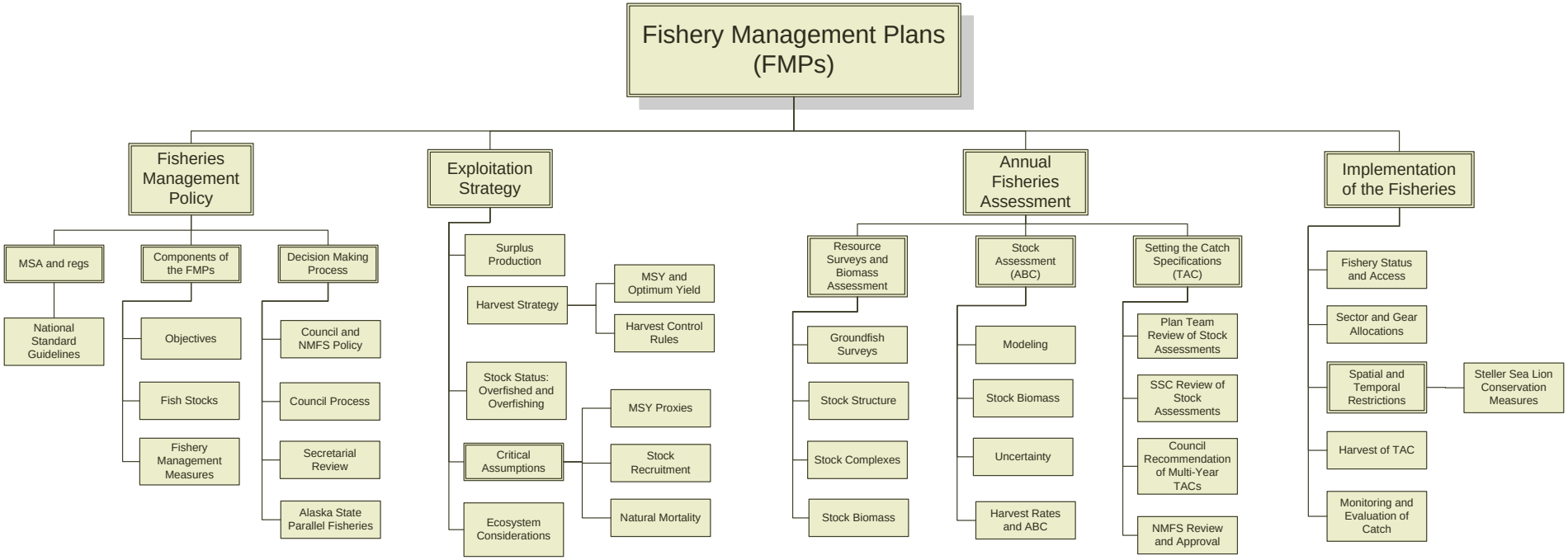
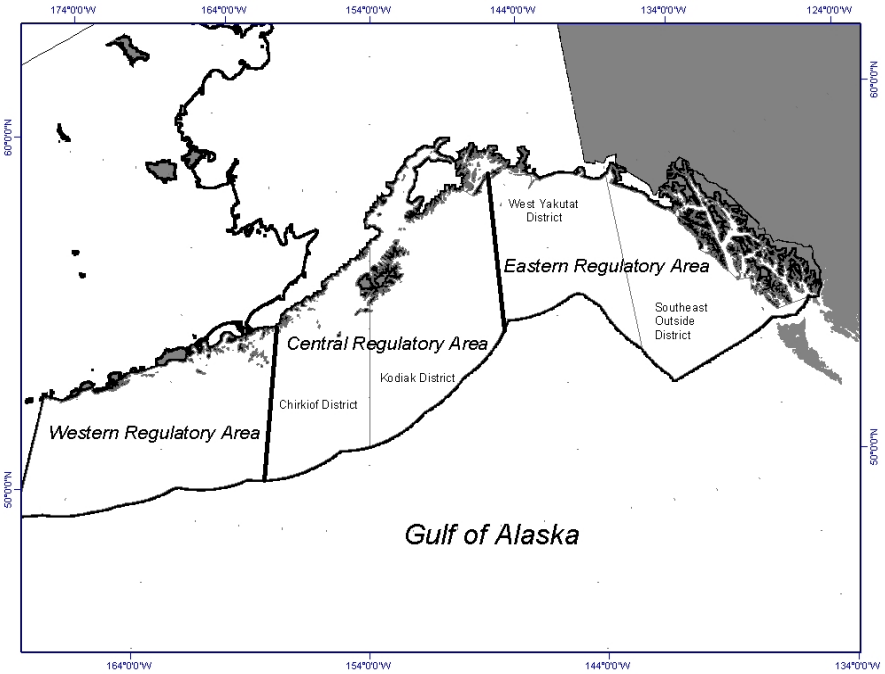
FIGURES



Note:

This chart represents the deconstruction of the Fishery Management Plans and the outside factors which influence actions which result in effects to listed species

Figure 2.1 Deconstruction of the Groundfish FMPs, their implementing regulations, and Alaska State Parallel Fisheries.



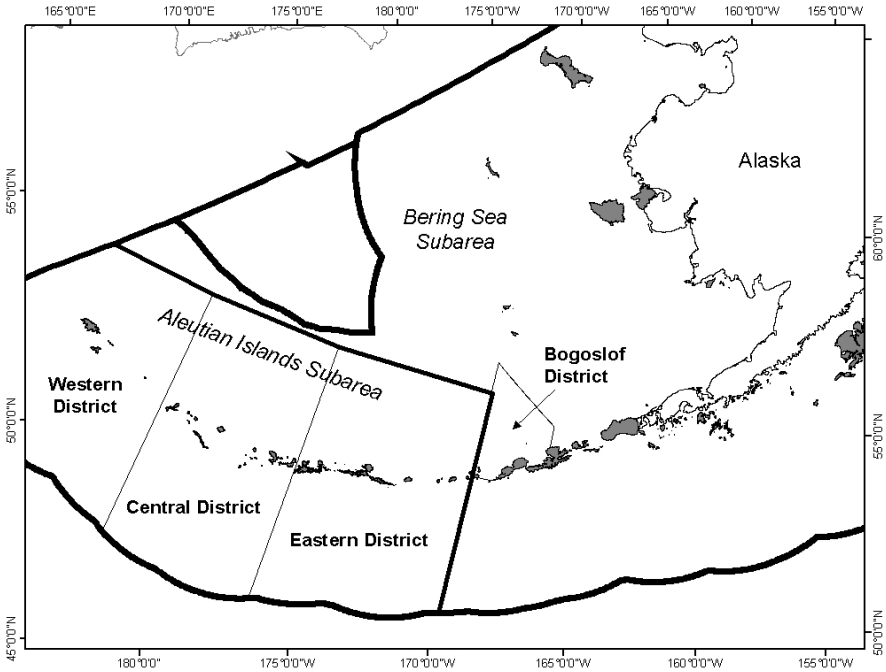


Figure 2.2 Regulatory areas of the GOA(top panel) and BSAI (bottom panel).

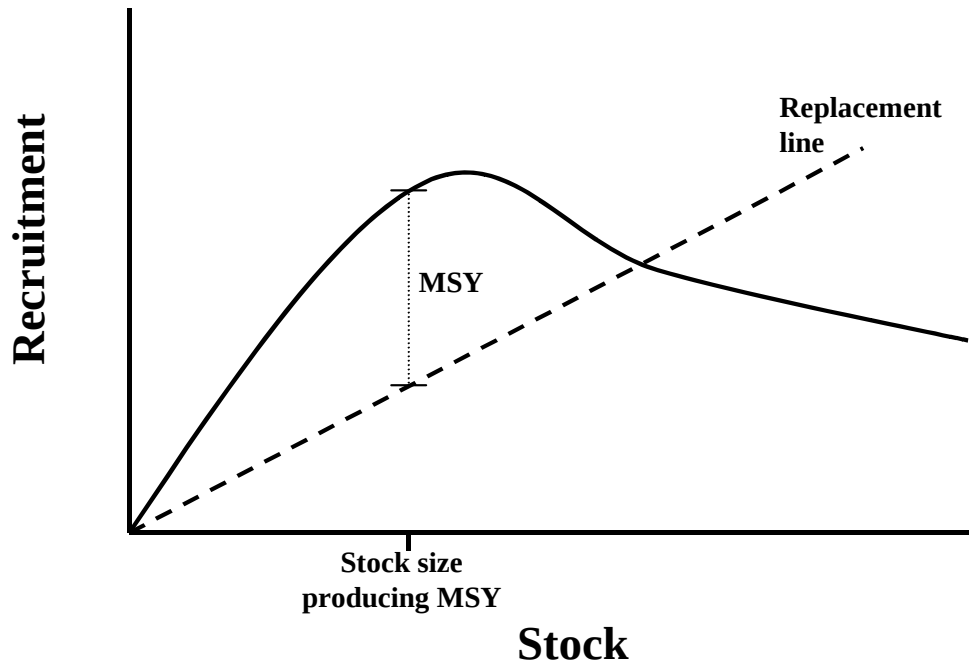


Figure 2.3 Hypothetical Ricker curve showing expected recruitment as a function of stock size. The replacement line indicates the level of recruitment necessary to sustain the population at any particular size. The positive difference between recruitment and the replacement line (to the left of the point where the two cross) indicates recruitment in excess of that needed to replace the stock, and is considered surplus in an single-species context. The maximum excess is the maximum sustainable yield (MSY) and the stock size that results in the maximum excess is the stock size producing MSY.

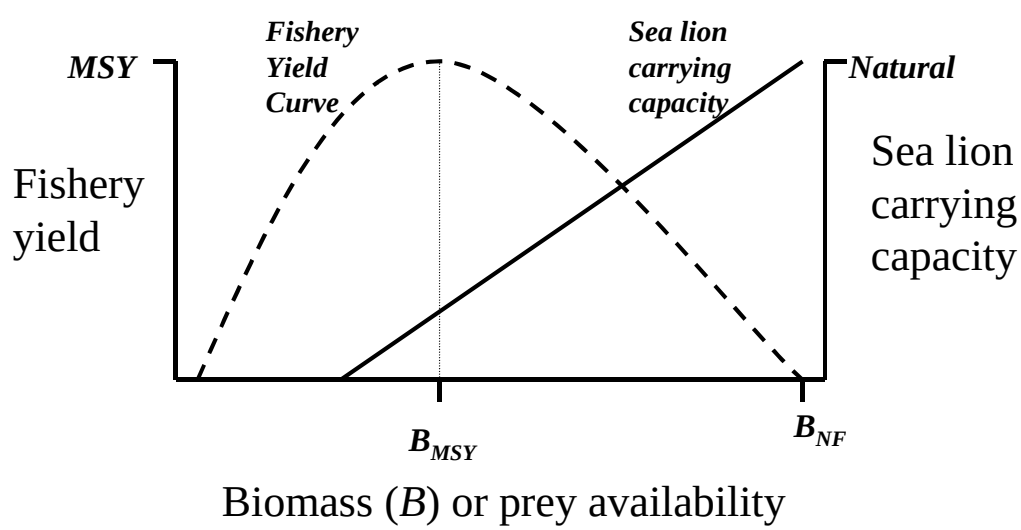


Figure 2.4 Schematic illustration of the relation between 1) the biomass of prey stocks and the yield curve that serves as the basis for the yield-based fishery paradigm, and 2) the simplest approximation of the relation of biomass of the prey stock to the environmental carrying capacity for Steller sea lions.

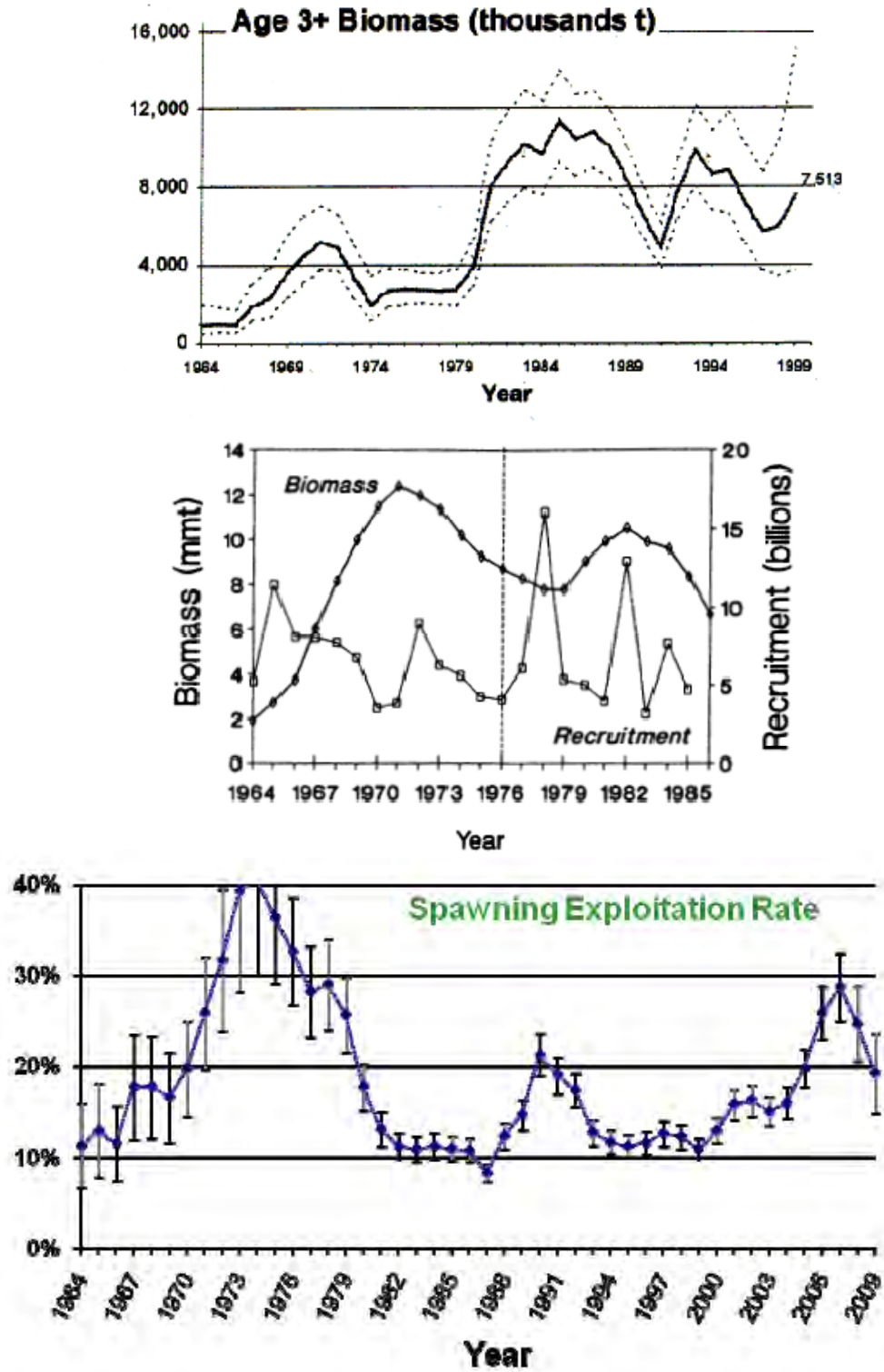


Figure 2.5 (Top left) Estimated spawning biomass of eastern Bering Sea pollock (age 3+) as described in Ianelli et. al. (1999). (Top right) Estimated biomass of eastern Bering Sea pollock (age 3+) for the period from 1964-1985 as presented in Megrey and Wespestad, 1990. (Bottom left) Spawning stock estimated exploitation rate as presented in Ianelli et al. (2005).

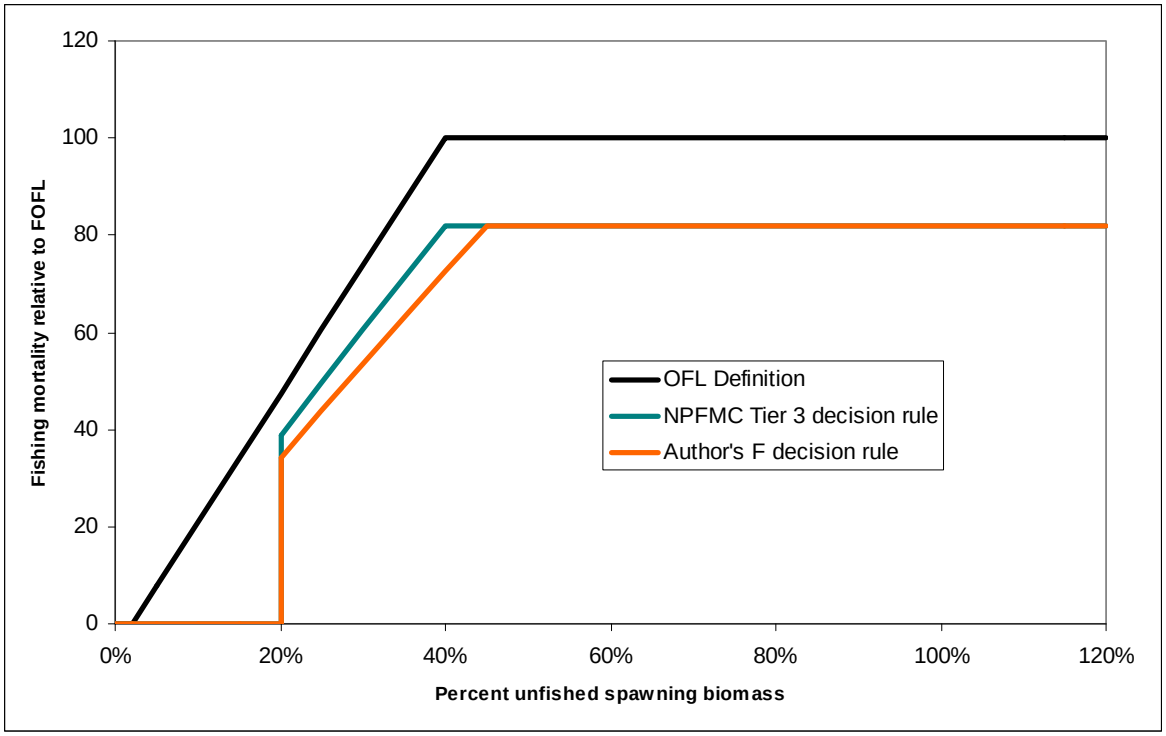


Figure 2.6 GOA pollock harvest decision rule (Dorn *et al.* 2005).

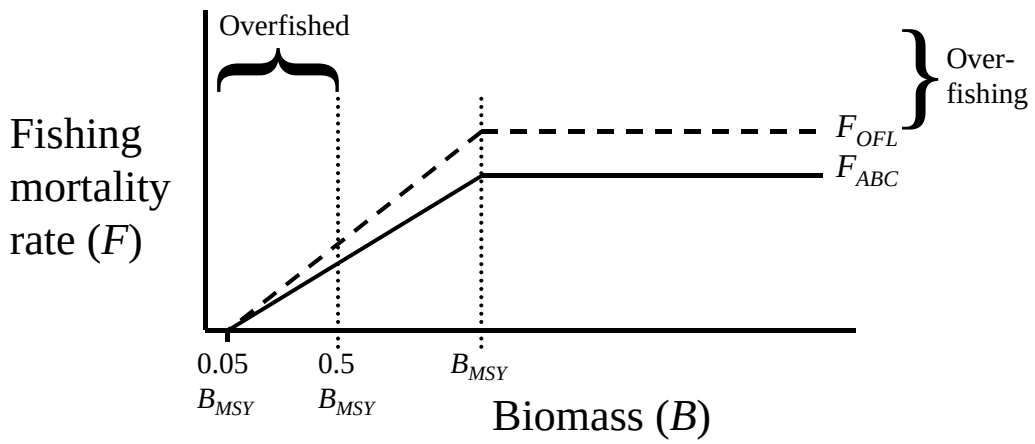


Figure 2.7 Graphic illustration of "overfishing" and "overfished." Overfishing occurs when the fishing mortality rate exceeds a prescribed maximum rate. Overfished indicates that the fished stock has declined below a certain level. The illustration indicates that the level is ½ BMSY, which may or may not be the actual level. The actual level is determined as the maximum of either ½ BMSY or the smallest level at which the population would be expected to recover to BMSY within 10 years of random recruitment and fishing at FOFL.

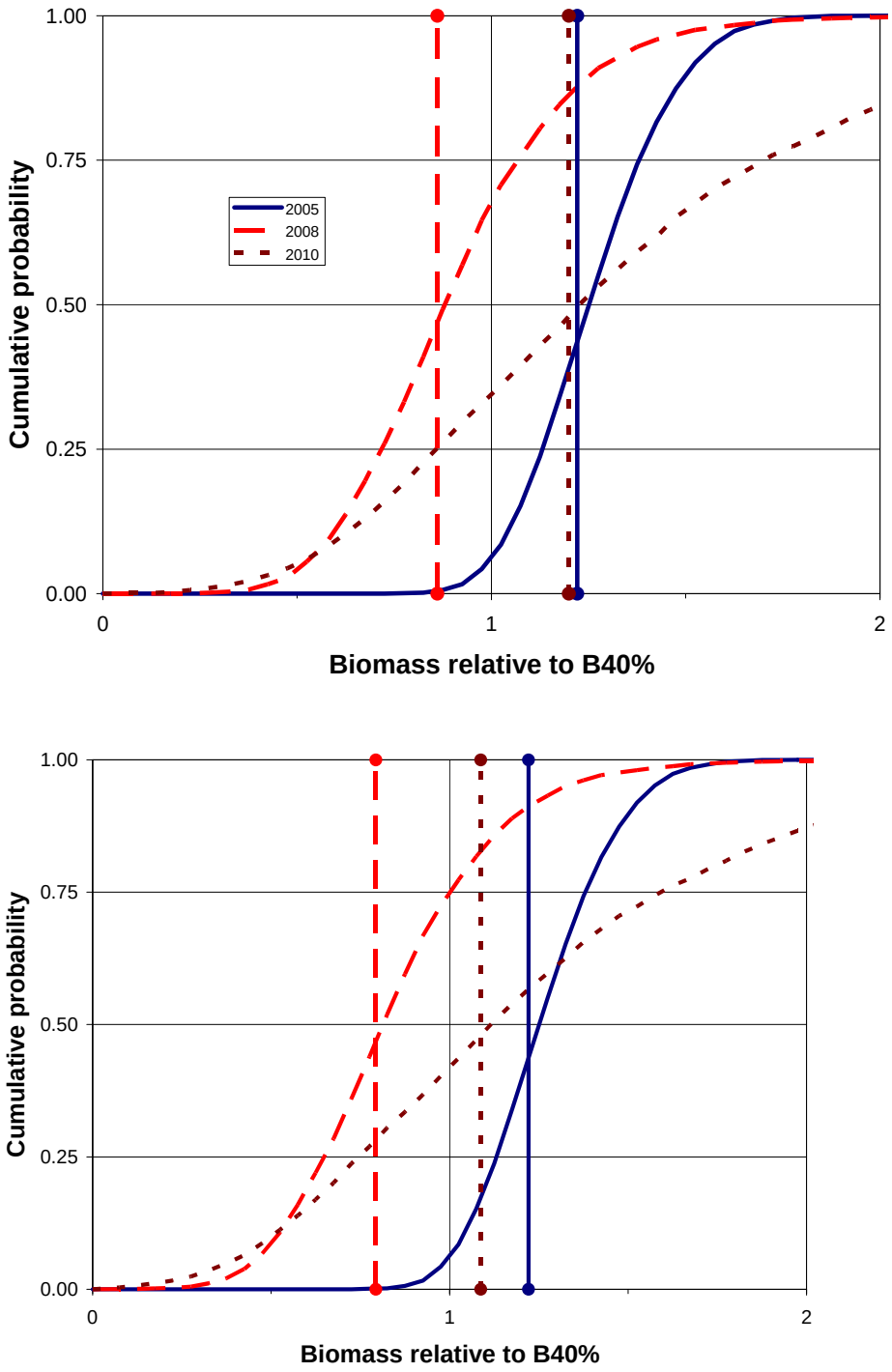


Figure 2.8 Cumulative probability that projected female spawning biomass levels will drop below $B_{40\%}$ based on a fixed constant catch levels of 1.3 (top) and 1.5 (bottom) million tons. Marginal distributions of the full joint posterior distribution based on a thinned MCMC chain used for integration. Corresponding expected values (means) are shown by the vertical lines terminated with closed circles.

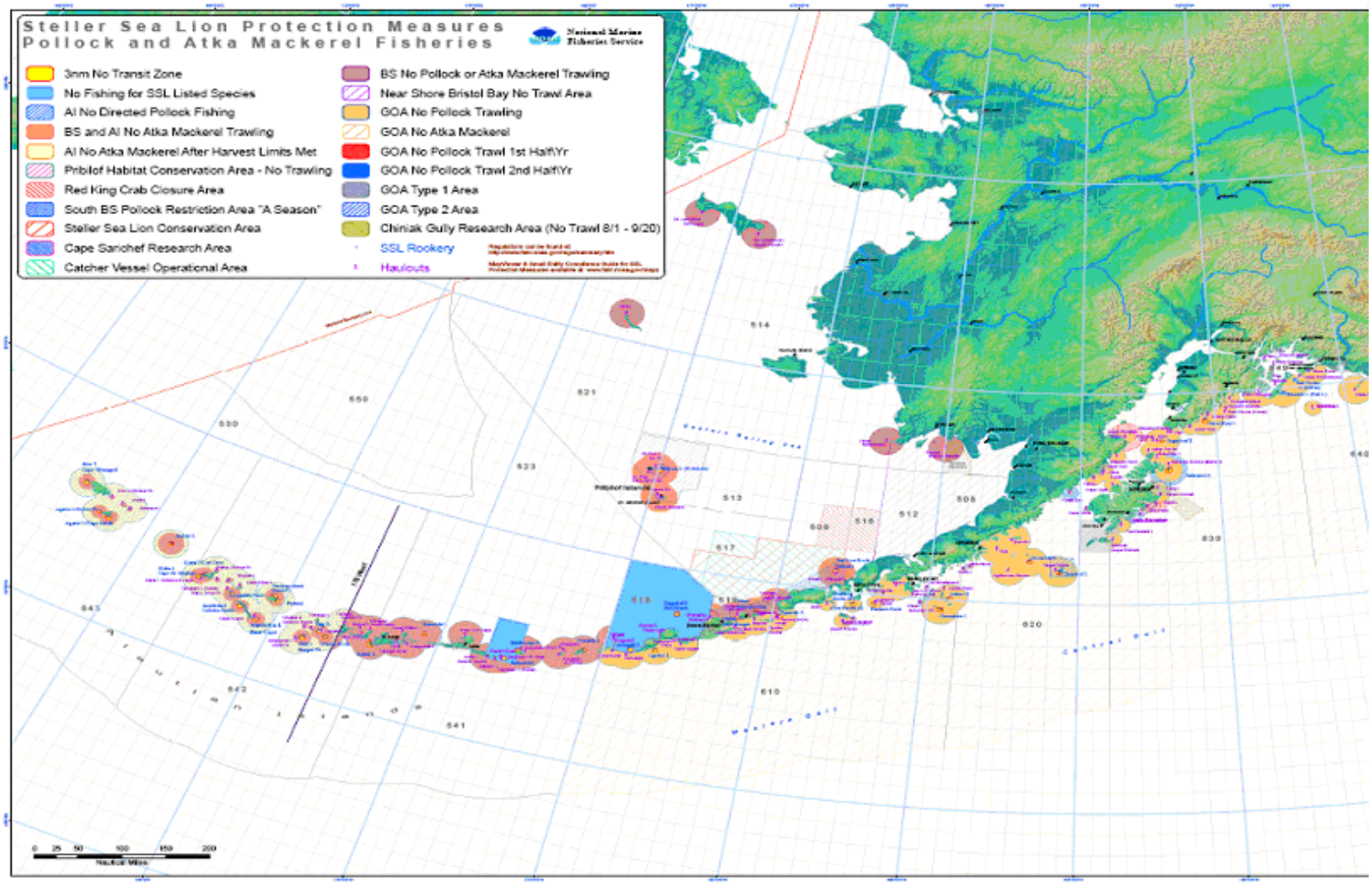


Figure 2.9 Steller sea lion protection measures for the pollock and Atka mackerel fisheries. (Source: http://www.fakr.noaa.gov/protectedresources/stellers/maps/Pollock_Atka0105.pdf)

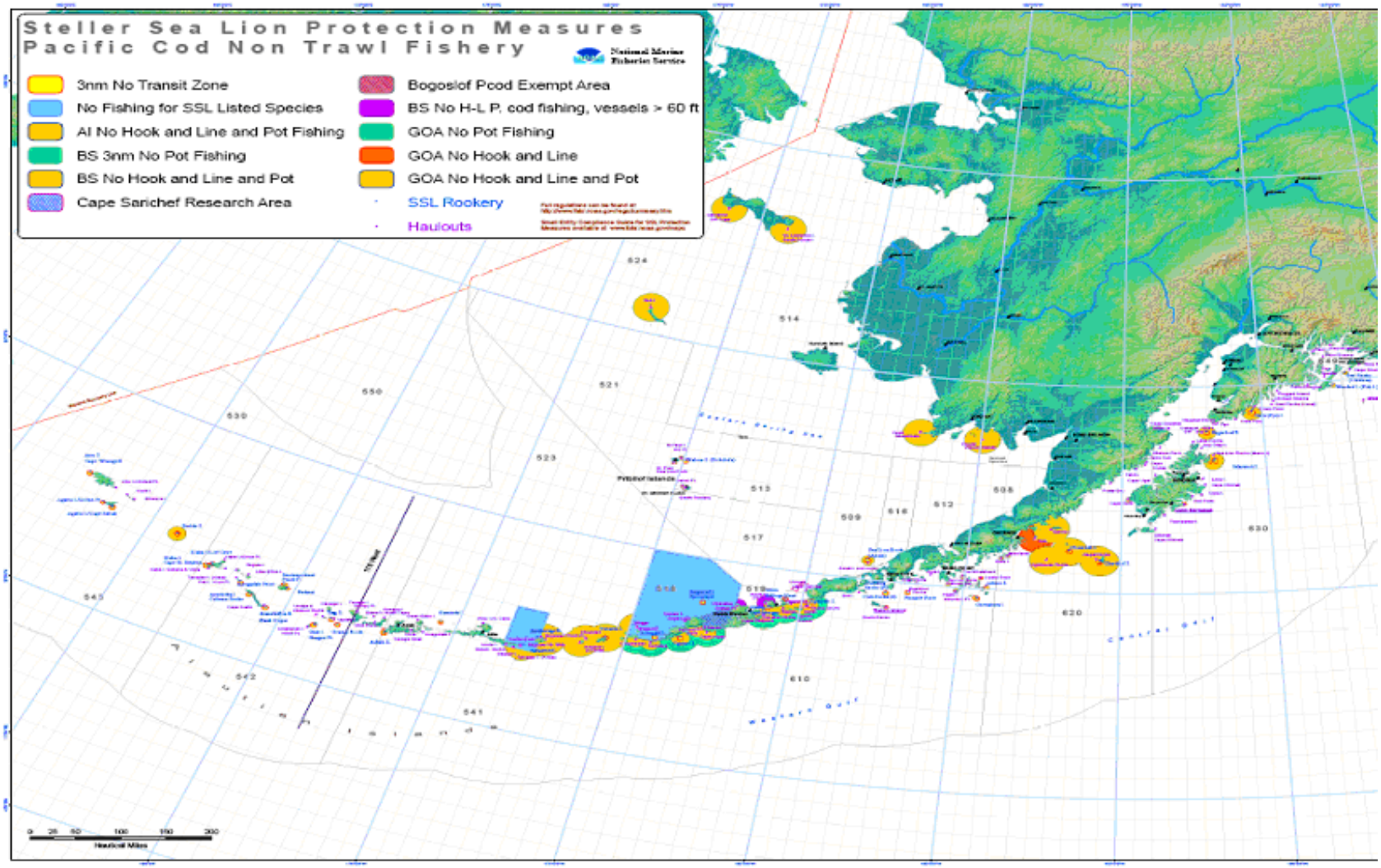


Figure 2.10 Steller sea lion protection measures for the Pacific cod non-trawl fishery.
(Source: http://www.fakr.noaa.gov/protectedresources/stellers/maps/NonTrawl _0105.pdf)

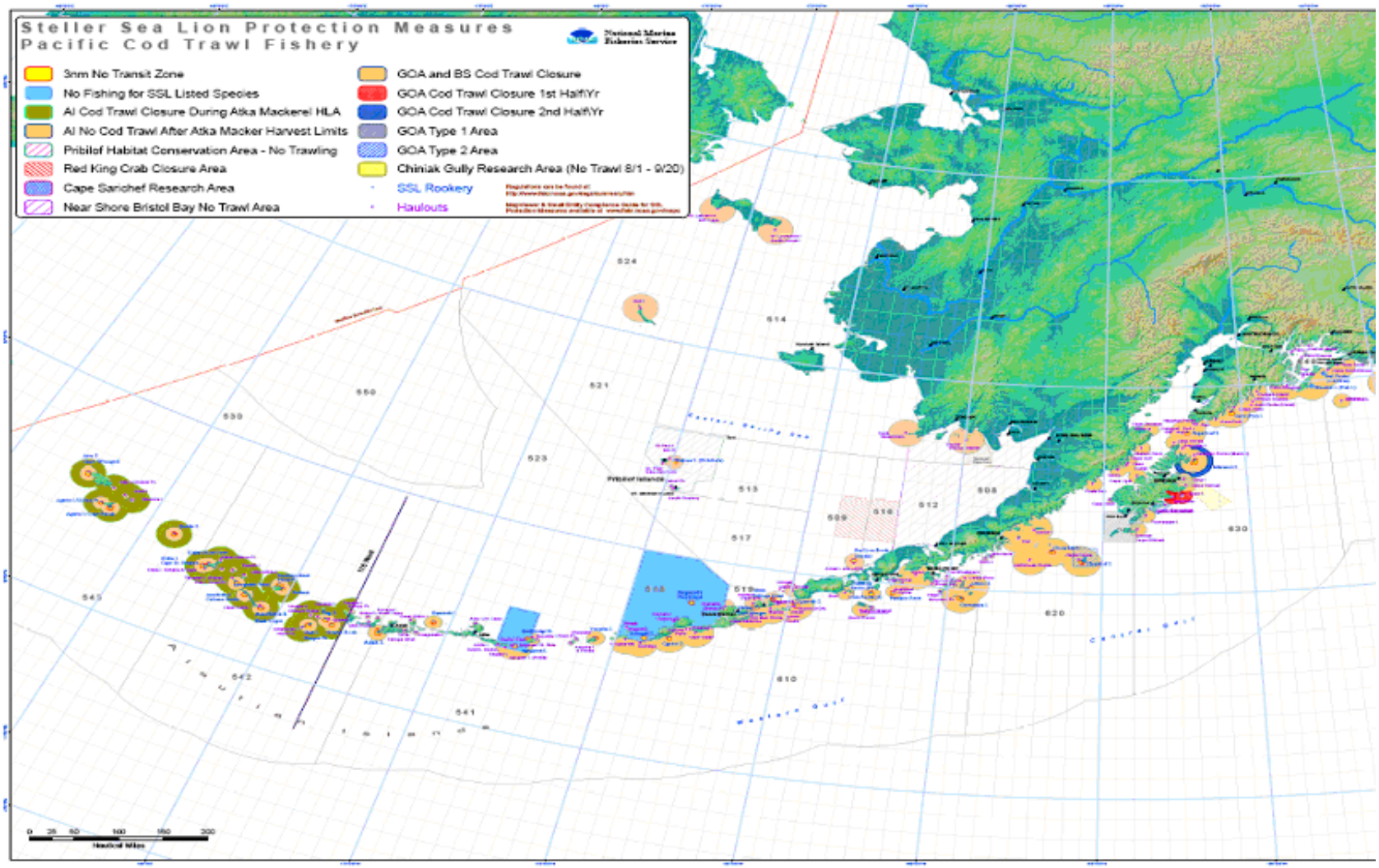


Figure 2.11 Steller sea lion protection measures for the Pacific cod trawl fishery.
(Source: http://www.fakr.noaa.gov/protectedresources/stellers/maps/Cod_Trawl0105.pdf)

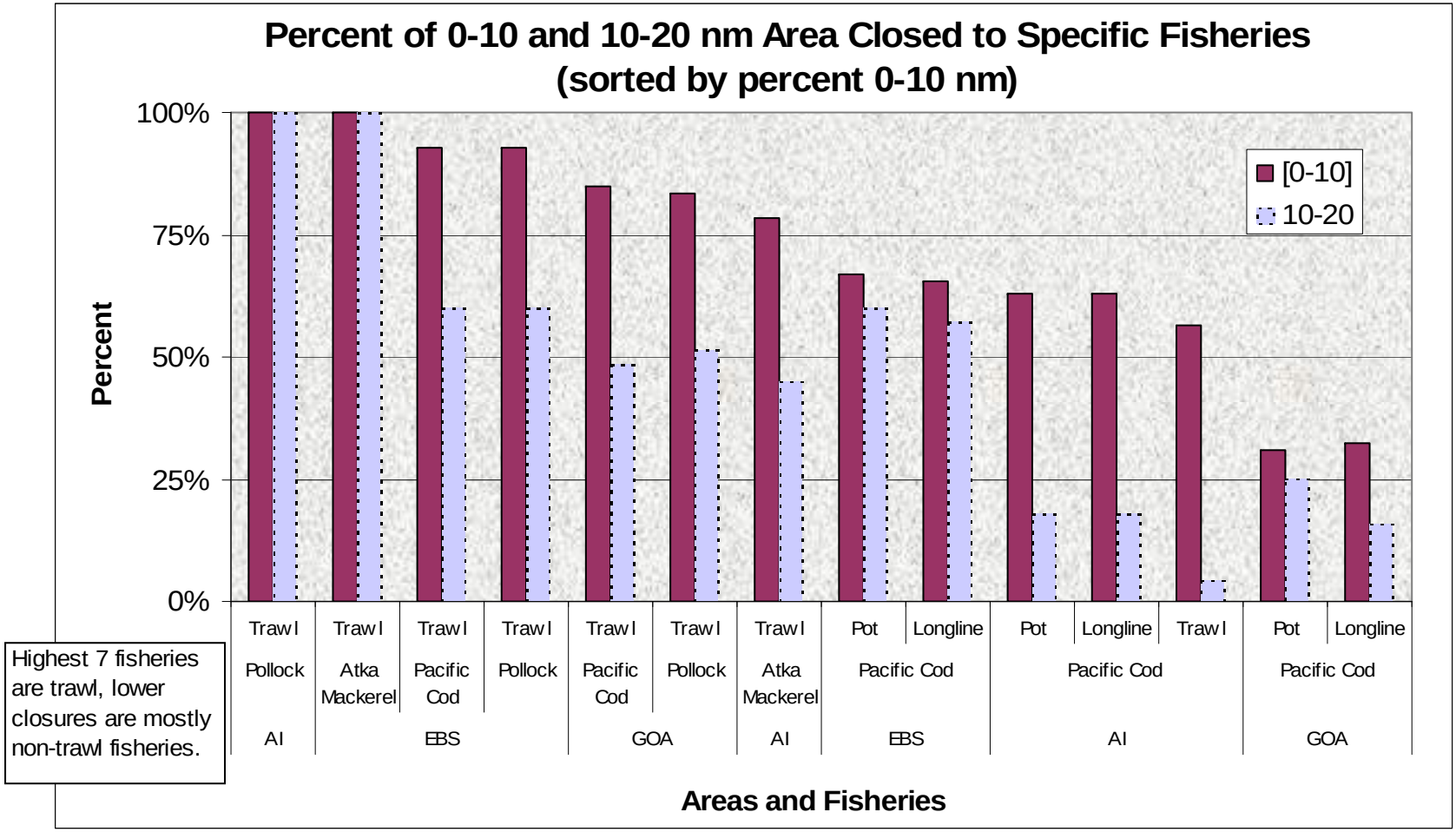


Figure 2.12 The amount of area closed in the BSAI and GOA under the Steller sea lion conservation measures as a percentage of each zone from 0-10 nm and 10-20 nm. The data area sorted as descending from 100% for the 0-10 nm zone, then the associated 10-20 nm percentage is plotted (data is from Table 2.36).

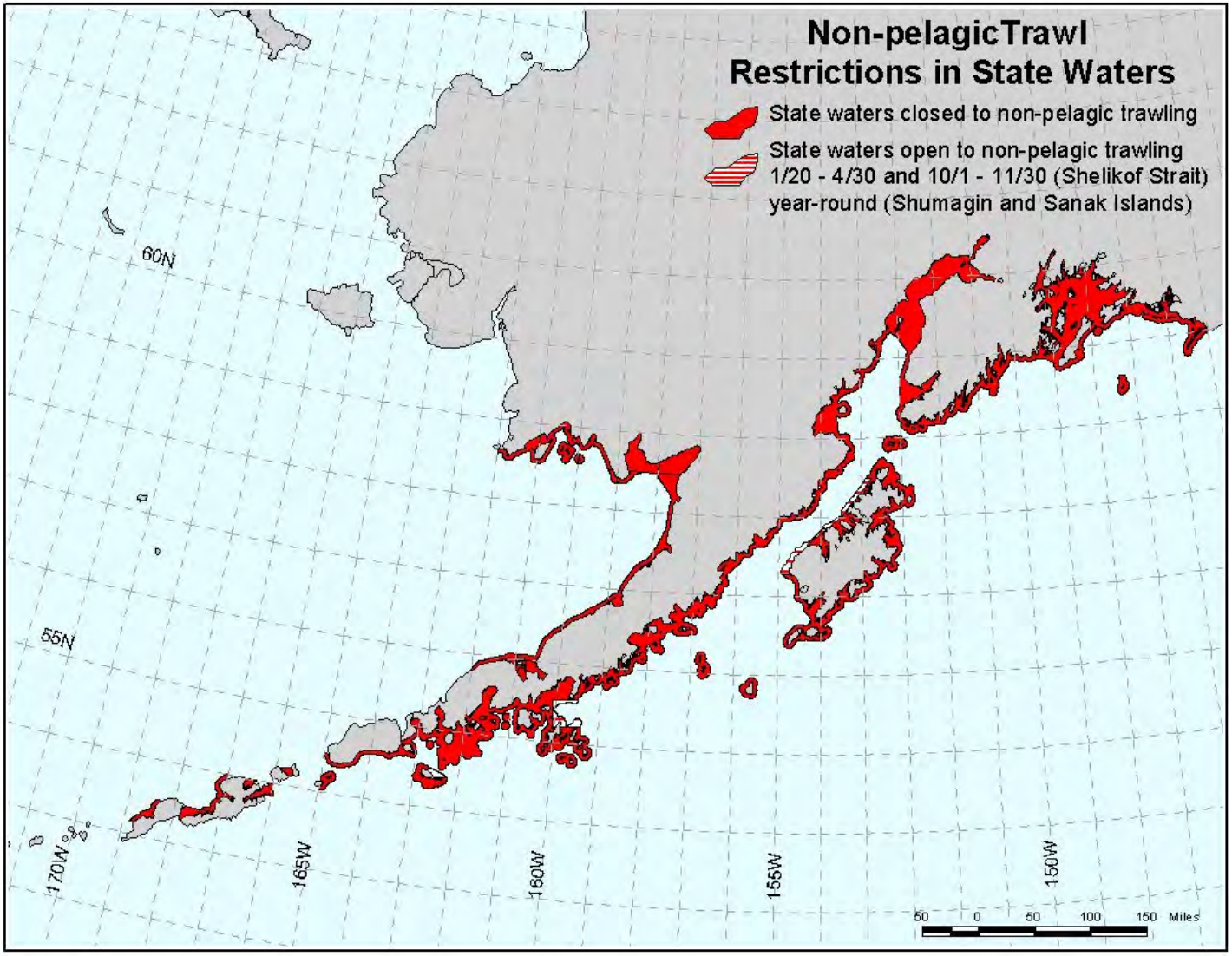


Figure 2.13. Non-pelagic trawl restrictions in State waters.

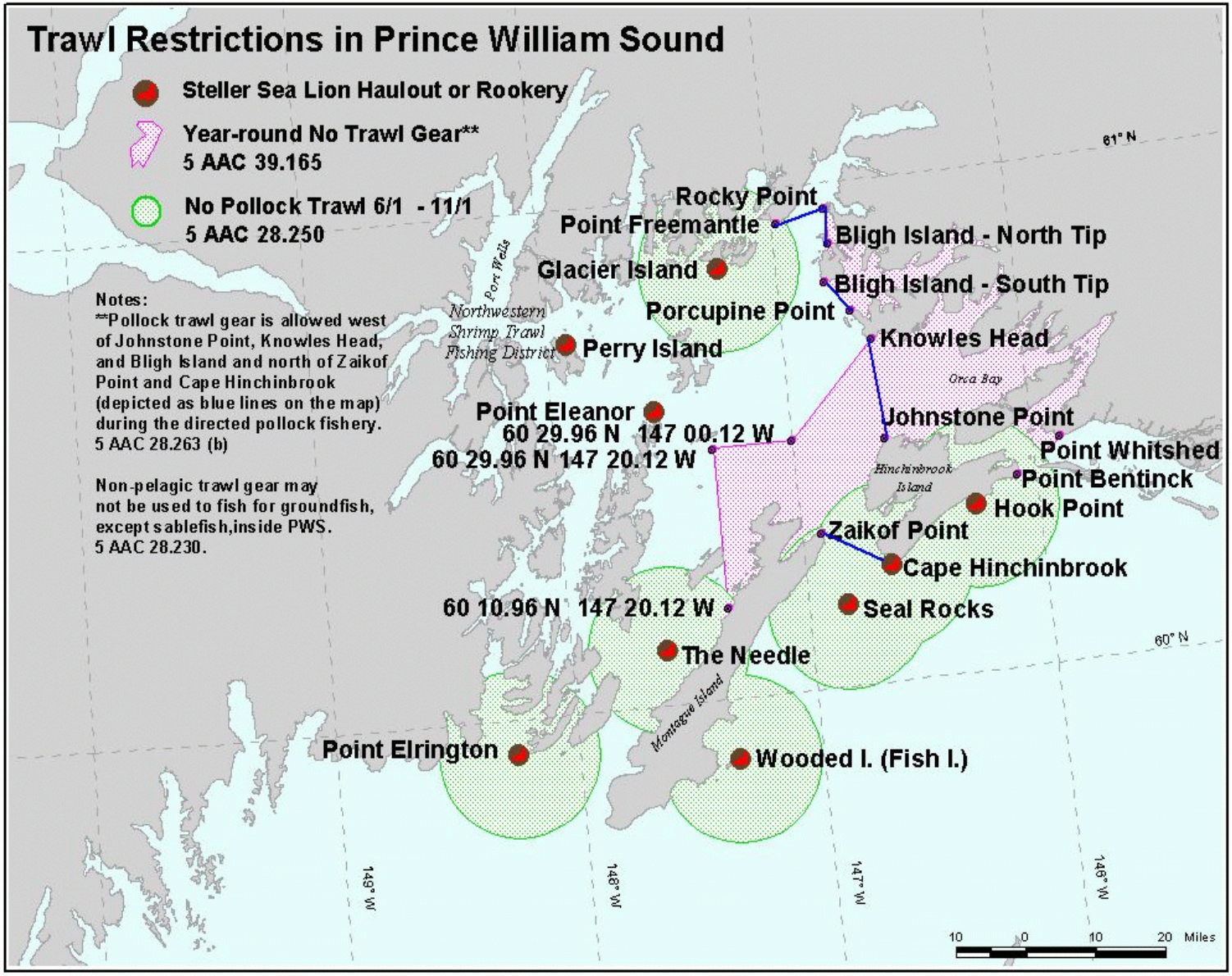


Figure 2.14 Year-round and seasonal trawl restrictions in Prince William Sound

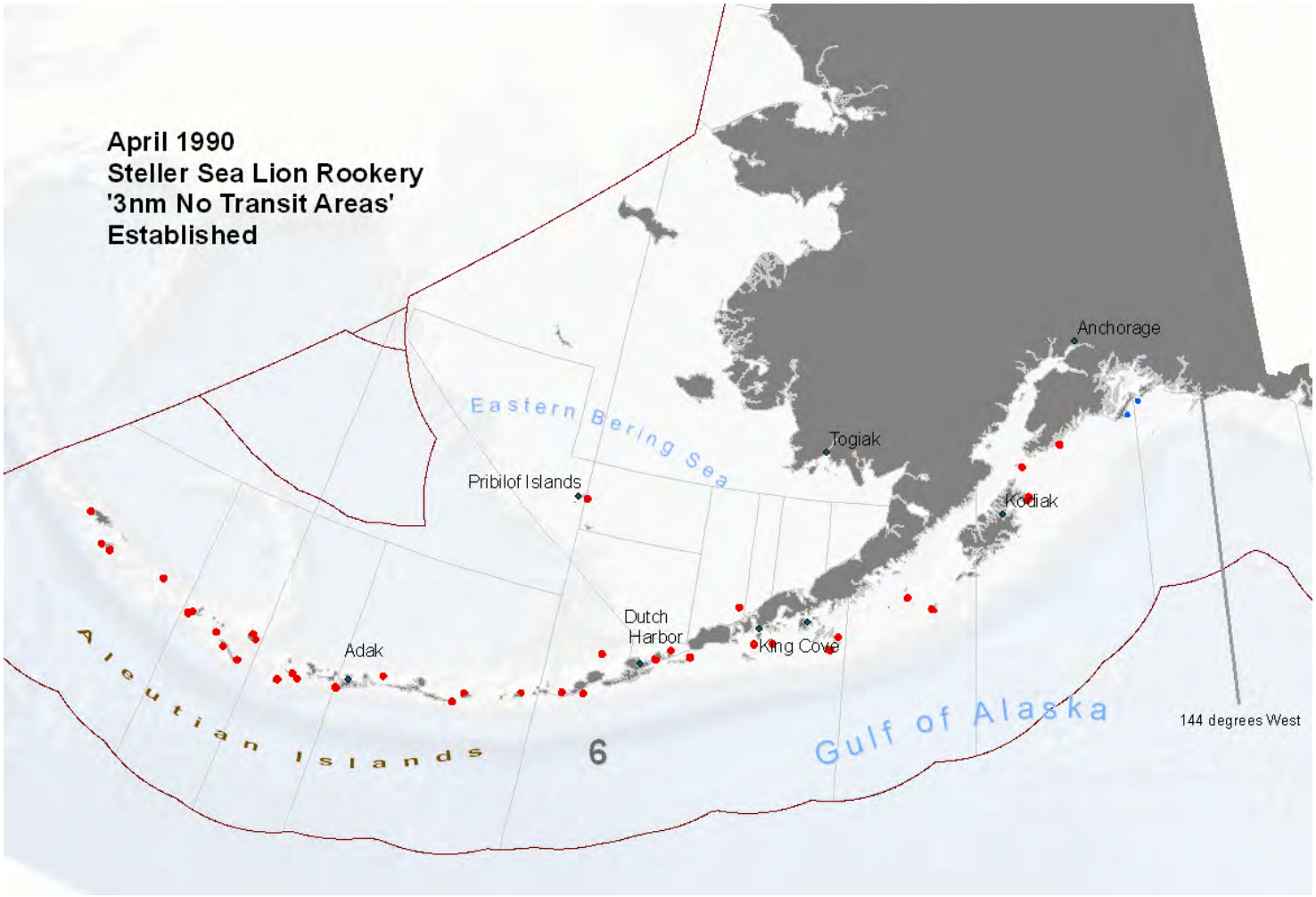


Figure 2.15 3nm no transit areas.

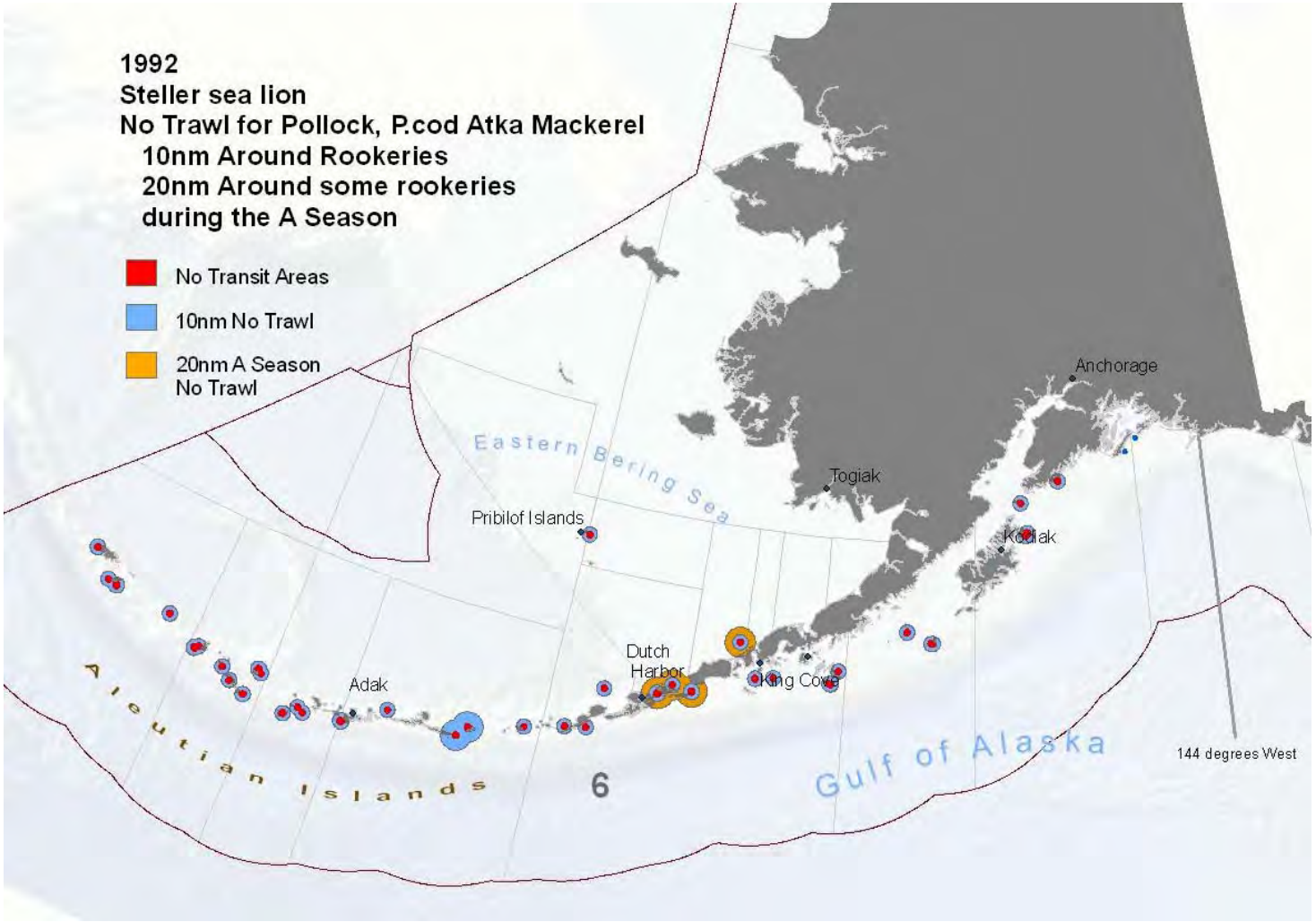


Figure 2.16 No trawl zones around SSL rookeries.

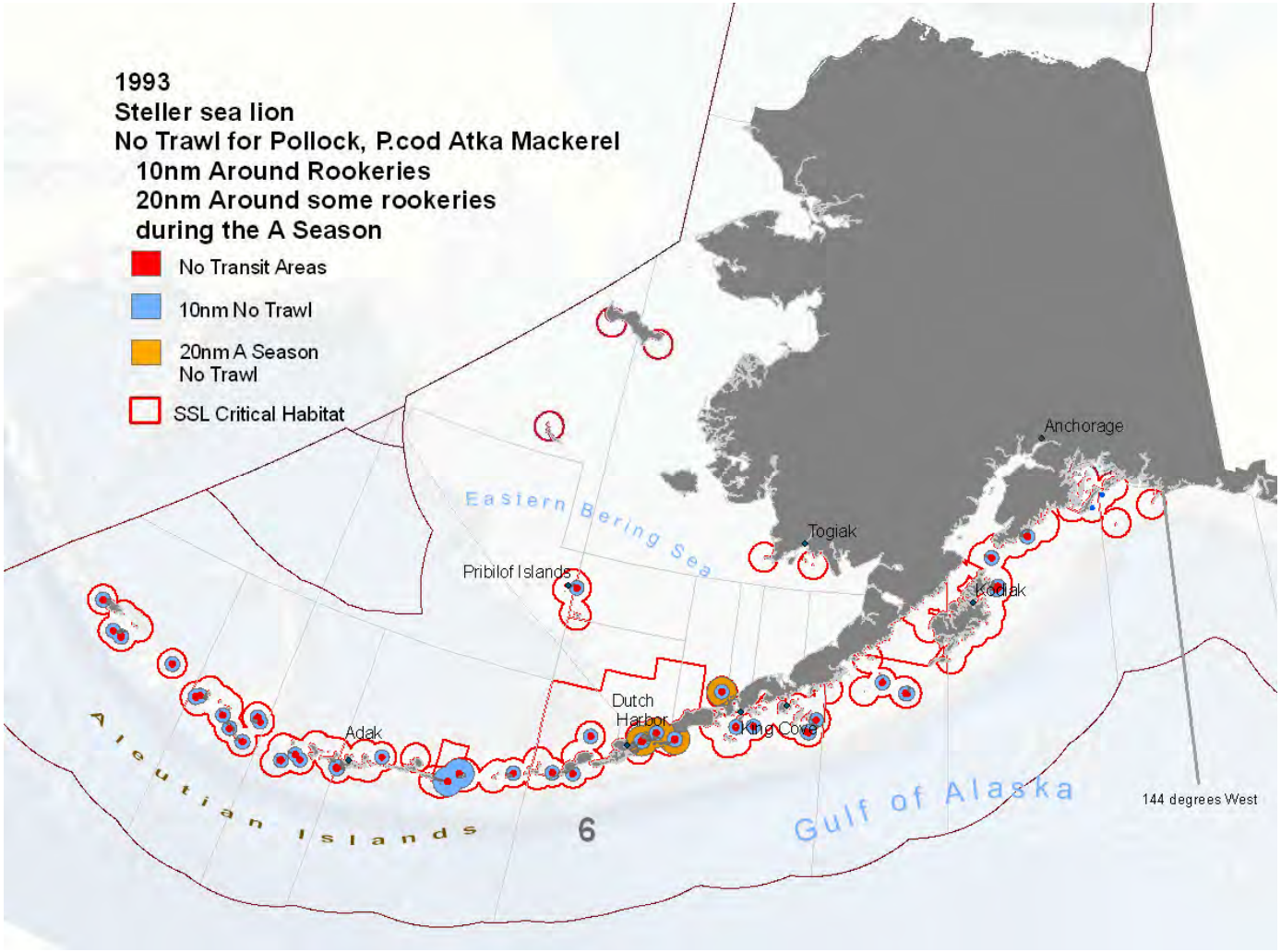


Figure 2.17 SSL Critical Habitat.

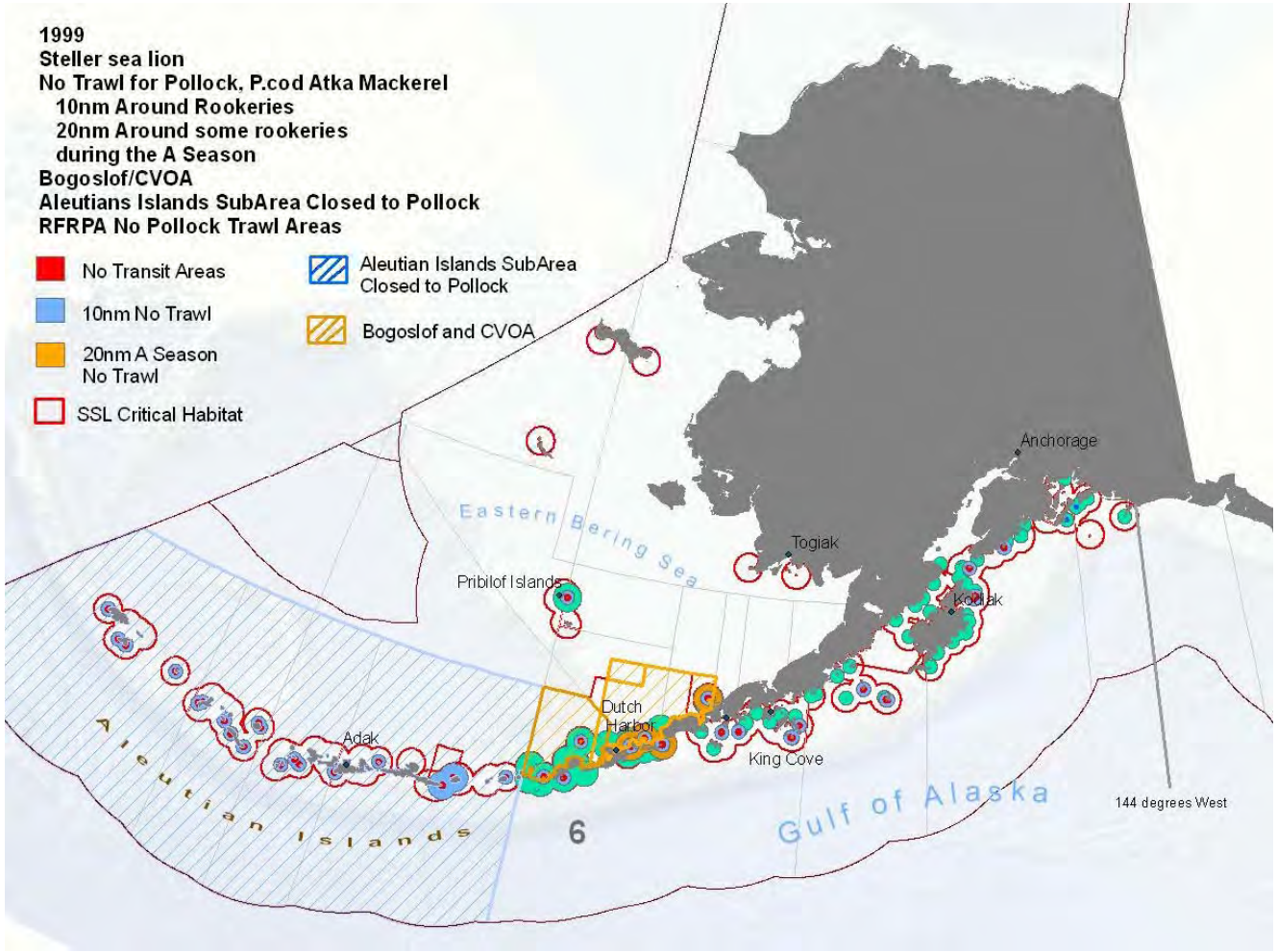


Figure 2.18 No trawl zones.

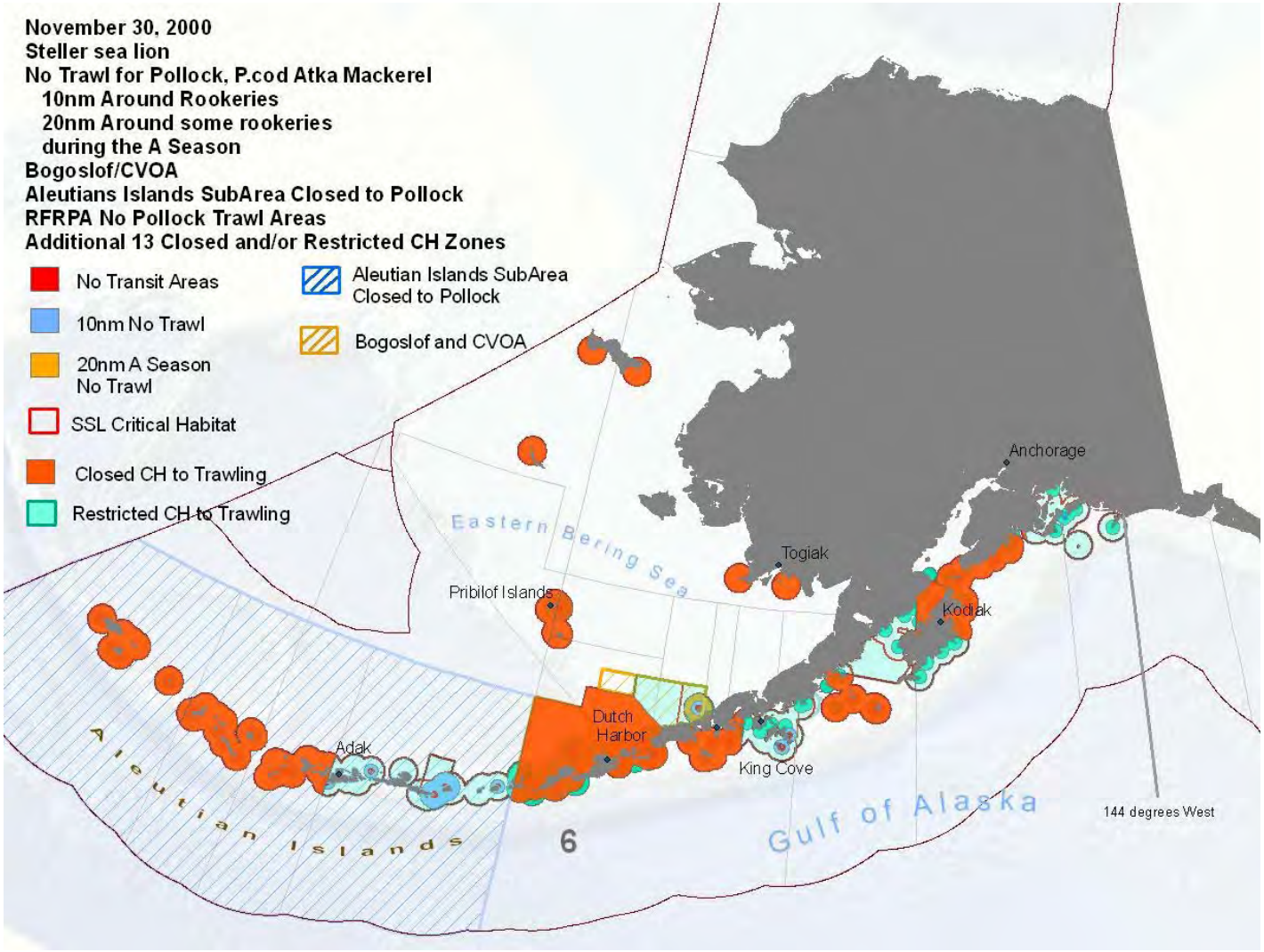


Figure 2.19 2000 “Open and Closed Areas”.

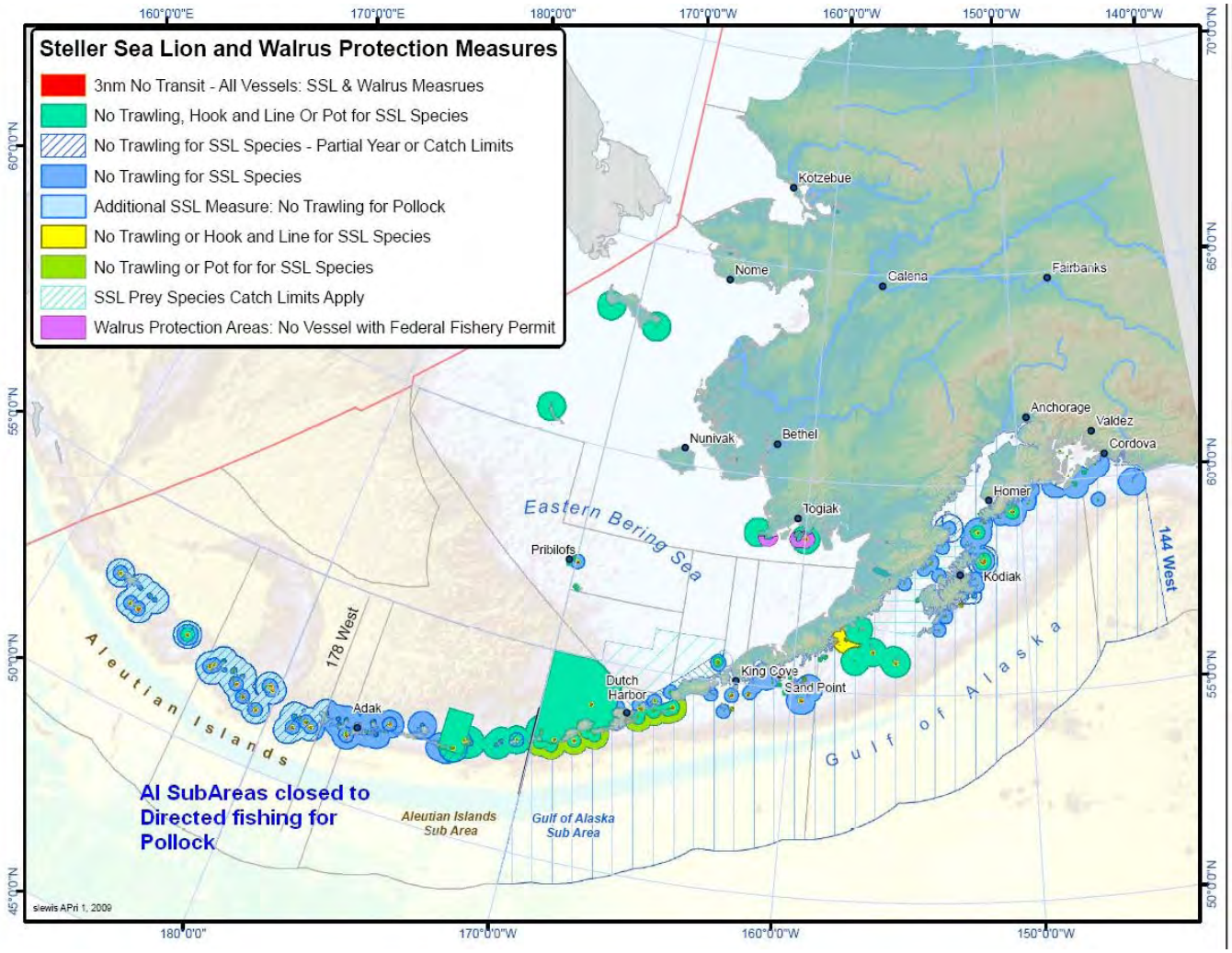


Figure 2.20 Current SSL protection measures

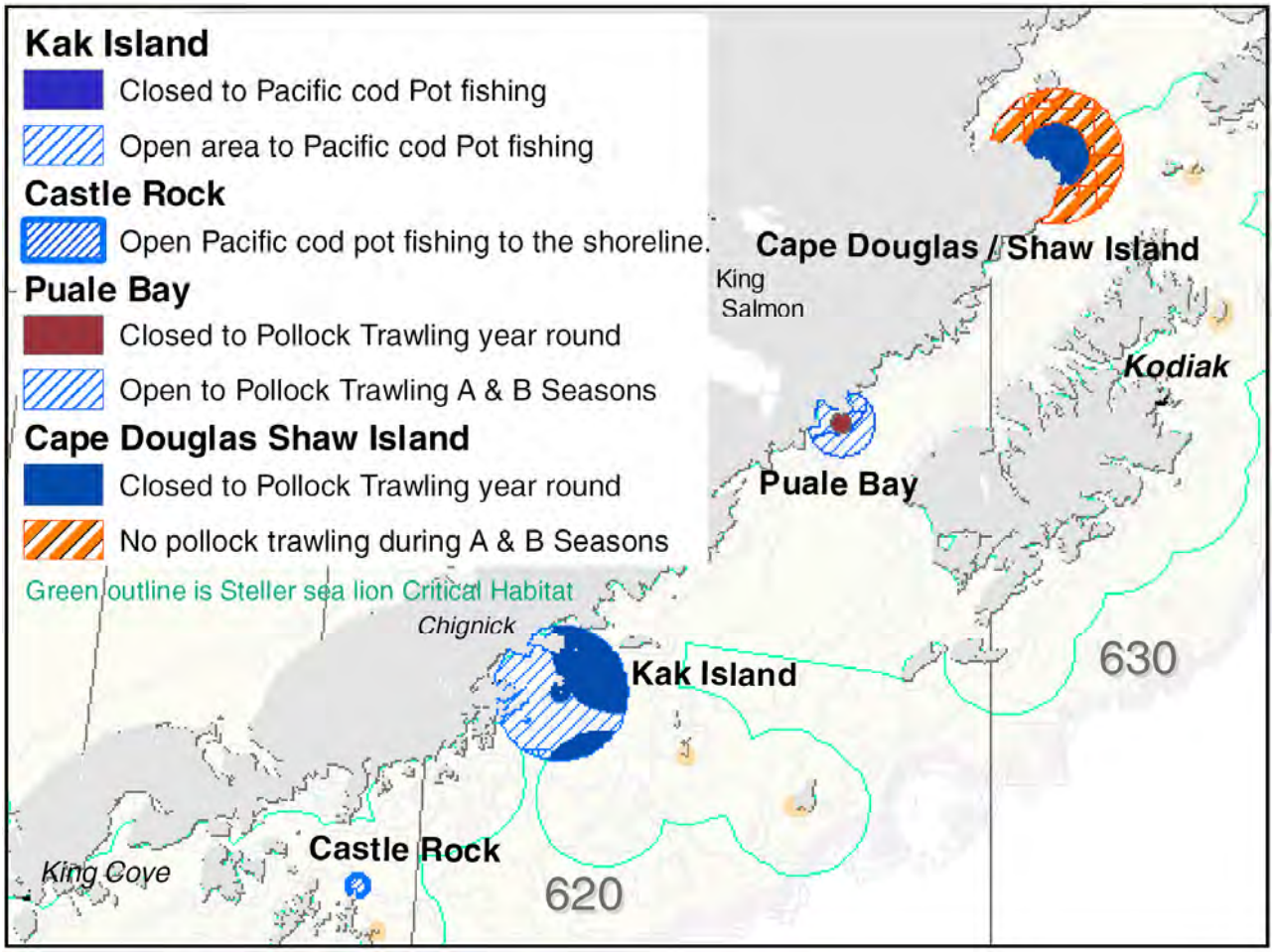


Figure 2.21 2004 Changes to GOA SSL protection measures.

Figure 3.1 Steller sea lion world-wide distribution.

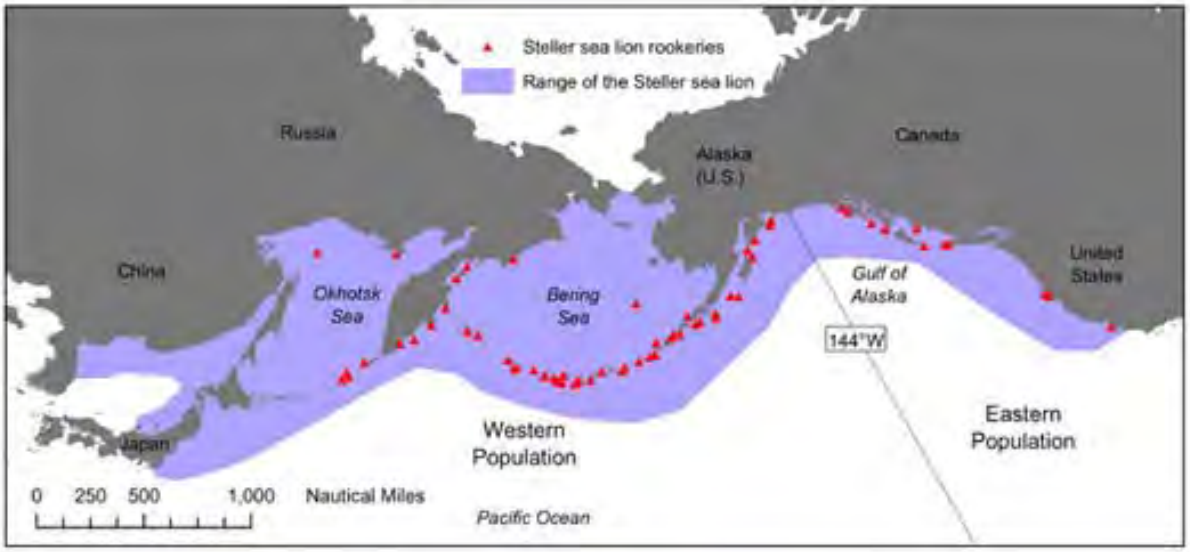


Figure 3.2 Steller sea lion critical habitat for the western DPS.

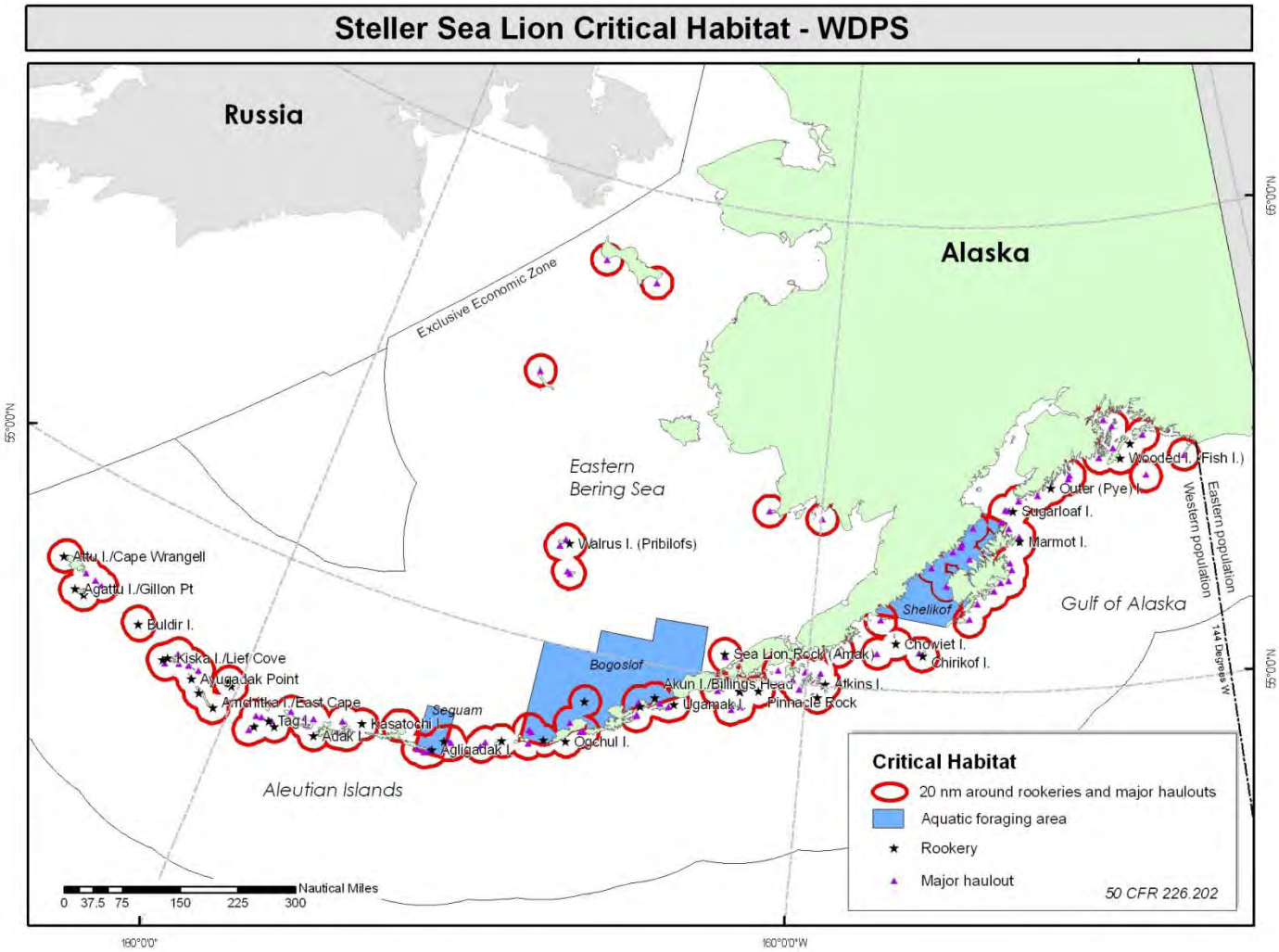


Figure 3.3 Steller sea lion critical habitat for the eastern DPS.

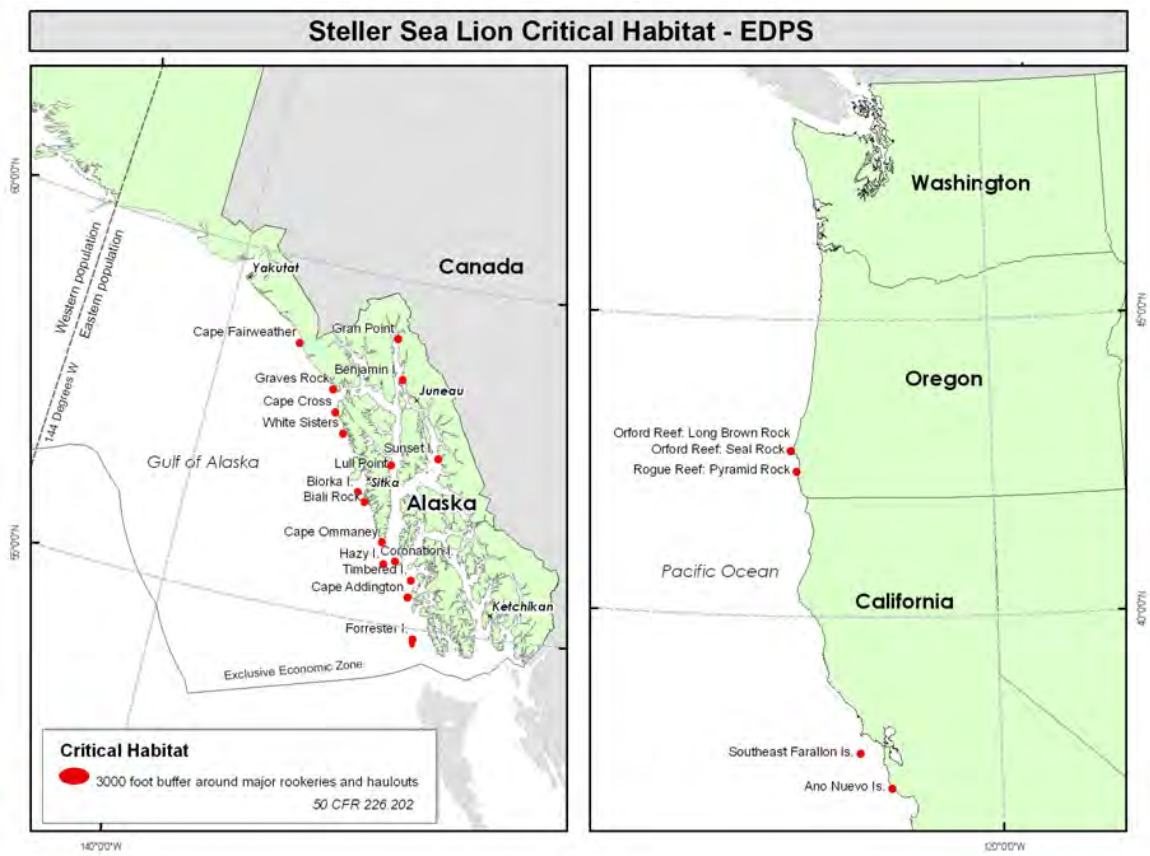


Figure 3.4 Steller sea lion survey regions from Dixon Entrance to Attu Island and the location of the principal rookeries in Alaska. Kiska Island, the Kenai Peninisula, and Walrus Island in the eastern Bering Sea are also noted, along with the boundary between the breeding ranges of the eastern and western sea lion stocks. The Central Aleutian Islands is defined as the area between Samalga Pass and Kiska Island.

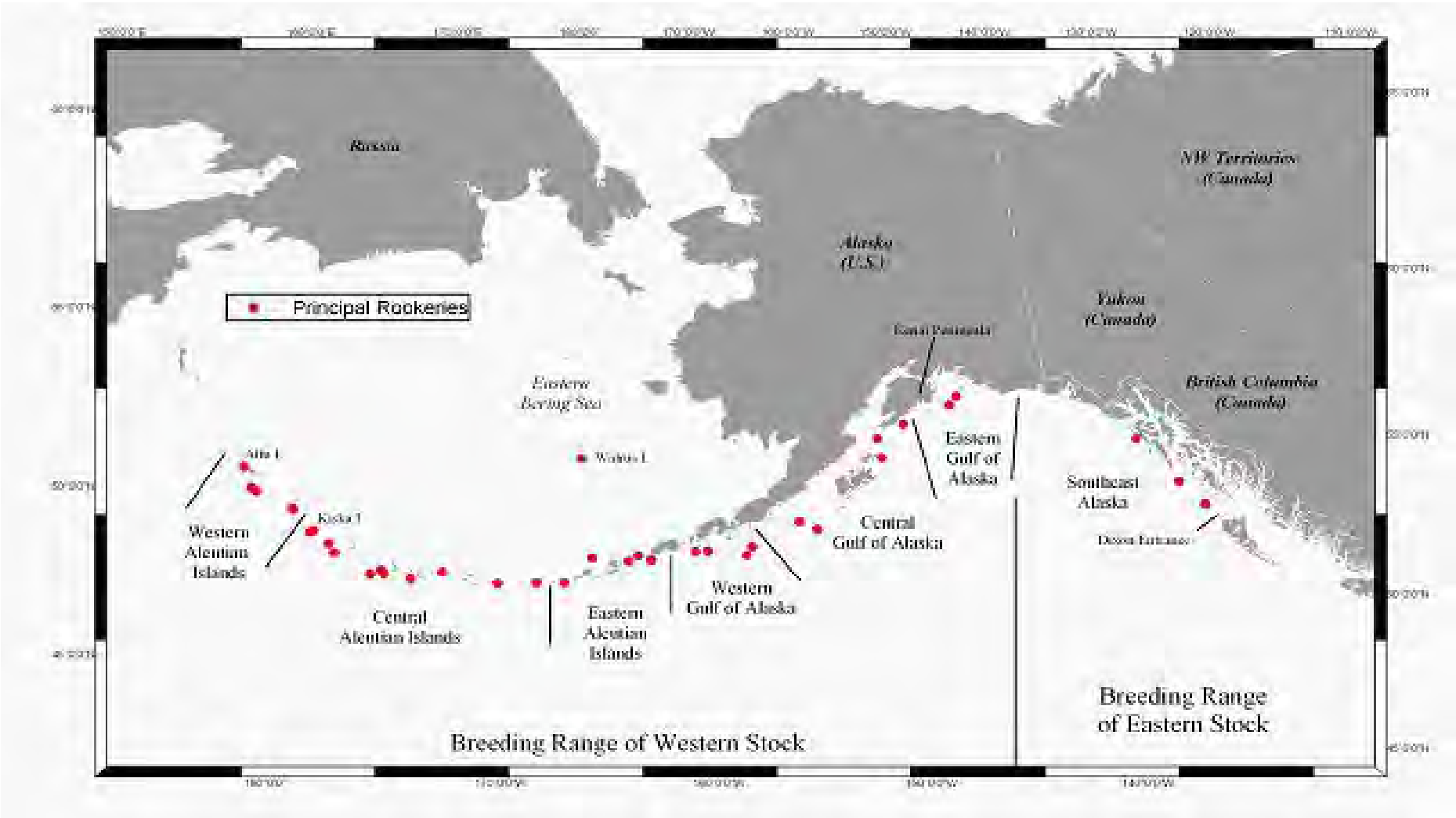


Figure 3.5. Counts of adult and juvenile Steller sea lions on western DPS trend sites in three sub-areas of the Gulf of Alaska, 1950s through 2008. Principal rookeries (named) and major terrestrial haul-out trend sites are shown (NMFS 2008; Demaster 2009).

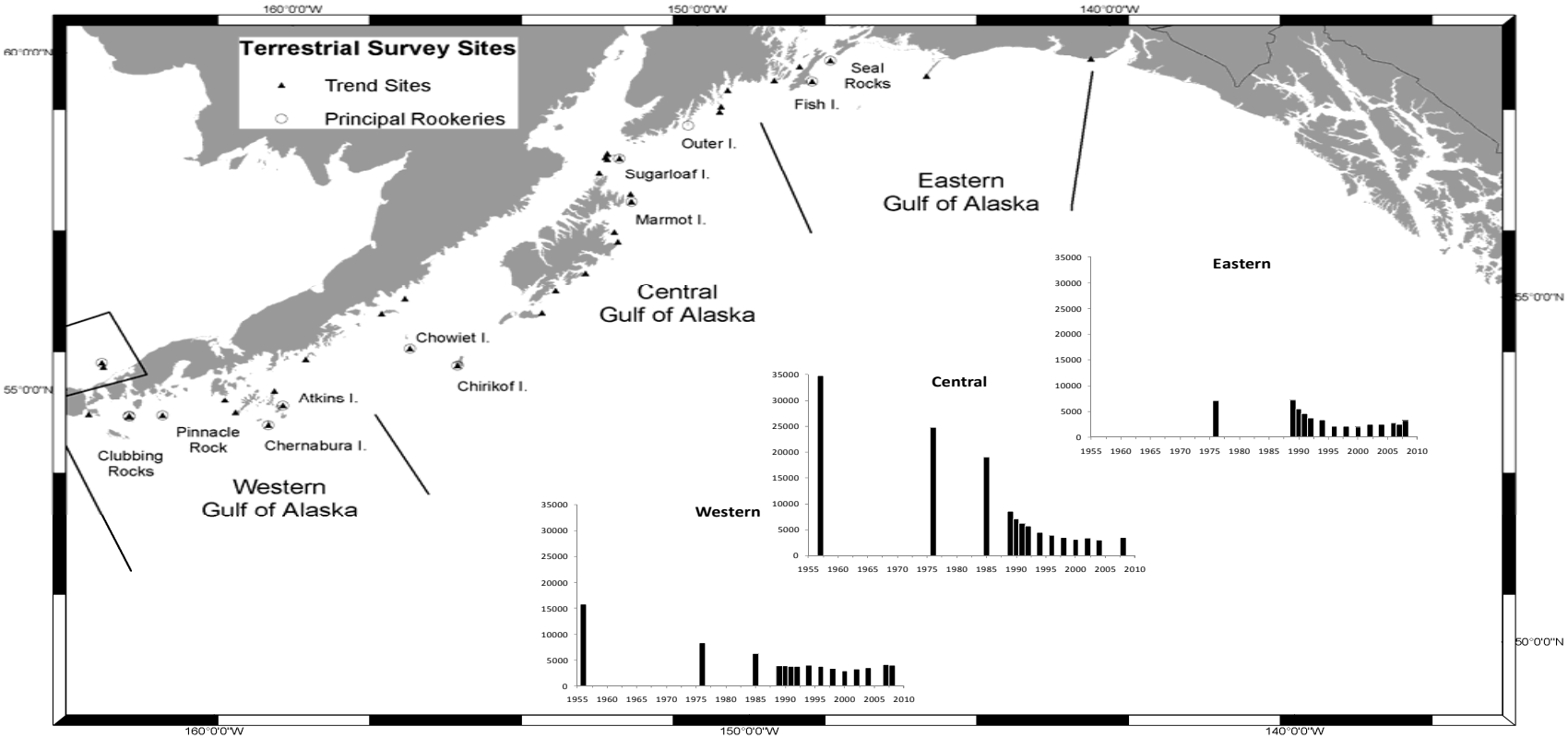


Figure 3.6. Counts of adult and juvenile Steller sea lions on western DPS trend sites in three sub-areas of the Aleutian Islands (eastern, central and western), and on Walrus Island in the eastern Bering Sea, 1950s through 2008. Principal rookeries (named) and major terrestrial haul-out trend sites are shown (NMFS 2008; Demaster 2009).

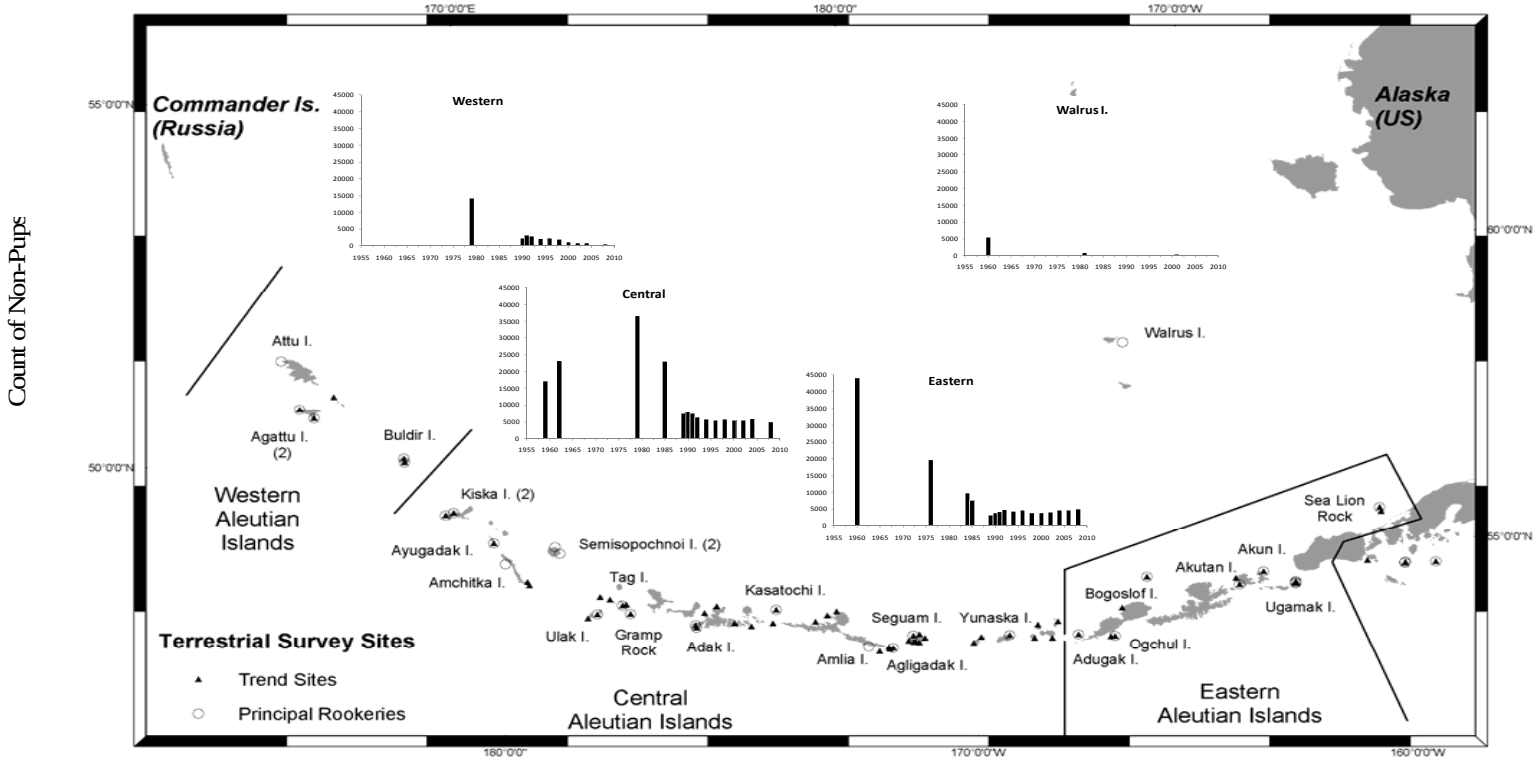


Figure 3.7. Counts of adult and juvenile (non-pup) Steller sea lions at 1990s trend sites by region (A. Guf of Alaska; B. Eastern and E-Central (170°-178°W) Aleutian Islands; C. Western and W-Central (178°W-177°E) Aleutian Islands; and D. western stock (=DPS or distinct population segment in Alaska and in the Kenai-Kiska area from the central Gulf of Alaska through the central Aleutian Islands), 1991-2009. Region totals for 2004-2009 reflect a reduction of 3.64% to account for photo resolution and orientation differences with those taken prior to 2004 (Fritz and Stinchcomb 2005). Total in 2008 for Western Stock in Alaska* (D) reflects an adjustment to the eastern Gulf of Alaska total to account for seasonal movement primarily from SE Alaska (see A, Eastern).

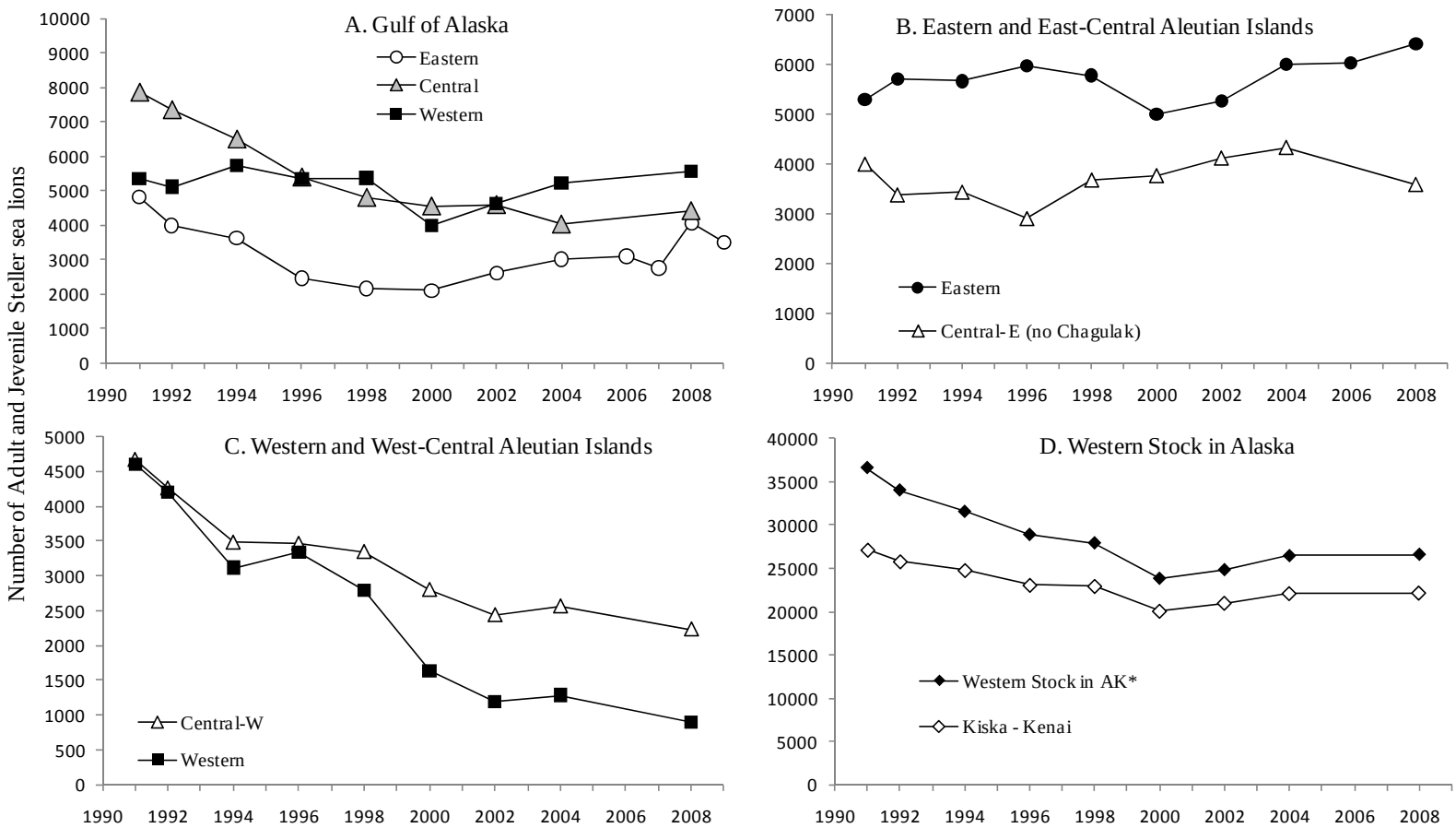


Figure 3.8. Map showing the spatial relationship between Steller sea lion Recovery Plan Areas, Rookery Cluster Areas (RCAs), and NMFS Groundfish Fishery Management Areas.

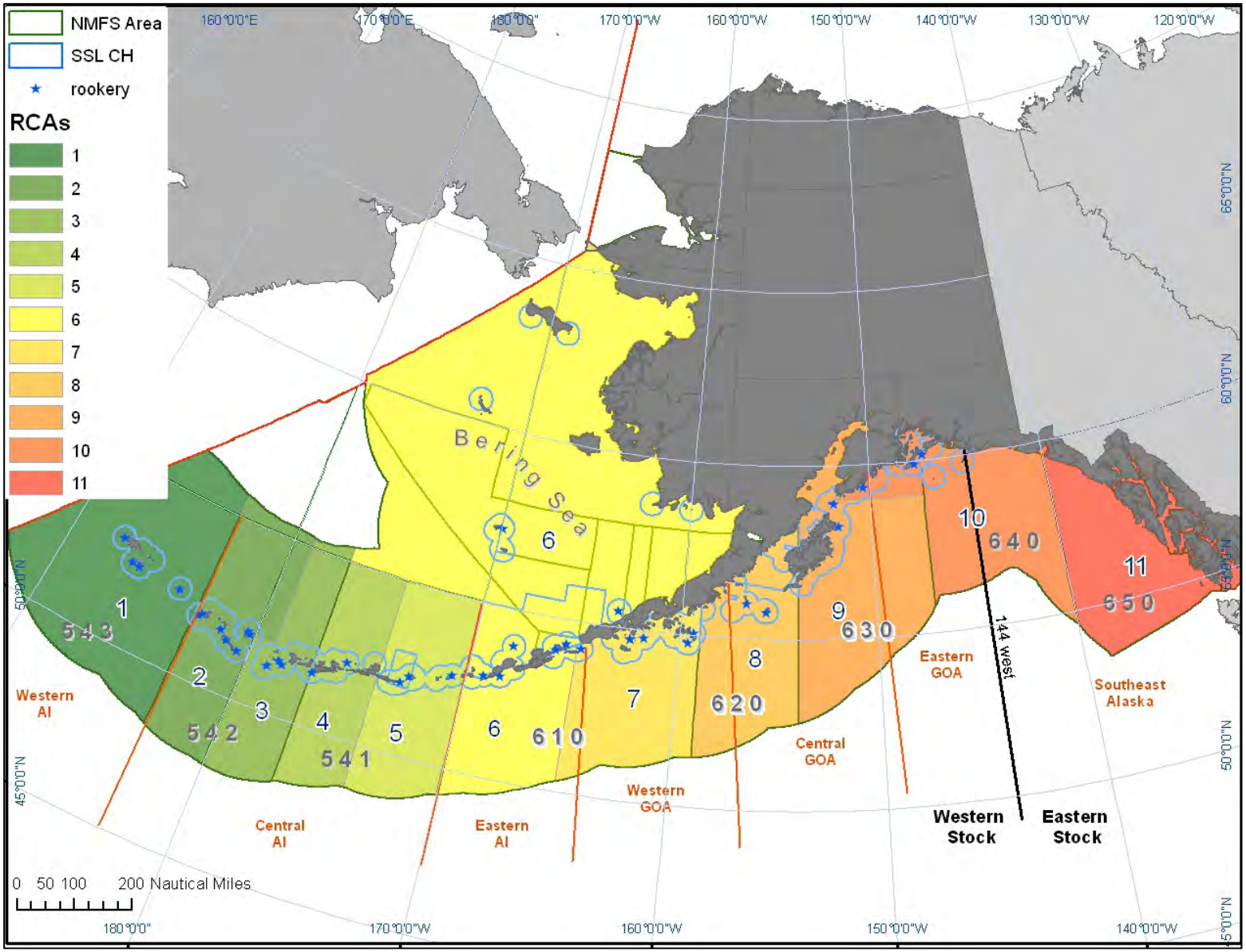


Figure 3.9. Steller sea lion pup counts at trend rookeries in the range of the western stock in Alaska by region from the late 1970s to 2009 in the Gulf of Alaska (A), Aleutian Islands (B), Kenai-Kiska area (central Gulf of Alaska through central Aleutian Islands) and the western stock in Alaska (C). Percent change in counts between 1990/92 and 2001/02 (D) and 2001/02 and 2009 (E) are also shown.

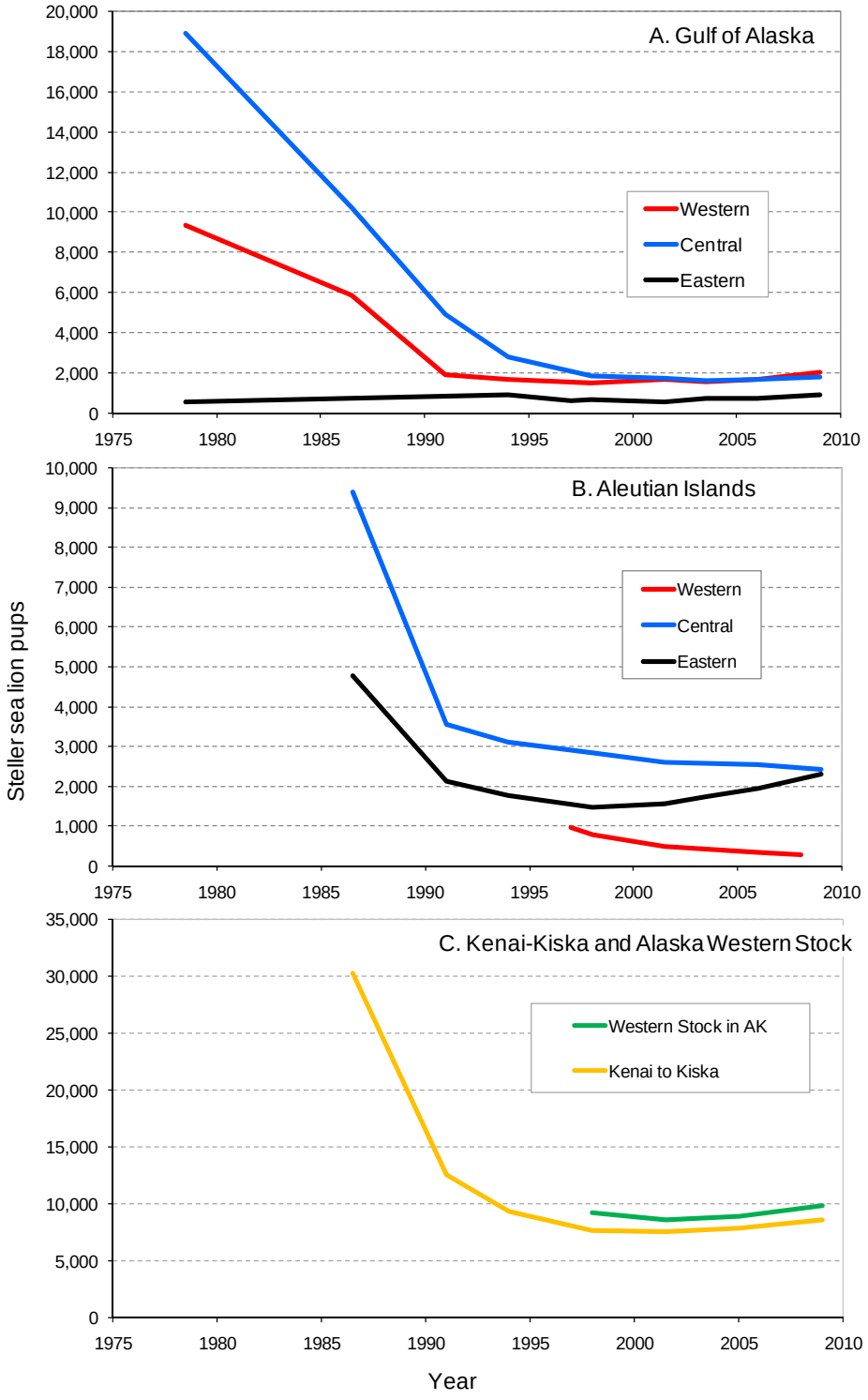


Figure 3.10 Change in pup count by rookery between 2005 and 2009 across the range of the western DPS in Alaska. Red bars indicate decline in rookery production, while green bars indicate an increase. W, C, and E Aleu = western, central and eastern Aleutian Islands; W, C, E Gulf = western, central and eastern Gulf of Alaska.

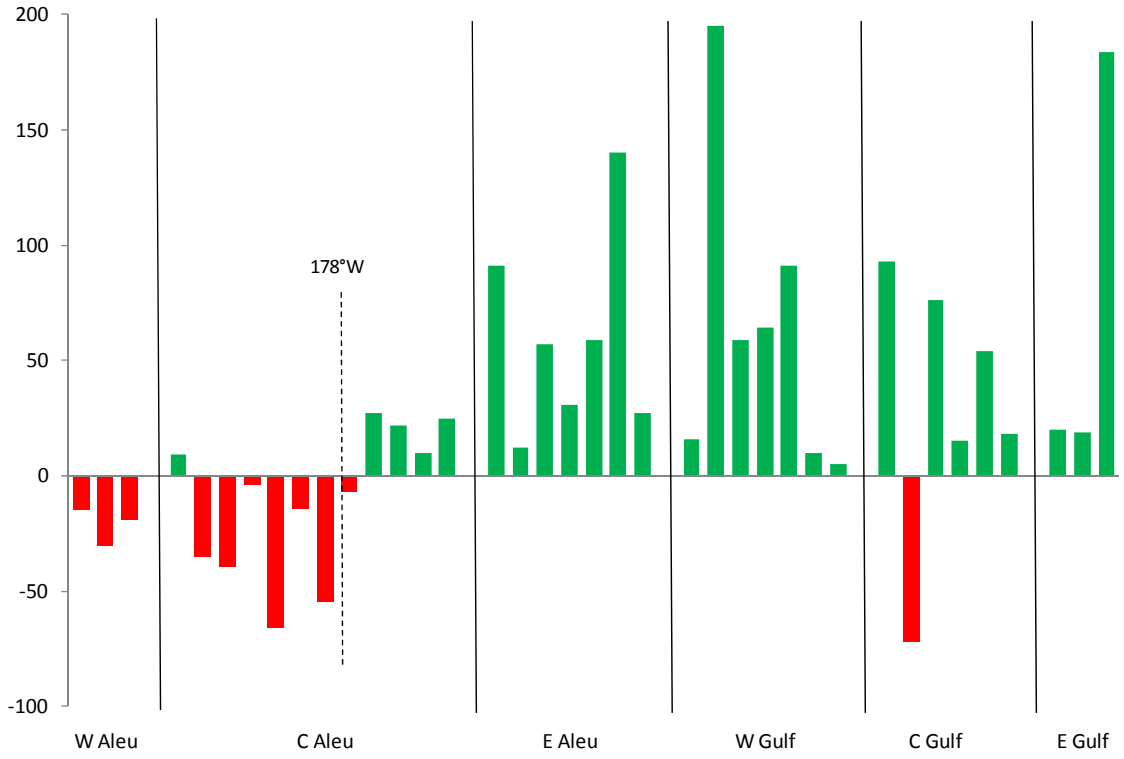
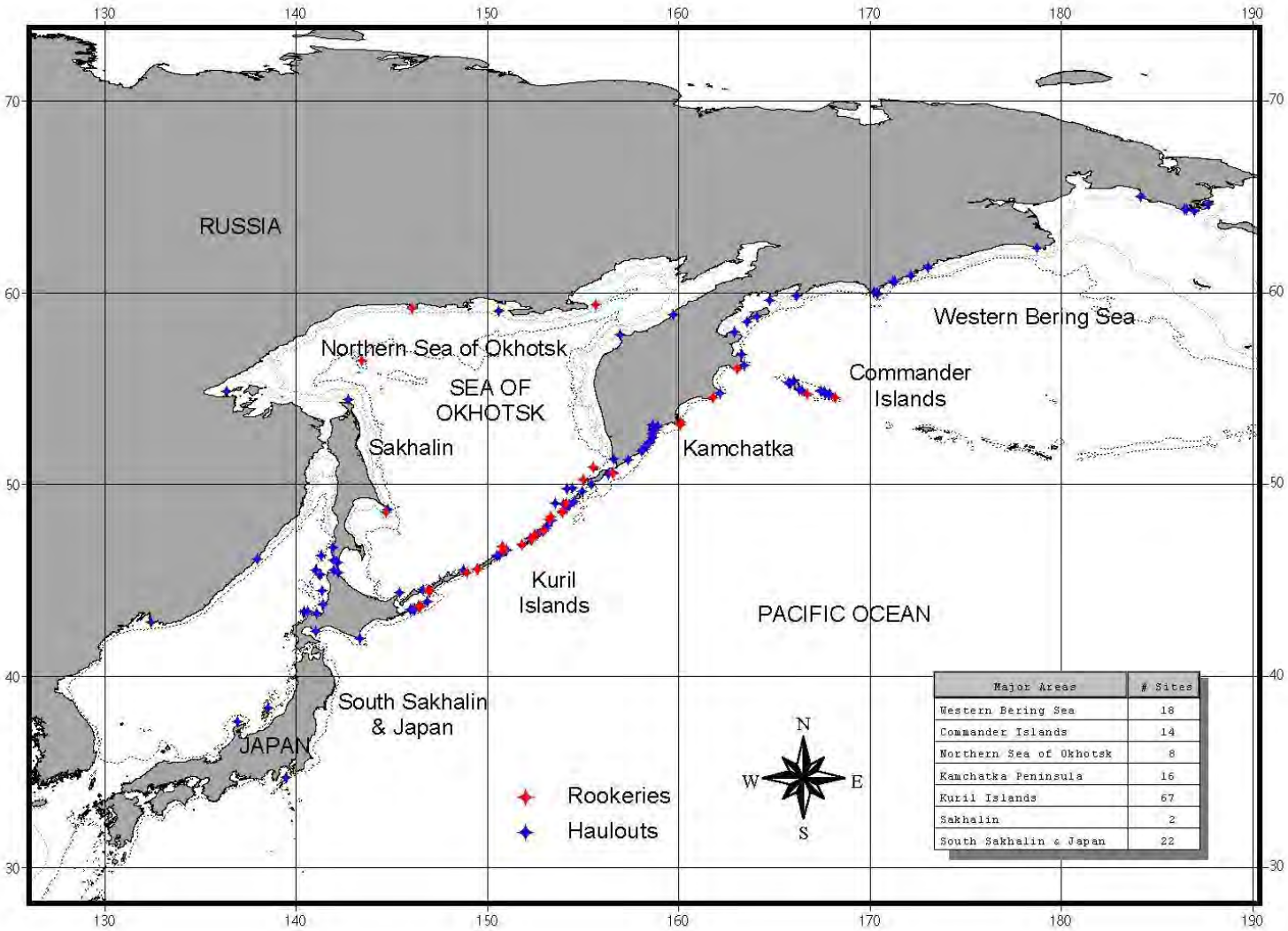


Figure 3.11. Locations of Steller sea lion rookeries (red) and haulout sites in Asia (Russia and Japan).



Major Areas	# Sites
Western Bering Sea	18
Commander Islands	14
Northern Sea of Okhotsk	8
Kamchatka Peninsula	16
Kuril Islands	67
Sakhalin	2
South Sakhalin & Japan	22

Figure 3.12 Counts of non-pup Steller sea lions by sub-area within Russia. NPSO = northern Sea of Okhotsk, Sakh=Sakhalin Island (southern Sea of Okhotsk), Kurils = Kuril Islands, CI = Commander Islands, EK = eastern Kamchatka Peninsula, and WBS = western Bering Sea. NPSO, Sakh and Kurils are part of 'Asian' stock as defined by Baker et al (2005). This portion of the Russian western DPS has been increasing since the 1990s. CI, EK, and WBS are part of the 'Western' stock as defined by Baker et al. (2005). This portion of the Russian western DPS declined from the 1980s through most of the 2000s and has remained low through 2008. Data from Burkanov and Loughlin (2005) and V. Burkanov, personal communication.

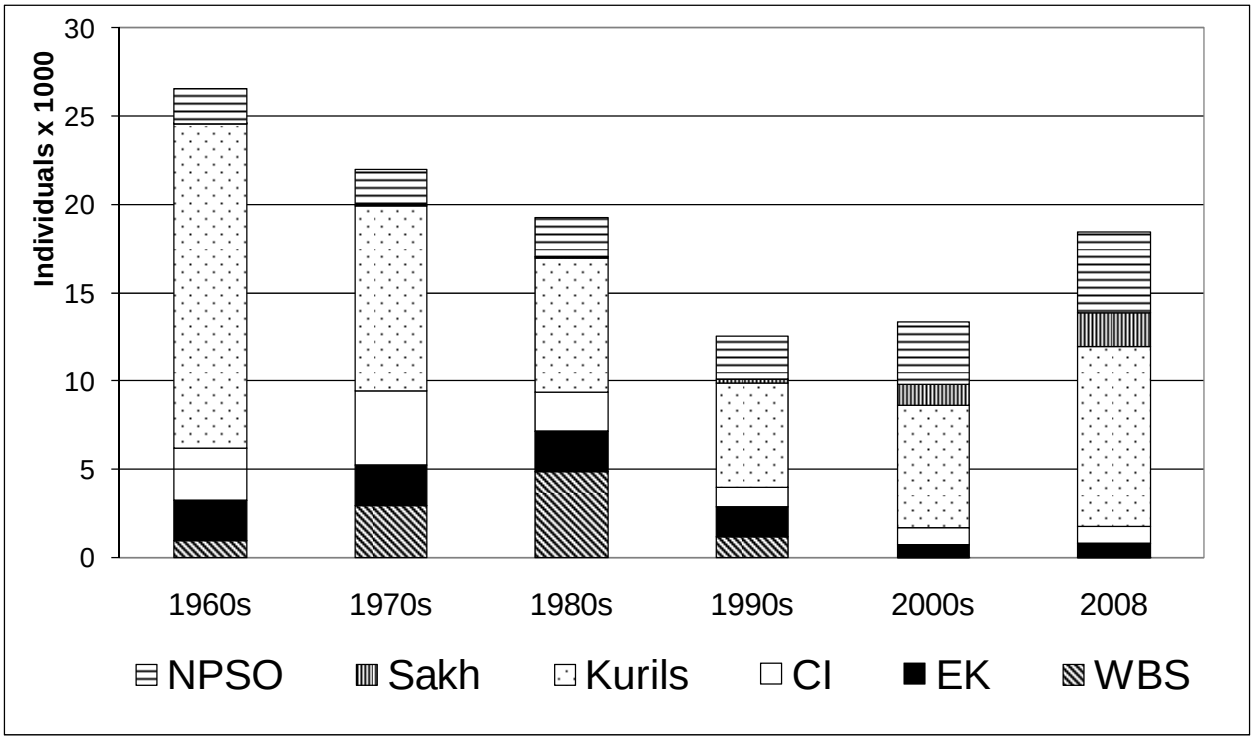


Figure 3.13 Counts of adult and juvenile Steller sea lions (non-pups) on eastern DPS terrestrial sites in Southeast Alaska (SE AK; trend sites) and British Columbia (all sites), 1971-2009. Major rookeries are named in both sub-areas (Olesiuk et al. ADF&G references), as is the boundary between the eastern and western distinct population segments (Cape Suckling).

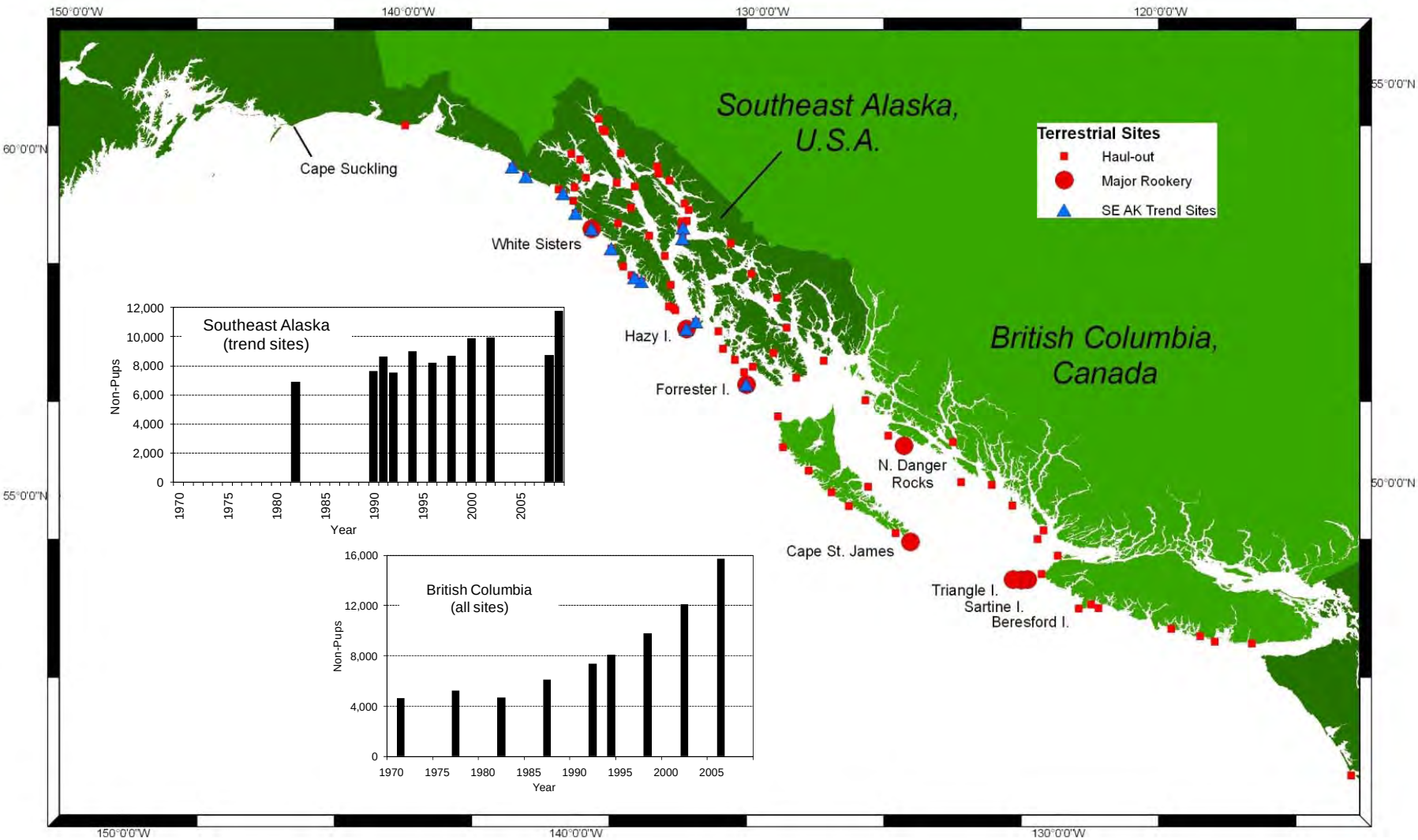


Figure 3.14 Counts of adult and juvenile Steller sea lions (non-pups) on eastern DPS terrestrial sites in Oregon (all sites) and California (rookeries), 1927-2009. Major rookeries are named in Oregon and California; there are no rookeries in Washington.

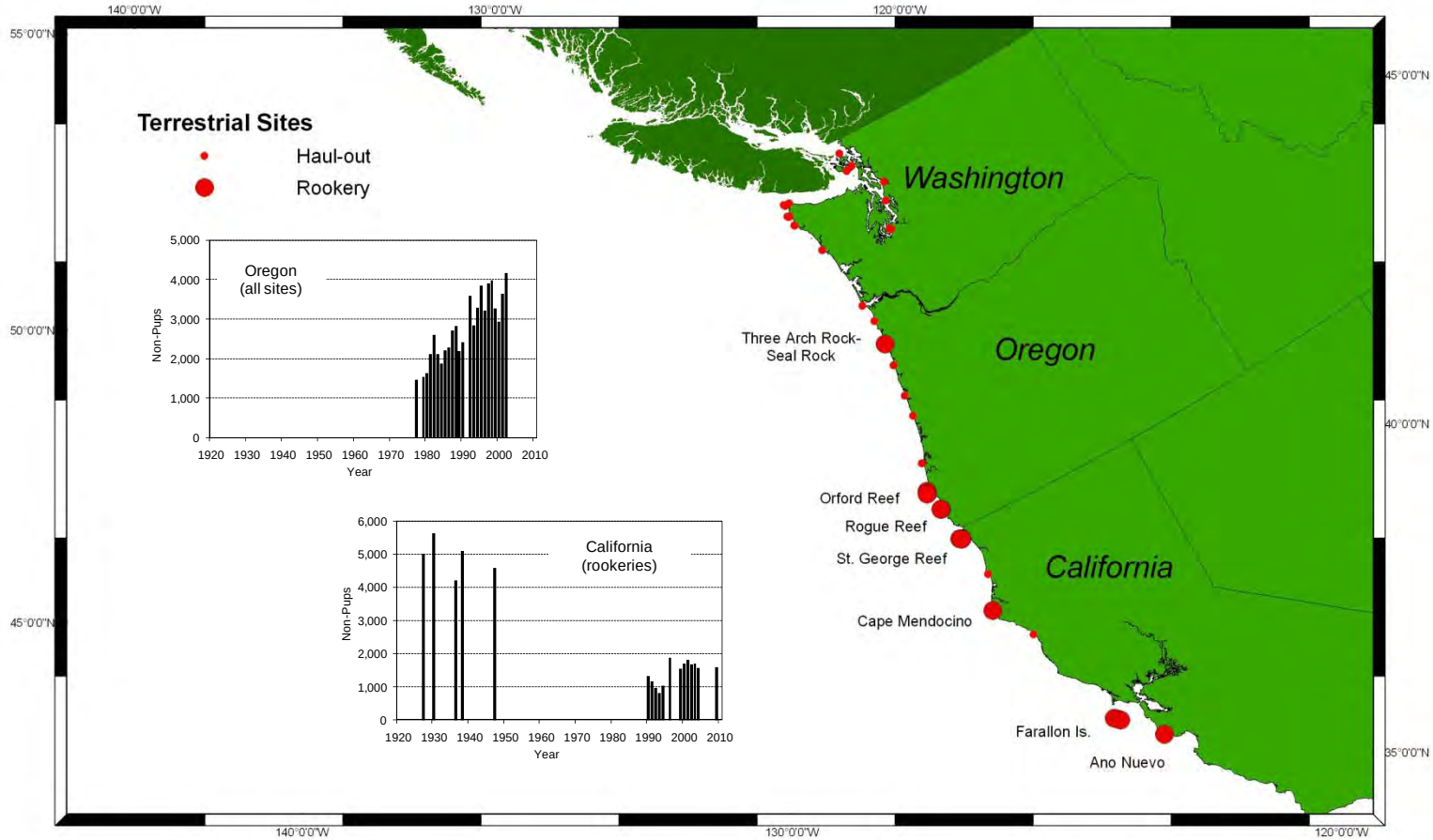


Figure 3.15. Counts of adult and juvenile Steller sea lions on trend sites by region within the eastern DPS, 1982-2009. Data are in Table 3.5.

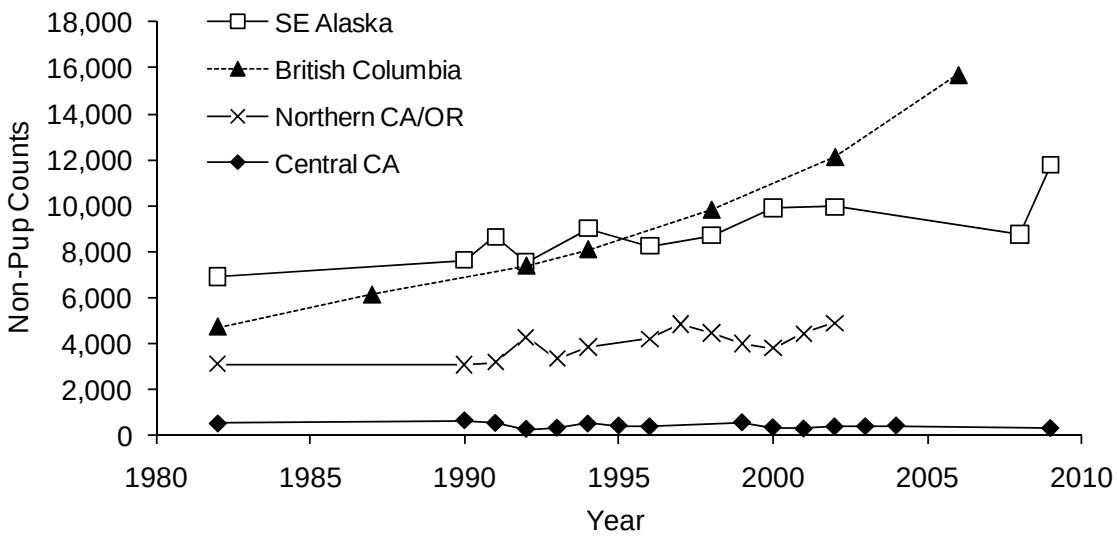


Figure 3.16. Steller sea lion vital rates in the western DPS (Marmot and Ugamak Islands, and central Gulf of Alaska – CGOA) and eastern DPS (Forrester Island), late 1970s through 2000s. A-C. Relative changes in juvenile and adult survivorship and natality rates of the CGOA female Steller sea lion population between the late 1970s (1970s) and 2004 (Holmes et al. 2007).

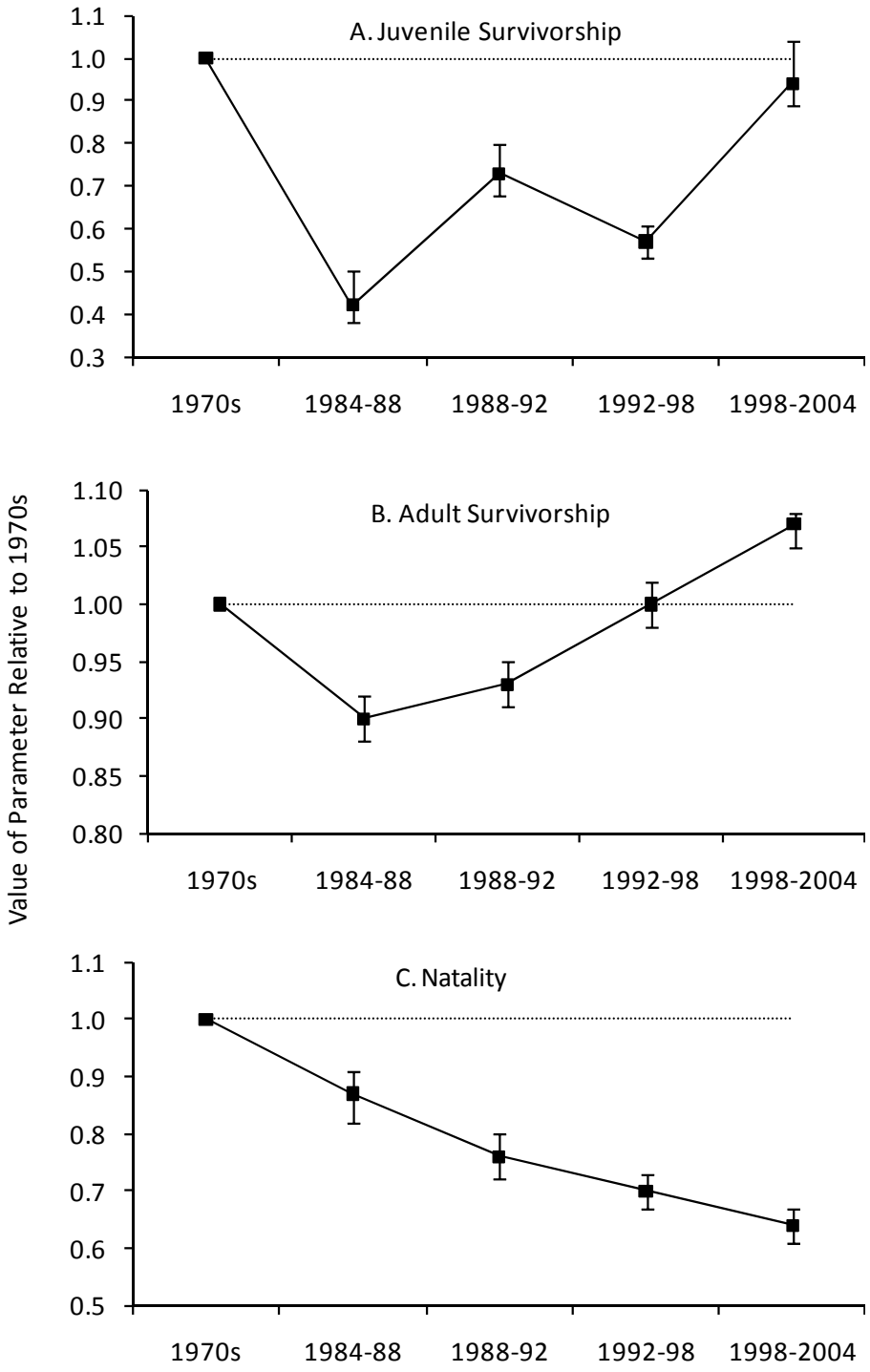
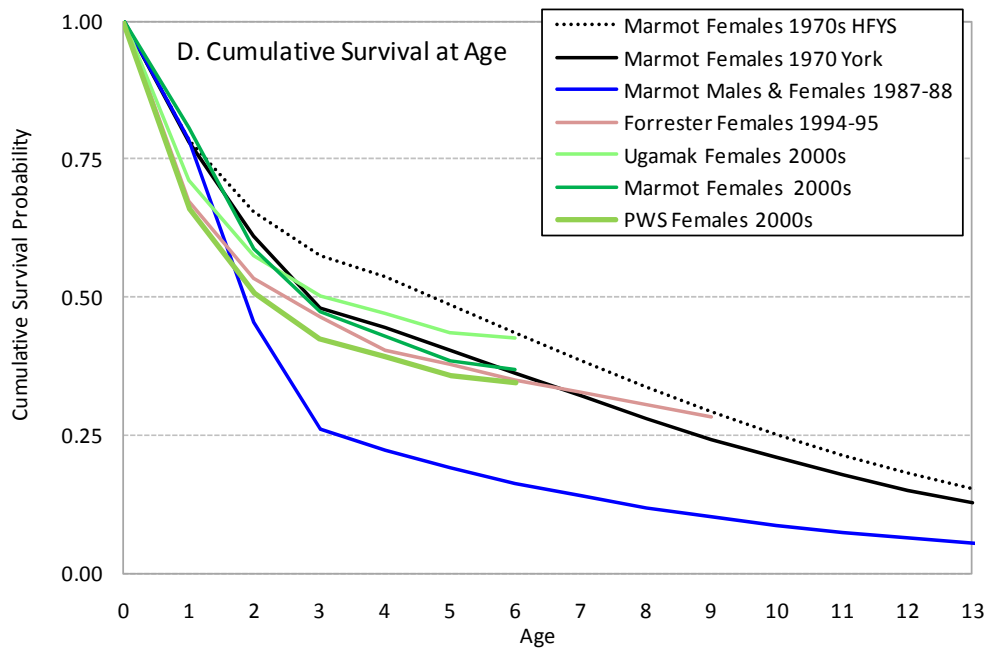


Figure 3.16 (continued). D. Cumulative survival of Steller sea lions at age in the late 1970s at Marmot Island (York (1994) and Holmes et al (2007; HFYS) life tables), in the late 1980s at Marmot Island (Pendleton et al. 2006; brand-resight), in the mid-1990s at Forrester Island in the eastern DPS (Pendleton et al. 2006; brand-resight), in the 2000s at Ugamak Island, Marmot Island, and rookeries near Prince William Sound (PWS; NMFS-AFSC, unpublished; brand-resight). E. Comparison of cumulative survival of Steller sea lions to age 3 (juvenile survival) during different time periods in the western DPS (black=1970s; blue=late 1980s; various shades of green = late 1990s and early 2000s) and at Forrester Island in the eastern DPS (mid 1990s; red). References as above with the addition of central Gulf of Alaska (CGOA) 84-88 and 98-04 from Holmes et al. (2007) and LHX PWS from Horning and Mellish (2009; 2010; used their estimates of survival from 1-2 and from 2-3 years of age plus NMFS unpublished brand resight estimate for survival from age 0-1 to estimate cumulative survival to age 3 from their life-history transmitter data.



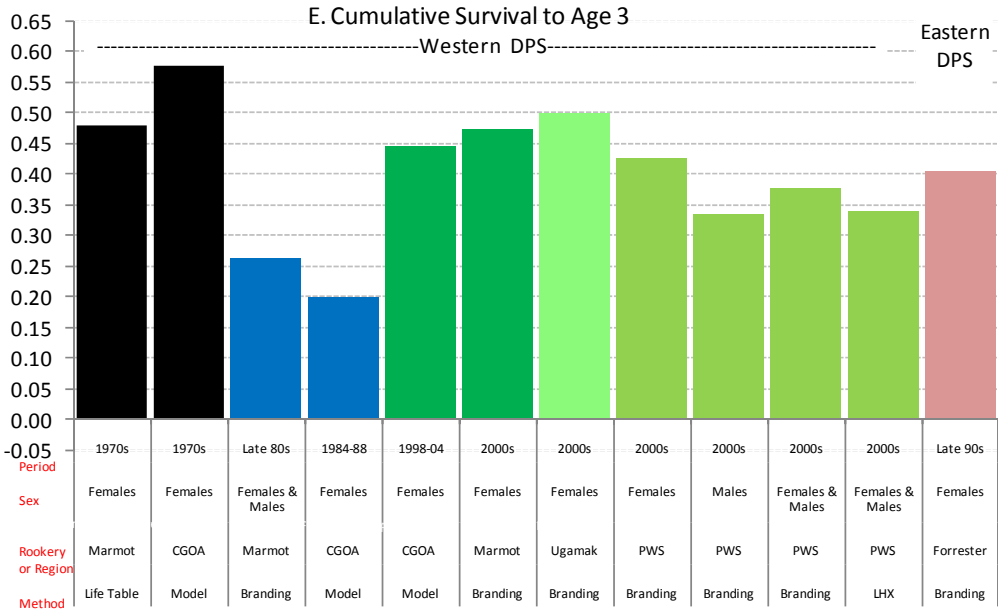


Figure 3.17 Locations associated with diving to >4 m for juvenile Steller sea lions instrumented in Prince William Sound during 2000-2002. Colors indicate distance zone of location based on nearest listed rookery or haulout.

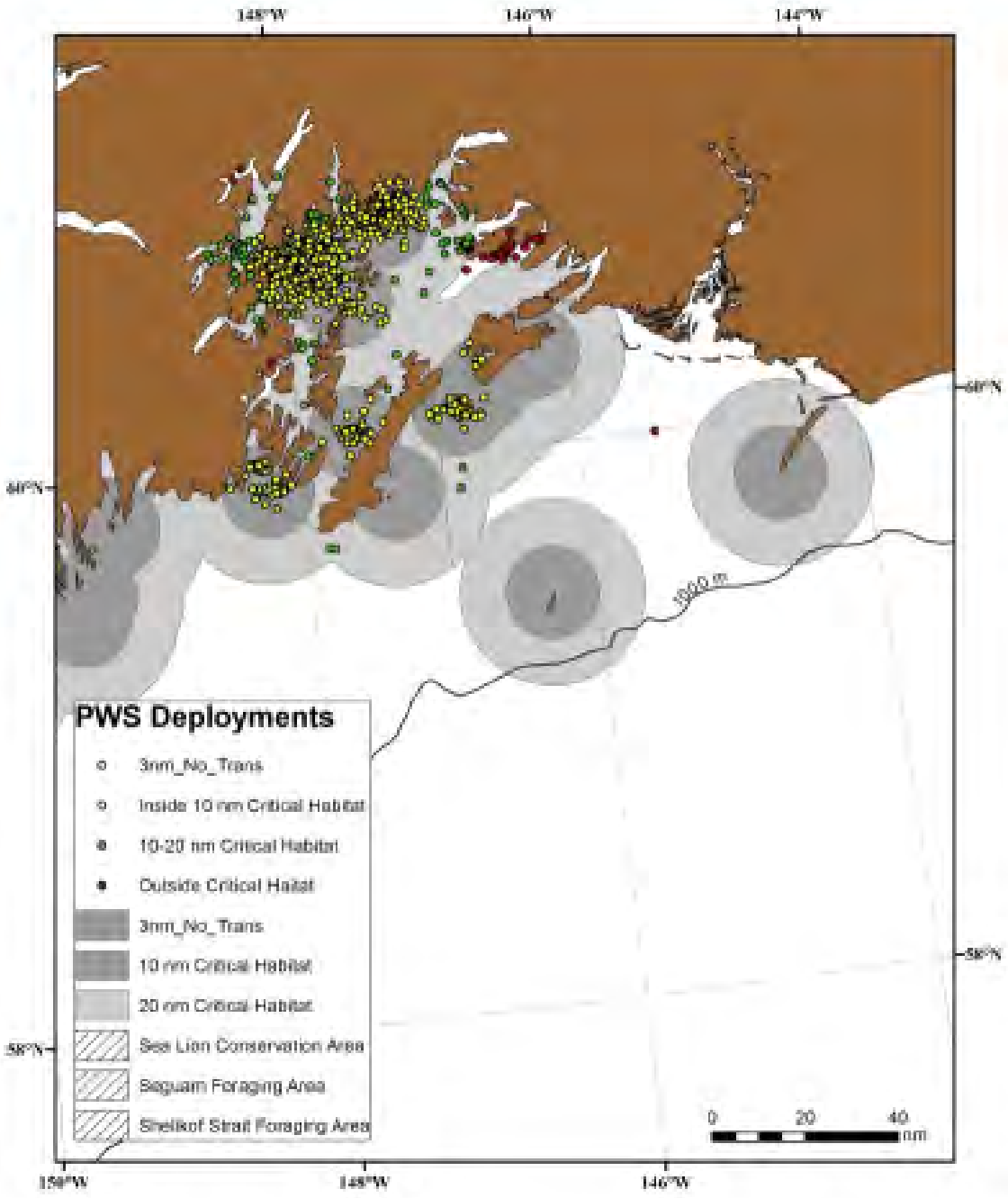


Figure 3.18 Locations associated with diving to >4 m for juvenile Steller sea lions instrumented near Kodiak Island during 2000-2005. Colors indicate distance zone of location based on nearest listed rookery or haulout.

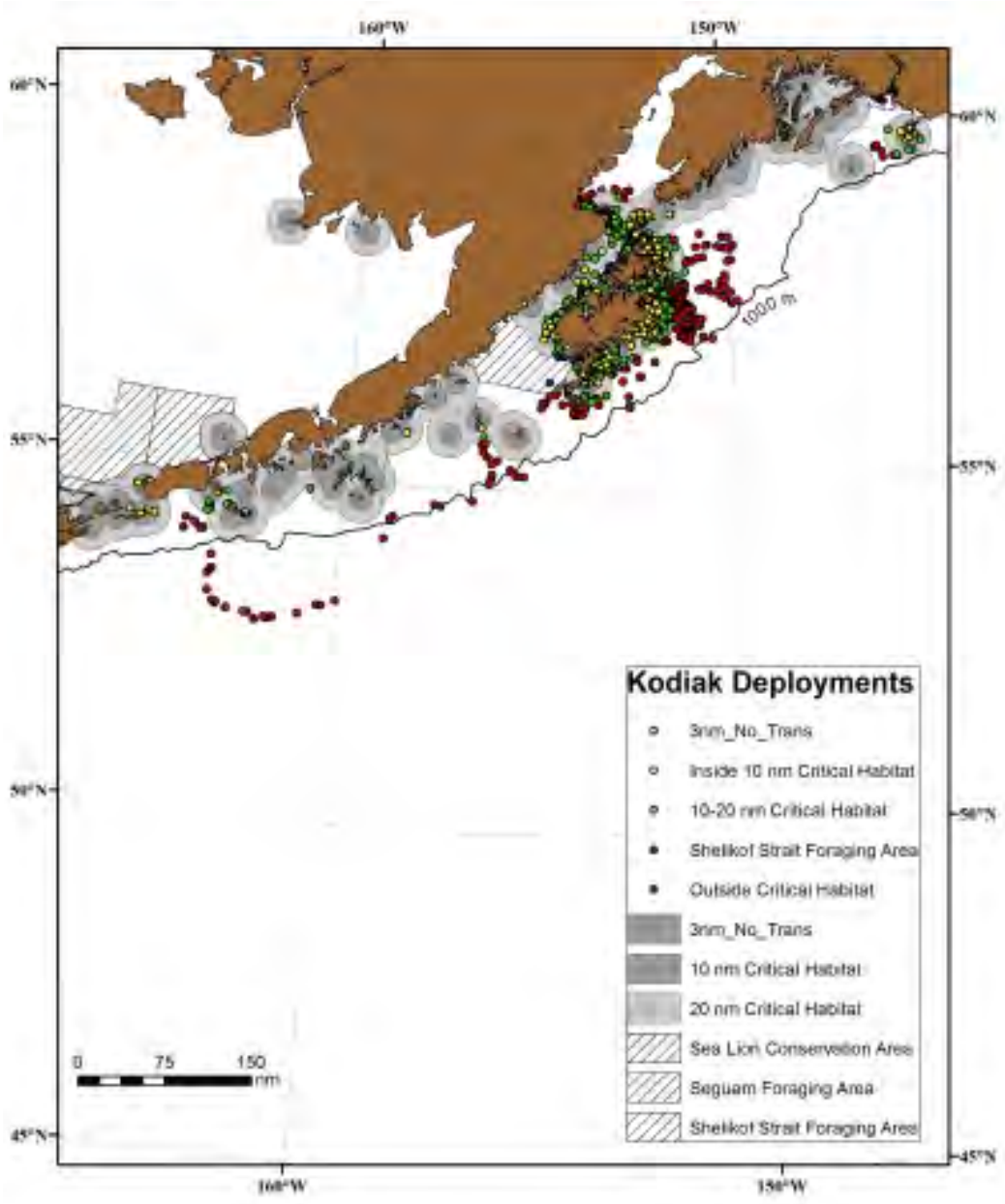


Figure 3.19 Locations associated with diving to >4 m for juvenile Steller sea lions in the Kodiak Island area during 2000-2005. Colors indicate distance zone of location based on nearest listed rookery or haulout.

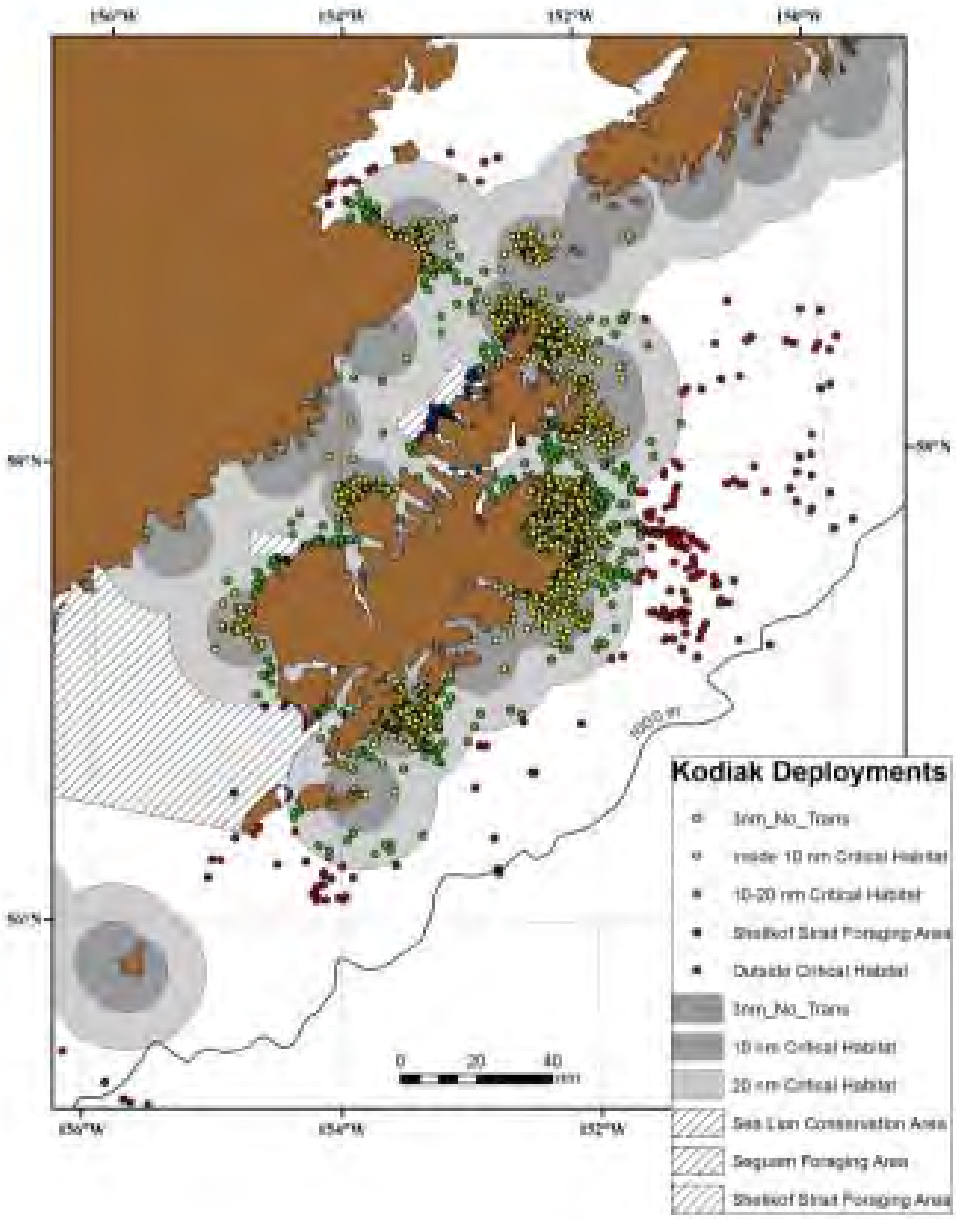


Figure 3.20 Locations associated with diving to >4 m for juvenile Steller sea lions in the Eastern Aleutian Islands area during 2000-2005. Colors indicate distance zone of location based on nearest listed rookery or haulout.

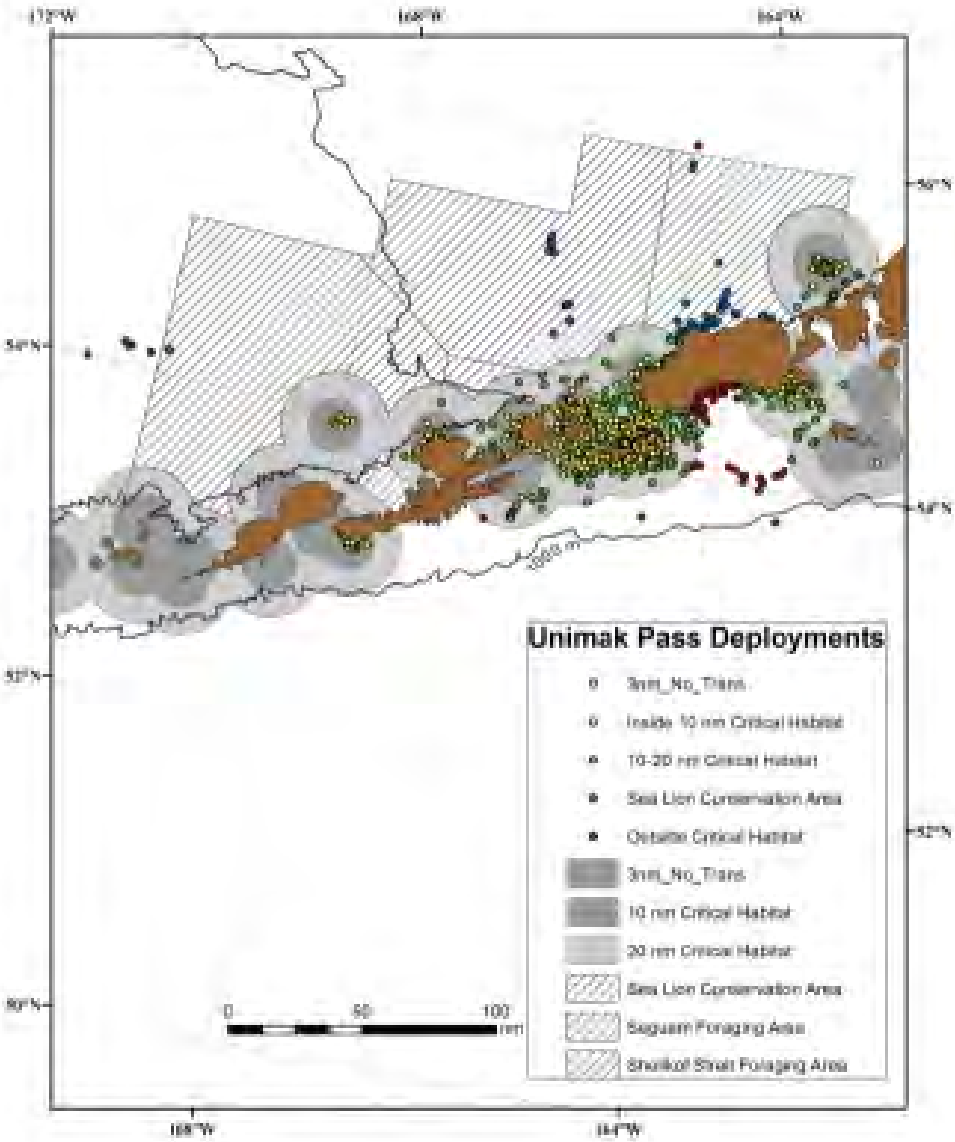


Figure 3.21 Locations associated with diving to >4 m for juvenile Steller sea lions in the Central-Western Aleutian Islands area during 2000-2005. Colors indicate distance zone of location based on nearest listed rookery or haulout.

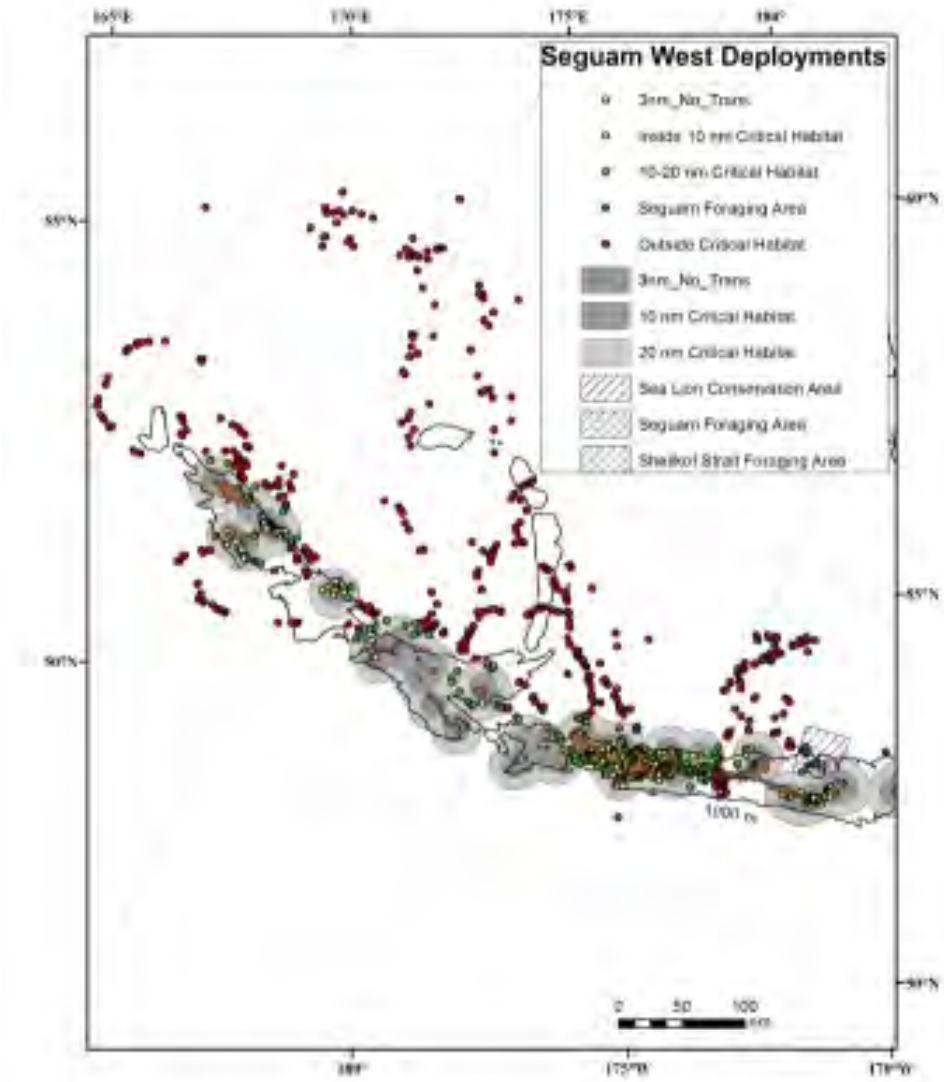


Figure 3.22. Frequency of occurrence of Steller sea lion prey items found in stomach samples (n=781 stomachs with prey remains) collected in studies conducted from 1956 to 1986 in locations ranging from the Kuril Islands to California. Prey taxa are grouped following Merrick and Calkins (1996) with the addition of the Other invertebrate and Mammal categories. Panel A shows the eastern and western portions of the range from the 1950's through the 1970's. Panel B shows the same geographic areas during the 1980's.

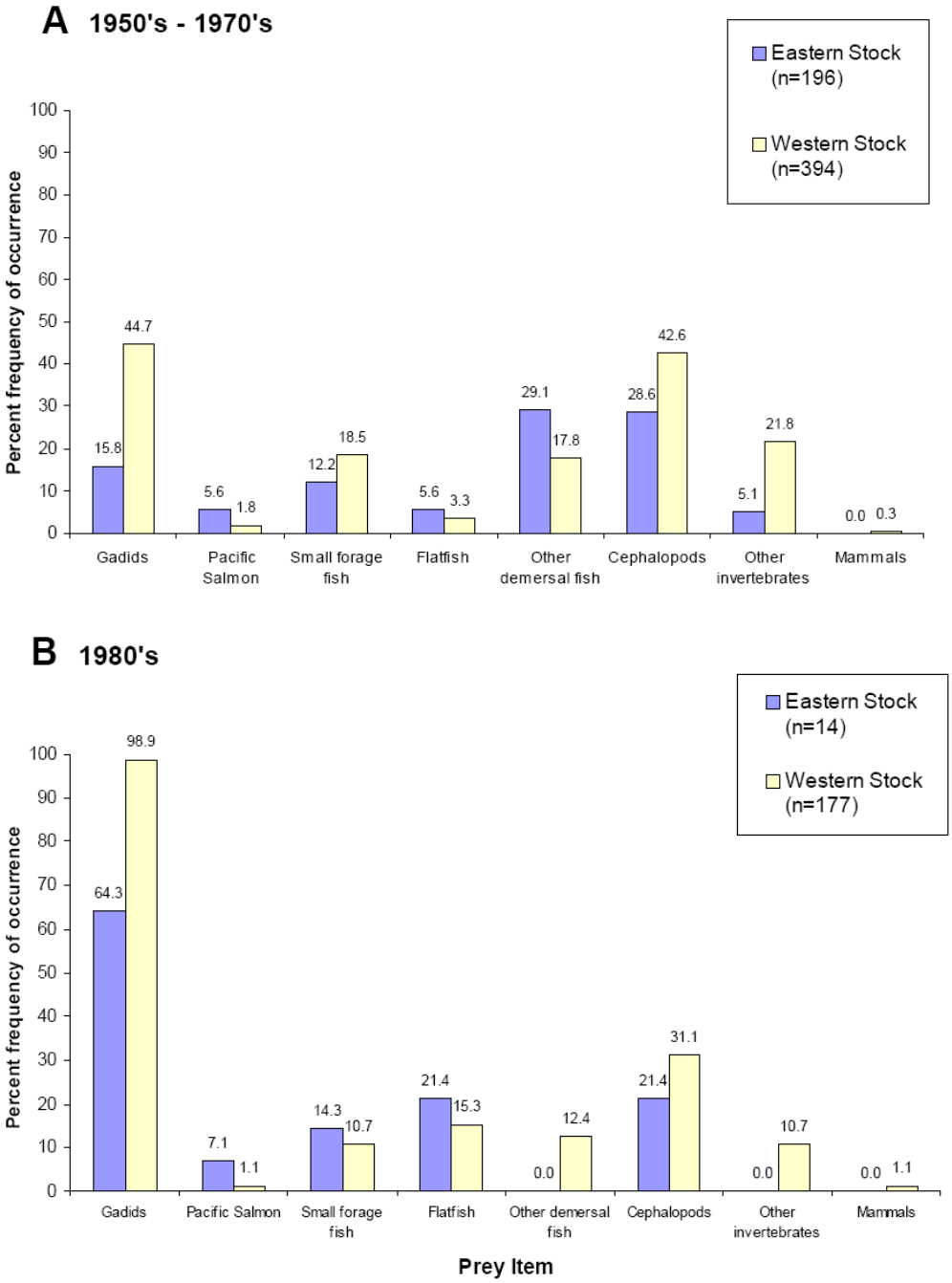
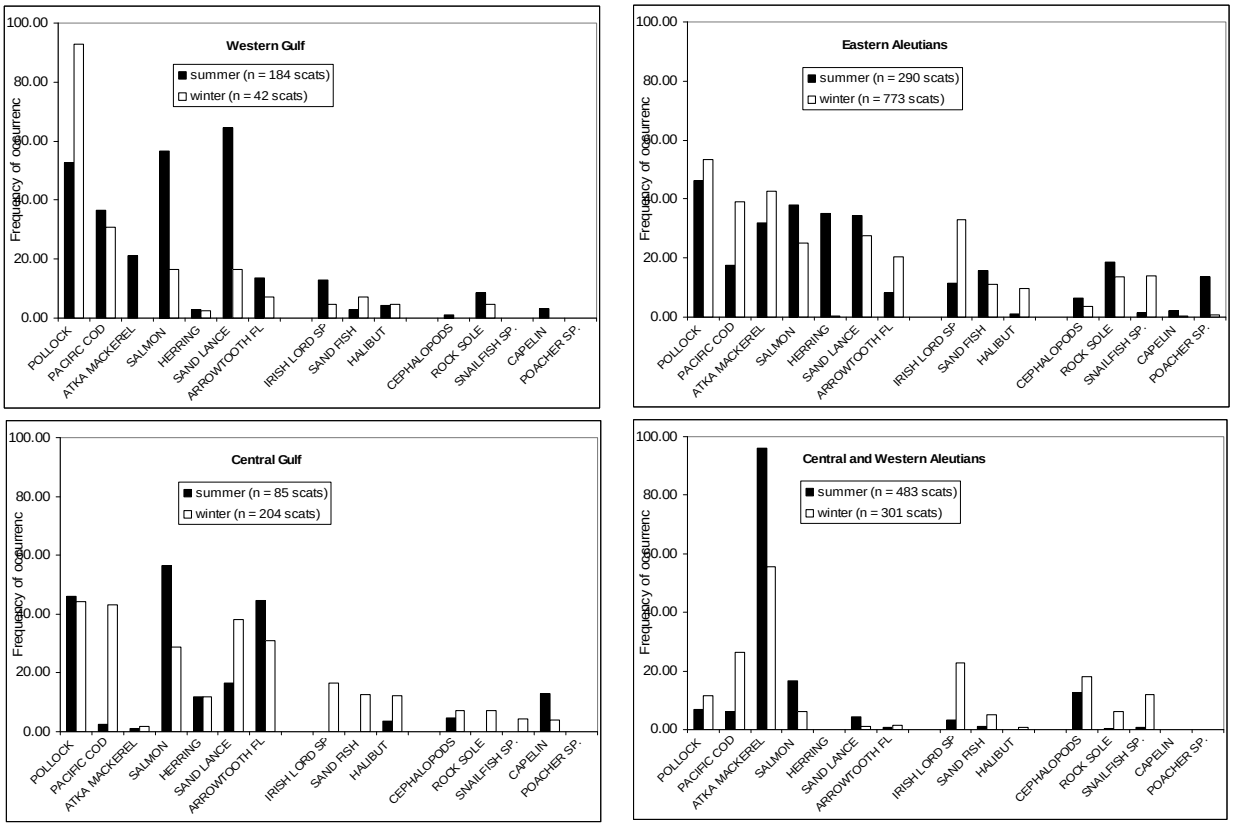


Figure 3.23 Percent frequency of occurrence of prey occurring in Steller sea lion scats collected from 1999 to 2005 (NMFS 2006b).



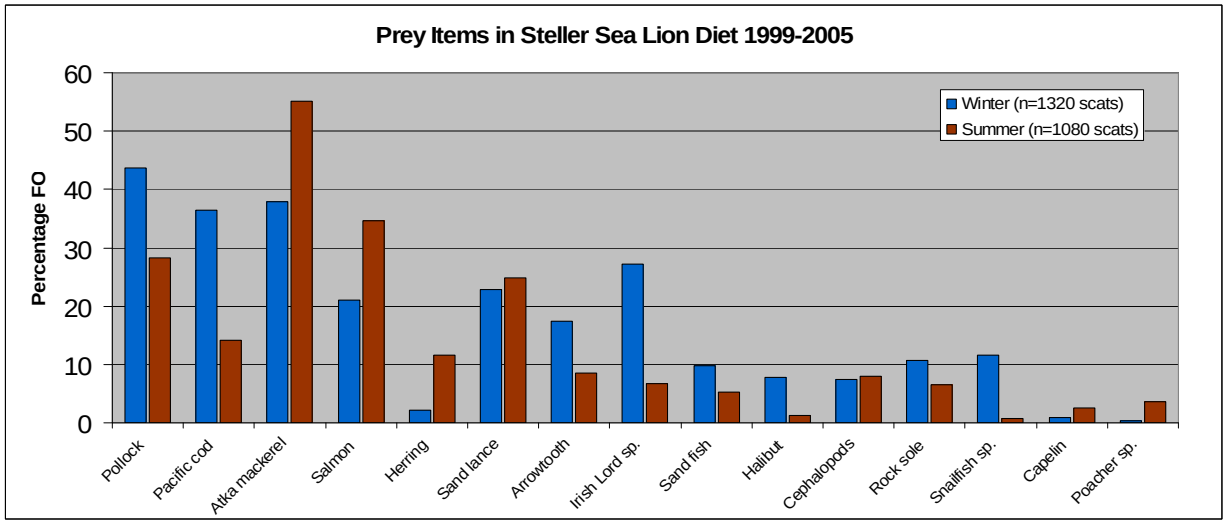


Figure 3.24 Schematic of the Steller sea lion life-cycle, with an emphasis on reproduction.

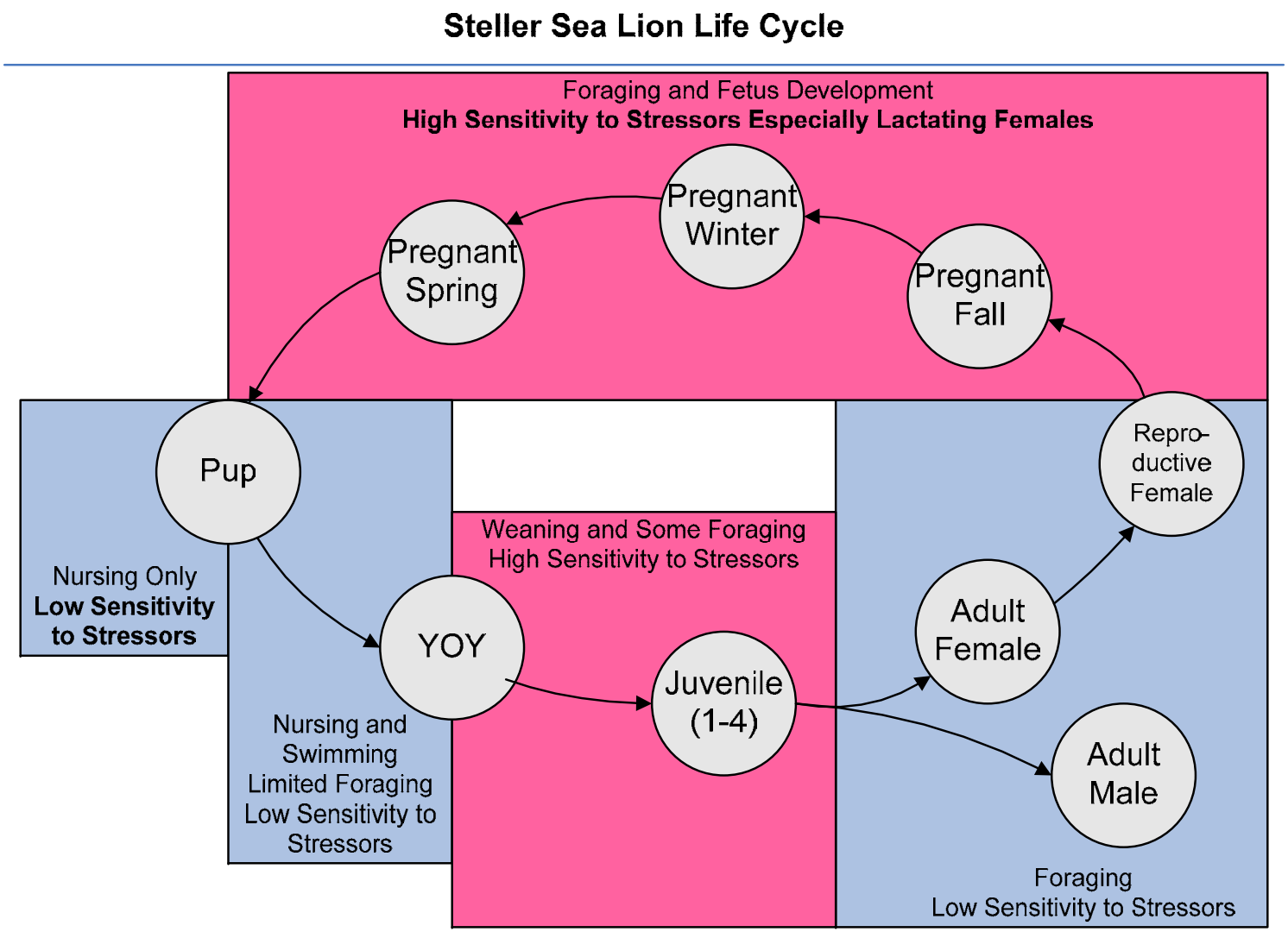


Figure 4.1. Time series index of bottom trawl catch for all species, including fish and invertebrates, at three sites in the southeast Bering Sea. Index units are CPUE in Kg/ha. (from Conners *et al*. 2002, NMFS 2006b).

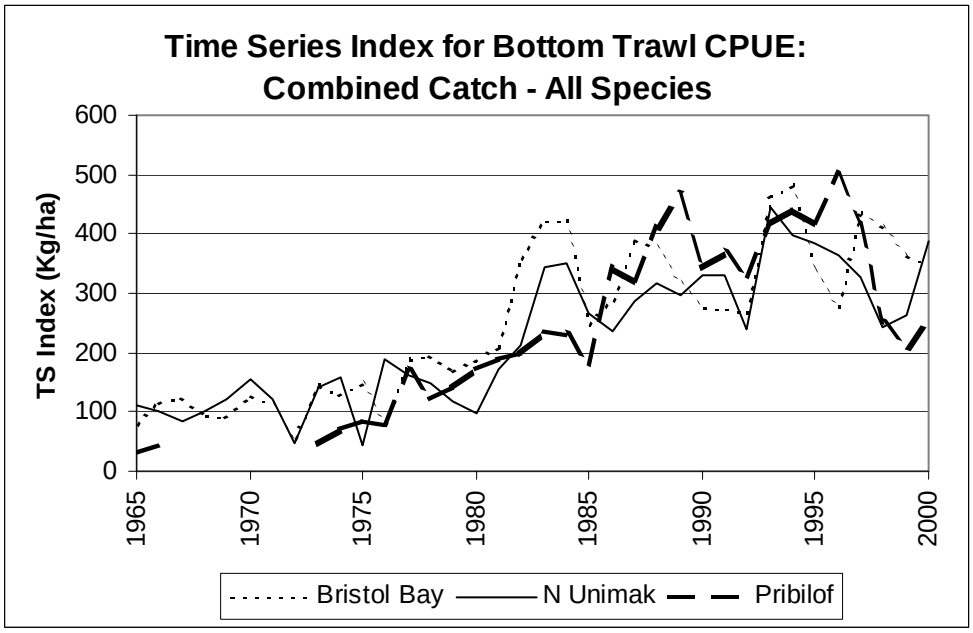


Figure 4.2 Total stock assessment biomass (mmt) and percentage of biomass by length class for major groundfish predators (top), walleye pollock (middle), and small flatfish (bottom). Biomass values come from age-structured stock assessment models as published in NPFMC (2005).

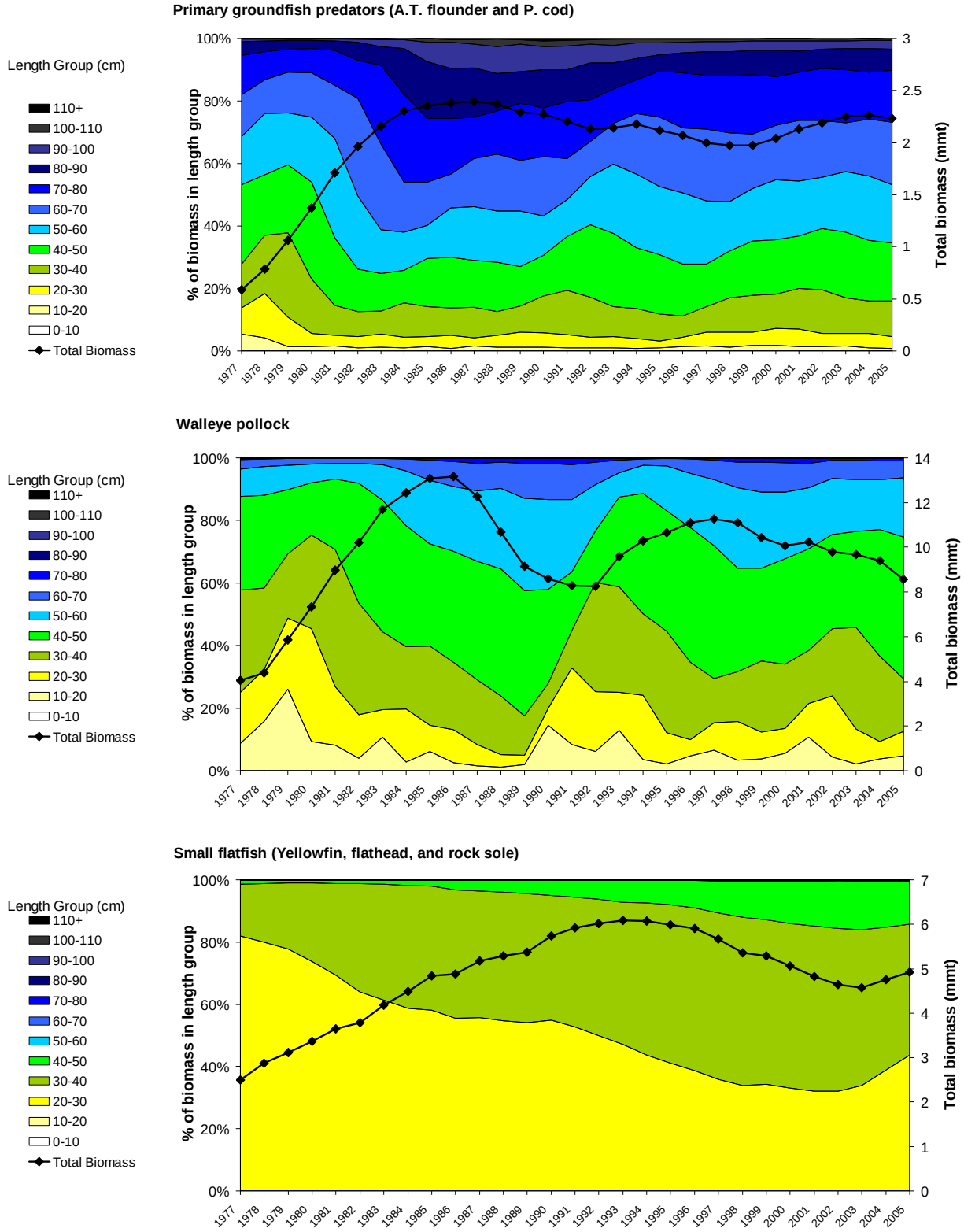


Figure 4.3. Average recruitment of EBS pollock at age 1 under different "regimes" based on estimates computed from within the stock assessment model. Vertical lines represent ± two standard deviations.

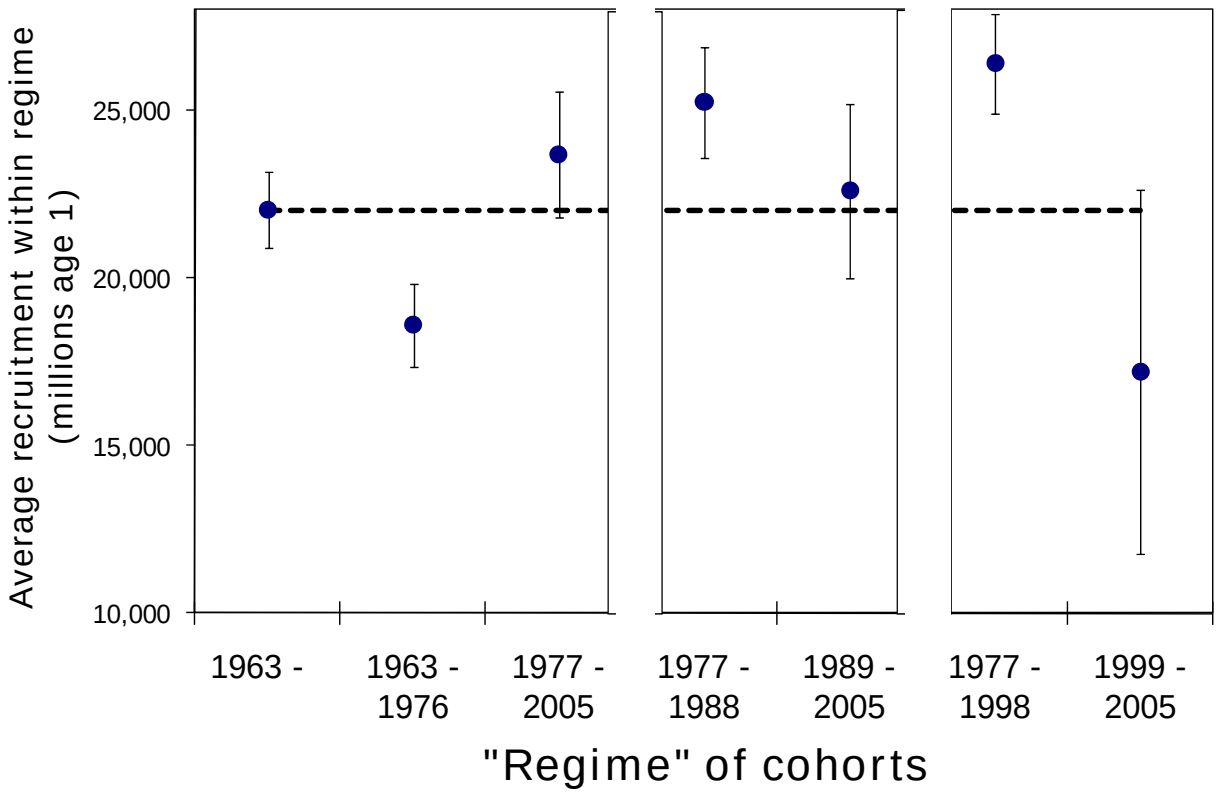


Figure 4.4. Estimated year class abundance for Gulf of Alaska pollock from Dorn et al. (2007). Vertical lines separate climate regimes with stong (solid line) and moderate (dashed line) signal strength (modified from Fritz and Hinckley 2005).

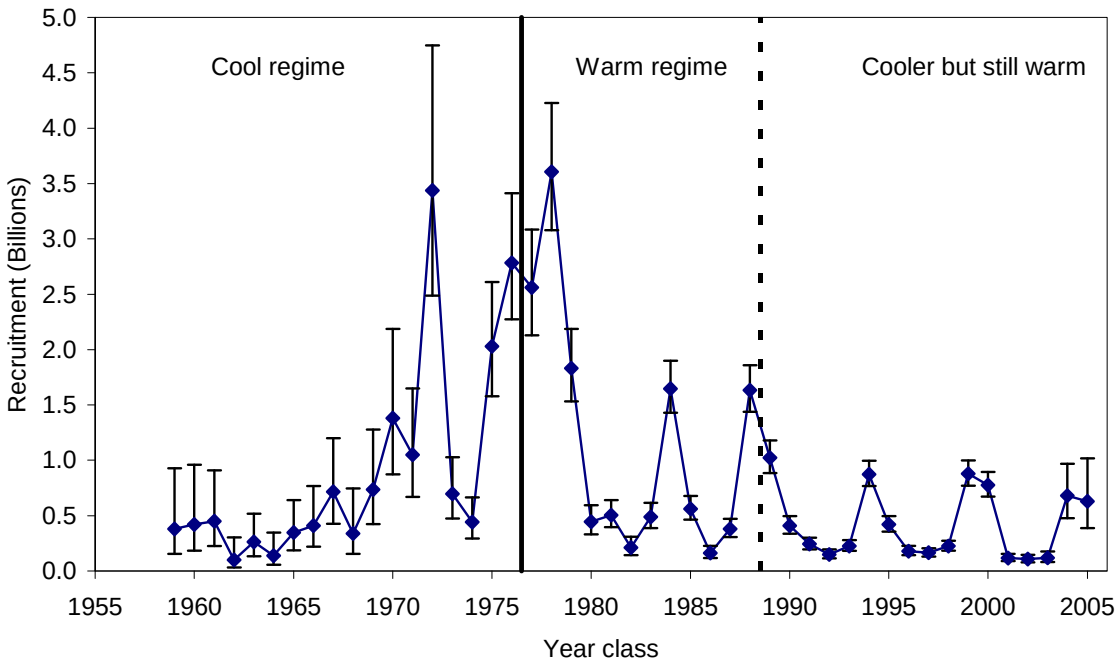


Figure 4.5. Annual harvest rates for pollock in 1994-2007 in the Bogoslof area, Gulf of Alaska, and eastern Bering Sea (left), and percent annual change in survey biomass during the same period (right).

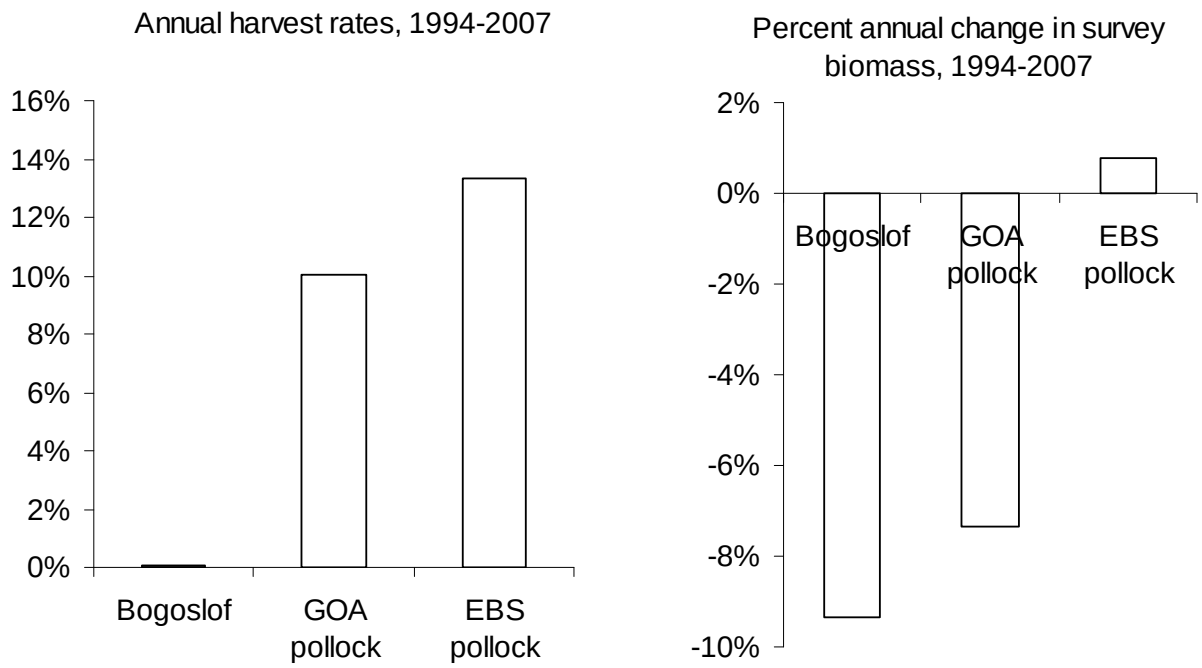


Figure 4.6. Spawning biomass trajectories for simulated unfished populations of Gulf of Alaska pollock compared to stock assessment model estimates.

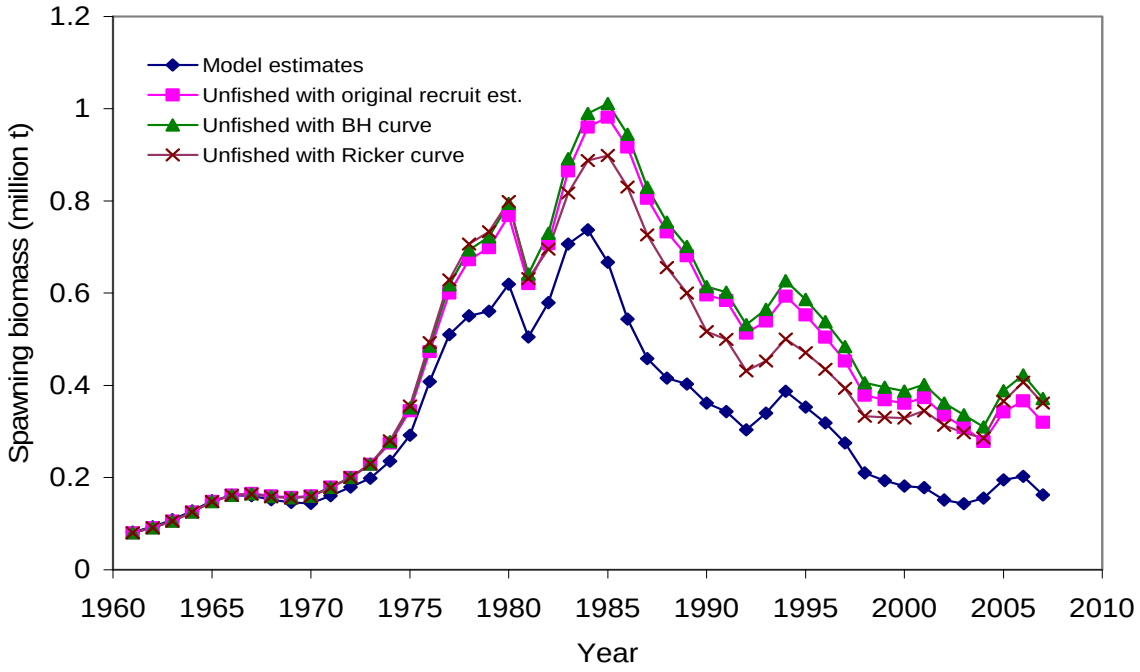


Figure 4.7. Example 1000-year simulation of spawning stock dynamics under current Gulf of Alaska pollock harvest control rule. Random recruitments were drawn from a lognormal distribution with the same variance and autocorrelation as the historical recruitment time series. The estimated 42-year trend from the assessment model is shown beginning in year 200 of the simulation.

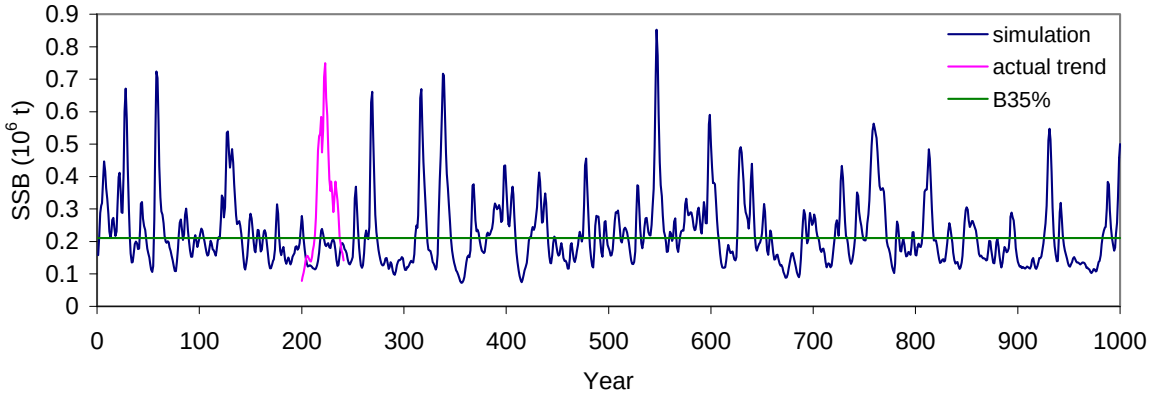


Figure 4.8. NMFS summer trawl survey gridded CPUE means by year for pollock, 1984-1991. The Steller sea lion critical habitat area is indicated by the line.

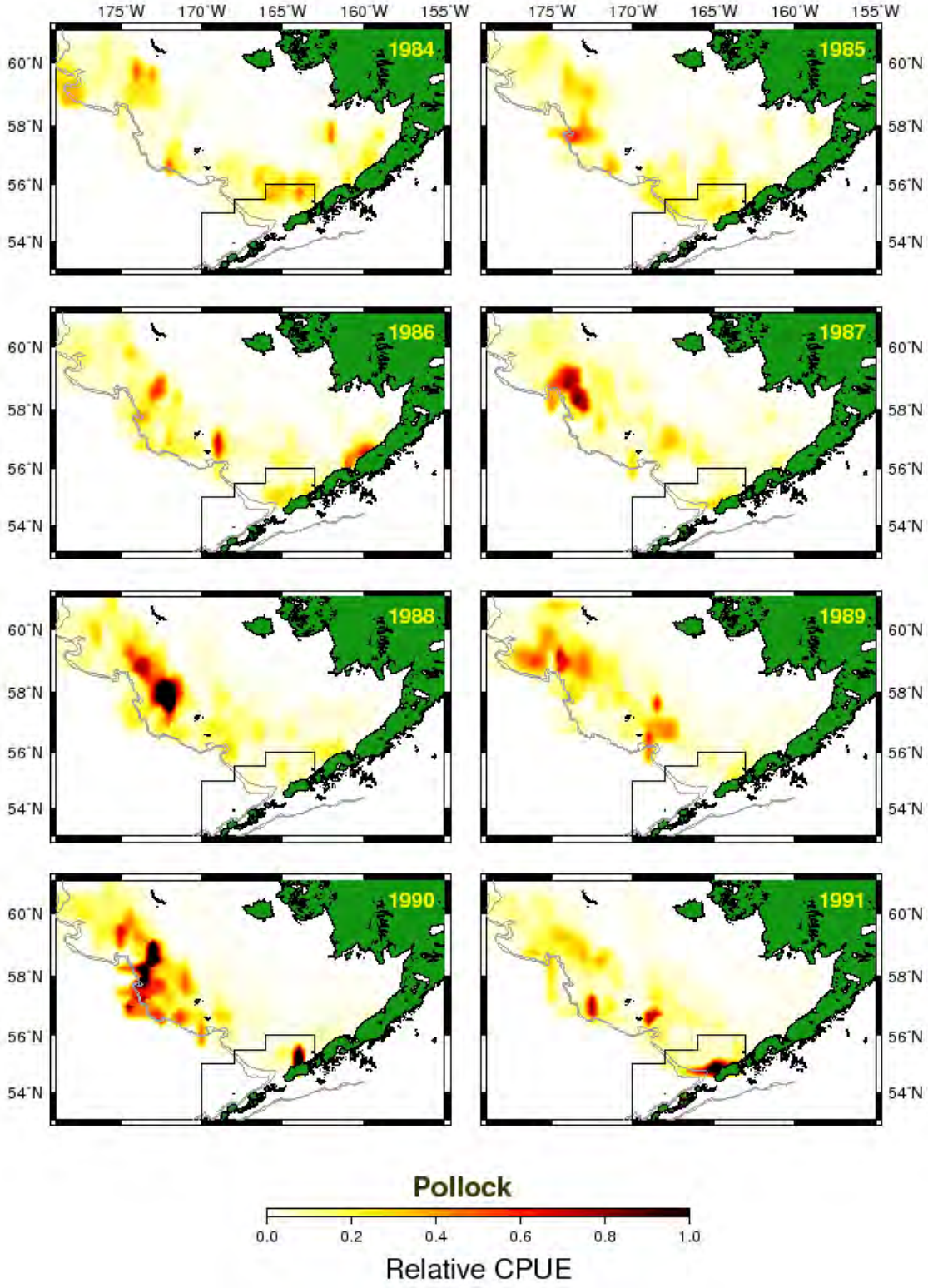


Figure 4.9 NMFS summer trawl survey gridded CPUE means by year for pollock, 1992-1999. The Steller sea lion critical habitat area is indicated by the line.

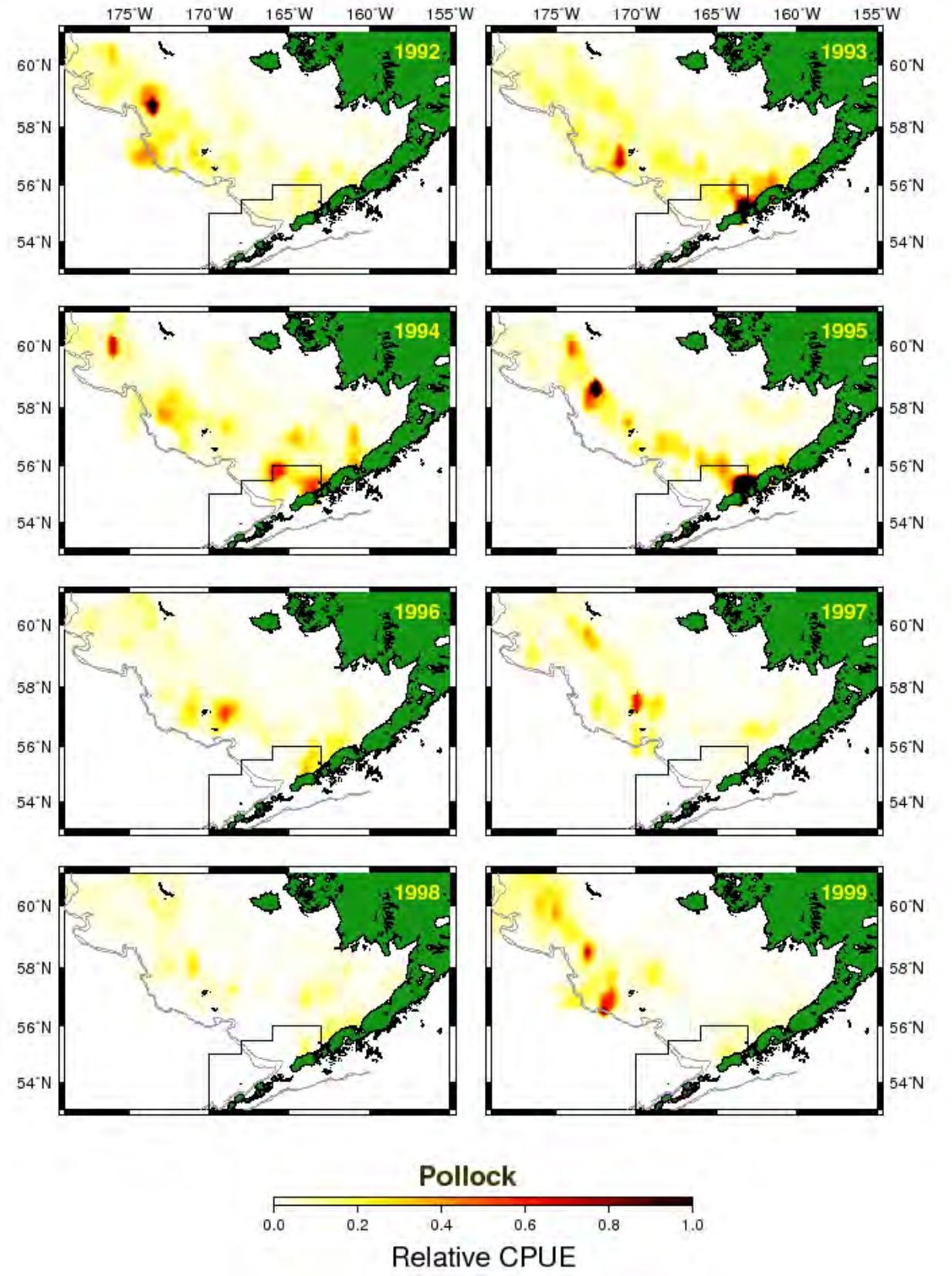


Figure 4.10 NMFS summer trawl survey gridded CPUE means by year for pollock, 2000-2007. The Steller sea lion critical habitat area is indicated by the line.

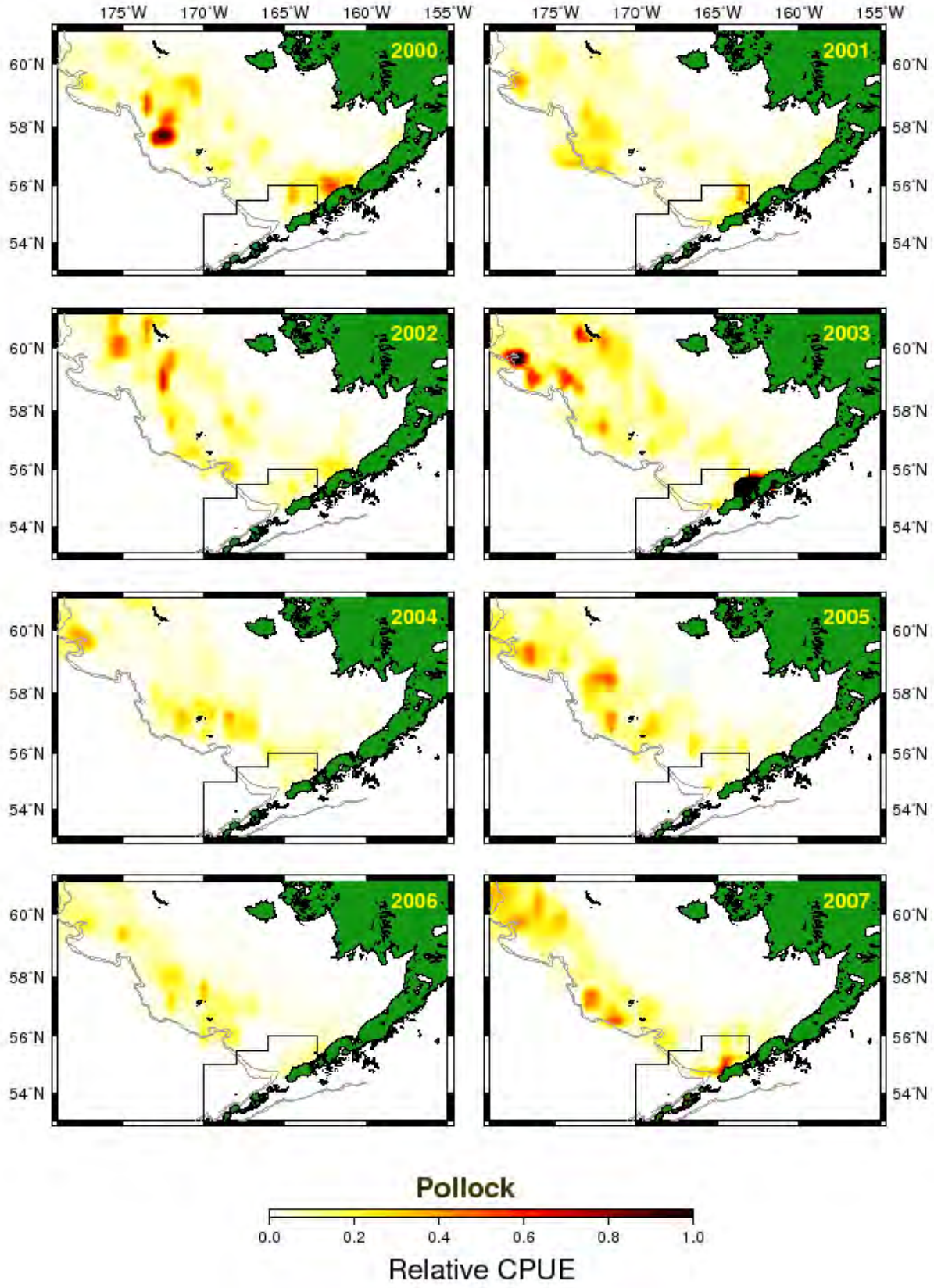


Figure 4.11 NMFS summer trawl survey gridded CPUE means by year for Pacific cod, 1982-1989. The Steller sea lion critical habitat area is indicated by the line.

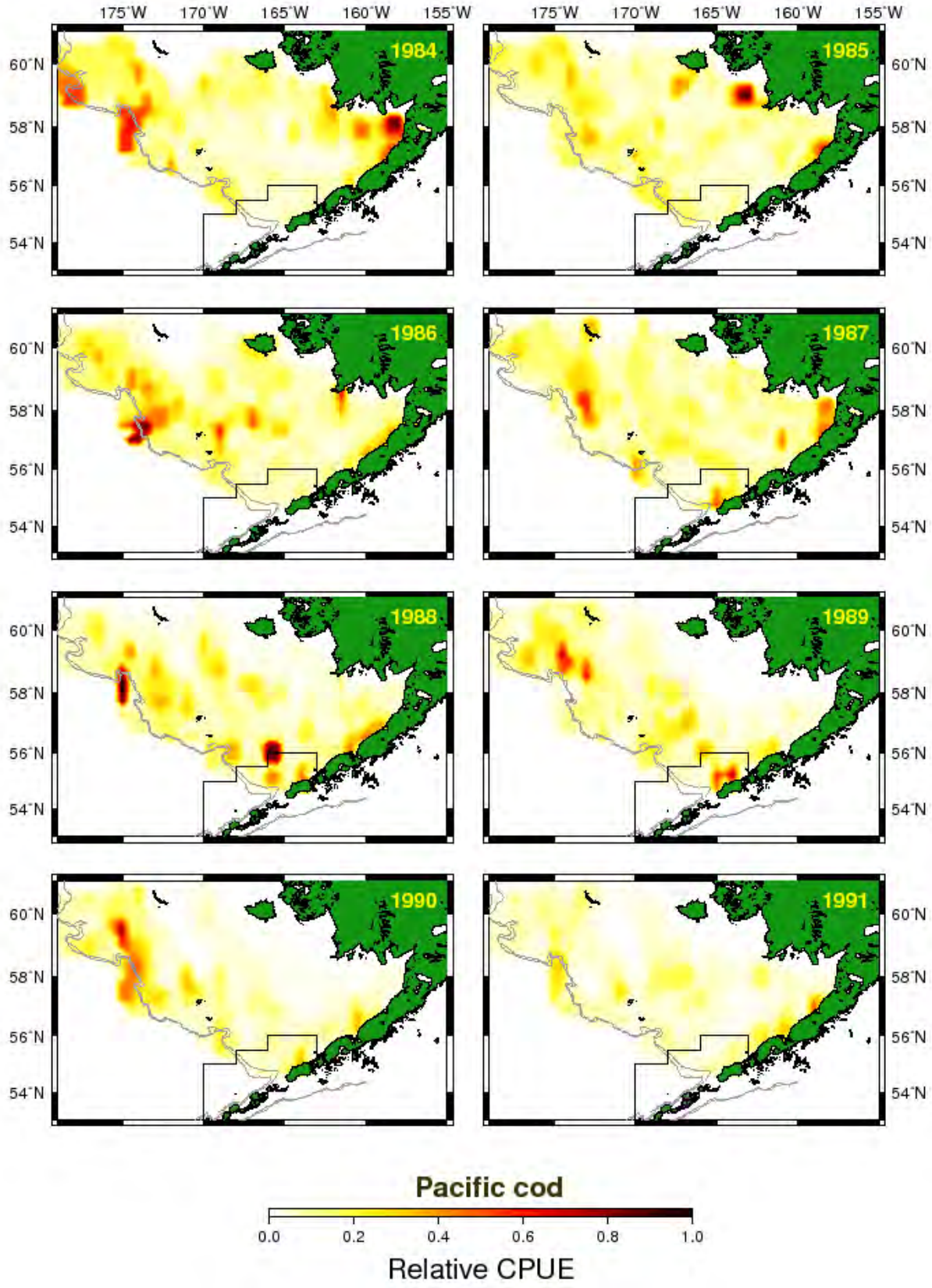


Figure 4.12 NMFS summer trawl survey gridded CPUE means by year for Pacific cod, 1990-1997. The Steller sea lion critical habitat area is indicated by the line.

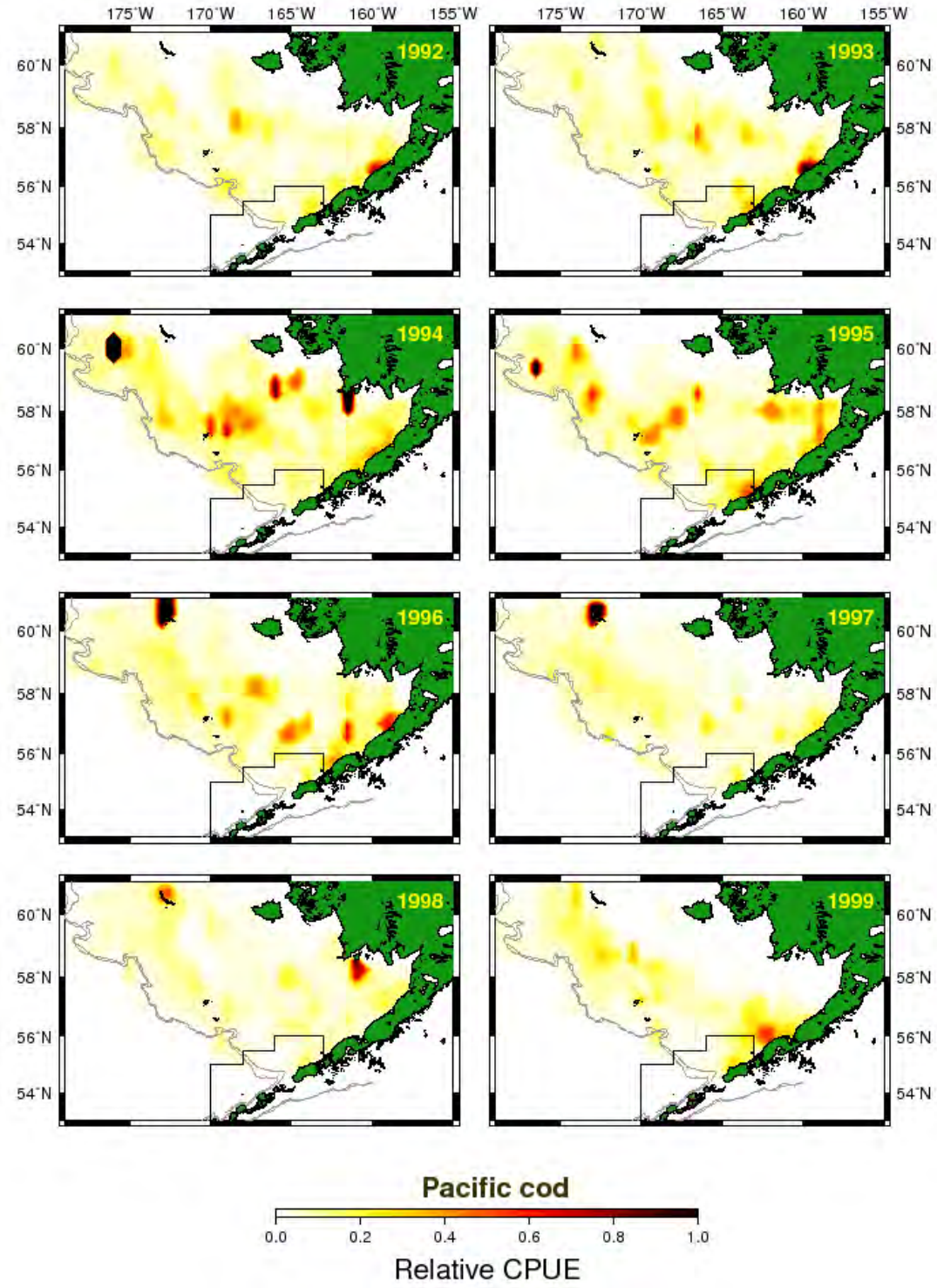


Figure 4.13 NMFS summer trawl survey gridded CPUE means by year for Pacific cod, 1996 - 2005. The Steller sea lion critical habitat area is indicated by the line.

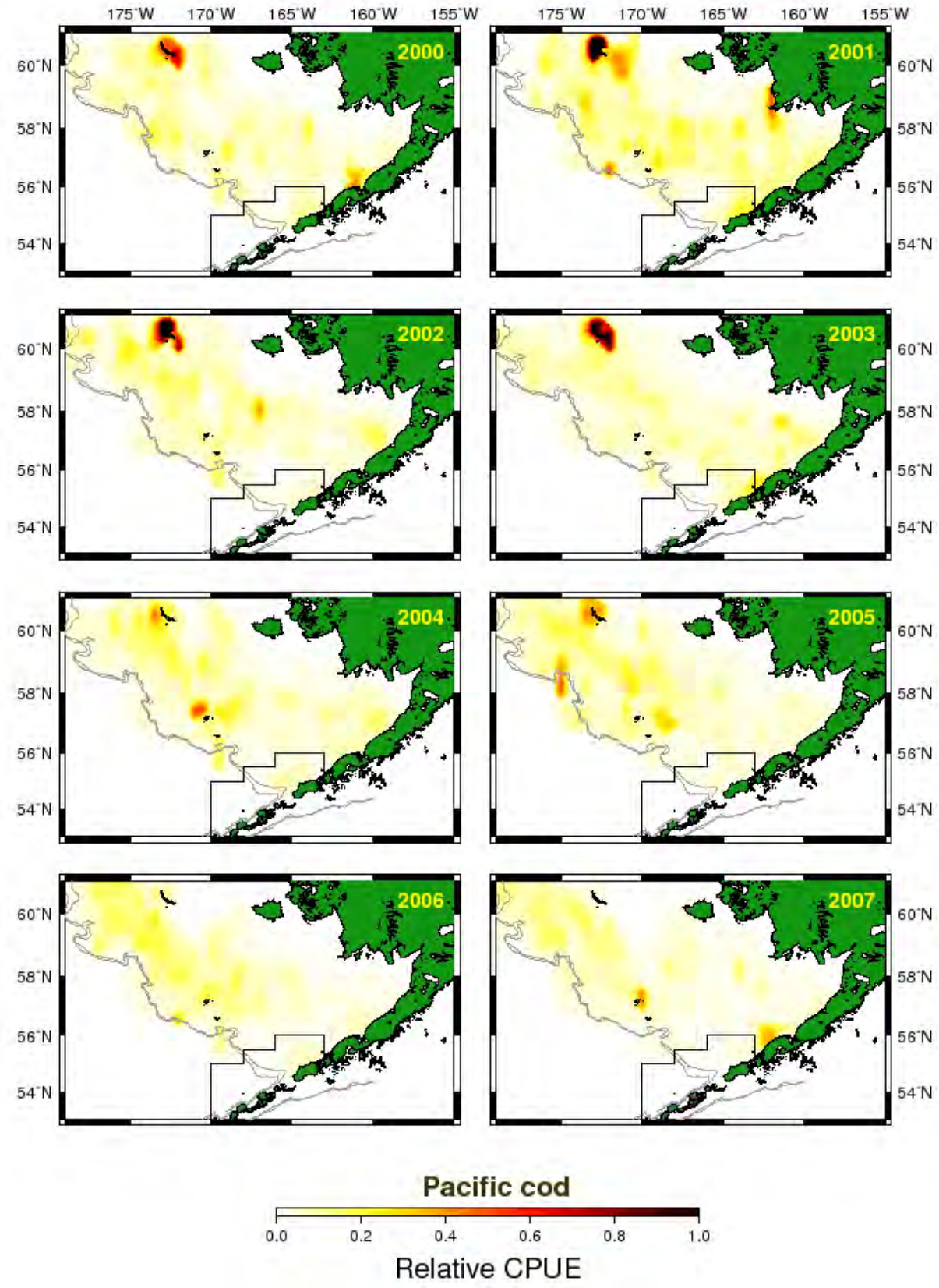


Figure 4.14 NMFS summer trawl survey mean CPUE weighted centers of abundance by year for pollock (top panel) and Pacific cod (bottom panel). The size of the year symbol is proportional to the mean CPUE for that year.

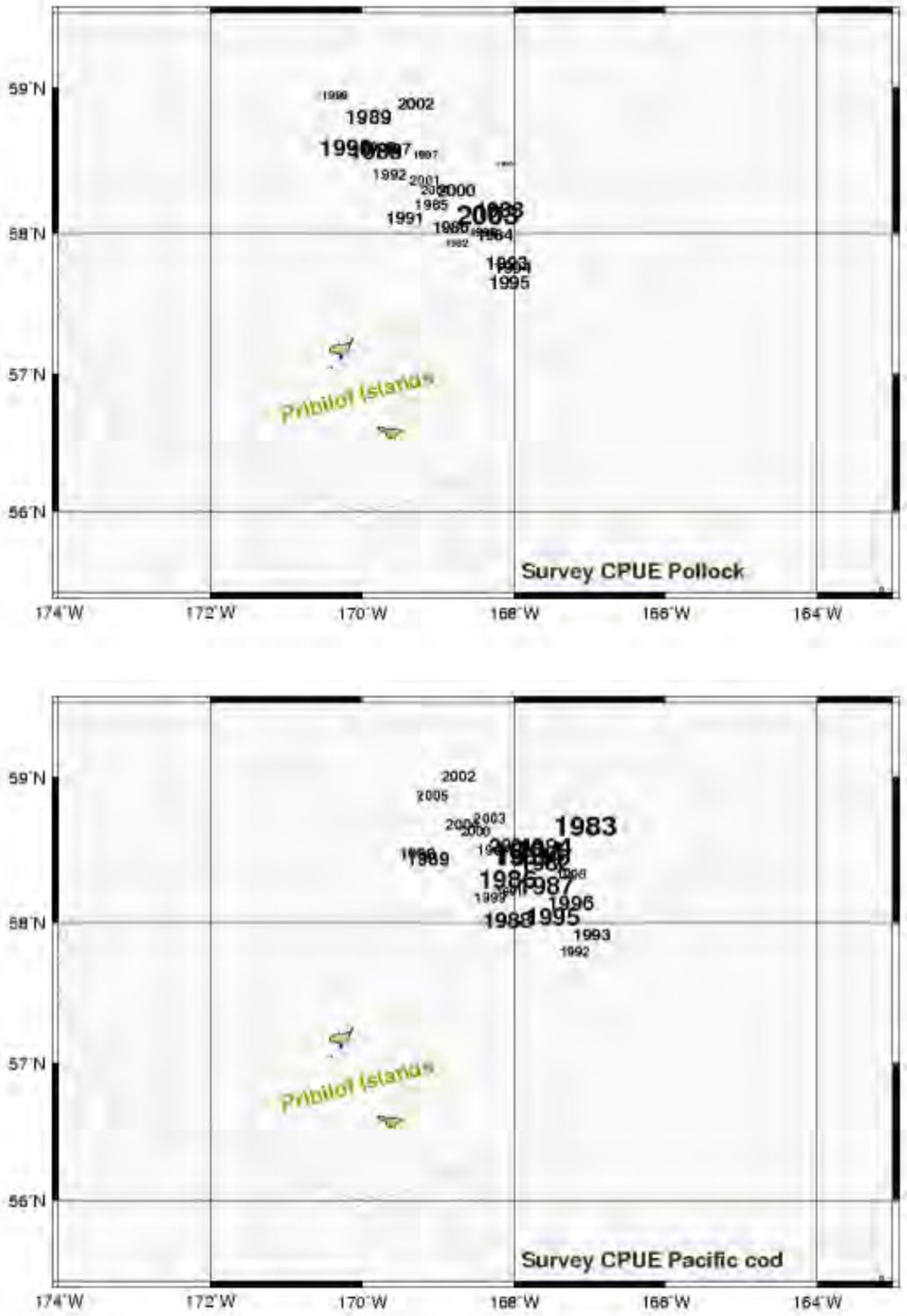
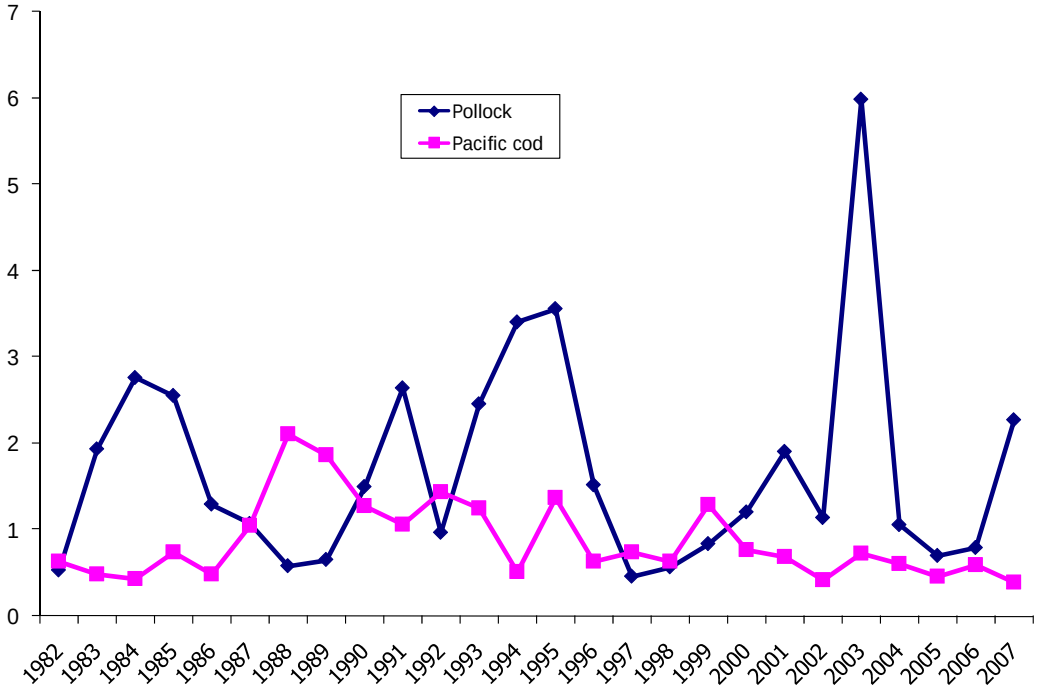


Figure 4.15 Ratio of average NMFS summer trawl survey CPUE **inside** Steller sea lion critical habitat over the average CPUE **outside** of critical habitat by year (top panel) and by 5-year periods (bottom panel) for pollock and Pacific cod.



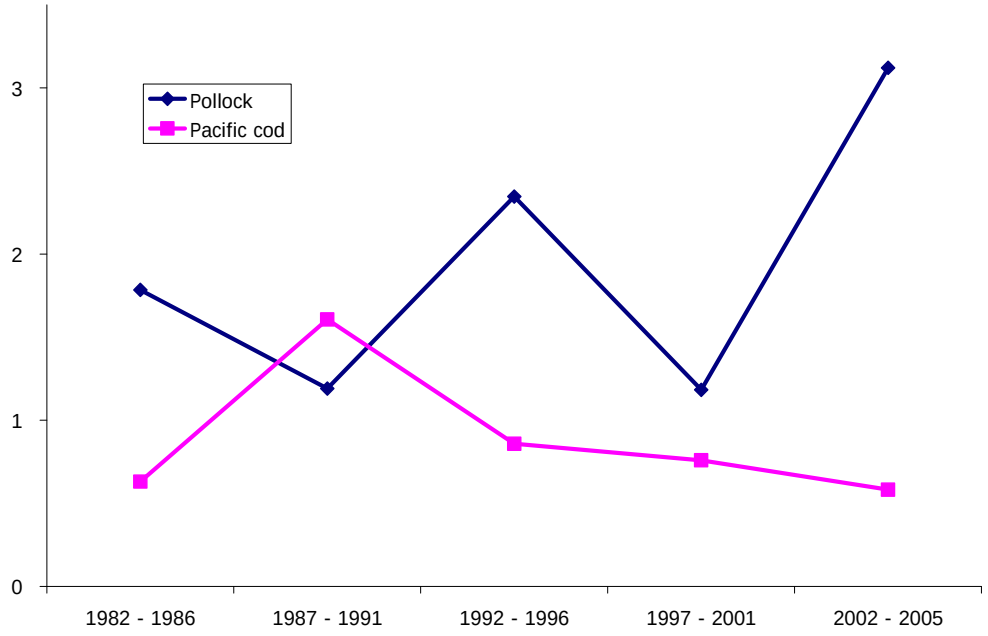


Figure 4.16 Bogoslof Island region pollock backscatter (sA) along tracklines during winter in three selected years.

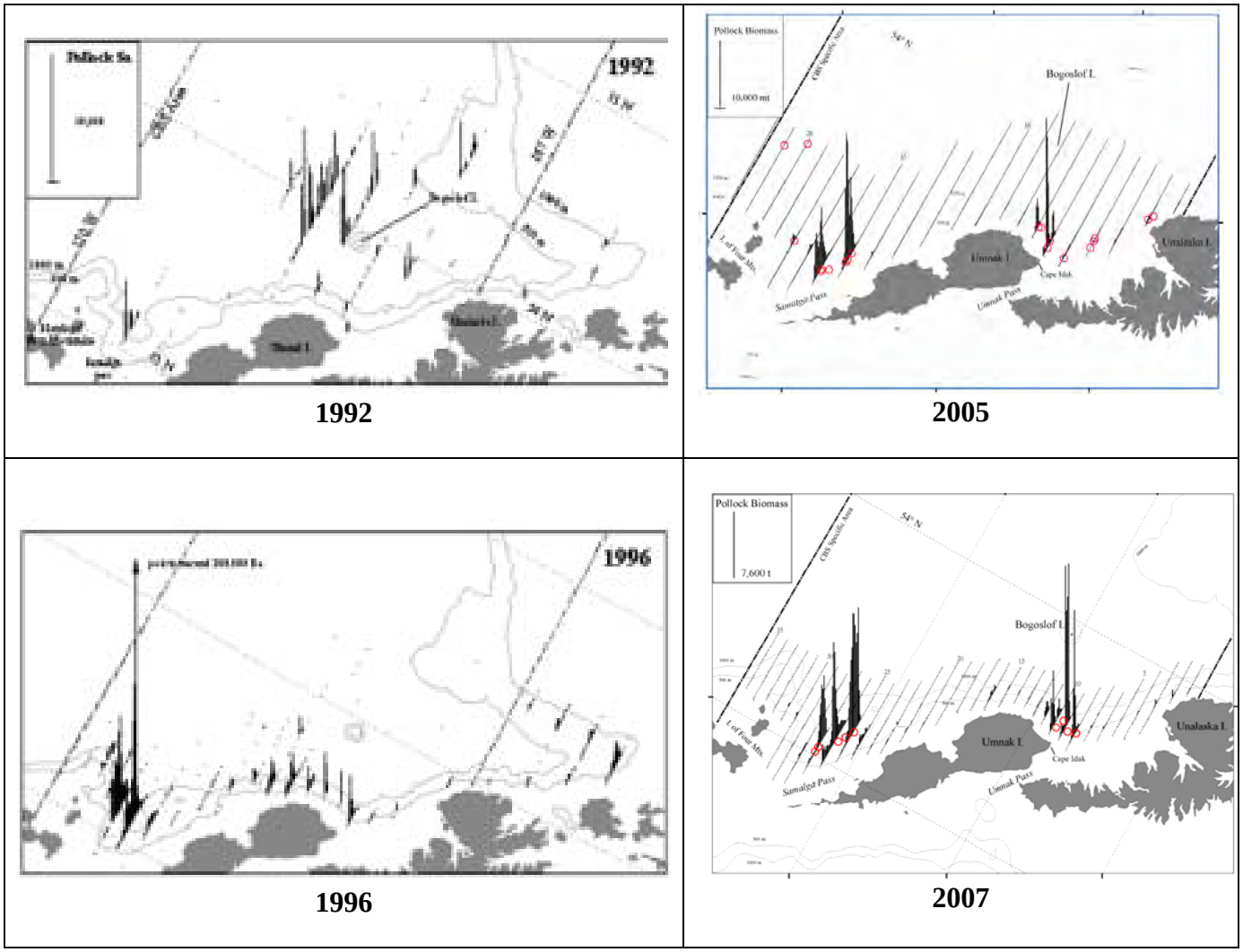


Figure 4.17 Atka mackerel Aleutian survey biomass estimates by area and survey year. Bars represent 95% confidence intervals based on sampling error (Lowe *et al.* 2007).

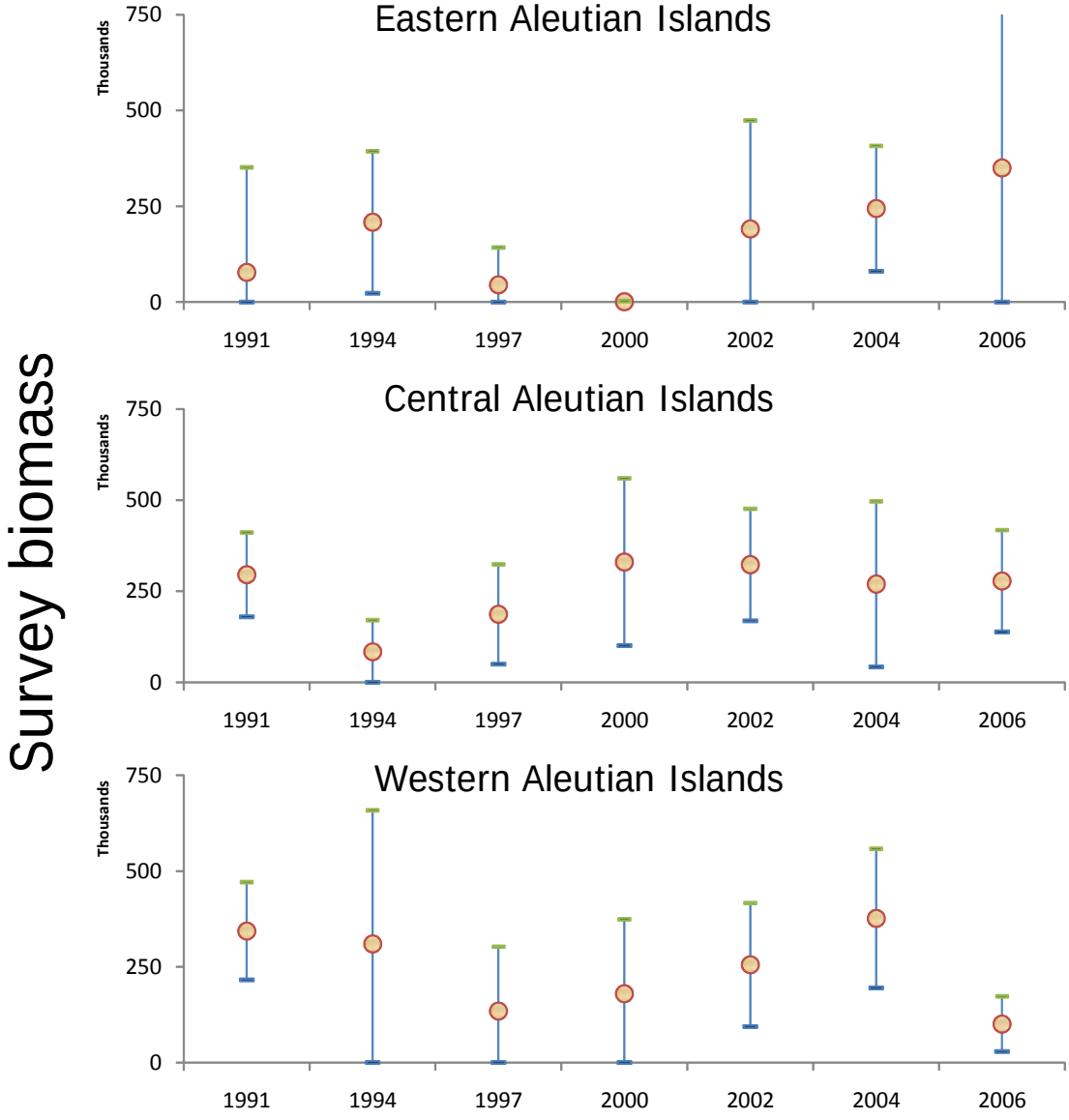


Figure 4.18 Atka mackerel Aleutian survey station CPUE (bar height), 2000-2006 (Lowe *et al*. 2007).

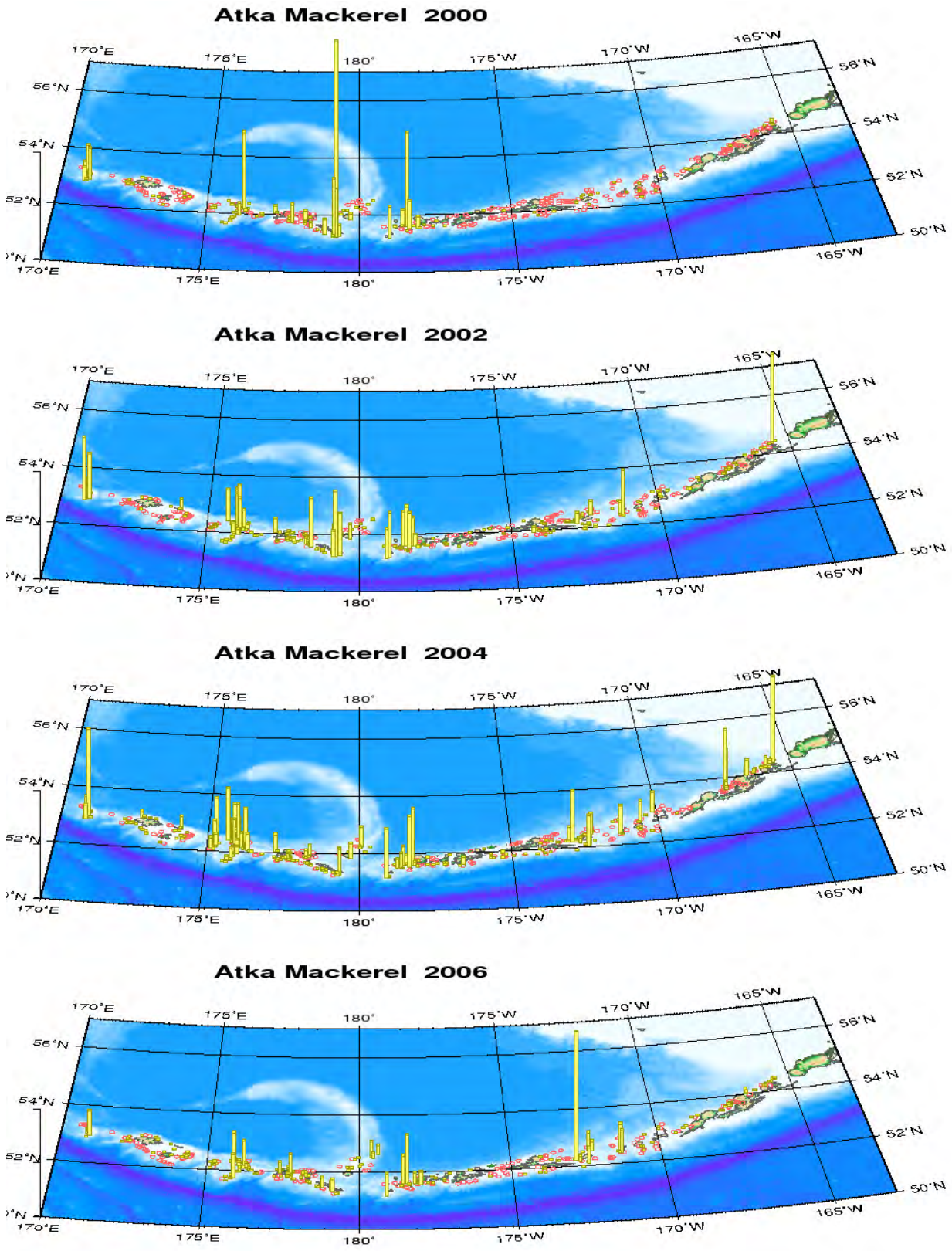


Figure 4.19 Pacific cod GOA survey station CPUE (bar height), 2001-2007.

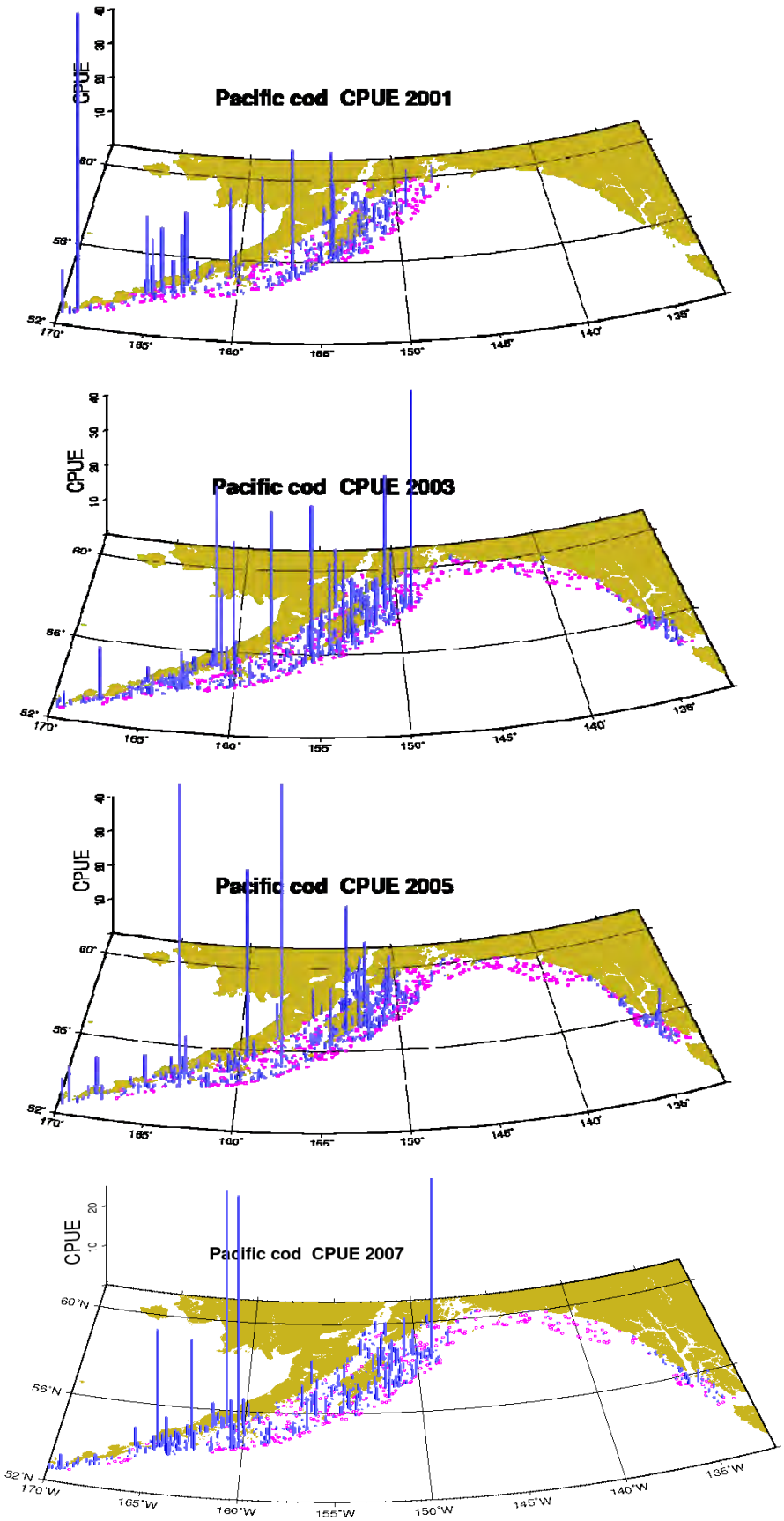
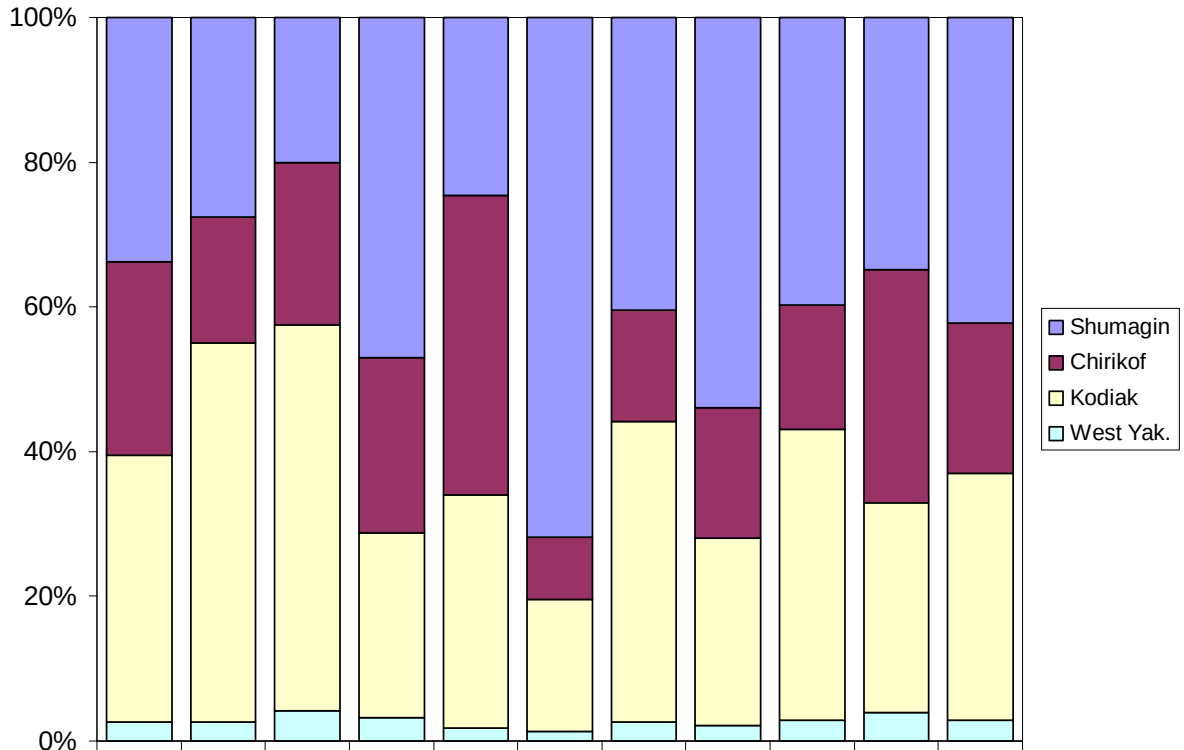
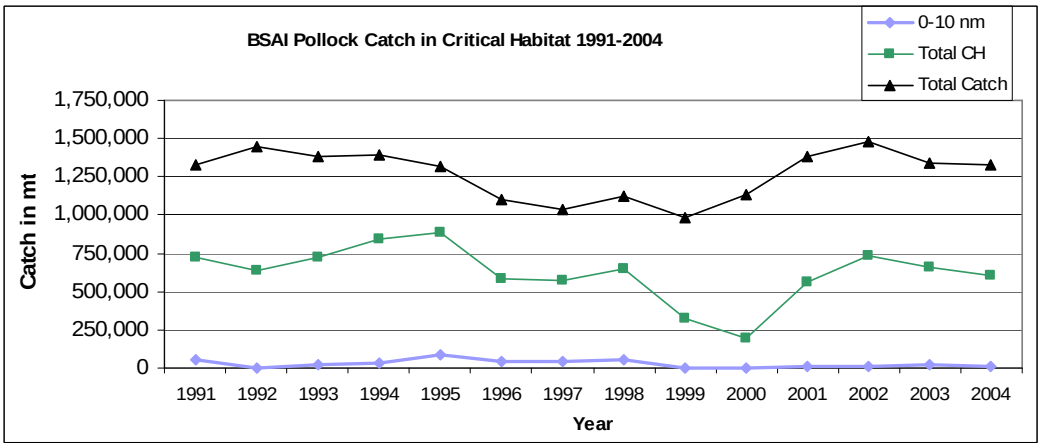


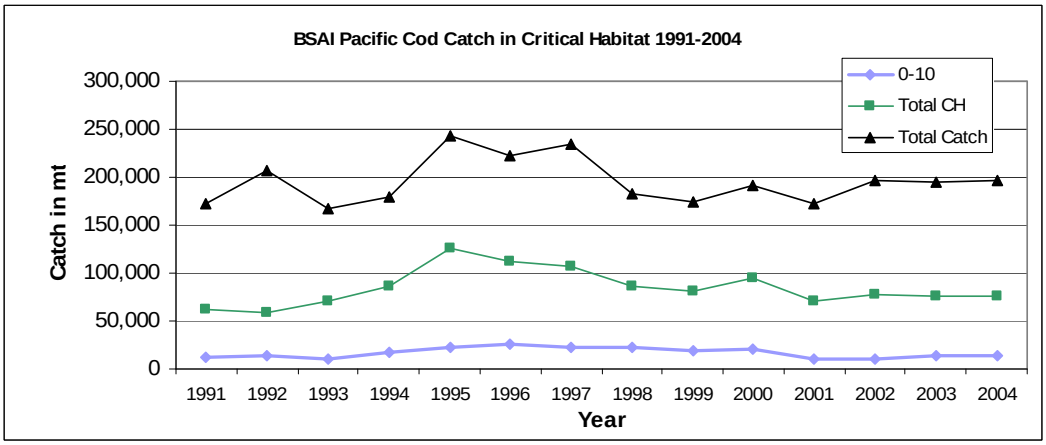
Figure 4.20 Percent distribution of Gulf of Alaska pollock biomass west of 140° W longitude. in NMFS bottom trawl surveys in 1984-2005. The percent in West Yakutat in 1984, 1987, and 2001 was set equal to the mean percent in 1990-99 (from Dorn *et al.* 2007).



	1984	1987	1990	1993	1996	1999	2001	2003	2005	2007	4 survey avg (2001-
Shumagin	33.82%	27.59%	20.03%	46.98%	24.60%	71.81%	40.40%	53.92%	39.70%	34.81%	42.21%
Chirikof	26.66%	17.38%	22.41%	24.32%	41.37%	8.57%	15.49%	18.09%	17.19%	32.26%	20.76%
Kodiak	36.90%	52.41%	53.43%	25.49%	32.20%	18.30%	41.49%	25.84%	40.19%	28.95%	34.12%
West Yak.	2.62%	2.62%	4.13%	3.21%	1.83%	1.32%	2.62%	2.15%	2.92%	3.98%	2.92%

Figure 4.21 Catch of Pollock, Pacific cod, and Atka mackerel in critical habitat in the Bering Sea Aleutian Islands (BSAI) from 1991-2004.





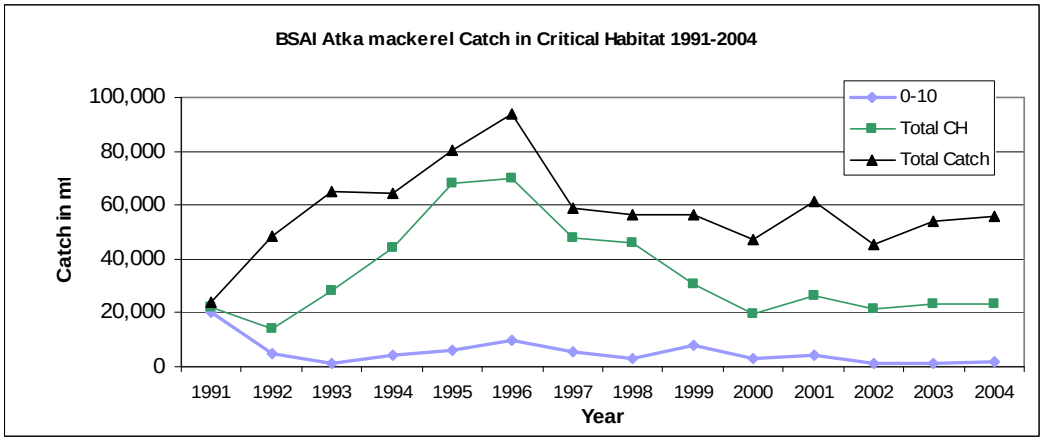
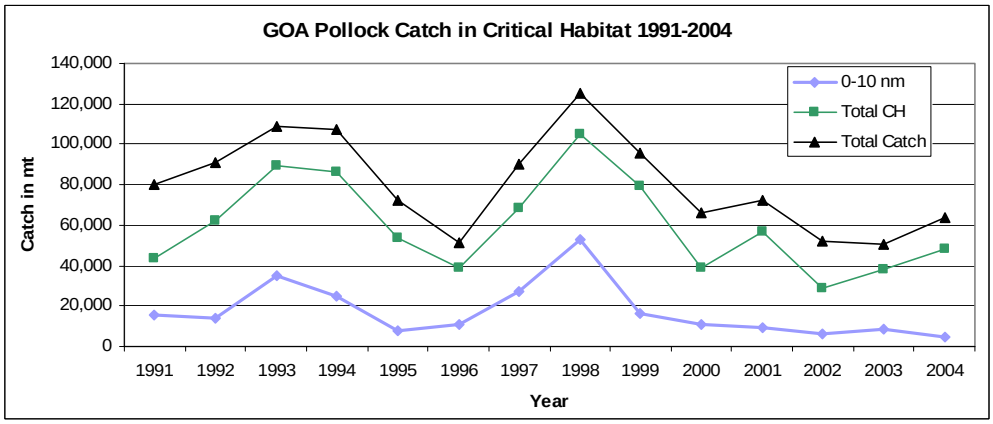


Figure 4.22 Catch of Pollock and Pacific cod in critical habitat in the Gulf of Alaska (GOA) from 1991-2004.



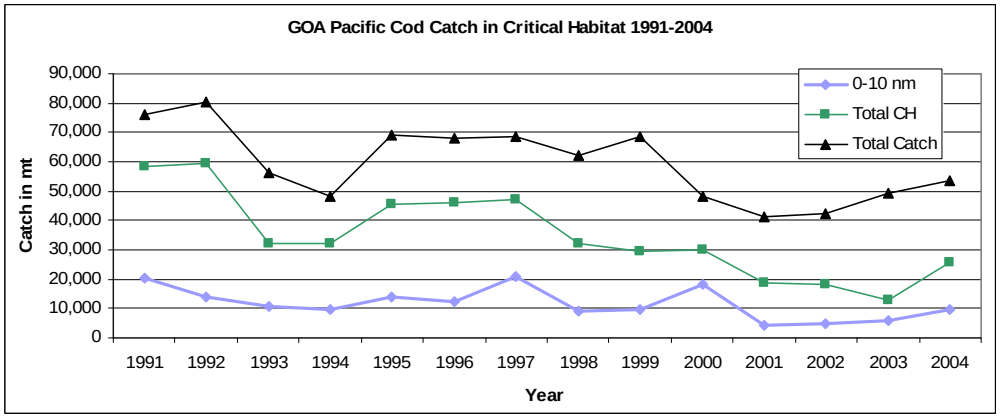


Figure 4.23 (A) Catch and estimated age 3+ biomass of walleye pollock, Pacific cod and Atka mackerel in the eastern Bering Sea, Aleutian Islands and "Donut Hole" (international waters of the central Bering Sea) from 1964-2004. Estimated biomass is from stock assessments and includes Bogoslof pollock biomass (Ianelli et al. 2005, Lowe et al. 2005, Thompson et al. 2005). (B) Annual harvest rates calculated from panel (A). (C). Catch and estimated age 3+ biomass of walleye pollock and Pacific cod in the Gulf of Alaska from 1964-2004. Estimated biomass is from stock assessments (Dorn et al. 2005, Thompson et al. 2005). Total catch as well as that portion removed from Steller sea lion critical habitat are shown. (D) Annual harvest rates for the GOA fisheries from panel (C).

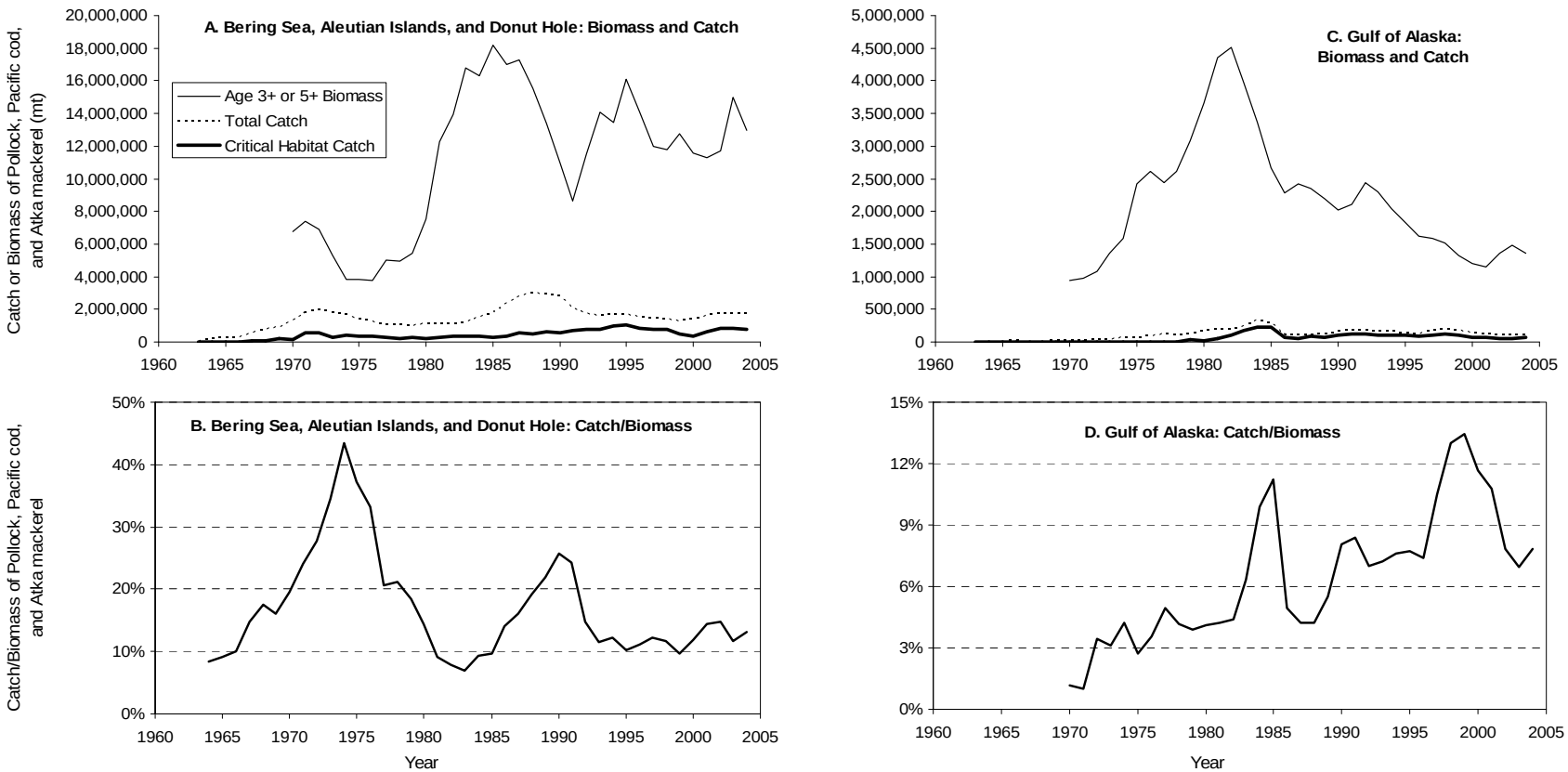


Figure 4.24 Exposure risk analysis schematic.

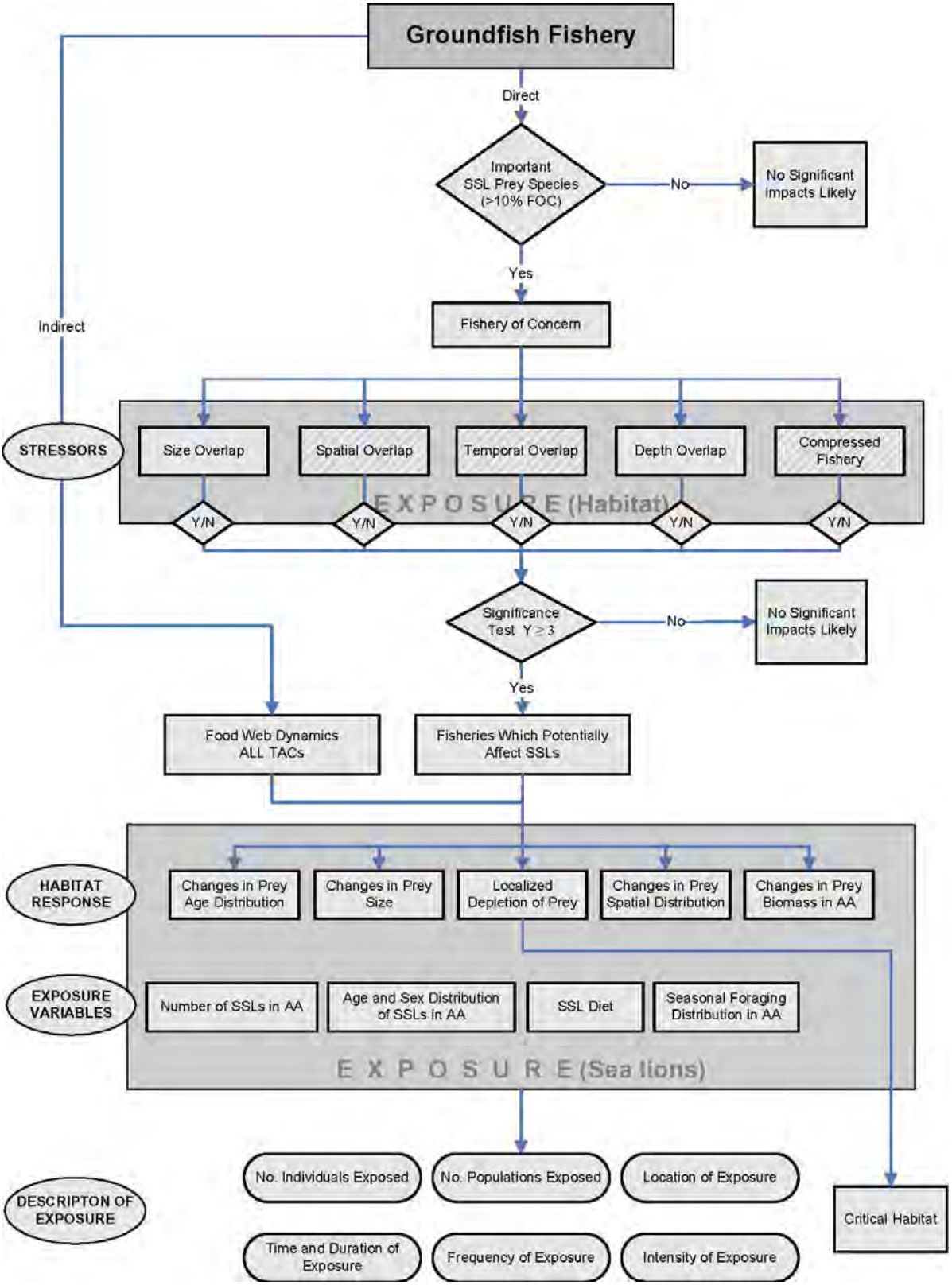


Figure 4.25 Schematic of a

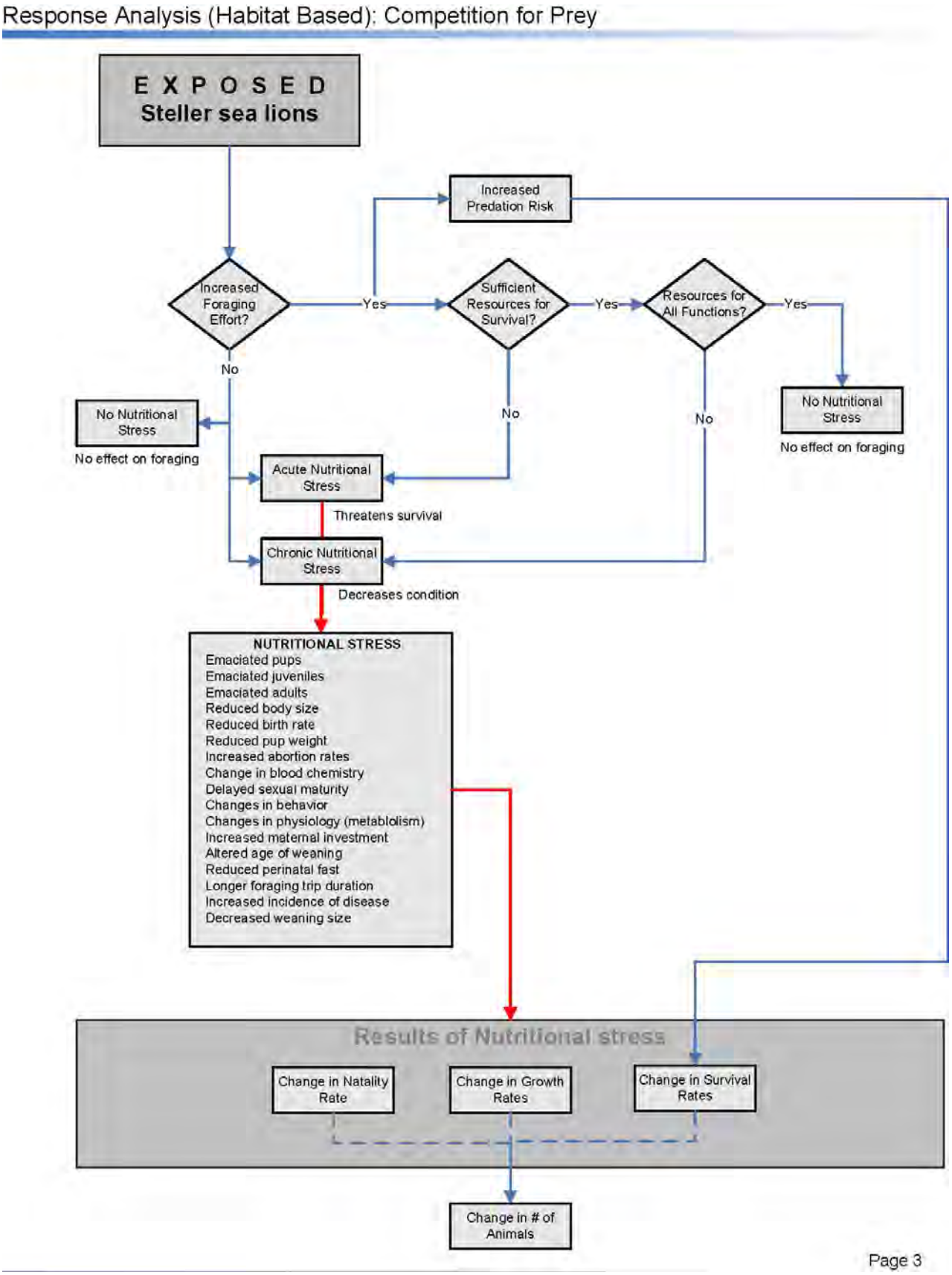


Figure 4.26: Areas used to designate "Expanded Observer Data" as catch taken in the Bering Sea (BS), Gulf of Alaska (GOA), or the Aleutian Islands (AI) regions.

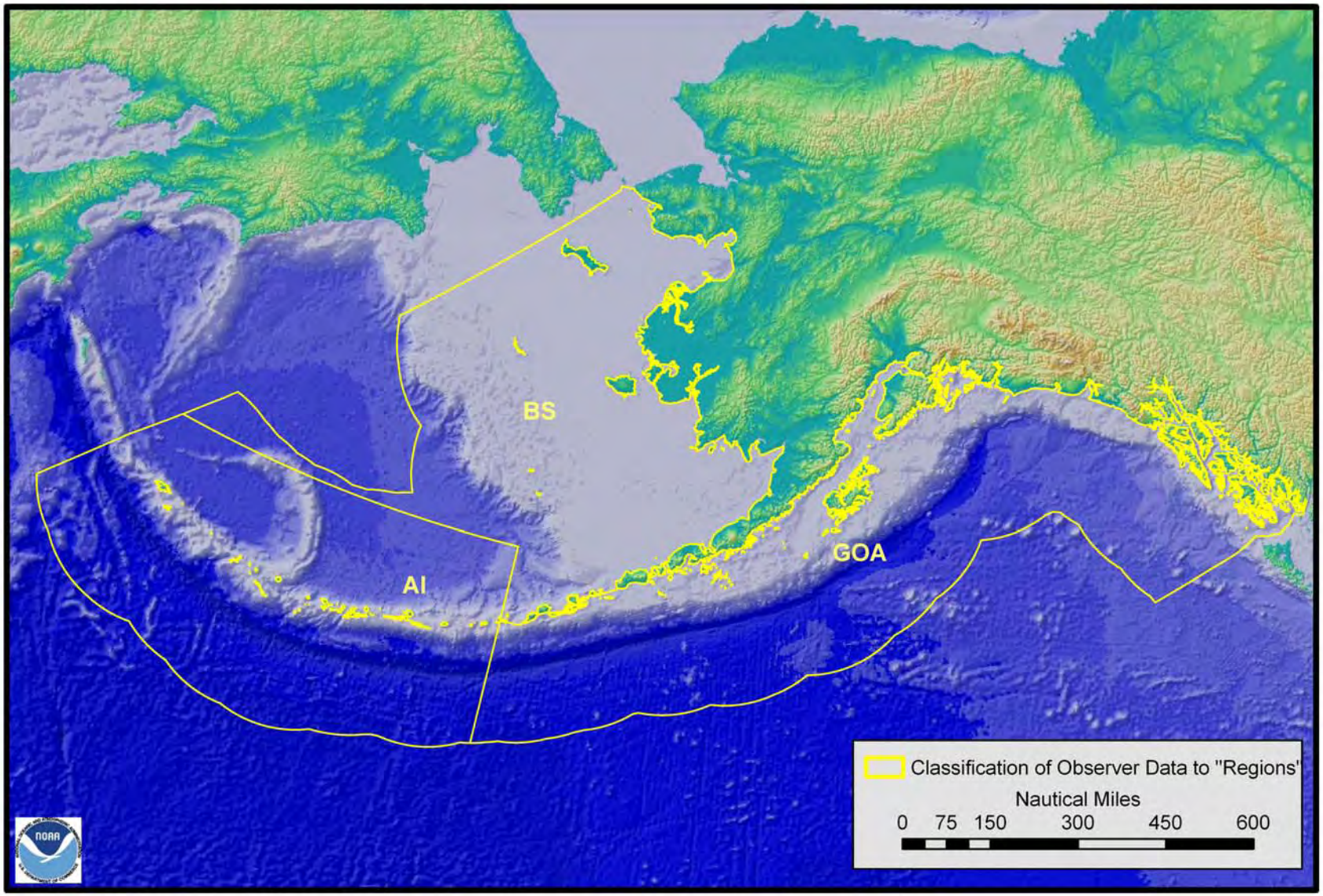
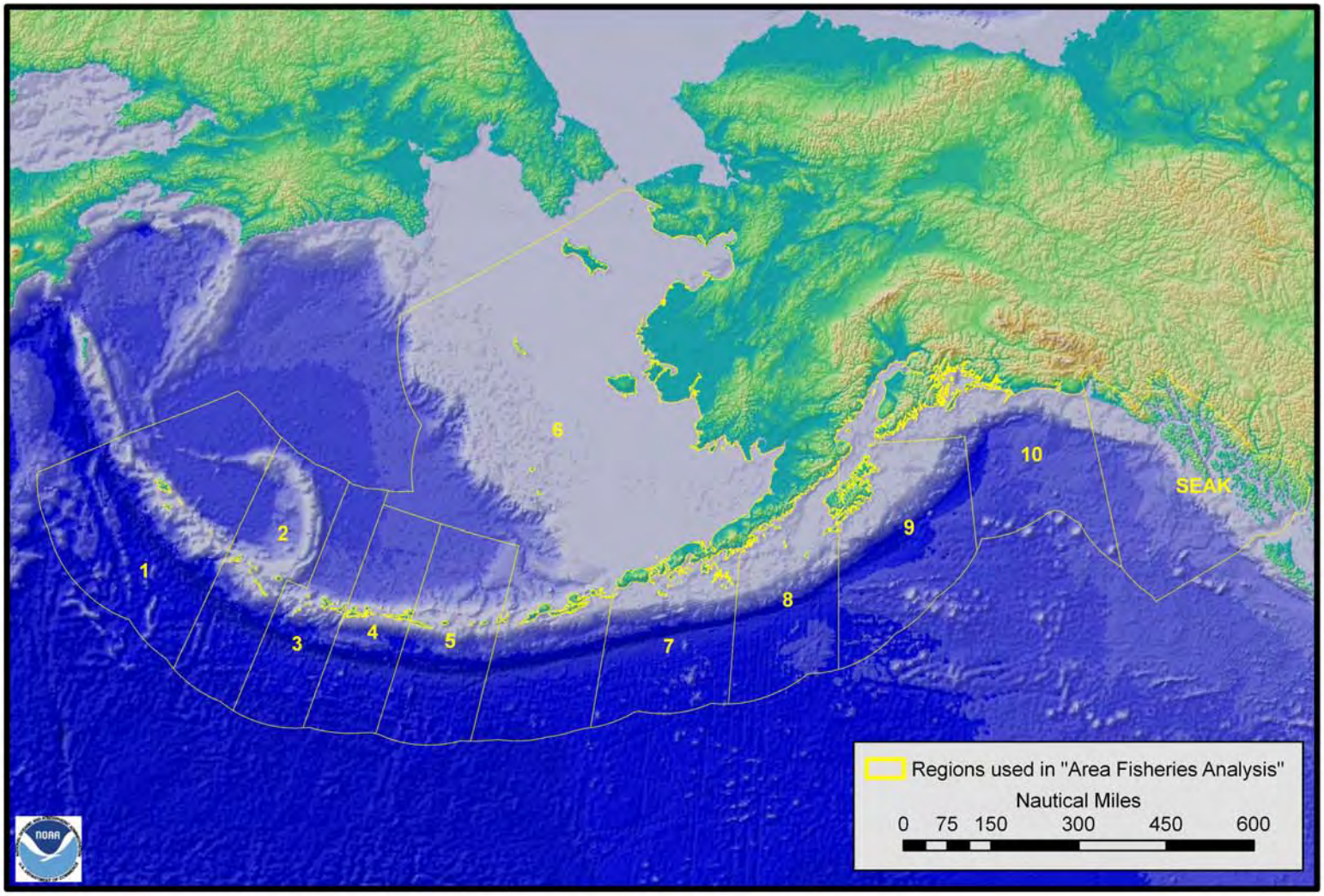


Figure 4.27: Polygons used in the “RCA” analysis to classify expanded observer fisheries catch data.



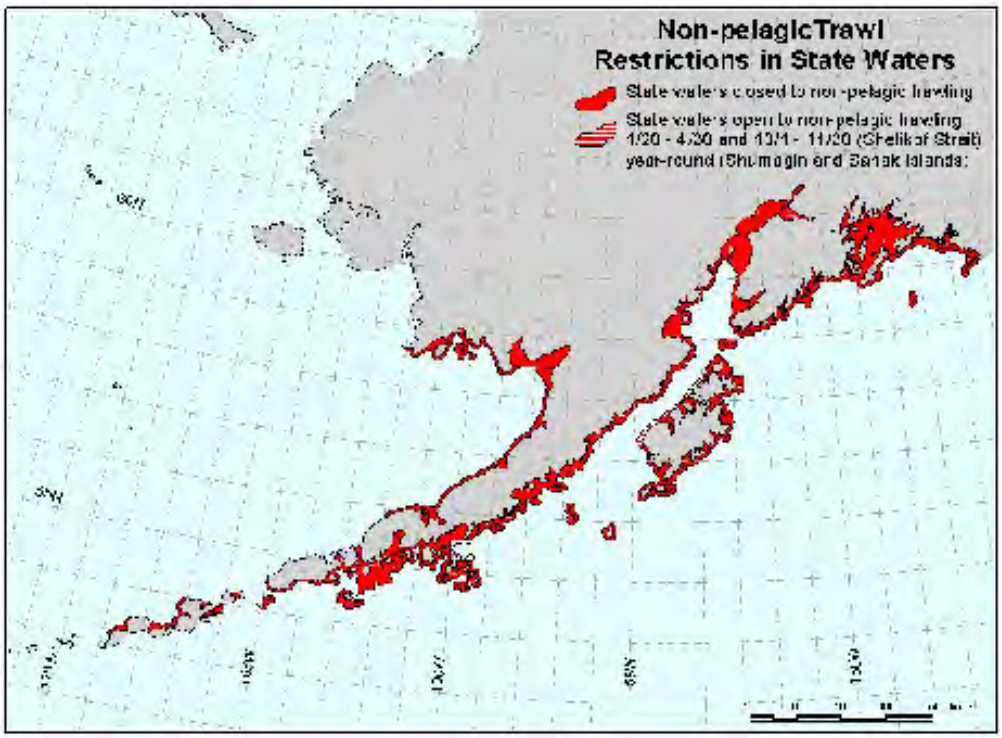


Figure 4.28 Non-pelagic trawl restrictions in state waters west of 144W.

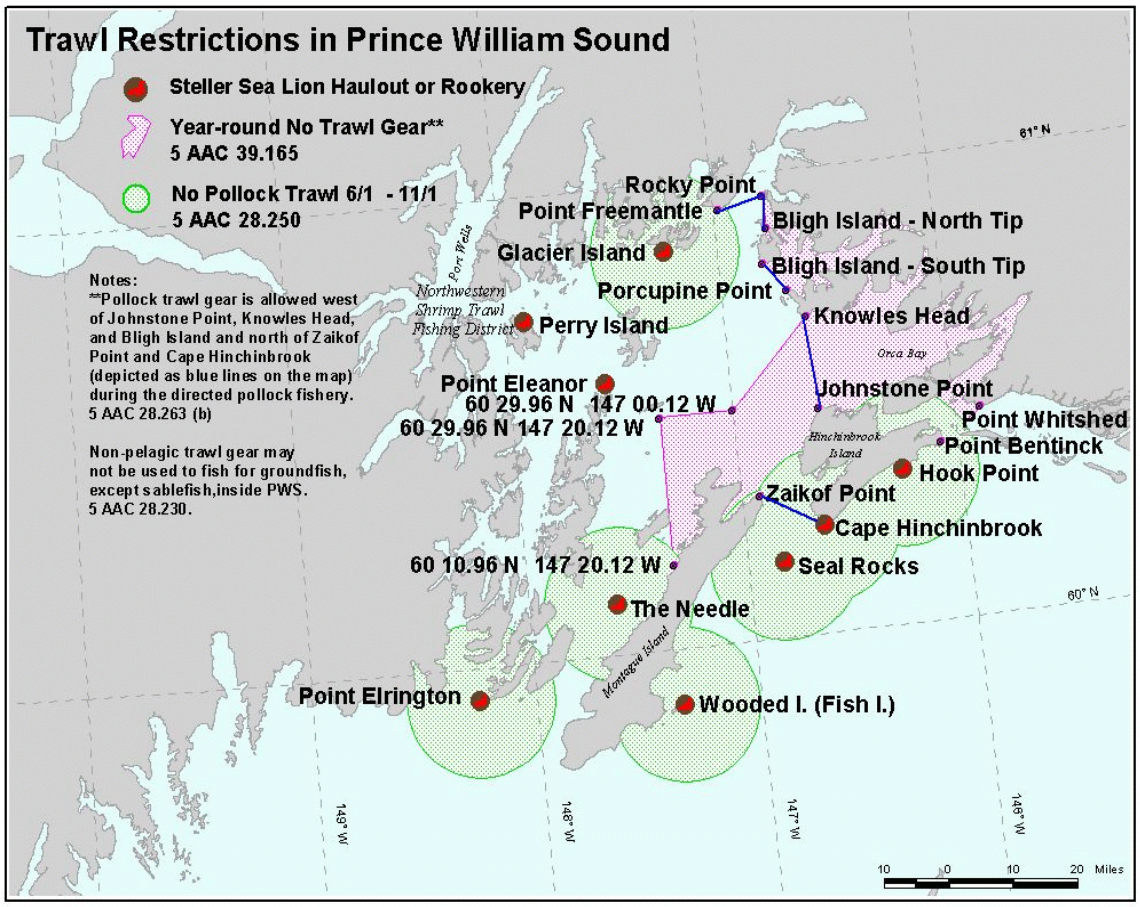


Figure 4.29 Year-round and seasonal trawl restrictions in Prince William Sound.

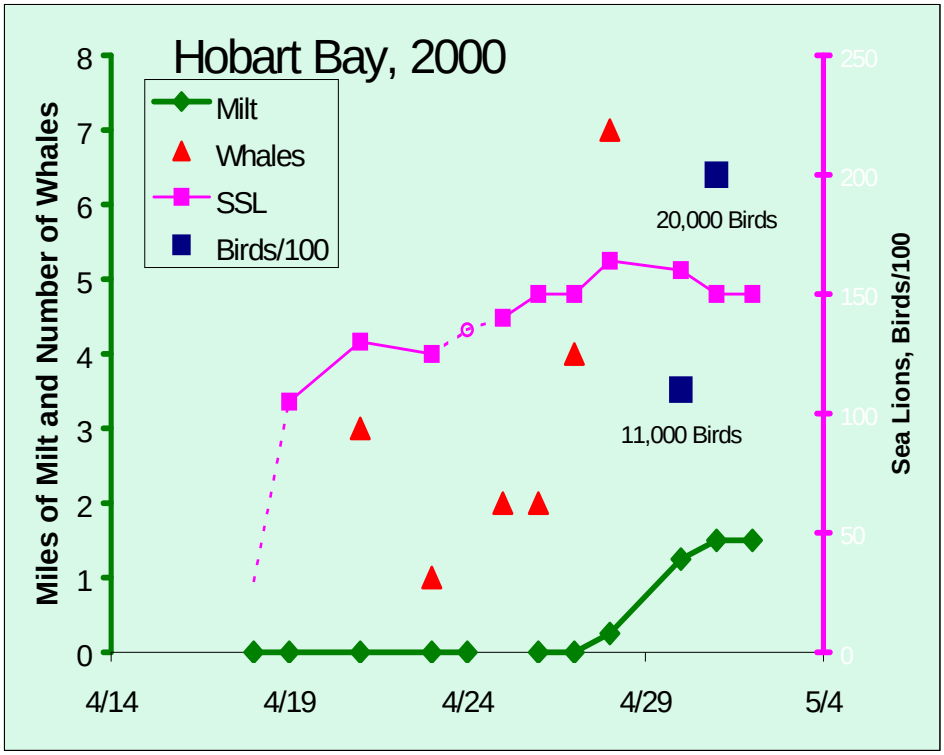


Figure 4.30 Response of marine mammals to herring in Hobart Bay, 2000.

Figure 4.31(from NMFS 2001)

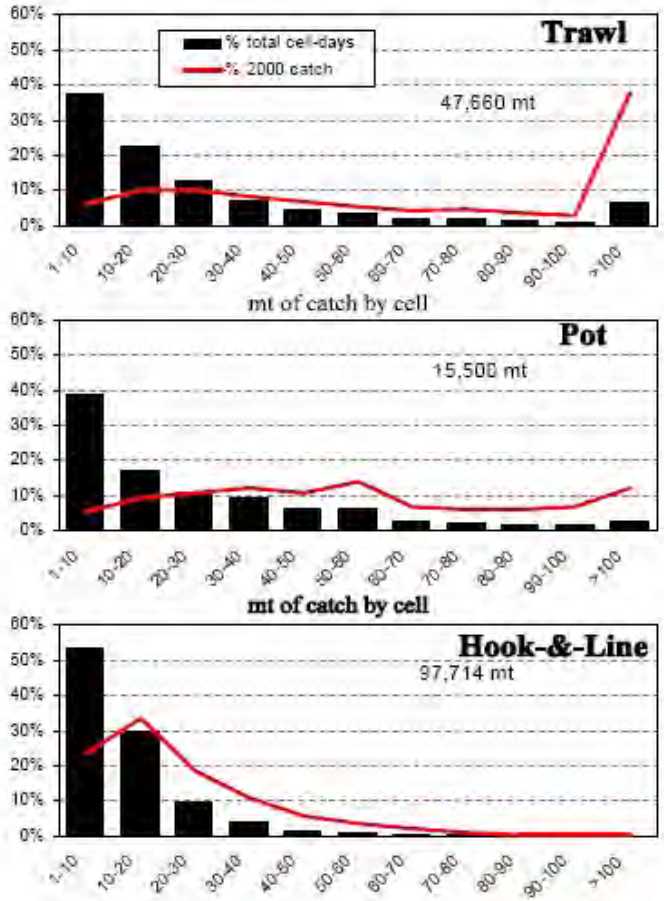


Figure 5.1 Distribution of catch in the BSAI Pacific cod fishery in 2000. The x-axis represents the rate of catch in mt broken out in areas of 100 km². Bars represent the relative amount of days in which 100 km² cells had a particular catch rate. The line graph represents the cumulative percentage of the total catch in each bin.

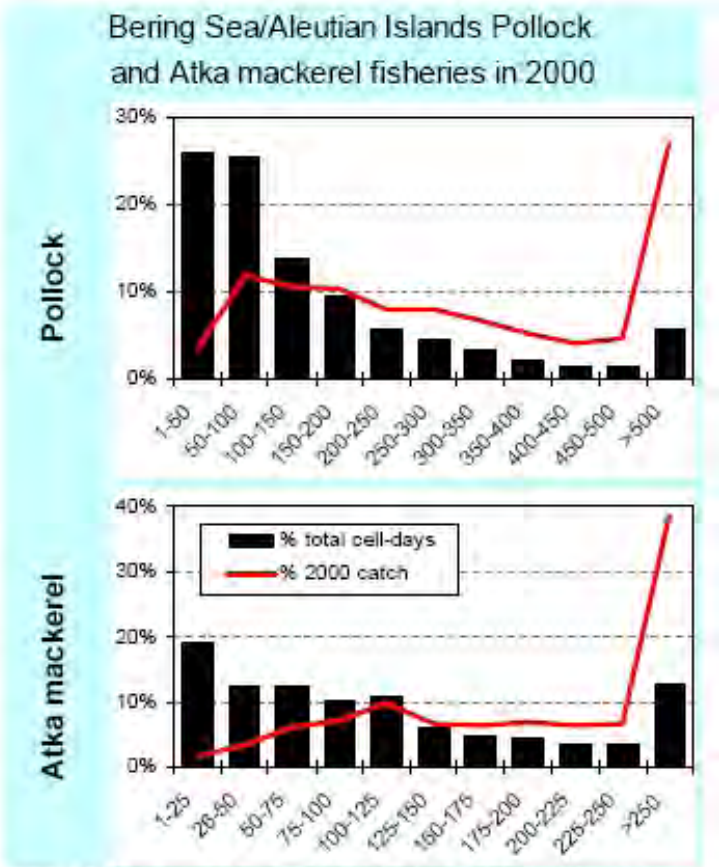


Figure 5.2. Distribution of catch in the BSAI pollock and Atka mackerel fisheries in 2000. The x-axis represents the rate of catch in mt broken out in areas of 100 km². Bars represent the relative amount of days in which 100 km² cells had a particular catch rate. The line graph represents the cumulative percentage of the total catch in each bin.

Figure 4.32 Theoretical unfished spawning biomass and numbers at age (top panel) based on EBS pollock stock dynamics. Theoretical spawning biomass at age under no fishing compared to expected spawning biomass at age under fishing at $F_{40\%}$ (middle panel). The bottom panel represents the 2005 spawning biomass at age (in white) compared to what would be expected had no fishing occurred (dark bars).

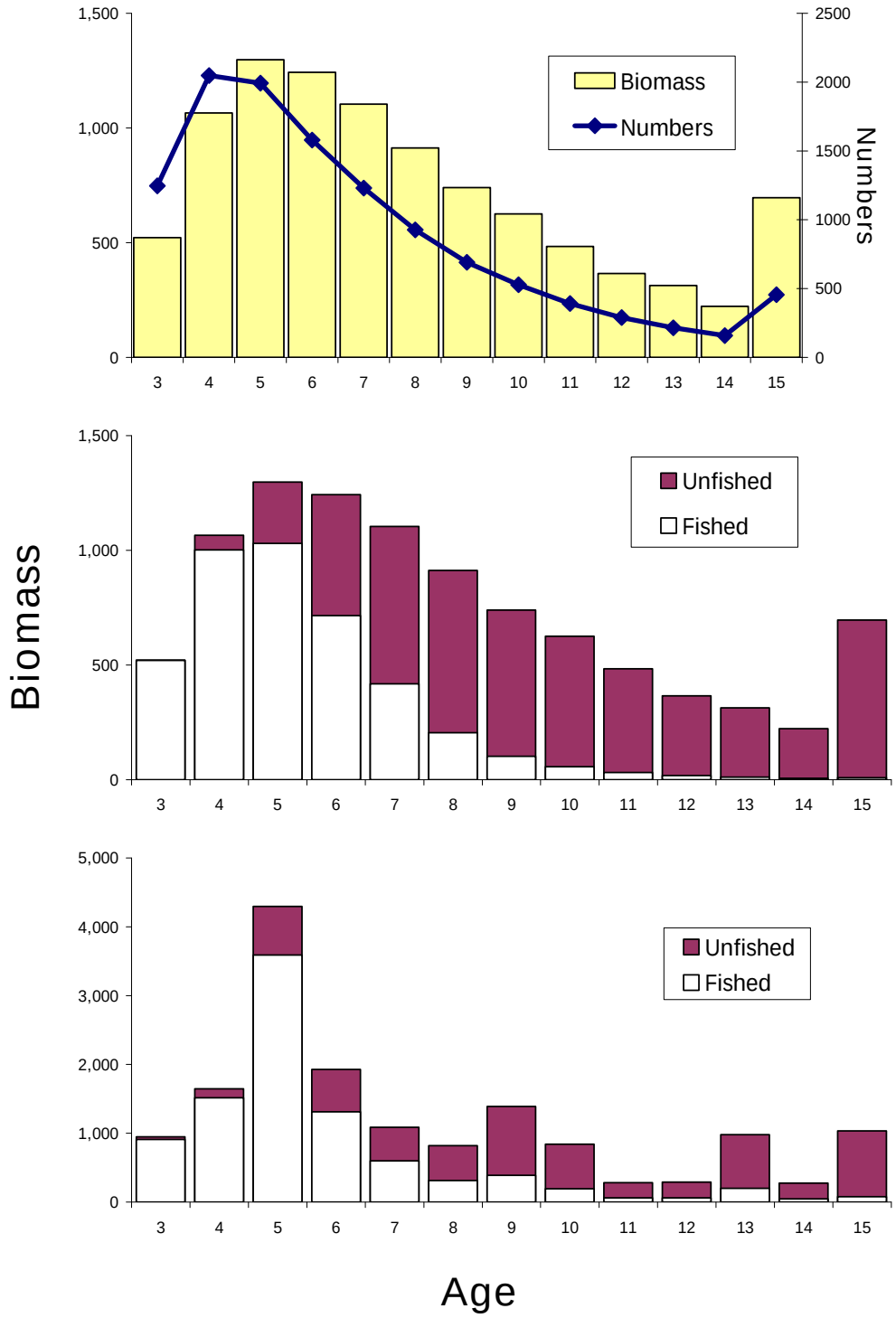


Figure 4.33. EBS pollock spawning stock biomass estimates from Ianelli et al. (2007) compared to values had no fishing occurred during this period. The unfished stock size calculations assume the same natural mortality, mean weights-at-age, and estimates of numbers at age one as used in the assessment.

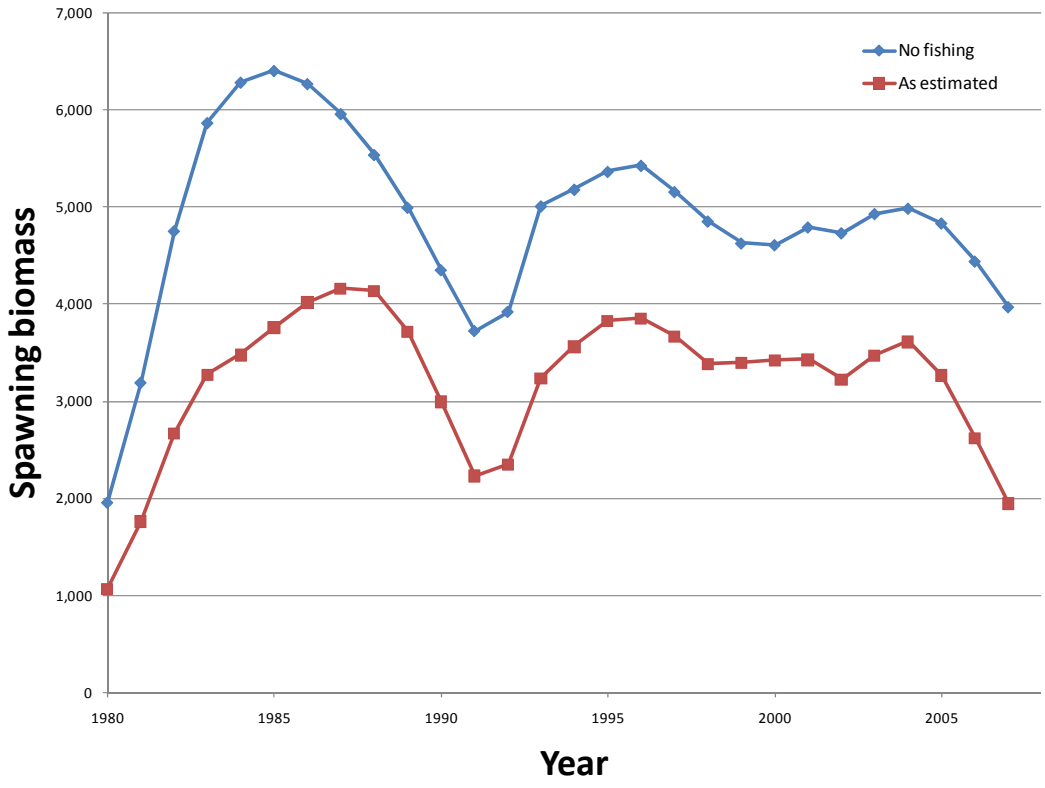
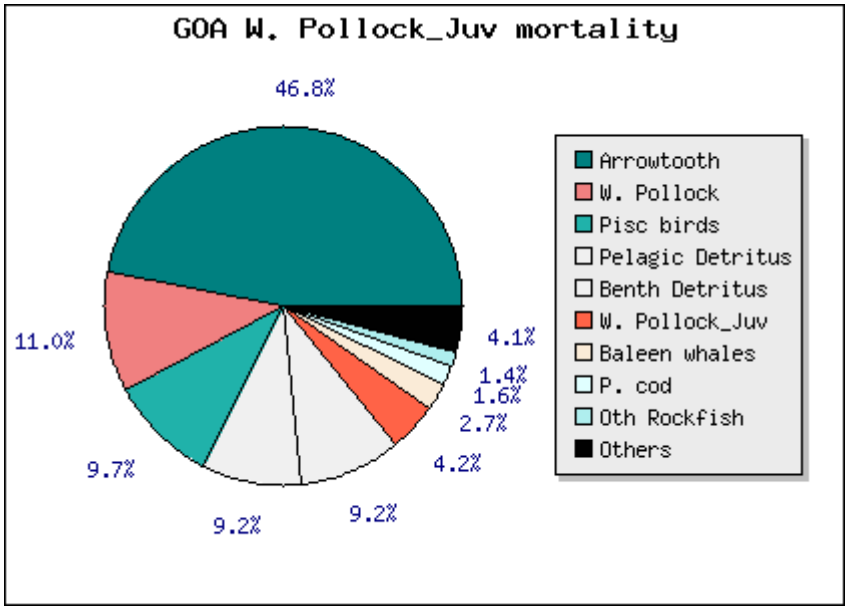


Figure 4.34 Sources of mortality for walleye pollock juveniles (top) and adults (bottom) from an ECOPATH model of the Gulf of Alaska (Gaichas 2006). Pollock less than 20cm are considered juveniles.



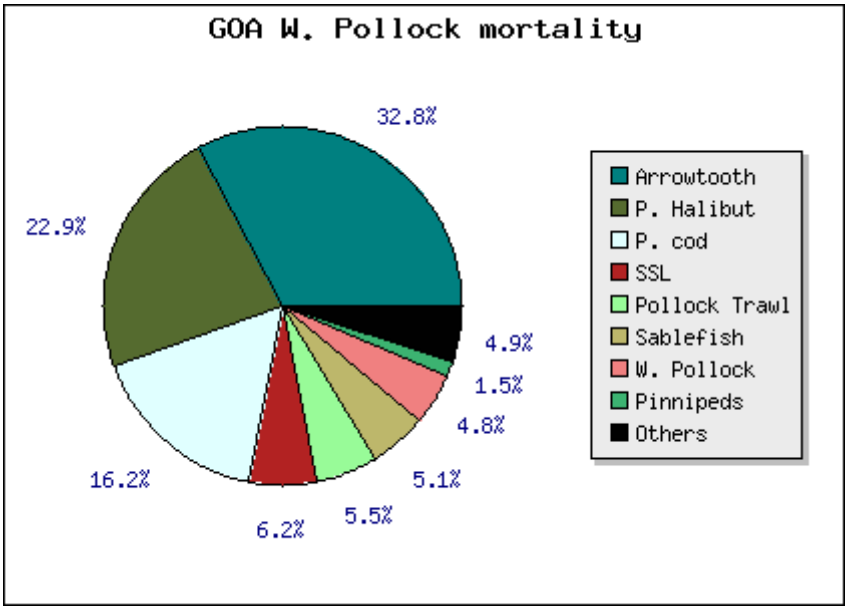


Figure 4.35 Historical trends in GOA walleye pollock, Pacific cod, Pacific halibut, arrowtooth flounder, and Steller Sea Lions, from stock assessment data.

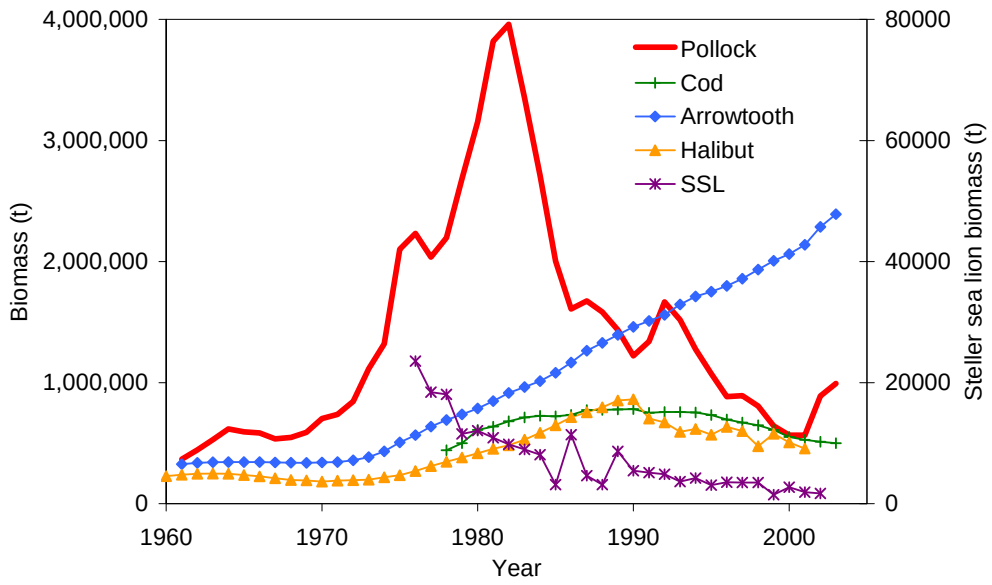


Figure 4.36 Comparison of potential outcomes of reducing or stopping pollock fishing on pollock biomass in the GOA given different assumptions of predation and which fisheries are stopped.

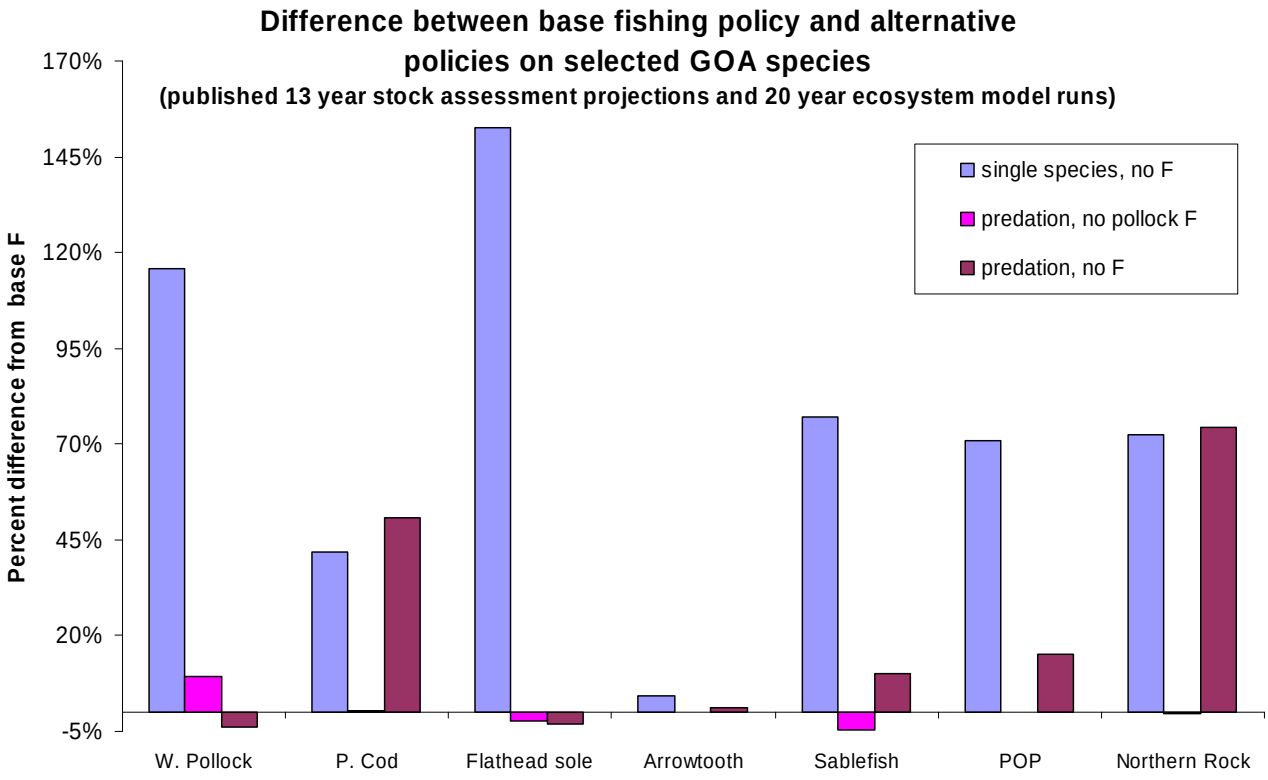
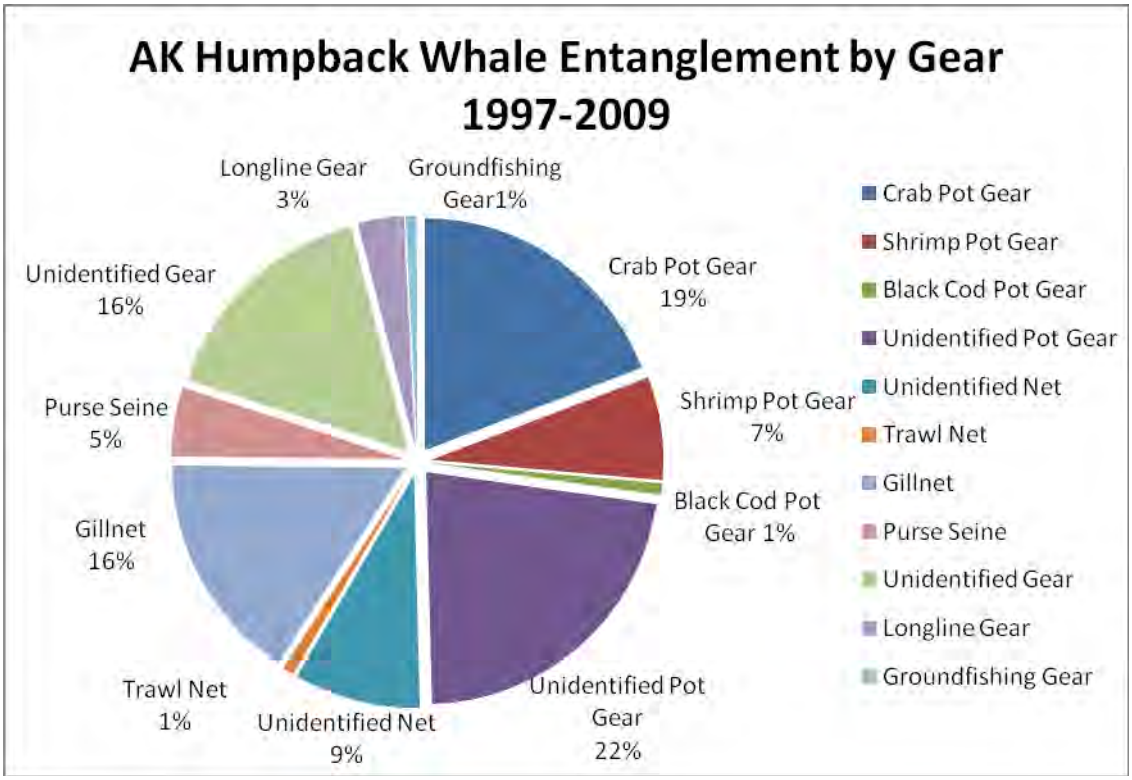


Figure 4.37. Humpback whale entanglements in Alaska by gear type. Source: NMFS Alaska Region Stranding Program 2010.



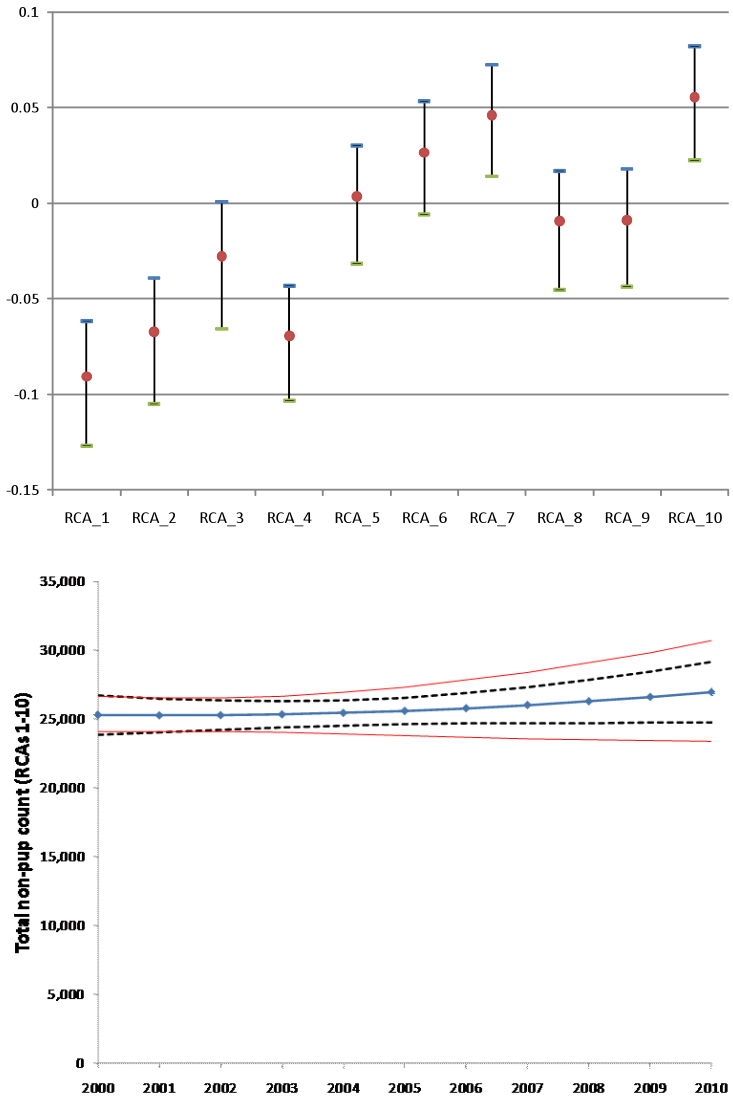
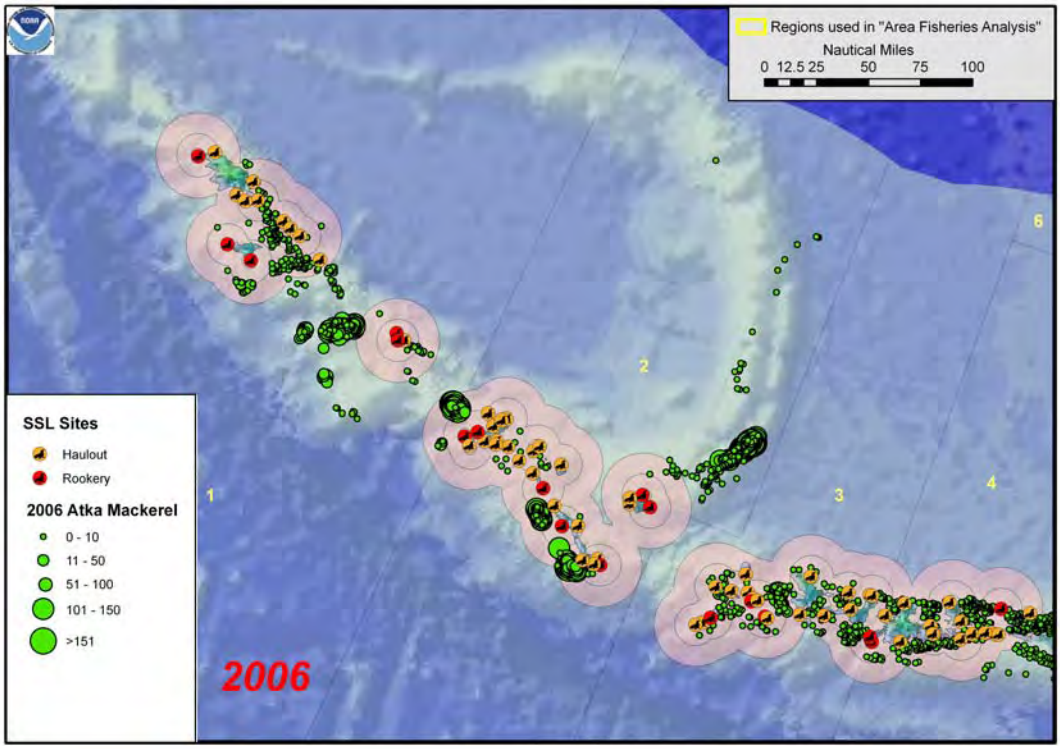


Figure 5.1. From Ianelli (2010). TOP: Estimates of annual rate of change ($\boldsymbol{b}_j$; y-axis) in the western Steller sea lion population by RCA showing MCMC lower and upper 5th percentiles by RCA. BOTTOM: Overall western DPS trend estimates showing approximate 95% confidence bands (dashed lines=asymptotic approximations, thin red lines based on MCMC integration). Results of overall trend indicate a modest but uncertain (not significantly different from 0) increase over the period 2000-2010 given the available data (all RCAs combined). Broken out by RCA regions, the rate of increase by region was negative for areas 1-4 and was balanced rates close to 0 or positive in the others. Model fits had a poor pattern of residuals for the most abundant RCA (RCA 6) with observations on rookeries increasing in recent years more rapidly than model estimates but for counts on haulouts and non-rookery sites, the model estimates indicated a greater increase compared to observed animal counts. This could reflect changes in the age structure of the Steller sea lion population (e.g., changes in the proportion of juvenile animals).

Figure 5.2. Examples of the distribution of catch (mt) of Atka mackerel in RCAs 1-3; pink circular regions show designated Steller sea lion critical habitat.



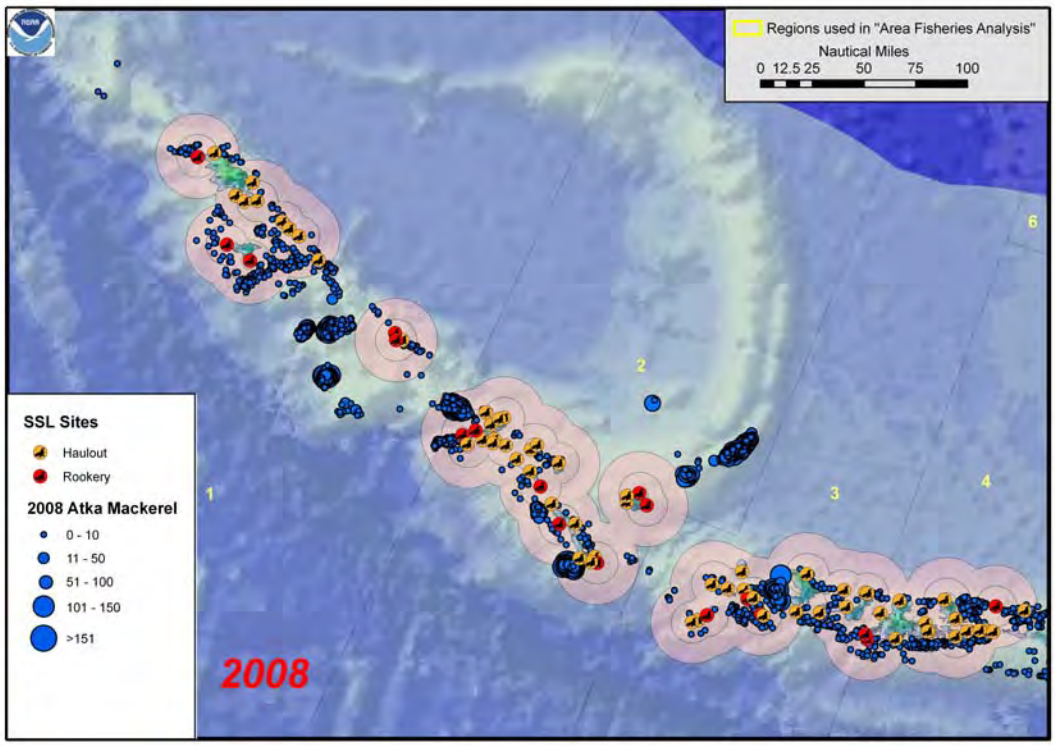
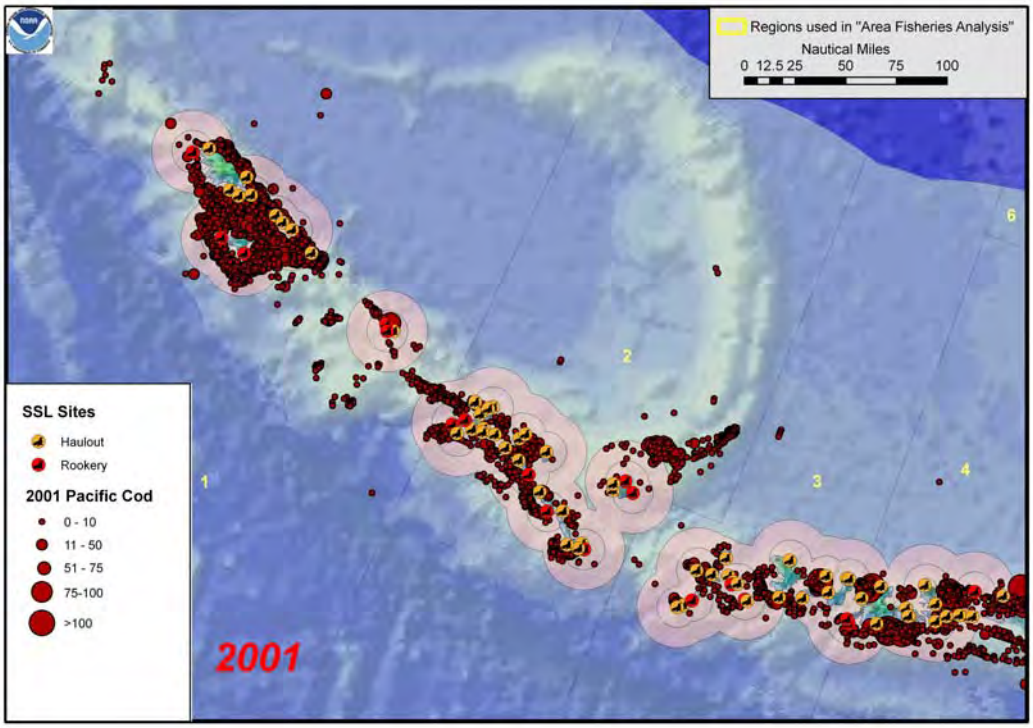


Figure 5.3. Examples of the distribution of catch (mt) of Pacific cod in RCAs 1-4; pink circular regions show designated Steller sea lion critical habitat.



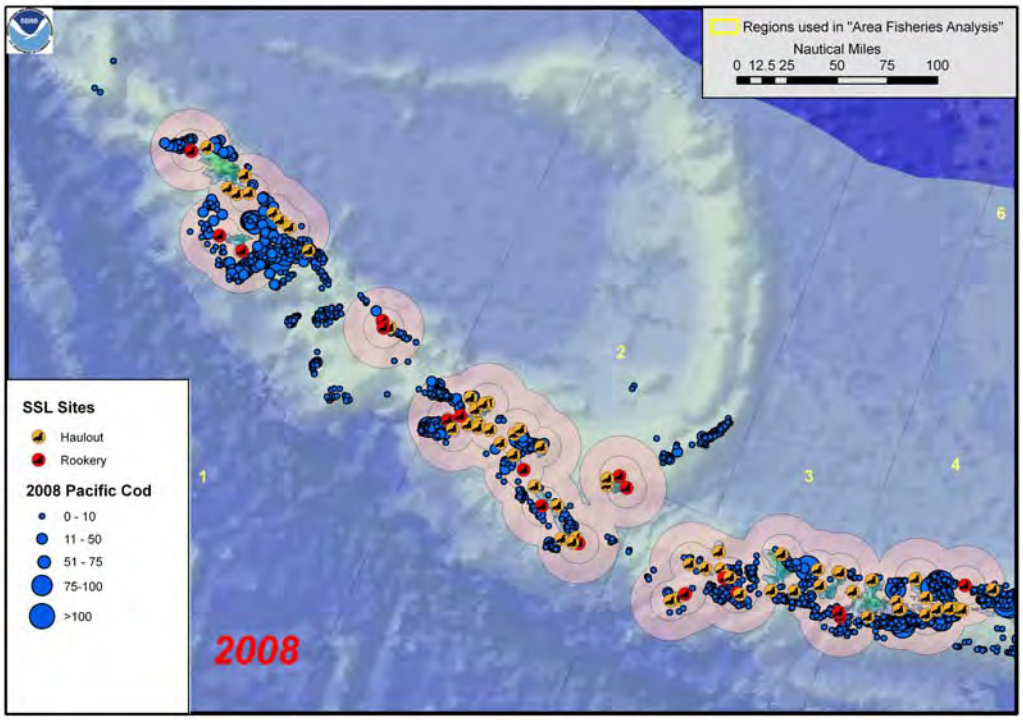
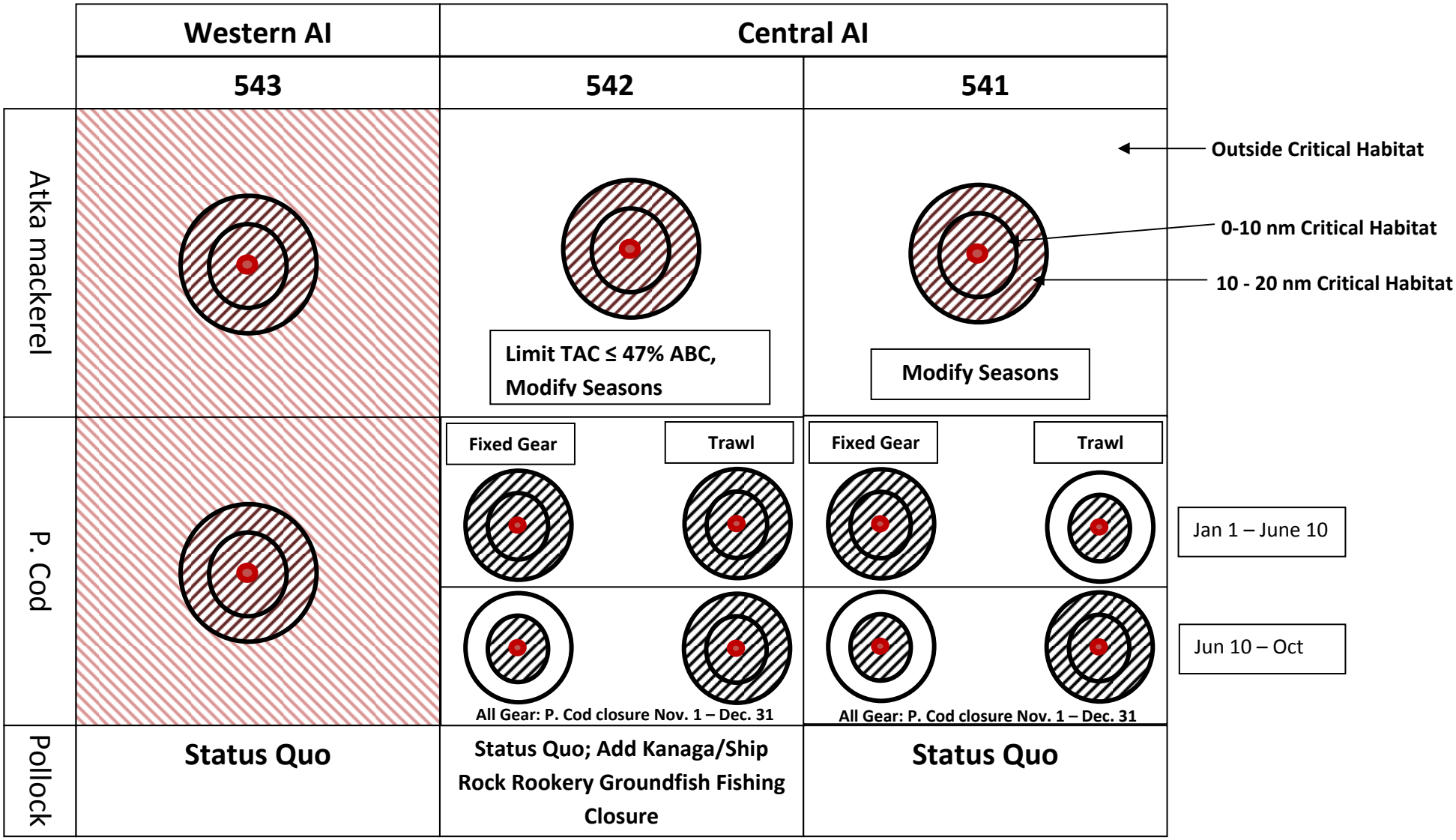


Figure 8.1. – Depiction of the RPA for Fishery Management Areas 543, 542, and 541. Red circles represent designated Steller sea lion critical habitat sites, circles around the sites represent the 0-10 nm and 10-20 nm zones of critical habitat and areas outside of the zones represent areas beyond critical habitat. Diagonal lines represent areas that would be closed in each Fishery Management Area under the RPA.



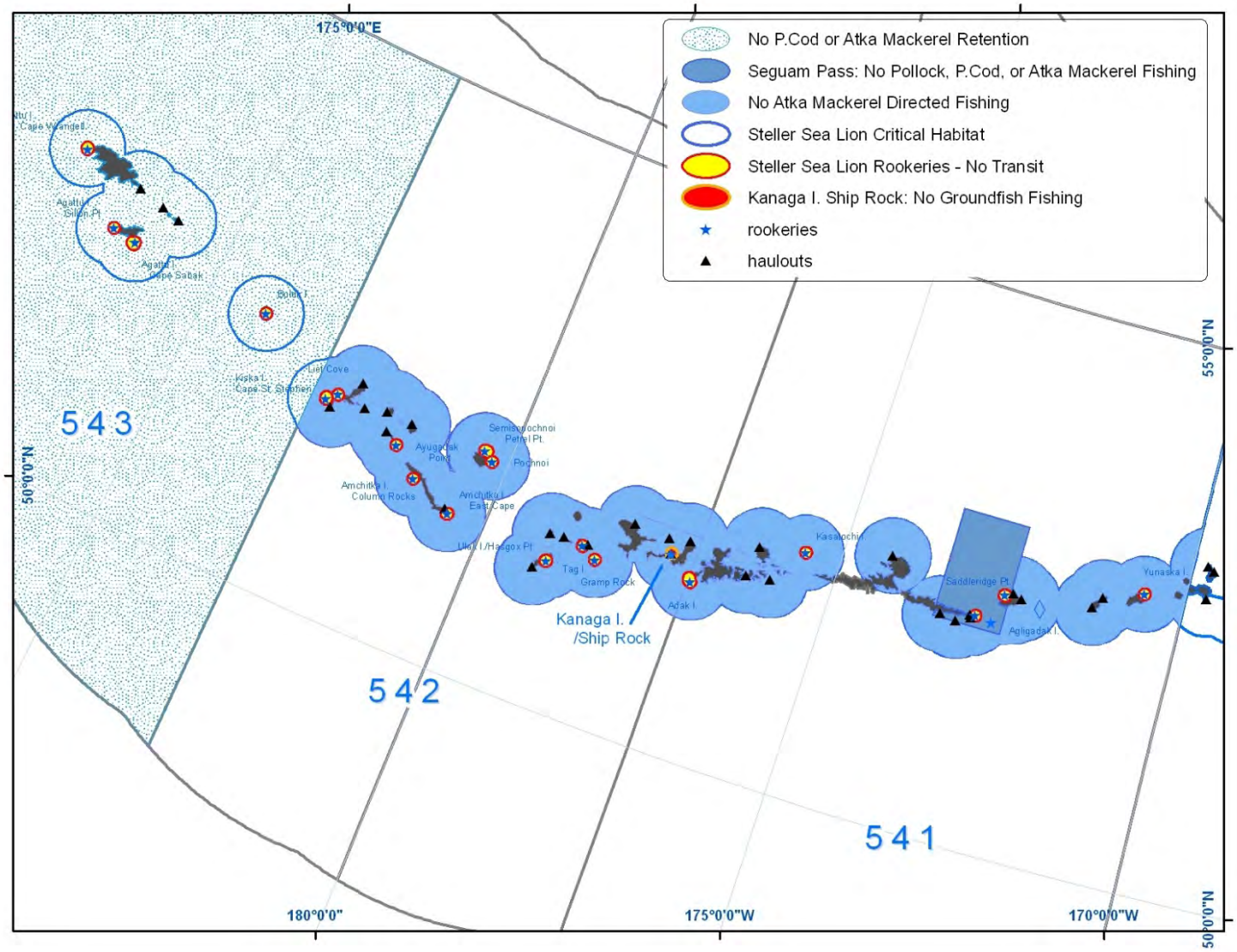


Figure 8.2. Map of the RPA for Atka mackerel fisheries in Areas 543, 542, and 541.

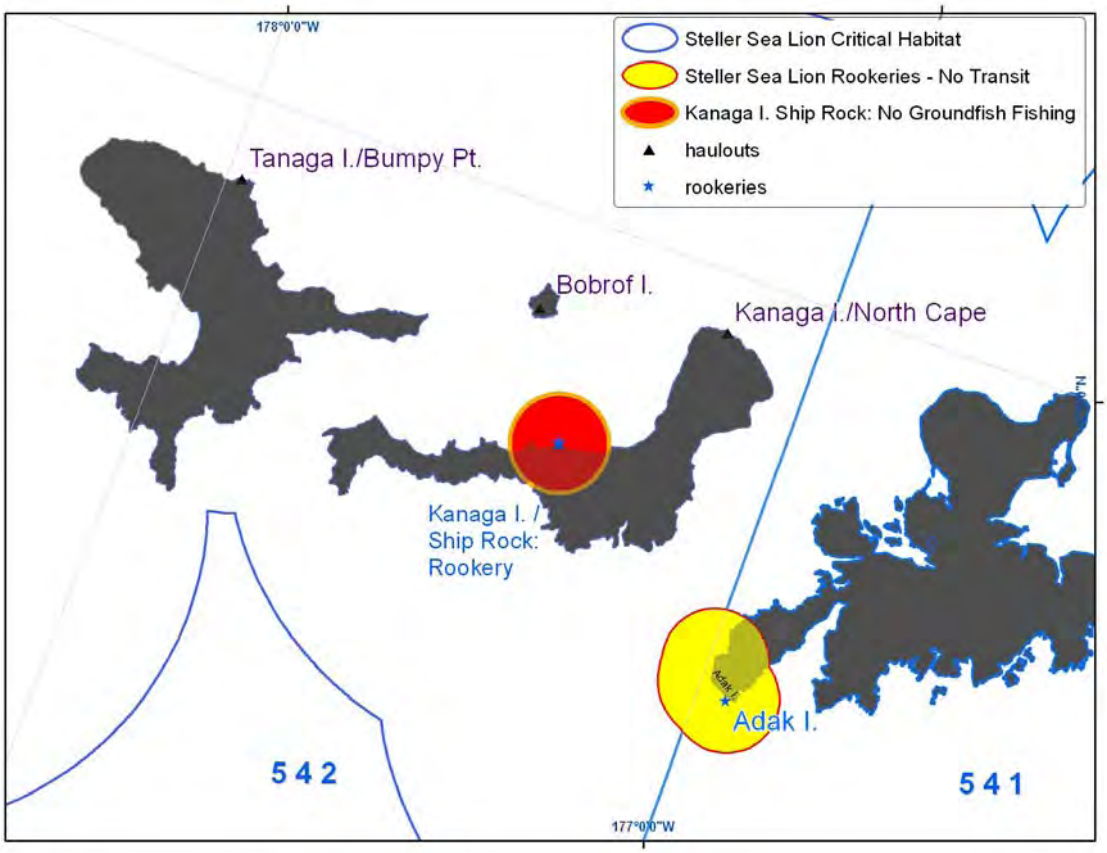


Figure. 8.3 Kanaga Island/Ship Rock closure from 0 to 3 nm.

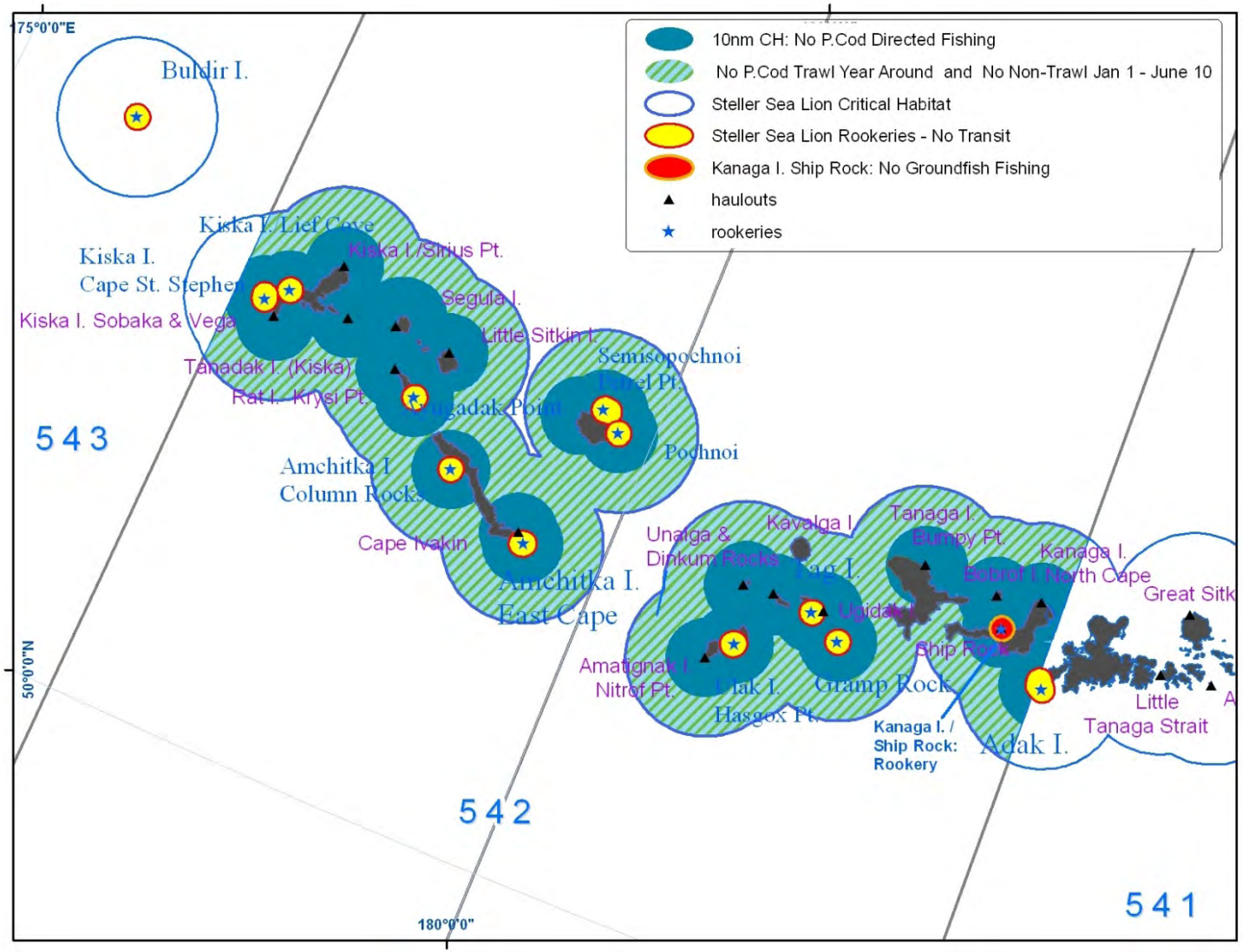


Figure 8.4. Map of the RPA for Pacific cod fisheries in Area 542.

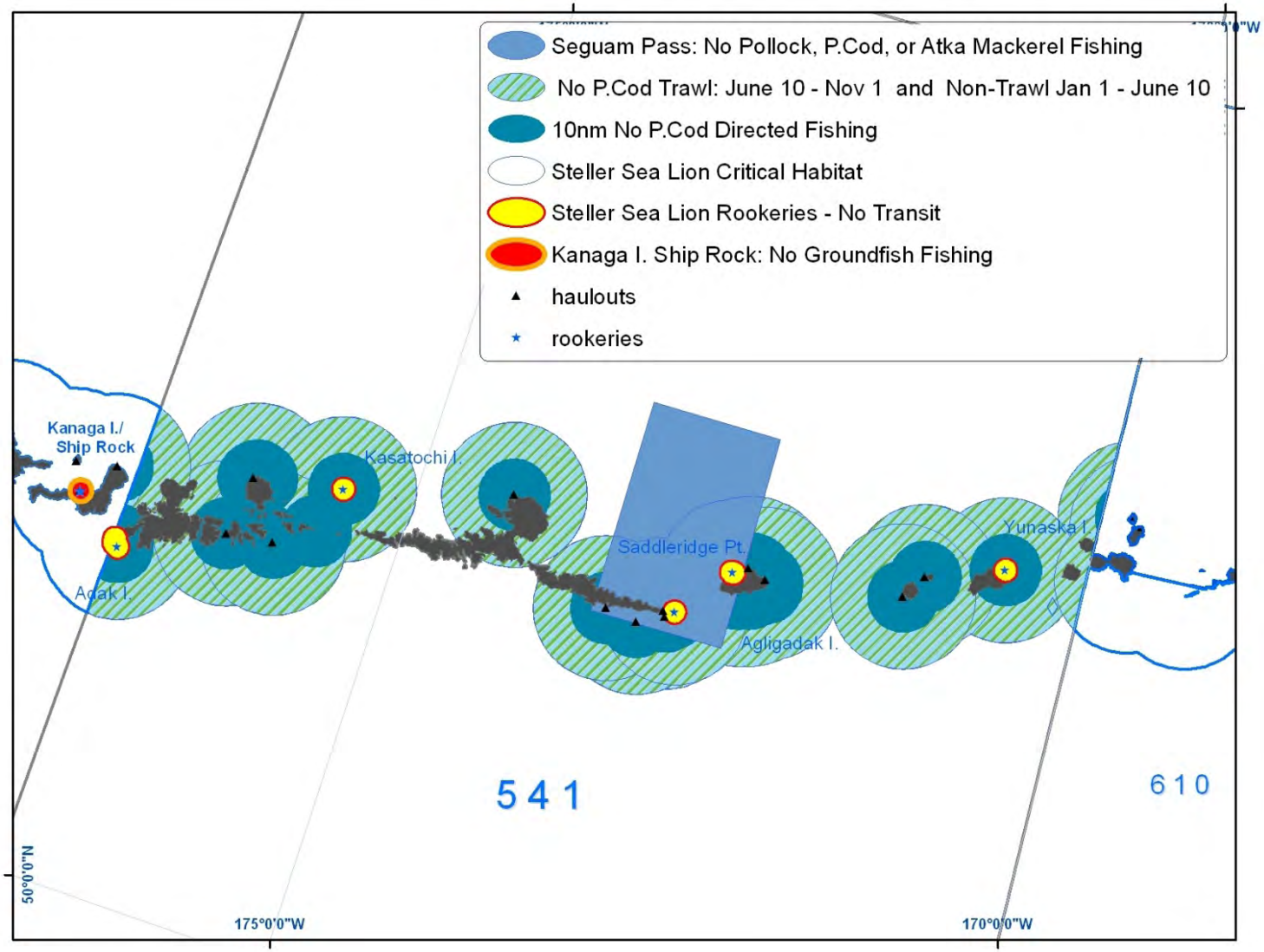


Figure 8.5. Map of the RPA for Pacific cod fisheries in Area 541.

TABLES

Table 2.1a Summary of management measures for the BSAI groundfish fishery.

Management Area	U.S. Exclusive Economic Zone (EEZ) of the eastern Bering Sea and that portion of the North Pacific Ocean adjacent to the Aleutian Islands which is west of 170 W. up to the U.S.-Russian Convention Line of 1867. **Subareas:** The area is divided into two subareas, the Bering Sea and the Aleutian Islands.
Stocks	All stocks of finfish and marine invertebrates in the management area except salmonids, shrimps, scallops, snails, king crab, Tanner crab, Dungeness crab, corals, surf clams, horsehair crab, lyre crab, Pacific halibut, and Pacific herring. Those stocks and stock complexes that are commercially important and for which an annual TAC is established include: walleye pollock, Pacific cod, sablefish, yellowfin sole, Greenland turbot, arrowtooth flounder, rock sole, flathead sole, Alaska plaice, "other flatfish", Pacific ocean perch, northern rockfish, shortraker and rougheye rockfish, "other rockfish", Atka mackerel, and squid.
Maximum Sustainable Yield (MSY)	The historical estimate of MSY for the BSAI groundfish complex is in the range of 1.7 to 2.4 million mt.
Optimum Yield (OY)	The OY of the BSAI groundfish complex (consisting of stocks listed in the 'target species' and 'other species' categories, as listed in Table 3-1) is 85% of the historical estimate of MSY, or 1.4 to 2.0 million mt, plus the incidental harvest of nonspecified species.
Procedure to set Total Allowable Catch (TAC)	Based on the annual Stock Assessment and Fishery Evaluation (SAFE) report, the Council will recommend to the Secretary of Commerce TACs and apportionments thereof for each target species and the "other species" category. The Secretary will implement annual TACs which may cover up to 2 fishing years, following public comment and Council recommendations at the December Council meeting. **Reserve**: 15% of the TAC for each target species (except pollock and fixed-gear sablefish) and the "other species" category is set aside to form the reserve, used for correcting operational problems of the fleets, adjusting species TACs for conservation, or apportionments. The reserve is not designated by species or species groups.
Apportionment of TAC	**Pollock**: the amount of pollock that may be taken with non-pelagic trawls may be limited; pollock TAC shall be divided into roe-bearing ("A" season) and non roe-bearing ("B" season) allowances. **Sablefish**: vessels using fixed gear may harvest no more than 50% of the TAC in the Bering Sea and 75% of the TAC in the Aleutian Islands; vessels using trawl gear may harvest no more than 50% of the TAC in the Bering Sea and 25% of the TAC in the Aleutian Islands. **Pacific cod**: After subtraction of the CDQ allowance, the remaining TAC shall be allocated 1.4% for vessels using jig gear, 2.3% for catcher processors using trawl gear listed in Section 208(e)(1)-(20) of the AFA, 13.4% for catcher processors using trawl gear as defined in Section 219(a)(7) of the Consolidated Appropriations Act, 2005 (P.L. 108-447), 22.1% for catcher vessels using trawl gear, 48.7% for catcher processors using hook-and-line gear, 0.2% for catcher vessels ≥60' LOA using hook-and-line gear, 1.5% for catcher processors using pot gear, 8.4% for catcher vessels ≥60' LOA using pot gear, and 2.0% for catcher vessels <60' LOA that use either hook-and-line gear or pot gear. Allocations may be seasonally apportioned. **Aleutian Islands Pacific ocean perch, flathead sole, rock sole and yellowfin sole**: After subtraction of the CDQ allowance, and incidental catch amount, the remaining TAC is apportioned among vessels using trawl gear. **Atka mackerel**: up to 2% of the eastern Aleutian Islands and Bering Sea TACs will be allocated to vessels using jig gear. **Shortraker and rougheye rockfish**: after subtraction of reserves, the Aleutian Islands TAC will be allocated 70% to vessels using trawl gear and 30% to vessels using non-trawl gear.
Attainment of TAC	The attainment of a TAC for a species will result in the closure of the target fishery for that species. Further retention of that species will be prohibited.
Permit	All vessels participating in the BSAI groundfish fisheries, other than fixed gear sablefish, require a Federal groundfish license, except for: vessels fishing in State of Alaska waters; vessels less than 32' LOA; and jig gear vessels less than 60' LOA that meet specific effort restrictions. Licenses are endorsed with area, gear, and vessel type and length designations. Fixed gear vessels engaged in directed fishing for Pacific cod must qualify for a Pacific cod endorsement. Fishing permits may be authorized, for limited experimental purposes, for the target or incidental harvest of groundfish that would otherwise be prohibited.
Authorized Gear	Gear types authorized by the FMP are trawls, hook-and-line, pots, jigs, and other gear as defined in regulations. **Pollock**: The use of non-pelagic trawl gear in the directed fishery for pollock is prohibited.

Time and Area Restrictions	**All trawl**: Fishing with trawl vessels is not permitted year-round in the Crab and Halibut Protection Zone and the Pribilof Islands Habitat Conservation Area. The Nearshore Bristol Bay Trawl Closure area is also closed year-round except for a subarea that remains open between April 1 and June 15 each year. The Chum Salmon Savings Area is closed to trawling from August 1 through August 31. **Non-pelagic trawl**: The Red King Crab Savings Area is closed to non-pelagic trawling year-round, except for a subarea that may be opened at the discretion of the Council and NMFS when a guideline harvest level for Bristol Bay red king crab has been established. The Aleutian Islands Habitat Conservation Area is closed to nonpelagic trawling year-round. **Bottom contact gear:** The use of bottom contact gear is prohibited in the Aleutian Islands Coral and Alaska Seamount Habitat Protection Areas year-round. The use of mobile bottom contact gear is prohibited year-round in Bowers Ridge Habitat Conservation Zone. **Directed pollock fishery**: Catcher/processor vessels identified in the American Fisheries Act are prohibited from engaging in directed fishing for pollock in the Catcher Vessel Operational Area during the non-roe ("B") season unless they are participating in a community development quota fishery. **Marine mammal measures**: Regulations implementing the FMP may include conservation measures that temporally and spatially limit fishing effort around areas important to marine mammals. **Gear test area exemption**: Specific gear test areas for use when the fishing grounds are closed to that gear type are established in regulations that implement the FMP.
Prohibited Species	Pacific halibut, Pacific herring, Pacific salmon and steelhead, king crab, and Tanner crab are prohibited species and must be returned to the sea with a minimum of injury except when their retention is authorized by other applicable law. Groundfish species and species under this FMP for which TAC has been achieved shall be treated in the same manner as prohibited species.
Prohibited Species Catch (PSC) Limits	When a target fishery attains a PSC limit apportionment or seasonal allocation, the bycatch zone or management area to which the PSC limit applies will be closed to that target fishery for the remainder of the year or season. **Red king crab**: Based on the size of the spawning biomass of red king crab, the PSC limit in Zone 1 for trawl fisheries is either 23,000, 97,000 or 197,000 red king crab; attainment closes Zone 1. ***C. bairdi* crab**: Established in regulation for trawl fisheries based on population abundance; attainment closes Zone 1 or Zone 2. ***C. opilio* crab**: Established in regulation for trawl fisheries in the C. opilio Bycatch Limitation Zone based on population abundance, with minimum and maximum limits; attainment closes zone. **Pacific halibut**: Halibut mortality limits established in regulation for trawl and non-trawl fisheries. **Pacific herring**: 1% of the annual biomass of eastern Bering Sea herring, for trawl fisheries; attainment may close the Herring Savings Areas. **Chum salmon**: Attainment of 42,000 fish limit in the Catcher Vessel Operational Area between August 15 and October 14 closes the Chum Salmon Savings Area for the rest of that time period. **Chinook salmon**: Attainment of Chinook PSC limit established in regulation for the Bering Sea or the Aleutian Islands subarea closes the Bering Sea or Aleutian Island Chinook Salmon Savings Area to directed pollock trawl fishing. **Apportionment**: For trawl fisheries, may be apportioned by target fishery and season; for non-trawl fisheries, may be apportioned by target fishery, gear type, area, and season.
Retention and Utilization Requirements	**Pollock**: Roe-stripping is prohibited; see also below. **Improved Retention/Improved Utilization Program**: All pollock and Pacific cod must be retained and processed.
Fixed Gear Sablefish Fishery	The directed fixed gear sablefish fisheries are managed under an Individual Fishing Quota program. The FMP specifies requirements for the initial allocation of quota share in 1995, as well as transfer, use, ownership, and general provisions. **Annual Allocation**: The ratio of a person's quota share to the quota share pool is multiplied by the fixed gear TAC (adjusted for the community development quota allocation - see below), to arrive at the annual individual fishing quota.
Bering Sea Pollock Fishery	Subtitle II of the American Fisheries Act (AFA), incorporated by reference in the FMP, implemented a cooperative program for the pollock fishery. **Access**: Limits pollock fishery access to named vessels and processors; included a buyout of 9 catcher/processor vessels. **Allocation**: After adjustment for the community development quota allocation (see below) and incidental catch of pollock in other fisheries, the pollock TAC is apportioned 50% to vessels harvesting pollock for inshore processing, 40% to vessels harvesting pollock for catcher/processor processing, and 10% to vessels harvesting pollock for mothership processing. **Cooperatives**: Creates standards and limitations for the creation and operation of cooperatives. **Sideboards**: Establishes harvesting and processing restrictions on AFA pollock participants to protect other fisheries. **Catch monitoring**: Increases observer coverage and scale requirements for catcher/processors.

Aleutian Islands Pollock Fishery	The non-CDQ directed pollock fishery in the Aleutian Islands is fully allocated to the Aleut Corporation for the purpose of economic development in Adak, Alaska. **Allocation**: To be funded, to the extent possible in whole or in part, from the difference between the sum of all BSAI groundfish fishery TACs and the 2 million mt OY cap, if the difference is large enough to do so. The remainder of the funding comes from a reduction in the Bering Sea pollock recommended TAC. A mechanism for determining "A" and "B" season allowances is specified.
Community Development Quota (CDQ) Multispecies Fishery	Eligible fishery-dependent communities in western Alaska will receive a percentage of all groundfish species or species group TACs, except squid, and a pro-rata share of PSC species. **Sablefish**: 20% of the fixed gear TAC **Pollock**: 10% of the TAC **Other groundfish species**: 7.5% of the TAC, to come out of the groundfish reserve
Flexible Authority	The Regional Administrator of NMFS is authorized to make inseason adjustments through gear modifications, closures, or fishing area/quota restrictions, for conservation reasons, to protect identified habitat problems, or to increase vessel safety.
Recordkeeping and Reporting	Recordkeeping that is necessary and appropriate to determine catch, production, effort, price, and other information necessary for conservation and management may be required. May include the use of catch and/or product logs, product transfer logs, effort logs, or other records as specified in regulations. **Processors**: Shall report necessary information for the management of the groundfish fisheries as specified in regulations. **At-sea processor vessels**: Must submit a weekly catch/receipt and product transfer report and record cargo transfer and off-loading information in a separate transfer log. Catcher/processors are also required to check in and check out of any fishing area for which TAC is established, as specified in regulations.
Observer Program	U.S. fishing vessels that catch groundfish in the EEZ, or receive groundfish caught in the EEZ, and shoreside processors that receive groundfish caught in the EEZ, are required to accommodate NMFS-certified observers as specified in regulations, in order to verify catch composition and quantity, including at-sea discards, and collect biological information on marine resources.
Evaluation and Review of the FMP	The Council will maintain a continuing review of the fisheries managed under this FMP, and all critical components of the FMP will be reviewed periodically. **Management Policy**: Objectives in the management policy statement will be reviewed annually. **Essential Fish Habitat (EFH)**: The Council will conduct a complete review of EFH once every 5 years, and in between will solicit proposals on Habitat Areas of Particular Concern and/or conservation and enhancement measures to minimize potential adverse effects from fishing. Annually, EFH information will be reviewed in the "Ecosystems Considerations" chapter of the SAFE report.

Table 2.1b Summary of management measures for the GOA groundfish fishery.

Management Area	U.S. exclusive economic zone (EEZ) of the North Pacific Ocean, exclusive of the Bering Sea, between the eastern Aleutian Islands at 170E W. longitude and Dixon Entrance at 132E40' W. longitude. Regulatory areas: Three regulatory areas are defined in the Gulf of Alaska: Eastern, extending from Dixon Entrance to 147E W. longitude; Central, extending between 147E W. and 159E W. longitude, and Western, extending between 159E W. and 170E W. longitude.
Stocks	All finfish, except salmon, steelhead, halibut, herring, and tuna, which are distributed or exploited in the management area, and are listed in Table 3-1. Those stocks and stock complexes that are commercially important and for which an annual TAC is established include: walleye pollock, Pacific cod, sablefish, shallow and deep water flatfish, rex sole, flathead sole, arrowtooth flounder, Pacific ocean perch, shortraker/rougheye rockfish, northern rockfish, "other slope" rockfish, pelagic shelf rockfish, demersal shelf rockfish, thornyhead rockfish, Atka mackerel, and skates.
Optimum Yield (OY) and Maximum Sustainable Yield (MSY)	The OY of the GOA groundfish complex (consisting of stocks listed in the 'target species' and 'other species' categories, as listed in Table 3-1) is in the range of 116,000 to 800,000 mt. The upper end of the range is derived from historical estimates of MSY.
Procedure to set Total Allowable Catch (TAC)	Based on the annual Stock Assessment and Fishery Evaluation (SAFE) report, the Council will recommend to the Secretary of Commerce TACs and apportionments thereof for each target species and the "other species" category. TAC for the "other species" category will be set less than or equal to 5% of the summed target species TACs. The Secretary will implement annual TACs which may cover up to 2 fishing years, following public comment and Council recommendations at the December Council meeting. Reserve: 20% of the TAC for pollock, Pacific cod, flatfish, and the "other species" category is set aside to form the reserve, which may be reapportioned to these fisheries at any time and in any amount by the Regional Administrator.
Apportionment of TAC	Harvest allocations and management are based on the calendar year. TACs are apportioned by regulatory area, and by district for some stocks. Areas or districts may also be managed together. **Pollock**: the Western and Central regulatory areas are combined, and annual TACs are divided into seasonal allowances. 100% of the TAC is allocated to the inshore sector. **Pacific cod:** TAC shall be allocated 90% to the inshore sector and 10% to the offshore sector. **Sablefish:** the Eastern regulatory area is divided into two districts, West Yakutat and Southeast Outside. In the Eastern regulatory area, vessels using hook-and-line gear will be permitted to take up to 95% of the TAC, and vessels using trawl gear up to 5%. In the Western and Central regulatory areas, vessels using hook-and-line gear will be permitted to take up to 80% of the TAC, and vessels using trawl gear up to 20%. **Rockfish:** the Eastern regulatory area is divided into two districts, West Yakutat and Southeast Outside.
Attainment of TAC	The attainment of a TAC for a species will result in the closure of the target fishery for that species. Further retention of that species will be prohibited.
Permit	All vessels participating in the GOA groundfish fisheries, other than fixed gear sablefish and demersal shelf rockfish in Southeast Outside district, require a Federal groundfish license, except for: vessels fishing in State of Alaska waters and vessels less than 26' LOA. Licenses are endorsed with area, gear, and vessel type and length designations. Fishing permits may be authorized, for limited experimental purposes, for the target or incidental harvest of groundfish that would otherwise be prohibited.
Participation Restrictions	**American Fisheries Act (AFA):** Vessels or processors participating in the Bering Sea and Aleutian Islands pollock fishery authorized under the AFA are subject to harvesting and processing sideboard restrictions on GOA groundfish.
Authorized Gear	Gear types authorized by the FMP are trawls, hook-and-line, pots, jigs, and other gear as defined in regulations. **Sablefish:** Legal gear for taking sablefish in the GOA is hook and line and trawl gear.
Time and Area Restrictions	**Fishing Year**: January 1-December 31. **All vessels:** Fishing or anchoring within the Sitka Pinnacles Marine Reserve is prohibited at all times. **All trawl**: Use of trawl gear is prohibited at all times in the Southeast Outside district. **Non-pelagic trawl**: The use of non-pelagic trawl is prohibited in Cook Inlet. Three types of closure areas are designated around Kodiak Island. Type I areas prohibit non-pelagic trawling year-round; Type II prohibit non-pelagic trawl from February 15 to June 15; adjacent areas designated as Type III may be reclassified by the Regional Administrator as Type I or Type II following a recruitment event. The Gulf of Alaska Slope Habitat Conservation Area is closed to non-pelagic trawling year-round. **Bottom contact gear**: The use of bottom contact gear is prohibited in the Gulf of Alaska Coral and Alaska Seamount Habitat Protection Areas year-round. **Anchoring:** Anchoring by fishing vessels in the Gulf of Alaska Coral and Alaska Seamount Habitat Protection Areas is prohibited. **Marine mammal measures:** Regulations implementing the FMP may include conservation measures that temporally and spatially limit fishing effort around areas important to marine mammals. **Gear test area exemption**: Specific gear test areas for use when the fishing grounds are closed to that gear type, are established in regulations that implement the FMP.

Prohibited Species	Pacific halibut, Pacific herring, Pacific salmon and steelhead, king crab, and Tanner crab are prohibited species and must be returned to the sea with a minimum of injury except when their retention is authorized by other applicable law. Groundfish species and species under this FMP for which TAC has been achieved shall be treated in the same manner as prohibited species.
Prohibited Species Catch (PSC) Limits	The attainment of a PSC limit for a species will result in the closure of the appropriate fishery. **Pacific halibut**: Halibut mortality PSC limits are established annually in regulation; may be apportioned by season, regulatory area, gear type, and/or target fishery.
Retention and Utilization Requirements	**Pollock**: Roe-stripping is prohibited; see also below. **Improved Retention/Improved Utilization Program**: All pollock and Pacific cod must be retained and processed.
Bycatch Reduction Programs	**Shallow water Flatfish:** The Council will annually review the GOA fisheries that exceed a discard rate of 5% of shallow water flatfish, and may propose management measures to reduce bycatch in these fisheries.
Fixed Gear Sablefish Fishery	The directed fixed gear sablefish fisheries are managed under an Individual Fishing Quota program. The FMP specifies requirements for the initial allocation of quota share in 1995, as well as transfer, use, ownership, and general provisions. **Annual Allocation**: The ratio of a person's quota share to the quota share pool is multiplied by the fixed gear TAC (adjusted for the community development quota allocation - see below), to arrive at the annual individual fishing quota. **Community Quota Share Purchases:** Specified GOA coastal communities are eligible to hold commercial catcher boat sablefish quota share under the IFQ program.
Delegated Authority	**Demersal shelf rockfish:** Managed by the State of Alaska under Council oversight. The Council retains the responsibility of setting the demersal shelf rockfish harvest level.
Flexible Authority	The Regional Administrator of NMFS is authorized to make inseason adjustments through gear modifications, closures, or fishing area/quota restrictions, for conservation reasons, to protect identified habitat problems, or to increase vessel safety.
Recordkeeping and Reporting	Recordkeeping that is necessary and appropriate to determine catch, production, effort, price, and other information necessary for conservation and management may be required. May include the use of catch and/or product logs, product transfer logs, effort logs, or other records as specified in regulations. **Processors**: Shall report necessary information for the management of the groundfish fisheries as specified in regulations. **At-sea processor vessels**: Must submit a weekly catch/receipt and product transfer report and record cargo transfer and off-loading information in a separate transfer log. Catcher/processors are also required to check in and check out of any fishing area for which TAC is established, as specified in regulations.
Observer Program	U.S. fishing vessels that catch groundfish in the EEZ, or receive groundfish caught in the EEZ, and shoreside processors that receive groundfish caught in the EEZ, are required to accommodate NMFS-certified observers as specified in regulations, in order to verify catch composition and quantity, including at-sea discards, and collect biological information on marine resources.
Evaluation and Review of the FMP	The Council will maintain a continuing review of the fisheries managed under this FMP, and all critical components of the FMP will be reviewed periodically. **Management Policy**: Objectives in the management policy statement will be reviewed annually. **Essential Fish Habitat (EFH)**: The Council will conduct a complete review of EFH once every 5 years, and in between will solicit proposals on Habitat Areas of Particular Concern and/or conservation and enhancement measures to minimize potential adverse effects from fishing. Annually, EFH information will be reviewed in the "Ecosystems Considerations" chapter of the SAFE report.

Table 2.2 Target species in the BSAI and GOA groundfish fisheries. These stocks, their status, and the fisheries on each stock are described in detail in the 2005 Stock Assessment and Fishery Evaluation reports for the BSAI and GOA groundfish fisheries.

Stock	Management units

Stock	Management units
Arrowtooth flounder	Managed as a single unit in the GOA. With Kamchatka flounder, managed as a single unit in the BSAI.
Atka mackerel	Managed as separate units in the BSAI and in the GOA.
Deep-water flatfish	In the GOA, managed as a complex of three species, including Dover sole, Greenland turbot, and deep-sea sole.
Demersal shelf rockfish	In the GOA, managed as a complex of seven species, including canary, China, copper, quillback, rosethorn, tiger, and yelloweye rockfish.
Flathead sole	Managed as a single unit in the GOA. With Bering flounder, managed as a single unit in the BSAI.
Greenland turbot	Managed as a single unit in the BSAI, and included in the deep-water complex in the GOA.
Northern rockfish	Managed as a single unit in the GOA, included in the "other red rockfish" complex in the Bering Sea, and included in the northern/sharpchin complex in the Aleutian Islands.
Northern/sharpchin rockfish	Managed as a two-species complex in the Aleutian Islands.
Other flatfish	In the Bering Sea, managed as a complex of sixteen species, including Alaska plaice, Arctic flounder, butter sole, California tonguefish, C-O sole, curlfin sole, deepsea sole, Dover sole, English sole, hybrid sole, longhead dab, Pacific sanddab, petrale sole, rex sole, roughscale sole, sand sole, slender sole, and starry flounder.
Other red rockfish	In the Bering Sea, managed as a complex of four species, including northern, rougheye, sharpchin, and shortraker rockfish.
Other rockfish	In the Bering Sea and Aleutian Islands, managed as separate complexes of at least 33 species, including aurora, black, blackgill, blue, bocaccio, brown, canary, chameleon, chilipepper, copper, dark blotched, dark dusky, gray, greenstriped, harlequin, pink rose, pygmy, red banded, redstripe, rosethorn, rosy, silvergrey, splitnose, stripetail, tiger, vermilion, widow, yelloweye, yellowmouth, yellowtail, broad banded thornyhead, longspine thornyhead, and shortspine thornyhead rockfishes.

Stock	Management units
Other slope rockfish	In the GOA, managed as a complex consisting of 17 species, including aurora, blackgill, bocaccio, chilipepper, darkblotched, greenstriped, harlequin, pygmy, redbanded, redstripe, sharpchin, shortbelly, silvergrey, splitnose, stripetail, vermilion, and yellowmouth rockfish.
Other species	In the BSAI, managed as a complex of at least 44 species, including multiple species of sculpins, sharks, skates and octopus. In the GOA, managed as a complex of at least 30 species, including multiple species of sharks, skates, sculpins, octopus, and squids.
Pacific cod	Managed as separate units in the BSAI and GOA.
Pacific ocean perch	Managed as five units, including Bering Sea, Aleutian Islands, western GOA, central GOA, and eastern GOA.
Pelagic shelf rockfish	In the GOA, managed under Amendment 46 to FMP and includes dusky, yellowtail, and widow rockfish.
Black and blue rockfish	In the GOA, managed as multiple area specific units
Pollock	Managed as five units, including eastern Bering Sea, Aleutian Islands, Aleutian Basin/Bogoslof Island, western/central GOA, and eastern GOA.
Rex sole	Managed as a unit in the GOA; included in "other rockfish" in the BSAI.
Rock sole	Managed as a single unit in the BSAI; included in the shallow-water complex in the GOA.
Sablefish	Managed as separate units in the Bering Sea, Aleutian Islands, and GOA.
Shallow-water flatfish	In the GOA, managed as a complex consisting of 15 species, including Alaska plaice, butter sole, C-O sole, curlfin sole, English sole, hybrid sole, longhead dab, pacific sanddab, petrale sole, rock sole, roughscale sole, sand sole, slender sole, starry flounder, and yellowfin sole.
Shortraker/roughey e rockfish	In the Aleutian Islands and GOA, managed as separate two-species complexes.
Squid	Managed as a single unit in the BSAI; consists of multiple species.
Thornyhead rockfish	Managed as a single unit in the GOA; included in the "other rockfish" complex in the BSAI; consists of multiple species.
Yellowfin sole	Managed as a single unit in the BSAI, and included in the shallow-water complex in the GOA.

Table 2.3 Survey CVs by species/species groups. (BSAI = Bering Sea Aleutian Islands, EBS = Eastern Bering Sea, SBSEA = Southern Bering Sea, AI = Aleutian Islands, GOA = Gulf of Alaska, EIT = echo integration trawl, ADMB = AD model builder)

Species or species group	FMP/Area	Survey Type	Survey CV	Assessment Method	ABC/OFL Tier
Alaska plaice	BSAI	Bottom trawl	11%	ADMB	3a
Arrowtooth flounder	BSAI	Bottom trawl	10%	ADMB	3a
Arrowtooth flounder	GOA	Bottom trawl	7%	ADMB	3a
Atka mackerel	BSAI	Bottom trawl	17%	ADMB	3a
Atka mackerel	GOA	Bottom trawl	50%	Bycatch	6
Deepwater flatfish	GOA	Bottom trawl	8%	ADMB/ave.catch	3a, 6[1]
Demersal shelf rockfish	GOA	Line transact	17%	Survey index	4
Flathead sole	BSAI	Bottom trawl	9%	ADMB	3a
Flathead sole	GOA	Bottom trawl	8%	ADMB	3a
Greenland turbot	BSAI	Bottom trawl	17%	ADMB	3b
Northern rockfish	BSAI	Bottom trawl	22%	ADMB	3a
Northern rockfish	GOA	Bottom trawl	37%	ADMB	3a
Northern rocksole	BSAI	Bottom trawl	7%	ADMB	3a
Octopus	BSAI	Bottom trawl	--	Survey index	5
Other flatfish	BSAI	Bottom trawl	20%	Survey index	5
Other rockfish	BSAI	Bottom trawl	9%/67%/18%[5]	Survey index	5
Other slope rockfish	GOA	Bottom trawl	25%	Survey index	4, 5[2]
Pacific cod	BSAI	Bottom trawl	7%	Stock synthesis 2	3b
Pacific cod	GOA	Bottom trawl	26%	Stock synthesis 2	3a
Pacific ocean perch	BSAI	Bottom trawl	13%	ADMB	3b
Pacific ocean perch	GOA	Bottom trawl	19%	ADMB	3a
Pelagic shelf rockfish	GOA	Bottom trawl	30%	ADMB/survey	3a, 5[3]
Pollock	BSAI/EBS	Bottom trawl/EIT	20%	ADMB	1a
Pollock	BSAI/AI	Bottom trawl	18%	Survey index	5
Pollock	BSAI/Bogoslof	EIT	20%	Survey index	5
Pollock	GOA	Bottom trawl/EIT	15%/4%	ADMB	3b
Pollock	GOA/Southeast	Bottom trawl	8%	Survey index	5
Rex sole	GOA	Bottom trawl	8%	ADMB	5
Rougheye rockfish	BSAI	Bottom trawl	25%	Survey index	5
Rougheye rockfish	GOA	Bottom trawl	18%	ADMB	3a
Sablefish	BSAI/EBS	Longline	10%	ADMB	3b
Sablefish	BSAI/AI	Longline	10%	ADMB	3b
Sablefish	GOA	Longline	10%	ADMB	3b
Sculpins	BSAI	Bottom trawl	10-52%/14-47%[6]	Survey index	5
Shallow water flatfish	GOA	Bottom trawl	7%	Survey index	4, 5[4]
Sharks	BSAI	Bottom trawl	71%/34%/55%[7]	Survey index	5
Shortraker rockfish	BSAI	Bottom trawl	37%	Survey index	5
Shortraker rockfish	GOA	Bottom trawl	20%	Survey index	5
Skates	BSAI	Bottom trawl	5%/8%/16%[8]	Survey index	5
Skates	GOA	Bottom trawl	9%	Survey index	5
Squid	BSAI	Bottom trawl	--	Average catch	6
Thornyhead rockfish	GOA	Bottom trawl	4%	Survey index	5
Yellowfin sole	BSAI	Bottom trawl	13%	ADMB	3a

[1] Dover sole Tier 3a, other deepwater flatfish Tier 6.
[2] Sharpchin rockfish Tier 4, remaining other slope rockfish Tier 5.
[3] Dusky rockfish Tier 3a, widow and yellowtail rockfish Tier 5.
[4] Northern and southern rocksole Tier 4, remaining shallow water flatfish Tier 5.
[5] Other rockfish CVs of 9%/67%/18% correspond to the EBS slope/SBSEA/AI surveys.
[6] Sculpin CVs of 10-52% corresponds to major sp. in 2005 EBS shelf survey, CVs of 14-47% corresponds to major sp.in 2004 AI survey.
[7] Shark CVs of 71%/34%/55% correspond to the EBS shelf/EBS slope/Al surveys.
[8] Skate CVs of 5%/8%/16% correspond to the EBS shelf/EBS slope/Al surveys.

Table 2.4 Thousands of tons of female spawning biomass relative to the current (2009) $B_{100\%}$ level (in parentheses) from 1980-2008. Source: 2009 SAFE reports.

	GOA Pollock	GOA Pacific cod	BSAI Atka mackerel	EBS Pollock	BSAI Pacific cod
$B_{100\%}$	620 (100%)	292 (100%)	238 (100%)	5,876 (100%)	1027 (100%)
1980	542 (87%)	159 (55%)	100 (42%)	994 (17%)	396 (39%)
1981	450 (72%)	165 (56%)	146 (61%)	1,670 (28%)	508 (50%)
1982	527 (85%)	191 (65%)	154 (65%)	2,559 (44%)	692 (67%)
1983	654 (105%)	198 (68%)	143 (60%)	3,155 (54%)	881 (86%)
1984	688 (111%)	187 (64%)	124 (52%)	3,352 (57%)	989 (96%)
1985	619 (100%)	181 (62%)	99 (42%)	3,603 (61%)	1010 (98%)
1986	502 (81%)	185 (64%)	84 (35%)	3,832 (65%)	982 (96%)
1987	421 (68%)	191 (66%)	84 (35%)	3,964 (67%)	958 (93%)
1988	382 (62%)	190 (65%)	92 (44%)	3,961 (67%)	931 (91%)
1989	372 (60%)	187 (64%)	105 (39%)	3,564 (61%)	872 (85%)
1990	336 (54%)	181 (62%)	123 (52%)	2,862 (49%)	804 (78%)
1991	318 (51%)	160 (55%)	143 (60%)	2,119 (36%)	705 (69%)
1992	282 (46%)	144 (49%)	185 (78%)	2,217 (38%)	581 (57%)
1993	319 (51%)	134 (46%)	189(79%)	3,090 (53%)	522 (51%)
1994	369 (59%)	144 (49%)	164 (69%)	3,399 (58%)	535 (52%)
1995	338 (54%)	157 (54%)	144 (61%)	3,596 (61%)	560 (55%)
1996	305 (49%)	154 (53%)	130 (55%)	3,589 (61%)	560 (55%)
1997	263 (42%)	149 (51%)	109 (46%)	3,378 (57%)	563 (55%)
1998	199 (32%)	142 (49%)	99 (42%)	3,134 (53%)	537 (52%)
1999	181 (29%)	139 (48%)	106 (45%)	3,149 (54%)	532 (52%)
2000	169 (27%)	129 (44%)	93 (39%)	3,185 (54%)	542 (53%)
2001	165 (27%)	118 (41%)	85 (36%)	3,199 (54%)	569 (55%)
2002	138 (22%)	111 (38%)	106 (45%)	2,999 (51%)	594 (58%)
2003	131 (21%)	108 (37%)	151 (63%)	3,139 (53%)	593 (58%)
2004	148 (24%)	110 (38%)	176 (74%)	3,195 (54%)	586 (57%)
2005	192 (31%)	109 (37%)	181 (76%)	2,874 (49%)	559 (54%)
2006	205 (33%)	103 (35%)	150 (63%)	2,297 (39%)	510 (50%)
2007	186 (30%)	97 (33%)	126 (53%)	1,832 (31%)	454 (44%)
2008	185 (30%)	99 (34%)	119 (50%)	1,254 (21%)	410 (40%)

Table 2.5a Council recommendations for GOA groundfish 2006 - 2007 OFLs , ABCs and TACs

		2005				2006			2007		
Stock/ Assemblage	Area	OFL	ABC	TAC	Catch*	OFL	ABC	TAC	OFL	ABC	TAC
Pollock	W (61)		30,380	30,380	31,116		29,187	29,187		23,291	23,291
	C (62)		34,404	34,404	27,838		30,775	30,775		24,558	24,558
	C (63)		18,718	18,718	19,348		18,619	18,619		14,858	14,858
	WYAK		1,688	1,688	1,879		1,809	1,809		1,443	1,443
	Subtotal	144,340	85,190	85,190	80,181	110,100	80,390	80,390	89,500	64,150	64,150
	EYAK/SEO	8,690	6,520	6,520	0	8,209	6,157	6,157	8,209	6,157	6,157
	Total	153,030	91,710	91,710	80,181	118,309	86,547	86,547	97,709	70,307	70,307
Pacific Cod	W		20,916	15,687	12,208		26,855	20,141		19,292	14,469
	C		33,117	25,086	21,241		37,873	28,405		27,206	20,405
	E		4,067	3,660	14		4,131	3,718		2,968	2,671
	Total	86,200	58,100	44,433	33,462	95,500	68,859	52,264	59,100	49,466	37,545
Sablefish	W		2,540	2,540	1,892		2,670	2,670		2,360	2,360
	C		7,250	7,250	6,602		6,370	6,370		5,630	5,630
	WYAK		2,580	2,580	1,825		2,280	2,280		2,014	2,014
	SEO		3,570	3,570	3,335		3,520	3,520		3,116	3,116
	Total	19,280	15,940	15,940	13,654	17,880	14,840	14,840	15,800	13,120	13,120
Deep-water flatfish[1]	W		330	330	3		420	420		421	421
	C		3,340	3,340	395		4,139	4,139		4,145	4,145
	WYAK		2,120	2,120	4		2,661	2,661		2,665	2,665
	EYAK/SEO		1,030	1,030	4		1,445	1,445		1,446	1,446
	Total	8,490	6,820	6,820	406	11,008	8,665	8,665	11,022	8,677	8,677
Rex sole	W		1,680	1,680	576		1,159	1,159		1,096	1,096
	C		7,340	7,340	1,576		5,506	5,506		5,207	5,207
	WYAK		1,340	1,340	0		1,049	1,049		992	992
	EYAK/SEO		2,290	2,290	0		1,486	1,486		1,405	1,405
	Total	16,480	12,650	12,650	2,152	12,000	9,200	9,200	11,400	8,700	8,700
Shallow-water flatfish[2]	W		21,580	4,500	108		24,720	4,500		24,720	4,500
	C		27,250	13,000	4,516		24,258	13,000		24,258	13,000
	WYAK		2,030	2,030	0		628	628		628	628
	EYAK/SEO		1,210	1,210	6		1,844	1,844		1,844	1,844
	Total	63,840	52,070	20,740	4,630	62,418	51,450	19,972	62,418	51,450	19,972
Flathead sole	W		11,690	2,000	611		10,548	2,000		10,932	2,000
	C		30,020	5,000	1,904		25,195	5,000		26,111	5,000
	WYAK		3,000	3,000	0		2,022	2,022		2,096	2,096
	EYAK/SEO		390	390	0		55	55		57	57
	Total	56,500	45,100	10,390	2,515	47,003	37,820	9,077	48,763	39,196	9,153
Arrowtooth flounder	W		26,250	8,000	2,531		20,154	8,000		21,011	8,000
	C		168,950	25,000	16,681		134,906	25,000		140,640	25,000
	WYAK		11,790	2,500	23		15,954	2,500		16,632	2,500
	EYAK/SEO		9,910	2,500	29		6,830	2,500		7,120	2,500
	Total	253,90	216,90	38,000	19,264	207,67	177,84	38,000	216,50	185,40	38,000

	2005					2006			2007		
Stock/ Assemblage	Area	OFL	ABC	TAC	Catch*	OFL	ABC	TAC	OFL	ABC	TAC
		0	0			8	4		0	3	

		2005				2006			2007		
Stock/ Assemblage	Area	OFL	ABC	TAC	Catch*	OFL	ABC	TAC	OFL	ABC	TAC
Other Slope rockfish[3]	W		40	40	93		577	577		577	577
	C		300	300	565		386	386		386	386
	WYAK		130	130	70		317	317		317	317
	EYAK/SEO		3,430	200	36		2,872	200		2,872	200
	Total	5,150	3,900	670	764	5,394	4,152	1,480	5,394	4,152	1,480
Northern rockfish[3]	W		808	808	570		1,483	1,483		1,483	1,483
	C		4,283	4,283	4,208		3,608	3,608		3,608	3,608
	E		0	0	0		0	0		0	0
	Total	6,050	5,091	5,091	4,778	7,673	5,091	5,091	7,618	5,091	5,091
Pacific ocean perch	W	3,076	2,567	2,567	2,340	4,931	4,155	4,155	4,997	4,290	4,290
	C	10,226	8,535	8,535	8,145	8,806	7,418	7,418	8,923	7,660	7,660
	WYAK		841	841	872		1,101	1,101		1,137	1,137
	SEO		1,632	1,632	0		1,587	1,587		1,639	1,639
	E(subtotal)	2,964				3,190	2,688	2,688	3,232	2,776	2,776
	Total	16,266	13,575	13,575	11,357	16,927	14,261	14,261	17,152	14,726	14,726
Shortraker	W		155	155	70		153	153		153	153
	C		324	324	224		353	353		353	353
	E		274	274	203		337	337		337	337
	Total	982	753	753	497	1,124	843	843	1,124	843	843
Rougheye	W		188	188	52		136	136		133	133
	C		557	557	122		608	608		596	596
	E		262	262	122		239	239		235	235
	Total	1,531	1,007	1,007	296	1,180	983	983	1,161	964	964
Pelagic shelf rockfish	W		377	377	120		1,438	1,438		1,463	1,463
	C		3,067	3,067	1,845		3,262	3,262		3,318	3,318
	WYAK		211	211	215		301	301		306	306
	EYAK/SEO		898	898	3		435	435		443	443
	Total	5,680	4,553	4,553	2,183	6,662	5,436	5,436	6,779	5,530	5,530
Demersal rockfish											
	SEO	640	410	410	289	650	410	410	650	410	410
Thornyhead rockfish	W		410	410	189		513	513		513	513
	C		1,010	1,010	388		989	989		989	989
	E		520	520	134		707	707		707	707
	Total	2,590	1,940	1,940	711	2,945	2,209	2,209	2,945	2,209	2,209
Atka mack.	Total	6,200	600	600	882	6,200	4,700	1,500	6,200	4,700	1,500
Big skate	W		727	727	26		695	695		695	695
	C		2,463	2,463	758		2,250	2,250		2,250	2,250
	E		809	809	60		599	599		599	599
	Total	5,332	3,999	3,999	844	4,726	3,544	3,544	4,726	3,544	3,544
Longnose skate	W		66	66	15		65	65		65	65
	C		1,972	1,972	947		1,969	1,969		1,969	1,969
	E		780	780	135		861	861		861	861
	Total	3,757	2,818	2,818	1,097	3,860	2,895	2,895	3,860	2,895	2,895
Other skates	Total	1,769	1,327	1,327	663	2,156	1,617	1,617	2,156	1,617	1,617
Other species	Total	NA	NA	13,871	2232	NA	NA	13,942		NA	12,266

	2005					2006			2007		
Stock/ Assemblage	Area	OFL	ABC	TAC	Catch*	OFL	ABC	TAC	OFL	ABC	TAC
Total		**713,667**	**539,263**	**291,298**	**182,957**	**631,293**	**501,366**	**292,776**	**582,477**	**473,000**	**258,549**

* Catch through November 6, 2005

[1] "Deep water flatfish" includes Dover sole, Greenland turbot and deepsea sole.

[2] "Shallow water flatfish" includes rock sole, yellowfin sole, butter sole, starry flounder, English sole, Alaska plaice, and sand sole.

[3] The EGOA ABC of 2 mt for northern rockfish has been included in the WYAK ABC for other slope rockfish.

Table 2.5b

NPFMC recommended GOA TACs for 2008 and 2009 and SSC recommendations for OFLs and ABCs

Stock/		2007				2008			2009		
Assemblage	Area	OFL	ABC	TAC	Catch	OFL	ABC	TAC	OFL	ABC	TAC
Pollock	W (61)		25,012	25,012	18,012		17,602	17,602		23,700	23,700
	C (62)		20,890	20,890	19,366		19,181	19,181		25,821	25,821
	C (63)		14,850	14,850	14,315		13,640	13,640		18,367	18,367
	WYAK		1,398	1,398	86		1,517	1,517		2,042	2,042
	Subtotal	87,220	62,150	62,150	51,779	72,110	51,940	51,940	95,940	69,930	69,930
	EYAK/SEO	8,209	6,157	6,157	0	11,040	8,240	8,240	11,040	8,240	8,240
	Total	95,429	68,307	68,307	51,779	83,150	60,180	60,180	106,980	78,170	78,170
Pacific Cod	W		26,855	20,141	13,227		25,932	19,449		25,932	19,449
	C		37,873	28,405	23,404		37,901	28,426		37,901	28,426
	E		4,131	3,718	65		2,660	2,394		2,660	2,394
	Total	97,600	68,859	52,264	36,696	88,660	66,493	50,269	88,660	66,493	50,269
Sablefish	W		2,470	2,470	1,996		1,890	1,890		1,727	1,727
	C		6,190	6,190	5,536		5,500	5,500		5,026	5,026
	WYAK		2,280	2,280	1,769		1,950	1,950		1,782	1,782
	SEO		3,370	3,370	3,238		3,390	3,390		3,098	3,098
	Total	16,906	14,310	14,310	12,539	15,040	12,730	12,730	12,924	11,633	11,633
Deep-water flatfish	W		420	420	8		690	690		707	707
	C		4,163	4,163	247		6,721	6,721		6,927	6,927
	WYAK		2,677	2,677	2		965	965		995	995
	EYAK/SEO		1,447	1,447	10		527	527		543	543
	Total	10,431	8,707	8,707	267	11,343	8,903	8,903	11,583	9,172	9,172
Shallow-water flatfish	W		24,720	4,500	281		26,360	4,500		26,360	4,500
	C		24,258	13,000	7,761		29,873	13,000		29,873	13,000
	WYAK		628	628	0		3,333	3,333		3,333	3,333
	EYAK/SEO		1,844	1,844	0		1,423	1,423		1,423	1,423
	Total	62,418	51,450	19,972	8,042	74,364	60,989	22,256	74,364	60,989	22,256
Rex sole	W		1,147	1,147	413		1,022	1,022		948	948
	C		5,446	5,446	2,432		6,731	6,731		6,241	6,241
	WYAK		1,037	1,037	1		520	520		483	483
	EYAK/SEO		1,470	1,470	0		859	859		796	796
	Total	11,900	9,100	9,100	2,846	11,933	9,132	9,132	11,065	8,468	8,468
Arrowtooth flounder	W		20,852	8,000	3,134		30,817	8,000		31,080	8,000
	C		139,582	30,000	21,808		167,936	30,000		169,371	30,000
	WYAK		16,507	2,500	63		15,245	2,500		15,375	2,500
	EYAK/SEO		7,067	2,500	68		12,472	2,500		12,579	2,500
	Total	214,828	184,008	43,000	25,073	266,914	226,470	43,000	269,237	228,405	43,000
Flathead sole	W		10,908	2,000	696		12,507	2,000		13,001	2,000
	C		26,054	5,000	2,407		28,174	5,000		29,289	5,000
	WYAK		2,091	2,091	2		3,420	3,420		3,556	3,556
	EYAK/SEO		57	57	0		634	634		659	659
	Total	48,658	39,110	9,148	3,105	55,787	44,735	11,054	57,962	46,505	11,215

Stock/		2007				2008			2009		
Assemblage	Area	OFL	ABC	TAC	Catch	OFL	ABC	TAC	OFL	ABC	TAC
Pacific ocean perch	W	4,976	4,244	4,244	4,428	4,376	3,686	3,686	4,397	3,704	3,704
	C	8,922	7,612	7,612	7,125	9,717	8,185	8,185	9,764	8,225	8,225
	WYAK		1,140	1,140	1,242		1,100	1,100		1,105	1,105
	SEO	3,260	1,640	1,640	0		2,028	2,028		2,038	2,038
	E(subtotal)	3,260	2,780	2,780	1,242	3714	3,128	3,128	3732	3,143	3,143
	Total	17,158	14,636	14,636	12,795	17,807	14,999	14,999	17,893	15,072	15,072
Northern rockfish[3]	W		1,439	1,439	1107		2,141	2,141		2,047	2,047
	C		3,499	3,499	2,982		2,408	2,408		2,302	2,302
	E		0	0	0		0	0		0	0
	Total	5,890	4,938	4,938	4,089	5,430	4,549	4,549	5,120	4,349	4,349
Rougheye	W		136	136	71		125	125		124	124
	C		611	611	175		834	834		830	830
	E		241	241	153		327	327		325	325
	Total	1,148	988	988	399	1,548	1286	1286	1,540	1,279	1,279
Shortraker	W		153	153	193		120	120		120	120
	C		353	353	155		315	315		315	315
	E		337	337	244		463	463		463	463
	Total	1,124	843	843	592	1,197	898	898	1,197	898	898
Other slope[3]	W		577	577	252		357	357		357	357
	C		386	386	319		569	569		569	569
	WYAK		319	319	49		604	604		604	604
	EYAK/SEO		2,872	200	45		2,767	200		2,767	200
	Total	5,394	4,154	1,482	665	5,624	4,297	1,730	5,624	4,297	1,730
Pelagic shelf rockfish	W		1,466	1,466	595		1,003	1,003		986	986
	C		3,325	3,325	2,440		3,626	3,626		3,566	3,566
	WYAK		307	307	293		251	251		247	247
	EYAK/SEO		444	444	1		347	347		341	341
	Total	6,458	5,542	5,542	3,329	6,400	5,227	5,227	6,294	5,140	5,140
Demersal rockfish		650	410		178	611	382	382	611	382	382
	Total			410							
Thornyhead	W		513	513	338		267	267		267	267
	C		989	989	247		860	860		860	860
	E		707	707	184		783	783		783	783
	Total	2,945	2,209	2,209	769	2,540	1,910	1,910	2,540	1,910	1,910
Atka mackerel	Total	6,200	4,700	1,500	1,441	6,200	4,700	1,500	6,200	4,700	1,500
Big skate	W		695	695	68		632	632		632	632
	C		2,250	2,250	1,218		2,065	2,065		2,065	2,065
	E		599	599	8		633	633		633	633
	Total	4,726	3,544	3,544	1,294	4,439	3,330	3,330	4,439	3,330	3,330
Longnose skate	W		65	65	46		78	78		78	78
	C		1,969	1,969	814		2,041	2,041		2,041	2,041
	E		861	861	240		768	768		768	768
	Total	3,860	2,895	2,895	1,100	3,849	2,887	2,887	3,849	2,887	2,887
Other skates	Total	2,156	1,617	1,617	1,104	2,806	2,104	2,104	2,806	2,104	2,104
Other Species	Total	NA	NA	4,500	2,695			4,500			4,500
Total		**611,153**	**490,327**	**269,912**	**170,797**	**665,642**	**536,201**	**262,826**	**690,888**	**556,183**	**279,264**

Table 2.6a Council recommended ABC, OFL, and 2006 and 2007 TAC specifications for the BSAI.

Species	Area	2005				2006			2007		
		OFL	ABC	TAC	Catch**	OFL	ABC	TAC	OFL	ABC	TAC
Pollock	EBS	2,100,000	1,960,000	1,478,500	1,483,096	2,090,000	1,930,000	1,485,000	1,930,000	1,790,000	1,500,000
	Aleutian Islands	39,100	29,400	19,000	1,621	39,100	29,400	19,000	39,100	29,400	19,000
	Bogoslof District	39,600	2,570	10	0	50,600	5,500	10	50,600	5,500	10
Pacific cod	BSAI	265,000	206,000	206,000	183,020	230,000	194,000	194,000	176,000	148,000	148,000
Sablefish	BS	2,950	2,440	2,440	1,037	3,680	3,060	2,820	3,260	2,700	2,700
	AI	3,170	2,620	2,620	1,480	3,740	3,100	3,000	3,300	2,740	2,740
Yellowfin sole	BSAI	148,000	124,000	90,686	91,684	144,000	121,000	95,701	137,000	116,000	107,641
Greenland turbot	Total	19,200	3,930	3,500	2,530	14,200	2,740	2,740	13,400	2,630	2,630
	BS		2,720	2,700	2,105		1,890	1,890		1,815	1,815
	AI		1,210	800	425		850	850		815	815
Arrowtooth flounder	BSAI	132,000	108,000	12,000	13,888	166,000	136,000	13,000	174,000	142,000	18,000
Rock sole	BSAI	157,000	132,000	41,500	37,237	150,000	126,000	41,500	145,000	122,000	44,000
Flathead sole	BSAI	70,200	58,500	19,500	15,818	71,800	59,800	19,500	67,900	56,600	22,000
Alaska plaice	BSAI	237,000	189,000	8,000	11,183	237,000	188,000	8,000	231,000	183,000	15,000
Other flatfish	BSAI	28,500	21,400	3,500	4,466	24,200	18,100	3,500	24,200	18,100	5,000
Pacific Ocean perch	BSAI	17,300	14,600	12,600	10,360	17,600	14,800	12,600	17,600	14,800	14,800
	BS		2,920	1,400	811		2,960	1,400		2,960	2,960
	AI total		11,680	11,200	9,549		11,840	11,200		11,840	11,840
	WAI		5,305	5,085	4,725		5,372	5,085		5,372	5,372
	CAI		3,165	3,035	2,238		3,212	3,035		3,212	3,212
	EAI		3,210	3,080	2,586		3,256	3,080		3,256	3,256
Northern rockfish	BSAI	9,810	8,260	5,000	3,959	10,100	8,530	4,500	9,890	8,320	5,000
Shortraker rockfish	BSAI	794	596	596	166	774	580	580	774	580	580
Rougheye rockfish	BSAI	298	223	223	92	299	224	224	299	224	224
Other rockfish	BSAI	1,870	1,400	1,050	468	1,870	1,400	1,050	1,870	1,400	1,400
	BS		810	460	188		810	460		810	810
	AI		590	590	280		590	590		590	590
Atka mackerel	Total	147,000	124,000	63,000	61,958	130,000	110,000	63,000	107,000	91,000	63,000
	WAI		46,620	20,000	19,736		41,360	15,500		34,220	17,500
	CAI		52,830	35,500	35,105		46,860	40,000		38,760	38,000
	EAI/BS		24,550	7,500	7,133		21,780	7,500		18,020	7,500
Squid	BSAI	2,620	1,970	1,275	1,183	2,620	1,970	1,275	2,620	1,970	1,275
Other species	BSAI	87,920	53,860	29,000	24,666	89,404	58,882	29,000	89,404	62,950	27,000
Total	BSAI	3,509,332	3,044,769	2,000,000	1,949,912	3,476,987	3,045,586	2,000,000	3,224,217	2,832,414	2,000,000

**2005 catch is through October 29, and includes CDQ. The preferred alternative is Alternative 2. The 2006 and 2007 OFLs, ABCs, and TACs were adopted by the Council in December 2005.

Table 2.6b 2007 Harvest Specifications and Council recommended 2008 and 2009 ABC, OFL, and TAC specifications for the BSAI.

Species	Area	2007				2008			2009		
		OFL	ABC	TAC	Catch	OFL	ABC	TAC	OFL	ABC	TAC
Pollock	EBS	1,640,000	1,394,000	1,394,000	1,350,000	1,440,000	1,000,000	1,000,000	1,320,000	1,000,000	1,000,000
	Aleutian Islands	54,500	44,500	19,000	2,488	34,000	28,200	19,000	26,100	22,700	19,000
	Bogoslof	48,000	5,220	10	0	58,400	7,970	10	58,400	7,970	10
Pacific cod	BSAI	207,000	176,000	170,720	172,655	207,000	176,000	170,720	207,000	176,000	170,720
Sablefish	BS	3,520	2,980	2,980	1,090	3,380	2,860	2,860	2,910	2,610	2,610
	AI	3,320	2,810	2,810	1,080	2,890	2,440	2,440	2,510	2,230	2,230
Yellowfin sole	BSAI	240,000	225,000	136,000	119,332	265,000	248,000	225,000	296,000	276,000	205,000
Greenland turbot	Total	15,600	2,440	2,440	1,946	15,600	2,540	2,540	16,000	2,540	2,540
	BS		1,680	1,680	1,435		1,750	1,750		1,750	1,750
	AI		760	760	511		790	790		790	790
Arrowtooth flounder	BSAI	193,000	158,000	20,000	11,700	297,000	244,000	75,000	300,000	246,000	75,000
Northern rock sole	BSAI	200,000	198,000	55,000	37,013	304,000	301,000	75,000	379,000	375,000	75,000
Flathead sole	BSAI	95,300	79,200	30,000	19,500	86,000	71,700	50,000	83,700	69,700	50,000
Alaska plaice	BSAI	241,000	190,000	25,000	19,411	248,000	194,000	50,000	277,000	217,000	50,000
Other flatfish	BSAI	28,500	21,400	10,000	5,840	28,800	21,600	21,600	28,800	21,600	21,600
Pacific Ocean perch	BSAI	26,100	21,900	19,900	17,800	25,700	21,700	21,700	25,400	21,300	21,300
	BS		4,160	2,160	811		4,200	4,200		4,100	4,100
	AI total		17,740	17,740	16,960		17,500	17,500		17,200	17,200
	WAI		7,720	7,720	7,421		7,610	7,610		7,490	7,490
	CAI		5,050	5,050	4,423		4,990	4,990		4,900	4,900
	EAI		4,970	4,970	5,116		4,900	4,900		4,810	4,810
Northern rockfish	BSAI	9,750	8,190	8,190	3,940	9,740	8,180	8,180	9,680	8,130	8,130
Shortraker	BSAI	564	424	424	318	564	424	424	564	424	424
Rougheye	BSAI	269	202	202	163	269	202	202	269	202	202
Other rockfish	BSAI	1,330	999	999	635	1,330	999	999	1,290	968	968
	BS		414	414	205		414	414		414	414
	AI		585	585	430		585	585		554	554
Atka mackerel	Total	86,900	74,000	63,000	56,620	71,400	60,700	60,700	50,600	47,500	47,500
	WAI		20,600	9,600			16,900	16,900		13,200	13,200
	CAI		29,600	29,600			24,300	24,300		19,000	19,000
	EAI/BS		23,800	23,800			19,500	19,500		15,300	15,300
Squid	BSAI	2,620	1,970	1,970	1,190	2,620	1,970	1,970	2,620	1,970	1,970
Other species	BSAI	91,700	68,800	37,400	26,500	104,000	78,100	50,000	104,000	78,100	60,000
Total	BSAI	3,188,973	2,676,035	2,000,045	1,849,221	3,205,693	2,472,585	1,838,345	3,191,843	2,577,944	1,814,204

**2007 catch is through October 27, 2007 (includes CDQ and state water harvests).

Table 2.7 TAC projections for 2006, 2007, and 2008 for pollock, Pacific cod and Atka mackerel. Also included is biomass projections and overall catch ratio for each managed area (AFSC unpublished data).

TAC				
Species	**Area**	**2006**	**2007**	**2008**
Pollock	GOA	85,807	70,507	72,007
Pollock	EBS	1,485,000	1,419,800	1,168,700
Pollock	AI	19,000	19,000	19,000
Pacific cod	GOA	52,264	44,705	30,436
Pacific cod	BSAI	188,180	144,045	118,049
Atka mackerel	GOA	1,500	1,500	1,500
Atka mackerel	BSAI	63,000	90,900	65,100

Biomass				
Species	**Area**	**2006**	**2007**	**2008**
Pollock	GOA	771,457	819,510	896,227
Pollock	EBS	9,681,630	9,570,530	9,877,730
Pollock	AI	130,000	130,000	130,000
Pacific cod	GOA	438,295	412,970	420,938
Pacific cod	BSAI	1,241,710	1,167,570	1,215,240
Atka mackerel	GOA	n/a	n/a	n/a
Atka mackerel	BSAI	550,517	496,627	460,297

Ratio				
Species	**Area**	**2006**	**2007**	**2008**
Pollock	Eastern GOA	0.11	0.09	0.08
Pollock	Central GOA	0.11	0.09	0.08
Pollock	Western GOA	0.11	0.09	0.08
Pollock	Pribilof Islands	0.15	0.15	0.12
Pollock	Eastern AI	0.15	0.15	0.15
Pollock	Central AI	0.15	0.15	0.15
Pollock	Western AI	0.15	0.15	0.15
Pacific cod	Eastern GOA	0.12	0.11	0.07
Pacific cod	Central GOA	0.12	0.11	0.07
Pacific cod	Western GOA	0.12	0.11	0.07
Pacific cod	Pribilof Islands	0.15	0.12	0.10
Pacific cod	Eastern AI	0.15	0.12	0.10
Pacific cod	Central AI	0.15	0.12	0.10
Pacific cod	Western AI	0.15	0.12	0.10
Atka mackerel	Eastern GOA	n/a	n/a	n/a
Atka mackerel	Central GOA	n/a	n/a	n/a
Atka mackerel	Western GOA	n/a	n/a	n/a
Atka mackerel	Pribilof Islands	n/a	n/a	n/a
Atka mackerel	Eastern AI	0.11	0.18	0.14
Atka mackerel	Central AI	0.11	0.18	0.14
Atka mackerel	Western AI	0.11	0.18	0.14

Table 2.8 Fisheries and target species for GOA (first panel) and BSAI (second panel). For further information on fisheries targets see section 2.1 of the BA.

Species	Trawl	Hook-and-line	Pot	Jig
Walleye pollock	X			
Pacific cod	X	X	X	X
Deepwater flatfish	X			
Rex sole	X			
Flathead sole	X			
Shallow water flatfish	X			
Arrowtooth flounder	X			
Sablefish	X (bycatch only)	X (IFQ fishery)		
Pacific ocean perch	X			
Shortraker rockfish (bycatch only)				
Rougheye rockfish (bycatch only)				
Other rockfish (bycatch only)				
Northern rockfish	X			
Pelagic shelf rockfish	X			
Thornyhead rockfish (bycatch only)				
Big skates	X			
Longnose skates (W GOA bycatch only)				
Other skates (bycatch only)				
Demersal Shelf rockfish		X		X
Atka mackerel (bycatch only)				
Other species*				

*octopus, squid, shark, and sculpins

Table 2.9 Groundfish catches (metric tons) in the Bering Sea(a), Aleutian Islands(b), and Gulf of Alaska(c).

Bering Sea (BS)	Percent pollock/BS Groundfish		Percent P. cod/BS Groundfish		Percent Atka mackerel/BS Groundfish		Total BS Groundfish
Year	**Pollock**	**%**	**P. cod**	**%**	**A. mackerel**	**%**	**Total**
1964	174,792	44%	13,408	3%		0%	393,891
1965	230,551	67%	14,719	4%		0%	344,369
1966	261,678	58%	18,200	4%		0%	452,081
1967	550,362	66%	32,064	4%		0%	836,308
1968	702,181	73%	57,902	6%		0%	967,083
1969	862,789	72%	50,351	4%		0%	1,192,020
1970	1,256,565	79%	70,094	4%		0%	1,593,649
1971	1,743,763	82%	43,054	2%		0%	2,137,326
1972	1,874,534	87%	42,905	2%		0%	2,149,092
1973	1,758,919	85%	53,386	3%		0%	2,064,444
1974	1,588,390	84%	62,462	3%		0%	1,900,092
1975	1,356,736	82%	51,551	3%		0%	1,645,232
1976	1,177,822	82%	50,481	4%		0%	1,428,565
1977	978,370	84%	33,335	3%		0%	1,168,144
1978	979,431	75%	42,543	3%	831	0%	1,302,509
1979	913,881	79%	33,761	3%	1,985	0%	1,159,547
1980	958,279	78%	45,861	4%	4,955	0%	1,221,944
1981	973,505	77%	51,996	4%	3,027	0%	1,259,666
1982	955,964	79%	55,040	5%	328	0%	1,211,483
1983	982,363	77%	83,212	6%	141	0%	1,280,285
1984	1,098,783	75%	110,944	8%	57	0%	1,458,299
1985	1,179,759	72%	132,736	8%	4	0%	1,649,109
1986	1,188,449	73%	130,555	8%	12	0%	1,633,911
1987	1,237,597	76%	144,539	9%	12	0%	1,639,121
1988	1,228,000	68%	192,726	11%	428	0%	1,810,470
1989	1,230,000	75%	164,800	10%	3,126	0%	1,630,382
1990	1,353,000	82%	162,927	10%	480	0%	1,644,109
1991	1,268,360	77%	165,444	10%	2,265	0%	1,647,455
1992	1,384,376	76%	163,240	9%	2,610	0%	1,831,954
1993	1,301,574	78%	133,156	8%	201	0%	1,674,406
1994	1,362,694	75%	174,151	10%	190	0%	1,818,628
1995	1,264,578	72%	228,496	13%	340	0%	1,745,890
1996	1,189,296	72%	209,201	13%	780	0%	1,653,355
1997	1,115,268	68%	209,475	13%	171	0%	1,640,590
1998	1,101,428	74%	160,681	11%	901	0%	1,486,739
1999	889,589	74%	134,647	11%	2,008	0%	1,200,387
2000	1,132,736	76%	151,372	10%	239	0%	1,497,520
2001	1,387,452	82%	142,452	8%	264	0%	1,694,677
2002	1,481,815	81%	166,552	9%	572	0%	1,839,170
2003	1,492,039	80%	180,592	10%	6,362	0%	1,871,273
2004	1,481,678	79%	184,961	10%	7,079	0%	1,877,389
2005	1,483,096	80%	160,922	9%	3,495	0%	1,849,054
2006	1,486,425	79%	168,022	9%	3,170	0%	1,872,992
2007	1,353,990	78%	139,457	8%	3,021	0%	1,737,797

Table 2.10. Chronology of SSL protection measures in Alaska groundfish fisheries.

1990	Under the ESA, NMFS lists Steller sea lion as endangered. • Shooting banned to reduce Steller sea lion mortality. • Established 3nm No Transit/No Fishing Areas around Steller sea lion rookeries. State of Alaska also adopted these closures. (Figure 2.28)
1992	No Trawl zones around Steller sea lion rookeries established. (Figure 2.29) • 10nm around rookeries • 20nm around some rookeries in the A Season. • Donut Hole closed by internal convention
1993	Steller Sea Lion Critical Habitat Established under 50 CFR Part 226. (Figure 2.30) • 20nm around Rookery and Haulouts and the Bogoslof, Shelikof, and Seguam Pass Foraging Areas.
1995	Biological Opinion issued stating that fisheries of the Gulf of Alaska and Bering Sea, Aleutian Islands "not likely to jeopardize the continued existence of Steller Sea Lions.
1997	Steller sea lions west of 144 degrees West longitude are listed as endangered.
1998	• Atka Mackerel and Pollock Biological Opinion 1 issued. It says that these fisheries jeopardize the recovery of Steller sea lions. • Groundfish Fishery Biological Opinion 2 issued. • Ban on forage fishing as important to marine mammals.
1999	No trawl zones- Figure 2.31 • NMFS closes the Aleutian Islands Subarea (541, 542, 543) to directed fishing for Pollock • CH/CVOA in the Bering Sea Created inside the Bogoslof Foraging Area • Atka Mackerel Total Allowable Catch for inside and outside of Steller sea lion Critical Habitat • Additional RFRPA Pollock No Trawl Areas – A Season and/or B Season. • In 2000 Additional Pollock RFRPA's added.
2000	• July - Judge Zilly issues Trawl Injunction for all Steller sea lion Critical Habitat, as per 50 CFR 226. • November. Biological Opinion number 3 issues with 13 Closed and Restricted Areas. (Figure 2.32).
2001	• Emergency Rule issued with Management from January 2000. (Figure 2.31). • Emergency Rule Expired June 2001. Management reverted to November 30, Biological Opinion (Figure 2.32). • July 17, 2001 Final Rule issued with Current Management based on recommendations by the Steller Sea Lion Reasonable and Prudent Alternative Committee. Steller sea lion management broken out by Critical Habitat limits, target fisheries of pollock, P.cod, and Atka mackerel and gear type. (Figure 2.33)
2004	Small changes to GOA SSL protection measures based on informal consultation (Figure 2.34).

Table 2.11. Pacific cod allocations by season and area in the GOA

Area	Gear	Season	TAC Apportionment	Inshore	Offshore
W and C Regulatory Areas	H&L Pot Jig	Jan 1 – June 10	60	90	10
		Sept 1 – Dec 31	40	90	10
W and C Regulatory Areas	Trawl	Jan 20 – June 10	60	90	10
		Sept 1 – Nov 1	40	90	10
E Regulatory Area	All	Jan 1 – Dec 31 (Jan 20 for trawl)	100	90	10

Table 2.12. General SSL protection area closures in BSAI

Area	Restriction	Season	Exceptions
Rookeries BSAI	No groundfish fishing and no vessel transit 0-3 n mi	All year	
Rookeries AI	• No directed fishing for pollock 0-20 nm. • No directed fishing for Atka mackerel with trawl gear 0-10 W of 178º W and 0-20 nm E of 178ºW. • No directed fishing for P. cod by trawl 0-20 during HLA fishery, 0-10 after HLA fishery, and 0-10 nm E of 178ºW. • No directed fishing for P. cod by pot or hook-and-line 0-3 in W and C AI and W portion of EAI, and 0-20 in the E portion of EAI.	All year	Buldir I. closed to Atka mackerel trawling 0-15 nm, and no P. cod pot and hook-and-line directed fishing 0-10. Agligadak I. closed to P. cod trawl 0-20 nm.
Haulouts AI	• No directed pollock fishing 0-20 nm • No P. cod trawl 0-3 nm. • No P. cod trawl 0-20 during HLA Atka mackerel fishery. • No P. cod pot or hook and line fishing 0-20 nm in E portion of EAI. • No Atka mackerel trawl fishing 0-3 nm W of 178º W and 0-20 nm E of 178ºW.	All year	
Haulouts BS	• No directed pollock fishing varies from 0-3 nm to 0-20 nm. • No directed fishing for P. cod by trawl varies 0-3 nm to 0-20 nm. • No directed fishing for P. cod with pot or hook-and-line gear varies 0-3 nm to 0-20 nm. • No directed fishing for Atka mackerel 0-20 nm.	All year	
Area	**Restriction**	**Season**	**Exceptions**
Rookeries BS	• No directed trawl fishing for P. cod or pollock 0-10 nm. • No directed fishing for P. cod with hook and line or pot gear 0-3 nm. • No directed fishing for Atka mackerel with trawl 0 to 20 nm.	All year	Sea Lion Rocks (Amak) no pot or hook-and-line fishing for P. cod within 0-7 nm. Bogoslof I. and Adugak I. are in the Bogoslof Foraging Area, closed to directed fishing for pollock, P. cod and Atka mackerel.
Pribilof Is. haulouts	No directed trawl fishing for P. cod or pollock 0-3 nm	All year	
East of 178˚ W, trawl gear	Rookeries closed 0-10 n mi; haulouts closed 0-3 nm	All year	Agligadak closed 0-20 nm
West of 178˚ W, trawl gear	Rookeries & haulouts closed 0-20 nm until Atka mackerel fishery inside SSL CH is closed (applies to A & B seasons), then P cod trawling closed 0-3 nm of haulouts and 0-10 n mi of rookeries	All year	
Pot, H&L gear in Aleutian Islands	Closed in SSL CH east of 173˚ W to 170˚ W; Buldir rookery closed 0-10 nm; Agligadak rookery closed 0-20 nm	All year	
Seguam foraging area	Closed to pollock, P. cod and Atka mackerel	All year	

Bogoslof foraging area	Closed to Atka mackerel, P. cod, and pollock directed fishing	All year	Bogoslof Pacific Cod Exemption Area H&L and jig vessels < 60' targeting P. cod allowed S of line extending from a point 3 nm N of Bishop Point to Cape Tanak
St. Lawrence & Hall Is., Cape Newenham, Round Is. haulouts	Closed 0-20 nm to pollock, P. cod and Atka mackerel	All year	
Unalaska/Bishop Point & Akutan I./Reef-Lava haulouts	No directed H&L fishing for P. cod 0-10 nm	All year	Vessels <60' E of 167ºW are exempt. Jig vessels prohibited in 10 nm Bishop Pt. Closure W of 167º W
Steller Sea Lion Conservation Area (SCA)	No directed fishing for pollock	A season	
Catcher Vessel Operating Area (CVOA)	No directed trawl C/P fishing for pollock	B season	

Table 2.13. Pacific cod allocations by season in the BSAI (non-CDQ fisheries)

Sector	Seasonal Allowances		
	A season	B season	C season
(1) Trawl			
(i) Trawl CV	**74 %**	**11 %**	**15 %**
(ii) Trawl CP	**75 %**	**25 %**	**0 %**
(2) Hook-and-line **CP,** hook-and-line **CV** ≥60 ft (18.3 m) LOA, **and** **pot** gear vessels ≥60 ft (18.3 m) LOA	**51 %**	**49 %**	**no C season**
(3) Jig vessels	**60 %**	20 %	**20 %**
(4) All other nontrawl vessels	no seasonal **allowance**	no seasonal **allowance**	no seasonal **allowance**

Table 2.14. Pollock allocations by season and area in the BSAI

Area	DFA	Season	DFA Allocation	Restriction
Bering Sea	Inshore 50 % C/P 40 % Mothership 10 %	Jan 20 – June 10	40 %	No more than 28 % from the SCA before Apr 1
		June 10 – Nov 1	60 %	
Aleutian Islands	Aleut Corp 100 %	Jan 20 – June 10	40 %	
		June 10 – Nov 1	60 %	
Bogoslof		Closed		

Table 2.15. Atka mackerel allocations by season and area in the BSAI

Gear	ITAC Gear Split	Area	Spatial ITAC Split	Season	Seasonal Allocation	Restrictions
Jig	~2 %			Jan 1 – Dec 31		
Trawl	~98 %	W & C Regulatory Areas	~68 %	Jan 20 – Apr 15	50 %	Each season's harvest limited to 60 percent of seasonal apportionment in W & C HLAs (see regulations)
				Sept 1 – Nov 1	50 %	
		E Reg Area & Bering Sea	~32 %	Jan 20 – Apr 15	50 %	
				Sept 1 – Nov 1	50 %	

Table 2.16 Comparison of current management measures to the 2000 BiOp RPA.

Management Measures	RPA from the FMP Biological Opinion	SSL Protection Measures Since 2000 BiOp	Additional Measures That May Protect SSLs
Harvest Control Rule	NMFS 2000 Biological Opinion Global Control Rule	Harvest Control Rule - no directed fishing if biomass < B20% for P. cod, pollock, and Atka mackerel (679.20(d)(4))	
No Transit Zones	3 nm no-transit zones around principal rookeries	3 nm no-transit and no groundfish fishing zones around principal rookeries (Table 12 to part 679)	

Area Closures	All CH/RFRPA sites designated as restricted or closed to fishing for pollock, cod, and mackerel	• Specified closures around rookeries & haulouts by fishery, area, season, and gear type (Tables 4-6 and 12 to part 679) • Bering Sea Pollock Restriction Area closed to pollock fishing in A season (679.22(a)(7)(ii)) • Bogoslof Area and Seguam Foraging Area closed to directed fishing for pollock, cod, and mackerel. (679.22(a)(7)(I) and (a)(8)(i)) • No fishing for pollock in CH in the AI (679.22(a)(8)(ii)) • No trawl fishing for P. Cod in the Atka mackerel harvest limit area (HLA) during the Atka mackerel HLA fishery (679.22(a)(8)(iv)) • No fishing for Atka mackerel in the HLA except during assigned periods and locations of HLA fishery (679.20(a)(8)(iii)) • No directed fishing for Atka mackerel in the GOA (679.22 (b)(2)(iv))	• EFH and HAPC rule bottom contact gear closures around seamounts and coral gardens which may be used for foraging by SSLs and may be located near SSL rookeries and haulouts, reducing disturbance and potential competition. (Tables 22, 23, and 26 to part 679) • Walrus Protection Area closure to fishing 3-12 nm around Round Island and the Twins 4/1-9/30 (679.22(a)(4)) • No trawling in Pribilof Island Habitat Conservation Zone (679.22(a)(6)) • CVOA closed to pollock C/Ps in the B season (679.22(a)(5)) • Near Shore Bristol Bay Trawl Closure between 4/1-6/15 (679.22 (a)(9))

Season Closures	• No trawling 1/1 to 1/20; • no trawling for pollock, cod, or mackerel 11/1 to 1/20; • no fishing for pollock, cod, or mackerel inside CH 11/1 to 1/20	• No groundfish trawling 1/1 to 1/20 (679.23(c)) • Closure period between GOA pollock B and C seasons (679.23(d)(2)) • Closure period between AI Atka mackerel A and B seasons (679.23(e)(3)) • Closure period between BSAI P. cod pot A and B seasons (679.23(e)(5)) • No trawling for Atka mackerel, pollock, or cod 11/1 to 12/31(679.23)	
Seasons and Apportionments pollock	• BSAI - 1/20 (40%), 6/11 (60%); • GOA - 1/20 (40%), 6/11 (60%)	• AI - 1/20: no more than 40 % of ABC; 6/11 remainder of annual TAC (679.20(a)(5)(iii)) • BS 1/20-6/10 (40%), 6/10-11/1 (60%); (679.20(a)(5)(i)(B)) • GOA - 1/20 -3/10 (25%); 3/10- 5/31 (25%), 8/25-10/1 (25%), 10/1-11/1 (25%) (679.20(a)(5)(iv))	
Seasons and Apportionments cod	• BSAI - 1/20 (40%), 6/11 (60%); • GOA - 1/20 (40%), 6/11 (60%)	• BSAI trawl - 1/20-4/1 (60%), 4/1-6/10 (20%), 6/10-11/1 (20%) (679.20(a)(7)(iii)) • BSAI longline- 1/1-6/10 (60%), 6/10-12/31 (40%) (679.20(a)(7)(iii)) • BSAI pot - 1/1-6/10 (60%), 9/1-12/31 (40%) (679.20(a)(7)(iii)) • BSAI jig- 1/1-4/30 (40 %), 4/30-8/31 (20 %), 8/3-12/31 (40%) (679.20(a)(7)(iii)) • W/C GOA trawl - 1/20-6/10 (60%), 9/1-12/31 (40%) (679.20(a)(11)) • W/C GOA fixed - 1/1-6/10 (60%), 9/1-12/31 (40%) (679.20(a)(11))	

Seasons and Apportionments mackerel	• BSAI - 1/20 (40%), 6/11 (60%); • GOA - 1/20 (40%), 6/11 (60%)	BSAI - 1/20 - 4/15 (50%) and 9/1-11/1 (50%) (679.20(a)(8)(ii)(A)	
Catch Limits Inside CH	Pollock, cod, and mackerel: 4 seasons (1/20, 4/1, 5/11 8/22) inside CH/RFRPA with catch limits based on season and area specific biomass estimates	• A season pollock harvest in SCA limited to 28% of annual TAC prior to April 1 (679.20(a)(5)(i)(C)) • Mackerel harvest of seasonal apportionment limited to 60% inside CH (679.20(a)(8)(ii)(C))	
Other Catch Limits		• HLA fishery in the AI does platooning of the Atka mackerel fishery to reduce effort inside CH. (679.20(a)(8)(iii)) • 50% allocation of AI pollock to vessels < 60ft by 2013 and beyond slowing fishing rate (679.20(a)(5)(iii))	
Experimental Design	Large scale: 4 sets of restricted/closed areas for comparison	Small scale experiments for Pacific cod, Atka mackerel, and pollock testing local depletion hypothesis	
Observer Coverage	No change to current observer coverage requirements	No change to current observer coverage requirements	

VMS		VMS required on all vessels (except those using jig gear) when fishing for pollock, cod, or mackerel. (679.7(a)(18))	• All vessels in AI required to operate VMS. (679.7(a)(21)) • All vessels in GOA with mobile bottom contact gear on board required to have VMS (679.7(a)(22))
Registration Requirements	None	Preregistration required for Atka mackerel fishery	• AFA for BS pollock, slows down fishery to reduce potential competition. (Part 679, subpart F) • Registration required for AI pollock fishery (679.7(l))

Table 2.17 Steller Sea Lion Protection Areas 3nm No Groundfish Fishing Sites (Table 12 to 50 CFR Part 679)

Column Number 1	2	3	4	5	6	7
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		No transit[2]
		Latitude	Longitude	Latitude	Longitude	3 nm
Walrus I. (Pribilofs)	Bering Sea	57 11.00 N	169 56.00 W			Y
Attu I./Cape Wrangell	Aleutian I.	52 54.60 N	172 27.90 E	52 55.40 N	172 27.20 E	Y
Agattu I./Gillon Pt.	Aleutian I.	52 24.13 N	173 21.31 E			Y
Agattu I./Cape Sabak	Aleutian I.	52 22.50 N	173 43.30 E	52 21.80 N	173 41.40 E	Y
Buldir I.	Aleutian I.	52 20.25 N	175 54.03 E	52 20.38 N	175 53.85 E	Y
Kiska I./Cape St. Stephen	Aleutian I.	51 52.50 N	177 12.70 E	51 53.50 N	177 12.00 E	Y
Kiska I./Lief Cove	Aleutian I.	51 57.16 N	177 20.41 E	51 57.24 N	177 20.53 E	Y
Ayugadak Point	Aleutian I.	51 45.36 N	178 24.30 E			Y
Amchitka I./Column Rocks	Aleutian I.	51 32.32 N	178 49.28 E			Y
Amchitka I./East Cape	Aleutian I.	51 22.26 N	179 27.93 E	51 22.00 N	179 27.00 E	Y
Semisopochnoi/Petrel Pt.	Aleutian I.	52 01.40 N	179 36.90 E	52 01.50 N	179 39.00 E	Y
Semisopochnoi I./Pochnoi Pt.	Aleutian I.	51 57.30 N	179 46.00 E			Y
Ulak I./Hasgox Pt.	Aleutian I.	51 18.90 N	178 58.90 W	51 18.70 N	178 59.60 W	Y
Tag I.	Aleutian I.	51 33.50 N	178 34.50 W			Y
Gramp Rock	Aleutian I.	51 28.87 N	178 20.58 W			Y
Adak I.	Aleutian I.	51 35.50 N	176 57.10 W	51 37.40 N	176 59.60 W	Y
Kasatochi I.	Aleutian I.	52 11.11 N	175 31.00 W			Y
Agligadak I.	Aleutian I.	52 06.09 N	172 54.23 W			Y
Seguam I./Saddleridge Pt.	Aleutian I.	52 21.05 N	172 34.40 W	52 21.02 N	172 33.60 W	Y
Yunaska I.	Aleutian I.	52 41.40 N	170 36.35 W			Y
Adugak I.	Bering Sea	52 54.70 N	169 10.50 W			Y
Ogchul I.	Gulf of Alaska	52 59.71 N	168 24.24 W			Y
Bogoslof I./Fire I.	Bering Sea	53 55.69 N	168 02.05 W			Y
Akutan I./Cape Morgan	Gulf of Alaska	54 03.39 N	165 59.65 W	54 03.70 N	166 03.68 W	Y
Akun I./Billings Head	Bering Sea	54 17.62 N	165 32.06 W	54 17.57 N	165 31.71 W	Y

Column Number 1	2	3	4	5	6	7
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		No transit[2]
		Latitude	Longitude	Latitude	Longitude	3 nm
Ugamak I.	Gulf of Alaska	54 13.50 N	164 47.50 W	54 12.80 N	164 47.50 W	Y
Sea Lion Rock (Amak)	Bering Sea	55 27.82 N	163 12.10 W			Y
Clubbing Rocks (S)	Gulf of Alaska	54 41.98 N	162 26.7 W			Y
Clubbing Rocks (N)	Gulf of Alaska	54 42.75 N	162 26.7 W			Y
Pinnacle Rock	Gulf of Alaska	54 46.06 N	161 45.85 W			Y
Chernabura I.	Gulf of Alaska	54 45.18 N	159 32.99 W	54 45.87 N	159 35.74 W	Y
Atkins I.	Gulf of Alaska	55 03.20 N	159 17.40 W			Y
Chowiet I.	Gulf of Alaska	56 00.54 N	156 41.42 W	55 00.30 N	156 41.60 W	Y
Chirikof I.	Gulf of Alaska	55 46.50 N	155 39.50 W	55 46.44 N	155 43.46 W	Y
Sugarloaf I.	Gulf of Alaska	58 53.25 N	152 02.40 W			Y
Marmot I.	Gulf of Alaska	58 13.65 N	151 47.75 W	58 09.90 N	151 52.06 W	Y
Outer (Pye) I.	Gulf of Alaska	59 20.50 N	150 23.00 W	59 21.00 N	150 24.50 W	Y
Wooded I. (Fish I.)	Gulf of Alaska	59 52.90 N	147 20.65 W			
Seal Rocks (Cordova)	Gulf of Alaska	60 09.78 N	146 50.30 W			

[1] Where two sets of coordinates are given, the baseline extends in a clock-wise direction from the first set of geographic coordinates along the shoreline at mean lower-low water to the second set of coordinates. Where only one set of coordinates is listed, that location is the base point.

[2] See 50 CFR 223.202(a)(2)(i) for regulations regarding 3 nm no transit zones.

Note: No groundfish fishing zones are the waters between 0 nm to 3 nm surrounding each site.

Table 2.18 Steller Sea Lion Protection Areas Pollock Fisheries Restrictions (Table 4 to 50 CFR Part 679)

Column Number 1	2	3	4	5	6	7
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Pollock No-fishing Zones for Trawl Gear [2,8](nm)
		Latitude	Longitude	Latitude	Longitude	
St. Lawrence I./S Punuk I.	Bering Sea	63 04.00 N	168 51.00 W			20
St. Lawrence I./SW Cape	Bering Sea	63 18.00 N	171 26.00 W			20
Hall I.	Bering Sea	60 37.00 N	173 00.00 W			20
St. Paul I./Sea Lion Rock	Bering Sea	57 06.00 N	170 17.50 W			3
St. Paul I./NE Pt.	Bering Sea	57 15.00 N	170 06.50 W			3
Walrus I. (Pribilofs)	Bering Sea	57 11.00 N	169 56.00 W			10
St. George I./Dalnoi Pt.	Bering Sea	56 36.00 N	169 46.00 W			3
St. George I./S Rookery	Bering Sea	56 33.50 N	169 40.00 W			3
Cape Newenham	Bering Sea	58 39.00 N	162 10.50 W			20
Round (Walrus Islands)	Bering Sea	58 36.00 N	159 58.00 W			20
Attu I./Cape Wrangell	Aleutian I.	52 54.60 N	172 27.90 E	52 55.40 N	172 27.20 E	20
Agattu I./Gillon Pt.	Aleutian I.	52 24.13 N	173 21.31 E			20
Attu I./Chirikof Pt.	Aleutian I.	52 49.75 N	173 26.00 E			20
Agattu I./Cape Sabak	Aleutian I.	52 22.50 N	173 43.30 E	52 21.80 N	173 41.40 E	20
Alaid I.	Aleutian I.	52 46.50 N	173 51.50 E	52 45.00 N	173 56.50 E	20
Shemya I.	Aleutian I.	52 44.00 N	174 08.70 E			20
Buldir I.	Aleutian I.	52 20.25 N	175 54.03 E	52 20.38 N	175 53.85 E	20
Kiska I./Cape St. Stephen	Aleutian I.	51 52.50 N	177 12.70 E	51 53.50 N	177 12.00 E	20
Kiska I./Sobaka & Vega	Aleutian I.	51 49.50 N	177 19.00 E	51 48.50 N	177 20.50 E	20
Kiska I./Lief Cove	Aleutian I.	51 57.16 N	177 20.41 E	51 57.24 N	177 20.53 E	20
Kiska I./Sirius Pt.	Aleutian I.	52 08.50 N	177 36.50 E			20
Tanadak I. (Kiska)	Aleutian I.	51 56.80 N	177 46.80 E			20
Segula I.	Aleutian I.	51 59.90 N	178 05.80 E	52 03.06 N	178 08.80 E	20
Ayugadak Point	Aleutian I.	51 45.36 N	178 24.30 E			20

Column Number 1	2	3	4	5	6	7
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Pollock No-fishing Zones for Trawl Gear [2,8](nm)
		Latitude	Longitude	Latitude	Longitude	
Rat I./Krysi Pt.	Aleutian I.	51 49.98 N	178 12.35 E			20
Little Sitkin I.	Aleutian I.	51 59.30 N	178 29.80 E			20
Amchitka I./Column Rocks	Aleutian I.	51 32.32 N	178 49.28 E			20
Amchitka I./East Cape	Aleutian I.	51 22.26 N	179 27.93 E	51 22.00 N	179 27.00 E	20
Amchitka I./Cape Ivakin	Aleutian I.	51 24.46 N	179 24.21 E			20
Semisopochnoi/Petrel Pt.	Aleutian I.	52 01.40 N	179 36.90 E	52 01.50 N	179 39.00 E	20
Semisopochnoi I./Pochnoi Pt.	Aleutian I.	51 57.30 N	179 46.00 E			20
Amatignak I. Nitrof Pt.	Aleutian I.	51 13.00 N	179 07.80 W			20
Unalga & Dinkum Rocks	Aleutian I.	51 33.67 N	179 04.25 W	51 35.09 N	179 03.66 W	20
Ulak I./Hasgox Pt.	Aleutian I.	51 18.90 N	178 58.90 W	51 18.70 N	178 59.60 W	20
Kavalga I.	Aleutian I.	51 34.50 N	178 51.73 W	51 34.50 N	178 49.50 W	20
Tag I.	Aleutian I.	51 33.50 N	178 34.50 W			20
Ugidak I.	Aleutian I.	51 34.95 N	178 30.45 W			20
Gramp Rock	Aleutian I.	51 28.87 N	178 20.58 W			20
Tanaga I./Bumpy Pt.	Aleutian I.	51 55.00 N	177 58.50 W	51 55.00 N	177 57.10 W	20
Bobrof I.	Aleutian I.	51 54.00 N	177 27.00 W			20
Kanaga I./Ship Rock	Aleutian I.	51 46.70 N	177 20.72 W			20
Kanaga I./North Cape	Aleutian I.	51 56.50 N	177 09.00 W			20
Adak I.	Aleutian I.	51 35.50 N	176 57.10 W	51 37.40 N	176 59.60 W	20
Little Tanaga Strait	Aleutian I.	51 49.09 N	176 13.90 W			20
Great Sitkin I.	Aleutian I.	52 06.00 N	176 10.50 W	52 06.60 N	176 07.00 W	20
Anagaksik I.	Aleutian I.	51 50.86 N	175 53.00 W			20
Kasatochi I.	Aleutian I.	52 11.11 N	175 31.00 W			20
Atka I./North Cape	Aleutian I.	52 24.20 N	174 17.80 W			20
Amlia I./Sviech. Harbor[11]	Aleutian I.	52 01.80 N	173 23.90 W			20
Sagigik I.[11]	Aleutian I.	52 00.50 N	173 09.30 W			20

Column Number 1	2	3	4	5	6	7
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Pollock No-fishing Zones for Trawl Gear [2,8](nm)
		Latitude	Longitude	Latitude	Longitude	
Amlia I./East[11]	Aleutian I.	52 05.70 N	172 59.00 W	52 05.75 N	172 57.50 W	20
Tanadak I. (Amlia[11])	Aleutian I.	52 04.20 N	172 57.60 W			20
Agligadak I.[11]	Aleutian I.	52 06.09 N	172 54.23 W			20
Seguam I./Saddleridge Pt.[11]	Aleutian I.	52 21.05 N	172 34.40 W	52 21.02 N	172 33.60 W	20
Seguam I./Finch Pt.	Aleutian I.	52 23.40 N	172 27.70 W	52 23.25 N	172 24.30 W	20
Seguam I./South Side	Aleutian I.	52 21.60 N	172 19.30 W	52 15.55 N	172 31.22 W	20
Amukta I. & Rocks	Aleutian I.	52 27.25 N	171 17.90 W			20
Chagulak I.	Aleutian I.	52 34.00 N	171 10.50 W			20
Yunaska I.	Aleutian I.	52 41.40 N	170 36.35 W			20
Uliaga[3]	Bering Sea	53 04.00 N	169 47.00 W	53 05.00 N	169 46.00 W	20,10
Chuginadak	Gulf of Alaska	52 46.70 N	169 41.90 W			20
Kagamil[3]	Bering Sea	53 02.10 N	169 41.00 W			20,10
Samalga	Gulf of Alaska	52 46.00 N	169 15.00 W			20
Adugak I.[3]	Bering Sea	52 54.70 N	169 10.50 W			10
Umnak I./Cape Aslik[3]	Bering Sea	53 25.00 N	168 24.50 W			BA
Ogchul I.	Gulf of Alaska	52 59.71 N	168 24.24 W			20
Bogoslof I./Fire I.[3]	Bering Sea	53 55.69 N	168 02.05 W			BA
Polivnoi Rock	Gulf of Alaska	53 15.96 N	167 57.99 W			20
Emerald I.	Gulf of Alaska	53 17.50 N	167 51.50 W			20
Unalaska/Cape Izigan	Gulf of Alaska	53 13.64 N	167 39.37 W			20
Unalaska/Bishop Pt.[9]	Bering Sea	53 58.40 N	166 57.50 W			10
Akutan I./Reef-lava[9]	Bering Sea	54 08.10 N	166 06.19 W	54 09.10 N	166 05.50 W	10
Unalaska I./Cape Sedanka[6]	Gulf of Alaska	53 50.50 N	166 05.00 W			20
Old Man Rocks[6]	Gulf of Alaska	53 52.20 N	166 04.90 W			20
Akutan I./Cape Morgan[6]	Gulf of Alaska	54 03.39 N	165 59.65 W	54 03.70 N	166 03.68 W	20
Akun I./Billings Head[9]	Bering Sea	54 17.62 N	165 32.06 W	54 17.57 N	165 31.71 W	10

Column Number 1	2	3	4	5	6	7
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Pollock No-fishing Zones for Trawl Gear [2,8](nm)
		Latitude	Longitude	Latitude	Longitude	
Rootok[6]	Gulf of Alaska	54 03.90 N	165 31.90 W	54 02.90 N	165 29.50 W	20
Tanginak I.[6]	Gulf of Alaska	54 12.00 N	165 19.40 W			20
Tigalda/Rocks NE[6]	Gulf of Alaska	54 09.60 N	164 59.00 W	54 09.12 N	164 57.18 W	20
Unimak/Cape Sarichef[9]	Bering Sea	54 34.30 N	164 56.80 W			10
Aiktak[6]	Gulf of Alaska	54 10.99 N	164 51.15 W			20
Ugamak I.[6]	Gulf of Alaska	54 13.50 N	164 47.50 W	54 12.80 N	164 47.50 W	20
Round (GOA)[6]	Gulf of Alaska	54 12.05 N	164 46.60 W			20
Sea Lion Rock (Amak)[9]	Bering Sea	55 27.82 N	163 12.10 W			10
Amak I. And rocks[9]	Bering Sea	55 24.20 N	163 09.60 W	55 26.15 N	163 08.50 W	10
Bird I.	Gulf of Alaska	54 40.00 N	163 17.2 W			10
Caton I.	Gulf of Alaska	54 22.70 N	162 21.30 W			3
South Rocks	Gulf of Alaska	54 18.14 N	162 41.3 W			10
Clubbing Rocks (S)	Gulf of Alaska	54 41.98 N	162 26.7 W			10
Clubbing Rocks (N)	Gulf of Alaska	54 42.75 N	162 26.7 W			10
Pinnacle Rock	Gulf of Alaska	54 46.06 N	161 45.85 W			3
Sushilnoi Rocks	Gulf of Alaska	54 49.30 N	161 42.73 W			10
Olga Rocks	Gulf of Alaska	55 00.45 N	161 29.81 W	54 59.09 N	161 30.89 W	10
Jude I.	Gulf of Alaska	55 15.75 N	161 06.27 W			20
Sea Lion Rocks (Shumagins)	Gulf of Alaska	55 04.70 N	160 31.04 W			3
Nagai I./Mountain Pt.	Gulf of Alaska	54 54.20 N	160 15.40 W	54 56.00 N	160 15.00 W	3
The Whaleback	Gulf of Alaska	55 16.82 N	160 05.04 W			3
Chernabura I.	Gulf of Alaska	54 45.18 N	159 32.99 W	54 45.87 N	159 35.74 W	20
Castle Rock	Gulf of Alaska	55 16.47 N	159 29.77 W			3
Atkins I.	Gulf of Alaska	55 03.20 N	159 17.40 W			20
Spitz I.	Gulf of Alaska	55 46.60 N	158 53.90 W			3
Mitrofania	Gulf of Alaska	55 50.20 N	158 41.90 W			3

Column Number 1	2	3	4	5	6	7
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Pollock No-fishing Zones for Trawl Gear [2,8](nm)
		Latitude	Longitude	Latitude	Longitude	
Kak	Gulf of Alaska	56 17.30 N	157 50.10 W			20
Lighthouse Rocks	Gulf of Alaska	55 46.79 N	157 24.89 W			20
Sutwik I.	Gulf of Alaska	56 31.05 N	157 20.47 W	56 32.00 N	157 21.00 W	20
Chowiet I.	Gulf of Alaska	56 00.54 N	156 41.42 W	55 00.30 N	156 41.60 W	20
Nagai Rocks	Gulf of Alaska	55 49.80 N	155 47.50 W			20
Chirikof I.	Gulf of Alaska	55 46.50 N	155 39.50 W	55 46.44 N	155 43.46 W	20
Puale Bay[12]	Gulf of Alaska	57 40.60 N	155 23.10 W			3,10
Kodiak/Cape Ikolik	Gulf of Alaska	57 17.20 N	154 47.50 W			3
Takli I.	Gulf of Alaska	58 01.75 N	154 31.25 W			10
Cape Kuliak	Gulf of Alaska	58 08.00 N	154 12.50 W			10
Cape Gull	Gulf of Alaska	58 11.50 N	154 09.60 W	58 12.50 N	154 10.50 W	10
Kodiak/Cape Ugat	Gulf of Alaska	57 52.41 N	153 50.97 W			10
Sitkinak/Cape Sitkinak	Gulf of Alaska	56 34.30 N	153 50.96 W			10
Shakun Rock	Gulf of Alaska	58 32.80 N	153 41.50 W			10
Twoheaded I.	Gulf of Alaska	56 54.50 N	153 32.75 W	56 53.90 N	153 33.74 W	10
Cape Douglas (Shaw I.)[12]	Gulf of Alaska	59 00.00 N	153 22.50 W			20,10
Kodiak/Cape Barnabas	Gulf of Alaska	57 10.20 N	152 53.05 W			3
Kodiak/Gull Point[4]	Gulf of Alaska	57 21.45 N	152 36.30 W			10, 3
Latax Rocks	Gulf of Alaska	58 40.10 N	152 31.30 W			10
Ushagat I./SW	Gulf of Alaska	58 54.75 N	152 22.20 W			10
Ugak I.[4]	Gulf of Alaska	57 23.60 N	152 17.50 W	57 21.90 N	152 17.40 W	10, 3
Sea Otter I.	Gulf of Alaska	58 31.15 N	152 13.30 W			10
Long I.	Gulf of Alaska	57 46.82 N	152 12.90 W			10
Sud I.	Gulf of Alaska	58 54.00 N	152 12.50 W			10
Kodiak/Cape Chiniak	Gulf of Alaska	57 37.90 N	152 08.25 W			10
Sugarloaf I.	Gulf of Alaska	58 53.25 N	152 02.40 W			20

Column Number 1	2	3	4	5	6	7
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Pollock No-fishing Zones for Trawl Gear [2,8](nm)
		Latitude	Longitude	Latitude	Longitude	
Sea Lion Rocks (Marmot)	Gulf of Alaska	58 20.53 N	151 48.83 W			10
Marmot I.[5]	Gulf of Alaska	58 13.65 N	151 47.75 W	58 09.90 N	151 52.06 W	15, 20
Nagahut Rocks	Gulf of Alaska	59 06.00 N	151 46.30 W			10
Perl	Gulf of Alaska	59 05.75 N	151 39.75 W			10
Gore Point	Gulf of Alaska	59 12.00 N	150 58.00 W			10
Outer (Pye) I.	Gulf of Alaska	59 20.50 N	150 23.00 W	59 21.00 N	150 24.50 W	20
Steep Point	Gulf of Alaska	59 29.05 N	150 15.40 W			10
Seal Rocks (Kenai)	Gulf of Alaska	59 31.20 N	149 37.50 W			10
Chiswell Islands	Gulf of Alaska	59 36.00 N	149 34.00 W			10
Rugged Island	Gulf of Alaska	59 50.00 N	149 23.10 W	59 51.00 N	149 24.70 W	10
Point Elrington[7, 10]	Gulf of Alaska	59 56.00 N	148 15.20 W			20
Perry I.[7]	Gulf of Alaska	60 44.00 N	147 54.60 W			
The Needle[7]	Gulf of Alaska	60 06.64 N	147 36.17 W			
Point Eleanor[7]	Gulf of Alaska	60 35.00 N	147 34.00 W			
Wooded I. (Fish I.)	Gulf of Alaska	59 52.90 N	147 20.65 W			20
Glacier Island[7]	Gulf of Alaska	60 51.30 N	147 14.50 W			
Seal Rocks (Cordova)[10]	Gulf of Alaska	60 09.78 N	146 50.30 W			20
Cape Hinchinbrook[10]	Gulf of Alaska	60 14.00 N	146 38.50 W			20
Middleton I.	Gulf of Alaska	59 28.30 N	146 18.80 W			10
Hook Point[10]	Gulf of Alaska	60 20.00 N	146 15.60 W			20
Cape St. Elias	Gulf of Alaska	59 47.50 N	144 36.20 W			20

[1] Where two sets of coordinates are given, the baseline extends in a clock-wise direction from the first set of geographic coordinates along the shoreline at mean lower-low water to the second set of coordinates. Where only one set of coordinates is listed, that location is the base point.

[2] Closures as stated in 50 CFR 679.22(a)(7)(iv), (a)(8)(ii) and (b)(2)(ii).

[3] This site lies within the Bogoslof area (BA). The BA consists of all waters of area 518 as described in Figure 1 of this part south of a straight line connecting 55°00' N/170°00' W, and 55°00' N/168°11'4.75" W. Closure to directed fishing for pollock around Uliaga and Kagamil is 20 nm for waters west of 170°W long. and 10 nm for waters east of 170°W long.
[4] The trawl closure between 0 nm to 10 nm is effective from January 20 through May 31. Trawl closure between 0 nm to 3 nm is effective from August 25 through November 1.
[5] Trawl closure between 0 nm to 15 nm is effective from January 20 through May 31. Trawl closure between 0 nm to 20 nm is effective from August 25 to November 1.
[6] Restriction area includes only waters of the Gulf of Alaska Area.
[7] Contact the Alaska Department of Fish and Game for fishery restrictions at these sites.
[8] No-fishing zones are the waters between 0 nm and the nm specified in column 7 around each site and within the BA.
[9] This site is located in the Bering Sea Pollock Restriction Area, closed to pollock trawling during the A season. This area consists of all waters of the Bering Sea subarea south of a line connecting the points 163°0'00" W long./55°46'30" N lat., 165°08'00" W long./54°42'9" N lat., 165°40'00" long./54°26'30" N lat., 166°12'00" W long./54°18'40" N lat., and 167°0'00" W long./54°8'50" N lat.
[10] The 20 nm closure around this site is effective in federal waters outside of State of Alaska waters of Prince William Sound.
[11] Some or all of the restricted area is located in the Seguam Foraging area (SFA) which is closed to all gears types. The SFA is established as all waters within the area between 52°N lat. and 53°N lat. and between 173°30' W long. and 172°30' W long.
[12]The 3 nm trawl closure around Puale Bay and the 20 nm trawl closure around Cape Douglas/Shaw I. are effective January 20 through May 31. The 10 nm trawl closure around Puale Bay and the 10 nm trawl closure around Cape Douglas/Shaw I. are effective August 25 through November 1.

Table 2.19 Steller Sea Lion Protection Areas Pacific Cod Fisheries Restrictions (Table 5 to 50 CFR Part 679)

Column Number 1	2	3	4	5	6	7	8	9
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Pacific Cod No-fishing Zones for Trawl Gear[2,3] (nm)	Pacific Cod No-fishing Zone for Hook-and-Line Gear[2,3] (nm)	Pacific Cod No-fishing Zone for Pot Gear[2,3] (nm)
		Latitude	Longitude	Latitude	Longitude			
St. Lawrence I./S Punuk I.	BS	63 04.00 N	168 51.00 W			20	20	20
St. Lawrence I./SW Cape	BS	63 18.00 N	171 26.00 W			20	20	20
Hall I.	BS	60 37.00 N	173 00.00 W			20	20	20
St. Paul I./Sea Lion Rock	BS	57 06.00 N	170 17.50 W			3	3	3
St. Paul I./NE Pt.	BS	57 15.00 N	170 06.50 W			3	3	3
Walrus I. (Pribilofs)	BS	57 11.00 N	169 56.00 W			10	3	3
St George I./Dalnoi Pt.	BS	56 36.00 N	169 46.00 W			3	3	3
St. George I./S. Rookery	BS	56 33.50 N	169 40.00 W			3	3	3
Cape Newenham	BS	58 39.00 N	162 10.50 W			20	20	20
Round (Walrus Islands)	BS	58 36.00 N	159 58.00 W			20	20	20
Attu I./Cape Wrangell[11]	AI	52 54.60 N	172 27.90 E	52 55.40 N	172 27.20 E	20, 10	3	3
Agattu I./Gillon Pt.[11]	AI	52 24.13 N	173 21.31 E			20, 10	3	3
Attu I./Chirikof Pt.[11]	AI	52 49.75 N	173 26.00 E			20, 3		
Agattu I./Cape Sabak[11]	AI	52 22.50 N	173 43.30 E	52 21.80 N	173 41.40 E	20, 10	3	3
Alaid I.[11]	AI	52 46.50 N	173 51.50 E	52 45.00 N	173 56.50 E	20, 3		
Shemya I.[11]	AI	52 44.00 N	174 08.70 E			20, 3		
Buldir I.[11]	AI	52 20.25 N	175 54.03 E	52 20.38 N	175 53.85 E	20, 10	10	10
Kiska I./Cape St. Stephen[11]	AI	51 52.50 N	177 12.70 E	51 53.50 N	177 12.00 E	20, 10	3	3
Kiska I. Sobaka & Vega[11]	AI	51 49.50 N	177 19.00 E	51 48.50 N	177 20.50 E	20, 3		
Kiska I./Lief Cove[11]	AI	51 57.16 N	177 20.41 E	51 57.24 N	177 20.53 E	20, 10	3	3

Column Number 1	2	3	4	5	6	7	8	9
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Pacific Cod No-fishing Zones for Trawl Gear[2,3] (nm)	Pacific Cod No-fishing Zone for Hook-and-Line Gear[2,3] (nm)	Pacific Cod No-fishing Zone for Pot Gear[2,3] (nm)
		Latitude	Longitude	Latitude	Longitude			
Kiska I./Sirius Pt.[11]	AI	52 08.50 N	177 36.50 E			20, 3		
Tanadak I. (Kiska)[11]	AI	51 56.80 N	177 46.80 E			20, 3		
Segula I.[11]	AI	51 59.90 N	178 05.80 E	52 03.06 N	178 08.80 E	20, 3		
Ayugadak Point[11]	AI	51 45.36 N	178 24.30 E			20, 10	3	3
Rat I./Krysi Pt.[11]	AI	51 49.98 N	178 12.35 E			20, 3		
Little Sitkin I.[11]	AI	51 59.30 N	178 29.80 E			20, 3		
Amchitka I./Column[11]	AI	51 32.32 N	178 49.28 E			20, 10	3	3
Amchitka I./East Cape[11]	AI	51 22.26 N	179 27.93 E	51 22.00 N	179 27.00 E	20,10	3	3
Amchitka I./Cape Ivakin[11]	AI	51 24.46 N	179 24.21 E			20, 3		
Semisopochnoi/Petrel Pt.[11]	AI	52 01.40 N	179 36.90 E	52 01.50 N	179 39.00 E	20, 10	3	3
Semisopochnoi I./Pochnoi Pt.[11]	AI	51 57.30 N	179 46.00 E			20, 10	3	3
Amatignak I./Nitrof Pt.[11]	AI	51 13.00 N	179 07.80 W			20, 3		
Unalga & Dinkum Rocks[11]	AI	51 33.67 N	179 04.25 W	51 35.09 N	179 03.66 W	20, 3		
Ulak I./Hasgox Pt.[11]	AI	51 18.90 N	178 58.90 W	51 18.70 N	178 59.60 W	20, 10	3	3
Kavalga I.[11]	AI	51 34.50 N	178 51.73 W	51 34.50 N	178 49.50 W	20, 3		
Tag I.[11]	AI	51 33.50 N	178 34.50 W			20, 10	3	3
Ugidak I.[11]	AI	51 34.95 N	178 30.45 W			20, 3		
Gramp Rock[11]	AI	51 28.87 N	178 20.58 W			20, 10	3	3
Tanaga I./Bumpy Pt.[11]	AI	51 55.00 N	177 58.50 W	51 55.00 N	177 57.10 W	20,3		
Bobrof I.	AI	51 54.00 N	177 27.00 W			3		
Kanaga I./Ship Rock	AI	51 46.70 N	177 20.72 W			3		
Kanaga I./North Cape	AI	51 56.50 N	177 09.00 W			3		
Adak I.	AI	51 35.50 N	176 57.10 W	51 37.40 N	176 59.60 W	10	3	3

Column Number 1	2	3	4	5	6	7	8	9
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Pacific Cod No-fishing Zones for Trawl Gear[2,3] (nm)	Pacific Cod No-fishing Zone for Hook-and-Line Gear[2,3] (nm)	Pacific Cod No-fishing Zone for Pot Gear[2,3] (nm)
		Latitude	Longitude	Latitude	Longitude			
Little Tanaga Strait	AI	51 49.09 N	176 13.90 W			3		
Great Sitkin I.	AI	52 06.00 N	176 10.50 W	52 06.60 N	176 07.00 W	3		
Anagaksik I.	AI	51 50.86 N	175 53.00 W			3		
Kasatochi I.	AI	52 11.11 N	175 31.00 W			10	3	3
Atka I./N. Cape	AI	52 24.20 N	174 17.80 W			3		
Amlia I./Sviech. Harbor[4]	AI	52 01.80 N	173 23.90 W			3		
Sagigik I.[4]	AI	52 00.50 N	173 09.30 W			3		
Amlia I./East[4]	AI	52 05.70 N	172 59.00 W	52 05.75 N	172 57.50 W	3	20	20
Tanadak I. (Amlia)[4]	AI	52 04.20 N	172 57.60 W			3	20	20
Agligadak I.[4]	AI	52 06.09 N	172 54.23 W			20	20	20
Seguam I./Saddleridge Pt.[4]	AI	52 21.05 N	172 34.40 W	52 21.02 N	172 33.60 W	10	20	20
Seguam I./Finch Pt.	AI	52 23.40 N	172 27.70 W	52 23.25 N	172 24.30 W	3	20	20
Seguam I./South Side	AI	52 21.60 N	172 19.30 W	52 15.55 N	172 31.22 W	3	20	20
Amukta I. & Rocks	AI	52 27.25 N	171 17.90 W			3	20	20
Chagulak I.	AI	52 34.00 N	171 10.50 W			3	20	20
Yunaska I.	AI	52 41.40 N	170 36.35 W			10	20	20
Uliaga[5, 14]	BS	53 04.00 N	169 47.00 W	53 05.00 N	169 46.00 W	10	20	20
Chuginadak[14]	GOA	52 46.70 N	169 41.90 W			20	20,10	20
Kagamil[5, 14]	BS	53 02.10 N	169 41.00 W			10	20	20
Samalga	GOA	52 46.00 N	169 15.00 W			20	10	20
Adugak I.[5]	BS	52 54.70 N	169 10.50 W			10	BA	BA
Umnak I./Cape Aslik[5]	BS	53 25.00 N	168 24.50 W			BA	BA	BA
Ogchul I.	GOA	52 59.71 N	168 24.24 W			20	10	20

Column Number 1	2	3	4	5	6	7	8	9
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Pacific Cod No-fishing Zones for Trawl Gear[2,3] (nm)	Pacific Cod No-fishing Zone for Hook-and-Line Gear[2,3] (nm)	Pacific Cod No-fishing Zone for Pot Gear[2,3] (nm)
		Latitude	Longitude	Latitude	Longitude			
Bogoslof I./Fire I.[5]	BS	53 55.69 N	168 02.05 W			BA	BA	BA
Polivnoi Rock[9]	GOA	53 15.96 N	167 57.99 W			20	10	20
Emerald I.[13, 9]	GOA	53 17.50 N	167 51.50 W			20	10	20
Unalaska/Cape Izigan[9]	GOA	53 13.64 N	167 39.37 W			20	10	20
Unalaska/Bishop Pt.[6, 13]	BS	53 58.40 N	166 57.50 W			10	10	3
Akutan I./Reef-lava[6]	BS	54 08.10 N	166 06.19 W	54 09.10 N	166 05.50 W	10	10	3
Unalaska I./Cape Sedanka[9]	GOA	53 50.50 N	166 05.00 W			20	10	20
Old Man Rocks[9]	GOA	53 52.20 N	166 04.90 W			20	10	20
Akutan I./Cape Morgan[9]	GOA	54 03.39 N	165 59.65 W	54 03.70 N	166 03.68 W	20	10	20
Akun I./Billings Head	BS	54 17.62 N	165 32.06 W	54 17.57 N	165 31.71 W	10	3	3
Rootok[9]	GOA	54 03.90 N	165 31.90 W	54 02.90 N	165 29.50 W	20	10	20
Tanginak I.[9]	GOA	54 12.00 N	165 19.40 W			20	10	20
Tigalda/Rocks NE[9]	GOA	54 09.60 N	164 59.00 W	54 09.12 N	164 57.18 W	20	10	20
Unimak/Cape Sarichef	BS	54 34.30 N	164 56.80 W			10	3	3
Aiktak[9]	GOA	54 10.99 N	164 51.15 W			20	10	20
Ugamak I.[9]	GOA	54 13.50 N	164 47.50 W	54 12.80 N	164 47.50 W	20	10	20
Round (GOA)[9]	GOA	54 12.05 N	164 46.60 W			20	10	20
Sea Lion Rock (Amak)	BS	55 27.82 N	163 12.10 W			10	7	7
Amak I. And rocks	BS	55 24.20 N	163 09.60 W	55 26.15 N	163 08.50 W	10	3	3
Bird I.	GOA	54 40.00 N	163 17.2 W			10		
Caton I.	GOA	54 22.70 N	162 21.30 W			3	3	
South Rocks	GOA	54 18.14 N	162 41.3 W			10		
Clubbing Rocks (S)	GOA	54 41.98 N	162 26.7 W			10	3	3

Column Number 1	2	3	4	5	6	7	8	9
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Pacific Cod No-fishing Zones for Trawl Gear[2,3] (nm)	Pacific Cod No-fishing Zone for Hook-and-Line Gear[2,3] (nm)	Pacific Cod No-fishing Zone for Pot Gear[2,3] (nm)
		Latitude	Longitude	Latitude	Longitude			
Clubbing Rocks (N)	GOA	54 42.75 N	162 26.7 W			10	3	3
Pinnacle Rock	GOA	54 46.06 N	161 45.85 W			3	3	3
Sushilnoi Rocks	GOA	54 49.30 N	161 42.73 W			10		
Olga Rocks	GOA	55 00.45 N	161 29.81 W	54 59.09 N	161 30.89 W	10		
Jude I.	GOA	55 15.75 N	161 06.27 W			20		
Sea Lion Rocks (Shumagins)	GOA	55 04.70 N	160 31.04 W			3	3	3
Nagai I./Mountain Pt.	GOA	54 54.20 N	160 15.40 W	54.56.00 N	160.15.00 W	3	3	3
The Whaleback	GOA	55 16.82 N	160 05.04 W			3	3	3
Chernabura I.	GOA	54 45.18 N	159 32.99 W	54 45.87 N	159 35.74 W	20	3	3
Castle Rock	GOA	55 16.47 N	159 29.77 W			3	3	
Atkins I.	GOA	55 03.20 N	159 17.40 W			20	3	3
Spitz I.	GOA	55 46.60 N	158 53.90 W			3	3	3
Mitrofania	GOA	55 50.20 N	158 41.90 W			3	3	3
Kak	GOA	56 17.30 N	157 50.10 W			20	20	3
Lighthouse Rocks	GOA	55 46.79 N	157 24.89 W			20	20	20
Sutwik I.	GOA	56 31.05 N	157 20.47 W	56 32.00 N	157 21.00 W	20	20	20
Chowiet I.	GOA	56 00.54 N	156 41.42 W	56 00.30 N	156 41.60 W	20	20	20
Nagai Rocks	GOA	55 49.80 N	155 47.50 W			20	20	20
Chirikof I.	GOA	55 46.50 N	155 39.50 W	55 46.44 N	155 43.46 W	20	20	20
Puale Bay	GOA	57 40.60 N	155 23.10 W			10		
Kodiak/Cape Ikolik	GOA	57 17.20 N	154 47.50 W			3	3	3
Takli I.	GOA	58 01.75 N	154 31.25 W			10		
Cape Kuliak	GOA	58 08.00 N	154 12.50 W			10		

Column Number 1	2	3	4	5	6	7	8	9
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Pacific Cod No-fishing Zones for Trawl Gear[2,3] (nm)	Pacific Cod No-fishing Zone for Hook-and-Line Gear[2,3] (nm)	Pacific Cod No-fishing Zone for Pot Gear[2,3] (nm)
		Latitude	Longitude	Latitude	Longitude			
Cape Gull	GOA	58 11.50 N	154 09.60 W	58 12.50 N	154 10.50 W	10		
Kodiak/Cape Ugat	GOA	57 52.41 N	153 50.97 W			10		
Sitkinak/Cape Sitkinak	GOA	56 34.30 N	153 50.96 W			10		
Shakun Rock	GOA	58 32.80 N	153 41.50 W			10		
Twoheaded I.	GOA	56 54.50 N	153 32.75 W	56 53.90 N	153 33.74 W	10		
Cape Douglas (Shaw I.)	GOA	59 00.00 N	153 22.50 W			10		
Kodiak/Cape Barnabas	GOA	57 10.20 N	152 53.05 W			3	3	
Kodiak/Gull Point[7]	GOA	57 21.45 N	152 36.30 W			10, 3		
Latax Rocks	GOA	58 40.10 N	152 31.30 W			10		
Ushagat I./SW	GOA	58 54.75	152 22.20 W			10		
Ugak I.[7]	GOA	57 23.60 N	152 17.50 W	57 21.90 N	152 17.40 W	10, 3		
Sea Otter I.	GOA	58 31.15 N	152 13.30 W			10		
Long I.	GOA	57 46.82 N	152 12.90 W			10		
Sud I.	GOA	58 54.00 N	152 12.50 W			10		
Kodiak/Cape Chiniak	GOA	57 37.90 N	152 08.25 W			10		
Sugarloaf I.	GOA	58 53.25 N	152 02.40 W			20	10	10
Sea Lion Rocks (Marmot)	GOA	58 20.53 N	151 48.83 W			10		
Marmot I.[8]	GOA	58 13.65 N	151 47.75 W	58 09.90 N	151 52.06 W	15, 20	10	10
Nagahut Rocks	GOA	59 06.00 N	151 46.30 W			10		
Perl	GOA	59 05.75 N	151 39.75 W			10		
Gore Point	GOA	59 12.00 N	150 58.00 W			10		
Outer (Pye) I.	GOA	59 20.50 N	150 23.00 W	59 21.00 N	150 24.50 W	20	10	10
Steep Point	GOA	59 29.05 N	150 15.40 W			10		

Column Number 1	2	3	4	5	6	7	8	9
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Pacific Cod No-fishing Zones for Trawl Gear[2,3] (nm)	Pacific Cod No-fishing Zone for Hook-and-Line Gear[2,3] (nm)	Pacific Cod No-fishing Zone for Pot Gear[2,3] (nm)
		Latitude	Longitude	Latitude	Longitude			
Seal Rocks (Kenai)	GOA	59 31.20 N	149 37.50 W			10		
Chiswell Islands	GOA	59 36.00 N	149 34.00 W			10		
Rugged Island	GOA	59 50.00 N	149 23.10 W			10		
Point Elrington[10, 12]	GOA	59 56.00 N	148 15.20 W			20		
Perry I.[10]	GOA	60 44.00 N	147 54.60 W					
The Needle[10]	GOA	60 06.64 N	147 36.17 W					
Point Eleanor[10]	GOA	60 35.00 N	147 34.00 W					
Wooded I. (Fish I.)	GOA	59 52.90 N	147 20.65 W			20	3	3
Glacier Island[10]	GOA	60 51.30 N	147 14.50 W					
Seal Rocks (Cordova)[12]	GOA	60 09.78 N	146 50.30 W			20	3	3
Cape Hinchinbrook[12]	GOA	60 14.00 N	146 38.50 W			20		
Middleton I.	GOA	59 28.30 N	146 18.80 W			10		
Hook Point[12]	GOA	60 20.00 N	146 15.60 W			20		
Cape St. Elias	GOA	59 47.50 N	144 36.20 W			20		

BS = Bering Sea, AI = Aleutian Islands, GOA = Gulf of Alaska

[1]Where two sets of coordinates are given, the baseline extends in a clock-wise direction from the first set of geographic coordinates along the shoreline at mean lower-low water to the second set of coordinates. Where only one set of coordinates is listed, that location is the base point.

[2] Closures as stated in 50 CFR 679.22(a)(7)(v), (a)(8)(iv) and (b)(2)(iii).

[3] No-fishing zones are the waters between 0 nm and the nm specified in columns 7, 8, and 9 around each site and within the Bogoslof area (BA) and the Seguam Foraging Area (SFA).

[4] Some or all of the restricted area is located in the SFA which is closed to all gears types. The SFA is established as all waters within the area between 52° N lat. and 53° N lat. and between 173°30' W long. and 172°30' W long. Amlia I./East, and Tanadak I. (Amlia) haulouts 20 nm hook-and-line and pot closures apply only to waters located east of 173° W longitude.

[5]This site lies within the BA which is closed to all gear types. The BA consists of all waters of area 518 as described in Figure 1 of this part south of a straight line connecting 55°00'N/170°00'W, and 55°00' N/168°11'4.75" W.

[6]Hook-and-line no-fishing zones apply only to vessels greater than or equal to 60 feet LOA in waters east of 167° W long. For Bishop Point the 10 nm closure west of 167° W. long. applies to all hook and line and jig vessels.

[7]The trawl closure between 0 nm to 10 nm is effective from January 20 through June 10. Trawl closure between 0 nm to 3 nm is effective from September 1 through November 1.

[8] The trawl closure between 0 nm to 15 nm is effective from January 20 through June 10. Trawl closure between 0 nm to 20 nm is effective from September 1 through November 1.

[9]Restriction area includes only waters of the Gulf of Alaska Area.

[10]Contact the Alaska Department of Fish and Game for fishery restrictions at these sites.

[11]Directed fishing for Pacific cod using trawl gear is prohibited in the harvest limit area (HLA) as defined at § 679.2 until the HLA Atka mackerel directed fishery in the A or B seasons is completed. The 20 nm closure around Gramp Rock and Tanaga I./Bumpy Pt. applies only to waters west of 178°W long. and only during the HLA directed fishery. After closure of the Atka mackerel HLA directed fishery, directed fishing for Pacific cod using trawl gear is prohibited in the HLA between 0 nm to 10 nm of rookeries and between 0 nm to 3 nm of haulouts. Directed fishing for Pacific cod using trawl gear is prohibited between 0-3 nm of Tanaga I./Bumpy Pt.

[12] The 20 nm closure around this site is effective only in waters outside of the State of Alaska waters of Prince William Sound.

[13] See 50 CFR 679.22(a)(7)(i)(C) for exemptions for catcher vessels less than 60 feet (18.3 m) LOA using jig or hook-and-line gear between Bishop Point and Emerald Island closure areas.

[14]Trawl closure around this site is limited to waters east of 170°0'00" W long. Closure to hook-and-line fishing around Chuginadak is 20 nm for waters west of 170°W long. and 10 nm for waters east of 170°W long.

Table 2.20 Steller Sea Lion Protection Areas Atka Mackerel Fisheries Restrictions (Table 6 to 50 CFR Part 679)

Column Number 1	2	3	4	5	6	7
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Atka mackerel No-fishing Zones for Trawl Gear [2,3](nm)
		Latitude	Longitude	Latitude	Longitude	
St. Lawrence I./S Punuk I.	Bering Sea	63 04.00 N	168 51.00 W			20
St. Lawrence I./SW Cape	Bering Sea	63 18.00 N	171 26.00 W			20
Hall I.	Bering Sea	60 37.00 N	173 00.00 W			20
St. Paul I./Sea Lion Rock	Bering Sea	57 06.00 N	170 17.50 W			20
St. Paul I./NE Pt.	Bering Sea	57 15.00 N	170 06.50 W			20
Walrus I. (Pribilofs)	Bering Sea	57 11.00 N	169 56.00 W			20
St. George I./Dalnoi Pt.	Bering Sea	56 36.00 N	169 46.00 W			20
St. George I./S Rookery	Bering Sea	56 33.50 N	169 40.00 W			20
Cape Newenham	Bering Sea	58 39.00 N	162 10.50 W			20
Round (Walrus Islands)	Bering Sea	58 36.00 N	159 58.00 W			20
Attu I./Cape Wrangell	Aleutian Islands	52 54.60 N	172 27.90 E	52 55.40 N	172 27.20 E	10
Agattu I./Gillon Pt.	Aleutian Islands	52 24.13 N	173 21.31 E			10
Attu I./Chirikof Pt.	Aleutian Islands	52 49.75 N	173 26.00 E			3
Agattu I./Cape Sabak	Aleutian Islands	52 22.50 N	173 43.30 E	52 21.80 N	173 41.40 E	10
Alaid I.	Aleutian Islands	52 46.50 N	173 51.50 E	52 45.00 N	173 56.50 E	3
Shemya I.	Aleutian Islands	52 44.00 N	174 08.70 E			3
Buldir I.	Aleutian Islands	52 20.25 N	175 54.03 E	52 20.38 N	175 53.85 E	15
Kiska I./Cape St. Stephen	Aleutian Islands	51 52.50 N	177 12.70 E	51 53.50 N	177 12.00 E	10
Kiska I./Sobaka & Vega	Aleutian Islands	51 49.50 N	177 19.00 E	51 48.50 N	177 20.50 E	3
Kiska I./Lief Cove	Aleutian Islands	51 57.16 N	177 20.41 E	51 57.24 N	177 20.53 E	10
Kiska I./Sirius Pt.	Aleutian Islands	52 08.50 N	177 36.50 E			3
Tanadak I. (Kiska)	Aleutian Islands	51 56.80 N	177 46.80 E			3

Column Number 1	2	3	4	5	6	7
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Atka mackerel No-fishing Zones for Trawl Gear [2,3](nm)
		Latitude	Longitude	Latitude	Longitude	
Segula I.	Aleutian Islands	51 59.90 N	178 05.80 E	52 03.06 N	178 08.80 E	3
Ayugadak Point	Aleutian Islands	51 45.36 N	178 24.30 E			10
Rat I./Krysi Pt.	Aleutian Islands	51 49.98 N	178 12.35 E			3
Little Sitkin I.	Aleutian Islands	51 59.30 N	178 29.80 E			3
Amchitka I./Column Rocks	Aleutian Islands	51 32.32 N	178 49.28 E			10
Amchitka I./East Cape	Aleutian Islands	51 22.26 N	179 27.93 E	51 22.00 N	179 27.00 E	10
Amchitka I./Cape Ivakin	Aleutian Islands	51 24.46 N	179 24.21 E			3
Semisopochnoi/Petrel Pt.	Aleutian Islands	52 01.40 N	179 36.90 E	52 01.50 N	179 39.00 E	10
Semisopochnoi I./Pochnoi Pt.	Aleutian Islands	51 57.30 N	179 46.00 E			10
Amatignak I. Nitrof Pt.	Aleutian Islands	51 13.00 N	179 07.80 W			3
Unalga & Dinkum Rocks	Aleutian Islands	51 33.67 N	179 04.25 W	51 35.09 N	179 03.66 W	3
Ulak I./Hasgox Pt.	Aleutian Islands	51 18.90 N	178 58.90 W	51 18.70 N	178 59.60 W	10
Kavalga I.	Aleutian Islands	51 34.50 N	178 51.73 W	51 34.50 N	178 49.50 W	3
Tag I.	Aleutian Islands	51 33.50 N	178 34.50 W			10
Ugidak I.	Aleutian Islands	51 34.95 N	178 30.45 W			3
Gramp Rock[7]	Aleutian Islands	51 28.87 N	178 20.58 W			10, 20
Tanaga I./Bumpy Pt.	Aleutian Islands	51 55.00 N	177 58.50 W	51 55.00 N	177 57.10 W	20
Bobrof I.	Aleutian Islands	51 54.00 N	177 27.00 W			20
Kanaga I./Ship Rock	Aleutian Islands	51 46.70 N	177 20.72 W			20
Kanaga I./North Cape	Aleutian Islands	51 56.50 N	177 09.00 W			20
Adak I.	Aleutian Islands	51 35.50 N	176 57.10 W	51 37.40 N	176 59.60 W	20
Little Tanaga Strait	Aleutian Islands	51 49.09 N	176 13.90 W			20
Great Sitkin I.	Aleutian Islands	52 06.00 N	176 10.50 W	52 06.60 N	176 07.00 W	20

Column Number 1	2	3	4	5	6	7
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Atka mackerel No-fishing Zones for Trawl Gear [2,3](nm)
		Latitude	Longitude	Latitude	Longitude	
Anagaksik I.	Aleutian Islands	51 50.86 N	175 53.00 W			20
Kasatochi I.	Aleutian Islands	52 11.11 N	175 31.00 W			20
Atka I./North Cape	Aleutian Islands	52 24.20 N	174 17.80 W			20
Amlia I./Sviech. Harbor[5]	Aleutian Islands	52 01.80 N	173 23.90 W			20
Sagigik I.[5]	Aleutian Islands	52 00.50 N	173 09.30 W			20
Amlia I./East[5]	Aleutian Islands	52 05.70 N	172 59.00 W	52 05.75 N	172 57.50 W	20
Tanadak I. (Amlia)[5]	Aleutian Islands	52 04.20 N	172 57.60 W			20
Agligadak I.[5]	Aleutian Islands	52 06.09 N	172 54.23 W			20
Seguam I./Saddleridge Pt.[5]	Aleutian Islands	52 21.05 N	172 34.40 W	52 21.02 N	172 33.60 W	20
Seguam I./Finch Pt.[5]	Aleutian Islands	52 23.40 N	172 27.70 W	52 23.25 N	172 24.30 W	20
Seguam I./South Side[5]	Aleutian Islands	52 21.60 N	172 19.30 W	52 15.55 N	172 31.22 W	20
Amukta I. & Rocks	Aleutian Islands	52 27.25 N	171 17.90 W			20
Chagulak I.	Aleutian Islands	52 34.00 N	171 10.50 W			20
Yunaska I.	Aleutian Islands	52 41.40 N	170 36.35 W			20
Uliaga[6]	Bering Sea	53 04.00 N	169 47.00 W	53 05.00 N	169 46.00 W	20
Kagamil[6]	Bering Sea	53 02.10 N	169 41.00 W			20
Adugak I.[6]	Bering Sea	52 54.70 N	169 10.50 W			20
Umnak I./Cape Aslik[6]	Bering Sea	53 25.00 N	168 24.50 W			BA
Bogoslof I./Fire I.[6]	Bering Sea	53 55.69 N	168 02.05 W			BA
Unalaska/Bishop Pt.	Bering Sea	53 58.40 N	166 57.50 W			20
Akutan I./Reef-lava	Bering Sea	54 08.10 N	166 06.19 W	54 09.10 N	166 05.50 W	20
Akun I./Billings Head	Bering Sea	54 17.62 N	165 32.06 W	54 17.57 N	165 31.71 W	20
Unimak/Cape Sarichef	Bering Sea	54 34.30 N	164 56.80 W			20

Column Number 1	2	3	4	5	6	7
Site Name	Area or Subarea	Boundaries from		Boundaries to[1]		Atka mackerel No-fishing Zones for Trawl Gear [2,3](nm)
		Latitude	Longitude	Latitude	Longitude	
Sea Lion Rock (Amak)	Bering Sea	55 27.82 N	163 12.10 W			20
Amak I. And rocks	Bering Sea	55 24.20 N	163 09.60 W	55 26.15 N	163 08.50 W	20

[1]Where two sets of coordinates are given, the baseline extends in a clock-wise direction from the first set of geographic coordinates along the shoreline at mean lower-low water to the second set of coordinates.
[2] Closures as stated in 50 CFR 679.22 (a)(7)(vi) and (a)(8)(v).
[3] No-fishing zones are the waters between 0 nm and the nm specified in column 7 around each site and within the Bogoslof area (BA).
[4] The 20 nm Atka mackerel fishery closure around the Tanaga I./Bumpy Pt. Rookery is established only for that portion of the area east of 178 W longitude.
[5] Some or all of the restricted area is located in the Seguam Foraging Area (SFA) which is closed to all gears types. The SFA is established as all waters within the area between 52 N lat. and 53 N lat. and between 173 30' W long. and 172 30' W long.
[6] This site lies in the BA, closed to all gear types. The BA consists of all waters of Area 518 described in Figure 1 of this part south of a straight line connecting 55 00'N/170 00'W and 55 00'N/168 11'4.75" W.
[7]Directed fishing for Atka mackerel by vessels using trawl gear is prohibited in waters located 0-20 nm seaward of Gramp Rock and east of 178 W long.

Table 2.21 The amount of area closed in the BSAI and GOA under the Steller sea lion conservation measures. Given the complexity of the conservation measures, closure areas are described for each fishery and area. Includes year round closures only; areas open seasonally are not included in "closure areas". Forgaing Area values in this table do not include the area inside 0-20 nm critical habitat. This allows all the data to be additive to get total critical habitat. GOA values in red are those updated since the last consultation and changes made in 2004 to the GOA pollock and Pacific cod fisheries.

			Area Closed To Fishing Km^2				Critical Habitat Base Values Km^2						0-20 nm Area of Critical Habitat		
Region	Fishery	Gear	0-3	3-10	10-20	Foraging Area	0-3	3-10	10-20	Foraging Area	(Area)	Total CH	Total Closed 0-20	Total 0-20 CH	% 0-20 Closed
AI	Pollock	Trawl	4,294	31,182	61,364	2,631	4,294	31,182	61,364	2,631	Seguam	99,472	96,841	96,841	100
	Pacific Cod	Trawl	4,294	15,775	2,611	2,631	4,294	31,182	61,364	2,631	Seguam	99,472	22,681	96,841	23
		Pot	4,294	18,092	11,080	2,631	4,294	31,182	61,364	2,631	Seguam	99,472	33,466	96,841	35
		Longline	4,294	18,092	11,080	2,631	4,294	31,182	61,364	2,631	Seguam	99,472	33,466	96,841	35
	Atka Mackerel	Trawl	4,294	23,526	27,640	2,631	4,294	31,182	61,364	2,631	Seguam	99,472	55,460	96,841	57
EBS	Pollock	Trawl	1,661	12,759	22,497	24,098	1,661	13,849	37,419	53,020	SCA	105,948	36,916	52,928	70
	Pacific Cod	Trawl	1,661	12,759	22,497	24,098	1,661	13,849	37,419	53,020	SCA	105,948	36,916	52,928	70
		Pot	1,661	8,689	22,496	24,098	1,661	13,849	37,419	53,020	SCA	105,948	32,845	52,928	62
		Longline	1,661	8,472	21,446	23,252	1,661	13,849	37,419	53,020	SCA	105,948	31,578	52,928	60
	Atka Mackerel	Trawl	1,661	13,849	37,426	24,098	1,661	13,849	37,419	53,020	SCA	105,948	52,935	52,928	100
GOA	Pollock	Trawl	6,128	37,394	40,571	0	6,128	46,109	78,997	12,875	Shelikof	144,109	84,093	131,234	64
	Pacific Cod	Trawl	6,128	38,165	38,243	0	6,128	46,109	78,997	12,875	Shelikof	144,109	82,536	131,234	63
		Pot	3,436	12,691	19,899	0	6,128	46,109	78,997	12,875	Shelikof	144,109	36,027	131,234	27
		Longline	3,530	13,325	12,574	0	6,128	46,109	78,997	12,875	Shelikof	144,109	29,430	131,234	22
BSAI/GOA	Pollock	Trawl	12,083	81,335	124,432	26,729	12,083	91,140	177,780	68,526	Foraging	349,529	217,851	281,003	78
	Pacific Cod	Trawl	12,083	66,699	63,351	26,729	12,083	91,140	177,780	68,526	Foraging	349,529	142,134	281,003	51
		Pot	9,391	39,472	53,475	26,729	12,083	91,140	177,780	68,526	Foraging	349,530	102,339	281,003	36
		Longline	9,485	39,890	45,100	25,883	12,083	91,140	177,780	68,526	Foraging	349,531	94,475	281,003	34
	Atka Mackerel (BSAI)	Trawl	5,955	37,375	65,066	26,729	5,955	45,031	98,783	55,651	Foraging	205,420	108,396	149,769	72

Table 2.22 The amount of area closed in the BSAI and GOA under the Steller sea lion conservation measures as a percentage of each zone. Given the complexity of the conservation measures, closure areas are described for each fishery and area.

% Area Closed								
Region	**Fishery**	**Gear**	**0-3**	**3-10**	***[0-10]***	**10-20**	**Foraging Area**	**Total CH**
AI	Pollock	Trawl	100%	100%	*100%*	100%	100%	100%
	Pacific Cod	Trawl	100%	51%	*57%*	4%	100%	25%
		Pot	100%	58%	*63%*	18%	100%	36%
		Longline	100%	58%	*63%*	18%	100%	36%
	Atka Mackerel	Trawl	100%	75%	*78%*	45%	100%	58%
EBS	Pollock	Trawl	100%	92%	*93%*	60%	45%	58%
	Pacific Cod	Trawl	100%	92%	*93%*	60%	45%	58%
		Pot	100%	63%	*67%*	60%	45%	54%
		Longline	100%	61%	*65%*	57%	44%	52%
	Atka Mackerel	Trawl	100%	100%	*100%*	100%	45%	73%
GOA	Pollock	Trawl	100%	81%	*83%*	51%	0%	58%
	Pacific Cod	Trawl	100%	83%	*85%*	48%	0%	57%
		Pot	56%	28%	*31%*	25%	0%	25%
		Longline	58%	29%	*32%*	16%	0%	20%
BSAI/GOA	Pollock	Trawl	100%	89%	*91%*	70%	39%	70%
	Pacific Cod	Trawl	100%	73%	*76%*	36%	39%	48%
		Pot	78%	43%	*47%*	30%	39%	37%
		Longline	78%	44%	*48%*	25%	38%	34%
	Atka Mackerel (BSAI)	Trawl	100%	83%	*85%*	66%	48%	66%

Table 2.23 The amount of area that would have been closed in the BSAI and GOA under the RPA from the 2000 BiOp. Because all fisheries (i.e., pollock, Pacific cod, and Atka mackerel) were closed in the same areas, gear types and fisheries are not presented as they are all the same.

Area	Area Closed (km^2)	Total Area (km^2)	% Closed
0-3 nm	*8,753*	*13,060*	*67.02%*
3-10 nm	*62,660*	*96,974*	*64.62%*
0-10 nm	71,413	110,034	64.90%
10-20 nm	117,959	185,687	63.53%
CH Beyond 20 nm	41,099	70,263	58.49%
Total critical habitat	230,471	365,983	62.97%

Table 2.24 Amounts in metric tons of 2005 groundfish harvested on observed vessels and in hauls sampled by observers compared with amounts estimated using the Catch Accounting System (CAS) estimation procedure. The Catch Accounting System uses observer groundfish catch estimates for catcher/processors greater than 125' LOA ("100%" to "200%" observed vessels) and weekly production reports for catcher/processors less than 125' LOA. Retained catcher vessel catch is based on scale weights from shore plants or mother ships. Catcher vessel groundfish discards are estimated from observer data. The percentages are relative to the CAS estimate.

FMP Area	Gear[1]	Target	CAS Estimate	Catch on observed Vessels[2]	Percent catch vessels/ CAS estimate	Catch in hauls observed[3]	Catch in hauls observed/ CAS estimate
BSAI	HAL	Pac Cod	143,671	140,927	98%	94,720	66%
	HAL	Sablefish	892	934	105%	678	76%
	HAL	Turbot	2,031	3,406	168%	2,892	142%
	JIG	Pac Cod	118	-	0%	-	0%
	POT	Pac Cod	17,747	6,335	36%	5,692	32%
	POT	Sablefish	1,319	1,028	78%	993	75%
	NPT	Atka Mackerel	69,661	69,809	100%	68,316	98%
	NPT	Pac Cod	81,225	56,589	70%	43,518	54%
	NPT	Other Flats	1,963	1,671	85%	644	33%
	NPT	Rockfish	8,298	8,400	101%	5,898	71%
	NPT	Flathead sole	23,535	19,101	81%	11,850	50%
	NPT	Rock sole	41,381	45,959	111%	30,782	74%
	NPT	Sablefish	36	37	102%	35	97%
	NPT	Turbot	84	89	106%	48	57%
	NPT	Arrowtooth	5,689	6,118	108%	4,059	71%
	NPT	Yellowfin Sole	120,106	118,426	99%	87,735	73%
	PTR	Pollock	1,462,105	1,464,311	100%	1,462,807	100%
		Total	1,979,862	1,943,140	98%	1,820,666	92%
GOA	HAL	Pac Cod	6,121	749	12%	467	8%
	HAL	Sablefish	14,254	5,884	41%	4,254	30%
	JIG	Pac Cod	2,864	-	0%	-	0%
	JIG	Rockfish	21	-	0%	-	0%
	POT	Pac Cod	24,634	2,430	10%	2,007	8%
	NPT	Pac Cod	12,292	3,456	28%	2,751	22%
	NPT	Shallow Flatfish	7,813	1,520	19%	1,158	15%
	NPT	Rockfish	22,038	14,670	67%	9,849	45%
	NPT	Flathead sole	3,059	1,010	33%	824	27%
	NPT	Other species	191	155	81%	133	70%
	NPT	Pollock	589	-	0%	-	0%
	NPT	Sablefish	6	-	0%	-	0%
	NPT	Arrowtooth fl.	14,694	8,758	60%	5,745	39%
	NPT	Rex sole	3,244	1,292	40%	868	27%
	PTR	Rockfish	1,255	1,369	109%	1,200	96%
	PTR	Pollock	82,623	69,006	84%	68,524	83%
		Total	195,699	110,300	56%	97,779	50%

[1]Gear defininitions are as follows: HAL is hook-and-line (longline); JIG is jig gear; POT is pot gear; NPT is non-pelagic trawl (bottom trawl); PTR is pelagic traw (mid water).
[2]'Catch on observed vessels' is from the observer estimate of official total catch. The estimate includes hauls that are directly sampled by the observer plus unsampled hauls. Catch composition on unobseverd hauls is extrapolated from sampled hauls. Unsampled hauls weight is from the vessel operator's log book.
[3]'Catch in hauls observed' is from hauls actually sampled by the observer.

Table 2.25 Major Alaska Steller Sea Lion Rookery Sites in Table 1 to Part 226.

Where two sets of coordinates are given, the baseline extends in a clockwise direction from the first set of geographic coordinates along the shoreline at mean lower-low water to the second set of coordinates. Where only one set of coordinates is listed, that location is the base point.

Region/site	Boundaries to–			
	Latitude	Longitude	Latitude	Longitude
Western Aleutians:				
Agattu I.				
Cape Sabak \1\	52 23.5N	173 43.5E	52 22.0N	173 41.0E
Gillon Point \1\.	52 24.0N	173 21.5E		
Attu I.\1\.	52 54.5N	172 28.5E	52 57.5N	172 31.5E
Buldir I.\1\.	52 20.5N	175 57.0E	52 23.5N.	172 51.0E
Central Aleutians:				
Adak I.\1\.	51 36.5N	176 59.0W	51 38.0N	176.59.5W
Agligadak I.\1\.	52 06.5N	172 54.0W		
Amchitka I.:\1\				
Column Rock \1\	51 32.5N	178 49.5E		
East Cape \1\.	51 22.5N	179 28.0E	51 21.5N	179 25.0E
Ayugadak I.\1\.	51 45.5N	178 24.5E		
Gramp Rock \1\.	51 29.0N	178 20.5W		
Kasatochi I.\1\.	52 10.0N	175 31.5W	52 10.5N	175 29.0W
Kiska I.:				
Lief Cove \1\.	51 57.5N	177 21.0E	51 56.5N	177 20.0E
Cape St. Stephen \1\	51 52.5N	177 13.0E	51 53.5N	177 12.0E
Seguam I./Saddleridge \1\.	52 21.0N	172 35.0W	52 21.0N	172 33.0W
Semisopochnoi I.:				
Pochnoi Pt \1\..	51 58.5N	179 45.5E	51 57.0N	179 46.0E
Petrel Pt \1\	52 01.5N	179 37.5E	52 01.5E	179 39.0E
Tag I.\1\.	51 33.5N	178 34.5W		
Ulak I.\1\..	51 20.0N	178 57.0W	51 18.5N	178 59.5W
Yunaska I.\1\	52 42.0N	170 38.5W	52 41.0N	170 34.5W
Eastern Aleutian:				
Adugak I.\1\	52 55.0N	169 10.5W		
Akun I./Billings Head \1\.	54 18.0N	165 32.5W	54 18.0N	165 31.5W
Akutan I./Cape Morgan \1\.	54 03.5N	166 00.0W	54 05.5N	166 05.0W
Bogoslof I.\1\ \2\	53 56.0N	168 02.0W		
Ogchul I.\1\..	53 00.0N	168 24.0W		
Sea Lion Rocks. (Amak) \1\.	55 28.0N	163 12.0W		
Ugamak I.\1\..	54 14.0N	164 48.0W	54 13.0N	164 48.0W
Bering Sea:				
Walrus I.\1\.	57 11.0N	169 56.0W		
Western Gulf of Alaska:				
Atkins I.\1\..	55 03.5N	159 18.5W		
Chernabura I.\1\.	54 47.5N	159 31.0W	54 45.5N	159 33.5W
Clubbing Rocks (N) \1\.	54 43.0N	162 26.5W		
Clubbing Rocks (S) \1\.	54 42.0N	162 26.5W		
Pinnacle Rock \1\	54 46.0N	161 46.0W		
Central Gulf of Alaska:				
Chirikof I.\1\..	55 46.5N	155 39.5W	55 46.5N	155 43.0W
Chowiet I.\1\.	56 00.5N	156 41.5W	56 00.5N	156 42.0W
Marmot I.\1\	58 14.5N	151 47.5W	58 10.0N	151 51.0W
Outer I.\1\.	59 20.5N	150 23.0W	59 21.0N	150 24.5W
Sugarloaf I.\1\...	58 53.0N	152 02.0W		

Region/site	Boundaries to–			
	Latitude	Longitude	Latitude	Longitude
Eastern Gulf of Alaska: Seal Rocks \1\.. Fish I.\1\	60 10.0N 59 53.0N	146 50.0W 147 20.5W		
Southeast Alaska: Forrester I. Hazy I. White Sisters	54 51.0N 55 52.0N 57 38.0N	133 32.0W 134 34.0W 136 15.5W	54 52.5N 55 51.5N	133 35.5W 134 35.0W

\1\ Includes an associated 20 NM aquatic zone.
\2\ Associated 20 NM aquatic zone lies entirely within one of the three special foraging areas.

Table 2.26 Alaska Major Steller Sea Lion Haulout Sites from Table 2 to Part 226

Where two sets of coordinates are given, the baseline extends in a clockwise direction from the first set of geographic coordinates along the shoreline at mean lower-low water to the second set of coordinates. Where only one set of coordinates is listed, that location is the basepoint.

Region/site	Boundaries to–			
	Latitude	Longitude	Latitude	Longitude
Western Aleutians:				
Alaid I.\1\. Attu/Chirikof Pt.\1\ Shemya I.\1\..	52 45.0N 52 30.0N 52 44.0N	173 56.5E 173 26.7E 174 09.0E	52 46.5N	173 51.5E
Central Aleutians:				

Region/site	Boundaries to–			
	Latitude	Longitude	Latitude	Longitude
Amatignak I.\1\	51 13.0N	179 08.0E		
Amlia I:				
East \1\	52 05.0N	172 58.5W	52 06.0N	172 57.0W
Sviech. Harbor \1\.	52 02.0N	173 23.0W		
Amukta I. & Rocks \1\.	52 31.5N	171 16.5W	52 26.5N	171 16.5W
Anagaksik I.\1\	51 51.0N	175 53.5W		
Atka I.\1\.	52 23.5N	174 17.0W	52 24.5N	174 07.5W
Bobrof I.\1	51 54.0N	177 27.0W		
Chagulak I.\1\.	52 34.0N	171 10.5W		
Chuginadak I.\1\..	52 46.5N	169 44.5W	52 46.5N	169 42.0W
Great Sitkin I.\1\.	52 06.0N	176 10.5W	52 07.0N	176 08.5W
Kagamil I.\1\..	53 02.5N	169 41.0W		
Kanaga I:				
North Cape \1\.	51 56.5N	177 09.0W		
Ship Rock \1\	51 47.0N	177 22.5W		
Kavalga I.\1\.	51 34.5N	178 51.5W	51 34.5N	178 49.5W
Kiska I./Sirius Pt.\1\.	52 08.5N	177 36.5E		
Kiska I./Sobaka & Vega \1\.	51 50.0N	177 20.0E	51 48.5N	177 20.5E
Little Sitkin I.\1\.	51 59.5N	178 30.0E		
Little Tanaga I.\1\.	51 50.5N	176 13.0W	51 49.0N	176 13.0W
Sagigik I.\1\.	52 00.5N	173 08.0W		
Seguam I:				
South \1\...	52 19.5N	172 18.0W	52 15.0N	172 37.0W
Finch Pt.\1\...	52 23.5N	172 25.5W	52 23.5N	172 24.0W
Segula I.\1\...	52 00.0N	178 06.5E	52 03.5N	178 09.0E
Tanaga I.\1\....	51 55.0N	177 58.5W	51 55.0N	177 57.0W
Tanadak I. (Amlia) \1\.	52 04.5N	172 57.0W		
Tanadak I. (Kiska) \1\..	51 57.0N	177 47.0E		
Ugidak I.\1\.	51 35.0N	178 30.5W		
Uliaga I.\1\.	53 04.0N	169 47.0W	53 05.0N	169 46.0W
Unalga & Dinkum Rocks \1\.	51 34.0N	179 04.0W	51 34.5N	179 03.0W
Eastern Aleutians:				
Akutan I./Reef-Lava \1\.	54 10.5N	166 04.5W	54 07.5N	166 06.5W
Amak I.\1\.	55 24.0N	163 07.0W	55 26.0N	163 10.0W
Cape Sedanka & Island \1\.	53 50.5N	166 05.0W		
Emerald I.\1\.	53 17.5N	167 51.5W		
Old Man Rocks \1\.	53 52.0N	166 05.0W.		
Polivnoi Rock \1\	53 16.0N	167 58.0W		
Tanginak I.\1\	54 13.0N	165 19.5W		
Tigalda I.\1\..	54 08.5N	164 58.5W		
Umnak I./Cape Aslik \1\.	53 25.0N	168 24.5W		
Bering Sea:				
Cape Newenham \1\.	58 39.0N	162 10.5W		
Hall I.\1\..	60 37.0N	173 00.0W		
Round I.\1\.	58 36.0N	159 58.0W		
St. Paul I:				
Northeast Point \1\.	57 15.0N	170 06.5W		
Sea Lion Rock \1\.	57 06.0N	170 17.5W		
St. George I:				
S Rookery \1\.	56 33.5N	169 40.0W		

Region/site	Boundaries to–			
	Latitude	Longitude	Latitude	Longitude
Dalnoi Point \1\..	56 36.0N	169 46.0W		
St. Lawrence I:				
S Punuk I.\1\.	64 04.0N	168 51.0W		
SW Cape \1\	63 18.0N.	171 26.0W		
Western Gulf of Alaska:				
Bird I. \1\.	54 40.5N	163 18.0W		
Castle Rock \1\.	55 17.0N	159 30.0W		
Caton I.\1\.	54 23.5N	162 25.5W		
Jude I.\1\.	55 16.0N	161 06.0W		
Lighthouse Rocks \1\.	55 47.5N	157 24.0W		
Nagai I.\1\.	54 52.5N	160 14.0W	54 56.0N	160 15.0W
Nagai Rocks \1\.	55 50.0N	155 46.0W		
Sea Lion Rocks (Unga) \1\.	55 04.5N	160 31.0W		
South Rock \1\	54 18.0N	162 43.5W		
Spitz I.\1\..	55 47.0N	158 54.0W		
The Whaleback \1\.	55 16.5N	160 06.0W		
Central Gulf of Alaska:				
Cape Barnabas \1\.	57 10.0N	152 55.0W	57 07.5N	152 55.0W
Cape Chiniak \1\	57 35.0N	152 09.0W	57 37.5N	152 09.0W
Cape Gull \1\ \2\	58 13.5N	154 09.5W	58 12.5N	154 10.5W
Cape Ikolik \1\ \2\	57 17.0N	154 47.5W		
Cape Kuliak \1\ \2\	58 08.0N	154 12.5W		
Cape Sitkinak \1\.	56 32.0N	153 52.0W		
Cape Ugat \1\ \2\	57 52.0N	153 51.0W		
Gore Point \1\.	59 12.0N	150 58.0W		
Gull Point \1\..	57 21.5N	152 36.5W	57 24.5N	152 39.0W
Latax Rocks \1\	58 42.0N	152 28.5W	58 40.5N	152 30.0W
Long I.\1\	57 45.5N	152 16.0W		
Nagahut Rocks \1\	59 06.0N	151 46.0W		
Puale Bay \1\ \2\	57 41.0N	155 23.0W		
Sea Lion Rocks (Marmot) \1\.	58 21.0N	151 48.5W		
Sea Otter I.\1\	58 31.5N	152 13.0W		
Shakun Rock \1\ \2\	58 33.0N	153 41.5W		
Sud I.\1\.	58 54.0N	152 12.5W		
Sutwik I.\1\..	56 32.0N	157 14.0W	56 32.0N	157 20.0W
Takli I. \1\ \2\	58 03.0N	154 27.5W	58 03.0N	154 30.0W
Two-headed I.\1\	56 54.5N	153 33.0W	56 53.5N	153 35.5W
Ugak I.\1\.	57 23.0N	152 15.5W	57 22.0N	152 19.0W
Ushagat I. \1	58 55.0N	152 22.0W		
Eastern Gulf of Alaska:				

Region/site	Boundaries to–			
	Latitude	Longitude	Latitude	Longitude
Cape Fairweather	58 47.5N	137 56.3W		
Cape St. Elias \1\.	59 48.0N	144 36.0W		
Chiswell Islands \1\.	59 36.0N	149 34.0W		
Graves Rock	58 14.5N	136 45.5W		
Hook Point \1\	60 20.0N	146 15.5W		
Middleton I.\1\	59 26.5N	146 20.0W		
Perry I.\1\.	60 39.5N	147 56.0W		
Point Eleanor \1\	60 35.0N	147 34.0W		
Point Elrington \1\	59 56.0N	148 13.5W		
Seal Rocks \1\	60 10.0N	146 50.0W		
The Needle \1\	60 07.0N	147 37.0W		
Southeast Alaska:				
Benjamin I	58 33.5N	134 54.5W		
Biali Rock	56 43.0N	135 20.5W		
Biorka I	56 50.0N	135 34.0W		
Cape Addington..	55 26.5N	133 49.5W		
Cape Cross	57 55.0N	136 34.0W		
Cape Ommaney	56 10.5N	134 42.5W		
Coronation I.	55 56.0N	134 17.0W		
Gran Point	59 08.0N	135 14.5W		
Lull Point	57 18.5N	134 48.5W		
Sunset I	57 30.5N	133 35.0W		
Timbered I	55 42.0N	133 48.0W		

\1\ Includes an associated 20 NM aquatic zone.
\2\ Associated 20 nm aquatic zone lies entirely within one of the three special foraging areas.

Table 2.27 Harvest in state waters, including parallel, state GHL, and CDQ fisheries.

BSAI Species	2008 S	2008 CP/M	2009 S	2009 CP/M	2008 Total	2009 Total	2008 TAC	2008 % of TAC	2009 TAC	2009 % of TAC
Alaska plaice	0	0	0	0	0	0	50,000	0%	50,000	0%
Arrowtooth flounder	16	23	45	28	39	73	75,000	0%	75,000	0%
Other flatfish	33	4	29	2	37	31	21,600	0%	17,400	0%
Flathead sole	11	1	6	0	12	6	50,000	0%	60,000	0%
Greenland turbot	0	3	0	3	3	3	2,540	0%	7,380	0%
Northern rockfish	3	24	1	49	27	50	8,180	0%	7,160	1%
Other species	45	169	22	48	213	70	50,000	0%	50,000	0%
Pacific ocean perch	59	532	4	517	590	522	19,198	3%	18,800	3%
Rougheye rockfish	1	6	1	9	7	10	172	4%	539	2%
Other rockfish	5	8	10	6	14	16	849	2%	1,040	2%
Rock sole	26	16	11	48	42	60	75,000	0%	90,000	0%
Sablefish	36	12	71	16	48	87	5,300	1%	4,920	2%
Squid	4	1	2	0	5	3	1,675	0%	1,970	0%
Shortraker rockfish	1	2	1	10	3	10	360	1%	387	3%
Yellowfin sole	1	12	0	1	13	1	225,000	0%	210,000	0%
Total	241	812	204	737	1,053	941	584,874	0%	594,596	0%

GOA Species	2008 S	2008 CP/M	2009 S	2009 CP/M	2008 Total	2009 Total	2008 TAC	2008 % of TAC	2009 TAC	2009 % of TAC
Arrowtooth flounder	812	3	371	0	814	372	43,000	2%	43,000	1%
Big skate	96	0	198	0	96	198	3,330	3%	3,330	6%
Demersal shelf rockfish	74		58		74	58	382	19%	362	16%
Deep water flatfish	3		1		3	1	8,903	0%	9,168	0%
Flathead sole	228	0	148	0	229	148	11,054	2%	11,181	1%
Longnose skate	73	0	171	0	73	171	2,887	3%	2,887	6%
Northern rockfish	6	0	0	0	6	0	4,549	0%	4,362	0%
Other species	299	4	279	0	303	279	2,104	14%	4,500	6%
Pelagic shelf rockfish	19	0	8	0	19	8	5,227	0%	4,781	0%
Pacific ocean perch	1	0	0	0	1	0	14,999	0%	15,111	0%
Rex sole	13		9		13	9	9,132	0%	8,996	0%
Rougheye rockfish	38	0	32	0	38	32	1,286	3%	1,284	3%
Other rockfish	42	0	42	0	42	42	1,730	2%	1,730	2%
Sablefish	1,181		969		1,181	969	12,730	9%	11,160	9%
Shallow water flatfish	248	0	60	0	248	60	22,256	1%	22,256	0%
Shortraker rockfish	57	0	51	0	57	51	898	6%	898	6%
Thornyhead rockfish	52		49		52	49	1,910	3%	1,910	3%
Other skates	34	10	37	7	44	44	2,104	2%	2,104	2%
Total	3,277	18	2,485	8	3,294	2,493	148,481	2%	149,020	2%

Table 3-1a. Counts of adult and juvenile (non-pup) Steller sea lions at western DPS rookery and haul-out trend sites in Alaska consistently surveyed during June-July surveys from 1956 to 2008 (NMFS 2000, Sease *et al.* 2001, Sease and Gudmundson 2002, and Fritz and Stinchcomb 2005; Fritz et al. 2008; DeMaster 2009). Numbers in parentheses are the number of trend sites in each sub-area. Percentage differences between years are shown below. 2008Adj and 2008A refer to 2008 counts adjusted for seasonal movement in the eastern and central Gulf of Alaska (DeMaster 2009).

Year(s)	Gulf of Alaska			Aleutian Islands			Kenai-Kiska (74)	Western DPS in Alaska (87)
	Eastern (9)	Central (16)	Western (9)	Eastern (11)	Central (38)	Western (4)		
1956-60[1]		34,792	15,772	44,020	17,120		111,704	
1962					23,175			
1976-79[2]	7,053	24,678	8,311	19,743	36,632	14,011	89,364	110,428
1985		19,002	6,275	7,505	23,042		55,824	
1989	7,241	8,552	3,908	3,032	7,572		23,064	
1990[3]	5,444	7,050	3,915	3,801	7,988	23,273	22,754	30,525
1991	4,596	6,270	3,732	4,228	7,496	3,083	21,726	29,405
1992	3,738	5,739	3,716	4,839	6,398	2,869	20,692	27,299
1994	3,365	4,516	3,981	4,419	5,820	2,035	18,736	24,136
1996	2,132	3,913	3,739	4,715	5,524	2,187	17,891	22,210
1998[4]	21,104	3,467	3,360	3,841	5,749	1,911	16,417	20,438
2000	1,975	3,180	2,840	3,840	5,419	1,071	15,279	18,325
2002	2,500	3,366	3,221	3,956	5,480	817	16,023	19,340
2004[5]	2,536	2,944	3,512	4,707	5,936	898	17,099	20,533
2006[5]	2,773			4,721				
2007[5]	2,505		4,114					
2008[5]	3,726	3,176	4,029	5,039	4,931	588	17,175	21,489
2008 Adj[5]	3,212	3,492	4,029	5,039	4,931	588	17,491	21,291
Percentage Differences								
1950s to 2000		-91%	-82%	-91%	-68%		-86%	
1990 to 2000	-64%	-55%	-27%	1%	-32%	-54%	-33%	-40%
2000 to 2004	28%	-7%	24%	23%	10%	-16%	12%	12%
2004 to 2008A	27%	19%	15%	7%	-17%	-34%	2%	4%
2000 to 2008A	63%	10%	42%	31%	-9%	-45%	14%	16%

[1] 1956 counts for the western GOA, 1957 counts for the central GOA, 1959 counts for the central Aleutians and 1960 counts for the eastern Aleutians.
[2] 1976 counts for the eastern, central, and western GOA and the eastern Aleutians, and 1979 counts for the central and western Aleutians.
[3] Gillon Point rookery, Agattu Island not surveyed in 1990.
[4] 1999 counts substituted for sites in the eastern Gulf of Alaska not surveyed in 1998.
[5] 2004-2008 counts were from high resolution vertical photographs, while all others were from oblique 35 mm photographs, aerial counts or beach counts. 2004-2008 data reflect a –3.64% adjustment to account for resolution and count differences (Fritz and Stinchcomb 2005).

Table 3.1b.--Counts of adult and juvenile (non-pup) Steller sea lions observed at rookery and haul-out trend sites surveyed consistently since 1991 in seven subareas of the western DPS in Alaska during June-July aerial surveys from 1991 to 2008 (NMFS 2000, Sease *et al.* 2001, Sease and Gudmundson 2002, and Fritz and Stinchcomb 2005; Fritz et al. 2008; DeMaster 2009). This group of sites in each sub-area includes more haulouts than the group surveyed consistently since the 1950s (Table 3.1A). Numbers in parentheses are the number of trend sites in each sub-area. Percentage differences between years are shown below. 2008Adj and 2008A refer to 2008 counts adjusted for seasonal movement in the eastern and central Gulf of Alaska (DeMaster 2009).

	Gulf of Alaska			Aleutian Islands				Western Stock
Year	Eastern (13)	Central (33)	Western (20)	Eastern (27)	Central (58)	Western (10)	Kenai to Kiska	in Alaska
1991	4,812	7,872	5,338	5,283	8,656	4,601	27,149	36,562
1992	3,981	7,358	5,112	5,707	7,633	4,199	25,811	33,991
1994	3,612	6,505	5,718	5,664	6,909	3,114	24,796	31,522
1996	2,450	5,400	5,356	5,967	6,368	3,334	23,091	28,875
1998[1]	2,158	4,806	5,367	5,774	7,017	2,786	22,964	27,908
2000	2,102	4,555	3,996	4,990	6,560	1,633	20,101	23,836
2002	2,615	4,594	4,617	5,261	6,547	1,196	21,018	24,829
2004[2]	3,015	4,028	5,233	5,991	6,885	1,286	22,137	26,438
2006[2]	3,101			6,031				
2007[2]	2,760							
2008[2]	4,065	4,420	5,558	6,405	5,817	894	22,199	27,159
2008 Adj[2]	3,313	4,602	5,558	6,405	5,817	894	22,382	26,589
Percentage Differences								
1991 to 2000	-56%	-42%	-25%	-6%	-24%	-65%	-26%	-35%
2000 to 2004	43%	-12%	31%	20%	5%	-21%	10%	11%
2004 to 2008A	10%	14%	6%	7%	-16%	-31%	1%	1%
2000 to 2008A	58%	1%	39%	28%	-11%	-45%	11%	12%

[1] 1999 counts substituted for sites in the eastern Gulf of Alaska not surveyed in 1998.

[2] 2004-2008 counts were from high resolution vertical photographs, while all others were from oblique 35 mm photographs, aerial counts or beach counts. 2004-2008 data reflect a –3.64% adjustment to account for resolution and count differences (Fritz and Stinchcomb 2005).

Table 3.1c. – Counts and average annual trends of adult and juvenile (non-pup) Steller sea lions observed at rookery and haul-out trend sites surveyed consistently since 1991 in seven subregions of the western DPS in Alaska during June-July aerial surveys from 2000 to 2008 (source data: Table 3.1B).

Year	Western AI	Central AI	Eastern AI	Western GOA	Central GOA	Eastern GOA	Total
2000	1,633	6,560	4,990	3,996	4,555	2,102	23,836
2002	1,196	6,547	5,261	4,617	4,594	2,615	24,830
2004	1,286	6,885	5,991	5,233	4,028	3,015	26,438
2006	--	--	6,031	--	--	3,101	--
2008A[2]	894	5,817	6,405	5,558	4,602	3,313	26,589
Trend (2000-2008A)	-0.068	-0.015	0.032	0.04	-0.001	0.054	0.014

Table 3.2. Counts of Steller sea lion pups at selected rookeries (number in parentheses) in 7 sub-areas of the western DPS in Alaska and in SE Alaska (eastern DPS) from 1978-79 to 2009. Blank cells indicate incomplete counts in the period and sub-area. Percentage differences in counts between periods are shown below.

	Gulf of Alaska			Aleutian Islands			Kenai to Kiska	Western DPS in Alaska	SE Alaska Eastern DPS
	Eastern	Central	Western	Eastern	Central	Western			
Years	(2)	(5)	(4)	(5)	(11)[1]	(4)	(25)	(31)	(5)
1978-1979	574	18,893	9,351						2,219
1984-1989		10,254	5,879	4,778	9,382		30,293		
1990-1992		4,904	1,923	2,115	3,568		12,510		4,164
1994	903	2,831	1,662	1,756	3,109		9,358		3,770
1997	611					979			
1998	689	1,876	1,493	1,474	2,834	803	7,677	9,169	4,235
2001-2002	586	1,721	1,671	1,561	2,612	488	7,565	8,639	4,877
2003-2004	716	1,609	1,577	1,731					
2005	715	1,651	1,707	1,921	2,551	343	7,830	8,888	5,510
2009	918	1,821	2,062	2,300	2,436	279	8,619	9,816	7,444
Percent Change									
1978-79 to 2001-02	2%	-91%	-82%						
1990-92 to 2001-02		-65%	-13%	-26%	-27%		-40%		
2001-02 to 2005	22%	-4%	2%	23%	-2%	-30%	4%	3%	13%
2005 to 2009	28%	10%	21%	20%	-5%	-19%	10%	10%	35%
2001-02 to 2009	57%	6%	23%	47%	-7%	-43%	14%	14%	53%

[1] 1984-89 central Aleutian count does not include Amchitka/Column Rocks (n=10)

Table 3.3. Counts of adult and juvenile (non-pup) Steller sea lions on terrestrial trend sites in Russia.

Year	W. Bering Sea	Commander Islands	E. Kamchatka	Kuril Islands	Tuleny Island	Sea of Okhotsk
1963		29,201		14,660	602	
1969				14,184		
1971		2,920				
1973		3,503				
1974					49	1,208
1975				8,397		
1977		4,480				
1978		2,807			26	
1981		2,101		5,921		
1982	4,910	1,577				
1983	3,230	1,761	2,073		65	
1984		1,930				
1985	3,370	1,700			137	
1986		2,633			450	
1987	1,231	2,267	1,690			
1988		1,221			171	16,913
1989	1,199	896	1,519	4,488	190	
1990		865			410	
1991	427	752	794		350	
1992		843			463	
1993		569			549	
1994	200	543	642		557	
1995		653		4,075		
1996		804			615	24,294
1997		812			679	
1998		900			836	
1999	180	860	720		770	
2000		741			1,155	
2001		718	669	4,782	857	2,324
2002	16	581	491		1,041	2,072
2003		530		4,806	1,119	
2004	91	674	548		1,084	2,478
2005				6,231	1,218	
2006		711	546		1,006	2,755
2007				7,637	1,646	
2008	110	797	388		1,326	
2009		581			1,365	

[1]1962 data. [2]1964 data. [3]1989 data for Iony Island. [4]1995 data for Yamsky Islands and 1997 data for Iony Island.

Table 3.4. Counts of Steller sea lion pups on rookery trend sites in Russia.

Year	Commander Islands	E. Kamchatka	Kuril Islands	Tuleny Island	Sea of Okhotsk
1962	1				
1963			3,673		
1969	0		3,250		
1970	3				
1971	4				
1972	9				
1973	26				
1974				1	607
1977	19				
1978	26			0	
1980				6	
1981	48				
1982	83			0	
1983	104		1,992	5	
1984	141			0	
1986	151		1,560	25	
1987	197	211			
1988	141			38	7121
1989	195		1,442	45	
1990				59	
1991	229			63	
1992	222	108	1,623	90	
1993	224	115		120	
1994	226	93		146	
1995	248	84	1,972		
1996	261	87		219	
1997	244	96		256	1,368
1998	280	91		303	
1999	271	87		291	
2000	180	76	1,756	340	
2001	228	61	1,843	303	1,231
2002	210	84	1,973	410	980
2003	216		2,126	480	
2004	221	107		508	1,868
2005	236		2,366	407	
2006	235	108		584	1,820
2007	220		2,548	584	
2008	225	104		570	
2009	176			699	

[1]1989 data for Iony Island.

Table 3.5. Counts of adult and juvenile Steller sea lions on trend sites by region within the eastern DPS, 1982-2009. 2008 count in SE Alaska was from survey conducted in early June 2008 and was likely affected by seasonal movement of animals out of this area (see DeMaster 2009). Data from British Columbia from Olesiuk (2008). Data from 2009 in Central CA from M. Lowry, SWFSC (NMFS unpublished).

Year	SE Alaska	British Columbia	Northern CA/OR	Central CA	Total Eastern Stock
1982	6,898	4,713	3,094	511	15,216
1987		6,109			
1990	7,629		3,088	655	
1991	8,641		3,180	537	
1992	7,555	7,376	4,274	276	19,481
1993			3,334	325	
1994	9,001	8,091	3,831	508	21,431
1995				426	
1996	8,231		4,192	382	
1997			4,834		
1998	8,693	9,818	4,464		
1999			3,988	564	
2000	9,892		3,793	349	
2001			4,438	287	
2002	9,951	12,121	4,885	380	27,337
2003				390	
2004				425	
2006		15,700			
2008	8,748				
2009	11,798			308	

Table 3.6. Steller sea lion pups (2009 survey) and adult females (2008 survey) counted and estimated **on rookeries** in each sub-area of the western stock in Alaska. The ratio of observed pup per female was calculated using survey counts. The estimated number of adult females was obtained by applying the observation rate of 44%, which yields an estimate of the true number of pups per female on rookeries.

Region	Counted Pups	Counted Adult Females	Observed Females with Pup	Estimated Adult Females	Estimated Females with Pup
E GULF	982	1,124	87%	2,553	38%
C GULF	1,604	1,669	96%	3,793	42%
W GULF	2,348	2,689	87%	6,111	38%
E ALEU	2,430	2,872	85%	6,526	37%
C ALEU	2,645	3,017	88%	6,855	39%
W ALEU	279	418	67%	949	29%
TOTAL	10,288	11,787	87%	26,787	38%

Table 3.7. Steller sea lion pups (2009 survey) and adult females (2008 survey) counted and estimated on haul-outs and on both rookeries and haul-outs in each sub-area of the western stock in Alaska. The estimated number of adult females on haul-outs was obtained by applying the observation rate of 44%. Pups born on haulouts were estimated by using the ratio of rookery:total pup production of 95%, with 5% born on haulouts. Actual pup counts on haulouts in 2009 are also shown.

	Haul-Outs Only				Rookeries and Haul-outs		
Region	Counted Adult Females	Estimated Adult Females	Counted Pups	Estimated Pups	Estimated Total Pups	Estimated Females with Pup	Percent of 1976 rate
E GULF	726	1,650	45	52	1,034	25%	51%
C GULF	728	1,653	58	84	1,688	31%	64%
W GULF	704	1,599	134	124	2,472	32%	66%
E ALEU	677	1,537	60	128	2,558	32%	65%
C ALEU	293	665	56	139	2,784	37%	76%
W ALEU	41	92	20	15	294	28%	58%
TOTAL	3,167	7,196	373	541	10,829	32%	66%

Table 3.8. Age-specific rates of survivorship and baseline (1976) natality for female Steller sea lions in the central Gulf of Alaska (Holmes et al. 2007). Survivorship is from age *t* to *t*+1. Fecundity is number of female pups produced per female at age *t*.

Age (*t*)	Survivorship	Natality
0	0.7845	0
1	0.8331	0
2	0.8816	0
3	0.9302	0
4	0.9092	0.048
5	0.8951	0.1695
6	0.8839	0.2215
7	0.8746	0.2795
8	0.8665	0.3285
9	0.8593	0.3285
10	0.8527	0.3285
11	0.8468	0.3885
12	0.8412	0.3885
13	0.836	0.3885
14	0.8312	0.3885
15	0.8266	0.3885
16	0.8223	0.3885
17	0.8182	0.257
18	0.8142	0.257
19	0.8105	0.257
20	0.8069	0.257
21	0.8034	0.257
22	0.8001	0
23	0.7968	0
24	0.7937	0
25	0.7907	0
26	0.7878	0
27	0.785	0
28	0.7822	0
29	0.7795	0
30	0.7769	0
31	0	0

Table 3.10 Table II-9 (NMFS 2003) updated with proportions of locations associated with diving to >4 m for juvenile Steller sea lions >10 months old at capture and instrumented during 2000-2005. Zones based on distances from nearest listed haulout or rookery, and proportions were stratified by season.

	Level of concern	Summer (Apr-Sept)	Winter (Oct-Mar)
Zone	**2001 BiOp**	**>10 months (n=4,816)**	**>10 months (n=1,990)**
Inside CH			
0-10 nm	High	78.4%	88.9%
10-20 nm	Low to moderate	8.7%	8.9%
>20 nm	Low	0.9%	0.3%
Outside CH	Low	11.9%	1.9%

Table 3.11 Proportion of 14,441 locations associated with diving to >4 m for 116 juvenile Steller sea lions based on distance to nearest listed haulout or rookery and stratified by region and season.

	Prince William Sound		Kodiak		Eastern Aleutians		Central/Western Aleutians	
Zone	**Summer[1]**	**Winter[2]**	**Summer**	**Winter**	**Summer**	**Winter**	**Summer**	**Winter**
Inside CH								
0-10 nm	92.0%	94.5%	86.8%	93.0%	88.5%	91.2%	68.8%	100.0%
10-20 nm	7.1%	4.6%	7.5%	5.2%	5.5%	6.9%	8.8%	0.0%
>20 nm	0.0%	0.1%	0.3%	0.3%	2.8%	0.2%	0.5%	0.0%
Outside CH	0.9%	0.9%	5.4%	1.6%	3.3%	1.7%	21.9%	0.0%

[1] Summer is defined as April through September.

[2] Winter is defined as October through March.

Table 3.12 Steller sea lion satellite-tag deployments during 2000-2005 (*n* = 116) included in the current analysis. Data not included in the March 2003 "Addendum to the Section 7 Consultation of October 2001" (NMFS 2003*a*) are marked as "New" under the "Category" heading (data used in the previous analysis are marked by "-").

ID	Deployment Date	Age at capture (months)	Location	Group	Category
6295	29-Feb-00	9	Turf Pt. Seguam Island	NMML	-
6296	29-Feb-00	9	Turf Pt. Seguam Island	NMML	-
6297	29-Feb-00	9	Turf Pt. Seguam Island	NMML	-
6298	29-Feb-00	9	Turf Pt. Seguam Island	NMML	-
6299	9-Mar-00	9	Aiktak	NMML	-
6300	9-Mar-00	9	Aiktak	NMML	-
6302	12-Mar-00	9	Long Island, Kodiak	NMML	-
6301	12-Mar-00	21	Long Island, Kodiak	NMML	-
11212	23-Apr-00	10.5	Glacier Island, PWS	ADFG	New
11214	24-Apr-00	10.5	Glacier Island, PWS	ADFG	New
11215	24-Apr-00	10.5	Glacier Island, PWS	ADFG	New
11216	25-Apr-00	10.5	Glacier Island, PWS	ADFG	New
11217	25-Apr-00	10.5	Glacier Island, PWS	ADFG	New
11218	25-Apr-00	10.5	Glacier Island, PWS	ADFG	New
11219	25-Apr-00	10.5	Glacier Island, PWS	ADFG	New
11220	26-Apr-00	22.5	The Needle, PWS	ADFG	New
11221	28-Apr-00	22.5	Point Elrington, PWS	ADFG	New
11222	22-Aug-00	14	Glacier Island, PWS	ADFG	New
11210	23-Aug-00	14	The Needle, PWS	ADFG	New
11223	23-Aug-00	14	The Needle, PWS	ADFG	New
11211	24-Aug-00	26	The Needle, PWS	ADFG	New
6303	26-Feb-01	21	Reef Bite	NMML	-
6304	1-Mar-01	9	Aiktak	NMML	-
6305	1-Mar-01	9	Ugamak	NMML	-
6308	3-Mar-01	9	Aiktak	NMML	-
6309	3-Mar-01	9	Aiktak	NMML	-

6310	3-Mar-01	9	Aiktak	NMML	-
6307	3-Mar-01	9	Rocks off Tigalda	NMML	-
6306	3-Mar-01	21	Rocks off Tigalda	NMML	-
6312	4-Mar-01	9	Billingshead, Akun	NMML	-
6311	4-Mar-01	21	Billingshead, Akun	NMML	-
6283	6-Mar-01	9	Long Island, Kodiak	ADFG	New
6284	6-Mar-01	9	Long Island, Kodiak	ADFG	New
6285	7-Mar-01	9	Long Island, Kodiak	ADFG	New
6115	9-Mar-01	9	Sea Otter	NMML	-
6286	9-Mar-01	9	Sea Otter	NMML	-
6287	9-Mar-01	9	Sea Otter	NMML	-
6288	10-Mar-01	9	Sea Otter	NMML	-
6289	12-Mar-01	9	Long Island, Kodiak	NMML	-
6290	12-Mar-01	9	Long Island, Kodiak	NMML	-
6291	12-Mar-01	9	Long Island, Kodiak	NMML	-
6292	12-Mar-01	9	Long Island, Kodiak	NMML	-
6293	13-Mar-01	9	Long Island, Kodiak	NMML	-
6294	13-Mar-01	9	Long Island, Kodiak	NMML	-
6124	2-Aug-01	14	Cape Chiniak, Kodiak	NMML	-
6966	7-Aug-01	14	Two Headed Rock, Kodiak	NMML	-
6967	8-Aug-01	14	Two Headed Rock, Kodiak	NMML	-
7576	17-Sep-01	3	Cape Morgan, Akutan	ADFG	New
7578	17-Sep-01	3	Cape Morgan, Akutan	ADFG	New
8237	3-Nov-01	17	Two Headed Rock, Kodiak	NMML	-
7585	6-Nov-01	5	Bull Head, Glacier Island	ADFG	New
7586	6-Nov-01	17	Bull Head, Glacier Island	ADFG	New
7589	7-Nov-01	17	Bull Head, Glacier Island	ADFG	New
7592	8-Nov-01	5	NE Haulout, Perry Island	ADFG	New
7593	8-Nov-01	17	NE Haulout, Perry Island	ADFG	New
7594	8-Nov-01	17	NE Haulout, Perry Island	ADFG	New

7595	8-Nov-01	17	NE Haulout, Perry Island	ADFG	New
7600	9-Nov-01	5	NE Haulout, Perry Island	ADFG	New
7602	11-Nov-01	5	NE Haulout, Perry Island	ADFG	New
7603	11-Nov-01	5	NE Haulout, Perry Island	ADFG	New
6446	13-Nov-01	5	Ugamak	NMML	-
8238	13-Nov-01	5	Ugamak	NMML	-
8239	14-Nov-01	17	Aiktak	NMML	-
7467	28-Feb-02	9	Cape Chiniak, Kodiak	NMML	-
7468	2-Mar-02	9	Long Island, Kodiak	NMML	-
7469	2-Mar-02	9	Long Island, Kodiak	NMML	-
7471	3-Mar-02	9	Long Island, Kodiak	NMML	-
7473	3-Mar-02	9	Long Island, Kodiak	NMML	-
7474	4-Mar-02	9	Long Island, Kodiak	NMML	-
6647	5-Mar-02	9	Two Headed Rock, Kodiak	NMML	-
7478	5-Mar-02	9	Two Headed Rock, Kodiak	NMML	-
7479	5-Mar-02	9	Two Headed Rock, Kodiak	NMML	-
7476	5-Mar-02	24	Two Headed Rock, Kodiak	NMML	-
7481	10-Mar-02	9	Basalt Rock	NMML	-
7482	11-Mar-02	9	Aiktak	NMML	-
7483	11-Mar-02	9	Aiktak	NMML	-
7484	11-Mar-02	9	Aiktak	NMML	-
7485	11-Mar-02	9	Aiktak	NMML	-
7486	11-Mar-02	9	Aiktak	NMML	-
7487	11-Mar-02	9	Aiktak	NMML	-
6475	12-Mar-02	9	Aiktak	NMML	-
7488	12-Mar-02	9	Aiktak	NMML	-
7489	12-Mar-02	9	Aiktak	NMML	-
7620	7-Apr-02	9	Bay of Waterfalls, Adak Island	ADFG	New
7621	7-Apr-02	9	Bay of Waterfalls, Adak Island	ADFG	New
7824	26-Jul-02	12	Cape Chiniak, Kodiak	NMML	-

7823	26-Jul-02	24	Cape Chiniak, Kodiak	NMML	-
7825	29-Jul-02	12	Two Headed Rock, Kodiak	NMML	-
7827	29-Jul-02	12	Two Headed Rock, Kodiak	NMML	-
7829	30-Jul-02	24	Two Headed Rock, Kodiak	NMML	-
7830	1-Aug-02	12	Marmot Island	NMML	-
7831	2-Aug-02	24	Marmot Island	NMML	-
7832	2-Aug-02	24	Marmot Island	NMML	-
8243	25-Feb-03	9	Long Island, Kodiak	NMML	New
8244	27-Feb-03	9	Long Island, Kodiak	NMML	New
8246	27-Feb-03	9	Long Island, Kodiak	NMML	New
8247	27-Feb-03	9	Long Island, Kodiak	NMML	New
8248	1-Mar-03	9	Cape Ugat, Kodiak	NMML	New
8249	2-Mar-03	9	Cape Ugat, Kodiak	NMML	New
8251	6-Mar-03	9	Rocks off Tigalda	NMML	New
8253	7-Mar-03	9	Aiktak	NMML	New
11246	19-Apr-05	10	Silak Island	NMML	New
11247	19-Apr-05	10	Silak Island	NMML	New
11248	20-Apr-05	10	Little Tanaga Island	NMML	New
11249	22-Apr-05	10	Lake Point, Adak	NMML	New
11250	22-Apr-05	10	Lake Point, Adak	NMML	New
11251	22-Apr-05	10	Lake Point, Adak	NMML	New
11252	22-Apr-05	10	Lake Point, Adak	NMML	New
11253	22-Apr-05	10	Lake Point, Adak	NMML	New
11255	24-Apr-05	10	Ship Rock, Kanaga	NMML	New
11257	25-Apr-05	10	Ogalala Pt., Kagalaska	NMML	New
11258	25-Apr-05	10	Ogalala Pt., Kagalaska	NMML	New
11256	25-Apr-05	10	Ship Rock, Kanaga	NMML	New
11260	2-May-05	11	Lake Point, Adak	NMML	New
11261	2-May-05	11	Lake Point, Adak	NMML	New
11262	2-May-05	11	Lake Point, Adak	NMML	New

Table 3.13 Effect of error-checking, database matching and filtering on number of locations included in analysis of juvenile Steller sea lion diving locations during 2000-2005. A total of 65,150 locations from 116 animals were initially extracted from the database for processing.

Number of Locations	Percent of initial locations	Category
12	0.02%	Identified outliers.
207	0.32%	Timeline data only indicated dry transmission.
324	0.50%	No land/sea or timeline indication of wet or dry transmission.
418	0.64%	Land sea data only indicated dry transmission.
1535	2.36%	Conflicts between land/sea and timeline transmission status.
5307	8.15%	Timeline and land/sea data indicated dry transmission.
6703	10.29%	Removed in processing, duplicates, z-quality locations, pre- and post- deployment locations.
9281	14.25%	On-land locations.
12335	18.93%	Did not meet dive to >4 meter criteria.
14587	22.39%	B locations.
14441	**22.17%**	**Used in this analysis.**

Table 3.14. Food habits information for Steller sea lions collected in the range of the western DPS, 1945-1998. Sample sizes and characteristics of the study (Reprinted from Fritz and Hinckley 2005).

Sample Sizes and Characteristics		Months				Region						
Reference	Years	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	CGOA	WGOA	EBS	EAI	CAI	WAI	Russia
Imler and Sarber (1947)	1945			7		7						
Wilke and Kenyon (1952)	1949, 51			3				3				
Mathisen *et al.* (1962)	1958		94				94					
Thorsteinson and Lensink (1962)	1959		56			9	27		20			
Tikhomirov (1964)	1962	X	X					X				
Fiscus and Baines (1966)	1960, 62		16			4	2	1	9			
Perlov (1975)	1966-69			?								X
Lowry *et al.* (1982)	1976	4						4				
Pitcher (1981)	1975-78	43	54	9	47	136	17					
Calkins (1998) a	1981	60										60
Calkins (1998) b	1981	32						32				
Frost and Lowry (1986)	1985	13						13				
Gearin (unpub)	1985, 86			3	8			11				
Calkins and Goodwin (1988)	1985, 86		X		X	74						
Merrick *et al.* (1997) a	1990-93			76		76						
Merrick *et al.* (1997) b	1990-93			67					67			
Merrick *et al.* (1997) c	1990-93			167						167		
Merrick *et al.* (1997) d	1990-93			28							28	
Goto and Shimazaki (1997)	1994-96	62										62
Sinclair and Zeppelin (2002) a	1990-98	X	X	X	X	574						
Sinclair and Zeppelin (2002) b	1990-98	X	X	X	X		929					
Sinclair and Zeppelin (2002) c	1990-98	X	X	X	X				889			
Sinclair and Zeppelin (2002) d	1990-98	X	X	X	X					1370		

Table 3.14 (cont'd). Food habits information of Steller sea lions collected in the range of the western DPS, 1945-1998.
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Food Habits Data	Sample	Sample Location	Data Type	Percent of Sample with Prey Item (x=present)												
Reference	Type			Pollock	Cod	Flatfish	Greenling	Rockfish	Smelts	Sandlance	Herring	Salmon	Sculpin	Shrimp/ Crab	Squid	Octopus
Imler and Sarber (1947)	Stomach	Land	FO	57		71						28				43
Wilke and Kenyon (1952)	Stomach	Land	PW	7	10	49				32			<1			2
Mathisen *et al.* (1962)	Stomach	Land	FO				13	9	14	1		1	6	10	44	
Thorsteinson and Lensink (1962)	Stomach	Land	FO			6	4	11		25			4	2	20	
Tikhomirov (1968)	Visual	At-sea									D					
Fiscus and Baines (1966)	Stomach	At-sea	FO	6		12	6	6	56	25			19			
Perlov (1975)	Stomach	At-sea	FO	63			10						1		>30	25
Lowry *et al.* (1982)	Stomach	At-sea	PV	97		1									1	1
Pitcher (1981)	Stomach	Land	FO	67	12	5		3	11		11	4	4	7	23	13
Calkins (1998) a	Stomach	At-sea	FO	83	43	3					17		>12	2	2	18
Calkins (1998) b	Stomach	At-sea	FO	100	28	>19		3			6		6	>10	19	19
Frost and Lowry (1987)	Stomach	At-sea	PV	48							48					
Gearin (unpub)	Stomach	Land	FO	>36	>45	54								18		45
Calkins and Goodwin (1988)	Stomach	Land	FO	58	7	14				7	3	3	1	>1	4	32
Merrick *et al.* (1997) a	Scat	Land	FOSS	66		4	<1		6			20	0		3	
Merrick *et al.* (1997) b	Scat	Land	FOSS	33		2	31		8			17	7		2	
Merrick *et al.* (1997) c	Scat	Land	FOSS	13		0	69		1			6	4		8	
Merrick *et al.* (1997) d	Scat	Land	FOSS	7		0	77					5	5		7	
Goto and Shimazaki (1997)	Stomach	At-sea	FO	89	76	24									69	11
Sinclair and Zeppelin (2002) a	Scat	Land	FO	>50	>5	>20	<5	x	x	>10	>10	>10	<10		<10	<10
Sinclair and Zeppelin (2002) b	Scat	Land	FO	>70	>10	>10	<5	x	x	>10	<10	>10	>10		<5	<5
Sinclair and Zeppelin (2002) c	Scat	Land	FO	>50	>10	<5	>20	x	x	<5	>5	>20	>10		<10	<10
Sinclair and Zeppelin (2002) d	Scat	Land	FO	<10	>10	<5	>60	x		<5	<5	>20	>10		<20	<20

Abbreviations: CGOA – central Gulf of Alaska; WGOA – western Gulf of Alaska; EBS – eastern Bering Sea; EAI – eastern Aleutian Islands; CAI – central Aleutian Islands; WAI – western Aleutian Islands; X – number for cell is unknown; ? – season of sample collection is unknown but likely to be as indicated; FO=frequency of occurrence; PW=percent by weight; PV=percent by volume; FOSS=Split sample FO.

Table 3.15. Percent frequency of occurrence of all taxa identified in stomach samples collected from 1956 to 1986 throughout the range of Steller sea lions. Values are shown for the entire range in all years and for the Eastern and Western stocks during two time periods; from the 1950-70's and the 1980's.

	All Years	1950's - 1970's		1980's	
	RANGE	EASTERN	WESTERN	EASTERN	WESTERN
	n=781	n=196	n=394	n=14	n=177
Species	% Frequency of Occurrence				
Pollock	**39.2**	**9.2**	**38.6**	**57.1**	**72.3**
Octopus sp.	16.5	23.0	9.9	7.1	24.9
Pacific Cod	**8.6**	**1.0**	**4.8**	**7.1**	**25.4**
Cephalopods	7.8	0.0	15.5	0.0	0.0
Clamshell	7.4	3.6	11.9	0.0	2.3
Rockfish unident.	6.7	16.3	4.8	0.0	0.6
Pacific herring	**6.5**	**9.7**	**4.1**	**14.3**	**7.9**
Gonatid squid	4.5	0.0	8.9	0.0	0.0
Sandlance	3.5	1.5	4.8	0.0	2.8
Squid	3.5	5.6	0.8	14.3	6.2
Fish unident.	3.2	0.0	4.8	14.3	2.3
Capelin	3.2	0.0	6.3	0.0	0.0
Righteye flounder unident.	3.1	0.0	2.8	21.4	5.6
Sculpin unident.	2.8	0.0	3.0	0.0	5.6
Greenling unident.	2.7	0.0	5.3	0.0	0.0
Salmon	**2.7**	**5.6**	**1.8**	**7.1**	**1.1**
Gonatus magister	2.6	0.0	5.1	0.0	0.0
Flatfishes	1.9	3.6	0.3	0.0	4.0
Milk	1.8	6.6	0.3	0.0	0.0
Dogfish	1.7	6.6	0.0	0.0	0.0
Smelt unident.	1.7	0.0	3.3	0.0	0.0
Shrimps	1.7	1.5	2.0	0.0	1.1
Pacific Hake	1.4	5.6	0.0	0.0	0.0
Crustaceans	1.4	0.0	2.8	0.0	0.0
Stones and gravel	1.3	0.0	2.5	0.0	0.0
Sculpin unident.	1.2	0.0	1.5	0.0	1.7
Crab unident.	1.0	0.0	1.3	0.0	1.7
Yellowfin sole	0.9	0.5	0.0	0.0	3.4
Ommatostrephidae	0.8	0.0	1.5	0.0	0.0
Ratfish	0.6	2.6	0.0	0.0	0.0
Tanner Crab	0.6	0.0	0.5	0.0	1.7
Teliost fish unident.	0.5	0.0	0.0	0.0	2.3
Cartilaginous fish unident.	0.5	0.0	0.0	0.0	2.3
Pacific halibut	0.5	0.5	0.3	0.0	1.1
Gadidae	0.5	0.0	0.5	0.0	1.1
Shell fragments	0.4	0.0	0.0	0.0	1.7
Lamprey	0.4	0.5	0.5	0.0	0.0
Isopods	0.4	0.0	0.8	0.0	0.0
Buccinum sp.	0.4	0.0	0.0	0.0	1.7
Spotted seal	0.3	0.0	0.3	0.0	0.6
Skate unident.	0.3	0.5	0.3	0.0	0.0

Table 3.16 Percent frequency of occurrence of prey occurring in Steller sea lion scats collected from 1999 to 2005 (NMFS 2006b).

Region	Central & Western Aleutians		Eastern Aleutians		Western Gulf		Central Gulf		Eastern Gulf	Western DPS		
Season	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Summer	Winter	ALL
Number of scats	483	301	290	773	184	42	85	204	38	1080	1320	2400
Pollock	7	12	46	53	53	93	46	44	8	28	44	37
Pacific cod	6	26	18	39	36	31	2	43	5	14	37	26
Atka mackerel	96	55	32	43	21		1	2		55	38	46
Salmon	17	6	38	25	57	17	56	29	84	35	21	27
Herring			35	1	3	2	12	12	24	12	2	6
Sand lance	4	1	34	28	65	17	16	38	39	25	23	24
Arrowtooth	1	1	8	21	14	7	45	31	5	9	17	13
Irish Lord sp.	3	23	11	33	13	5		17		7	27	18
Sand fish	1	5	16	11	3	7		13		5	10	8
Halibut		1	1	10	4	5	4	12		1	8	5
Cephalopods	13	18	7	4	1		5	7	3	8	7	8
Rock sole	0	6	19	14	9	5		7		7	11	9
Snailfish sp.	1	12	1	14				4		1	12	7
Capelin			2	0	3		13	4	13	3	1	2
Poacher sp.			14	1						4	0	2

Table 3.17 Data gaps for assessing potential biological manifestations of nutritional stress in the western DPS of Steller sea lions. Evidence is based on a comparison with the previous decade (H=historical) or with the eastern DPS (G=Geographic). Y=Yes, data are available to make a comparison and an effect was as indicated; N=No, data are available to make a comparison but the effect was opposite to that indicated; U=Unknown, no data are available; U*=Unknown, data available but not analyzed. Range-wide versus local data sets are identified by superscript "R" and "L", respectively. See text and Appendix 3 for details and references.

Potential Biological Effects	1980s	1990s	2000-2004
More emaciated pups (<4 wks)	U	U*	N(H)
More emaciated pups (>4 wks)	U	U	U
More emaciated juveniles	U	N(H,G)	U
More emaciated adults	U	N(H,G)	U
Reduced pup survival (to 4 wks)	U*	U*	U
Reduced adult body size	Y(H)	U	U
Reduced juvenile body size	Y(H)	U*	U
Reduced pup body size	U	N(G), U*(H)	N(H)
Reduced birth weight	N or U?	U	U
Reduced pup weight	?	N(G),U*(H)	N(H)
Reduced growth rate	Y(H)	N(G)	N(H)
Reduced pup survival	? OR U	U*	N(H)
Reduced juvenile survival	Y(H)	Y	N(H)
Reduced adult survival	Y(H)	N	N(H)
Reduced overall survival	Y(H)	Y(H,G)	N(H)
Reduced birth rate	Y(H)	Y(H)	Y(H)
Reduced pup counts	Y(H)	Y(H)	N(H)
Reduced non-pup counts	Y(H)	Y(H)	N(H)
Increased reproductive failure	Y(H)	U	U
Change in pup blood chemistry (increased fasting)	U	N(G)	N
Change in juvenile blood chemistry (increased fasting)	U	U*	N
Delayed sexual maturity	U	U	U
Change in metabolic rate	U	U	U
Decreased body condition (adult females on rookeries)	U	U* (N(G))	U
Reduced adult perinatal fast	U	N(G)	U
Longer foraging trip duration	U	N(G)	U*
Increased susceptibility to disease (haptoglobin)	U	U*	U
Increased incidence of disease	U	N(G)	N(H,G)
Increased susceptibility to predation	U	U	U
Altered weaning age	U	U*(G)	U*
Decreased weaning size	U	U	U
Traditional ecological knowledge re. body condition	?	U*	U*

Table 3.22 to Part 226 – Major Steller Sea Lion Rookery Sites

Major Steller sea lion rookery sites are identified in the following table. Where two sets of coordinates are given, the baseline extends in the clockwise direction from the first set of geographic coordinates along the shoreline at mean lower-low water to the second set of coordinates. Where only one set of coordinates is listed, that location is the base point.

State/region/site	Boundaries to–			
	Latitude	Longitude	Latitude	Longitude
Alaska				
Western Aleutians:				
Agattu I.				
Cape Sabak \1\	52 23.5N	173 43.5E	52 22.0N	173 41.0E
Gillon Point \1\.	52 24.0N	173 21.5E		
Attu I.\1\.	52 54.5N	172 28.5E	52 57.5N	172 31.5E
Buldir I.\1\.	52 20.5N	175 57.0E	52 23.5N.	172 51.0E
Central Aleutians:				
Adak I.\1\.	51 36.5N	176 59.0W	51 38.0N	176.59.5W
Agligadak I.\1\.	52 06.5N	172 54.0W		
Amchitka I.:\1\				
Column Rock \1\	51 32.5N	178 49.5E		
East Cape \1\.	51 22.5N	179 28.0E	51 21.5N	179 25.0E
Ayugadak I.\1\.	51 45.5N	178 24.5E		
Gramp Rock \1\.	51 29.0N	178 20.5W		
Kasatochi I.\1\.	52 10.0N	175 31.5W	52 10.5N	175 29.0W
Kiska I.:				
Lief Cove \1\.	51 57.5N	177 21.0E	51 56.5N	177 20.0E
Cape St. Stephen \1\	51 52.5N	177 13.0E	51 53.5N	177 12.0E
Seguam I./Saddleridge \1\.	52 21.0N	172 35.0W	52 21.0N	172 33.0W
Semisopochnoi I.:				
Pochnoi Pt \1\..	51 58.5N	179 45.5E	51 57.0N	179 46.0E
Petrel Pt \1\	52 01.5N	179 37.5E	52 01.5E	179 39.0E
Tag I.\1\.	51 33.5N	178 34.5W		
Ulak I.\1\..	51 20.0N	178 57.0W	51 18.5N	178 59.5W
Yunaska I.\1\	52 42.0N	170 38.5W	52 41.0N	170 34.5W
Eastern Aleutian:				
Adugak I.\1\	52 55.0N	169 10.5W		
Akun I./Billings Head \1\.	54 18.0N	165 32.5W	54 18.0N	165 31.5W
Akutan I./Cape Morgan \1\.	54 03.5N	166 00.0W	54 05.5N	166 05.0W
Bogoslof I.\1\ \2\	53 56.0N	168 02.0W		
Ogchul I.\1\..	53 00.0N	168 24.0W		
Sea Lion Rocks. (Amak) \1\.	55 28.0N	163 12.0W		
Ugamak I.\1\..	54 14.0N	164 48.0W	54 13.0N	164 48.0W
Bering Sea:				
Walrus I.\1\.	57 11.0N	169 56.0W		

State/region/site	Boundaries to–			
	Latitude	Longitude	Latitude	Longitude
Alaska (continued)				
Western Gulf of Alaska:				
Atkins I.\1\..	55 03.5N	159 18.5W		
Chernabura I.\1\.	54 47.5N	159 31.0W	54 45.5N	159 33.5W
Clubbing Rocks (N) \1\.	54 43.0N	162 26.5W		
Clubbing Rocks (S) \1\.	54 42.0N	162 26.5W		
Pinnacle Rock \1\	54 46.0N	161 46.0W		
Central Gulf of Alaska:				
Chirikof I.\1\..	55 46.5N	155 39.5W	55 46.5N	155 43.0W
Chowiet I.\1\.	56 00.5N	156 41.5W	56 00.5N	156 42.0W
Marmot I.\1\	58 14.5N	151 47.5W	58 10.0N	151 51.0W
Outer I.\1\.	59 20.5N	150 23.0W	59 21.0N	150 24.5W
Sugarloaf I.\1\...	58 53.0N	152 02.0W		
Eastern Gulf of Alaska:				
Seal Rocks \1\...	60 10.0N	146 50.0W		
Fish I.\1\	59 53.0N	147 20.5W		
Southeast Alaska:				
Forrester I.	54 51.0N	133 32.0W	54 52.5N	133 35.5W
Hazy I.	55 52.0N	134 34.0W	55 51.5N	134 35.0W
White Sisters	57 38.0N	136 15.5W		
Oregon:				
Rogue Reef: Pyramid Rock	42 26.4N	124 28.1W		
Orford Reef:				
Long Brown Rock	42 47.3N	124 36.2W		
Seal Rock	42 47.1N	124 35.4W		
California:				
Ano Nuevo I				
Southeast Farallon I	37 06.3N	122 20.3W		
Sugarloaf I. & Cape Mendocino.	37 41.3N	123 00.1W		
	40 26.0N	124 24.0W		

\1\ Includes an associated 20 NM aquatic zone.
\2\ Associated 20 NM aquatic zone lies entirely within one of the three special foraging areas.

Table 3.23 to Part 226 – Major Steller Sea Lion Haulout Sites in Alaska

Major Steller sea lion haulout sites in Alaska are identified in the following table. Where two set of coordinates are given, the baseline extends in a clockwise direction from the first set of geographic coordinates along the shoreline at mean lower-low water to the second set of coordinates. Where only one set of coordinates is listed, that location is the base point.

State/region/site	Boundaries to–			
	Latitude	Longitude	Latitude	Longitude
Western Aleutians:				
Alaid I.\1\.	52 45.0N	173 56.5E	52 46.5N	173 51.5E
Attu/Chirikof Pt.\1\	52 30.0N	173 26.7E		
Shemya I.\1\..	52 44.0N	174 09.0E		
Central Aleutians:				
Amatignak I.\1\	51 13.0N	179 08.0E		
Amlia I:				
East \1\	52 05.0N	172 58.5W	52 06.0N	172 57.0W
Sviech. Harbor \1\.	52 02.0N	173 23.0W		
Amukta I. & Rocks \1\..	52 31.5N	171 16.5W	52 26.5N	171 16.5W
Anagaksik I.\1\	51 51.0N	175 53.5W		
Atka I.\1\.	52 23.5N	174 17.0W	52 24.5N	174 07.5W
Bobrof I.\1	51 54.0N	177 27.0W		
Chagulak I.\1\.	52 34.0N	171 10.5W		
Chuginadak I.\1\..	52 46.5N	169 44.5W	52 46.5N	169 42.0W
Great Sitkin I.\1\.	52 06.0N	176 10.5W	52 07.0N	176 08.5W
Kagamil I.\1\..	53 02.5N	169 41.0W		
Kanaga I:				
North Cape \1\..	51 56.5N	177 09.0W		
Ship Rock \1\	51 47.0N	177 22.5W		
Kavalga I.\1\.	51 34.5N	178 51.5W	51 34.5N	178 49.5W
Kiska I./Sirius Pt.\1\.	52 08.5N	177 36.5E		
Kiska I./Sobaka & Vega \1\.	51 50.0N	177 20.0E	51 48.5N	177 20.5E
Little Sitkin I.\1\.	51 59.5N	178 30.0E		
Little Tanaga I.\1\.	51 50.5N	176 13.0W	51 49.0N	176 13.0W
Sagigik I.\1\.	52 00.5N	173 08.0W		
Seguam I:				
South \1\...	52 19.5N	172 18.0W	52 15.0N	172 37.0W
Finch Pt.\1\...	52 23.5N	172 25.5W	52 23.5N	172 24.0W
Segula I.\1\...	52 00.0N	178 06.5E	52 03.5N	178 09.0E
Tanaga I.\1\....	51 55.0N	177 58.5W	51 55.0N	177 57.0W
Tanadak I. (Amlia) \1\.	52 04.5N	172 57.0W		
Tanadak I. (Kiska) \1\..	51 57.0N	177 47.0E		
Ugidak I.\1\.	51 35.0N	178 30.5W		
Uliaga I.\1\.	53 04.0N	169 47.0W	53 05.0N	169 46.0W
Unalga & Dinkum Rocks \1\.	51 34.0N	179 04.0W	51 34.5N	179 03.0W

State/region/site	Boundaries to–			
	Latitude	Longitude	Latitude	Longitude
Eastern Aleutians:				
Akutan I./Reef-Lava \1\.	54 10.5N	166 04.5W	54 07.5N	166 06.5W
Amak I.\1\.	55 24.0N	163 07.0W	55 26.0N	163 10.0W
Cape Sedanka & Island \1\.	53 50.5N	166 05.0W		
Emerald I.\1\.	53 17.5N	167 51.5W		
Old Man Rocks \1\.	53 52.0N	166 05.0W.		
Polivnoi Rock \1\	53 16.0N	167 58.0W		
Tanginak I.\1\	54 13.0N	165 19.5W		
Tigalda I.\1\..	54 08.5N	164 58.5W		
Umnak I./Cape Aslik \1\.	53 25.0N	168 24.5W		
Bering Sea:				
Cape Newenham \1\.	58 39.0N	162 10.5W		
Hall I.\1\..	60 37.0N	173 00.0W		
Round I.\1\.	58 36.0N	159 58.0W		
St. Paul I:				
Northeast Point \1\.	57 15.0N	170 06.5W		
Sea Lion Rock \1\.	57 06.0N	170 17.5W		
St. George I:				
S Rookery \1\.	56 33.5N	169 40.0W		
Dalnoi Point \1\..	56 36.0N	169 46.0W		
St. Lawrence I:				
S Punuk I.\1\.	64 04.0N	168 51.0W		
SW Cape \1\	63 18.0N.	171 26.0W		
Western Gulf of Alaska:				
Bird I. \1\.	54 40.5N	163 18.0W		
Castle Rock \1\.	55 17.0N	159 30.0W		
Caton I.\1\.	54 23.5N	162 25.5W		
Jude I.\1\.	55 16.0N	161 06.0W		
Lighthouse Rocks \1\.	55 47.5N	157 24.0W		
Nagai I.\1\.	54 52.5N	160 14.0W	54 56.0N	160 15.0W
Nagai Rocks \1\.	55 50.0N	155 46.0W		
Sea Lion Rocks (Unga) \1\.	55 04.5N	160 31.0W		
South Rock \1\	54 18.0N	162 43.5W		
Spitz I.\1\..	55 47.0N	158 54.0W		
The Whaleback \1\.	55 16.5N	160 06.0W		
Central Gulf of Alaska:				
Cape Barnabas \1\.	57 10.0N	152 55.0W	57 07.5N	152 55.0W
Cape Chiniak \1\	57 35.0N	152 09.0W	57 37.5N	152 09.0W
Cape Gull \1\ \2\	58 13.5N	154 09.5W	58 12.5N	154 10.5W
Cape Ikolik \1\ \2\	57 17.0N	154 47.5W		
Cape Kuliak \1\ \2\	58 08.0N	154 12.5W		
Cape Sitkinak \1\.	56 32.0N	153 52.0W		
Cape Ugat \1\ \2\	57 52.0N	153 51.0W		
Gore Point \1\.	59 12.0N	150 58.0W		

State/region/site	Boundaries to–			
	Latitude	Longitude	Latitude	Longitude
Central Gulf of Alaska (continued)				
Gull Point \1\..	57 21.5N	152 36.5W	57 24.5N	152 39.0W
Latax Rocks \1\	58 42.0N	152 28.5W	58 40.5N	152 30.0W
Long I.\1\	57 45.5N	152 16.0W		
Nagahut Rocks \1\	59 06.0N	151 46.0W		
Puale Bay \1\ \2\	57 41.0N	155 23.0W		
Sea Lion Rocks (Marmot) \1\.	58 21.0N	151 48.5W		
Sea Otter I.\1\	58 31.5N	152 13.0W		
Shakun Rock \1\ \2\	58 33.0N	153 41.5W		
Sud I.\1\.	58 54.0N	152 12.5W		
Sutwik I.\1\..	56 32.0N	157 14.0W	56 32.0N	157 20.0W
Takli I. \1\ \2\	58 03.0N	154 27.5W	58 03.0N	154 30.0W
Two-headed I.\1\	56 54.5N	153 33.0W	56 53.5N	153 35.5W
Ugak I.\1\.	57 23.0N	152 15.5W	57 22.0N	152 19.0W
Ushagat I. \1	58 55.0N	152 22.0W		
Eastern Gulf of Alaska:				
Cape Fairweather	58 47.5N	137 56.3W		
Cape St. Elias \1\.	59 48.0N	144 36.0W		
Chiswell Islands \1\.	59 36.0N	149 34.0W		
Graves Rock	58 14.5N	136 45.5W		
Hook Point \1\	60 20.0N	146 15.5W		
Middleton I.\1\	59 26.5N	146 20.0W		
Perry I.\1\.	60 39.5N	147 56.0W		
Point Eleanor \1\	60 35.0N	147 34.0W		
Point Elrington \1\	59 56.0N	148 13.5W		
Seal Rocks \1\	60 10.0N	146 50.0W		
The Needle \1\	60 07.0N	147 37.0W		
Southeast Alaska:				
Benjamin I	58 33.5N	134 54.5W		
Biali Rock	56 43.0N	135 20.5W		
Biorka I	56 50.0N	135 34.0W		
Cape Addington..	55 26.5N	133 49.5W		
Cape Cross	57 55.0N	136 34.0W		
Cape Ommaney	56 10.5N	134 42.5W		
Coronation I.	55 56.0N	134 17.0W		
Gran Point	59 08.0N	135 14.5W		
Lull Point	57 18.5N	134 48.5W		
Sunset I	57 30.5N	133 35.0W		
Timbered I	55 42.0N	133 48.0W		

\1\ Includes an associated 20 NM aquatic zone.
\2\ Associated 20 nm aquatic zone lies entirely within one of the three special foraging areas.

Table 3.20 Gulf of Alaska Atka Mackerel ABCs and TACs, 1977 to present.

Gulf of Alaska Atka mackerel catches (including discards), and corresponding Acceptable Biological Catches (ABC) and Total Allowable Catches (TAC) set by the North Pacific Fishery Management Council from 1977 to the present. Catches, ABCs, and TACs are in t.

Year	Catch	ABC	TAC
1977	19,455		22,000[e]
1978	19,588		24,800[e]
1979	10,949		26,800[e]
1980	13,166		28,700[e]
1981	18,727		28,700[e]
1982	6,760		28,700[e]
1983	12,260		28,700[e]
1984	1,153		28,700[e]
1985	1,848		5,000[e]
1986	4	4,700	4,678[e]
1987	1	0	240[f]
1988[a]	[b]		
1989	[b]		
1990	1,416[c]		
1991	3,258[c]		
1992	13,834[c]		
1993	5,146[c]		
1994[d]	3,538	4,800	3,500
1995	701	3,240	3,240
1996	1,580	3,240	3,240
1997	331	1,000	1,000
1998	317	600	600
1999	262	600	600
2000	170	600	600
2001	76	600	600
2002	85	600	600
2003	583	600	600
2004	819	600	600
2005	799	600	600
2006	876	4,700	1,500
2007	1,459	4,700	1,500
2008	2,109	4,700	1,500
2009g	2,219	4,700	2,000

a/ Atka mackerel were added to the Other Species category in 1988.
b/ Catches of Atka mackerel were included in the Other Species category.
c/ Catches of Atka mackerel was reported separately for 1990-1993.
d/ Atka mackerel were assigned a target species in 1994.
e/ Reported as OY (Optimum Yield).
f/ Reported as TQ (Target Quota).
g/ 2009 data as of 17-OCT-09 from NMFS Alaska Regional Office. Available at http://www.fakr.noaa.gov/2009/car110_goa.pdf

Table 3.21 BSAI Atka Mackerel ABCs and TACs, 1978 to present.

Time series of Bering Sea/Aleutian Islands Atka mackerel catches (including discard! CDQ catches), corresponding Acceptable Biological Catches (ABC), and Total Allou Catches (TAC) set by the North Pacific Fishery Management Council from 1978 to tl present. Catches, ABCs, and TACs are in metric tons.

Year	Catch	ABC	TAC
1977	21,763	a	a
1978	24,249	24,800	24,800
1979	23,264	24,800	24,800
1980	20,488	24,800	24,800
1981	19,688	24,800	24,800
1982	19,874	24,800	24,800
1983	11,726	25,500	24,800
1984	36,055	25,500	35,000
1985	37,860	37,700	37,700
1986	31,990	30,800	30,800
1987	30,061	30,800	30,800
1988	22,084	21,000	21,000
1989	17,994	24,000	20,285
1990	22,206	24,000	21,000
1991	26,626	24,000	24,000
1992	48,532	43,000	43,000
1993	66,006	117,100	64,000
1994	65,360	122,500	68,000
1995	81,554	125,000	80,000
1996	103,942	116,000	106,157
1997	65,842	66,700	66,700
1998	57,097	64,300	64,300
1999	56,237	73,300	66,400
2000	47,230	70,800	70,800
2001	61,563	69,300	69,300
2002	45,288	49,000	49,000
2003	54,045	63,000	60,000
2004	60,562	66,700	63,000
2005	62,012	124,000	63,000
2006	61,894	110,200	63,000
2007	58,763	74,000	63,000
2008	58,090	60,700	60,700
2009b		83,800	76,400

Table 3.22 BSAI Pacific cod ABCs and TACs, 1980 to present.

Year	ABC	TAC	Catch	Stock assessment model (from previous year)
1980	148,000	70,700	45,947	projection of 1979 survey numbers at age
1981	160,000	78,700	63,941	projection of 1979 survey numbers at age
1982	168,000	78,700	69,501	projection of 1979 survey numbers at age
1983	298,200	120,000	103,231	projection of 1979 survey numbers at age
1984	291,300	210,000	133,084	projection of 1979 survey numbers at age
1985	347,400	220,000	150,384	projection of 1979-1985 survey numbers at age
1986	249,300	229,000	142,511	separable age-structured model
1987	400,000	280,000	163,110	separable age-structured model
1988	385,300	200,000	208,236	separable age-structured model
1989	370,600	230,681	182,865	separable age-structured model
1990	417,000	227,000	179,608	separable age-structured model
1991	229,000	229,000	220,038	separable age-structured model
1992	182,000	182,000	207,272	SS1 model (age-based data)
1993	164,500	164,500	167,362	SS1 model (length-based data)
1994	191,000	191,000	193,802	SS1 model (length-based data)
1995	328,000	250,000	245,033	SS1 model (length-based data)
1996	305,000	270,000	240,676	SS1 model (length-based data)
1997	306,000	270,000	257,765	SS1 model (length-based data)
1998	210,000	210,000	193,256	SS1 model (length-based data)
1999	177,000	177,000	173,998	SS1 model (length-based data)
2000	193,000	193,000	191,060	SS1 model (length-based data)
2001	188,000	188,000	176,749	SS1 model (length-based data)
2002	223,000	200,000	197,356	SS1 model (length-based data)
2003	223,000	207,500	196,495	SS1 model (length-based data)
2004	223,000	215,500	212,155	SS1 model (length-based data)
2005	206,000	206,000	205,632	SS1 model (length- and age-based data)
2006	194,000	194,000	192,475	SS2 model (length- and age-based data)
2007	176,000	170,720	174,145	SS2 model (length- and age-based data)
2008	176,000	170,720	170,614	SS2 model (length- and age-based data)
2009	182,000	176,540	145,328	SS model (length- and age-based data)

Table 3.23 GOA Pacific cod ABCs and TACs, 1980 to present.

Year	ABC	TAC	Catch	Stock Assessment Model (from previous year)
1980	n/a	60,000	35,345	n/a
1981	n/a	70,000	36,131	n/a
1982	n/a	60,000	29,465	n/a
1983	n/a	60,000	36,540	n/a
1984	n/a	60,000	23,898	n/a
1985	n/a	60,000	14,428	n/a
1986	136,000	75,000	25,012	survey biomass
1987	125,000	50,000	32,939	survey biomass
1988	99,000	80,000	33,802	survey biomass
1989	71,200	71,200	43,293	stock reduction analysis
1990	90,000	90,000	72,517	stock reduction analysis
1991	77,900	77,900	76,328	stock reduction analysis
1992	63,500	63,500	80,747	stock reduction analysis
1993	56,700	56,700	56,488	stock reduction analysis
1994	50,400	50,400	47,485	stock reduction analysis
1995	69,200	69,200	68,985	SS1 model (length-based data)
1996	65,000	65,000	68,280	SS1 model (length-based data)
1997	81,500	69,115	77,018	SS1 model (length-based data)
1998	77,900	66,060	72,525	SS1 model (length-based data)
1999	84,400	67,835	81,785	SS1 model (length-based data)
2000	76,400	58,715	66,560	SS1 model (length-based data)
2001	67,800	52,110	51,542	SS1 model (length-based data)
2002	57,600	44,230	54,483	SS1 model (length-based data)
2003	52,800	40,540	52,579	SS1 model (length-based data)
2004	62,810	48,033	56,705	SS1 model (length-based data)
2005	58,100	44,433	47,585	SS1 model (length-based data)
2006	68,859	52,264	47,854	SS2 model (length- and age-based data)
2007	68,859	52,264	51,501	SS2 model (length- and age-based data)
2008	66,493	50,269	58,974	survey biomass
2009	55,300	41,807	46,646	SS model (length- and age-based data)

Table 3.24 GOA Pollock TACs, 1980 to present.

Year	*Foreign*	*Joint Venture*	*Domestic*	*Total*	*TAC*	*Research*
1964	1,126			1,126	---	
1965	2,749			2,749	---	
1966	8,932			8,932	---	
1967	6,276			6,276	---	
1968	6,164			6,164	---	
1969	17,553			17,553	---	
1970	9,343			9,343	---	
1971	9,458			9,458	---	
1972	34,081			34,081	---	
1973	36,836			36,836	---	
1974	61,880			61,880	---	
1975	59,512			59,512	---	
1976	86,527			86,527	---	
1977	117,834		522	118,356	150,000	75
1978	96,392	34	509	96,935	168,800	100
1979	103,187	566	1,995	105,748	168,800	52
1980	112,997	1,136	489	114,622	168,800	229
1981	130,324	16,857	563	147,744	168,800	433
1982	92,612	73,917	2,211	168,740	168,800	110
1983	81,358	134,131	119	215,608	256,600	213
1984	99,260	207,104	1,037	307,401	416,600	311
1985	31,587	237,860	15,379	284,826	305,000	167
1986	114	62,591	25,103	87,809	116,000	1202
1987		22,823	46,928	69,751	84,000	227
1988		152	65,587	65,739	93,000	19
1989			78,392	78,392	72,200	73
1990			90,744	90,744	73,400	158
1991			100,488	100,488	103,400	16
1992			90,857	90,857	87,400	40
1993			108,908	108,908	114,400	116
1994			107,335	107,335	109,300	70
1995			72,618	72,618	65,360	44
1996			51,263	51,263	54,810	147
1997			90,130	90,130	79,980	76
1998			125,098	125,098	124,730	64
1999			95,590	95,590	94,580	35
2000			73,080	73,080	94,960	56
2001			72,076	72,076	90,690	77
2002			51,937	51,937	53,490	78
2003			50,666	50,666	49,590	128
2004			63,934	63,934	65,660	53
2005			80,846	80,846	86,100	72
2006			71,976	71,976	81,300	63
2007			53,062	53,062	63,800	47
2008			52,500	52,500	53,590	26
2009					43,270	87
Average (1977-2008)				106,848	123,560	143

Sources: 1964-85--Megrey (1988); 1986-90--Pacific Fishery Information Network (PacFIN), Pacific Marine Fisheries Commission. Domestic catches in 1986-90 were adjusted for discard as described in Hollowed et al. (1991). 1991-2008 -- NMFS Alaska Regional Office.

Table 3.25 Aleutian Islands pollock ABCs and TACs, 1991-2008.

Time series of ABC, TAC, and total catch for Aleutian Islands Region walleye pollock fisheries 1991-2008. Units are in metric tons. Note: There was no OFL level set in 1991 and the 1993 harvest specifications were not available

YEAR	ABC	TAC	OFL	CATCH	CATCH/TAC
1991	101,460	72,250	NA	98,604	136%
1992	51,600	47,730	62,400	52,352	110%
1993				57,132	
1994	56,600	56,600	60,400	58,659	104%
1995	56,600	56,600	60,400	64,925	115%
1996	35,600	35,600	47,000	29,062	82%
1997	28,000	28,000	38,000	25,940	93%
1998	23,800	23,800	31,700	23,822	100%
1999	23,800	2,000	31,700	1,010	51%
2000	23,800	2,000	31,700	1,244	62%
2001	23,800	2,000	31,700	824	41%
2002	23,800	1,000	31,700	1,156	116%
2003	39,400	1,000	52,600	1,666	167%
2004	39,400	1,000	52,600	1,158	116%
2005	29,400	19,000	39,100	1,621	9%
2006	29,400	19,000	39,100	1,745	9%
2007	44,500	19,000	54,500	2,519	13%
2008	28,160	19,000	34,040	1,278	7%
2009	26,873	19,000	32,553	1,500	8%

* As of October 3, 2009

Table 3.26. TAC and ABC used to manage the arrowtooth flounder complex since 1980.

	arowtooth flounder	
year	TAC	ABC
1980		20,000
1981		16,500
1982		16,500
1983		20,000
1984		20,000
1985		20,000
1986	20,000	20,000
1987	9,795	30,900
1988	5,531	99,500
1989	6,000	163,700
1990	10,000	106,500
1991	20,000	116,400
1992	10,000	82,300
1993	10,000	72,000
1994	10,000	93,400
1995	10,227	113,000
1996	9,000	129,000
1997	20,760	108,000
1998	16,000	147,000
1999	134,354	140,000
2000	131,000	131,000
2001	22,015	117,000
2002	16,000	113,000
2003	12,000	112,000
2004	12,000	115,000
2005	12,000	108,000
2006	13,000	136,000
2007	20,000	158,000
2008	75,000	244,000
2009	75,000	156,000

Table 3.27. Catch, ABC, OFL and TAC for arrowtooth flounder in the Gulf of Alaska from 1964 to 2009. Arrowtooth flounder ABC was separated from flatfish ABC after 1990.

Year	Catch(t)	ABC	OFL	TAC
1964	514			
1965	514			
1966	2,469			
1967	2,276			
1968	1,697			
1969	1,315			
1970	1,886			
1971	1,185			
1972	4,477			
1973	10,007			
1974	4,883			
1975	2,776			
1976	3,045			
1977	9,449			
1978	8,409			
1979	7,579			
1980	7,848			
1981	7,433			
1982	4,639			
1983	6,331			
1984	3,457			
1985	1,539			
1986	1,221			
1987	4,963			
1988	5,138			
1989	2,584			
1990	7,706	343,300		
1991	10,034	340,100		20,000
1992	15,970	303,889	427,220	25,000
1993	15,559	321,287	451,690	30,000
1994	23,560	236,240	275,930	30,000
1995	18,428	198,130	231,420	35,000
1996	22,583	198,130	231,420	35,000
1997	16,319	197,840	280,800	35,000
1998	12,975	208,337	295,970	35,000
1999	16,207	217,106	308,875	35,000
2000	24,252	145,361	173,915	35,000
2001	19,964	148,151	173,546	38,000
2002	21,231	146,264	171,057	38,000
2003	29,994	155,139	181,394	38,000
2004	15,304	194,900	228,134	38,000
2005	19,770	194,900	228,134	38,000
2006	27,653	177,800	207,700	38,000
2007	25,494	184,008	214,828	43,000
2008	29,293	226,470	266,914	43,000
2009	22,072	221,512	261,022	43,000

Table 3.28 Nineteen Steller sea lion terrestrial haul-out sites that were listed as RFRPA sites for management purposes in 1999, but not designated as critical habitat. Locations are degrees and minutes and if two are listed, they denote endpoints of a stretch of coastline. An 'X' denotes whether the site met the seasonal non-pup count threshold during the time periods specified (>200 during the breeding season May-August; >100 during the non-breeding season September-April). Regions are defined in Fritz and Stinchcomb (2005).

												Non-Pup Count Criteria					
	Latitude		Longitude			Latitude		Longitude					1990-2005 Non-			1956-2005 Non-	
Sitename	D	Min	D	Min		D	Min	D	Min		Region	Breeding	Breeding	Annual	Breeding	Breeding	Annual
CAPE HINCHINBROOK	60	14.0	146	38.5	W						E GULF	X			X		
GLACIER	60	51.3	147	14.5	W						E GULF	X	X	X	X	X	X
RUGGED	59	50.0	149	23.1	W	59	51.0	149	24.7	W	E GULF		X			X	
STEEP POINT	59	29.1	150	15.4	W						E GULF	X			X		
PERL	59	5.7	151	39.7	W						C GULF	X	X	X	X	X	X
SHAW	59	0.0	153	22.5	W						C GULF	X			X		
KAK	56	17.3	157	50.1	W						W GULF	X			X		
MITROFANIA	55	50.2	158	41.9	W						W GULF	X	X	X	X	X	X
OLGA ROCKS	55	0.5	161	29.8	W	54	59.1	161	30.9	W	W GULF	X	X	X	X	X	X
SUSHILNOI ROCKS	54	49.3	161	42.7	W						W GULF	X	X	X	X	X	X
UGAMAK/ROUND	54	12.1	164	46.6	W						E ALEU				X		
AIKTAK	54	11.0	164	51.2	W						E ALEU		X			X	
UNIMAK/CAPE SARICHEF	54	34.3	164	56.8	W						E ALEU	X	X	X	X	X	X
ROOTOK	54	3.9	165	31.9	W	54	2.9	165	29.5	W	E ALEU	X	X	X	X	X	X
UNALASKA/BISHOP POINT	53	58.4	166	57.5	W						E ALEU	X	X	X	X	X	X
UNALASKA/CAPE IZIGAN	53	13.6	167	39.4	W						E ALEU	X	X	X	X	X	X
SAMALGA	52	46.0	169	15.0	W						E ALEU				X		
RAT	51	50.0	178	12.4	E						C ALEU		X			X	
AMCHITKA/CAPE IVAKIN	51	24.5	179	24.2	E						C ALEU				X		

Table 3.29 Steller sea lion terrestrial haul-out sites that met the non-pup count threshold since 1990 but were not designated as critical habitat (summary of Tables 1 and 2). Locations are degrees and minutes and if two are listed, they denote endpoints of a stretch of coastline. Regions are defined in Fritz and Stinchcomb (2005).

	Latitude		Longitude			Latitude		Longitude				Non-Pup Count Criteria		
Sitename[1]	Deg	Min	Dec	Min		Deg	Min	Dec	Min		Region	Breeding	Non-Breeding	Annual
CAPE HINCHINBROOK	60	14.0	146	38.5	W						E GULF	X		
GLACIER	60	51.3	147	14.5	W						E GULF	X	X	X
RUGGED	59	50.0	149	23.1	W	59	51.0	149	24.7	W	E GULF		X	
STEEP POINT	59	29.1	150	15.4	W						E GULF	X		
PERL	59	5.7	151	39.7	W						C GULF	X	X	X
ELIZABETH/CAPE ELIZABETH	59	9.4	151	53	W						C GULF		X	
FLAT	59	20	151	60	W						C GULF		X	
SHAW	59	0.0	153	22.5	W						C GULF	X		
KAK	56	17.3	157	50.1	W						W GULF	X		
MITROFANIA	55	50.2	158	41.9	W						W GULF	X	X	X
UNGA/ACHEREDIN POINT	55	7.2	160	49	W						W GULF	X		
OLGA ROCKS	55	0.5	161	29.8	W	54	59.1	161	30.9	W	W GULF	X	X	X
SUSHILNOI ROCKS	54	49.3	161	42.7	W						W GULF	X	X	X
UGAMAK/ROUND	54	12.1	164	46.6	W						E ALEU	X	X	X
AIKTAK	54	11.0	164	51.2	W						E ALEU		X	
UNIMAK/CAPE SARICHEF	54	34.3	164	56.8	W						E ALEU	X	X	X
ROOTOK	54	3.9	165	31.9	W	54	2.9	165	29.5	W	E ALEU	X	X	X
UNALASKA/BISHOP POINT	53	58.4	166	57.5	W						E ALEU	X	X	X
UNALASKA/CAPE IZIGAN	53	13.6	167	39.4	W						E ALEU	X	X	X
TAGALAK	51	58	175	37	W						C ALEU		X	
SEMISOPOCHNOI/TUMAN POINT	51	58	179	29	E						C ALEU		X	
RAT	51	50.0	178	12.4	E						C ALEU		X	

[1] Sites removed from the original list of 19 sites because they did not meet the criteria: Samalga and Amchitka/Cape Ivakin.

Table 3.30 Changes to rookery status in the western DPS and the Southeast Alaska portion of the eastern DPS.

Area	Rookeries
Western Aleutians (N = 4)	ATTU/CAPE WRANGELL, AGATTU/CAPE SABAK, AGATTU/GILLON POINT, and BULDIR
Central Aleutians (new N = 12)	KISKA/CAPE ST STEPHEN, KISKA/LIEF COVE, AYUGADAK, AMCHITKA/COLUMN ROCK, ULAK/HASGOX POINT, TAG, GRAMP ROCK, ADAK/LAKE POINT, KASATOCHI/NORTH POINT, SEGUAM/SADDLERIDGE, and YUNASKA [**add KANAGA/SHIP ROCK; subtract Agligadak, Semisopochnoi/Pochnoi, Semisopochnoi/Petrel, and Amchitka/East**]
Eastern Aleutians (N = 7)	ADUGAK, OGCHUL, BOGOSLOF/FIRE ISLAND, AKUTAN/CAPE MORGAN, AKUN/BILLINGS HEAD, UGAMAK COMPLEX, and SEA LION ROCK (AMAK)
Bering Sea (N = 1)	WALRUS
Western Gulf (new N = 6)	CLUBBING ROCKS, PINNACLE ROCK, CHERNABURA, and ATKINS [**add JUDE and LIGHTHOUSE ROCKS**]
Central Gulf (new N = 6)	CHOWIET, CHIRIKOF, MARMOT, SUGARLOAF, and OUTER (PYE) [**add USHAGAT/SW**]
Eastern Gulf (new N = 3)	WOODED (FISH) and SEAL ROCKS [**add CHISWELL ISLANDS**]
Southeast Alaska (new N=5)	FORRESTER ISLAND COMPLEX, HAZY ISLAND **[add WHITE SISTERS, GRAVES ROCK and BIALI ROCKS**

Table 3.31 Description of important Steller sea lion rookery and haulout sites based on an assessment of usage patterns (NMFS 2006b). Sites are evaluated by season (summer and winter; May – October and November – April) to determine when sites are important. Sites that do not meet either of the seasonal criteria are rated "neither" which does not mean that sea lions are not present, just that it did not meet the thresholds used in the analysis (>200 non-pups in summer and >100 non-pups in winter from 1990-2005). This analysis provides a model for evaluating potential impacts of fisheries by season and location.

Sitename	Latitude From	Longitude From	E/W	Latitude To	Longitude To	E/W	Region	Desc.[1]	Season
ROOKERIES									
YUNASKA	52.69	170.61	W				C ALEU	R	**ALL**
SEGUAM/SADDLERIDGE	52.35	172.57	W	52.35	172.56	W	C ALEU	R	**ALL**
KASATOCHI/NORTH POINT	52.19	175.52	W				C ALEU	R	**ALL**
ADAK/LAKE POINT	51.62	176.99	W	51.59	176.95	W	C ALEU	R	**ALL**
GRAMP ROCK	51.48	178.34	W				C ALEU	R	**ALL**
TAG	51.56	178.58	W				C ALEU	R	**ALL**
ULAK/HASGOX POINT	51.32	178.98	W	51.31	178.99	W	C ALEU	R	**ALL**
KISKA/LIEF COVE	51.95	177.34	E	51.95	177.34	E	C ALEU	R	**ALL**
KISKA/CAPE ST STEPHEN	51.88	177.21	E	51.89	177.20	E	C ALEU	R	**ALL**
KANAGA/SHIP ROCK	51.78	177.35	W				C ALEU	R/H	**ALL**
OUTER (PYE)	59.34	150.38	W	59.35	150.41	W	C GULF	R	**ALL**
MARMOT	58.23	151.80	W	58.17	151.87	W	C GULF	R	**ALL**
CHIRIKOF	55.78	155.66	W	55.77	155.72	W	C GULF	R	**ALL**
CHOWIET	56.01	156.69	W	56.01	156.69	W	C GULF	R	**ALL**
SEA LION ROCK (AMAK)	55.46	163.20	W				E ALEU	R	**ALL**

UGAMAK COMPLEX	54.23	164.79	W	54.21	164.79	W	E ALEU	R	**ALL**
AKUN/BILLINGS HEAD	54.29	165.53	W	54.29	165.53	W	E ALEU	R	**ALL**
OGCHUL	53.00	168.40	W				E ALEU	R	**ALL**
SEAL ROCKS	60.16	146.84	W				E GULF	R	**ALL**
WOODED (FISH)	59.88	147.34	W				E GULF	R	**ALL**
CHISWELL ISLANDS	59.60	149.57	W				E GULF	R/H	**ALL**
BULDIR	52.36	175.97	E	52.39	175.85	E	W ALEU	R	**ALL**
AGATTU/CAPE SABAK	52.38	173.72	E	52.36	173.69	E	W ALEU	R	**ALL**
AGATTU/GILLON POINT	52.40	173.36	E				W ALEU	R	**ALL**
ATTU/CAPE WRANGELL	52.91	172.47	E	52.92	172.45	E	W ALEU	R	**ALL**
ATKINS	55.05	159.29	W				W GULF	R	**ALL**
CHERNABURA	54.75	159.55	W	54.76	159.60	W	W GULF	R	**ALL**
PINNACLE ROCK	54.77	161.76	W				W GULF	R	**ALL**
CLUBBING ROCKS (N)	54.71	162.45	W				W GULF	R	**ALL**
CLUBBING ROCKS (S)	54.70	162.45	W				W GULF	R	**ALL**
JUDE	55.26	161.10	W				W GULF	R/H	**ALL**
LIGHTHOUSE ROCKS	55.78	157.41	W				W GULF	R/H	**ALL**
AMCHITKA/COLUMN ROCK	51.54	178.82	E				C ALEU	R	**SUMMER**
AYUGADAK	51.76	178.41	E				C ALEU	R	**SUMMER**
SUGARLOAF	58.89	152.04	W				C GULF	R	**SUMMER**
USHAGAT/SW	58.91	152.37	W				C GULF	R/H	**SUMMER**

AKUTAN/CAPE MORGAN	54.06	165.99	W	54.06	166.06	W	E ALEU	R	**SUMMER**
BOGOSLOF/FIRE ISLAND	53.93	168.03	W				E ALEU	R	**SUMMER**
ADUGAK	52.91	169.18	W				E ALEU	R	**SUMMER**
WALRUS	57.18	169.93	W				BERING	R	**SUMMER**
HAULOUTS									
SEMISOPOCHNOI/POCHNOI	51.96	179.77	E				C ALEU	H/R	**ALL**
CAPE ST. ELIAS	59.79	144.60	W				E GULF	H	**ALL**
THE NEEDLE	60.11	147.60	W				E GULF	H	**ALL**
POINT ELRINGTON	59.93	148.25	W				E GULF	H	**ALL**
KODIAK/CAPE CHINIAK	57.63	152.14	W				C GULF	H	**ALL**
SEA OTTER	58.52	152.22	W				C GULF	H	**ALL**
LATAX ROCKS	58.67	152.52	W				C GULF	H	**ALL**
TWOHEADED	56.91	153.55	W	56.90	153.56	W	C GULF	H	**ALL**
SHAKUN ROCKS	58.55	153.69	W				C GULF	H	**ALL**
SITKINAK/CAPE SITKINAK	56.57	153.85	W				C GULF	H	**ALL**
KODIAK/CAPE UGAT	57.87	153.85	W				C GULF	H	**ALL**
PUALE BAY	57.68	155.39	W				C GULF	H	**ALL**
NAGAI ROCKS	55.83	155.79	W				C GULF	H	**ALL**
THE WHALEBACK	55.28	160.08	W				W GULF	H	**ALL**
SEA LION ROCKS (SHUMAGINS)	55.08	160.52	W				W GULF	H	**ALL**
SOUTH ROCKS	54.30	162.69	W				W GULF	H	**ALL**

BIRD	54.67	163.29	W				W GULF	H	**ALL**
CAPE NEWENHAM	58.65	162.18	W				BERING	H	**ALL**
AMAK+ROCKS	55.40	163.16	W	55.44	163.14	W	E ALEU	H	**ALL**
TIGALDA/ROCKS NE	54.16	164.98	W	54.15	164.95	W	E ALEU	H	**ALL**
AMLIA/EAST CAPE	52.10	172.98	W	52.10	172.96	W	C ALEU	H	**ALL**
ATKA/NORTH CAPE	52.40	174.30	W				C ALEU	H	**ALL**
LITTLE TANAGA STRAIT	51.82	176.23	W				C ALEU	H	**ALL**
ALAID	52.78	173.86	E	52.75	173.94	E	W ALEU	H	**ALL**
AMCHITKA/EAST CAPE	51.37	179.47	E	51.37	179.45	E	C ALEU	H/R	**WINTER**
SEA LION ROCKS (MARMOT)	58.34	151.81	W				C GULF	H	**WINTER**
KODIAK/GULL POINT	57.36	152.61	W				C GULF	H	**WINTER**
KODIAK/CAPE BARNABAS	57.17	152.88	W				C GULF	H	**WINTER**
ST. GEORGE/DALNOI POINT	56.60	169.77	W				BERING	H	**WINTER**
TANGINAK	54.20	165.32	W				E ALEU	H	**WINTER**
OLD MAN ROCKS	53.87	166.08	W				E ALEU	H	**WINTER**
AKUTAN/REEF-LAVA	54.14	166.10	W	54.15	166.09	W	E ALEU	H	**WINTER**
CHAGULAK	52.57	171.18	W				C ALEU	H	**WINTER**
UNALGA+DINKUM ROCKS	51.56	179.07	W	51.58	179.06	W	C ALEU	H	**WINTER**
SEMISOPOCHNOI/PETREL	52.02	179.62	E	52.03	179.65	W	C ALEU	H/R	**WINTER**
LONG ISLAND	57.78	152.22	W				C GULF	H	**WINTER**
SEGUAM/WHARF POINT	52.36	172.32	W				C ALEU	H	**WINTER**

SEGUAM/TURF POINT	52.26	172.52	W				C ALEU	H	**WINTER**
KANAGA/N CAPE	51.94	177.15	W				C ALEU	H	**WINTER**
BOBROF	51.90	177.45	W				C ALEU	H	**WINTER**
AMATIGNAK/NITROF POINT	51.22	179.13	W				C ALEU	H	**WINTER**
LITTLE SITKIN	51.99	178.50	E				C ALEU	H	**WINTER**
SEGULA/GULA POINT	52.05	178.15	E				C ALEU	H	**WINTER**
SEGULA/CHUGUL POINT	52.00	178.10	E				C ALEU	H	**WINTER**
AGLIGADAK	52.10	172.90	W				C ALEU	H/R	**SUMMER**
HOOK POINT	60.33	146.26	W				E GULF	H	**SUMMER**
SUTWIK	56.52	157.34	W	56.53	157.35	W	C GULF	H	**SUMMER**
CATON	54.38	162.36	W				W GULF	H	**SUMMER**
ROUND (WALRUS IS)	58.60	159.97	W				BERING	H	**SUMMER**
AMLIA/SVIECH. HARBOR	52.03	173.40	W				C ALEU	H	**SUMMER**
SHEMYA	52.73	174.15	E				W ALEU	H	**SUMMER**
ATTU/CHIRIKOF POINT	52.83	173.43	E				W ALEU	H	**SUMMER**
MIDDLETON	59.47	146.31	W				E GULF	H	**NEITHER**
SEAL ROCKS (KENAI)	59.52	149.63	W				E GULF	H	**NEITHER**
GORE POINT	59.20	150.97	W				C GULF	H	**NEITHER**
TAKLI	58.03	154.52	W				C GULF	H	**NEITHER**
KODIAK/CAPE IKOLIK	57.29	154.79	W				C GULF	H	**NEITHER**
CASTLE ROCK	55.27	159.50	W				W GULF	H	**NEITHER**

NAGAI/MOUNTAIN POINT	54.90	160.26	W	54.93	160.25	W	W GULF	H	**NEITHER**
UMNAK/CAPE ASLIK	53.42	168.41	W				E ALEU	H	**NEITHER**
CHUGINADAK	52.78	169.70	W				C ALEU	H	**NEITHER**
ULIAGA	53.07	169.78	W	53.08	169.77	W	C ALEU	H	**NEITHER**
SAGIGIK	52.01	173.16	W				C ALEU	H	**NEITHER**
ANAGAKSIK	51.85	175.88	W				C ALEU	H	**NEITHER**
TANAGA/BUMPY POINT	51.92	177.98	W	51.92	177.95	W	C ALEU	H	**NEITHER**
POINT ELEANOR	60.58	147.57	W				E GULF	H	**NEITHER**
PERRY	60.73	147.91	W				E GULF	H	**NEITHER**
NAGAHUT ROCKS	59.10	151.77	W				C GULF	H	**NEITHER**
SUD	58.90	152.21	W				C GULF	H	**NEITHER**
UGAK	57.39	152.29	W	57.37	152.29	W	C GULF	H	**NEITHER**
CAPE GULL	58.19	154.16	W	58.21	154.18	W	C GULF	H	**NEITHER**
CAPE KULIAK	58.13	154.21	W				C GULF	H	**NEITHER**
SPITZ	55.78	158.90	W				W GULF	H	**NEITHER**
ST. LAWRENCE-S.PUNUK	63.07	168.85	W				BERING	H	**NEITHER**
ST. GEORGE/SOUTH ROOKERY	56.56	169.67	W				BERING	H	**NEITHER**
ST. PAUL/NE POINT	57.25	170.11	W				BERING	H	**NEITHER**
ST. PAUL/SEA LION ROCK	57.10	170.29	W				BERING	H	**NEITHER**
ST. LAWRENCE-SW CAPE	63.30	171.43	W				BERING	H	**NEITHER**
HALL	60.62	173.00	W				BERING	H	**NEITHER**

UNALASKA/CAPE SEDANKA	53.84	166.08	W				E ALEU	H	**NEITHER**
EMERALD	53.29	167.86	W				E ALEU	H	**NEITHER**
POLIVNOI ROCK	53.27	167.97	W				E ALEU	H	**NEITHER**
KAGAMIL	53.04	169.68	W				C ALEU	H	**NEITHER**
AMUKTA+ROCKS	52.45	171.30	W				C ALEU	H	**NEITHER**
TANADAK (AMLIA)	52.07	172.96	W				C ALEU	H	**NEITHER**
GREAT SITKIN	52.10	176.18	W	52.11	176.12	W	C ALEU	H	**NEITHER**
UGIDAK	51.58	178.51	W				C ALEU	H	**NEITHER**
KAVALGA	51.58	178.86	W	51.58	178.83	W	C ALEU	H	**NEITHER**
TANADAK (KISKA)	51.95	177.78	E				C ALEU	H	**NEITHER**
KISKA/SIRIUS POINT	52.14	177.61	E				C ALEU	H	**NEITHER**
KISKA/SOBAKA-VEGA	51.83	177.32	E	51.81	177.34	E	C ALEU	H	**NEITHER**
SEGUAM/FINCH POINT	52.39	172.46	W	52.39	172.41	W	C ALEU	H	**NEITHER**
GLACIER	60.86	147.24	W				E GULF	N	**ALL**
PERL	59.10	151.66	W				C GULF	N	**ALL**
MITROFANIA	55.84	158.70	W				W GULF	N	**ALL**
OLGA ROCKS	55.01	161.50	W	54.98	161.51	W	W GULF	N	**ALL**
SUSHILNOI ROCKS	54.82	161.71	W				W GULF	N	**ALL**
UGAMAK/ROUND	54.20	164.78	W				E ALEU	N	**ALL**
UNIMAK/CAPE SARICHEF	54.57	164.95	W				E ALEU	N	**ALL**
ROOTOK	54.07	165.53	W	54.05	165.49	W	E ALEU	N	**ALL**

UNALASKA/BISHOP POINT	53.97	166.96	W				E ALEU	N	**ALL**
UNALASKA/CAPE IZIGAN	53.23	167.66	W				E ALEU	N	**ALL**
RUGGED	59.83	149.39	W	59.85	149.41	W	E GULF	N	**WINTER**
ELIZABETH/CAPE ELIZABETH	59.16	151.89	W				C GULF	N	**WINTER**
FLAT	59.33	152.00	W				C GULF	N	**WINTER**
AIKTAK	54.18	164.85	W				E ALEU	N	**WINTER**
TAGALAK	51.96	175.62	W				C ALEU	N	**WINTER**
SEMISOPOCHNOI/TUMAN POINT	51.96	179.48	E				C ALEU	N	**WINTER**
RAT	51.83	178.21	E				C ALEU	N	**WINTER**
CAPE HINCHINBROOK	60.23	146.64	W				E GULF	N	**SUMMER**
STEEP POINT	59.48	150.26	W				E GULF	N	**SUMMER**
SHAW	59.00	153.38	W				C GULF	N	**SUMMER**
KAK	56.29	157.84	W				W GULF	N	**SUMMER**
UNGA/ACHEREDIN POINT	55.12	160.82	W				W GULF	N	**SUMMER**

[1] N = new site (22 sites); R/H = functional rookery that is listed CH haulout; H/R = functional haulout that is listed CH rookery; R = rookery CH; H = haulout CH

Table 4.1. Estimates of EBS age-1 pollock recruitment by year-class period (millions), the coefficient of variation, and correlation among estimates from other periods.

Regime Period	Regime	Average recruitment	CV	Regime (correlation) A	B	C	D	E	F	G	H
1963-1976	A	18,598	3%	1.000							
1977-2005	B	23,690	3%	0.140	1.000						
1977-1998	C	25,757	3%	0.143	0.877	1.000					
1977-1988	D	25,226	3%	0.102	0.772	0.888	1.000				
1989-2005	E	22,607	4%	0.133	0.923	0.681	0.468	1.000			
1989-1998	F	26,394	3%	0.149	0.743	0.838	0.494	0.734	1.000		
1999-2005	G	17,197	9%	0.079	0.759	0.353	0.301	0.874	0.310	1.000	
1963-2005	H	22,032	3%	0.485	0.934	0.826	0.719	0.863	0.710	0.699	1.000

Table 4.2. Mean year class strength by decade, 1960-2005 for Gulf of Alaska pollock.

Decade	Mean year class abundance (millions at age 2)	Coefficient of Variation
1960-1969	392	0.54
1970-1979	1,982	0.56
1980-1989	705	0.77
1990-1999	377	0.74
2000-2005	405	0.79

Table 4.3: Aleutian Islands summer bottom trawl survey Alaska pollock abundance estimates. NRA is the Near, Rat, and Andreanov area as described in Barbeaux et al. (2007).

	NRA West (174W-170E)	**NRA East (170W-174W)**	**NRA total**	**CV%**
1991	83,337	53,865	137,202	20%
1994	47,623	29,879	77,502	19%
1997	57,577	39,935	97,512	22%
2000	76,613	28,985	105,598	28%
2002	121,915	53,368	175,283	38%
2004	19,201	111,250	130,451	78%
2006	25,471	69,522	94,993	48%

Table 4.4: Total catch of pollock in the Aleutian Islands management area 1990-2007 in tons. NRA is the Near, Rat, and Andreanov area as described in Barbeaux et al. (2007).

Year	NRA Total	NRA West (174W-170E)	NRA East (170W-174W)
1990	79,025	10,477	68,548
1991	98,604	561	98,043
1992	52,352	8,519	43,833
1993	57,132	16,162	40,970
1994	58,659	5,965	52,694
1995	64,925	58,203	6,722
1996	29,062	23,187	5,875
1997	25,940	25,774	166
1998	23,822	23,335	487
1999	1,010	631	379
2000	1,244	891	353
2001	824	575	249
2002	1,156	351	805
2003	1,653	1,430	223
2004	1,150	962	188
2005	1,610	1,330	280
2006	1,736	1,657	79
2007	2,522		

Table 4.5 Estimated NRA region pollock catch at age (millions) from 2005 stock assessment (Barbeaux *et al*. 2005). 1978 year class is shaded. NRA is the Near, Rat, and Andreanov area as described in Barbeaux *et al*. (2005).

Year	Age 2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total	% 1978
1978	0.01	0.14	0.12	0.07	0.36	0.10	0.14	0.13	0.13	0.06	0.02	0.01		0.00	1.27	
1979	0.01	2.18	2.22	2.02	2.43	1.73	0.65	0.63	0.37	0.03	0.22			0.05	12.53	
1980	8.20	3.24	2.64	3.71	6.94	4.05	2.47	0.73	1.07	0.53	0.16	0.01	0.14	0.01	33.91	24%
1981		5.72	3.36	2.19	1.65	2.55	2.54	1.93	1.37	0.73	0.20	0.15	0.20	0.04	22.64	25%
1982		0.01	3.00	0.51	0.23	0.31	0.38	0.35	0.15	0.07	0.04	0.03	0.01	0.01	5.10	59%
1983				0.74	0.44	0.17	0.11	0.24	0.23	0.05	0.04	0.01	0.00	0.00	2.04	36%
1984	0.14	3.97		4.12	4.12	1.46	1.10	0.74	0.51	0.34	0.09	0.06	0.03	0.01	16.68	25%
1985	0.01	0.01	0.17	0.06	0.17	0.46	0.20	0.08	0.08	0.04	0.01	0.01	0.00	0.00	1.30	35%
1986																
1987			1.40	0.31	0.23	0.04	0.09	1.01	0.09	0.12	0.00	0.03	0.01	0.04	3.36	30%
1988																
1989																
1990		0.95	0.26	0.96	0.78	0.78	0.93	0.17	1.10	0.34	0.56	0.28	0.13	0.21	7.45	8%
1991																
1992			0.03	0.33	0.60	0.30	0.60	0.12	0.69	0.39	0.52	0.36	1.71	1.91	7.55	25%
1993			0.18	0.47	1.12	1.34	0.54	1.46	0.81	0.88	0.83	0.38	0.70	4.34	13.05	33%
1994			0.07	1.00	0.31	0.42	0.60	0.43	0.33	0.17	0.39	0.10	0.08	1.30	5.20	25%
1995		0.22	0.38	0.00	10.22	1.19	5.10	4.84	1.42	2.36	2.08	3.82	0.77	8.32	40.71	20%
1996		0.17	0.15	0.56	1.42	5.15	1.53	2.09	1.21	0.92	0.64	0.20	0.77	2.00	16.79	12%
1997																
1998		0.05	0.08	5.66	1.65	1.05	0.96	1.71	1.20	1.00	2.40	1.30	1.17	1.49	19.73	8%

Table 4.6 Importance of prey species in Steller sea lion diet studies collected from the 1940s to the 2000s (see Table 3.20 for citations).

	10 Stoms **1940s**	150 Stoms **1950s**	16 Stoms **1960s**	157 Stoms **1970s**	190 Stoms **1980s**	3762 Scats **1990s**	5000+ Scats **2000s**
Pollock	++		++	++	++	++	++
P. cod	+			+	+	++	++
Flatfish	++	+	+	+	++	++	++
Greenling		+	+			++	+
Rockfish		+	+	+	+	+	+
Smelts		+	++	+		+	++
Sandlance	++	+	+		+	++	++
Herring			+	+	+	+	+
Salmon	++	+		+	+	++	++
Sculpins	+	+	+	+	+	++	++
Cephalopods	+	++	+	+	+	+	+

++ indicates an important prey item (10% FO or greater)
+ indicates a prey item (10% FO or less)

Table 4.7 Federal TAC harvested within 3 nm of listed Steller sea lion rookeries and haulouts and within all state waters during parallel fisheries in 1999 by area, fishery, gear type, and vessel type. Estimates of catch in mt follow percentage of that gear type's harvest in brackets.

Area	Fishery	Gear	Vessel Type	Within 3 NM of SSL Haulouts During Parallel Seasons	Within all State Waters During Parallel Seasons
GOA	Pollock	Trawl	CV	1.5% (1,361 mt)	31.9% (29,380 mt)
	Pacific cod	Trawl	CV	0.9% (296 mt)	8.2% (2,696 mt)
		H & L	CV	5.3% (369 mt)	37.1% (2,584 mt)
		H & L	CP	0% (0 mt)	0% (0 mt)
		Pot	CV	7.4% (1,151 mt)	38.8% (6,038 mt)
		Jig	CV	0% (0 mt)	0% (0 mt)
BSAI	Pollock	Trawl	CV	0% (0 mt)	0.2% (1,053 mt)
		Trawl	CP	0% (0 mt)	0% (0 mt)
	Pacific cod	Trawl	CV	0.2% (69 mt)	10.3% (3,554 mt)
		Trawl	CP	0.2% (290 mt)	6.9% (1,001 mt)
		H&L	CP	0.1% (72 mt)	1.4% (997 mt)
		Pot	CV	1.0% (108 mt)	21.6% (2,337 mt)
		Jig	CV	1.5% (3 mt)	56.4% (112 mt)
	Atka mackerel	Trawl	CP	0.3% (155 mt)	0.6% (310 mt)

CV = catcher vessels, CP = catcher processors.

Table 4.8. Understanding about potential stressors on Steller sea lion population trends.

Hypothesis	What We Knew in 2000		What We Know Now	
	Contributor to Decline	**Current Stressor**	**Contributor to Decline**	**Current Stressor**
Environmental Change	Possible	Possible	Likely	Likely
Indirect Fisheries Effects	Possible	Possible	Likely	Likely
Direct Human Effects	Likely	Possible	Yes	Unlikely
Predation				
Killer Whales	Possible	Possible	Possible	Possible
Sharks	Possible	Possible	No	No
Inter-Specific Competition	Possible	Possible	Possible	Possible
Disease	Possible	Possible	Unlikely	Unlikely
Contaminants	Possible	Possible	Possible	Possible

Table 4.9. Summary of incidental mortality and serious injury of humpback whales (Western North Pacific stock) due to commercial fisheries from 2002 to 2006 and calculation of the mean annual mortality rate. Mean annual mortality in brackets represents a minimum estimate. N/A indicates that data are not available.

Fishery name	Years	Data type	Observer coverage	Observed mortality (in given yrs.)	Estimated mortality (in given yrs.)	Mean annual mortality
Bering Sea sablefish pot	2002	obs data	40.6	0	1[1]	0.20[2]
	2003		21.7	0	0	(N/A)
	2004		49.1	0	0	
	2005		39.2	0	0	
	2006		35.3	0	0	
Observer program total						0.20
Minimum total annual mortality						[∃0.2]

[1] Mortality was seen by an observer but not during an "observed set"; thus quantification of effort cannot be accomplished and the single record cannot be extrapolated to provide a total estimated mortality level.

[2] These mortalities occurred in an area of known overlap with the Central North Pacific stock of humpback whales. Since the stock identification is unknown, the mortalities are reflected in both stock assessments.

Table 4.10. NMFS AKR stranding records of reported humpback whale entanglements, 1997-2009. Reports on whale entanglements are collected opportunistically. The gears listed below could be commercial, subsistence or recreational, and gear type reported was not necessarily confirmed. An additional 22 reports of humpback entanglements from 1985-1996 are also available in NMFS AKR records. Source: NMFS Standing reports contributed by stranding network members, private citizens, anonymous callers.

Year	Area	Condition	Details
1997	Island of Hawaii	Released alive	Alaska crab pot floats removed by U.S. Coast Guard
1997	Peril Straits, AK	Injured	Entangled in line; attempt to disentangle failed
1997	Juneau	Injured	Tail wrapped in crab pot line
1997	Admiralty Island	Alive; entangled	Line and 2' diameter buoy attached
1997	Bering Strait	Dead with gear	Netting wrapped around midsection and flippers. Orange buoys trailing.
1998	Maalaea Bay, Lanai	Alive; entangled	Disentangled from gear, but some line remained
1998	Sitka, AK	Alive; entangled	Likely commercial gillnet around flippers
1998	Ketchikan, AK	Injury; status unknown	Salmon purse seiner net (commercial) torn through; thought to have died
1998	Juneau, AK	Entangled	No details available
1998	Wrangell, AK	Alive	Commercial crab pot line and buoy removed
1998	Homer, AK	Alive	Tanner crab pot cut loose
1998	Sitka, AK	Alive	Commercial crab pot line and buoy cut free; line remained in mouth
1998	Ketchikan	Entangled	Swimming freely with line and buoys attached
1998	Petersburg	Released, fate unknown	Likely crab buoys and line; buoy and most line removed.
1999	Homer	Entangled	In crab pot gear; released
1999	Prince of Wales Island	Entangled	In unknown pot gear, released
1999	Hawaii, nk	Entangled, fate unknown	Entangled and trailing line and a float.
1999	Sitka	Entanglement, apparently healthy	Line and buoy wrapped around whale; little or nothing dragging.
2000	Lynn Canal	Entangled	Purse seine gear
2000	Skagway	Entangled	Shrimp pot gear removed except for single buoy
2000	Uyak Bay	Entangled	Unknown gear
2001	Hawaii	Injured	Entangled in line/buoy from an AK fishery; released, injured – extent unknown
2001	Yakutat	Found dead	Entangled in salmon set gillnet
2001	Bering Glacier	Entangled	Entangled in gill net
2001	Hoonah Sound	Entangled, released	Shrimp pot gear
2001	Lynn Canal	Released alive, fate unknown	Shrimp pot gear
2001	Sitka	Released alive, fate unknown	Longline gear
2001	Resurrection Bay	Released alive	Mixed gear including: line, 3 buoys, a crab pot, 2 floats, 30# anchor, chain, ball of line. Animal swimming freely.

2001	Kodiak	Mother and calf; entangled	Possibly pot gear. Unsuccessful disentanglement attempt. Fate unknown.
2001	Sitka	Entangled, fate unknown	Green net on rostrum
2002	Taku Inlet	Entangled, fate unknown	2 crab pots and line
2002	Kodiak	Entangled, fate unknown	Series of entanglements in Kodiak area reported second hand by fishermen and not confirmed.
2002	Kodiak	Entangled, fate unknown	Series of entanglements in Kodiak area reported second hand by fishermen and not confirmed.
2002	Kodiak	Entangled, fate unknown	Series of entanglements in Kodiak area reported second hand by fishermen and not confirmed.
2002	North Pass	Entangled, fate unknown	Likely crab pot and line
2002	Ketchikan	Entangled, fate unknown	Crab line with buoy
2002	Petersburg	Released, fate unknown	Crab line and buoy
2002	Kupreanof Is	Entangled, fate unknown	Green mesh trawl net
2002	Funter Bay	Self-released, fate unknown	Unknown gear
2002	Ketchikan	Released, fate unknown	2 shrimp pots and line. Mostly removed.
2002	Unknown	Released, fate unknown	Entangled with groundfishing boat for two hours.
2002	Open Sea, Western AK	Partial self-release, fate unknown	Wrapped in black cod pot gear attached to boat. Broke free of boat and dragged gear away.
2003	Auke Bay	Self-released, fate unknown	Crab pot, line, buoy.
2003	Auke Bay	Entangled, fate unknown	Likely crab pot line (No trailing gear reported.) Swimming freely.
2003	Prince of Wales Is.	Dead with gear	Two large ropes and unknown fishing net on whale floating dead.
2003	Sitka Sound	Self-released, apparently healthy	Unconfirmed report: commercial fishing gear. Sighted later with no signs of entanglement.
2003	Stephens Passage	Entangled, fate unknown	Trailing line (unknown fishery).
2003	Taku Inlet	Released, fate unknown	Unconfirmed report of gillnet disentanglement
2004	Juneau	Entangled, not released	Two buoys, trailing 250' line
2004	Stephens Passage	Released, fate unknown	Line around body, disentangled.
2004	Kake	Entangled, not released	Lines and buoy (possibly halibut). Did not appear impaired.
2004	Sitka Sound	Entangled, not released	Blue-green net wrapped around body. No photos.
2004	Icy Strait	Entangled, partially released	Line (fishery unknown), partially removed. Trailing buoy.
2004	Keku Strait	Entangled, fate unknown	Line with two buoys; did not appear to be trailing pot (Dungeness crab).
2004	Sitka	Entangled, not released	5/8” yellow poly line draped across body forward of the dorsal fin. Reported as pot gear.
2005	Aialik Bay	Entangled, fate unknown	Animal trailing buoy.
2005	Alitak Bay	Entangled, fate unknown	Net mesh imprinted into skin, no gear remaining.
2005	Auke Bay	Entanglement, self-released	King crab gear.

2005	Chatham Strait	Entanglement, fate unknown	Large white buoy, larger than normal crab buoy. Entangled around tailstock.
2005	Craig	Entanglement, fate unknown	Three buoys total, seemed to be entangled in flukes.
2005	Frederick Sound	Entangled, self-released	Long line gear entanglement, freed itself after 10 minutes.
2005	Gastineau Channel	Entanglement, fate unknown	Calf entangled with 30-50 feet of green mesh net. Did not appear to affect diving.
2005	Homer	Entanglement, fate unknown	Possible resighting of 6/14/05 entanglement.
2005	Homer	Entanglement, died	Drowned in purse seine.
2005	Hoonah	Entanglement, fate unknown	2 later reports sighted the whale at Pt. Pogibshi.
2005	Juneau	Entanglement, fate unknown	Animal reported swimming slowly, trailing orange and white crab pot gear.
2005	Juneau	Entanglement, fate unknown	Mooring line wrapped around pec fins.
2005	Kodiak	Disentangled	Longline gear, fishermen cut off part of gear.
2005	Olga Point	Entanglement, fate unknown	Net and buoy wrapped around head and blowhole.
2005	Portage Bay	Entanglement, fate unknown	Mom and calf entangled together.
2005	Sadie Cove	Entanglement, fate unknown	Fishing gear remnants and buoys attached to flukes.
2005	Shuyak Island	Entanglement, fate unknown	Gillnets and 3 buoys attached, did not interfere with diving or breathing.
2005	Sitka	Entanglement, self-released	Whale entangled for a short period before breaking free.
2005	Wrangell	Died	Set gill net. Animal heavily wrapped around entire body.
2005	Kachemak Bay	Released, fate unknown	Fishing net remnants and buoys attached to flukes.
2005	Kodiak	Partial release, fate unknown	Appeared to be immobilized by crab pot gear.
2006	Anton Larsen Island	Disentangled	Caught in salmon gill net.
2006	Bartlett Cove	Entanglement, fate unknown	Animal was entangled around the tail in a sport fishing crab pot weighing approximately 80 pounds.
2006	Craig	Entangled, fate unknown	Longline halibut skate attached to pectoral fins.
2006	Dutch Harbor	Entangled, fate unknown	Orange buoy trailing from mouth.
2006	Flat Island	Entangled, fate unknown	Possible gillnet over head.
2006	Frederick Sound	Died	Animal was fresh dead with gear on animal.

2006	Hoonah Sound	Entangled, fate unknown	Animal trailing small orange buoy typical of crab pot gear.
2006	Juneau	Disentangled	Calf caught some pot gear, eventually disentangled.
2006	Kake	Entangled, fate unknown	Trailing 100-150 feet of line with buoys attached.
2006	Lynn Canal	Entanglement, fate unknown	40’ of line and a 2’ orange buoy trailing from tail. Possible crab pot gear.
2006	Peril Strait	Entanglement, fate unknown	Animal trailing 40 feet of line with orange buoy.
2006	Petersburg	Disentangled	Entangled in 75 fathoms of gillnet, lead and corkline; successfully disentangled by D. Holmes and USCG.
2006	Petersburg	Self-released	Wrapped in Gillnet. Self-released.
2006	Sitka	Entanglement, fate unknown	Whale first observed towing small (1-2 ft. diameter) white buoy 40-50 yds. behind it. Whale was very noisy, wheezing and trumpeting.
2006	Stephen’s Passage	Entanglement, fate unknown	Degree of entanglement unknown.
2006	Stephen’s Passage	Disentangled	Animal was successfully disentangled. Photos on file.
2006	Thorn Bay	Entanglement, fate unknown	2 light colored round buoys in tow.
2006	Hoonah	Entanglement, fate unknown	Rope or line wrapped around head region.
2006	Sawmill Bay	Entanglement, died	Drowned after becoming entangled in ADFG herring research seine.
2007	Benjamin Island	Entanglement, fate unknown	Calf was moving slowly and had netting over its back. It appeared to get caught on a shallow bottom, and then possibly broke free of the gear
2007	Kachemak Bay	Entanglement, fate unknown	Animal reported entangled with a white oblong buoy attached somewhere near its head.
2007	Kodiak	Entanglement, fate unknown	Whale appeared to be "hanging in water" for appx. 1 hour in 100 ft. of water. Seemed to have bunched up green gillnet entangled on head.
2007	Port Frederick	Entanglement, fate unknown	Calf was trailing two orange buoys.
2007	Sitka	Entanglement, fate unknown	Animal was mobile dragging several hundred feet of heavier gauge line (>1/2").
2007	S. Marble Island	Entanglement, fate unknown	Line trailing from whale's right fluke tip, entanglement not life threatening.
2007	Spasski Island	Entanglement, fate unknown	Animal trailing appx. 50 ft. of gillnet.
2007	Tenakee	Entanglement, fate unknown	Calf was seen trailing small styrofoam buoys from shrimp gear.
2007	Petersburg	Released, fate unknown	Life threatening entanglement prevented fluke from being used. Animal was fully disentangled.
2008	Sitka	Self-released, healthy	Was entangled in a purse seine net for between 20 min and two hours.

2008	Icy Strait	Partially released, fate unknown	Animal broke off half of gillnet with line and cork. Second boat pulled on net and it broke free of whale. Possible that some webbing remained.
2008	Peril Strait	Entangled, fate unknown	Trailing 2-3 ft yellow polyball on left side above pec fin. Unable to relocate.
2008	Icy Strait	Entangled, fate unknown	Single red/white polyball tight against the dorsal surface. Unable to relocate.
2008	Peril Strait	Entangled, fate unknown	Trailing net or plastic.
2008	Metlakatla	Partially released, fate unknown	Wrapped in gillnet and lead line attached to boat. 99% of gear removed when animal swam away.
2008	Kodiak	Released, fate unknown.	Crab pot line wrapped around tail.
2009	Wrangell	Entangled, fate unknown	Trailing orange buoy and 15-20 ft of line.
2009	Seward	Entangled, fate unknown	Reported wrapped in 1” black line but another observer said whale was playing in kelp. Not resighted.
2009	Juneau	Entangled, fate unknown	Gillnet draped across back of calf.
2009	Skagway	Self released, fate unknown	King crab pot gear wrapped around body and animal trailing buoys. Gear found floating nearby a couple of days later.
2009	Lynn Canal	Entangled, fate unknown	Dragging 100’ line and 2’ poly buoy. Not able to relocate.
2009	Glacier Bay	Released, fate unknown	Animal dragging pot gear. Gear removed.
2009	Tenakee	Entangled, fate unknown	Towing recreational shrimp pot gear.
2009	Haines	Entangled, fate unknown	Trailing one or two buoys with some attached line.
2009	Shelikof Strait	Entangled, fate unknown	Trailing one or two buoys.

Table 4.11. List of confirmed and unconfirmed(*) entanglements of the Central North Pacific population of humpback whales from 2001-2006. Data compiled by NOAA Sanctuaries, Hawaiian Island Humpback Whale National Marine Sanctuary (NMFS 2006c).

Date	Location/region	Description of entanglement	Response
1/8/2003	Hawaii (SE)	Line wrapped around tail; trailing 20 ft with 2 plastic mooring balls.	Event not confirmed
2/24/2003	Auiau Channel (W.Maui)	Line wrapped pec fins; trailing 100-120 ft.	Successful release
3/2/2003*	Pailolo Channel, Moloka`i	Animal trailing large orange buoy.	No response mounted.
3/4/2003*	Kamalapau Harbor, Lana`i	Animal trailing buoy 30 ft.	Unsuccessful/ Animal not found
2/2/2004	Auiau Channel (W.Maui)		Unsuccessful disentanglement
2/13/2004	Kauai Channel	Animal towing 50 yds of line/ rope.	Event not confirmed
1/6/2005*	Port Allen, Kaua`i	Line trailing from forward with ball of blue/green net 20-30 ft behind.	Unsuccessful/ Animal not found
1/24/2005	Oahu (E)	Gillnetting over the head, rope across jaw, and debris wrapped around pec fin.	Unsuccessful/ Unable to respond
2/4/2005*	Hapuna Beach, Big Island	Blue rope with 2 orange buoys running along flank near tail.	Unsuccessful/ Animal not found
2/9/2005	Oahu (N)	Buoyline of local fish trap gear around tail with a 50 lb anchor, 2 round, and 1 bullet buoy.	Unsuccessful/ Animal not found
2/11/2005	Auiau Channel (W.Maui)	Line around pec and entering mouth trailing 150 ft.	Assessed/ Not in need of assistance/ disentanglement
2/28/2005	Auiau Channel (W.Maui)	At least one, perhaps two lines in mouth; line under the body between left and right flippers with gear 6-8 ft from fluke.	Partially sucessful disentanglement
3/2/2005*	Oahu (W)		Unsuccessful/ Animal not found
12/27/2005	Kauai (E)	Rope with float trails 10-15 ft.	Assessed/ Not in need of assistance/ disentanglement
1/29/2006	Kawaihae Bay, Big Island	Line wrapped around tail; pair of lines trail 20-25 ft with ball of gear.	Unsuccessful/ Animal not found
2/9/2006	Kawaihae Bay, Big Island	Large red polyball at dorsal fin; lines trail to fluke with another polyball.	
2/12/2006	Auiau Channel (W.Maui)		Partially sucessful disentanglement
2/16/2006	Kawaihae Bay, Big Island	2 buoys trailing 35 ft on the tail and fluke was seen free of gear.	Unsuccessful/ Animal not found
2/18/2006*	Oahu (N)	Animal may be entangled in gear with buoy near tail.	Unsuccessful/Animal not found
2/23/2006*	Waikiki Beach, Oahu	Animal towing buoy 30 ft.	No response mounted
3/1/2006	North Pacific	Caught by entanglement in the main line and cut free, but not all the gear was removed.	Partially sucessful disentanglement

3/2/2006*	Kona Coast, Big Island	Animal has line around tail and trailing gear.	Unsuccessful/Animal not found
3/5/2006	Auiau Channel (Western Maui)	Over 100 lbs/357 ft. of line around the fluke and tail and trailed 20 ft with a ball of line.	Successful disentanglement
1/11/07	Kihei, Maui	Entangled in over 160 ft of braided line.	Response mounted. Animal partially disentangled.
2/6/07	Mano Pt, Big Island	Line wrapped around body, trailing 30-40 ft behind. Bundle includes two metal bars.	Response mounted. Animal partially disentangled.
2/23/07	Club Lanai, Lanai	Small gauge polyblend line around tail stock and base of lfuke blades. Pair of 10”, red trawl buoys trail 60 ft. Another 240 ft trail behind buoys.	Successful disentanglement
3/2/07	Lahaina, Maui	Heavy gauge line through mouth. Trails 40-50 ft to two polyballs.	Success disentanglement
3/17/07	Honolua Bay, Maui	Wrapped in heavy gauge, brown line aft of midsection. Several pieces of cargo netting hang off wrap.	Unable to relocate animal.
12/9/07	Lahaina, Maui	Entangled in monofilament line around tailstock and trailing aft.	No response mounted.
1/15/08	870 nm NNE of Hawaiian Islands	Observer aboard commercial longliner observed whale become entangled in mainline.	Animal cut free of mainline and all gear accounted for.
1/2/08	Lahaina Harbor, Maui	Small diameter line exiting right side of mouth.	No response mounted.
1/26/08	Lahaina, Maui	Entanled in 3/8”, yellow, polypro line from forward of body along right side and over dorsal.	No response mounted.
2/10/08	Maalaea Harbor, Maui	Heavy gauge, white line through mouth and along both sides of body to bundle of gear just above animal’s flukes.	Assessed, documented, biopsied, and attempted unsuccessfully to attach telemetry buoy.
4/25/08	Maili Pt, Oahu	Trailing 100 ft of line from forward on body. One end of line has buoy with red flag on short stem.	Response mounted. Found gear thrown from animal. Animal free of gear.
12/13/08	Maui, HI	Entangled in heavy gauge line that is draped over back and originates forward.	Response mounted. Partially disentangled animal.
12/24/08	SW corner of Kauai	Animal trailing dark-colored, heavy gauge line that is wrapped around flukes and perhaps other parts of body.	No response mounted.
1/12/09	Between Molokini and Puu Olai, Maui	Trailing more than 100 feet of yellow poly line.	Unable to relocate animal
1/13/09	Hauula, Oahu	Entangled by tail in what was reported as local crab pot gear.	Partially freed by local fisherman
1/19/09	Ship Wreck Beach, Lanai	Light green mesh trailing 45 ft behind animal.	Unable to relocate animal
2/1/09	Mala Wharf, Maui	Small gauge line around right flipper and tailstock. Trailing 100s of feet behind animal. Orange, 2 ft	Successful disentanglement

		buoy by animals side.	
2/20/09	Big Island and Maui	Heavy gauge yellow polyline across back.	Rescue attempt unsuccessful.
3/11/09	Honokahau Harbor, HI	Grey poly line around tailstock and trailing at least 45 ft behind animal.	Unable to relocate animal
12/1/09	Launiopoko, Maui	Animal wrapped in heavy gauge, yellow poly line with several 100 feet of line trailing behind.	Successful disentanglement
12/24/09	Haleiwa Harbor, Oahu	Reported to have weighted gear off tail.	Unable to relocate.
12/25/09	Launiopoko, Maui	Multiple wraps of small gauge, black poly line around its tail and trailing behind. Anchor suspended in line.	Animal freed of most, if not all, gear.
12/30/09	Hilo Harbor, HI	Trailing 70 ft of blue colored line	No response mounted.

Table 4.12. NMFS Alaska Region stranding records recording collisions between humpback and vessels, 1997-2009. This table reflects opportunistic data collection of fifty-eight reports involving collisions between vessels and humpback whales. The level of confirmation varies from thoroughly investigated to unconfirmed reports, involving animals positively identified as humpback whales as well as animals likely to have been humpback whales. Source: Reports contributed to NMFS AKR files by members of the Alaska Marine Mammal Stranding Network, the United States Coast Guard, J. Straley, Glacier Bay National Park and Preserve, and private citizens.

		Vessel			
Year	***Area***	***Type***	***Length (ft)***	***Speed (kts)***	***Details***
1997	Kenai Fjords	Commercial Fishing	32	-	Fate Unknown
1997	Kenai Fjords	Tour boat	95	22	No apparent injury, fate unknown
1997	Juneau	Recreational	16	Drifting	Fate Unknown
1997	Glacier Bay	Canoe	<20	<5	No apparent injury, fate unknown
1998	Juneau	Whalewatching	79	2	No apparent injury, fate unknown
1998	Juneau	Whalewatching	24	15-18	Fate Unknown
1999	Sitka	Sailboat	73	Anchored	Baleen left in side of boat, fate unknown
1999	Juneau	Cruise Ship	798	19	Dead
1999	Icy Strait	Sailboat	30	-	No apparent injury, fate unknown
1999	Metlakatla	Recreational	21	12	Skin left on bow of vessel, fate unknown
2001	Dixon Entrance	USCG	110	-	No apparent injury, fate unknown
2001	Icy Strait	Whalewatching	45	-	No apparent injury, fate unknown
2001	Glacier Bay	Cruise Ship	762	14	Dead, necropsy
2001	Anchorage	Container Ship	710		Dead
2002	Cross Sound	Charter	62	Neutral Coasting	No apparent injury, fate unknown
2002	Glacier Bay	Kayak	<20	Drifting	Fate Unknown
2002	Glacier Bay	Charter	97	Anchored	Fate Unknown
2003	Icy Bay	-	-	-	Dead, necropsy
2003	Icy Strait	Recreational	22	2	Fate Unknown
2003	Juneau	Recreational	19	-	Fate Unknown
2003	Gulf of Alaska	Cruise Ship	778	-	Fate Unknown
2003	Chatham Strait	Recreational	19	-	Fate Unknown
2003	Sitka	Research Vessel	23	Neutral Coasting	No apparent injury, fate unknown
2004	Juneau	Recreational	-	Drifting	Blubber left on boat, fate unknown
2004	Icy Strait	Recreational	23	5	Alive
2004	Glacier Bay	-	-	-	Dead, necropsy
2004	Juneau	-	-	-	Dead, necropsy
2005	Ketchikan	Whalewatching	48	-	No apparent injury, fate unknown
2005	Homer	Charter	28	-	Injury, fate unknown
2005	Icy Strait	Whalewatching	26	-	No apparent injury, fate unknown
2005	Frederick Sound	Recreational	28	25	Fate Unknown
2005	Juneau	Tour boat	143	-	No apparent injury, fate unknown
2005	Stephens Passage	Tour boat	56	-	Fate Unknown

Table 4.12 (Continued). NMFS Alaska Region stranding records recording collisions between humpback and vessels, 1997-2009.

2005	Frederick Sound	Cruise Ship	-	20	Fate Unknown
2005	Peril Strait	-	-	-	Dead, necropsy
2006	Juneau	Whalewatching	42	Idling	No apparent injury, fate unknown
2007	Whittier	Recreational	25	28	Fate Unknown
2007	Prince William Sound	Charter	-	-	Injury, fate unknown
2007	Prince William Sound	Recreational	-	26	Fate Unknown
2007	Sitka Sound	Charter	27	15	No apparent injury, fate unknown
2007	Stephens Passage	Recreational	26	20	No apparent injury, fate unknown
2007	Chatham Strait	-	-	-	Dead, necropsy
2007	Glacier Bay	Charter	43	28	Possible injury, alive
2007	Icy Strait	Landing Craft	32	17	Fate Unknown
2008	Sitka	Recreational	28	19	Fate Unknown
2008	Juneau	Tour boat	34	25	No apparent injury, fate unknown
2008	Kodiak	Recreational	26	26	No apparent injury, fate unknown
2008	Icy Strait	Commercial Fishing	58	10	Injury, fate unknown
2008	Juneau	Recreational	23	15	No apparent injury, fate unknown
2008	Kodiak	Recreational	-	15	No apparent injury, fate unknown
2008	Seward	Tour boat	87	Idling	Injury, fate unknown
2008	Craig	Recreational	32	37	Fate Unknown
2009	Gustavus	Zodiak	-	Anchored	No apparent injury, fate unknown
2009	Valdez	Charter	-	-	No apparent injury, fate unknown
2009	Pt. Adolphus	Skiff	17	30	Fate Unknown
2009	Angoon	Charter	-	-	No apparent injury, fate unknown
2009	Icy Strait	Charter	-	-	Fate Unknown
2009	Cross Sound	-	32	7	Blubber left on boat, fate unknown

Table 4.13. Summary of incidental mortality of sperm whales due to commercial fisheries and calculation of the mean annual mortality rate. Mean annual takes are based on 2002-2006 data.

Fishery name	**Years**	**Data type**	**Percent observer coverage**	**Observed mortality**	**Estimated mortality**	**Mean annual takes (CV in parentheses)**
GOA sablefish longline	2002 2003 2004 2005 2006	obs data	11.2	0 0 0 0 3	0 0 0 0 10	2.01 (CV = 0.49)
Estimated total annual takes						2.01 (CV = 0.49)

Table 4.14. NMFS AKR reported sperm whale stranding records, 1976-2009. Stranding reports are collected opportunistically. Not all reports were confirmed. Source: NMFS stranding reports contributed by Alaska Marine Mammal Stranding Network members and private citizens. NMFS Alaska Stranding Program Data 2010.

Year	*Area*	*Condition*	*Details*
1976	Shemya Island, Western AK	Dead	CBD
1985	Kodiak, Long Island	Moderate decomposition	beach-cast
1986	Kruzof Island, Southeast AK	Advanced decomposition	beach-cast
1986	Prince William Sound	Dead	beach-cast
1986	Shemya Island, Western AK	Moderate decomposition	beach-cast
1986	Shemya Island, Western AK	Fresh dead	possible entanglement in cables; unconfirmed in photos
1986	Kiska Island, , Western AK	Dead	beach-cast
1987	Adak Island	Advanced decomposition	floater
1988	Homer	Fresh dead	beach-cast
1990	Wooded Island, Southcentral AK	Dead	beach-cast
1992	Montague Island	Dead	beach-cast
1994	Attu Island	Mummified, skeleton	beach-cast
1995	Copper River Delta	Moderate decomposition	beach-cast
1997	Middleton Island	CBD	collision
1999	Open ocean, Gulf of AK	Dead	floater
2001	Kodiak, Long Island	Moderate decomposition	beach-cast
2002	Cape Douglas, Western AK	Advanced decomposition	beach-cast
2003	Prince of Wales Island, Southeast AK	Dead	floater
2003	Rat Island Pass, Western AK	Advanced decomposition	floater
2004	Shemya Island, Western AK	Advanced decomposition	beach-cast
2005	Cape Bartolome, Southeast AK	Moderate decomposition	floater
2006	North of Icy Bay, Outer Coast	Advanced decomposition	beach-cast
2006	Prince William Sound	Advanced decomposition	beach-cast
2006	Prince William Sound	Dead	Beach-cast
2006	Baranof Island	Unknown	beach-cast
2006	Kenai Peninsula/Resurrection Bay	Moderate decomposition	beach-cast
2007	Cold Bay	Advanced decomp.	Beach-cast
2008	Montague Island	Fresh Dead	floater
2008	Port Clarence	Dead	Beach-cast
2008	Shemya Island, Western AK	Moderate decomposition	Floater
2009	Homer	Died on site	Beach-cast

Table 5.1(a). Synopsis of Steller sea lion, environmental, and other metrics by RCA (for notes, definitions and data sources see Table 5.1(b)).

		Ecosystem	Aleutian Islands					Bering Sea	Gulf of Alaska				
		BSAI Fishery Areas	543	542		541		500-539					
		GOA Fishery Areas						610		620	630	640	650
		Steller sea lion Areas	W Aleu	C Aleu				E Aleu	W Gulf	C Gulf		E Gulf	SE Alaska
		Distinct Population Segment	Western										Eastern
		Rookery Cluster Areas	1	2	3	4	5	6	7	8	9	10	11
Steller sea lions	Trend (annual)	Adults and Juveniles (NPs)	-7%	-4%	-1%	-4%	2%	4%	4%	0%	0%	4%	2%
		Rookery NPs	-6%	-1%	0%	-1%	2%	6%	4%	1%	-1%	2%	2%
		Haulout NPs	-11%	-11%	-5%	-10%	0%	-2%	5%	-3%	0%	7%	2%
		Pups	-11%	-4%	-4%	2%	2%	5%	3%	1%	1%	4%	5%
	Survival	Brand-Resight (to age 3 females)						50%			47%	42%	40%
	Natality Indices	Survival-Trend						-17%			-31%	38%	7%
		Demographic Model								-36%	-36%		
		Δ Haulout - Rookery NPs	-5%	-10%	-5%	-9%	-2%	-8%	1%	-4%	1%	5%	0%
		Δ Pups - Rookery NPs	-5%	-3%	-4%	3%	0%	-1%	-1%	0%	2%	2%	3%
	Diet - Species ranked by % Frequency of Occurrence	#1	AM	AM	AM	AM	AM	Pollock	Pollock	Sand lance	Sand lance	Salmon	Pollock
		#2	Cod	Cod	Cod	Cod	Cod	AM	Sand lance	Pollock	Pollock	Sand lance	Herring
		#3	Ceph	Ceph	Ceph	Ceph	Ceph	Salmon	Salmon	ATF	ATF	Herring	Sand lance
		#4	Sculpin	Sculpin	Sculpin	Sculpin	Sculpin	Sand lance	Cod	Cod	Cod	Capelin	Salmon
		per capita food requirement; kg	> 19	> 19	> 19	17-19	17-19	17-19	17-19	17-19	17-19	17-19	< 17
	Juvenile Foraging Behavior	Mean % > 10 nm to listed site			18%			8%	4%		9%	11%	
		T											
Ecosystem	Prey	Groundfish biomass (1,000s t)	224	179	144	42	405	10,587	479	872	1,059	273	241
	Prey Surplus (2000)	Forage Ratio (Consumption/Biomass)			11			446			17		
	Competition	Arrowtooth flounder biomass (1,000s t)	27	14	9	29	81	835	202	605	832	230	176
	Predation	Relative Transient Killer Whale Density				Low		High			Medium		High
	Productivity	Spring Chlor a (mg/m3)	0.59	0.59	0.83	0.96	1.27	1.76	2.56	2.31	2.39	2.01	2.13
	Vulnerability to Regime Shifts	PDO Impact			Less					More			
	Storminess	Winter surface air temperature	-0.32	0.60	0.50	1.44	1.95	2.09	1.52	0.26	3.98	-1.76	3.97
		T											

Table 5.1(b). Notes, definitions and criteria relevant to Table 5.1(a)

1) Steller sea lions
    a. Trends (annual): annual rates of change in numbers of adults and juveniles (NPs = nonpups), NPs on trend rookeries, NPs on trend haulouts, and pups counted on trend rookeries by Rookery Cluster Area (RCA) 2000-2008 (AFSC 2010, NMML unpublished, DeMaster 2009, Fritz et al. 2008, NMFS 2008). Red =rates ≤ -2%; Green = rates ≥ +2%; Black = rates of -1%, 0% and +1%.
    b. Survival: cumulative survival to age 3 for female Steller sea lions branded as pups on rookeries in RCAs 6 and 9-11 between 2000-2005 with resights through 2008 (NMML unpublished; Pendleton et al. 2006). No data for RCAs 1-5 and 7-8; not used in summary.
    c. Natality indices
        i. Survival-Trend: The natality rate given the observed survivorship and population trend of the 2000s, expressed as a change from natality schedule of Holmes et al. (2007) for the central Gulf of Alaska population in the mid-1970s. No data for RCAs 1-5 and 7-8; not used in summary.
        ii. Demographic model: Estimate of the change in natality rate between the mid-1970s and the period 1998-2004 from Holmes et al. (2007). Note similarity in RCA 9 between the Survival-Trend and the Demographic Model estimates. No data for RCAs 1-7 and 10-11; not used in summary.
        iii. Δ Haulout – Rookery NPs: Difference between annual trend of Haulout NPs and Rookery NPs 2000-2008. If difference is negative, then trend in NP counts on haulouts is less than that on rookeries, a result consistent with a decline in natality. Red = difference in rates ≤ -2%; Green = difference in rates rates ≥ +2%; Black = difference in rates of -1%, 0% and +1%.
        iv. Δ Pups – Rookery NPs: Difference between annual trend of Haulout NPs and Rookery NPs 2000-2009. If difference is negative, then trend in NP counts on haulouts is less than that on rookeries, a result consistent with a decline in natality. Red = difference in rates ≤ -2%; Green = difference in rates rates ≥ +2%; Black = difference in rates of -1%, 0% and +1%.
    d. Diet
        i. Rank of species by percent frequency of occurrence in the diet of Steller sea lions in each RCA in the 2000s. RCAs 1-7 and 10: Table 3.16; RCAs 8-9: McKenzie and Wynne 2008; RCA 11: Trites et al. 2007. AM = Atka mackerel; Cod = Pacific cod; ATF = Arrowtooth flounder; Ceph = Cephalopods (squid and octopus).
        ii. Per Capita Food Requirement (kg): as estimated by energetic and diet modeling (Winship and Trites 2003). Red > 19 kg per day; Green < 17 kg day; Black 17-19 kg/day.

Table 5.1b Notes, definitions and criteria (continued).

2) Ecosystem
    a. Prey: Average annual biomass of groundfish in RCAs 1-5 (Pollock, Pacific cod, Atka mackerel), RCAs 7-11 (Pollock, Pacific cod, and Arrowtooth flounder) and RCA 6 (Pollock, Pacific cod, Atka mackerel, and Arrowtooth Flounder) 2000-2008 (AFSC 2010). Red = lower tail of distribution (< 300,000 mt); Green = upper tail of distribution (> 1,000,000 mt); Black (300,000 – 1,000,000 mt).
    b. Prey Surplus: Forage ratio (Consumption of groundfish prey divided by prey biomass) in the Aleutian Islands, eastern Bering Sea, and Gulf of Alaska from NMFS (2003). Red lowest value; Black intermediate value; Green highest value.
    c. Competition: Average annual biomass of arrowtooth flounder by RCA 2000-2008 (AFSC 2010). Green = lower tail of distribution (< 100,000 mt); Red = upper tail of distribution (> 500,000 mt); Black (100,000 – 500,000 mt).
    d. Predation: Relative density of transient killer whales from Tanaga Pass through SE Alaska (Zerbini et al. 2007; NMML)
    e. Productivity: Average spring chlorophyll a density (mg/m3) for 2000-2008 by RCA (AFSC 2010). Red = lower tail of distribution (< 1 mg/m3); Red = upper tail of distribution (> 2 mg/m3); Black (1-2 mg/m3).
    f. Vulnerability to Regime shifts: Relative effect or impact of Pacific decadal oscillation by RCA (after Rodionov et al 2005).
    g. Storminess: average winter surface air temperature by RCA for 2000-2008 (°C).

Table 5.2(a) . Synopsis of fishery and catch metrics by RCA. In "Current CH metric," catch is noted (+1, green) as dispersed, even (0, clear), or aggregated (-1, red) in Steller sea lion Critical Habitat. In "Seasonal Metrics," catch is noted as seasonally dispersed (+1), evenly distributed, or seasonally aggregated (-1). For additional notes, definitions and data sources see Table 5.2(b).

Fisheries Relationships		Ecosystem	Aleutian Islands					Bering Sea	Gulf of Alaska				
		Fishery Areas	543	542	542	541	541	500-539	610	620	630	640	650
		Steller sea lion Areas	W Aleu	C Aleu	C Aleu	C Aleu	C Aleu	E Aleu	W Gulf	C Gulf	C Gulf	E Gulf	SE AK
		Distinct Population Segment	Western										Eastern
		Rookery Cluster Areas	1	2	3	4	5	6	7	8	9	10	11
Pollock	**Average Annual Harvest Rate (Catch/Biomass)**		1%	1%	1%	2%	0%	16%	11%	10%	13%	8%	0%
	Is the catch aggregated in or dispersed out of critical habitat?	Average % catch in CH 2000-08	59.2	48.6	98.8	61.2	79.0	34.1	54.6	77.0	89.5	49.0	
	Seasonal Metrics	***winter (1st + 2nd qtr)***	27.4%	45.9%	21.7%	88.1%	66.5%	46.3%	35.1%	87.0%	44.4%	88.9%	
	Values are average % catch by quarter (2000-	***summer (3rd + 4th qtr)***	72.6%	54.1%	78.3%	11.9%	33.5%	53.7%	64.9%	13.0%	55.6%	11.1%	
Pacific cod	**Average Annual Harvest Rate (Catch/Biomass)**		10%	12%	5%	57%	11%	13%	19%	9%	26%	11%	1%
	Is the catch aggregated in or dispersed out of critical habitat?	Average %in CH 2000-2008	88.5	61.4	98.3	81.1	72.4	26.1	64.8	56.9	44.9	66.5	
	Seasonal Metrics	***winter metric***	76.4%	67.2%	70.6%	93.6%	96.6%	61.2%	72.6%	68.3%	62.5%	86.8%	70.0%
	Values are average % catch by quarter (2000-08)	***summer metric***	23.6%	32.8%	29.4%	6.4%	3.4%	38.8%	27.4%	31.7%	37.5%	13.2%	30.0%
Atka Mackerel	**Average Annual Harvest Rate (Catch/Biomass)**		11%	26%	4%	1%	5%	3%					
	Is the catch aggregated in or dispersed out of critical habitat?	Average %in CH 2000-2008	37.5	42.6	99.3	98.2	6.3	86.6	27.6	20.0	20.6		
	Seasonal Metrics	***winter metric***	31.0%	44.9%	39.1%	82.8%	48.3%	51.3%	9.6%	30.0%	28.8%		
	Values are average % catch by quarter (2000-08)	***summer metric***	69.0%	55.1%	60.9%	17.2%	51.7%	48.7%	90.4%	70.0%	71.2%		

Table 5.2 (b). Addendum: Definitions and criteria used in the Table: Synopsis of fishery and catch metrics by RCA.

Average annual harvest rate:

Data from AFSC 2010.

- Blank cells indicate lack of available data or catch so low as to render assessment imprecise.
- Clear cells with a score are where the actual harvest rate was near to the target harvest rates for the stock overall (+/- 25% of target rate); these given a score of "0".
- Green cells are where the actual harvest was less aggressive than the target HR, these assigned a score of "+1";
- Red cells are where the actual harvest rate was more aggressive than the target HR for the overall stock, assigned a "-1".

Critical Habitat dispersion/aggregation:

Designed to address: "Is the catch dispersed or aggregated within SSL Critical Habitat?" Data from the Expanded Observer Data (see Chapter 4).

Value in the table is the average of the proportion of catch made in critical habitat for the years 2000-2008.

Seasonal Distribution of Catch

Designed to address: “"Is the catch seasonally dispersed or aggregated?" Data from the Expanded Observer Data (see Chapter 4).

Winter/Summer Metric: The value shown for a season is the sum of the quarterly average (2000-2008) proportions of catch (Winter = 1st qtr + 2nd qtr; Summer = 3rd qtr + 4th qtr).

Table 5.3. Summary table of Steller sea lion biology, status, and trends and 2008 Atka mackerel, Pacific Cod, and Pollock harvest overall and in Steller sea lion critical habitat by RCA.

SSL Sub-Region	Fishery Management Area	RCA	Trend Sites (n)/Rookeries (n)	Non-Pup Counts at SSL Trend Sites 2008A[1]	SSL Trend Sites Avg Annual Growth Rate, 2000-2008 (%)		Overall Difference in SSL Counts, 2000-2008A (%)		Pups (2009): Non-Pups (2008)[5]	Primary Prey (% FO)[6]		Change in Amount of Harvest by CH Zone, 1999-2008(top row) and 2008 Harvest Amount by Zone (bottom row)[7]									Forage Biomass 2008 (top row) and Total Harvest by RCA (bottom row)[8]			Fraction of Biomass Harvested by RCA			Fraction of 2008 Total Catch taken from CH (top) and Fraction of 2008 Forage Biomass taken from CH			Forage Availability Ratio
												Atka Mackerel			Pacific Cod			Pollock												
					Non-Pups[2]	Pups[2]	Non-Pups[3]	Pups[4]		Summer	Winter	3-10	10-20	Foraging	3-10	10-20	Foraging	3-10	10-20	Foraging	Atka Mackerel	Pacific Cod	Pollock	Atka Mackerel	Pacific Cod	Pollock	Atka Mackerel	Pacific Cod	Pollock	
Western AI	543	1	10/4	894	-7	-11	-45	-43	0.29	Atka mackerel (96), Salmon (17), Cephlapods (13), Pollock (7), P. Cod (6)	Atka mackerel (55), P. Cod (26), Irish Lord (23), Cephlapods (18), Pollock (12), Snailfish (12)	15	-5,863		2,495	4,285		31	-45		62,154	39,939	18,794	0.27	0.23	0.01	0.36	0.95	0.61	11:1
												15	5,940		2,917	5,793		36	34		16,509	9,151	114				0.10	0.22	0.00	
Central AI	542	2	12/4	772	-4	-4	-11	-7	0.39			69	4,486		-867	-301		-70	-59		91,050	21,519	40,038	0.20	0.13	0.00	0.48	0.86	0.27	
												167	8,404		1,894	585		2	31		17,917	2,870	123				0.09	0.12	0.00	
	542	3	12/4	1896	-1	-4						-6,751	3,515		-414	98		-166	-31		81,236	23,068	13,074	0.06	0.06	0.01	1.00	1.00	0.96	
												113	4,447		1,100	340		125	36		4,560	1,441	168				0.06	0.06	0.01	
	541	4	13/2	1351	-4	2						-465	-34		-1,059	-3,898		-67	-58		20,173	7,403	1,907	0.00	0.93	0.25	0.98	0.83	0.15	
												51	1		3,616	2,092		22	47		53	6,910	470				0.00	0.77	0.04	
	541	5	12/2	1645	2	2						-4	-3,456		-498	4,002		12	284		216,994	80,223	198,830	0.09	0.15	0.00	0.01	0.76	0.85	
												2	194		366	8,569		14	328		18,650	11,821	404				0.00	0.11	0.00	
Eastern AI	610	6	31/7	6519	4	5	28	47	0.37	Pollock (46), Salmon (38), Herring (35), Sand Lance (34), Atka mackerel (32), Rock Sole (19), P. Cod (18)	Pollock (53), Atka mackerel (43), P. Cod (39), Irish Lord (35), Sandlance (28), Salmon (25), Arrowtooth (21)	*43*	*-1,754*	*-56*	*-1,449*	*-8,073*	*-2,343*	*5,232*	*61,556*	-140,512	74,149	934,201	4,438,756	0.01	0.15	0.22	0.91	0.07	0.25	446:1
												49	353	6	2,457	7,732		3,708	67,120	173,693	447	140,492	992,601				0.01	0.01	0.06	
	610	7	16/5	5274	5	3	39	23	0.38			*161*	*459*		*-4,663*	*120*		*-2,933*	*-3,219*			168,227	118,114		0.11	0.12		0.64	0.70	
Western GOA										Sandlance (65), Salmon (57), Pollock (53), P. Cod (36), Atka mackerel (21), Arrowtooth (14)	Pollock (93), P. Cod (31), Salmon (17), Sandlance (17), Arrowtooth (7)	174	459		4,831	7,173		6,020	3,751			18,661	13,986					0.07	0.08	
	620	8	11/3	1492	0	1									*-407*	*-1,424*	*5,324*	*-275*	*-8,139*	*-12,181*		53,508	211,585		0.21	0.08		0.75	0.59	17:1
Central GOA															35 *	550 *	8006 *	513	6,922	2,760		11,481	17,225					0.16	0.05	
	630	9	18/3	2814	0	1	1	6	0.42	Salmon (56), Pollock (46), Arrowtooth (45), Sandlance (16), Capelin (13), Herring (12)	Pollock (44), P. Cod (43), Sand Lance (38), Arrowtooth (31), Salmon (29), Irish Lord (17)				*-1,780*	*1,155*	*13*	*-3,816*	*-10,656*	*-56*		128,096	107,941		0.19	0.15		0.48	0.79	
															2971 *	8721 *	13 *	1,205	11,710	7		24,226	16,314					0.09	0.12	
Eastern GOA	640	10	19/4	3675	4	4	58	57	0.38	Salmon (84), Sand Lance (39), Herring (24), Capelin (13), Pollock (8), P. Cod (5), Arrowtooth (5)	not available				*84*	*-286*		*-481*	*-865*			12,556	42,961		0.17	0.03		0.76	0.60	
															574	1,038		0	701			2,109	1,166					0.06	0.02	

Source Tables:

[1] Table 3.1B

[2] Table 5.1(a)

[3] Table 3.1B

[4] Table 3.2

[5] Table 3.6

[6] Table 3.16

[7] Table IV 1999-2008 Areas 1-10

[8] Table IV-12

* There were large discrepancies between harvest amounts allocated to the various CH zones using the EOD and the CIA method for Pacific Cod in RCAs 8 & 9. The CIA results, which incorporate VMS information in addition to observer information ,indicate a much larger proportion of the 2008 P. Cod harvest being taken in the 3-10 and 10-20nm zones of SSL CH than in the Shelikof Special Foraging Area than the EOD results. This could be a result of 30% observer coverage requirements for the majority of vessels fishing this area.

Note: EBS Pollock harvest in the 3-10 and 10-20 nm zones of SSL CH is highly variable among years from 1991-2008 (see Draft Internal Biop Table III-1). Catch in these CH zones in 1999 were abnormally low. For example, on average 10,457 mt (s.e. = 9,849) of pollock were harvested from 3-10 and 118,894 mt (s.e. = 67,710) from 10-20 from 1991-2008. In 1999, only 476 mt and 5,266 mt of Pollock were harvested from 3-10 and 10-20nm respectively; which suggests that 1999 may not be a good comparison year to evaluate the performance of SSL migitation measures in displacing harvest from SSL CH.

Table 5.4. Projected female spawning stock biomass (SSB) for Aleutian Islands (AI), Bering Sea (BS) and Gulf of Alaska (GOA) groundfish stocks relative to B_{100} (from 2009 Stock Assessment and Fishery Evaluation (SAFE) Reports http://www.afsc.noaa.gov/REFM/Stocks/assessments.htm). B_{100} for arrowtooth flounder is not reported.

	SSB			SSB relative to B_{100}	
Stock	2010	2011	B_{100}	2010	2011
AI Atka mackerel	111,300	96,600	237,800	47%	41%
AI pollock	97,486	89,780[a]	298,000	33%	30%
BS pollock	1,316,000	1,588,000	5,876,000	22%	27%
BSAI Pacific cod	345,000	370,000	1,027,000	34%	36%
BS arrowtooth flounder	807,100	807,200	--	--	--
GOA pollock	184,567	206,912[b]	620,000	30%	33%
GOA Pacific cod	117,600	148,000	291,500	40%	51%
GOA arrowtooth flounder	2,139,000	2,118,000	--	--	--

[a] 2011 projection of AI pollock SSB assumes the entire 2010 TAC is caught, which is highly unlikely
[b] 2011 projection of GOA pollock SSB is based on the "Average F" projection