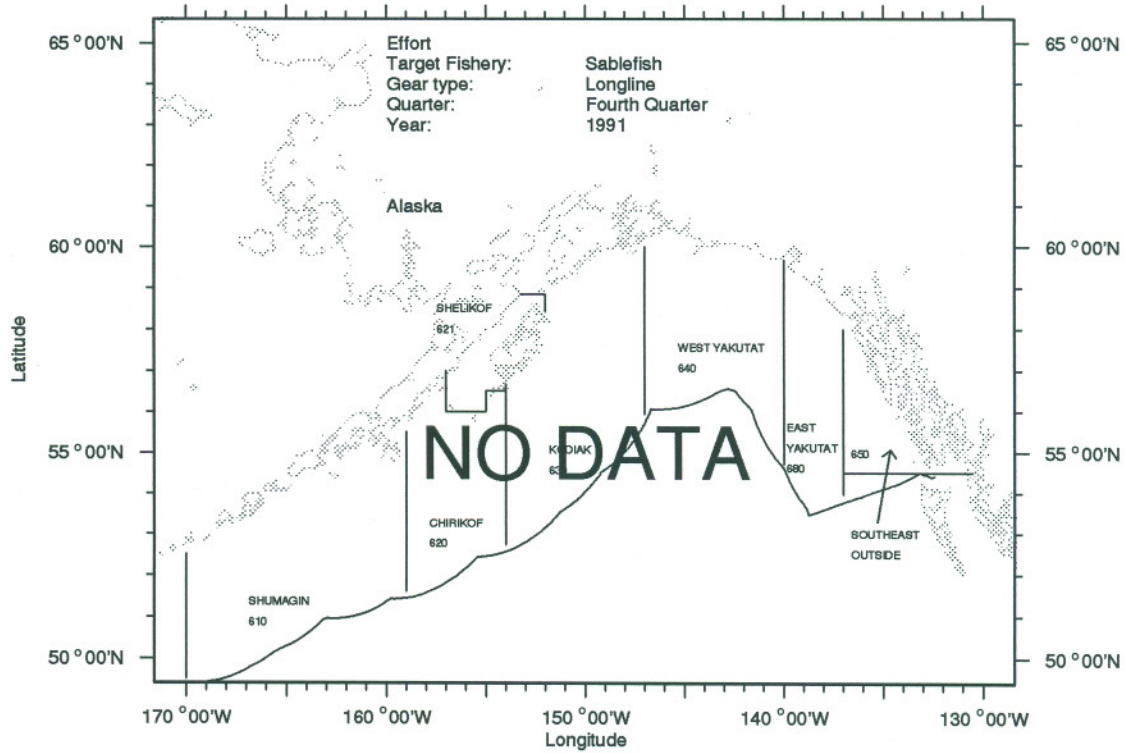
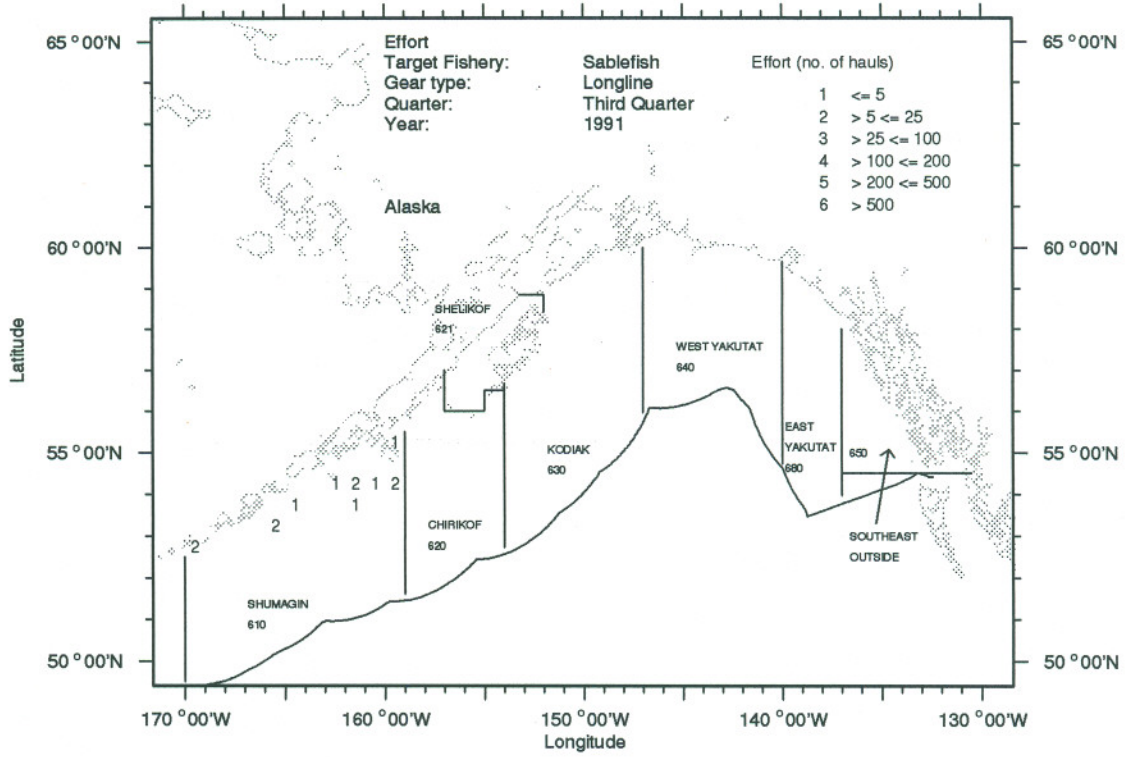


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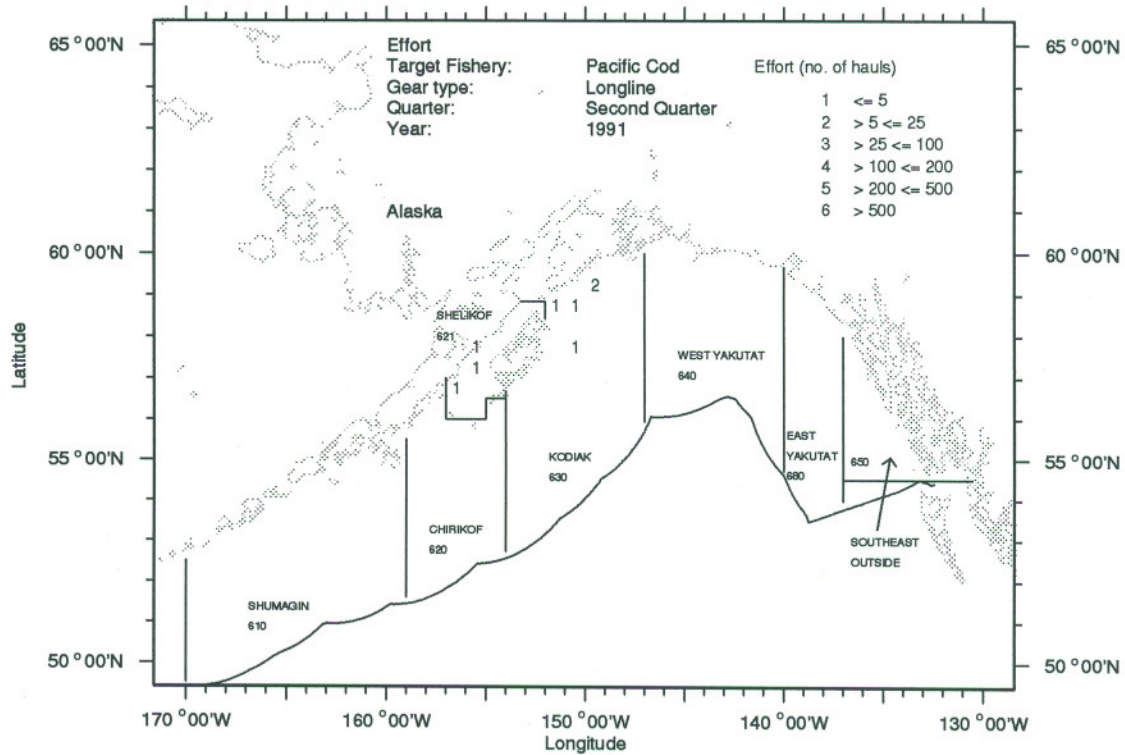
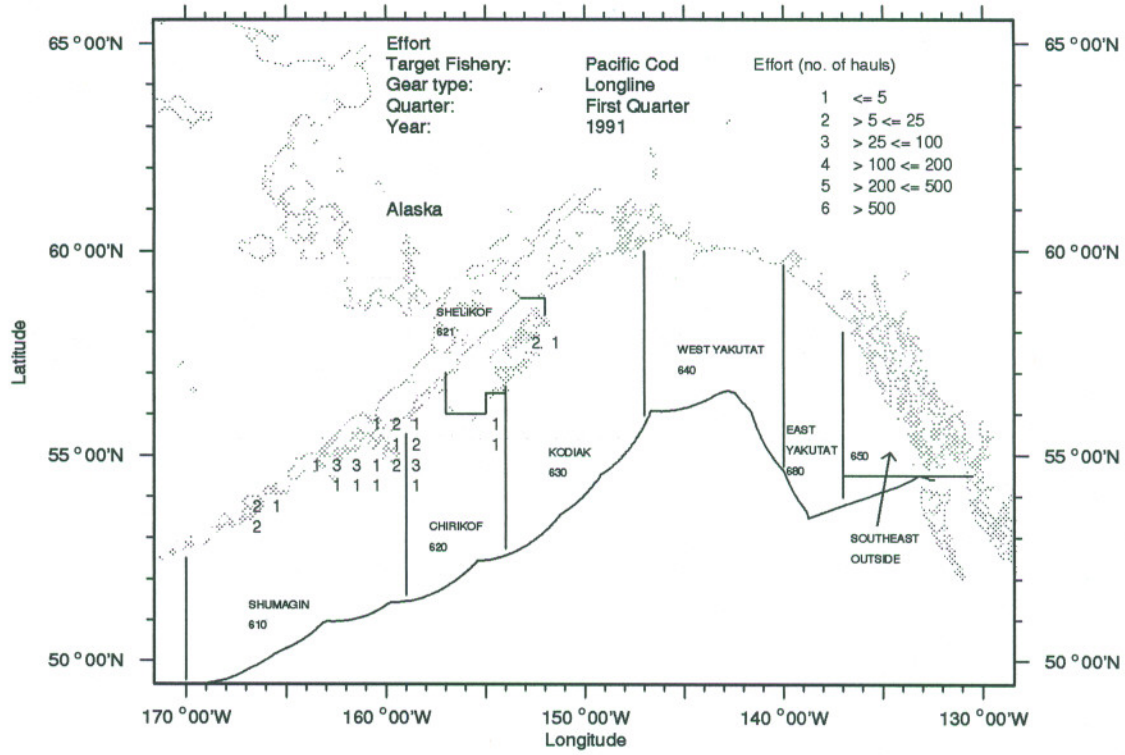


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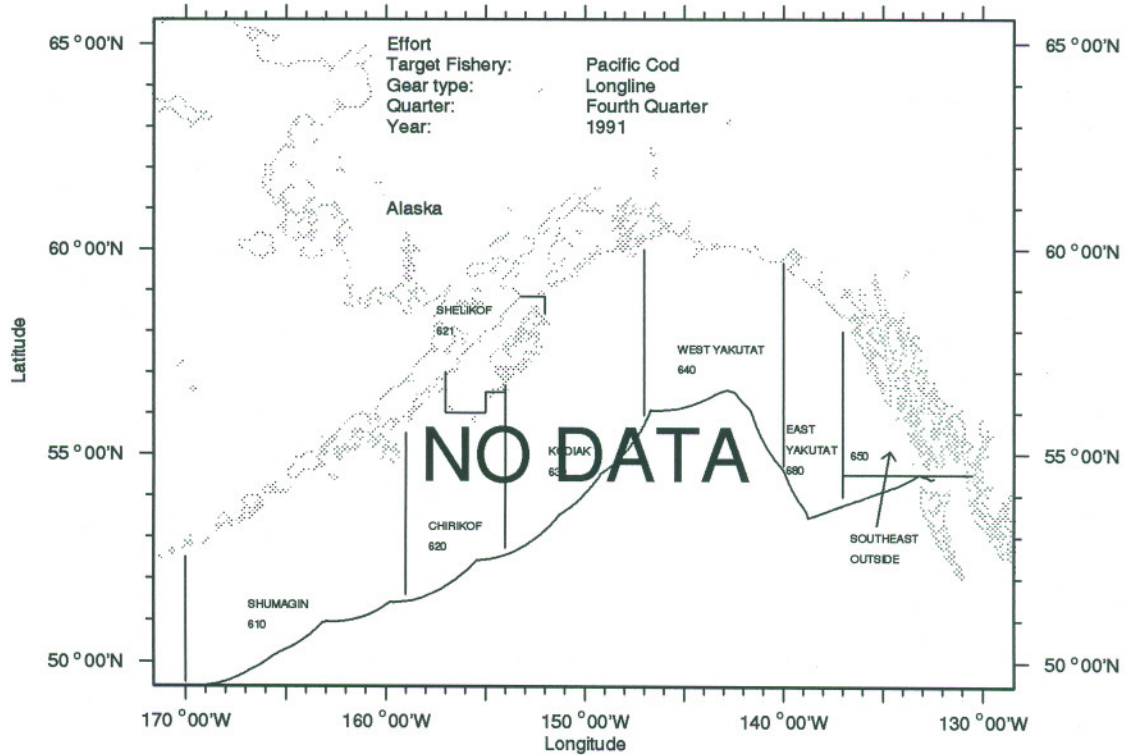
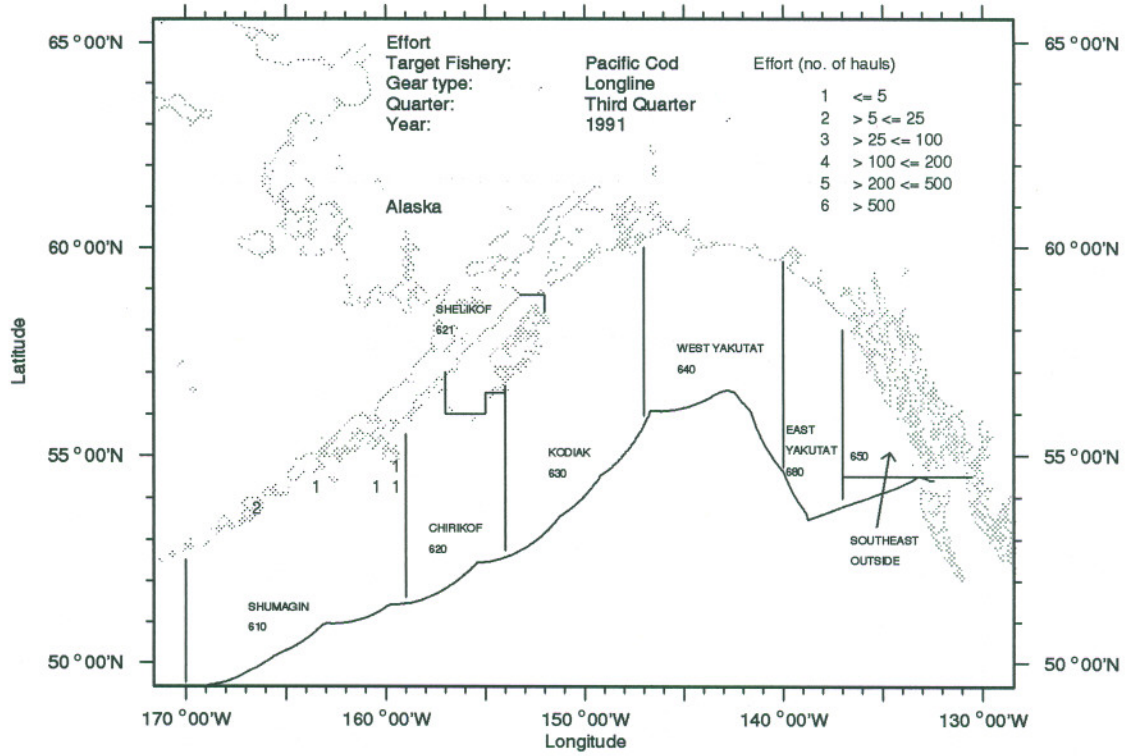


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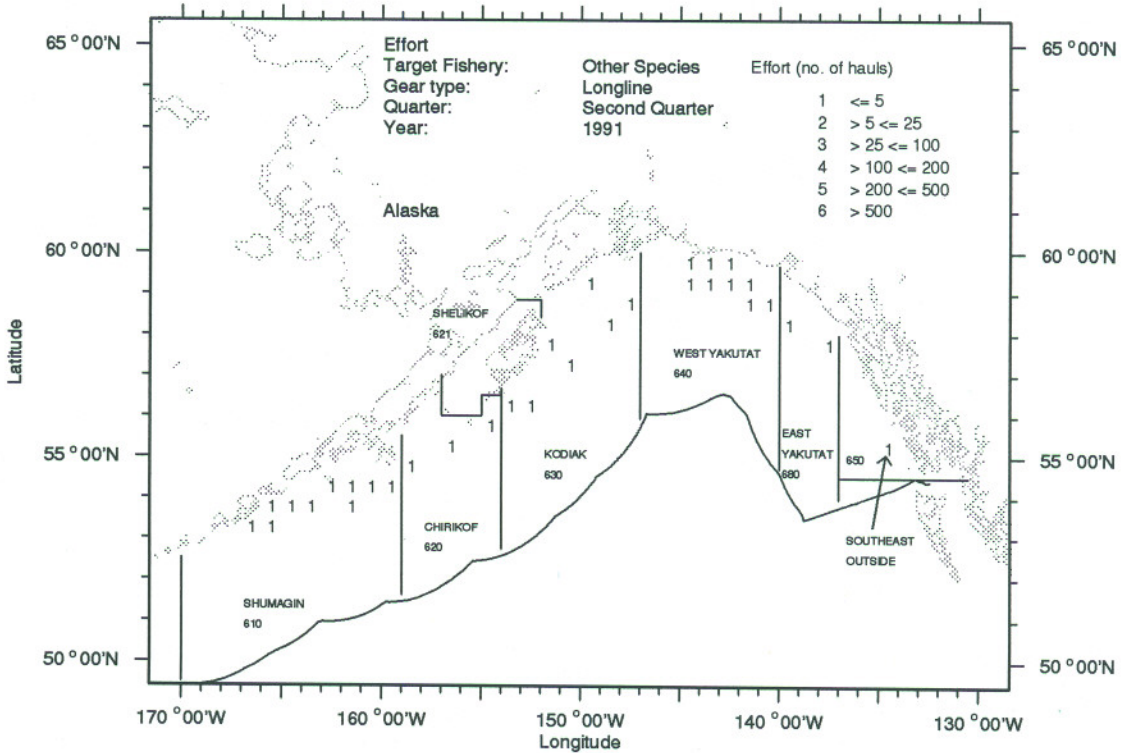
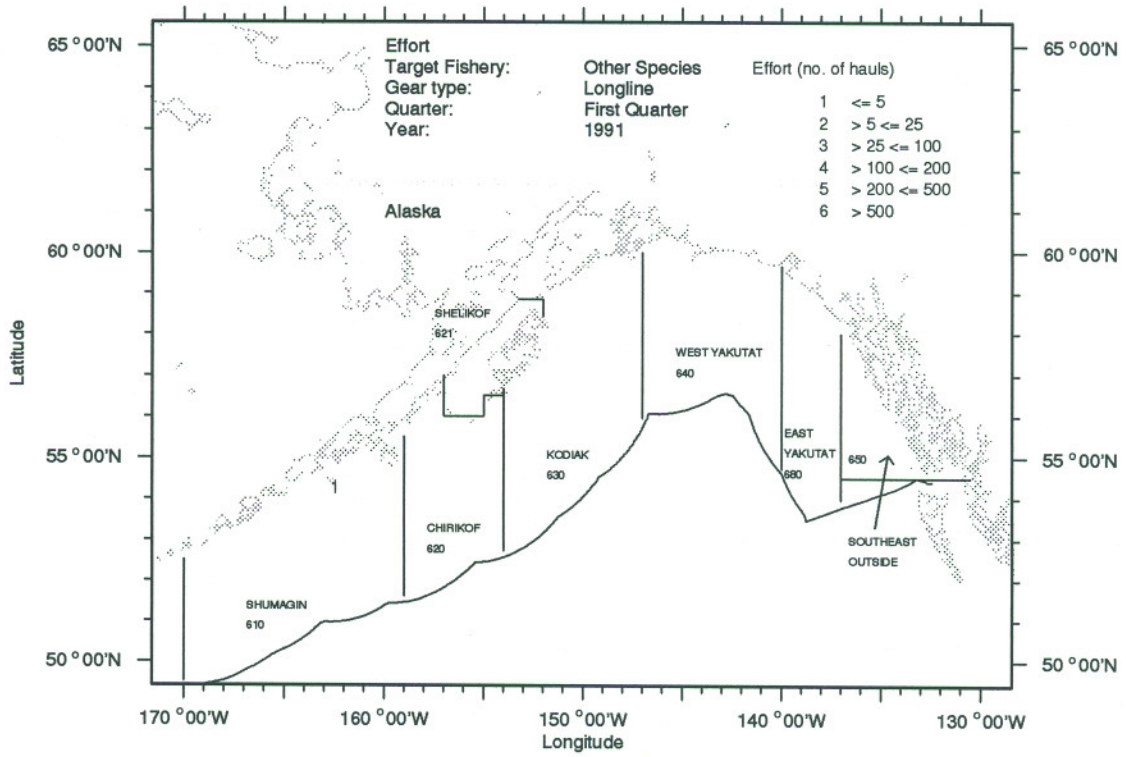


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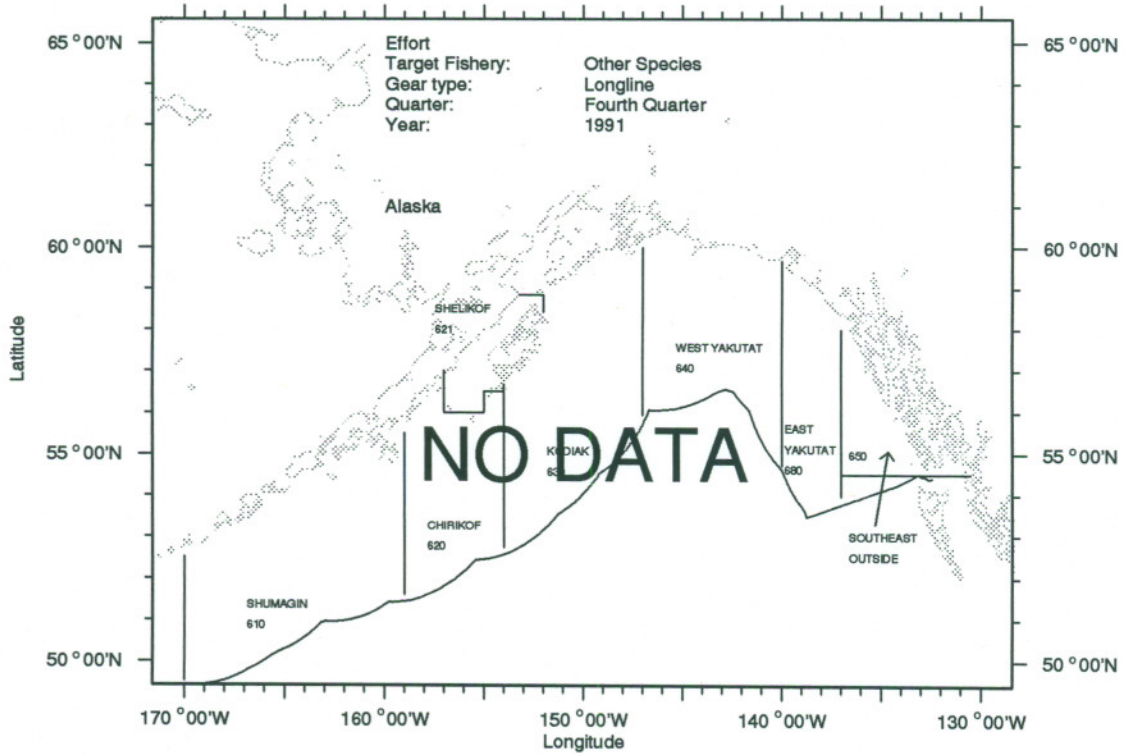
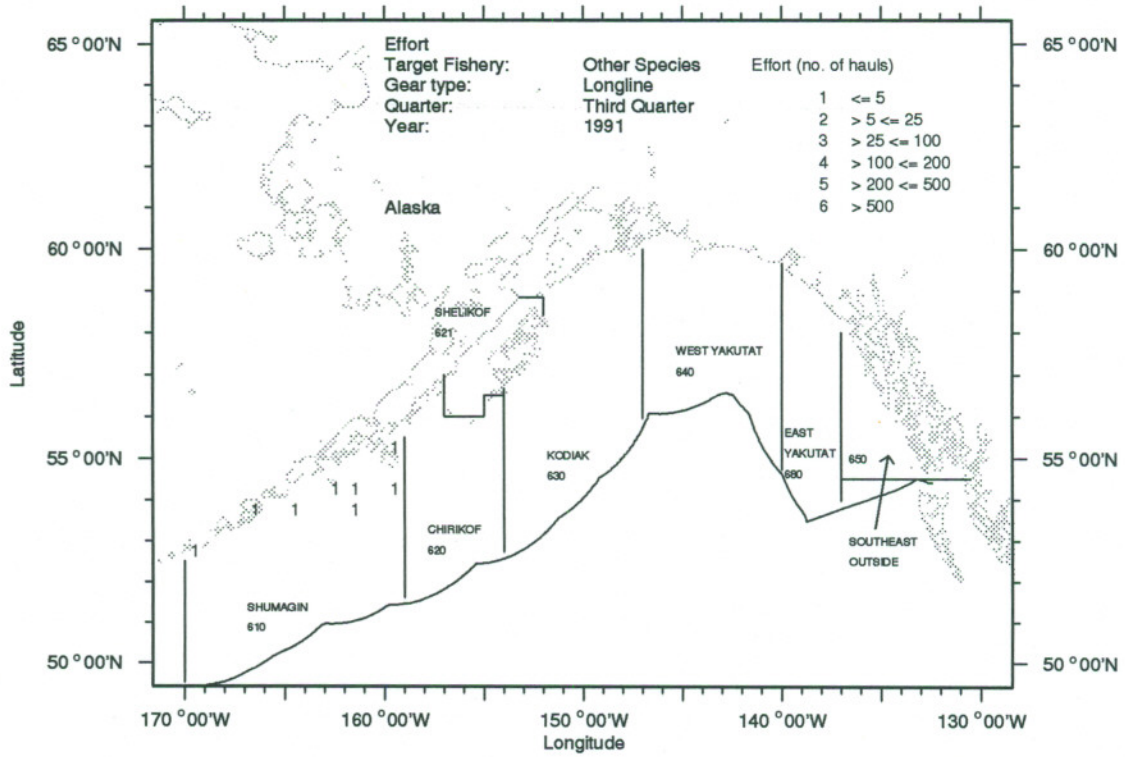


Figure 11.--Continued.

Table 44.-- Monthly bycatch rates (no./t) and average weights (kg) of Pacific salmon and number of hauls sampled in the U.S.

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target												
Jan	0.000	0.00	2	--	--	--	0.000	0.00	1	0.063	2.02	20
Feb	0.686	3.29	23	--	--	--	ns	ns	ns	0.373	2.33	49
Mar	0.000	0.00	18	--	--	--	--	--	--	0.088	3.20	51
Apr	0.000	0.00	1	0.094	3.15	81	--	--	--	0.233	3.01	163
May	ns	ns	ns	0.043	5.57	31	--	--	--	0.287	2.83	79
Jun	--	--	--	--	--	--	--	--	--	--	--	--
Jul	0.000	0.00	2	0.000	0.00	7	--	--	--	0.014	3.53	61
Aug	0.000	0.00	3	0.012	5.79	11	0.170	2.35	3	0.045	3.62	135
Sep	0.000	0.00	11	0.000	0.00	13	0.000	0.00	1	0.057	4.32	73
Oct	0.000	0.00	6	0.004	8.60	22	--	--	--	0.012	3.13	107
Nov	--	--	--	--	--	--	--	--	--	--	--	--
Dec	--	--	--	--	--	--	--	--	--	--	--	--
Year	0.277	3.29	66	0.055	3.59	165	0.081	2.35	5	0.139	2.99	738
Bottom trawl - Pollock target												
Jan	0.173	2.63	11	--	--	--	0.217	2.64	21	0.791	3.54	18
Feb	0.279	2.40	17	--	--	--	0.019	2.14	5	0.294	2.85	9
Mar	0.018	3.10	28	0.000	0.00	6	--	--	--	0.264	5.00	3
Apr	--	--	--	--	--	--	--	--	--	0.400	2.38	9
May	--	--	--	--	--	--	--	--	--	1.904	2.35	2
Jun	--	--	--	--	--	--	--	--	--	ns	ns	ns
Jul	0.003	1.90	19	--	--	--	--	--	--	0.050	4.30	5
Aug	0.000	0.00	2	--	--	--	--	--	--	0.006	2.35	17
Sep	0.000	0.00	20	0.000	0.00	1	0.000	0.00	2	0.008	7.03	28
Oct	0.195	4.82	94	0.057	8.00	2	0.000	0.00	1	0.076	3.11	43
Nov	--	--	--	--	--	--	--	--	--	--	--	--
Dec	--	--	--	--	--	--	--	--	--	--	--	--
Year	0.137	4.32	191	0.008	8.00	9	0.183	2.64	29	0.191	3.27	134
Bottom trawl - Pacific cod target												
Jan	0.028	2.43	94	--	--	--	0.000	0.00	1	0.119	2.45	21
Feb	0.027	3.55	254	0.000	0.00	7	0.725	3.71	5	0.179	3.58	151
Mar	0.023	3.31	357	0.016	4.72	125	0.000	0.00	17	0.104	3.20	206
Apr	0.134	3.97	4	0.803	2.97	34	0.155	2.89	20	0.421	4.54	65
May	--	--	--	0.077	2.70	3	--	--	--	0.000	0.00	1
Jun	--	--	--	--	--	--	--	--	--	--	--	--
Jul	0.000	0.00	2	0.000	0.00	2	--	--	--	0.000	0.00	4
Aug	0.000	0.00	1	7.595	2.50	3	--	--	--	0.000	0.00	11
Sep	0.000	0.00	10	--	--	--	--	--	--	0.083	4.70	4
Oct	0.000	0.00	10	--	--	--	0.000	0.00	5	7.191	3.05	1
Nov	--	--	--	--	--	--	--	--	--	--	--	--
Dec	--	--	--	--	--	--	--	--	--	--	--	--
Year	0.025	3.23	732	0.120	3.03	174	0.052	3.06	48	0.176	3.66	464

domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC area, 1991.
("Rate" = no. of groundfish; "Wt" = average weight; "Hl" = no. of hauls; "ns" = no observer sampling; "--" = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl
Bottom trawl - Flatfish target									
Jan	--	--	--	--	--	--	--	--	--
Feb	--	--	--	--	--	--	--	--	--
Mar	--	--	--	--	--	--	--	--	--
Apr	0.042	4.32	6	--	--	--	--	--	--
May	--	--	--	--	--	--	--	--	--
Jun	--	--	--	--	--	--	--	--	--
Jul	--	--	--	--	--	--	--	--	--
Aug	--	--	--	--	--	--	--	--	--
Sep	--	--	--	--	--	--	--	--	--
Oct	0.000	0.00	6	ns	ns	ns	--	--	--
Nov	--	--	--	--	--	--	--	--	--
Dec	--	--	--	--	--	--	--	--	--
Year	0.026	4.32	12	ns	ns	ns	--	--	--
Bottom trawl - Pollock target									
Jan	--	--	--	--	--	--	--	--	--
Feb	--	--	--	--	--	--	--	--	--
Mar	--	--	--	--	--	--	--	--	--
Apr	0.000	0.00	1	--	--	--	--	--	--
May	--	--	--	--	--	--	--	--	--
Jun	--	--	--	--	--	--	--	--	--
Jul	--	--	--	--	--	--	--	--	--
Aug	--	--	--	--	--	--	--	--	--
Sep	12.451	4.62	1	--	--	--	--	--	--
Oct	--	--	--	--	--	--	--	--	--
Nov	--	--	--	--	--	--	--	--	--
Dec	--	--	--	--	--	--	--	--	--
Year	0.576	4.62	2	--	--	--	--	--	--
Bottom trawl - Pacific cod target									
Jan	--	--	--	--	--	--	--	--	--
Feb	--	--	--	--	--	--	--	--	--
Mar	--	--	--	--	--	--	--	--	--
Apr	ns	ns	ns	--	--	--	--	--	--
May	--	--	--	--	--	--	--	--	--
Jun	--	--	--	--	--	--	--	--	--
Jul	--	--	--	--	--	--	--	--	--
Aug	--	--	--	--	--	--	--	--	--
Sep	--	--	--	--	--	--	--	--	--
Oct	--	--	--	--	--	--	--	--	--
Nov	--	--	--	--	--	--	--	--	--
Dec	--	--	--	--	--	--	--	--	--
Year	ns	ns	ns	--	--	--	--	--	--

Table 44.-- Monthly bycatch rates (no./t) and average weights (kg) of Pacific salmon and number of hauls sampled in the U.S.

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Rockfish target												
Jan	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---	2.961	3.15	3
Mar	0.012	2.94	61	14.854	5.24	39	1.113	7.40	1	0.306	5.17	118
Apr	1.396	3.33	10	0.631	3.78	25	---	---	---	0.031	5.41	88
May	0.000	0.00	1	0.284	4.46	3	---	---	---	0.781	3.57	11
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.012	8.20	12	0.000	0.00	3	---	---	---	0.005	4.37	85
Aug	0.000	0.00	3	0.000	0.00	7	---	---	---	0.000	0.00	188
Sep	0.014	4.79	70	0.000	0.00	1	---	---	---	0.009	4.80	61
Oct	0.068	1.89	72	---	---	---	---	---	---	0.000	0.00	11
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.192	3.22	230	10.575	5.22	78	1.113	7.40	1	0.097	4.89	565
Bottom trawl - Other species target												
Jan	---	---	---	---	---	---	---	---	---	---	---	---
Feb	0.000	0.00	1	0.000	0.00	2	---	---	---	---	---	---
Mar	0.000	0.00	4	---	---	---	---	---	---	27.519	5.10	3
Apr	---	---	---	0.132	3.15	4	---	---	---	0.382	2.02	10
May	---	---	---	0.978	4.33	2	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	3	---	---	---	---	---	---	0.008	4.20	16
Aug	0.000	0.00	1	0.000	0.00	2	---	---	---	0.000	0.00	46
Sep	0.017	4.95	10	0.000	0.00	2	---	---	---	0.004	5.20	30
Oct	0.045	2.97	74	---	---	---	---	---	---	0.010	2.40	13
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.042	3.00	93	0.181	4.08	12	---	---	---	0.430	4.69	118

domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC area, 1991 (Continued)
("Rate" = no. of groundfish; "Wt" = average weight; "Hl" = no. of hauls; "ns" = no observer sampling; "---" = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl
Bottom trawl - Rockfish target									
Jan	---	---	---	---	---	---	---	---	---
Feb	ns	ns	ns	ns	ns	ns	---	---	---
Mar	---	---	---	0.004	5.60	45	---	---	---
Apr	0.031	4.01	59	0.000	0.00	17	0.020	11.50	14
May	ns	ns	ns	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	0.000	0.00	12	---	---	---	---	---	---
Oct	0.000	0.00	17	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.023	4.01	88	0.003	5.60	62	0.020	11.50	14
Bottom trawl - Other species target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	0.000	0.00	2	---	---	---
Apr	0.016	9.10	5	---	---	---	0.000	0.00	1
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	ns	ns	ns	---	---	---	---	---	---
Sep	0.000	0.00	31	---	---	---	---	---	---
Oct	0.000	0.00	6	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.003	9.10	42	0.000	0.00	2	0.000	0.00	1

Table 44.-- Monthly bycatch rates (no./t) and average weights (kg) of Pacific salmon and number of hauls sampled in the U.S.

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target												
Jan	0.076	2.65	10	---	---	---	0.123	1.76	51	0.234	2.23	40
Feb	0.063	3.96	3	---	---	---	0.239	1.95	6	0.064	4.59	28
Mar	---	---	---	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Jun	0.009	2.15	15	0.000	0.00	1	0.000	0.00	2	0.103	3.32	116
Jul	0.081	2.52	181	ns	ns	ns	0.345	4.75	21	0.725	3.18	243
Aug	---	---	---	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	0.071	3.20	73	0.000	0.00	1	0.055	3.33	4	0.110	2.47	195
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.076	2.75	283	0.000	0.00	2	0.169	2.84	84	0.305	3.06	622
Pelagic trawl - Other species target												
Jan	ns	ns	ns	---	---	---	---	---	---	ns	ns	ns
Feb	0.000	0.00	10	0.000	0.00	1	ns	ns	ns	0.000	0.00	1
Mar	0.000	0.00	8	0.000	0.00	1	---	---	---	0.000	0.00	8
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	1	0.000	0.00	1	---	---	---	0.000	0.00	2
Aug	---	---	---	---	---	---	---	---	---	ns	ns	ns
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	ns	ns	ns	0.000	0.00	1	---	---	---	0.078	6.23	4
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	19	0.000	0.00	4	ns	ns	ns	0.032	6.23	15
Pots - All targets												
Jan	ns	ns	ns	ns	ns	ns	0.000	0.00	44	0.000	0.00	31
Feb	ns	ns	ns	0.000	0.00	22	0.000	0.00	140	0.000	0.00	87
Mar	ns	ns	ns	ns	ns	ns	0.000	0.00	35	0.000	0.00	150
Apr	---	---	---	ns	ns	ns	0.000	0.00	61	0.000	0.00	166
May	---	---	---	ns	ns	ns	ns	ns	ns	0.000	0.00	1
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---	---	---	---
Aug	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Nov	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Dec	0.000	0.00	40	---	---	---	ns	ns	ns	ns	ns	ns
Year	0.000	0.00	41	0.000	0.00	22	0.000	0.00	280	0.000	0.00	435

domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC area, 1991 (Continued)
("Rate" = no. of groundfish; "Wt" = average weight; "Hl" = no. of hauls; "ns" = no observer sampling; "--" = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl
Pelagic trawl - Pollock target									
Jan	--	--	--	--	--	--	--	--	--
Feb	--	--	--	--	--	--	--	--	--
Mar	0.000	0.00	9	--	--	--	--	--	--
Apr	0.000	0.00	15	--	--	--	--	--	--
May	--	--	--	--	--	--	--	--	--
Jun	--	--	--	--	--	--	--	--	--
Jul	--	--	--	--	--	--	--	--	--
Aug	--	--	--	--	--	--	--	--	--
Sep	--	--	--	--	--	--	--	--	--
Oct	--	--	--	--	--	--	--	--	--
Nov	--	--	--	--	--	--	--	--	--
Dec	--	--	--	--	--	--	--	--	--
Year	0.000	0.00	24	--	--	--	--	--	--
Pelagic trawl - Other species target									
Jan	--	--	--	--	--	--	--	--	--
Feb	--	--	--	--	--	--	--	--	--
Mar	--	--	--	--	--	--	--	--	--
Apr	--	--	--	--	--	--	--	--	--
May	--	--	--	--	--	--	--	--	--
Jun	--	--	--	--	--	--	--	--	--
Jul	--	--	--	--	--	--	--	--	--
Aug	--	--	--	--	--	--	--	--	--
Sep	--	--	--	--	--	--	--	--	--
Oct	--	--	--	--	--	--	--	--	--
Nov	--	--	--	--	--	--	--	--	--
Dec	--	--	--	--	--	--	--	--	--
Year	--	--	--	--	--	--	--	--	--
Pots - All targets									
Jan	--	--	--	--	--	--	--	--	--
Feb	--	--	--	--	--	--	--	--	--
Mar	ns	ns	ns	ns	ns	ns	--	--	--
Apr	--	--	--	ns	ns	ns	--	--	--
May	--	--	--	--	--	--	--	--	--
Jun	--	--	--	ns	ns	ns	--	--	--
Jul	--	--	--	--	--	--	--	--	--
Aug	--	--	--	--	--	--	--	--	--
Sep	--	--	--	--	--	--	--	--	--
Oct	--	--	--	--	--	--	--	--	--
Nov	--	--	--	--	--	--	--	--	--
Dec	--	--	--	--	--	--	--	--	--
Year	ns	ns	ns	ns	ns	ns	--	--	--

Table 44.-- Monthly bycatch rates (no./t) and average weights (kg) of Pacific salmon and number of hauls sampled in the U.S.

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target												
Jan	---	---	---	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	0.000	0.00	62	0.000	0.00	82	ns	ns	ns	0.000	0.00	245
Jun	0.008	3.39	141	0.000	0.00	92	---	---	---	0.000	0.00	238
Jul	0.000	0.00	50	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---	---	---	---
Sep	ns	ns	ns	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---	---	---	---
Nov	ns	ns	ns	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.004	3.39	253	0.000	0.00	174	ns	ns	ns	0.000	0.00	483
Longline - Pacific cod target												
Jan	0.000	0.00	37	0.000	0.00	1	ns	ns	ns	ns	ns	ns
Feb	0.000	0.00	27	0.000	0.00	18	ns	ns	ns	ns	ns	ns
Mar	0.000	0.00	48	0.000	0.00	88	ns	ns	ns	0.000	0.00	10
Apr	---	---	---	ns	ns	ns	ns	ns	ns	ns	ns	ns
May	ns	ns	ns	ns	ns	ns	ns	ns	ns	0.000	0.00	2
Jun	ns	ns	ns	---	---	---	0.000	0.00	3	0.000	0.00	14
Jul	0.000	0.00	23	---	---	---	---	---	---	---	---	---
Aug	0.000	0.00	2	---	---	---	---	---	---	---	---	---
Sep	0.000	0.00	1	---	---	---	---	---	---	ns	ns	ns
Oct	ns	ns	ns	---	---	---	---	---	---	ns	ns	ns
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	138	0.000	0.00	107	0.000	0.00	3	0.000	0.00	26
Longline - Other species target												
Jan	0.000	0.00	1	---	---	---	---	---	---	ns	ns	ns
Feb	---	---	---	---	---	---	---	---	---	ns	ns	ns
Mar	---	---	---	---	---	---	---	---	---	ns	ns	ns
Apr	---	---	---	ns	ns	ns	---	---	---	ns	ns	ns
May	0.000	0.00	1	0.000	0.00	4	---	---	---	0.000	0.00	3
Jun	0.000	0.00	25	0.000	0.00	2	---	---	---	0.000	0.00	11
Jul	0.000	0.00	10	---	---	---	---	---	---	ns	ns	ns
Aug	0.000	0.00	1	---	---	---	---	---	---	ns	ns	ns
Sep	---	---	---	---	---	---	---	---	---	ns	ns	ns
Oct	---	---	---	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	38	0.000	0.00	6	---	---	---	0.000	0.00	14

domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC area, 1991 (Continued)
("Rate" = no. of groundfish; "Wt" = average weight; "Hl" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl
Longline - Sablefish target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---
May	0.002	2.10	246	0.000	0.00	18	0.000	0.00	22
Jun	0.234	2.00	22	ns	ns	ns	ns	ns	ns
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	ns	ns	ns	---	---	---
Sep	---	---	---	ns	ns	ns	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.009	2.02	268	0.000	0.00	18	0.000	0.00	22
Longline - Pacific cod target									
Jan	---	---	---	ns	ns	ns	---	---	---
Feb	---	---	---	ns	ns	ns	---	---	---
Mar	---	---	---	ns	ns	ns	---	---	---
Apr	---	---	---	ns	ns	ns	---	---	---
May	ns	ns	ns	ns	ns	ns	ns	ns	ns
Jun	ns	ns	ns	ns	ns	ns	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	ns	ns	ns	ns	ns	ns	ns	ns	ns
Oct	---	---	---	ns	ns	ns	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	ns	ns	ns	---	---	---
Year	ns	ns	ns	ns	ns	ns	ns	ns	ns
Longline - Other species target									
Jan	---	---	---	ns	ns	ns	---	---	---
Feb	---	---	---	ns	ns	ns	---	---	---
Mar	---	---	---	ns	ns	ns	ns	ns	ns
Apr	---	---	---	ns	ns	ns	ns	ns	ns
May	0.000	0.00	15	0.000	0.00	2	0.000	0.00	5
Jun	0.000	0.00	1	ns	ns	ns	ns	ns	ns
Jul	---	---	---	ns	ns	ns	ns	ns	ns
Aug	---	---	---	ns	ns	ns	---	---	---
Sep	ns	ns	ns	ns	ns	ns	ns	ns	ns
Oct	---	---	---	ns	ns	ns	---	---	---
Nov	---	---	---	ns	ns	ns	---	---	---
Dec	---	---	---	ns	ns	ns	---	---	---
Year	0.000	0.00	16	0.000	0.00	2	0.000	0.00	5

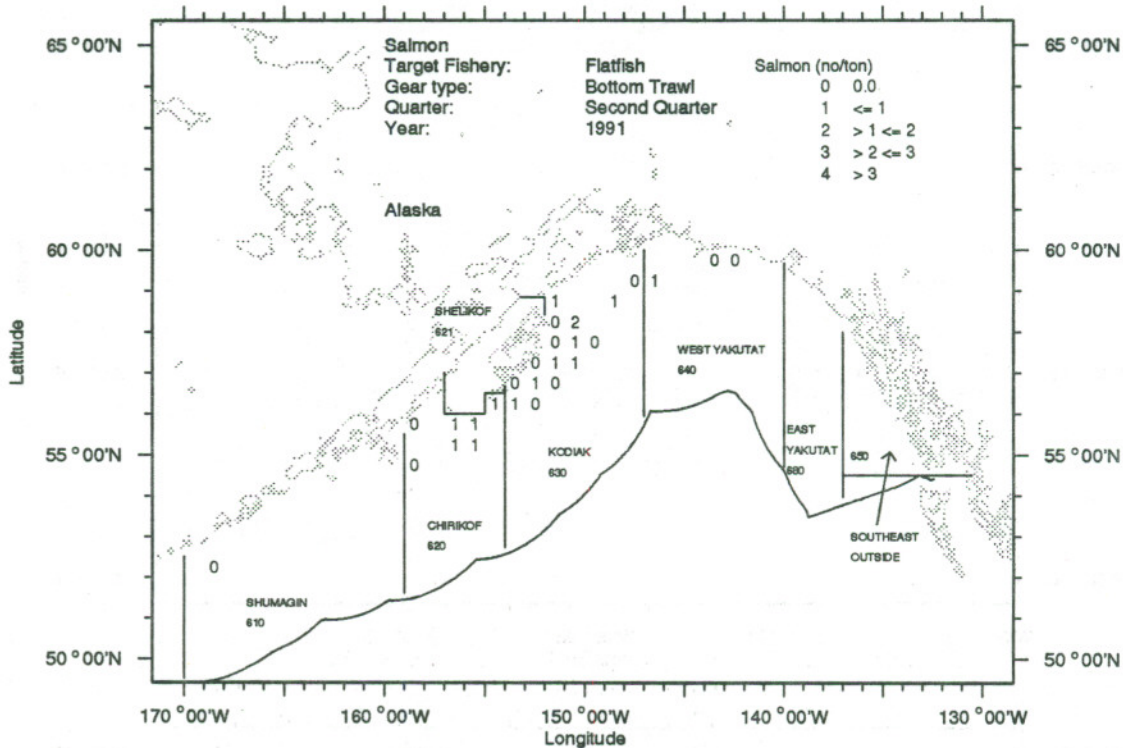
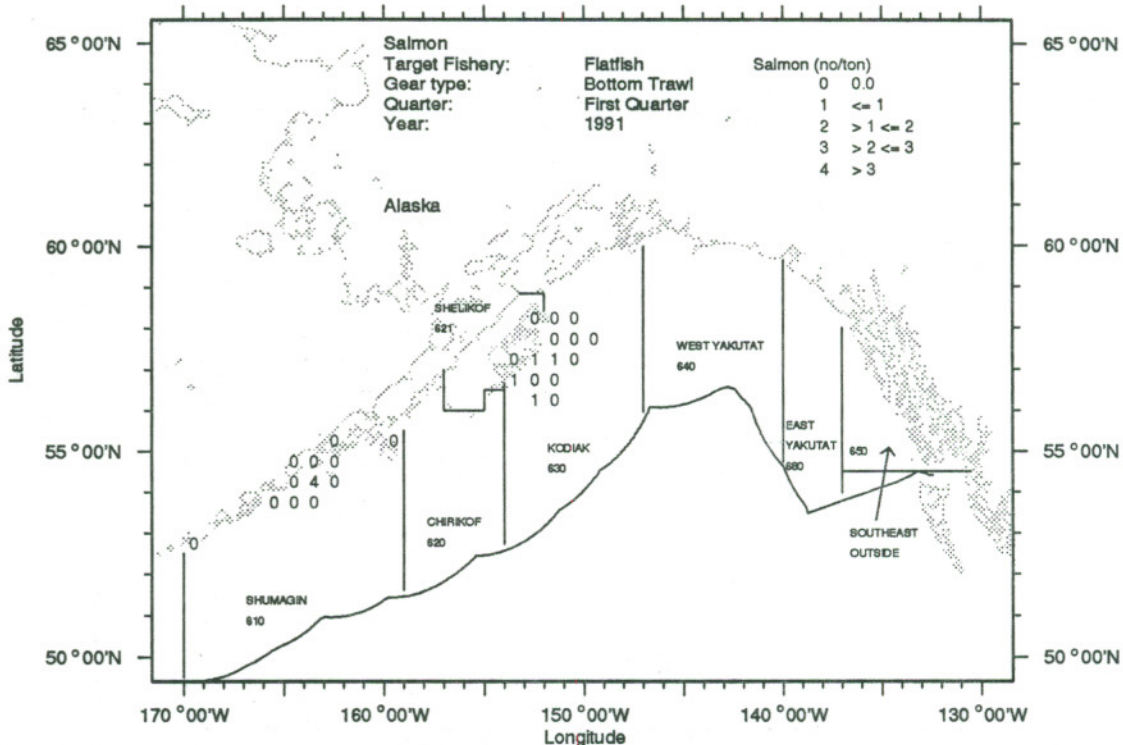


Figure 12.--Bycatch (no./metric ton (t)) of Pacific salmon in the U.S. domestic groundfish fisheries by quarter, target fishery, gear type, and ½° latitude and 1° longitude areas in the Gulf of Alaska region, 1991.

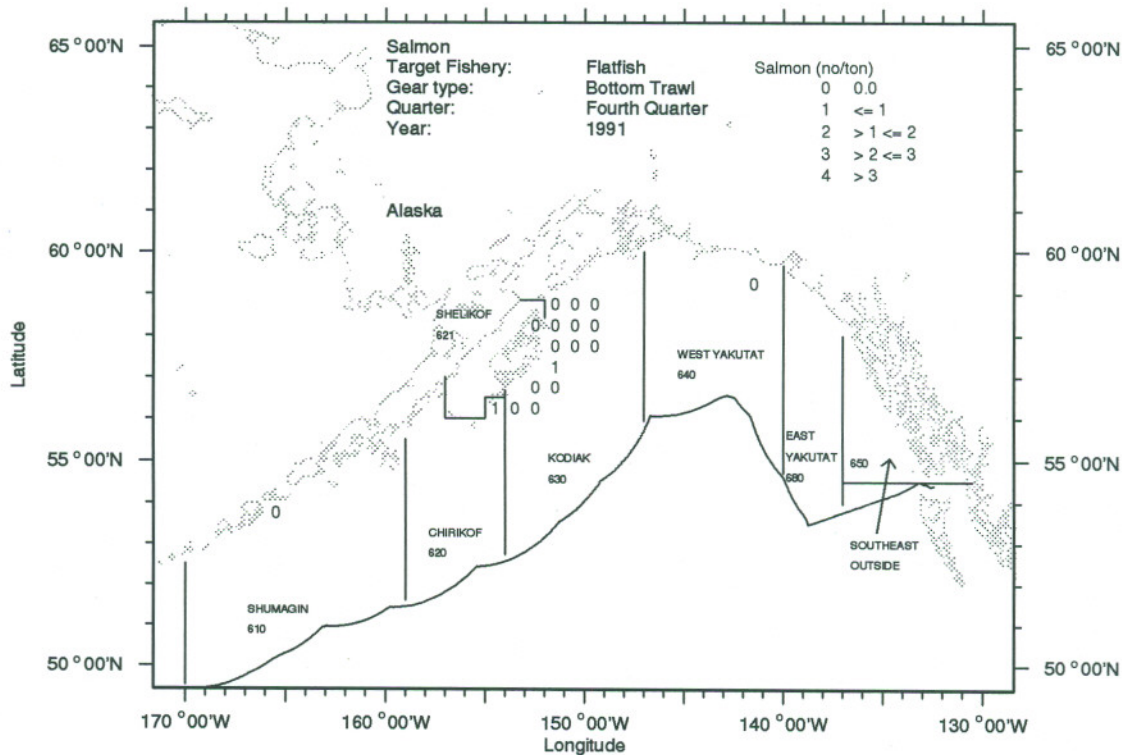
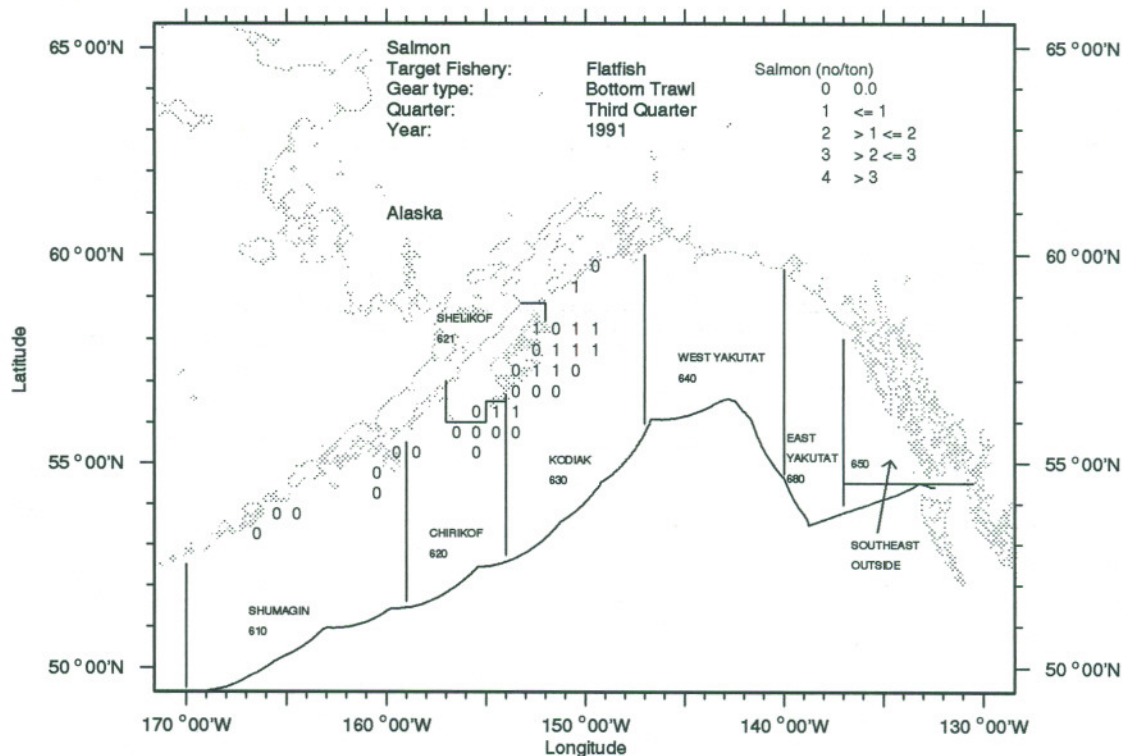


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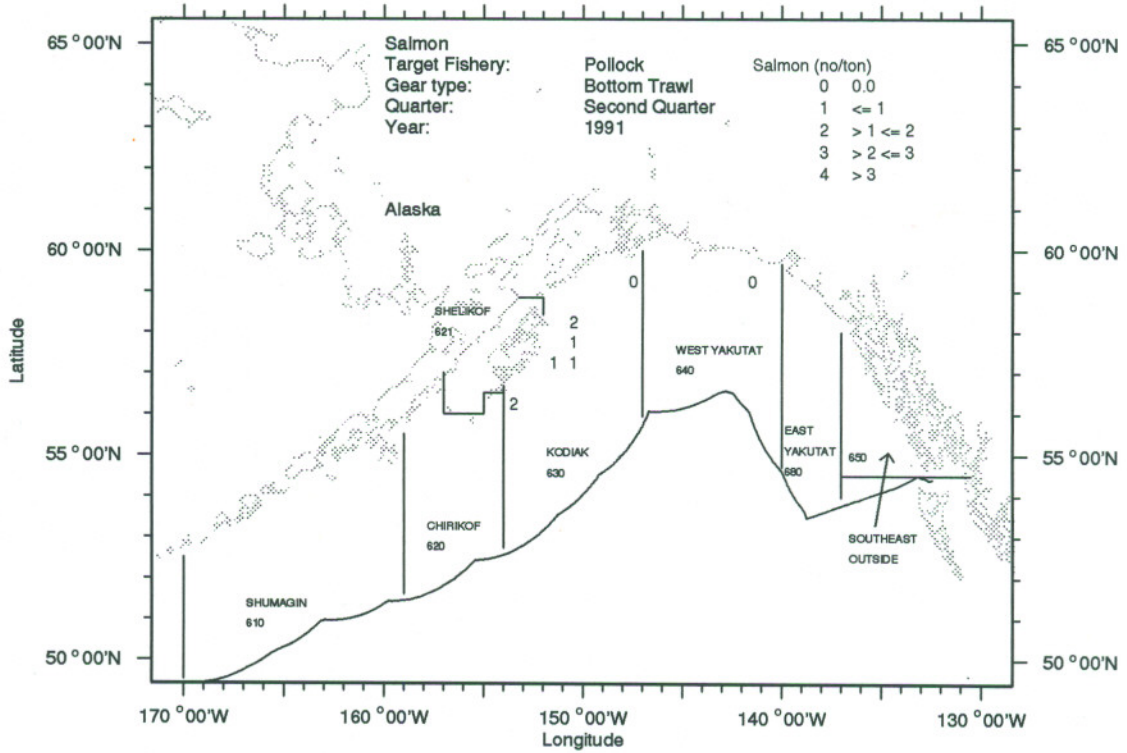
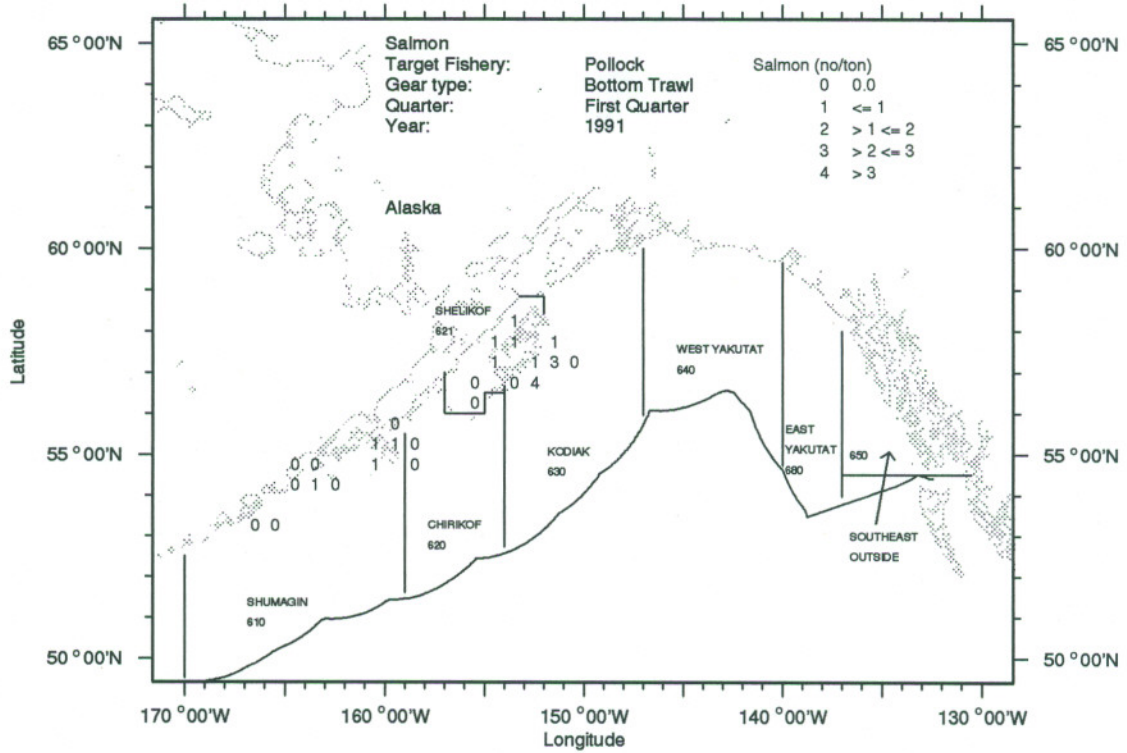


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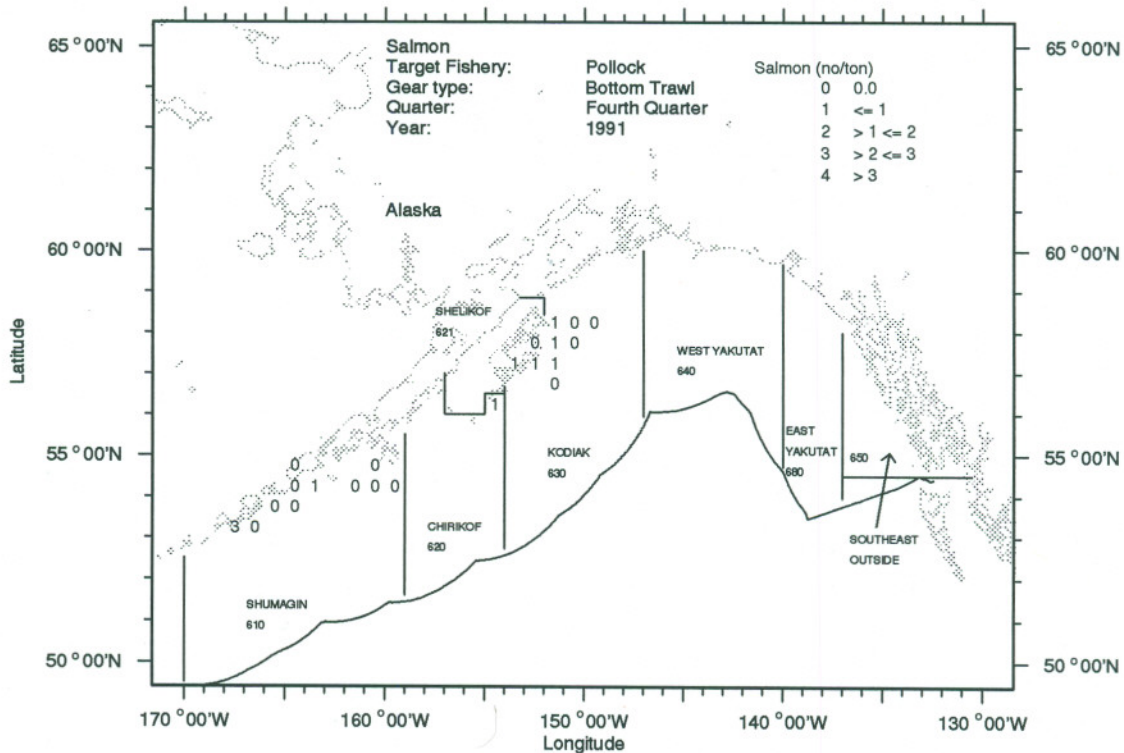
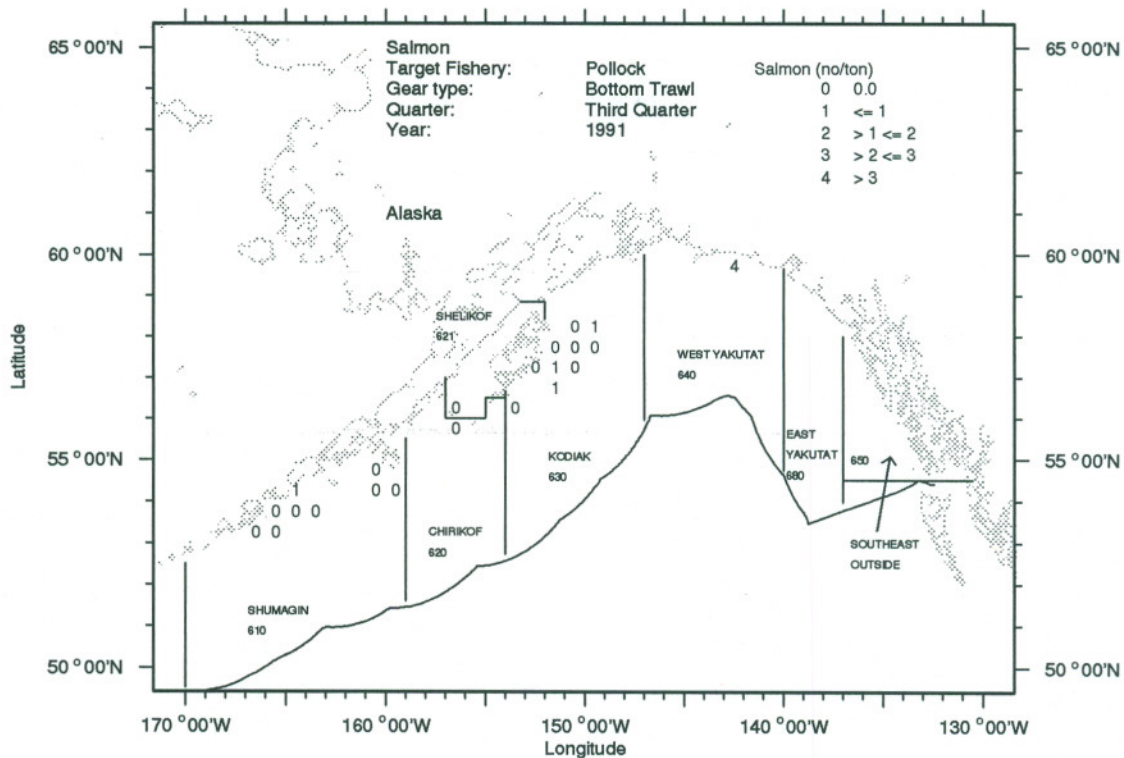


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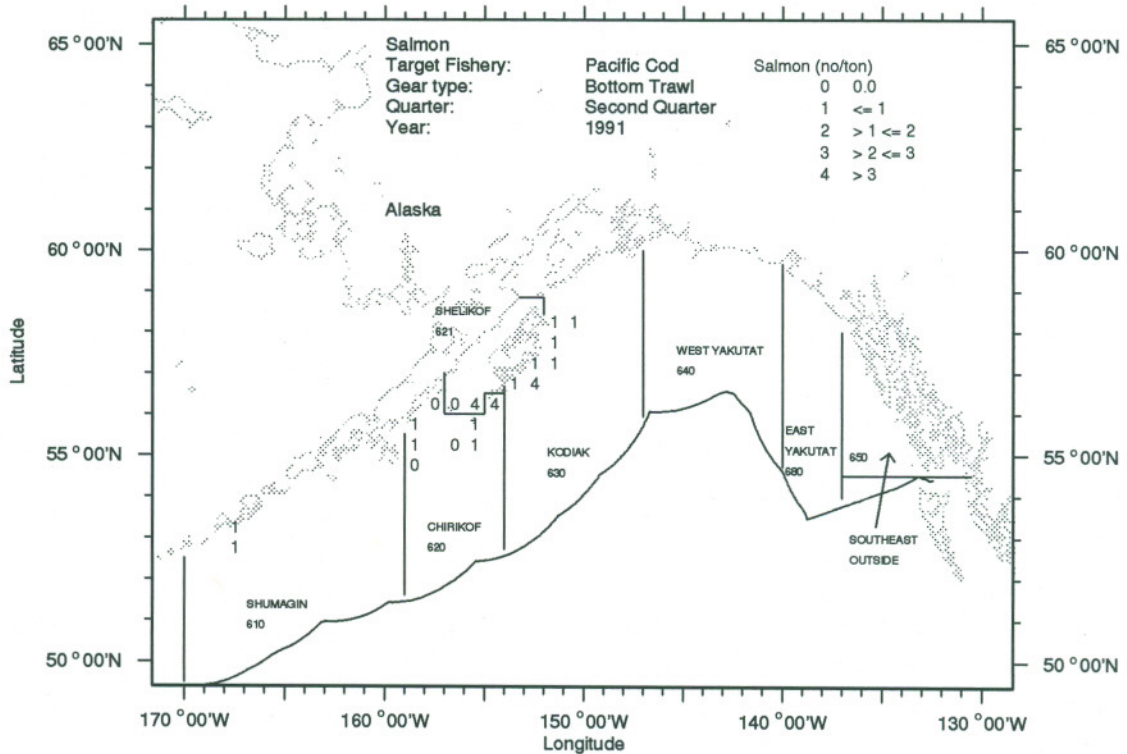
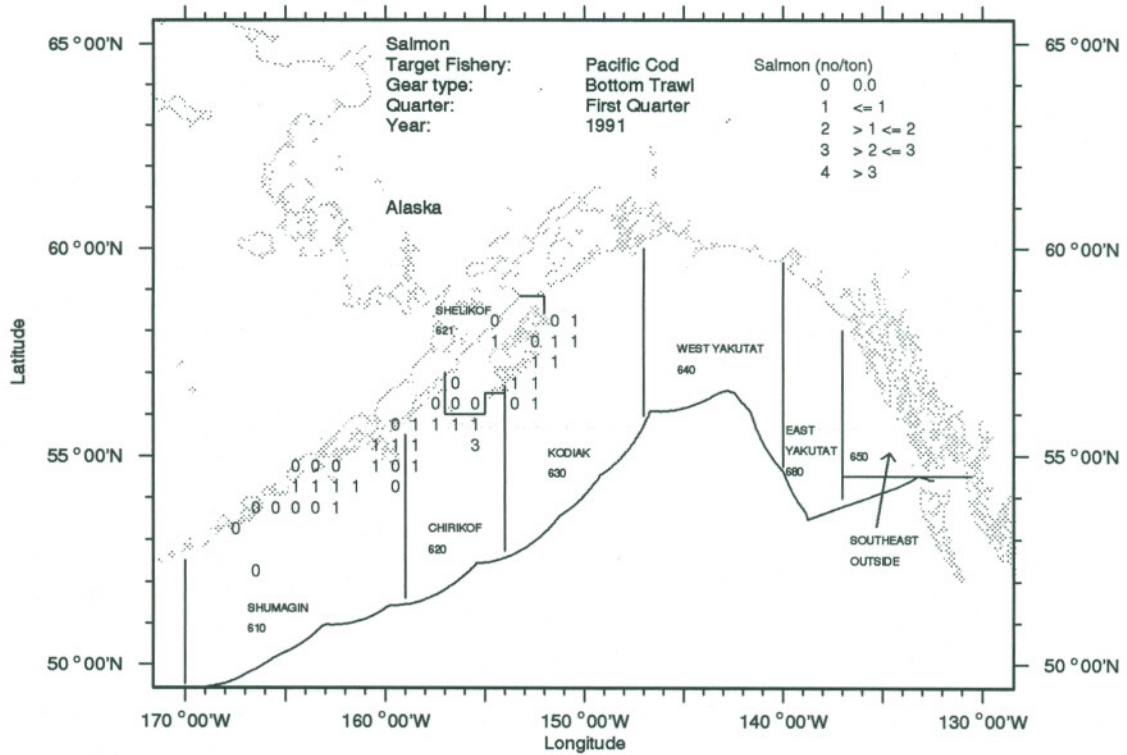


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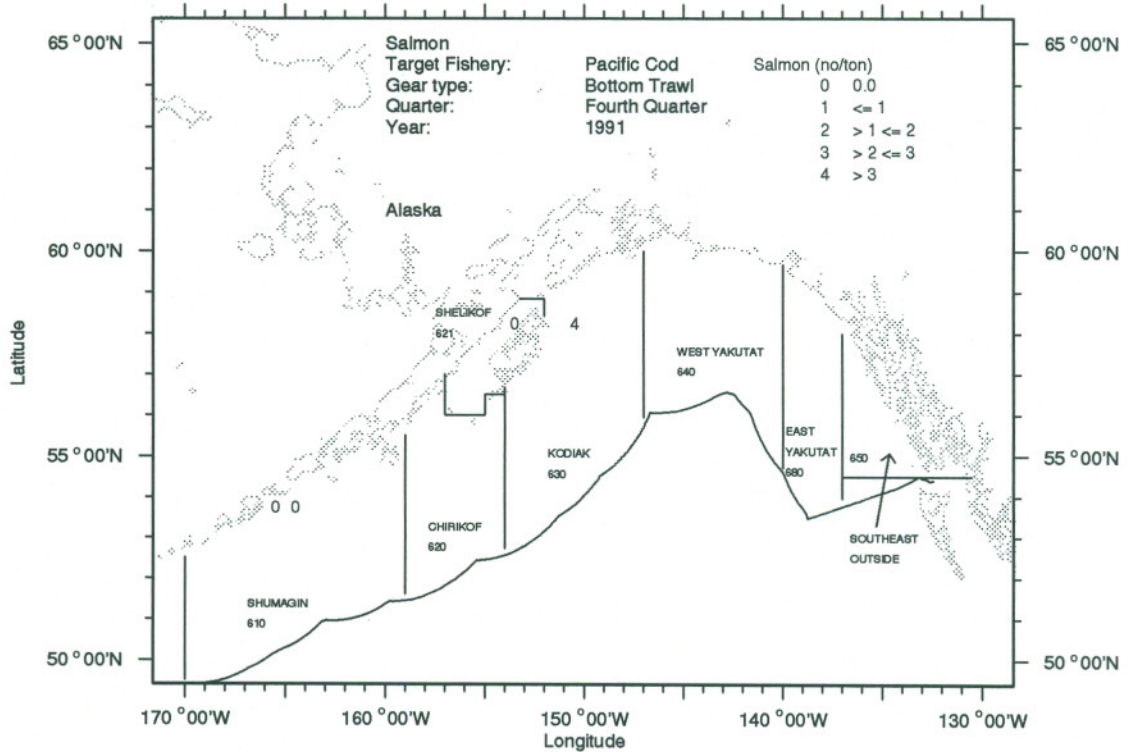
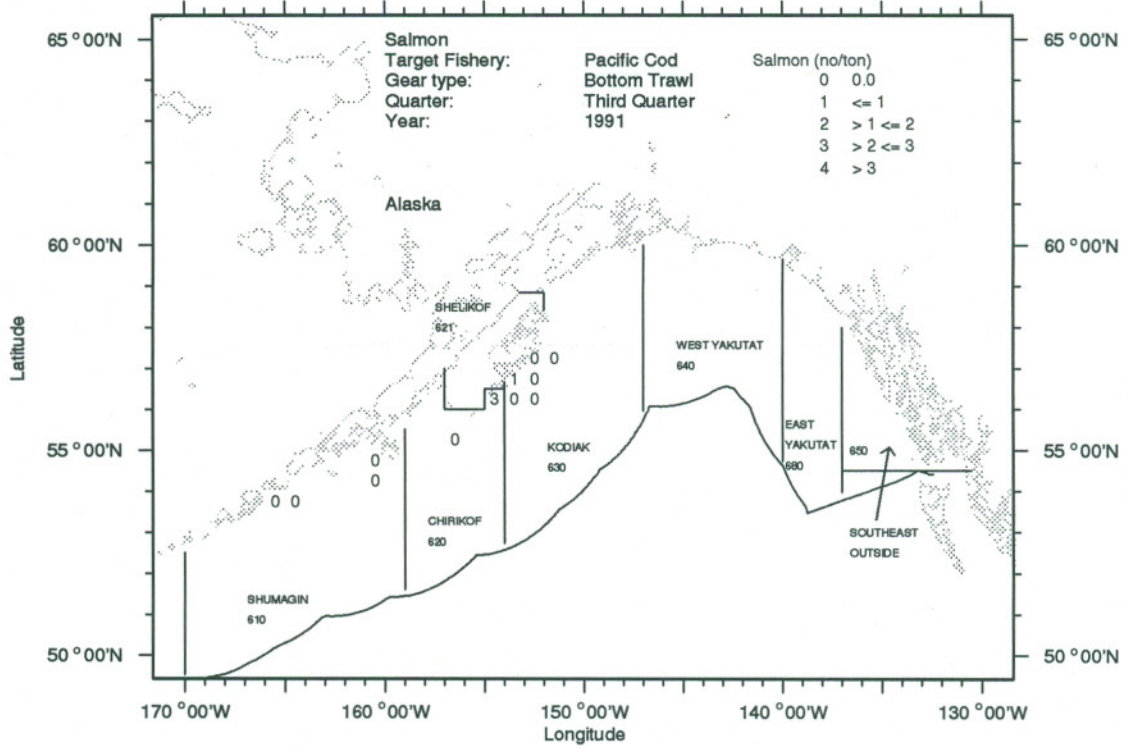


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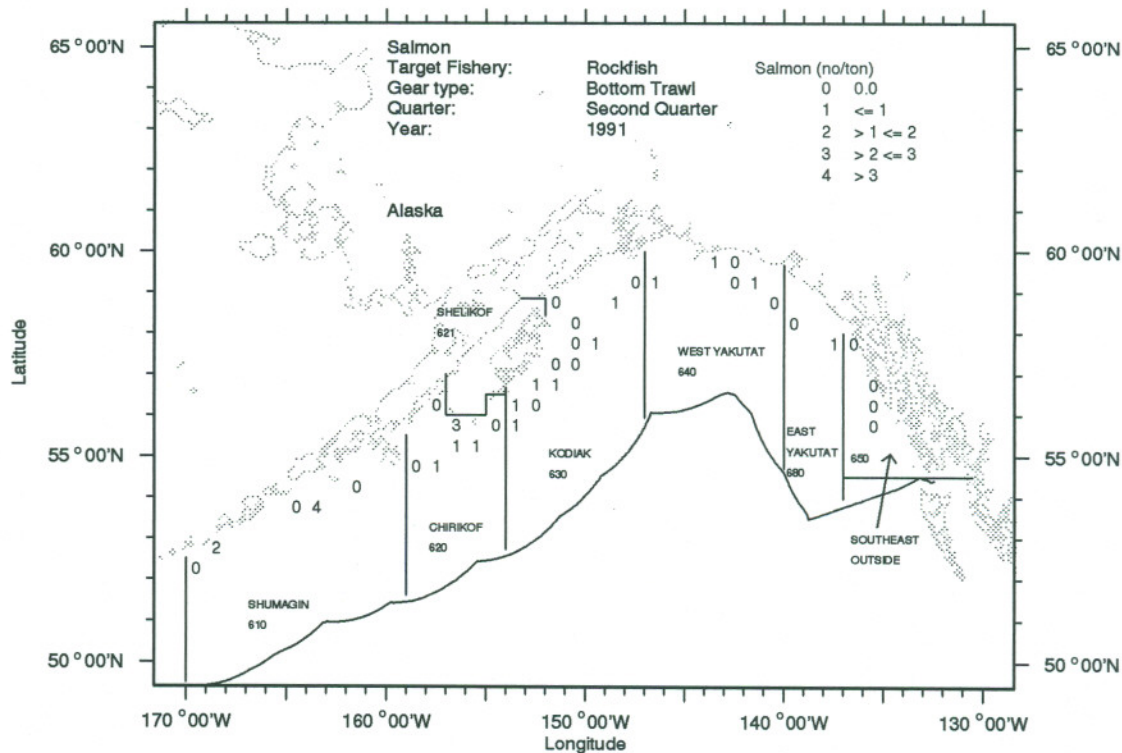
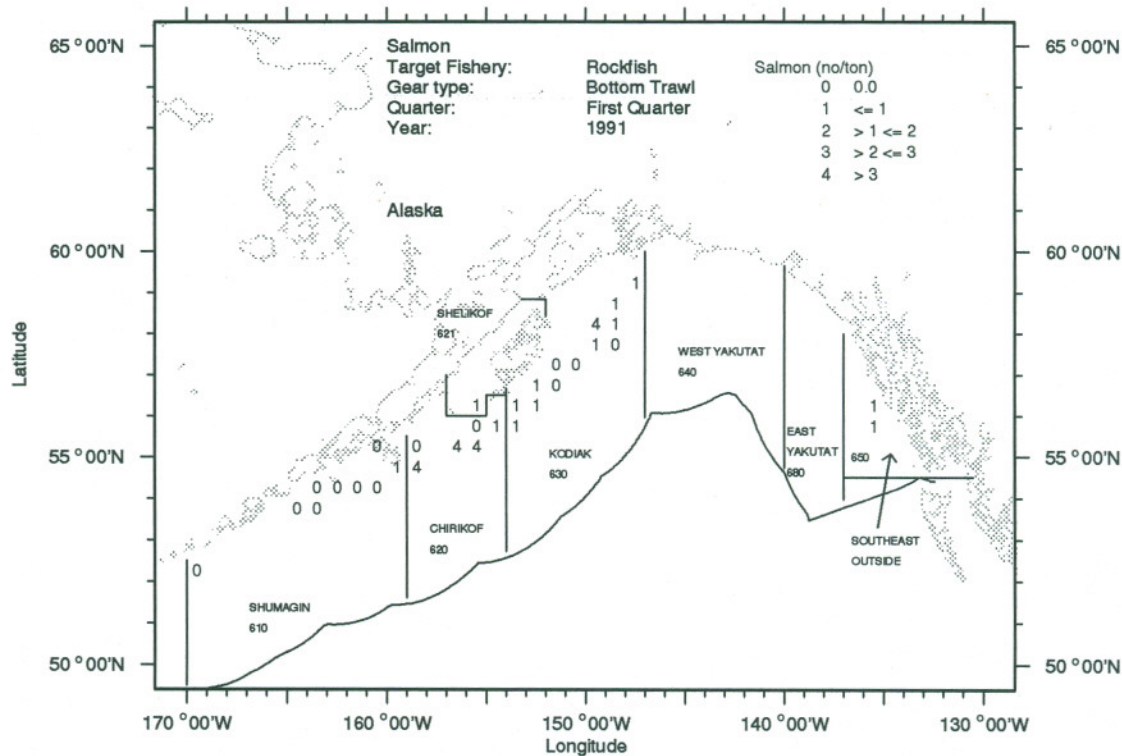


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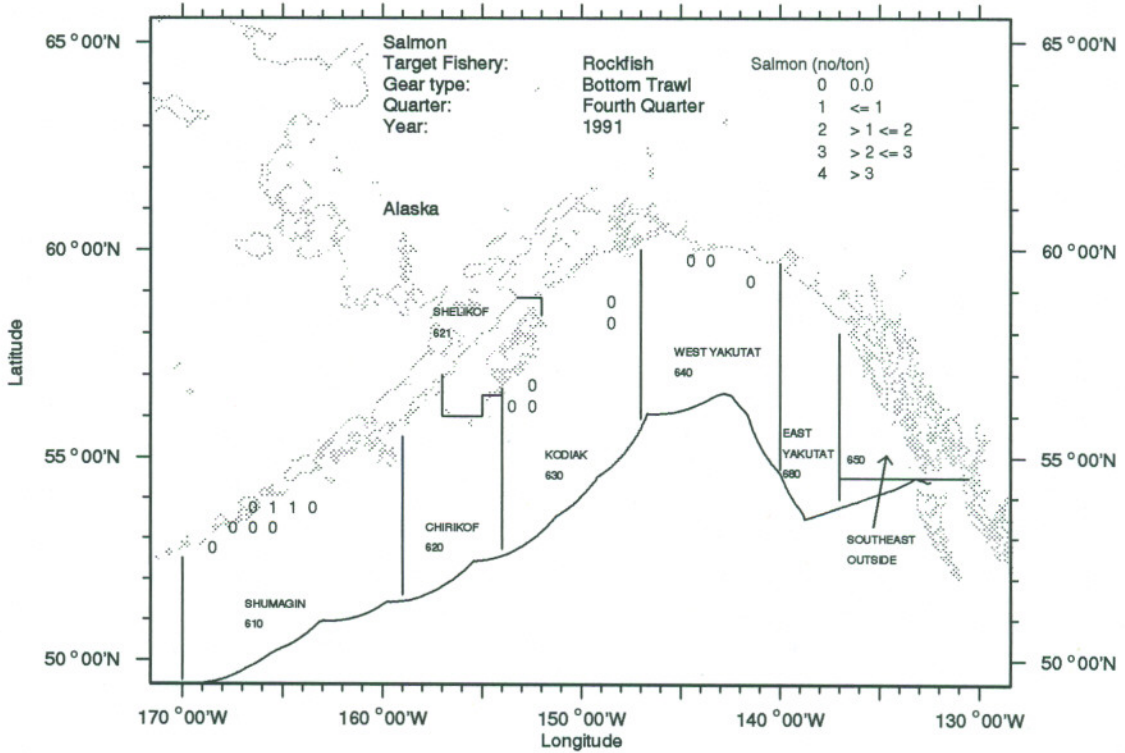
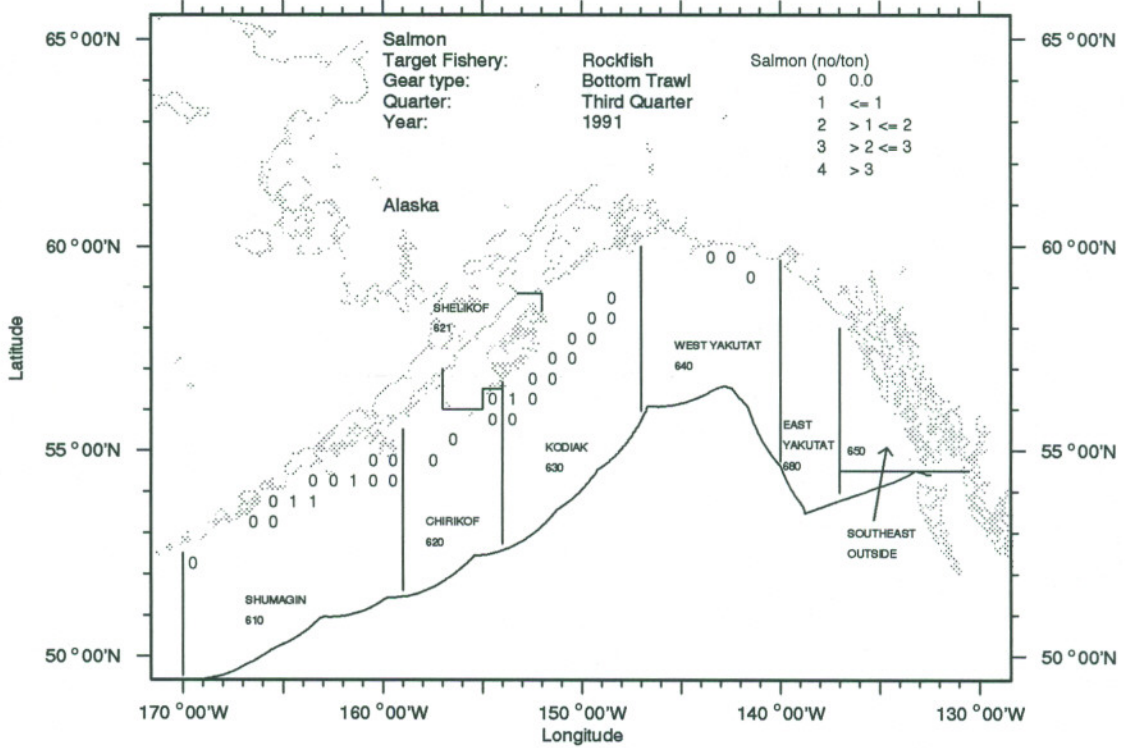


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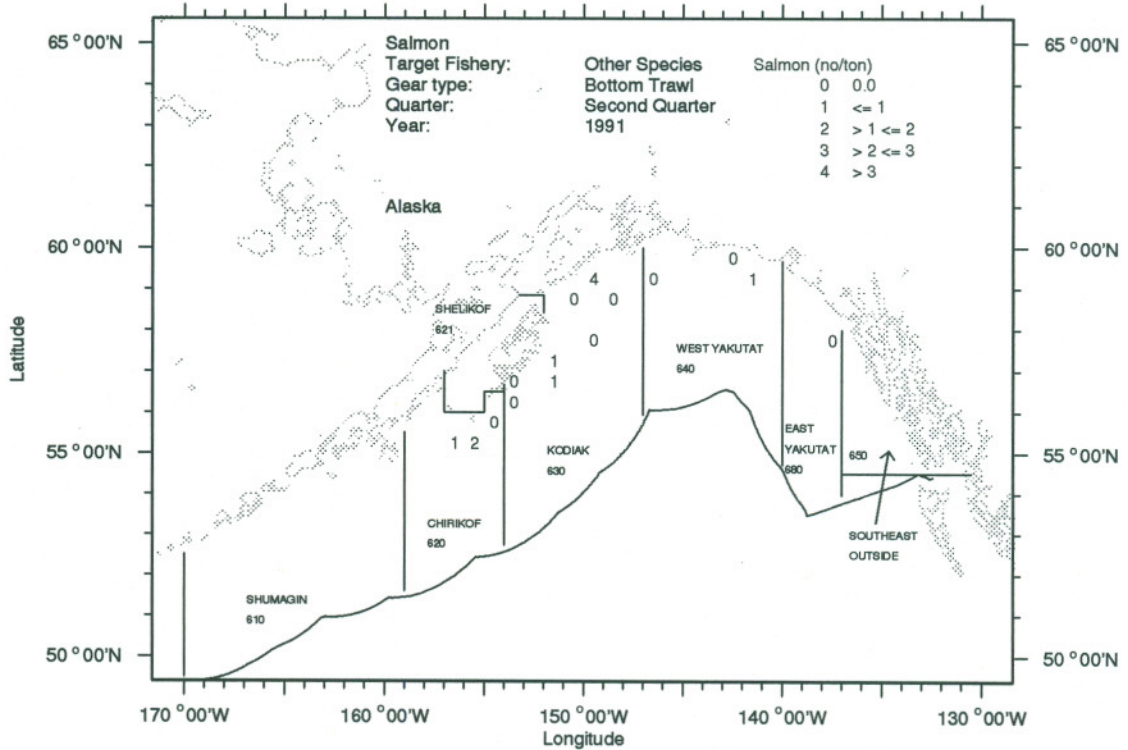
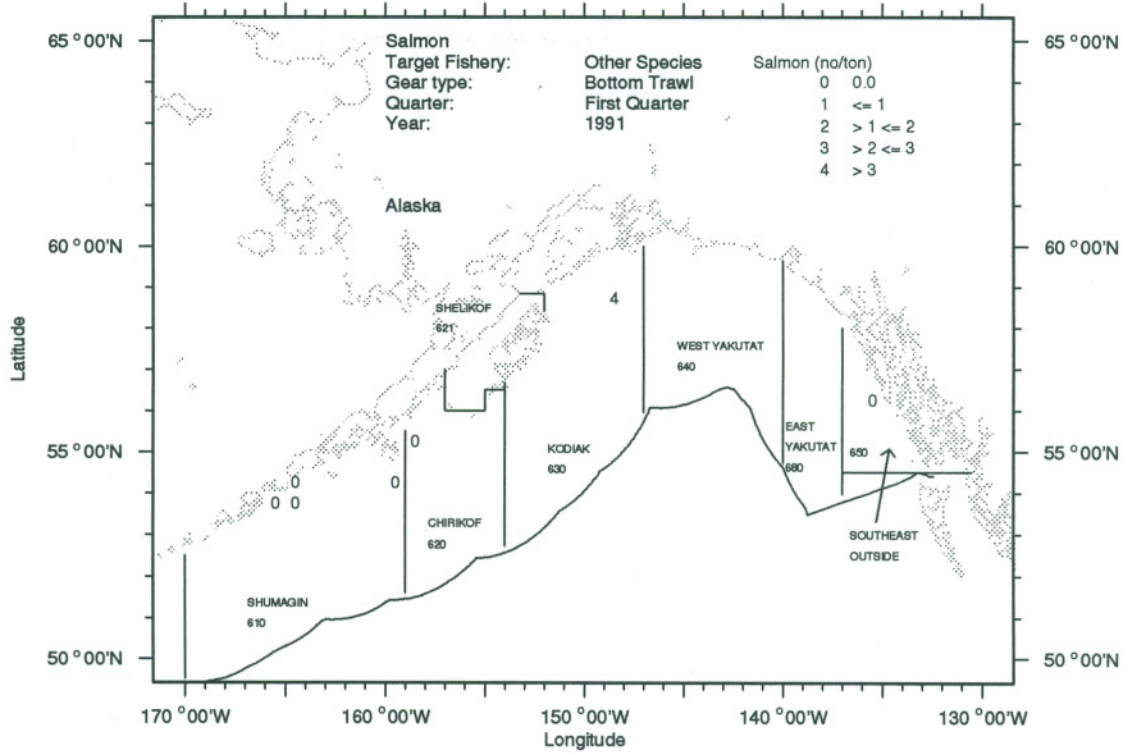


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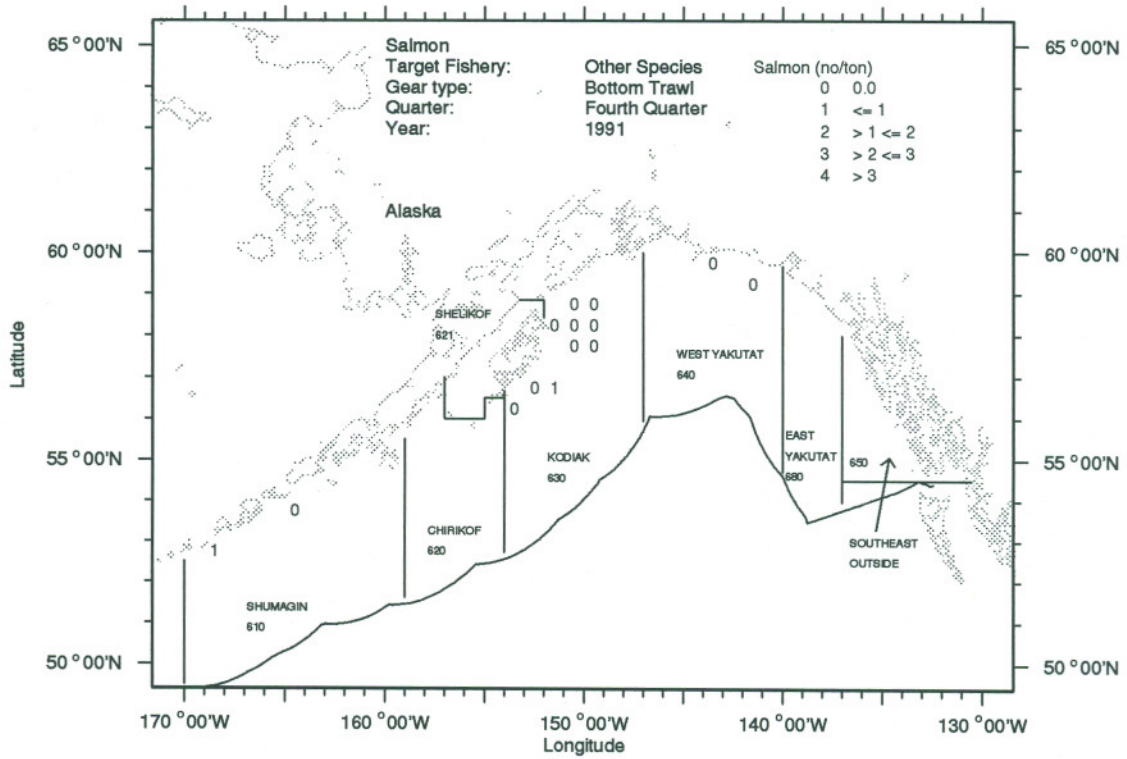
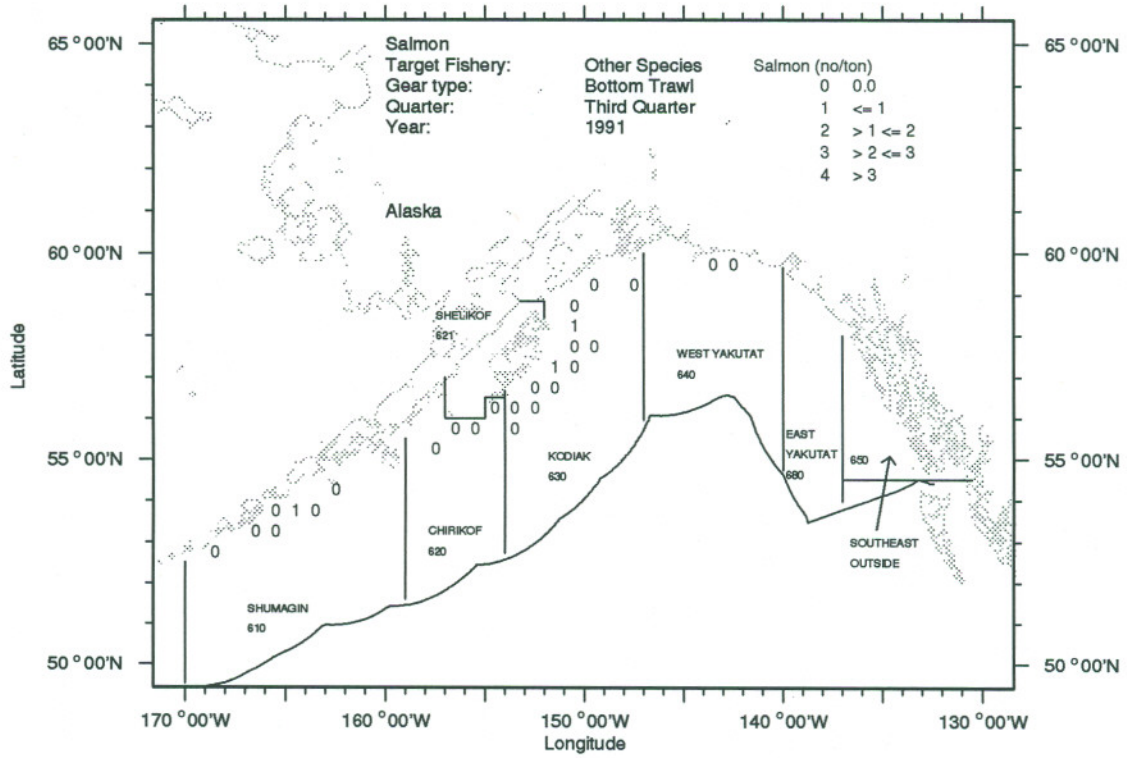


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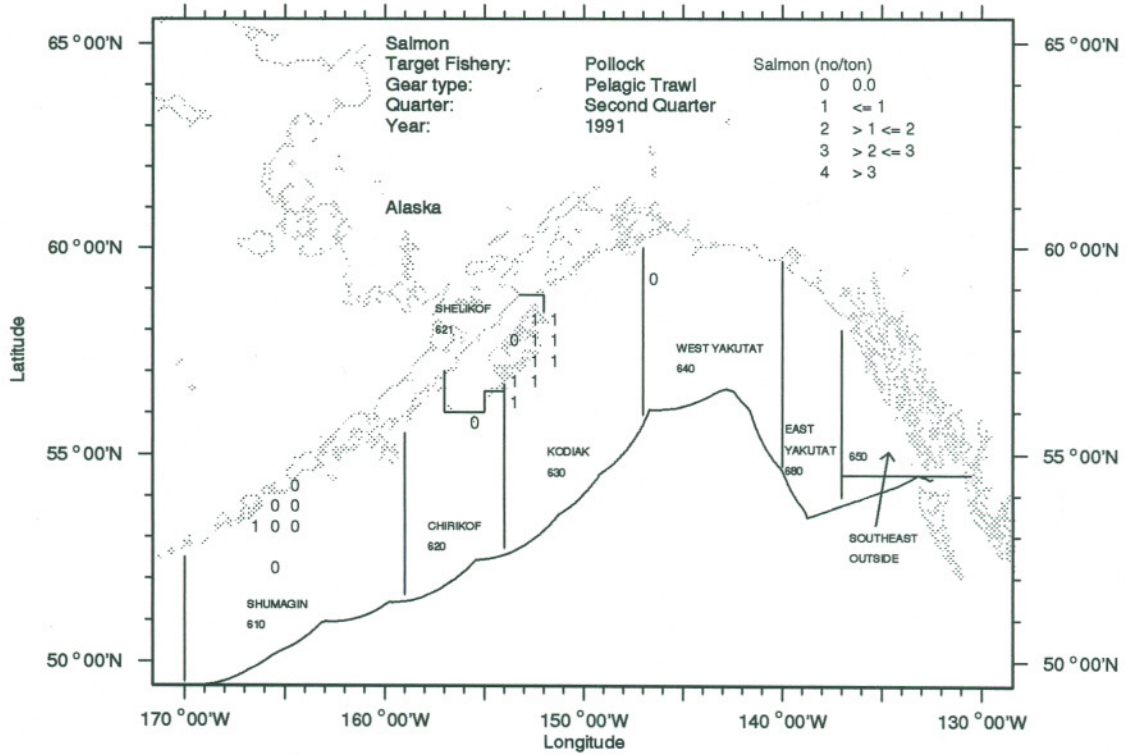
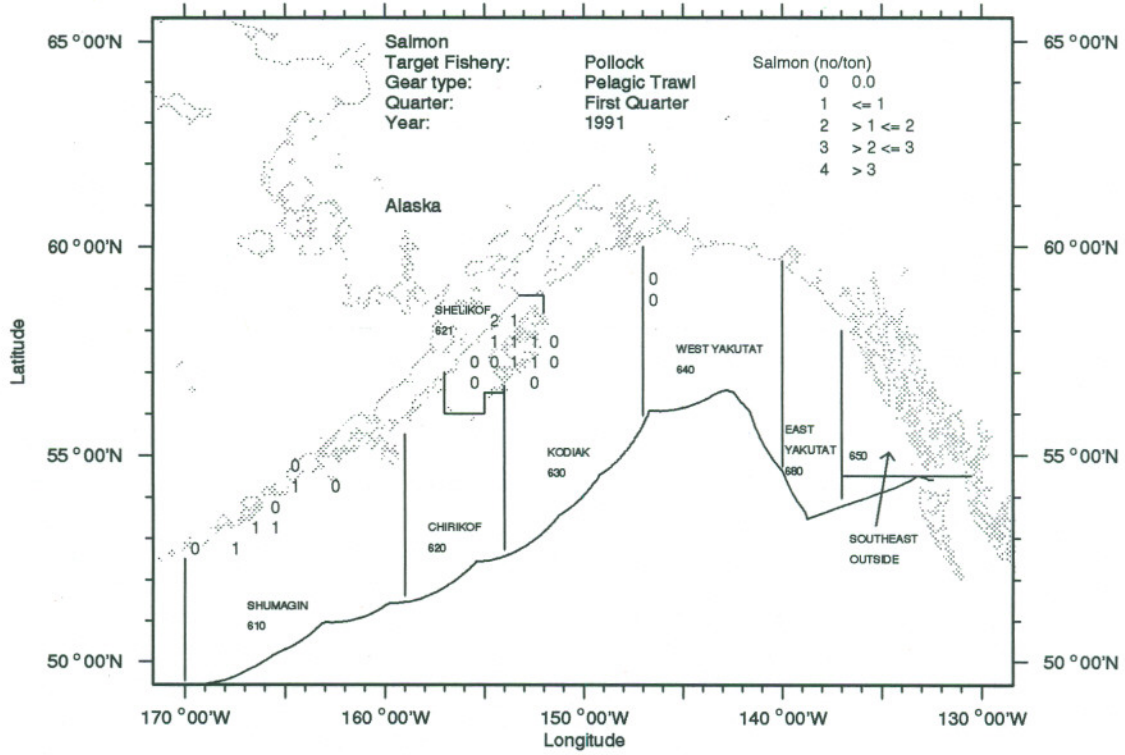


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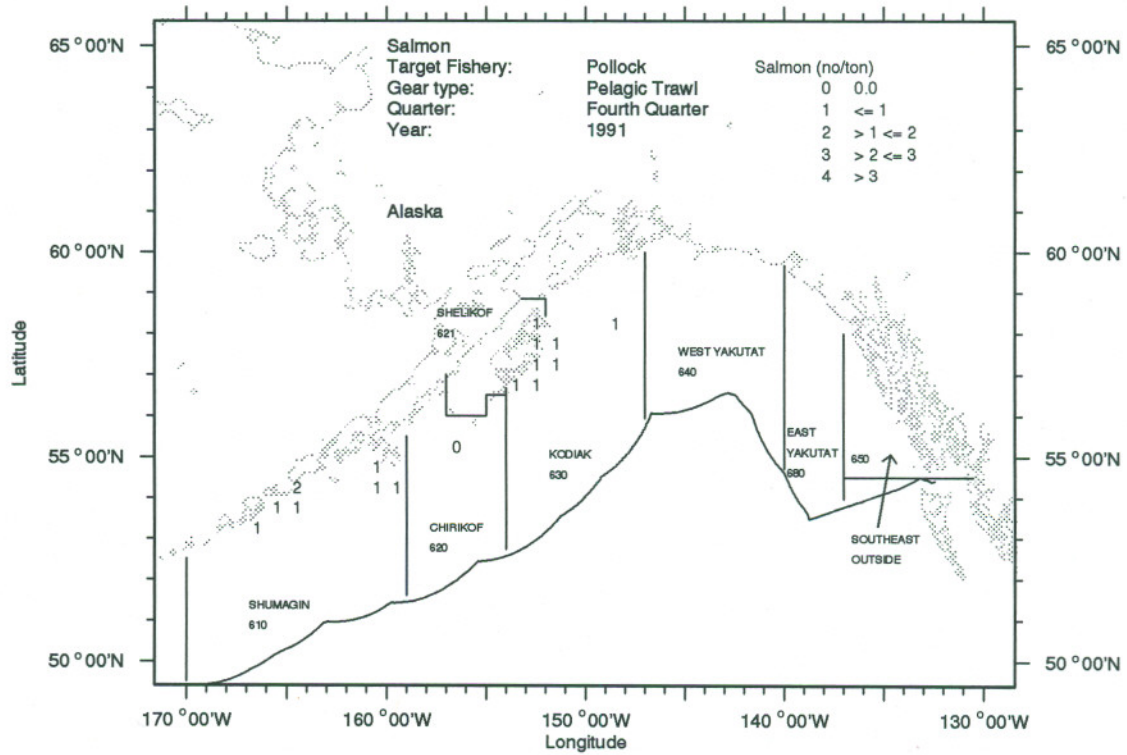
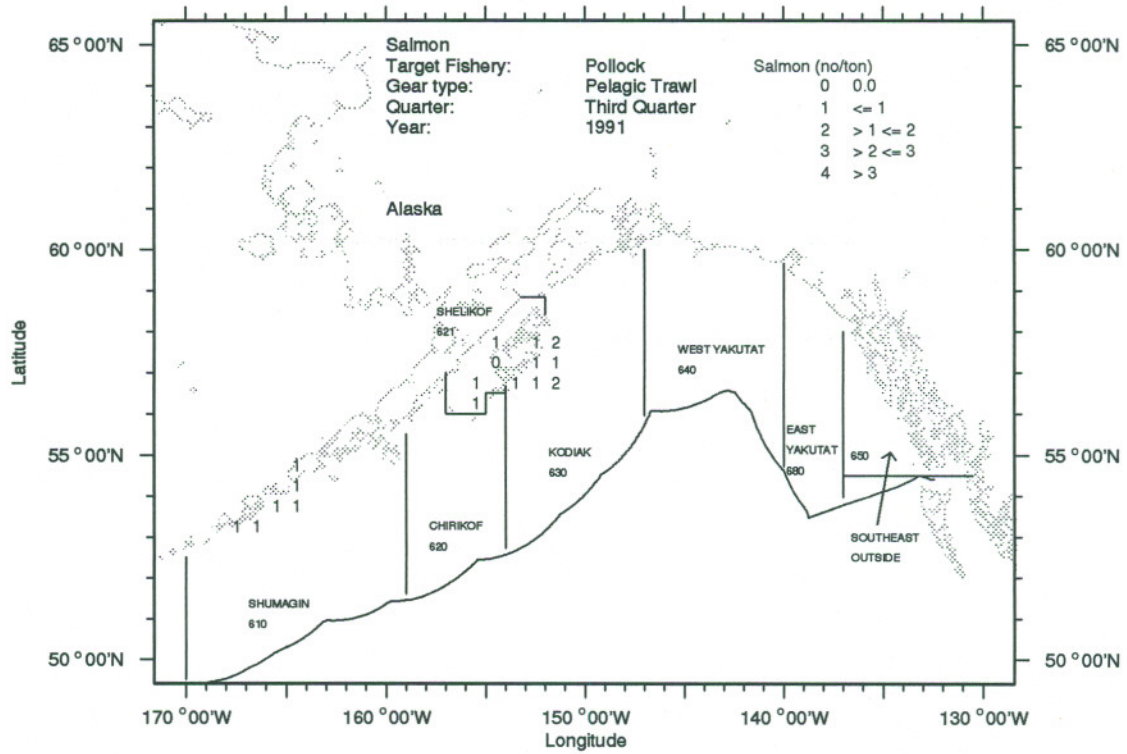


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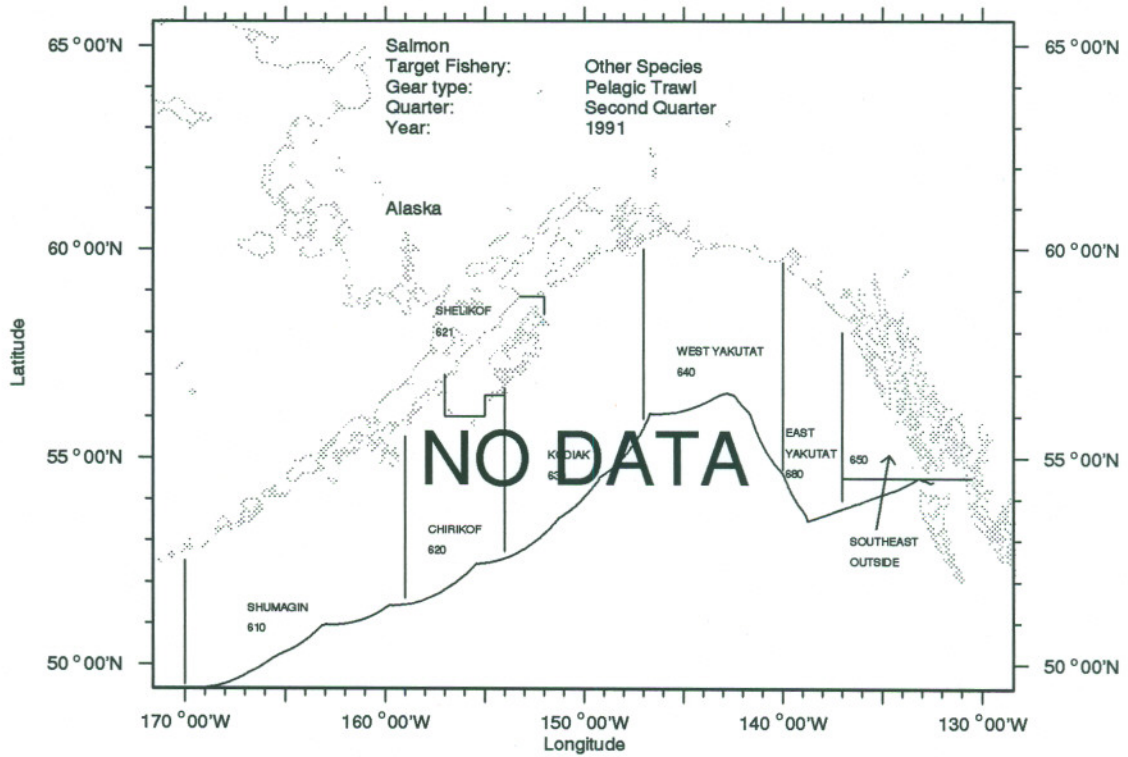
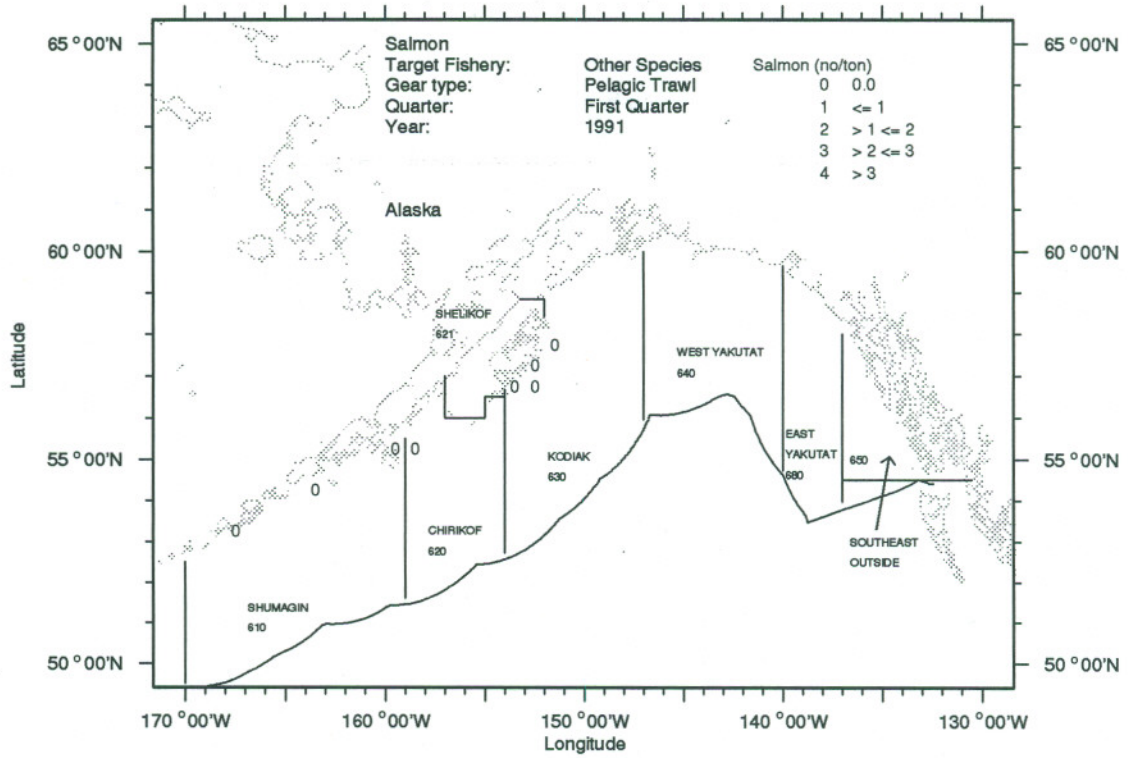


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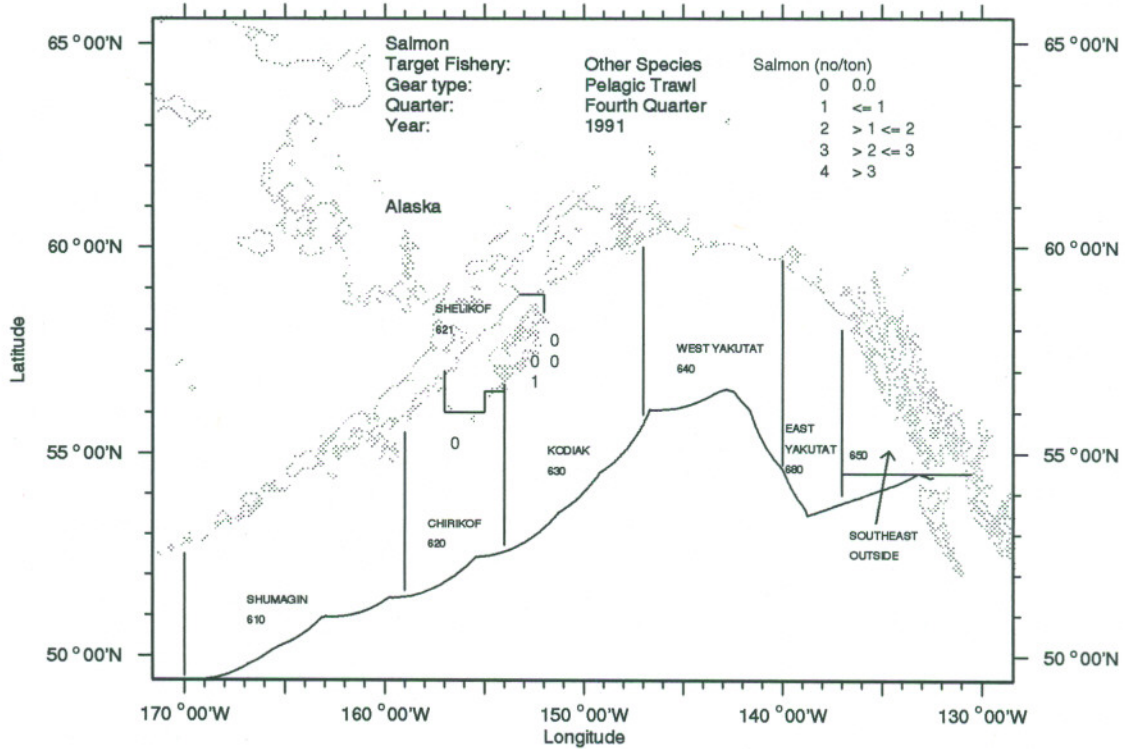
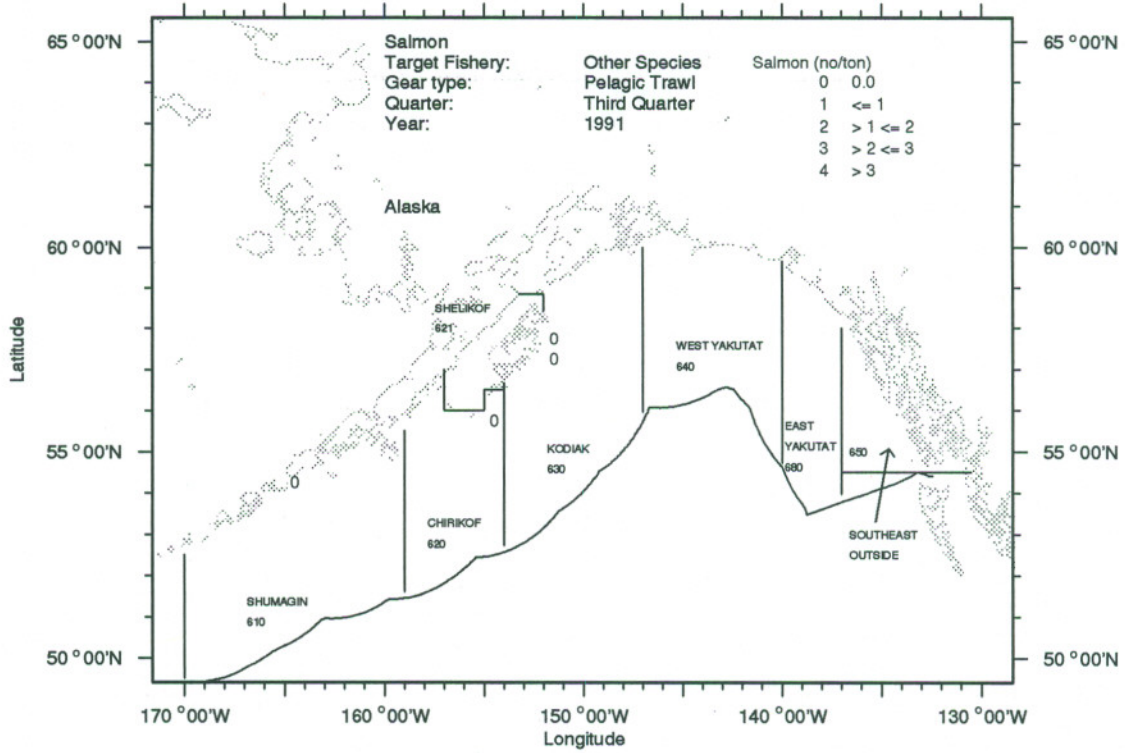


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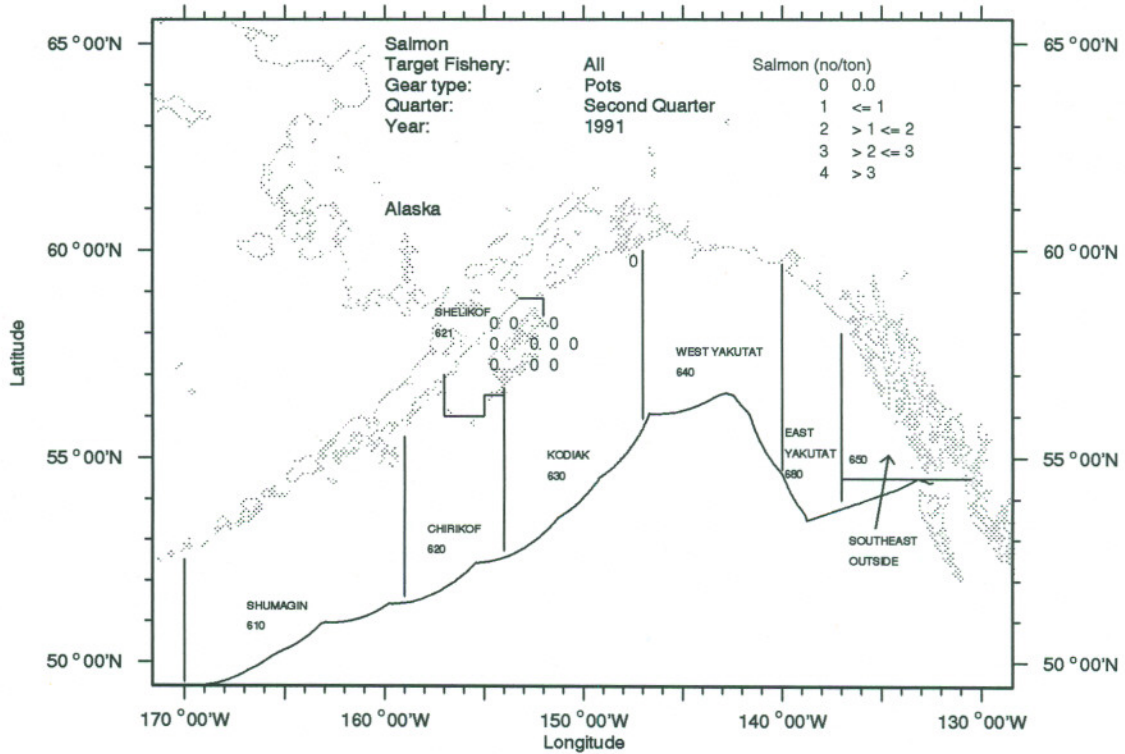
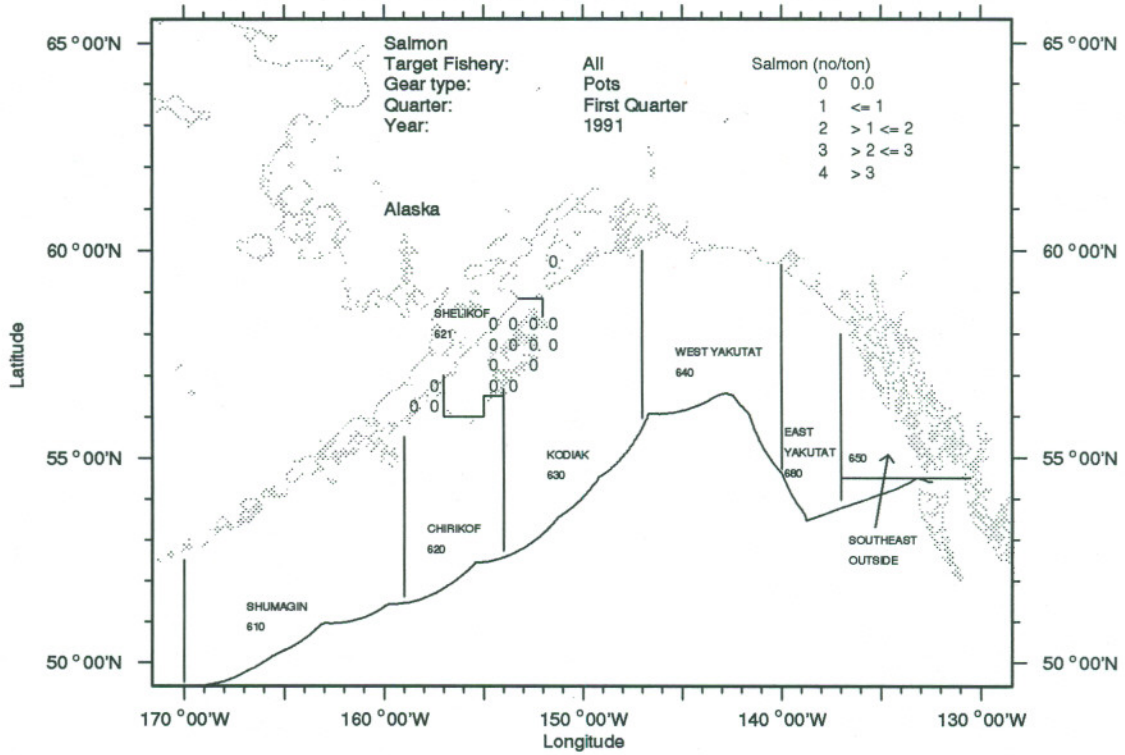


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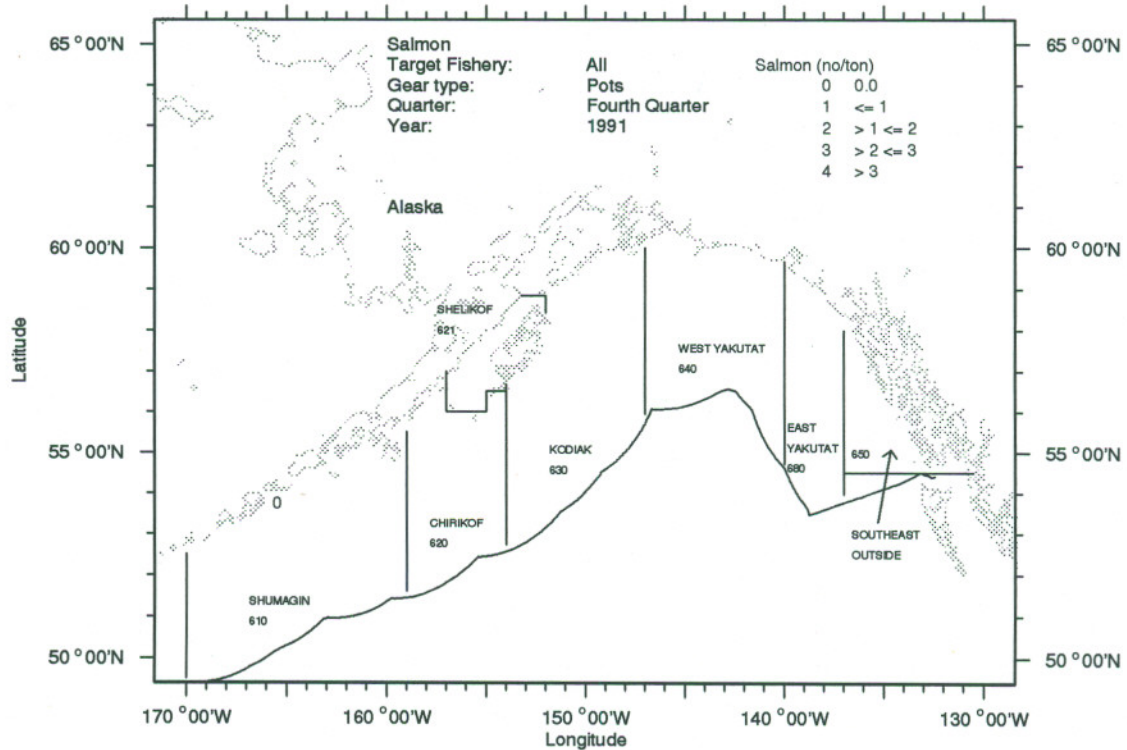
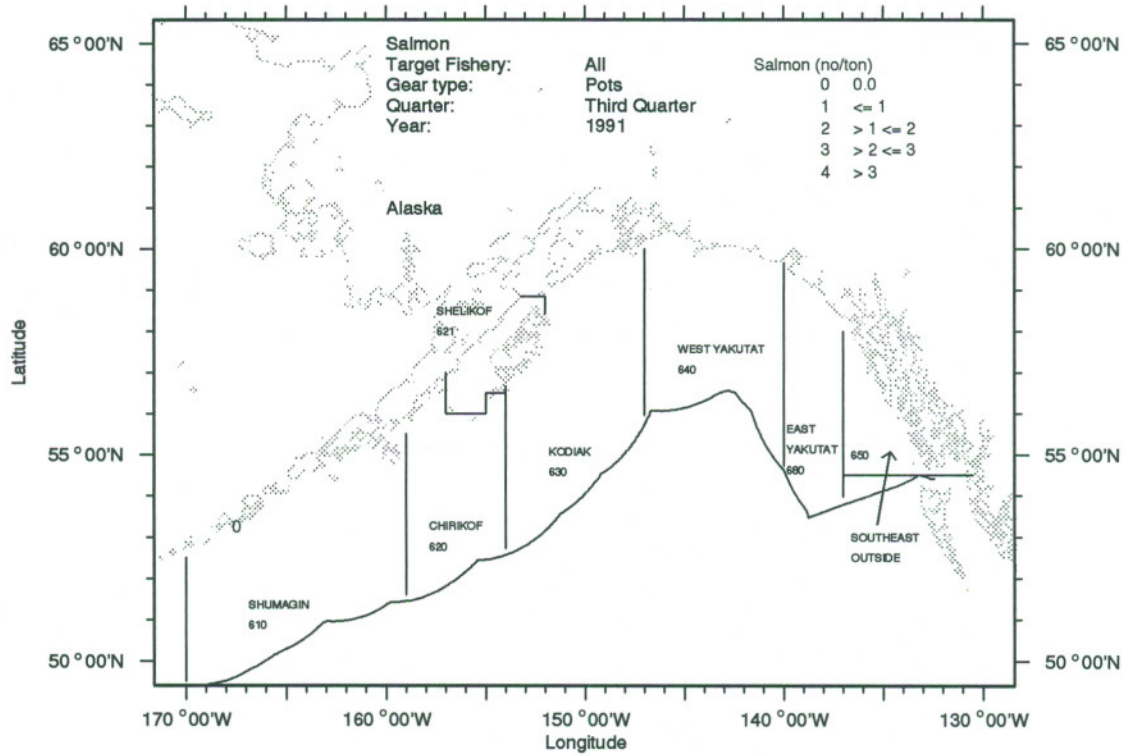


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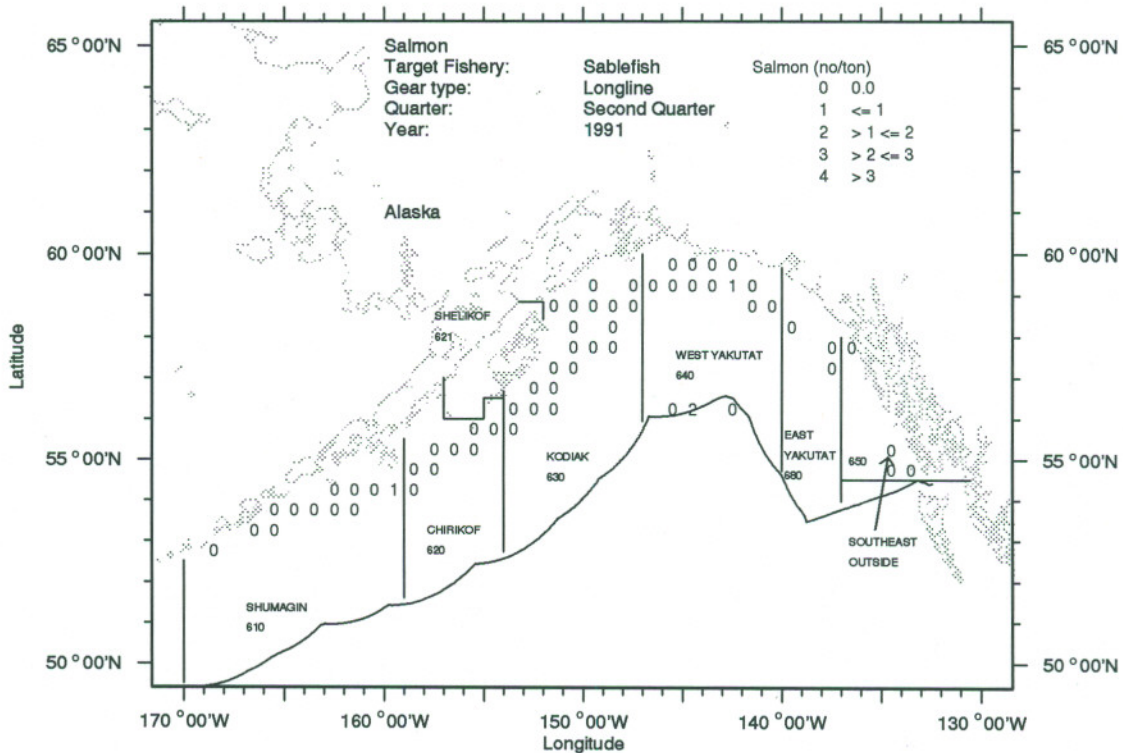
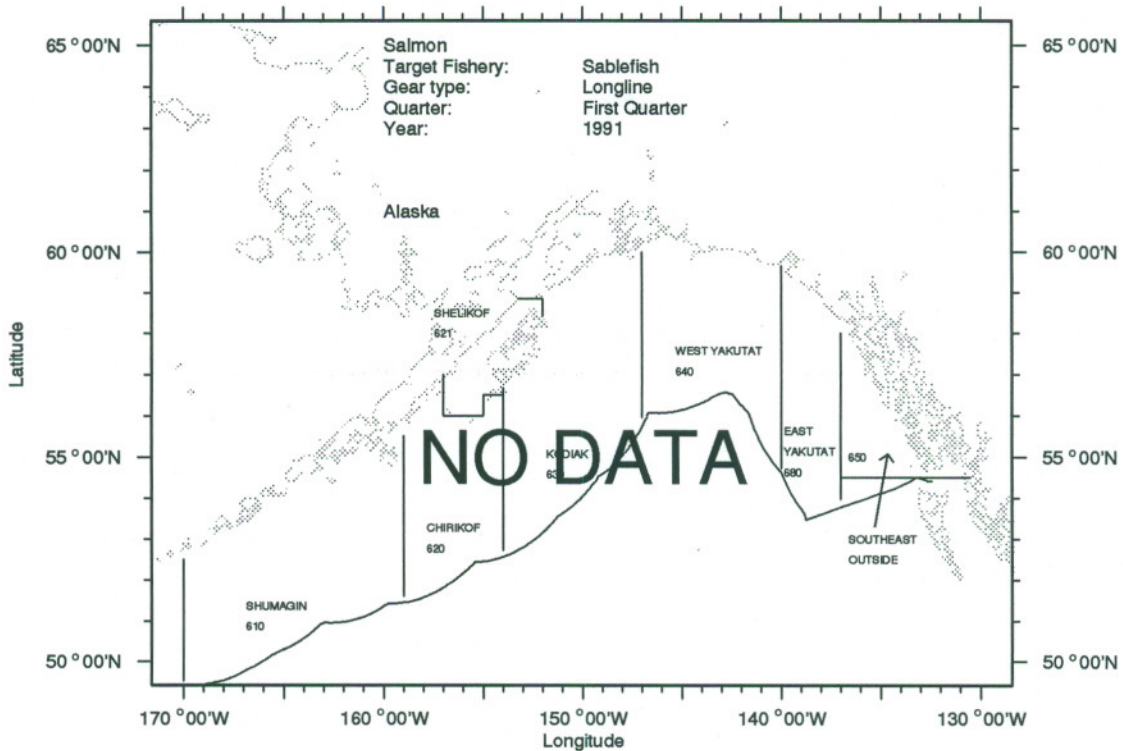


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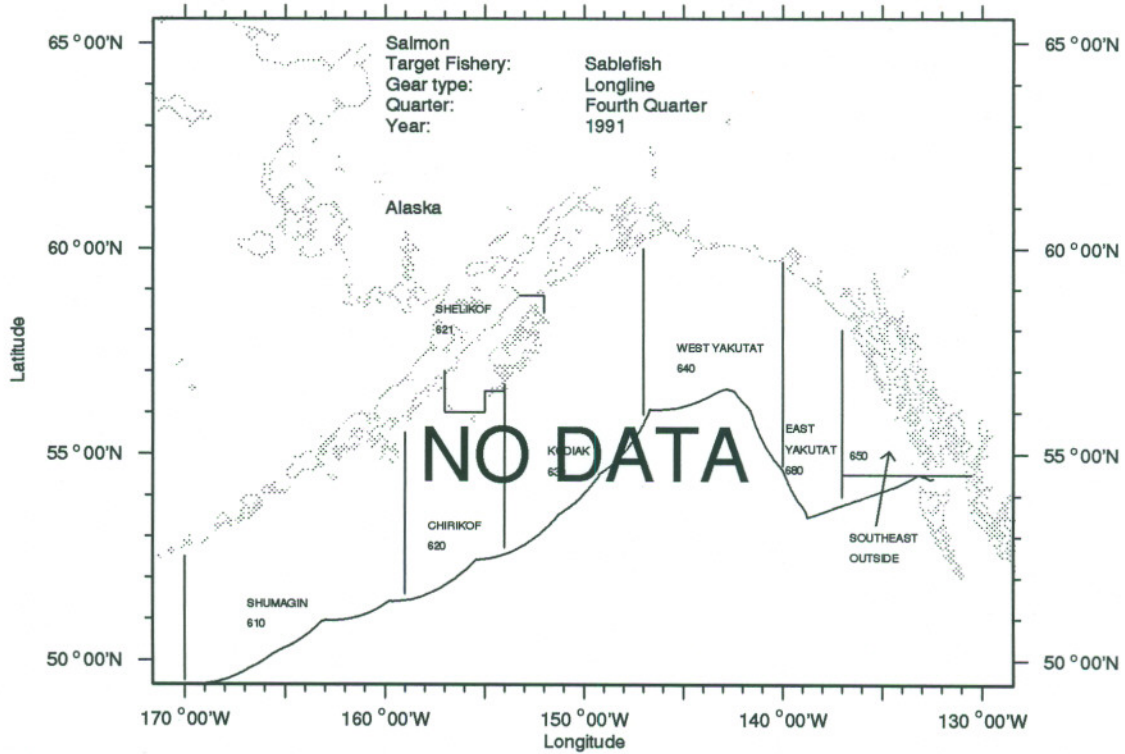
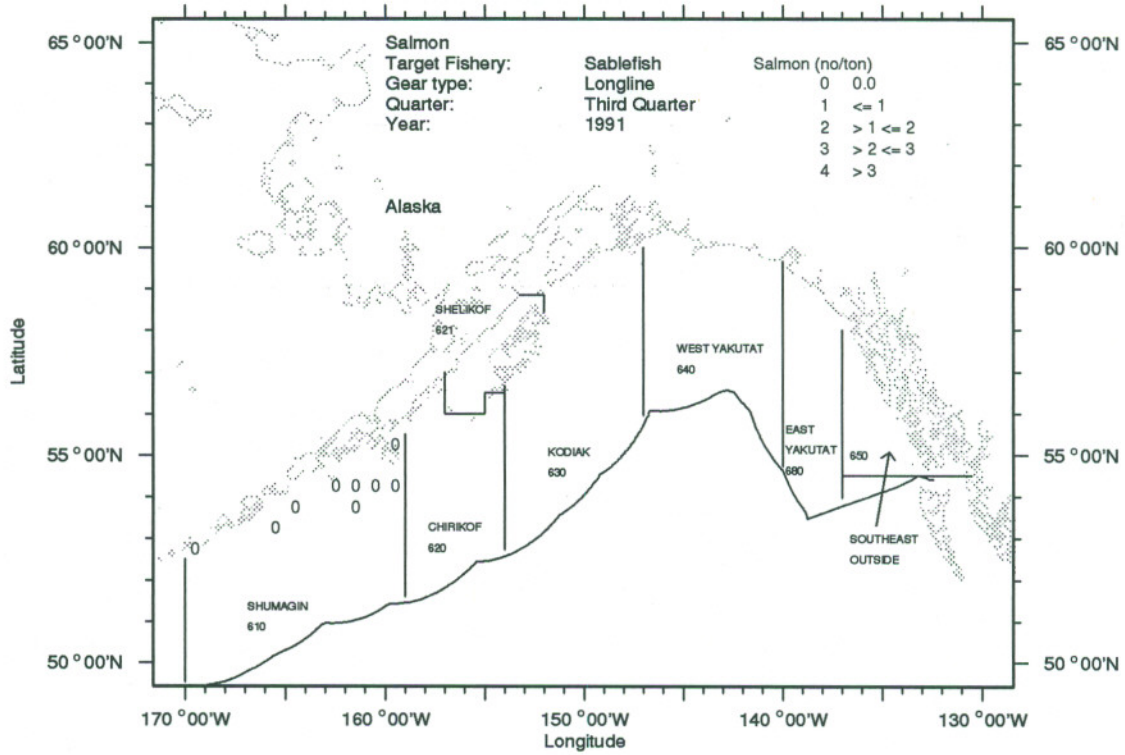


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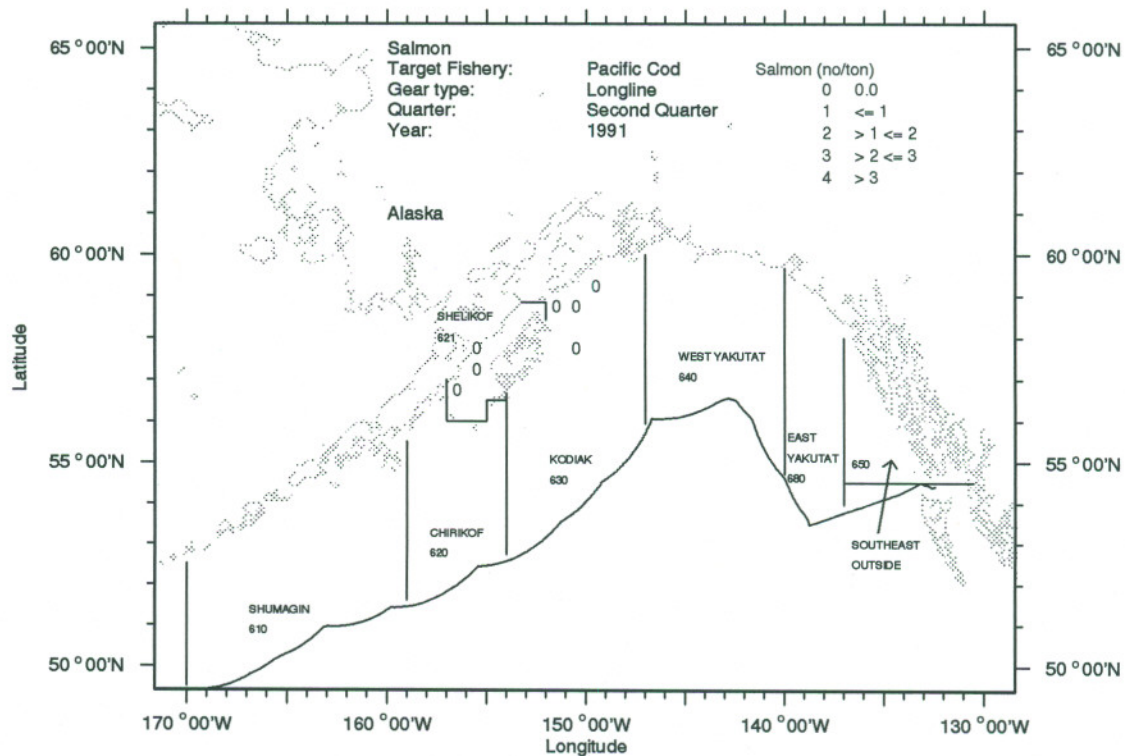
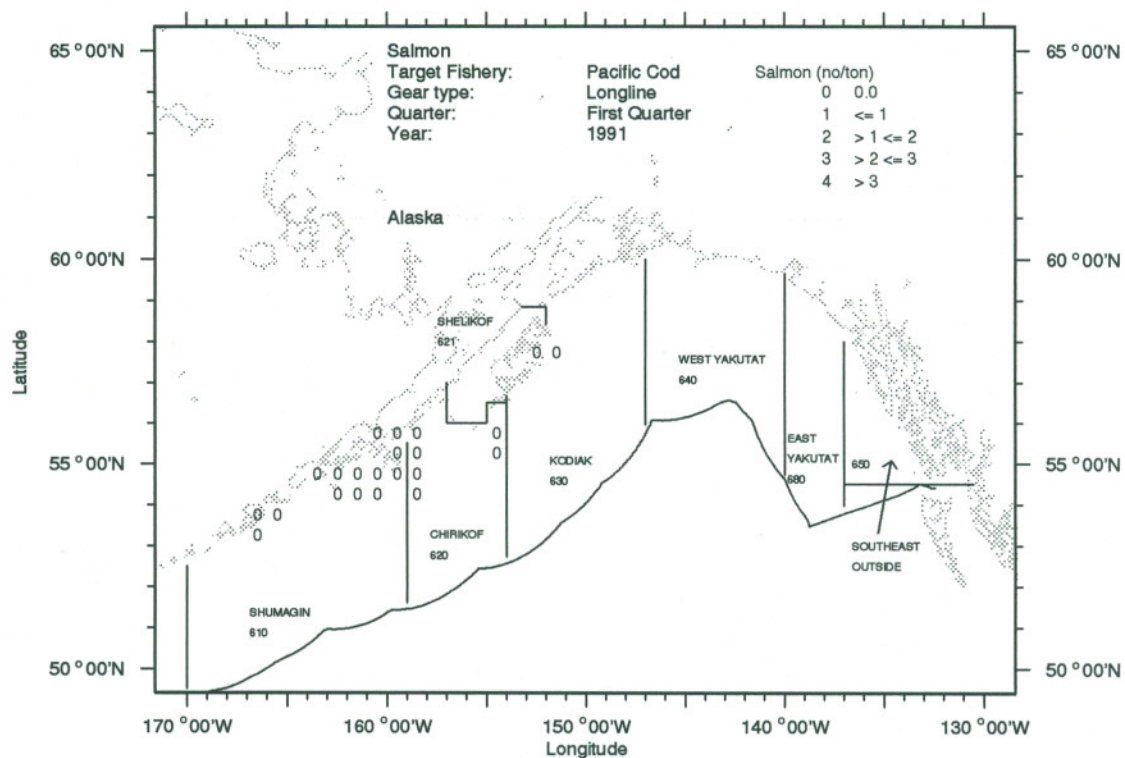


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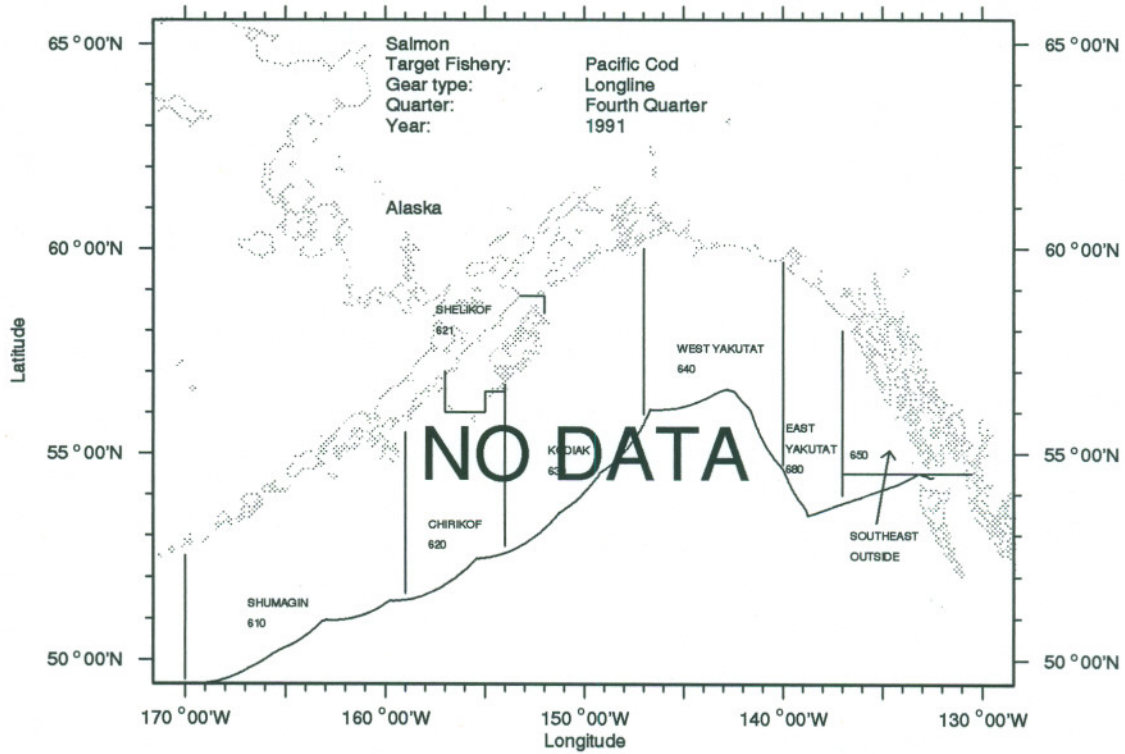
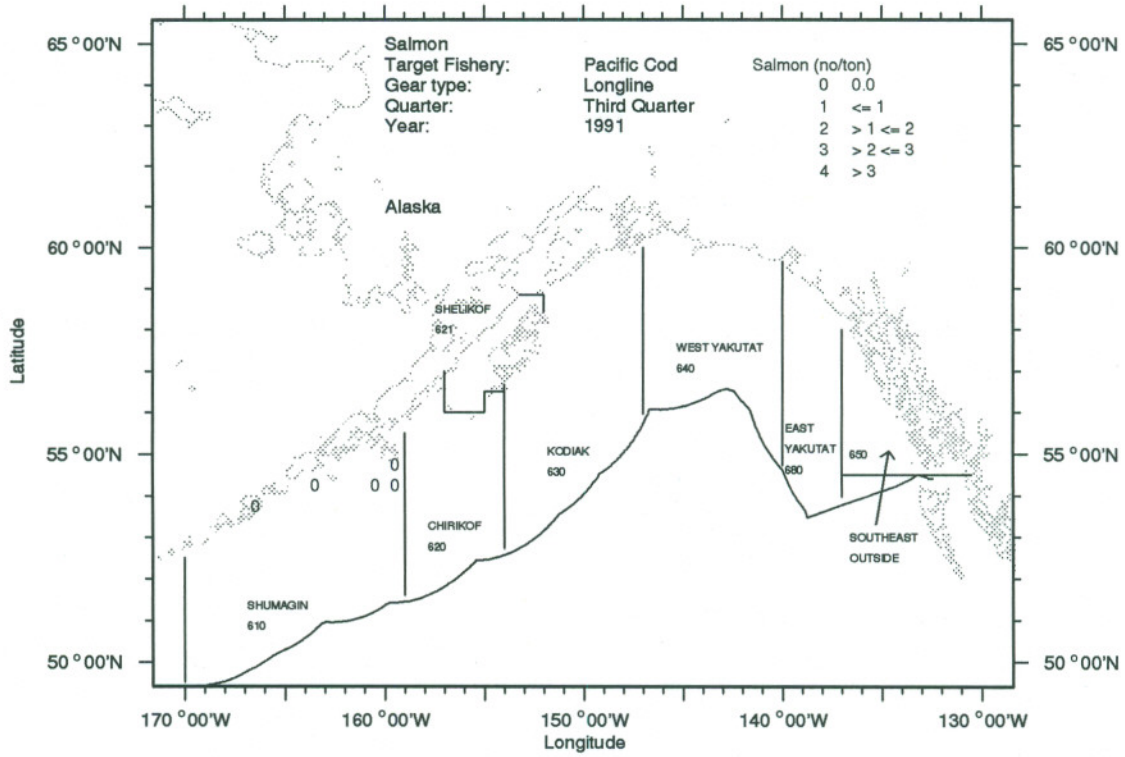


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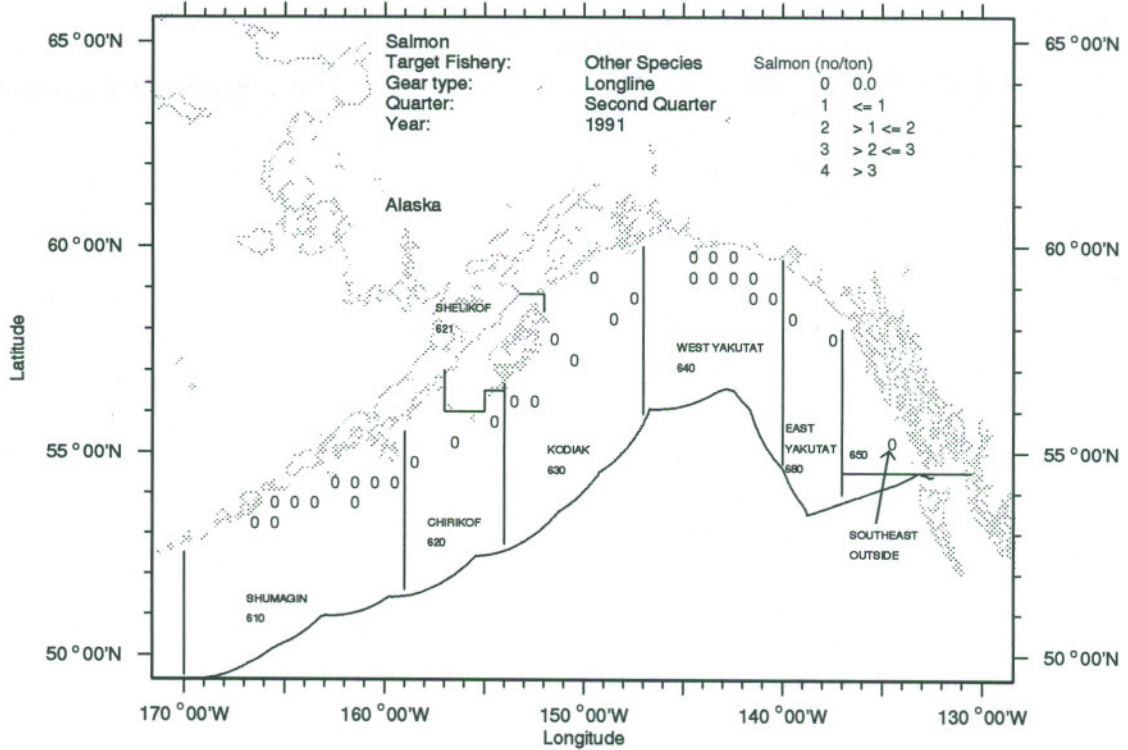
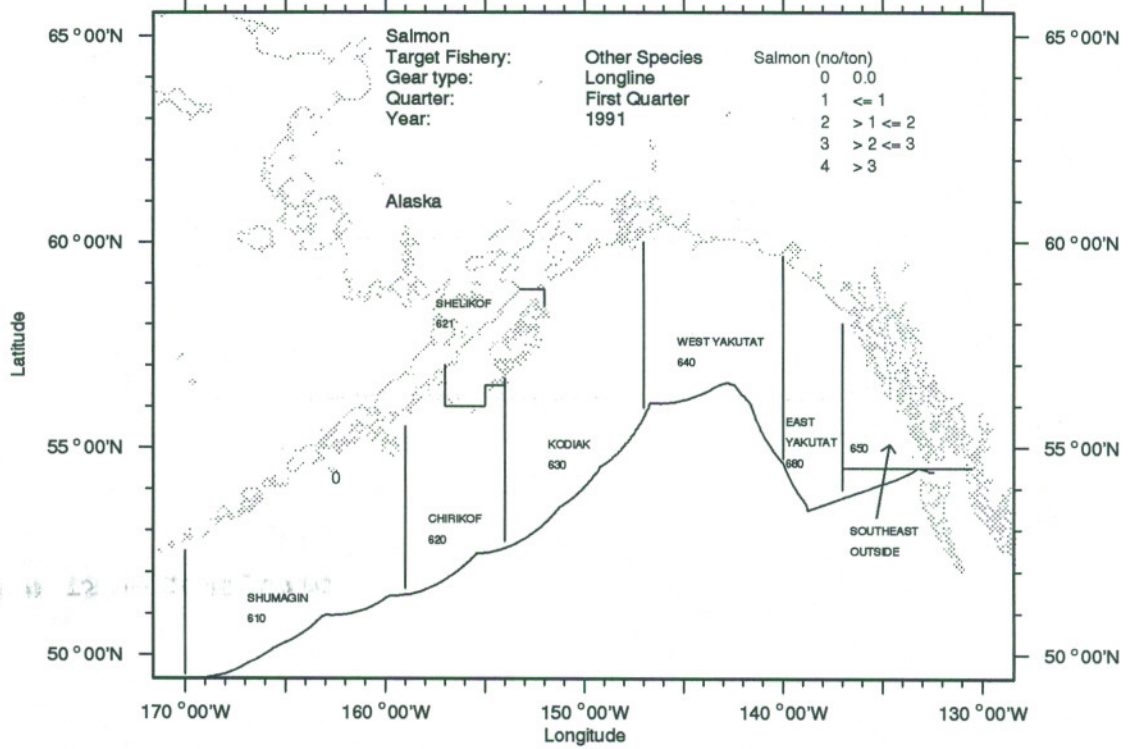


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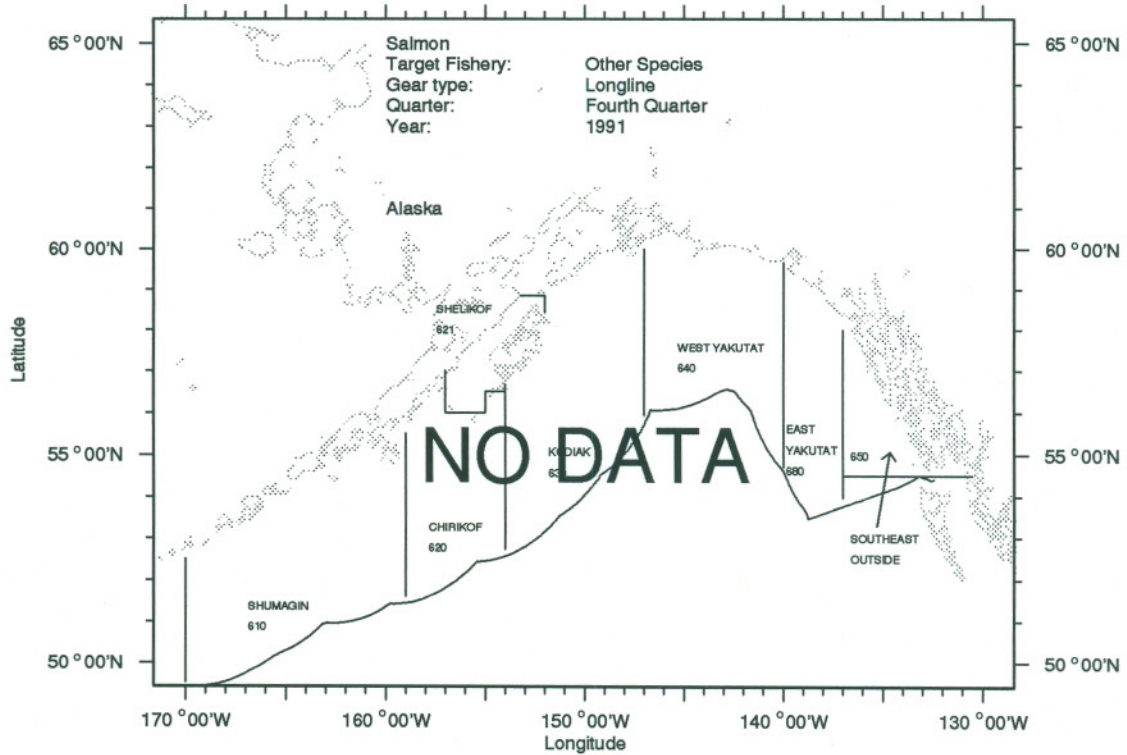
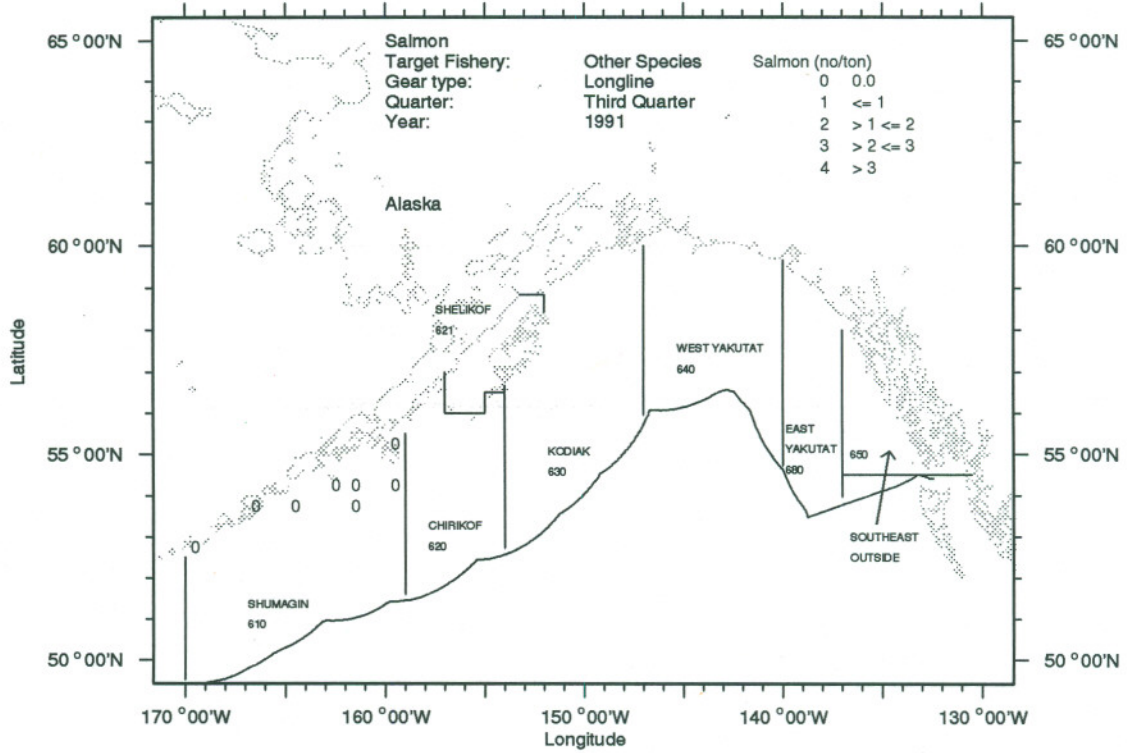


Figure 12.--Continued.

Table 45.--Estimated bycatch of Pacific salmon (by number of fish) by U.S. domestic groundfish vessels in the Gulf of Alaska region by species, NPFMC area, and gear type, 1991. (Dashes indicate area not fished.)

Chinook salmon (numbers)								
Gear type	Area 610	Area 620	Area 621	Area 630	Area 640	Area 650	Area 680	Total
Trawl	4,427	21,687	916	11,492	195	93	84	38,894
Longline	0	0	0	0	0	0	0	0
Pot	0	0	0	0	0	0	--	0
Jig	0	0	0	0	0	0	0	0
Total	4,427	21,687	916	11,492	195	93	84	38,894
Percent by area	11.4%	55.8%	2.4%	29.5%	0.5%	0.2%	0%	
Other salmon* (numbers)								
Gear type	Area 610	Area 620	Area 621	Area 630	Area 640	Area 650	Area 680	Total
Trawl	2,655	637	135	11,485	26	5	3	14,946
Longline	4	0	0	0	0	0	0	4
Pot	0	0	0	0	0	0	--	0
Jig	0	0	0	0	0	0	0	0
Total	2,659	637	135	11,485	26	5	3	14,950
Percent by area	17.8%	4.3%	0.9%	76.8%	0.2%	<0.1%	<0.1%	
Total salmon (numbers)								
Gear type	Area 610	Area 620	Area 621	Area 630	Area 640	Area 650	Area 680	Total
Trawl	7,082	22,324	1,051	22,977	221	98	87	53,840
Longline	4	0	0	0	0	0	0	4
Pot	0	0	0	0	0	0	--	0
Jig	0	0	0	0	0	0	0	0
Total	7,086	22,324	1,051	22,977	221	98	87	53,844
Percent by area	13.2%	41.5%	2.0%	42.7%	0.4%	0.2%	0.2%	

*Species in this group are coho salmon, chum salmon, sockeye salmon, and pink salmon.

Table 46.--U.S. domestic groundfish catch (in metric tons (t)) and Pacific salmon bycatch (in numbers) by target fishery, NPFMC zone, and species in the Gulf of Alaska region, 1991.

Fishery	Gear	Zone	Groundfish catch	Pacific salmon					
				Chinook	Other	Total salmon	Per t of groundfish	% within zone	% of total salmon catch
Pollock midwater	Trawl	Eastern	5,497.49	0	0	0	0.000	0.0%	0.0%
		Central	44,992.87	3,695	10,651	14,346	0.319	31.0%	26.6%
		Western	34,869.20	2,232	2,246	4,478	0.128	63.2%	8.3%
		Total	85,359.56	5,927	12,897	18,824	0.221		35.0%
Pollock bottom	Longline	Eastern	nf	nf	nf	nf	nf	nf	nf
		Central	0.25	0	0	0	0.000	0.0%	0.0%
		Western	0.72	0	0	0	0.000	0.0%	0.0%
		Total	0.97	0	0	0	0.000		0.0%
Pollock bottom	Pot	Eastern	nf	nf	nf	nf	nf	nf	nf
		Central	112.72	0	0	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf	nf	nf
		Total	112.72	0	0	0	0.000		0.0%
Pollock bottom	Trawl	Eastern	80.32	14	1	15	0.187	3.7%	0.0%
		Central	15,485.61	2,388	95	2,483	0.160	5.4%	4.6%
		Western	5,881.68	111	64	175	0.030	2.5%	0.3%
		Total	21,447.61	2,513	160	2,673	0.125		5.0%
Pacific cod	Gillnet	Eastern	nf	nf	nf	nf	nf	nf	nf
		Central	9.87	0	0	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf	nf	nf
		Total	9.87	0	0	0	0.000		0.0%
Pacific cod	Longline	Eastern	279.60	0	0	0	0.000	0.0%	0.0%
		Central	5,868.30	0	0	0	0.000	0.0%	0.0%
		Western	1,332.54	0	0	0	0.000	0.0%	0.0%
		Total	7,480.44	0	0	0	0.000		0.0%
Pacific cod	Jig	Eastern	7.28	0	0	0	0.000	0.0%	0.0%
		Central	48.65	0	0	0	0.000	0.0%	0.0%
		Western	34.75	0	0	0	0.000	0.0%	0.0%
		Total	90.68	0	0	0	0.000		0.0%
Pacific cod	Pot	Eastern	3.88	0	0	0	0.000	0.0%	0.0%
		Central	9,376.71	0	0	0	0.000	0.0%	0.0%
		Western	1,095.18	0	0	0	0.000	0.0%	0.0%
		Total	10,475.77	0	0	0	0.000		0.0%
Pacific cod	Trawl	Eastern	2.40	0	0	0	0.000	0.0%	0.0%
		Central	33,567.55	3,858	8	3,866	0.115	8.3%	7.2%
		Western	36,511.85	1,616	0	1,616	0.044	22.8%	3.0%
		Total	70,081.80	5,474	8	5,482	0.078		10.2%
Deepwater flatfish	Longline	Eastern	nf	nf	nf	nf	nf	nf	nf
		Central	24.54	0	0	0	0.000	0.0%	0.0%
		Western	13.54	0	0	0	0.000	0.0%	0.0%
		Total	38.08	0	0	0	0.000		0.0%
Deepwater flatfish	Trawl	Eastern	0.02	0	0	0	0.000	0.0%	0.0%
		Central	18,476.68	3,194	750	3,944	0.213	8.5%	7.3%
		Western	1,863.22	115	20	135	0.072	1.9%	0.3%
		Total	20,339.92	3,309	770	4,079	0.201		7.6%
Shallow-water flatfish	Trawl	Eastern	nf	nf	nf	nf	nf	nf	nf
		Central	1,632.01	54	21	75	0.046	0.2%	0.1%
		Western	177.66	1	0	1	0.006	0.0%	0.0%
		Total	1,809.67	55	21	76	0.042		0.1%

Table 46.--Continued.

Fishery	Gear	Zone	Groundfish catch	Pacific salmon					
				Chinook	Other	Total salmon	Per t of groundfish	% within zone	% of total salmon catch
Rockfish	Longline	Eastern	509.32	0	0	0	0.000	0.0%	0.0%
		Central	116.60	0	0	0	0.000	0.0%	0.0%
		Western	2.28	0	0	0	0.000	0.0%	0.0%
		Total	628.20	0	0	0	0.000		0.0%
Rockfish	Jig	Eastern	12.82	0	0	0	0.000	0.0%	0.0%
		Central	9.90	0	0	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf	nf	nf
		Total	22.72	0	0	0	0.000		0.0%
Rockfish	Trawl	Eastern	3,947.59	356	14	370	0.094	91.1%	0.7%
		Central	15,098.28	20,904	732	21,636	1.433	46.7%	40.2%
		Western	5,091.76	341	303	644	0.126	9.1%	1.2%
		Total	24,137.63	21,601	1,049	22,650	0.938		42.1%
Other	Longline	Eastern	47.38	0	0	0	0.000	0.0%	0.0%
		Central	5.74	0	0	0	0.000	0.0%	0.0%
		Western	2.60	0	0	0	0.000	0.0%	0.0%
		Total	55.72	0	0	0	0.000		0.0%
Other	Jig	Eastern	1.04	0	0	0	0.000	0.0%	0.0%
		Central	383.60	0	0	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf	nf	nf
		Total	384.64	0	0	0	0.000		0.0%
Other	Pot	Eastern	nf	nf	nf	nf	nf	nf	nf
		Central	0.63	0	0	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf	nf	nf
		Total	0.63	0	0	0	0.000		0.0%
Other	Trawl	Eastern	831.69	2	19	21	0.025	5.2%	0.0%
		Central	245.92	2	0	2	0.008	0.0%	0.0%
		Western	2,191.76	11	22	33	0.015	0.5%	0.1%
		Total	3,269.37	15	41	56	0.017		0.1%
Sablefish	Longline	Eastern	10,383.16	0	0	0	0.000	0.0%	0.0%
		Central	10,933.33	0	0	0	0.000	0.0%	0.0%
		Western	2,142.82	0	4	4	0.002	0.1%	0.0%
		Total	23,459.31	0	4	4	0.000		0.0%
Sablefish	Jig	Eastern	nf	nf	nf	nf	nf	nf	nf
		Central	15.21	0	0	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf	nf	nf
		Total	15.21	0	0	0	0.000		0.0%
Sablefish	Trawl	Eastern	nf	nf	nf	nf	nf	nf	nf
		Central	252.31	0	0	0	0.000	0.0%	0.0%
		Western	142.71	0	0	0	0.000	0.0%	0.0%
		Total	395.02	0	0	0	0.000		0.0%
Total		Eastern	21,603.99	372	34	406	0.019		0.8%
		Central	156,657.28	34,095	12,257	46,352	0.296		86.1%
		Western	91,354.27	4,427	2,659	7,086	0.078		13.2%
		Total	269,615.54	38,894	14,950	53,844	0.200		

Table 47.--Biological data on the bycatch of Pacific salmon in U.S. domestic groundfish fisheries in the Gulf of Alaska region, 1991.

Species	Percent by species	Sex	Sex composition	Average weight (kg)	Average length (cm)
Chinook	72.2%	Male	45.9	3.03	58.1
		Female	54.1	3.43	61.7
Chum	25.5%	Male	57.6	3.11	59.9
		Female	42.4	2.89	59.3
Coho	2.1%	Male	50.0	3.36	60.2
		Female	50.0	2.72	62.6
Sockeye	0.1%	Male	64.3	3.16	49.2
		Female	35.7	2.10	53.5
Pink	0.1%	Male	63.6	1.21	43.4
		Female	36.4	1.26	45.3

Table 48.-- Monthly bycatch rates (kg/t) and average weights (kg) of Pacific halibut on and number of hauls sampled in the U.S.

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target												
Jan	11.966	2.29	2	---	---	---	87.995	3.17	1	14.677	3.75	20
Feb	24.086	2.22	23	---	---	---	ns	ns	ns	38.249	2.46	49
Mar	6.994	1.07	18	---	---	---	---	---	---	41.468	3.02	51
Apr	24.015	1.56	1	61.747	4.04	81	---	---	---	62.168	3.50	163
May	ns	ns	ns	59.629	4.38	31	---	---	---	107.482	4.63	79
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	35.917	7.24	2	47.446	5.75	7	---	---	---	36.927	7.79	61
Aug	25.600	5.28	3	11.841	5.07	11	16.509	11.01	3	27.826	8.81	135
Sep	11.922	6.75	11	25.161	5.55	13	9.868	4.94	1	80.841	9.40	73
Oct	22.977	3.68	6	33.075	4.48	22	---	---	---	94.486	8.37	107
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	17.135	2.23	66	50.030	4.24	165	15.599	6.00	5	67.396	5.15	738
Bottom trawl - Pollock target												
Jan	9.651	1.48	11	---	---	---	2.959	1.92	21	6.669	2.45	18
Feb	10.414	1.97	17	---	---	---	11.297	1.60	5	26.443	2.11	9
Mar	14.864	2.59	28	3.812	4.13	6	---	---	---	41.392	1.95	3
Apr	---	---	---	---	---	---	---	---	---	19.247	3.35	9
May	---	---	---	---	---	---	---	---	---	6.285	3.01	2
Jun	---	---	---	---	---	---	---	---	---	ns	ns	ns
Jul	0.549	2.78	19	---	---	---	---	---	---	85.874	6.99	5
Aug	30.895	5.73	2	---	---	---	---	---	---	31.450	7.49	17
Sep	27.167	7.51	20	8.415	3.30	1	26.268	7.16	2	36.351	9.37	28
Oct	3.455	4.65	94	7.724	1.93	2	84.053	10.70	1	17.034	8.22	43
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	5.697	3.27	191	5.227	3.16	9	6.057	2.70	29	21.844	6.52	134
Bottom trawl - Pacific cod target												
Jan	11.481	1.45	94	---	---	---	3.811	0.85	1	49.570	6.20	21
Feb	9.865	1.66	254	12.112	2.99	7	12.094	1.27	5	20.105	0.02	151
Mar	10.290	1.71	357	10.320	4.18	125	4.998	2.13	17	14.339	2.79	206
Apr	29.169	1.94	4	72.915	3.13	34	12.777	1.52	20	35.065	2.45	65
May	---	---	---	46.094	5.56	3	---	---	---	46.706	3.68	1
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	24.984	6.72	2	27.516	4.60	2	---	---	---	0.000	0.00	4
Aug	0.000	0.00	1	24.354	6.02	3	---	---	---	31.759	7.59	11
Sep	5.517	4.08	10	---	---	---	---	---	---	170.416	9.94	4
Oct	20.747	5.26	10	---	---	---	13.316	5.75	5	114.706	2.90	1
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	10.433	1.65	732	15.999	3.70	174	8.388	2.07	48	22.476	0.07	464

domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC area, 1991.
("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	294.294	21.78	6	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	56.869	10.51	6	ns	ns	ns	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	206.904	19.65	12	ns	ns	ns	---	---	---
Bottom trawl - Pollock target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	2.359	7.10	1	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	53.504	4.30	1	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	4.725	5.29	2	---	---	---	---	---	---
Bottom trawl - Pacific cod target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	ns	ns	ns	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	ns	ns	ns	---	---	---	---	---	---

Table 48.-- Monthly bycatch rates (kg/t) and average weights (kg) of Pacific halibut on and number of hauls sampled in the U.S.

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Rockfish target												
Jan	0.256	1.80	1	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---	62.774	3.96	3
Mar	10.382	3.34	61	85.762	5.73	39	104.386	5.99	1	163.186	10.58	118
Apr	17.320	3.92	10	46.035	4.41	25	---	---	---	84.615	7.63	88
May	103.605	5.00	1	39.224	5.69	3	---	---	---	32.041	4.79	11
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	15.514	4.78	12	6.090	7.30	3	---	---	---	15.513	16.92	85
Aug	13.420	9.30	3	12.757	9.53	7	---	---	---	8.118	8.13	188
Sep	10.069	7.51	70	2.973	1.00	1	---	---	---	17.120	7.70	61
Oct	16.373	6.25	72	---	---	---	---	---	---	94.402	10.16	11
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	13.076	4.73	230	72.489	5.48	78	104.386	5.99	1	61.971	9.51	565
Bottom trawl - Other species target												
Jan	---	---	---	---	---	---	---	---	---	---	---	---
Feb	2.845	0.50	1	2.768	1.47	2	---	---	---	---	---	---
Mar	17.044	2.50	4	---	---	---	---	---	---	26.909	16.84	3
Apr	---	---	---	13.221	5.99	4	---	---	---	57.494	4.44	10
May	---	---	---	66.763	4.72	2	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	22.128	4.86	3	---	---	---	---	---	---	34.486	8.38	16
Aug	0.000	0.00	1	45.063	8.34	2	---	---	---	43.784	7.51	46
Sep	12.296	6.86	10	24.788	10.50	2	---	---	---	94.371	11.47	30
Oct	8.952	9.93	74	---	---	---	---	---	---	102.330	8.37	13
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	9.242	8.18	93	23.883	5.99	12	---	---	---	62.578	8.02	118

domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC area, 1991 (Continued).
("Rate" = no./t of groundfish; "Wt" = average weight; "Hl" = no. of hauls; "ns" = no observer sampling; "--" = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl
Bottom trawl - Rockfish target									
Jan	--	--	--	--	--	--	--	--	--
Feb	ns	ns	ns	ns	ns	ns	--	--	--
Mar	--	--	--	20.216	9.37	45	--	--	--
Apr	44.080	11.20	59	49.951	22.44	17	50.506	6.49	14
May	ns	ns	ns	--	--	--	--	--	--
Jun	--	--	--	--	--	--	--	--	--
Jul	--	--	--	--	--	--	--	--	--
Aug	--	--	--	--	--	--	--	--	--
Sep	6.549	3.60	12	--	--	--	--	--	--
Oct	59.078	6.95	17	--	--	--	--	--	--
Nov	--	--	--	--	--	--	--	--	--
Dec	--	--	--	--	--	--	--	--	--
Year	43.141	9.56	88	29.063	13.35	62	50.506	6.49	14
Bottom trawl - Other species target									
Jan	--	--	--	--	--	--	--	--	--
Feb	--	--	--	--	--	--	--	--	--
Mar	--	--	--	59.532	13.89	2	--	--	--
Apr	78.486	12.60	5	--	--	--	70.304	9.11	1
May	--	--	--	--	--	--	--	--	--
Jun	--	--	--	--	--	--	--	--	--
Jul	--	--	--	--	--	--	--	--	--
Aug	ns	ns	ns	--	--	--	--	--	--
Sep	9.756	5.16	31	--	--	--	--	--	--
Oct	18.363	7.20	6	--	--	--	--	--	--
Nov	--	--	--	--	--	--	--	--	--
Dec	--	--	--	--	--	--	--	--	--
Year	25.731	8.82	42	59.532	13.89	2	70.304	9.11	1

Table 48.-- Monthly bycatch rates (kg/t) and average weights (kg) of Pacific halibut on and number of hauls sampled in the U.S.

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target												
Jan	0.032	4.60	10	---	---	---	0.452	2.47	51	0.025	2.20	40
Feb	0.254	1.68	3	---	---	---	0.000	0.00	6	0.002	2.20	28
Mar	---	---	---	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Jun	0.327	3.04	15	0.000	0.00	1	0.000	0.00	2	0.026	7.81	116
Jul	0.232	3.68	181	ns	ns	ns	0.022	7.00	21	0.063	9.60	243
Aug	---	---	---	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	2.209	4.91	73	0.000	0.00	1	0.000	0.00	4	0.250	4.60	195
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.926	4.63	283	0.000	0.00	2	0.319	2.49	84	0.130	4.99	622
Pelagic trawl - Other species target												
Jan	ns	ns	ns	---	---	---	---	---	---	ns	ns	ns
Feb	7.085	3.90	10	21.546	3.28	1	ns	ns	ns	0.000	0.00	1
Mar	11.261	5.02	8	19.613	3.13	1	---	---	---	24.375	2.92	8
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	1	0.000	0.00	1	---	---	---	191.231	10.14	2
Aug	---	---	---	---	---	---	---	---	---	ns	ns	ns
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	ns	ns	ns	0.000	0.00	1	---	---	---	13.594	3.01	4
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	7.459	4.27	19	15.950	3.19	4	ns	ns	ns	37.683	4.82	15
Pots - All targets												
Jan	ns	ns	ns	ns	ns	ns	4.605	3.18	44	1.067	2.77	31
Feb	ns	ns	ns	0.314	2.50	22	1.714	2.44	140	1.244	3.48	87
Mar	ns	ns	ns	ns	ns	ns	2.384	4.48	35	1.886	6.71	150
Apr	---	---	---	ns	ns	ns	2.821	5.52	61	11.216	3.90	166
May	---	---	---	ns	ns	ns	ns	ns	ns	10.583	4.16	1
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---	---	---	---
Aug	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Nov	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Dec	24.198	4.18	40	---	---	---	ns	ns	ns	ns	ns	ns
Year	24.129	4.18	41	0.314	2.50	22	2.502	3.82	280	5.652	4.11	435

domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC area, 1991 (Continued).
("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	0.000	0.00	9	---	---	---	---	---	---
Apr	0.000	0.00	15	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	24	---	---	---	---	---	---
Pelagic trawl - Other species target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	---	---	---	---	---	---	---	---	---
Pots - All targets									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	ns	ns	ns	ns	ns	ns	---	---	---
Apr	---	---	---	ns	ns	ns	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	ns	ns	ns	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	ns	ns	ns	ns	ns	ns	---	---	---

Table 48.-- Monthly bycatch rates (kg/t) and average weights (kg) of Pacific halibut on and number of hauls sampled in the U.S.

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target												
Jan	---	---	---	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	53.819	7.69	62	73.660	14.25	82	ns	ns	ns	131.266	15.04	245
Jun	142.065	8.61	141	137.833	17.03	92	---	---	---	433.786	9.30	238
Jul	258.507	9.12	50	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---	---	---	---
Sep	ns	ns	ns	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---	---	---	---
Nov	ns	ns	ns	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	149.588	8.73	253	105.849	15.95	174	ns	ns	ns	266.234	10.38	483
Longline - Pacific cod target												
Jan	192.622	5.11	37	607.211	5.80	1	ns	ns	ns	ns	ns	ns
Feb	107.821	7.23	27	67.774	8.38	18	ns	ns	ns	ns	ns	ns
Mar	81.775	8.83	48	73.019	6.79	88	ns	ns	ns	63.111	6.64	10
Apr	---	---	---	ns	ns	ns	ns	ns	ns	ns	ns	ns
May	ns	ns	ns	ns	ns	ns	ns	ns	ns	970.437	8.73	2
Jun	ns	ns	ns	---	---	---	1655.438	14.36	3	262.120	8.04	14
Jul	471.087	14.39	23	---	---	---	---	---	---	---	---	---
Aug	221.131	3.79	2	---	---	---	---	---	---	---	---	---
Sep	641.557	4.46	1	---	---	---	---	---	---	ns	ns	ns
Oct	ns	ns	ns	---	---	---	---	---	---	ns	ns	ns
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	150.975	8.52	138	76.825	6.95	107	1655.438	14.36	3	200.164	7.94	26
Longline - Other species target												
Jan	7930.349	20.80	1	---	---	---	---	---	---	ns	ns	ns
Feb	---	---	---	---	---	---	---	---	---	ns	ns	ns
Mar	---	---	---	---	---	---	---	---	---	ns	ns	ns
Apr	---	---	---	ns	ns	ns	---	---	---	ns	ns	ns
May	28592.234	13.98	1	327.851	3.93	4	---	---	---	0.000	0.00	3
Jun	255.232	8.31	25	0.000	0.00	2	---	---	---	525.319	11.16	11
Jul	216.096	9.99	10	---	---	---	---	---	---	ns	ns	ns
Aug	12157.895	9.73	1	---	---	---	---	---	---	ns	ns	ns
Sep	---	---	---	---	---	---	---	---	---	ns	ns	ns
Oct	---	---	---	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	455.752	11.61	38	164.793	3.93	6	---	---	---	515.520	11.16	14

domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC area, 1991 (Continued).
 ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---
May	72.697	13.53	246	99.159	7.24	18	1.868	10.48	22
Jun	47.109	9.56	22	ns	ns	ns	ns	ns	ns
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	ns	ns	ns	---	---	---
Sep	---	---	---	ns	ns	ns	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	71.910	13.42	268	99.159	7.24	18	1.868	10.48	22
Longline - Pacific cod target									
Jan	---	---	---	ns	ns	ns	---	---	---
Feb	---	---	---	ns	ns	ns	---	---	---
Mar	---	---	---	ns	ns	ns	---	---	---
Apr	---	---	---	ns	ns	ns	---	---	---
May	ns	ns	ns	ns	ns	ns	ns	ns	ns
Jun	ns	ns	ns	ns	ns	ns	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	ns	ns	ns	ns	ns	ns	ns	ns	ns
Oct	---	---	---	ns	ns	ns	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	ns	ns	ns	---	---	---
Year	ns	ns	ns	ns	ns	ns	ns	ns	ns
Longline - Other species target									
Jan	---	---	---	ns	ns	ns	---	---	---
Feb	---	---	---	ns	ns	ns	---	---	---
Mar	---	---	---	ns	ns	ns	ns	ns	ns
Apr	---	---	---	ns	ns	ns	ns	ns	ns
May	124.024	16.83	15	757.757	9.28	2	73.880	11.32	5
Jun	725.865	19.18	1	ns	ns	ns	ns	ns	ns
Jul	---	---	---	ns	ns	ns	ns	ns	ns
Aug	---	---	---	ns	ns	ns	---	---	---
Sep	ns	ns	ns	ns	ns	ns	ns	ns	ns
Oct	---	---	---	ns	ns	ns	---	---	---
Nov	---	---	---	ns	ns	ns	---	---	---
Dec	---	---	---	ns	ns	ns	---	---	---
Year	165.447	17.48	16	757.757	9.28	2	73.880	11.32	5

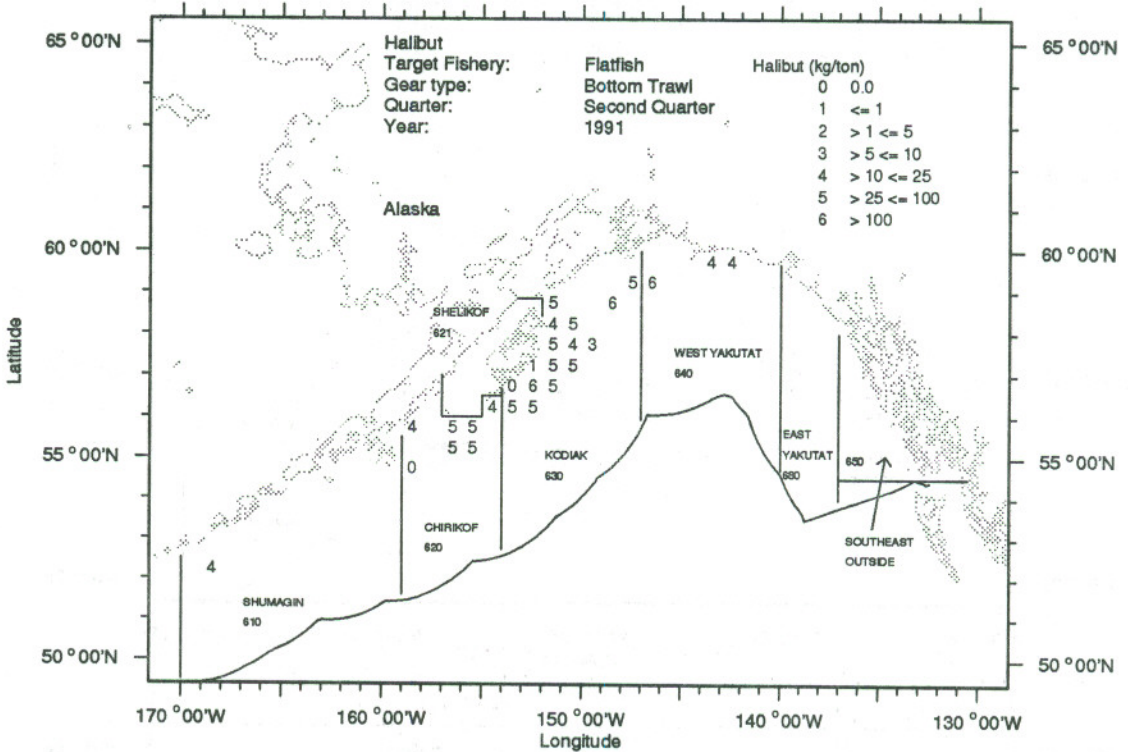
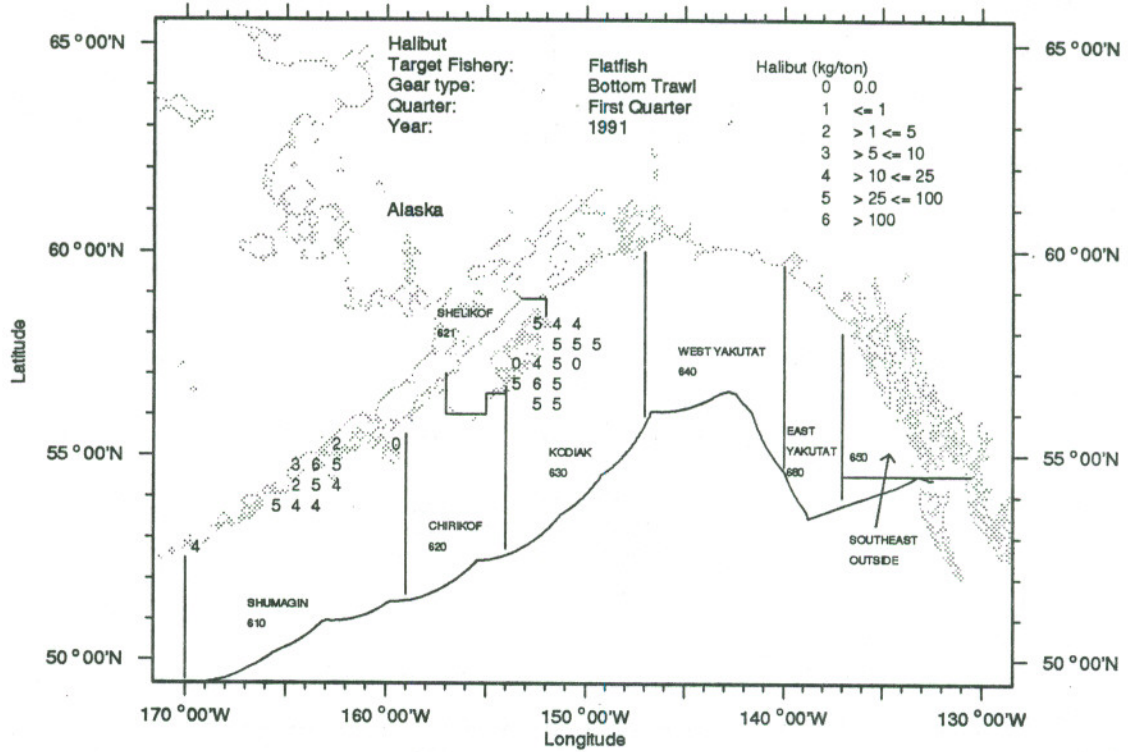


Figure 13.--Bycatch (kg/metric ton (t)) of Pacific halibut in the U.S. domestic groundfish fisheries by quarter, target fishery, gear type, and 1/2° latitude and 1° longitude areas in the Gulf of Alaska region, 1991.

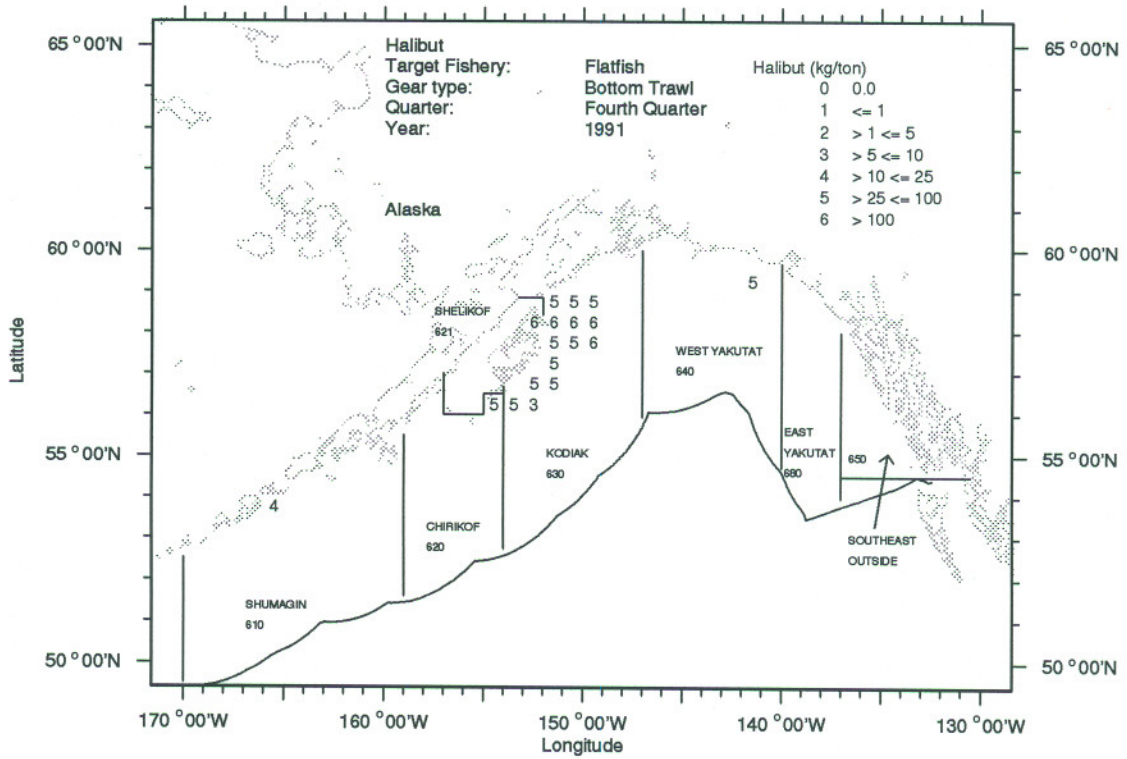
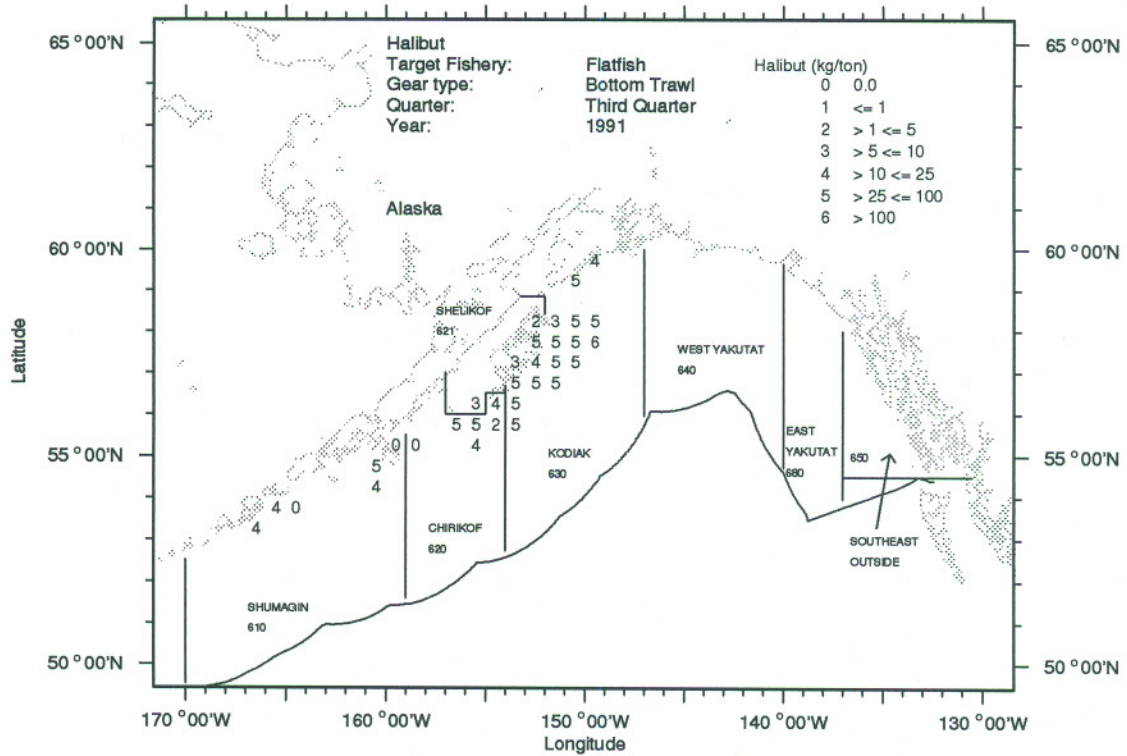


Figure 13.--Continued.

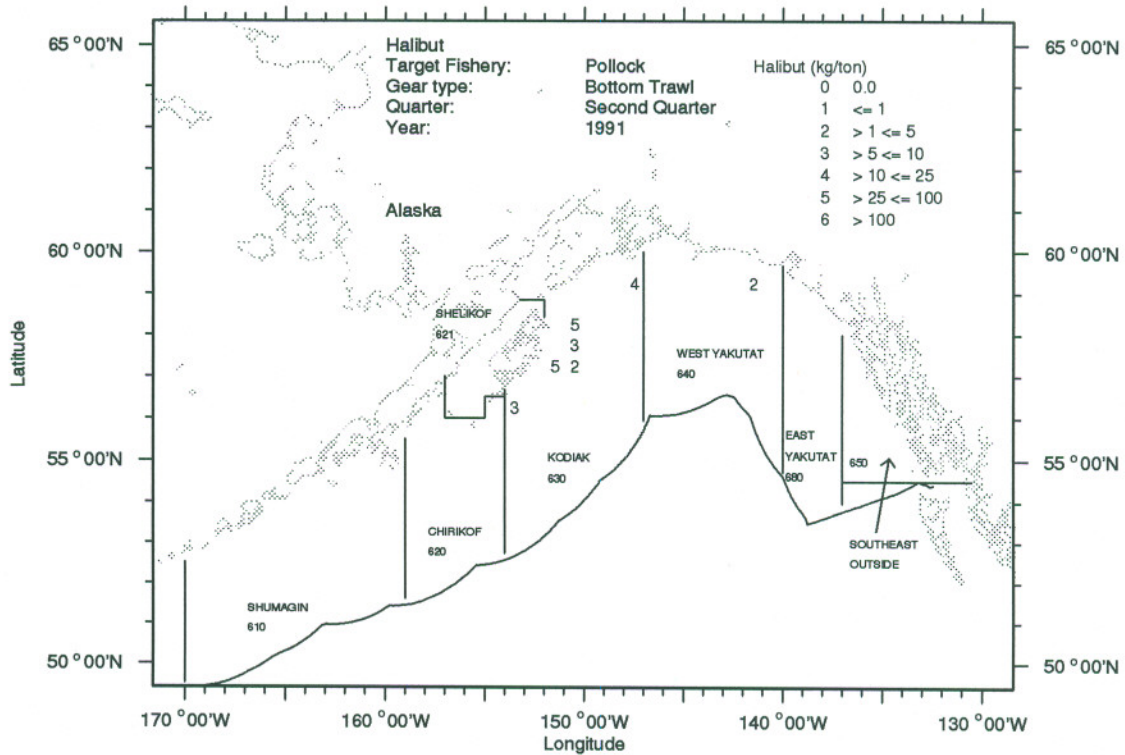
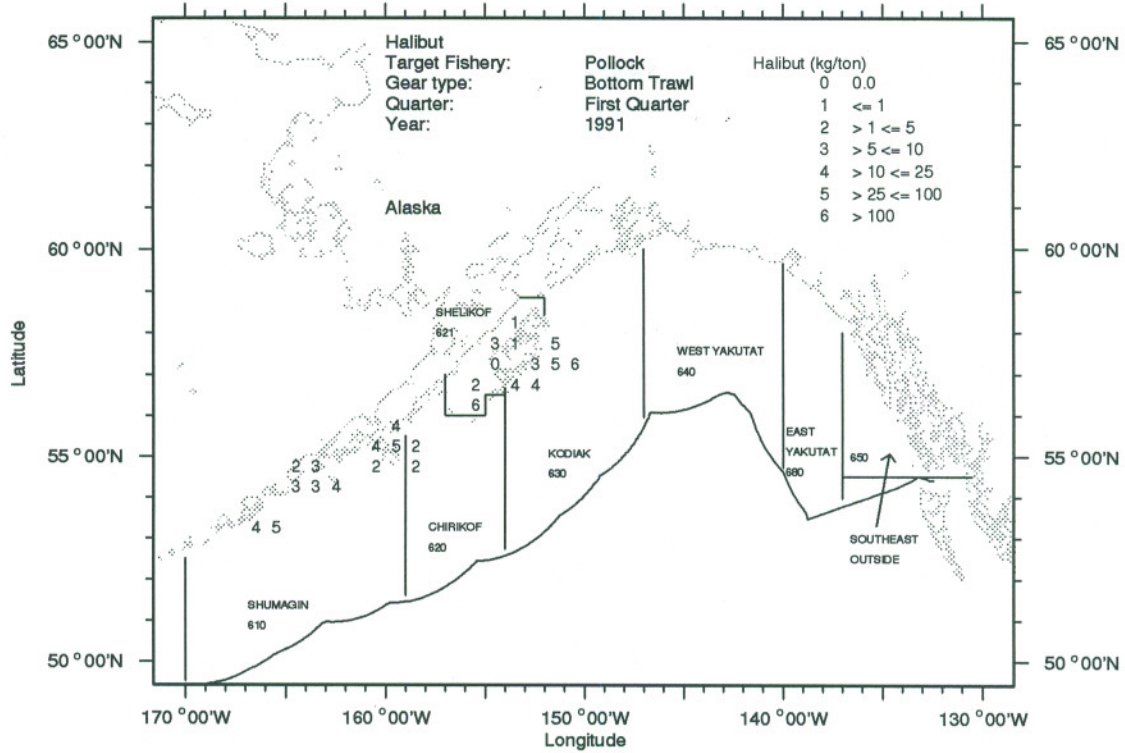


Figure 13.--Continued.

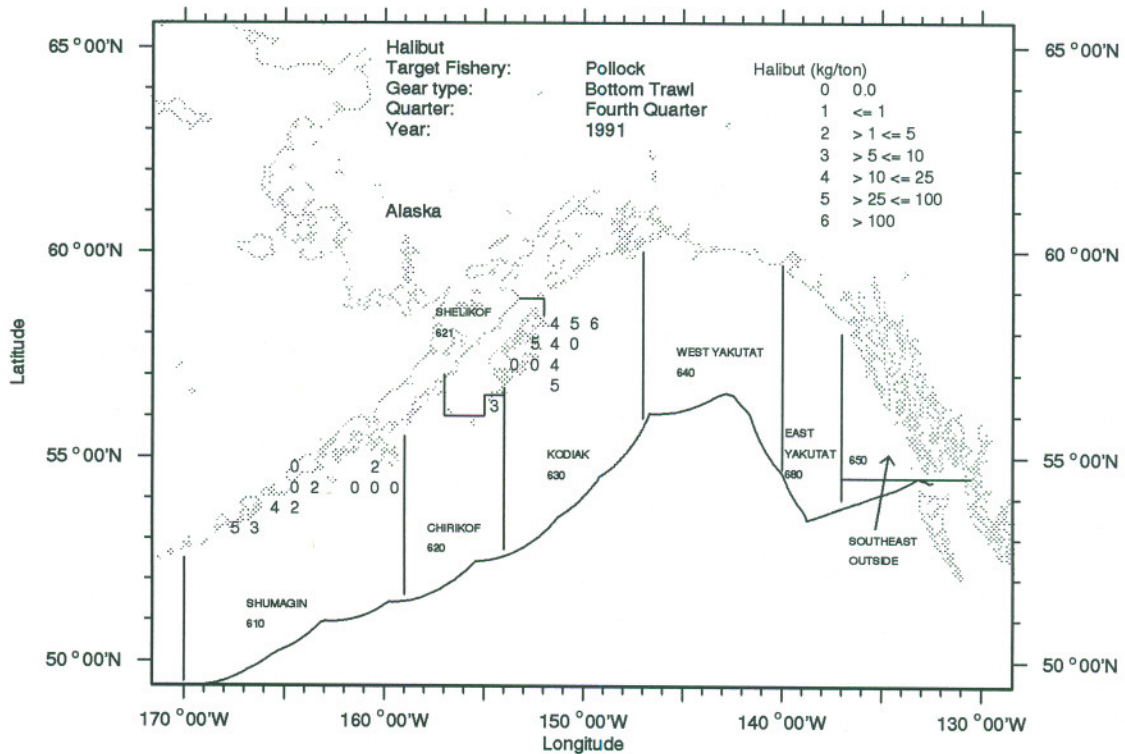
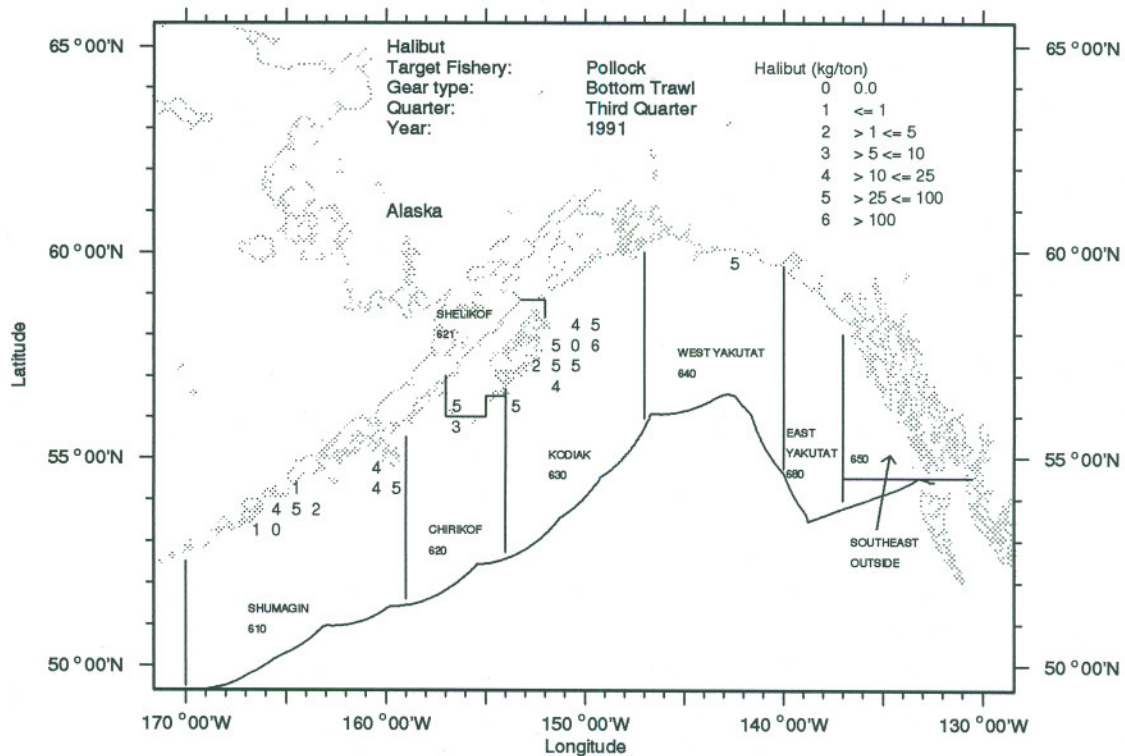


Figure 13.--Continued.

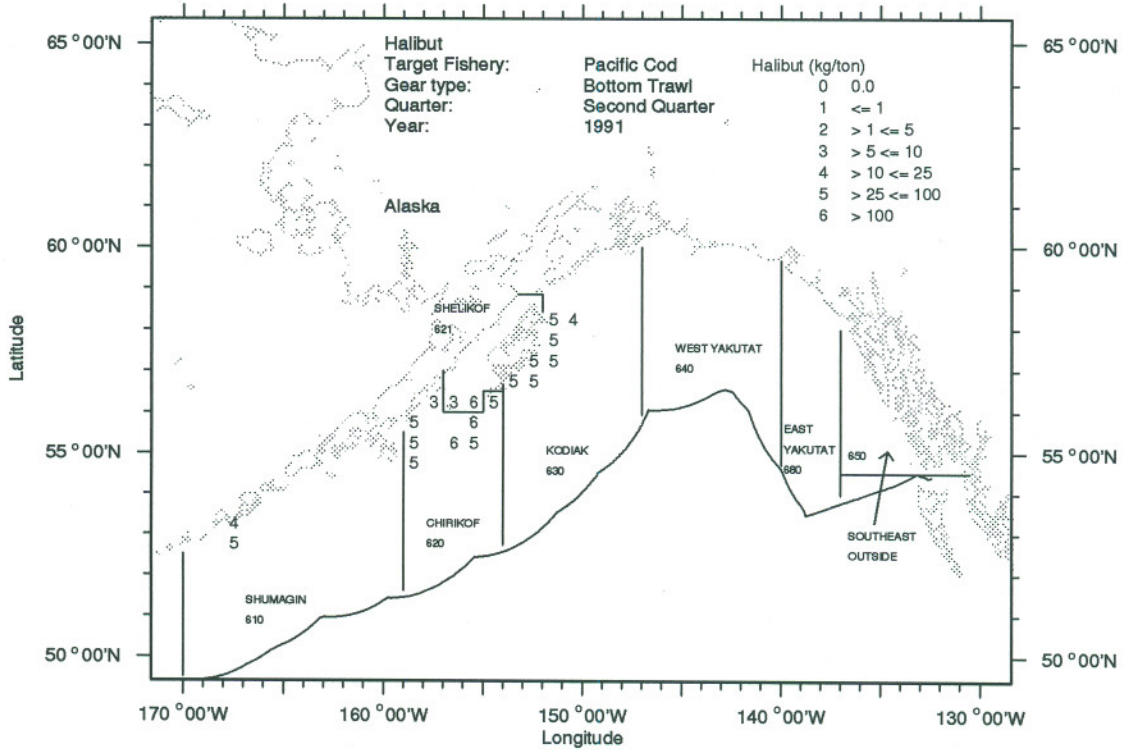
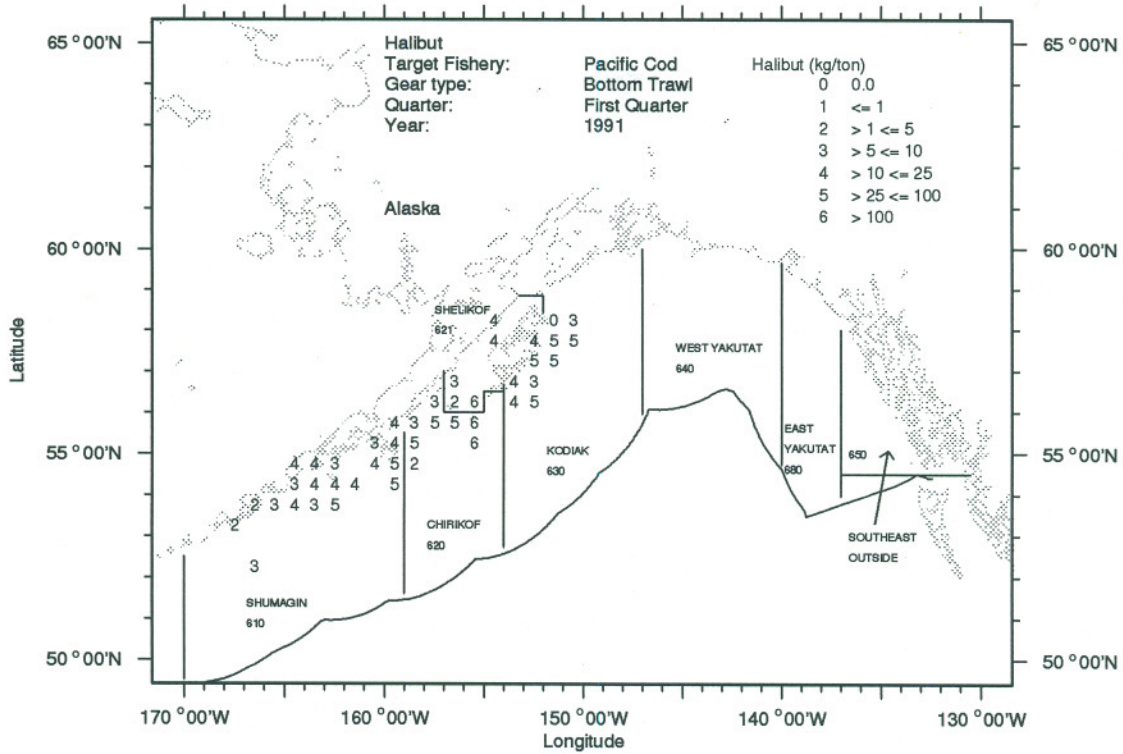


Figure 13.--Continued.

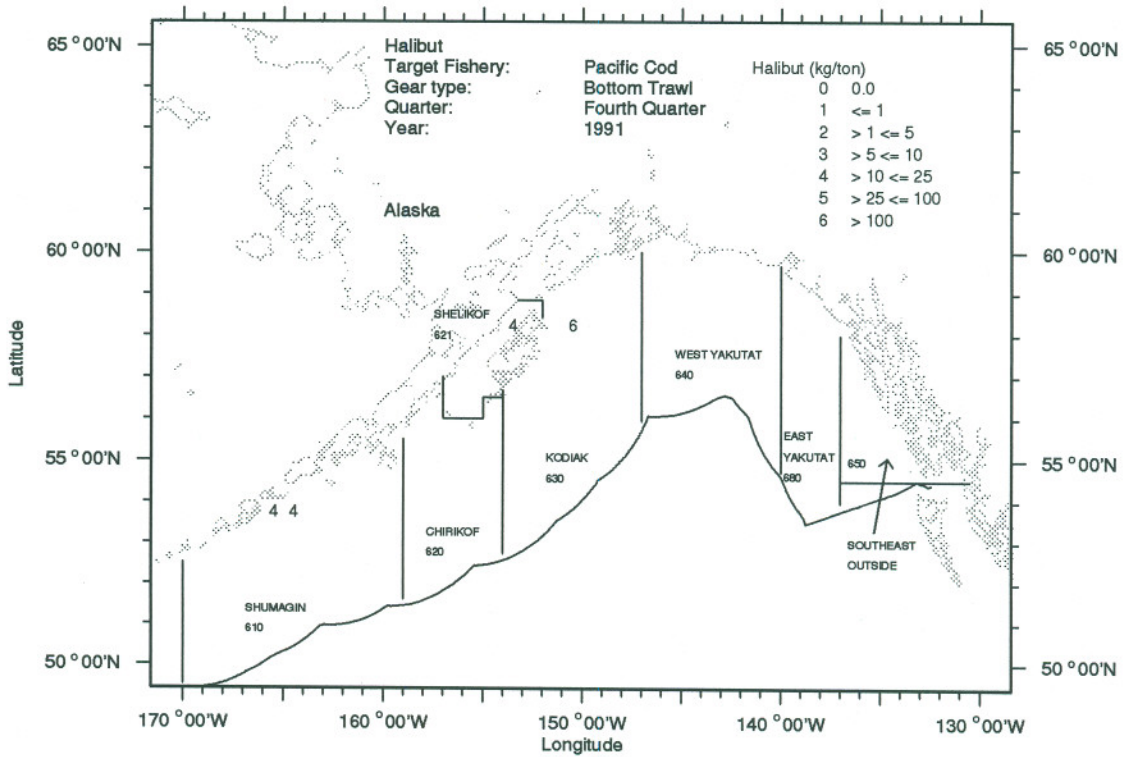
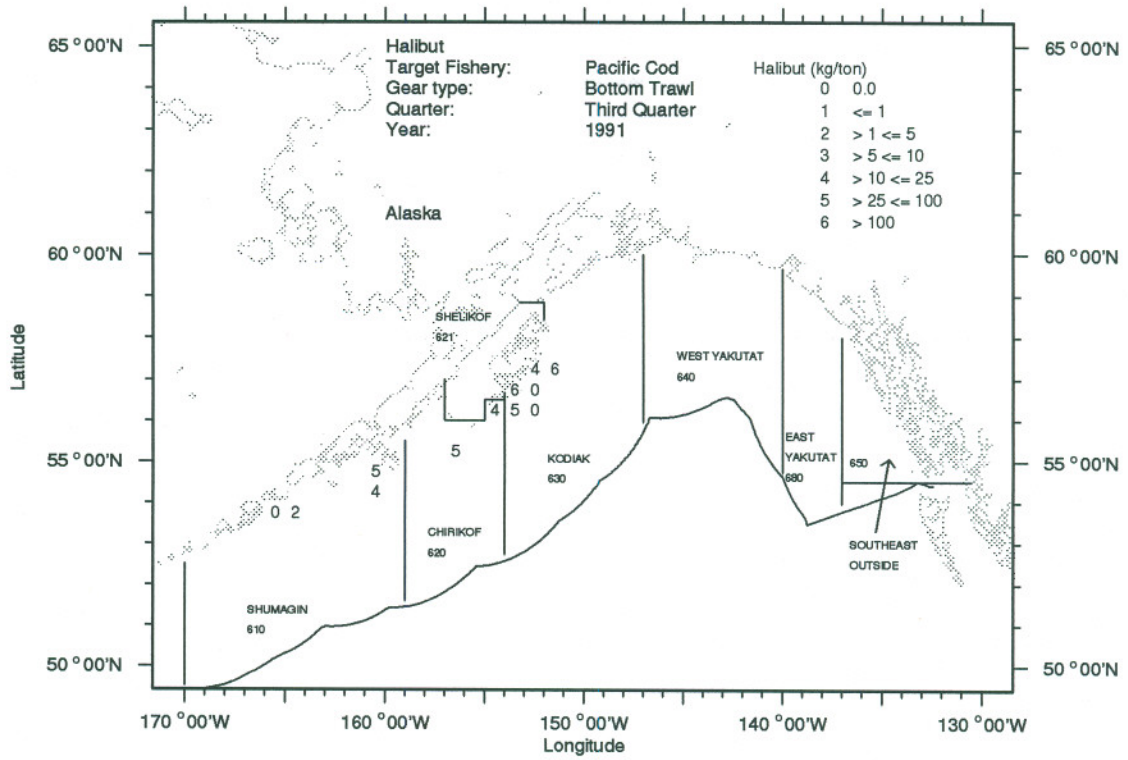


Figure 13.--Continued.

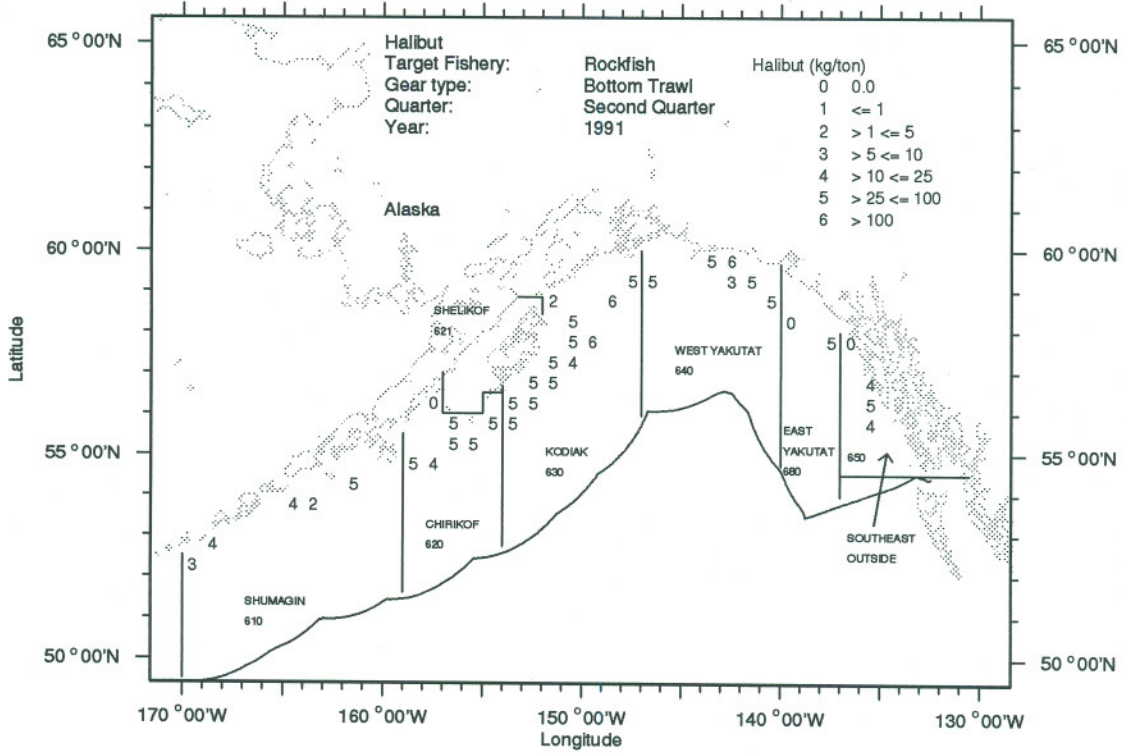
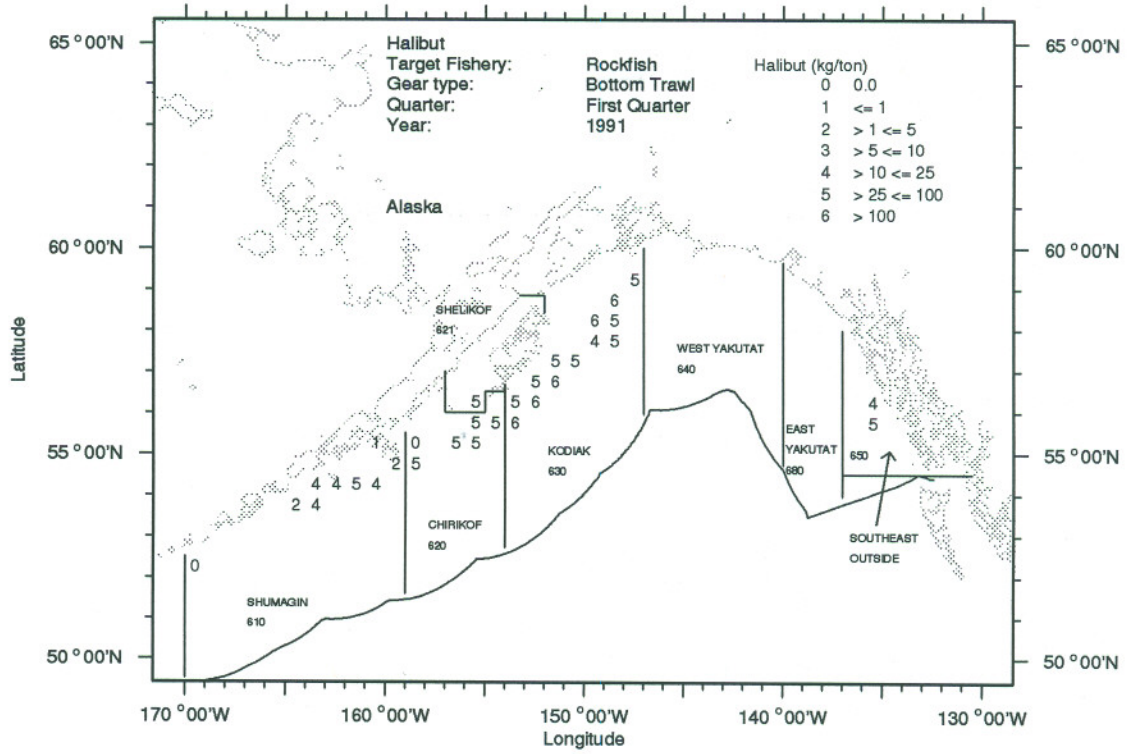


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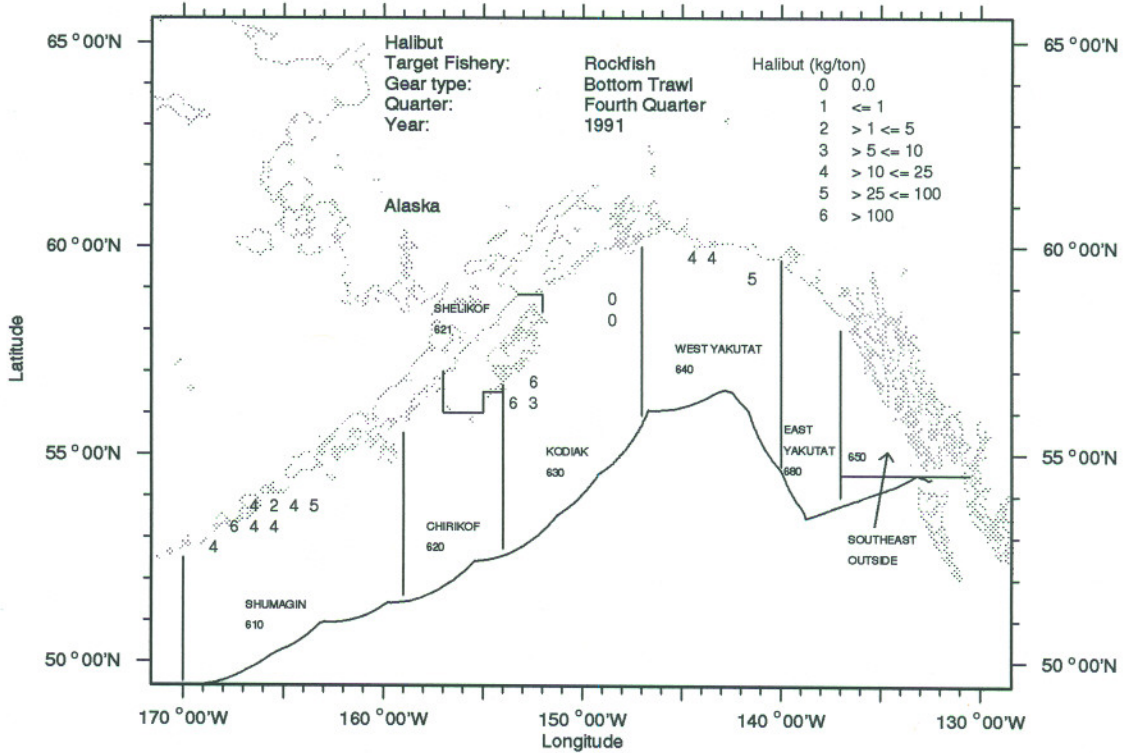
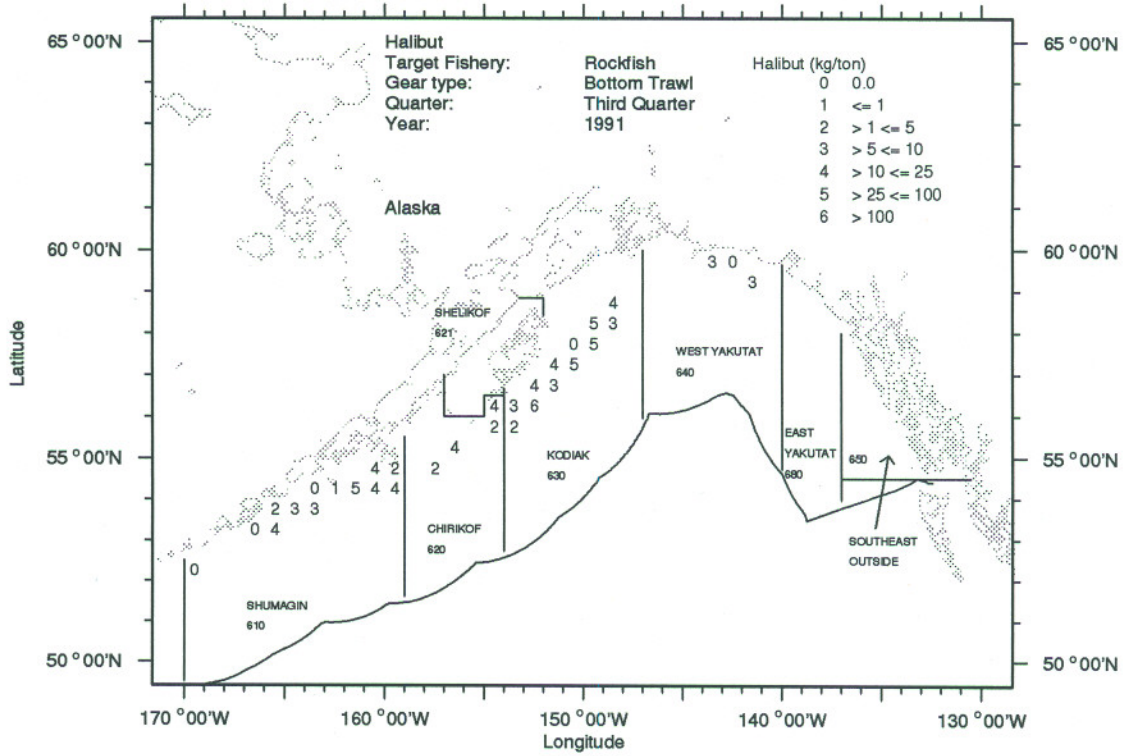


Figure 13.--Continued.

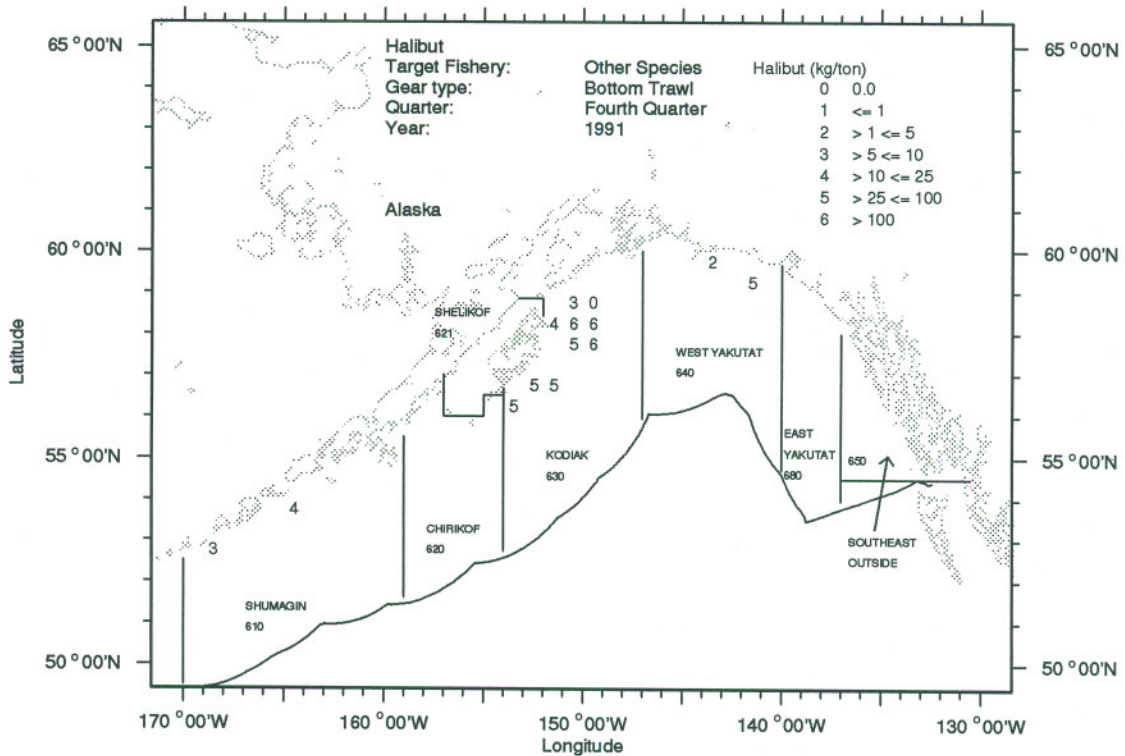
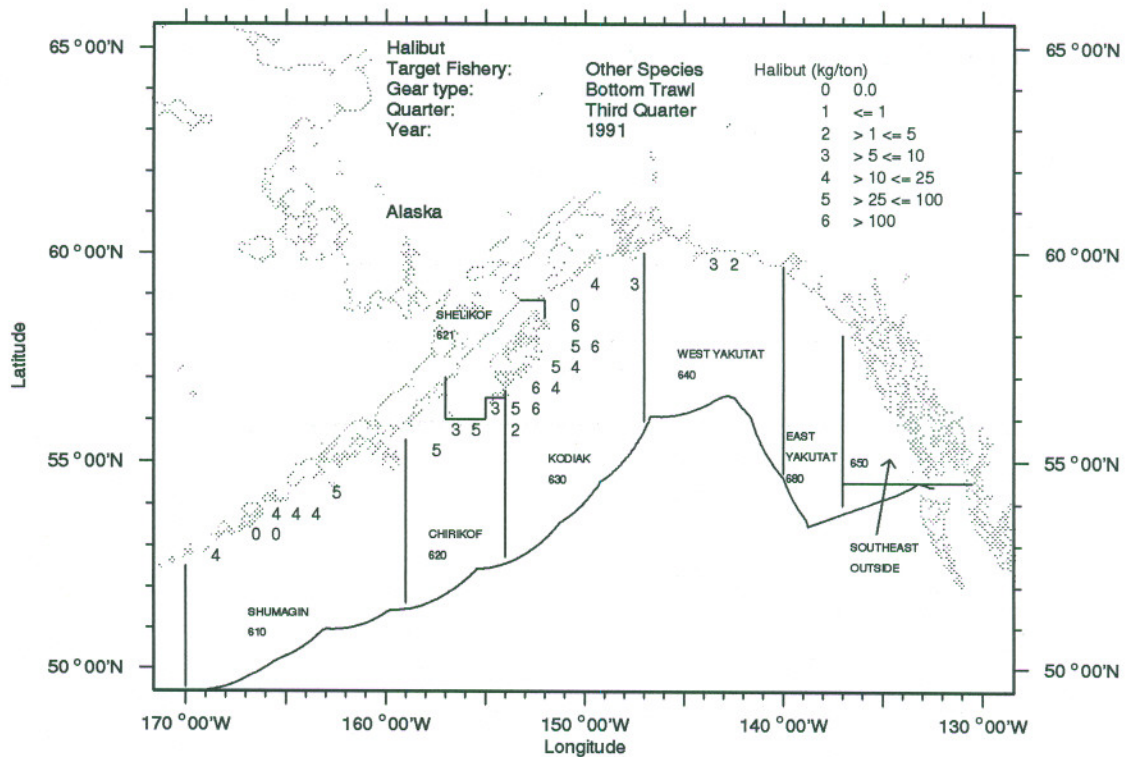


Figure 13.--Continued.

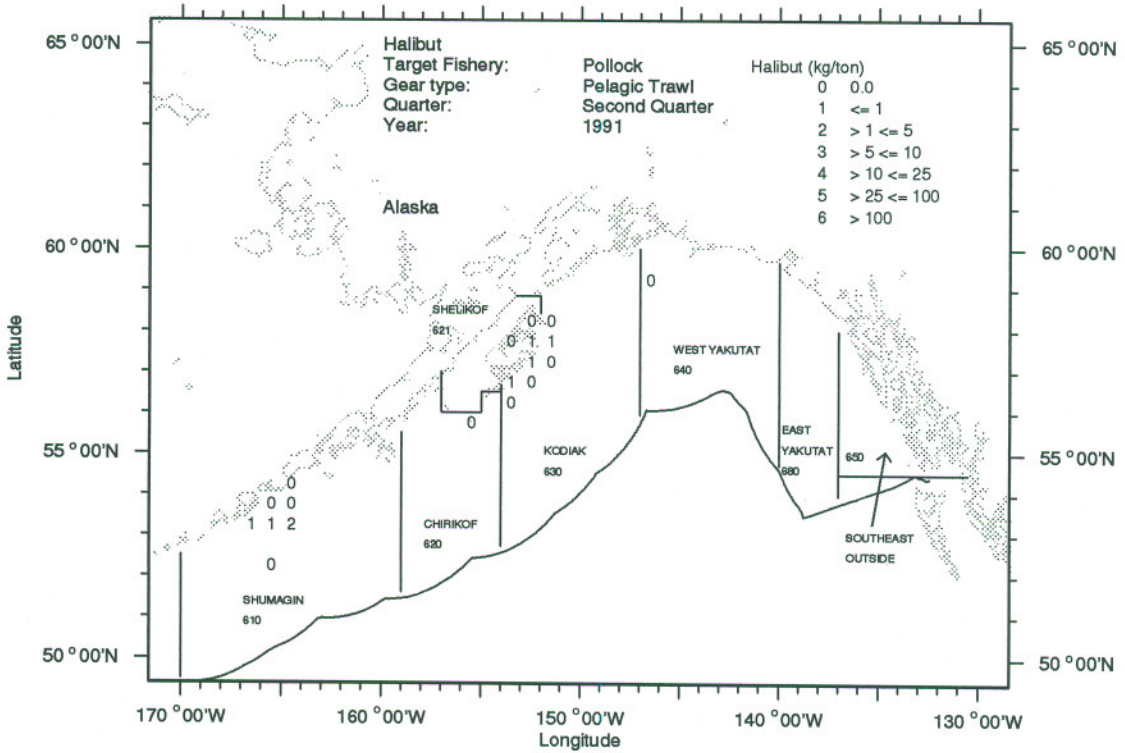
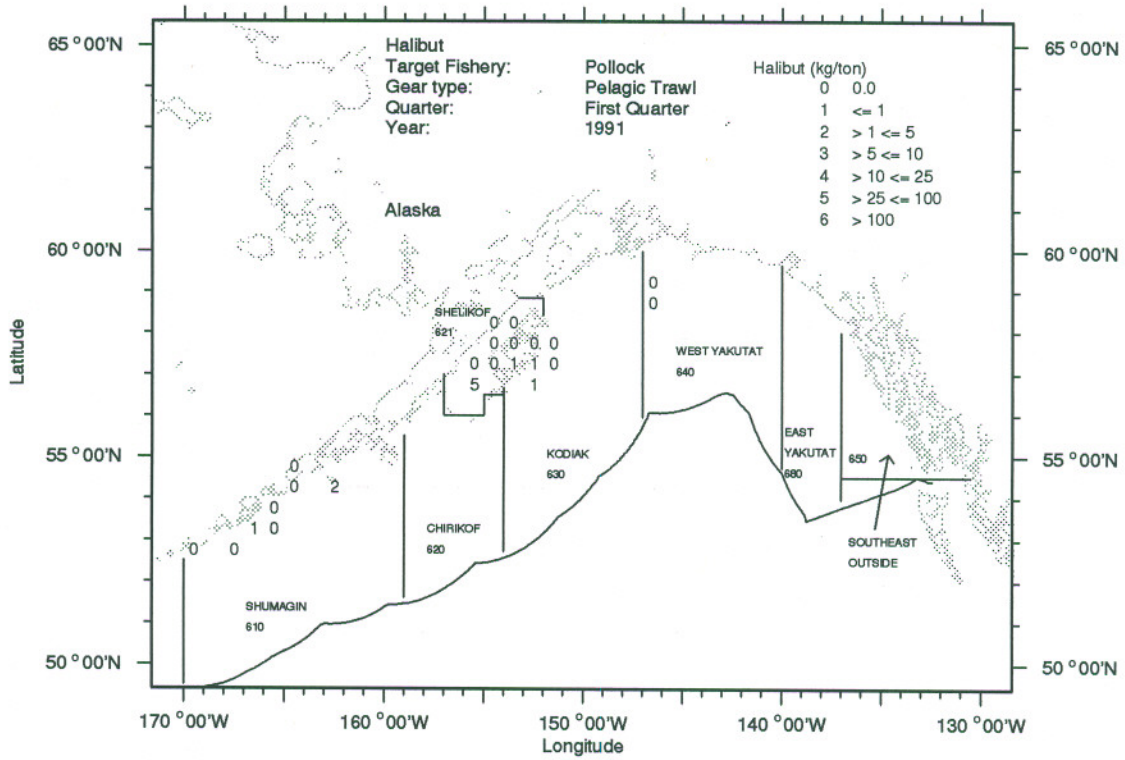


Figure 13.--Continued.

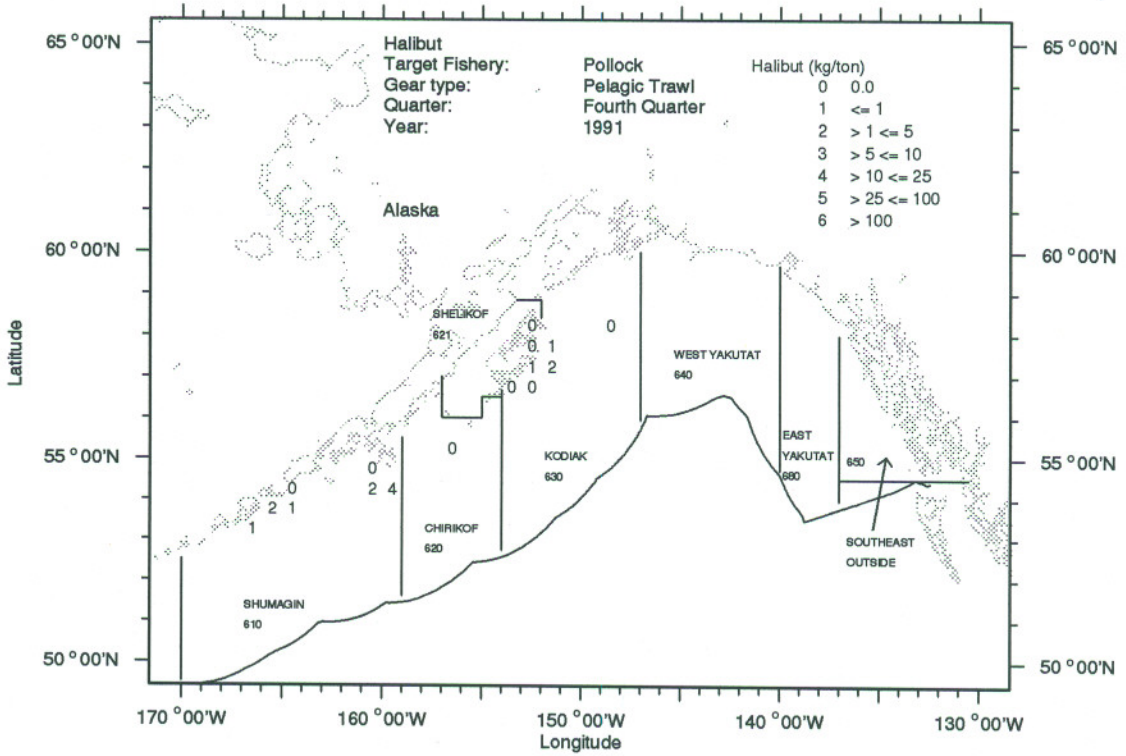
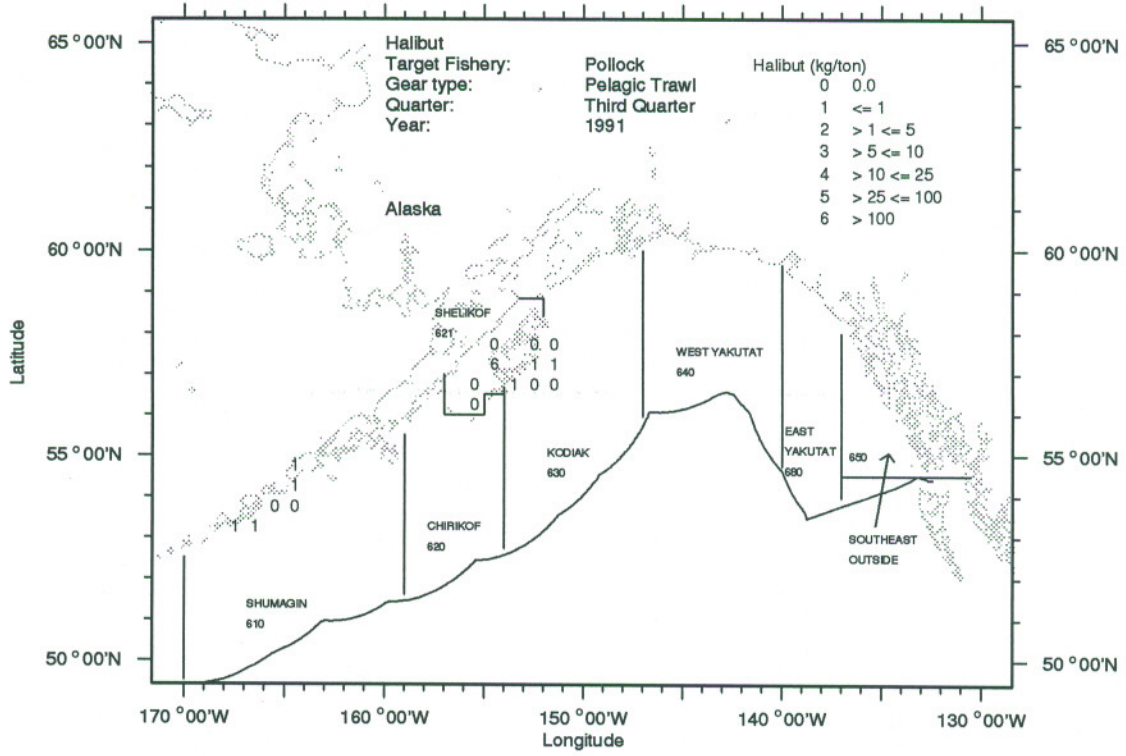


Figure 13.--Continued.

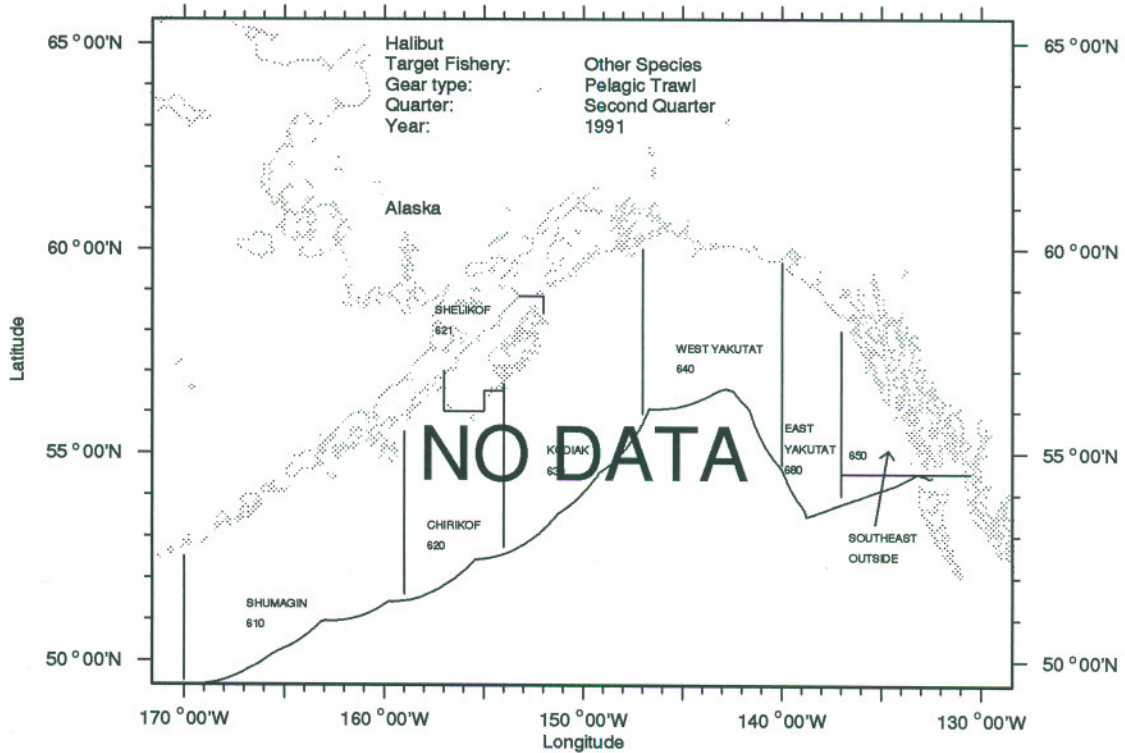
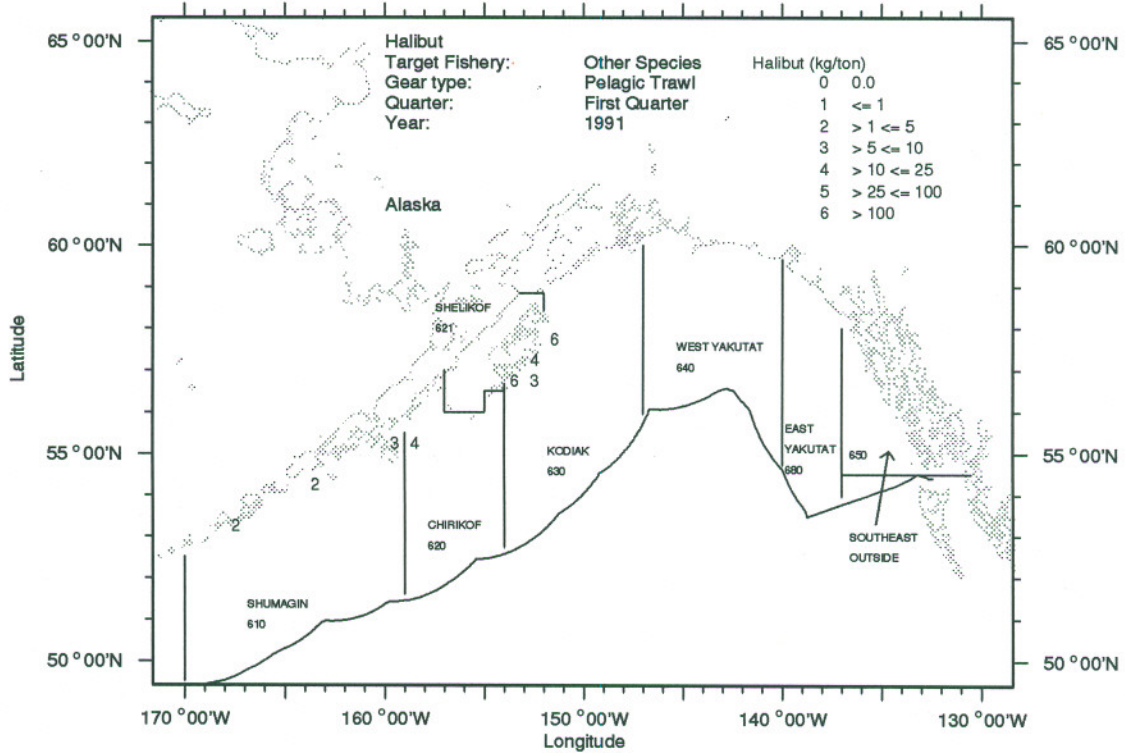


Figure 13.--Continued.

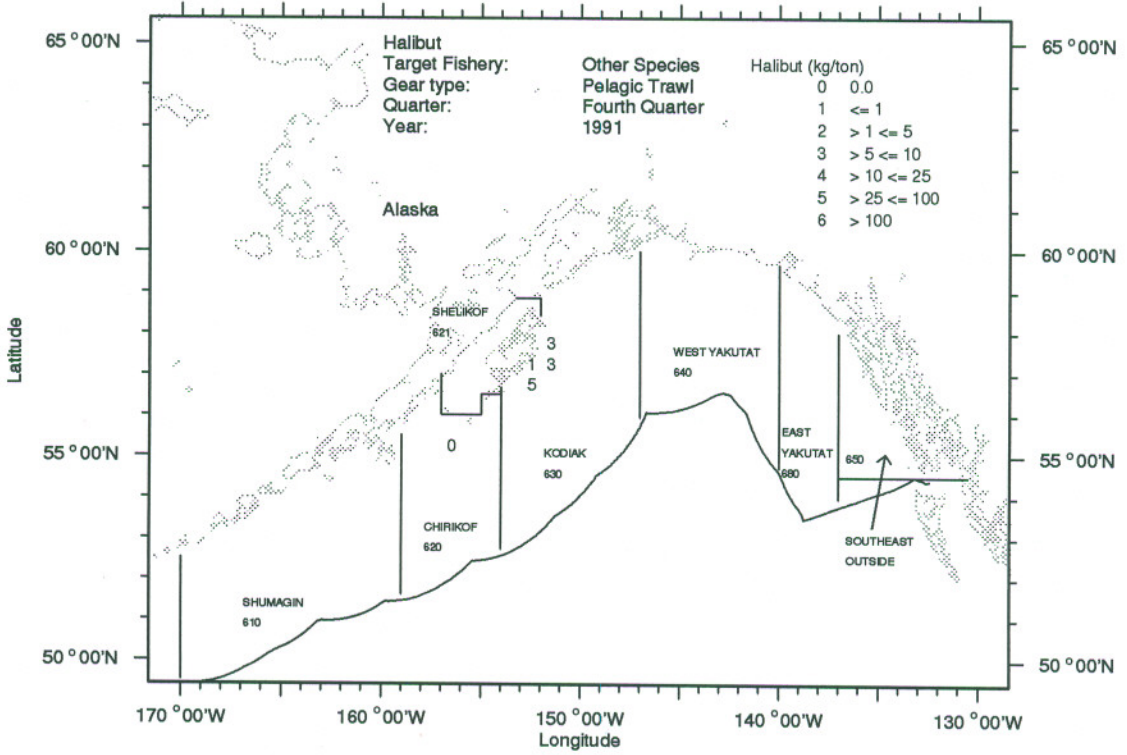
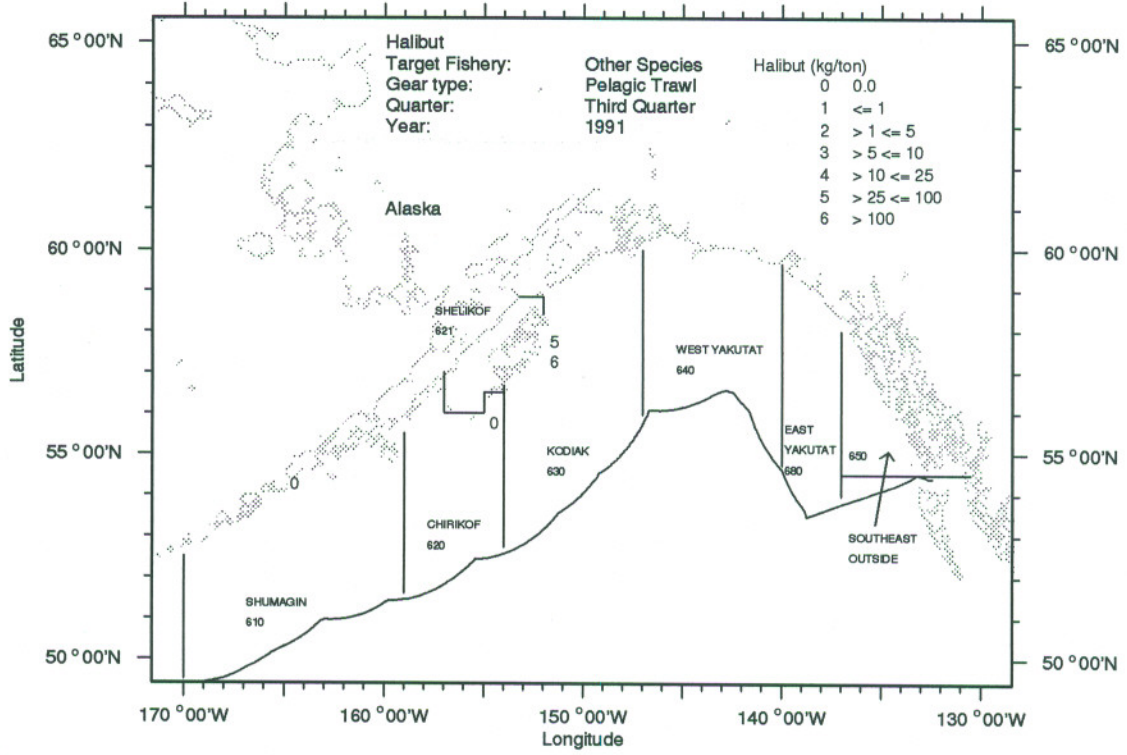


Figure 13.--Continued.

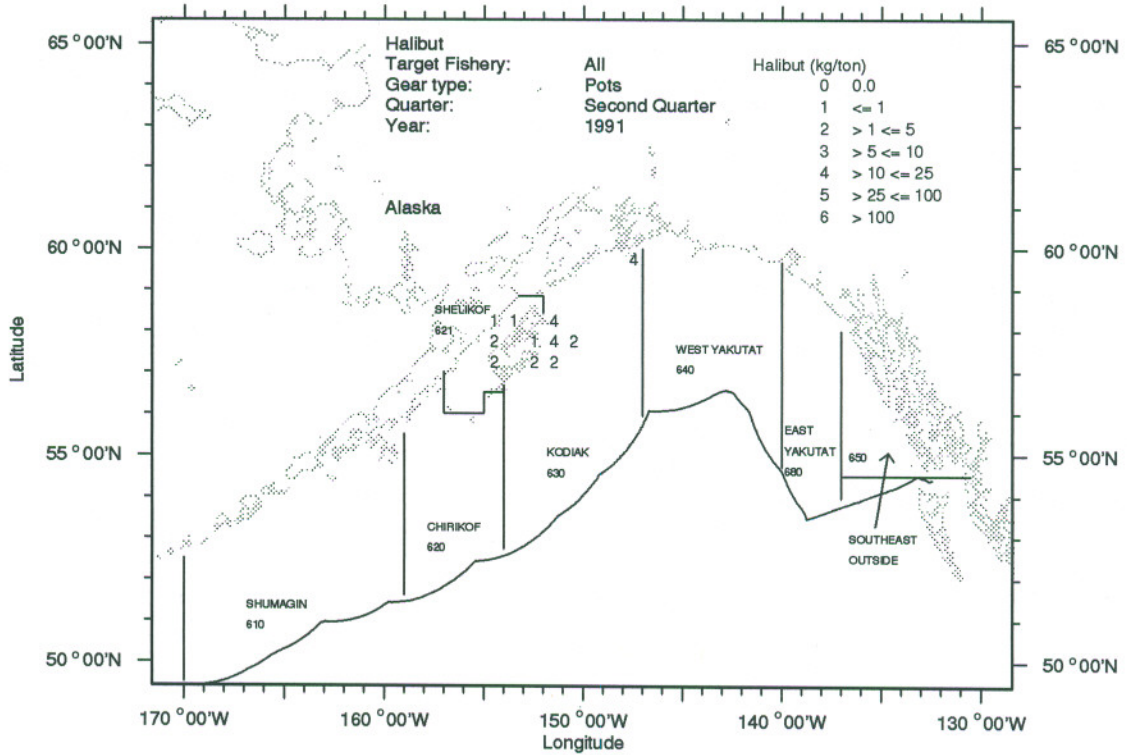
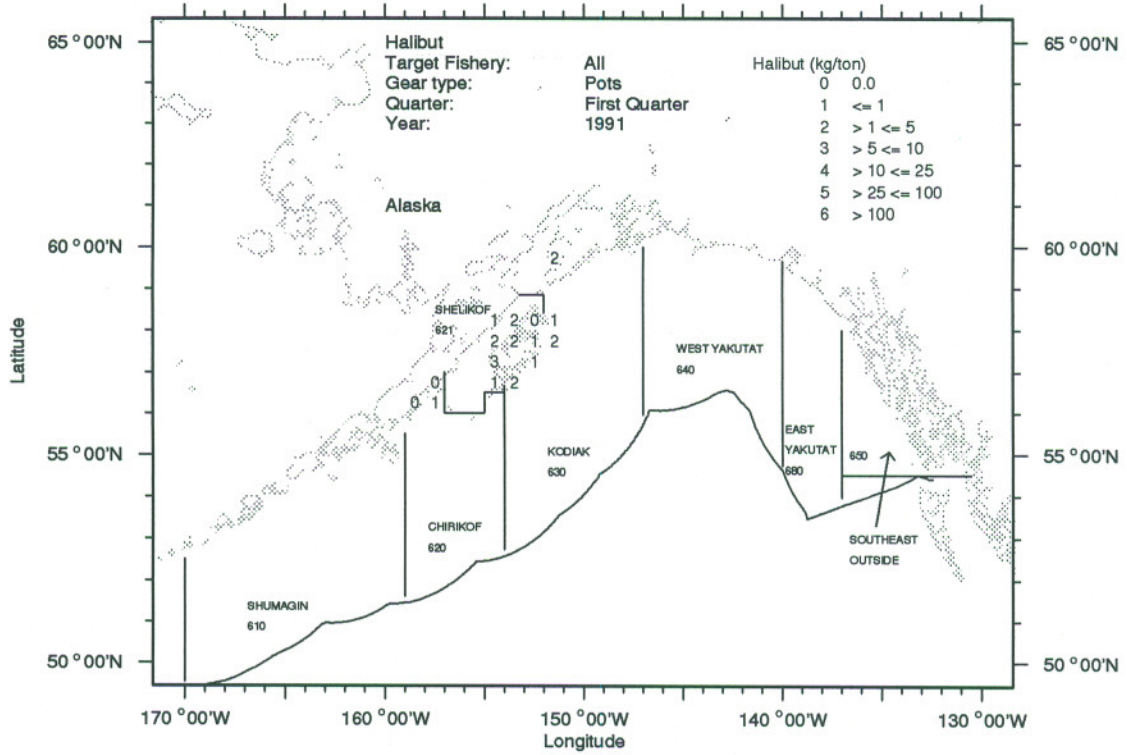


Figure 13.--Continued.

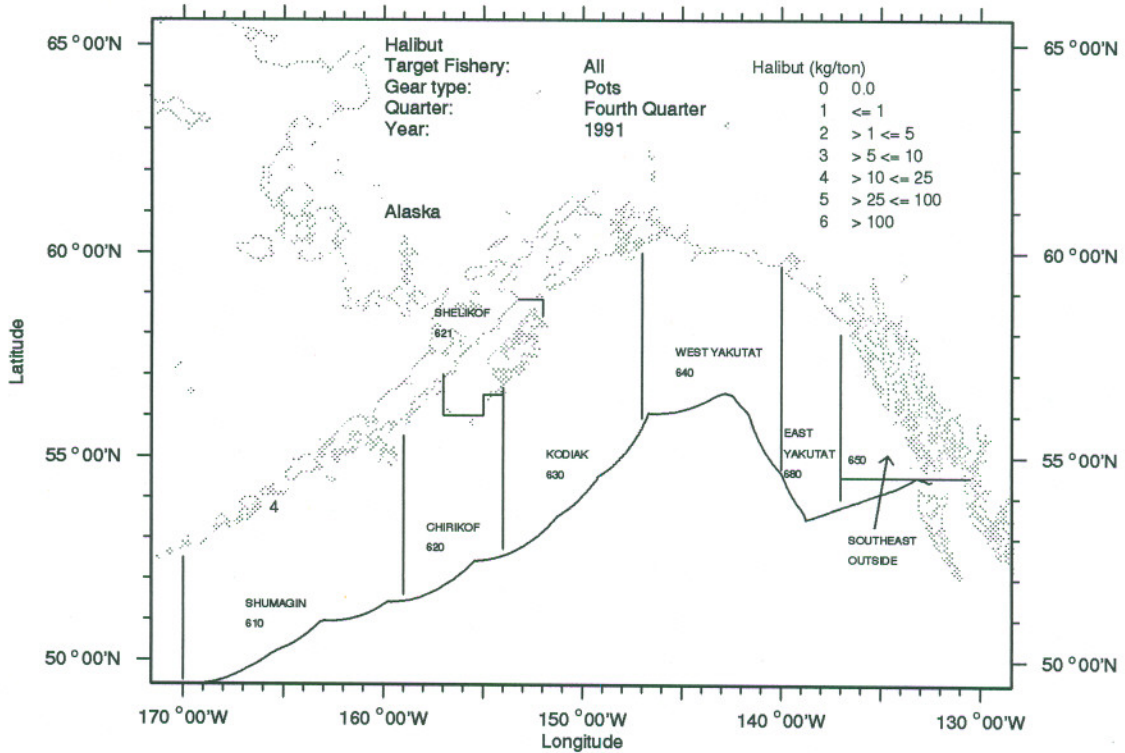
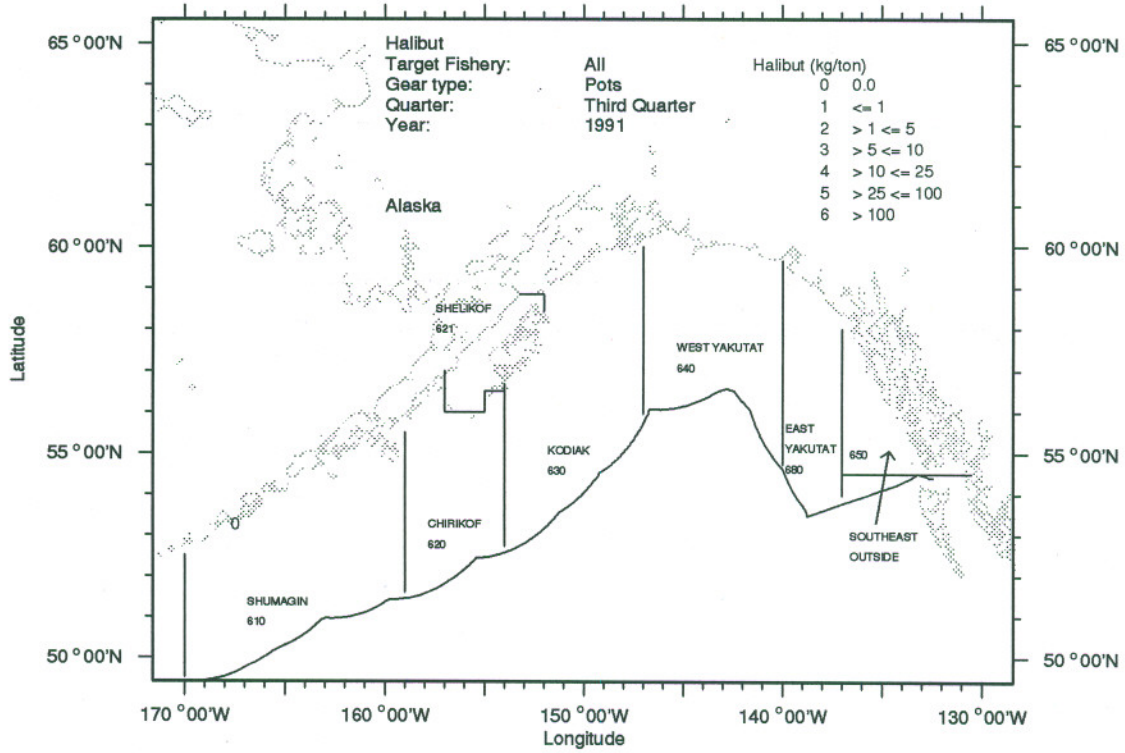


Figure 13.--Continued.

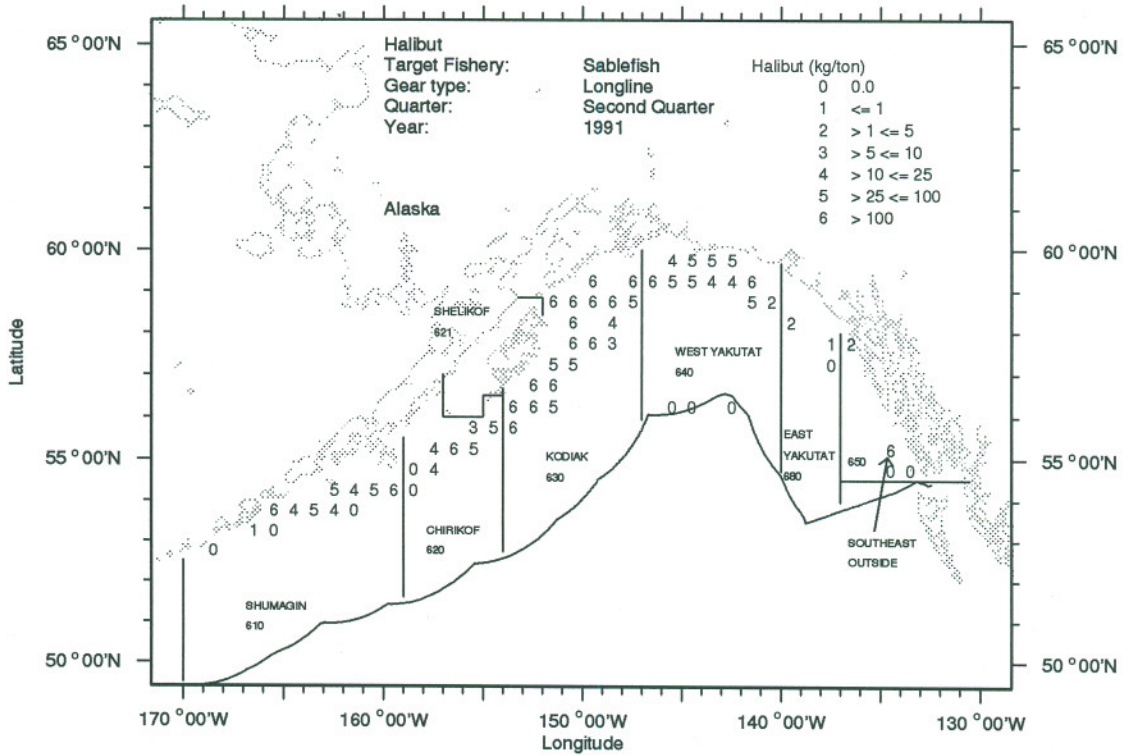
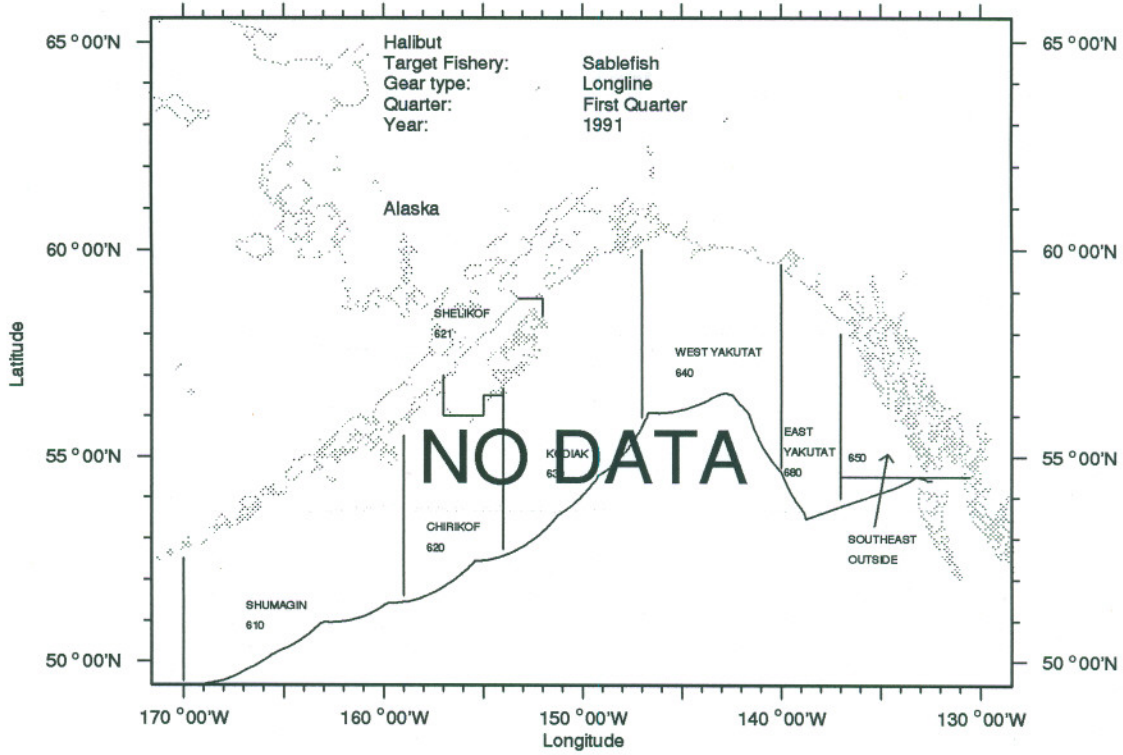


Figure 13.--Continued.

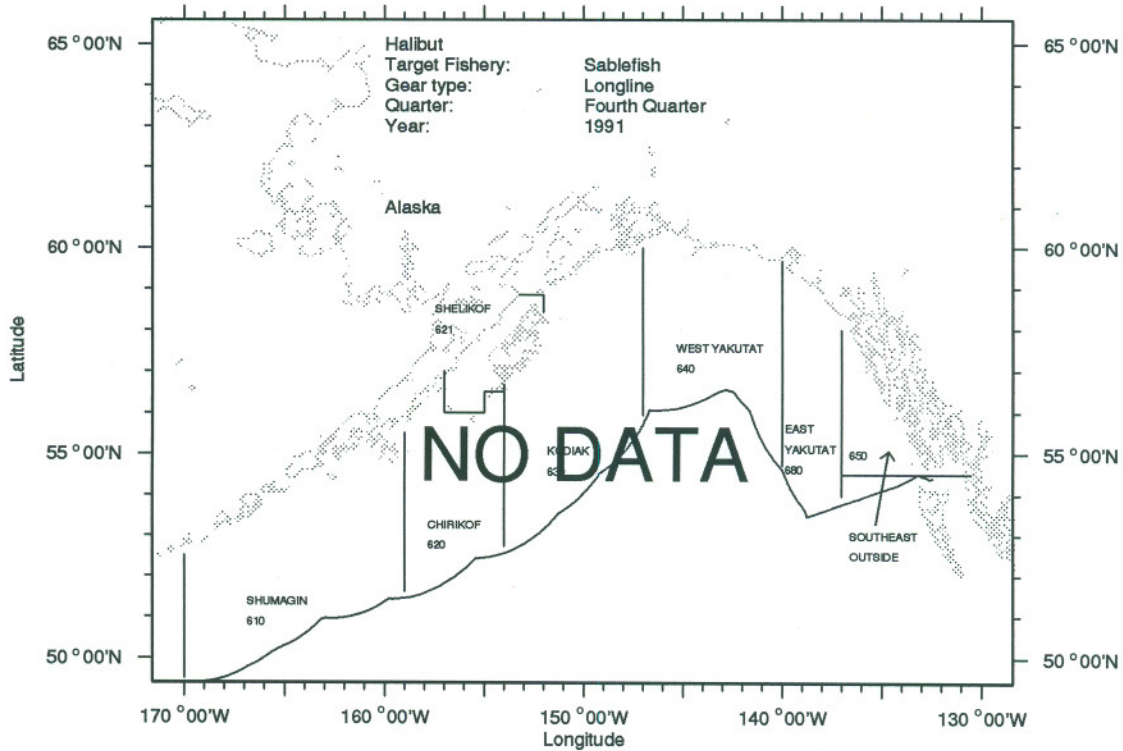
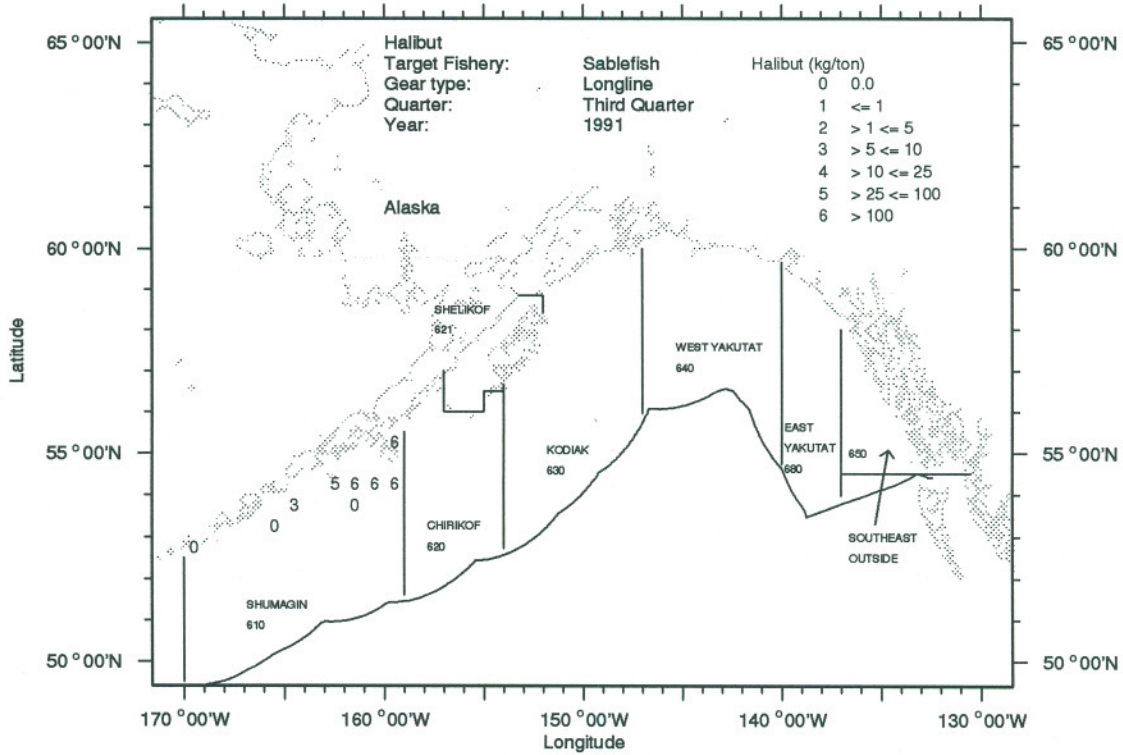


Figure 13.--Continued.

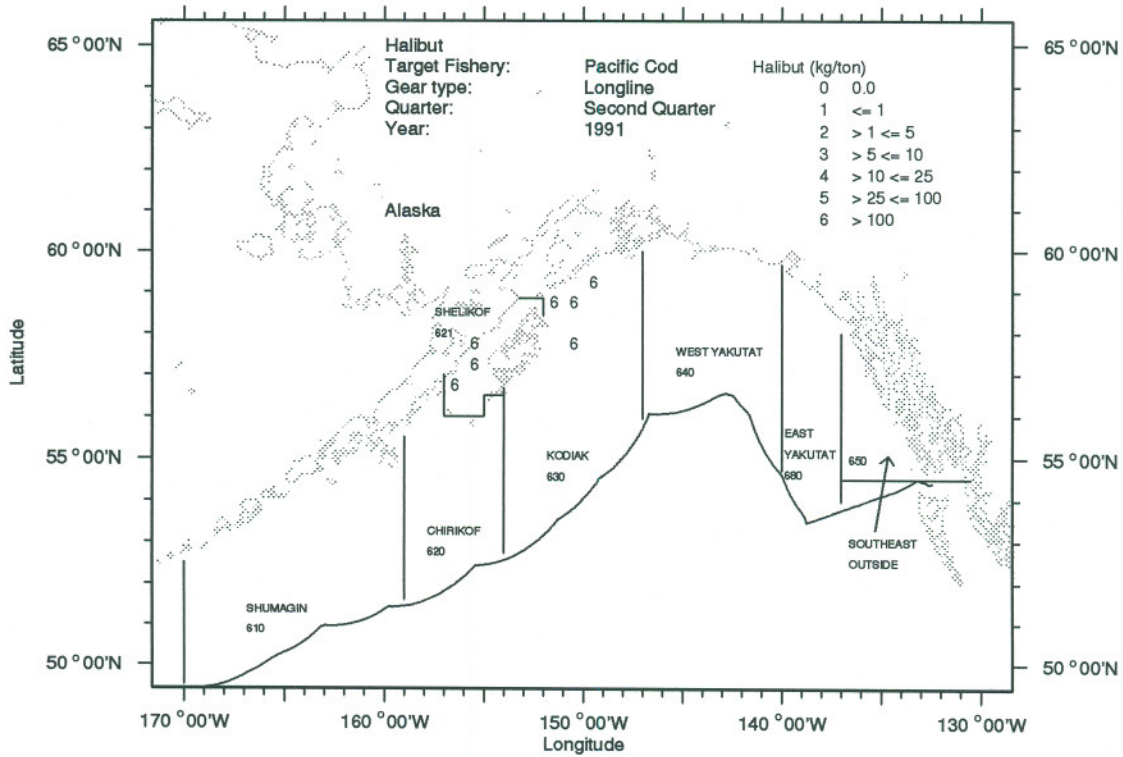
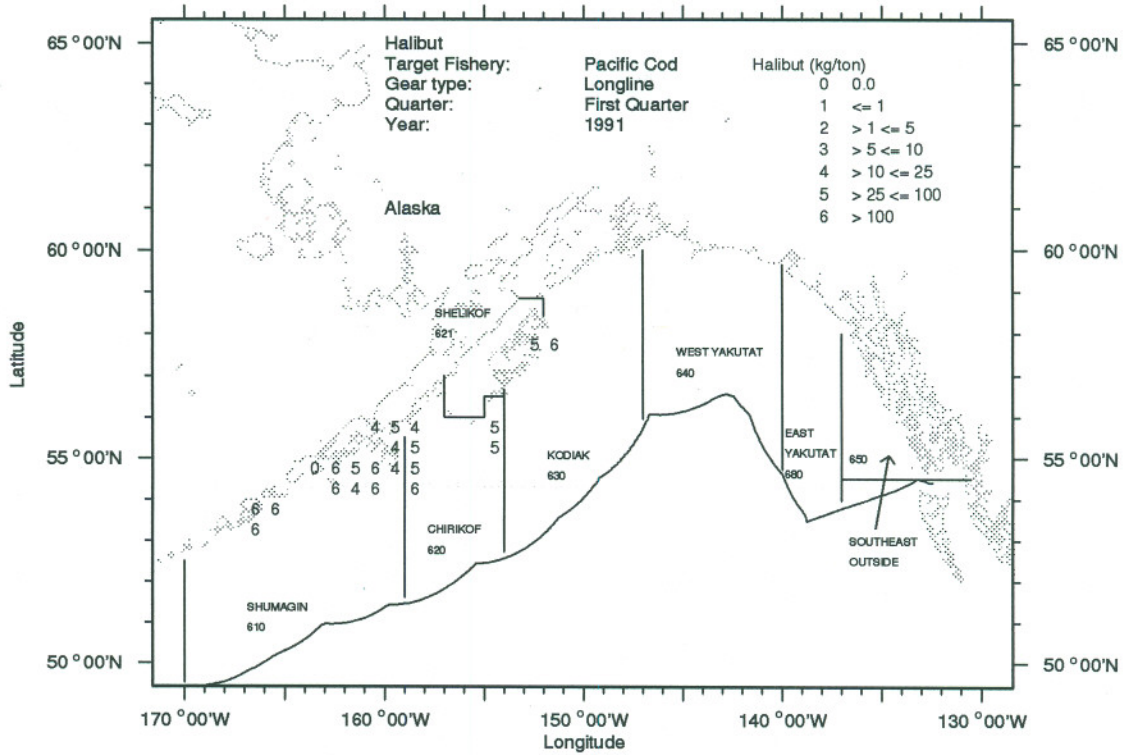


Figure 13.--Continued.

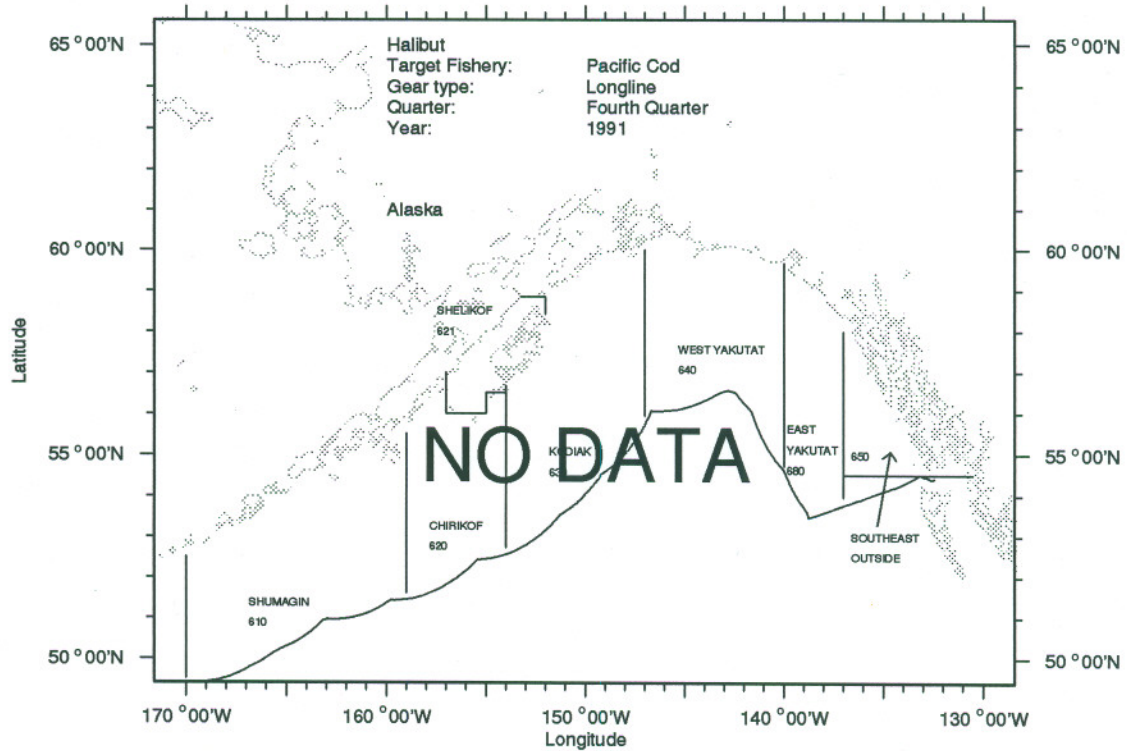
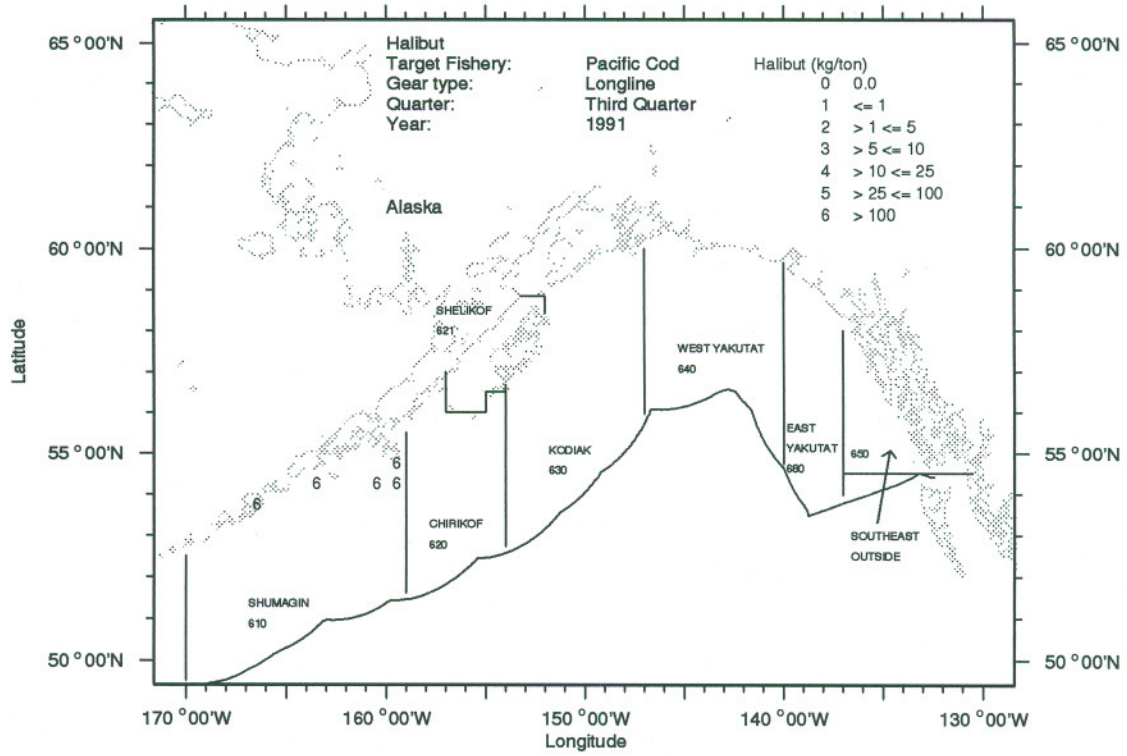


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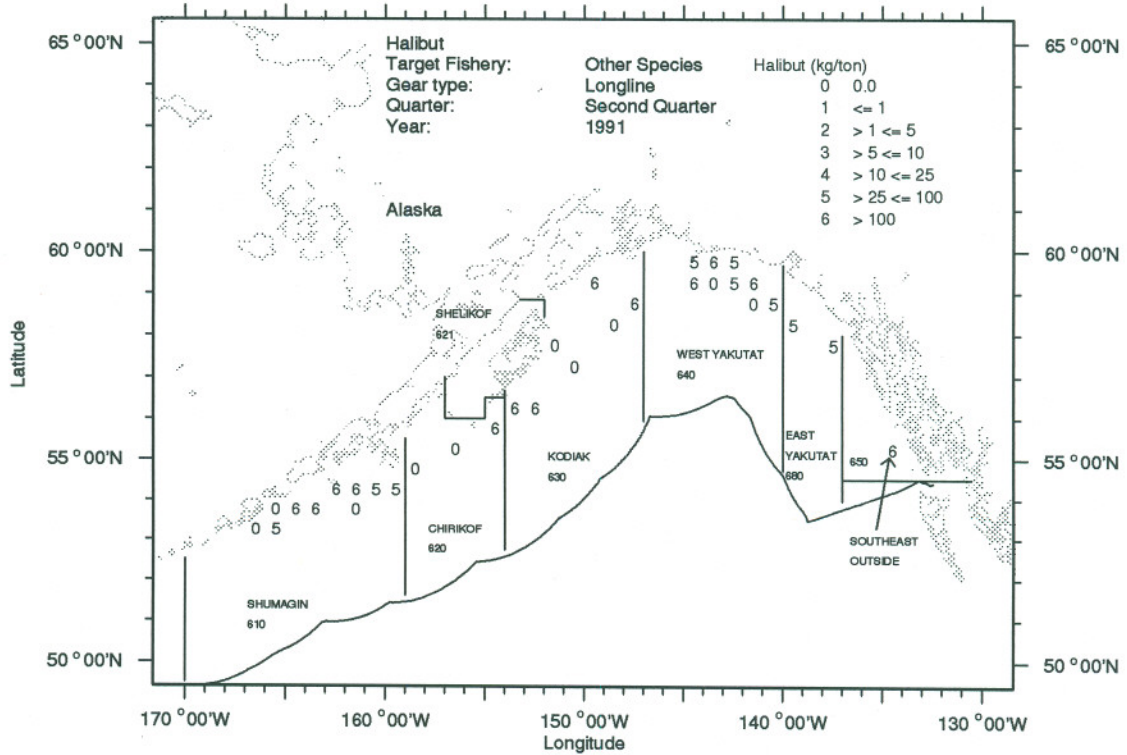
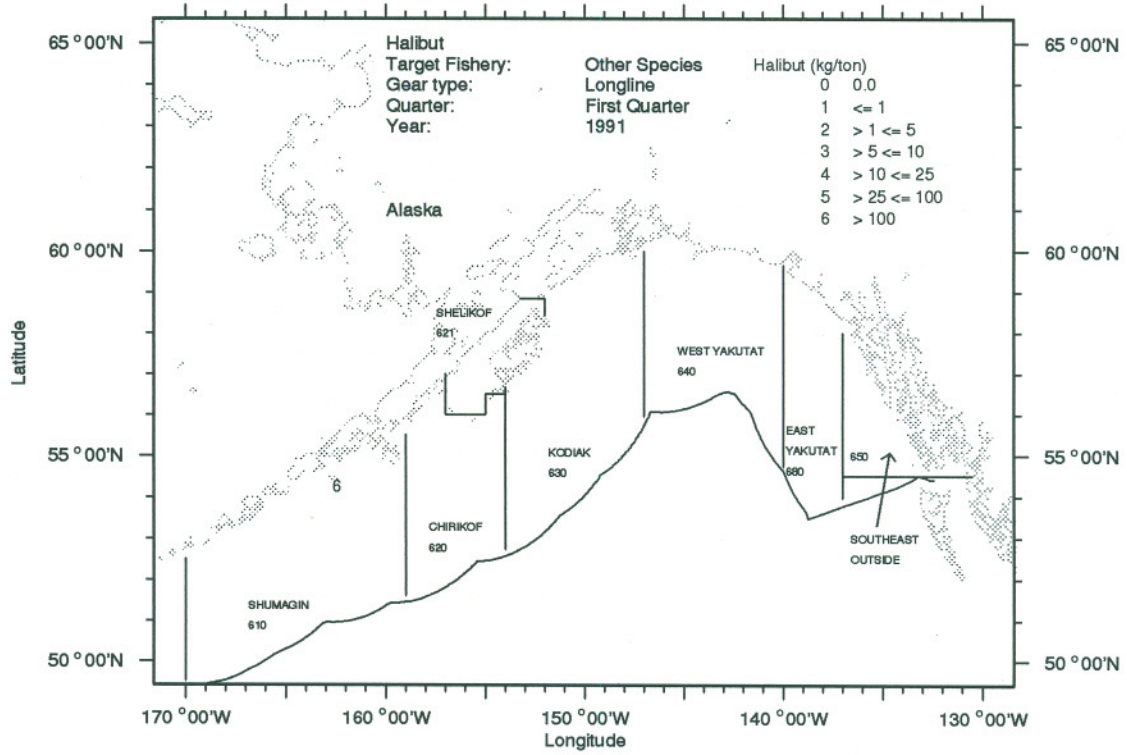


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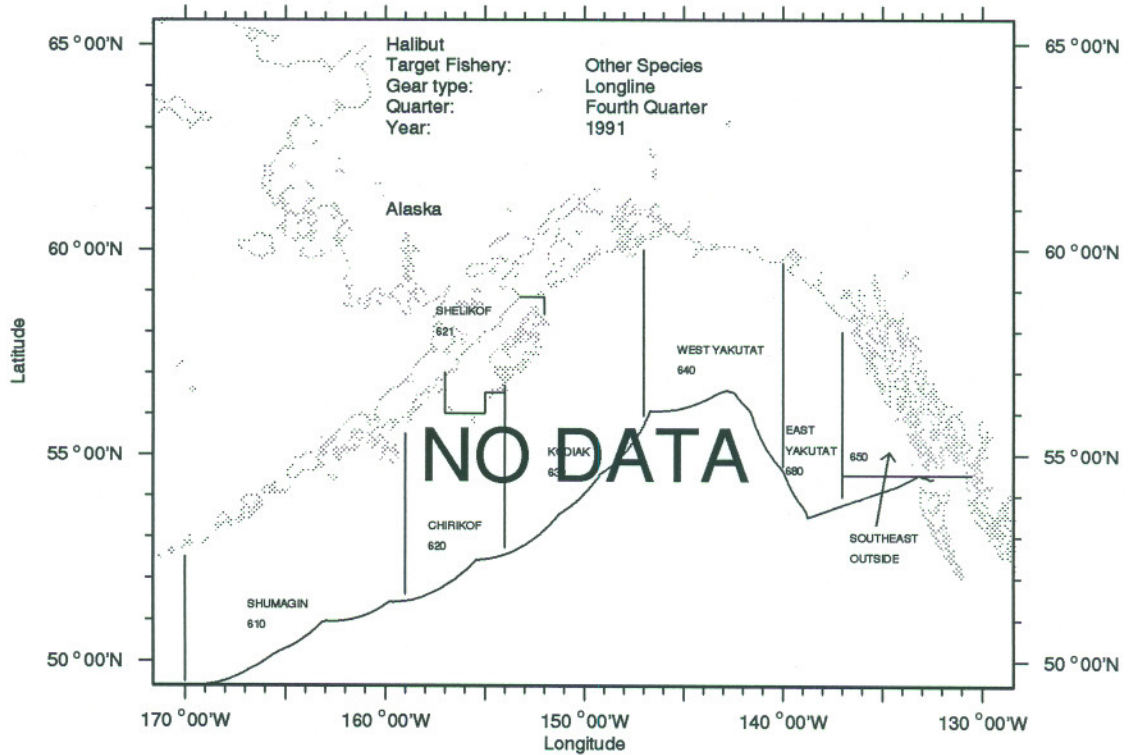
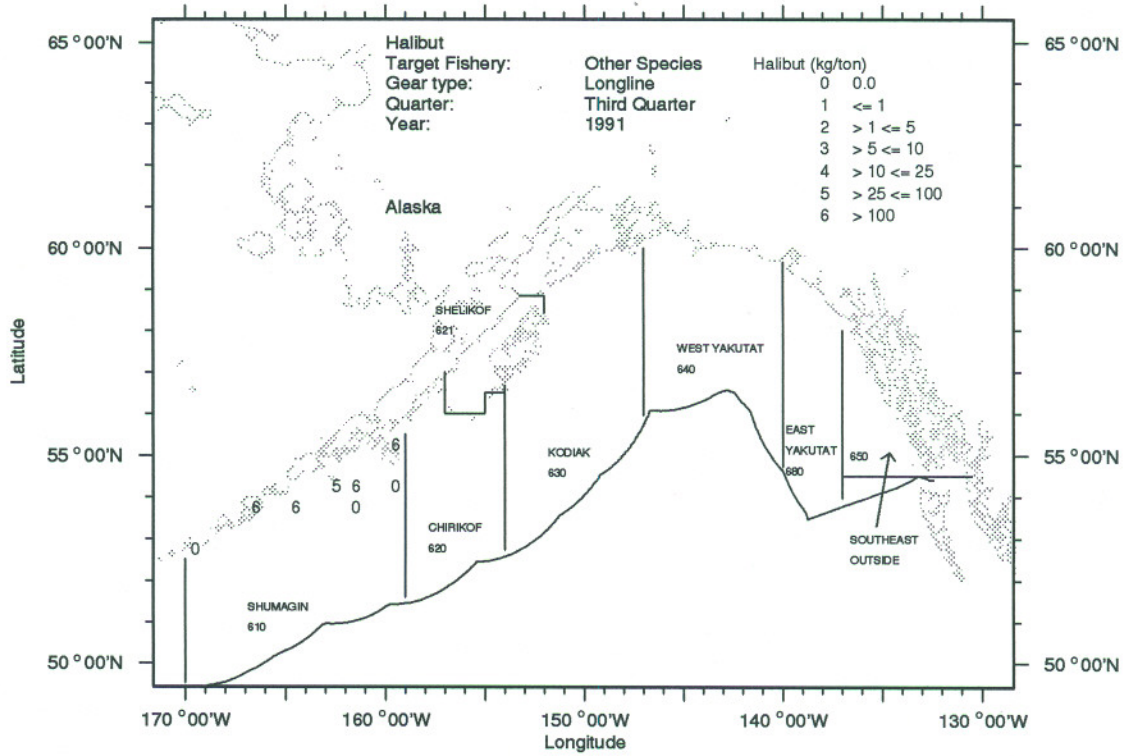


Figure 13.--Continued.

Table 49.--Estimated bycatch and mortality* of Pacific halibut in metric tons (t) by U.S. domestic groundfish vessels in the Gulf of Alaska region by NPFMC area and gear type, 1991. (Dashes indicate area not fished.)

Gear	Total bycatch (t)							Total
	Area 610	Area 620	Area 621	Area 630	Area 640	Area 650	Area 680	
Trawl	643.56	608.19	20.59	2,889.83	120.40	45.79	17.72	4,346.08
Longline	574.56	270.75	69.93	2,941.87	593.61	958.96	206.37	5,616.05
Pot	9.92	4.77	8.98	32.59	0.02	0.00	--	56.28
Jig	3.42	0.02	9.47	35.69	0.27	1.70	0.09	50.66
Total	1,231.46	883.73	108.97	5,899.98	714.30	1,006.45	224.18	10,069.07
Percent by area	12.2%	8.8%	1.1%	58.6%	7.1%	10.0%	2.2%	

Gear	Estimated mortality (t)							Total
	Area 610	Area 620	Area 621	Area 630	Area 640	Area 650	Area 680	
Trawl	321.78	304.10	10.30	1,444.92	60.20	22.90	8.86	2,173.04
Longline	74.69	35.20	9.09	382.44	77.17	124.66	26.8281	730.09
Pot	1.19	0.57	1.08	3.91	0.00	0.00	--	6.75
Jig	3.42	0.02	9.47	35.69	0.27	1.70	0.09	50.66
Total	401.08	339.88	29.93	1,866.96	137.64	149.26	35.7781	2,960.54
Percent by area	13.5%	11.5%	1.0%	63.1%	4.6%	5.0%	1.2%	

* Pre-assigned mortality rates in effect in 1991 were as follows: trawl vessels--50%, longline vessels--13%, pot vessels--12% and jig vessels--100%.

Table 50.--U.S. domestic groundfish catch and Pacific halibut bycatch (in metric tons (t)) by target fishery, NPFMC zone, and species in the Gulf of Alaska region, 1991.

Fishery	Gear	Zone	Groundfish catch	Pacific halibut bycatch				Pacific halibut mortality			
				Bycatch (t)	kg/ t of ground-fish	% within zone	% of total bycatch	Bycatch (t)	kg/ t of ground-fish	% within zone	% of total bycatch
Pollock midwater	Trawl	Eastern	5,497.49	0.00	0.0	0.0%	0.0%	0.00	0.0	0.0%	0.0%
		Central	44,992.87	16.36	0.4	0.2%	0.2%	8.19	0.2	0.4%	0.3%
		Western	34,869.20	38.66	1.1	3.1%	0.4%	19.33	0.6	4.8%	0.7%
		Total	85,359.56	55.02	0.6	0.5%	27.51	0.3	0.9%		
Pollock bottom	Longline	Eastern	nf	nf	nf	nf	nf	nf	nf	nf	nf
		Central	0.25	0.02	80.0	0.0%	0.0%	0.00	10.4	0.0%	0.0%
		Western	0.72	0.07	97.2	0.0%	0.0%	0.01	12.6	0.0%	0.0%
		Total	0.97	0.09	92.8	0.0%	0.0%	0.01	12.1	0.0%	0.0%
Pollock bottom	Pot	Eastern	nf	nf	nf	nf	nf	nf	nf	nf	nf
		Central	112.72	0.00	0.0	0.0%	0.0%	0.00	0.0	0.0%	0.0%
		Western	nf	nf	nf	nf	nf	nf	nf	nf	nf
		Total	112.72	0.00	0.0	0.0%	0.0%	0.00	0.0	0.0%	0.0%
Pollock bottom	Trawl	Eastern	80.32	1.54	19.2	0.1%	0.0%	0.77	9.6	0.2%	0.0%
		Central	15,485.61	563.74	36.4	8.2%	5.6%	281.87	18.2	12.6%	9.5%
		Western	5,881.68	49.77	8.5	4.0%	0.5%	24.89	4.2	6.2%	0.8%
		Total	21,447.61	615.05	28.7	6.1%	307.53	14.3	10.4%		
Pacific cod	Gillnet	Eastern	nf	nf	nf	nf	nf	nf	nf	nf	nf
		Central	9.87	0.00	0.0	0.0%	0.0%	0.00	0.0	0.0%	0.0%
		Western	nf	nf	nf	nf	nf	nf	nf	nf	nf
		Total	9.87	0.00	0.0	0.0%	0.0%	0.00	0.0	0.0%	0.0%
Pacific cod	Longline	Eastern	279.60	35.66	127.5	1.8%	0.4%	4.64	16.6	1.4%	0.2%
		Central	5,868.30	700.95	119.4	10.2%	7.0%	91.12	15.5	4.1%	3.1%
		Western	1,332.54	266.81	200.2	21.7%	2.6%	34.69	26.0	8.6%	1.2%
		Total	7,480.44	1,003.42	134.1	10.0%	130.44	17.4	4.4%		
Pacific cod	Jig	Eastern	7.28	0.72	98.9	0.0%	0.0%	0.72	98.9	0.2%	0.0%
		Central	48.65	4.81	98.9	0.1%	0.0%	4.81	98.9	0.2%	0.2%
		Western	34.75	3.42	98.4	0.3%	0.0%	3.42	98.4	0.9%	0.1%
		Total	90.68	8.95	98.7	0.1%	8.95	98.7	0.3%		
Pacific cod	Pot	Eastern	3.88	0.02	5.2	0.0%	0.0%	0.00	0.6	0.0%	0.0%
		Central	9,376.71	46.34	4.9	0.7%	0.5%	5.56	0.6	0.2%	0.2%
		Western	1,095.18	9.92	9.1	0.8%	0.1%	1.19	1.1	0.3%	0.0%
		Total	10,475.77	56.28	5.4	0.6%	6.75	0.6	0.2%		
Pacific cod	Trawl	Eastern	2.40	0.03	12.5	0.0%	0.0%	0.02	6.3	0.0%	0.0%
		Central	33,567.55	659.01	19.6	9.6%	6.5%	329.51	9.8	14.7%	11.1%
		Western	36,511.85	426.10	11.7	34.6%	4.2%	213.05	5.8	53.1%	7.2%
		Total	70,081.80	1,085.14	15.5	10.8%	542.57	7.7	18.3%		
Deepwater flatfish	Longline	Eastern	nf	nf	nf	nf	nf	nf	nf	nf	nf
		Central	24.54	2.42	98.6	0.0%	0.0%	0.31	12.8	0.0%	0.0%
		Western	13.54	1.33	98.2	0.1%	0.0%	0.17	12.8	0.0%	0.0%
		Total	38.08	3.75	98.5	0.0%	0.49	12.8	0.0%		
Deepwater flatfish	Trawl	Eastern	0.02	0.00	0.0	0.0%	0.0%	0.00	0.0	0.0%	0.0%
		Central	18,476.68	1,128.51	61.1	16.4%	11.2%	564.26	30.5	25.2%	19.1%
		Western	1,863.22	30.79	16.5	2.5%	0.3%	15.40	8.3	3.8%	0.5%
		Total	20,339.92	1,159.30	57.0	11.5%	579.65	28.5	19.6%		
Shallow-water flatfish	Trawl	Eastern	nf	nf	nf	nf	nf	nf	nf	nf	nf
		Central	1,632.01	39.55	24.2	0.6%	0.4%	19.78	12.1	0.9%	0.7%
		Western	177.66	1.93	10.9	0.2%	0.0%	0.97	5.4	0.2%	0.0%
		Total	1,809.67	41.48	22.9	0.4%	20.74	11.5	0.7%		

Table 50.—Continued.

Fishery	Gear	Zone	Pacific halibut bycatch				Pacific halibut mortality				
			Groundfish catch	Bycatch (t)	kg/ t of ground-fish	% within zone	% of total bycatch	Bycatch (t)	kg/ t of ground-fish	% within zone	% of total bycatch
Rockfish	Longline	Eastern	509.32	50.28	98.7	2.6%	0.5%	6.54	12.8	2.0%	0.2%
		Central	116.60	11.51	98.7	0.2%	0.1%	1.50	12.8	0.1%	0.1%
		Western	2.28	0.23	100.9	0.0%	0.0%	0.03	13.1	0.0%	0.0%
		Total	628.20	62.02	98.7		0.6%	8.06	12.8		0.3%
Rockfish	Jig	Eastern	12.82	1.24	96.7	0.1%	0.0%	1.24	96.7	0.4%	0.0%
		Central	9.90	0.97	98.0	0.0%	0.0%	0.97	98.0	0.0%	0.0%
		Western	nf	nf	nf	nf	nf	nf	nf	nf	nf
		Total	22.72	2.21	97.3		0.0%	2.21	97.3		0.1%
Rockfish	Trawl	Eastern	3,947.59	174.95	44.3	9.0%	1.7%	87.48	22.2	27.1%	3.0%
		Central	15,098.28	1,102.99	73.1	16.0%	11.0%	551.50	36.5	24.7%	18.6%
		Western	5,091.76	78.41	15.4	6.4%	0.8%	39.21	7.7	9.8%	1.3%
		Total	24,137.63	1,356.35	56.2		13.5%	678.18	28.1		22.9%
Other	Longline	Eastern	47.38	4.66	98.4	0.2%	0.0%	0.61	12.8	0.2%	0.0%
		Central	5.74	0.57	99.3	0.0%	0.0%	0.07	12.9	0.0%	0.0%
		Western	2.60	0.26	100.0	0.0%	0.0%	0.03	13.0	0.0%	0.0%
		Total	55.72	5.49	98.5		0.1%	0.71	12.8		0.0%
Other	Jig	Eastern	1.04	0.10	96.2	0.0%	0.0%	0.10	96.2	0.0%	0.0%
		Central	383.60	37.88	98.7	0.5%	0.4%	37.88	98.7	1.7%	1.3%
		Western	nf	nf	nf	nf	nf	nf	nf	nf	nf
		Total	384.64	37.98	98.7		0.4%	37.98	98.7		1.3%
Other	Pot	Eastern	nf	nf	nf	nf	nf	nf	nf	nf	nf
		Central	0.63	0.00	0.0	0.0%	0.0%	0.00	0.0	0.0%	0.0%
		Western	nf	nf	nf	nf	nf	nf	nf	nf	nf
		Total	0.63	0.00	0.0		0.0%	0.00	0.0		0.0%
Other	Trawl	Eastern	831.69	7.39	8.9	0.4%	0.1%	3.70	4.4	1.1%	0.1%
		Central	245.92	5.18	21.1	0.1%	0.1%	2.59	10.5	0.1%	0.1%
		Western	2,191.76	16.14	7.4	1.3%	0.2%	8.07	3.7	2.0%	0.3%
		Total	3,269.37	28.71	8.8		0.3%	14.36	4.4		0.5%
Sablefish	Longline	Eastern	10,383.16	1,668.34	160.7	85.8%	16.6%	216.88	20.9	67.2%	7.3%
		Central	10,933.33	2,567.08	234.8	37.2%	25.5%	333.72	30.5	14.9%	11.3%
		Western	2,142.82	305.86	142.7	24.8%	3.0%	39.76	18.6	9.9%	1.3%
		Total	23,459.31	4,541.28	193.6		45.1%	590.37	25.2		19.9%
Sablefish	Jig	Eastern	nf	nf	nf	nf	nf	nf	nf	nf	nf
		Central	15.21	1.50	98.6	0.0%	0.0%	1.50	98.6	0.1%	0.1%
		Western	nf	nf	nf	nf	nf	nf	nf	nf	nf
		Total	15.21	1.50	98.6		0.0%	1.50	98.6		0.1%
Sablefish	Trawl	Eastern	nf	nf	nf	nf	nf	nf	nf	nf	nf
		Central	252.31	3.29	13.0	0.0%	0.0%	1.65	6.5	0.1%	0.1%
		Western	142.71	1.76	12.3	0.1%	0.0%	0.88	6.2	0.2%	0.0%
		Total	395.02	5.05	12.8		0.1%	2.53	6.4		0.1%
Total		Eastern	21,603.99	1,944.93	90.0		19.3%	322.68	14.9		10.9%
		Central	156,657.28	6,892.68	44.0		68.5%	2,236.78	14.3		75.6%
		Western	91,354.27	1,231.46	13.5		12.2%	401.08	4.4		13.5%
		Total	269,615.54	10,069.07	37.3			2,960.54	11.0		

Table 51.-- Monthly bycatch rates (no./t) and average weights (kg) of *C. bairdi* snow (Tanner) crab and number of hauls area, 1991.

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target												
Jan	0.000	0.00	2	---	---	---	61.144	0.68	1	0.318	1.24	20
Feb	1.269	0.44	23	---	---	---	ns	ns	ns	6.414	0.33	49
Mar	0.013	0.27	18	---	---	---	---	---	---	0.821	0.27	51
Apr	0.000	0.00	1	0.021	0.26	81	---	---	---	0.085	0.48	163
May	ns	ns	ns	1.181	0.43	31	---	---	---	0.317	0.35	79
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	2	0.000	0.00	7	---	---	---	1.075	0.55	61
Aug	0.000	0.00	3	0.012	0.75	11	6.365	0.26	3	0.928	0.81	135
Sep	2.595	0.04	11	1.178	0.13	13	0.000	0.00	1	4.029	0.30	73
Oct	14.188	0.15	6	1.073	0.12	22	---	---	---	0.886	0.47	107
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	1.698	0.22	66	0.499	0.25	165	5.045	0.42	5	1.180	0.40	738
Bottom trawl - Pollock target												
Jan	0.560	0.25	11	---	---	---	0.000	0.00	21	3.904	0.61	18
Feb	0.778	0.25	17	---	---	---	0.000	0.00	5	0.519	0.58	9
Mar	0.811	0.20	28	0.000	0.00	6	---	---	---	0.791	0.60	3
Apr	---	---	---	---	---	---	---	---	---	0.000	0.00	9
May	---	---	---	---	---	---	---	---	---	0.000	0.00	2
Jun	---	---	---	---	---	---	---	---	---	ns	ns	ns
Jul	0.000	0.00	19	---	---	---	---	---	---	0.425	0.48	5
Aug	0.000	0.00	2	---	---	---	---	---	---	0.068	0.85	17
Sep	0.953	0.05	20	0.000	0.00	1	0.000	0.00	2	0.067	0.31	28
Oct	0.123	0.26	94	0.000	0.00	2	7.856	0.17	1	0.002	0.60	43
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.264	0.21	191	0.000	0.00	9	0.075	0.17	29	0.584	0.60	134
Bottom trawl - Pacific cod target												
Jan	0.089	0.37	94	---	---	---	2.259	0.85	1	3.147	0.56	21
Feb	0.214	0.46	254	0.000	0.00	7	0.000	0.00	5	3.169	0.47	151
Mar	0.434	0.27	357	0.274	0.42	125	0.000	0.00	17	1.073	0.44	206
Apr	0.369	0.30	4	0.068	0.68	34	0.007	0.05	20	0.254	0.51	65
May	---	---	---	0.000	0.00	3	---	---	---	0.000	0.00	1
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	2	0.000	0.00	2	---	---	---	28.206	0.25	4
Aug	2.901	0.05	1	0.142	1.06	3	---	---	---	0.253	0.83	11
Sep	0.555	0.05	10	---	---	---	---	---	---	158.791	0.06	4
Oct	0.304	0.10	10	---	---	---	0.012	0.30	5	0.000	0.00	1
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.291	0.32	732	0.244	0.43	174	0.007	0.51	48	2.425	0.35	464

sampled in the U.S. domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC ("Rate = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; "—" = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	0.063	0.93	6	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	0.000	0.00	6	ns	ns	ns	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.040	0.93	12	ns	ns	ns	---	---	---
Bottom trawl - Pollock target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	0.000	0.00	1	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	24.885	0.02	1	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	1.151	0.02	2	---	---	---	---	---	---
Bottom trawl - Pacific cod target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	ns	ns	ns	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	ns	ns	ns	---	---	---	---	---	---

Table 51.-- Monthly bycatch rates (no./t) and average weights (kg) of *C. bairdi* snow (Tanner) crab and number of hauls area, 1991 (Continued).

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Rockfish target												
Jan	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---	0.000	0.00	3
Mar	0.000	0.00	61	0.000	0.00	39	0.000	0.00	1	0.020	0.15	118
Apr	0.000	0.00	10	0.062	0.03	25	---	---	---	0.134	0.98	88
May	0.000	0.00	1	0.000	0.00	3	---	---	---	0.020	0.73	11
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	12	6.856	0.05	3	---	---	---	0.043	0.10	85
Aug	0.000	0.00	3	0.352	0.30	7	---	---	---	0.443	0.57	188
Sep	0.002	0.63	70	0.000	0.00	1	---	---	---	0.000	0.00	61
Oct	0.000	0.00	72	---	---	---	---	---	---	0.000	0.00	11
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	<0.001	0.63	230	0.077	0.06	78	0.000	0.00	1	0.167	0.60	565
Bottom trawl - Other species target												
Jan	---	---	---	---	---	---	---	---	---	---	---	---
Feb	0.000	0.00	1	0.000	0.00	2	---	---	---	---	---	---
Mar	0.036	0.15	4	---	---	---	---	---	---	0.000	0.00	3
Apr	---	---	---	0.198	0.34	4	---	---	---	0.006	0.05	10
May	---	---	---	0.000	0.00	2	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	3	---	---	---	---	---	---	0.773	0.34	16
Aug	0.000	0.00	1	0.000	0.00	2	---	---	---	1.589	0.58	46
Sep	0.000	0.00	10	0.000	0.00	2	---	---	---	1.613	0.62	30
Oct	0.000	0.00	74	---	---	---	---	---	---	0.000	0.00	13
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.001	0.15	93	0.057	0.34	12	---	---	---	1.096	0.57	118

sampled in the U.S. domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC ("Rate = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Rockfish target									
Jan	---	---	---	---	---	---	---	---	---
Feb	ns	ns	ns	ns	ns	ns	---	---	---
Mar	---	---	---	0.000	0.00	45	---	---	---
Apr	0.000	0.00	59	0.000	0.00	17	0.000	0.00	14
May	ns	ns	ns	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	0.000	0.00	12	---	---	---	---	---	---
Oct	0.000	0.00	17	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	88	0.000	0.00	62	0.000	0.00	14
Bottom trawl - Other species target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	0.000	0.00	2	---	---	---
Apr	0.000	0.00	5	---	---	---	0.000	0.00	1
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	ns	ns	ns	---	---	---	---	---	---
Sep	0.000	0.00	31	---	---	---	---	---	---
Oct	0.000	0.00	6	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	42	0.000	0.00	2	0.000	0.00	1

Table 51.-- Monthly bycatch rates (no./t) and average weights (kg) of *C. bairdi* snow (Tanner) crab and number of hauls area, 1991 (Continued).

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target												
Jan	0.000	0.00	10	---	---	---	0.001	0.20	51	0.000	0.00	40
Feb	0.013	0.20	3	---	---	---	0.000	0.00	6	0.000	0.00	28
Mar	---	---	---	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Jun	0.009	0.40	15	0.000	0.00	1	0.000	0.00	2	0.004	1.13	116
Jul	0.015	0.02	181	ns	ns	ns	0.000	0.00	21	0.001	1.67	243
Aug	---	---	---	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	0.000	0.00	73	0.000	0.00	1	0.000	0.00	4	0.514	0.59	195
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.009	0.03	283	0.000	0.00	2	0.001	0.20	84	0.216	0.60	622
Pelagic trawl - Other species target												
Jan	ns	ns	ns	---	---	---	---	---	---	ns	ns	ns
Feb	0.000	0.00	10	0.730	0.50	1	ns	ns	ns	0.000	0.00	1
Mar	0.338	0.15	8	0.000	0.00	1	---	---	---	0.961	0.34	8
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	1	0.000	0.00	1	---	---	---	9.574	0.25	2
Aug	---	---	---	---	---	---	---	---	---	ns	ns	ns
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	ns	ns	ns	0.000	0.00	1	---	---	---	23.154	0.57	4
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.086	0.15	19	0.234	0.50	4	ns	ns	ns	11.107	0.53	15
Pots - All targets												
Jan	ns	ns	ns	ns	ns	ns	0.801	0.78	44	0.706	1.23	31
Feb	ns	ns	ns	0.811	0.53	22	9.292	0.51	140	0.960	0.55	87
Mar	ns	ns	ns	ns	ns	ns	5.791	0.59	35	2.285	0.40	150
Apr	---	---	---	ns	ns	ns	1.634	0.40	61	0.240	0.38	166
May	---	---	---	ns	ns	ns	ns	ns	ns	0.000	0.00	1
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---	---	---	---
Aug	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Nov	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Dec	0.220	0.39	40	---	---	---	ns	ns	ns	ns	ns	ns
Year	0.219	0.39	41	0.811	0.53	22	5.051	0.52	280	1.204	0.43	435

sampled in the U.S. domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC ("Rate = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	0.000	0.00	9	---	---	---	---	---	---
Apr	0.000	0.00	15	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	24	---	---	---	---	---	---
Pelagic trawl - Other species target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	---	---	---	---	---	---	---	---	---
Pots - All targets									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	ns	ns	ns	ns	ns	ns	---	---	---
Apr	---	---	---	ns	ns	ns	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	ns	ns	ns	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	ns	ns	ns	ns	ns	ns	---	---	---

Table 51.-- Monthly bycatch rates (no./t) and average weights (kg) of *C. bairdi* snow (Tanner) crab and number of hauls area, 1991 (Continued).

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target												
Jan	---	---	---	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	0.000	0.00	62	0.000	0.00	82	ns	ns	ns	0.024	1.11	245
Jun	0.000	0.00	141	0.044	1.50	92	---	---	---	0.000	0.00	238
Jul	0.000	0.00	50	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---	---	---	---
Sep	ns	ns	ns	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---	---	---	---
Nov	ns	ns	ns	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	253	0.022	1.50	174	ns	ns	ns	0.013	1.11	483
Longline - Pacific cod target												
Jan	0.000	0.00	37	0.000	0.00	1	ns	ns	ns	ns	ns	ns
Feb	0.000	0.00	27	0.000	0.00	18	ns	ns	ns	ns	ns	ns
Mar	0.006	0.40	48	0.000	0.00	88	ns	ns	ns	0.000	0.00	10
Apr	---	---	---	ns	ns	ns	ns	ns	ns	ns	ns	ns
May	ns	ns	ns	ns	ns	ns	ns	ns	ns	0.000	0.00	2
Jun	ns	ns	ns	---	---	---	0.000	0.00	3	0.000	0.00	14
Jul	0.047	0.46	23	---	---	---	---	---	---	---	---	---
Aug	0.000	0.00	2	---	---	---	---	---	---	---	---	---
Sep	0.000	0.00	1	---	---	---	---	---	---	ns	ns	ns
Oct	ns	ns	ns	---	---	---	---	---	---	ns	ns	ns
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.009	0.44	138	0.000	0.00	107	0.000	0.00	3	0.000	0.00	26
Longline - Other species target												
Jan	0.000	0.00	1	---	---	---	---	---	---	ns	ns	ns
Feb	---	---	---	---	---	---	---	---	---	ns	ns	ns
Mar	---	---	---	---	---	---	---	---	---	ns	ns	ns
Apr	---	---	---	ns	ns	ns	---	---	---	ns	ns	ns
May	0.000	0.00	1	0.000	0.00	4	---	---	---	0.000	0.00	3
Jun	0.000	0.00	25	0.000	0.00	2	---	---	---	0.000	0.00	11
Jul	0.000	0.00	10	---	---	---	---	---	---	ns	ns	ns
Aug	0.000	0.00	1	---	---	---	---	---	---	ns	ns	ns
Sep	---	---	---	---	---	---	---	---	---	ns	ns	ns
Oct	---	---	---	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	38	0.000	0.00	6	---	---	---	0.000	0.00	14

sampled in the U.S. domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC ("Rate = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---
May	0.038	0.88	246	0.022	1.10	18	0.000	0.00	22
Jun	0.000	0.00	22	ns	ns	ns	ns	ns	ns
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	ns	ns	ns	---	---	---
Sep	---	---	---	ns	ns	ns	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.037	0.88	268	0.022	1.10	18	0.000	0.00	22
Longline - Pacific cod target									
Jan	---	---	---	ns	ns	ns	---	---	---
Feb	---	---	---	ns	ns	ns	---	---	---
Mar	---	---	---	ns	ns	ns	---	---	---
Apr	---	---	---	ns	ns	ns	---	---	---
May	ns	ns	ns	ns	ns	ns	ns	ns	ns
Jun	ns	ns	ns	ns	ns	ns	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	ns	ns	ns	ns	ns	ns	ns	ns	ns
Oct	---	---	---	ns	ns	ns	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	ns	ns	ns	---	---	---
Year	ns	ns	ns	ns	ns	ns	ns	ns	ns
Longline - Other species target									
Jan	---	---	---	ns	ns	ns	---	---	---
Feb	---	---	---	ns	ns	ns	---	---	---
Mar	---	---	---	ns	ns	ns	ns	ns	ns
Apr	---	---	---	ns	ns	ns	ns	ns	ns
May	0.000	0.00	15	0.000	0.00	2	0.000	0.00	5
Jun	0.000	0.00	1	ns	ns	ns	ns	ns	ns
Jul	---	---	---	ns	ns	ns	ns	ns	ns
Aug	---	---	---	ns	ns	ns	---	---	---
Sep	ns	ns	ns	ns	ns	ns	ns	ns	ns
Oct	---	---	---	ns	ns	ns	---	---	---
Nov	---	---	---	ns	ns	ns	---	---	---
Dec	---	---	---	ns	ns	ns	---	---	---
Year	0.000	0.00	16	0.000	0.00	2	0.000	0.00	5

Table 52.-- Monthly bycatch rates (no./t) and average weights (kg) of "other" snow (Tanner) crab and number of hauls area, 1991.

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target												
Jan	0.000	0.00	2	---	---	---	0.000	0.00	1	0.000	0.00	20
Feb	0.000	0.00	23	---	---	---	ns	ns	ns	0.019	0.41	49
Mar	0.000	0.00	18	---	---	---	---	---	---	0.000	0.00	51
Apr	0.000	0.00	1	0.043	0.30	81	---	---	---	0.004	0.91	163
May	ns	ns	ns	0.000	0.00	31	---	---	---	0.000	0.00	79
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	2	0.000	0.00	7	---	---	---	0.005	0.63	61
Aug	0.000	0.00	3	0.012	0.60	11	0.000	0.00	3	0.000	0.00	135
Sep	0.000	0.00	11	0.000	0.00	13	0.000	0.00	1	0.000	0.00	73
Oct	0.000	0.00	6	0.000	0.00	22	---	---	---	0.000	0.00	107
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	66	0.022	0.31	165	0.000	0.00	5	0.002	0.71	738
Bottom trawl - Pollock target												
Jan	0.000	0.00	11	---	---	---	0.000	0.00	21	0.000	0.00	18
Feb	0.000	0.00	17	---	---	---	0.000	0.00	5	0.000	0.00	9
Mar	0.000	0.00	28	0.000	0.00	6	---	---	---	0.000	0.00	3
Apr	---	---	---	---	---	---	---	---	---	0.000	0.00	9
May	---	---	---	---	---	---	---	---	---	0.000	0.00	2
Jun	---	---	---	---	---	---	---	---	---	ns	ns	ns
Jul	0.000	0.00	19	---	---	---	---	---	---	0.000	0.00	5
Aug	0.000	0.00	2	---	---	---	---	---	---	0.000	0.00	17
Sep	0.000	0.00	20	0.000	0.00	1	0.000	0.00	2	0.000	0.00	28
Oct	0.017	0.02	94	0.000	0.00	2	0.000	0.00	1	0.000	0.00	43
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.009	0.02	191	0.000	0.00	9	0.000	0.00	29	0.000	0.00	134
Bottom trawl - Pacific cod target												
Jan	0.000	0.00	94	---	---	---	0.000	0.00	1	0.000	0.00	21
Feb	0.013	1.00	254	0.000	0.00	7	0.000	0.00	5	0.000	0.00	151
Mar	0.011	0.62	357	0.000	0.00	125	0.000	0.00	17	0.001	0.20	206
Apr	0.000	0.00	4	0.000	0.00	34	0.000	0.00	20	0.000	0.00	65
May	---	---	---	0.000	0.00	3	---	---	---	0.000	0.00	1
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	2	0.000	0.00	2	---	---	---	0.000	0.00	4
Aug	0.000	0.00	1	0.000	0.00	3	---	---	---	0.000	0.00	11
Sep	0.000	0.00	10	---	---	---	---	---	---	0.000	0.00	4
Oct	0.000	0.00	10	---	---	---	0.000	0.00	5	0.000	0.00	1
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.009	0.81	732	0.000	0.00	174	0.000	0.00	48	<0.001	0.20	464

sampled in the U.S. domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; "—" = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	0.000	0.00	6	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	1.571	0.01	6	ns	ns	ns	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.578	0.01	12	ns	ns	ns	---	---	---
Bottom trawl - Pollock target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	0.000	0.00	1	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	0.000	0.00	1	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	2	---	---	---	---	---	---
Bottom trawl - Pacific cod target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	ns	ns	ns	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	ns	ns	ns	---	---	---	---	---	---

Table 52.-- Monthly bycatch rates (no./t) and average weights (kg) of "other" snow (Tanner) crab and number of hauls area, 1991 (Continued).

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Rockfish target												
Jan	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---	0.310	0.28	3
Mar	0.000	0.00	61	0.000	0.00	39	0.000	0.00	1	0.000	0.00	118
Apr	0.000	0.00	10	0.027	0.47	25	---	---	---	0.001	0.60	88
May	12.433	0.20	1	0.000	0.00	3	---	---	---	0.000	0.00	11
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	12	0.000	0.00	3	---	---	---	0.000	0.00	85
Aug	0.000	0.00	3	2.536	0.94	7	---	---	---	0.000	0.00	188
Sep	0.480	0.26	70	0.000	0.00	1	---	---	---	0.000	0.00	61
Oct	0.274	0.66	72	---	---	---	---	---	---	0.000	0.00	11
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.193	0.41	230	0.044	0.88	78	0.000	0.00	1	<0.001	0.44	565
Bottom trawl - Other species target												
Jan	---	---	---	---	---	---	---	---	---	---	---	---
Feb	0.000	0.00	1	0.000	0.00	2	---	---	---	---	---	---
Mar	0.000	0.00	4	---	---	---	---	---	---	0.000	0.00	3
Apr	---	---	---	2.800	0.34	4	---	---	---	0.000	0.00	10
May	---	---	---	0.000	0.00	2	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	3	---	---	---	---	---	---	0.000	0.00	16
Aug	0.000	0.00	1	0.000	0.00	2	---	---	---	0.000	0.00	46
Sep	0.232	0.33	10	0.000	0.00	2	---	---	---	0.000	0.00	30
Oct	0.000	0.00	74	---	---	---	---	---	---	0.000	0.00	13
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.010	0.33	93	0.810	0.34	12	---	---	---	0.000	0.00	118

sampled in the U.S. domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Rockfish target									
Jan	---	---	---	---	---	---	---	---	---
Feb	ns	ns	ns	ns	ns	ns	---	---	---
Mar	---	---	---	0.000	0.00	45	---	---	---
Apr	0.000	0.00	59	0.000	0.00	17	0.000	0.00	14
May	ns	ns	ns	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	0.000	0.00	12	---	---	---	---	---	---
Oct	0.000	0.00	17	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	88	0.000	0.00	62	0.000	0.00	14
Bottom trawl - Other species target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	0.000	0.00	2	---	---	---
Apr	0.594	2.20	5	---	---	---	0.000	0.00	1
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	ns	ns	ns	---	---	---	---	---	---
Sep	0.000	0.00	31	---	---	---	---	---	---
Oct	0.000	0.00	6	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.126	2.20	42	0.000	0.00	2	0.000	0.00	1

Table 52.-- Monthly bycatch rates (no./t) and average weights (kg) of "other" snow (Tanner) crab and number of hauls area, 1991 (Continued).

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target												
Jan	0.000	0.00	10	---	---	---	0.000	0.00	51	0.000	0.00	40
Feb	0.000	0.00	3	---	---	---	0.000	0.00	6	0.000	0.00	28
Mar	---	---	---	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Jun	0.004	0.40	15	0.000	0.00	1	0.000	0.00	2	0.000	0.00	116
Jul	0.000	0.00	181	ns	ns	ns	0.000	0.00	21	0.000	0.00	243
Aug	---	---	---	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	0.000	0.00	73	0.000	0.00	1	0.000	0.00	4	0.000	0.00	195
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	<0.001	0.40	283	0.000	0.00	2	0.000	0.00	84	0.000	0.00	622
Pelagic trawl - Other species target												
Jan	ns	ns	ns	---	---	---	---	---	---	ns	ns	ns
Feb	0.000	0.00	10	0.000	0.00	1	ns	ns	ns	0.000	0.00	1
Mar	0.000	0.00	8	0.000	0.00	1	---	---	---	0.000	0.00	8
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	1	0.000	0.00	1	---	---	---	0.000	0.00	2
Aug	---	---	---	---	---	---	---	---	---	ns	ns	ns
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	ns	ns	ns	0.000	0.00	1	---	---	---	0.000	0.00	4
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	19	0.000	0.00	4	ns	ns	ns	0.000	0.00	15
Pots - All targets												
Jan	ns	ns	ns	ns	ns	ns	0.000	0.00	44	0.000	0.00	31
Feb	ns	ns	ns	0.000	0.00	22	0.000	0.00	140	0.000	0.00	87
Mar	ns	ns	ns	ns	ns	ns	0.000	0.00	35	0.000	0.00	150
Apr	---	---	---	ns	ns	ns	0.000	0.00	61	0.000	0.00	166
May	---	---	---	ns	ns	ns	ns	ns	ns	0.000	0.00	1
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---	---	---	---
Aug	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Nov	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Dec	0.000	0.00	40	---	---	---	ns	ns	ns	ns	ns	ns
Year	0.000	0.00	41	0.000	0.00	22	0.000	0.00	280	0.000	0.00	435

sampled in the U.S. domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	0.000	0.00	9	---	---	---	---	---	---
Apr	0.000	0.00	15	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	24	---	---	---	---	---	---
Pelagic trawl - Other species target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	---	---	---	---	---	---	---	---	---
Pots - All targets									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	ns	ns	ns	ns	ns	ns	---	---	---
Apr	---	---	---	ns	ns	ns	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	ns	ns	ns	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	ns	ns	ns	ns	ns	ns	---	---	---

Table 52.-- Monthly bycatch rates (no./t) and average weights (kg) of "other" snow (Tanner) crab and number of hauls area, 1991 (Continued).

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target												
Jan	---	---	---	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	0.087	0.66	62	0.053	1.10	82	ns	ns	ns	0.037	0.98	245
Jun	0.256	0.77	141	0.177	0.93	92	---	---	---	0.003	1.50	238
Jul	0.313	0.64	50	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---	---	---	---
Sep	ns	ns	ns	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---	---	---	---
Nov	ns	ns	ns	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.227	0.71	253	0.116	0.97	174	ns	ns	ns	0.022	1.01	483
Longline - Pacific cod target												
Jan	0.000	0.00	37	0.000	0.00	1	ns	ns	ns	ns	ns	ns
Feb	0.000	0.00	27	0.000	0.00	18	ns	ns	ns	ns	ns	ns
Mar	0.000	0.00	48	0.000	0.00	88	ns	ns	ns	0.000	0.00	10
Apr	---	---	---	ns	ns	ns	ns	ns	ns	ns	ns	ns
May	ns	ns	ns	ns	ns	ns	ns	ns	ns	0.000	0.00	2
Jun	ns	ns	ns	---	---	---	0.000	0.00	3	0.000	0.00	14
Jul	0.000	0.00	23	---	---	---	---	---	---	---	---	---
Aug	0.000	0.00	2	---	---	---	---	---	---	---	---	---
Sep	0.000	0.00	1	---	---	---	---	---	---	ns	ns	ns
Oct	ns	ns	ns	---	---	---	---	---	---	ns	ns	ns
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	138	0.000	0.00	107	0.000	0.00	3	0.000	0.00	26
Longline - Other species target												
Jan	0.000	0.00	1	---	---	---	---	---	---	ns	ns	ns
Feb	---	---	---	---	---	---	---	---	---	ns	ns	ns
Mar	---	---	---	---	---	---	---	---	---	ns	ns	ns
Apr	---	---	---	ns	ns	ns	---	---	---	ns	ns	ns
May	0.000	0.00	1	0.000	0.00	4	---	---	---	0.000	0.00	3
Jun	0.173	1.33	25	1.392	0.40	2	---	---	---	0.000	0.00	11
Jul	0.453	0.63	10	---	---	---	---	---	---	ns	ns	ns
Aug	0.000	0.00	1	---	---	---	---	---	---	ns	ns	ns
Sep	---	---	---	---	---	---	---	---	---	ns	ns	ns
Oct	---	---	---	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.262	0.93	38	0.692	0.40	6	---	---	---	0.000	0.00	14

sampled in the U.S. domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---
May	0.083	1.05	246	0.102	0.66	18	0.706	1.23	22
Jun	0.566	0.73	22	ns	ns	ns	ns	ns	ns
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	ns	ns	ns	---	---	---
Sep	---	---	---	ns	ns	ns	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.098	0.99	268	0.102	0.66	18	0.706	1.23	22
Longline - Pacific cod target									
Jan	---	---	---	ns	ns	ns	---	---	---
Feb	---	---	---	ns	ns	ns	---	---	---
Mar	---	---	---	ns	ns	ns	---	---	---
Apr	---	---	---	ns	ns	ns	---	---	---
May	ns	ns	ns	ns	ns	ns	ns	ns	ns
Jun	ns	ns	ns	ns	ns	ns	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	ns	ns	ns	ns	ns	ns	ns	ns	ns
Oct	---	---	---	ns	ns	ns	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	ns	ns	ns	---	---	---
Year	ns	ns	ns	ns	ns	ns	ns	ns	ns
Longline - Other species target									
Jan	---	---	---	ns	ns	ns	---	---	---
Feb	---	---	---	ns	ns	ns	---	---	---
Mar	---	---	---	ns	ns	ns	ns	ns	ns
Apr	---	---	---	ns	ns	ns	ns	ns	ns
May	0.000	0.00	15	0.000	0.00	2	0.177	1.00	5
Jun	0.000	0.00	1	ns	ns	ns	ns	ns	ns
Jul	---	---	---	ns	ns	ns	ns	ns	ns
Aug	---	---	---	ns	ns	ns	---	---	---
Sep	ns	ns	ns	ns	ns	ns	ns	ns	ns
Oct	---	---	---	ns	ns	ns	---	---	---
Nov	---	---	---	ns	ns	ns	---	---	---
Dec	---	---	---	ns	ns	ns	---	---	---
Year	0.000	0.00	16	0.000	0.00	2	0.177	1.00	5

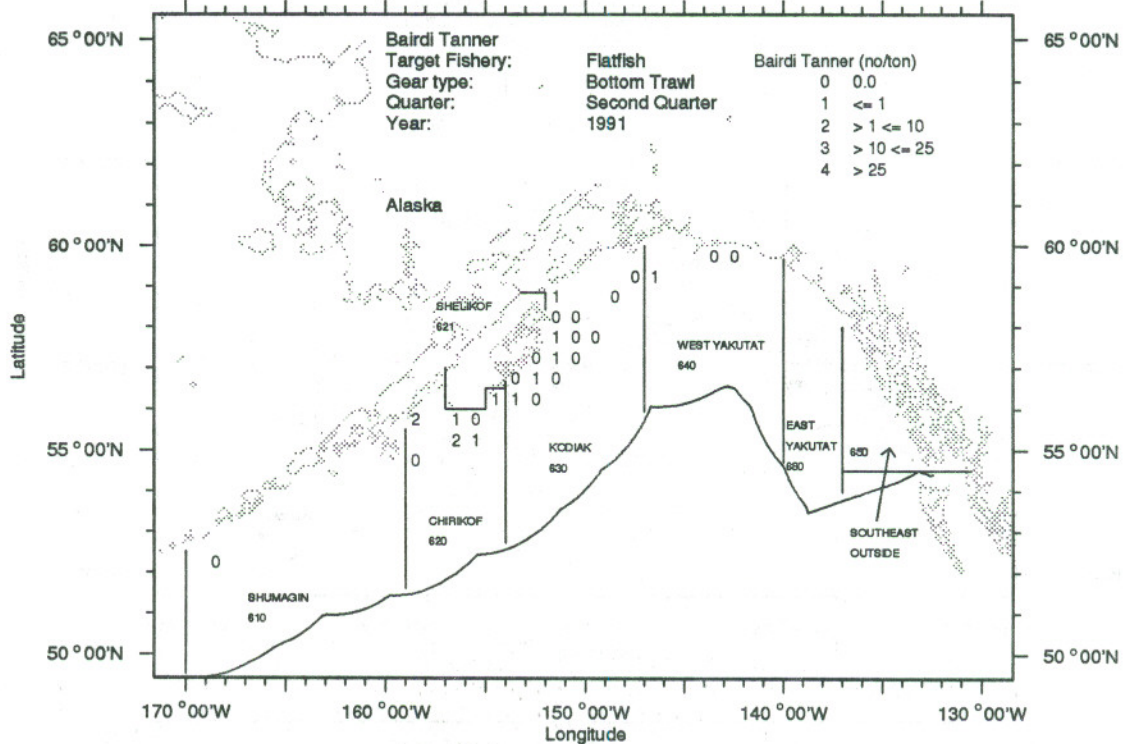
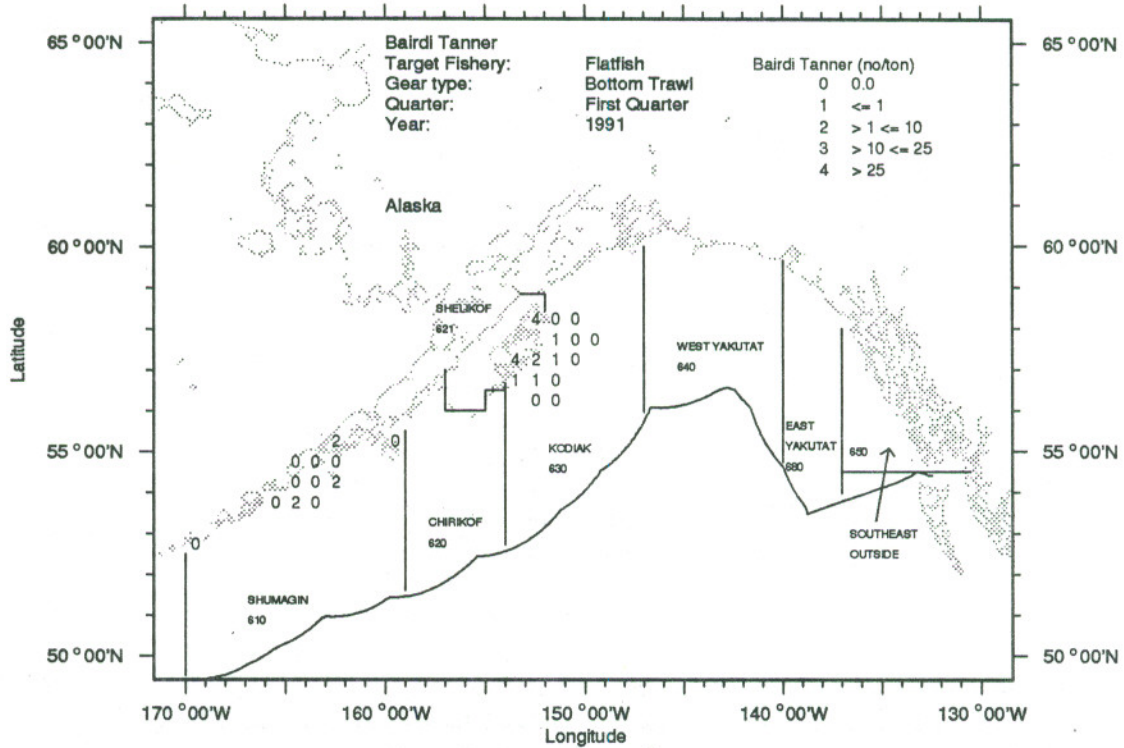


Figure 14.--Bycatch (no./metric ton (t)) of *C. bairdi* snow (Tanner) crab in the U.S. domestic groundfish fisheries by quarter, target fishery, gear type, and $\frac{1}{2}^\circ$ latitude and 1° longitude areas in the Gulf of Alaska region, 1991.

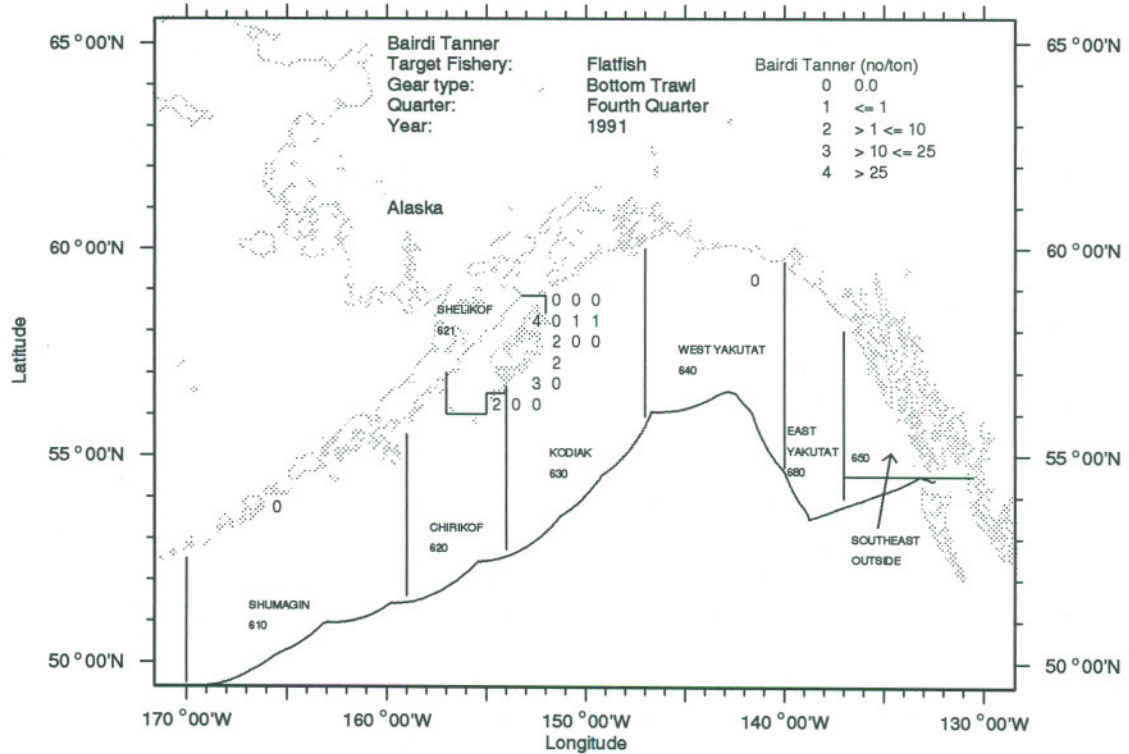
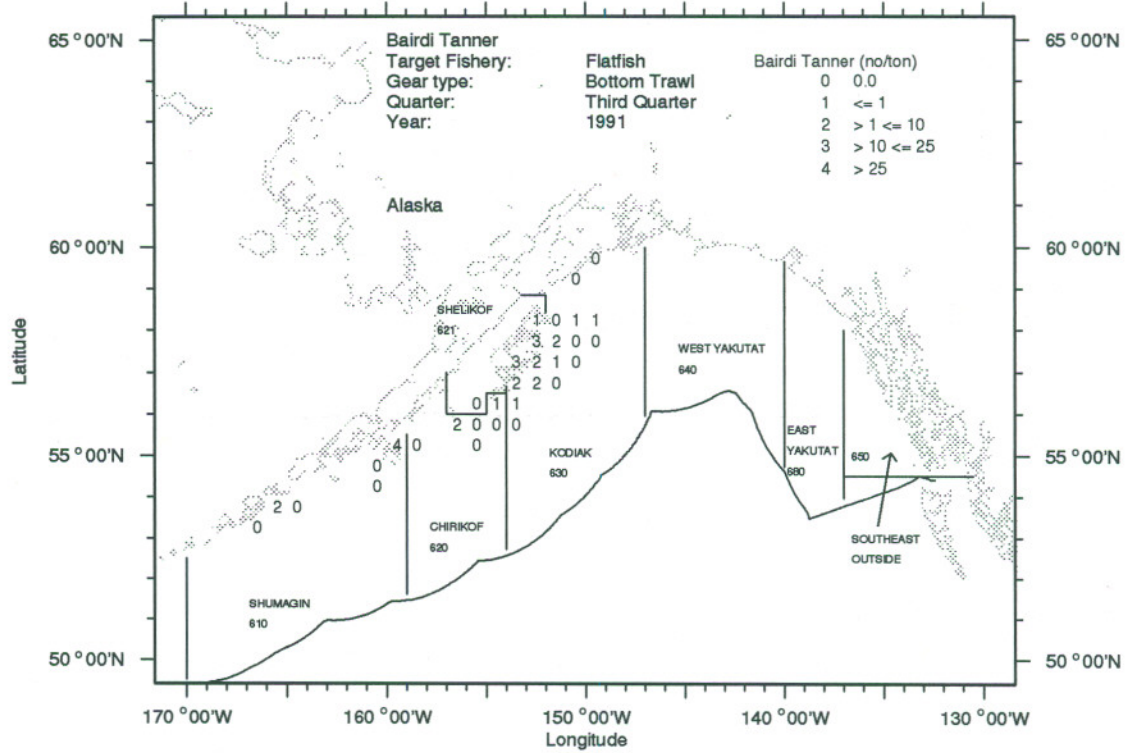


Figure 14.--Continued.

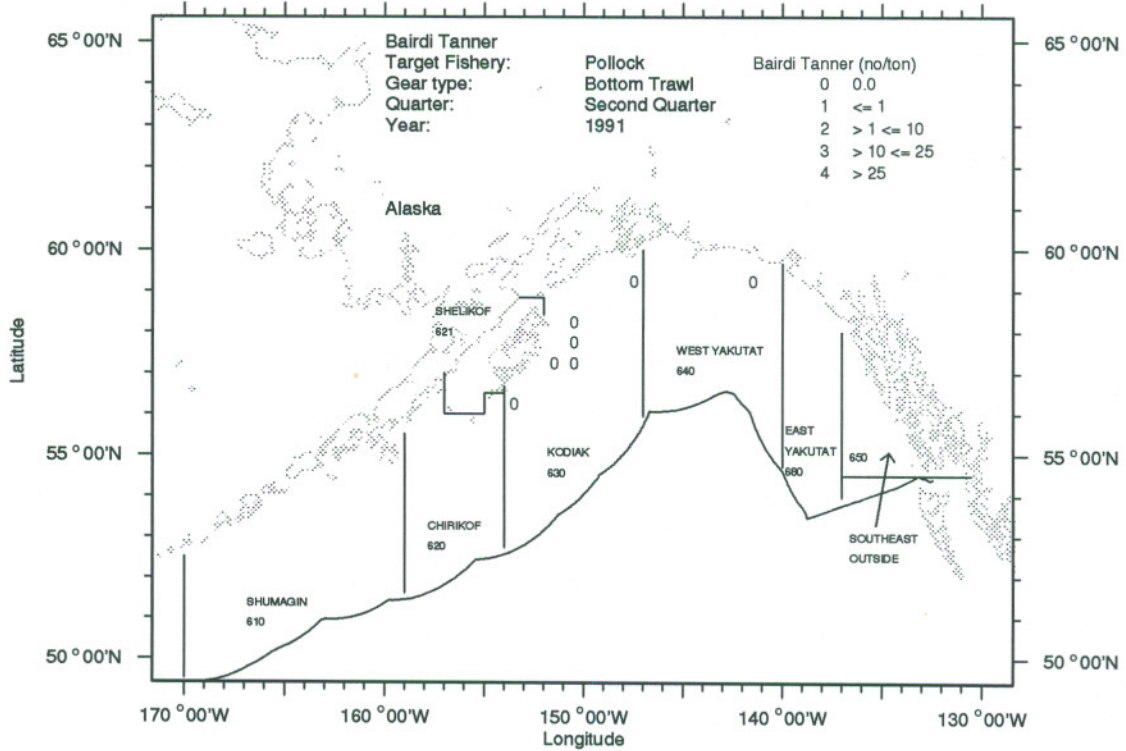
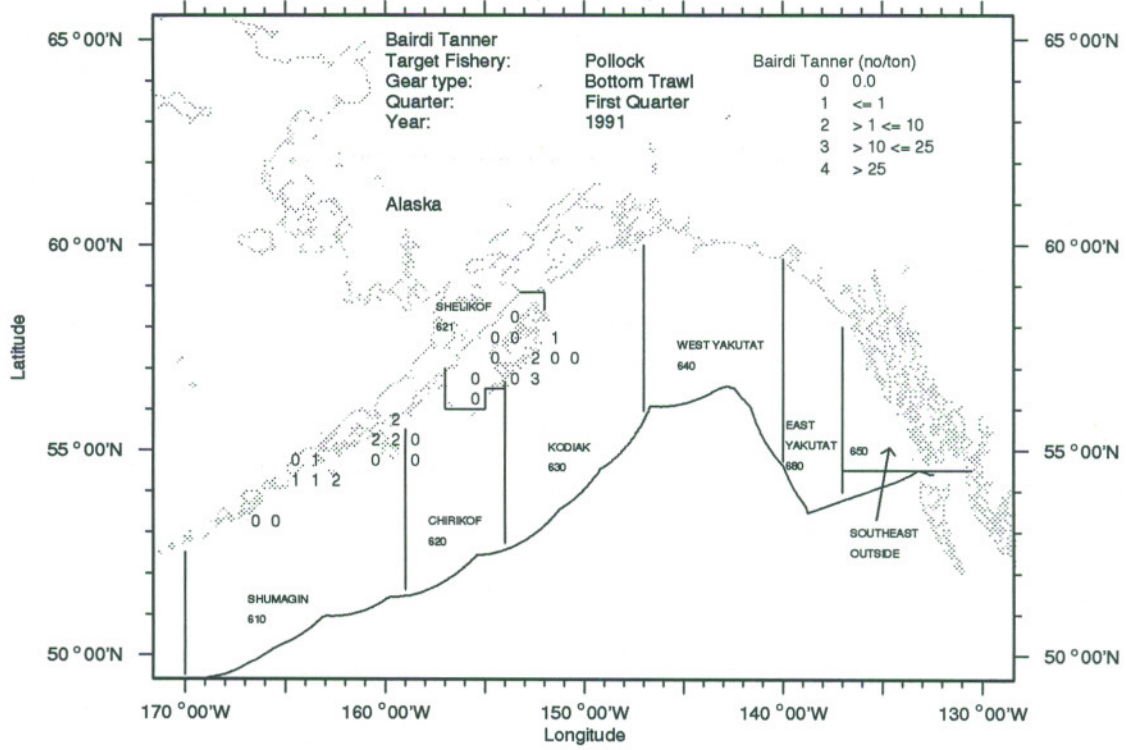


Figure 14.--Continued.

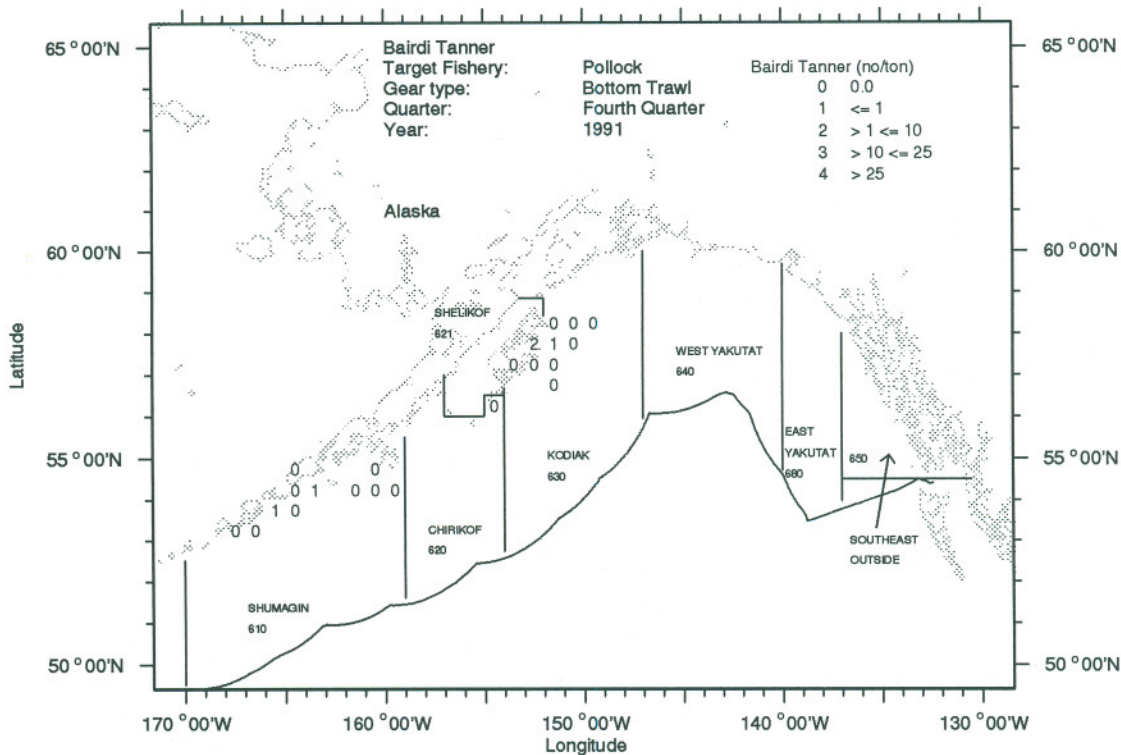
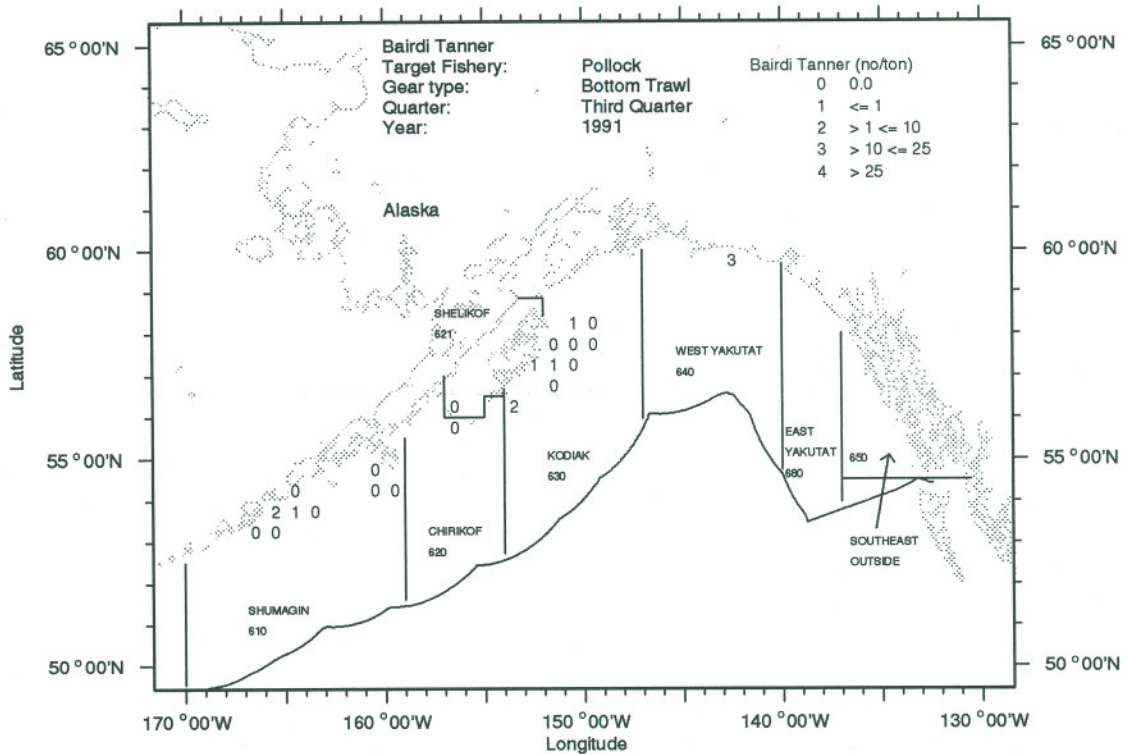


Figure 14.--Continued.

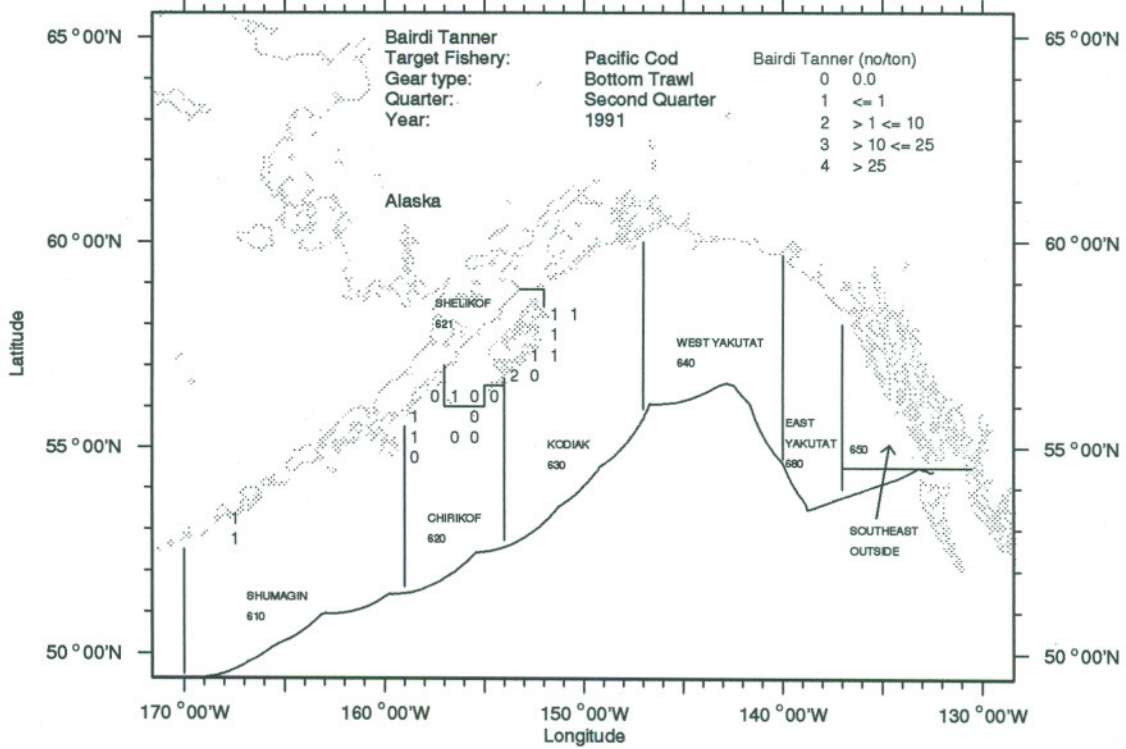
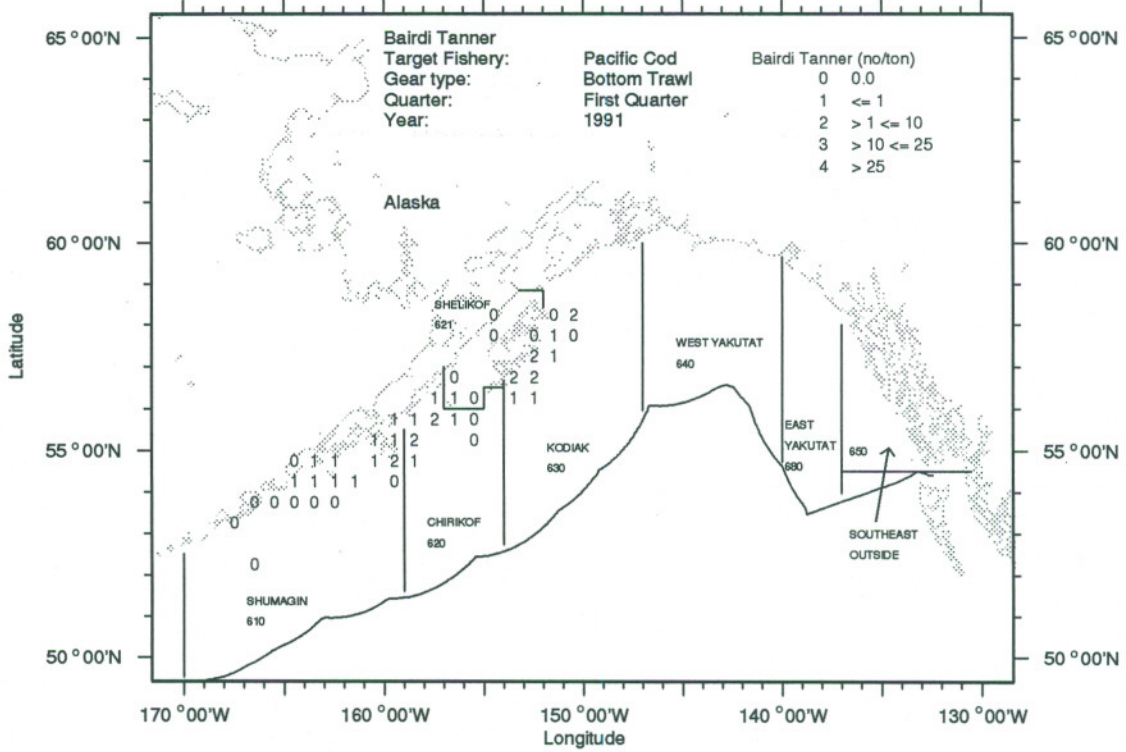


Figure 14.--Continued.

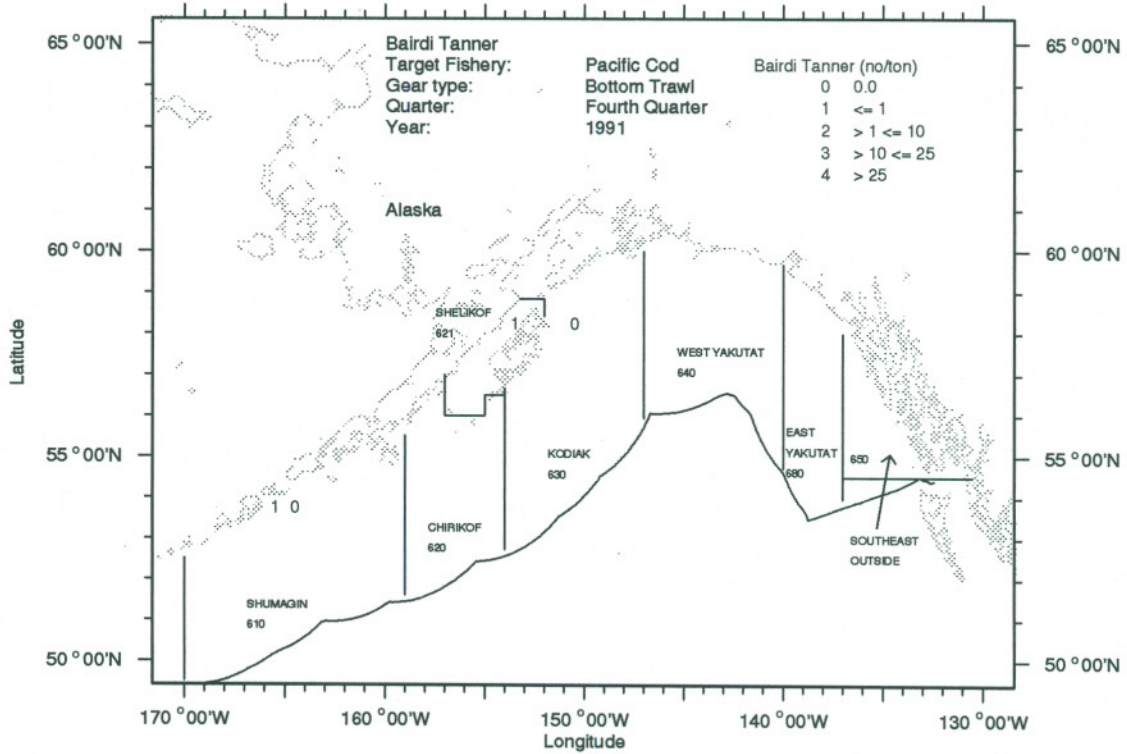
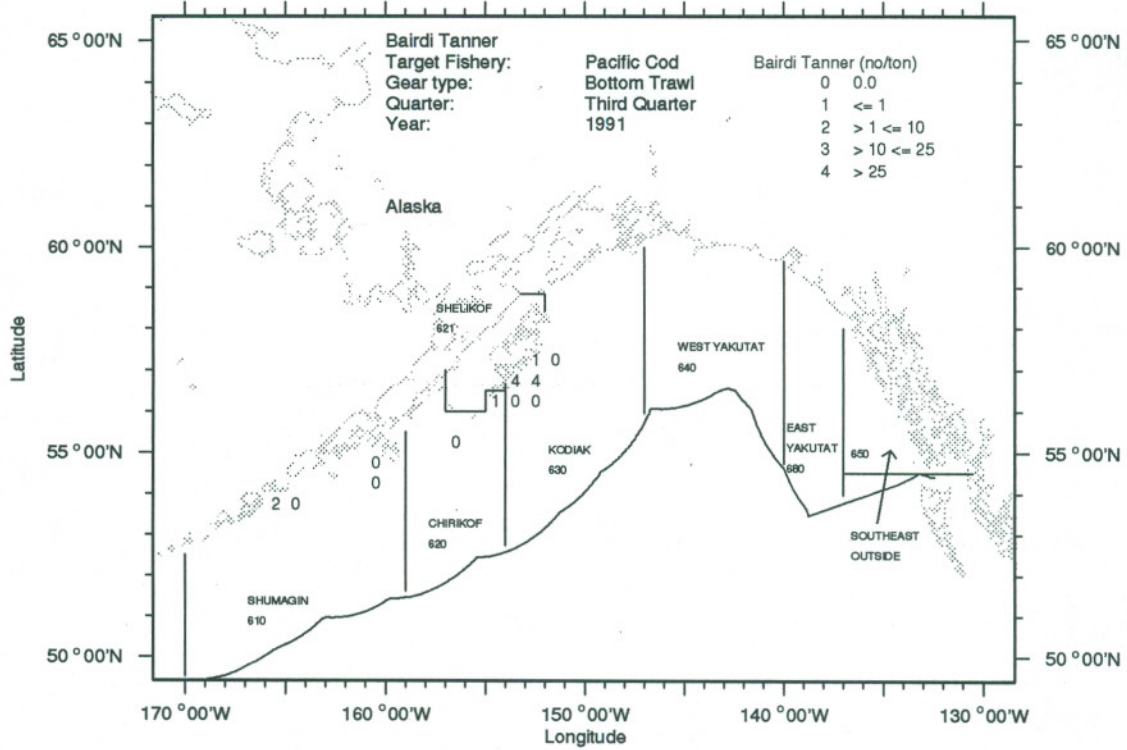


Figure 14.--Continued.

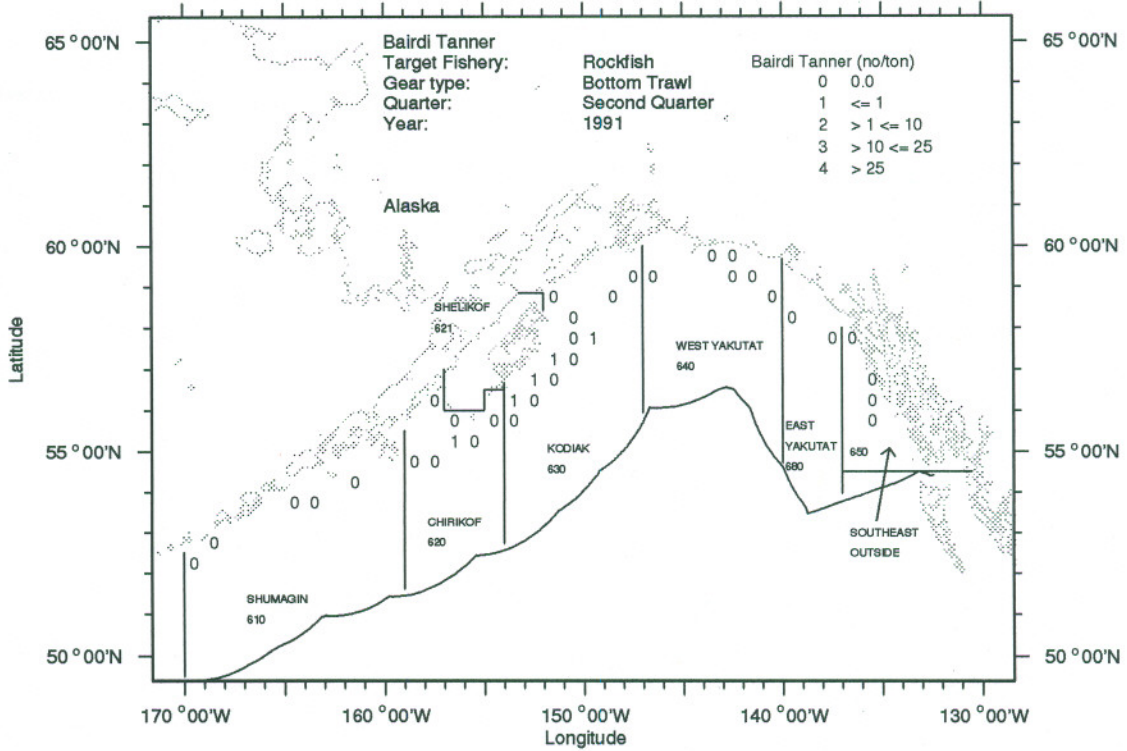
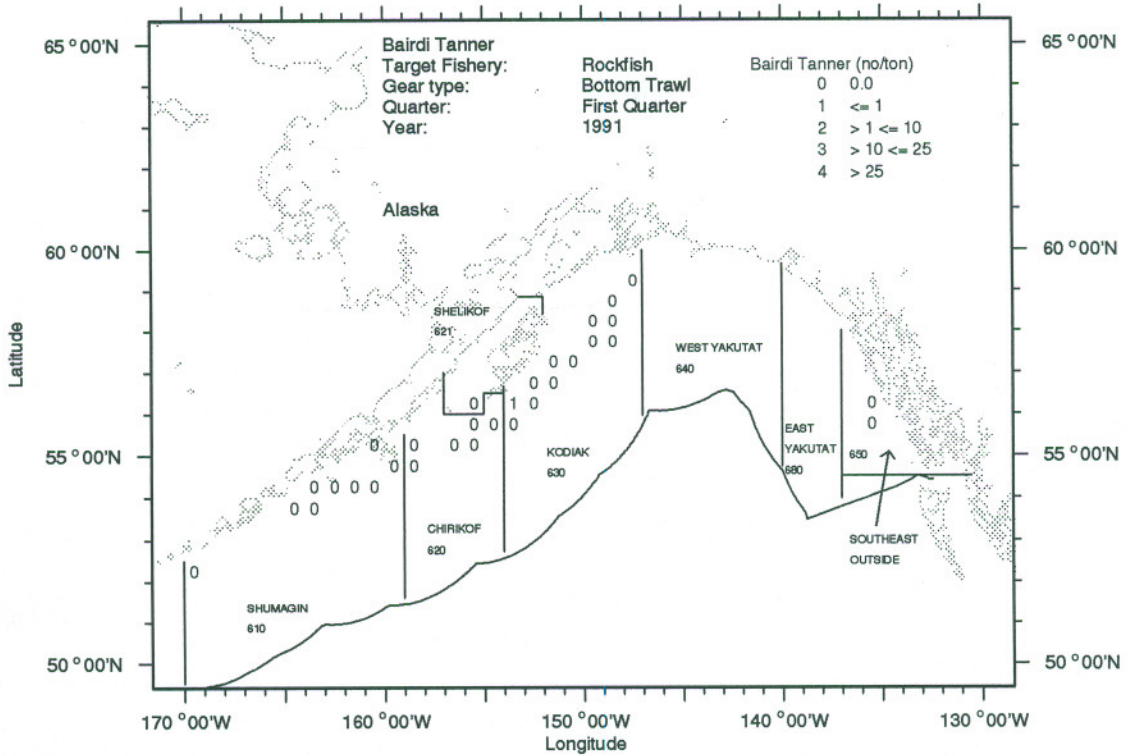


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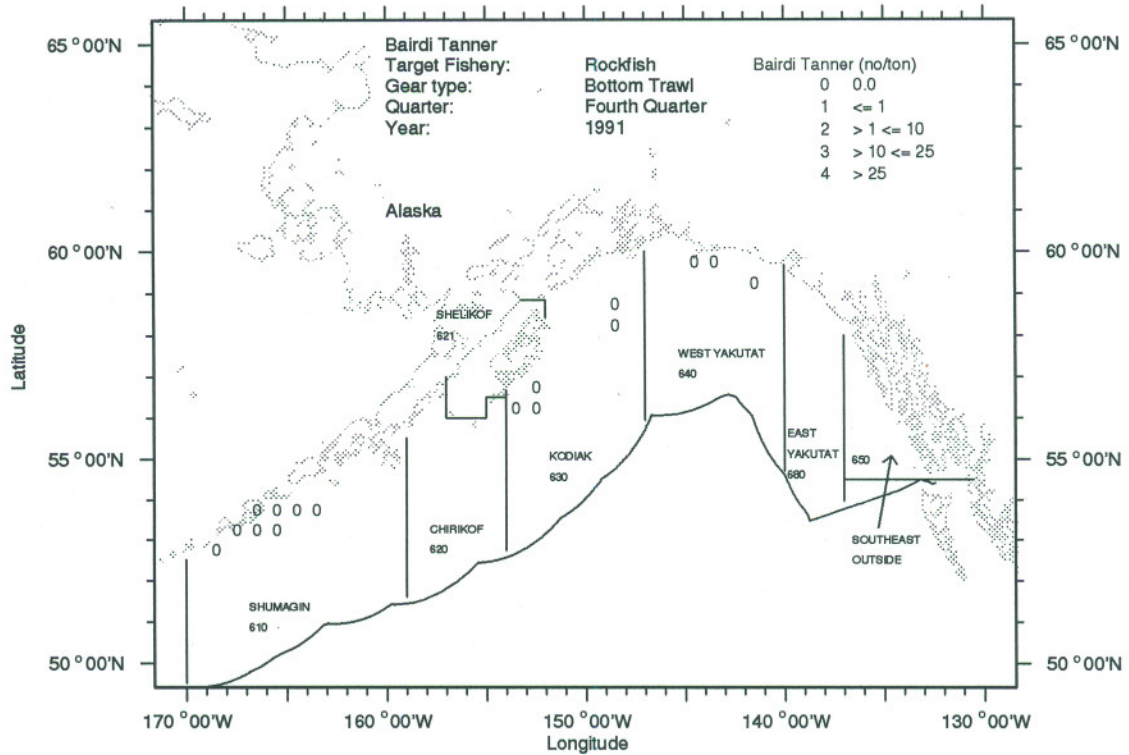
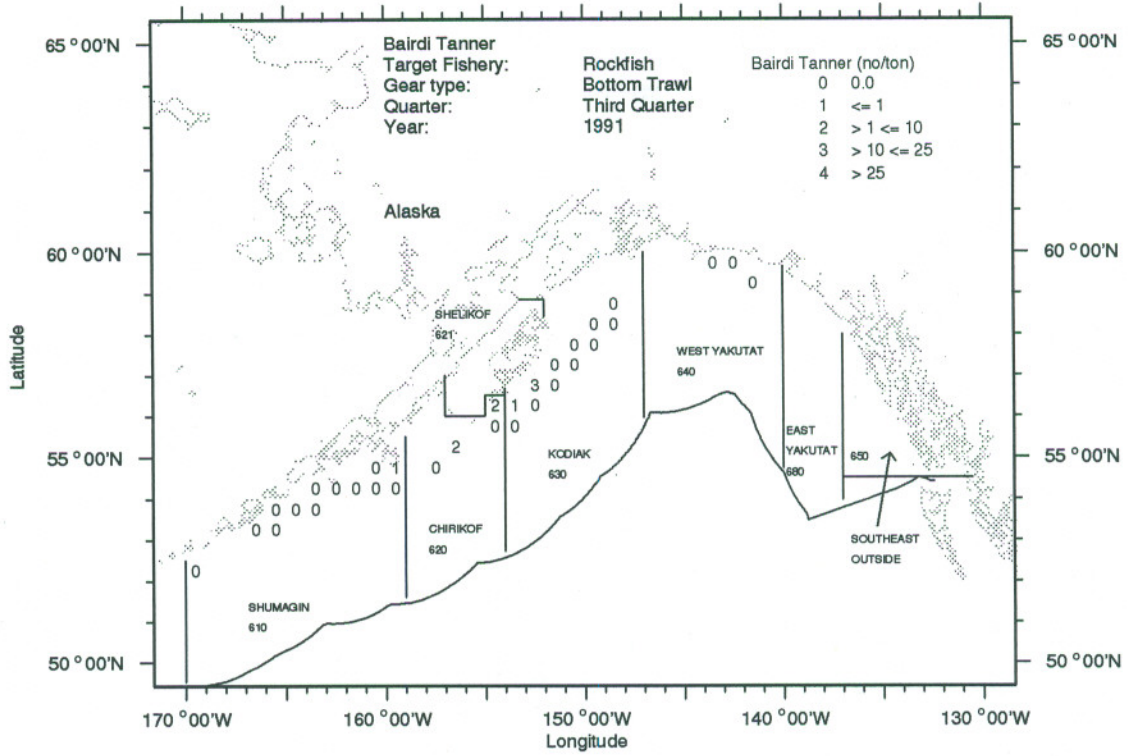


Figure 14.--Continued.

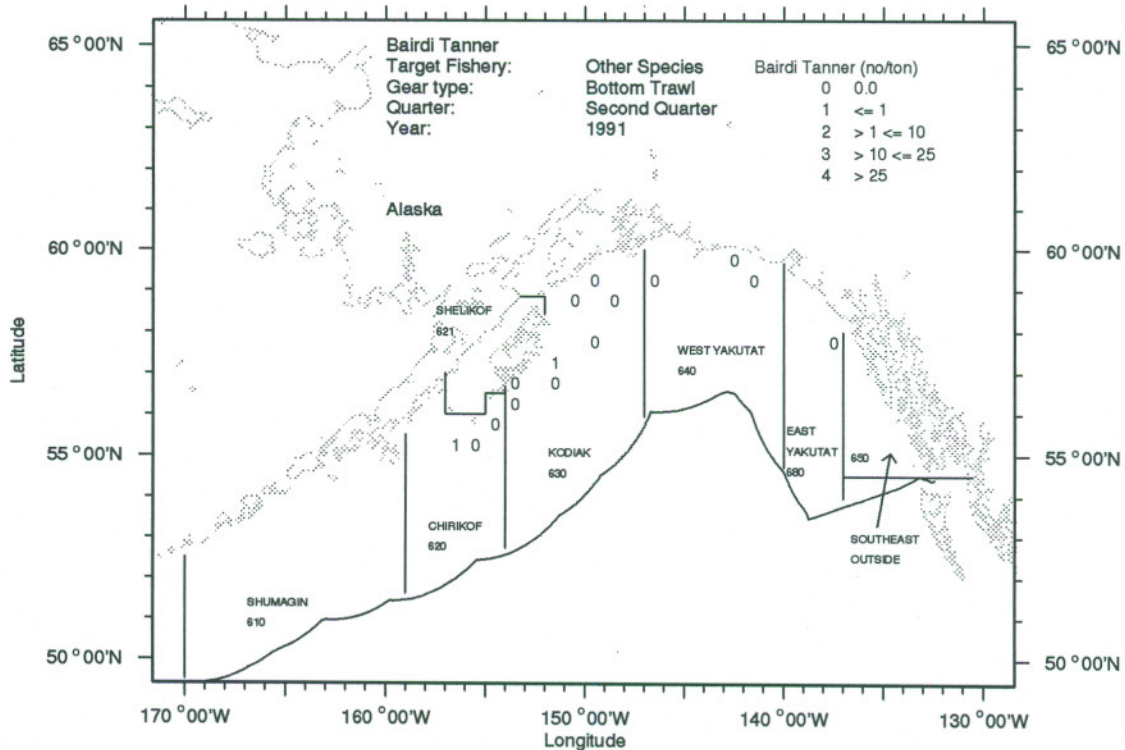
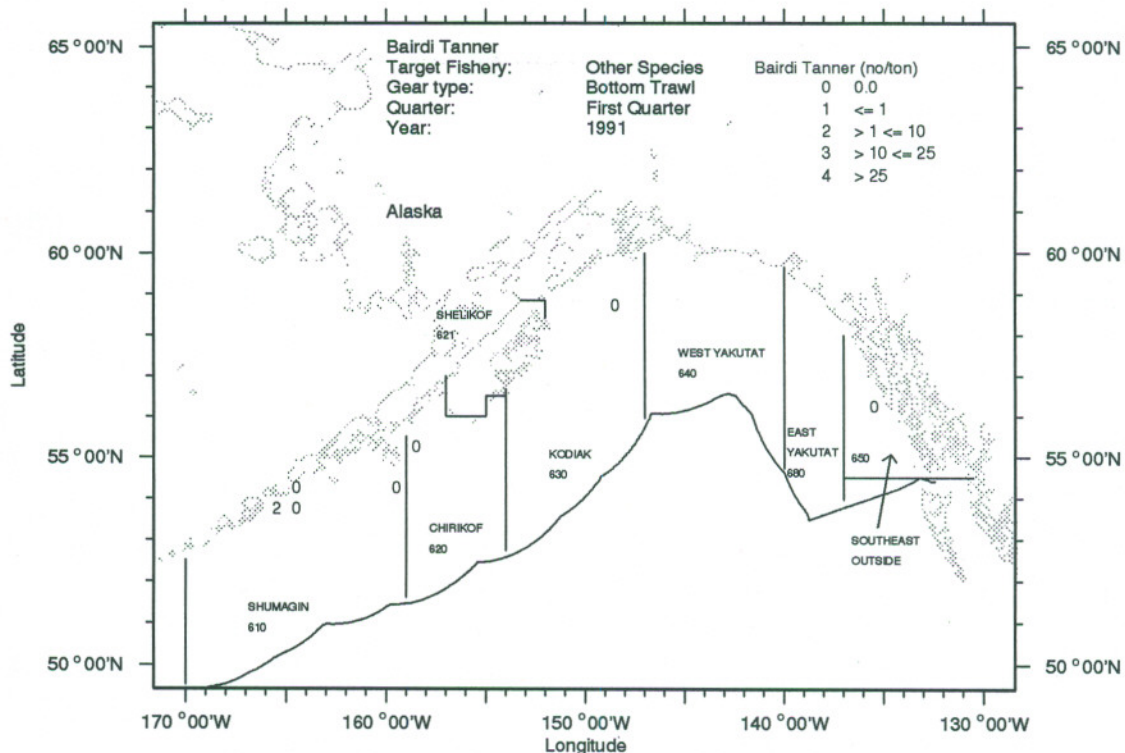


Figure 14.--Continued.

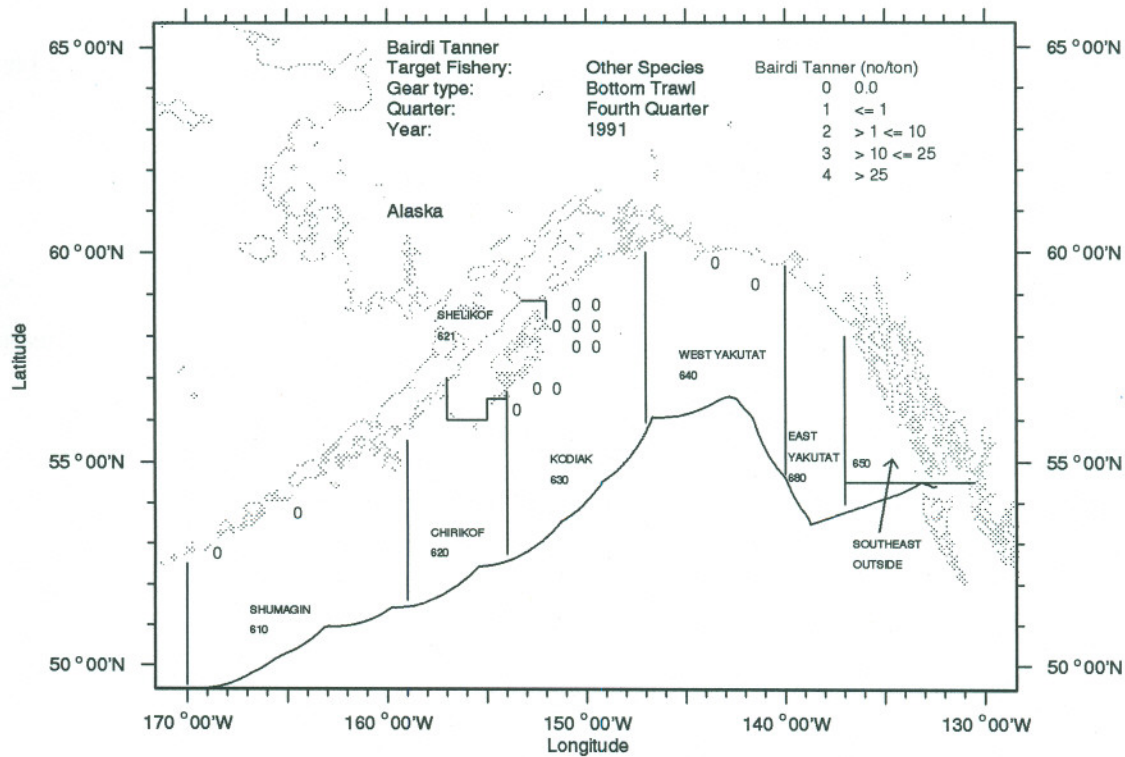
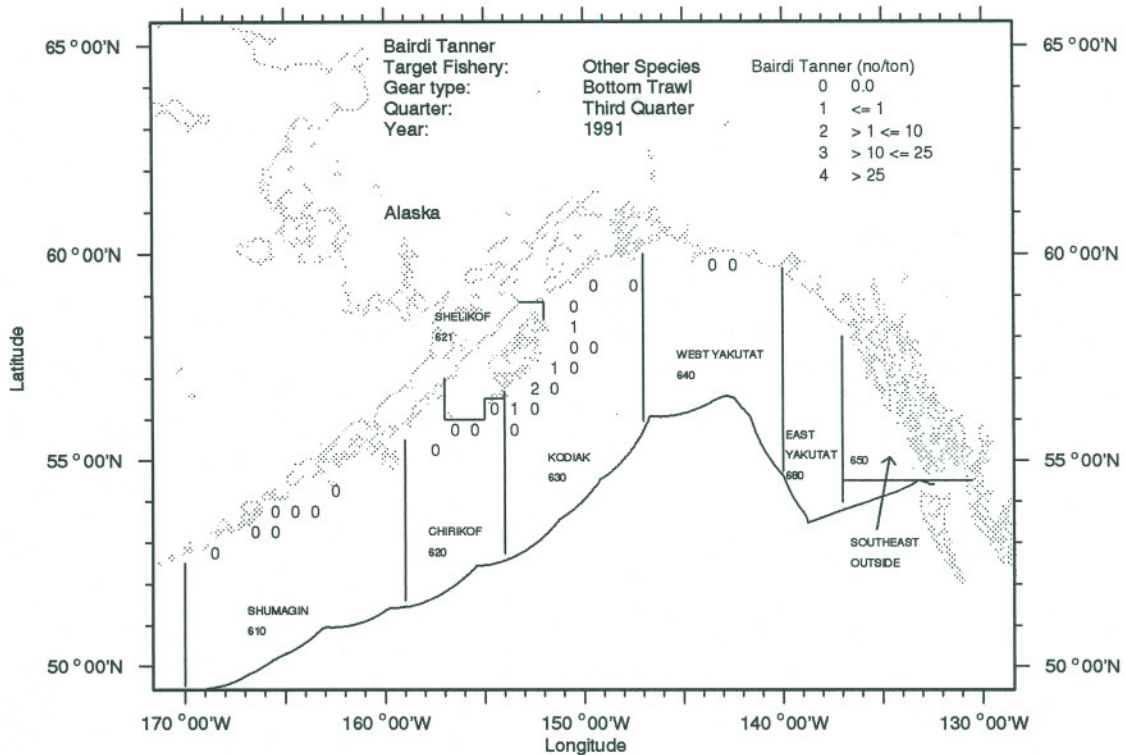


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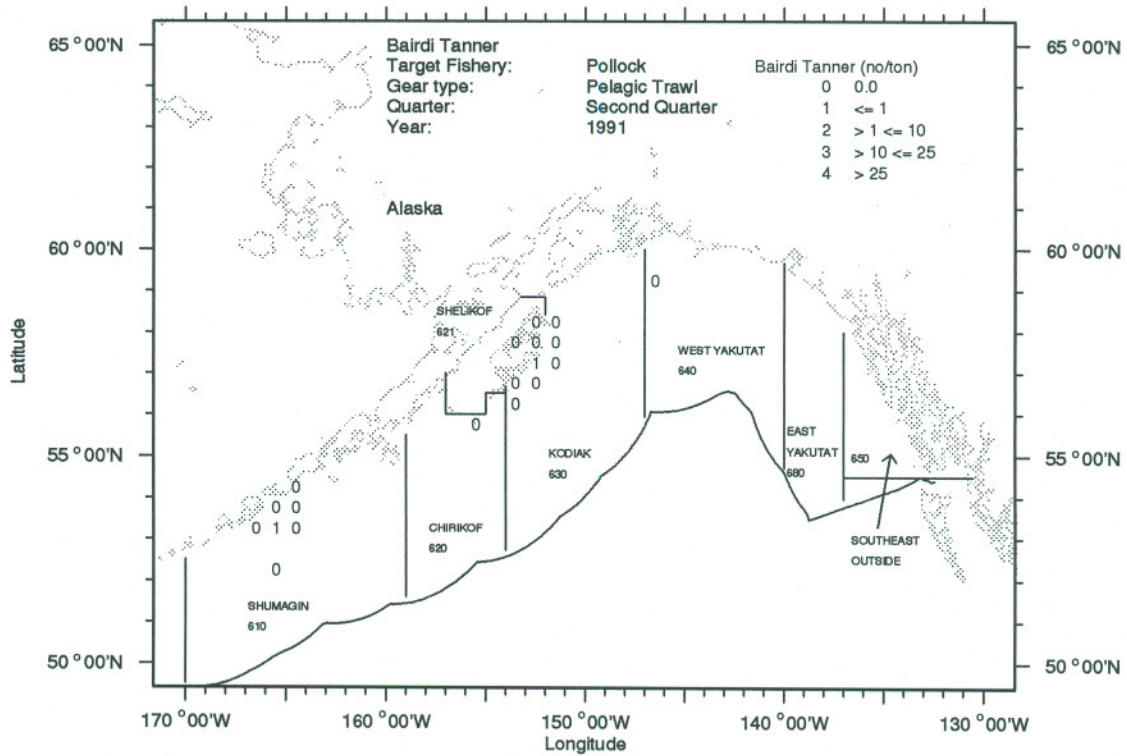
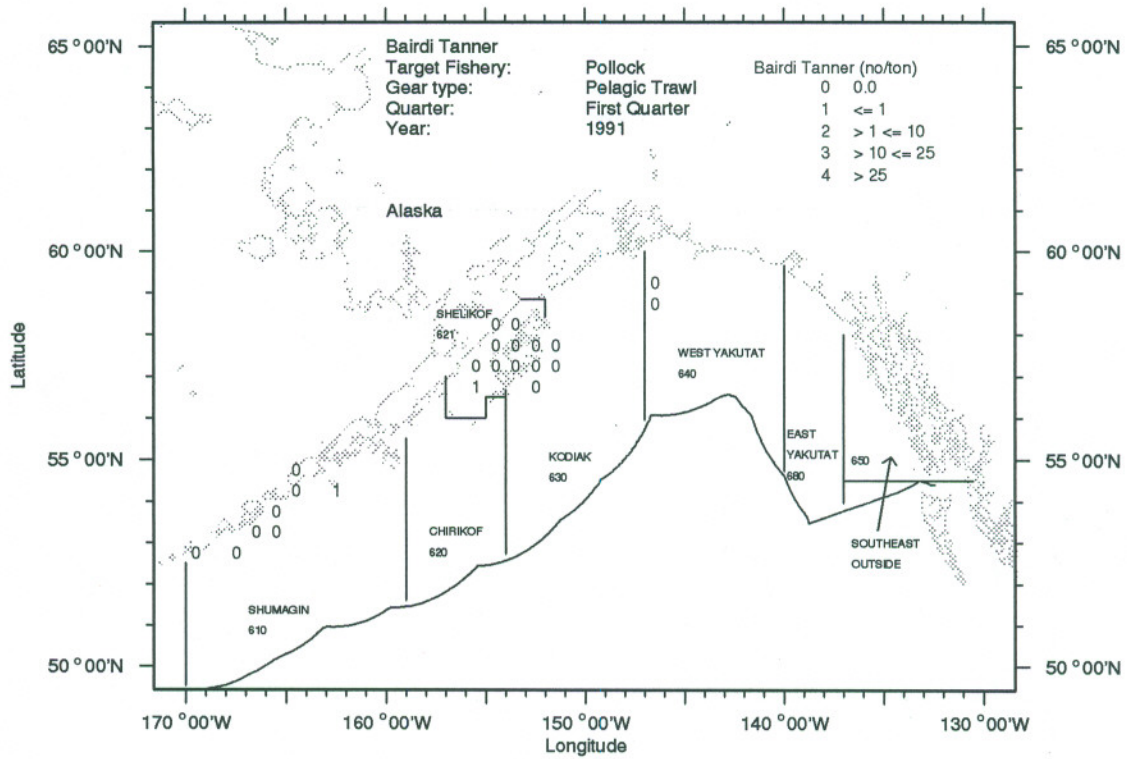


Figure 14.--Continued.

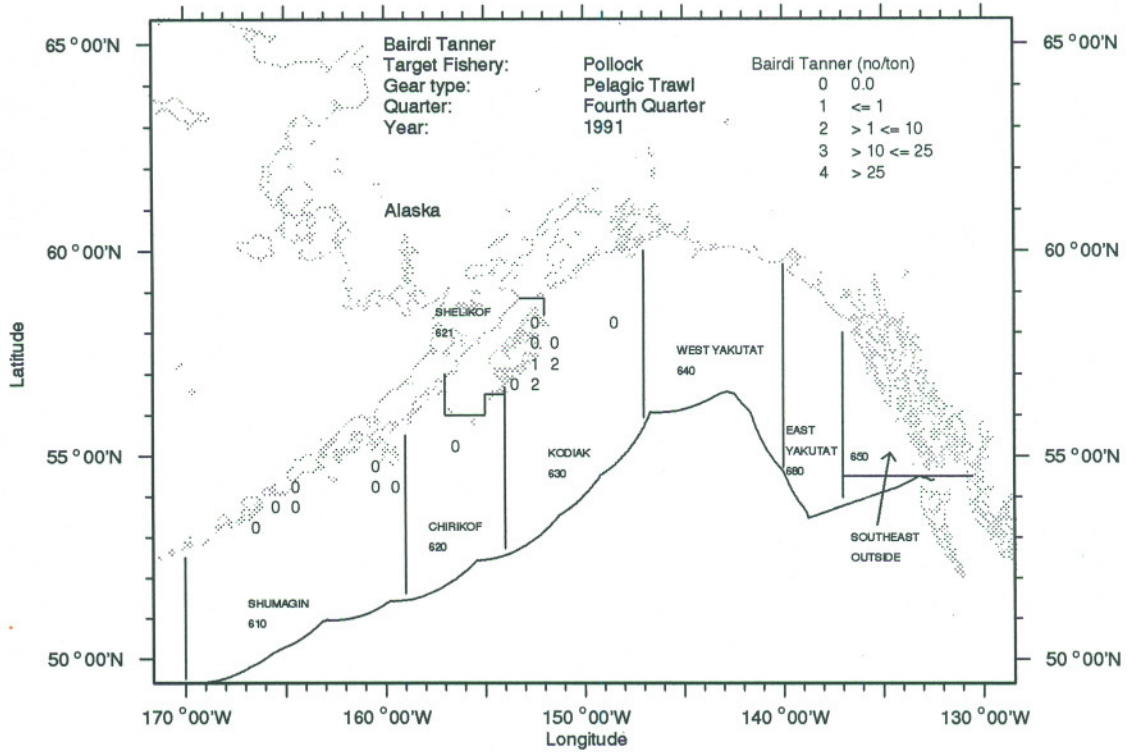
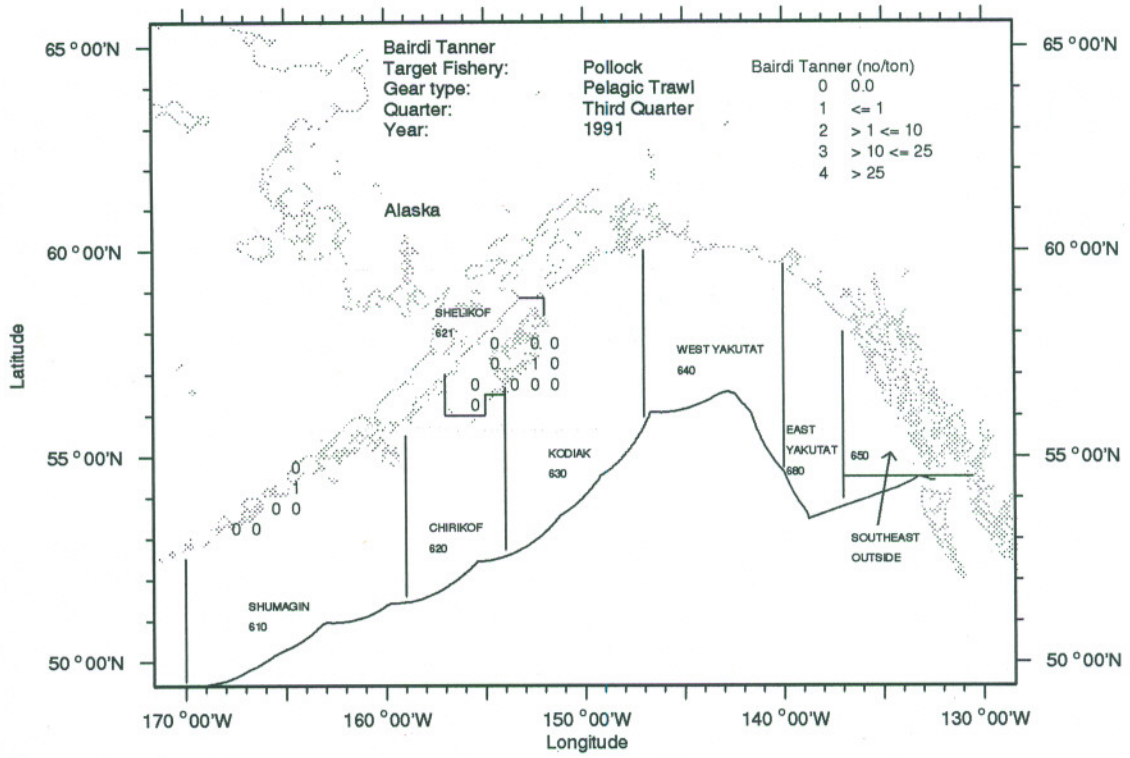


Figure 14.--Continued.

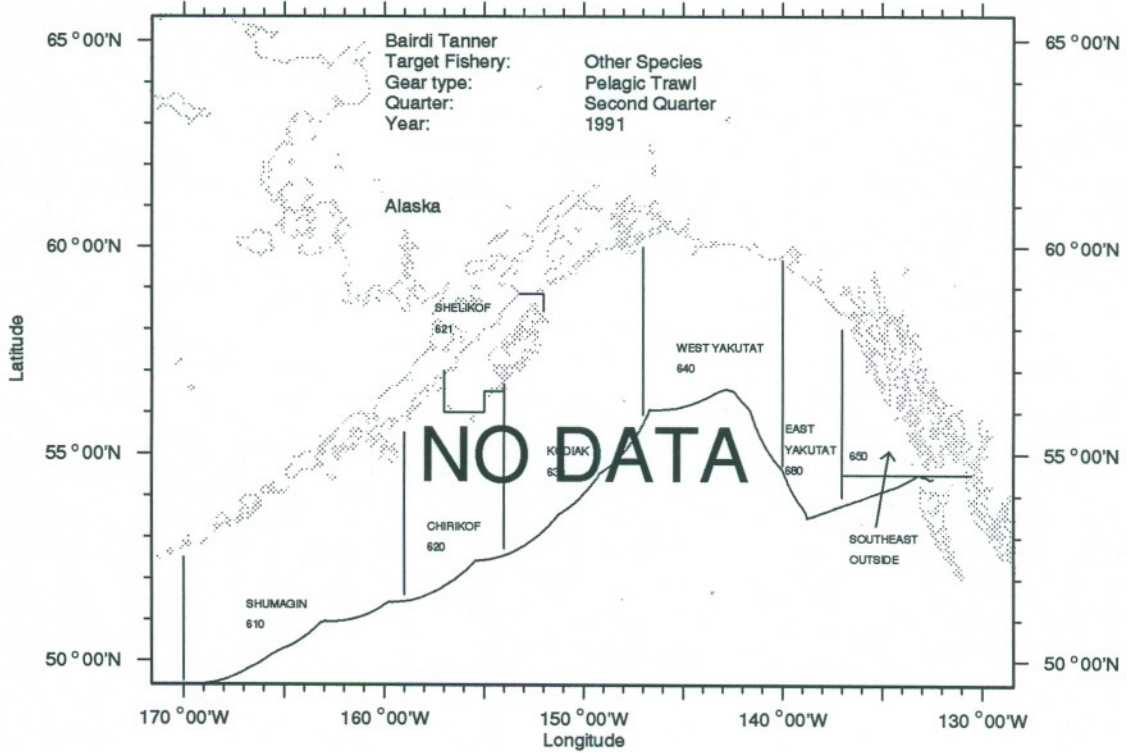
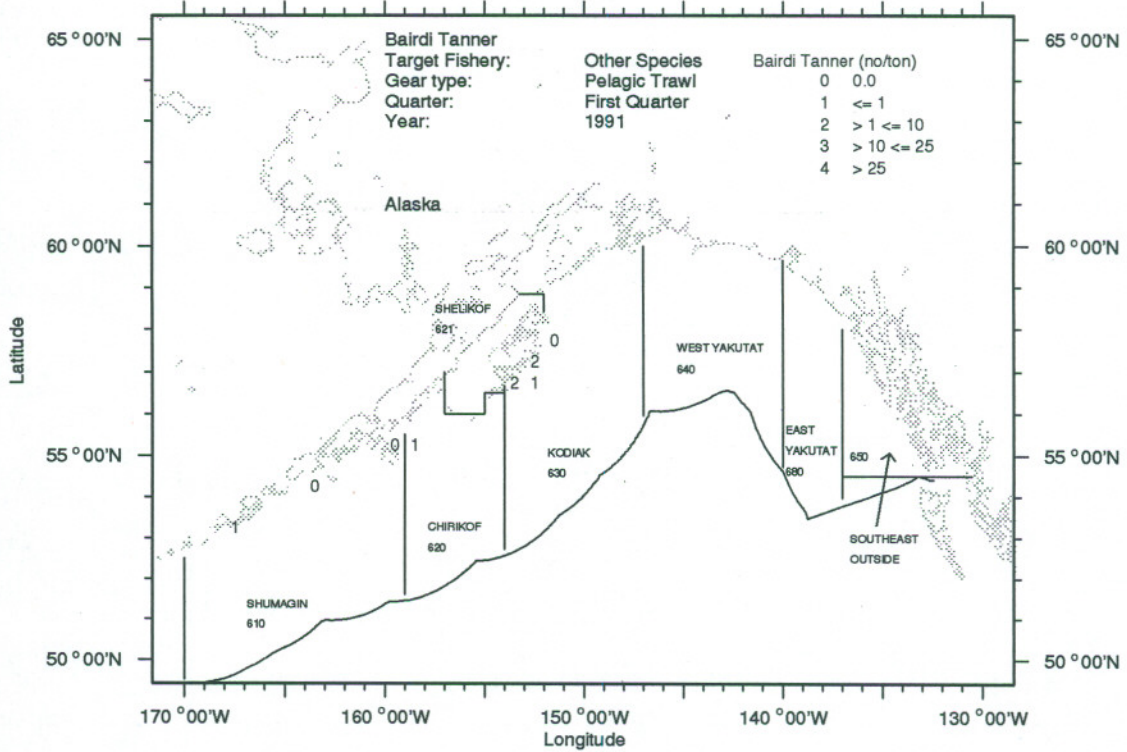


Figure 14.--Continued.

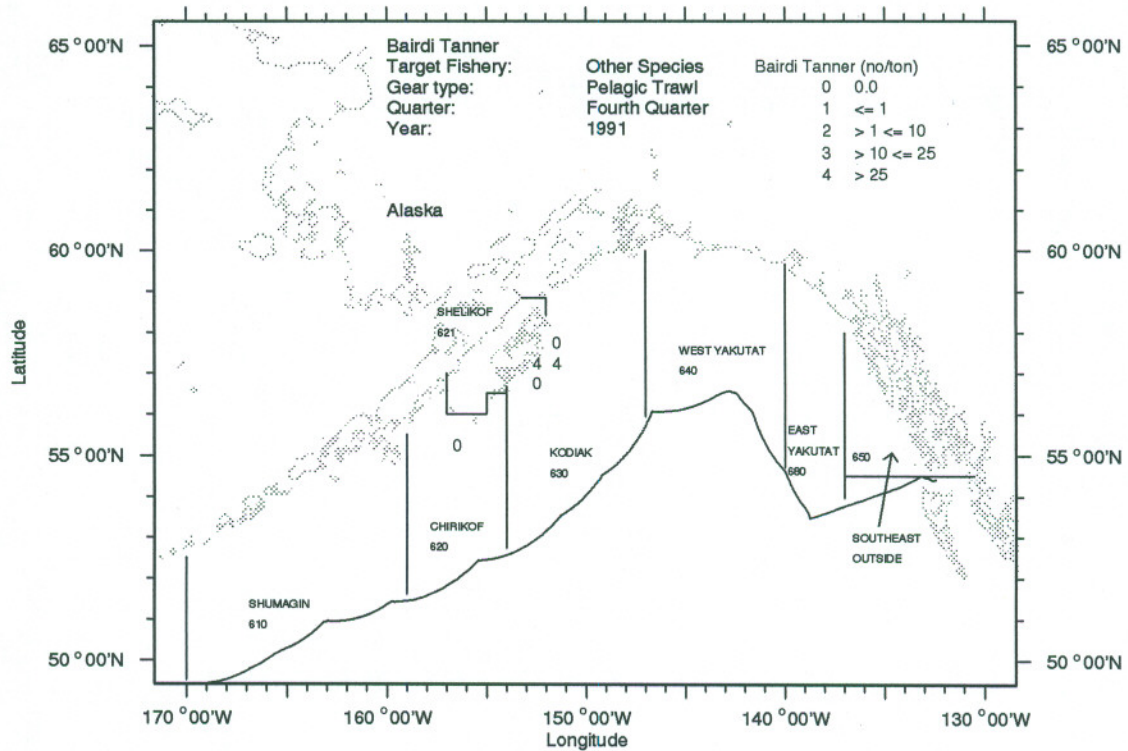
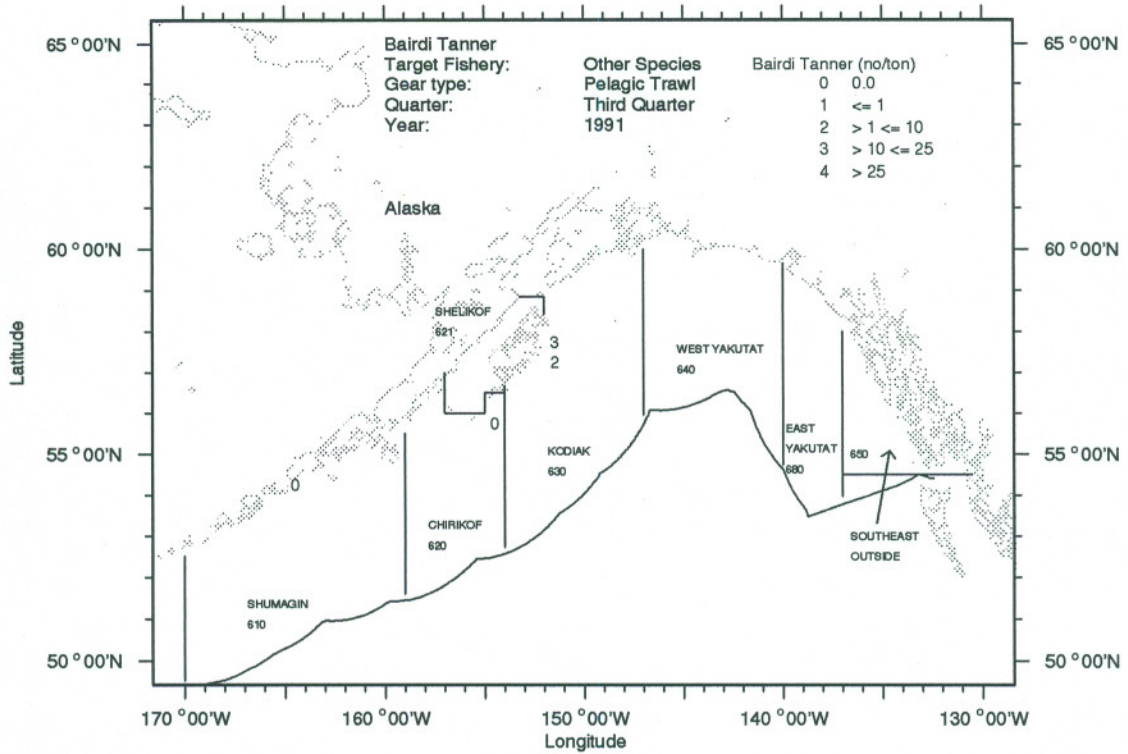


Figure 14.--Continued.

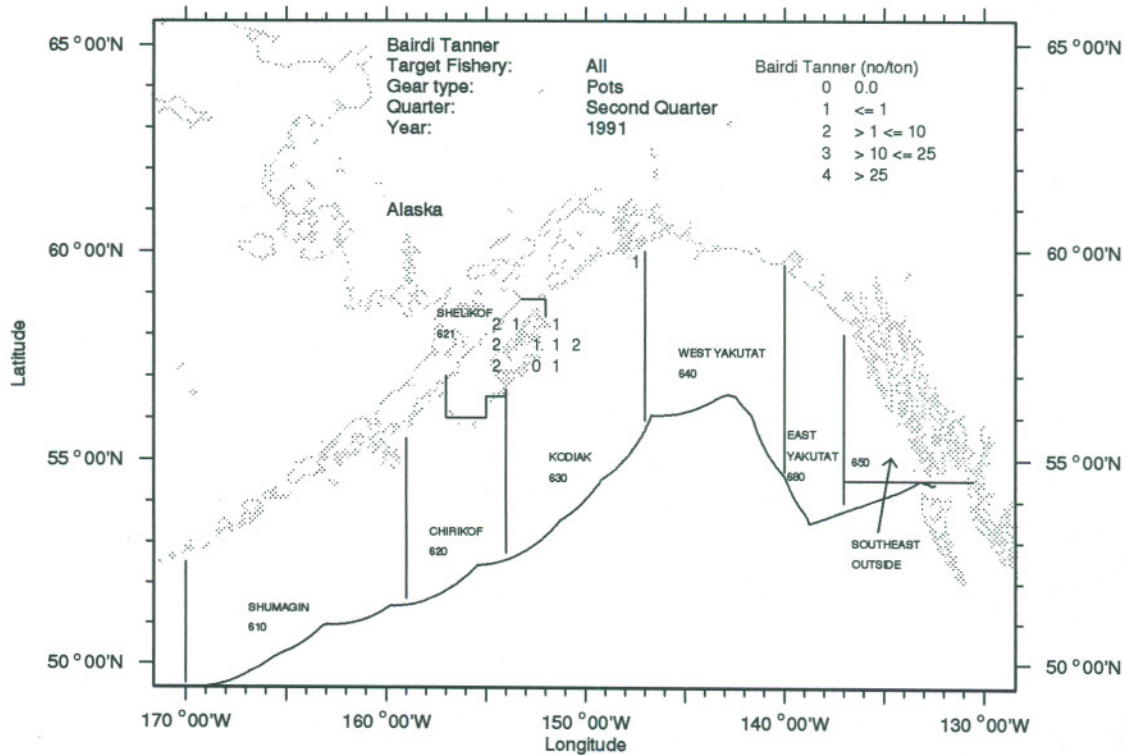
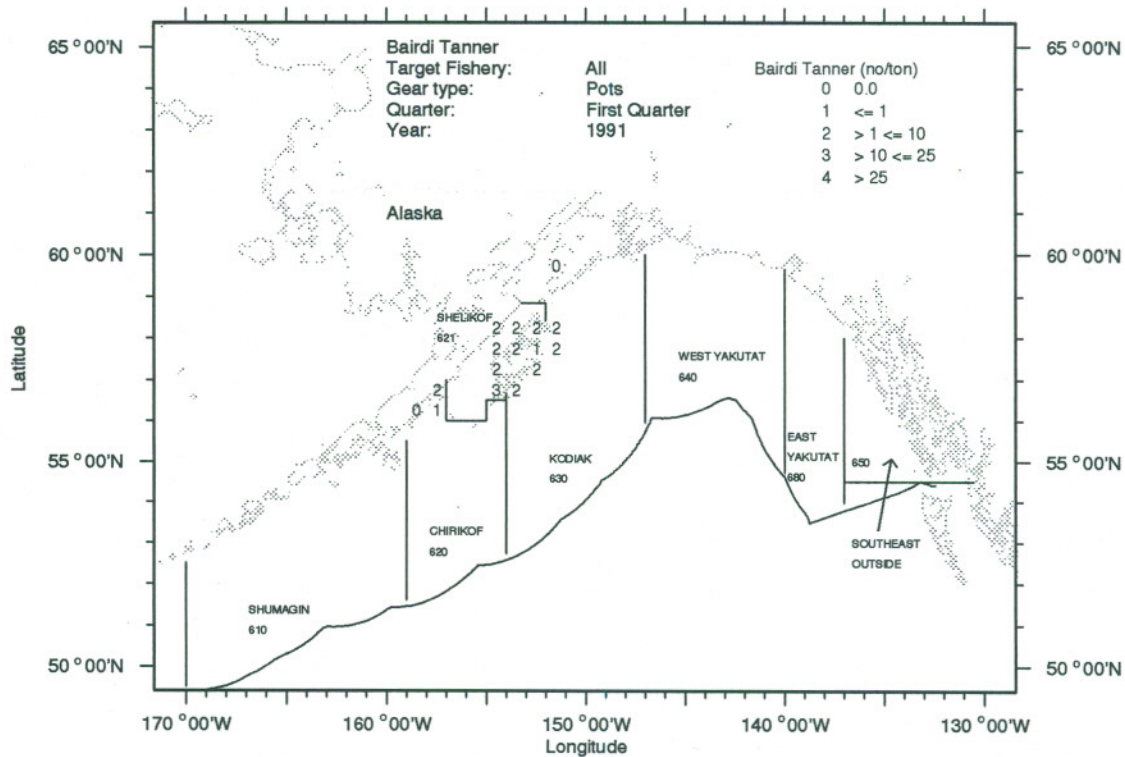


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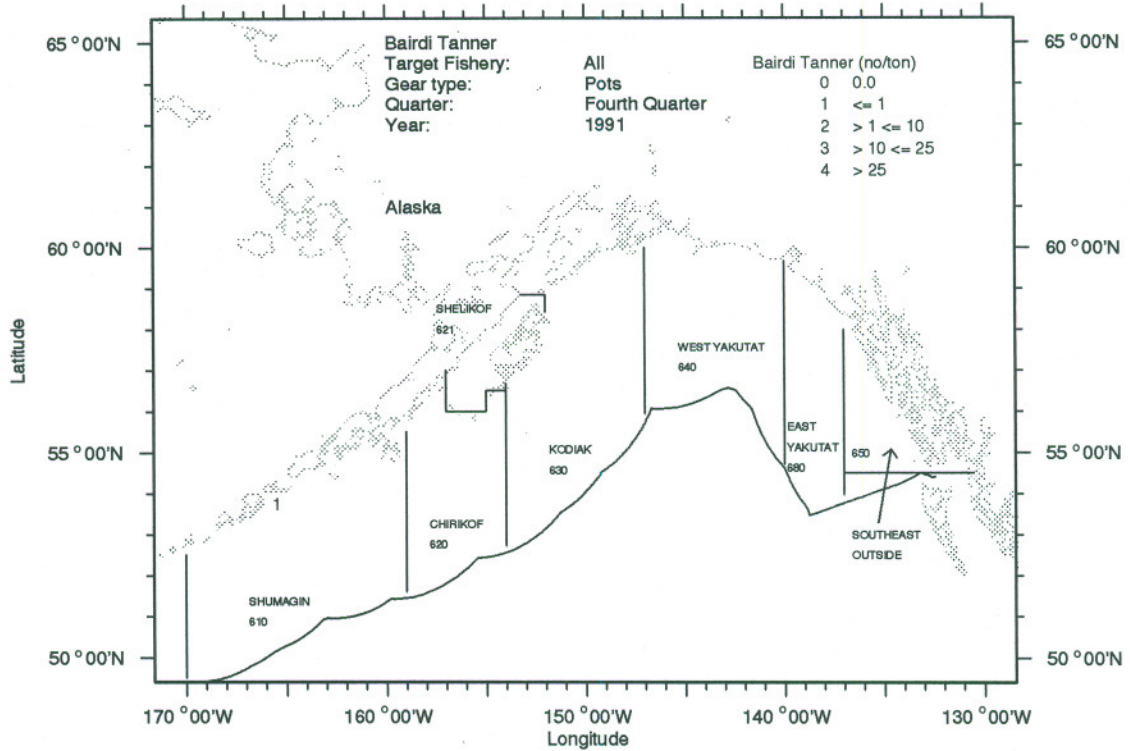
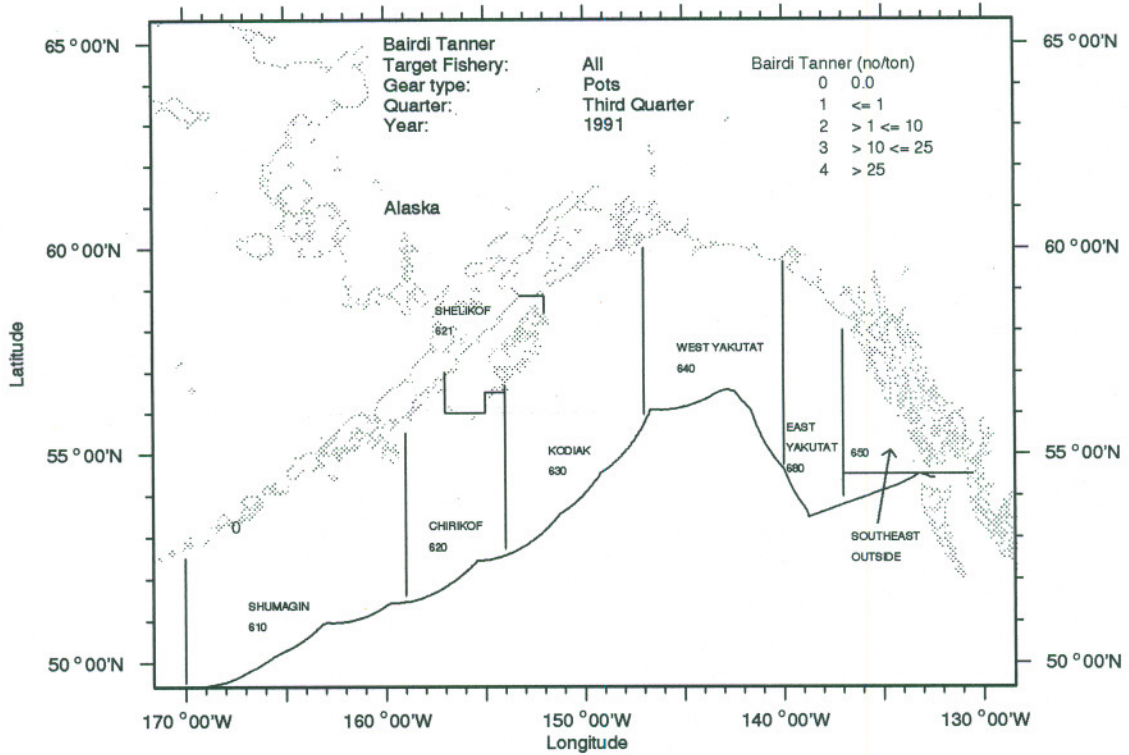


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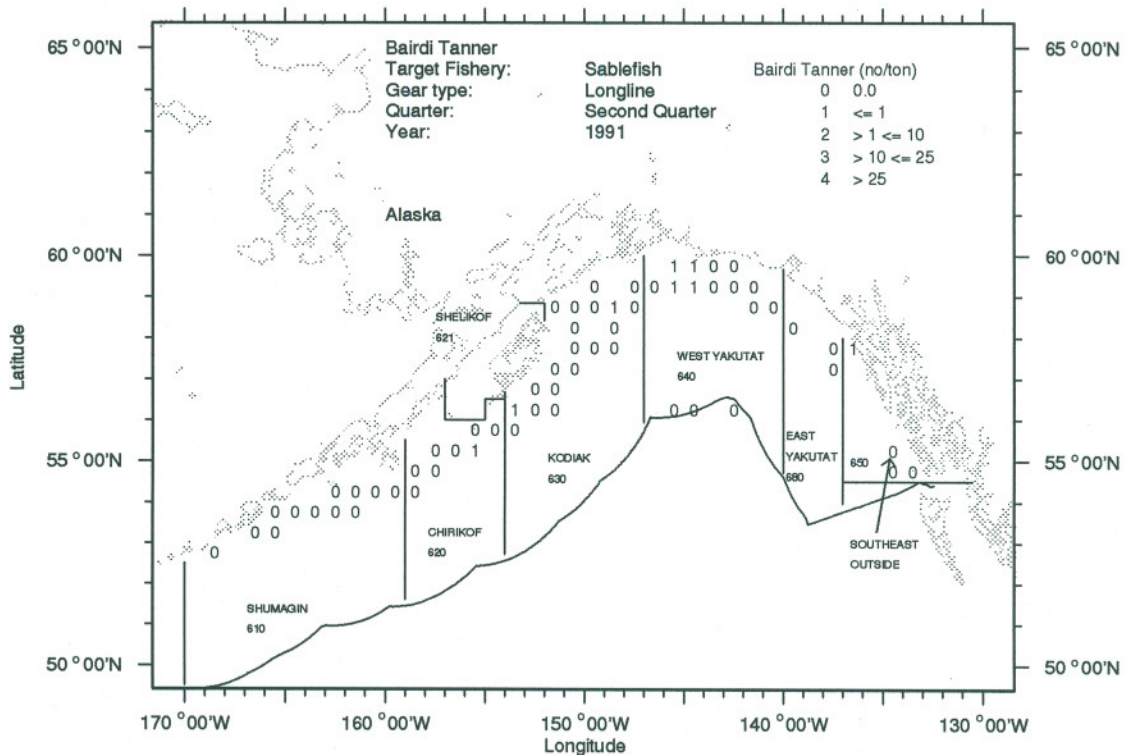
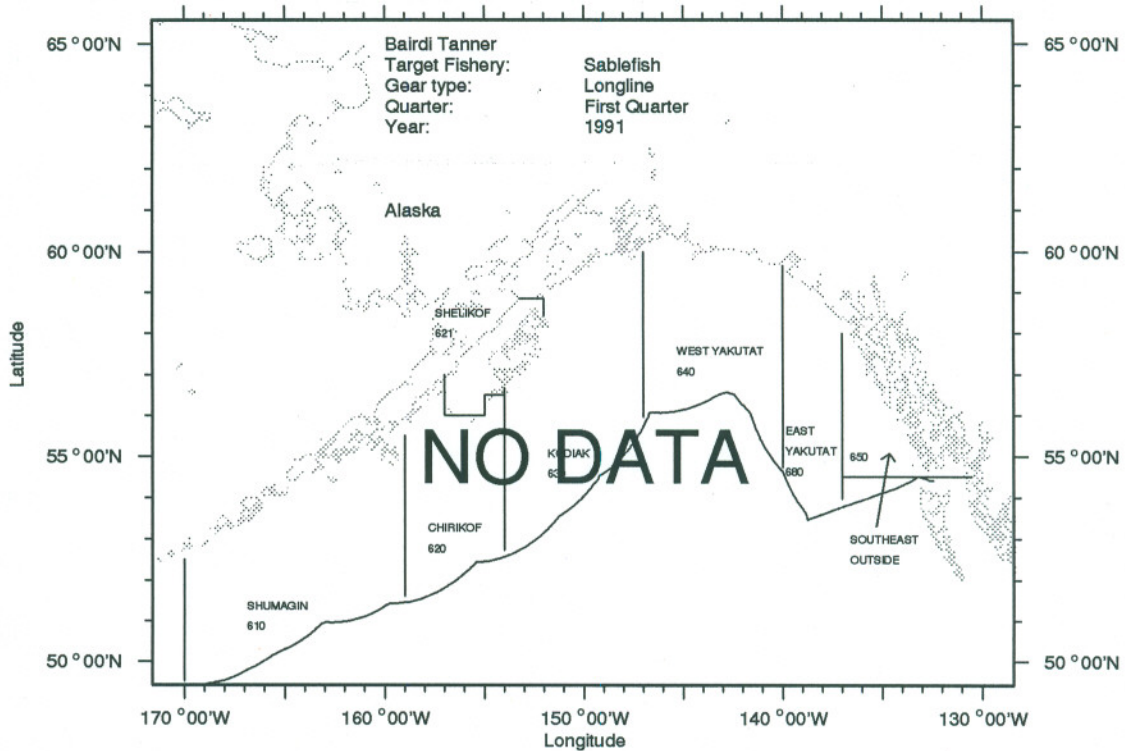


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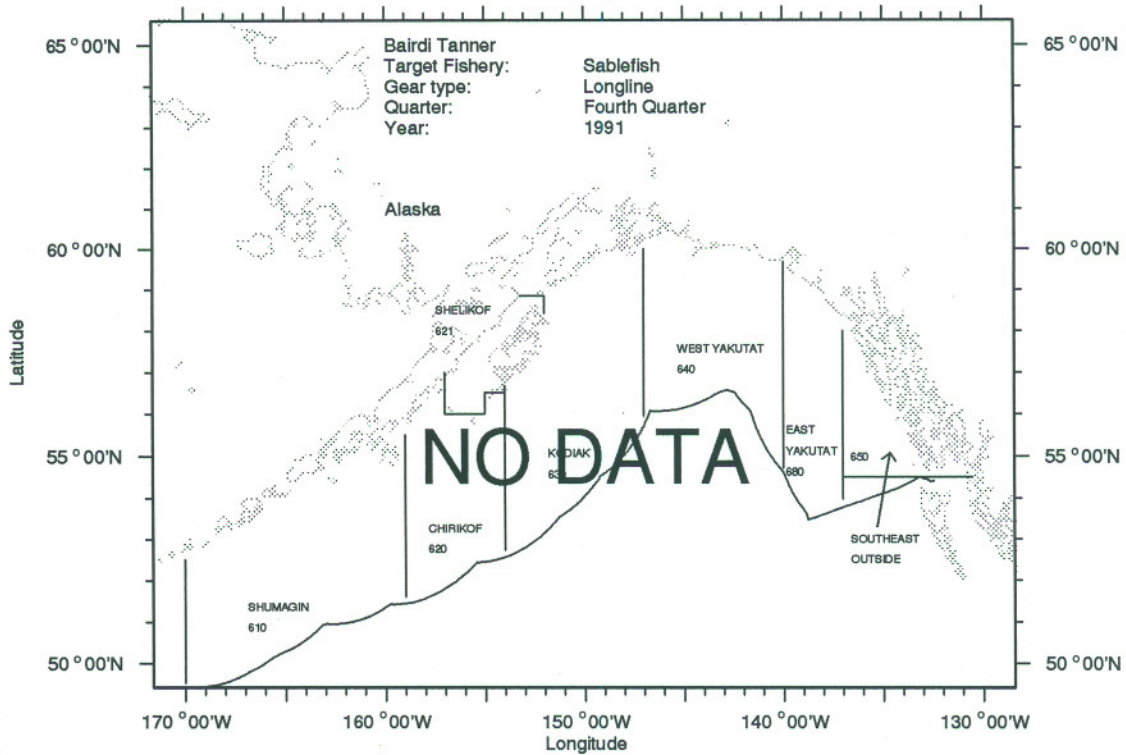
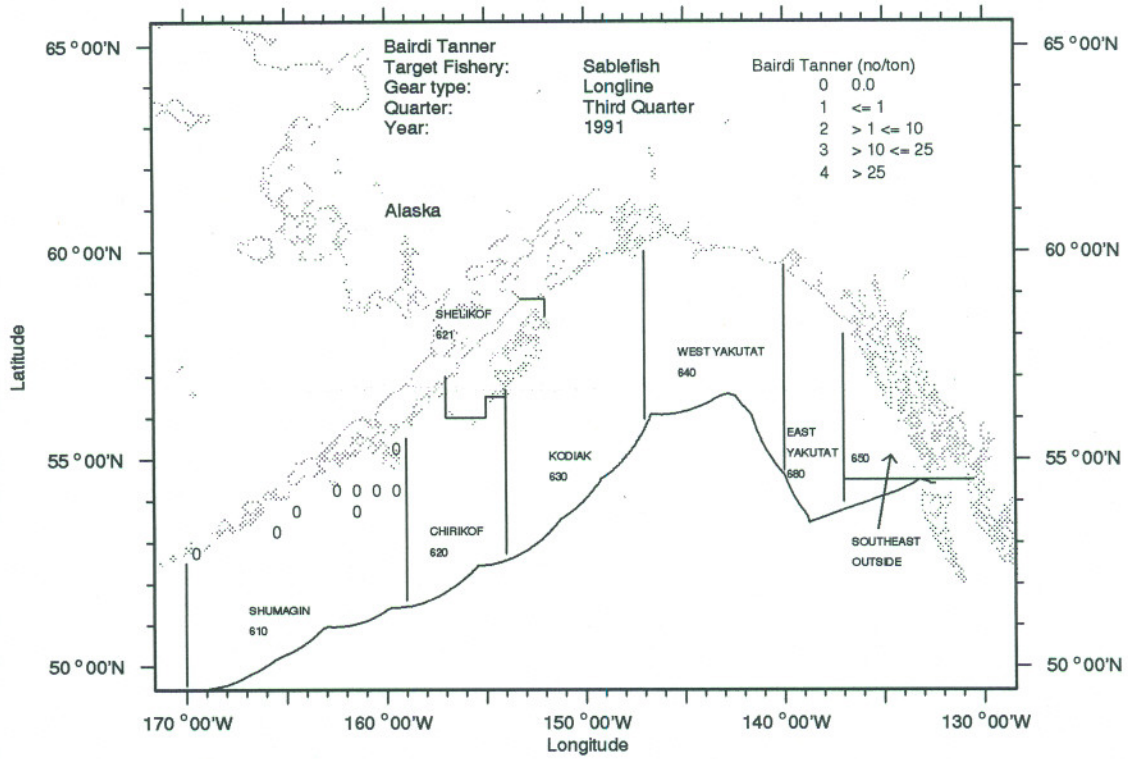


Figure 14.--Continued.

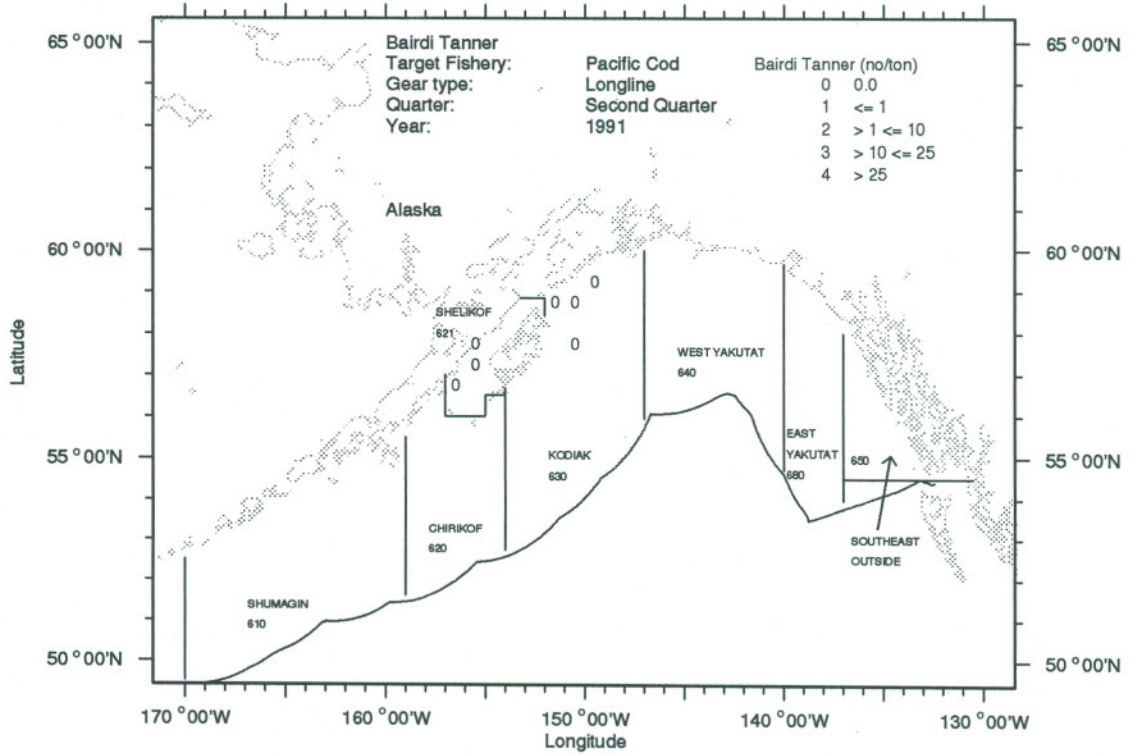
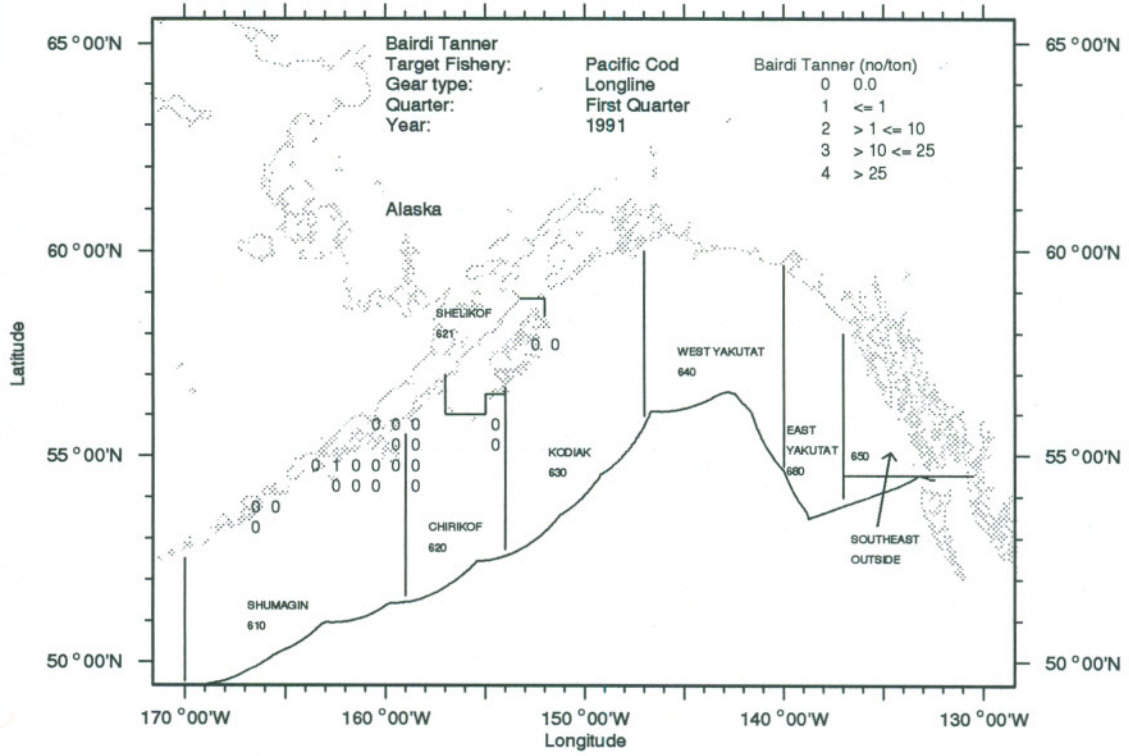


Figure 14.--Continued.

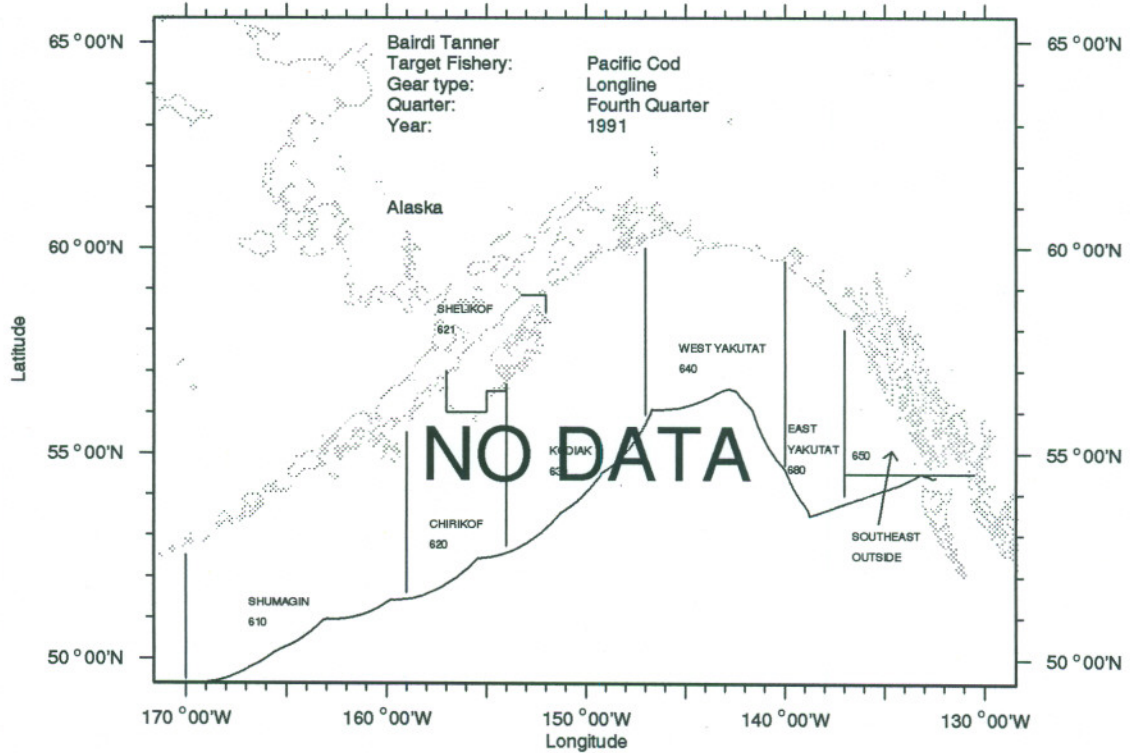
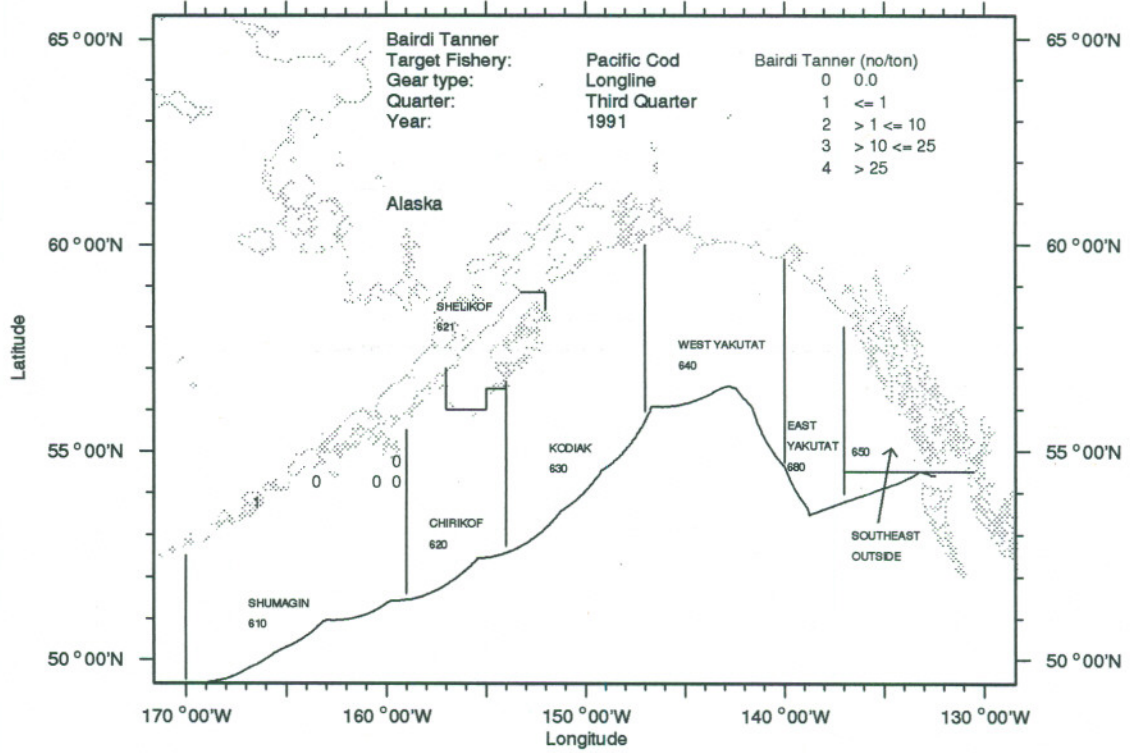


Figure 14.--Continued.

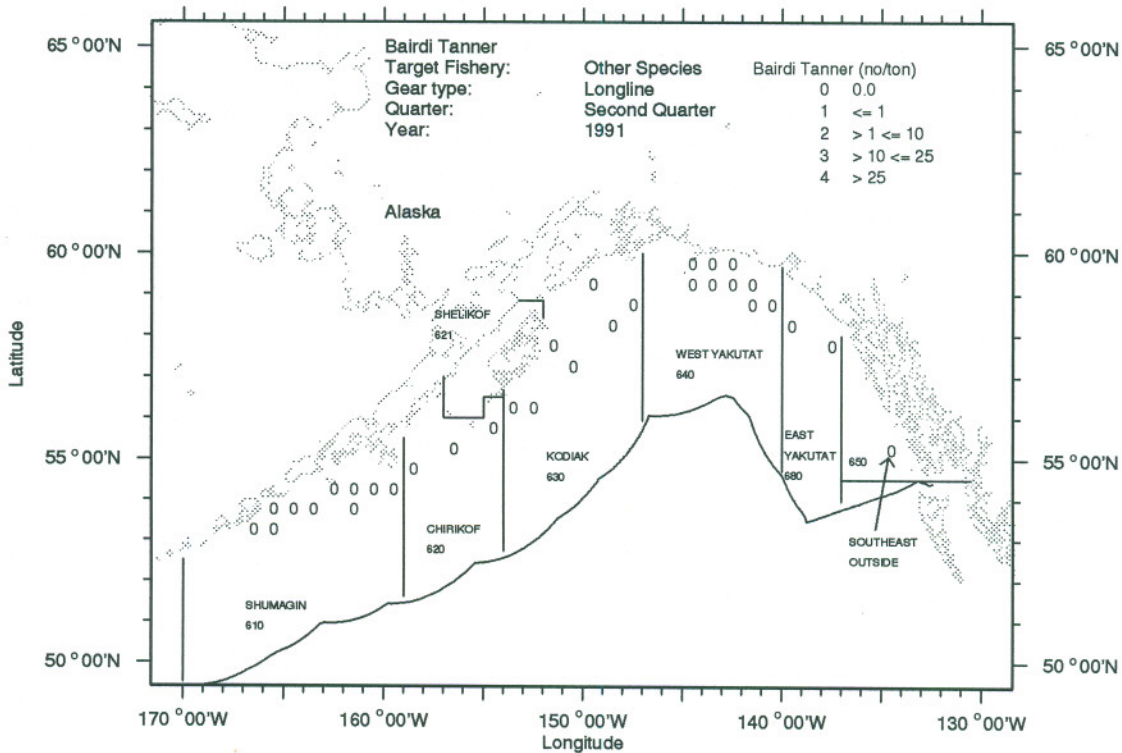
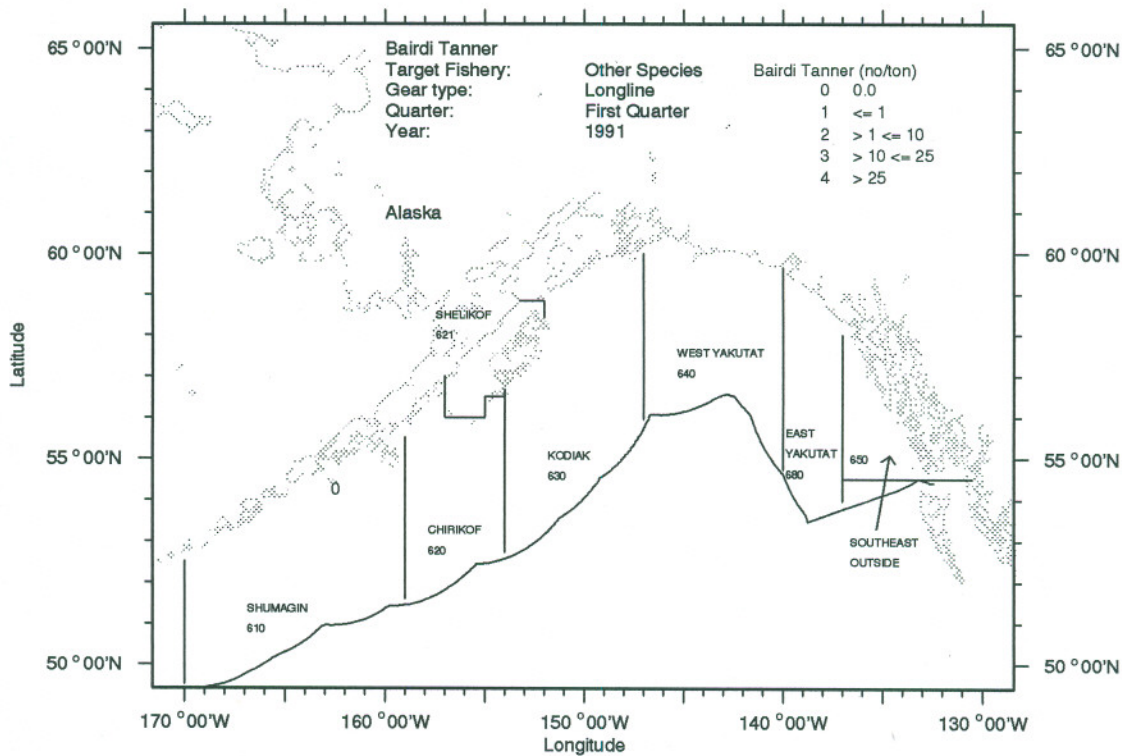


Figure 14.--Continued.

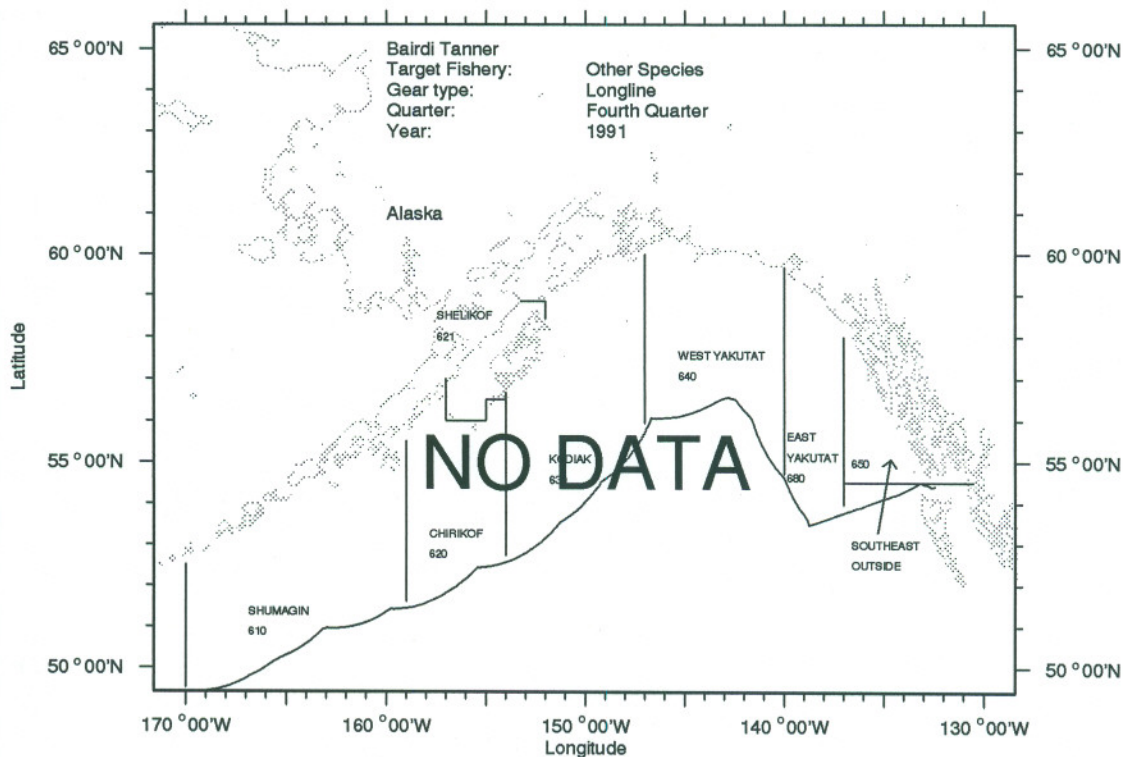
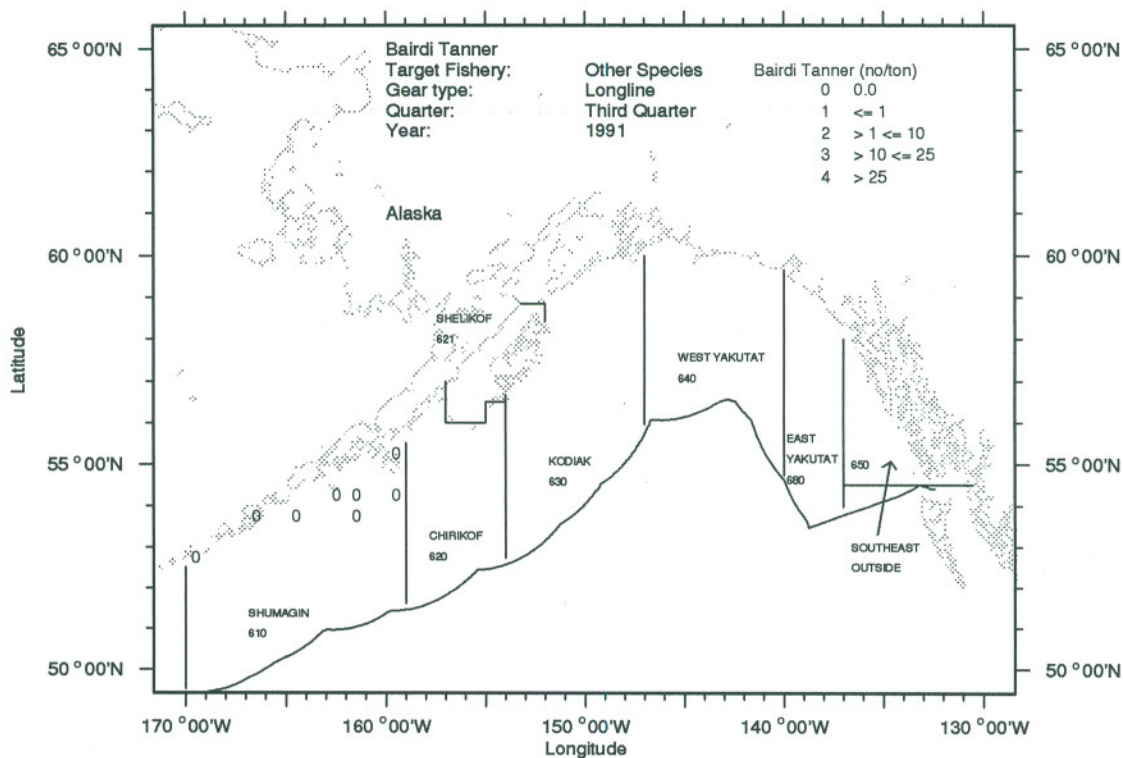


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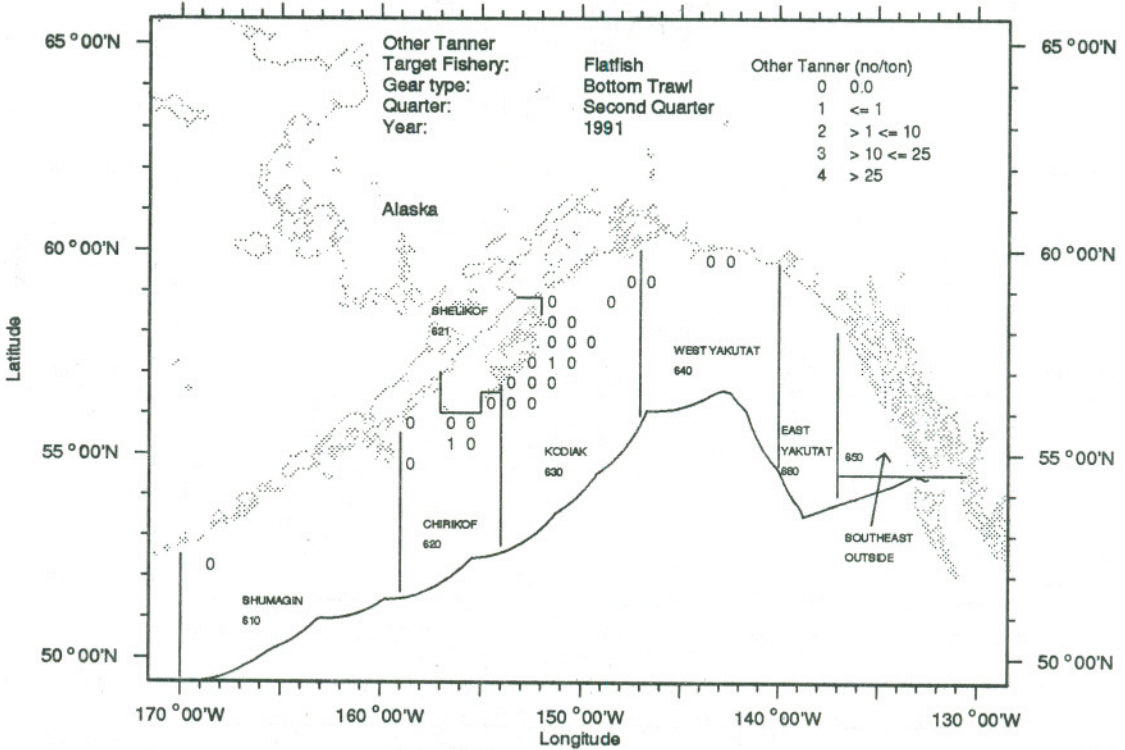
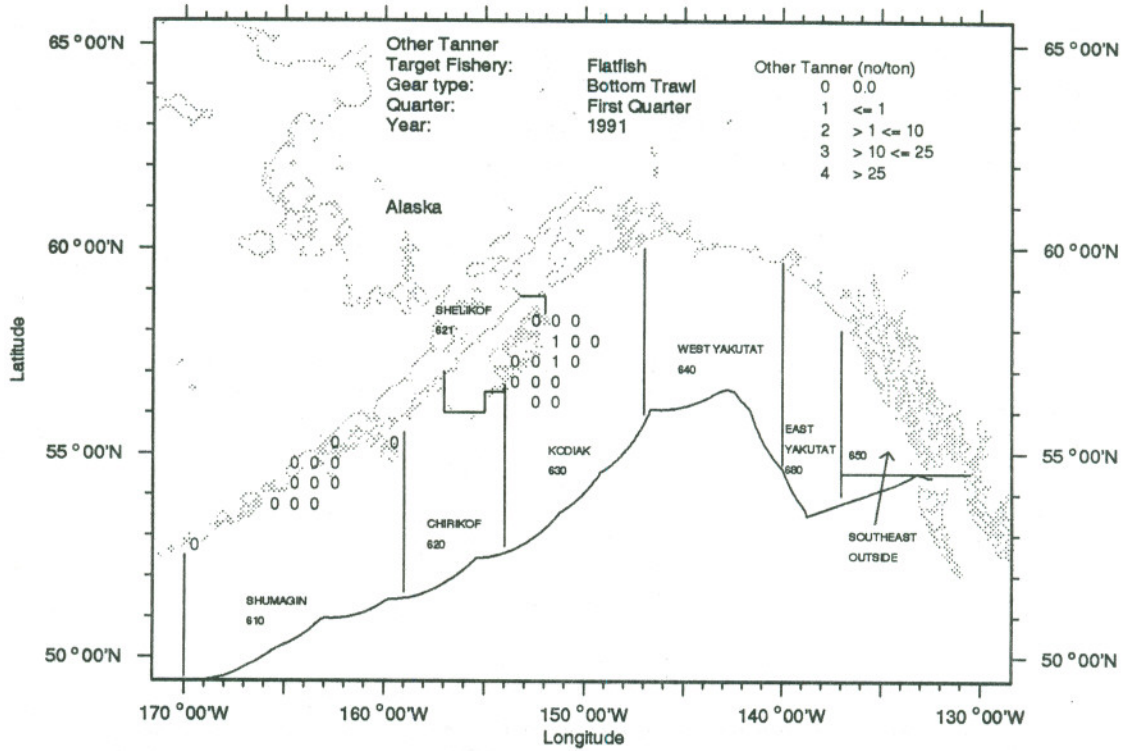


Figure 15.--Bycatch (no./metric ton (t)) of "other" Tanner crab in the U.S. domestic groundfish fisheries by quarter, target fishery, gear type, and ½° latitude and 1° longitude areas in the Gulf of Alaska region, 1991.

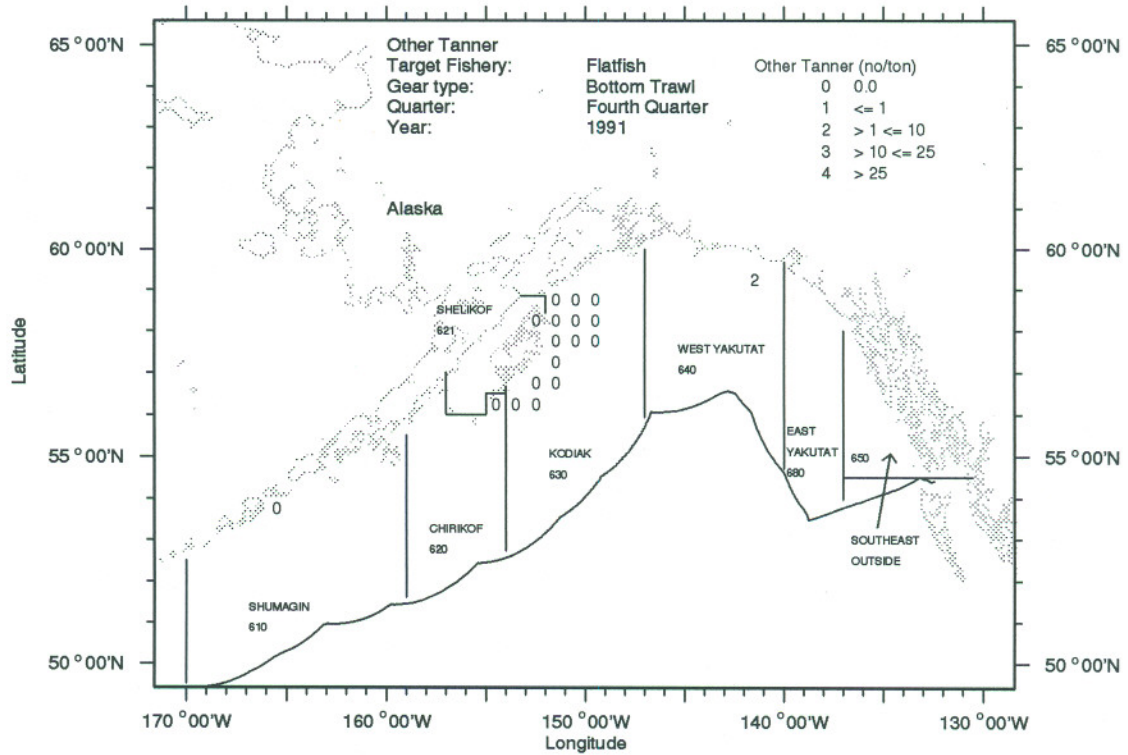
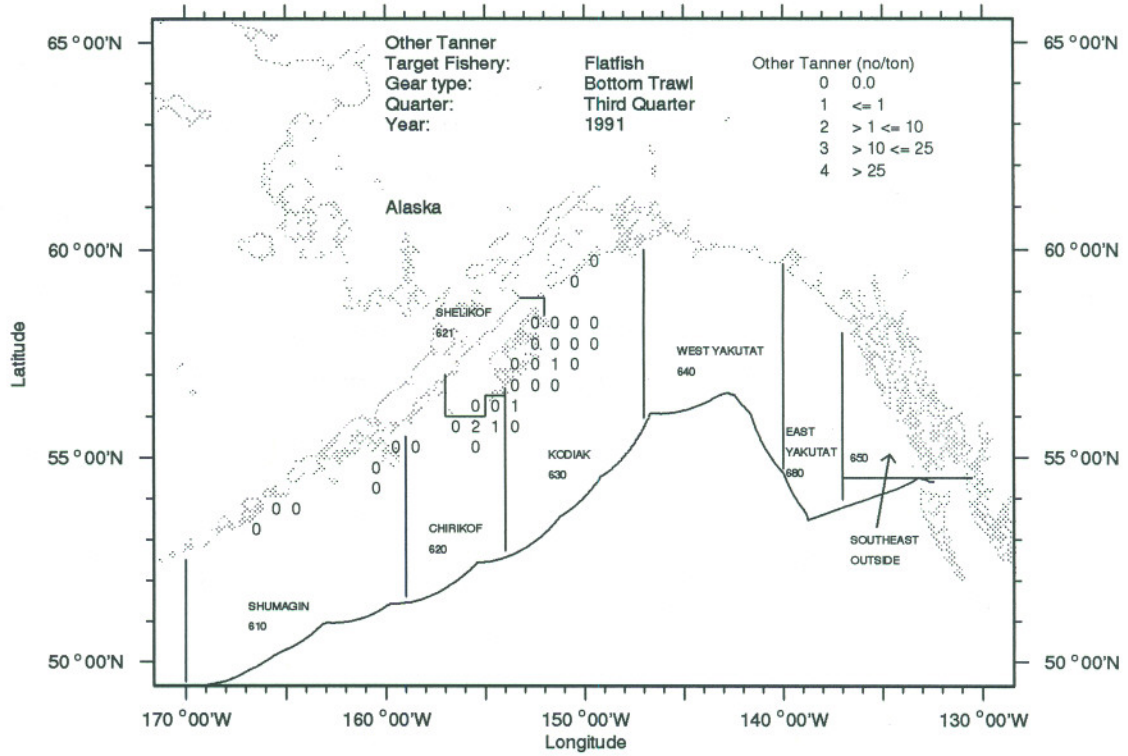


Figure 15.--Continued.

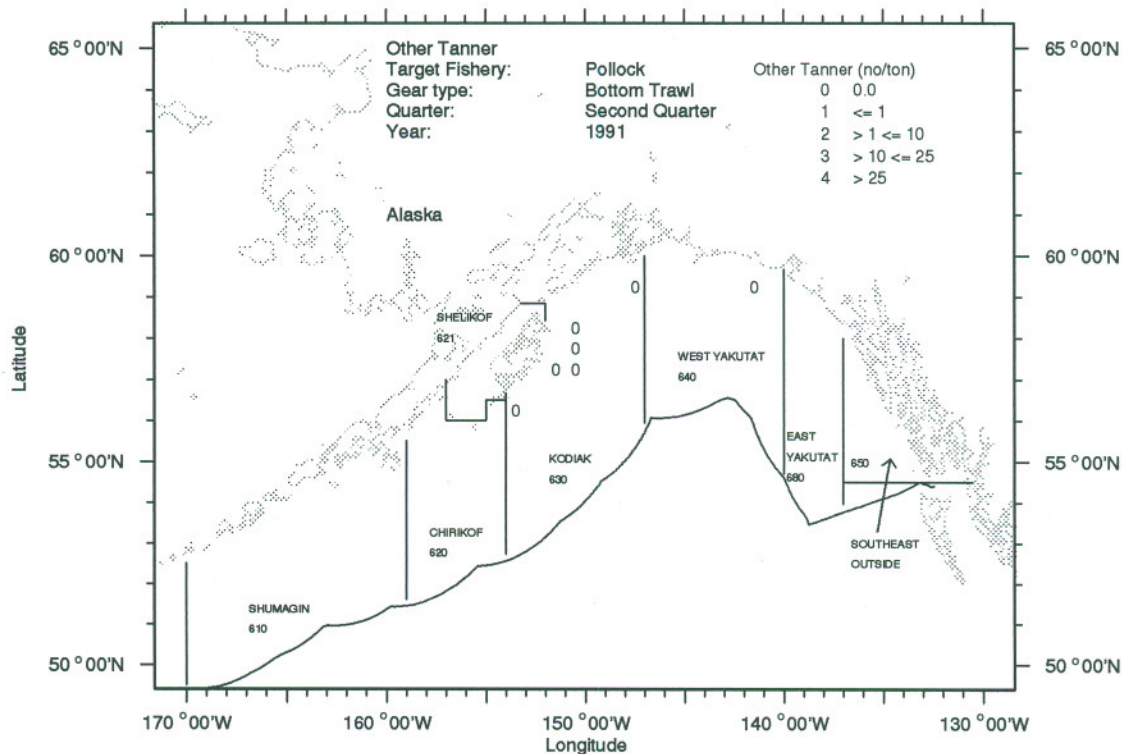
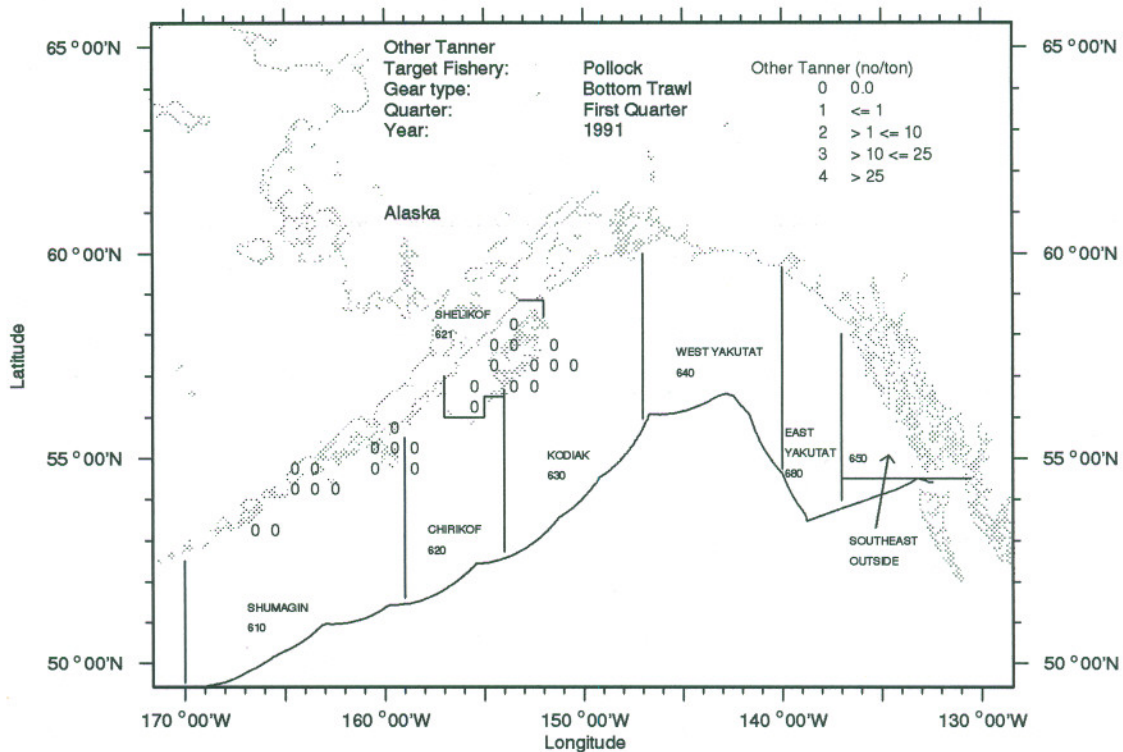


Figure 15.--Continued.

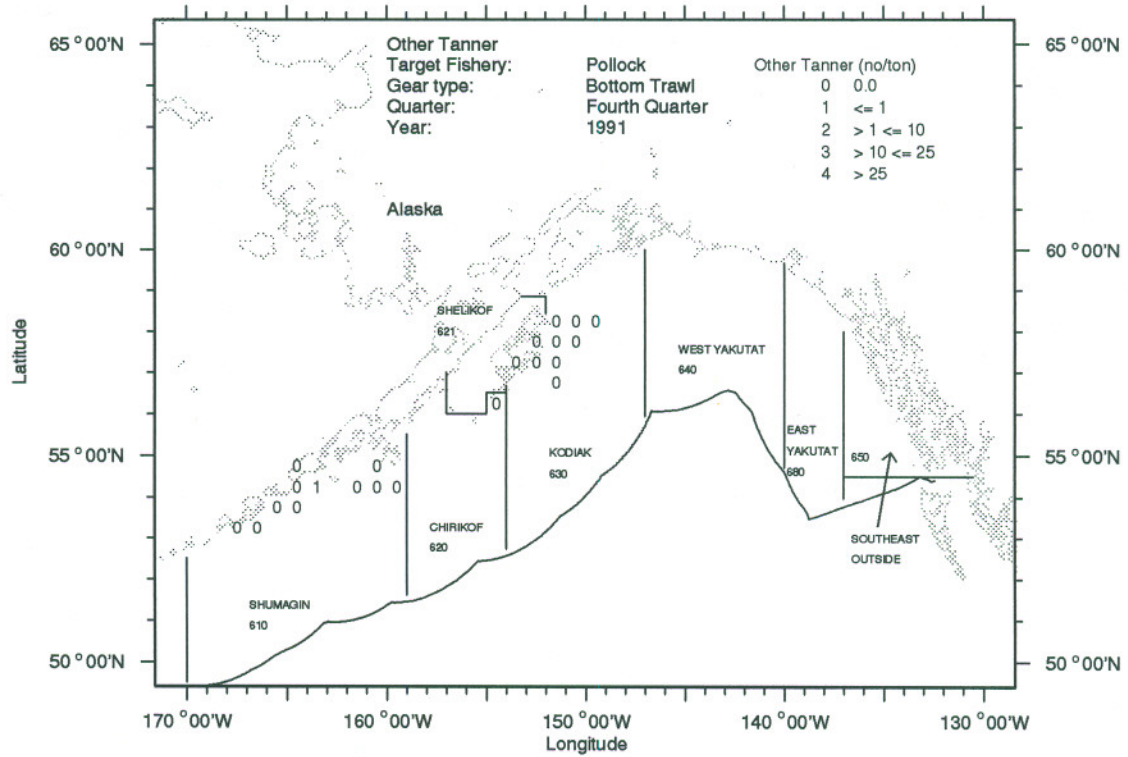
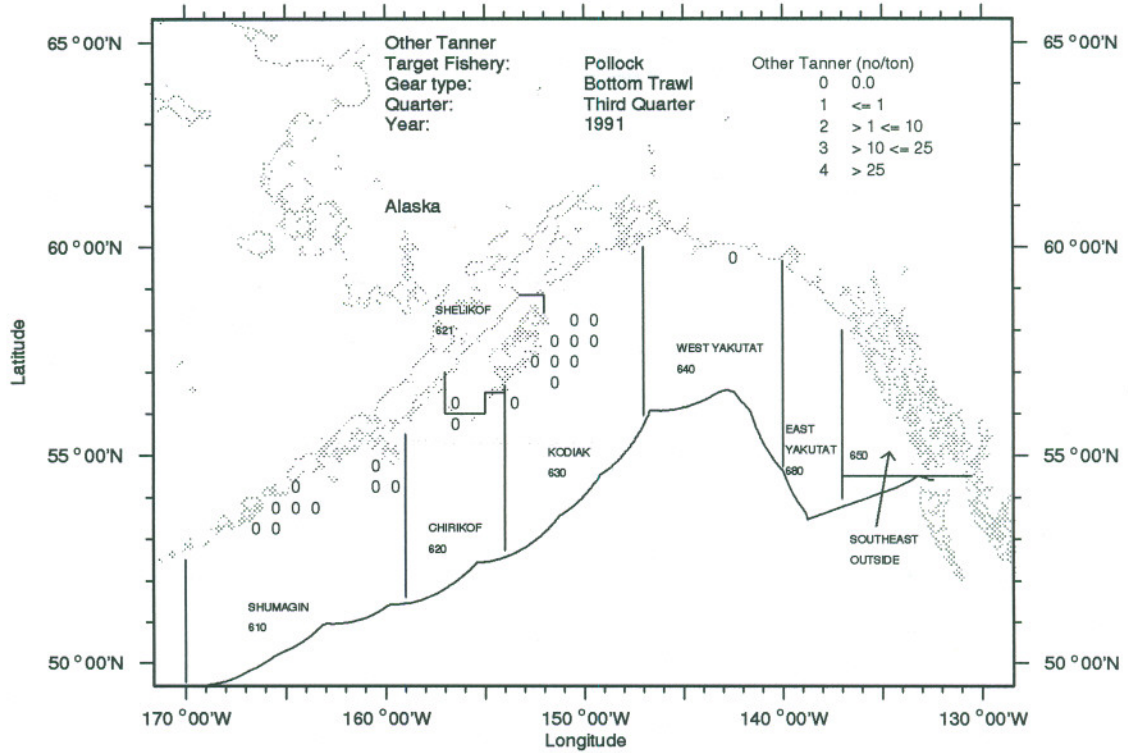


Figure 15.--Continued.

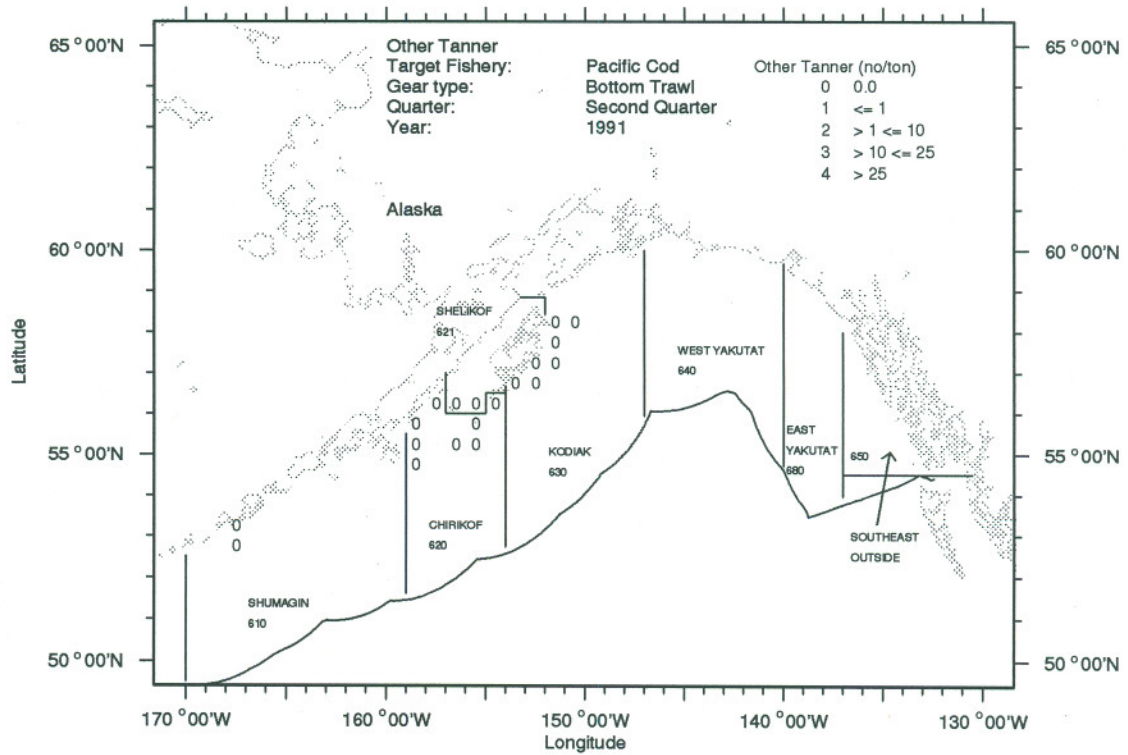
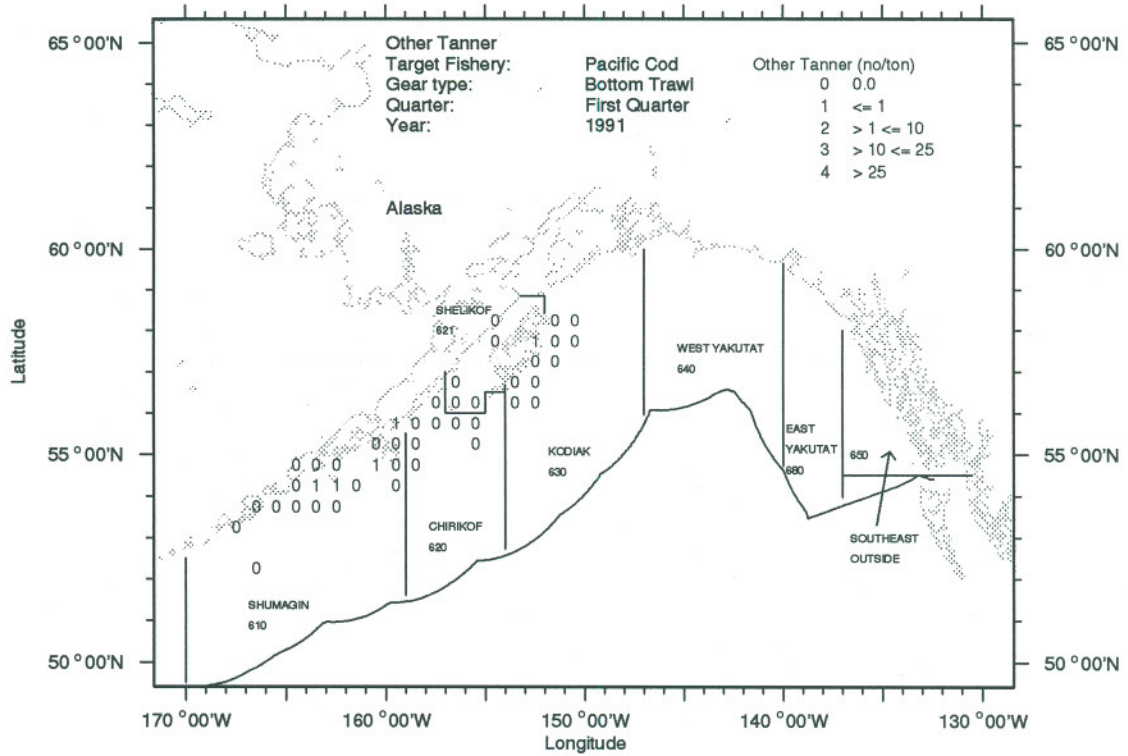


Figure 15.--Continued.

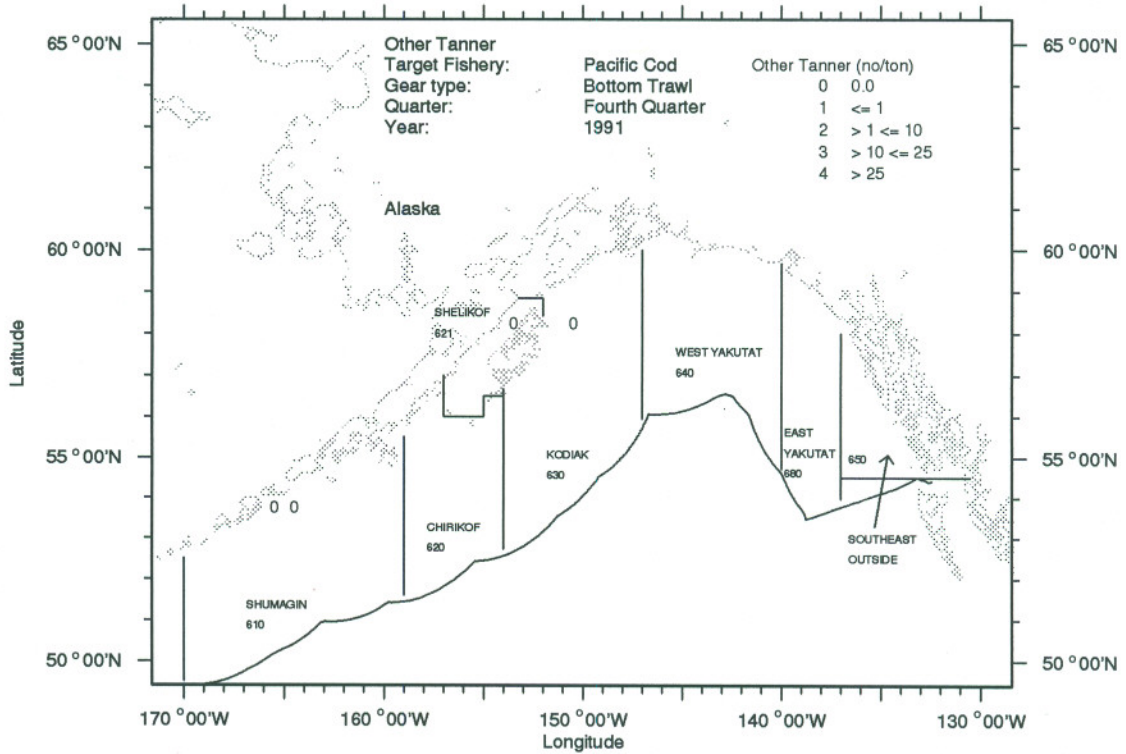
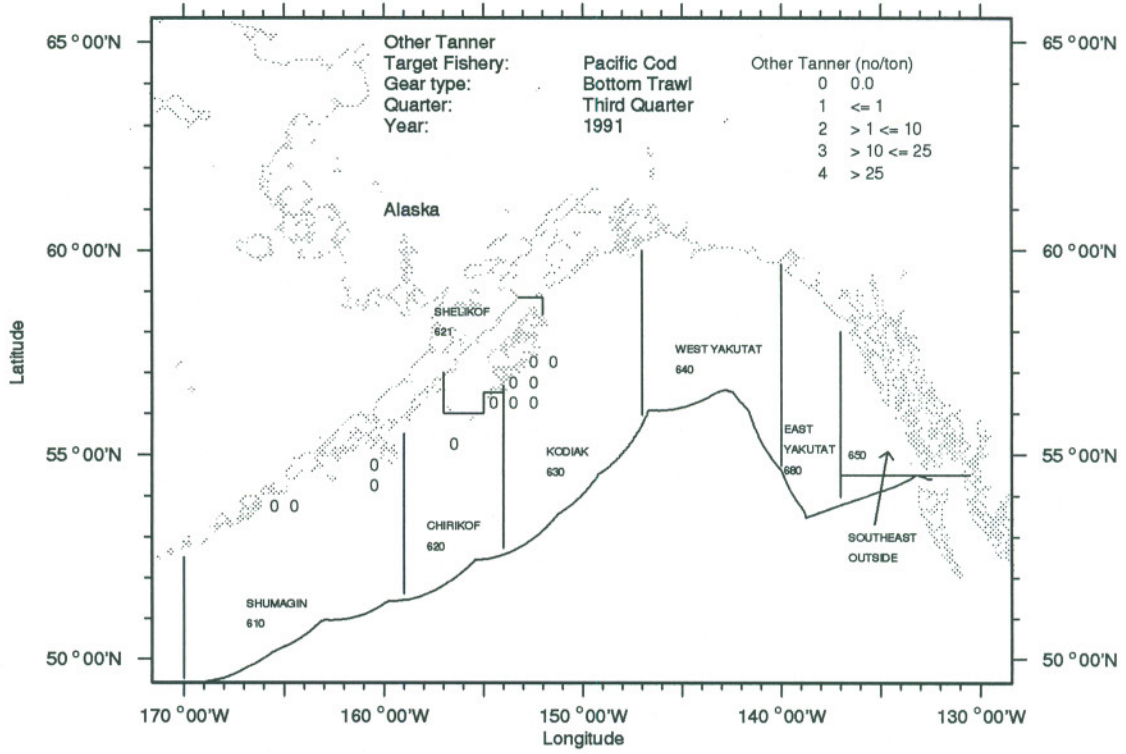


Figure 15.--Continued.

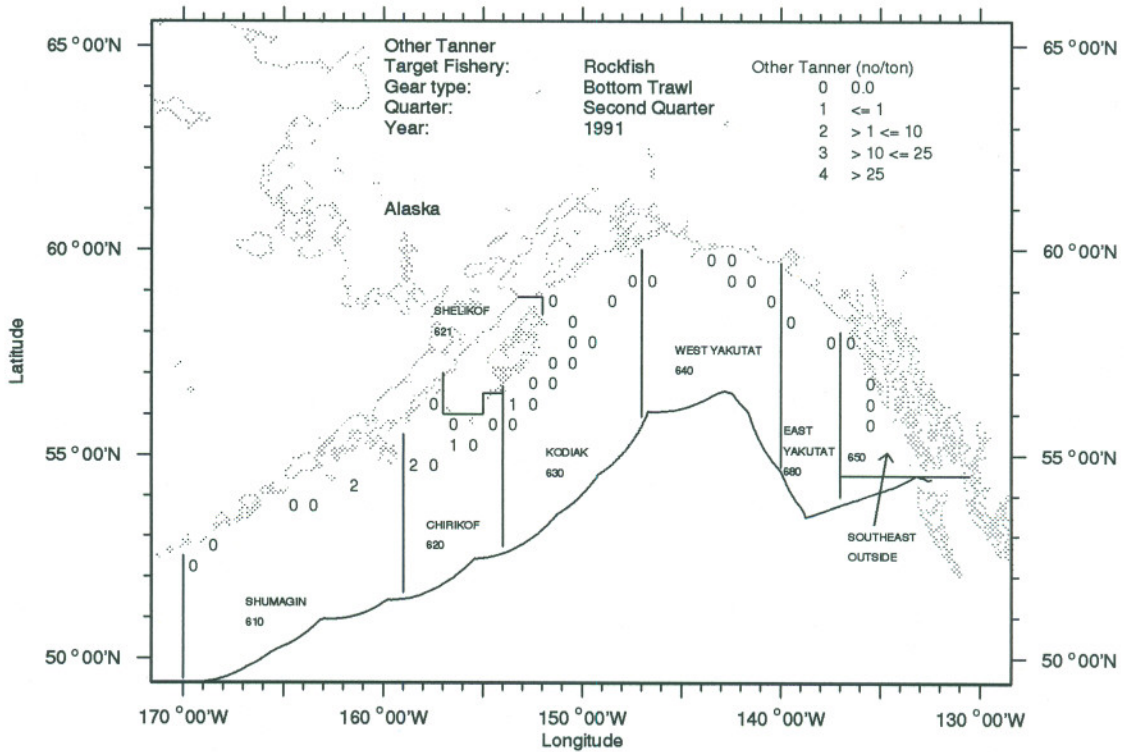
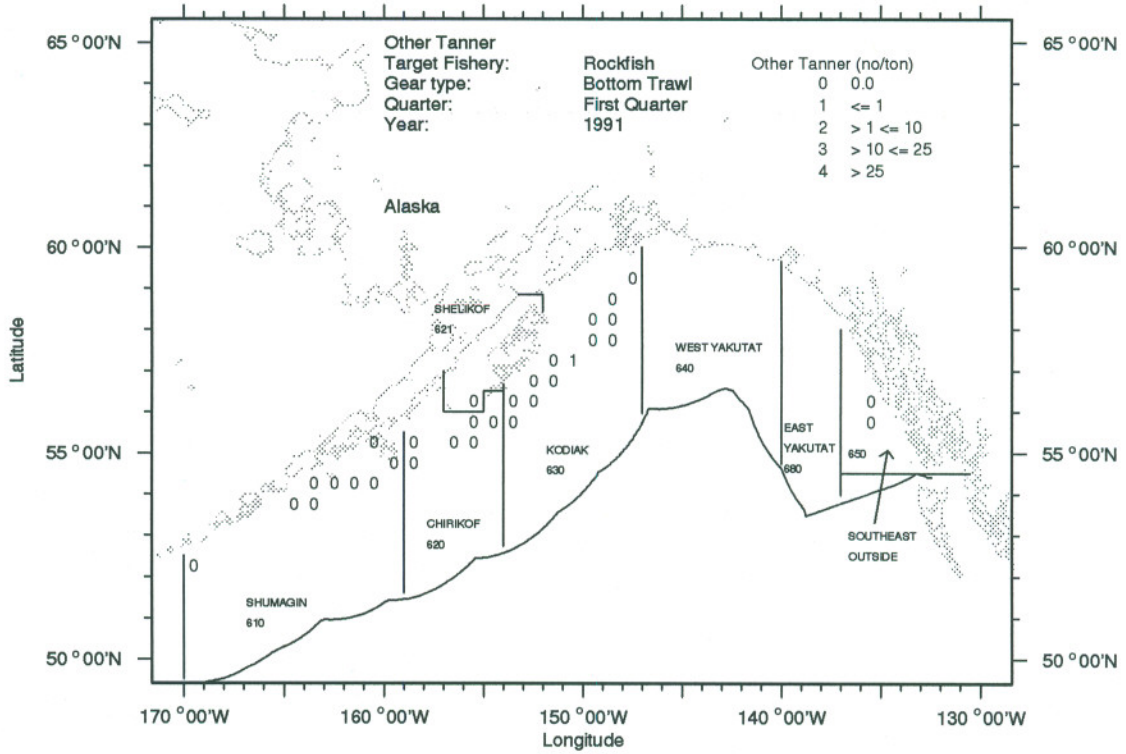


Figure 15.--Continued.

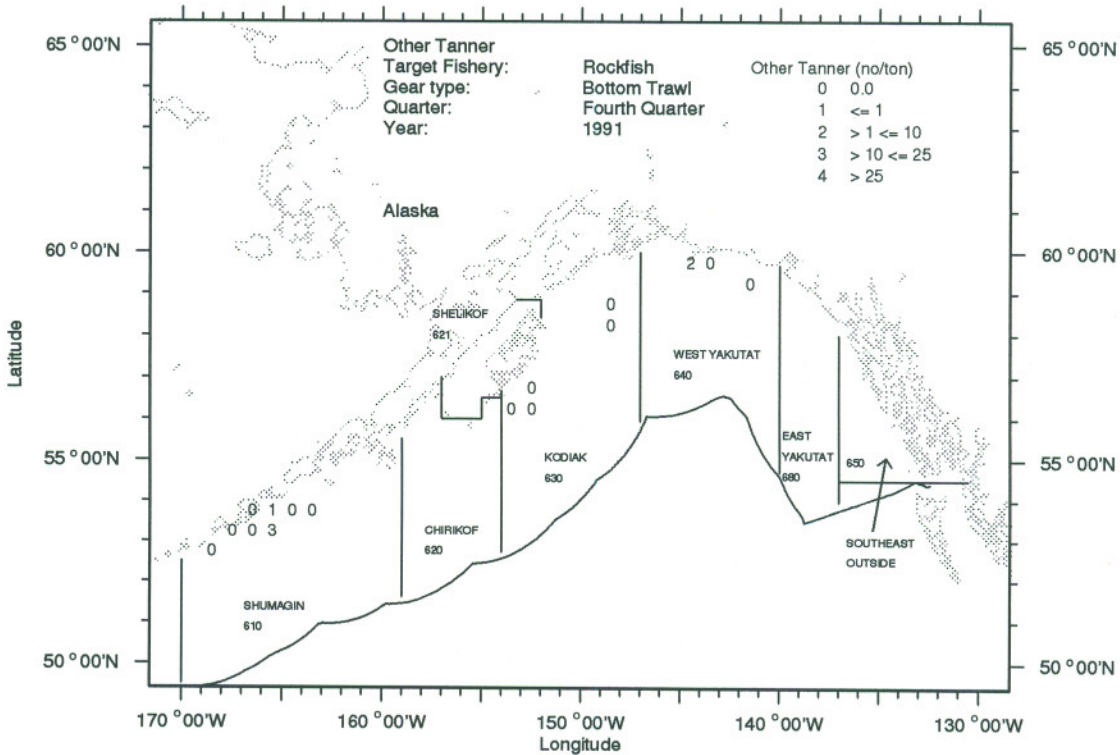
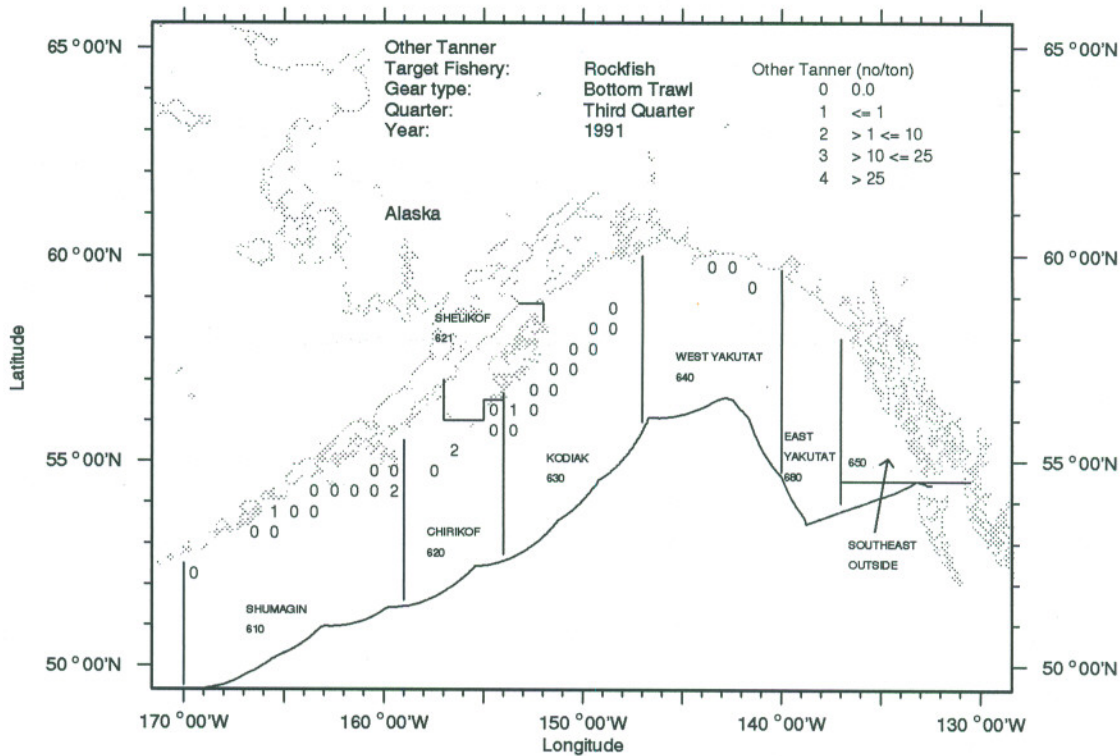


Figure 15.--Continued.

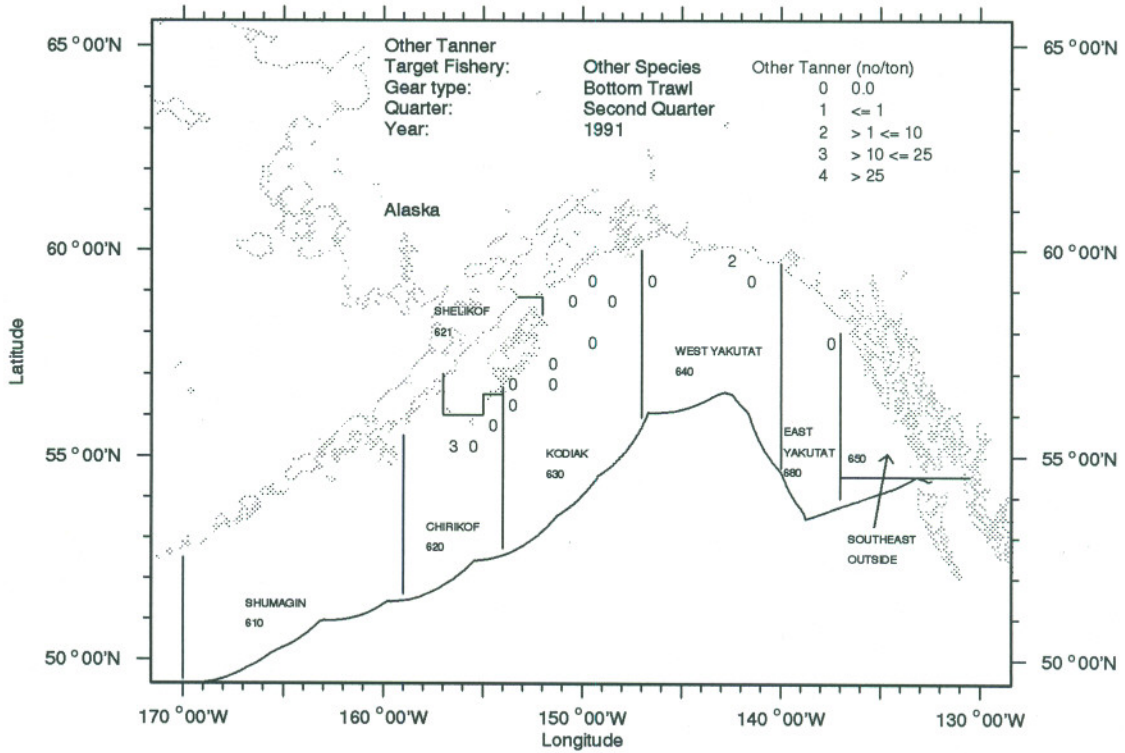
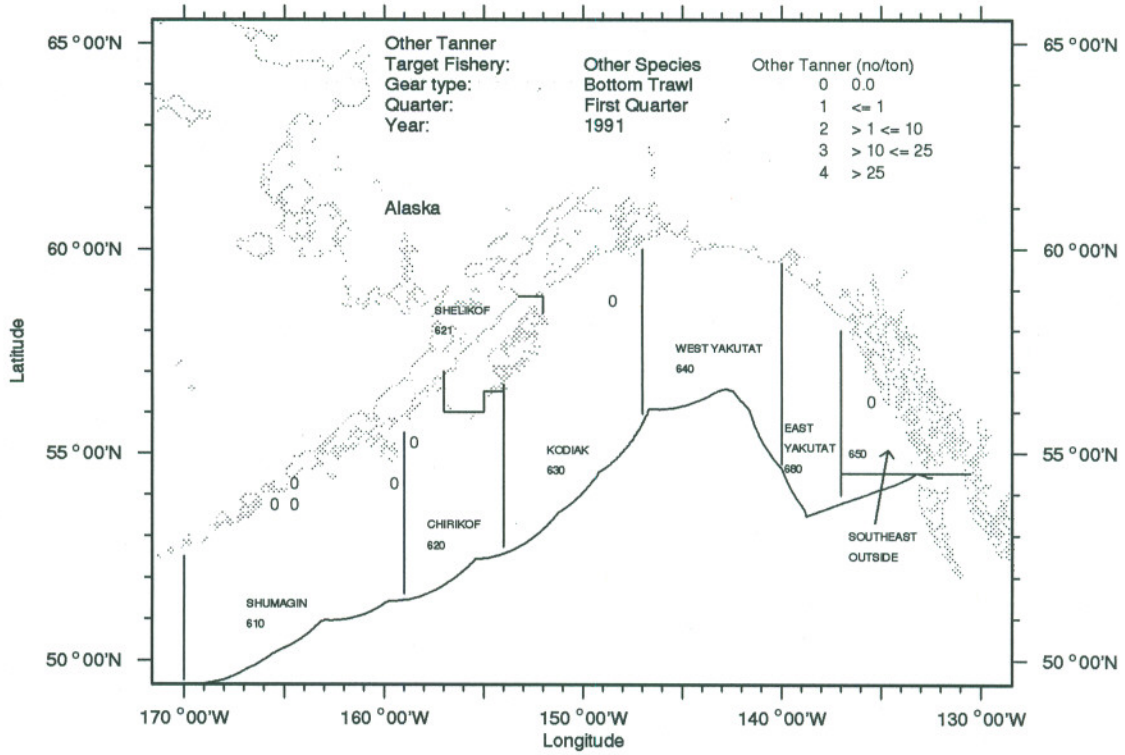


Figure 15.--Continued.

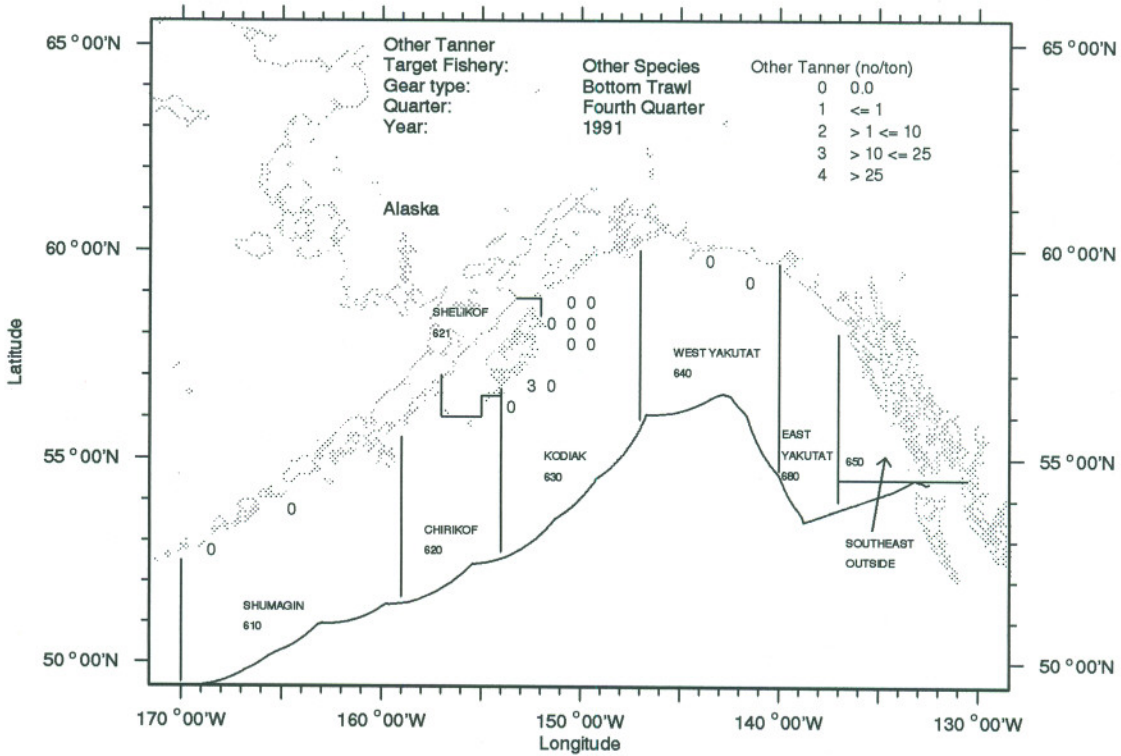
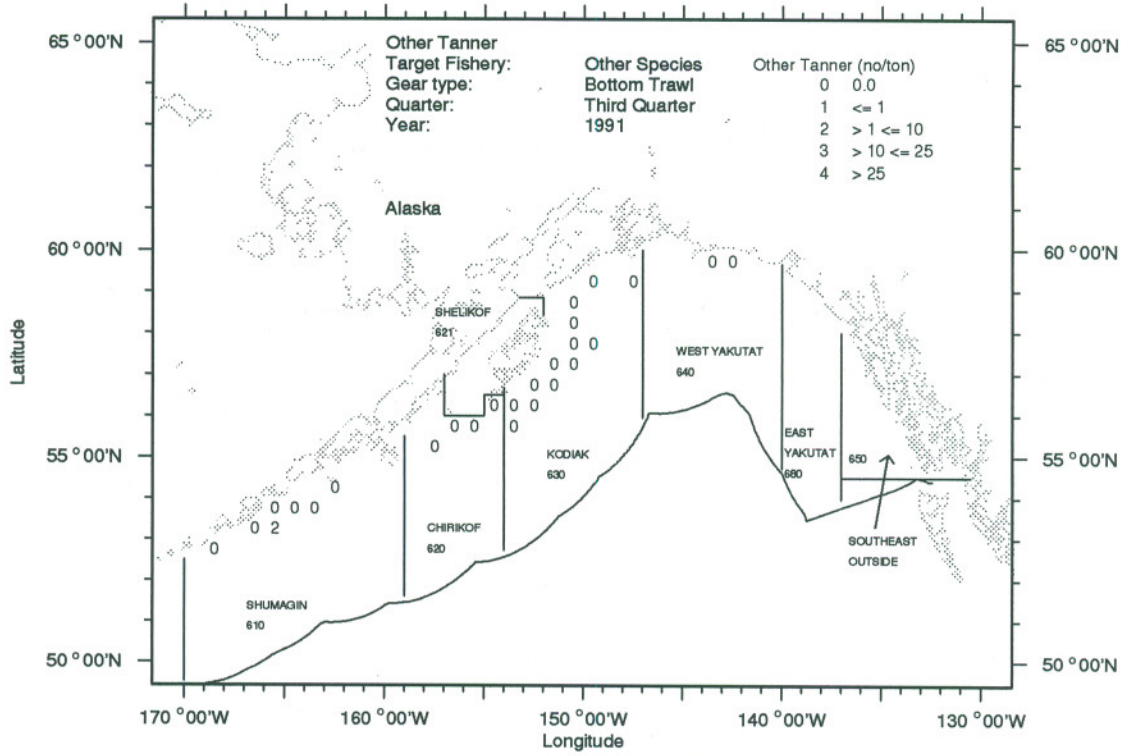


Figure 15.--Continued.

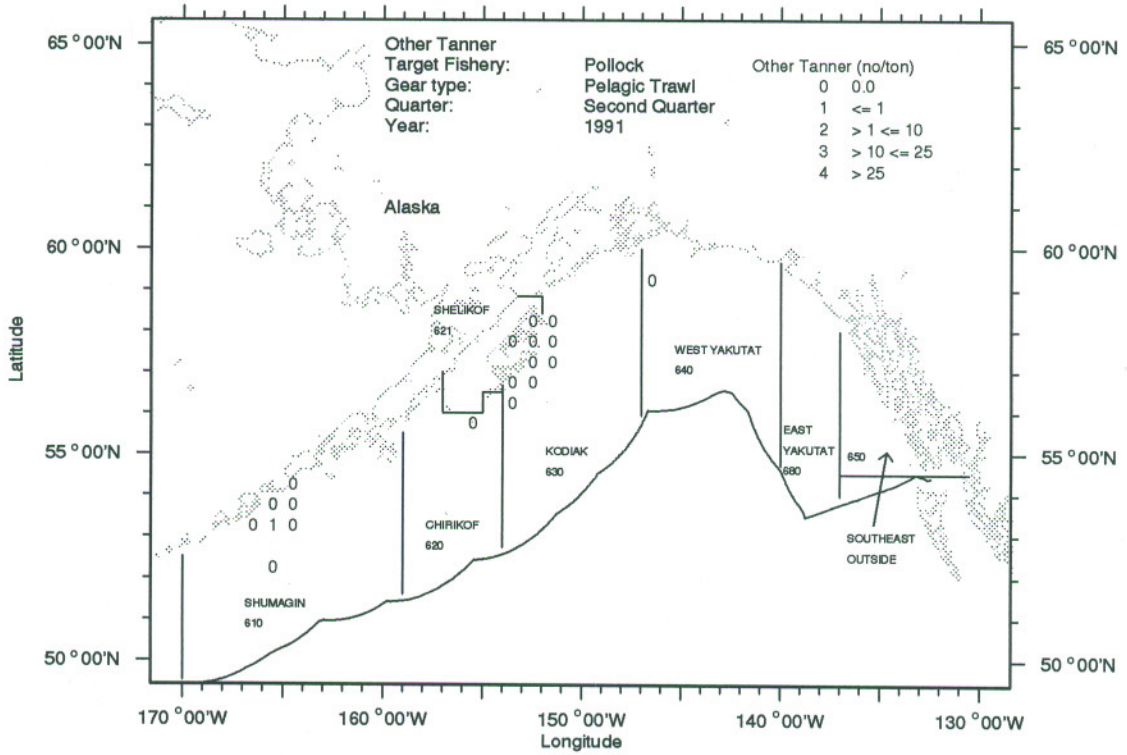
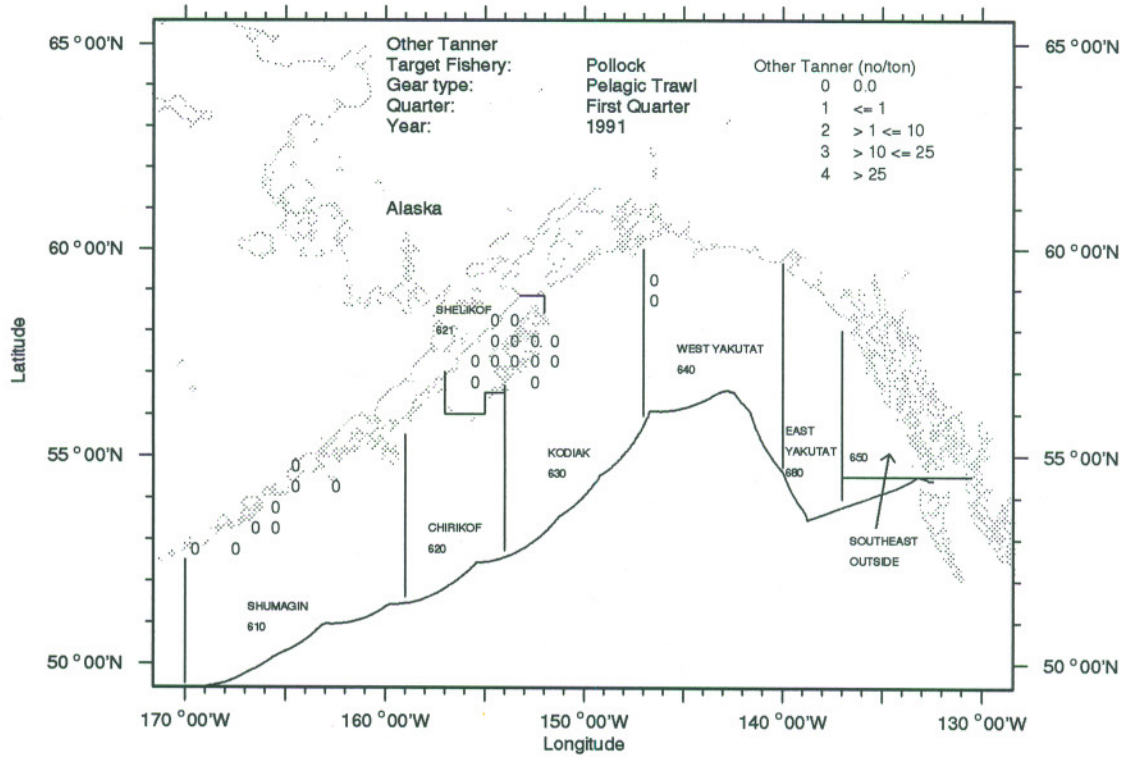


Figure 15.--Continued.

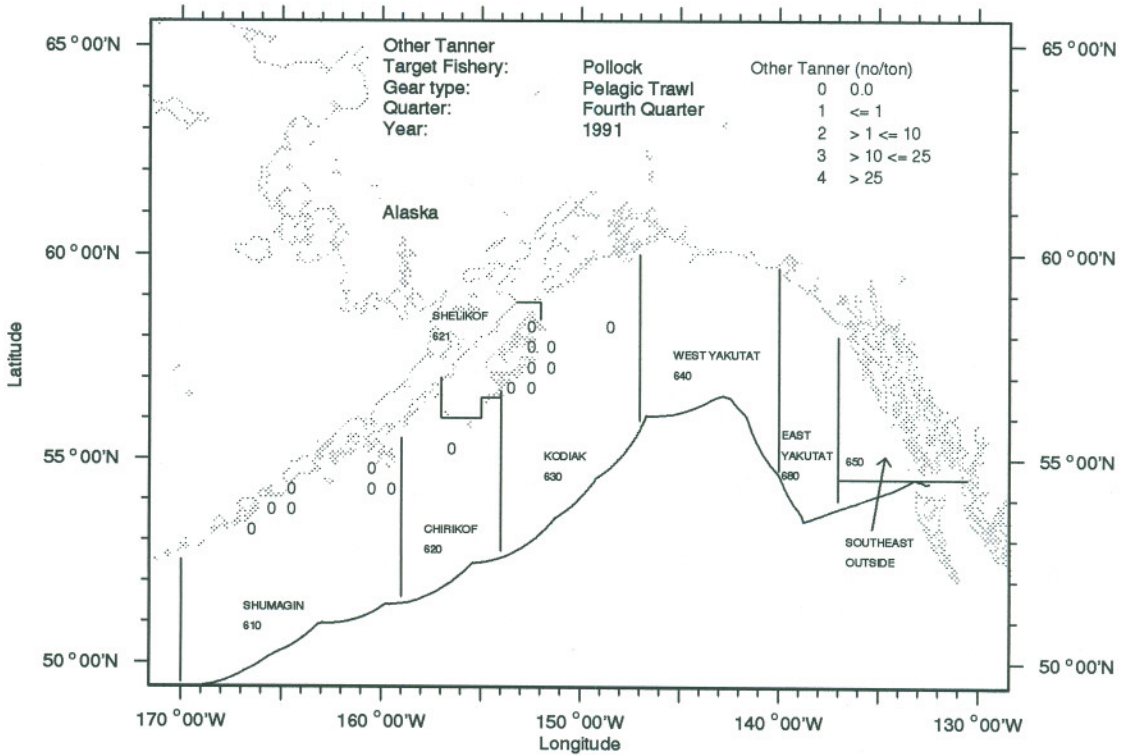
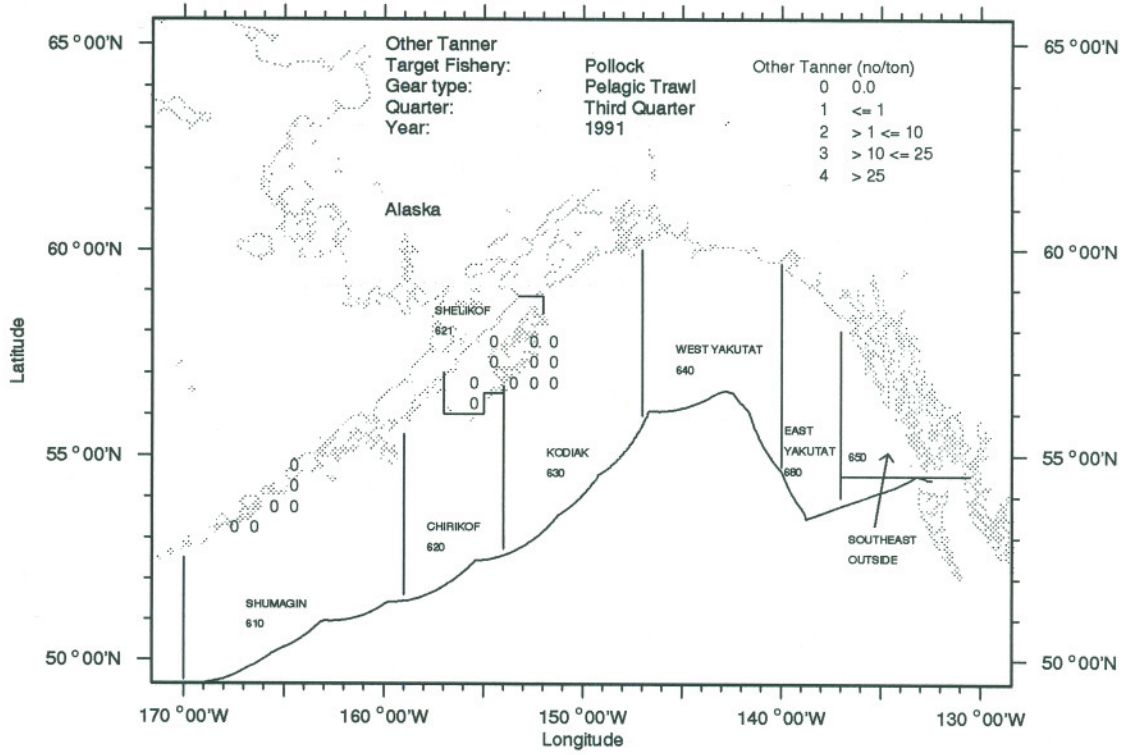


Figure 15.--Continued.

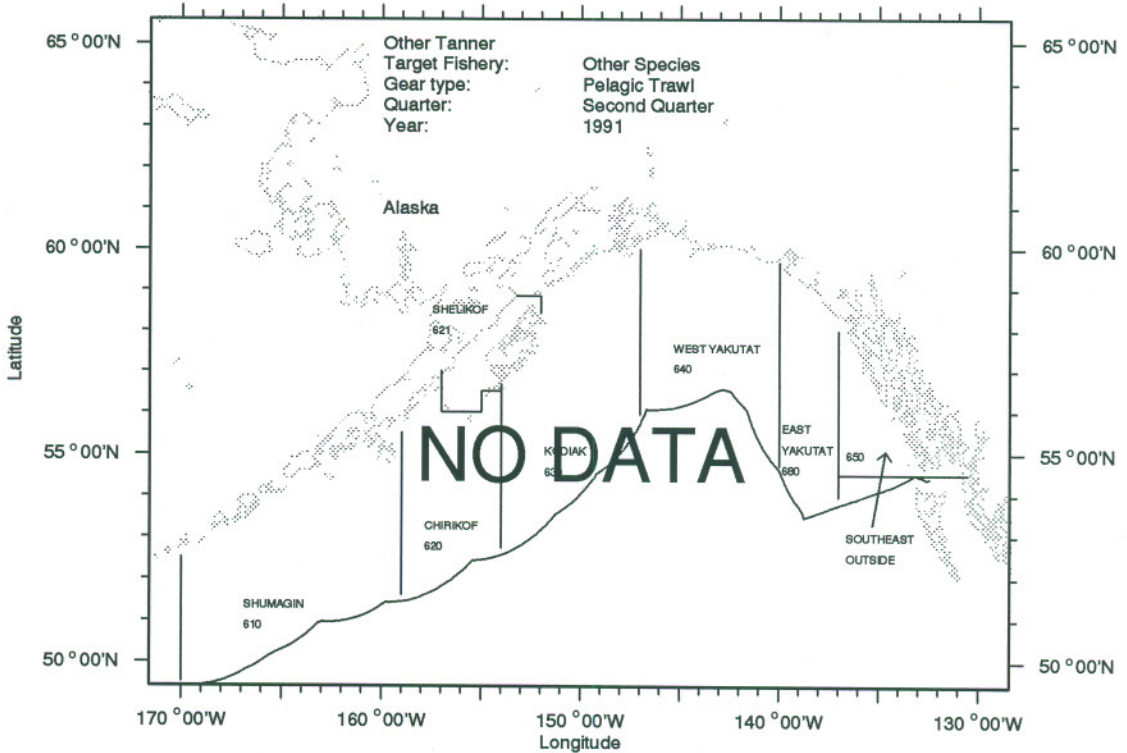
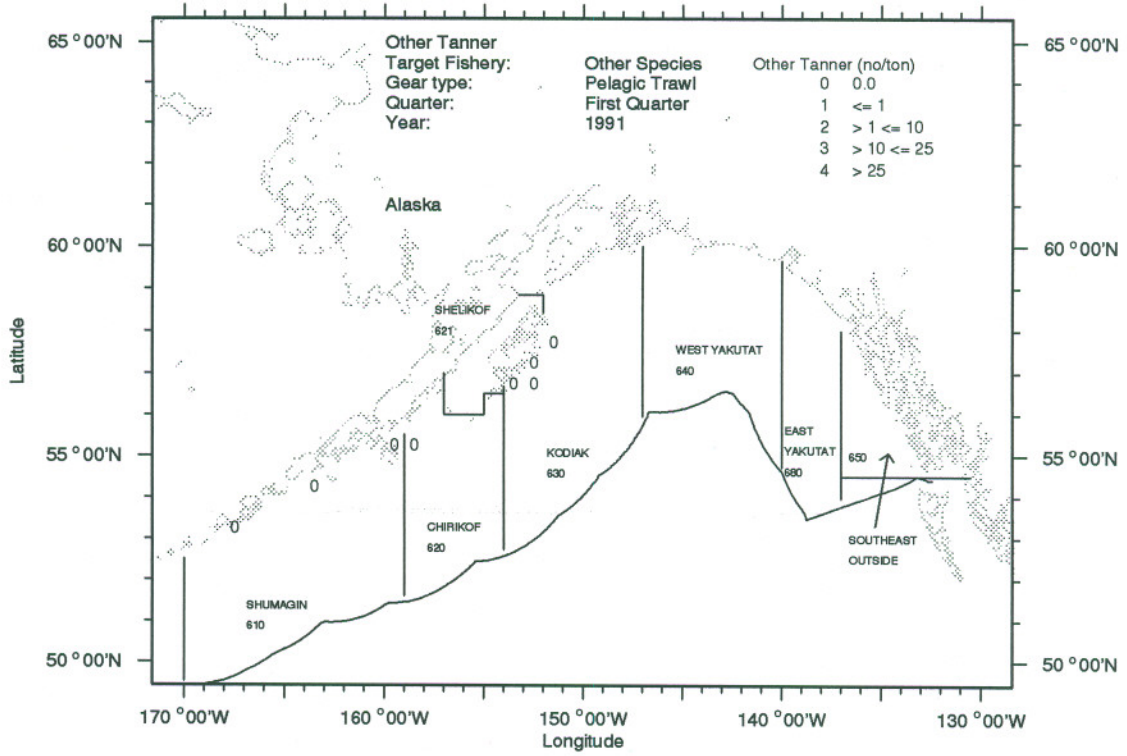


Figure 15.--Continued.

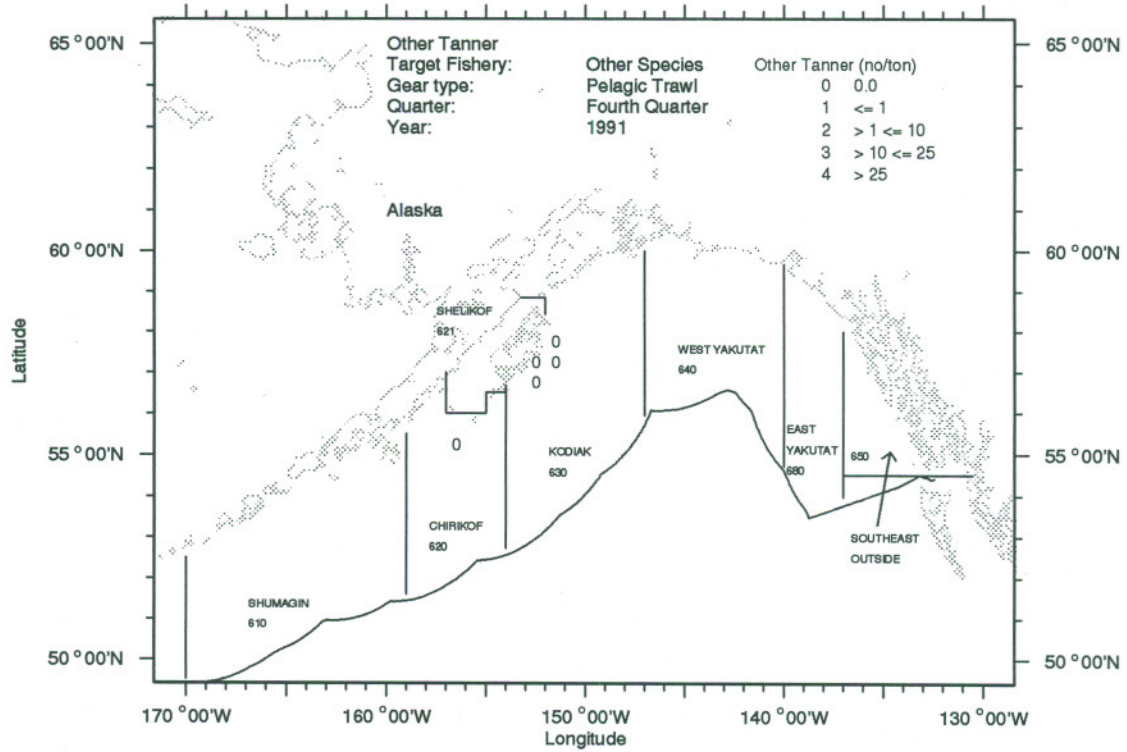
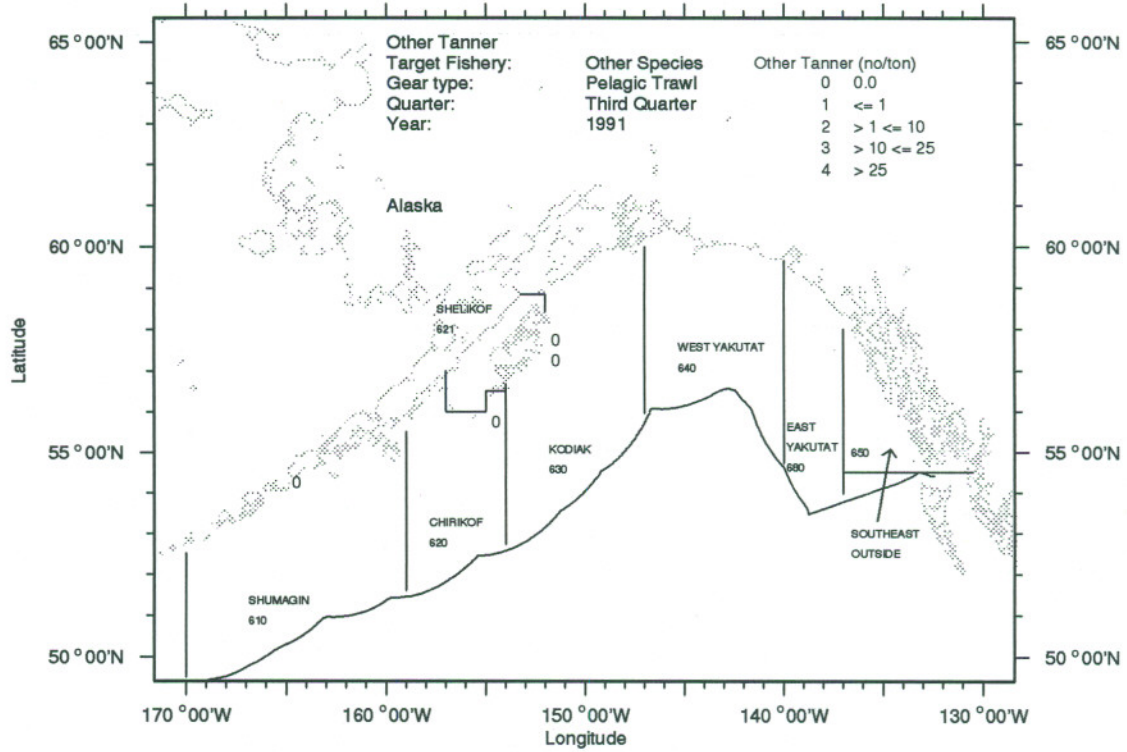


Figure 15.--Continued.

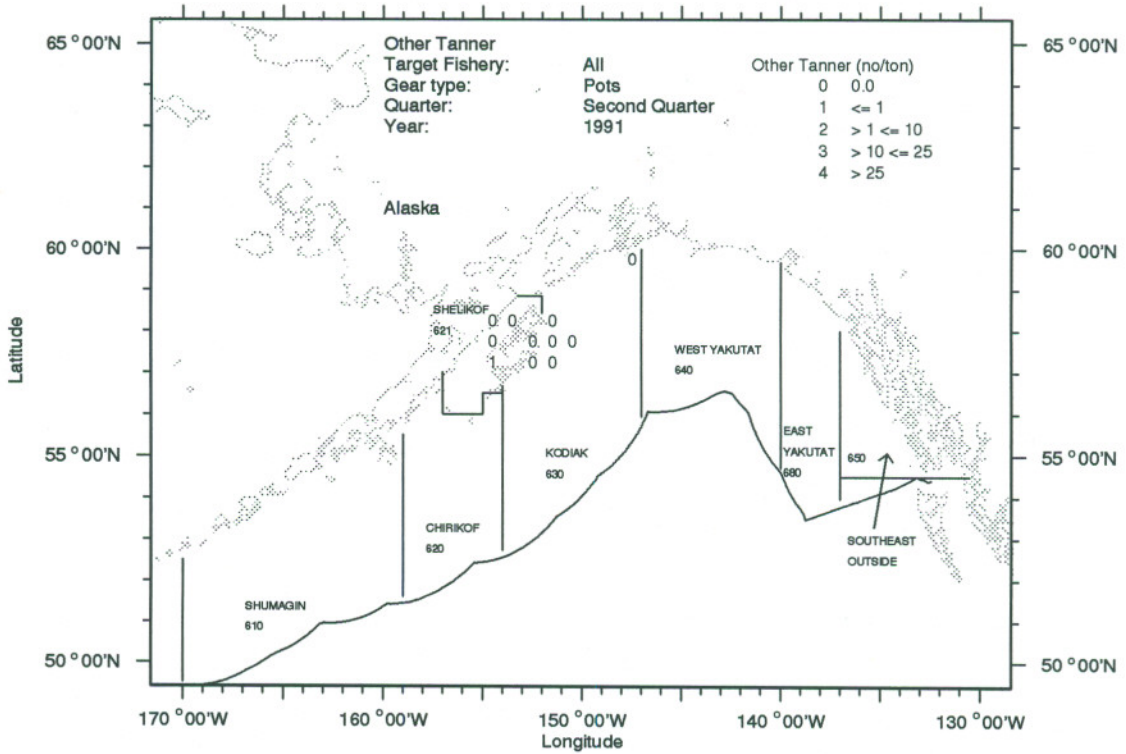
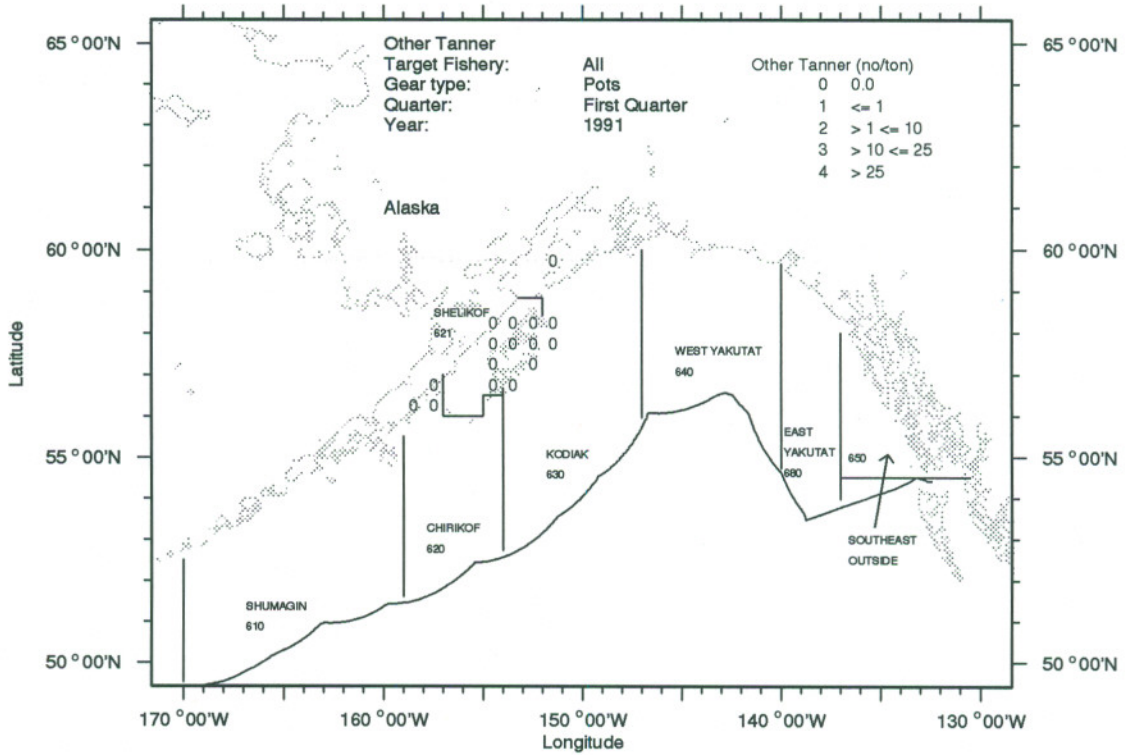


Figure 15.--Continued.

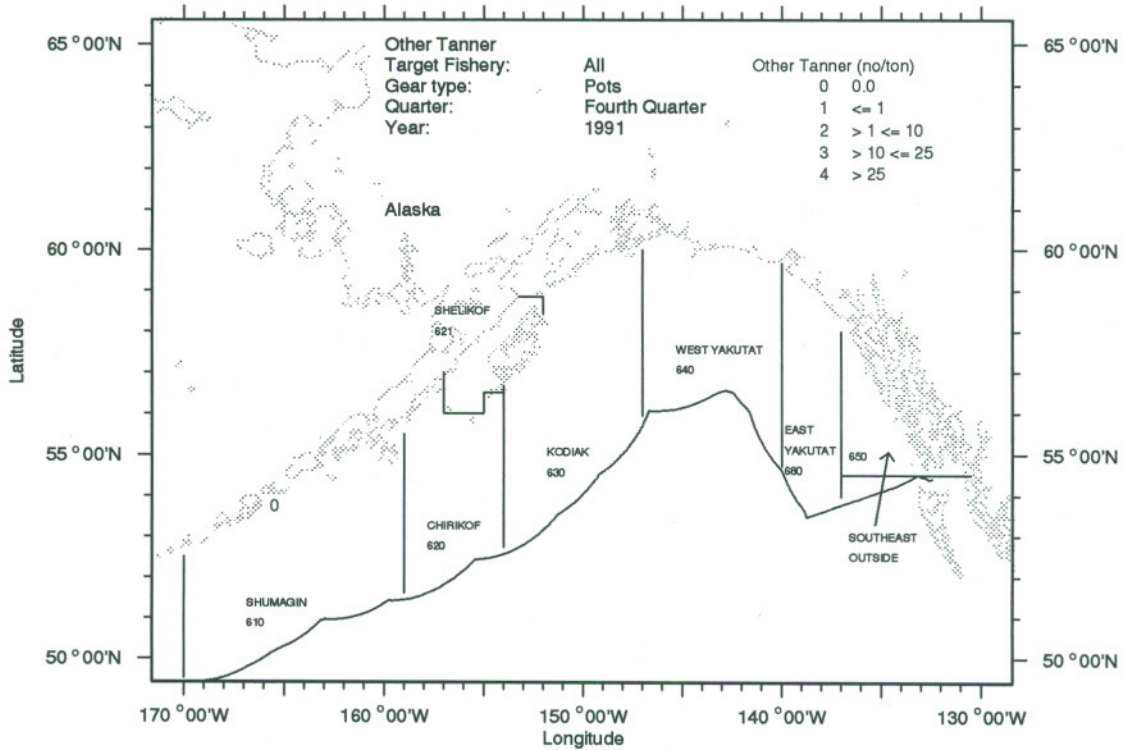
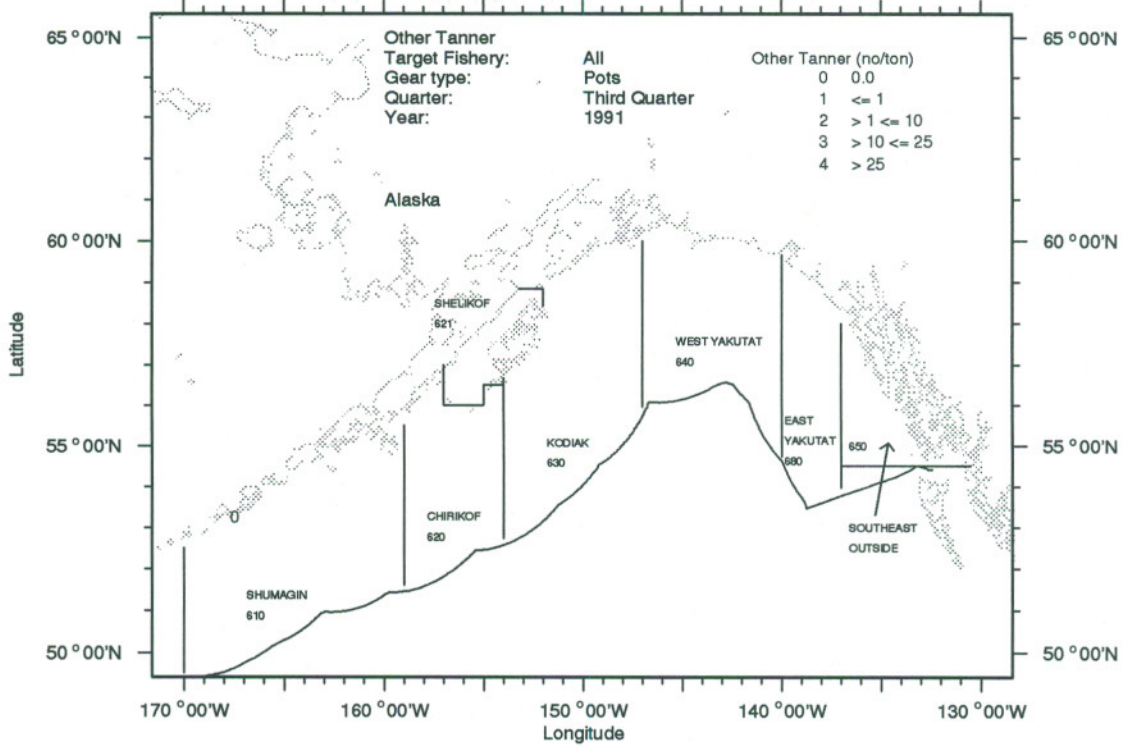


Figure 15.--Continued.

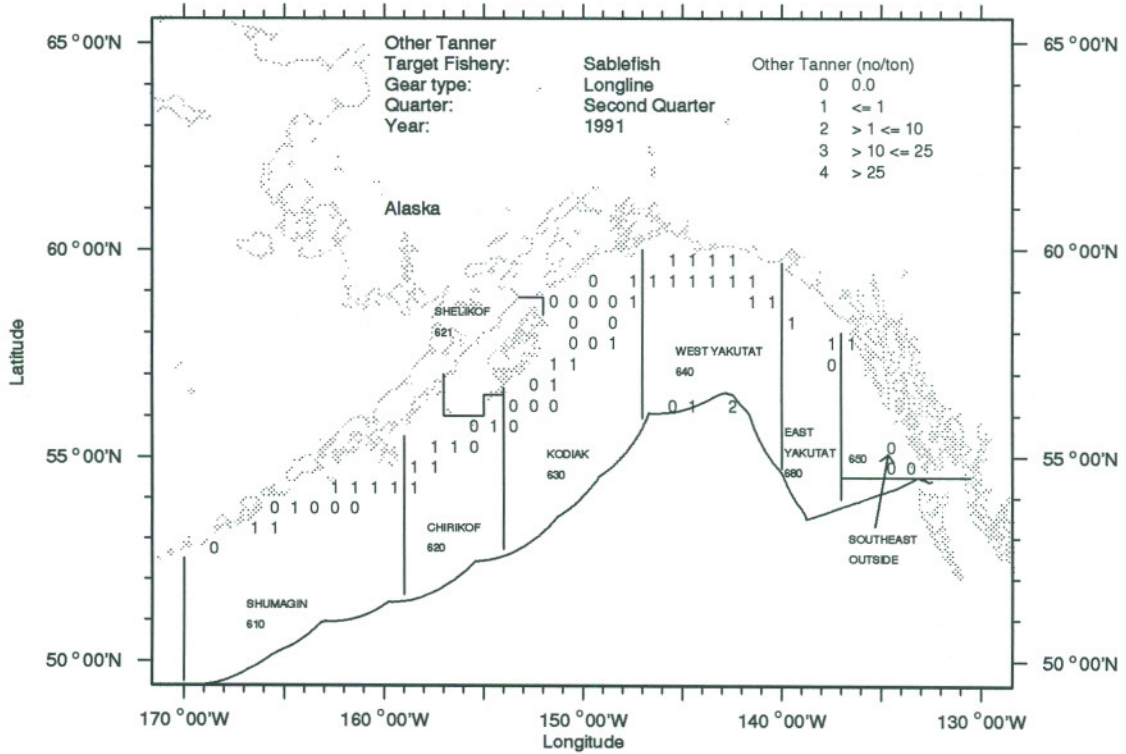
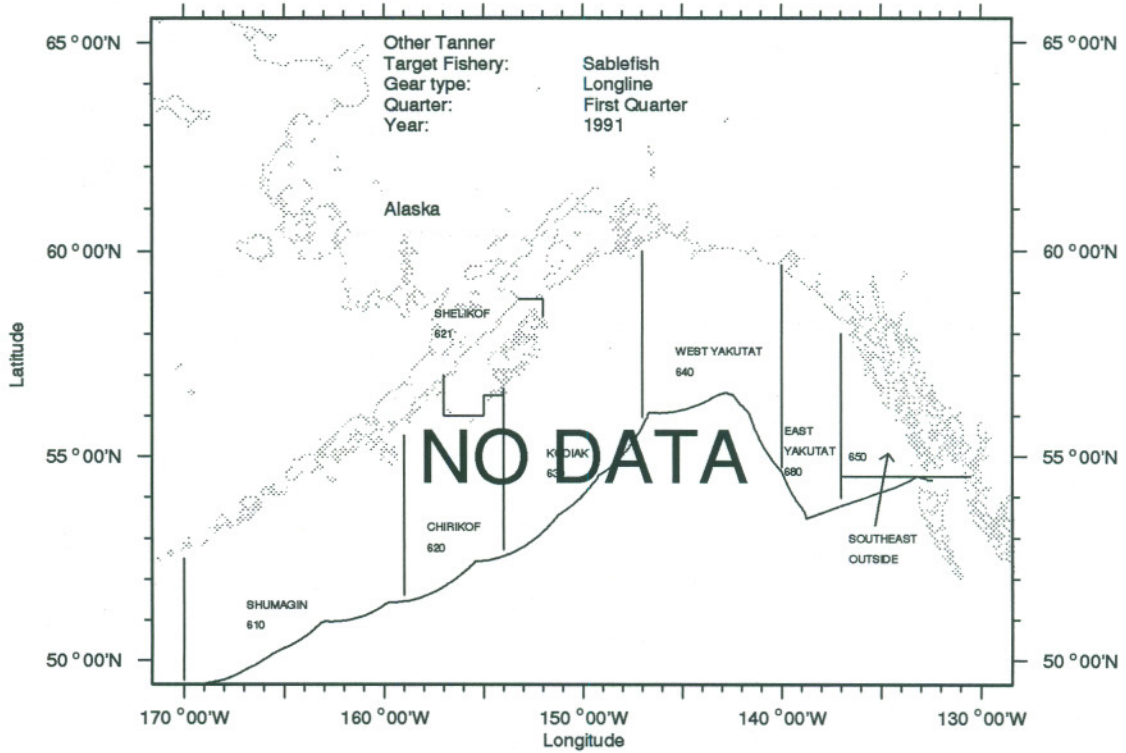


Figure 15.--Continued.

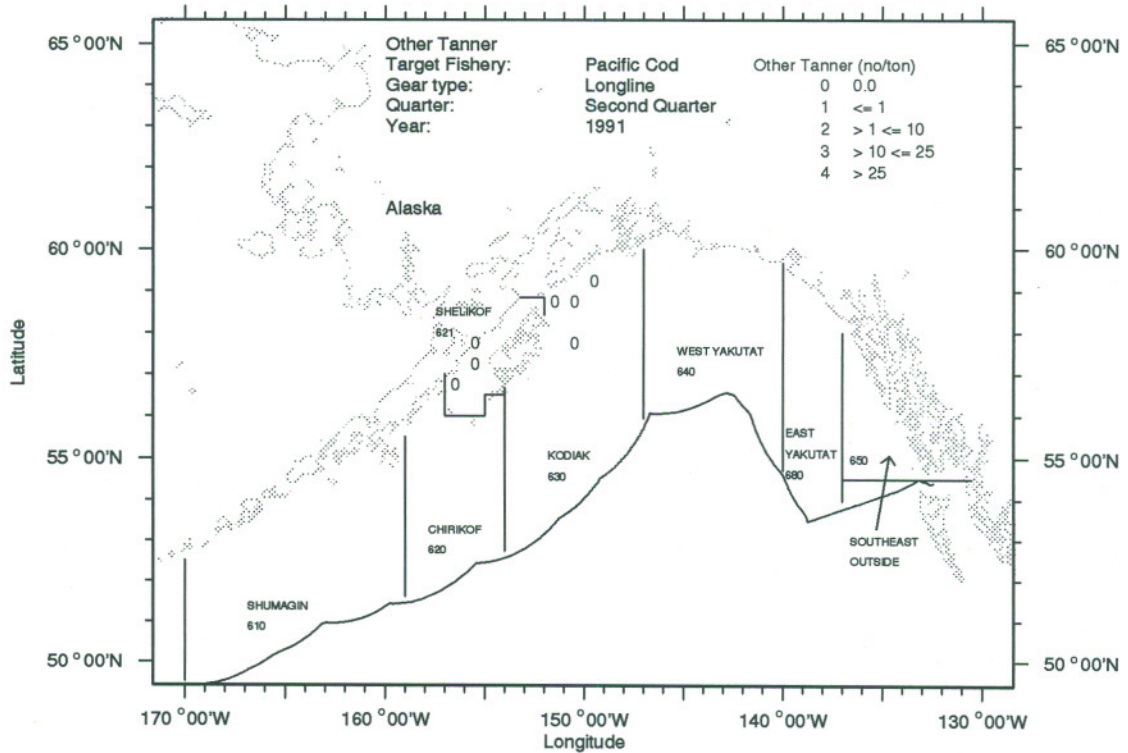
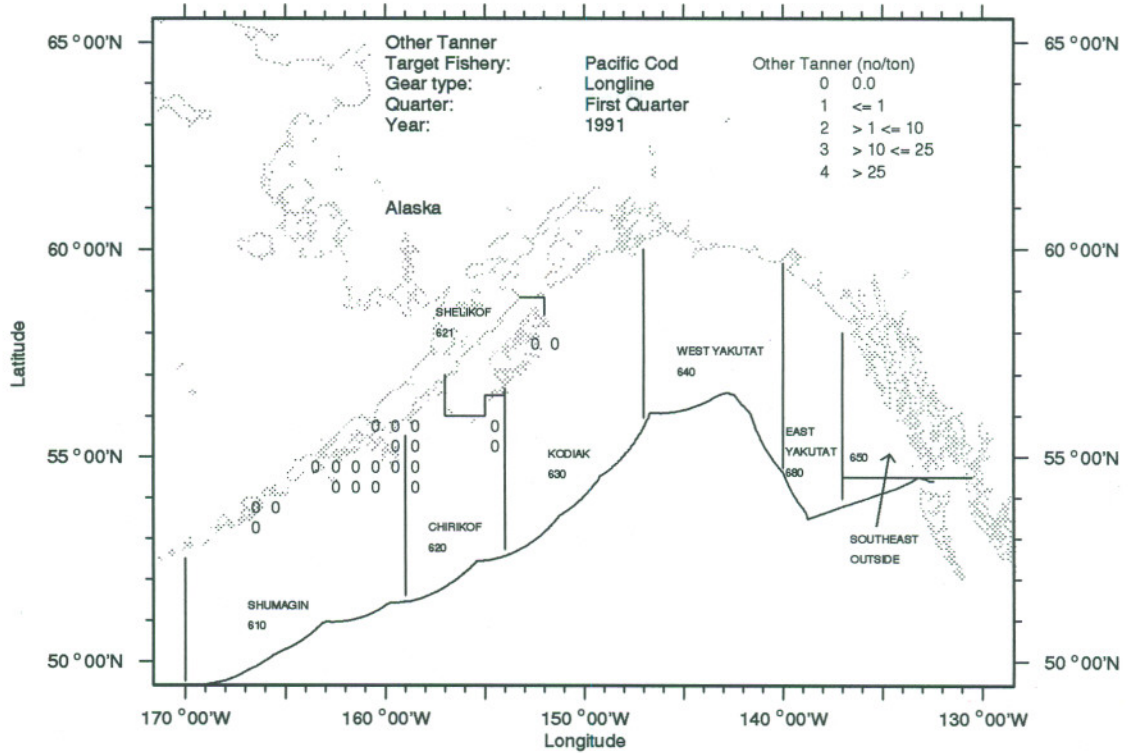


Figure 15.--Continued.

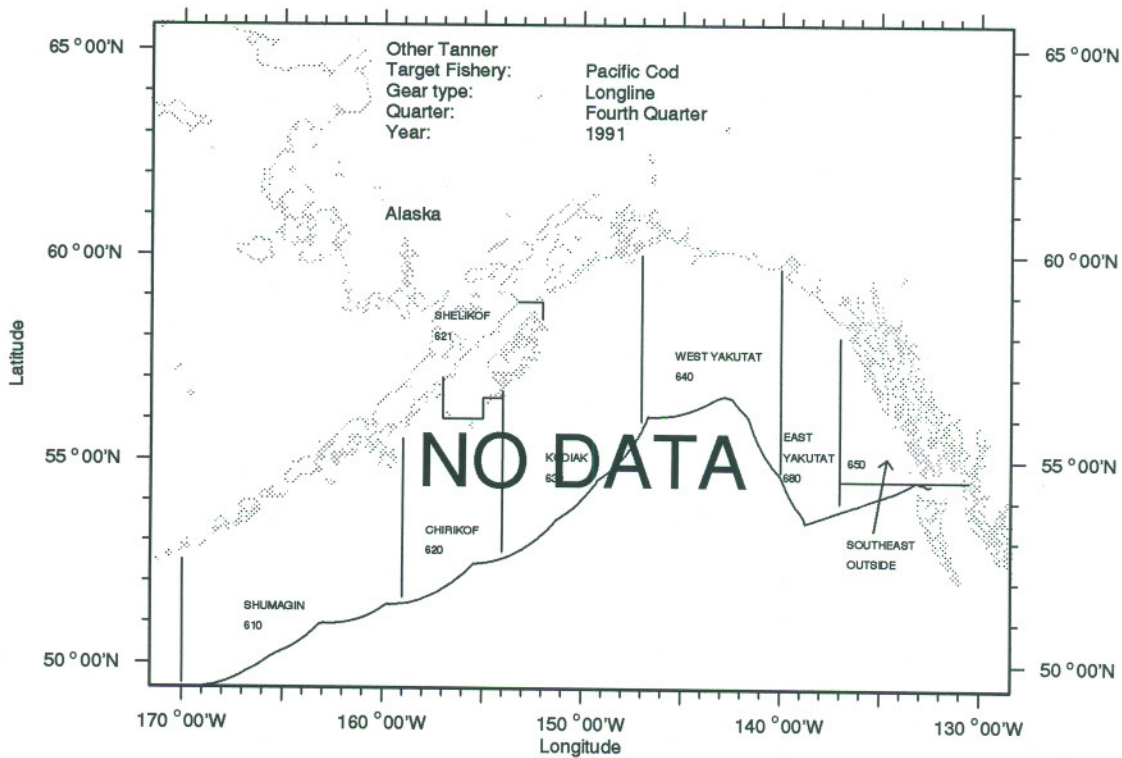
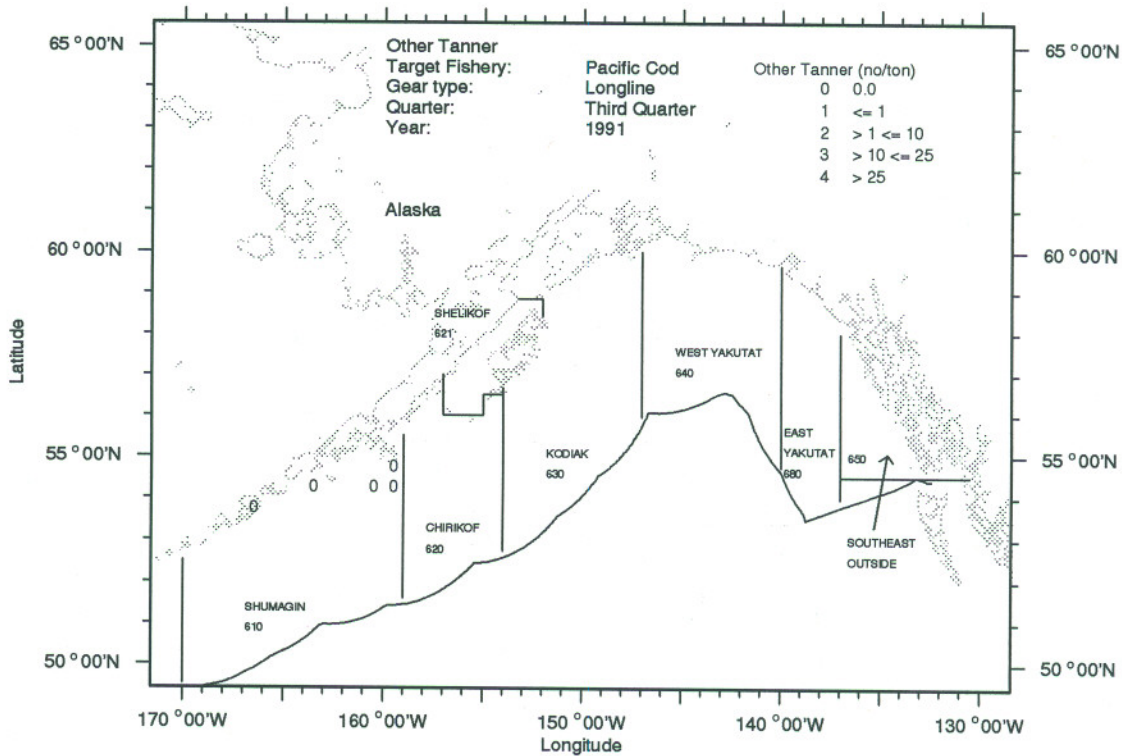


Figure 15.--Continued.

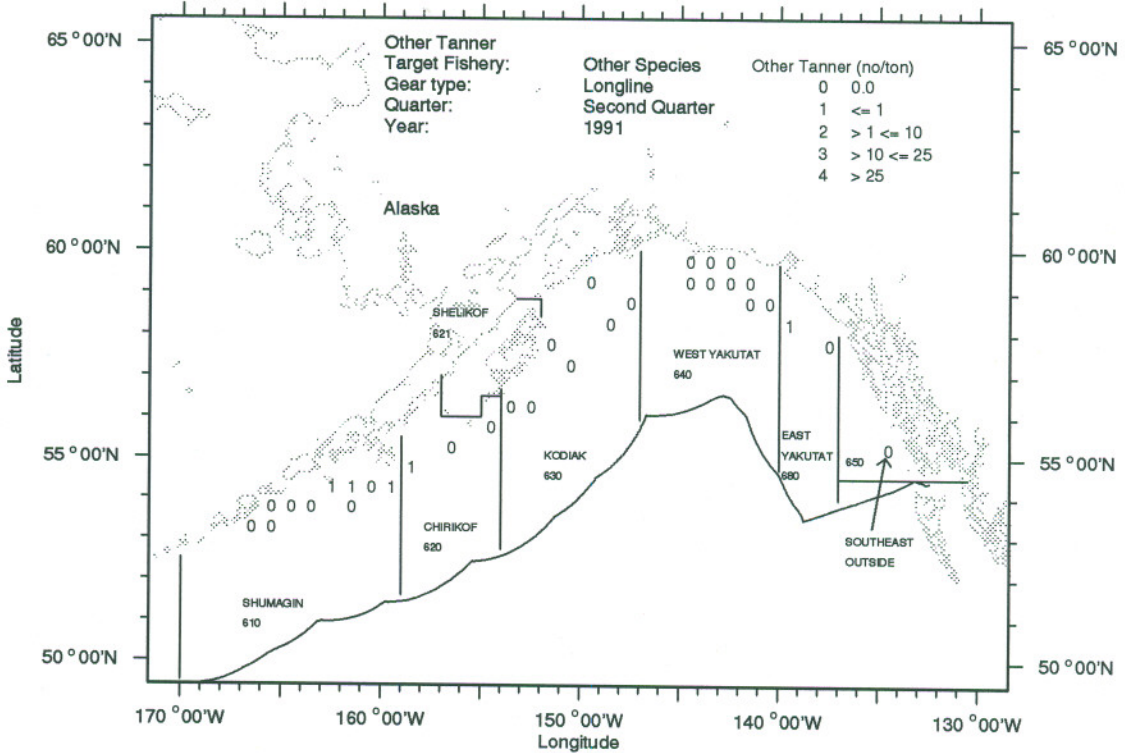
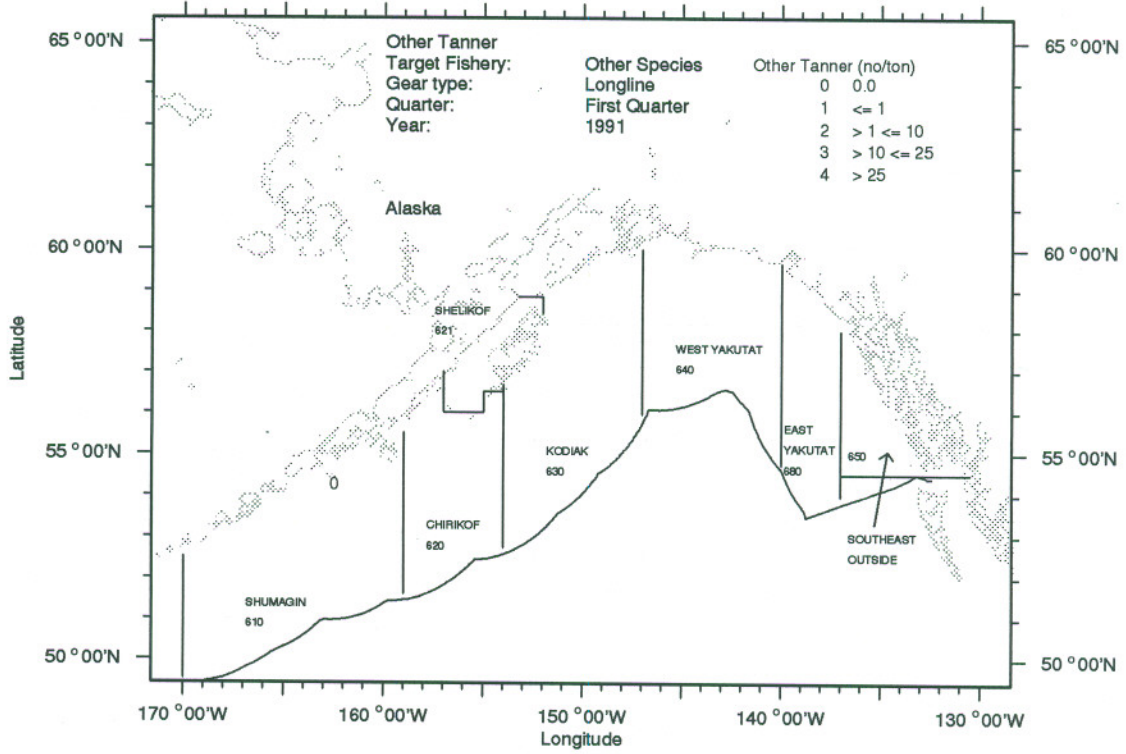


Figure 15.--Continued.

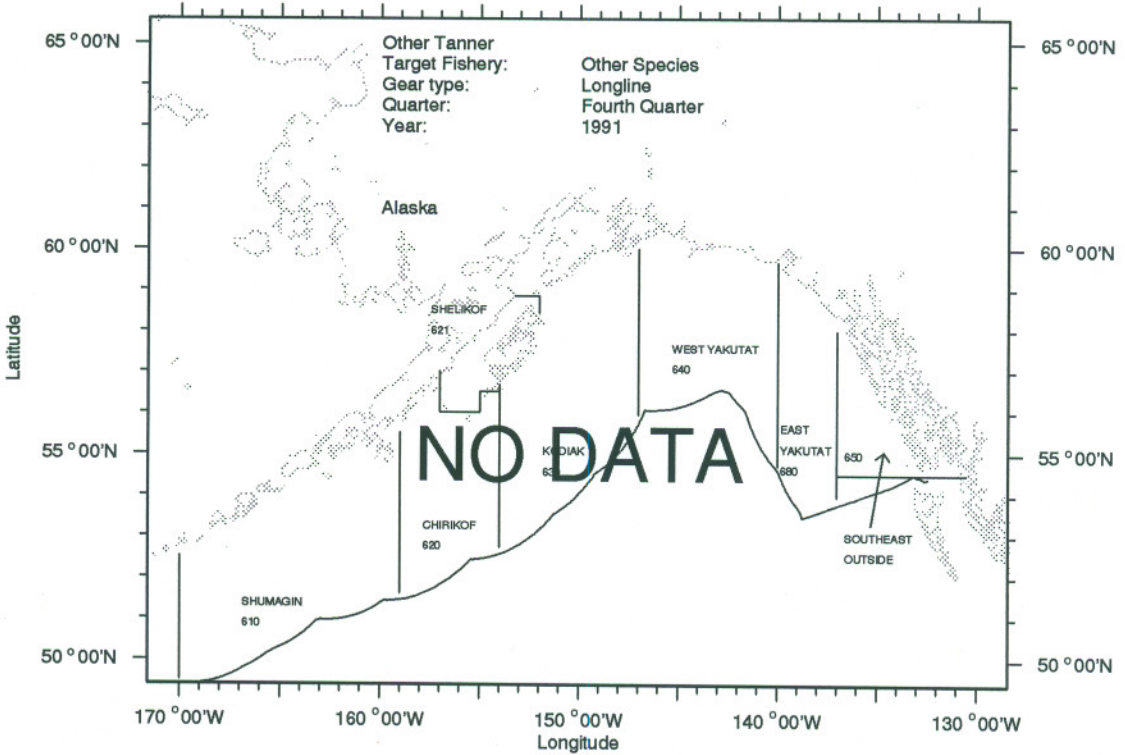
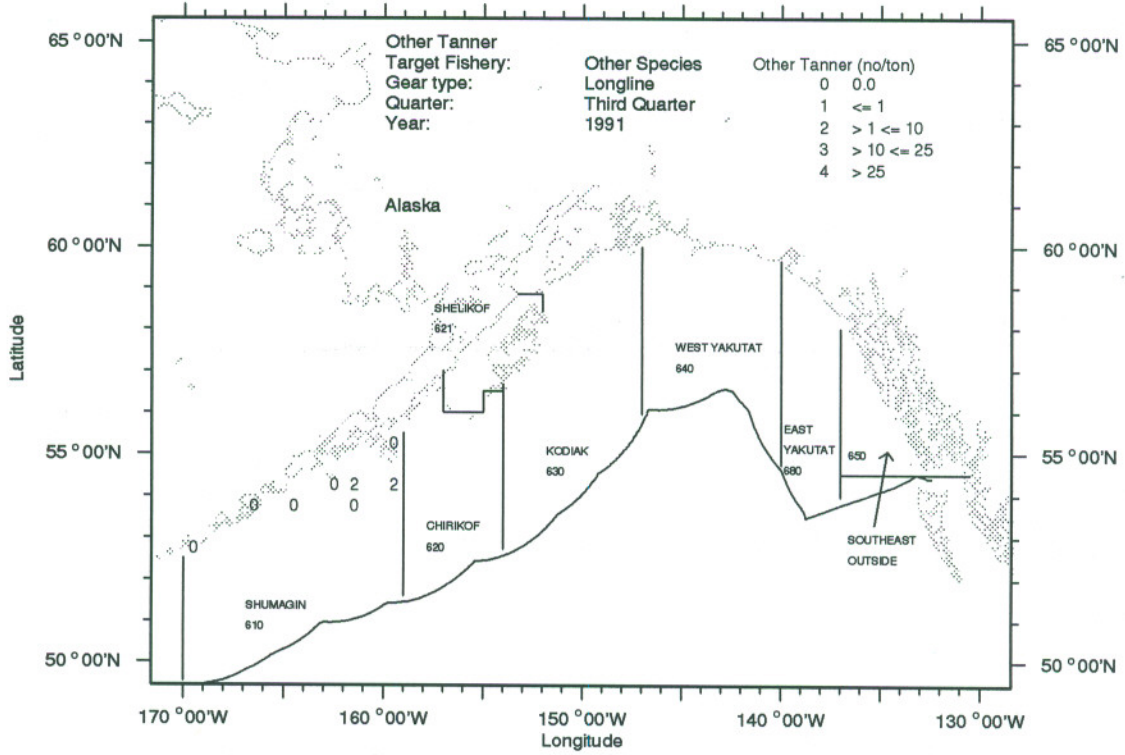


Figure 15.--Continued.

Table 53.--Estimated bycatch of Chionoecetes bairdi snow (Tanner) crab (in numbers of crab) by U.S. domestic groundfish vessels in the Gulf of Alaska region by NPFMC area and gear type, 1991. (Dashes indicate area not fished.)

Gear	Area 610	Area 620	Area 621	Area 630	Area 640	Area 650	Area 680	Total
Trawl	16,612	20,617	1,122	70,771	116	135	32	109,405
Longline	6	26	0	89	110	99	22	352
Pot	3,164	2,713	8,670	17,908	12	0	--	32,467
Jig	0	0	0	0	0	0	0	0
Total	19,782	23,356	9,792	88,768	238	234	54	142,224
Percent by area	13.9%	16.4%	6.9%	62.4%	0.2%	0.2%	<0.1%	

Table 54.--Estimated bycatch of "other" snow (Tanner) crabs* (in numbers of crabs) by U.S. domestic groundfish vessels in the Gulf of Alaska region by NPFMC area and gear type, 1991. (Dashes indicate area not fished.)

Gear	Area 610	Area 620	Area 621	Area 630	Area 640	Area 650	Area 680	Total
Trawl	3,366	3,009	31	1,067	72	7	4	7,556
Longline	430	203	3	237	261	480	110	1,724
Pot	0	0	0	0	0	0	--	0
Jig	0	0	0	0	0	0	0	0
Total	3,796	3,212	34	1,304	333	487	114	9,280
Percent by area	40.9%	34.6%	0.4%	14.1%	3.6%	5.2%	<0.1%	

*Species in this group consist of Chionoectes opilio, C. angulatus, and C. tanneri snow (Tanner) crabs.

Table 55.--U.S. domestic groundfish catch (in metric tons (t)) and *C. bairdi* bycatch (in numbers) by target fishery, NPFMC zone, and species in the Gulf of Alaska region, 1991.

Fishery	Gear	Zone	Groundfish catch	<i>C. bairdi</i>			
				Bycatch (numbers)	Per t of groundfish	% within zone	% of total bycatch
Pollock midwater	Trawl	Eastern	5,497.49	0	0.000	0.0%	0.0%
		Central	44,992.87	326	0.007	0.3%	0.2%
		Western	34,869.20	205	0.006	1.0%	0.1%
		Total	85,359.56	531	0.006		0.4%
Pollock bottom	Longline	Eastern	nf	nf	nf	nf	nf
		Central	0.25	0	0.000	0.0%	0.0%
		Western	0.72	0	0.000	0.0%	0.0%
		Total	0.97	0	0.000		0.0%
Pollock bottom	Pot	Eastern	nf	nf	nf	nf	nf
		Central	112.72	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	112.72	0	0.000		0.0%
Pollock bottom	Trawl	Eastern	80.32	107	1.332	20.3%	0.1%
		Central	15,485.61	20,386	1.316	16.7%	14.3%
		Western	5,881.68	2,316	0.394	11.7%	1.6%
		Total	21,447.61	22,809	1.063		16.0%
Pacific cod	Gillnet	Eastern	nf	nf	nf	nf	nf
		Central	9.87	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	9.87	0	0.000		0.0%
Pacific cod	Longline	Eastern	279.60	0	0.000	0.0%	0.0%
		Central	5,868.30	0	0.000	0.0%	0.0%
		Western	1,332.54	6	0.005	0.0%	0.0%
		Total	7,480.44	6	0.001		0.0%
Pacific cod	Jig	Eastern	7.28	0	0.000	0.0%	0.0%
		Central	48.65	0	0.000	0.0%	0.0%
		Western	34.75	0	0.000	0.0%	0.0%
		Total	90.68	0	0.000		0.0%
Pacific cod	Pot	Eastern	3.88	12	3.093	2.3%	0.0%
		Central	9,376.71	29,291	3.124	24.0%	20.6%
		Western	1,095.18	3,164	2.889	16.0%	2.2%
		Total	10,475.77	32,467	3.099		22.8%
Pacific cod	Trawl	Eastern	2.40	2	0.833	0.4%	0.0%
		Central	33,567.55	41,279	1.230	33.9%	29.0%
		Western	36,511.85	12,107	0.332	61.2%	8.5%
		Total	70,081.80	53,388	0.762		37.5%
Deepwater flatfish	Longline	Eastern	nf	nf	nf	nf	nf
		Central	24.54	0	0.000	0.0%	0.0%
		Western	13.54	0	0.000	0.0%	0.0%
		Total	38.08	0	0.000		0.0%
Deepwater flatfish	Trawl	Eastern	0.02	0	0.000	0.0%	0.0%
		Central	18,476.68	9,644	0.522	7.9%	6.8%
		Western	1,863.22	436	0.234	2.2%	0.3%
		Total	20,339.92	10,080	0.496		7.1%
Shallow-water flatfish	Trawl	Eastern	nf	nf	nf	nf	nf
		Central	1,632.01	11,406	6.989	9.4%	8.0%
		Western	177.66	72	0.405	0.4%	0.1%
		Total	1,809.67	11,478	6.343		8.1%

Table 55.--Continued.

Fishery	Gear	Zone	Groundfish catch	C. bairdi			
				Bycatch (numbers)	Per t of groundfish	% within zone	% of total bycatch
Rockfish	Longline	Eastern	509.32	0	0.000	0.0%	0.0%
		Central	116.60	0	0.000	0.0%	0.0%
		Western	2.28	0	0.000	0.0%	0.0%
		Total	628.20	0	0.000		0.0%
Rockfish	Jig	Eastern	12.82	0	0.000	0.0%	0.0%
		Central	9.90	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	22.72	0	0.000		0.0%
Rockfish	Trawl	Eastern	3,947.59	147	0.037	27.9%	0.1%
		Central	15,098.28	9,468	0.627	7.8%	6.7%
		Western	5,091.76	1,476	0.290	7.5%	1.0%
		Total	24,137.63	11,091	0.459		7.8%
Other	Longline	Eastern	47.38	0	0.000	0.0%	0.0%
		Central	5.74	0	0.000	0.0%	0.0%
		Western	2.60	0	0.000	0.0%	0.0%
		Total	55.72	0	0.000		0.0%
Other	Jig	Eastern	1.04	0	0.000	0.0%	0.0%
		Central	383.60	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	384.64	0	0.000		0.0%
Other	Pot	Eastern	nf	nf	nf	nf	nf
		Central	0.63	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	0.63	0	0.000		0.0%
Other	Trawl	Eastern	831.69	27	0.032	5.1%	0.0%
		Central	245.92	1	0.004	0.0%	0.0%
		Western	2,191.76	0	0.000	0.0%	0.0%
		Total	3,269.37	28	0.009		0.0%
Sablefish	Longline	Eastern	10,383.16	231	0.022	43.9%	0.2%
		Central	10,933.33	115	0.011	0.1%	0.1%
		Western	2,142.82	0	0.000	0.0%	0.0%
		Total	23,459.31	346	0.015		0.2%
Sablefish	Jig	Eastern	nf	nf	nf	nf	nf
		Central	15.21	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	15.21	0	0.000		0.0%
Sablefish	Trawl	Eastern	nf	nf	nf	nf	nf
		Central	252.31	0	0.000	0.0%	0.0%
		Western	142.71	0	0.000	0.0%	0.0%
		Total	395.02	0	0.000		0.0%
Total		Eastern	21,603.99	526	0.024		0.4%
		Central	156,657.28	121,916	0.778		85.7%
		Western	91,354.27	19,782	0.217		13.9%
		Total	269,615.54	142,224	0.528		

Table 56.--U.S. domestic groundfish catch (in metric tons (t)) and "other" Tanner (snow) crab bycatch (in numbers) by target fishery, NPFMC zone, and species in the Gulf of Alaska region, 1991.

Fishery	Gear	Zone	Groundfish catch	"Other" Tanner (snow) crab			
				Bycatch (numbers)	Per t of groundfish	% within zone	% of total bycatch
Pollock midwater	Trawl	Eastern	5,497.49	0	0.000	0.0%	0.0%
		Central	44,992.87	0	0.000	0.0%	0.0%
		Western	34,869.20	2	0.000	0.1%	0.0%
		Total	85,359.56	2	0.000		0.0%
Pollock bottom	Longline	Eastern	nf	nf	nf	nf	nf
		Central	0.25	0	0.000	0.0%	0.0%
		Western	0.72	0	0.000	0.0%	0.0%
		Total	0.97	0	0.000		0.0%
Pollock bottom	Pot	Eastern	nf	nf	nf	nf	nf
		Central	112.72	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	112.72	0	0.000		0.0%
Pollock bottom	Trawl	Eastern	80.32	3	0.037	0.3%	0.0%
		Central	15,485.61	685	0.044	15.1%	7.4%
		Western	5,881.68	310	0.053	8.2%	3.3%
		Total	21,447.61	998	0.047		10.8%
Pacific cod	Gillnet	Eastern	nf	nf	nf	nf	nf
		Central	9.87	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	9.87	0	0.000		0.0%
Pacific cod	Longline	Eastern	279.60	0	0.000	0.0%	0.0%
		Central	5,868.30	29	0.005	0.6%	0.3%
		Western	1,332.54	1	0.001	0.0%	0.0%
		Total	7,480.44	30	0.004		0.3%
Pacific cod	Jig	Eastern	7.28	0	0.000	0.0%	0.0%
		Central	48.65	0	0.000	0.0%	0.0%
		Western	34.75	0	0.000	0.0%	0.0%
		Total	90.68	0	0.000		0.0%
Pacific cod	Pot	Eastern	3.88	0	0.000	0.0%	0.0%
		Central	9,376.71	0	0.000	0.0%	0.0%
		Western	1,095.18	0	0.000	0.0%	0.0%
		Total	10,475.77	0	0.000		0.0%
Pacific cod	Trawl	Eastern	2.40	0	0.000	0.0%	0.0%
		Central	33,567.55	53	0.002	1.2%	0.6%
		Western	36,511.85	315	0.009	8.3%	3.4%
		Total	70,081.80	368	0.005		4.0%
Deepwater flatfish	Longline	Eastern	nf	nf	nf	nf	nf
		Central	24.54	0	0.000	0.0%	0.0%
		Western	13.54	0	0.000	0.0%	0.0%
		Total	38.08	0	0.000		0.0%
Deepwater flatfish	Trawl	Eastern	0.02	0	0.000	0.0%	0.0%
		Central	18,476.68	2,770	0.150	60.9%	29.8%
		Western	1,863.22	94	0.050	2.5%	1.0%
		Total	20,339.92	2,864	0.141		30.9%
Shallow-water flatfish	Trawl	Eastern	nf	nf	nf	nf	nf
		Central	1,632.01	0	0.000	0.0%	0.0%
		Western	177.66	0	0.000	0.0%	0.0%
		Total	1,809.67	0	0.000		0.0%

Table 56.—Continued.

Fishery	Gear	Zone	Groundfish catch	"Other" Tanner (snow) crab			
				Bycatch (numbers)	Per t of groundfish	% within zone	% of total bycatch
Rockfish	Longline	Eastern	509.32	0	0.000	0.0%	0.0%
		Central	116.60	0	0.000	0.0%	0.0%
		Western	2.28	0	0.000	0.0%	0.0%
		Total	628.20	0	0.000		0.0%
Rockfish	Jig	Eastern	12.82	0	0.000	0.0%	0.0%
		Central	9.90	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	22.72	0	0.000		0.0%
Rockfish	Trawl	Eastern	3,947.59	80	0.020	8.6%	0.9%
		Central	15,098.28	599	0.040	13.2%	6.5%
		Western	5,091.76	2,541	0.499	66.9%	27.4%
		Total	24,137.63	3,220	0.133		34.7%
Other	Longline	Eastern	47.38	0	0.000	0.0%	0.0%
		Central	5.74	0	0.000	0.0%	0.0%
		Western	2.60	0	0.000	0.0%	0.0%
		Total	55.72	0	0.000		0.0%
Other	Jig	Eastern	1.04	0	0.000	0.0%	0.0%
		Central	383.60	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	384.64	0	0.000		0.0%
Other	Pot	Eastern	nf	nf	nf	nf	nf
		Central	0.63	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	0.63	0	0.000		0.0%
Other	Trawl	Eastern	831.69	0	0.000	0.0%	0.0%
		Central	245.92	0	0.000	0.0%	0.0%
		Western	2,191.76	0	0.000	0.0%	0.0%
		Total	3,269.37	0	0.000		0.0%
Sablefish	Longline	Eastern	10,383.16	851	0.082	91.1%	9.2%
		Central	10,933.33	414	0.038	9.1%	4.5%
		Western	2,142.82	429	0.200	11.3%	4.6%
		Total	23,459.31	1,694	0.072		18.3%
Sablefish	Jig	Eastern	nf	nf	nf	nf	nf
		Central	15.21	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	15.21	0	0.000		0.0%
Sablefish	Trawl	Eastern	nf	nf	nf	nf	nf
		Central	252.31	0	0.000	0.0%	0.0%
		Western	142.71	104	0.729	2.7%	1.1%
		Total	395.02	104	0.263		1.1%
Total		Eastern	21,603.99	934	0.043		10.1%
		Central	156,657.28	4,550	0.029		49.0%
		Western	91,354.27	3,796	0.042		40.9%
		Total	269,615.54	9,280	0.034		

Table 57.--Condition of snow (Tanner) crabs examined by observers in U.S. domestic groundfish catches in the Gulf of Alaska region by species and gear type, 1991.

Species	Gear type	Excellent		Poor		Dead	
		numbers	%	numbers	%	numbers	%
<u>Chionoecetes</u> <u>bairdi</u>	Trawl	1,444	44.7%	894	27.6%	896	27.7%
	Pot	1,801	85.4%	258	12.2%	50	2.4%
	Longline	7	50.0%	4	28.6%	3	21.4%
<u>C. tanneri</u>	Trawl	5	71.4%	0	0.0%	2	28.6%
	Pot	0	0.0%	0	0.0%	0	0.0%
	Longline	23	46.0%	17	34.0%	10	20.0%
<u>C. angulatus</u>	Trawl	0	0.0%	0	0.0%	0	0.0%
	Pot	0	0.0%	0	0.0%	0	0.0%
	Longline	1	50.0%	0	0.0%	1	50.0%
All species	Trawl	1,449	44.7%	894	27.6%	898	27.7%
	Pot	1,801	85.4%	258	12.2%	50	2.4%
	Longline	31	47.0%	21	31.8%	14	21.2%

Table 58.--Biological data on the bycatch of snow (Tanner) crabs in U.S. domestic groundfish fisheries in the Gulf of Alaska region, 1991.

Species	Percent by species	Sex	Sex composition	Average weight (kg)	Average width (mm)
<u>Chionoecetes bairdi</u>	93.9%	Male	84.2	0.55	114.8
		Female	15.8	0.17	73.1
<u>C. tanneri</u>	4.7%	Male	76.7	0.83	134.3
		Female	23.3	0.81	148.0
<u>C. opilio</u>	0.9%	Male	96.3	0.63	100.5
		Female	3.7	0.11	48.0
<u>C. angulatus</u>	0.5%	Male	68.8	0.83	78.0
		Female	31.2	1.06	*

*Length data not collected.

Table 59.-- Monthly bycatch rates (no./t) and average weights (kg) of red king crab and number of hauls sampled in the U.S.

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target												
Jan	0.000	0.00	2	---	---	---	0.000	0.00	1	0.000	0.00	20
Feb	0.103	2.28	23	---	---	---	ns	ns	ns	0.000	0.00	49
Mar	0.000	0.00	18	---	---	---	---	---	---	0.000	0.00	51
Apr	0.000	0.00	1	0.000	0.00	81	---	---	---	0.000	0.00	163
May	ns	ns	ns	ns	ns	ns	---	---	---	ns	ns	ns
Jun	---	---	---	0.000	0.00	31	---	---	---	0.000	0.00	79
Jul	0.000	0.00	2	0.000	0.00	7	---	---	---	0.000	0.00	61
Aug	0.000	0.00	3	0.000	0.00	11	0.000	0.00	3	0.004	3.13	135
Sep	0.000	0.00	11	0.000	0.00	13	0.000	0.00	1	0.016	0.92	73
Oct	0.000	0.00	6	0.025	3.60	22	---	---	---	0.000	0.00	107
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.042	2.28	66	0.004	3.60	165	0.000	0.00	5	0.003	1.36	738
Bottom trawl - Pollock target												
Jan	0.000	0.00	11	---	---	---	0.000	0.00	21	0.000	0.00	18
Feb	0.000	0.00	17	---	---	---	0.000	0.00	5	0.000	0.00	9
Mar	0.000	0.00	28	0.000	0.00	6	---	---	---	0.000	0.00	3
Apr	---	---	---	---	---	---	---	---	---	0.000	0.00	9
May	---	---	---	---	---	---	---	---	---	0.000	0.00	2
Jun	---	---	---	---	---	---	---	---	---	ns	ns	ns
Jul	0.000	0.00	19	---	---	---	---	---	---	0.000	0.00	5
Aug	0.000	0.00	2	---	---	---	---	---	---	0.000	0.00	17
Sep	0.000	0.00	20	0.000	0.00	1	0.000	0.00	2	0.000	0.00	28
Oct	0.000	0.00	94	0.000	0.00	2	0.000	0.00	1	0.000	0.00	43
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	191	0.000	0.00	9	0.000	0.00	29	0.000	0.00	134
Bottom trawl - Pacific cod target												
Jan	0.000	0.00	94	---	---	---	0.000	0.00	1	0.000	0.00	21
Feb	0.000	0.00	254	0.000	0.00	7	0.000	0.00	5	0.000	0.00	151
Mar	<0.001	0.20	357	0.000	3.40	125	0.000	0.00	17	0.001	0.40	206
Apr	0.000	0.00	4	0.000	0.00	34	0.007	0.36	20	0.000	0.00	65
May	---	---	---	0.000	0.00	3	---	---	---	0.000	0.00	1
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	2	0.000	0.00	2	---	---	---	0.000	0.00	4
Aug	0.000	0.00	1	0.142	6.00	3	---	---	---	0.000	0.00	11
Sep	0.000	0.00	10	---	---	---	---	---	---	0.000	0.00	4
Oct	0.000	0.00	10	---	---	---	0.000	0.00	5	0.000	0.00	1
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	<0.001	0.20	732	0.001	5.14	174	0.002	0.36	48	<0.001	0.40	464

domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC area, 1991.
("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " -- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target									
Jan	--	--	--	--	--	--	--	--	--
Feb	--	--	--	--	--	--	--	--	--
Mar	--	--	--	--	--	--	--	--	--
Apr	0.000	0.00	6	--	--	--	--	--	--
May	--	--	--	--	--	--	--	--	--
Jun	--	--	--	--	--	--	--	--	--
Jul	--	--	--	--	--	--	--	--	--
Aug	--	--	--	--	--	--	--	--	--
Sep	--	--	--	--	--	--	--	--	--
Oct	0.000	0.00	6	ns	ns	ns	--	--	--
Nov	--	--	--	--	--	--	--	--	--
Dec	--	--	--	--	--	--	--	--	--
Year	0.000	0.00	12	ns	ns	ns	--	--	--
Bottom trawl - Pollock target									
Jan	--	--	--	--	--	--	--	--	--
Feb	--	--	--	--	--	--	--	--	--
Mar	--	--	--	--	--	--	--	--	--
Apr	0.000	0.00	1	--	--	--	--	--	--
May	--	--	--	--	--	--	--	--	--
Jun	--	--	--	--	--	--	--	--	--
Jul	--	--	--	--	--	--	--	--	--
Aug	--	--	--	--	--	--	--	--	--
Sep	0.000	0.00	1	--	--	--	--	--	--
Oct	--	--	--	--	--	--	--	--	--
Nov	--	--	--	--	--	--	--	--	--
Dec	--	--	--	--	--	--	--	--	--
Year	0.000	0.00	2	--	--	--	--	--	--
Bottom trawl - Pacific cod target									
Jan	--	--	--	--	--	--	--	--	--
Feb	--	--	--	--	--	--	--	--	--
Mar	--	--	--	--	--	--	--	--	--
Apr	ns	ns	ns	--	--	--	--	--	--
May	--	--	--	--	--	--	--	--	--
Jun	--	--	--	--	--	--	--	--	--
Jul	--	--	--	--	--	--	--	--	--
Aug	--	--	--	--	--	--	--	--	--
Sep	--	--	--	--	--	--	--	--	--
Oct	--	--	--	--	--	--	--	--	--
Nov	--	--	--	--	--	--	--	--	--
Dec	--	--	--	--	--	--	--	--	--
Year	ns	ns	ns	--	--	--	--	--	--

Table 59.-- Monthly bycatch rates (no./t) and average weights (kg) of red king crab and number of hauls sampled in the U.S.

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Rockfish target												
Jan	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---	0.000	0.00	3
Mar	0.000	0.00	61	0.000	0.00	39	0.000	0.00	1	0.001	1.20	118
Apr	0.000	0.00	10	0.000	0.00	25	---	---	---	0.000	0.00	88
May	0.000	0.00	1	0.000	0.00	3	---	---	---	0.000	0.00	11
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	12	0.000	0.00	3	---	---	---	0.000	0.00	85
Aug	0.000	0.00	3	0.000	0.00	7	---	---	---	0.000	0.00	188
Sep	0.000	0.00	70	0.000	0.00	1	---	---	---	0.000	0.00	61
Oct	0.000	0.00	72	---	---	---	---	---	---	0.000	0.00	11
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	230	0.000	0.00	78	0.000	0.00	1	<0.001	1.20	565
Bottom trawl - Other species target												
Jan	---	---	---	---	---	---	---	---	---	---	---	---
Feb	0.000	0.00	1	0.000	0.00	2	---	---	---	---	---	---
Mar	0.000	0.00	4	---	---	---	---	---	---	0.000	0.00	3
Apr	---	---	---	0.000	0.00	4	---	---	---	0.000	0.00	10
May	---	---	---	0.000	0.00	2	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	3	---	---	---	---	---	---	0.000	0.00	16
Aug	0.000	0.00	1	0.000	0.00	2	---	---	---	0.000	0.00	46
Sep	0.000	0.00	10	0.000	0.00	2	---	---	---	0.000	0.00	30
Oct	0.000	0.00	74	---	---	---	---	---	---	0.000	0.00	13
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	93	0.000	0.00	12	---	---	---	0.000	0.00	118

domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC area, 1991 (Continued).
("Rate" = no./t of groundfish; "Wt" = average weight; "Hl" = no. of hauls; "ns" = no observer sampling; "---" = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl
Bottom trawl - Rockfish target									
Jan	---	---	---	---	---	---	---	---	---
Feb	ns	ns	ns	ns	ns	ns	---	---	---
Mar	---	---	---	0.000	0.00	45	---	---	---
Apr	0.000	0.00	59	0.000	0.00	17	0.000	0.00	14
May	ns	ns	ns	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	0.000	0.00	12	---	---	---	---	---	---
Oct	0.000	0.00	17	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	88	0.000	0.00	62	0.000	0.00	14
Bottom trawl - Other species target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	0.000	0.00	2	---	---	---
Apr	0.000	0.00	5	---	---	---	0.000	0.00	1
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	ns	ns	ns	---	---	---	---	---	---
Sep	0.000	0.00	31	---	---	---	---	---	---
Oct	0.000	0.00	6	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	42	0.000	0.00	2	0.000	0.00	1

Table 59.-- Monthly bycatch rates (no./t) and average weights (kg) of red king crab and number of hauls sampled in the U.S.

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target												
Jan	0.000	0.00	10	---	---	---	0.000	0.00	51	0.000	0.00	40
Feb	0.000	0.00	3	---	---	---	0.000	0.00	6	0.000	0.00	28
Mar	---	---	---	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Jun	0.000	0.00	15	0.000	0.00	1	0.000	0.00	2	0.000	0.00	116
Jul	0.000	0.00	181	ns	ns	ns	0.000	0.00	21	0.000	0.00	243
Aug	---	---	---	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	0.000	0.00	73	0.000	0.00	1	0.000	0.00	4	0.000	0.00	195
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	283	0.000	0.00	2	0.000	0.00	84	0.000	0.00	622
Pelagic trawl - Other species target												
Jan	ns	ns	ns	---	---	---	---	---	---	ns	ns	ns
Feb	0.000	0.00	10	0.000	0.00	1	ns	ns	ns	0.000	0.00	1
Mar	0.000	0.00	8	0.000	0.00	1	---	---	---	0.000	0.00	8
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	1	0.000	0.00	1	---	---	---	0.000	0.00	2
Aug	---	---	---	---	---	---	---	---	---	ns	ns	ns
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	ns	ns	ns	0.000	0.00	1	---	---	---	0.000	0.00	4
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	19	0.000	0.00	4	ns	ns	ns	0.000	0.00	15
Pots - All targets												
Jan	ns	ns	ns	ns	ns	ns	0.000	0.00	44	0.000	0.00	31
Feb	ns	ns	ns	0.000	0.00	22	0.008	3.60	140	0.000	0.00	87
Mar	ns	ns	ns	ns	ns	ns	0.063	3.88	35	0.000	0.00	150
Apr	---	---	---	ns	ns	ns	0.000	0.00	61	0.000	0.00	166
May	---	---	---	ns	ns	ns	ns	ns	ns	0.000	0.00	1
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---	---	---	---
Aug	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Nov	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Dec	0.000	0.00	40	---	---	---	ns	ns	ns	ns	ns	ns
Year	0.000	0.00	41	0.000	0.00	22	0.018	3.84	280	0.000	0.00	435

domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC area, 1991 (Continued).
("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	0.000	0.00	9	---	---	---	---	---	---
Apr	0.000	0.00	15	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	24	---	---	---	---	---	---
Pelagic trawl - Other species target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	---	---	---	---	---	---	---	---	---
Pots - All targets									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	ns	ns	ns	ns	ns	ns	---	---	---
Apr	---	---	---	ns	ns	ns	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	ns	ns	ns	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	ns	ns	ns	ns	ns	ns	---	---	---

Table 59.-- Monthly bycatch rates (no./t) and average weights (kg) of red king crab and number of hauls sampled in the U.S.

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target												
Jan	---	---	---	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	0.000	0.00	62	0.000	0.00	82	ns	ns	ns	0.000	0.00	245
Jun	0.000	0.00	141	0.000	0.00	92	---	---	---	0.000	0.00	238
Jul	0.000	0.00	50	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---	---	---	---
Sep	ns	ns	ns	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---	---	---	---
Nov	ns	ns	ns	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	253	0.000	0.00	174	ns	ns	ns	0.000	0.00	483
Longline - Pacific cod target												
Jan	0.000	0.00	37	0.000	0.00	1	ns	ns	ns	ns	ns	ns
Feb	0.000	0.00	27	0.000	0.00	18	ns	ns	ns	ns	ns	ns
Mar	0.000	0.00	48	0.000	0.00	88	ns	ns	ns	0.000	0.00	10
Apr	---	---	---	ns	ns	ns	ns	ns	ns	ns	ns	ns
May	ns	ns	ns	ns	ns	ns	ns	ns	ns	0.000	0.00	2
Jun	ns	ns	ns	---	---	---	0.000	0.00	3	0.000	0.00	14
Jul	0.000	0.00	23	---	---	---	---	---	---	---	---	---
Aug	0.000	0.00	2	---	---	---	---	---	---	---	---	---
Sep	0.000	0.00	1	---	---	---	---	---	---	ns	ns	ns
Oct	ns	ns	ns	---	---	---	---	---	---	ns	ns	ns
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	138	0.000	0.00	107	0.000	0.00	3	0.000	0.00	26
Longline - Other species target												
Jan	0.000	0.00	1	---	---	---	---	---	---	ns	ns	ns
Feb	---	---	---	---	---	---	---	---	---	ns	ns	ns
Mar	---	---	---	---	---	---	---	---	---	ns	ns	ns
Apr	---	---	---	ns	ns	ns	---	---	---	ns	ns	ns
May	0.000	0.00	1	0.000	0.00	4	---	---	---	0.000	0.00	3
Jun	0.000	0.00	25	0.000	0.00	2	---	---	---	0.000	0.00	11
Jul	0.000	0.00	10	---	---	---	---	---	---	ns	ns	ns
Aug	0.000	0.00	1	---	---	---	---	---	---	ns	ns	ns
Sep	---	---	---	---	---	---	---	---	---	ns	ns	ns
Oct	---	---	---	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	38	0.000	0.00	6	---	---	---	0.000	0.00	14

domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC area, 1991 (Continued).
("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---
May	0.000	0.00	246	0.000	0.00	18	0.000	0.00	22
Jun	0.000	0.00	22	ns	ns	ns	ns	ns	ns
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	ns	ns	ns	---	---	---
Sep	---	---	---	ns	ns	ns	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	268	0.000	0.00	18	0.000	0.00	22
Longline - Pacific cod target									
Jan	---	---	---	ns	ns	ns	---	---	---
Feb	---	---	---	ns	ns	ns	---	---	---
Mar	---	---	---	ns	ns	ns	---	---	---
Apr	---	---	---	ns	ns	ns	---	---	---
May	ns	ns	ns	ns	ns	ns	ns	ns	ns
Jun	ns	ns	ns	ns	ns	ns	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	ns	ns	ns	ns	ns	ns	ns	ns	ns
Oct	---	---	---	ns	ns	ns	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	ns	ns	ns	---	---	---
Year	ns	ns	ns	ns	ns	ns	ns	ns	ns
Longline - Other species target									
Jan	---	---	---	ns	ns	ns	---	---	---
Feb	---	---	---	ns	ns	ns	---	---	---
Mar	---	---	---	ns	ns	ns	ns	ns	ns
Apr	---	---	---	ns	ns	ns	ns	ns	ns
May	0.000	0.00	15	0.000	0.00	2	0.000	0.00	5
Jun	0.000	0.00	1	ns	ns	ns	ns	ns	ns
Jul	---	---	---	ns	ns	ns	ns	ns	ns
Aug	---	---	---	ns	ns	ns	---	---	---
Sep	ns	ns	ns	ns	ns	ns	ns	ns	ns
Oct	---	---	---	ns	ns	ns	---	---	---
Nov	---	---	---	ns	ns	ns	---	---	---
Dec	---	---	---	ns	ns	ns	---	---	---
Year	0.000	0.00	16	0.000	0.00	2	0.000	0.00	5

Table 60.-- Monthly bycatch rates (no./t) and average weights (kg) of "other" king crab and number of hauls sampled in the

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Flatfish target												
Jan	0.277	0.57	2	---	---	---	0.000	0.00	1	0.000	0.00	20
Feb	0.000	0.00	23	---	---	---	ns	ns	ns	0.000	0.00	49
Mar	0.000	0.00	18	---	---	---	---	---	---	0.000	0.00	51
Apr	0.000	0.00	1	0.021	1.89	81	---	---	---	0.007	1.41	163
May	ns	ns	ns	0.009	0.95	31	---	---	---	0.005	1.50	79
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	2	0.000	0.00	7	---	---	---	0.000	0.00	61
Aug	0.000	0.00	3	0.000	0.00	11	0.000	0.00	3	0.005	1.66	135
Sep	0.000	0.00	11	0.000	0.00	13	0.000	0.00	1	0.000	0.00	73
Oct	0.000	0.00	6	0.000	0.00	22	---	---	---	0.001	0.72	107
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.018	0.57	66	0.012	1.77	165	0.000	0.00	5	0.003	1.44	738
Bottom trawl - Pollock target												
Jan	0.000	0.00	11	---	---	---	0.000	0.00	21	0.000	0.00	18
Feb	0.000	0.00	17	---	---	---	0.000	0.00	5	0.000	0.00	9
Mar	0.000	0.00	28	0.000	0.00	6	---	---	---	0.000	0.00	3
Apr	---	---	---	---	---	---	---	---	---	0.008	0.38	9
May	---	---	---	---	---	---	---	---	---	0.000	0.00	2
Jun	---	---	---	---	---	---	---	---	---	ns	ns	ns
Jul	0.000	0.00	19	---	---	---	---	---	---	0.000	0.00	5
Aug	0.000	0.00	2	---	---	---	---	---	---	0.000	0.00	17
Sep	0.000	0.00	20	0.000	0.00	1	0.000	0.00	2	0.000	0.00	28
Oct	0.000	0.00	94	0.000	0.00	2	0.000	0.00	1	0.000	0.00	43
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	191	0.000	0.00	9	0.000	0.00	29	<0.001	0.38	134
Bottom trawl - Pacific cod target												
Jan	0.000	0.00	94	---	---	---	0.000	0.00	1	0.000	0.00	21
Feb	0.000	0.00	254	0.000	0.00	7	0.000	0.00	5	0.000	0.00	151
Mar	0.001	0.53	357	0.000	0.00	125	0.000	0.00	17	0.000	0.00	206
Apr	0.000	0.00	4	0.000	0.00	34	0.000	0.00	20	0.003	2.10	65
May	---	---	---	0.000	0.00	3	---	---	---	0.000	0.00	1
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	2	0.000	0.00	2	---	---	---	0.000	0.00	4
Aug	0.000	0.00	1	0.000	0.00	3	---	---	---	0.000	0.00	11
Sep	0.000	0.00	10	---	---	---	---	---	---	0.000	0.00	4
Oct	0.000	0.00	10	---	---	---	0.000	0.00	5	0.000	0.00	1
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	<0.001	0.53	732	0.000	0.00	174	0.000	0.00	48	<0.001	2.10	464

U.S. domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC area, 1991.
("Rate" = no./t of groundfish; "Wt" = average weight; "Hl" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	Hl	Rate	Wt	Hl	Rate	Wt	Hl
Bottom trawl - Flatfish target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	0.042	1.15	6	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	0.000	0.00	6	ns	ns	ns	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.026	1.15	12	ns	ns	ns	---	---	---
Bottom trawl - Pollock target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	0.000	0.00	1	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	0.000	0.00	1	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	2	---	---	---	---	---	---
Bottom trawl - Pacific cod target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	ns	ns	ns	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	ns	ns	ns	---	---	---	---	---	---

Table 60.-- Monthly bycatch rates (no./t) and average weights (kg) of "other" king crab and number of hauls sampled in the (Continued).

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Rockfish target												
Jan	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---	0.000	0.00	3
Mar	0.000	0.00	61	0.000	0.00	39	0.000	0.00	1	0.028	2.36	118
Apr	0.015	2.50	10	0.062	1.21	25	---	---	---	0.016	1.24	88
May	0.000	0.00	1	1.449	1.20	3	---	---	---	0.010	2.30	11
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	12	0.000	0.00	3	---	---	---	0.015	1.30	85
Aug	0.000	0.00	3	0.000	0.00	7	---	---	---	0.059	0.50	188
Sep	0.005	1.60	70	0.000	0.00	1	---	---	---	0.000	0.00	61
Oct	0.000	0.00	72	---	---	---	---	---	---	0.000	0.00	11
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.003	2.15	230	0.062	1.20	78	0.000	0.00	1	0.029	1.06	565
Bottom trawl - Other species target												
Jan	---	---	---	---	---	---	---	---	---	---	---	---
Feb	0.000	0.00	1	0.000	0.00	2	---	---	---	---	---	---
Mar	0.000	0.00	4	---	---	---	---	---	---	0.069	1.25	3
Apr	---	---	---	2.896	0.34	4	---	---	---	0.013	1.00	10
May	---	---	---	0.000	0.00	2	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	3	---	---	---	---	---	---	0.000	0.00	16
Aug	0.000	0.00	1	0.000	0.00	2	---	---	---	0.000	0.00	46
Sep	0.000	0.00	10	0.000	0.00	2	---	---	---	0.000	0.00	30
Oct	0.000	0.00	74	---	---	---	---	---	---	0.000	0.00	13
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	93	0.837	0.34	12	---	---	---	0.003	1.08	118

U.S. domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC area, 1991
 ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Bottom trawl - Rockfish target									
Jan	---	---	---	---	---	---	---	---	---
Feb	ns	ns	ns	ns	ns	ns	---	---	---
Mar	---	---	---	0.002	1.40	45	---	---	---
Apr	0.028	2.03	59	0.000	0.00	17	0.015	1.73	14
May	ns	ns	ns	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	0.000	0.00	12	---	---	---	---	---	---
Oct	0.000	0.00	17	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.020	2.03	88	0.001	1.40	62	0.015	1.73	14
Bottom trawl - Other species target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	0.000	0.00	2	---	---	---
Apr	0.610	0.81	5	---	---	---	0.000	0.00	1
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	ns	ns	ns	---	---	---	---	---	---
Sep	0.000	0.00	31	---	---	---	---	---	---
Oct	0.000	0.00	6	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.130	0.81	42	0.000	0.00	2	0.000	0.00	1

Table 60.— Monthly bycatch rates (no./t) and average weights (kg) of "other" king crab and number of hauls sampled in the (Continued).

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target												
Jan	0.000	0.00	10	---	---	---	0.000	0.00	51	0.000	0.00	40
Feb	0.000	0.00	3	---	---	---	0.000	0.00	6	0.000	0.00	28
Mar	---	---	---	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Jun	0.000	0.00	15	0.000	0.00	1	0.000	0.00	2	0.000	0.00	116
Jul	0.000	0.00	181	ns	ns	ns	0.000	0.00	21	0.000	0.00	243
Aug	---	---	---	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	0.000	0.00	73	0.000	0.00	1	0.000	0.00	4	0.000	0.00	195
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	283	0.000	0.00	2	0.000	0.00	84	0.000	0.00	622
Pelagic trawl - Other species target												
Jan	ns	ns	ns	---	---	---	---	---	---	ns	ns	ns
Feb	0.000	0.00	10	0.000	0.00	1	ns	ns	ns	0.000	0.00	1
Mar	0.000	0.00	8	0.000	0.00	1	---	---	---	0.000	0.00	8
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	0.000	0.00	1	0.000	0.00	1	---	---	---	0.000	0.00	2
Aug	---	---	---	---	---	---	---	---	---	ns	ns	ns
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	ns	ns	ns	0.000	0.00	1	---	---	---	0.000	0.00	4
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	19	0.000	0.00	4	ns	ns	ns	0.000	0.00	15
Pots - All targets												
Jan	ns	ns	ns	ns	ns	ns	0.000	0.00	44	0.000	0.00	31
Feb	ns	ns	ns	0.000	0.00	22	0.000	0.00	140	0.019	0.20	87
Mar	ns	ns	ns	ns	ns	ns	0.000	0.00	35	0.000	0.00	150
Apr	---	---	---	ns	ns	ns	0.000	0.00	61	0.006	0.80	166
May	---	---	---	ns	ns	ns	ns	ns	ns	0.000	0.00	1
Jun	---	---	---	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---	---	---	---
Aug	0.000	0.00	1	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---	---	---	---
Oct	ns	ns	ns	---	---	---	ns	ns	ns	ns	ns	ns
Nov	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
Dec	0.000	0.00	40	---	---	---	ns	ns	ns	ns	ns	ns
Year	0.000	0.00	41	0.000	0.00	22	0.000	0.00	280	0.005	0.50	435

U.S. domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC area, 1991
 ("Rate" = no./t of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Pelagic trawl - Pollock target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	0.000	0.00	9	---	---	---	---	---	---
Apr	0.000	0.00	15	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	24	---	---	---	---	---	---
Pelagic trawl - Other species target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	---	---	---	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	---	---	---	---	---	---	---	---	---
Pots - All targets									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	ns	ns	ns	ns	ns	ns	---	---	---
Apr	---	---	---	ns	ns	ns	---	---	---
May	---	---	---	---	---	---	---	---	---
Jun	---	---	---	ns	ns	ns	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	ns	ns	ns	ns	ns	ns	---	---	---

Table 60.-- Monthly bycatch rates (no./t) and average weights (kg) of "other" king crab and number of hauls sampled in the (Continued).

	Area 610			Area 620			Area 621			Area 630		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target												
Jan	---	---	---	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---	---	---	---
May	0.000	0.00	62	0.030	1.80	82	ns	ns	ns	0.026	1.00	245
Jun	0.007	0.80	141	0.095	1.64	92	---	---	---	0.010	1.39	238
Jul	0.000	0.00	50	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---	---	---	---
Sep	ns	ns	ns	---	---	---	---	---	---	---	---	---
Oct	---	---	---	---	---	---	---	---	---	---	---	---
Nov	ns	ns	ns	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.003	0.80	253	0.062	1.68	174	ns	ns	ns	0.019	1.09	483
Longline - Pacific cod target												
Jan	0.000	0.00	37	0.000	0.00	1	ns	ns	ns	ns	ns	ns
Feb	0.000	0.00	27	0.000	0.00	18	ns	ns	ns	ns	ns	ns
Mar	0.000	0.00	48	0.000	0.00	88	ns	ns	ns	0.000	0.00	10
Apr	---	---	---	ns	ns	ns	ns	ns	ns	ns	ns	ns
May	ns	ns	ns	ns	ns	ns	ns	ns	ns	0.000	0.00	2
Jun	ns	ns	ns	---	---	---	0.000	0.00	3	0.000	0.00	14
Jul	0.000	0.00	23	---	---	---	---	---	---	---	---	---
Aug	0.000	0.00	2	---	---	---	---	---	---	---	---	---
Sep	0.000	0.00	1	---	---	---	---	---	---	ns	ns	ns
Oct	ns	ns	ns	---	---	---	---	---	---	ns	ns	ns
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	138	0.000	0.00	107	0.000	0.00	3	0.000	0.00	26
Longline - Other species target												
Jan	0.000	0.00	1	---	---	---	---	---	---	ns	ns	ns
Feb	---	---	---	---	---	---	---	---	---	ns	ns	ns
Mar	---	---	---	---	---	---	---	---	---	ns	ns	ns
Apr	---	---	---	ns	ns	ns	---	---	---	ns	ns	ns
May	0.000	0.00	1	0.000	0.00	4	---	---	---	2.631	1.40	3
Jun	0.000	0.00	25	0.000	0.00	2	---	---	---	0.000	0.00	11
Jul	0.000	0.00	10	---	---	---	---	---	---	ns	ns	ns
Aug	0.000	0.00	1	---	---	---	---	---	---	ns	ns	ns
Sep	---	---	---	---	---	---	---	---	---	ns	ns	ns
Oct	---	---	---	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---	---	---	---
Year	0.000	0.00	38	0.000	0.00	6	---	---	---	0.049	1.40	14

U.S. domestic groundfish fisheries in the Gulf of Alaska region by gear type, target fishery, and NPFMC area, 1991
("Rate = no./ft of groundfish; "Wt" = average weight; "HI" = no. of hauls; "ns" = no observer sampling; " --- " = no fishing).

	Area 640			Area 650			Area 680		
	Rate	Wt	HI	Rate	Wt	HI	Rate	Wt	HI
Longline - Sablefish target									
Jan	---	---	---	---	---	---	---	---	---
Feb	---	---	---	---	---	---	---	---	---
Mar	---	---	---	---	---	---	---	---	---
Apr	---	---	---	---	---	---	---	---	---
May	0.008	0.95	246	0.000	0.00	18	0.000	0.00	22
Jun	0.372	0.78	22	ns	ns	ns	ns	ns	ns
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	ns	ns	ns	---	---	---
Sep	---	---	---	ns	ns	ns	---	---	---
Oct	---	---	---	---	---	---	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	---	---	---	---	---	---
Year	0.019	0.85	268	0.000	0.00	18	0.000	0.00	22
Longline - Pacific cod target									
Jan	---	---	---	ns	ns	ns	---	---	---
Feb	---	---	---	ns	ns	ns	---	---	---
Mar	---	---	---	ns	ns	ns	---	---	---
Apr	---	---	---	ns	ns	ns	---	---	---
May	ns	ns	ns	ns	ns	ns	ns	ns	ns
Jun	ns	ns	ns	ns	ns	ns	---	---	---
Jul	---	---	---	---	---	---	---	---	---
Aug	---	---	---	---	---	---	---	---	---
Sep	ns	ns	ns	ns	ns	ns	ns	ns	ns
Oct	---	---	---	ns	ns	ns	---	---	---
Nov	---	---	---	---	---	---	---	---	---
Dec	---	---	---	ns	ns	ns	---	---	---
Year	ns	ns	ns	ns	ns	ns	ns	ns	ns
Longline - Other species target									
Jan	---	---	---	ns	ns	ns	---	---	---
Feb	---	---	---	ns	ns	ns	---	---	---
Mar	---	---	---	ns	ns	ns	ns	ns	ns
Apr	---	---	---	ns	ns	ns	ns	ns	ns
May	0.000	0.00	15	0.000	0.00	2	0.000	0.00	5
Jun	0.000	0.00	1	ns	ns	ns	ns	ns	ns
Jul	---	---	---	ns	ns	ns	ns	ns	ns
Aug	---	---	---	ns	ns	ns	---	---	---
Sep	ns	ns	ns	ns	ns	ns	ns	ns	ns
Oct	---	---	---	ns	ns	ns	---	---	---
Nov	---	---	---	ns	ns	ns	---	---	---
Dec	---	---	---	ns	ns	ns	---	---	---
Year	0.000	0.00	16	0.000	0.00	2	0.000	0.00	5

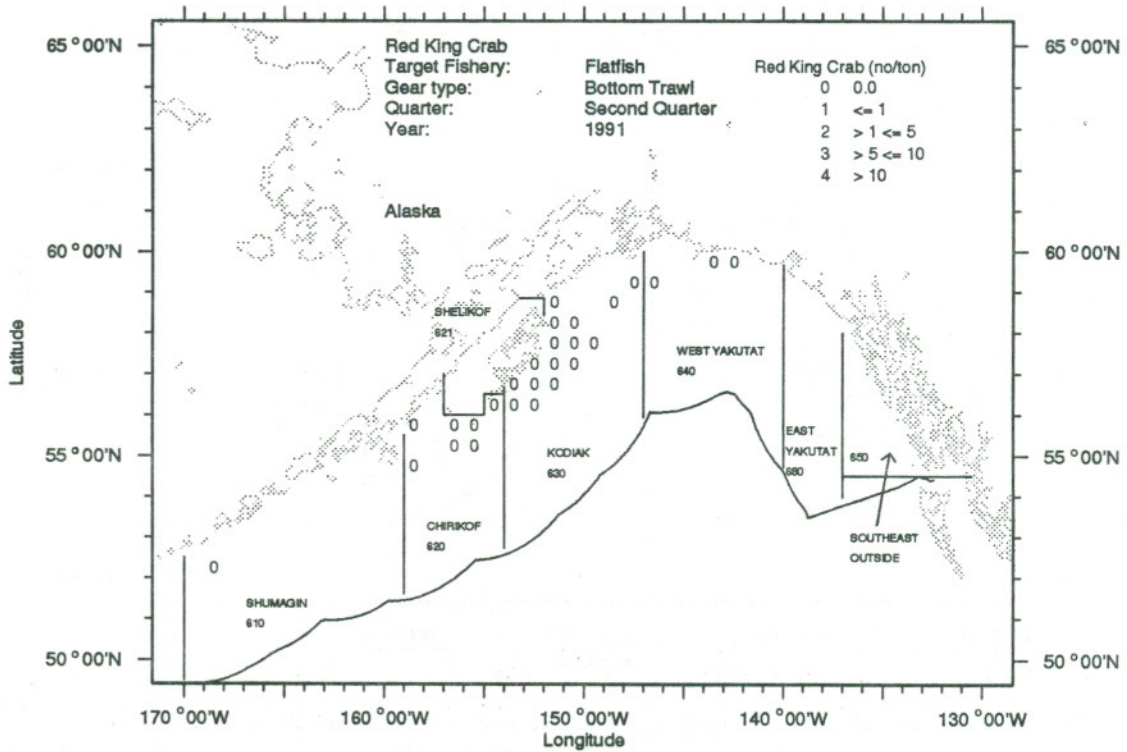
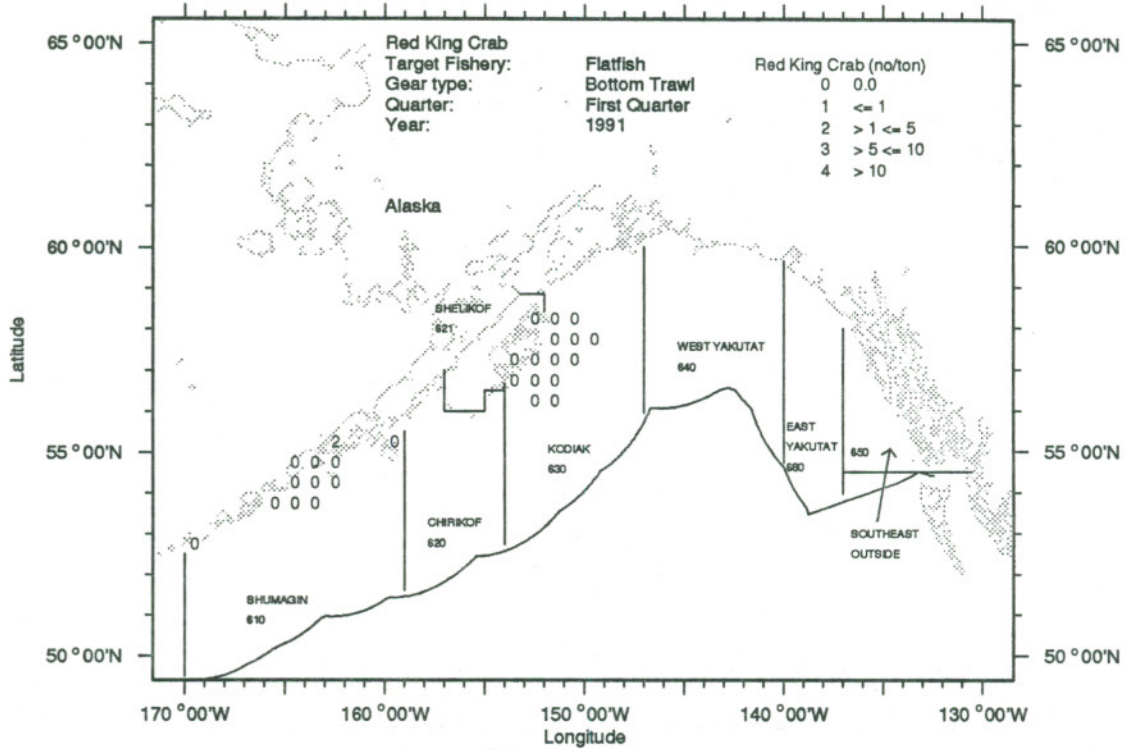


Figure 16.--Bycatch (no./metric ton (t)) of red king crab in the U.S. domestic groundfish fisheries by quarter, target fishery, gear type, and ½° latitude and 1° longitude areas in the Gulf of Alaska region, 1991.

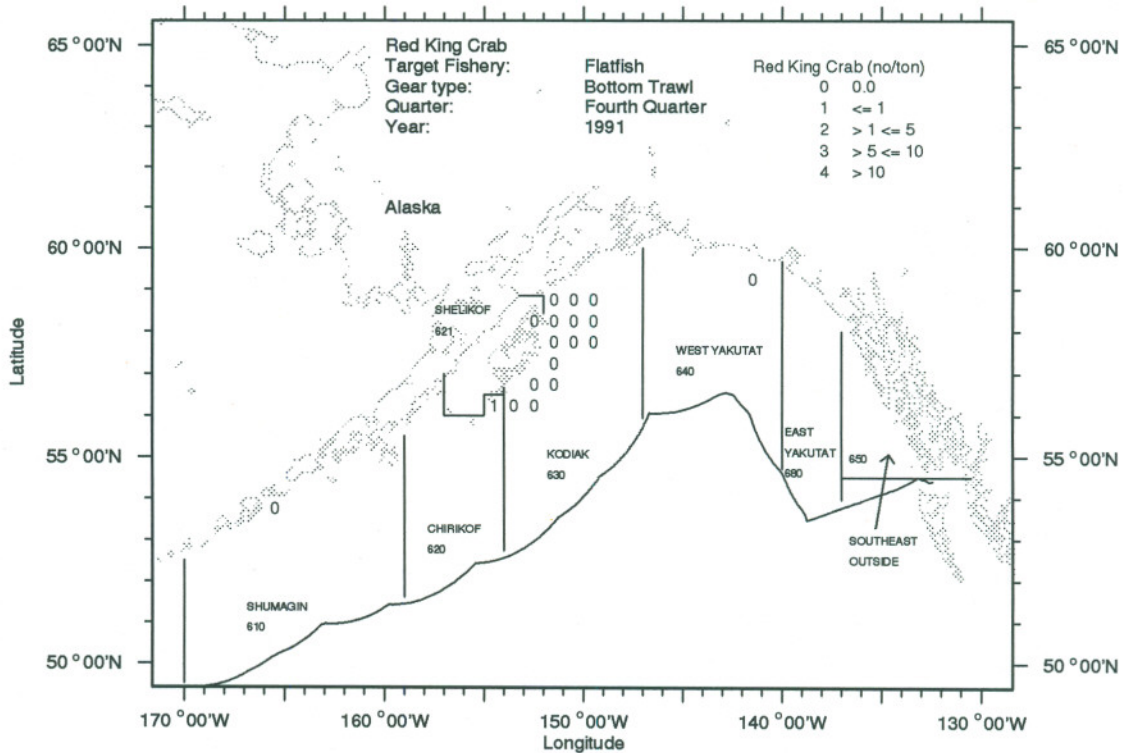
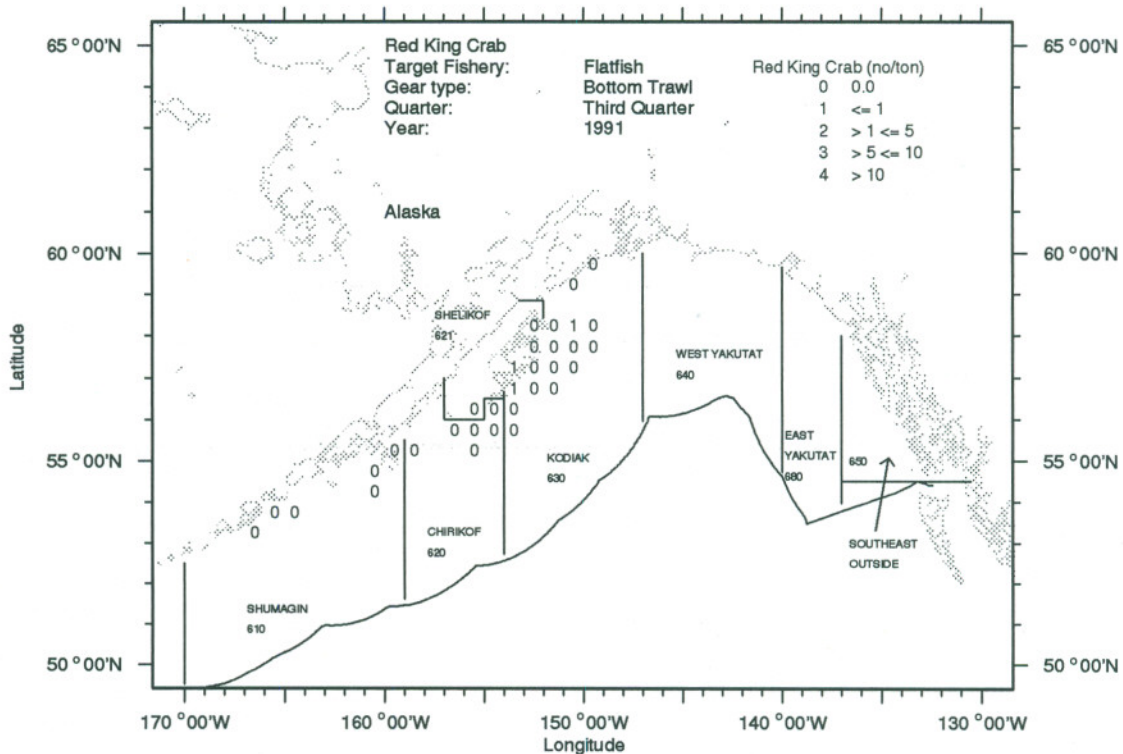


Figure 16.--Continued.

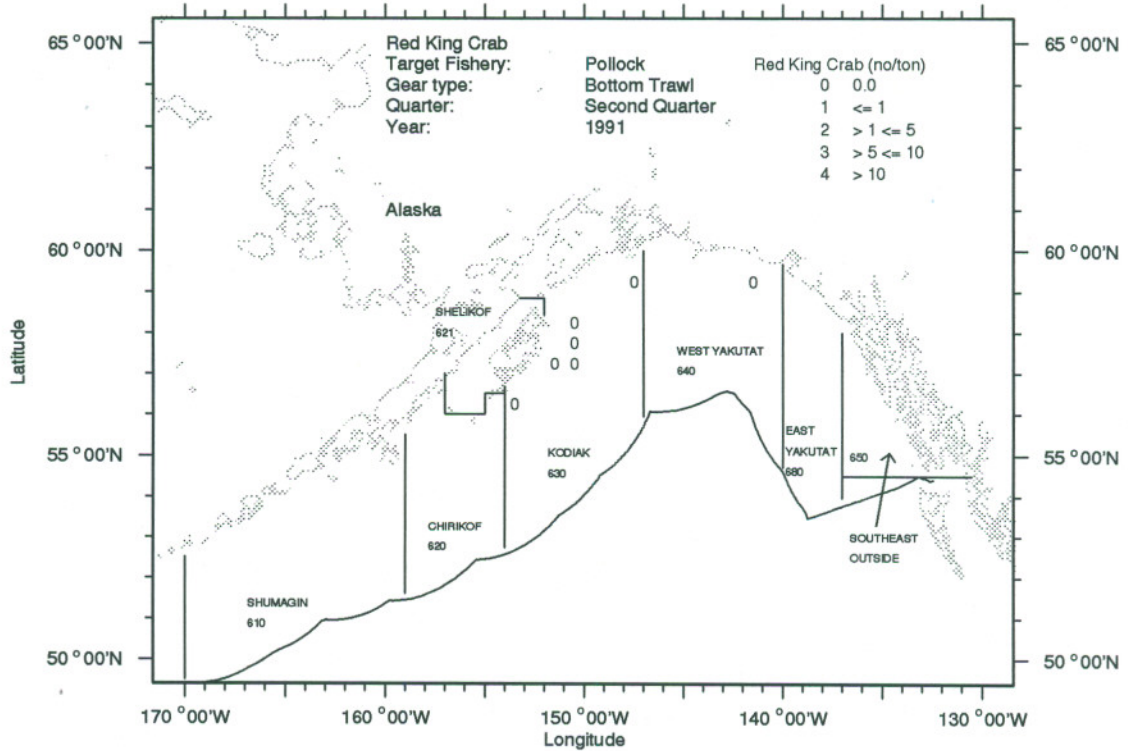
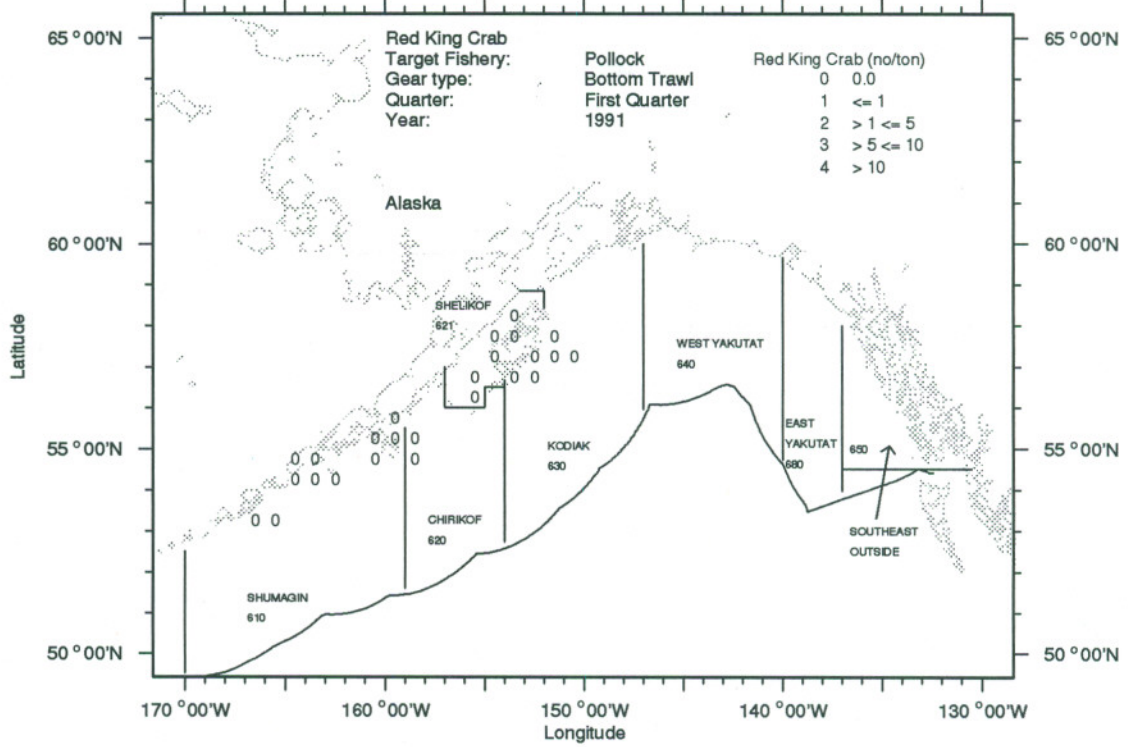


Figure 16.--Continued.

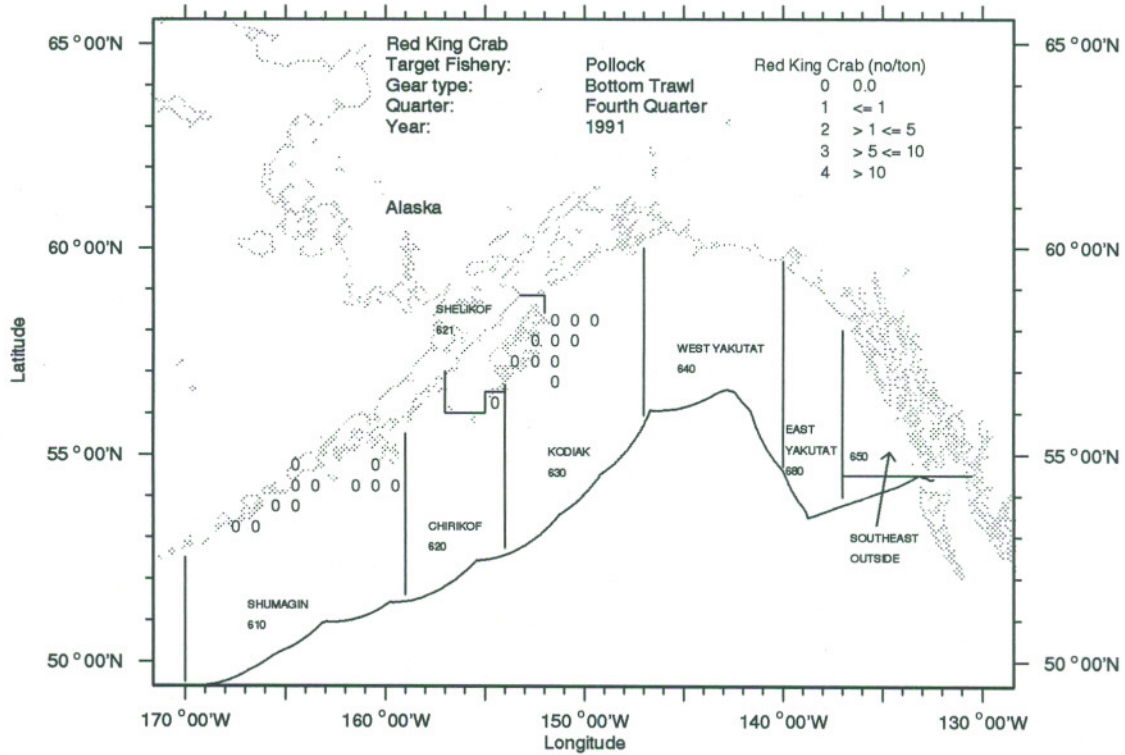
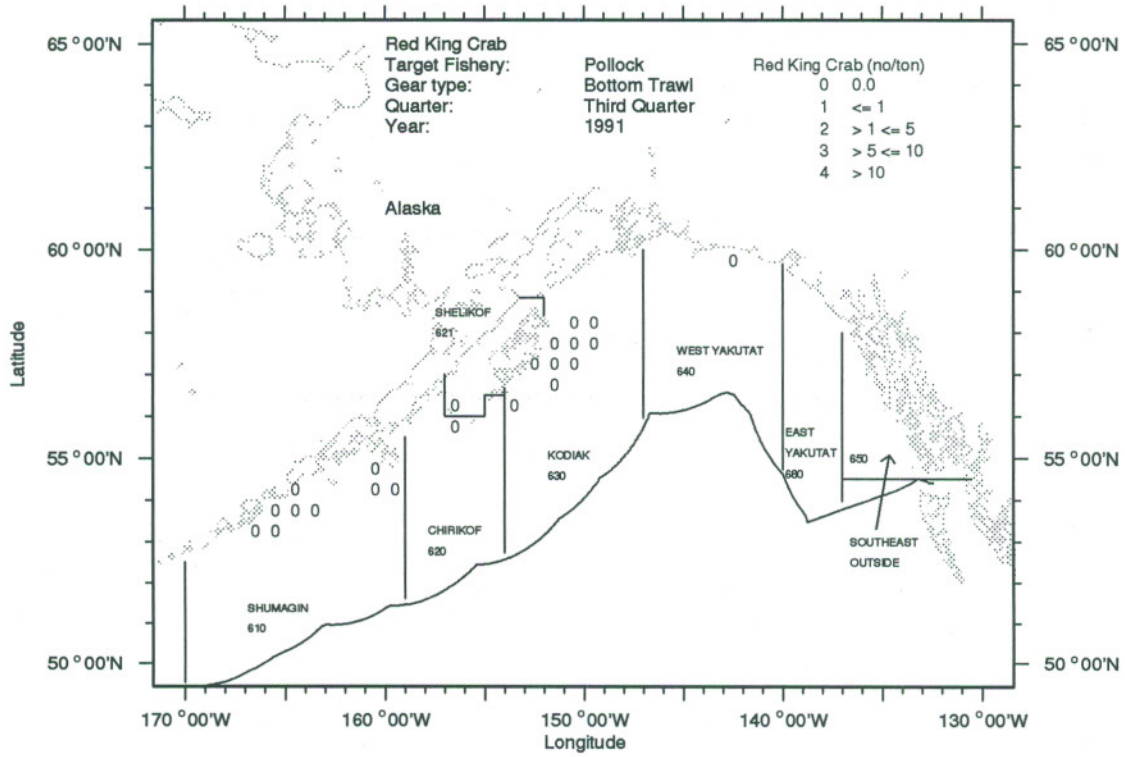


Figure 16.--Continued.

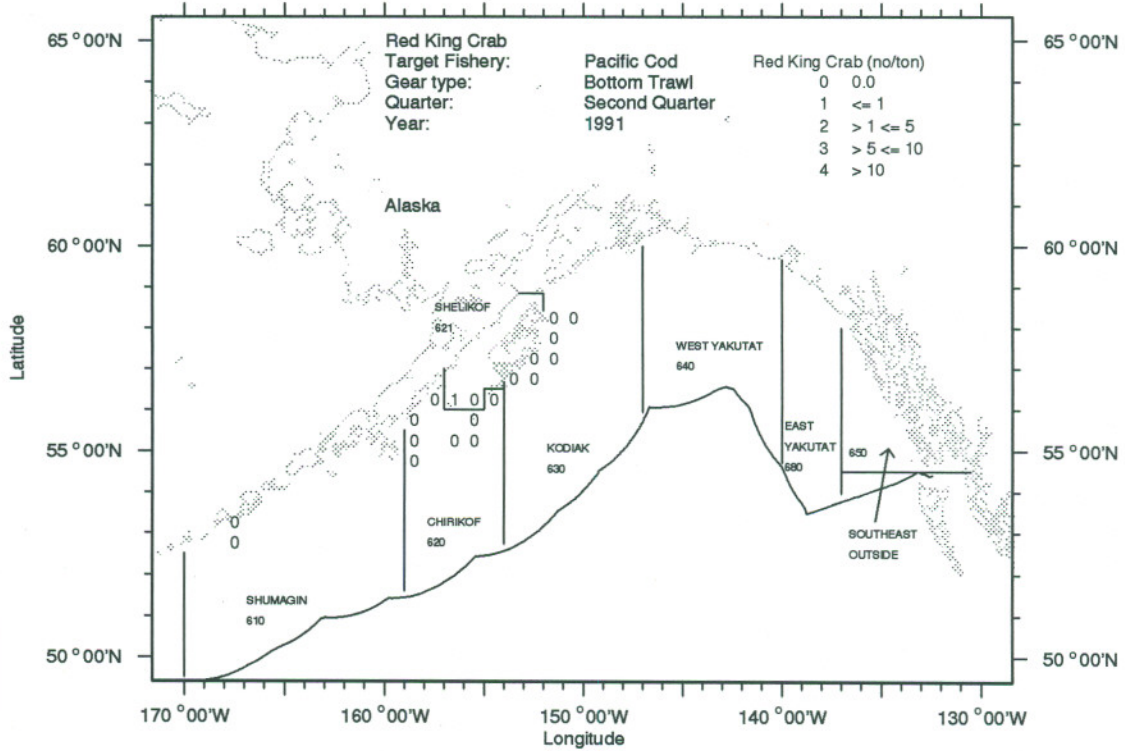
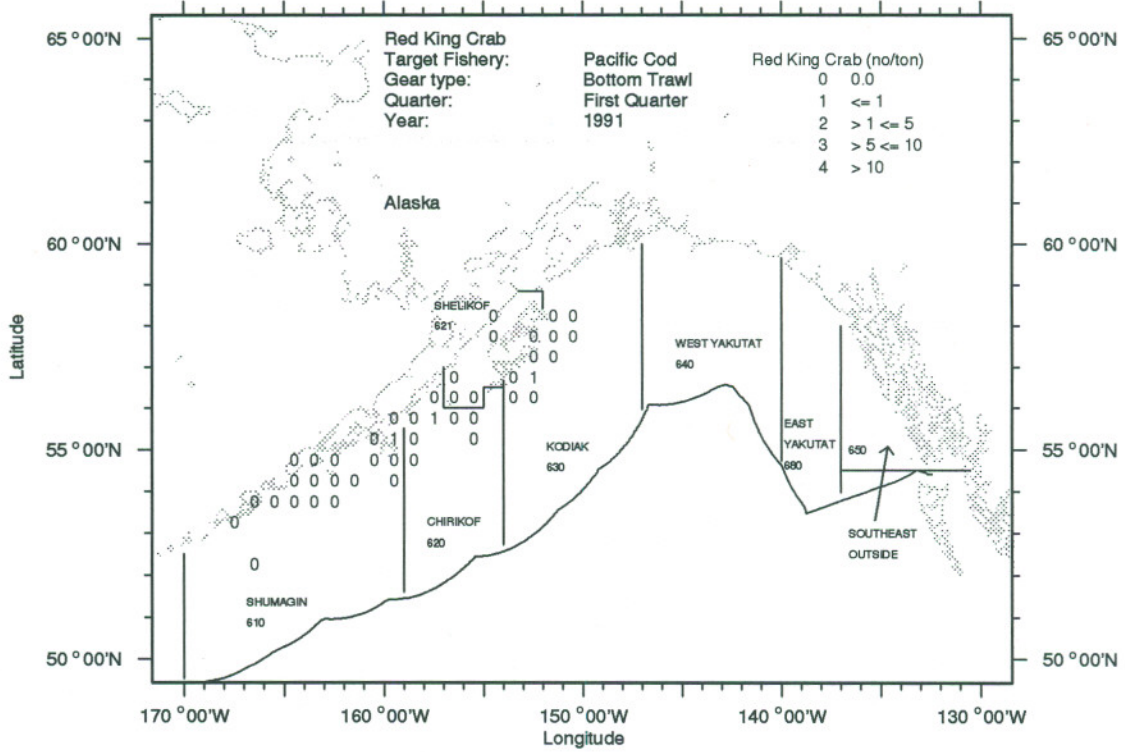


Figure 16.--Continued.

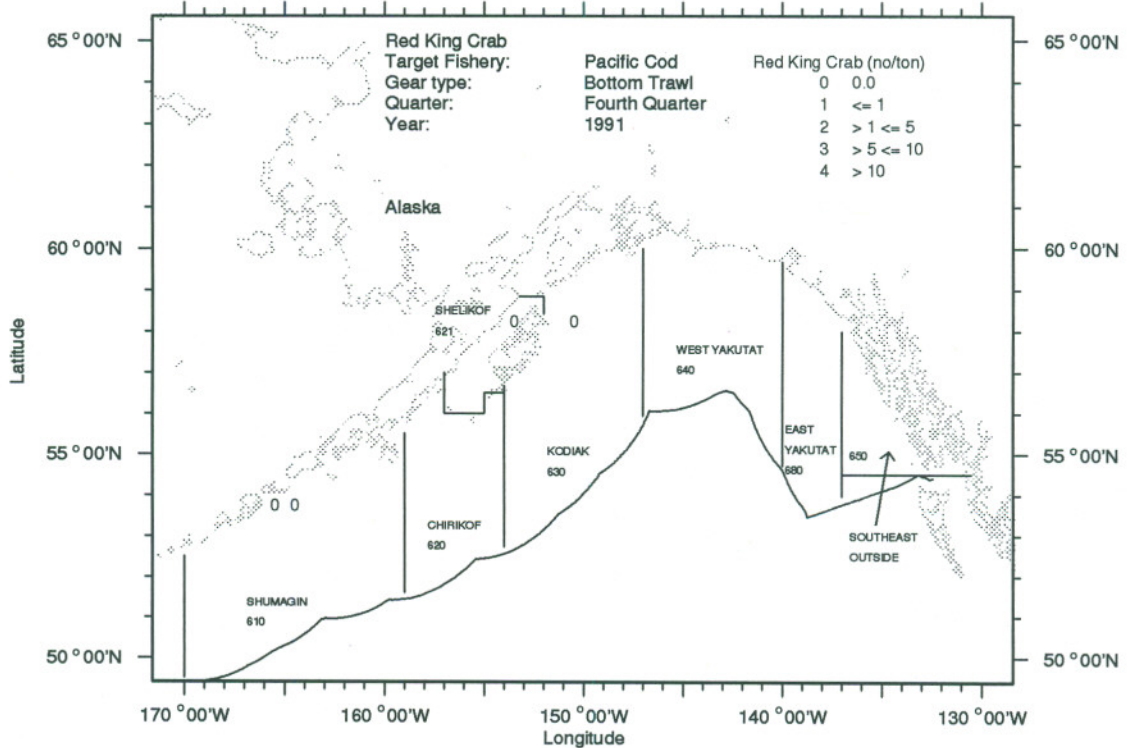
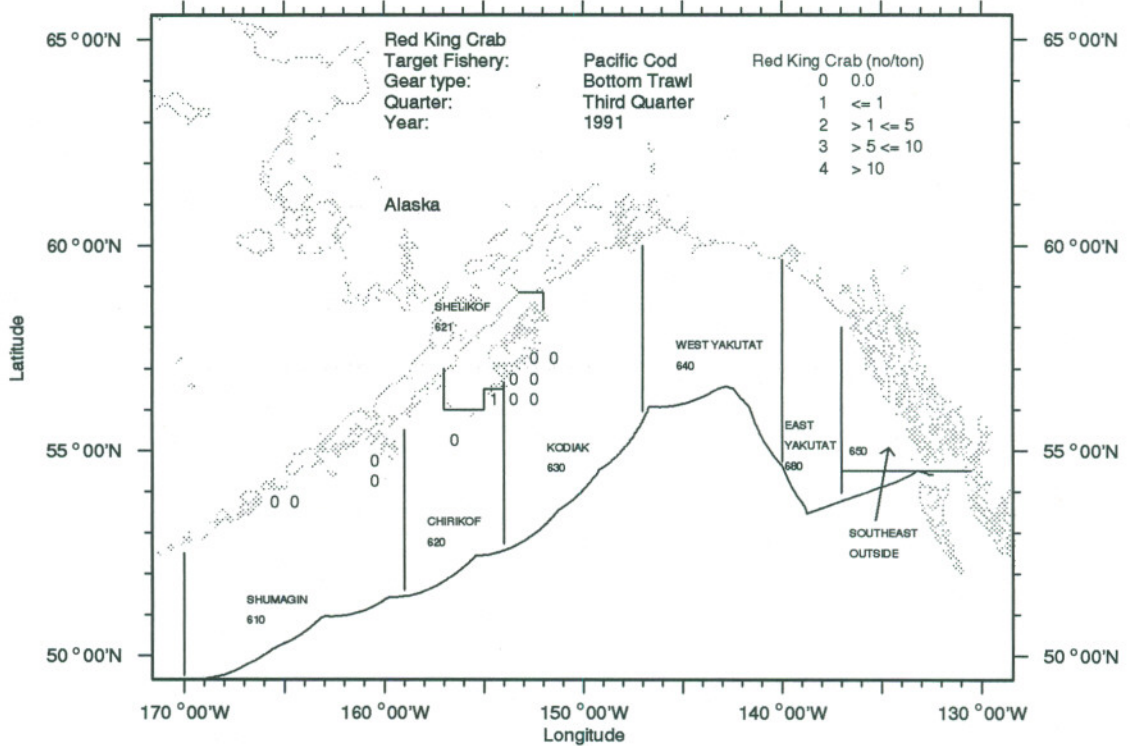


Figure 16.--Continued.

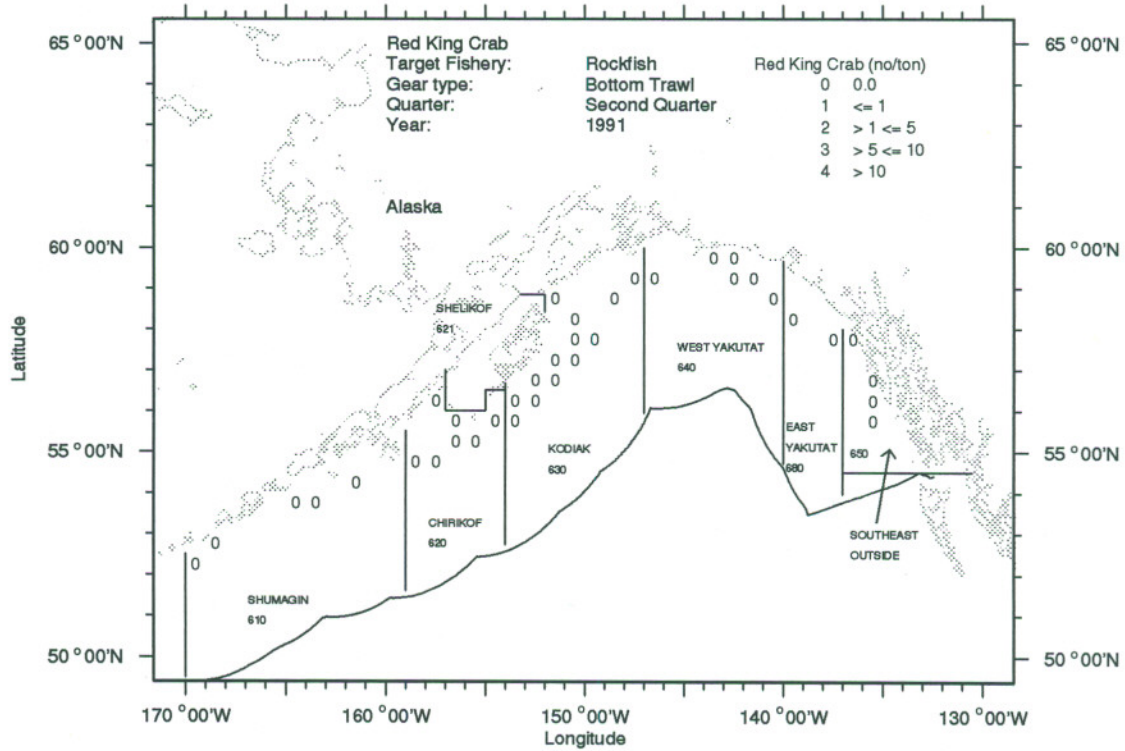
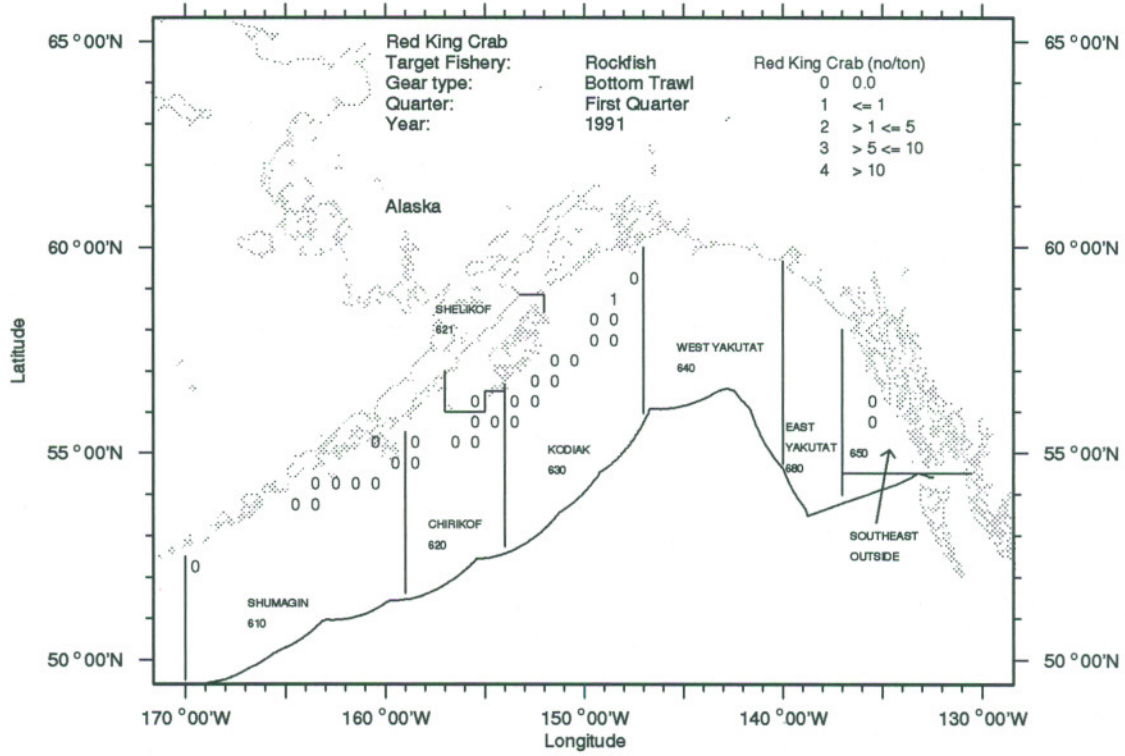


Figure 16.--Continued.

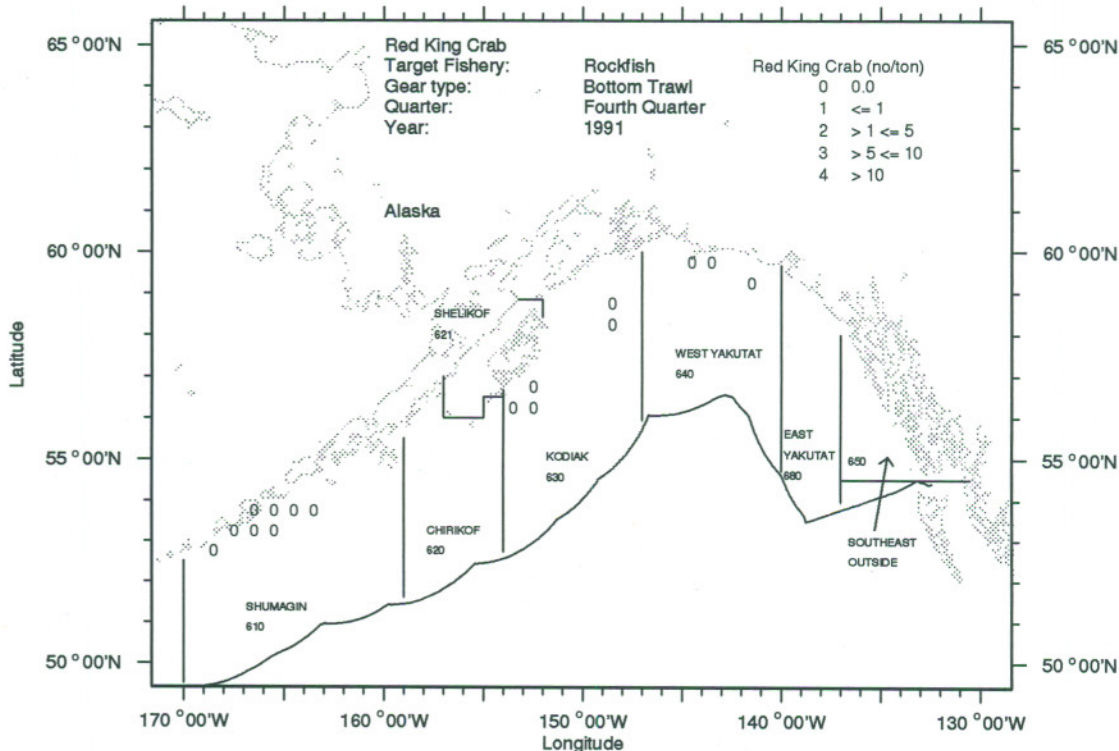
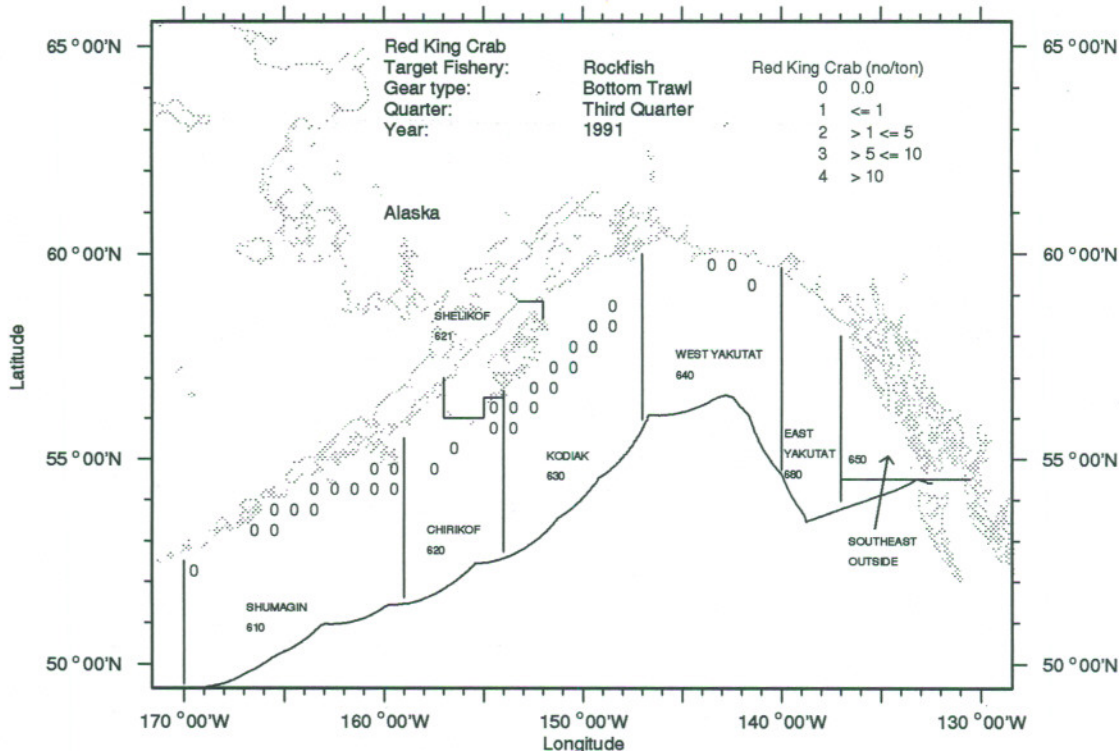


Figure 16.--Continued.

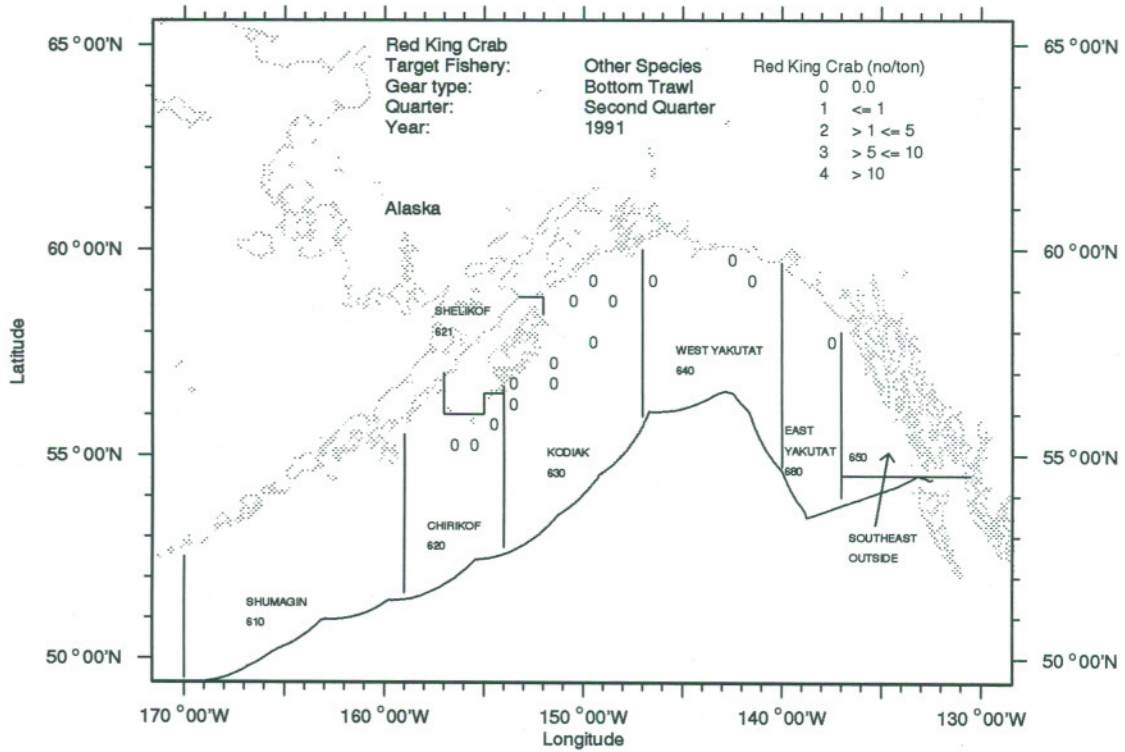
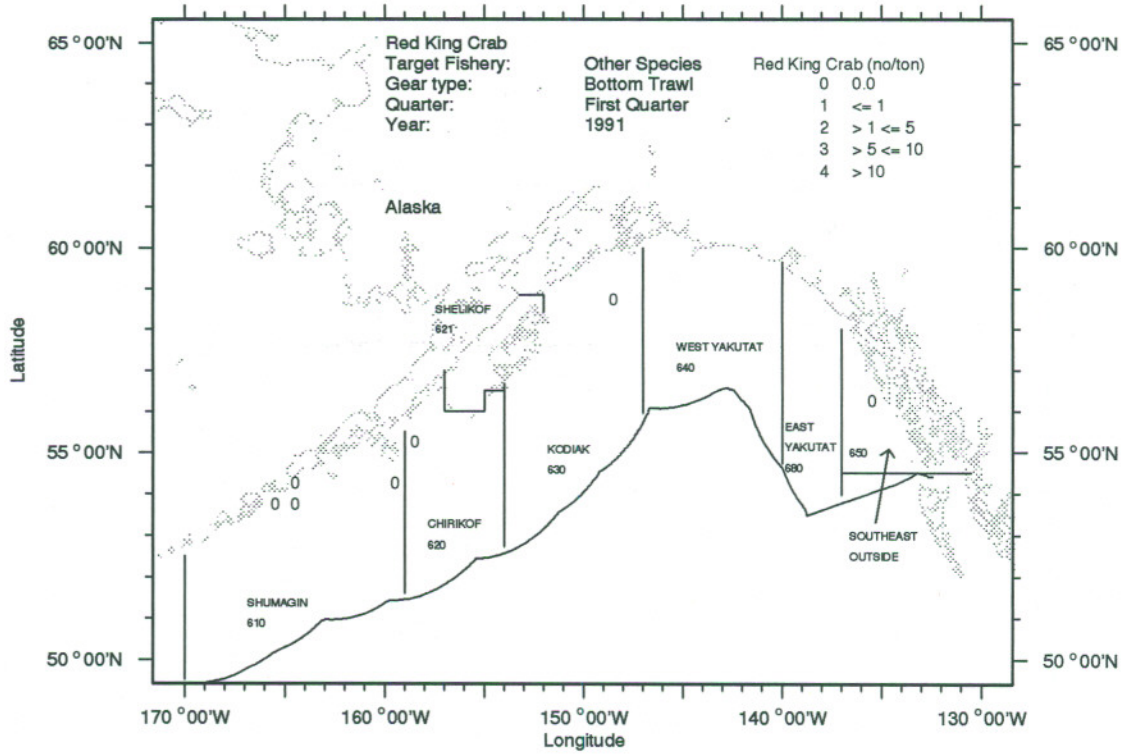


Figure 16.--Continued.

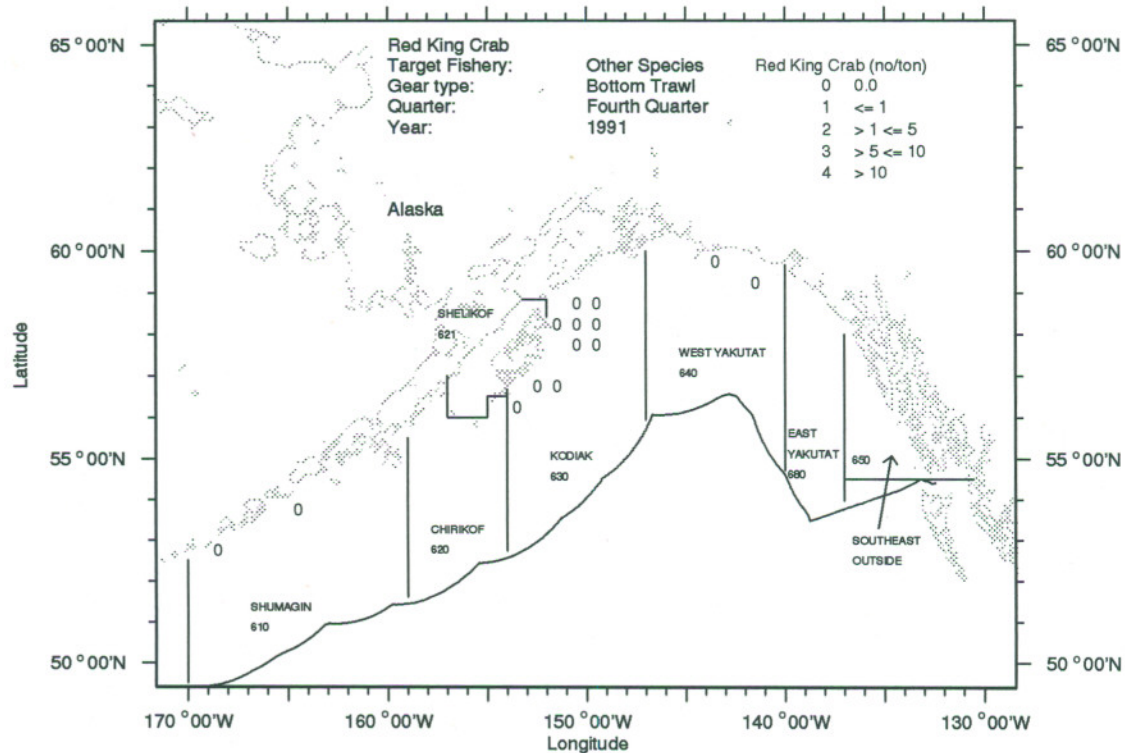
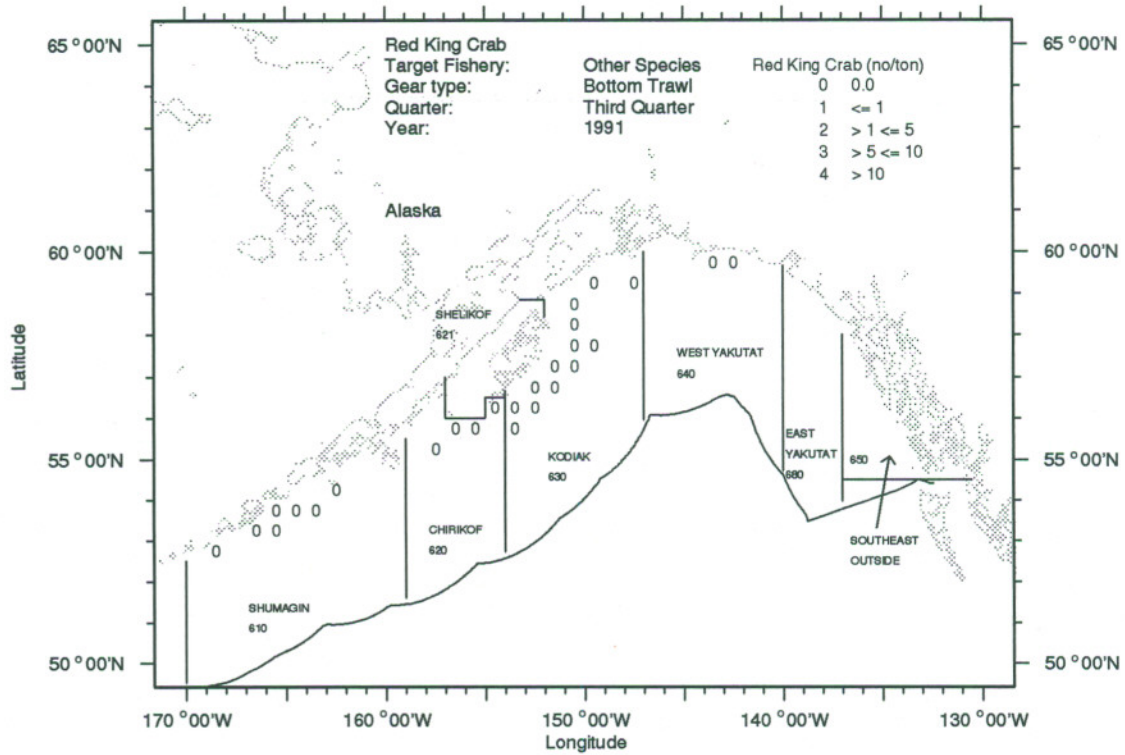


Figure 16.--Continued.

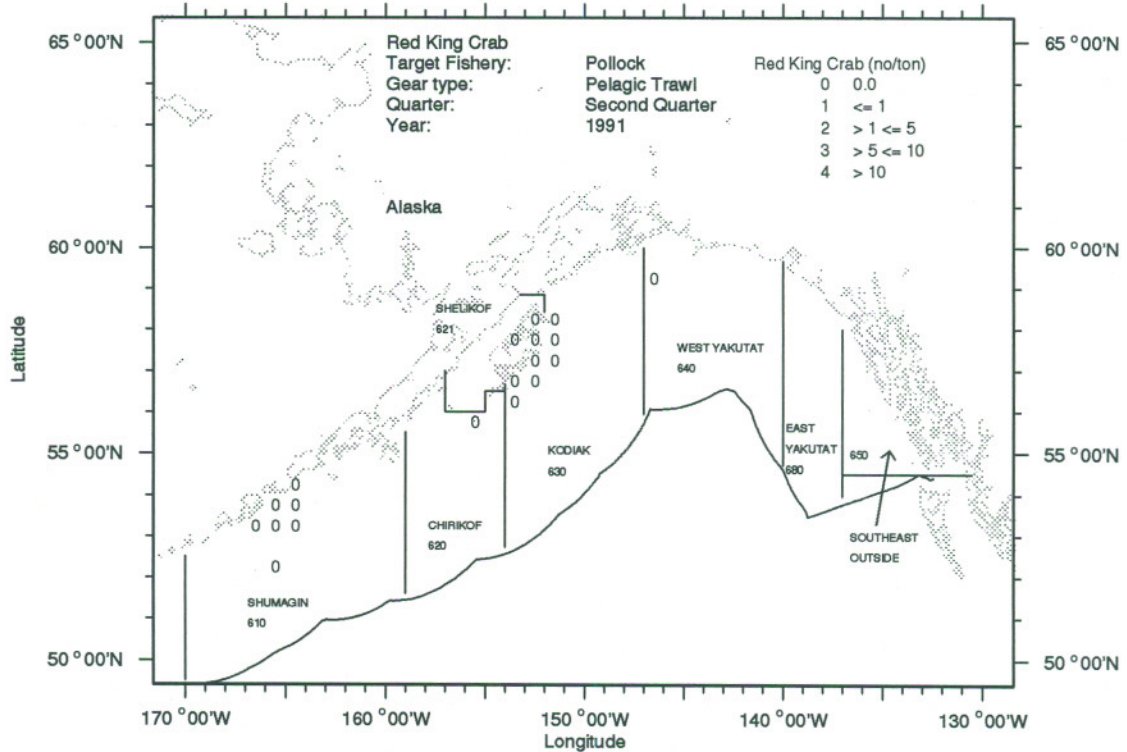
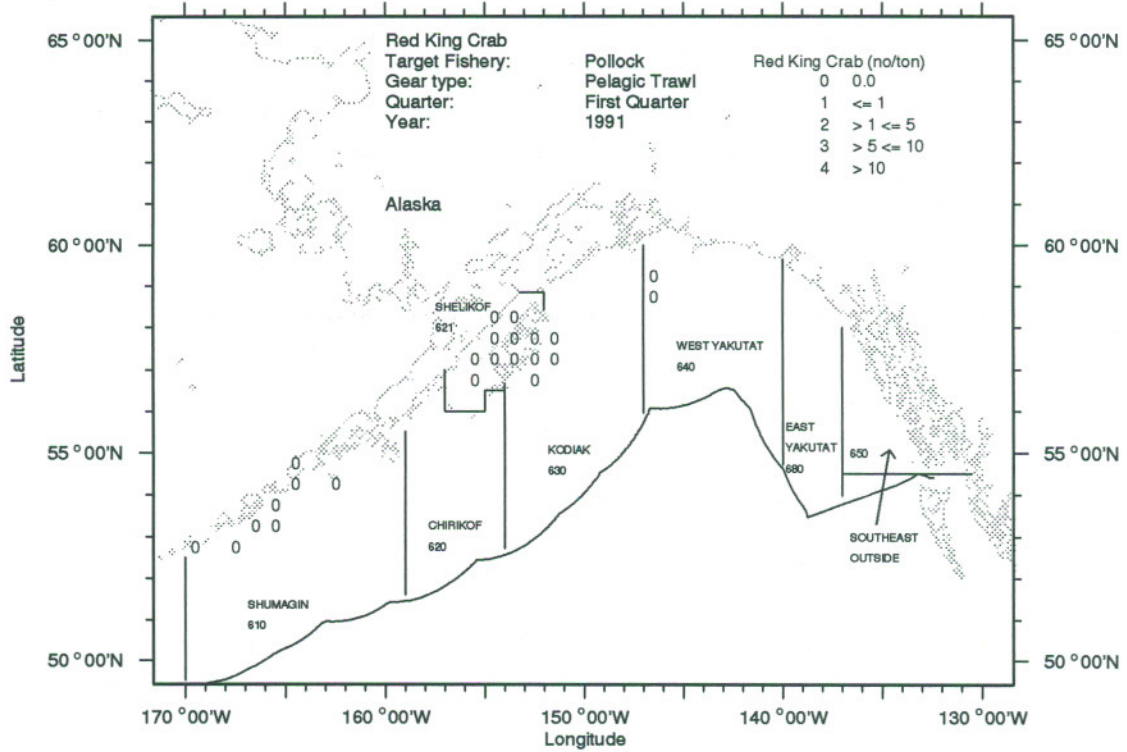


Figure 16.--Continued.

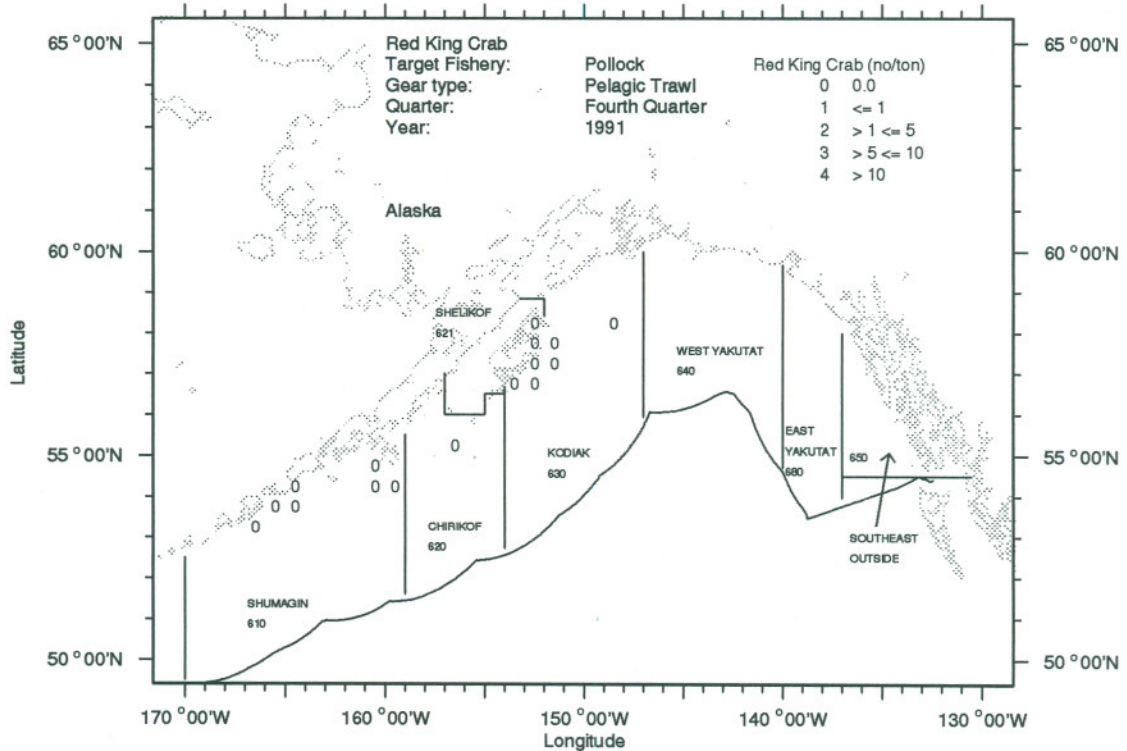
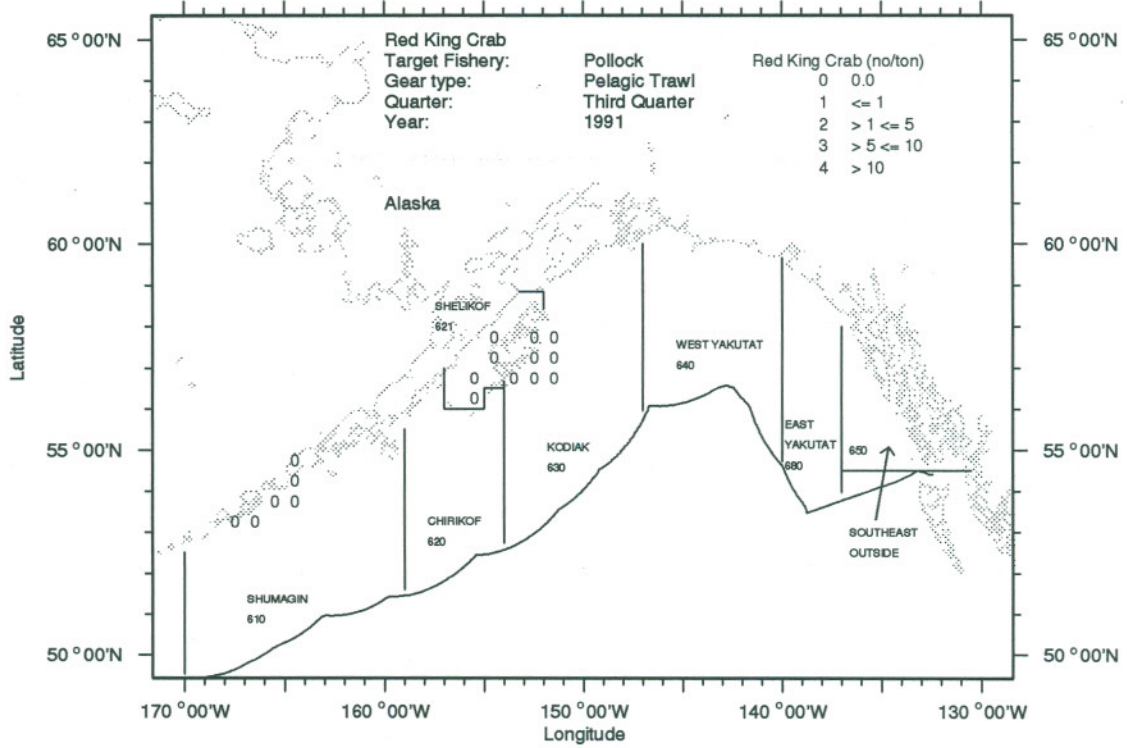


Figure 16.--Continued.

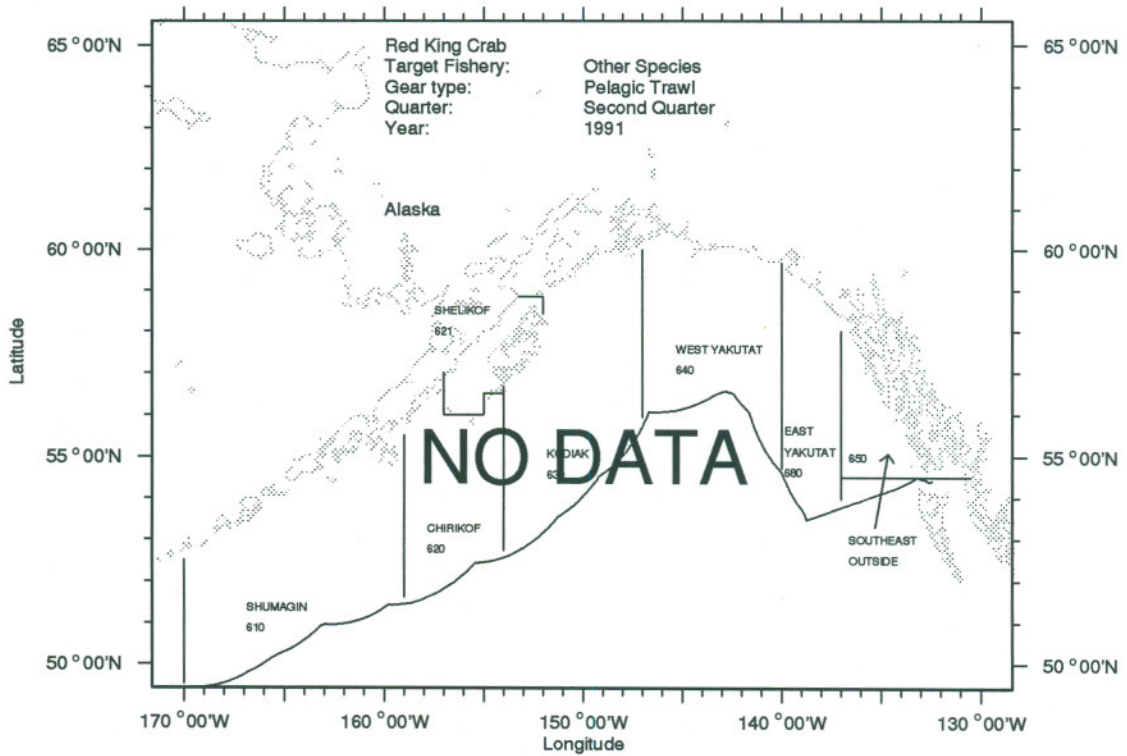
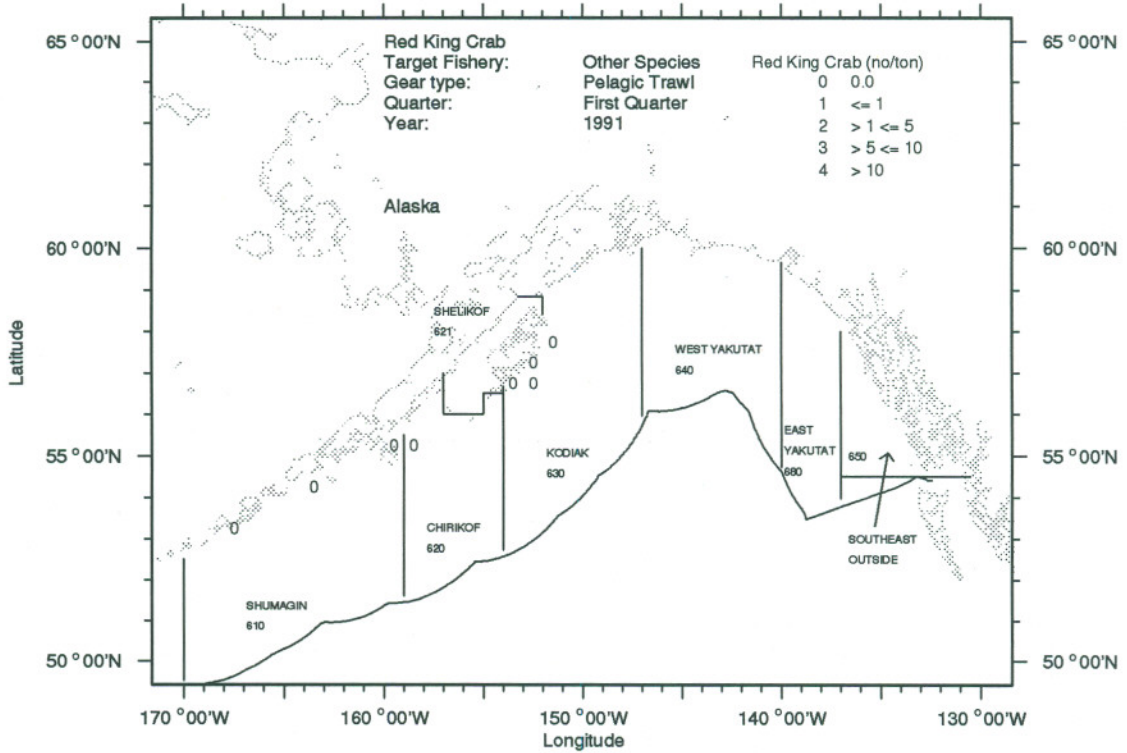


Figure 16.--Continued.

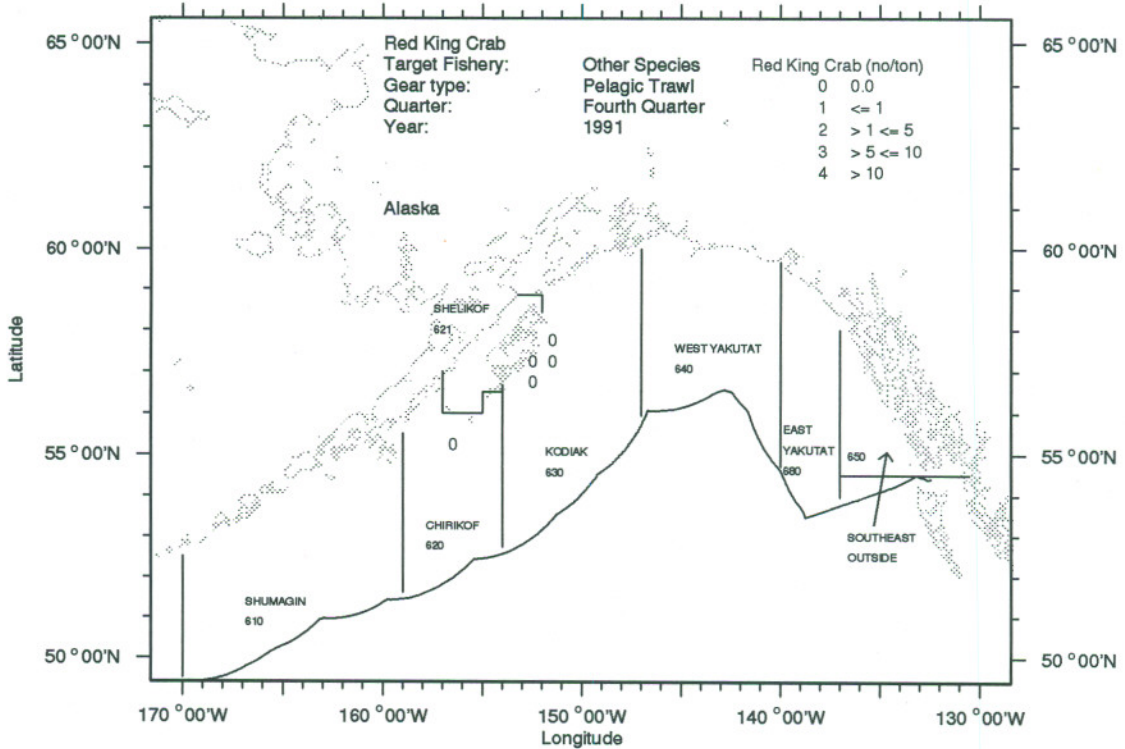
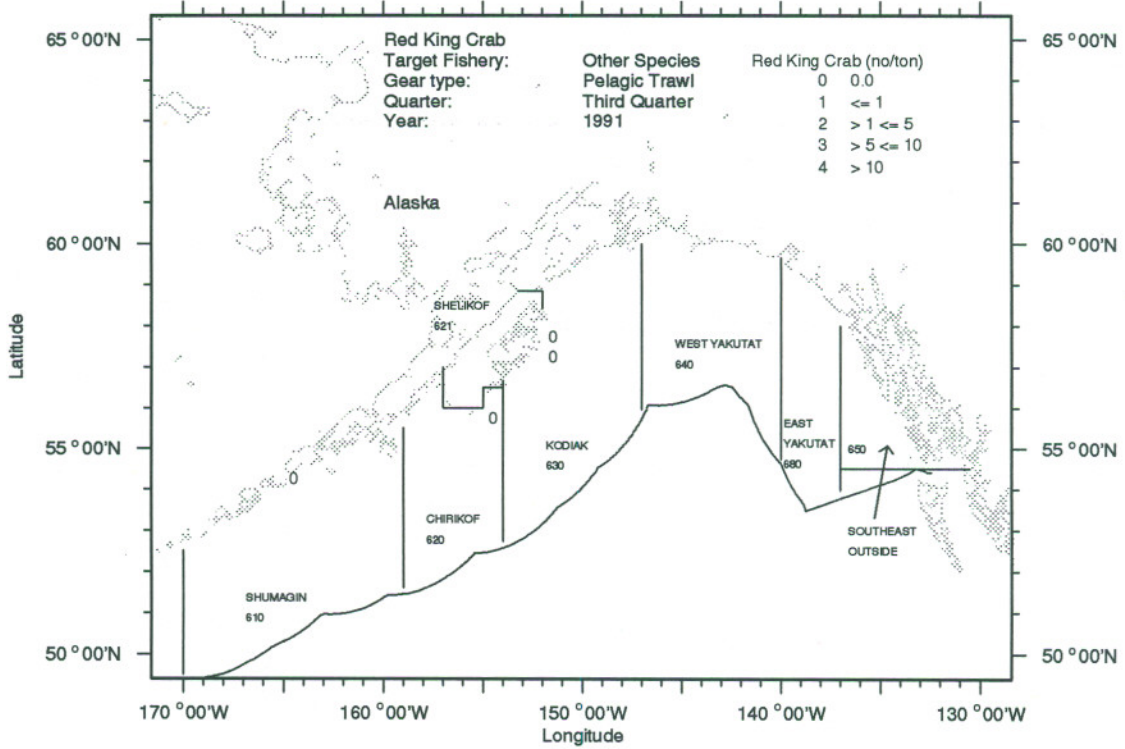


Figure 16.--Continued.

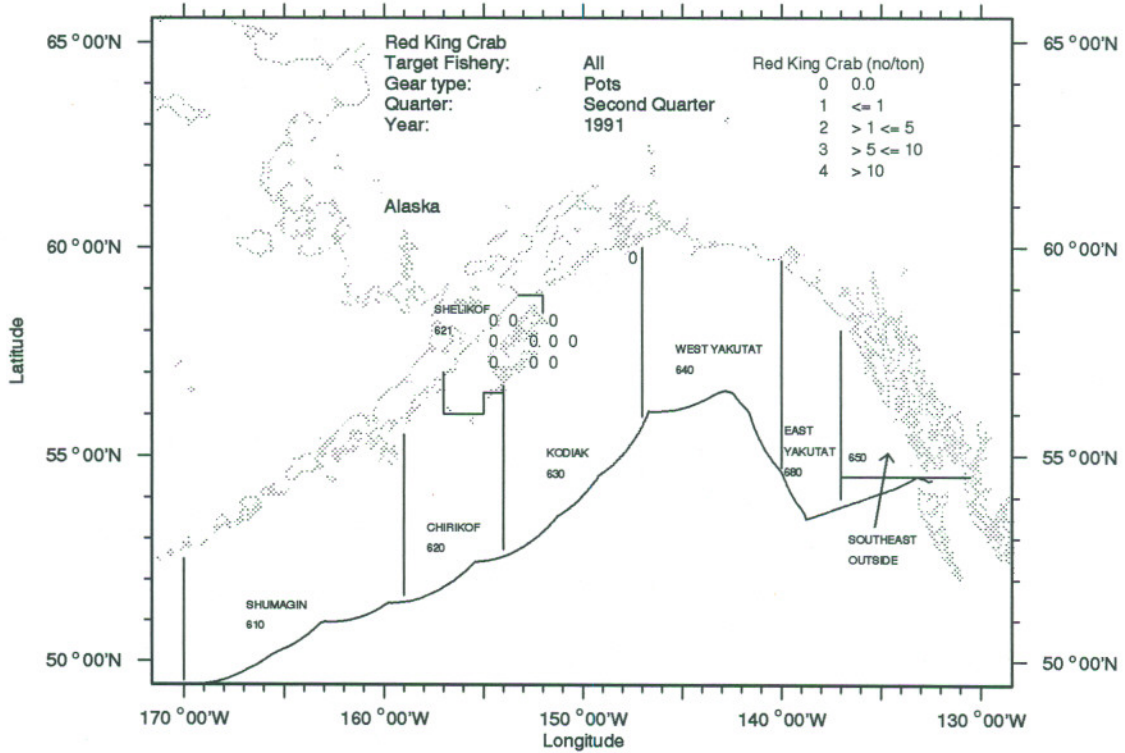
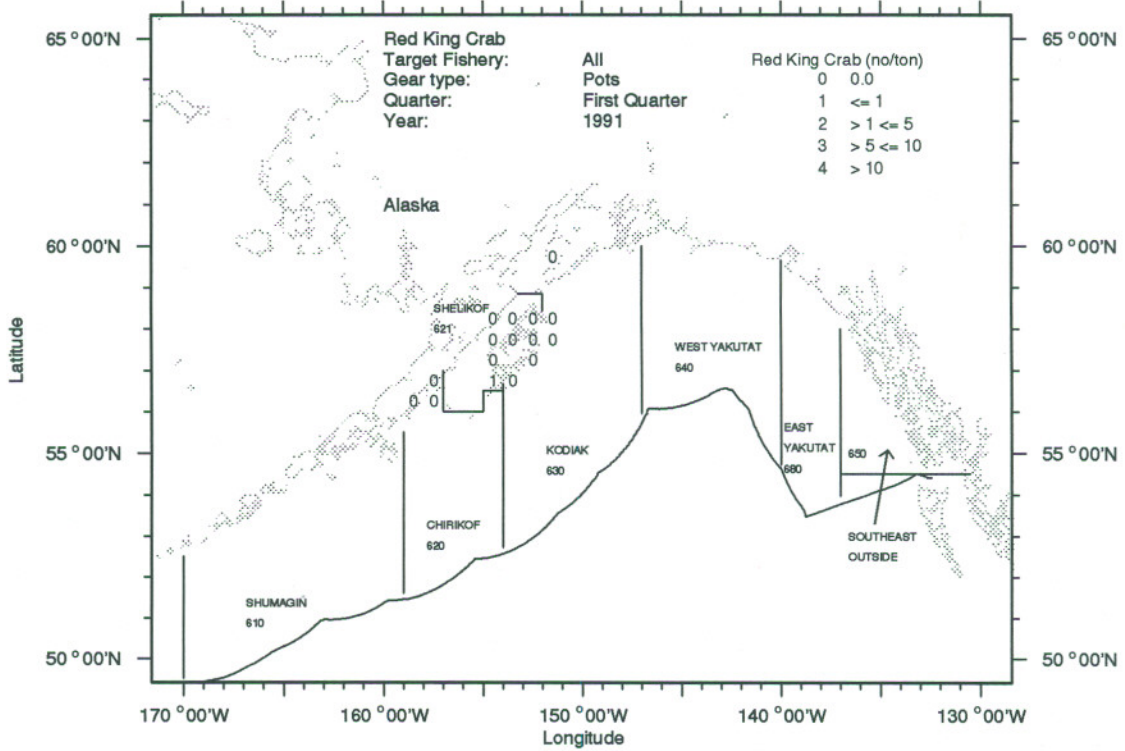


Figure 16.--Continued.

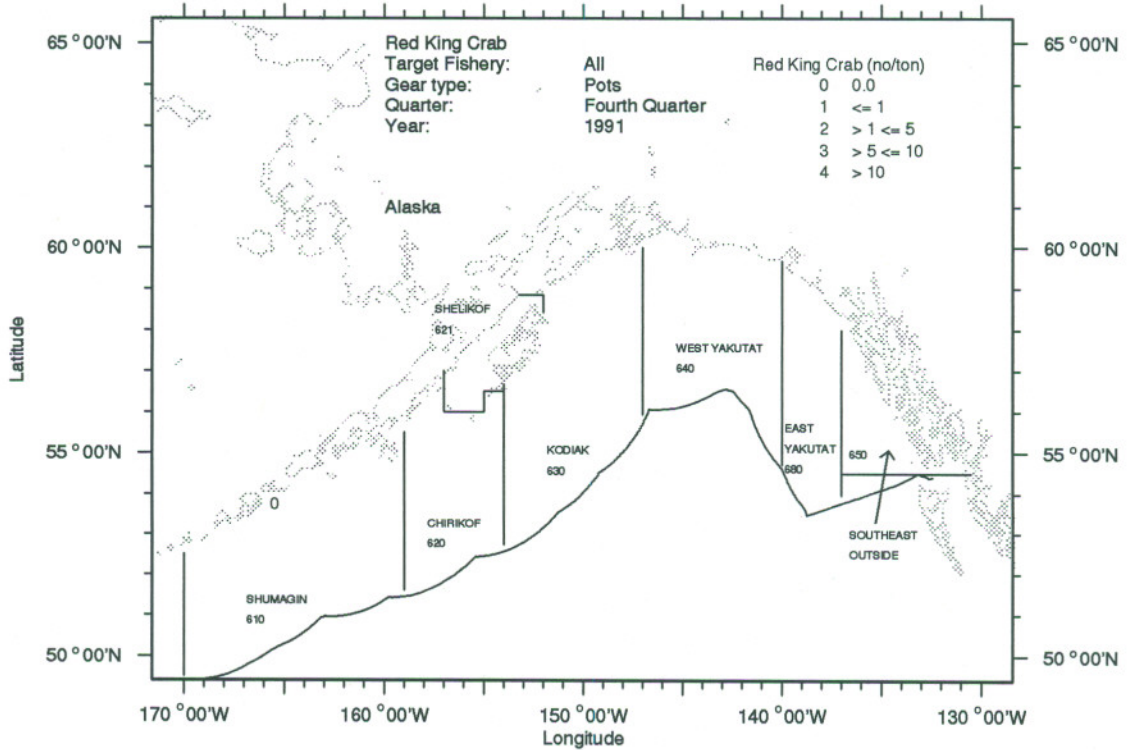
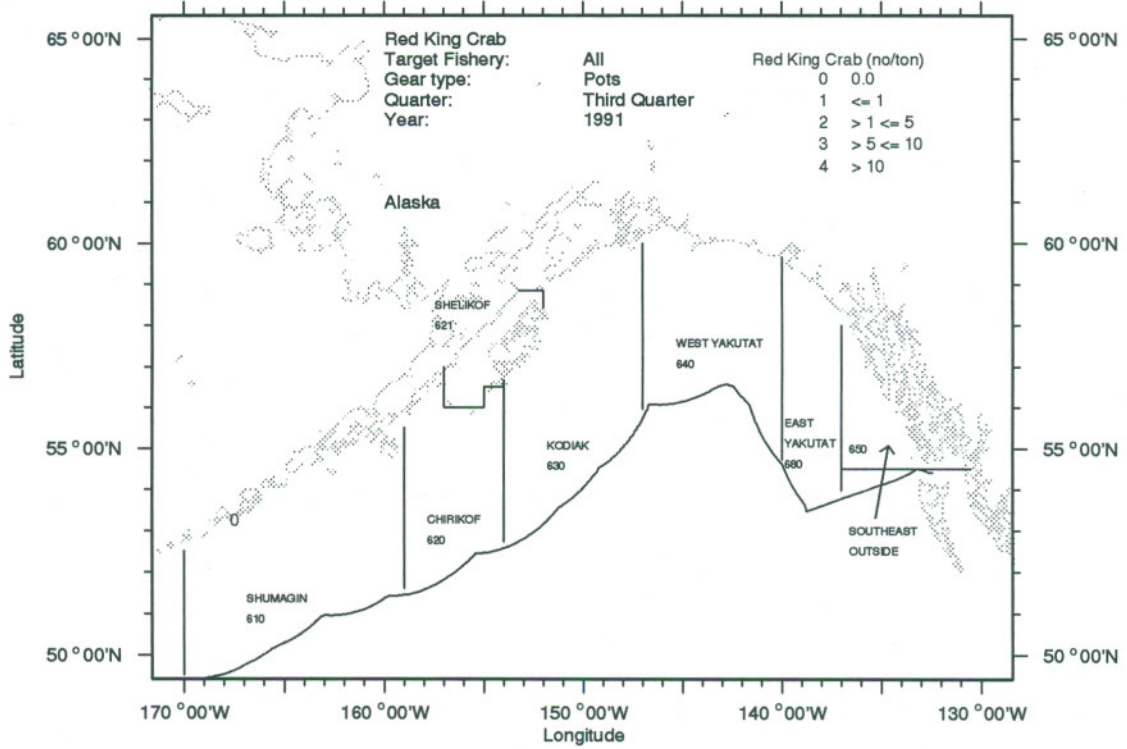


Figure 16.--Continued.

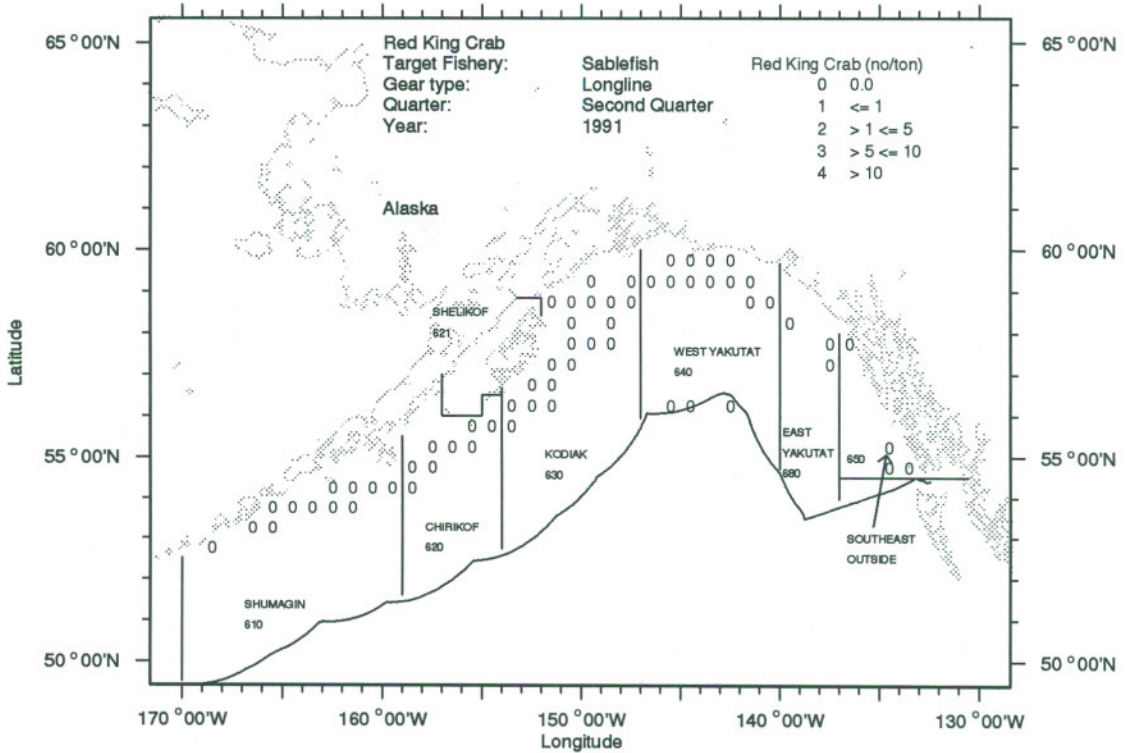
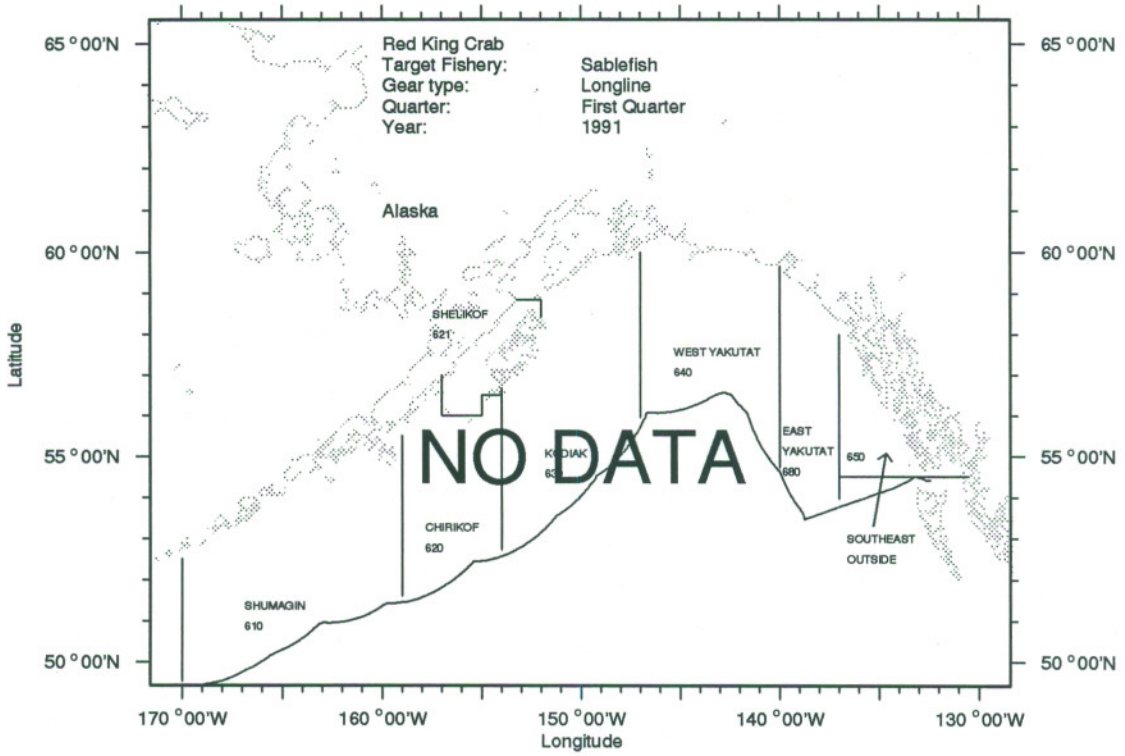


Figure 16.--Continued.

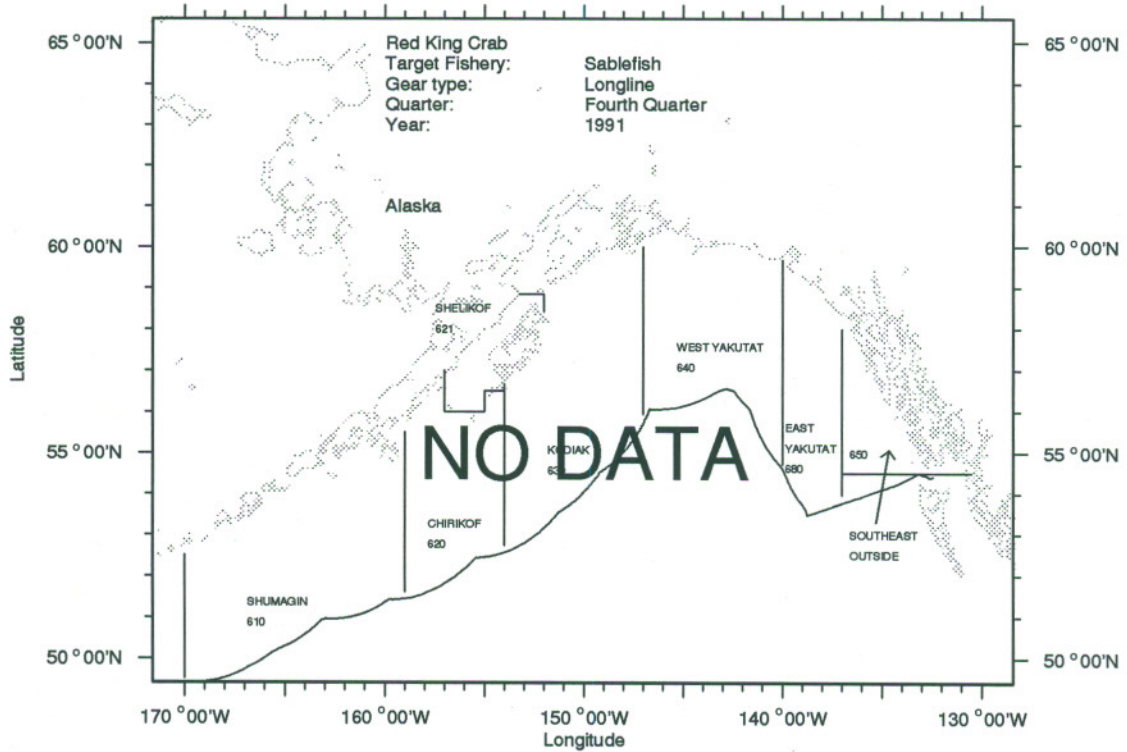
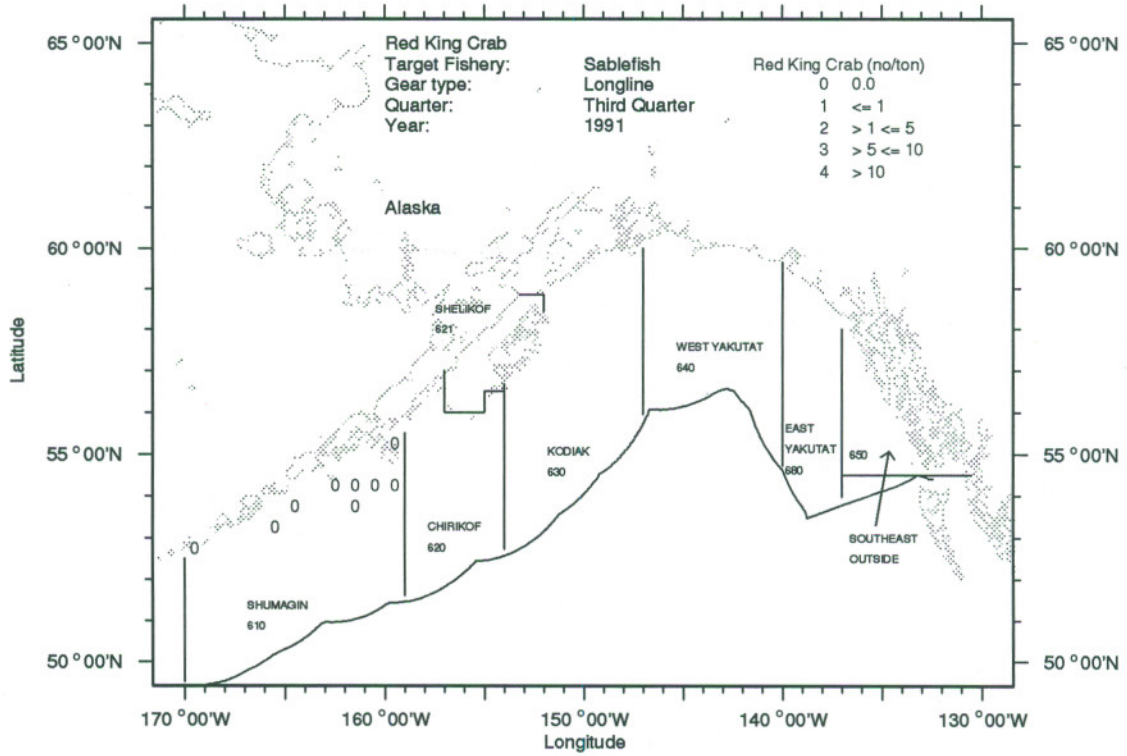


Figure 16.--Continued.

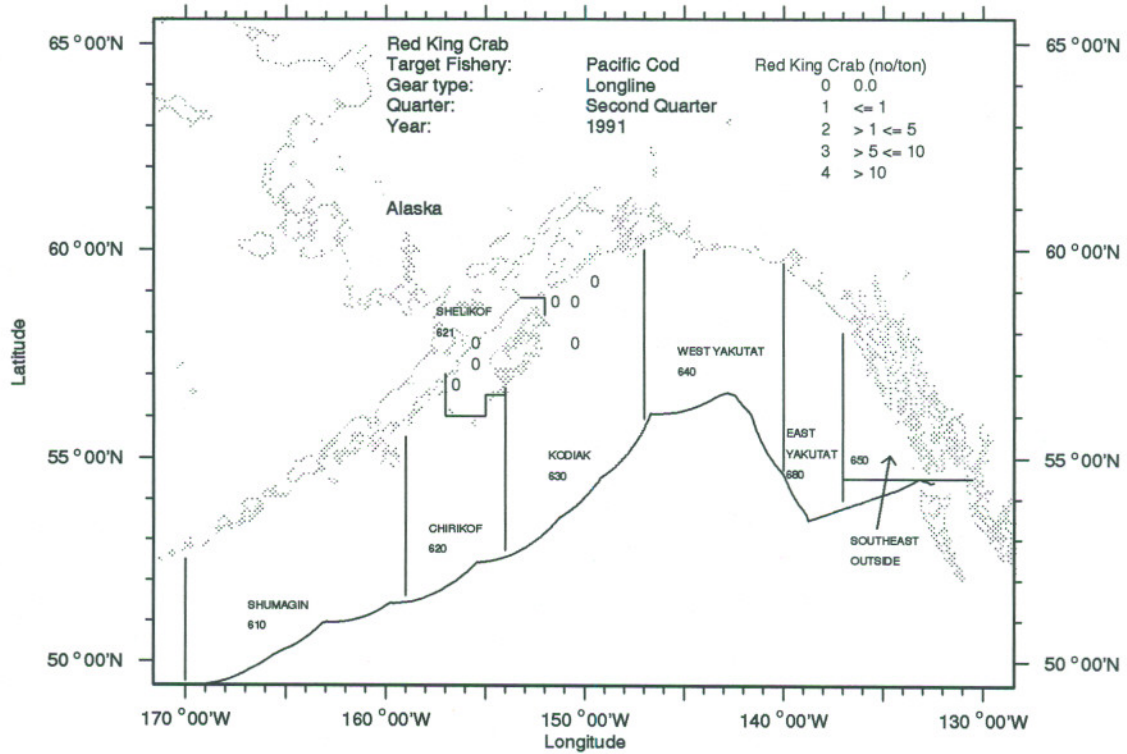
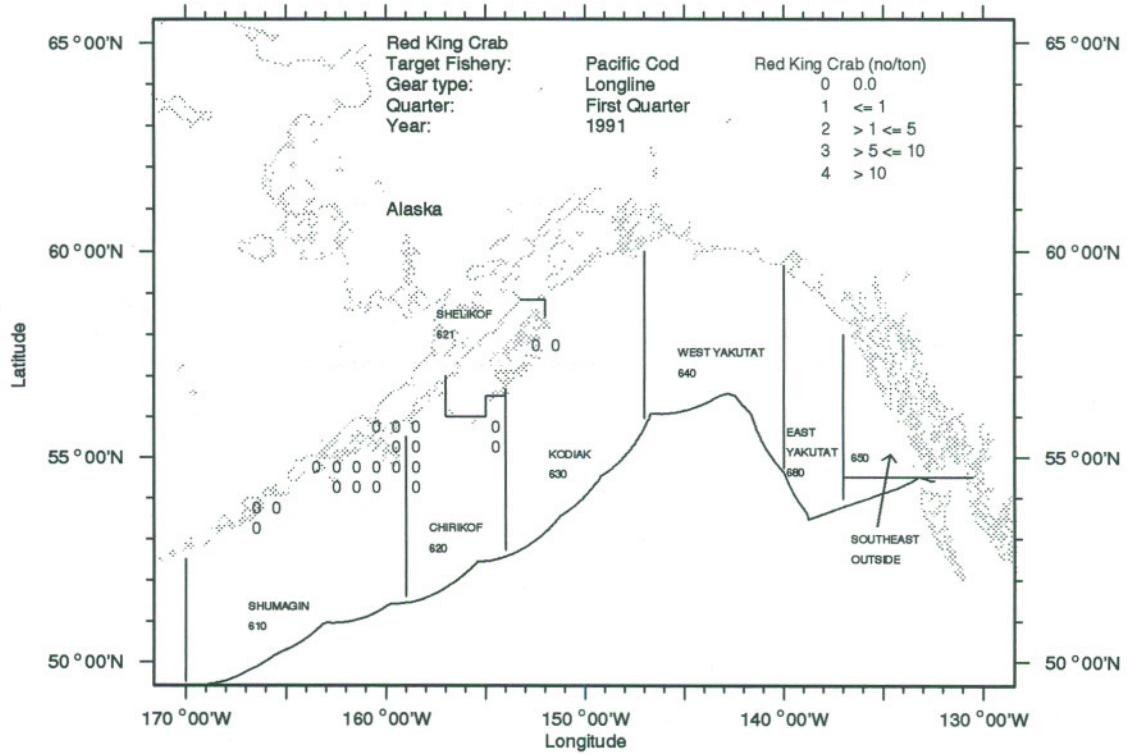


Figure 16.--Continued.

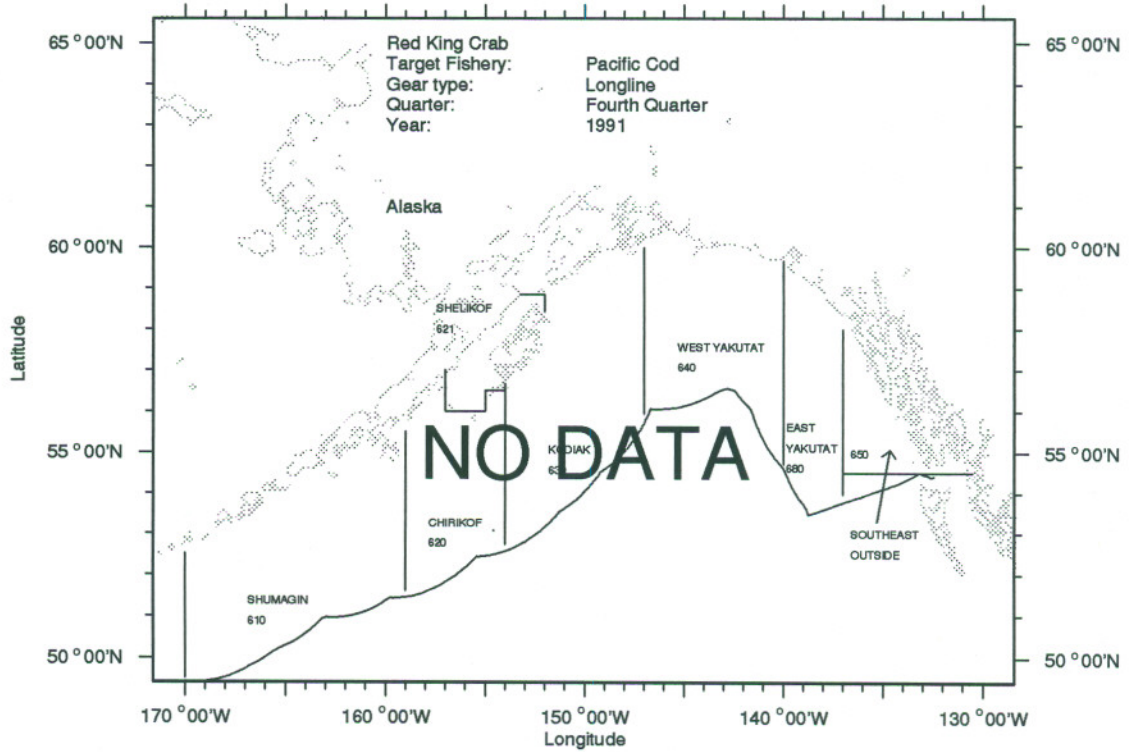
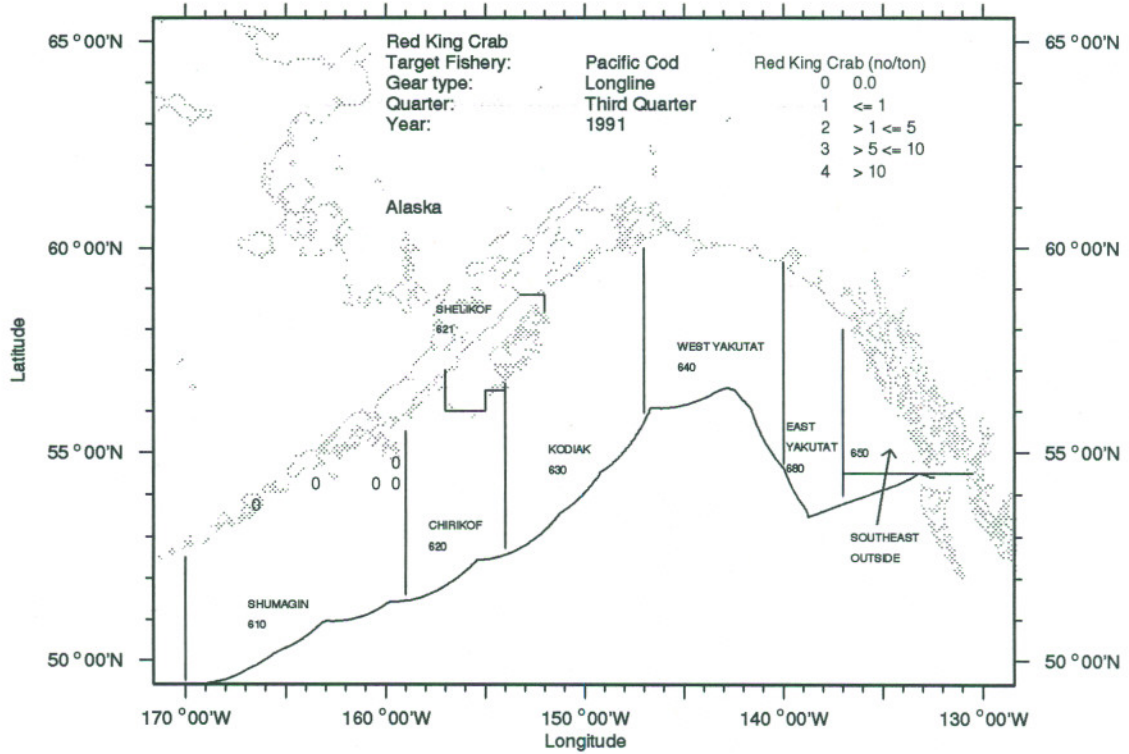


Figure 16.--Continued.

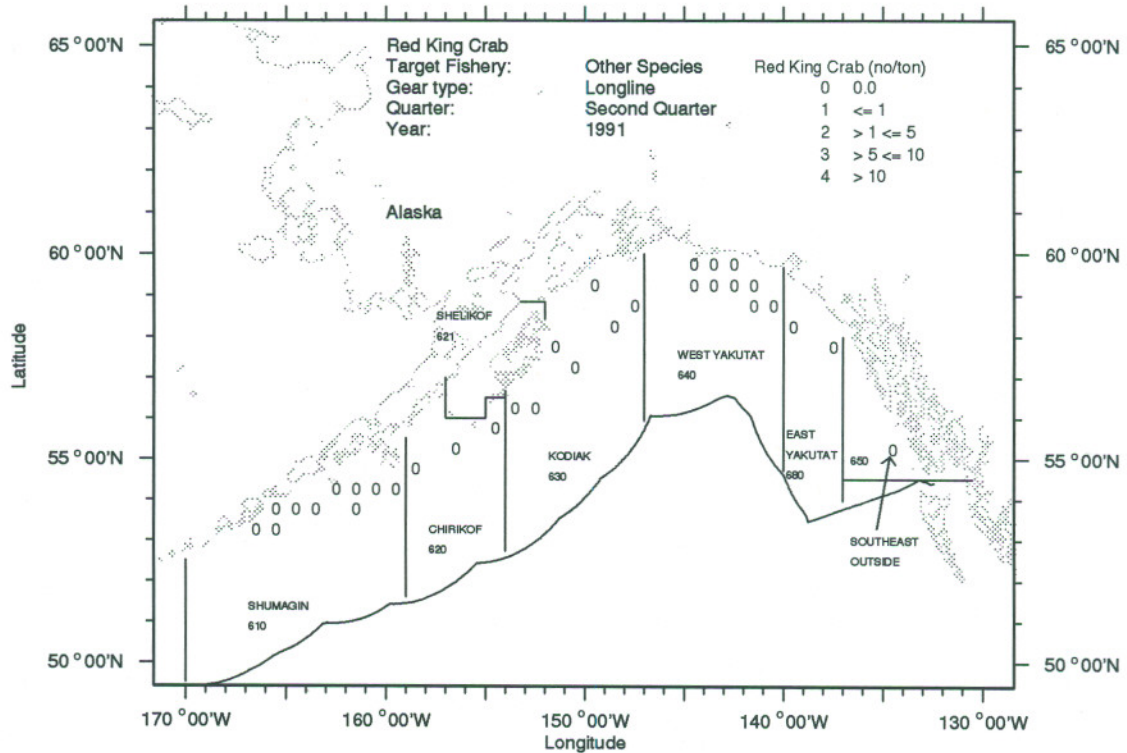
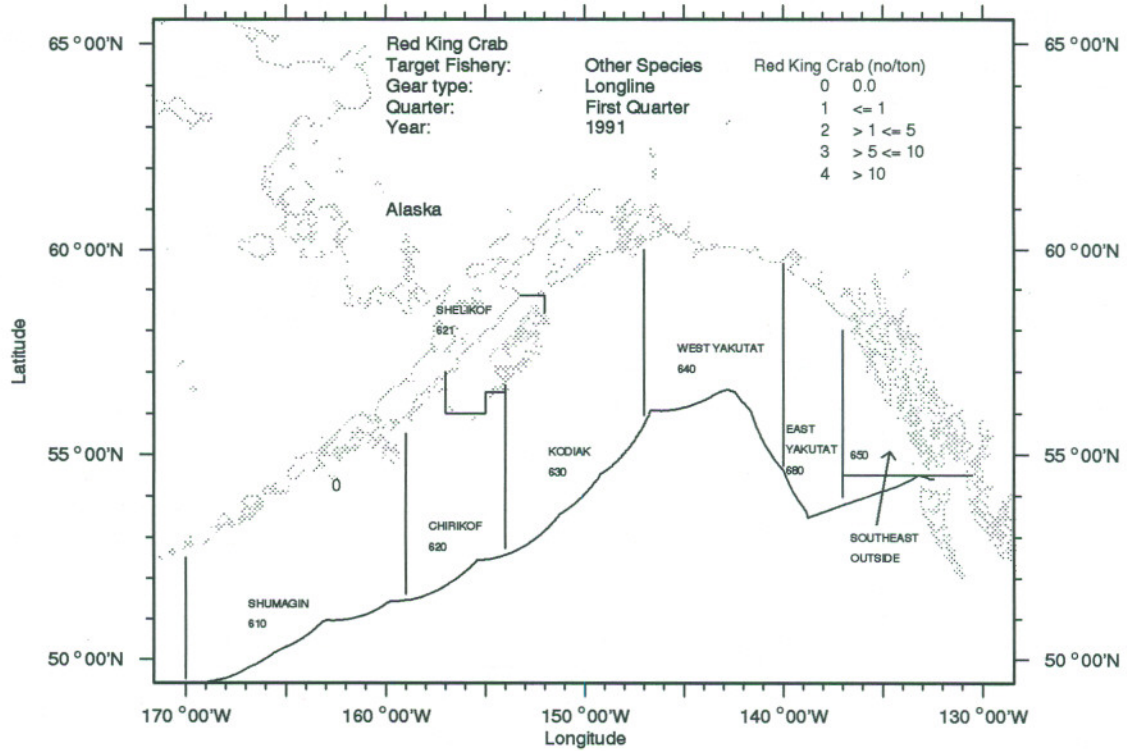


Figure 16.--Continued.

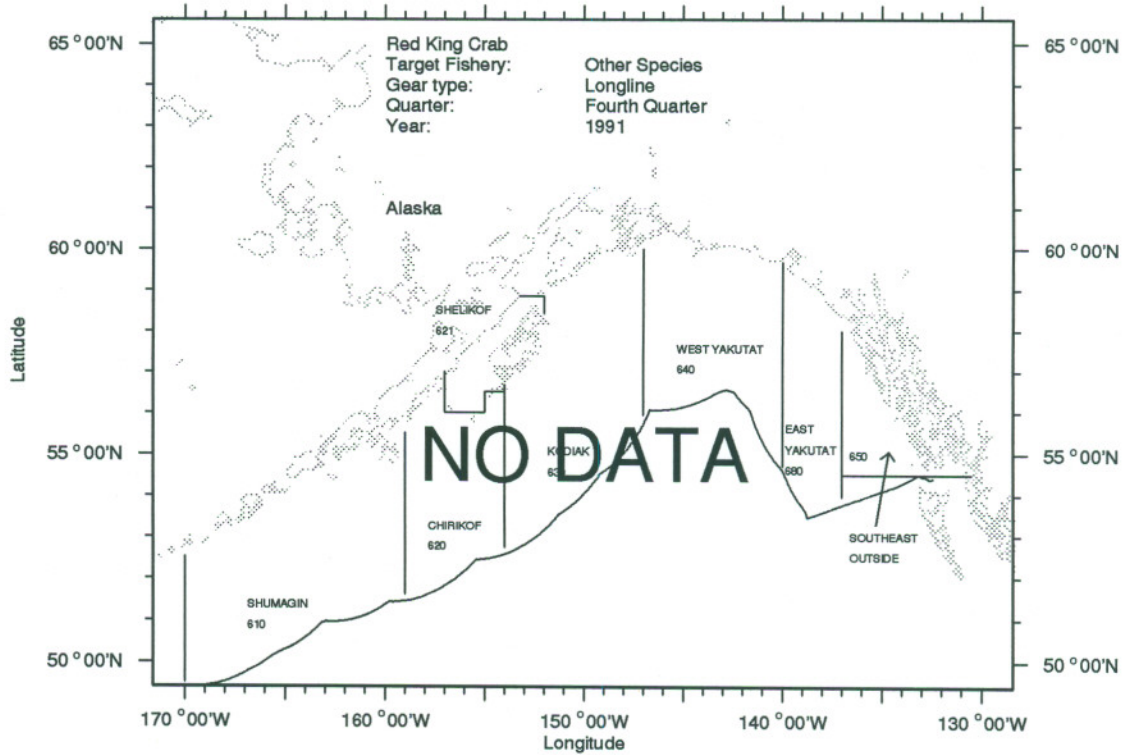
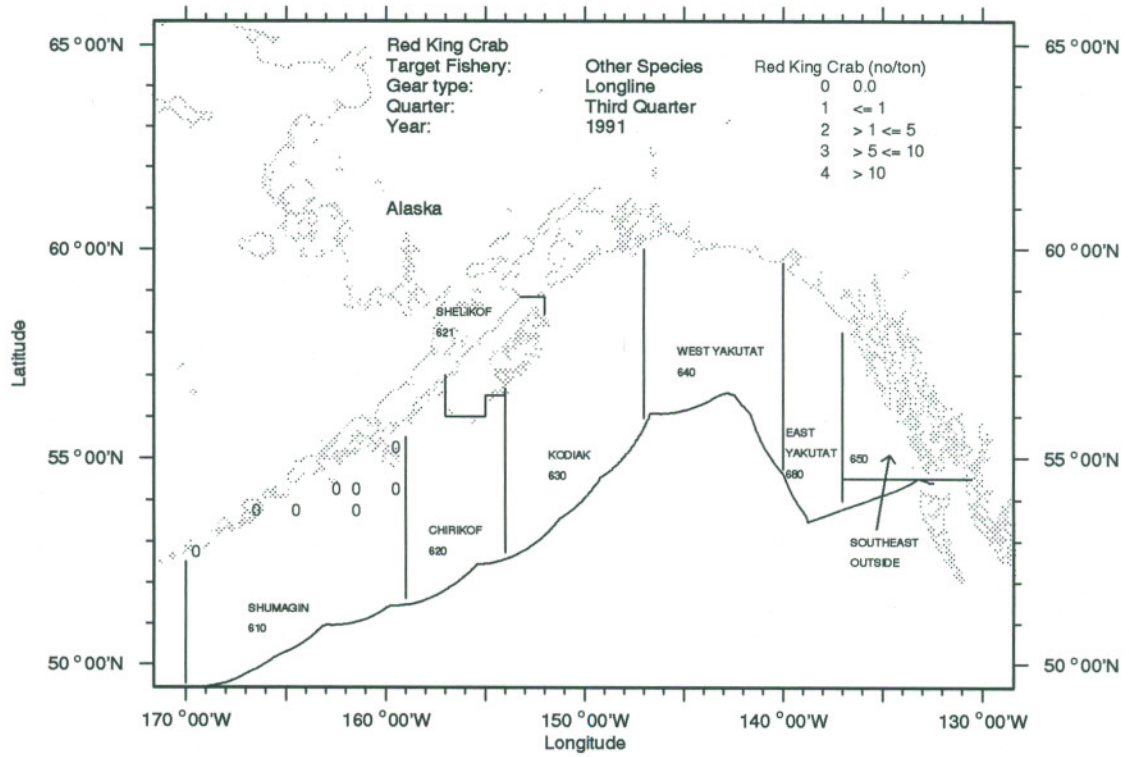


Figure 16.--Continued.

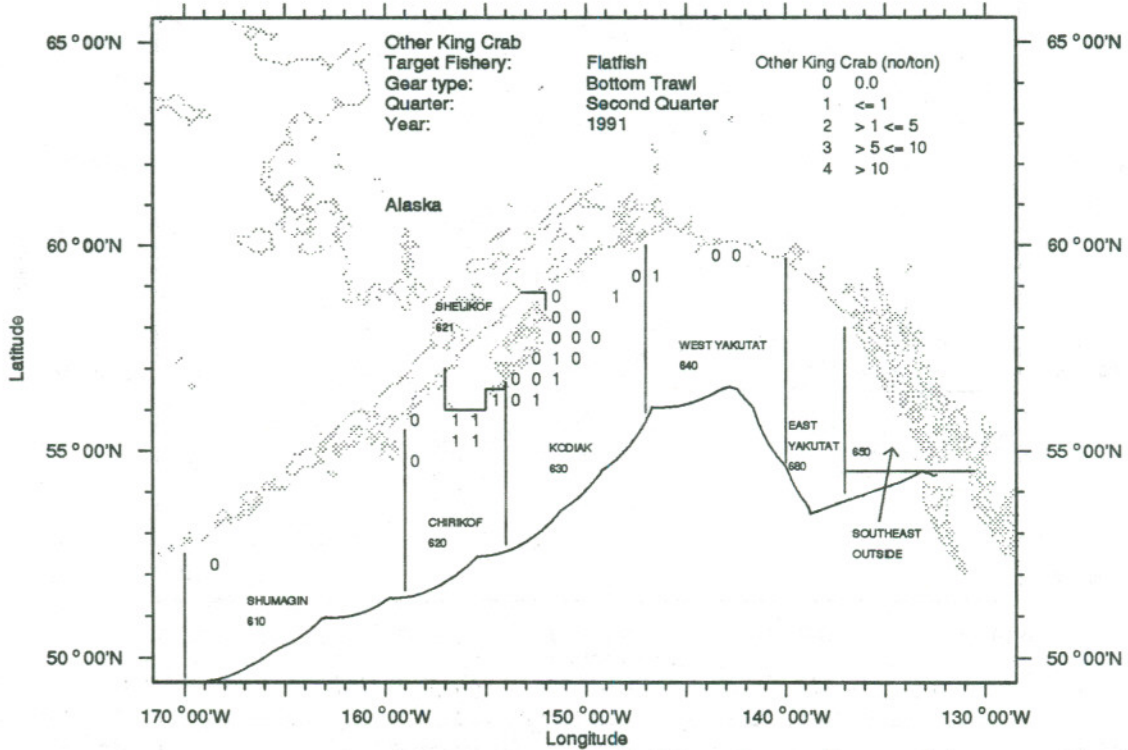
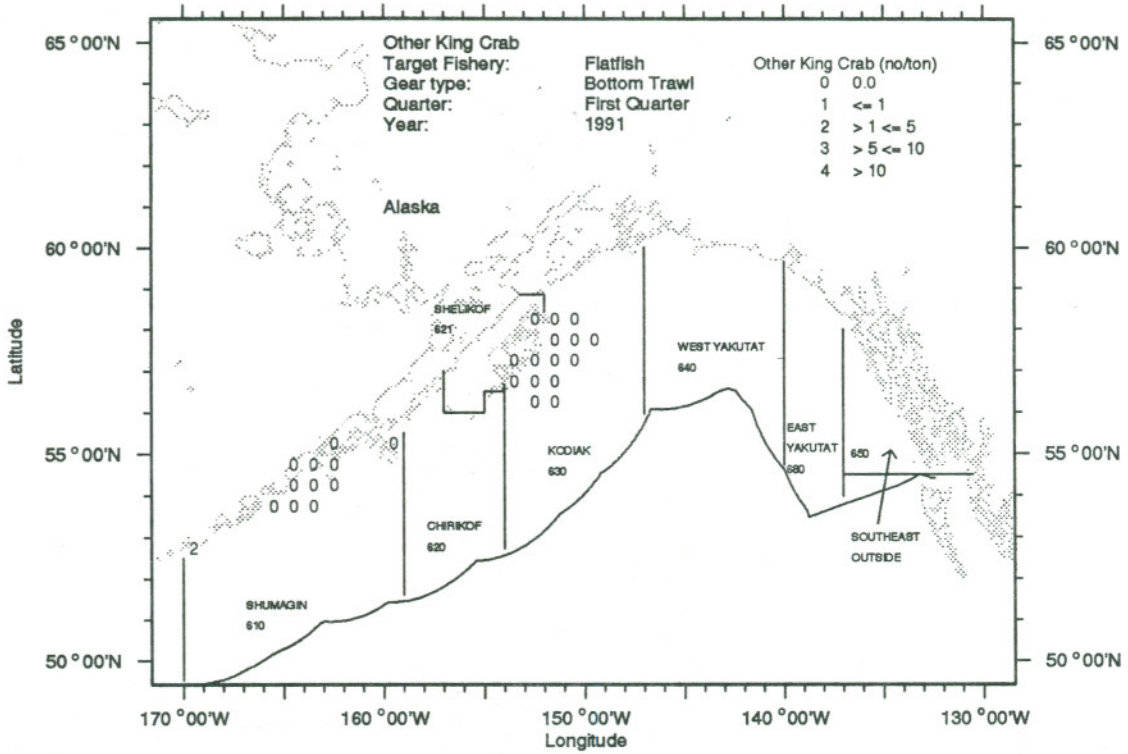


Figure 17.--Bycatch (no./metric ton (t)) of "other" king crab in the U.S. domestic groundfish fisheries by quarter, target fishery, gear type, and ½° latitude and 1° longitude areas in the Gulf of Alaska region, 1991.

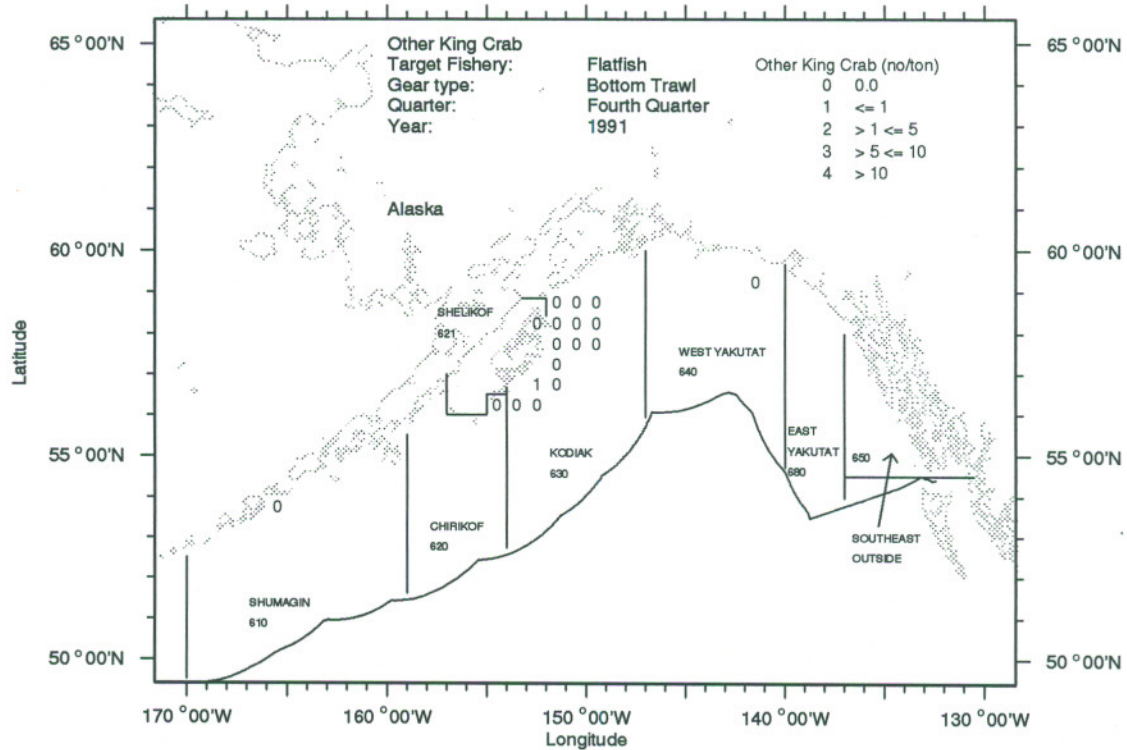
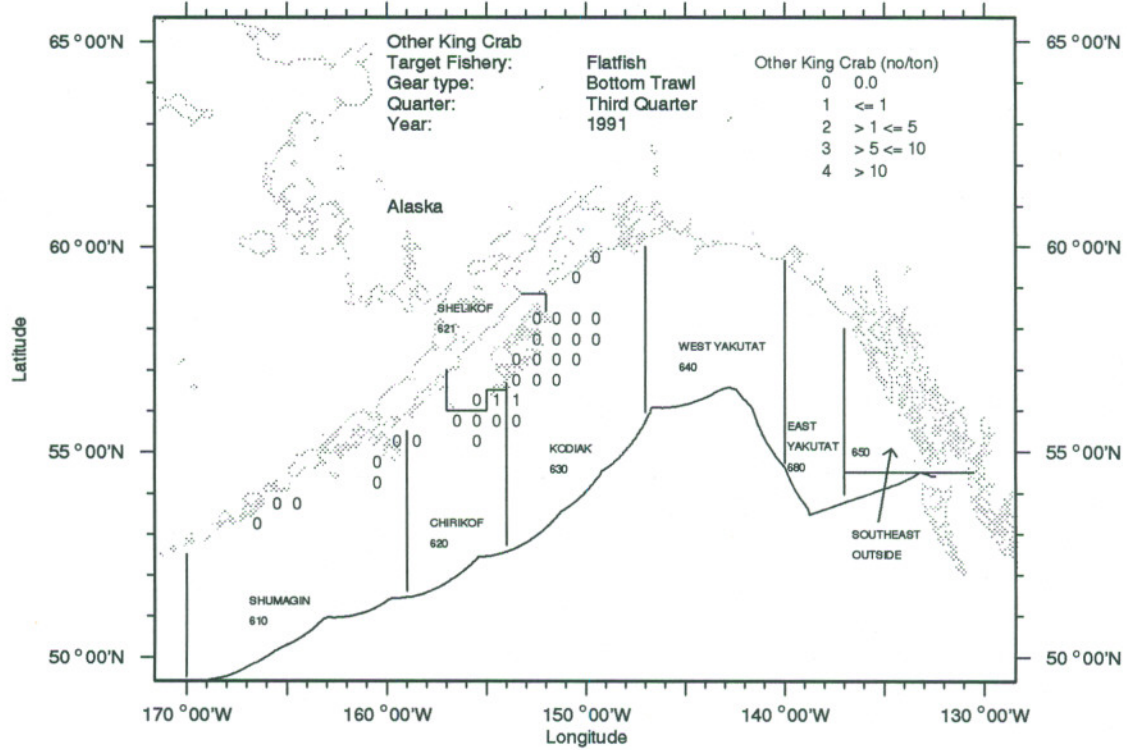


Figure 17.--Continued.

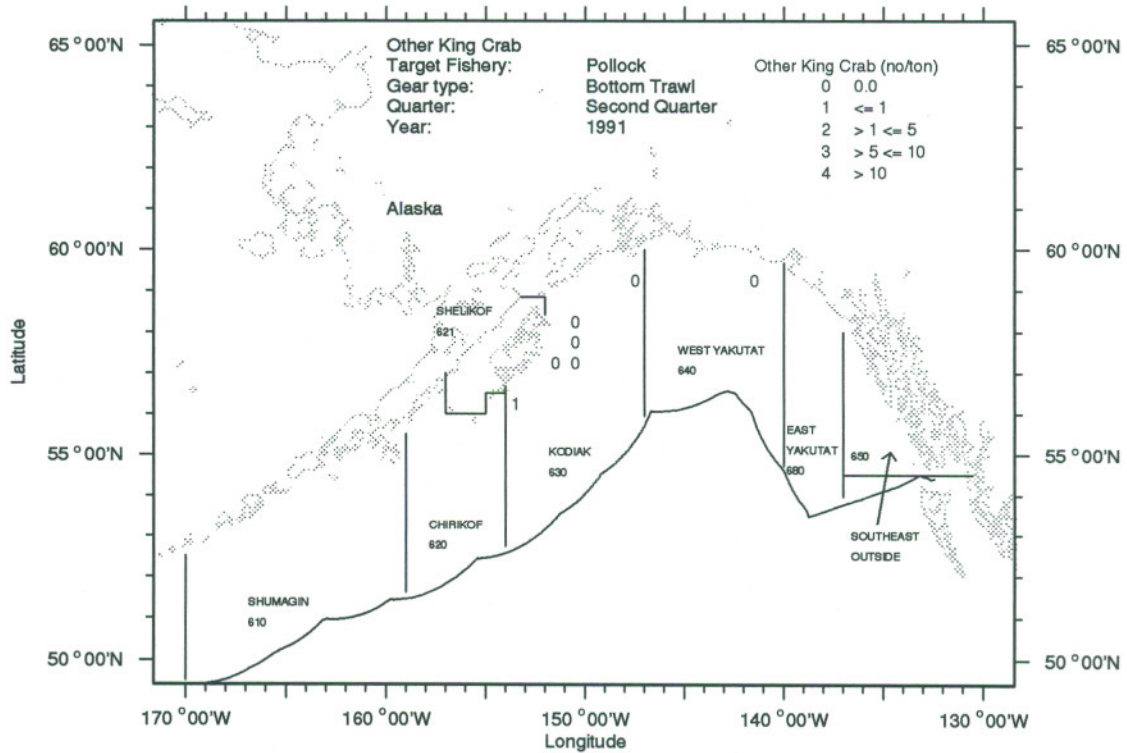
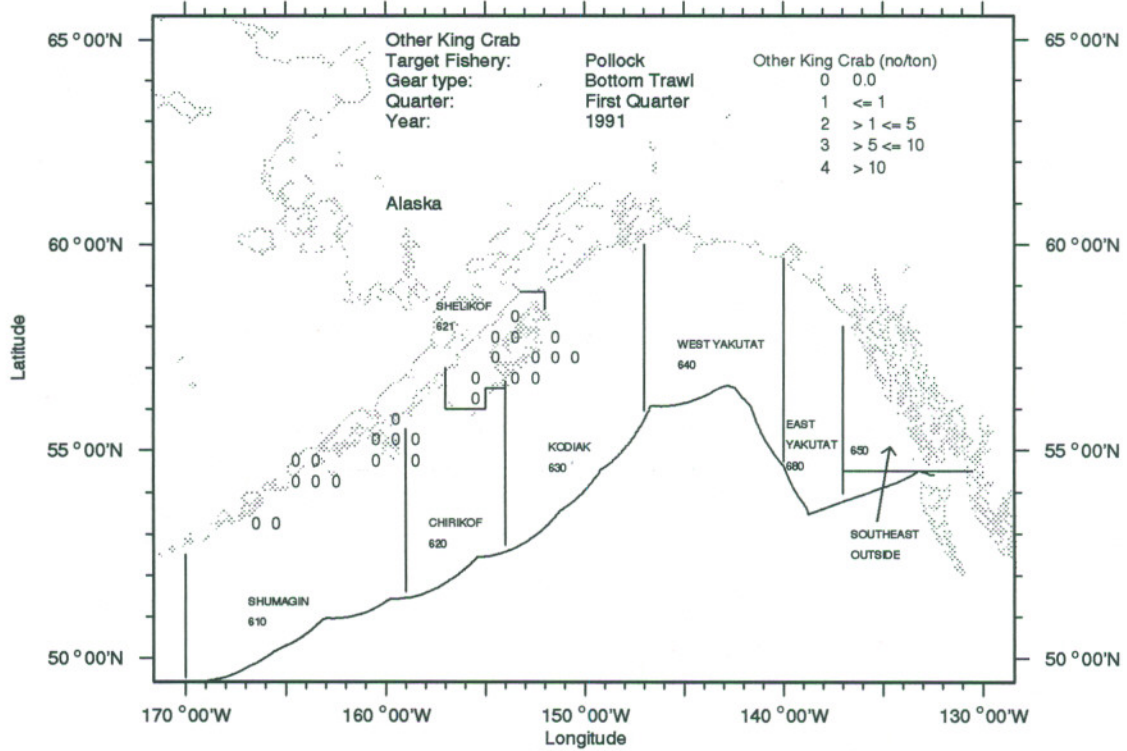


Figure 17.--Continued.

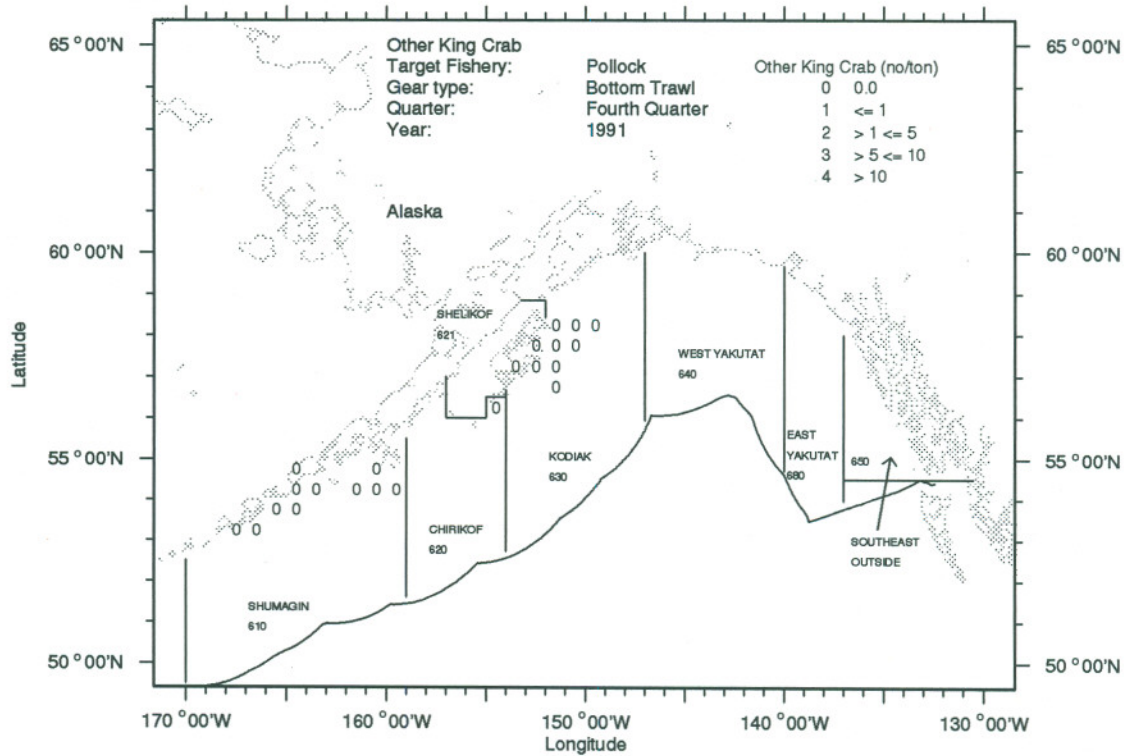
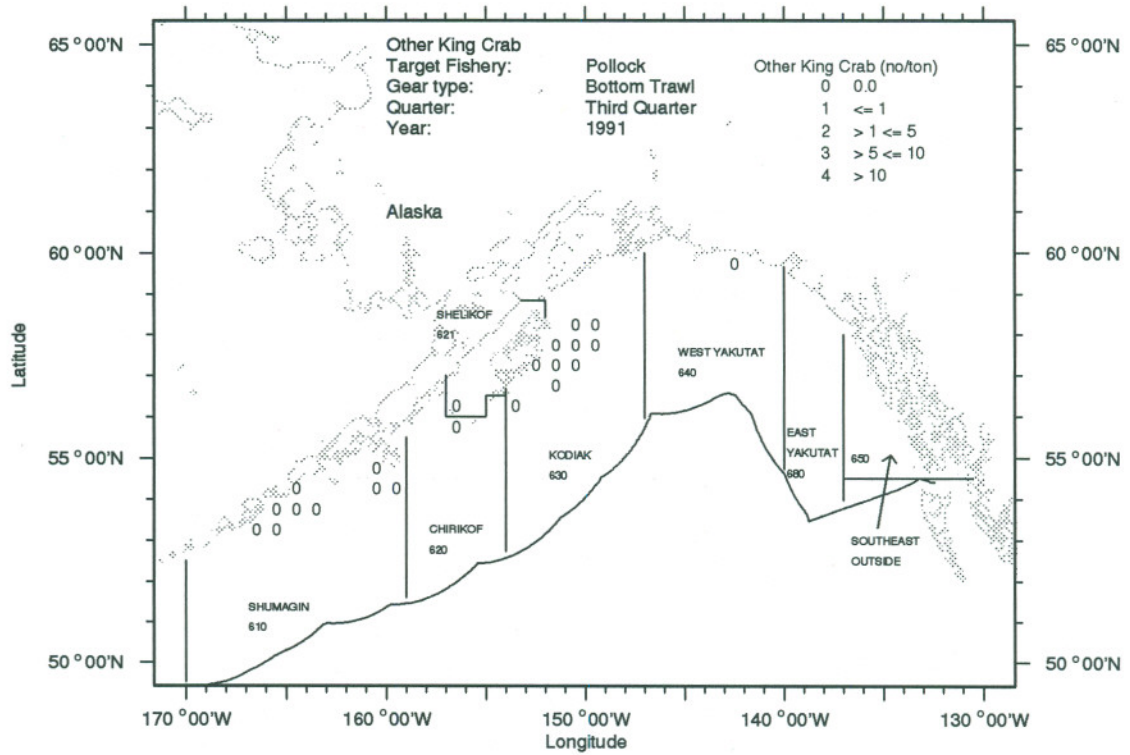


Figure 17.--Continued.

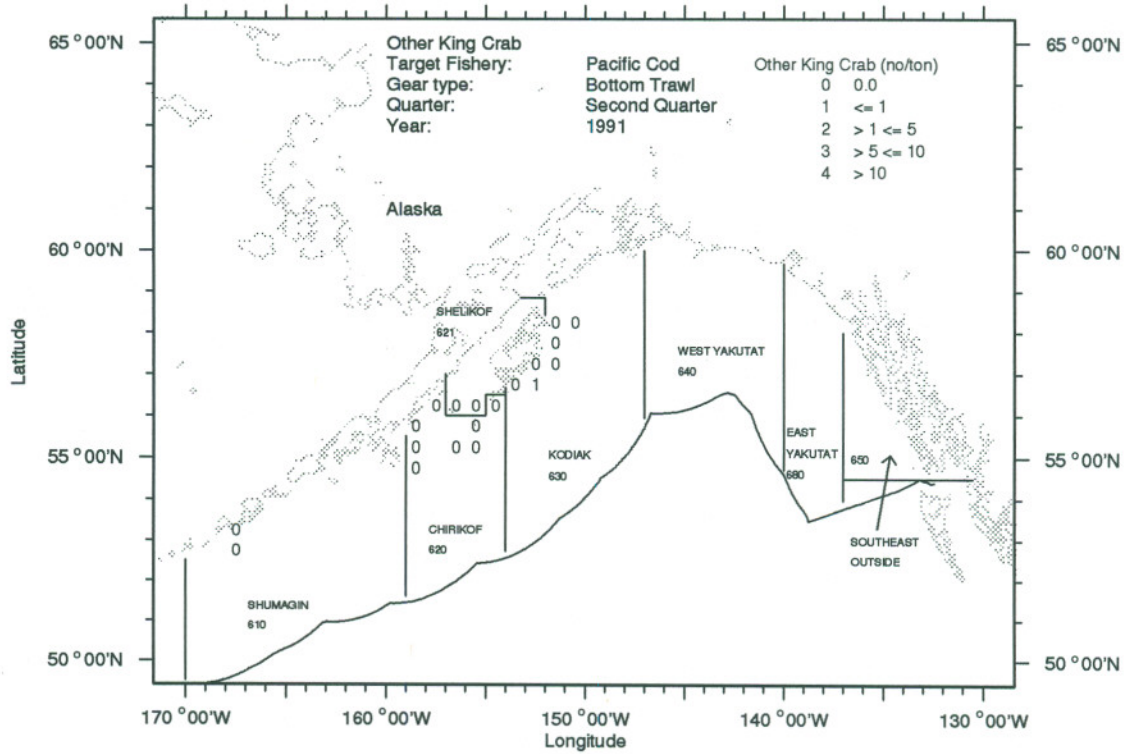
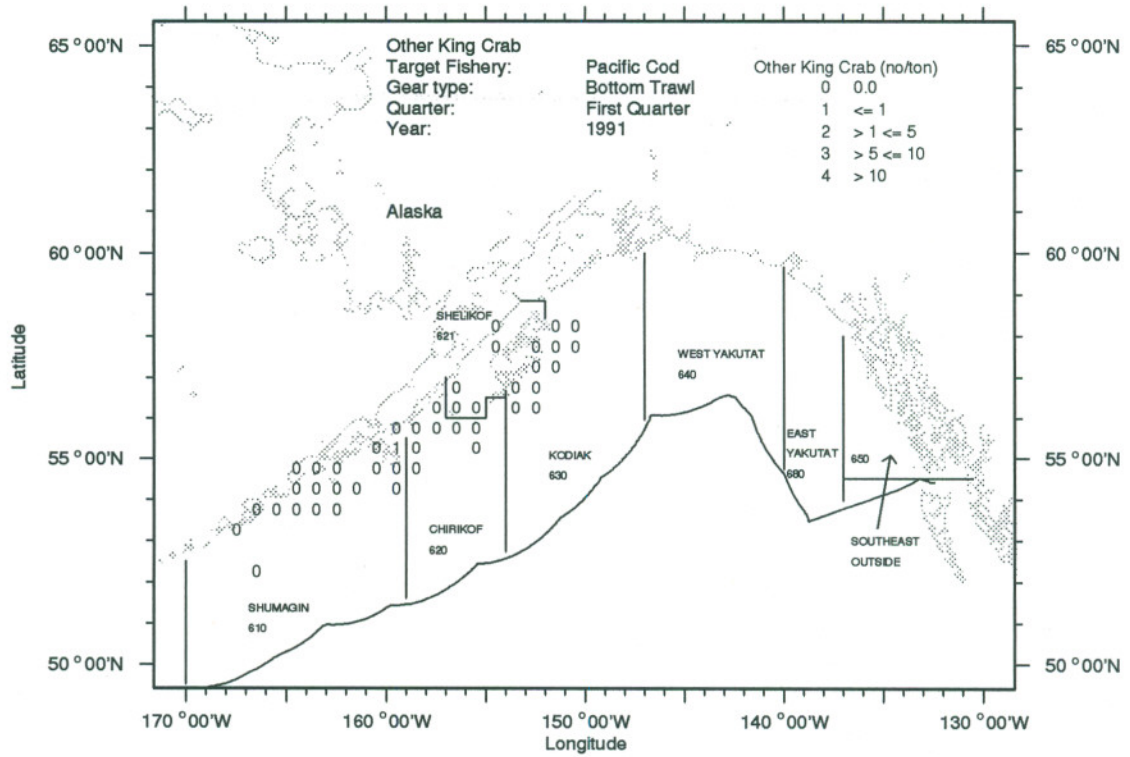


Figure 17.--Continued.

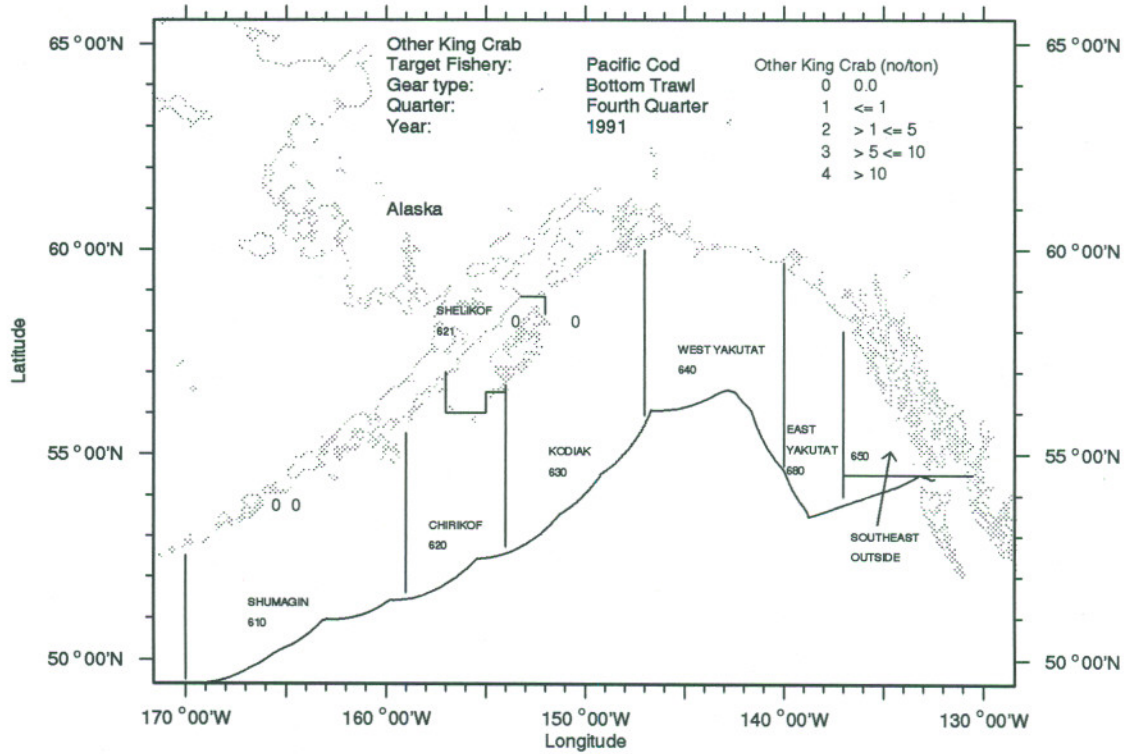
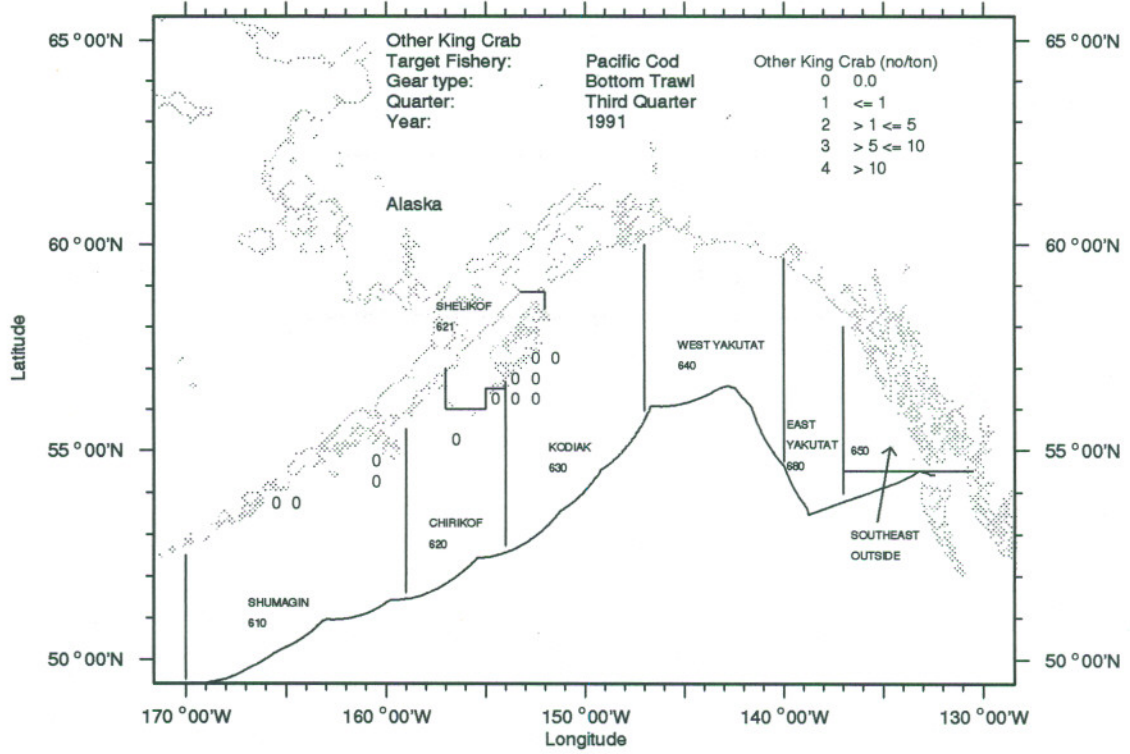


Figure 17.--Continued.

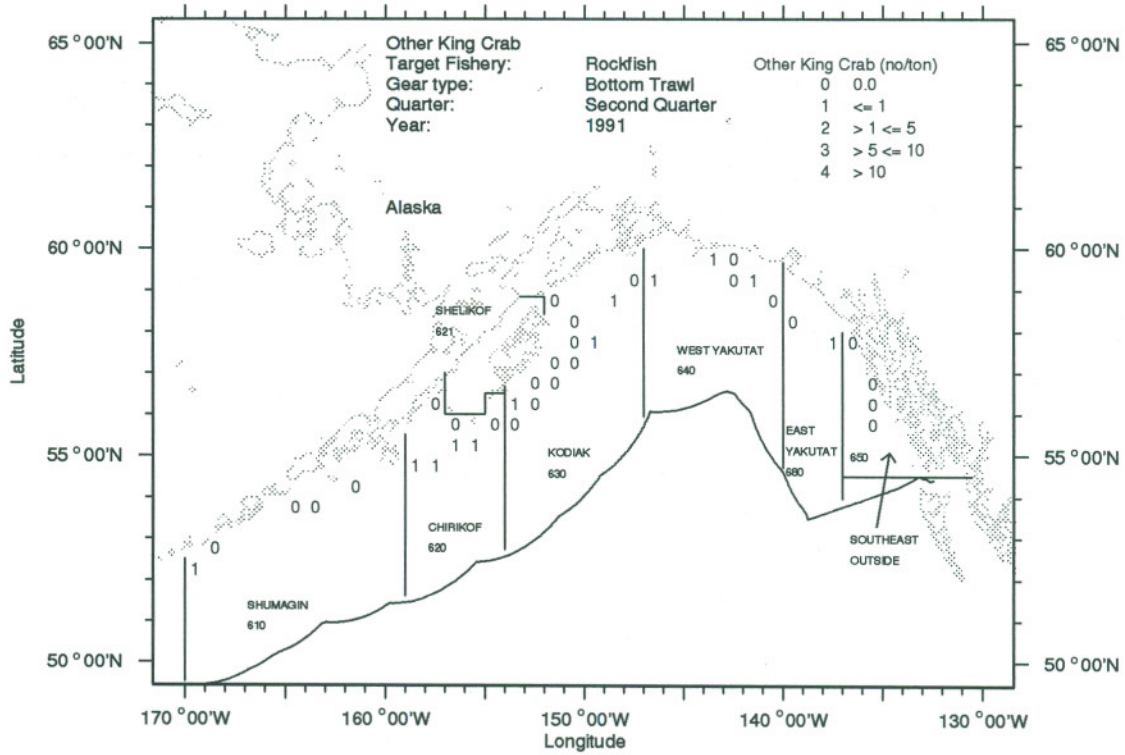
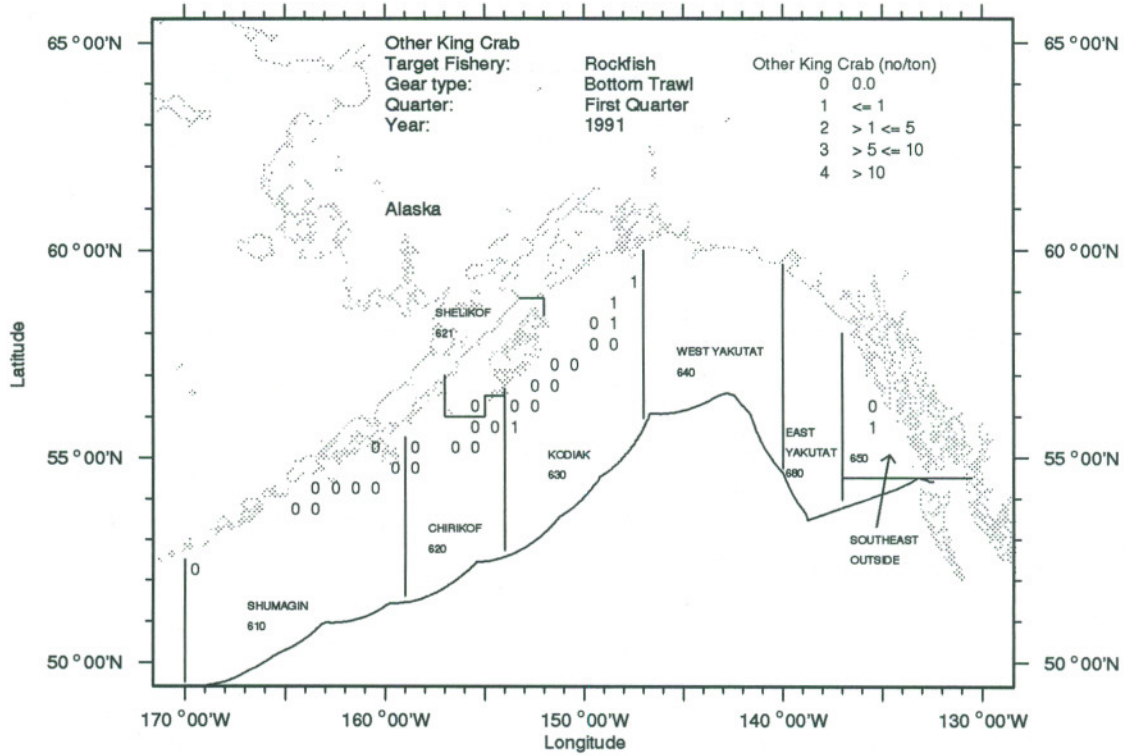


Figure 17.--Continued.

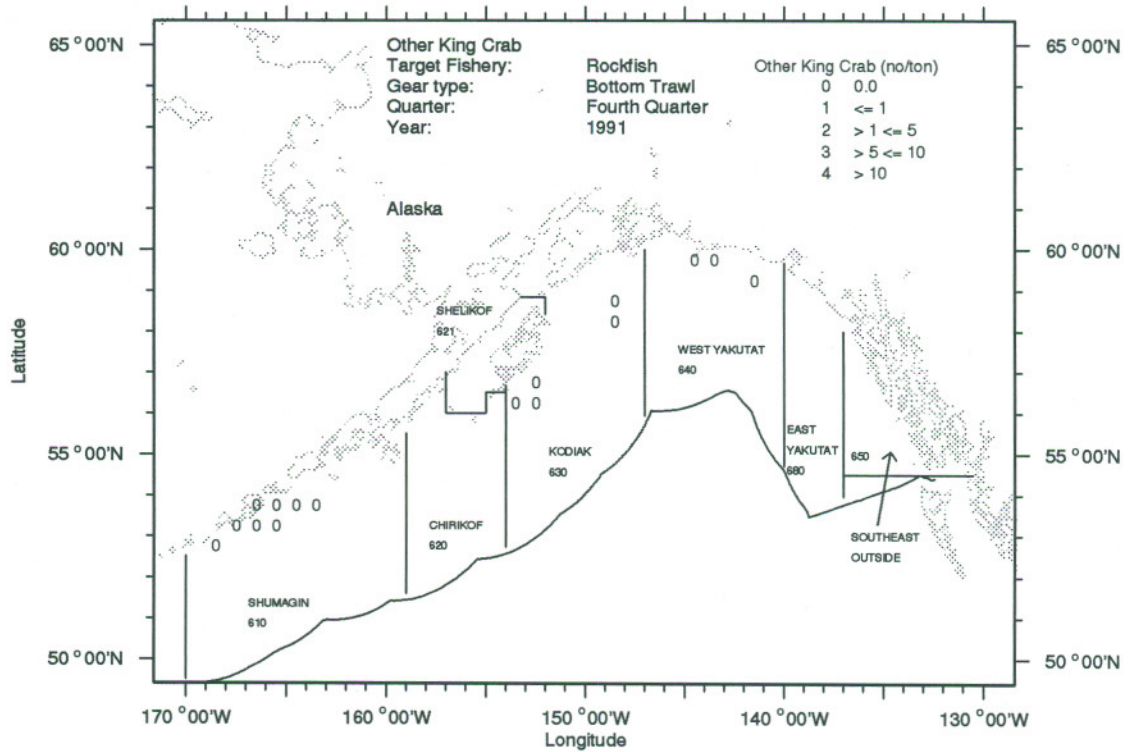
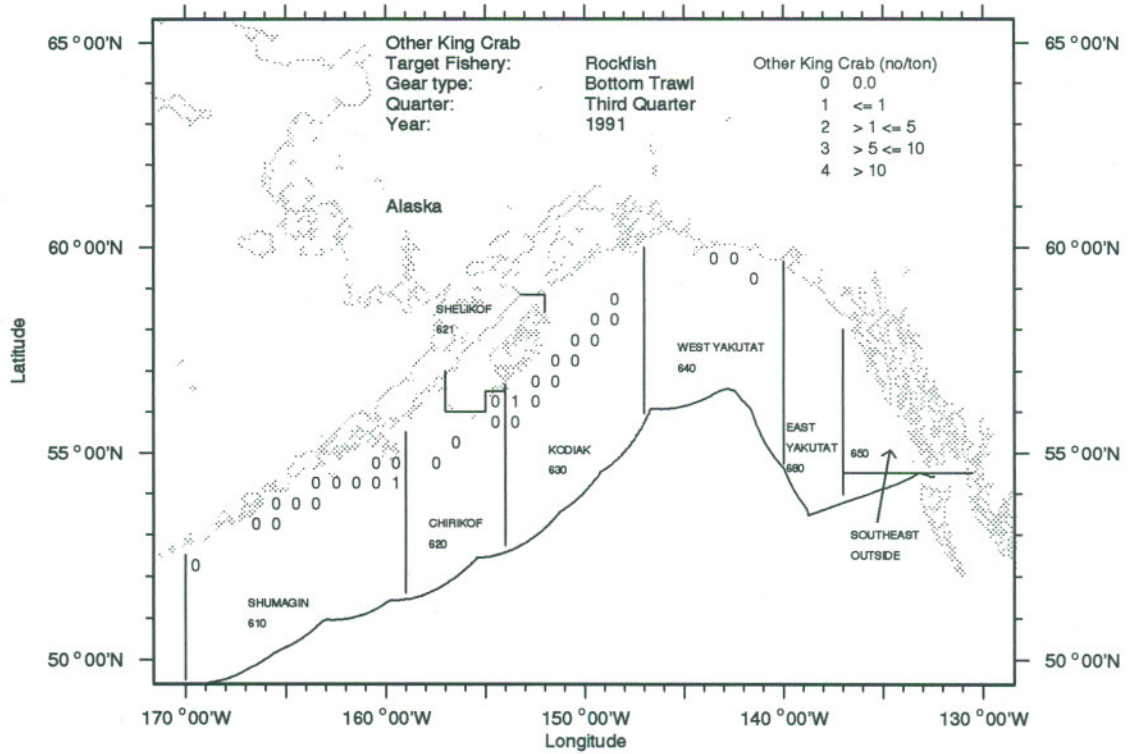


Figure 17.--Continued.

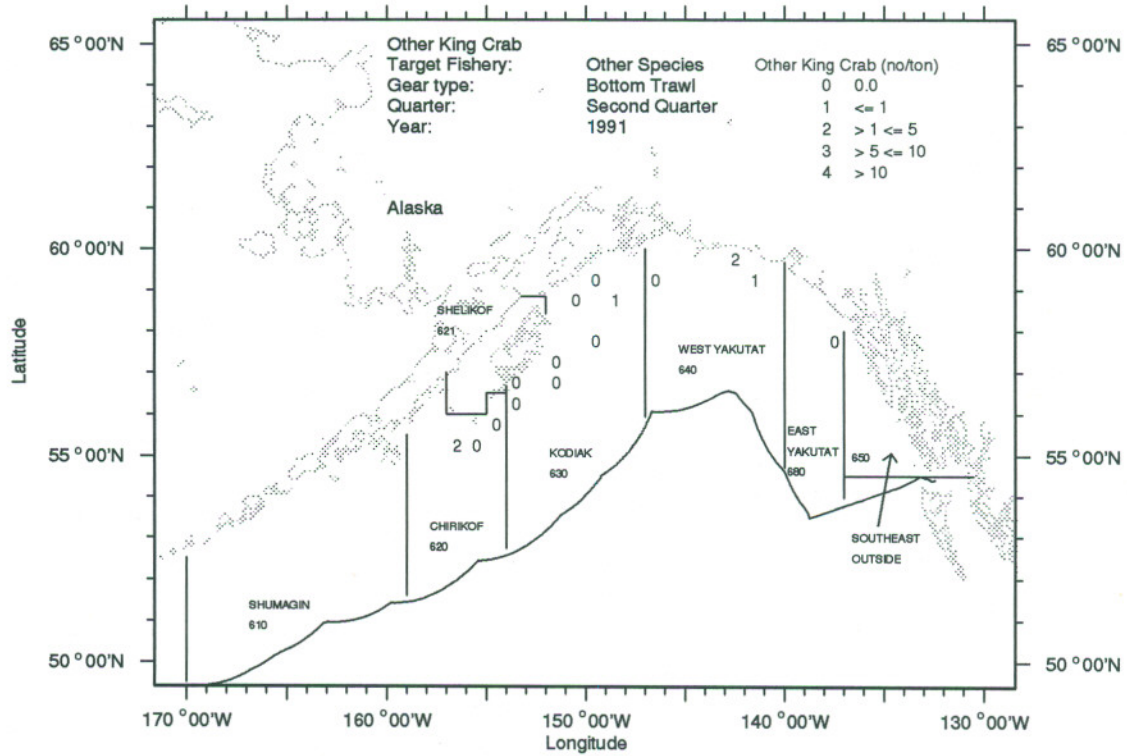
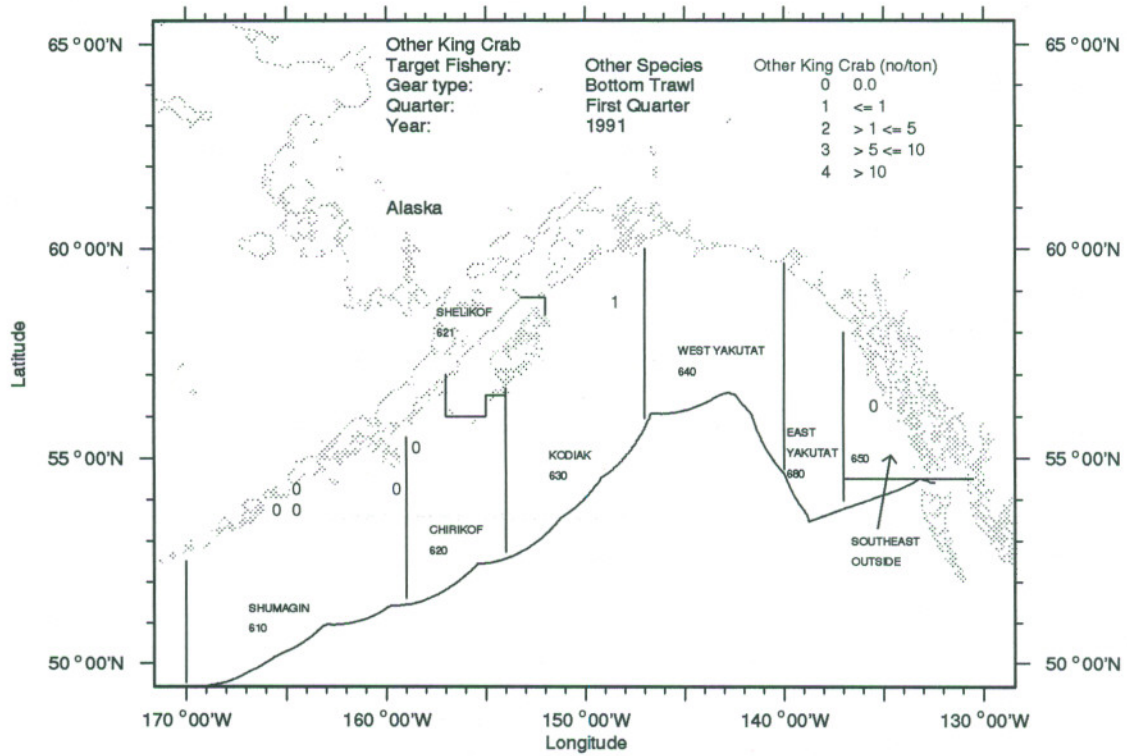


Figure 17.--Continued.

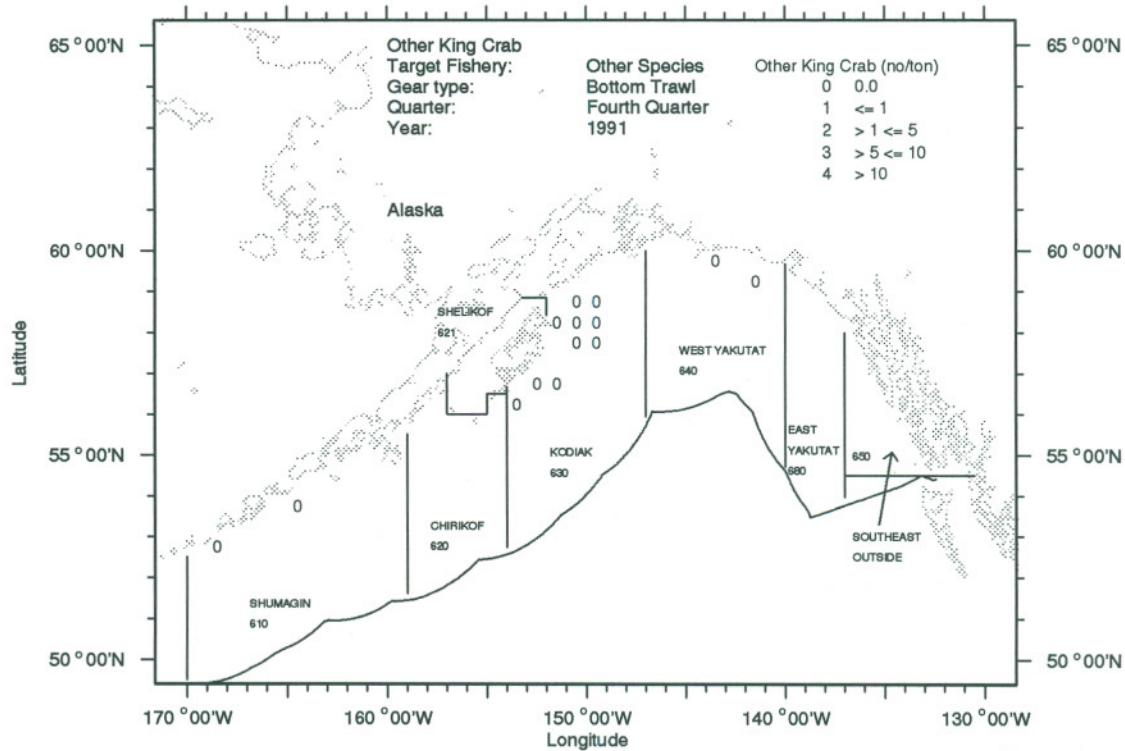
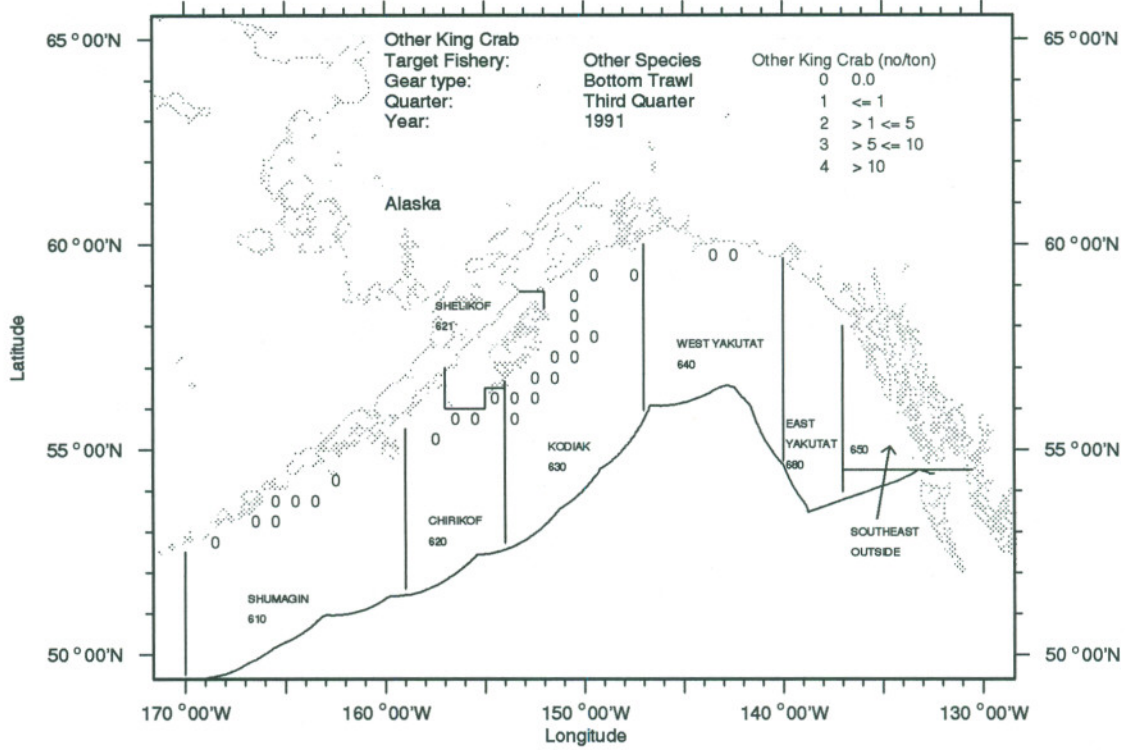


Figure 17.--Continued.

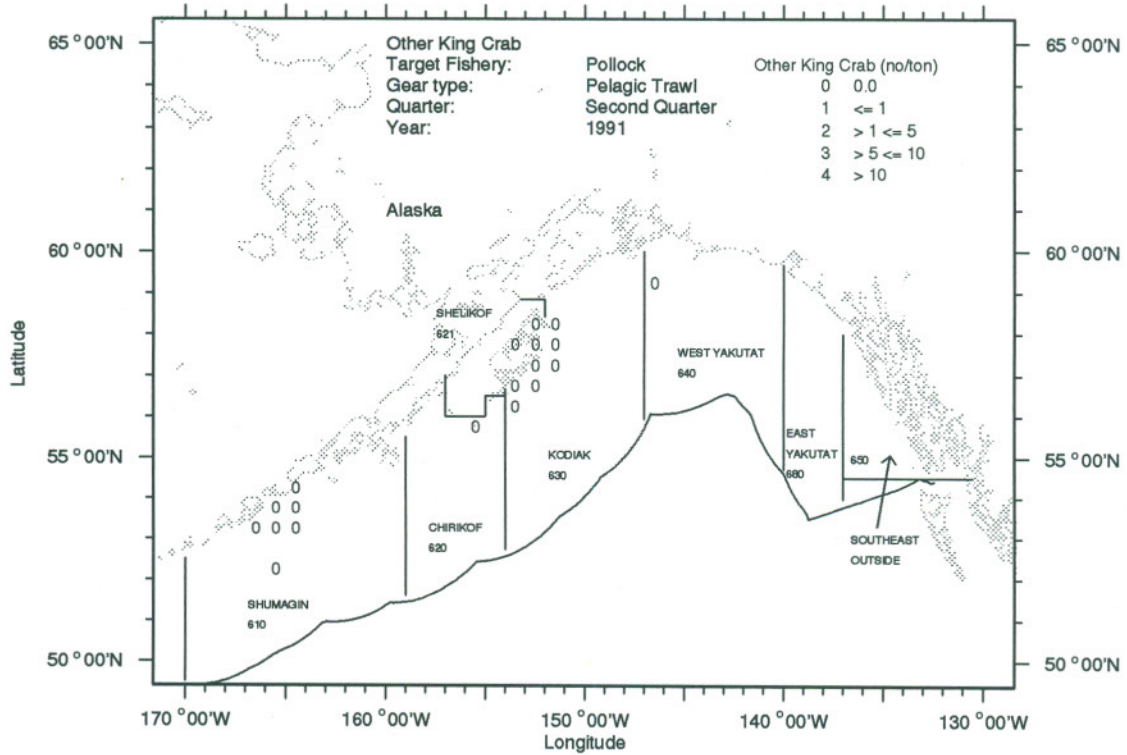
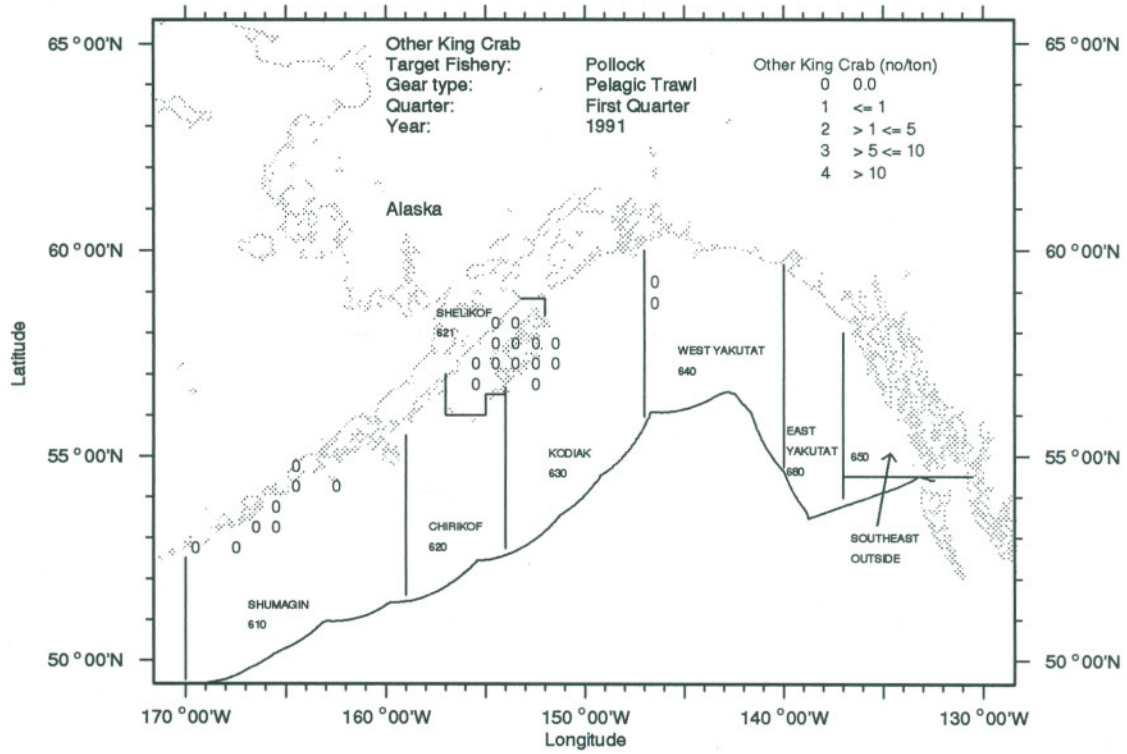


Figure 17.--Continued.

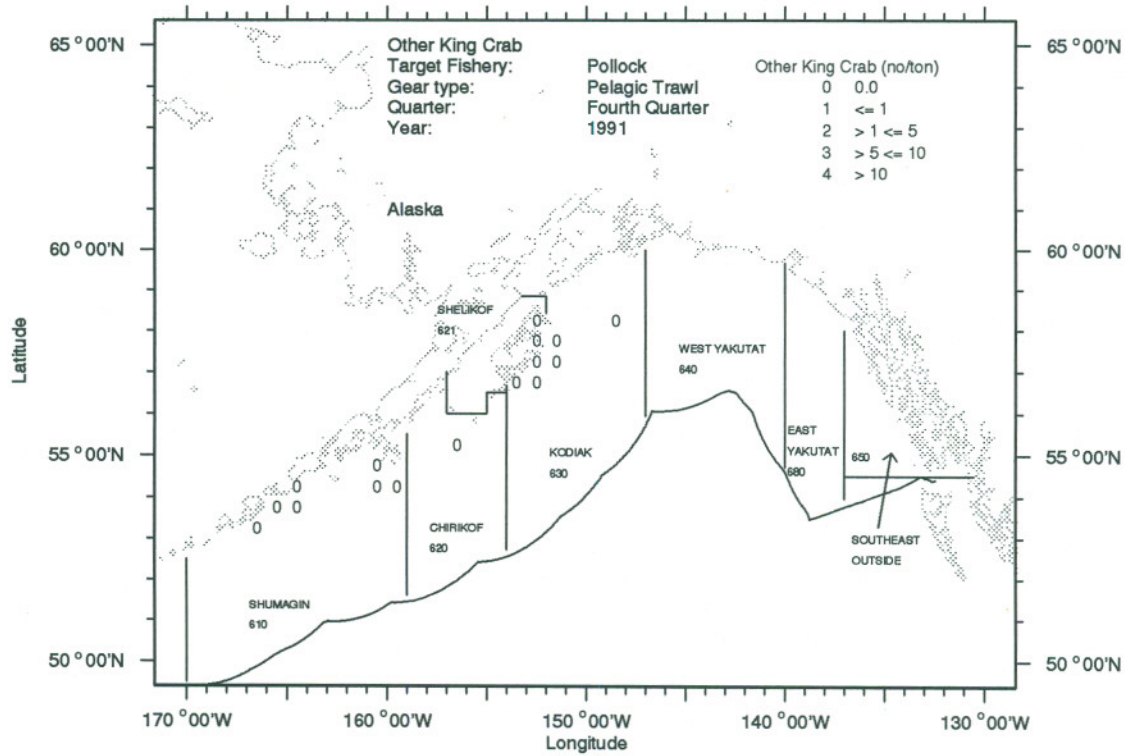
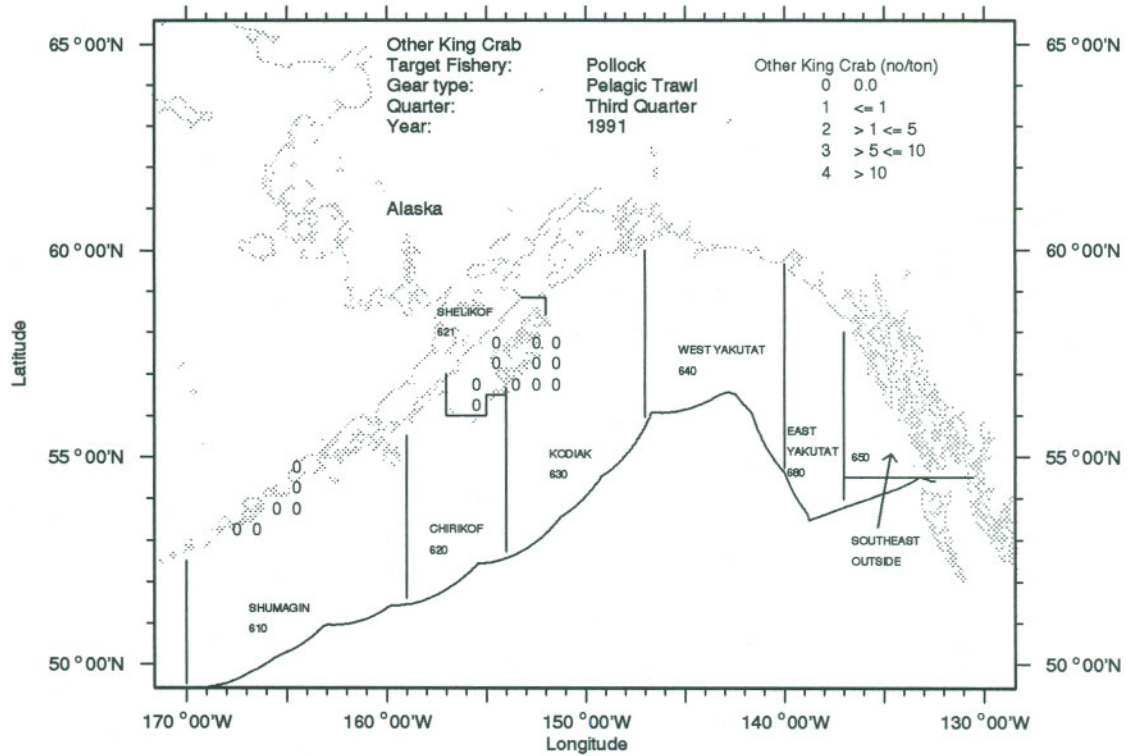


Figure 17.--Continued.

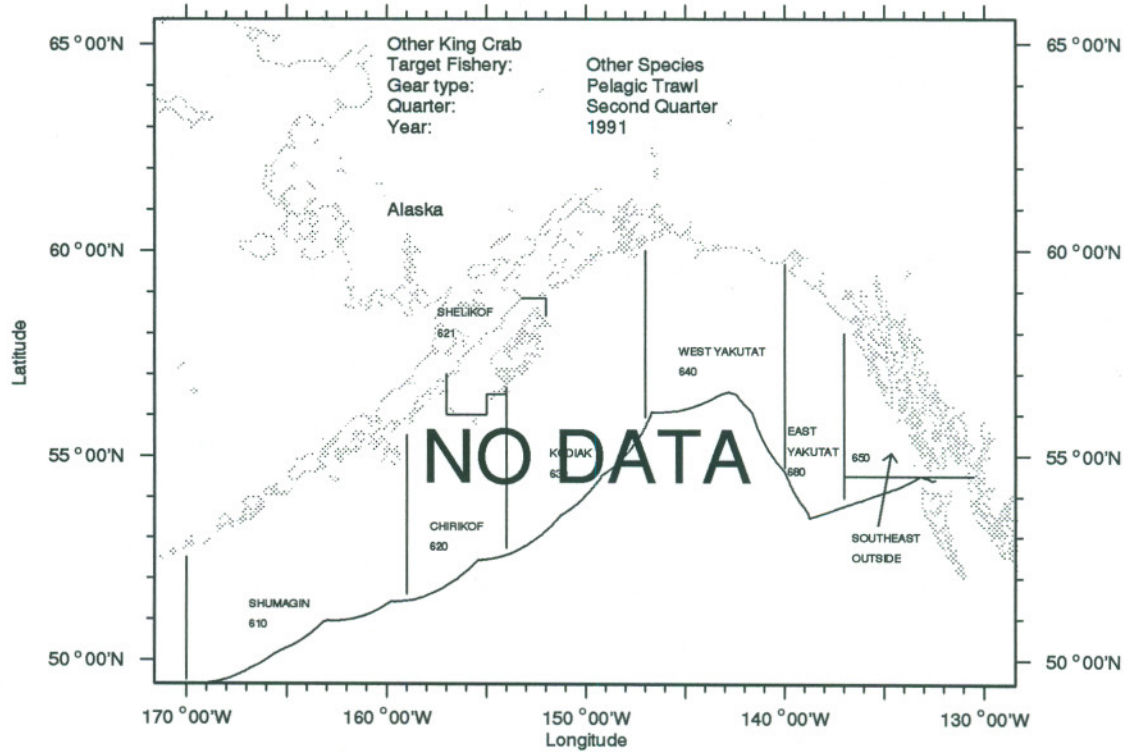
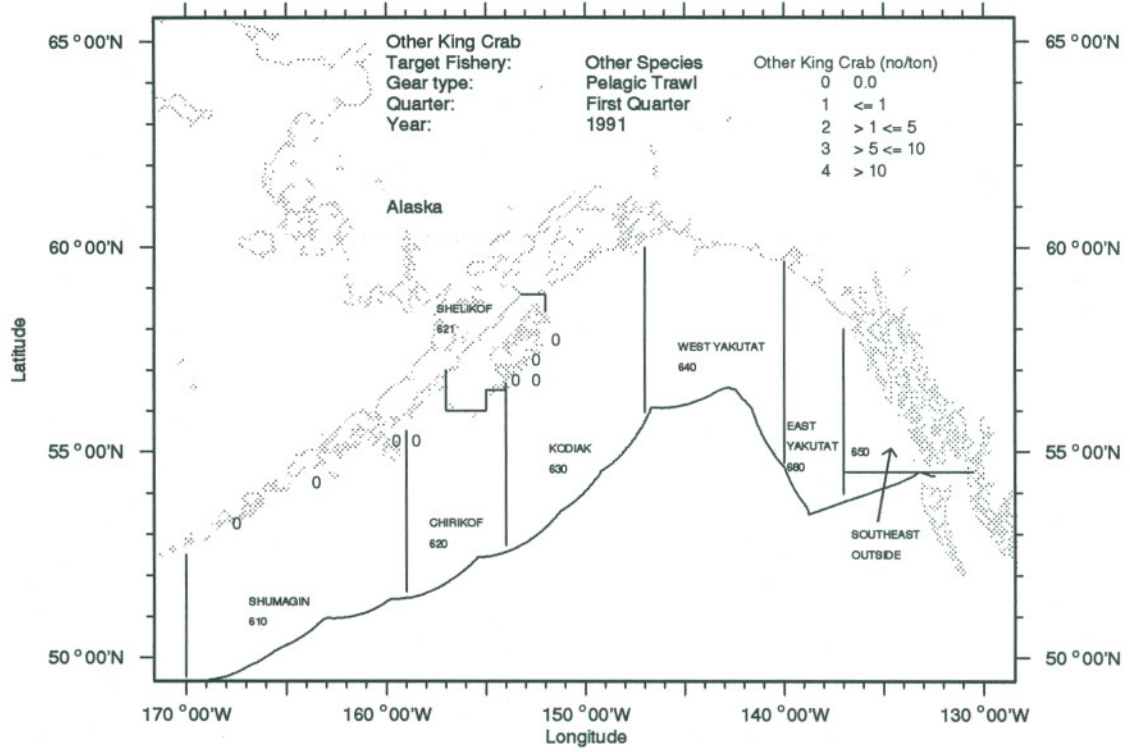


Figure 17.--Continued.

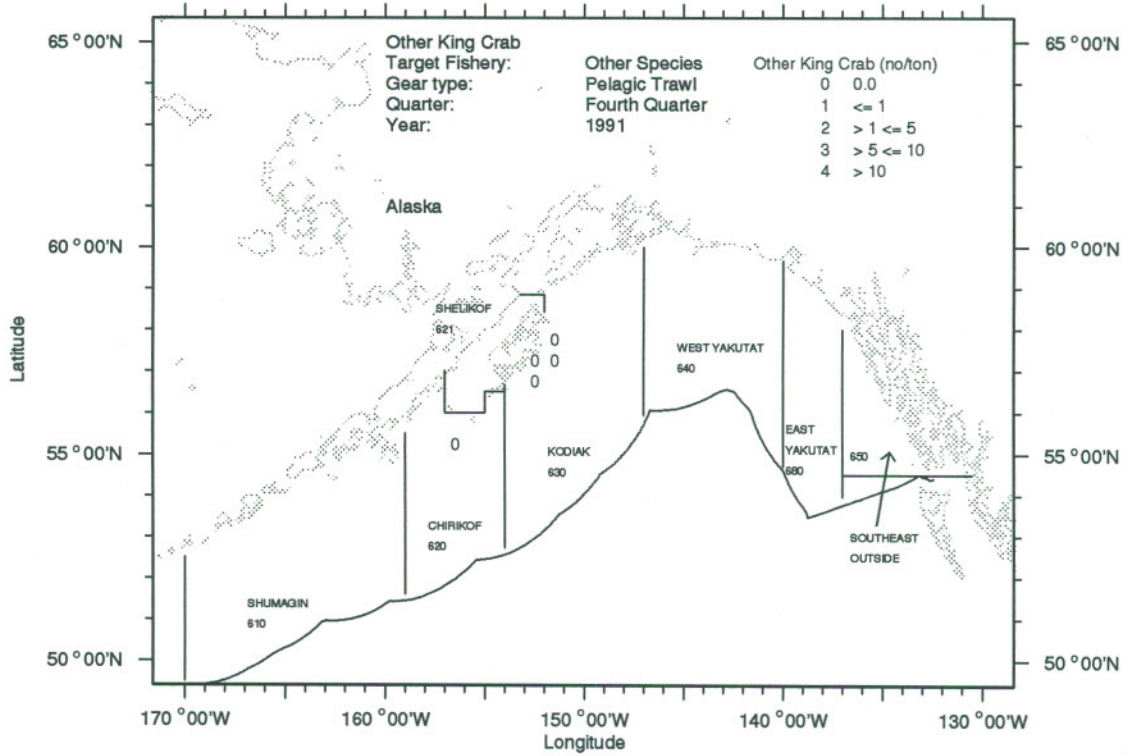
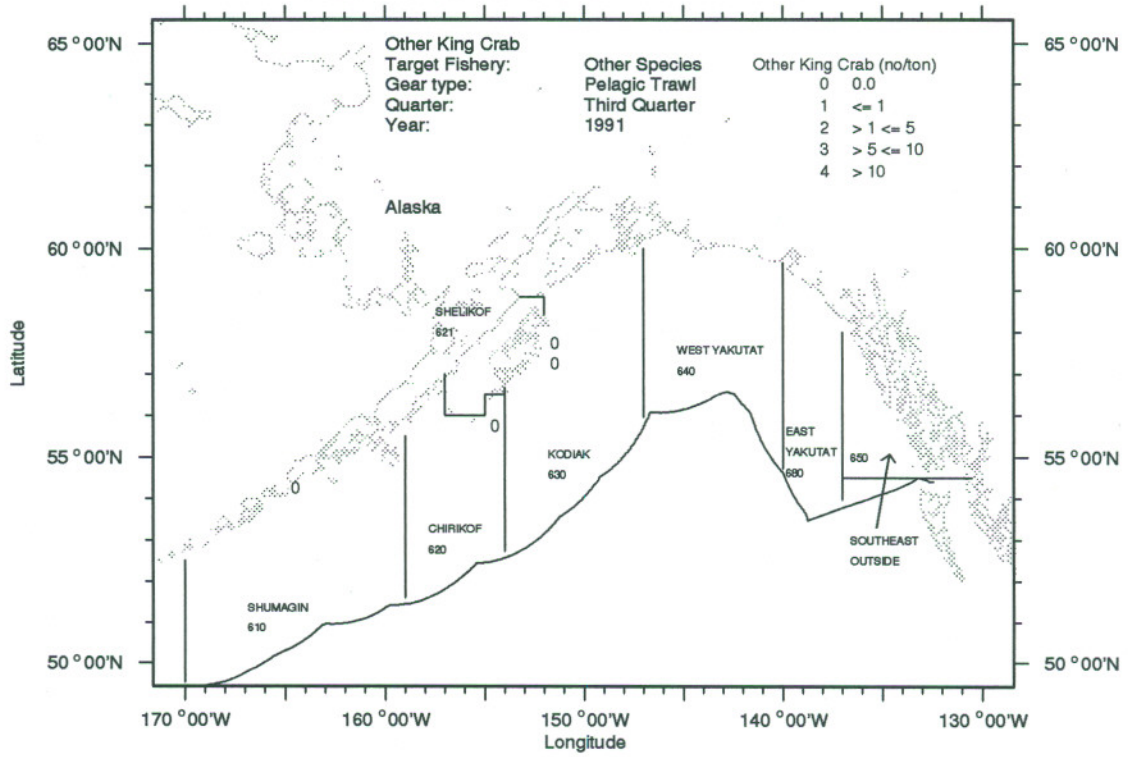


Figure 17.--Continued.

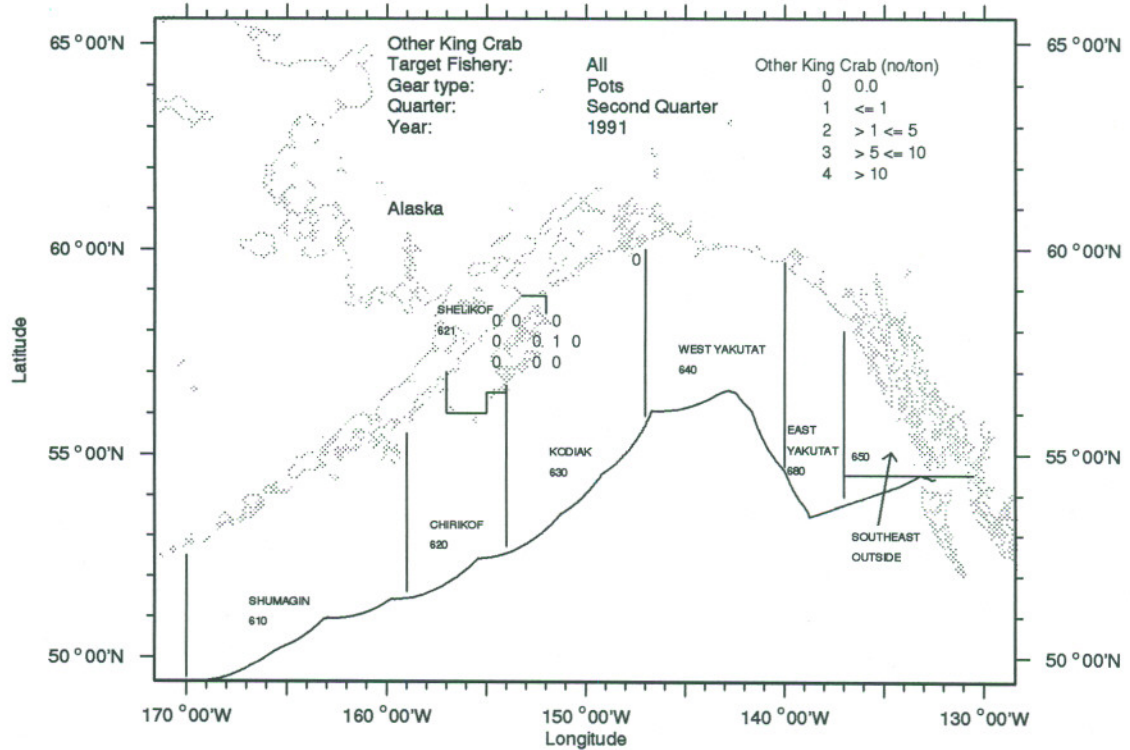
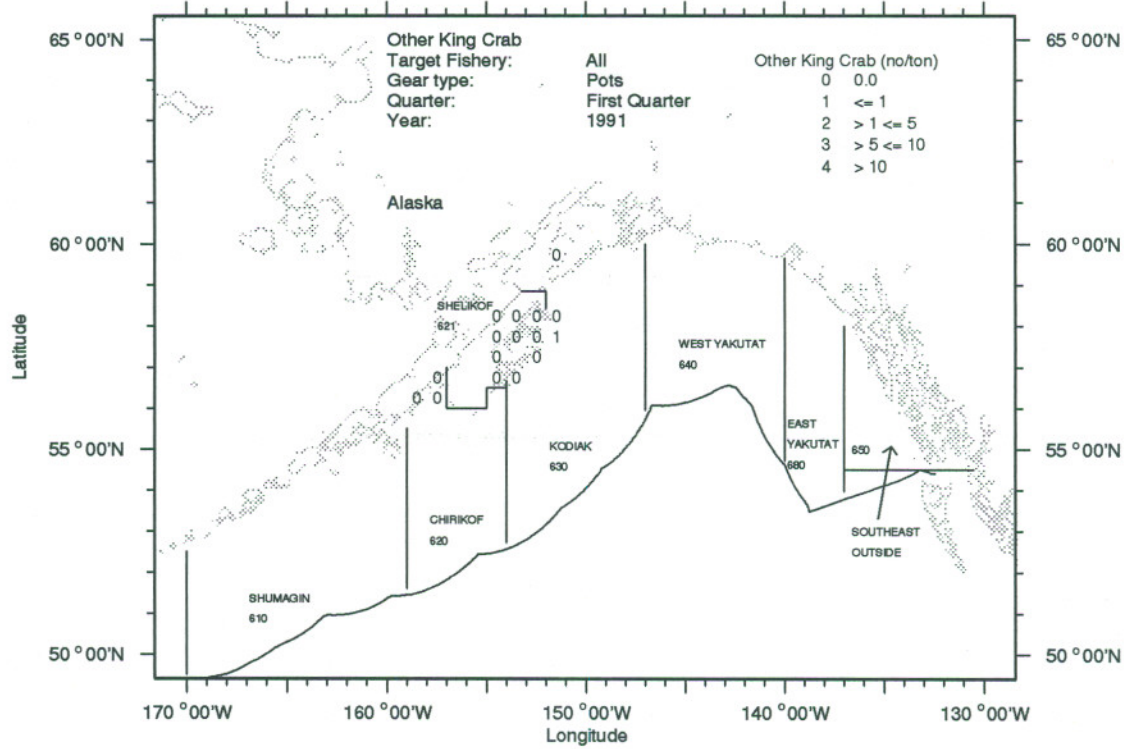


Figure 17.--Continued.

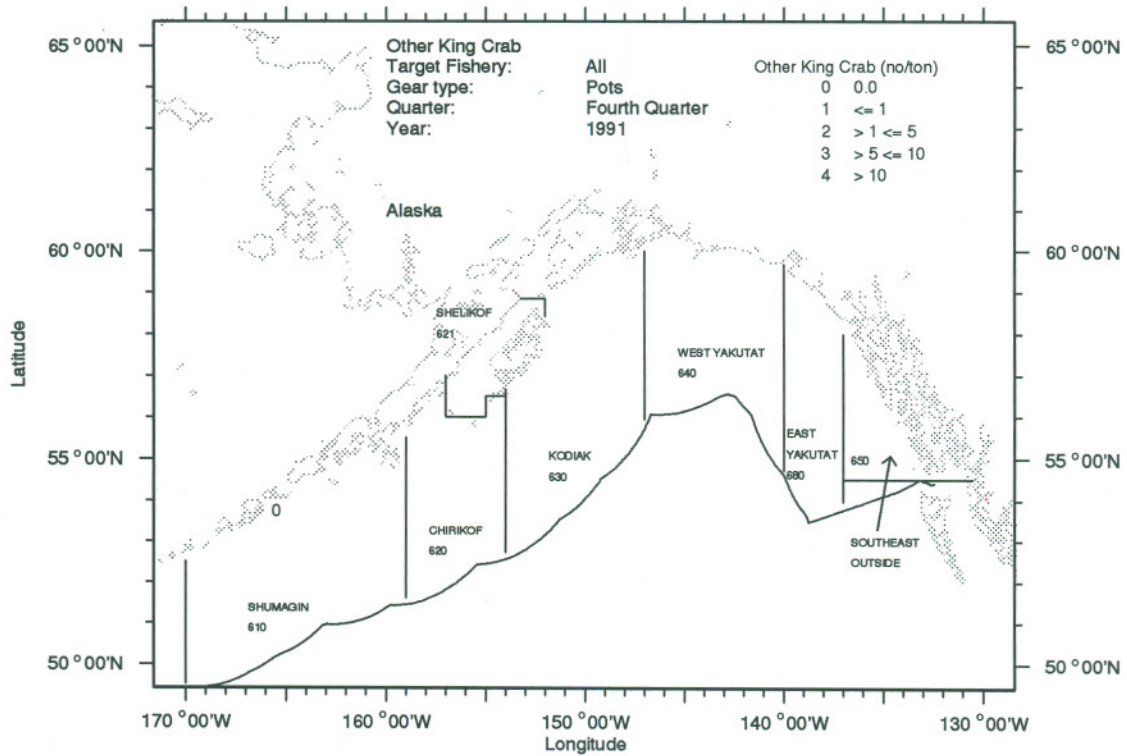
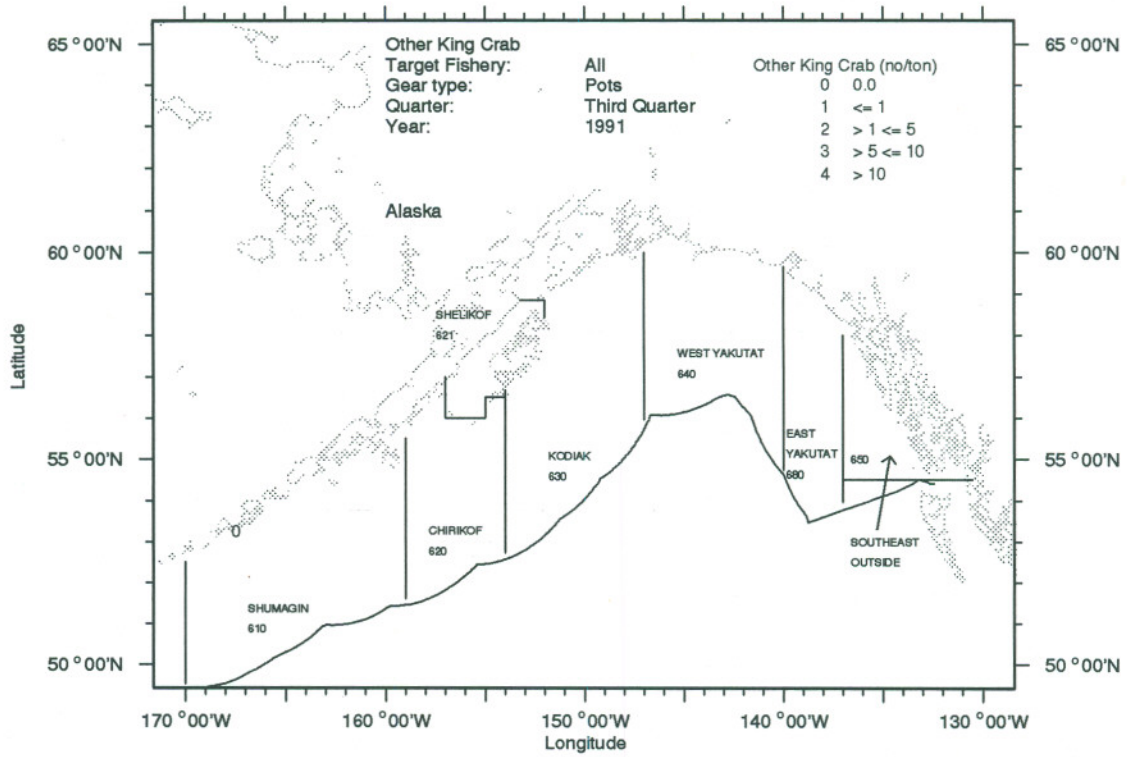


Figure 17.--Continued.

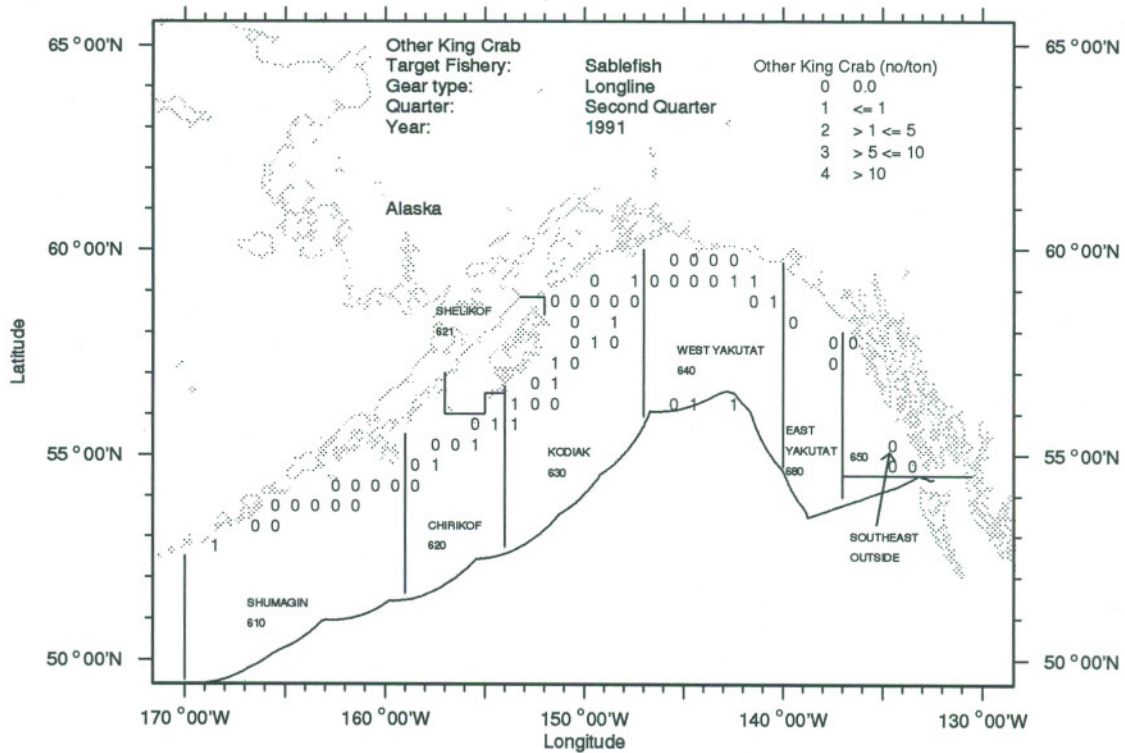
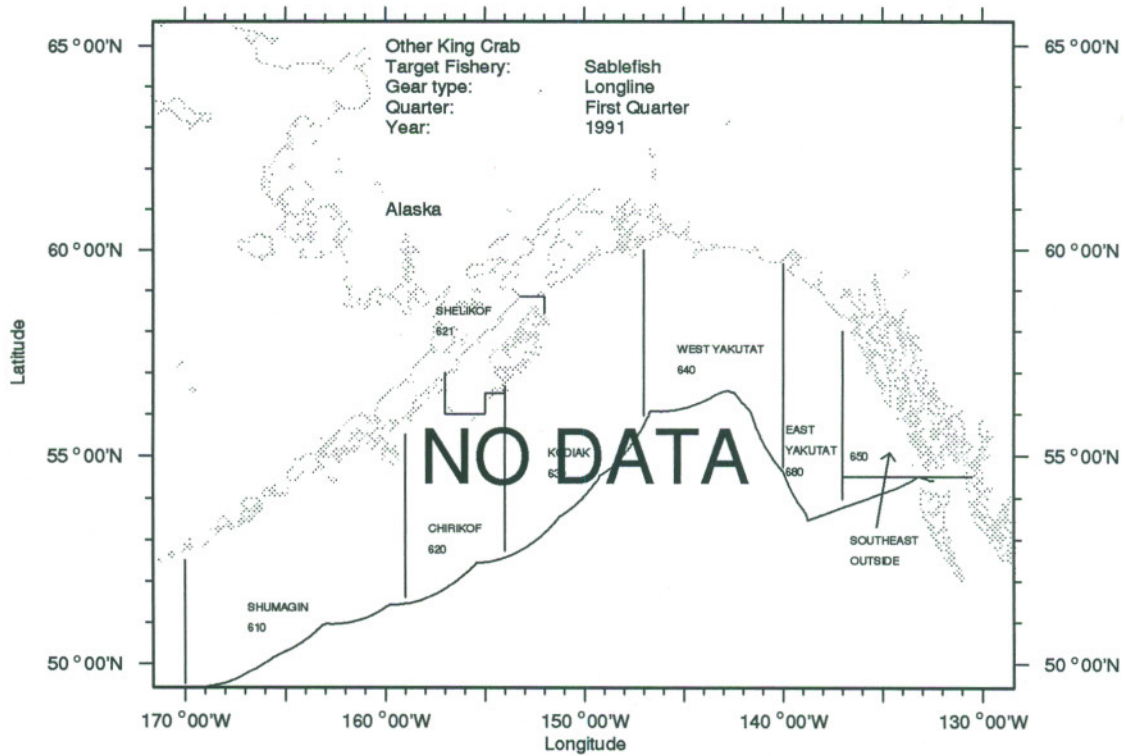


Figure 17.--Continued.

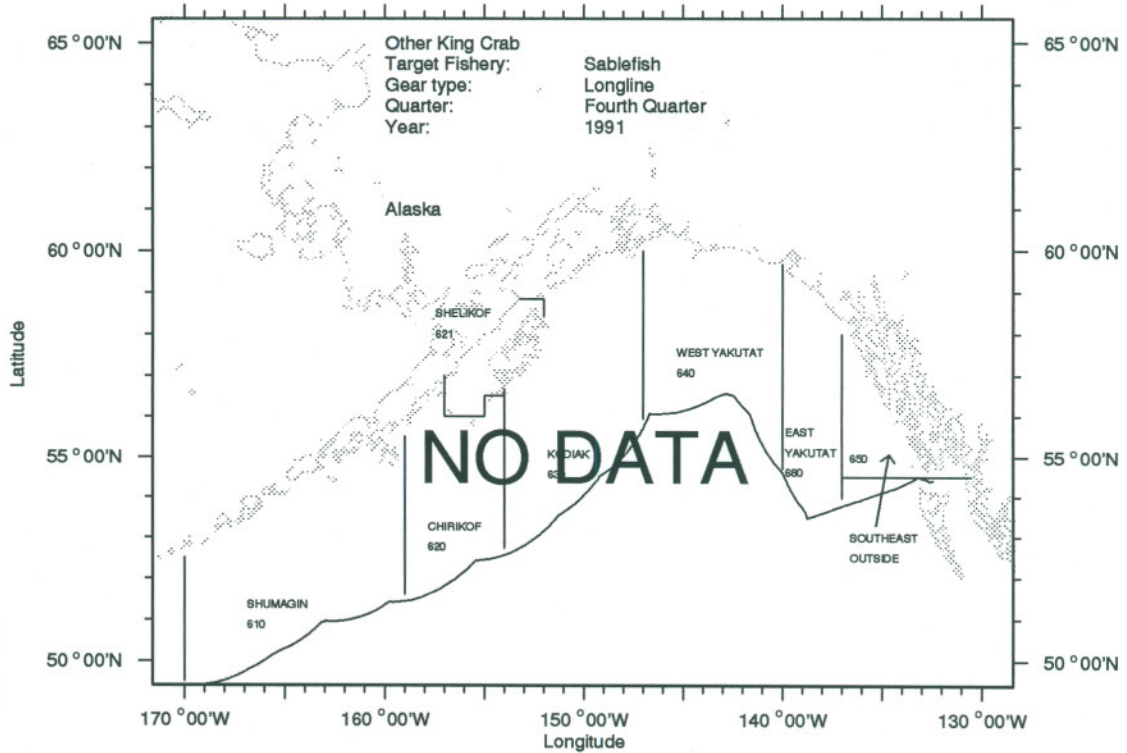
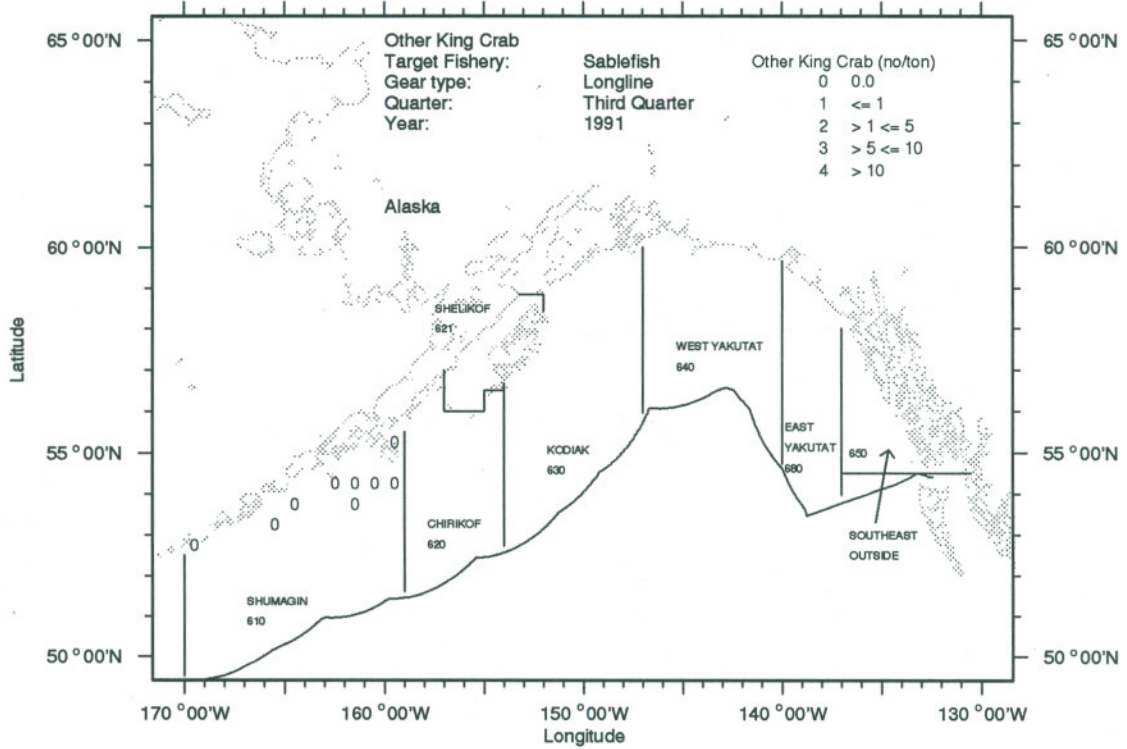


Figure 17.--Continued.

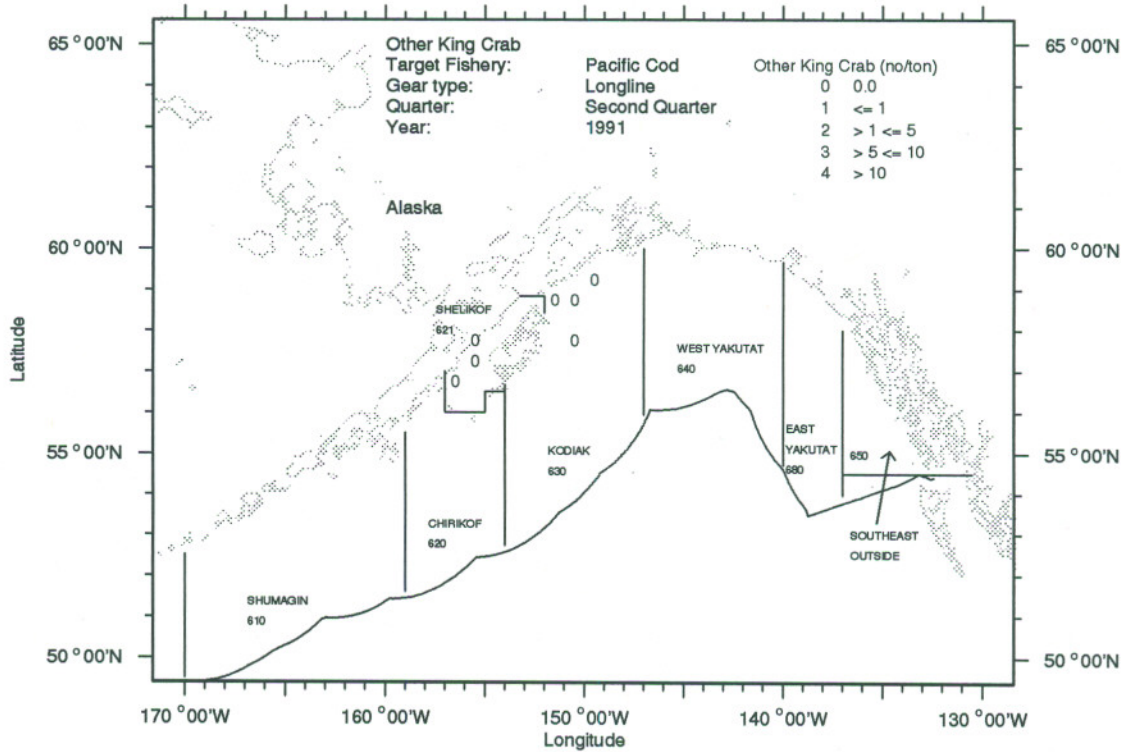
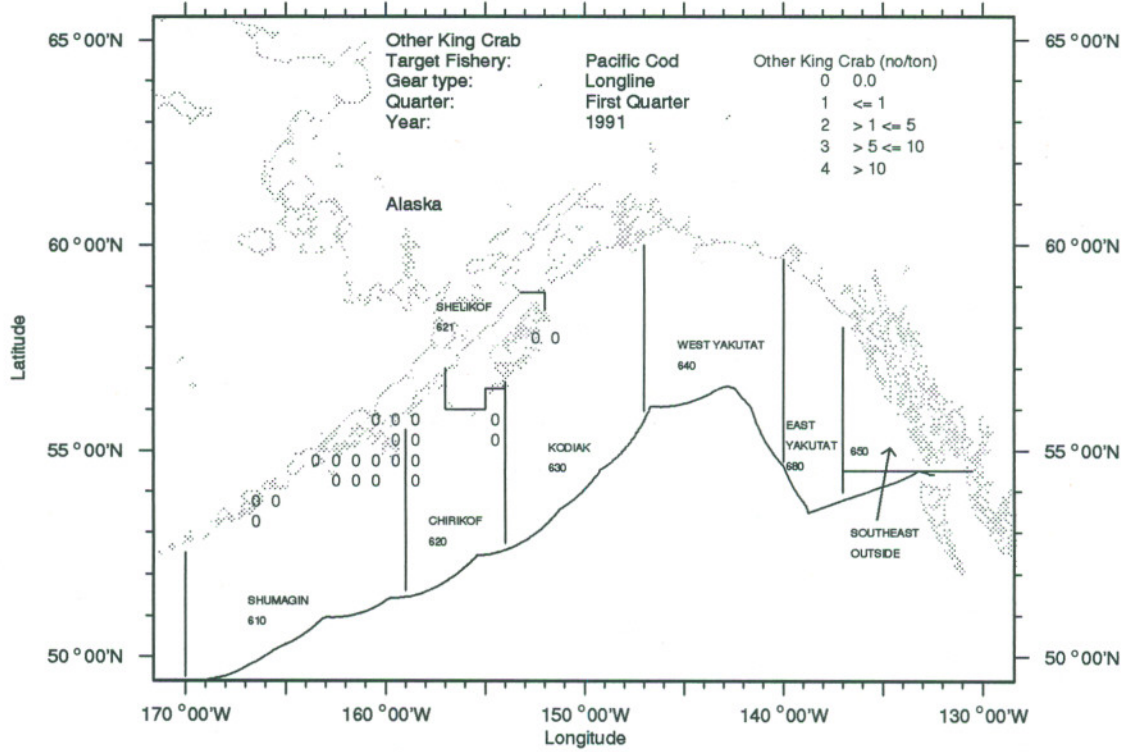


Figure 17.--Continued.

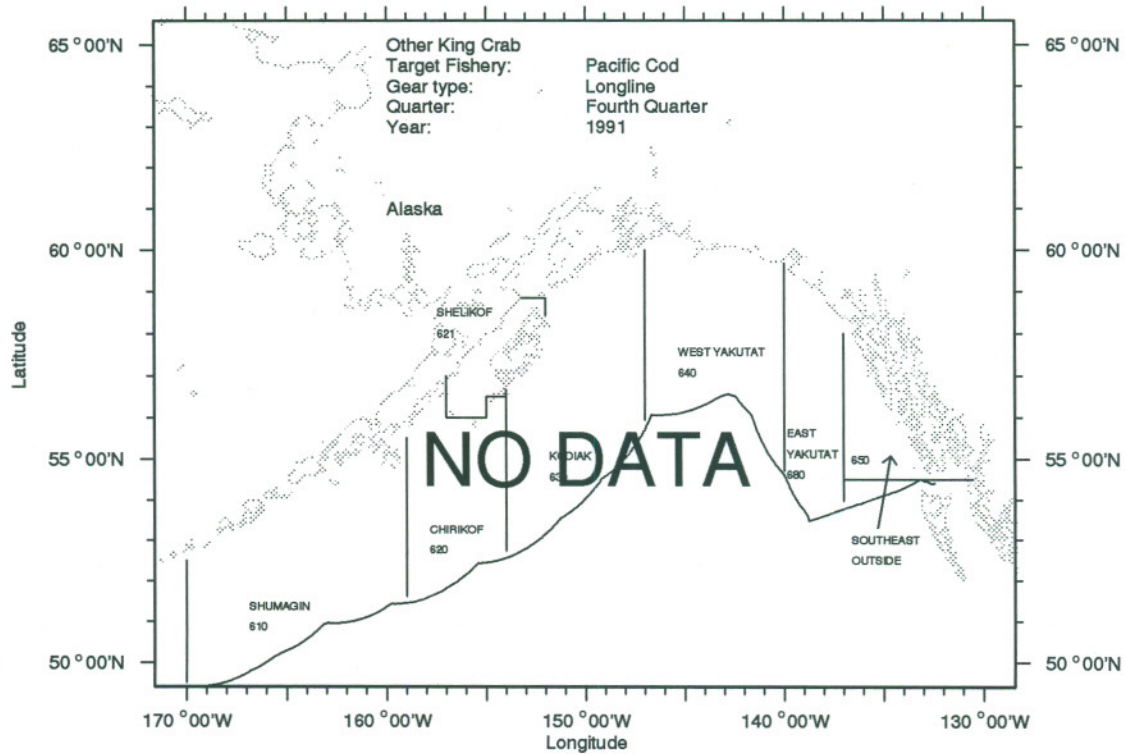
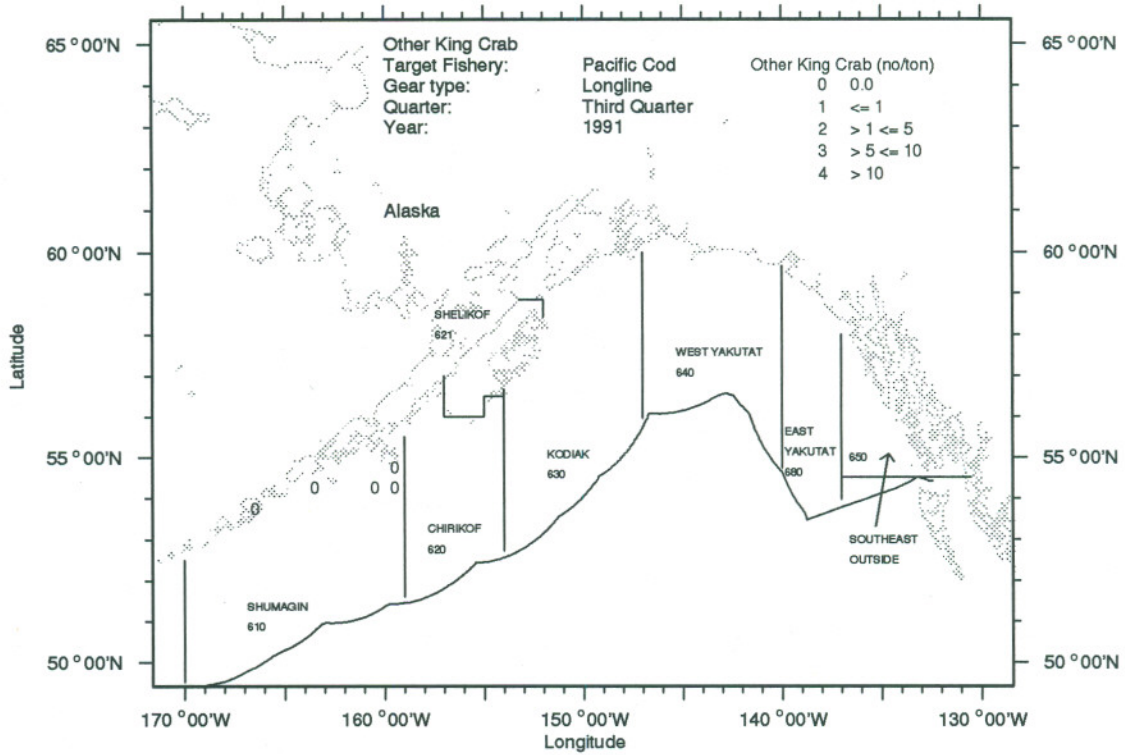


Figure 17.--Continued.

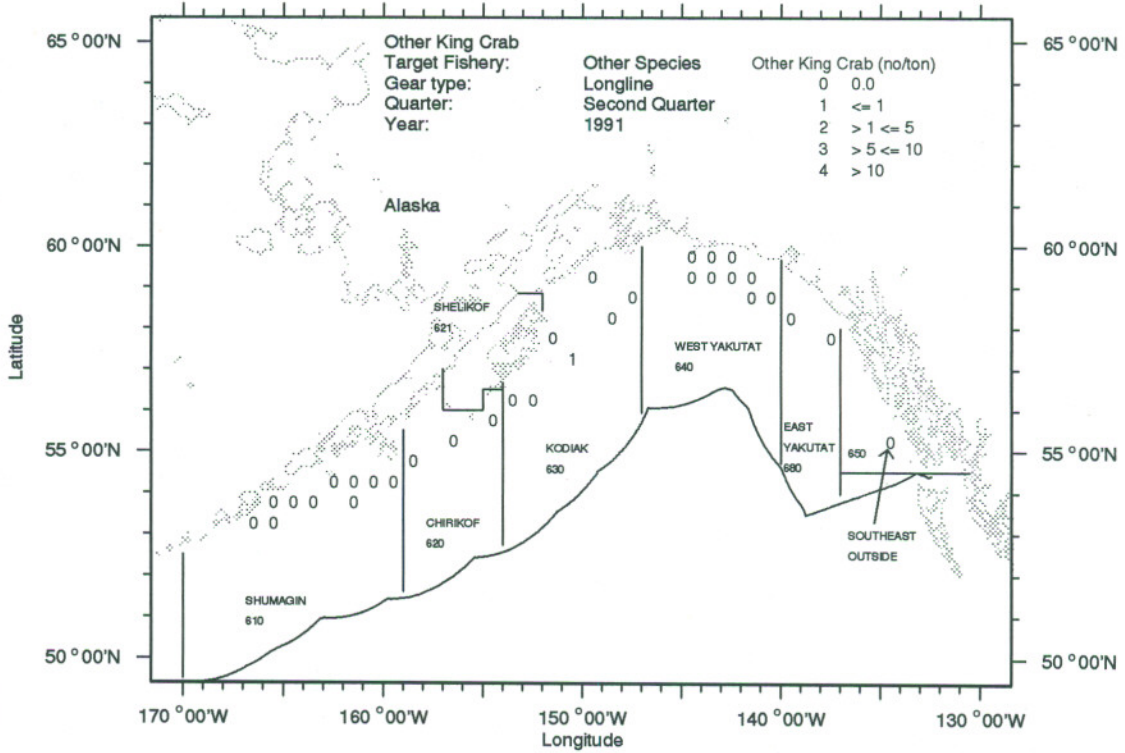
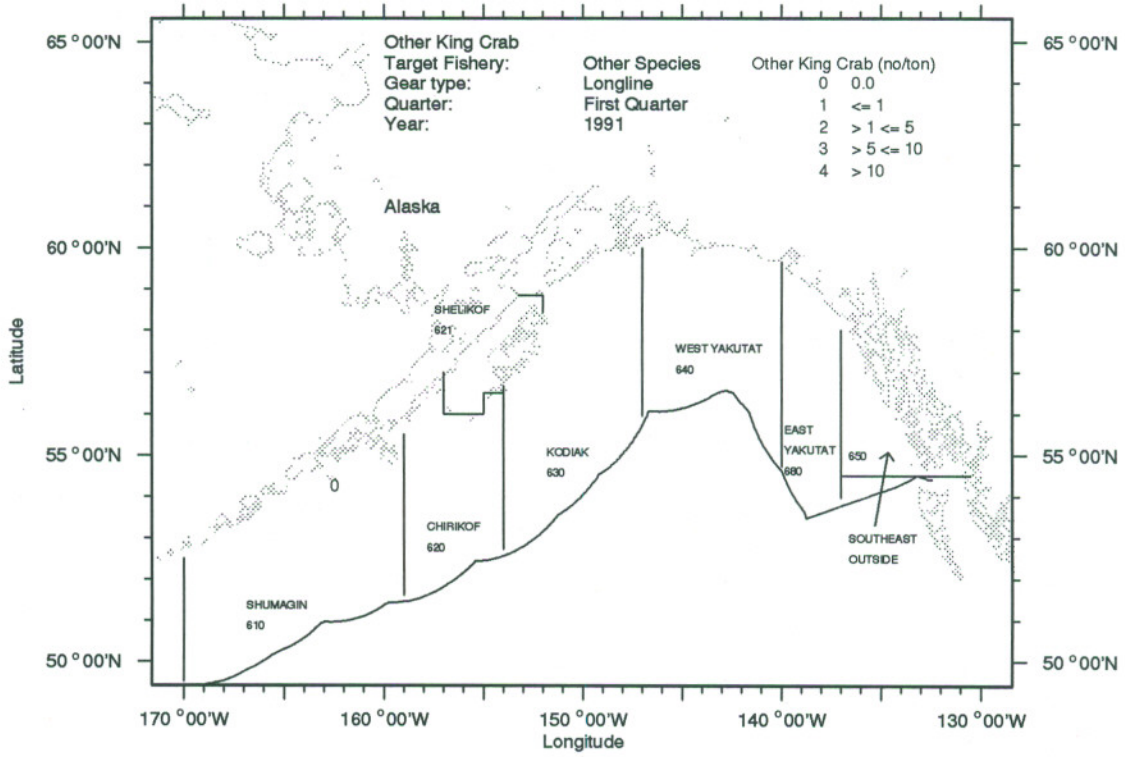


Figure 17.--Continued.

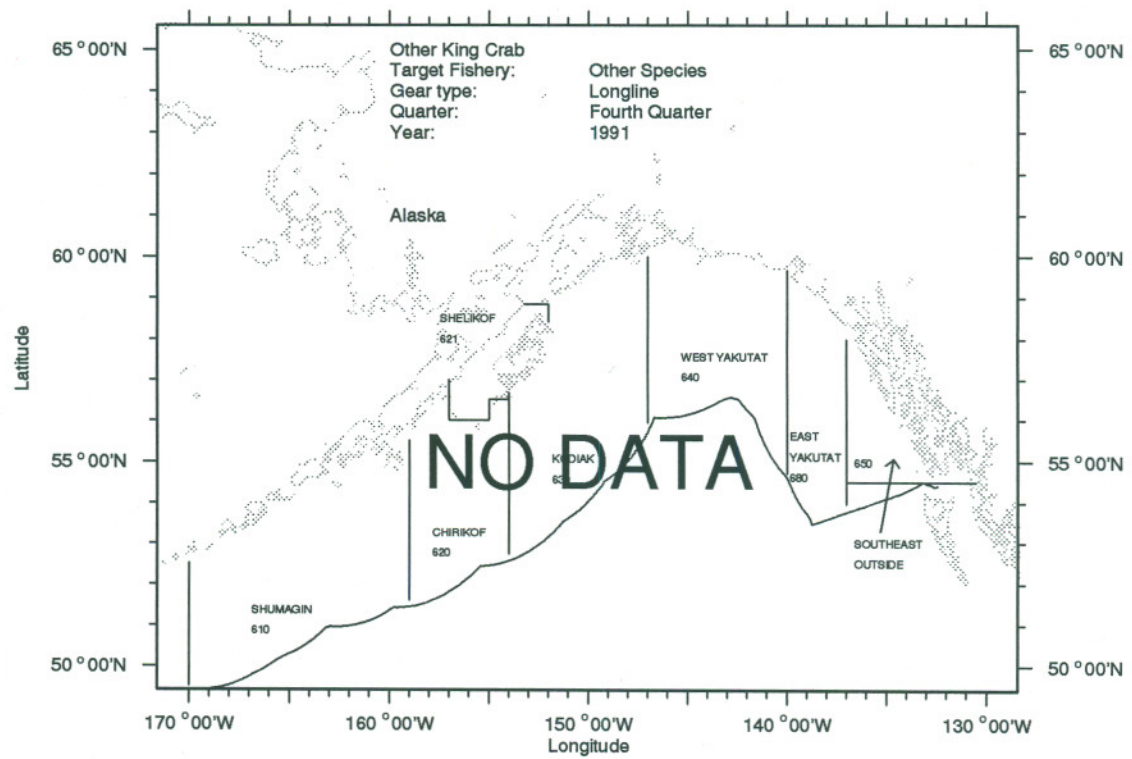
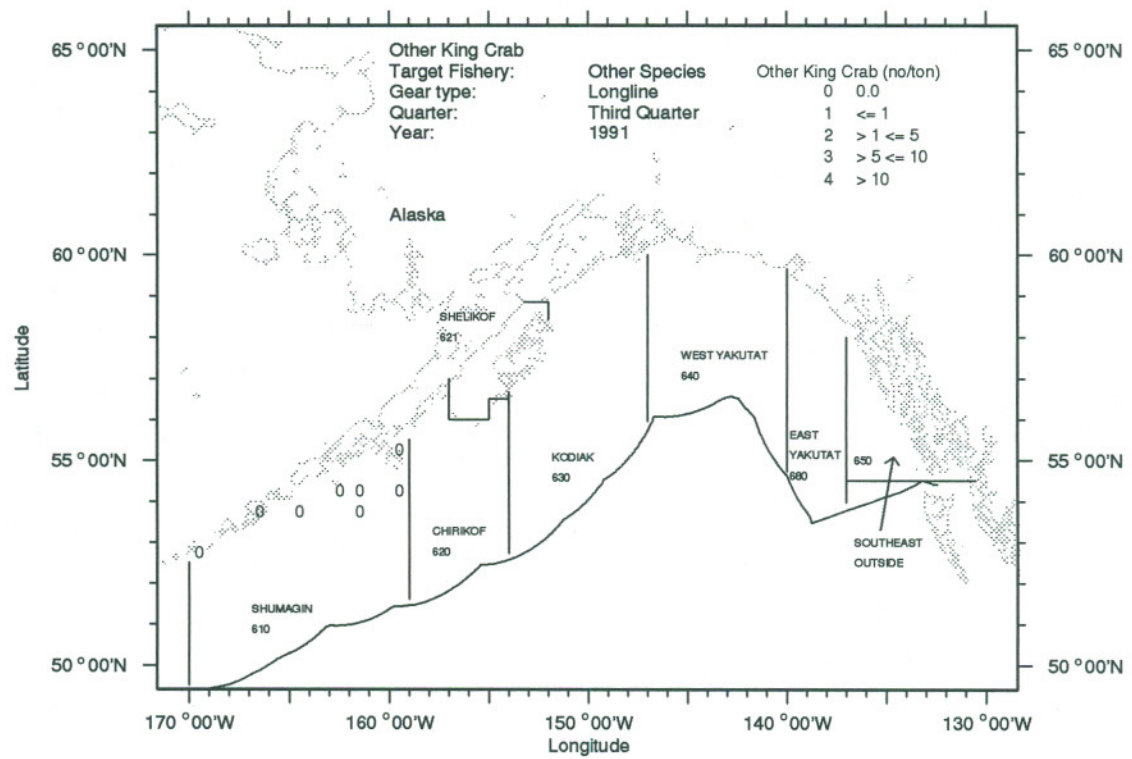


Figure 17.--Continued.

Table 61.--Estimated bycatch of red king crab (in numbers of crab) by U.S. domestic groundfish vessels in the Gulf of Alaska region by NPFMC area and gear type, 1991. (Dashes indicate area not fished.)

Gear	Area 610	Area 620	Area 621	Area 630	Area 640	Area 650	Area 680	Total
Trawl	25	28	2	53	0	0	0	108
Longline	0	0	0	0	0	0	0	0
Pot	7	4	6	80	0	0	--	97
Jig	0	0	0	0	0	0	0	0
Total	32	32	8	133	0	0	0	205
Percent by area	15.6%	15.6%	3.9%	64.9%	0.0%	0.0%	0.0%	

Table 62.--Estimated bycatch of "other" king crabs* (in numbers of crabs) by U.S. domestic groundfish vessels in the Gulf of Alaska by NPFMC area and gear type, 1991. (Dashes indicate area not fished.)

Gear	Area 610	Area 620	Area 621	Area 630	Area 640	Area 650	Area 680	Total
Trawl	562	525	0	445	154	4	8	1,698
Longline	4	77	0	287	21	50	22	461
Pot	0	0	0	0	0	0	--	0
Jig	0	0	0	0	0	0	0	0
Total	566	602	0	732	175	54	30	2,159
Percent by area	26.2%	27.9%	<0.1%	33.9%	8.1%	2.5%	1.4%	

*Species in this group consist of blue king crab (Paralithodes platypus), golden king crab (Lithodes aequispina), and couesi king crab (L. couesi).

Table 63.--U.S. domestic groundfish catch (in metric tons (t)) and red king crab bycatch (in numbers) by target fishery, NPFMC zone, and species in the Gulf of Alaska region, 1991.

Fishery	Gear	Zone	Groundfish catch	Red king crab			
				Bycatch (numbers)	Per t of groundfish	% within zone	% of total bycatch
Pollock midwater	Trawl	Eastern	5,497.49	0	0.000	0.0%	0.0%
		Central	44,992.87	0	0.000	0.0%	0.0%
		Western	34,869.20	0	0.000	0.0%	0.0%
		Total	85,359.56	0	0.000		0.0%
Pollock bottom	Longline	Eastern	nf	nf	nf	nf	nf
		Central	0.25	0	0.000	0.0%	0.0%
		Western	0.72	0	0.000	0.0%	0.0%
		Total	0.97	0	0.000		0.0%
Pollock bottom	Pot	Eastern	nf	nf	nf	nf	nf
		Central	112.72	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	112.72	0	0.000		0.0%
Pollock bottom	Trawl	Eastern	80.32	0	0.000	0.0%	0.0%
		Central	15,485.61	36	0.002	20.8%	17.6%
		Western	5,881.68	0	0.000	0.0%	0.0%
		Total	21,447.61	36	0.002		17.6%
Pacific cod	Gillnet	Eastern	nf	nf	nf	nf	nf
		Central	9.87	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	9.87	0	0.000		0.0%
Pacific cod	Longline	Eastern	279.60	0	0.000	0.0%	0.0%
		Central	5,868.30	0	0.000	0.0%	0.0%
		Western	1,332.54	0	0.000	0.0%	0.0%
		Total	7,480.44	0	0.000		0.0%
Pacific cod	Jig	Eastern	7.28	0	0.000	0.0%	0.0%
		Central	48.65	0	0.000	0.0%	0.0%
		Western	34.75	0	0.000	0.0%	0.0%
		Total	90.68	0	0.000		0.0%
Pacific cod	Pot	Eastern	3.88	0	0.000	0.0%	0.0%
		Central	9,376.71	90	0.010	52.0%	43.9%
		Western	1,095.18	7	0.006	21.9%	3.4%
		Total	10,475.77	97	0.009		47.3%
Pacific cod	Trawl	Eastern	2.40	0	0.000	0.0%	0.0%
		Central	33,567.55	4	0.000	2.3%	2.0%
		Western	36,511.85	0	0.000	0.0%	0.0%
		Total	70,081.80	4	0.000		2.0%
Deepwater flatfish	Longline	Eastern	nf	nf	nf	nf	nf
		Central	24.54	0	0.000	0.0%	0.0%
		Western	13.54	0	0.000	0.0%	0.0%
		Total	38.08	0	0.000		0.0%
Deepwater flatfish	Trawl	Eastern	0.02	0	0.000	0.0%	0.0%
		Central	18,476.68	35	0.002	20.2%	17.1%
		Western	1,863.22	25	0.013	78.1%	12.2%
		Total	20,339.92	60	0.003		29.3%
Shallow-water flatfish	Trawl	Eastern	nf	nf	nf	nf	nf
		Central	1,632.01	6	0.004	3.5%	2.9%
		Western	177.66	0	0.000	0.0%	0.0%
		Total	1,809.67	6	0.003		2.9%

Table 63.--Continued.

Fishery	Gear	Zone	Groundfish catch	Red king crab			
				Bycatch (numbers)	Per t of groundfish	% within zone	% of total bycatch
Rockfish	Longline	Eastern	509.32	0	0.000	0.0%	0.0%
		Central	116.60	0	0.000	0.0%	0.0%
		Western	2.28	0	0.000	0.0%	0.0%
		Total	628.20	0	0.000		0.0%
Rockfish	Jig	Eastern	12.82	0	0.000	0.0%	0.0%
		Central	9.90	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	22.72	0	0.000		0.0%
Rockfish	Trawl	Eastern	3,947.59	0	0.000	0.0%	0.0%
		Central	15,098.28	2	0.000	1.2%	1.0%
		Western	5,091.76	0	0.000	0.0%	0.0%
		Total	24,137.63	2	0.000		1.0%
Other	Longline	Eastern	47.38	0	0.000	0.0%	0.0%
		Central	5.74	0	0.000	0.0%	0.0%
		Western	2.60	0	0.000	0.0%	0.0%
		Total	55.72	0	0.000		0.0%
Other	Jig	Eastern	1.04	0	0.000	0.0%	0.0%
		Central	383.60	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	384.64	0	0.000		0.0%
Other	Pot	Eastern	nf	nf	nf	nf	nf
		Central	0.63	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	0.63	0	0.000		0.0%
Other	Trawl	Eastern	831.69	0	0.000	0.0%	0.0%
		Central	245.92	0	0.000	0.0%	0.0%
		Western	2,191.76	0	0.000	0.0%	0.0%
		Total	3,269.37	0	0.000		0.0%
Sablefish	Longline	Eastern	10,383.16	0	0.000	0.0%	0.0%
		Central	10,933.33	0	0.000	0.0%	0.0%
		Western	2,142.82	0	0.000	0.0%	0.0%
		Total	23,459.31	0	0.000		0.0%
Sablefish	Jig	Eastern	nf	nf	nf	nf	nf
		Central	15.21	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	15.21	0	0.000		0.0%
Sablefish	Trawl	Eastern	nf	nf	nf	nf	nf
		Central	252.31	0	0.000	0.0%	0.0%
		Western	142.71	0	0.000	0.0%	0.0%
		Total	395.02	0	0.000		0.0%
Total		Eastern	21,603.99	0	0.000		0.0%
		Central	156,657.28	173	0.001		84.4%
		Western	91,354.27	32	0.000		15.6%
		Total	269,615.54	205	0.001		

Table 64.--U.S. domestic groundfish catch (in metric tons (t)) and "other" king crab bycatch (in numbers) by target fishery, NPFMC zone, and species in the Gulf of Alaska region, 1991.

Fishery	Gear	Zone	Groundfish catch	"Other" king crab			
				Bycatch (numbers)	Per t of groundfish	% within zone	% of total bycatch
Pollock midwater	Trawl	Eastern	5,497.49	0	0.000	0.0%	0.0%
		Central	44,992.87	0	0.000	0.0%	0.0%
		Western	34,869.20	0	0.000	0.0%	0.0%
		Total	85,359.56	0	0.000		0.0%
Pollock bottom	Longline	Eastern	nf	nf	nf	nf	nf
		Central	0.25	0	0.000	0.0%	0.0%
		Western	0.72	0	0.000	0.0%	0.0%
		Total	0.97	0	0.000		0.0%
Pollock bottom	Pot	Eastern	nf	nf	nf	nf	nf
		Central	112.72	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	112.72	0	0.000		0.0%
Pollock bottom	Trawl	Eastern	80.32	0	0.000	0.0%	0.0%
		Central	15,485.61	9	0.001	0.7%	0.4%
		Western	5,881.68	0	0.000	0.0%	0.0%
		Total	21,447.61	9	0.000		0.4%
Pacific cod	Gillnet	Eastern	nf	nf	nf	nf	nf
		Central	9.87	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	9.87	0	0.000		0.0%
Pacific cod	Longline	Eastern	279.60	0	0.000	0.0%	0.0%
		Central	5,868.30	0	0.000	0.0%	0.0%
		Western	1,332.54	0	0.000	0.0%	0.0%
		Total	7,480.44	0	0.000		0.0%
Pacific cod	Jig	Eastern	7.28	0	0.000	0.0%	0.0%
		Central	48.65	0	0.000	0.0%	0.0%
		Western	34.75	0	0.000	0.0%	0.0%
		Total	90.68	0	0.000		0.0%
Pacific cod	Pot	Eastern	3.88	0	0.000	0.0%	0.0%
		Central	9,376.71	0	0.000	0.0%	0.0%
		Western	1,095.18	0	0.000	0.0%	0.0%
		Total	10,475.77	0	0.000		0.0%
Pacific cod	Trawl	Eastern	2.40	0	0.000	0.0%	0.0%
		Central	33,567.55	0	0.000	0.0%	0.0%
		Western	36,511.85	0	0.000	0.0%	0.0%
		Total	70,081.80	0	0.000		0.0%
Deepwater flatfish	Longline	Eastern	nf	nf	nf	nf	nf
		Central	24.54	0	0.000	0.0%	0.0%
		Western	13.54	0	0.000	0.0%	0.0%
		Total	38.08	0	0.000		0.0%
Deepwater flatfish	Trawl	Eastern	0.02	0	0.000	0.0%	0.0%
		Central	18,476.68	588	0.032	44.1%	27.2%
		Western	1,863.22	506	0.272	89.4%	23.4%
		Total	20,339.92	1,094	0.054		50.7%
Shallow-water flatfish	Trawl	Eastern	nf	nf	nf	nf	nf
		Central	1,632.01	0	0.000	0.0%	0.0%
		Western	177.66	0	0.000	0.0%	0.0%
		Total	1,809.67	0	0.000		0.0%

Table 64.--Continued.

Fishery	Gear	Zone	Groundfish catch	"Other" king crab			
				Bycatch (numbers)	Per t of groundfish	% within zone	% of total bycatch
Rockfish	Longline	Eastern	509.32	0	0.000	0.0%	0.0%
		Central	116.60	0	0.000	0.0%	0.0%
		Western	2.28	0	0.000	0.0%	0.0%
		Total	628.20	0	0.000		0.0%
Rockfish	Jig	Eastern	12.82	0	0.000	0.0%	0.0%
		Central	9.90	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	22.72	0	0.000		0.0%
Rockfish	Trawl	Eastern	3,947.59	166	0.042	64.1%	7.7%
		Central	15,098.28	372	0.025	27.9%	17.2%
		Western	5,091.76	56	0.011	9.9%	2.6%
		Total	24,137.63	594	0.025		27.5%
Other	Longline	Eastern	47.38	0	0.000	0.0%	0.0%
		Central	5.74	0	0.000	0.0%	0.0%
		Western	2.60	0	0.000	0.0%	0.0%
		Total	55.72	0	0.000		0.0%
Other	Jig	Eastern	1.04	0	0.000	0.0%	0.0%
		Central	383.60	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	384.64	0	0.000		0.0%
Other	Pot	Eastern	nf	nf	nf	nf	nf
		Central	0.63	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	0.63	0	0.000		0.0%
Other	Trawl	Eastern	831.69	0	0.000	0.0%	0.0%
		Central	245.92	1	0.004	0.1%	0.0%
		Western	2,191.76	0	0.000	0.0%	0.0%
		Total	3,269.37	1	0.000		0.0%
Sablefish	Longline	Eastern	10,383.16	93	0.009	35.9%	4.3%
		Central	10,933.33	364	0.033	27.3%	16.9%
		Western	2,142.82	4	0.002	0.7%	0.2%
		Total	23,459.31	461	0.020		21.4%
Sablefish	Jig	Eastern	nf	nf	nf	nf	nf
		Central	15.21	0	0.000	0.0%	0.0%
		Western	nf	nf	nf	nf	nf
		Total	15.21	0	0.000		0.0%
Sablefish	Trawl	Eastern	nf	nf	nf	nf	nf
		Central	252.31	0	0.000	0.0%	0.0%
		Western	142.71	0	0.000	0.0%	0.0%
		Total	395.02	0	0.000		0.0%
Total		Eastern	21,603.99	259	0.012		12.0%
		Central	156,657.28	1,334	0.009		61.8%
		Western	91,354.27	566	0.006		26.2%
		Total	269,615.54	2,159	0.008		

Table 65.--Condition of king crabs examined by observers in U.S. domestic groundfish catches in the Gulf of Alaska region by species and gear type, 1991.

Species	Gear type	Excellent		Poor		Dead	
		numbers	%	numbers	%	numbers	%
Red king crab	Trawl	0	0.0%	29	78.4%	8	21.6%
	Pot	7	100.0%	0	0.0%	0	0.0%
	Longline	0	0.0%	0	0.0%	0	0.0%
Blue king crab	Trawl	0	0.0%	1	100.0%	0	0.8%
	Pot	0	0.0%	0	0.0%	0	0.0%
	Longline	0	0.0%	0	0.0%	0	0.0%
Golden king crab	Trawl	12	15.6%	25	32.5%	40	51.9%
	Pot	2	100.0%	0	0.0%	0	0.0%
	Longline	7	87.5%	0	0.0%	1	12.5%
Couesi king crab	Trawl	0	0.0%	1	100.0%	0	0.0%
	Pot	0	0.0%	0	0.0%	0	0.0%
	Longline	6	85.7%	1	14.3%	0	0.0%
All species	Trawl	12	10.3%	56	48.3%	48	41.4%
	Pot	9	100.0%	0	0.0%	0	0.0%
	Longline	13	86.7%	1	6.7%	1	6.7%

Table 66.--Biological data on the bycatch of king crabs in U.S. domestic groundfish fisheries in the Gulf of Alaska region, 1991.

Species	Percent by species	Sex	Sex composition	Average weight (kg)	Average length (mm)
Golden king crab	62.5%	Male	45.8	1.29	109.8
		Female	54.2	1.22	120.4
Couesi king crab	22.0%	Male	35.0	1.09	75.5
		Female	65.0	0.98	99.7
Red king crab	8.7%	Male	61.0	2.38	148.2
		Female	39.0	1.75	127.4
Blue king crab	6.8%	Male	100.0	2.42	88.0

Table 67.--Common and scientific names of rockfish identified in U.S. domestic groundfish catches in the Gulf of Alaska region, 1991.

Common name	Scientific name
Black rockfish	<u>Sebastes melanops</u>
Darkblotched rockfish	<u>Sebastes crameri</u>
Dusky rockfish	<u>Sebastes ciliatus</u>
Harlequin rockfish	<u>Sebastes variegatus</u>
Northern rockfish	<u>Sebastes polyspinis</u>
Pacific ocean perch	<u>Sebastes alutus</u>
Redbanded rockfish	<u>Sebastes babcocki</u>
Redstripe rockfish	<u>Sebastes proriger</u>
Rougheye rockfish	<u>Sebastes aleutianus</u>
Sharpchin rockfish	<u>Sebastes zacentrus</u>
Shortraker rockfish	<u>Sebastes borealis</u>
Shortspine thornyhead	<u>Sebastolobus alascanus</u>
Silvergray rockfish	<u>Sebastes brevispinus</u>
Splitnose rockfish	<u>Sebastes diploproa</u>
Yelloweye rockfish	<u>Sebastes ruberrimus</u>
Widow rockfish	<u>Sebastes entomelas</u>
Other rockfish*	
Blue rockfish	<u>Sebastes mystinus</u>
Bocaccio	<u>Sebastes paucispinus</u>
Canary rockfish	<u>Sebastes pinniger</u>
Greenstriped rockfish	<u>Sebastes elongatus</u>
Longspine thornyhead	<u>Sebastolobus altivelis</u>
Rosethorn rockfish	<u>Sebastes helvomaculatus</u>
Stripetail rockfish	<u>Sebastes saxicola</u>
Tiger rockfish	<u>Sebastes nigrocinctus</u>
Yellowtail rockfish	<u>Sebastes flavidus</u>
Yellowmouth rockfish	<u>Sebastes reedi</u>

* The 10 species listed under "other rockfish" each made up less than 0.1% of the rockfish catch in U.S. domestic groundfish catches.

Table 68.--Rockfish species groupings in the Gulf of Alaska for 1991 and species associated with each group.

Species group	Associated species	
	Common name	Scientific name
Pacific ocean perch	Pacific ocean perch	<u>Sebastes aleutus</u>
Shortraker/rougheye	Shortraker rockfish	<u>S. borealis</u>
	Rougheye rockfish	<u>S. aleutianus</u>
Demersal shelf rockfish	Canary rockfish	<u>Sebastes pinniger</u>
	China rockfish	<u>S. nebulosus</u>
	Copper rockfish	<u>S. caurinus</u>
	Quillback rockfish	<u>S. maliger</u>
	Red banded rockfish	<u>S. babcocki</u>
	Rosethorn rockfish	<u>S. helvomaculatus</u>
	Tiger rockfish	<u>S. nigrocinctus</u>
	Yelloweye rockfish	<u>S. ruberrimus</u>
Pelagic shelf rockfish	Black rockfish	<u>S. melanops</u>
	Blue rockfish	<u>S. mystinus</u>
	Dusky rockfish	<u>S. ciliatus</u>
	Widow rockfish	<u>S. entomelas</u>
	Yellowtail rockfish	<u>S. flavidus</u>
Slope rockfish	Aurora rockfish	<u>S. aurora</u>
	Blackgill rockfish	<u>S. melanostomus</u>
	Bocaccio	<u>S. paucispinis</u>
	Chilipepper rockfish	<u>S. goodei</u>
	Darkblotched rockfish	<u>S. crameri</u>
	Greenstriped rockfish	<u>S. elongatus</u>
	Harlequin rockfish	<u>S. variegatus</u>
	Northern rockfish	<u>S. polyspinis</u>
	Pygmy rockfish	<u>S. wilsoni</u>
	Redstripe rockfish	<u>S. proriger</u>
	Sharpchin rockfish	<u>S. zacentrus</u>
	Shortbelly rockfish	<u>S. jordani</u>
	Silvergray rockfish	<u>S. brevispinus</u>
	Splitnose rockfish	<u>S. diploproa</u>
	Stripetail rockfish	<u>S. saxicola</u>
Vermillion rockfish	<u>S. miniatus</u>	
Yellowmouth rockfish	<u>S. reedi</u>	
Thornyheads	Longspine thornyhead	<u>Sebastolobus altivelis</u>
	Shortspine thornyhead	<u>S. alascanus</u>

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Table 69.--Estimated U.S. domestic rockfish catch (in metric tons) by species and North Pacific Fishery Management Council (NPFMC) area in the Gulf of Alaska region, 1991.

Species	Area 610	Area 620	Area 621	Area 630	Area 640	Area 650	Area 680	All areas	% of rockfish catch
Northern rockfish	1,020.5	323.9	0.9	5,674.5	36.8	0.0	0.0	7,056.6	33.29%
Pacific ocean perch	1,589.2	1,340.5	6.0	1,609.2	857.4	1,060.0	169.1	6,631.4	31.28%
Dusky rockfish	246.5	107.8	69.2	827.2	719.6	23.2	49.1	2,042.6	9.63%
Shortspine thornyhead	722.0	147.2	3.0	703.5	222.9	188.9	27.4	2,014.9	9.50%
Rougheye rockfish	110.6	90.7	0.6	503.2	74.1	97.8	10.0	887.0	4.18%
Shortraker rockfish	54.3	52.8	0.6	444.9	105.8	175.7	38.0	872.1	4.11%
Harlequin rockfish	61.3	55.4	0.0	84.7	103.3	0.0	135.9	440.6	2.08%
Sharpchin rockfish	0.5	0.1	0.0	3.7	44.0	149.3	3.8	201.4	0.95%
Silvergray rockfish	0.3	1.1	1.2	2.7	8.5	161.6	7.6	183.0	0.86%
Redstripe rockfish	2.1	2.5	0.0	29.8	108.7	0.0	11.9	155.0	0.73%
Black rockfish	1.5	7.7	0.0	145.6	0.0	0.0	0.0	154.8	0.73%
Yelloweye rockfish	22.5	5.6	1.1	108.1	13.4	0.0	0.6	151.3	0.71%
Darkblotched rockfish	28.1	0.4	0.0	0.4	8.8	108.5	1.0	147.2	0.69%
Splitnose rockfish	0.0	0.0	0.0	0.0	101.1	0.0	0.0	101.1	0.48%
Widow rockfish	0.0	0.0	0.0	9.3	25.1	51.8	0.0	86.2	0.41%
Redbanded rockfish	15.6	4.0	0.0	6.5	5.8	7.5	4.3	43.7	0.21%
Rosethorn rockfish	0.0	0.0	0.0	0.0	0.3	6.6	0.2	7.1	0.03%
Blue rockfish	0.0	4.1	0.5	0.9	0.0	0.0	0.0	5.5	0.03%
Canary rockfish	0.0	0.0	0.0	0.3	0.0	5.1	0.0	5.4	0.03%
Bocaccio	0.0	3.1	0.0	0.0	0.7	0.0	0.0	3.8	0.02%
Yellowtail rockfish	3.4	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.02%
Longspine thornyhead	1.8	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.01%
Greenstripe rockfish	0.0	0.0	0.0	0.0	1.7	0.0	0.0	1.7	0.01%
Yellowmouth rockfish	0.0	0.7	0.0	0.5	0.5	0.0	0.0	1.7	0.01%
Tiger rockfish	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.00%
Stripetail rockfish	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.00%
Other rockfish species*	5.2	7.9	0.5	1.9	3.2	11.7	0.5	30.9	0.15%
Total	3,880.2	2,147.6	83.1	10,155.2	2,438.5	2,036.0	459.2	21,199.8	
Percent by area	18.3%	10.1%	0.4%	47.9%	11.5%	9.6%	2.2%		

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*Species included in this category each made up less than 0.10% of the total rockfish catch and are listed in Table 67.

Table 70.--Common and scientific names of flatfish identified in U.S. domestic groundfish catches in the Gulf of Alaska region, 1991.

Common name	Scientific name
Arrowtooth flounder	<u>Atheresthes stomias</u>
Butter sole	<u>Pleuronectes isolepis</u>
Dover sole	<u>Microstomus pacificus</u>
English sole	<u>Pleuronectes vetulus</u>
Flathead sole	<u>Hippoglossoides elassodon</u>
Greenland turbot	<u>Reinhardtius hippoglossoides</u>
Rex sole	<u>Errex zachirus</u>
Rock sole	<u>Pleuronectes bilineatus</u>
Sand sole	<u>Psettichthys melanostictus</u>
Starry flounder	<u>Platichthys stellatus</u>
Other flatfish*	
Alaska plaice	<u>Pleuronectes quadrituberculatus</u>
Curlfin sole	<u>Pleuronichthys decurrens</u>
Deepsea sole	<u>Embassichthys bathybius</u>
Longhead dab	<u>Pleuronectes proboscideus</u>
Petrale sole	<u>Eopsetta jordani</u>
Yellowfin sole	<u>Pleuronectes asper</u>

* The six species listed under "other flatfish" each made up less than 0.1% of the flatfish catch in U.S. domestic groundfish catches.

Table 71.--Flatfish species groupings in the Gulf of Alaska for 1991 and species associated with each group.

Species group	<u>Associated species</u>	
	Common name	Scientific name
Arrowtooth flounder	Arrowtooth flounder	<u>Atheresthes stomias</u>
Flathead sole	Flathead sole	<u>Hippoglossoides elassodon</u>
Deep-water flatfish	Dover sole	<u>Microstomus pacificus</u>
	Greenland turbot	<u>Reinhardtius hippoglossoides</u>
	Rex sole	<u>Errex zachirus</u>
Shallow-water flatfish	Butter sole	<u>Pleuronectes isolepis</u>
	Rock sole	<u>Pleuronectes bilineatus</u>
	Starry flounder	<u>Platichthys stellatus</u>
	Yellowfin sole	<u>Pleuronectes asper</u>
	All other flatfish*	

* Except Pacific halibut.

Table 72.--Estimated U.S. domestic flatfish catch (in metric tons) by species and North Pacific Fishery Management Council (NPFMC) area in the Gulf of Alaska region, 1991.

Species	Area 610	Area 620	Area 621	Area 630	Area 640	Area 650	Area 680	All areas	% of flatfish catch
Arrowtooth flounder	3,944.8	2,828.3	65.3	14,083.5	411.7	201.5	36.7	21,571.8	53.82%
Rex sole	884.4	1,104.5	24.3	4,584.7	20.7	8.3	4.1	6,631.0	16.54%
Rock sole	2,799.1	497.8	18.5	2,524.2	0.0	0.0	0.0	5,839.6	14.57%
Dover sole	256.0	314.1	2.7	2,839.9	72.0	68.6	5.1	3,558.4	8.88%
Flathead sole	219.2	63.8	2.0	949.2	2.1	0.0	0.2	1,236.5	3.09%
Butter sole	9.4	84.7	0.2	491.9	0.0	0.0	0.0	586.2	1.46%
Starry flounder	17.5	2.5	0.4	265.7	0.7	0.0	0.0	286.8	0.72%
English sole	2.6	1.4	3.7	136.5	0.0	0.0	0.0	144.2	0.36%
Greenland turbot	59.5	1.4	0.0	32.5	5.0	0.0	2.2	100.6	0.25%
Yellowfin sole	4.8	0.0	0.9	66.4	0.0	0.0	0.0	72.1	0.18%
Sand sole	0.0	0.5	0.0	31.8	0.0	0.0	0.0	32.3	0.08%
Alaska plaice	7.3	0.4	2.0	0.4	0.0	0.0	0.0	10.1	0.03%
Kamchatka flounder	3.6	0.0	0.0	1.2	0.0	0.0	0.0	4.8	0.01%
Petrale sole	0.4	0.0	0.0	0.0	0.0	3.1	0.3	3.8	0.01%
Deepsea sole	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.9	0.00%
Curfin sole	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00%
Longhead dab	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00%
Other flatfish species*	11.3	1.8	2.0	33.4	0.0	3.1	0.3	51.9	0.13%
Total	8,208.6	4,900.3	120.0	26,007.9	512.2	281.5	48.6	40,079.1	
Percent by area	20.5%	12.2%	0.3%	64.9%	1.3%	0.7%	0.1%		

*Species included in this category each made up less than 0.10% of the total flatfish catch and are listed in Table 70.

SUMMARY OF OBSERVER SAMPLING OF OFFSHORE PROCESSING OPERATIONS
OFF THE COASTS OF WASHINGTON, OREGON, AND CALIFORNIA

Area of Sampling

Observers sampled aboard offshore processors conducting Pacific whiting fishing operations in 1991 off the coasts of Washington, Oregon, and California (Fig. 18) in the Vancouver, Columbia, Eureka, and Monterey statistical areas designated by the International North Pacific Fisheries Commission (INPFC). The 0.8 t of groundfish caught in the Conception INPFC statistical area was not sampled. Observers sampled all 902 processing days that occurred from 17 March through 29 September and from 16 November through 26 November. Groundfish catch estimates were based solely on observer reports.

Estimates of Domestic Groundfish Catch

The Allowable Biological Catch (ABC) for Pacific whiting in 1991 was 253,000 t and the quota was 228,000 t, of which offshore processing operations caught 196,905 t (Table 73). The catch of Pacific whiting accounted for 99.0% of the 198,952 t of groundfish caught by these operations. Rockfish accounted for 1,528 t (or 75%) of the 2,047 t of the bycatch, with the remainder consisting mostly of the "other species" group (261 t) and jack mackerel (229 t). The Pacific whiting catch was fairly evenly distributed among the Eureka (66,811 t), Monterey (64,129 t), and Columbia (60,441 t) INPFC areas (Table 74).

Summary of Data Collected

Observers sampled 2,366 trawl hauls for groundfish composition and prohibited species bycatch. Among the biological data collected by observers in 1991 were 114,425 lengths and 1,407 otoliths from Pacific whiting. Observers also collected 1,562 Pacific salmon and 6 Pacific halibut lengths. No tagged Pacific salmon were recovered and no stomach samples were collected. Observers monitored 97,093 t of groundfish for fishing gear-marine mammal interactions. No marine mammals were observed to be involved in fishing gear interactions.

Bycatch of Prohibited Species

Pacific Salmon

Bycatch rates of Pacific salmon by month and INPFC area are shown in Table 75. The highest monthly rates occurred in the

Vancouver INPFC area in June (0.103 fish/t of groundfish) and in the Eureka INPFC area in March (0.090 fish/t), April (0.059 fish/t), May (0.072 fish/t), and July (0.065 fish/t). In contrast, the highest monthly rate observed in the Columbia INPFC area was 0.030 fish/t in June, and for the Monterey INPFC area, it was 0.007 fish/t in May.

Pacific salmon bycatch rates by 1/2° latitude and 1° longitude blocks are shown in Figure 19. The highest rate was observed off the southern Oregon coast at 42°00'N, 124°W (0.225 fish/t of groundfish). Other high rates occurred off the Washington coast at 42°00'N, 124°W (0.075 fish/t) and off the northern California coast at 41°00'N, 124°W (0.064 fish/t) and 41°00'N, 124°W (0.064 fish/t). No other rate exceeded 0.020 fish/t.

Offshore processing operations caught 6,318 Pacific salmon, of which 6,153 (or 97.39%) were chinook salmon (Table 76). The remaining bycatch consisted of coho (2.07%), pink (0.36%), and chum salmon (0.18%) (Table 77).

Overall, Pacific salmon were caught at a rate of 0.032 fish/t of Pacific whiting. However, 76.0% of the Pacific salmon catch (by number) came from the Eureka INPFC area, even though only 33.8% of the Pacific whiting catch came from the Eureka INPFC area.

Pacific Halibut

Offshore processing operations caught 29 Pacific halibut (152 kg). The monthly breakdown of these catches was May--5 halibut (32 kg) in the Columbia INPFC area; June--10 halibut (53 kg) in the Columbia INPFC area and 10 halibut (35 kg) in the Vancouver INPFC area; August--2 halibut (14 kg) in the Eureka INPFC area; and September--2 halibut (18 kg) in the Columbia INPFC area. Condition was recorded for seven Pacific halibut and all were dead.

Rockfish Catch by Species

Twenty-six species of rockfish were identified in catches taken in offshore processing operations in 1991 (Table 78). The "other" rockfish group refers to the 12 species that each made up less than 0.1% of the rockfish catch. Of the 1,528 t of rockfish caught in 1991 (Table 79), chilipepper rockfish (Sebastes goodei) was the most abundant, comprising 522 t or 34.2% of the catch. Significant amounts were also caught of widow rockfish (S. entomelas, 366 t or 24.0%), yellowtail rockfish (S. flavidus, 321 t or 21.0%) and splitnose rockfish (S. diploproa, 178 t or 11.6%). The remaining 22 species accounted for 141 t. By INPFC area, the highest catch amounts were 479 t of chilipepper rockfish and 162 t of splitnose rockfish in the Monterey INPFC

area, 275 t of yellowtail rockfish and 216 t of widow rockfish in the Columbia INPFC area, 42 t of darkblotched rockfish (*S. crameri*) and 21 t of widow rockfish in the Eureka INPFC area, and 40 t yellowtail rockfish and 32 t of widow rockfish in the Vancouver INPFC area. No sampling occurred in the Conception INPFC area.

Flatfish Catch by Species

Observers identified six species of flatfish in 1991 (Table 80). Of the 1.43 t of flatfish caught in 1991, 0.83 t were Pacific sanddab (*Citharichthys sordidus*), 0.31 t were rex sole, and 0.26 t were arrowtooth flounder (Table 81). The remaining three species accounted for 0.03 t of the flatfish catch.

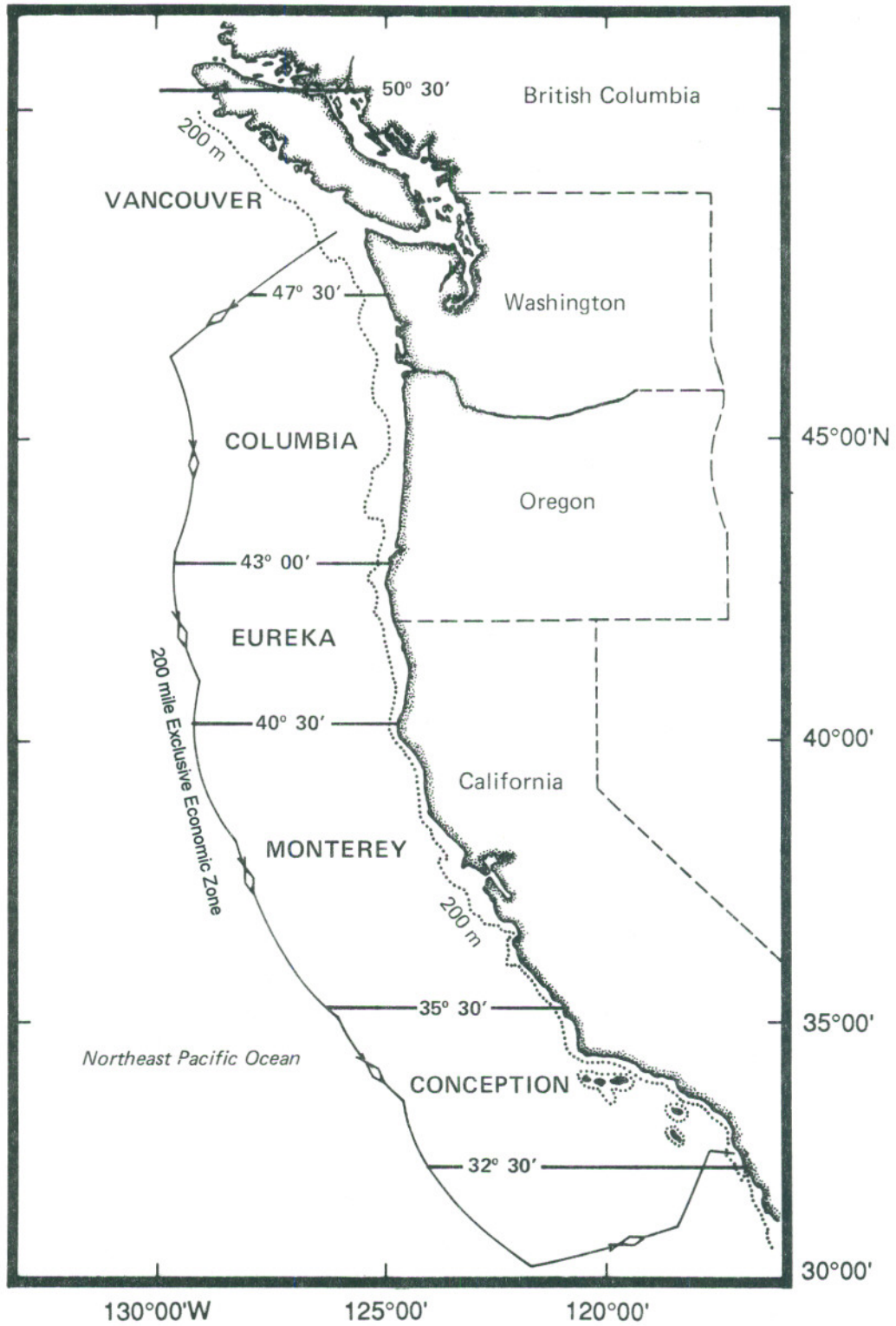


Figure 18.--International North Pacific Fisheries Commission (INPFC) statistical areas off the coasts of Washington, Oregon, and California.

Table 73.--Estimated catches in metric tons (t) of groundfish taken by at-sea processing operations in the Pacific whiting fishery off the coasts of Washington, Oregon, and California, 1991.

Species	Retained catch	Discarded catch	Total catch	Percent discarded	Percent of whiting catch
Pacific whiting	183,721.97	13,183.16	196,905.13	6.70%	--
Jack mackerel	119.86	108.85	228.71	47.59%	0.12%
Lingcod	0.18	0.26	0.44	59.09%	<0.01%
Pacific cod	0.22	0.11	0.33	33.33%	<0.01%
Sablefish	12.92	14.57	27.49	53.00%	0.01%
Arrowtooth flounder	0.03	0.23	0.26	88.46%	<0.01%
Dover sole	<0.01	0.03	0.03	90.91%	<0.01%
English sole	0.00	<0.01	<0.01	100.00%	<0.01%
Rex sole	0.03	0.28	0.31	90.32%	<0.01%
Other flounders	0.82	0.01	0.83	1.20%	<0.01%
Bocaccio	1.44	10.63	12.07	88.07%	0.01%
Canary rockfish	1.87	3.18	5.05	62.97%	<0.01%
Chilipepper rockfish	63.30	459.13	522.43	87.88%	0.27%
Pacific ocean perch	4.26	33.79	38.05	88.80%	0.02%
Shortbelly rockfish	0.81	6.12	6.93	88.31%	<0.01%
Thornyheads	0.15	0.41	0.56	73.21%	<0.01%
Widow rockfish	149.03	217.30	366.33	59.32%	0.19%
Yellowtail rockfish	45.24	275.32	320.56	85.89%	0.16%
Other rockfish	67.86	188.54	256.40	73.53%	0.13%
Other fish	79.98	181.37	261.35	69.40%	0.13%
Total	184,269.97	14,683.29	198,953.26	7.38%	

Table 74.--Estimated catches in metric tons of groundfish taken by at-sea processing operations in the Pacific whiting fishery off the coasts of Washington, Oregon, and California by INPFC area, 1991.

Species	Vancouver	Columbia	Eureka	Monterey	Conception	Total
Pacific whiting	5,735.15	60,441.25	66,599.91	64,128.82	0.00	196,905.13
Jack mackerel	72.49	136.00	20.22	0.00	0.00	228.71
Lingcod	0.01	0.39	0.02	0.02	0.00	0.44
Pacific cod	0.02	0.31	0.00	0.00	0.00	0.33
Sablefish	0.03	6.37	21.08	0.01	0.00	27.49
Other species	2.87	127.94	84.41	45.34	0.79	261.35
Arrowtooth flounder	0.00	0.25	0.01	0.00	0.00	0.26
Dover sole	0.00	0.03	0.00	0.00	0.00	0.03
English sole	0.00	0.00	<0.01	0.00	0.00	<0.01
Rex sole	0.00	0.31	0.00	0.00	0.00	0.31
Other flounders	0.00	0.83	0.00	0.00	0.00	0.83
Bocaccio	0.01	0.14	0.01	11.91	0.00	12.07
Canary rockfish	0.01	4.98	0.02	0.04	0.00	5.05
Chilipepper rockfish	7.90	33.73	1.57	479.23	0.00	522.43
Pacific ocean perch	2.06	11.95	5.73	18.31	0.00	38.05
Shortbelly rockfish	0.00	5.90	0.00	1.03	0.00	6.93
Thornyheads	0.00	0.56	0.00	0.00	0.00	0.56
Widow rockfish	31.74	215.64	21.00	97.95	0.00	366.33
Yellowtail rockfish	40.04	274.58	3.57	2.37	0.00	320.56
Other rockfish	2.95	18.99	53.09	181.37	0.00	256.40
Total	5,895.28	61,280.15	66,810.64	64,966.40	0.79	198,953.26

Table 75.--Monthly bycatch rates of Pacific salmon (number of fish per metric ton of groundfish), average weight (kg), and sampled hauls taken in offshore Pacific whiting fisheries off the coasts of Washington, Oregon, and California by INPFC area, 1991.
by INPFC area, 1991.

Month	Vancouver			Columbia			Eureka			Monterey		
	Rate	Ave. wt.	Hauls	Rate	Ave. wt.	Hauls	Rate	Ave. wt.	Hauls	Rate	Ave. wt.	Hauls
Jan.	--	--	--	--	--	--	--	--	--	--	--	--
Feb.	--	--	--	--	--	--	--	--	--	--	--	--
Mar.	--	--	--	0.000	0.00	1	0.090	1.77	10	0.004	4.10	62
Apr.	--	--	--	0.000	0.00	2	0.059	2.84	226	0.006	4.73	560
May	--	--	--	0.010	2.38	326	0.072	3.24	406	0.007	4.18	218
June	0.103	9.74	28	0.030	5.73	119	--	--	--	--	--	--
July	0.004	5.17	29	0.006	4.27	89	0.065	3.80	65	0.000	0.00	11
Aug.	--	--	--	0.002	2.62	133	--	--	--	--	--	--
Sep.	--	--	--	0.001	2.50	28	0.000	0.00	1	0.000	0.00	1
Oct.	--	--	--	0.000	0.00	1	--	--	--	--	--	--
Nov.	--	--	--	0.008	3.63	50	--	--	--	--	--	--
Dec.	--	--	--	--	--	--	--	--	--	--	--	--
Year	0.052	9.55	57	0.011	3.93	749	0.067	3.16	708	0.006	4.54	852

Dashes indicates areas not fished.

Table 76.--Estimated bycatch of Pacific salmon (in numbers and metric tons) taken by at-sea processing operations in the Pacific whiting fishery off the coasts of Washington, Oregon, and California by species and INPFC area, 1991.

Species	Number of salmon				
	Vancouver	Columbia	Eureka	Monterey	Total
Chinook salmon	256	678	4,743	476	6,153
Other salmon	12	74	56	23	165
Total	268	752	4,799	499	6,318
Percent by area	4.2%	11.9%	76.0%	7.9%	

Species	Weight (metric tons)				
	Vancouver	Columbia	Eureka	Monterey	Total
Chinook salmon	1.33	1.33	6.41	0.92	9.99
Other salmon	0.01	0.07	0.07	0.04	0.19
Total	1.34	1.40	6.48	0.96	10.18
Percent by area	13.2%	13.8%	63.7%	9.4%	

Table 77.--Biological data on the bycatch of Pacific salmon in at-sea U.S. domestic groundfish fisheries off the coasts of Washington, Oregon, and California, 1991.

Species	Percent by species	Sex	Sex composition	Average weight (kg)	Average length (cm)
Chinook	97.39%	Male	41.8	3.18	58.0
		Female	58.3	3.40	58.9
Coho	2.07%	Male	43.9	2.20	52.8
		Female	56.1	3.00	56.3
Pink	0.36%	Male	50.0	1.06	40.2
		Female	50.0	0.87	41.6
Chum	0.18%	Male	40.0	4.55	65.5
		Female	60.0	4.35	68.3

Table 78.--Common and scientific names of rockfish identified by observers in offshore processing operations off the coasts of Washington, Oregon, and California, 1991.

Common name	Scientific name
Bank rockfish	<u>Sebastes rufus</u>
Brown rockfish	<u>Sebastes auriculatus</u>
Bocaccio	<u>Sebastes paucispinus</u>
Canary rockfish	<u>Sebastes pinniger</u>
Chilipepper rockfish	<u>Sebastes goodei</u>
Darkblotched rockfish	<u>Sebastes crameri</u>
Pacific ocean perch	<u>Sebastes alutus</u>
Redstripe rockfish	<u>Sebastes proriger</u>
Rougheye rockfish	<u>Sebastes aleutianus</u>
Shortbelly rockfish	<u>Sebastes jordani</u>
Splitnose rockfish	<u>Sebastes diploproa</u>
Widow rockfish	<u>Sebastes entomelas</u>
Yelloweye rockfish	<u>Sebastes ruberrimus</u>
Yellowtail rockfish	<u>Sebastes flavidus</u>
Other rockfish*	
Aurora rockfish	<u>Sebastes aurora</u>
Blackgill rockfish	<u>Sebastes melanostomus</u>
Dusky rockfish	<u>Sebastes ciliatus</u>
Greenstriped rockfish	<u>Sebastes elongatus</u>
Redbanded rockfish	<u>Sebastes babcocki</u>
Sharpchin rockfish	<u>Sebastes zacentrus</u>
Shortraker rockfish	<u>Sebastes borealis</u>
Shortspine thornyhead	<u>Sebastolobus alascanus</u>
Silvergray rockfish	<u>Sebastes brevispinis</u>
Stripetail rockfish	<u>Sebastes saxicola</u>
Vermilion rockfish	<u>Sebastes miniatus</u>
Yellowmouth rockfish	<u>Sebastes reedi</u>

* The twelve species listed under "other rockfish" each made up less than 0.1% of the rockfish catch in U.S. domestic groundfish catches.

Table 79.--Estimated catches in metric tons of rockfish taken in at-sea processing operations in the Pacific whiting fishery off the coasts of Washington, Oregon, and California by INPFC area and species, 1991.

Species	Vancouver	Columbia	Eureka	Monterey	Total	% by species
Chilipepper rockfish	7.90	33.73	1.57	479.23	522.43	34.2%
Widow rockfish	31.74	215.64	21.00	97.95	366.33	24.0%
Yellowtail rockfish	40.04	274.58	3.57	2.37	320.56	21.0%
Splitnose rockfish	0.00	5.17	10.70	162.04	177.91	11.6%
Darkblotched rockfish	0.00	7.04	42.36	11.00	60.40	4.0%
Pacific ocean perch	2.06	11.95	5.73	18.31	38.05	2.5%
Bocaccio	0.01	0.14	0.01	11.91	12.07	0.8%
Shortbelly rockfish	0.00	5.90	0.00	1.03	6.93	0.5%
Brown rockfish	0.00	0.00	0.00	5.58	5.58	0.4%
Canary rockfish	0.01	4.98	0.02	0.04	5.05	0.3%
Roughey rockfish	0.00	4.03	0.00	0.04	4.07	0.3%
Redstripe rockfish	2.95	0.32	0.00	0.05	3.32	0.2%
Bank rockfish	0.00	0.00	0.02	2.24	2.26	0.1%
Yelloweye rockfish	0.00	1.70	0.00	0.00	1.70	0.1%
Other rockfish species*	0.00	1.29	0.01	0.42	1.72	0.1%
Total	84.71	566.47	84.99	792.21	1,528.38	
Percent by area	5.5%	37.1%	5.6%	51.8%		

*Species included in this category each made up less than 0.10% of the total rockfish catch and are listed in Table 78.

Table 80.--Common and scientific names of flatfish identified by observers in offshore processing operations off the coasts of Washington, Oregon, and California, 1991.

Common name	Scientific name
Arrowtooth flounder	<u>Atheresthes stomias</u>
Dover sole	<u>Microstomus pacificus</u>
English sole	<u>Pleuronectes vetulus</u>
Flathead sole	<u>Hippoglossoides elassodon</u>
Pacific sanddab	<u>Citharichthys sordidus</u>
Rex sole	<u>Errex zachirus</u>

Table 81.--Estimated catches in metric tons of flatfish taken in at-sea processing operations in the Pacific whiting fishery off the coasts of Washington, Oregon, and California by INPFC area and species, 1991.

Species	Vancouver	Columbia	Eureka	Monterey	Total	% by species
Pacific sanddab	0.00	0.83	0.00	0.00	0.83	57.9%
Rex sole	0.00	0.31	0.00	0.00	0.31	21.6%
Arrowtooth flounder	0.00	0.25	0.01	0.00	0.26	18.1%
Dover sole	0.00	0.03	0.00	0.00	0.03	2.1%
Flathead sole	0.00	<0.01	0.00	0.00	<0.01	0.3%
English sole	0.00	<0.01	0.00	0.00	<0.01	<0.1%
Total	0.00	1.42	0.01	0.00	1.43	
Percent by area	0.0%	99.3%	0.8%	0.0%		

*Species included in this category each made up less than 0.10% of the total flatfish catch and are listed in Table 80.

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