# FIGURES

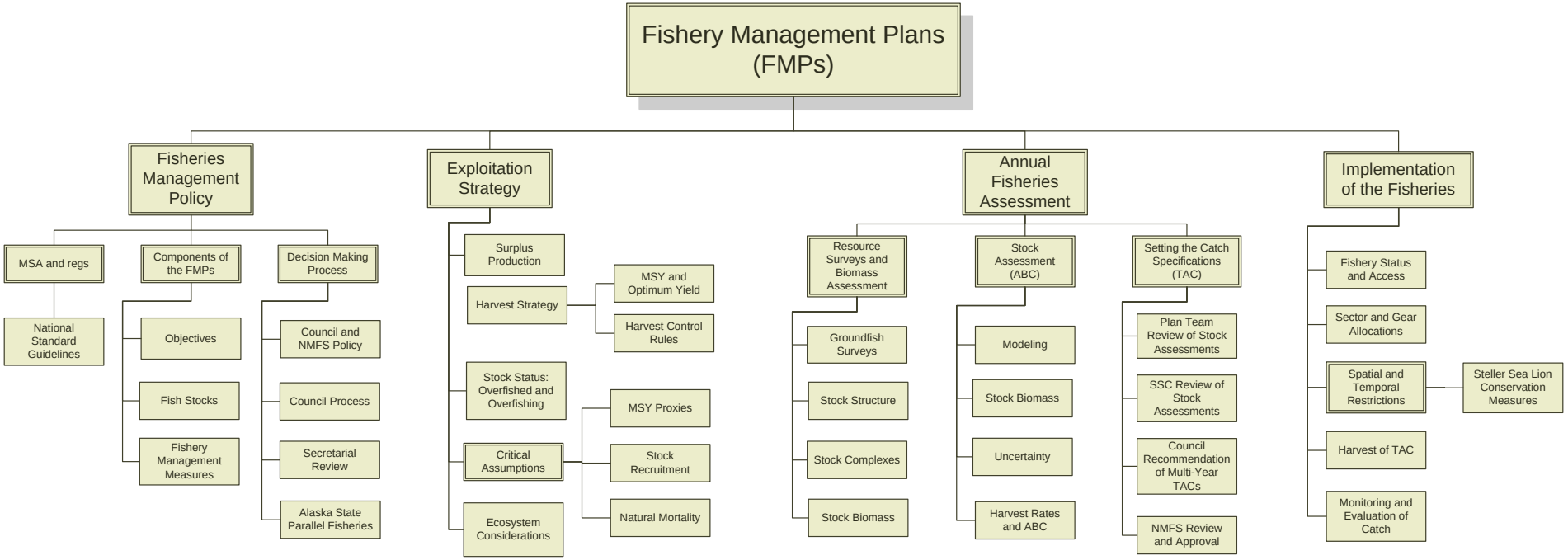
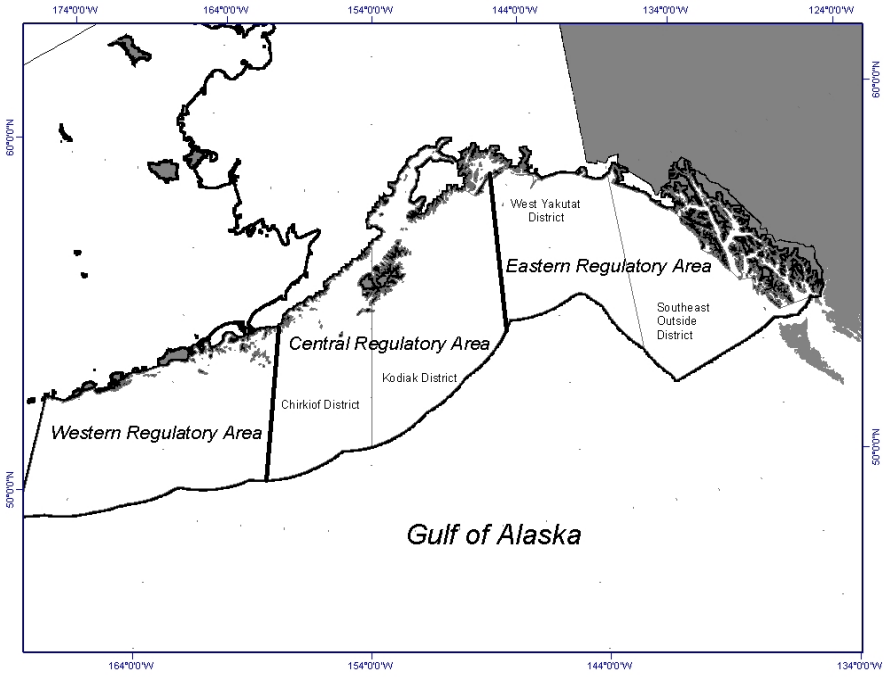



**Figure 2.1** Deconstruction of the Groundfish FMPs, their implementing regulations, and Alaska State Parallel Fisheries.



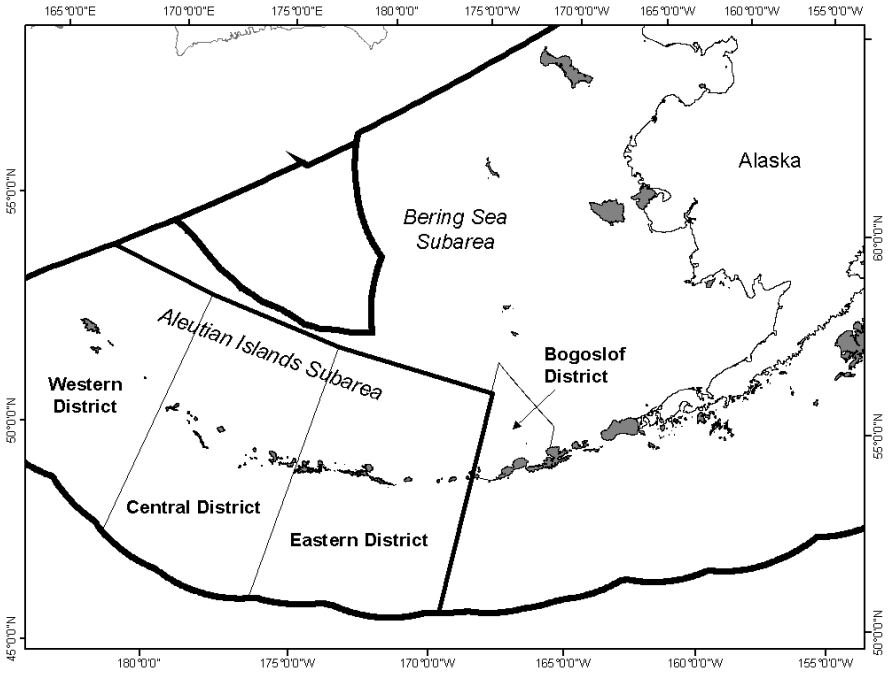




**Figure 2.2** Regulatory areas of the GOA(top panel) and BSAI (bottom panel).

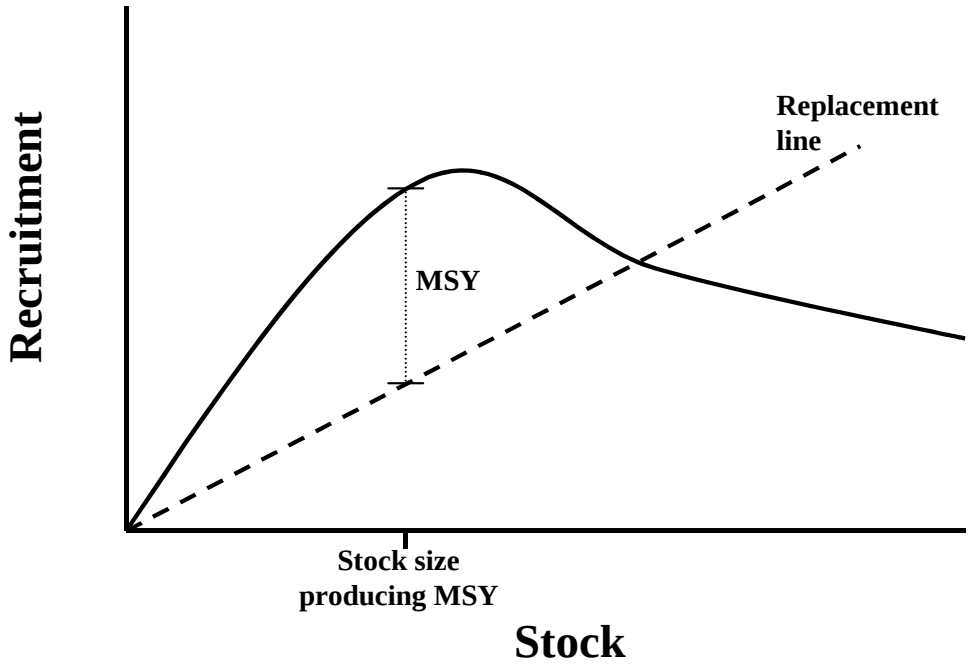



**Figure 2.3** Hypothetical Ricker curve showing expected recruitment as a function of stock size. The replacement line indicates the level of recruitment necessary to sustain the population at any particular size. The positive difference between recruitment and the replacement line (to the left of the 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.

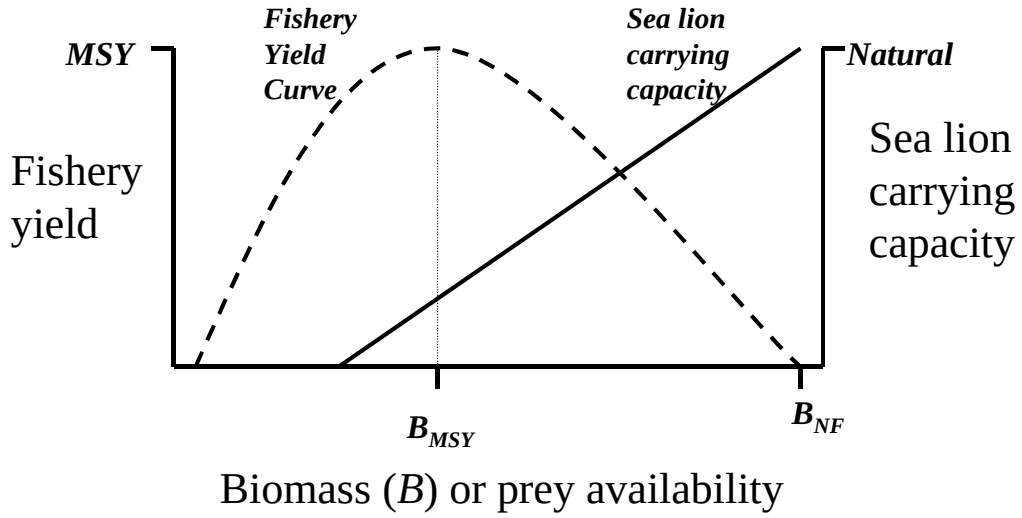



**Figure 2.4** Schematic illustration of the relation between 1) the biomass of prey stocks and the yield curve that serves as the basis for the yield-based fishery paradigm, and 2) the simplest approximation of the relation of biomass of the prey stock to the environmental carrying capacity for Steller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

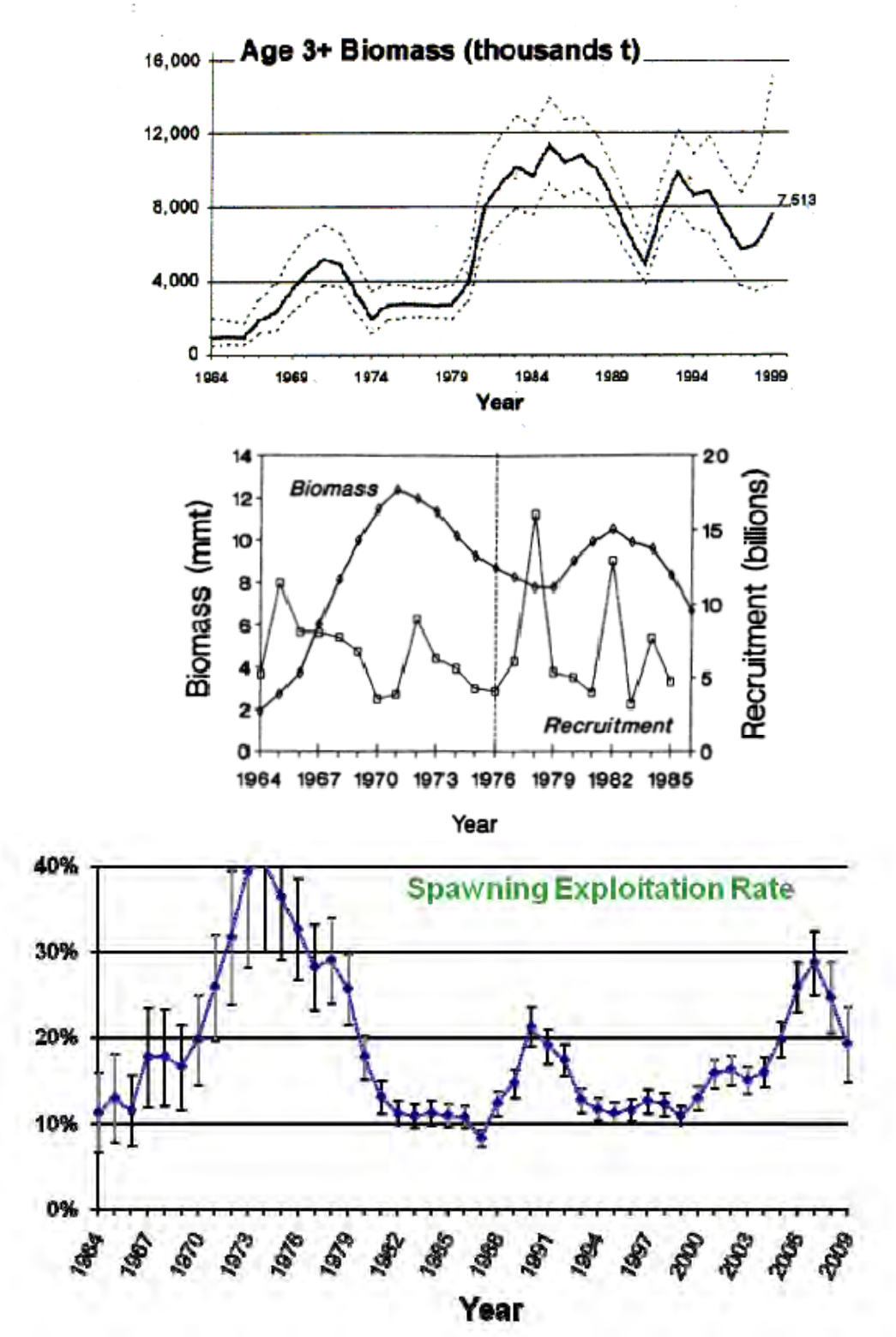



**Figure 2.5** (Top left) Estimated spawning biomass of eastern Bering Sea pollock (age 3+) as described in Ianelli et. al. (1999). (Top right) Estimated biomass of eastern Bering Sea pollock (age 3+) for the period from 1964-1985 as presented in Megrey and Wespestad, 1990. (Bottom left) Spawning stock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

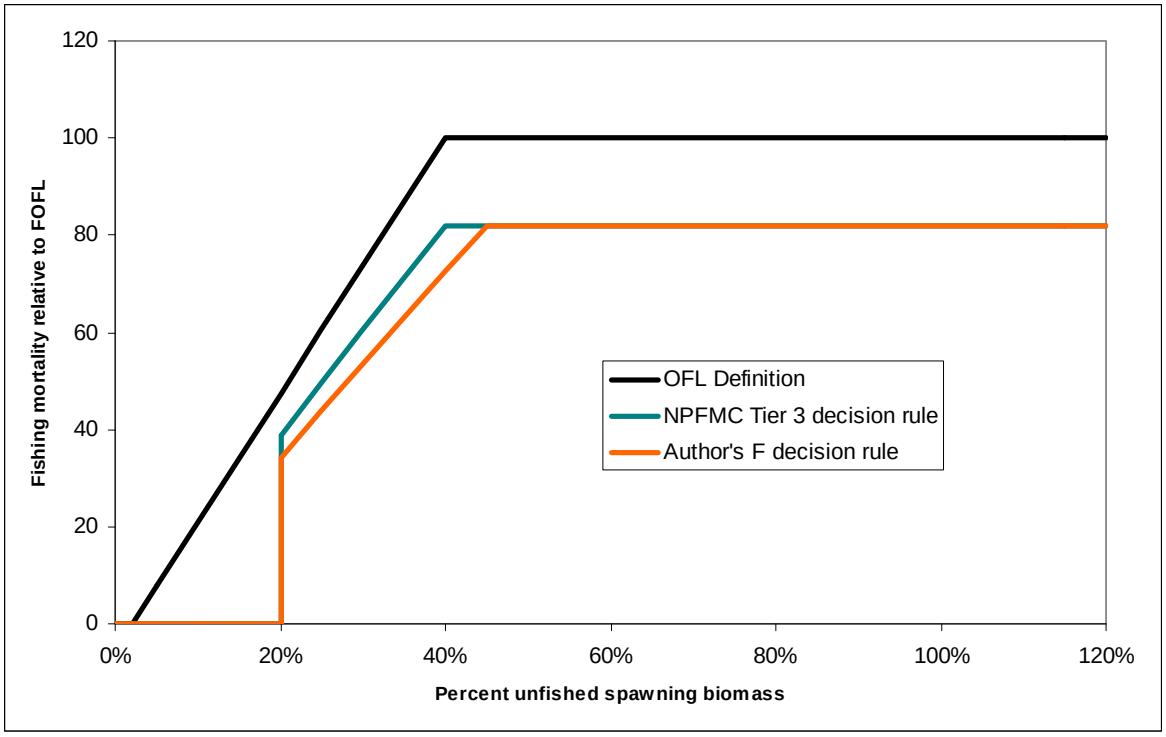



**Figure 2.6** GOA pollock harvest decision rule (Dorn *et al.* 2005).

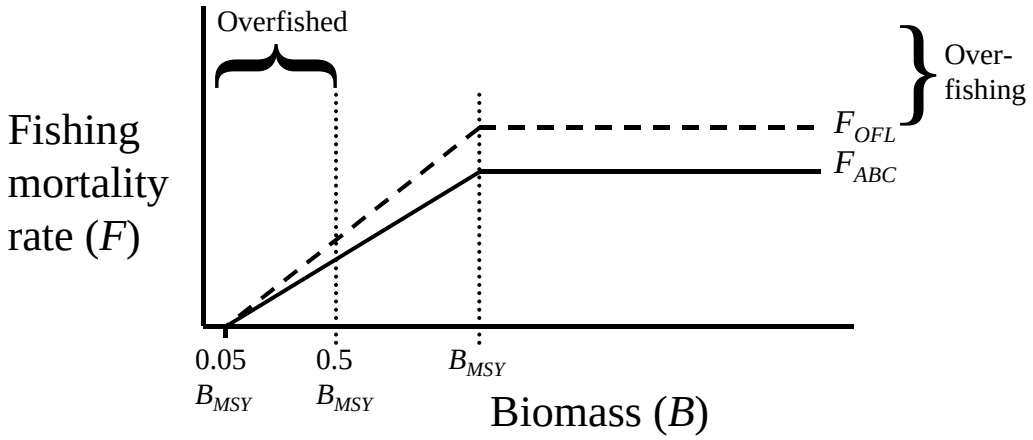



**Figure 2.7** Graphic illustration of "overfishing" and "overfished." Overfishing occurs when the fishing mortality rate exceeds a prescribed maximum rate. Overfished indicates that the fished stock has declined below a certain level. The illustration indicates that the level is ½ BMSY, which may or 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.

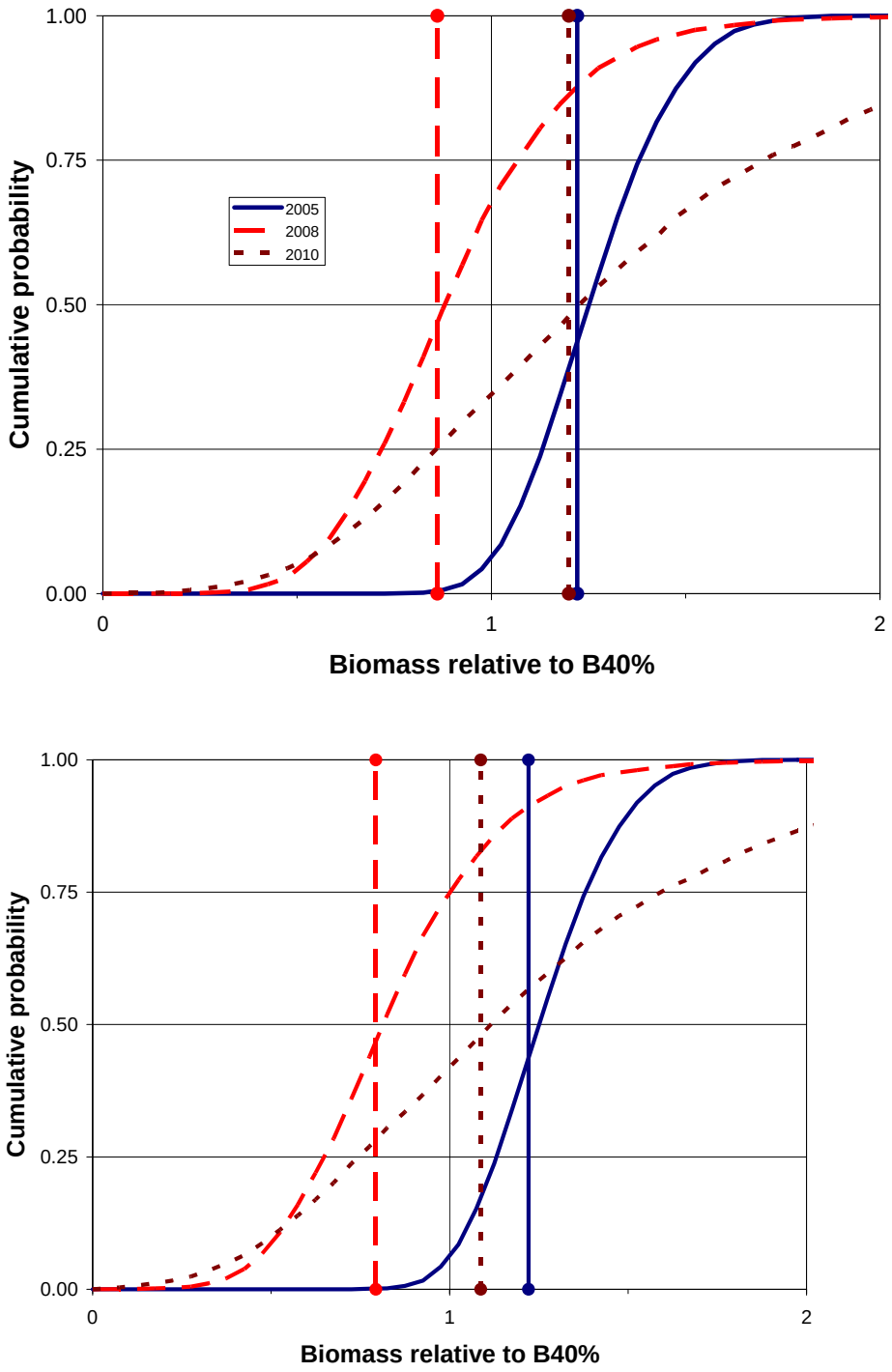



**Figure 2.8** Cumulative probability that projected female spawning biomass levels will drop below $B_{40\%}$ based on a fixed constant catch levels of 1.3 (top) and 1.5 (bottom) million tons. Marginal distributions of the full joint posterior distribution based on a thinned MCMC chain used for integration.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

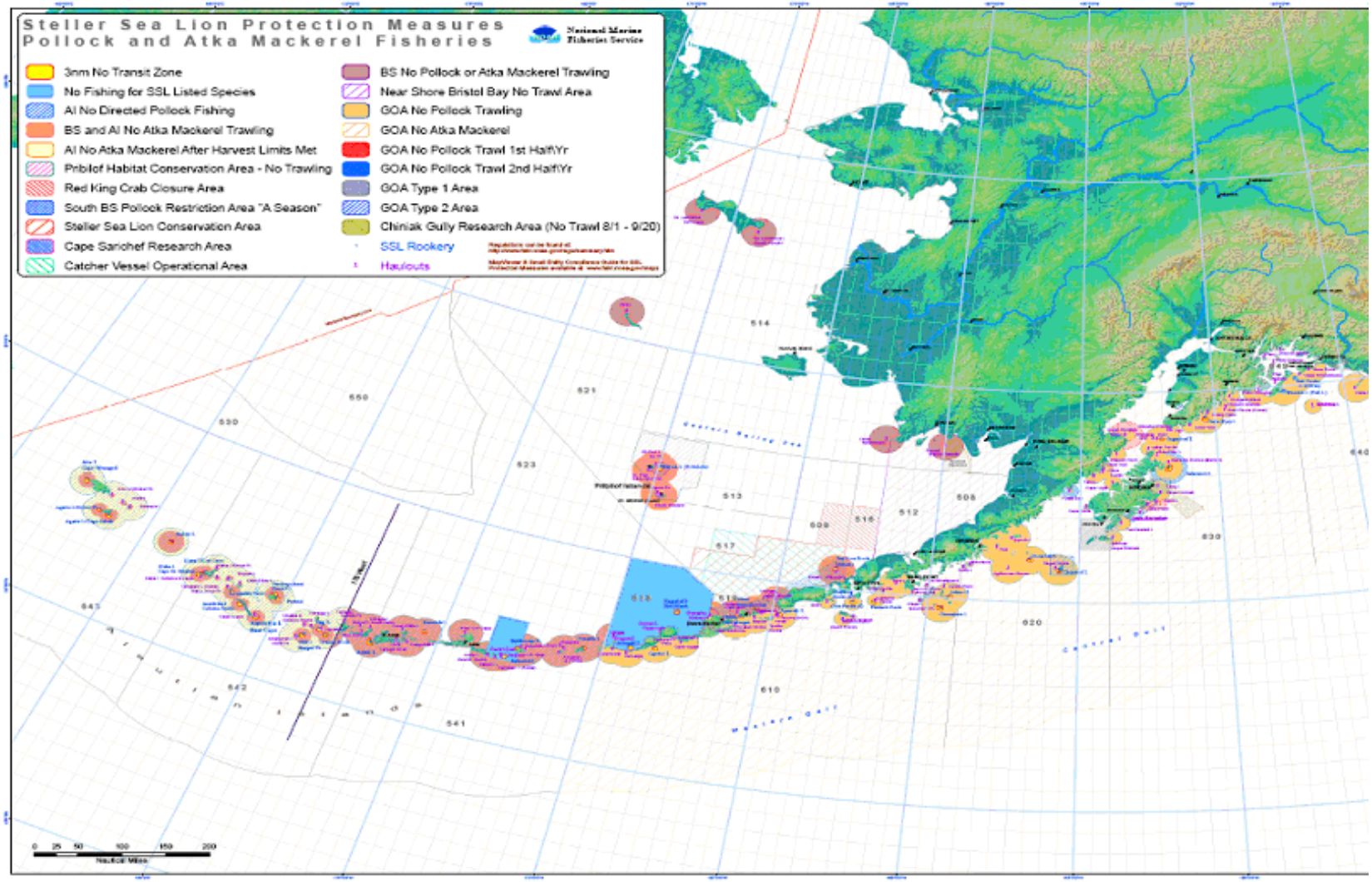



**Figure 2.9** Steller sea lion protection measures for the pollock and Atka mackerel fisheries. (Source: http://www.fakr.noaa.gov/protectedresources/stellers/maps/Pollock_Atka0105.pdf)

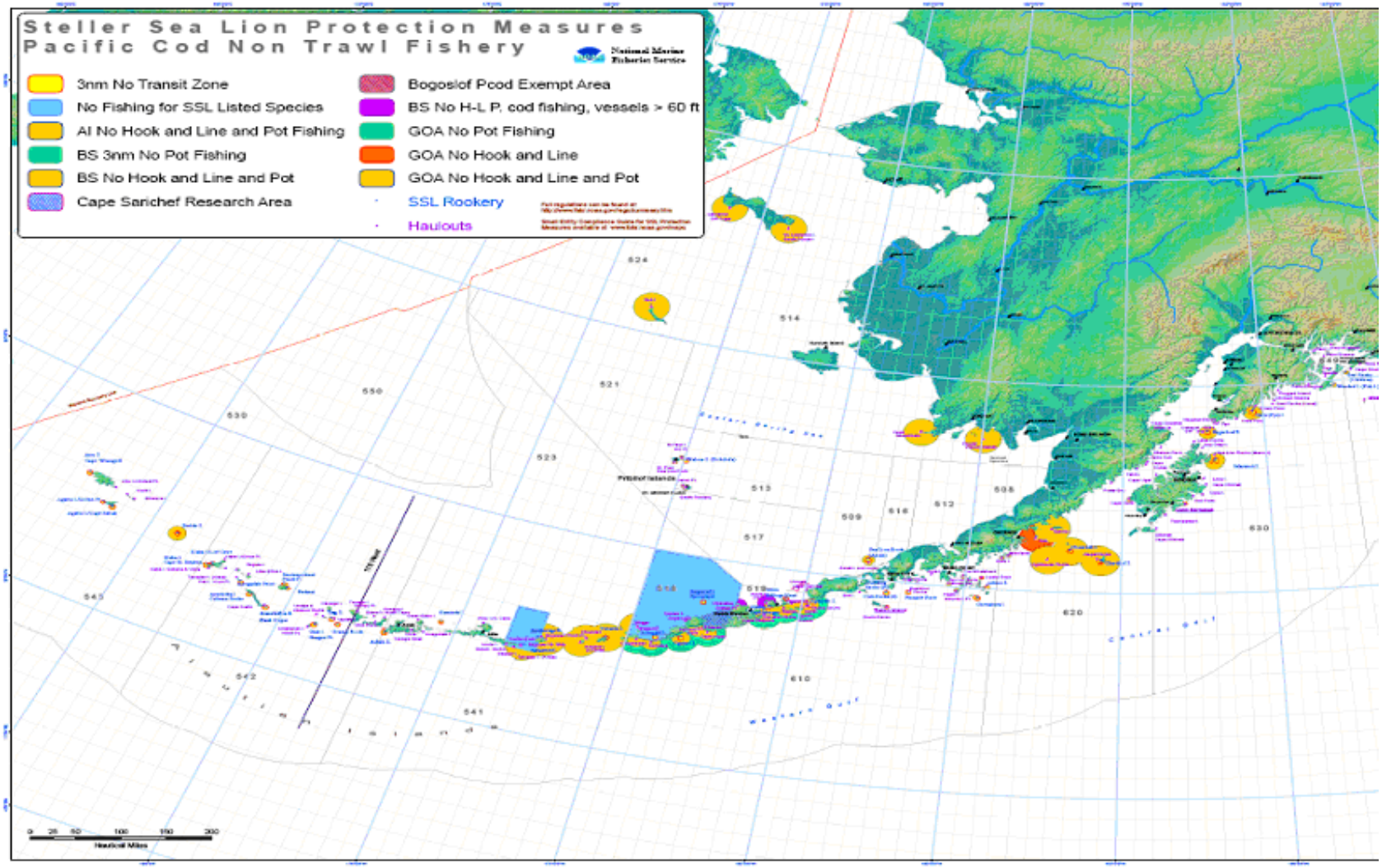



**Figure 2.10** Steller sea lion protection measures for the Pacific cod non-trawl fishery.
(Source: http://www.fakr.noaa.gov/protectedresources/stellers/maps/NonTrawl _0105.pdf)

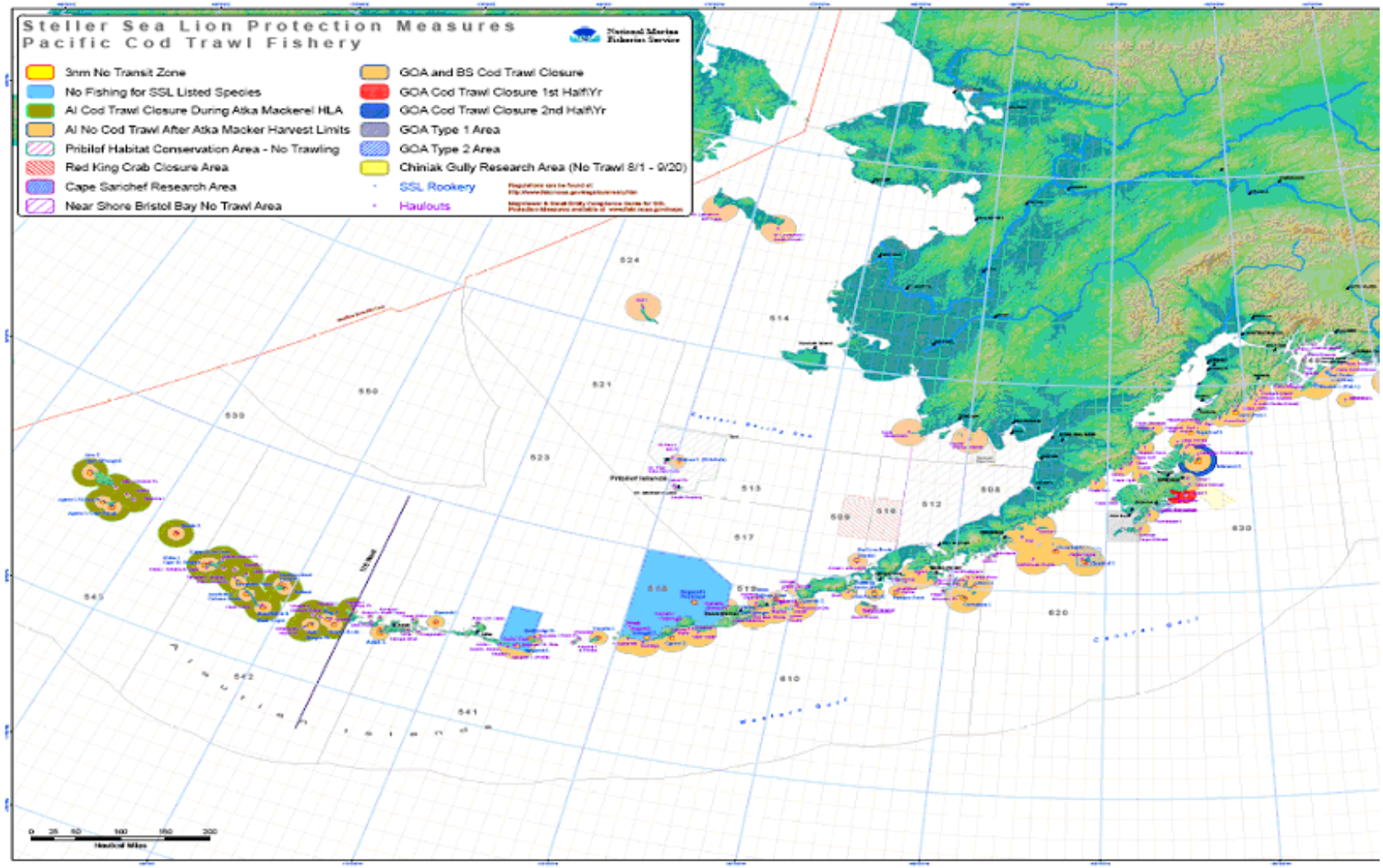



**Figure 2.11** Steller sea lion protection measures for the Pacific cod trawl fishery.
(Source: http://www.fakr.noaa.gov/protectedresources/stellers/maps/Cod_Trawl0105.pdf)

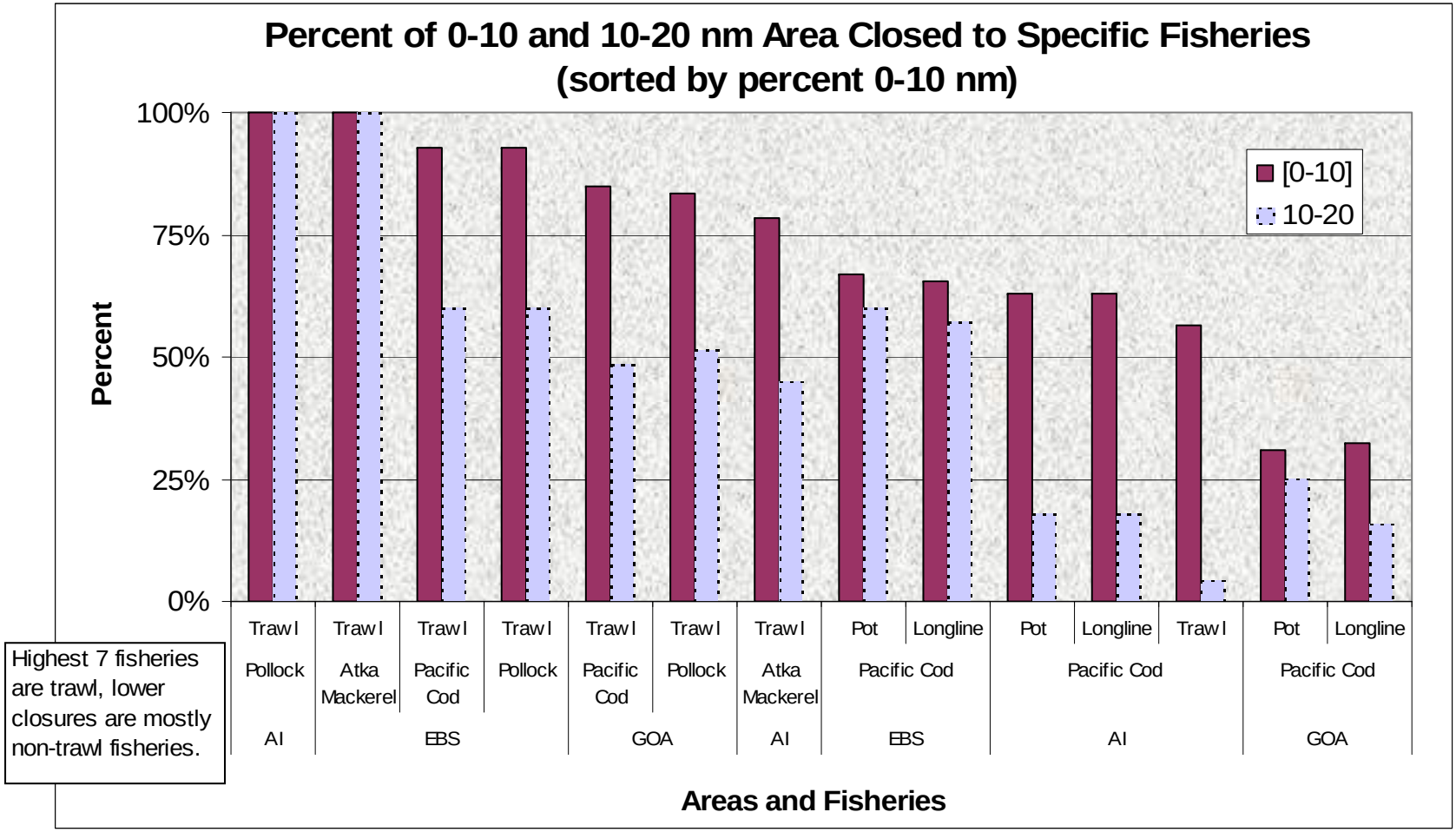



**Figure 2.12** The amount of area closed in the BSAI and GOA under the Steller sea lion conservation measures as a percentage of each zone from 0-10 nm and 10-20 nm. The data area sorted as descending from 100% for the 0-10 nm zone, then the associated 10-20 nm percentage is plotted (data is from Table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

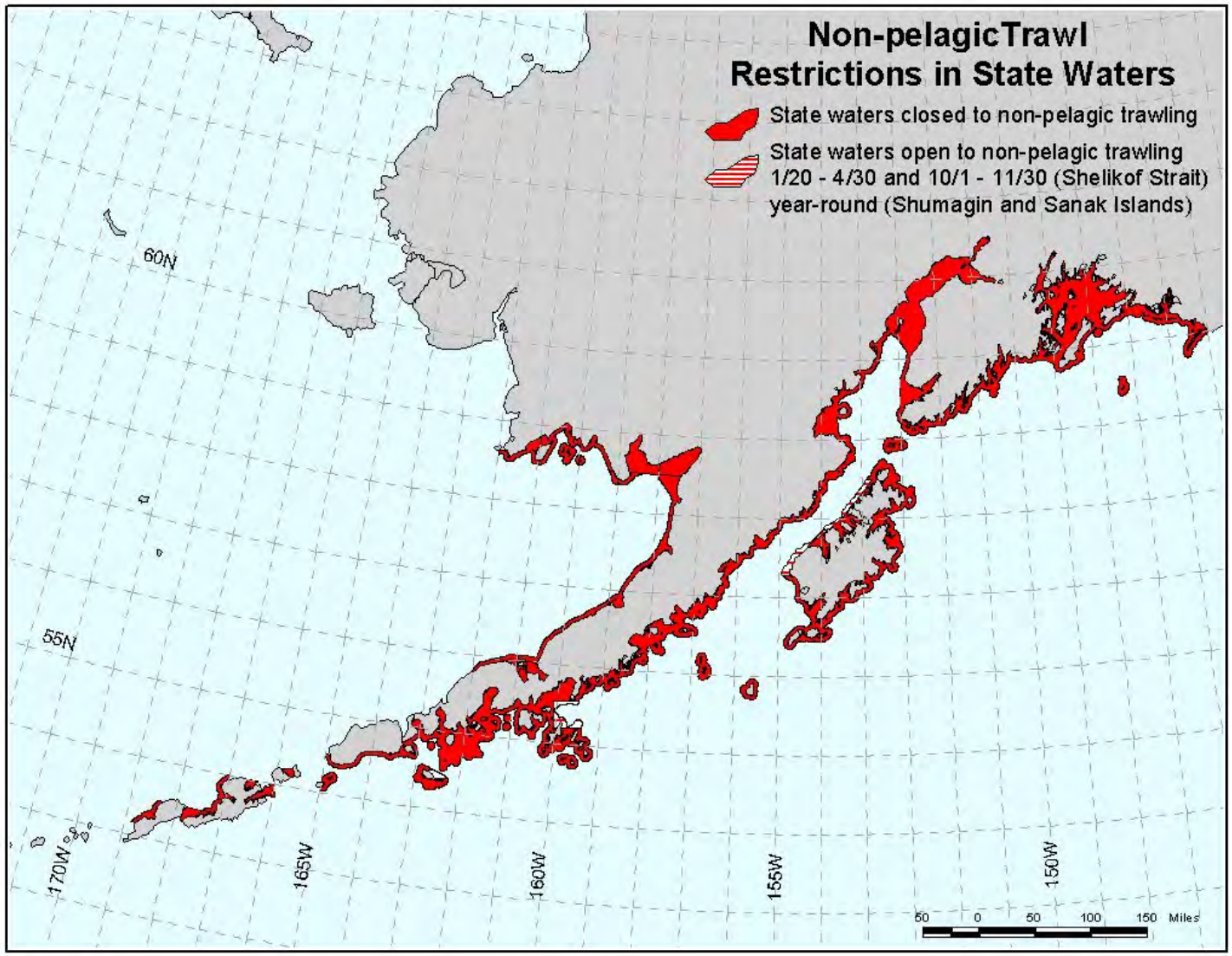



Figure 2.13. Non-pelagic trawl restrictions in State waters.

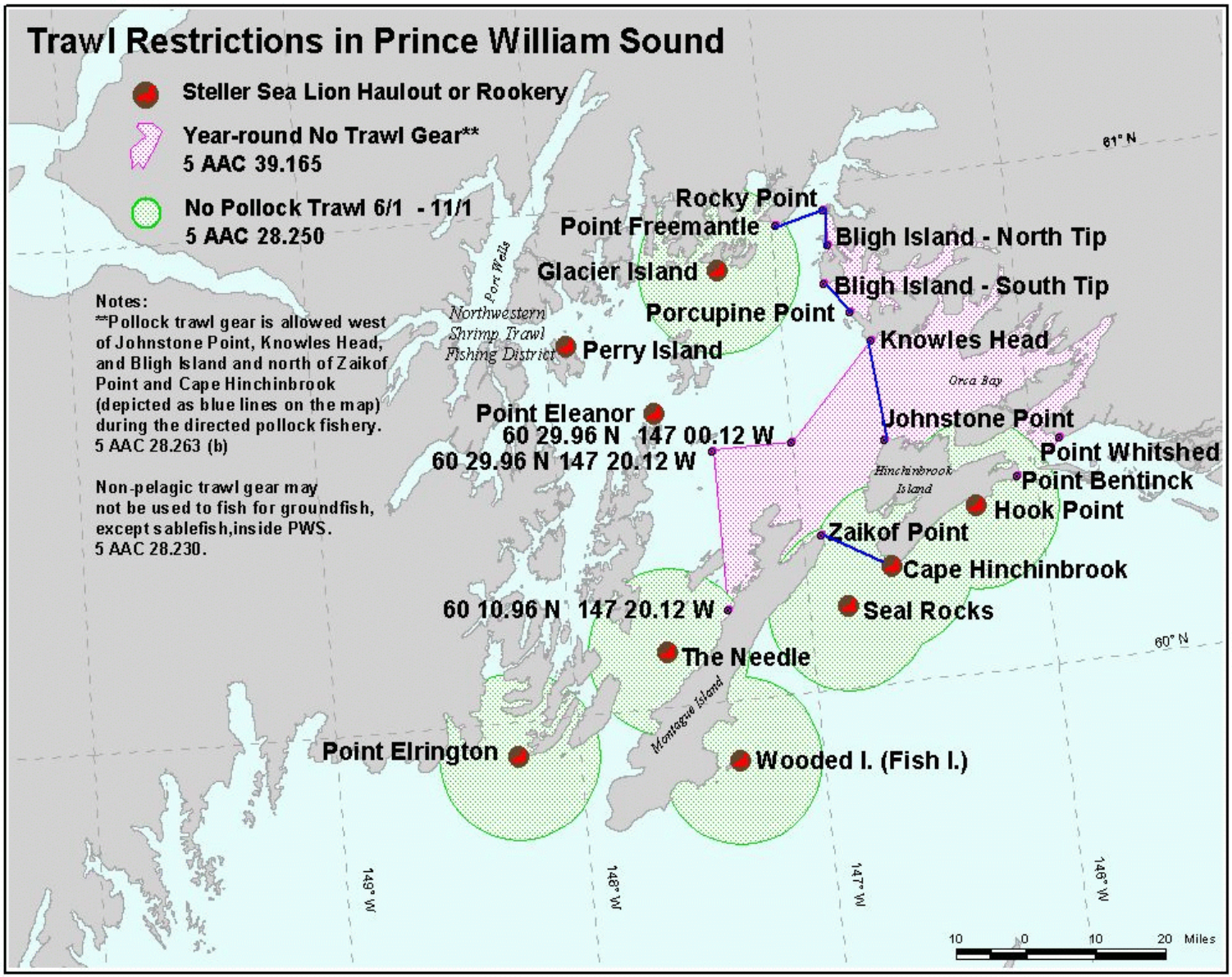



Figure 2.14 Year-round and seasonal trawl restrictions in Prince William Sound

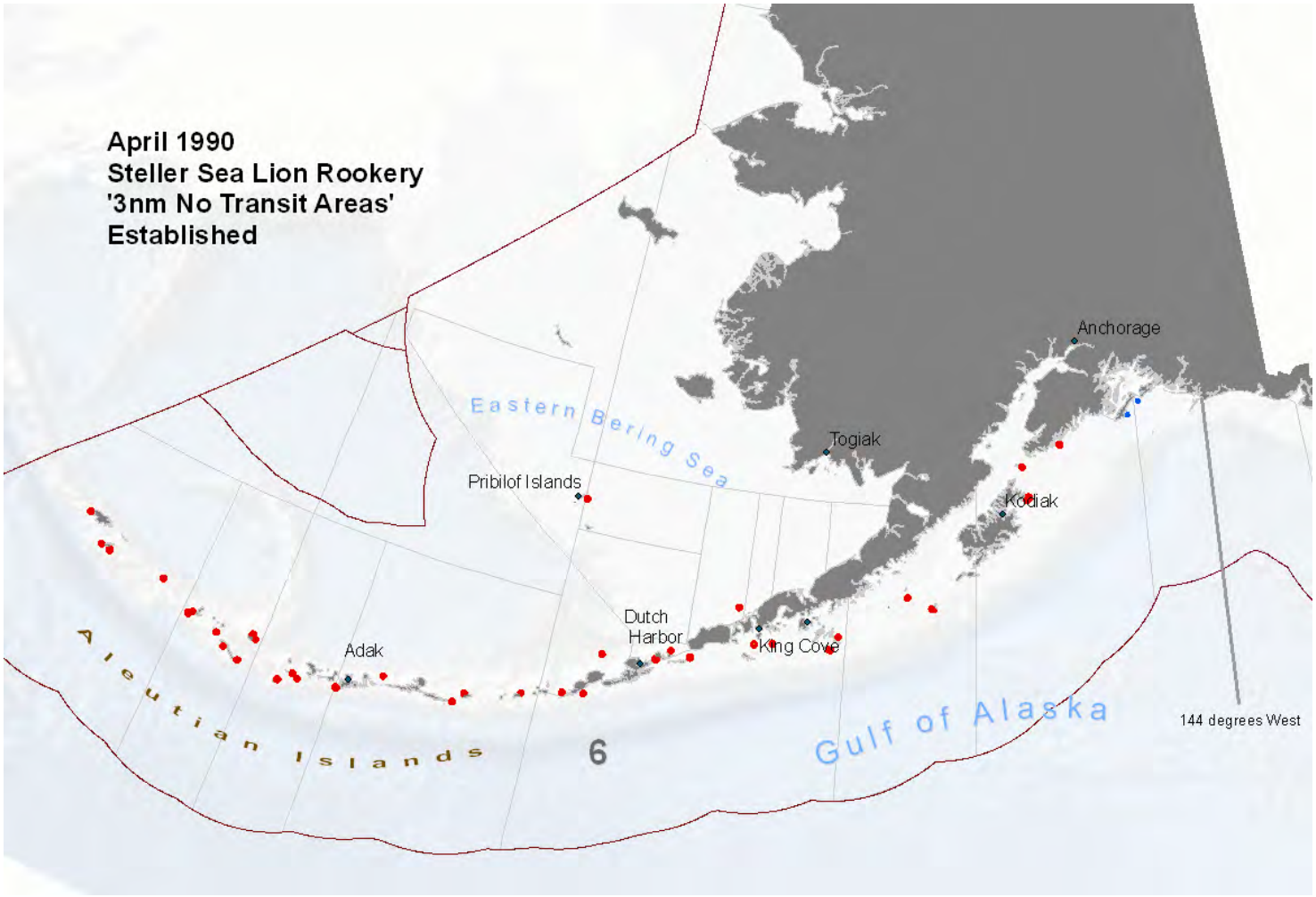



Figure 2.15 3nm no transit areas.

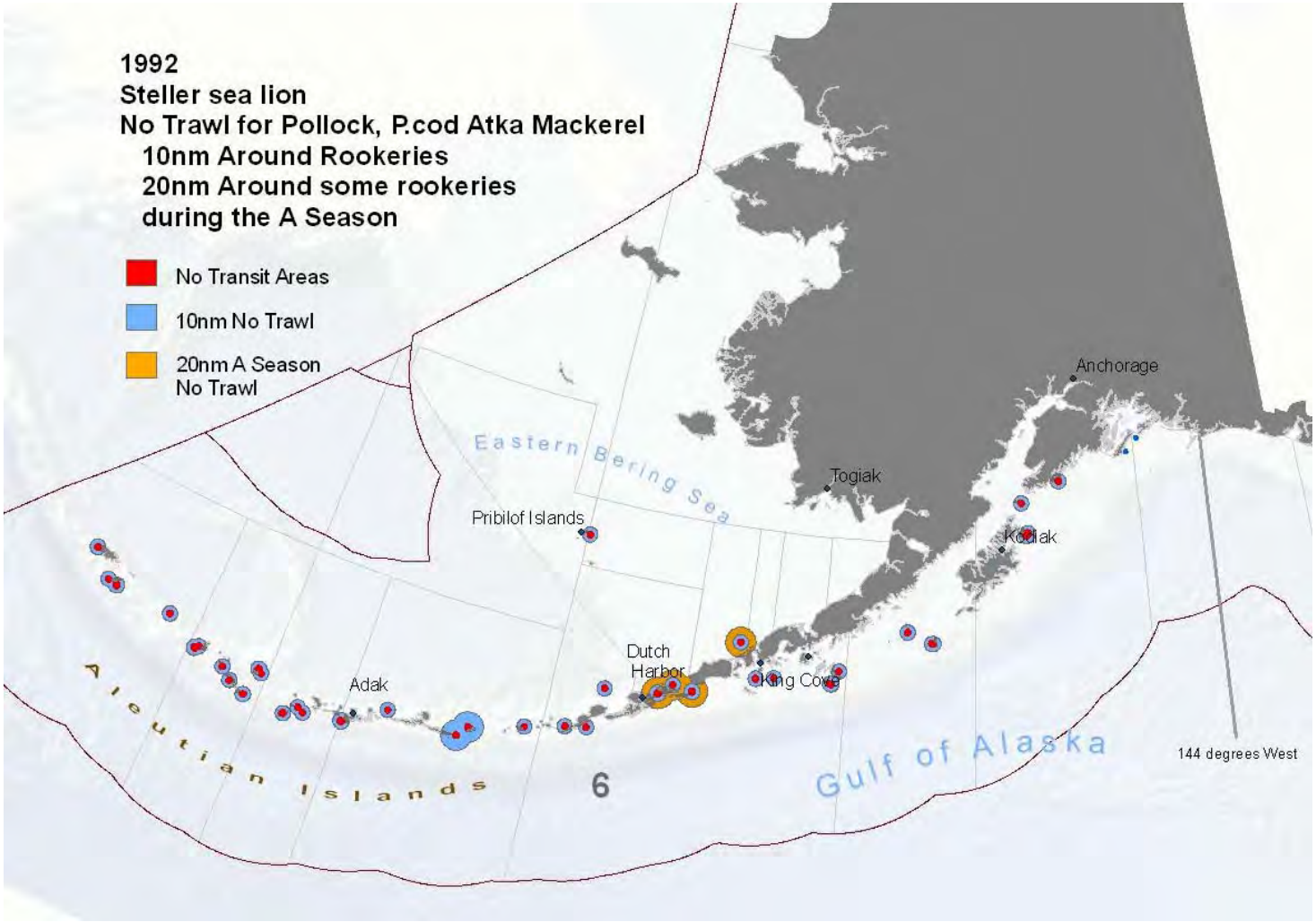



Figure 2.16 No trawl zones around SSL rookeries.

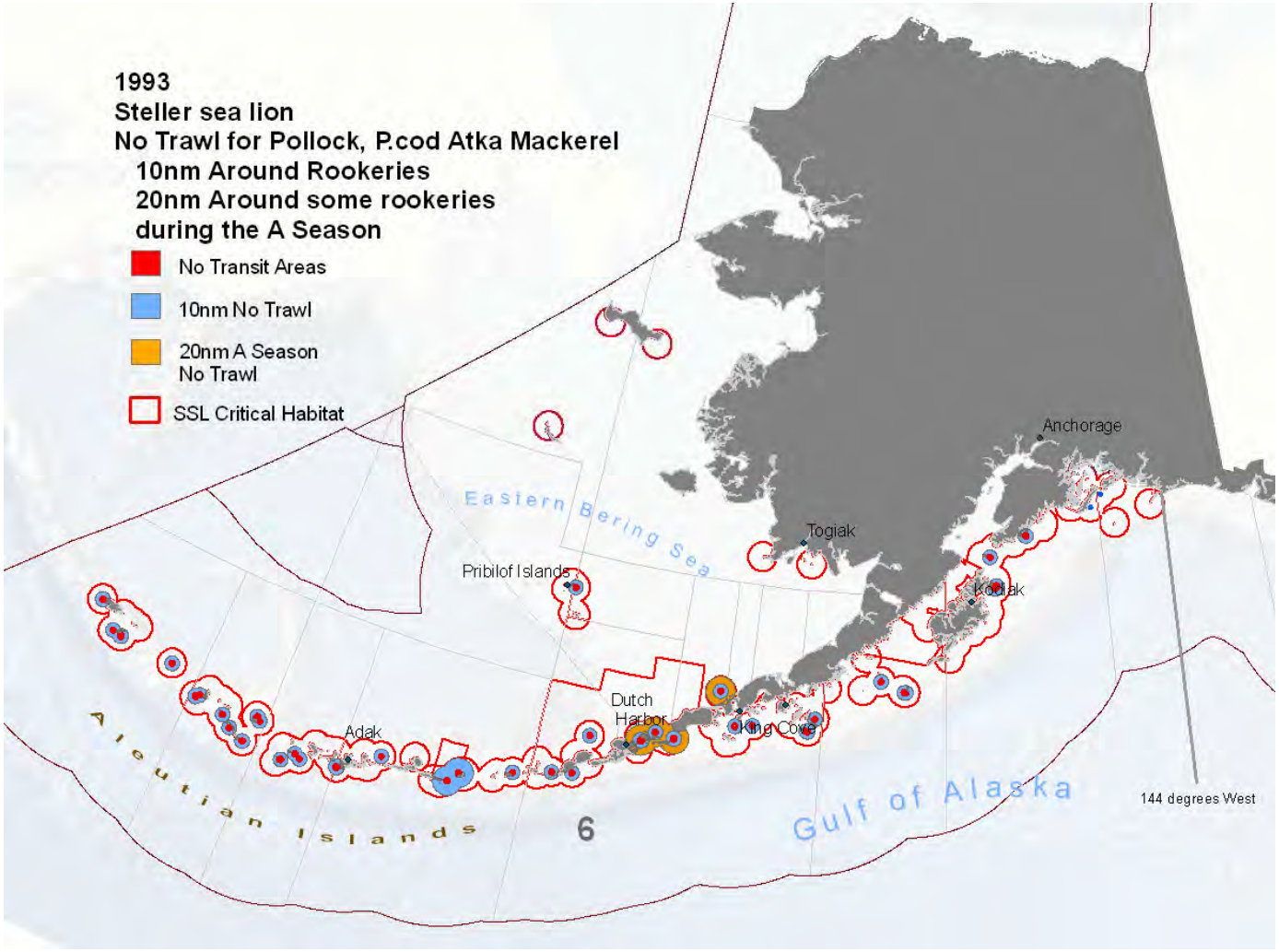



Figure 2.17 SSL Critical Habitat.

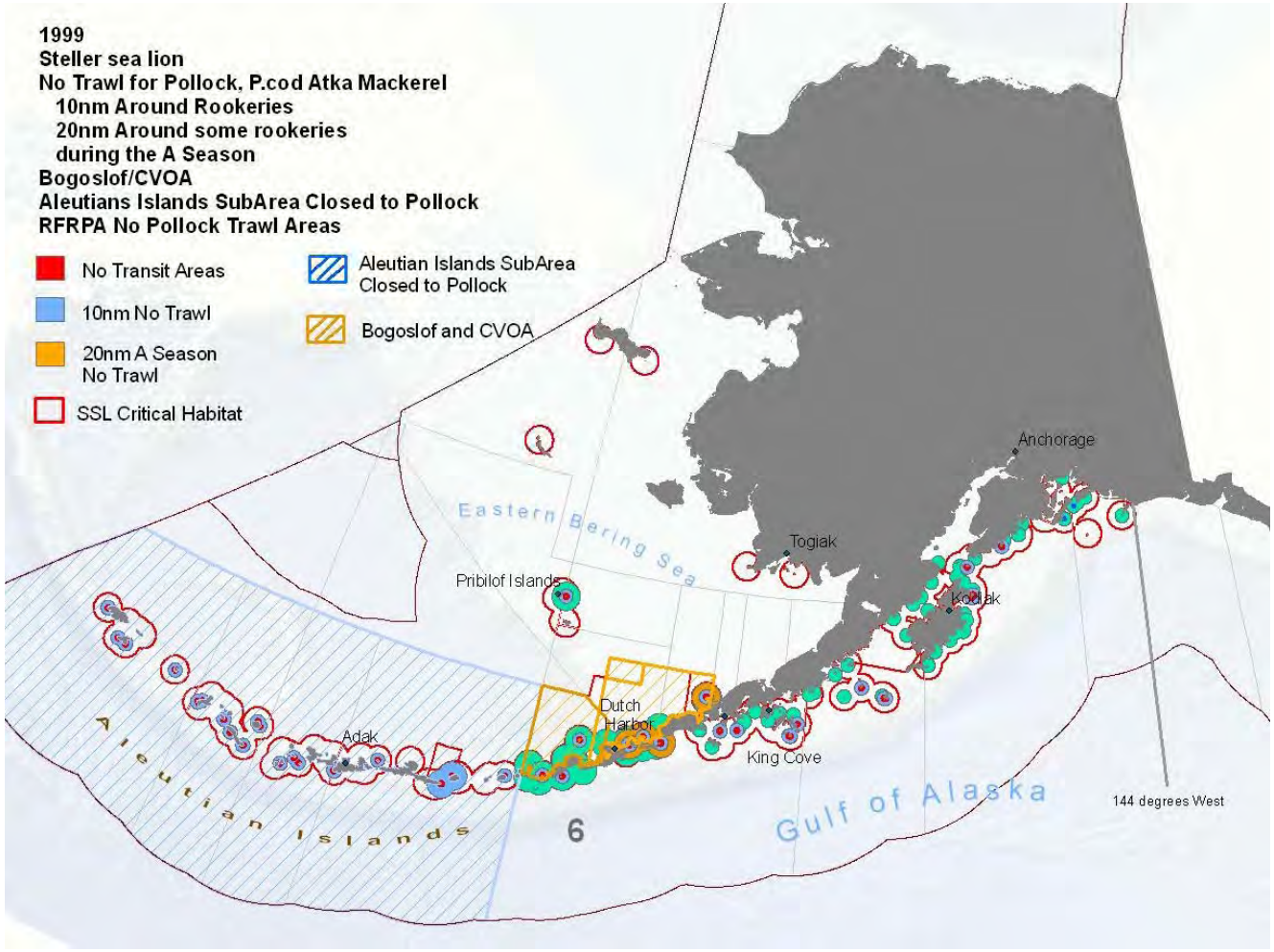



Figure 2.18 No trawl zones.

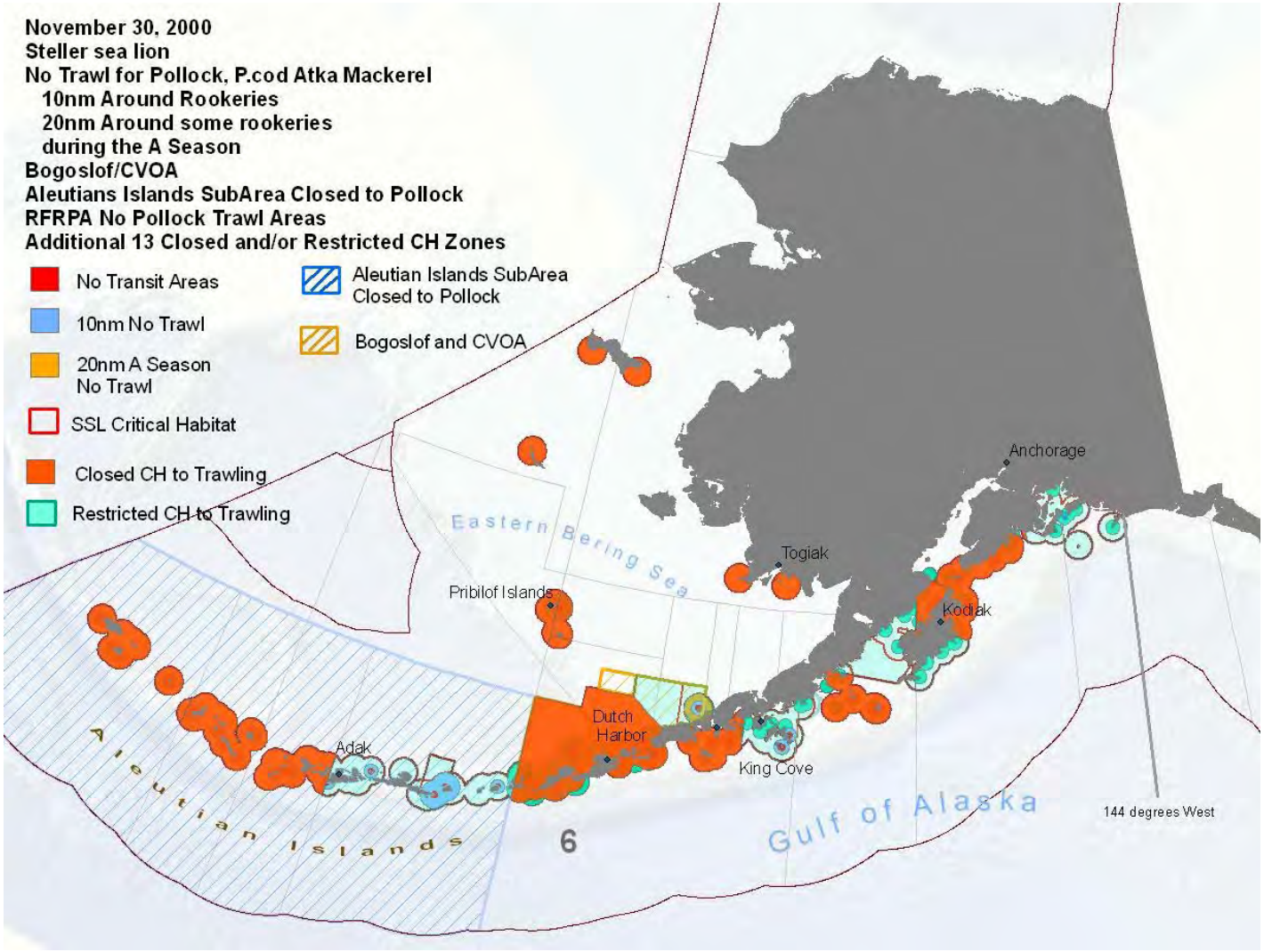



Figure 2.19 2000 “Open and Closed Areas”.

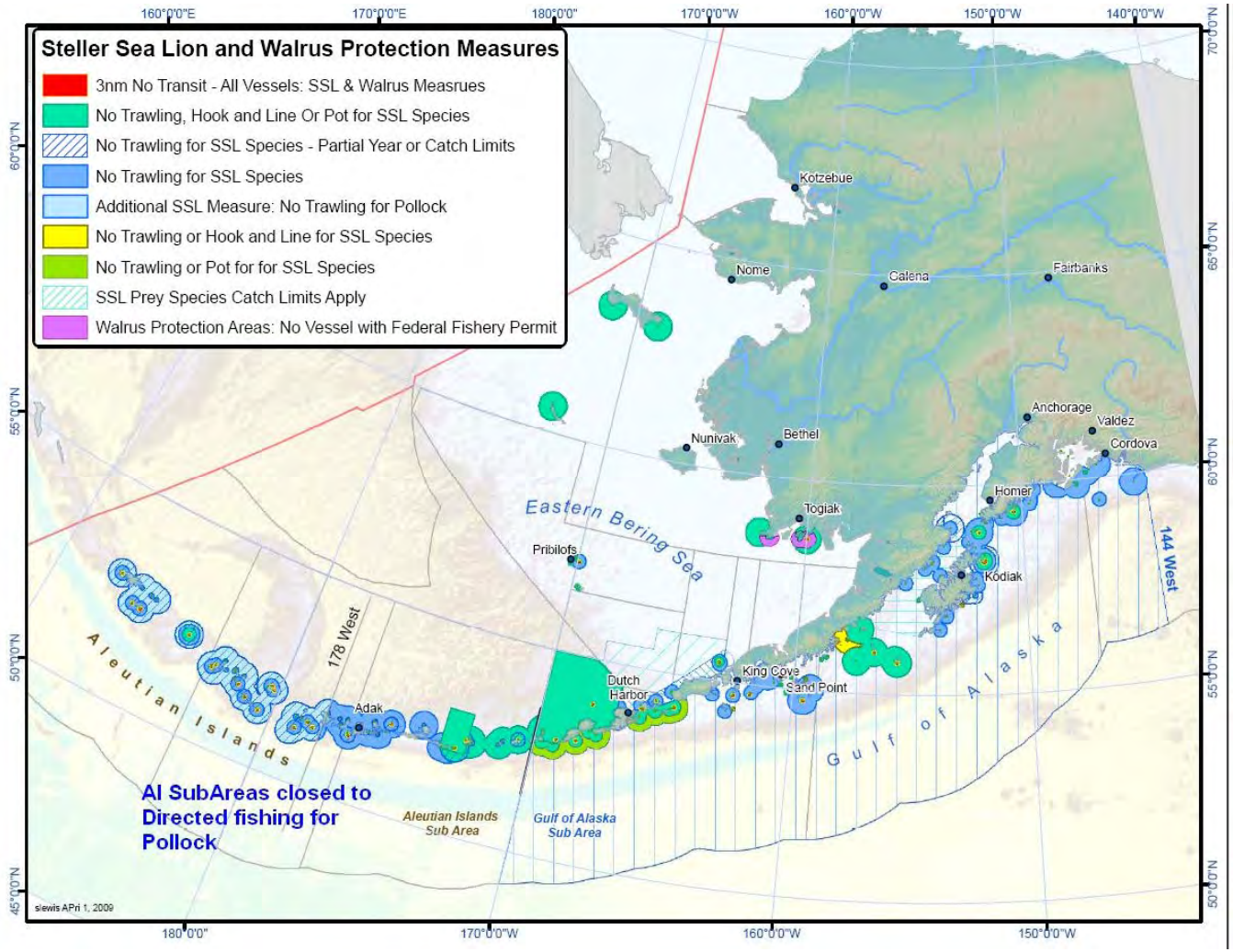



Figure 2.20 Current SSL protection measures

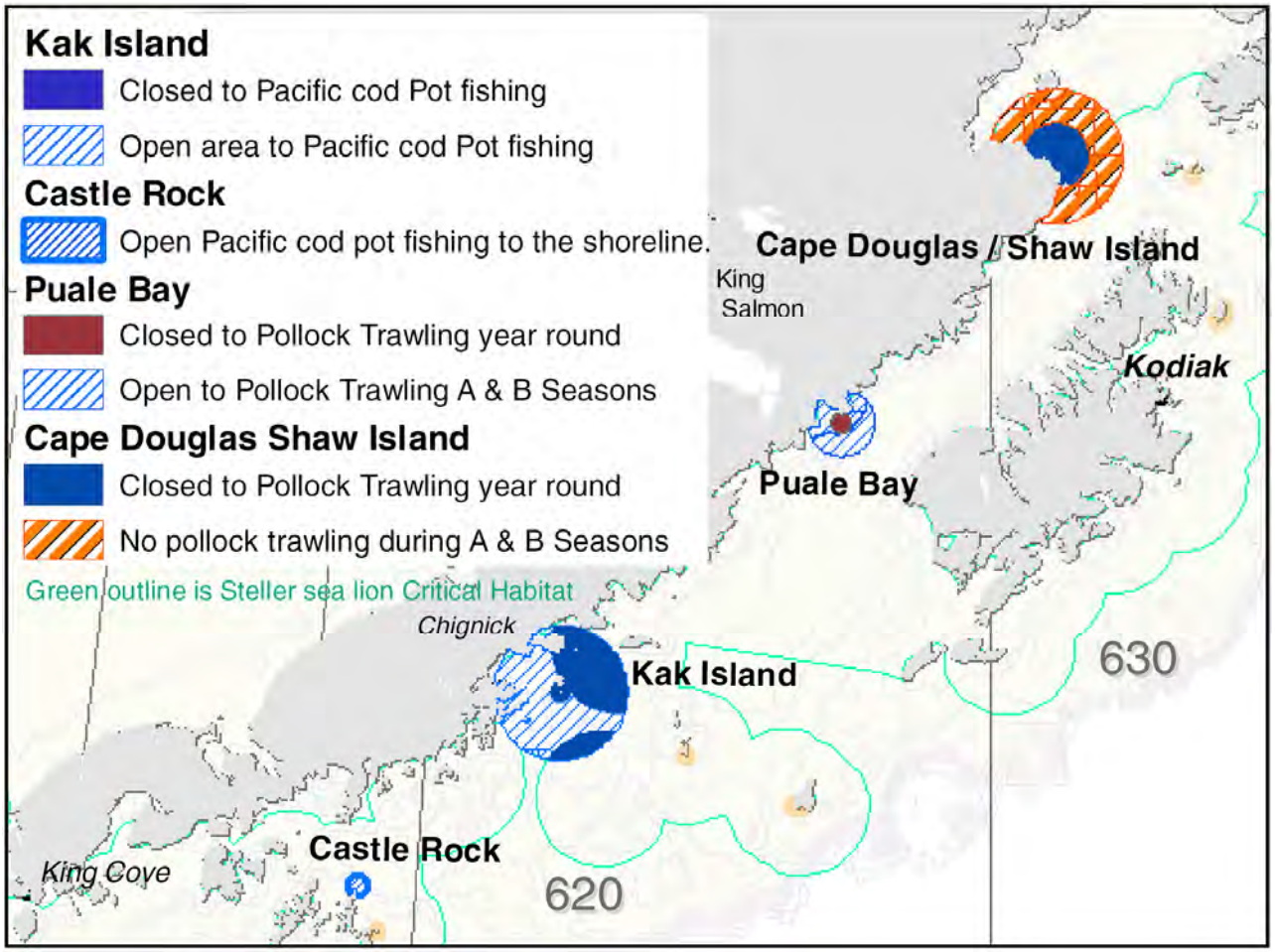



Figure 2.21 2004 Changes to GOA SSL protection measures.

**Figure 3.1** Steller sea lion world-wide distribution.

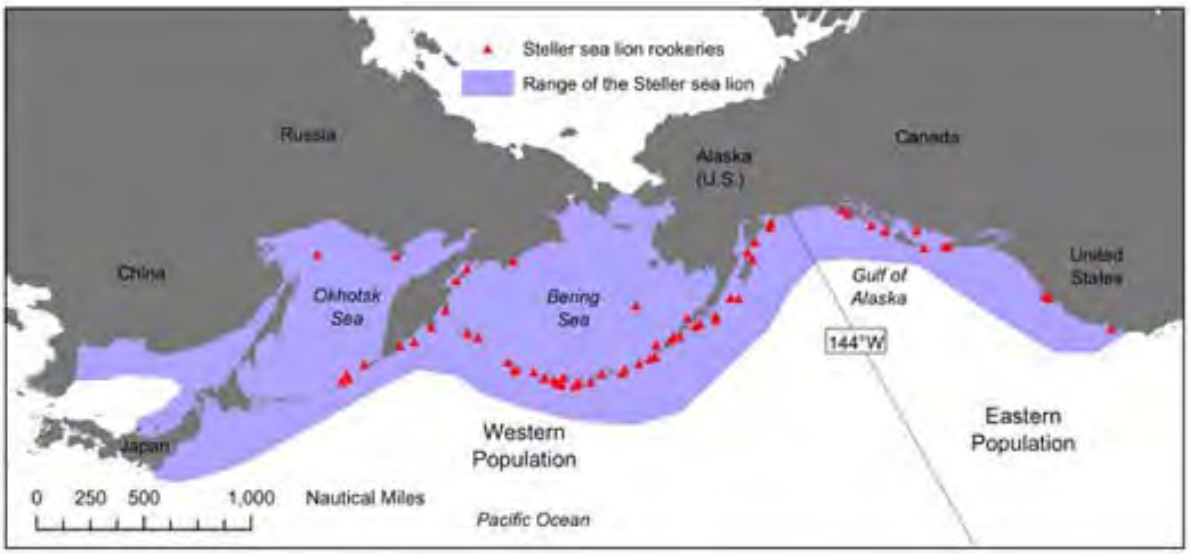



**Figure 3.2** Steller sea lion critical habitat for the western DPS.

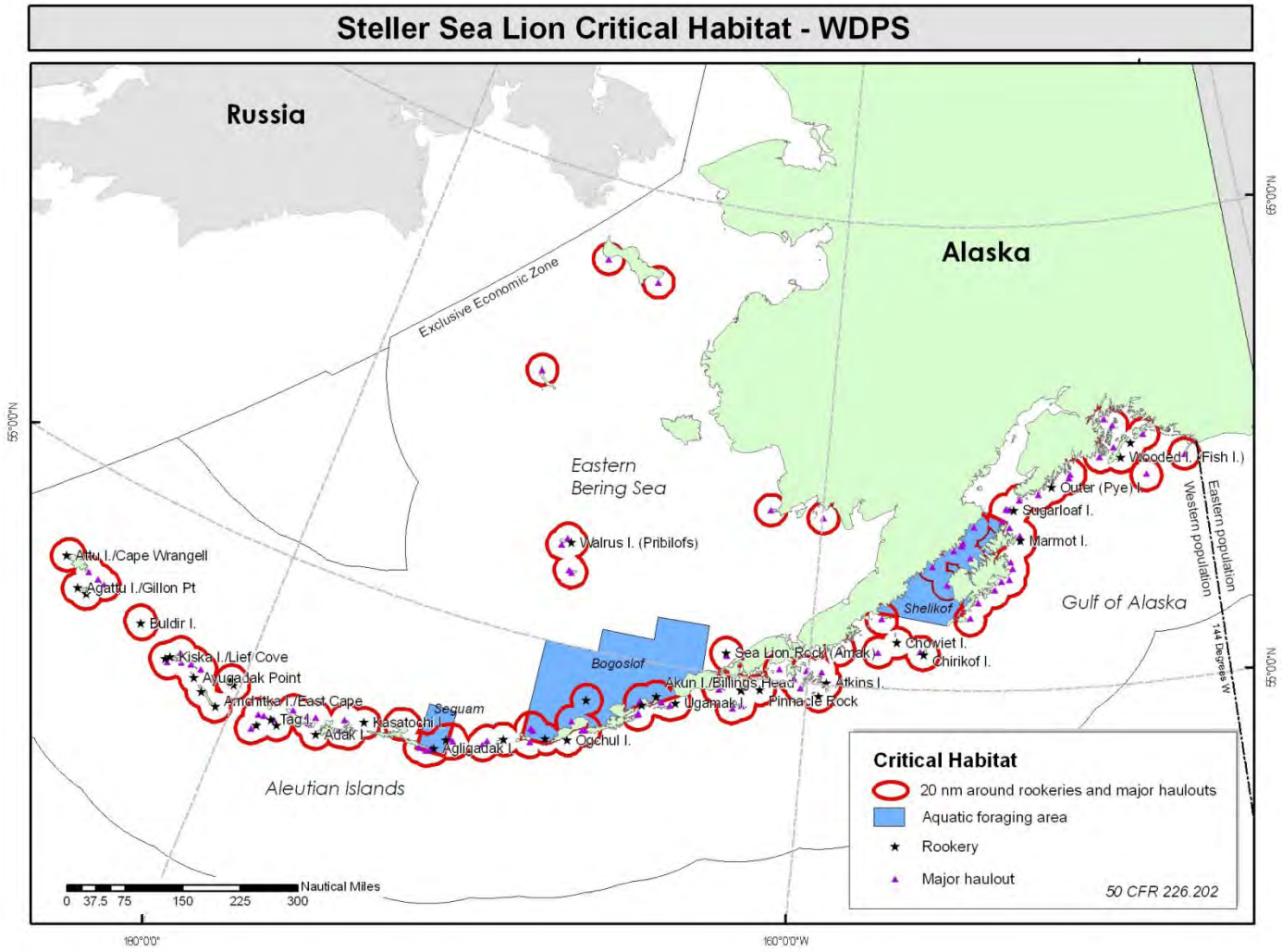


**Figure 3.3** Steller sea lion critical habitat for the eastern DPS.

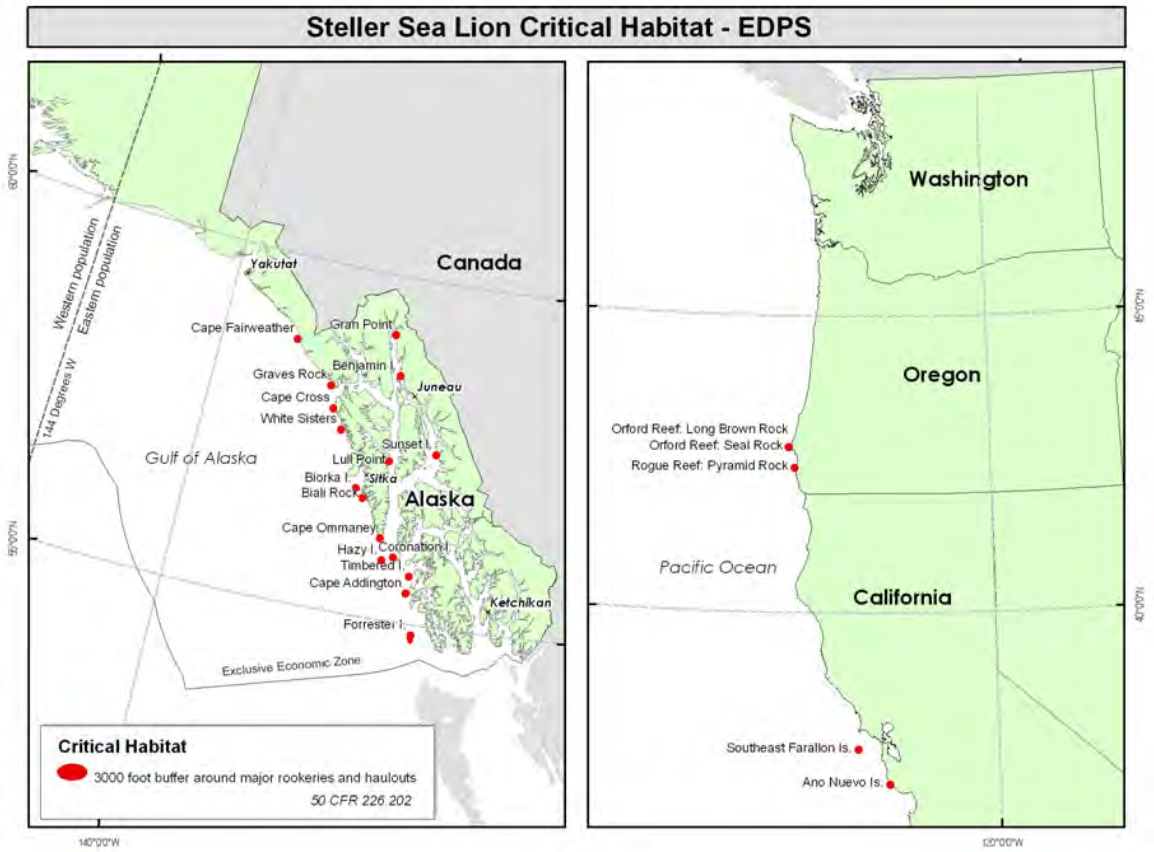


**Figure 3.4** Steller sea lion survey regions from Dixon Entrance to Attu Island and the location of the principal rookeries in Alaska. Kiska Island, the Kenai Peninisula, and Walrus Island in the eastern Bering Sea are also noted, along with the boundary between the breeding ranges of the eastern and 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).

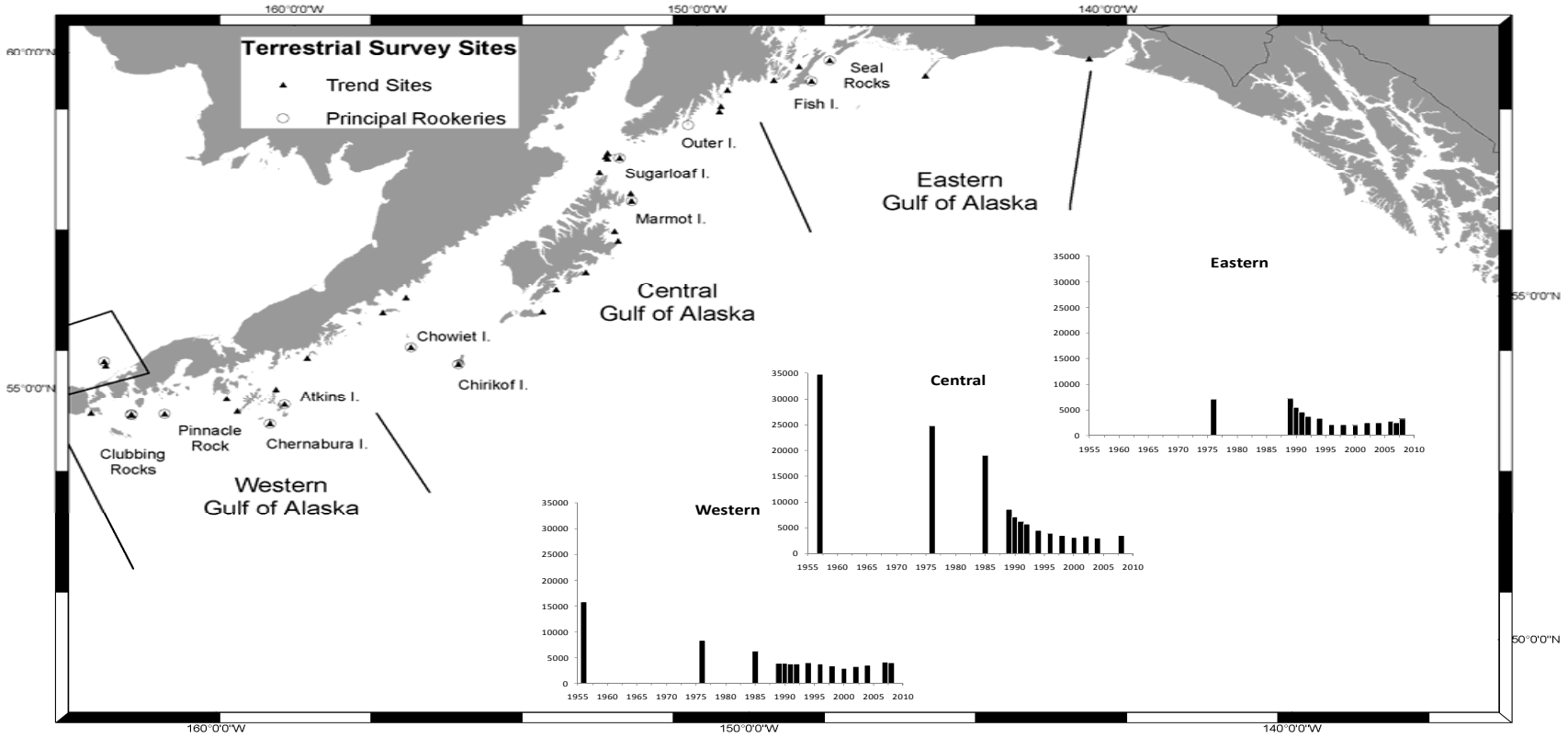


**Figure 3.6.** Counts of adult and juvenile Steller sea lions on western DPS trend sites in three sub-areas of the Aleutian Islands (eastern, central and western), and on Walrus Island in the eastern Bering Sea, 1950s through 2008. Principal rookeries (named) and major terrestrial haul-out trend sites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

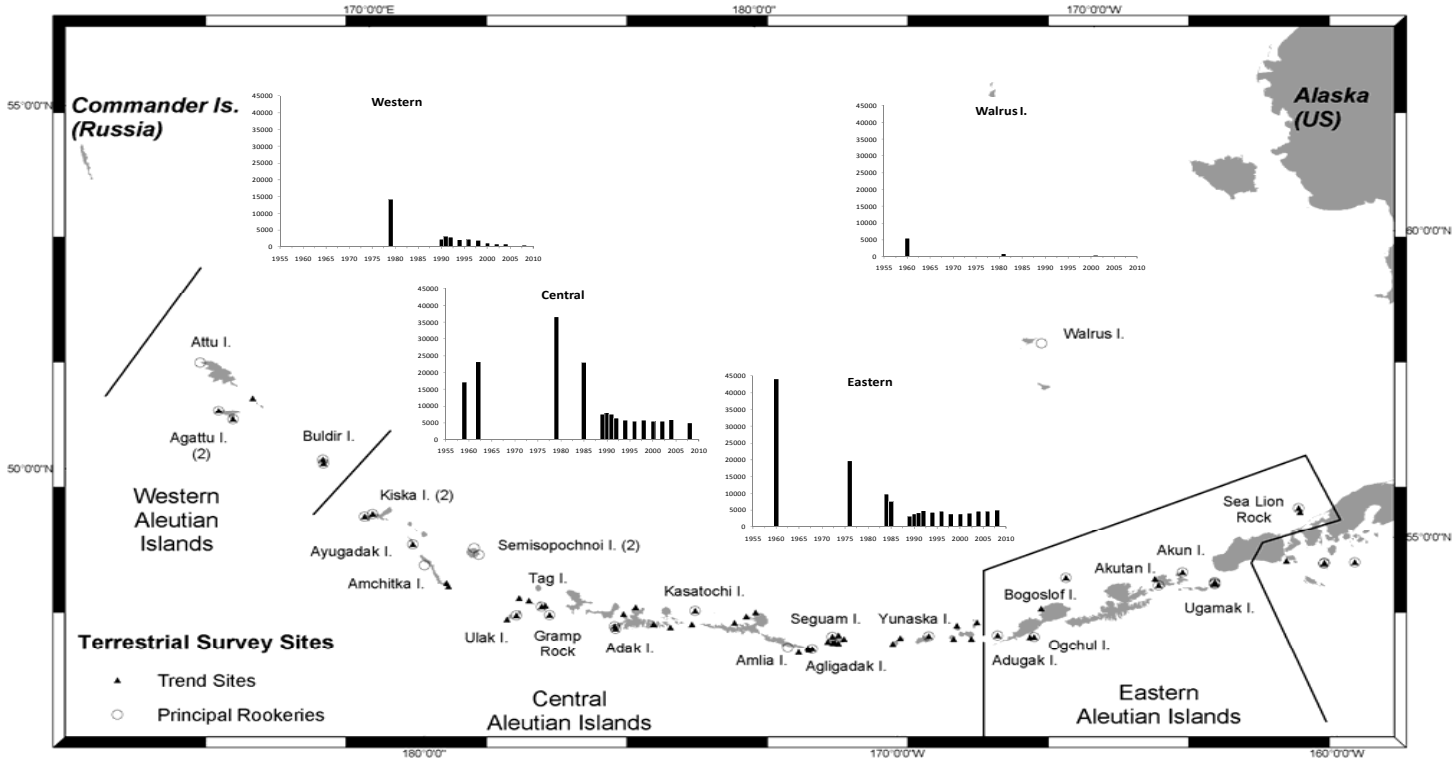


**Figure 3.7.** Counts of adult and juvenile (non-pup) Steller sea lions at 1990s trend sites by region (A. Guf of Alaska; B. Eastern and E-Central (170°-178°W) Aleutian Islands; C. Western and W-Central (178°W-177°E) Aleutian Islands; and D. western stock (=DPS or distinct population segment in Alaska 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).

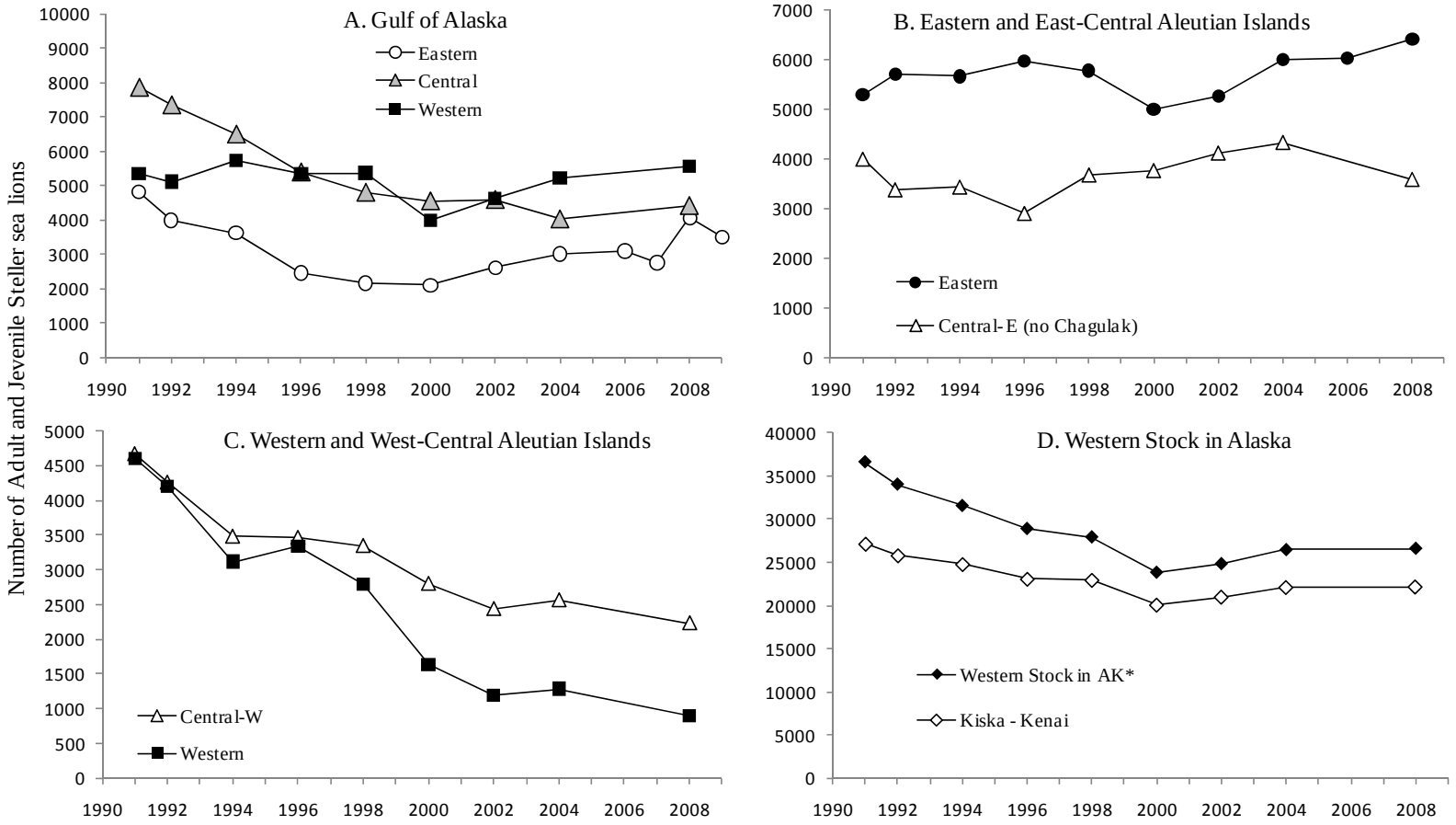


**Figure 3.8.** Map showing the spatial relationship between Steller sea lion Recovery Plan Areas, Rookery Cluster Areas (RCAs), and NMFS Groundfish Fishery Management Areas.

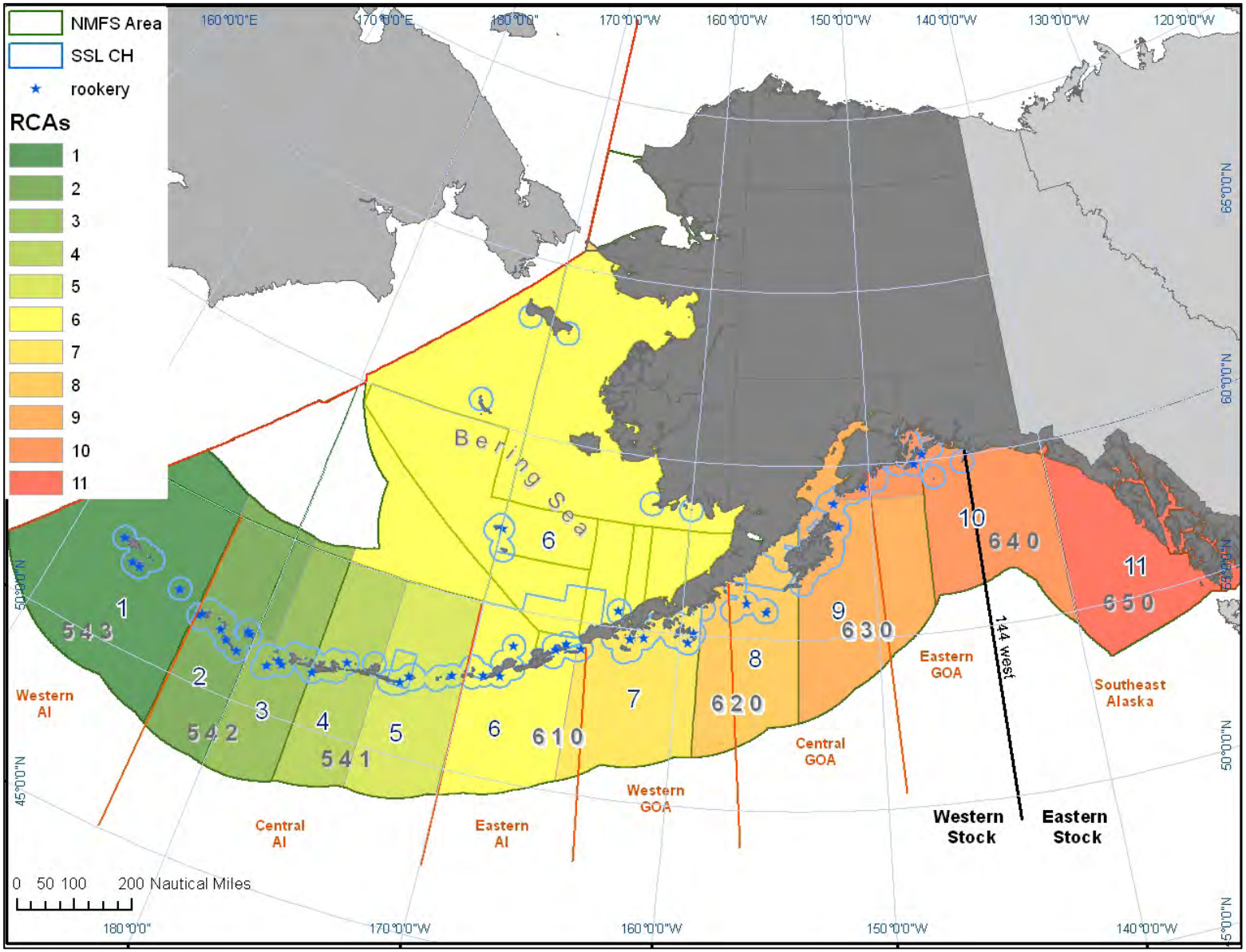


**Figure 3.9**. Steller sea lion pup counts at trend rookeries in the range of the western stock in Alaska by region from the late 1970s to 2009 in the Gulf of Alaska (A), Aleutian Islands (B), Kenai-Kiska area (central Gulf of Alaska through central Aleutian Islands) and the western stock in Alaska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

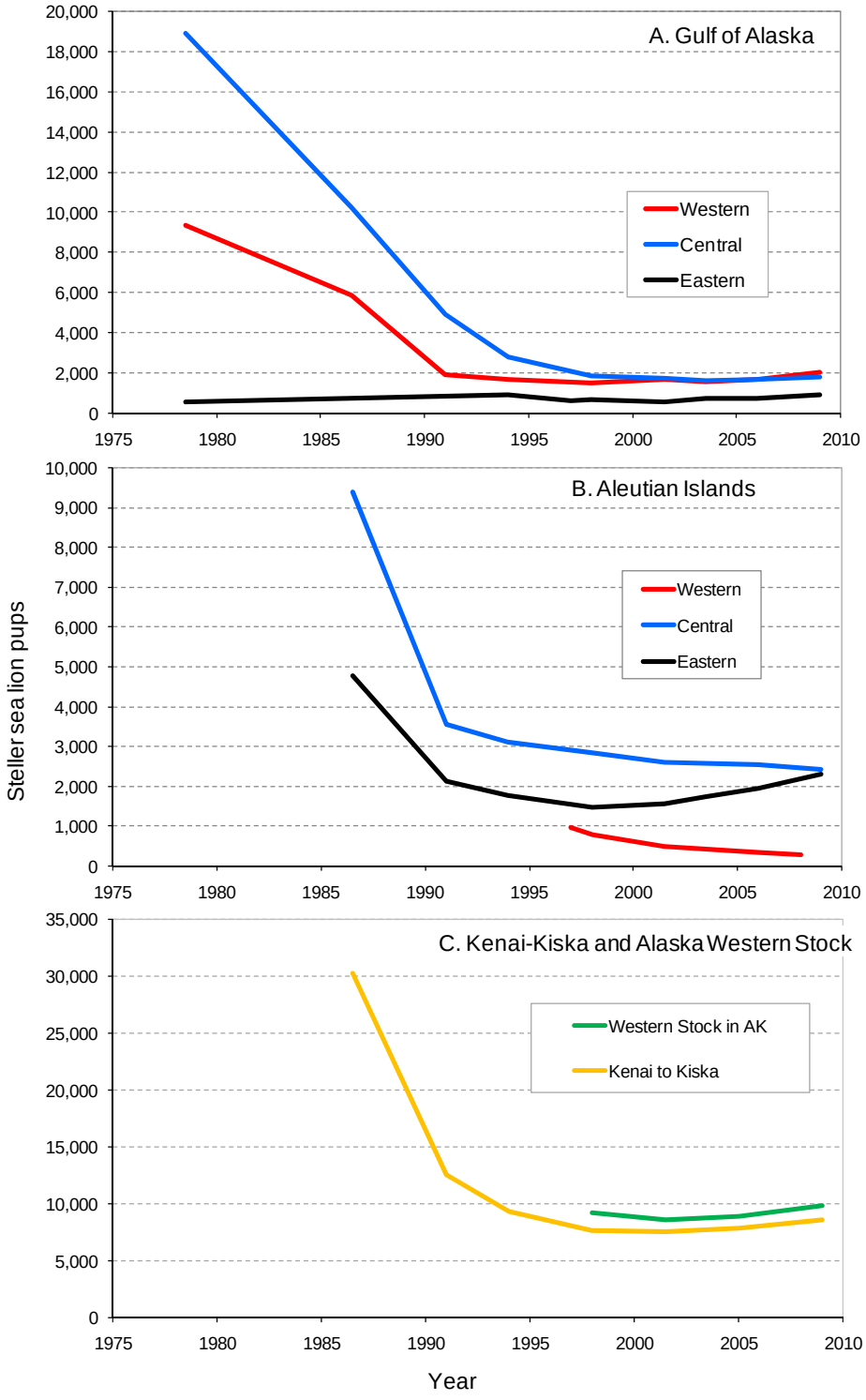


**Figure 3.10** Change in pup count by rookery between 2005 and 2009 across the range of the western DPS in Alaska. Red bars indicate decline in rookery production, while green bars indicate an increase. W, C, and E Aleu = western, central and eastern Aleutian Islands; W, C, E Gulf = western, central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

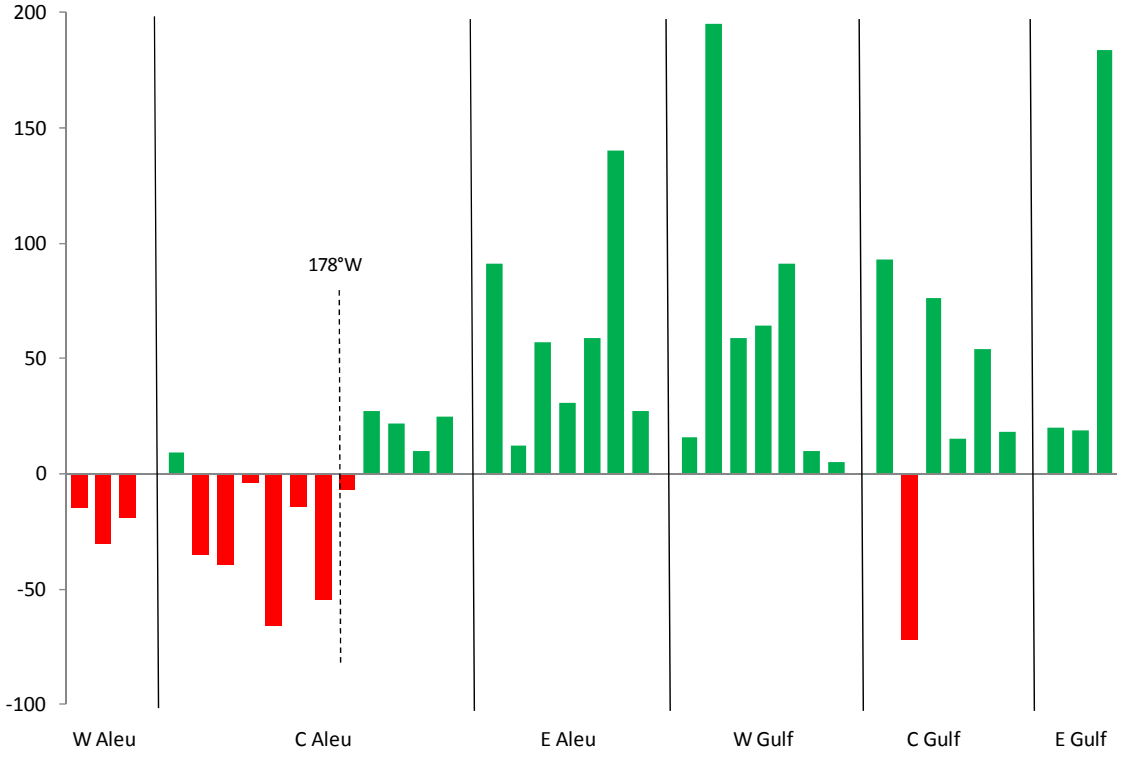


**Figure 3.11.** Locations of Steller sea lion rookeries (red) and haulout sites in Asia (Russia and Japan).

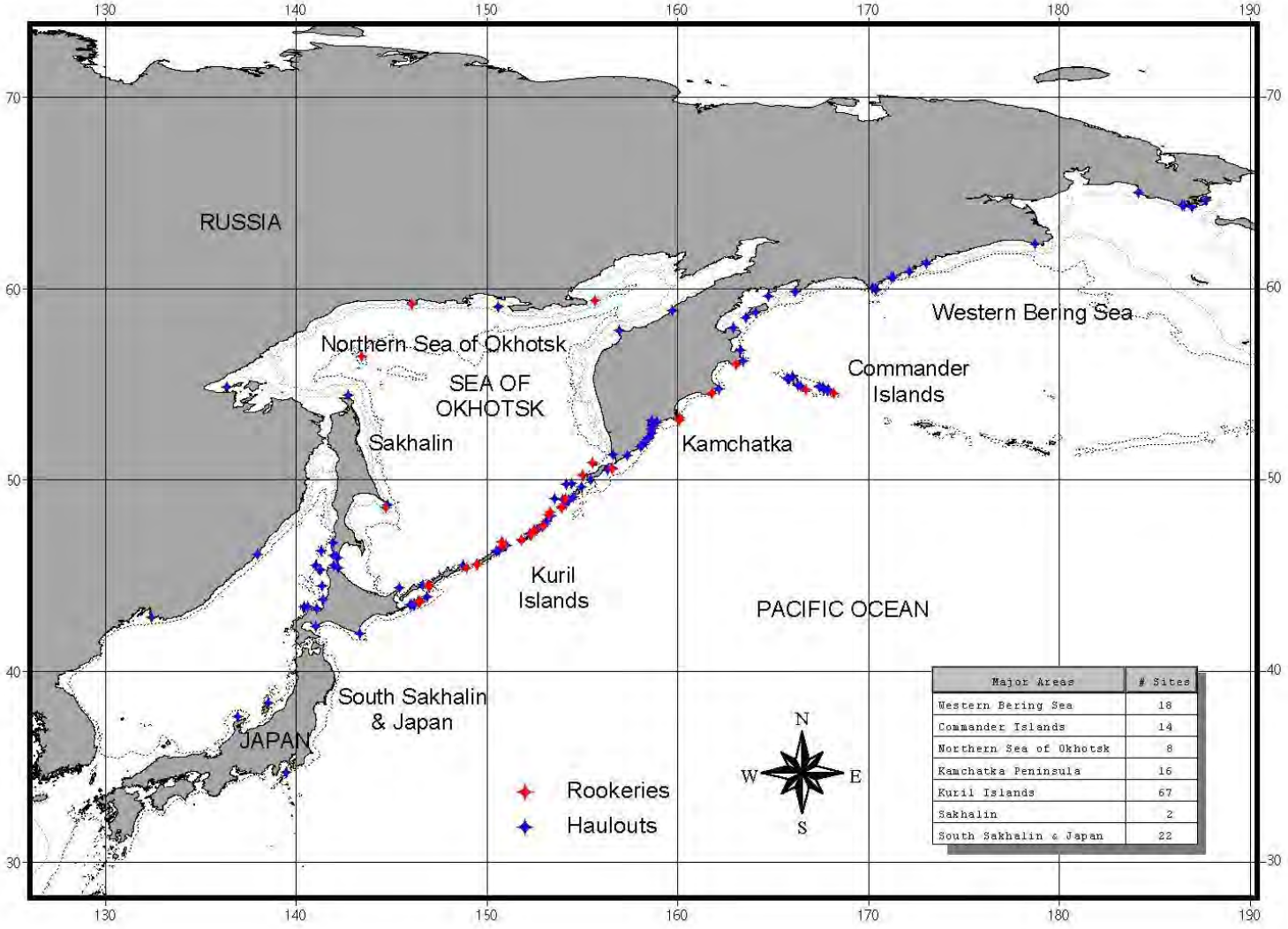


**Figure 3.12** Counts of non-pup Steller sea lions by sub-area within Russia. NPSO = northern Sea of Okhotsk, Sakh=Sakhalin Island (southern Sea of Okhotsk), Kurils = Kuril Islands, CI = Commander Islands, EK = eastern Kamchatka Peninsula, and WBS = western Bering Sea. NPSO, Sakh and Kurils are part 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.

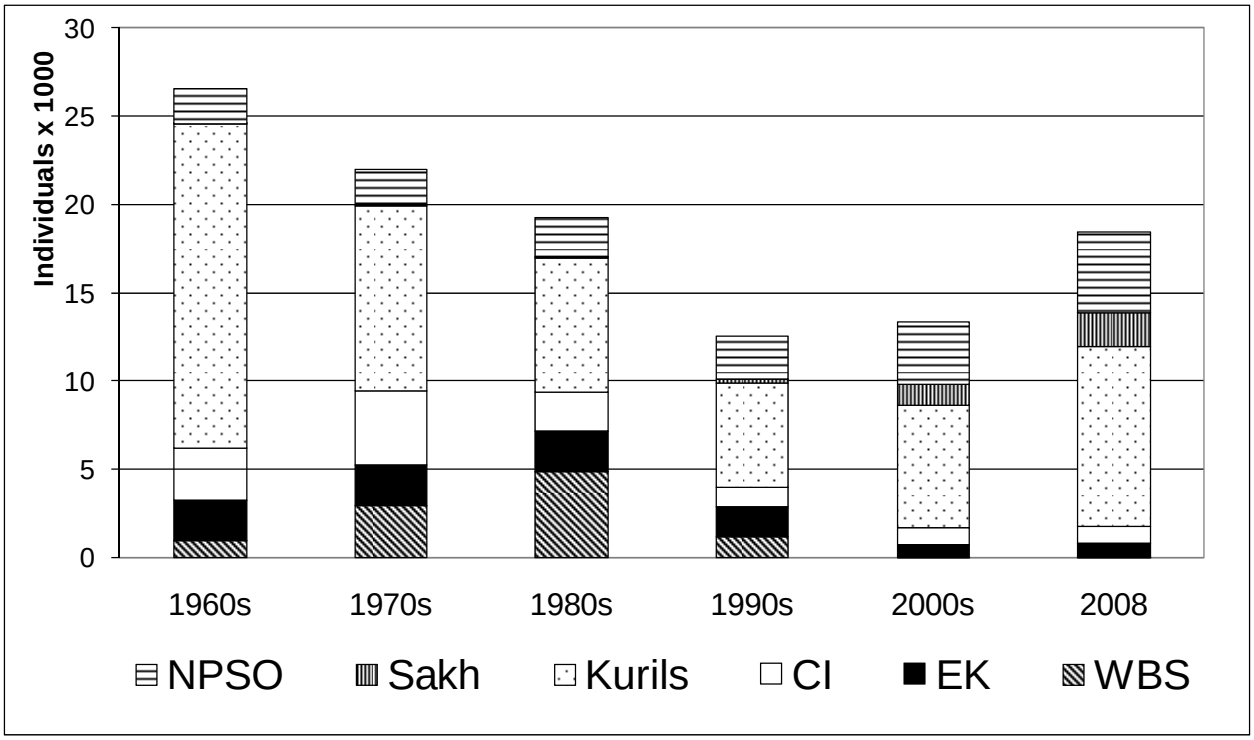


**Figure 3.13** Counts of adult and juvenile Steller sea lions (non-pups) on eastern DPS terrestrial sites in Southeast Alaska (SE AK; trend sites) and British Columbia (all sites), 1971-2009. Major rookeries are named in both sub-areas (Olesiuk et al. ADF&G references), as is the boundary between the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

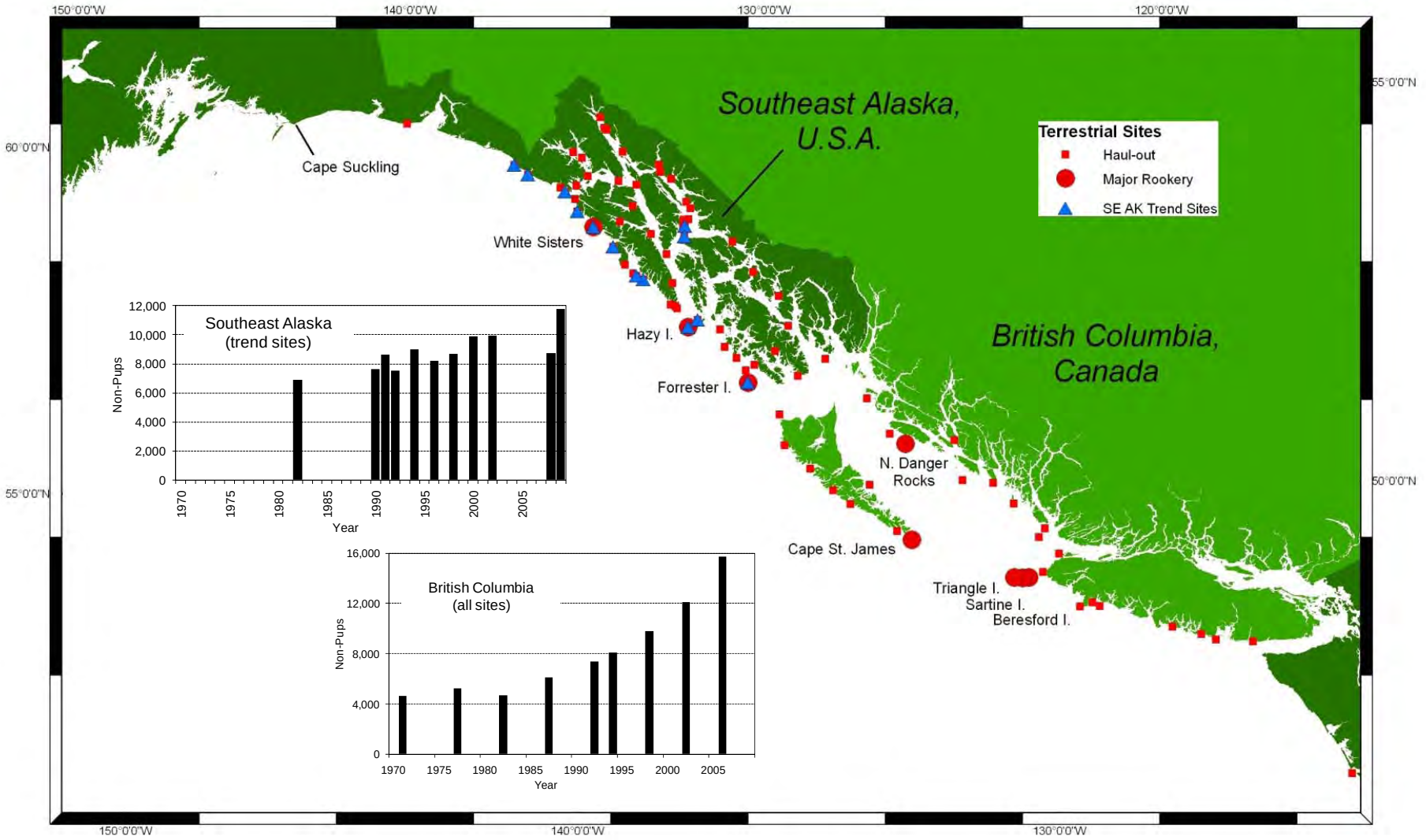


**Figure 3.14** Counts of adult and juvenile Steller sea lions (non-pups) on eastern DPS terrestrial sites in Oregon (all sites) and California (rookeries), 1927-2009. Major rookeries are named in Oregon and California; there are no rookeries in Washington.

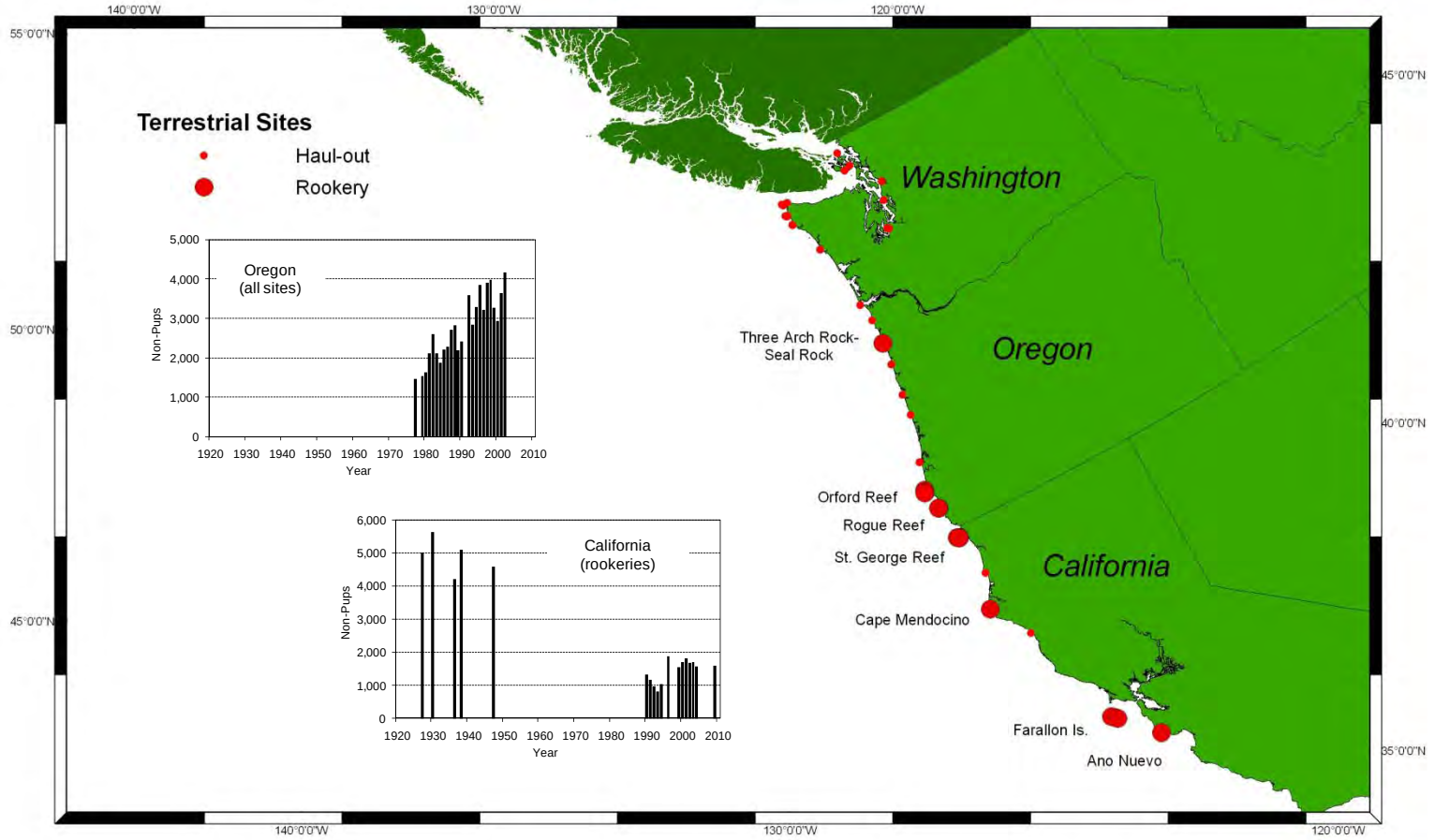


**Figure 3.15.** Counts of adult and juvenile Steller sea lions on trend sites by region within the eastern DPS, 1982-2009. Data are in Table 3.5.

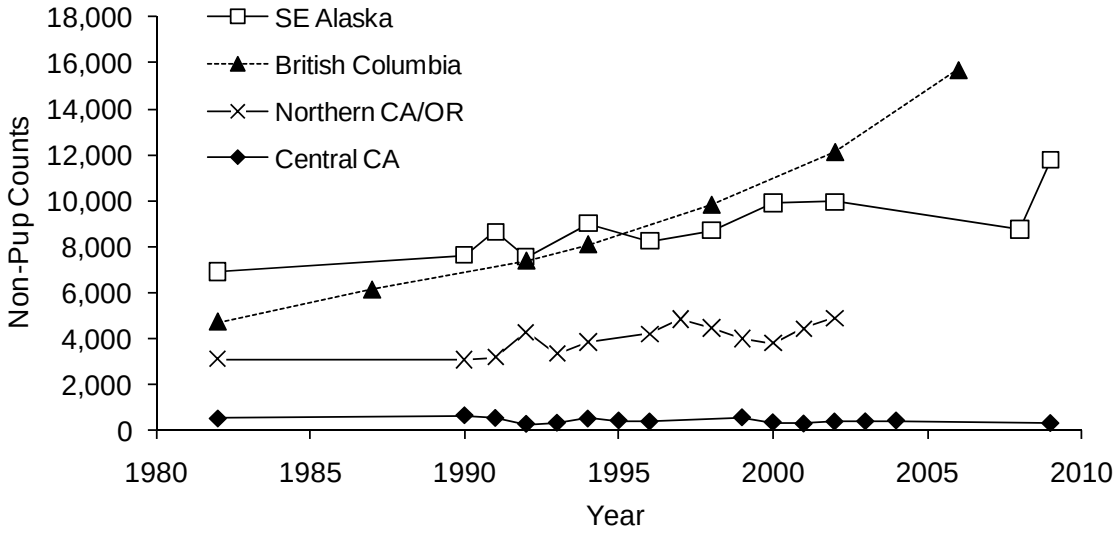


**Figure 3.16.** Steller sea lion vital rates in the western DPS (Marmot and Ugamak Islands, and central Gulf of Alaska – CGOA) and eastern DPS (Forrester Island), late 1970s through 2000s. A-C. Relative changes in juvenile and adult survivorship and natality rates of the CGOA female Steller sea lion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

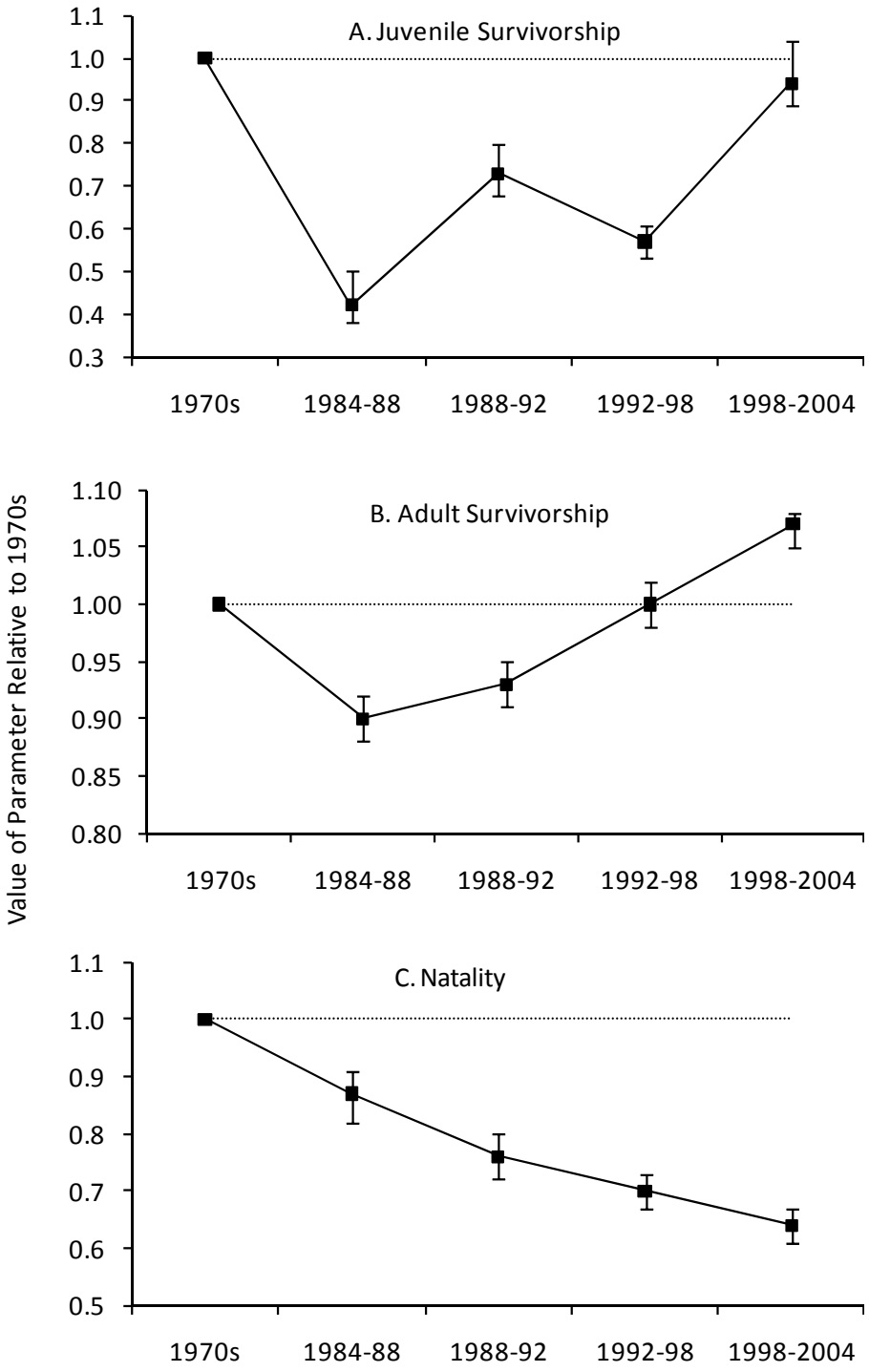
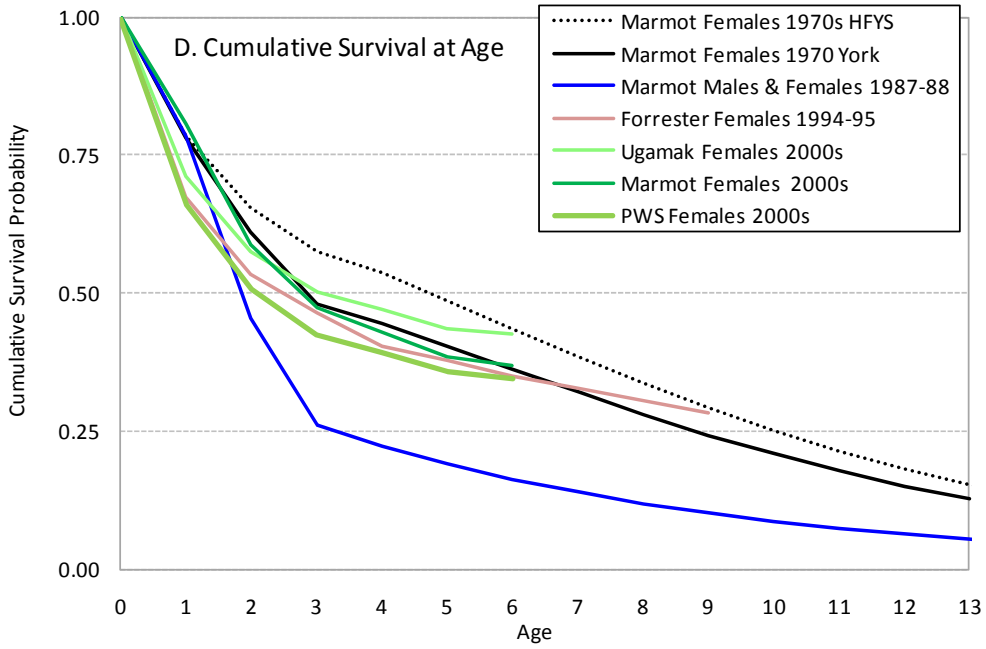


**Figure 3.16 (continued).** D. Cumulative survival of Steller sea lions at age in the late 1970s at Marmot Island (York (1994) and Holmes et al (2007; HFYS) life tables), in the late 1980s at Marmot Island (Pendleton et al. 2006; brand-resight), in the mid-1990s at Forrester Island in the eastern DPS (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.



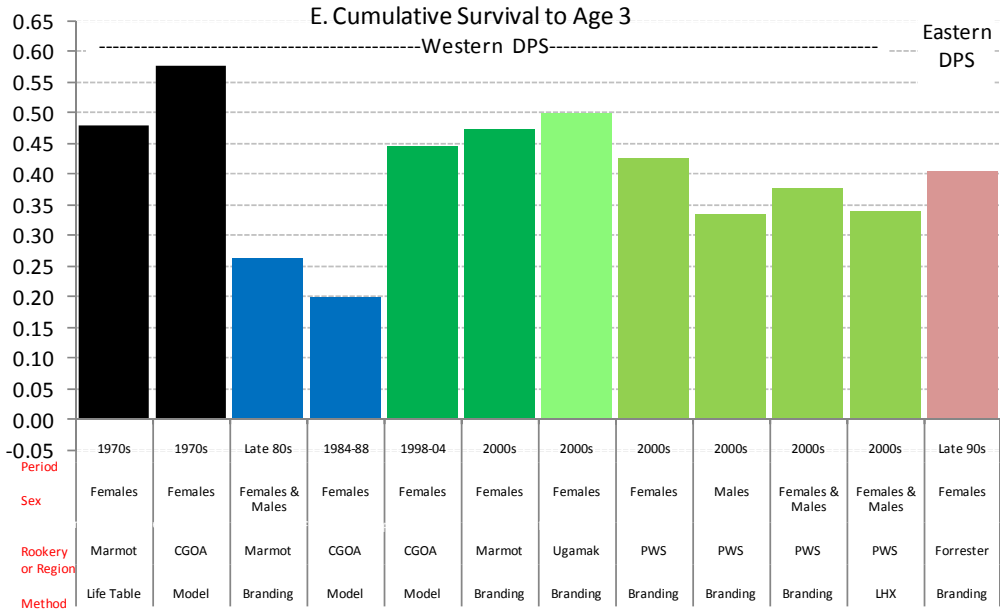



**Figure 3.17** Locations associated with diving to >4 m for juvenile Steller sea lions instrumented in Prince William Sound during 2000-2002. Colors indicate distance zone of location based on nearest listed rookery or haulout.

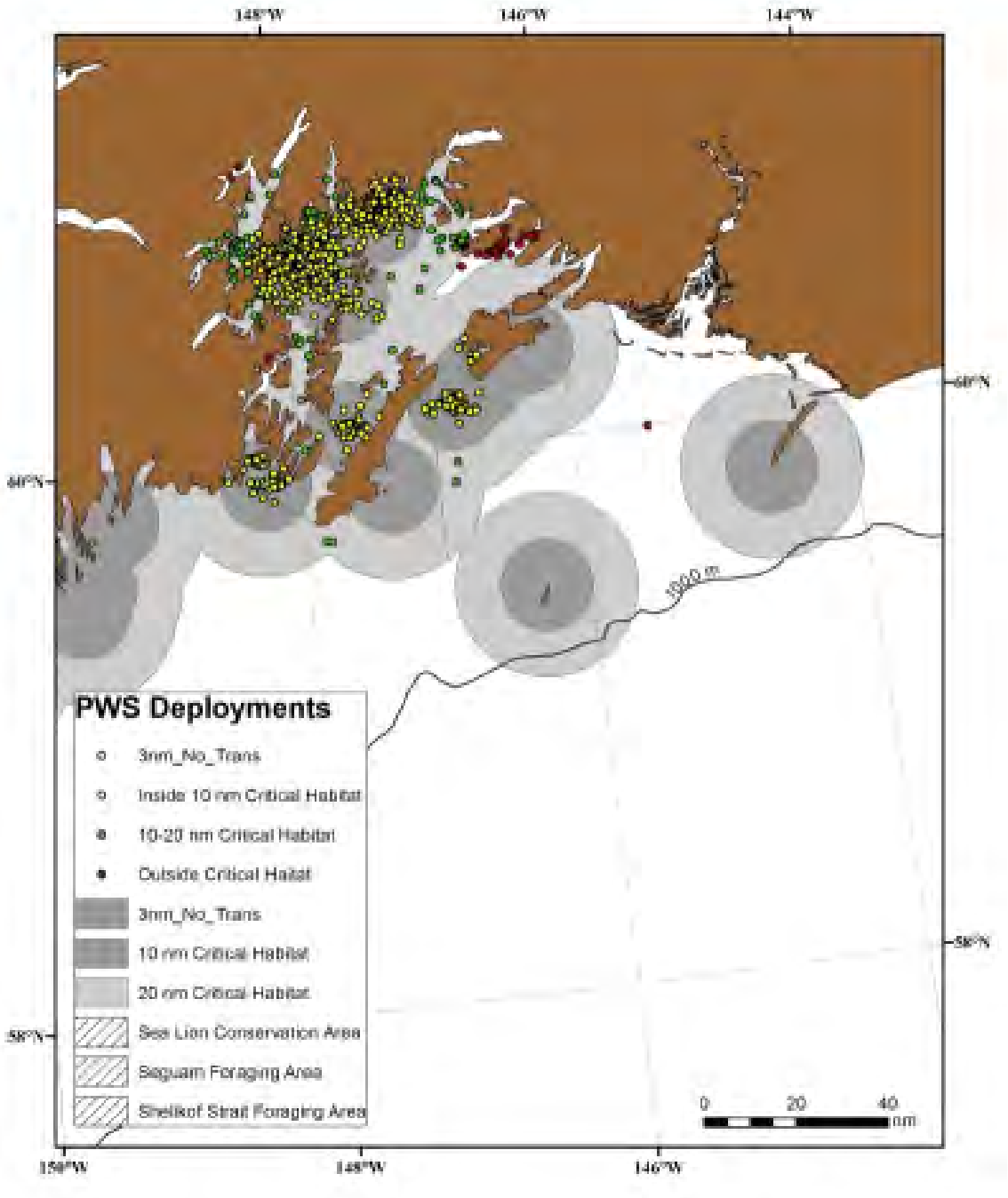


**Figure 3.18** Locations associated with diving to >4 m for juvenile Steller sea lions instrumented near Kodiak Island during 2000-2005. Colors indicate distance zone of location based on nearest listed rookery or haulout.

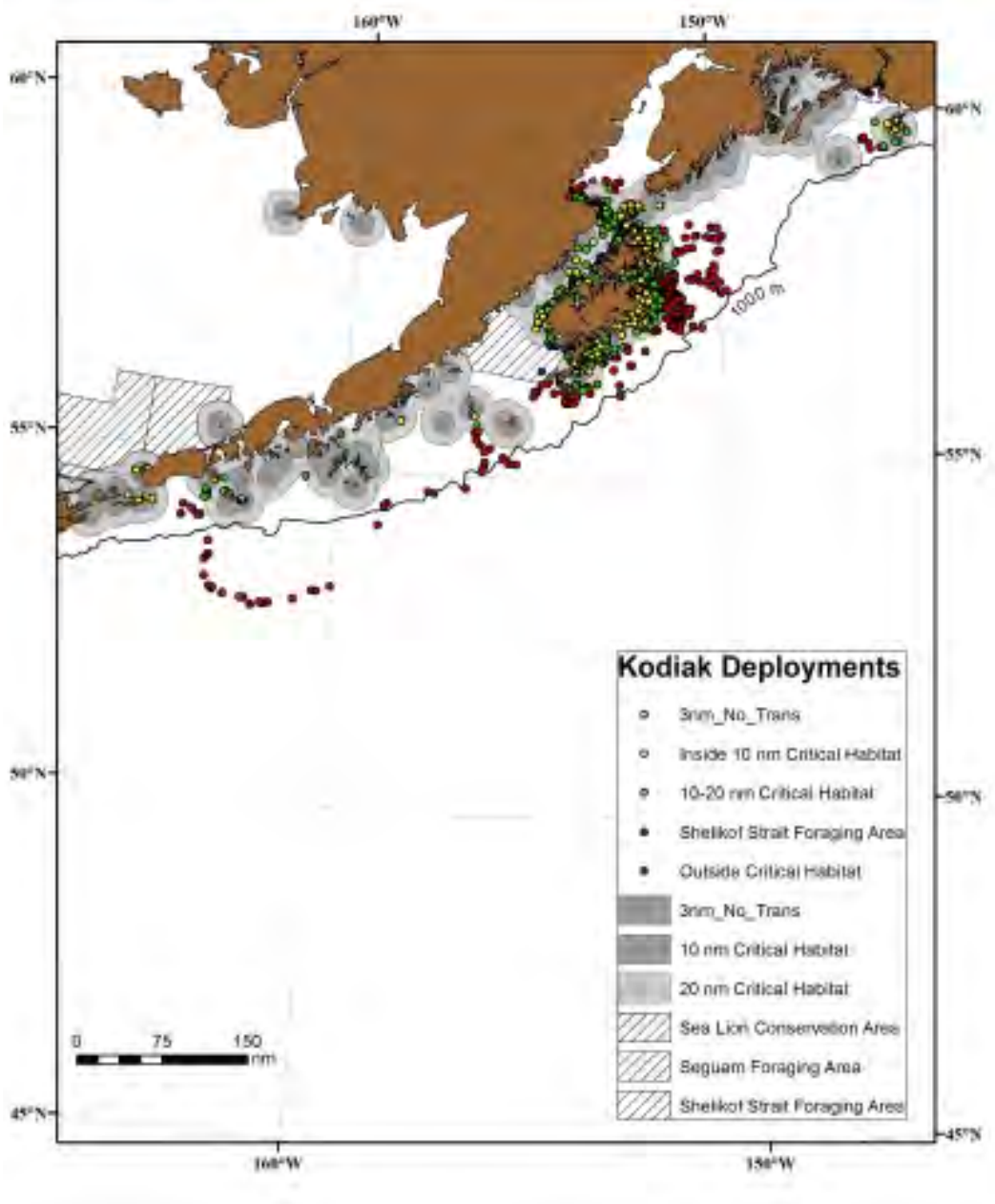


**Figure 3.19** Locations associated with diving to >4 m for juvenile Steller sea lions in the Kodiak Island area during 2000-2005. Colors indicate distance zone of location based on nearest listed rookery or haulout.

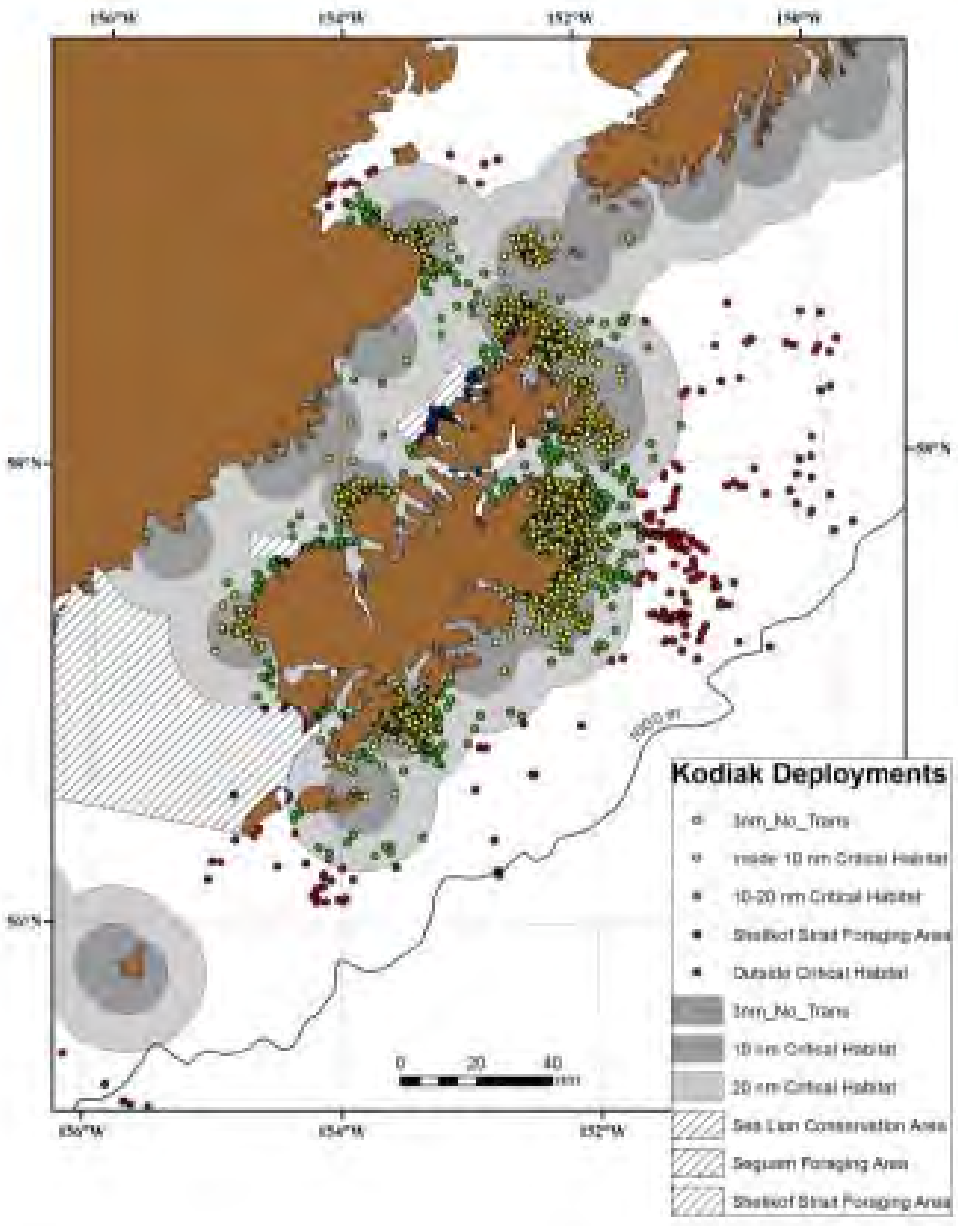


**Figure 3.20** Locations associated with diving to >4 m for juvenile Steller sea lions in the Eastern Aleutian Islands area during 2000-2005. Colors indicate distance zone of location based on nearest listed rookery or haulout.

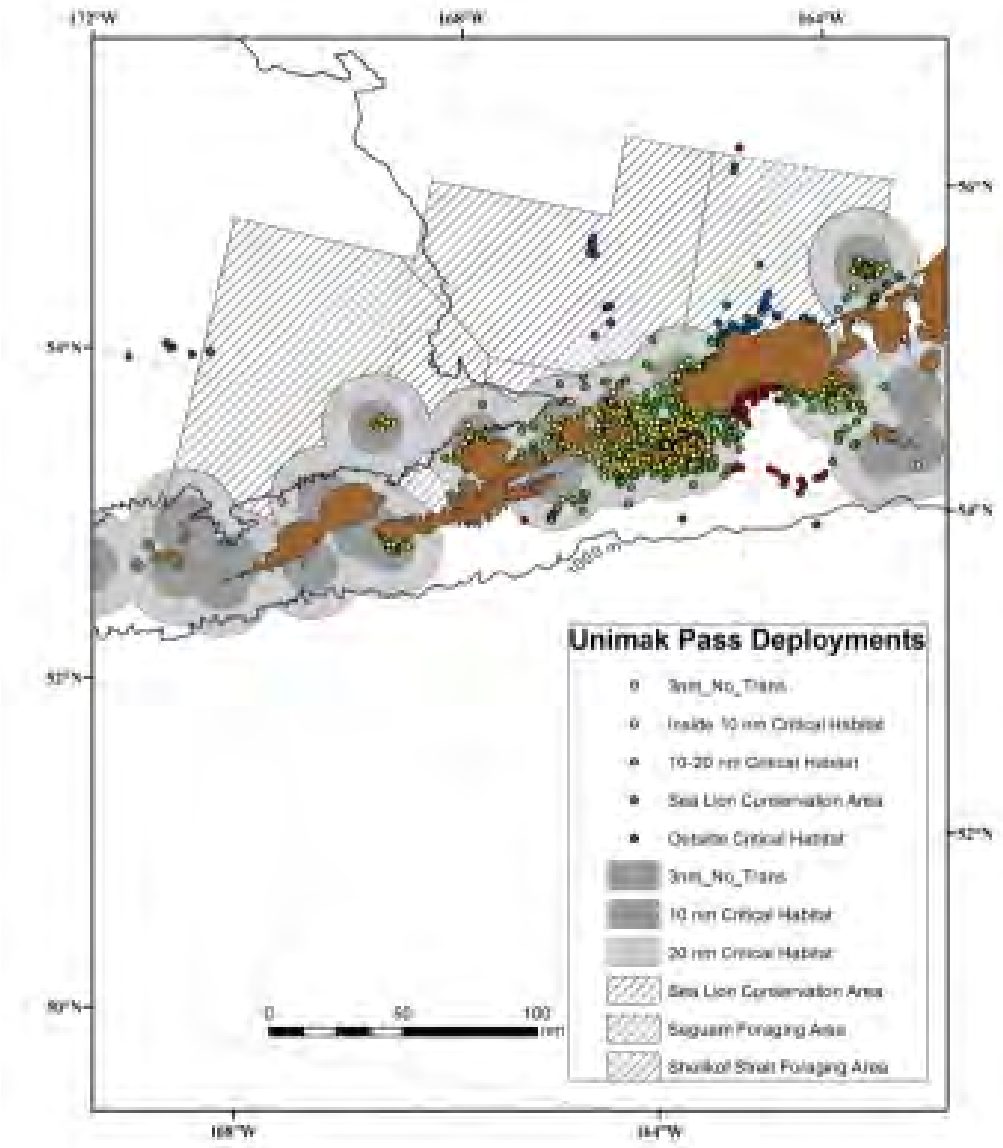


**Figure 3.21** Locations associated with diving to >4 m for juvenile Steller sea lions in the Central-Western Aleutian Islands area during 2000-2005. Colors indicate distance zone of location based on nearest listed rookery or haulout.

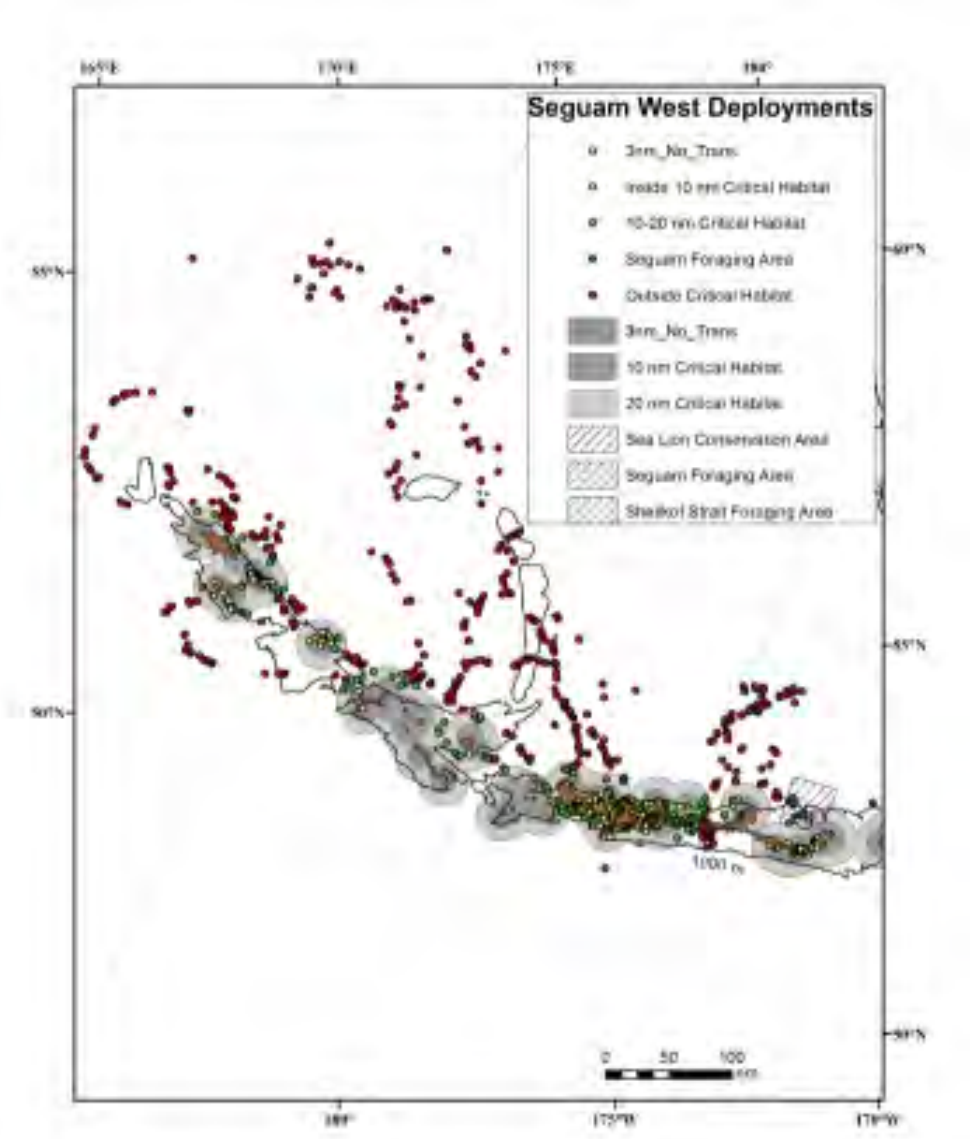


**Figure 3.22.** Frequency of occurrence of Steller sea lion prey items found in stomach samples (n=781 stomachs with prey remains) collected in studies conducted from 1956 to 1986 in locations ranging from the Kuril Islands to California. Prey taxa are grouped following Merrick and Calkins (1996) with 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.

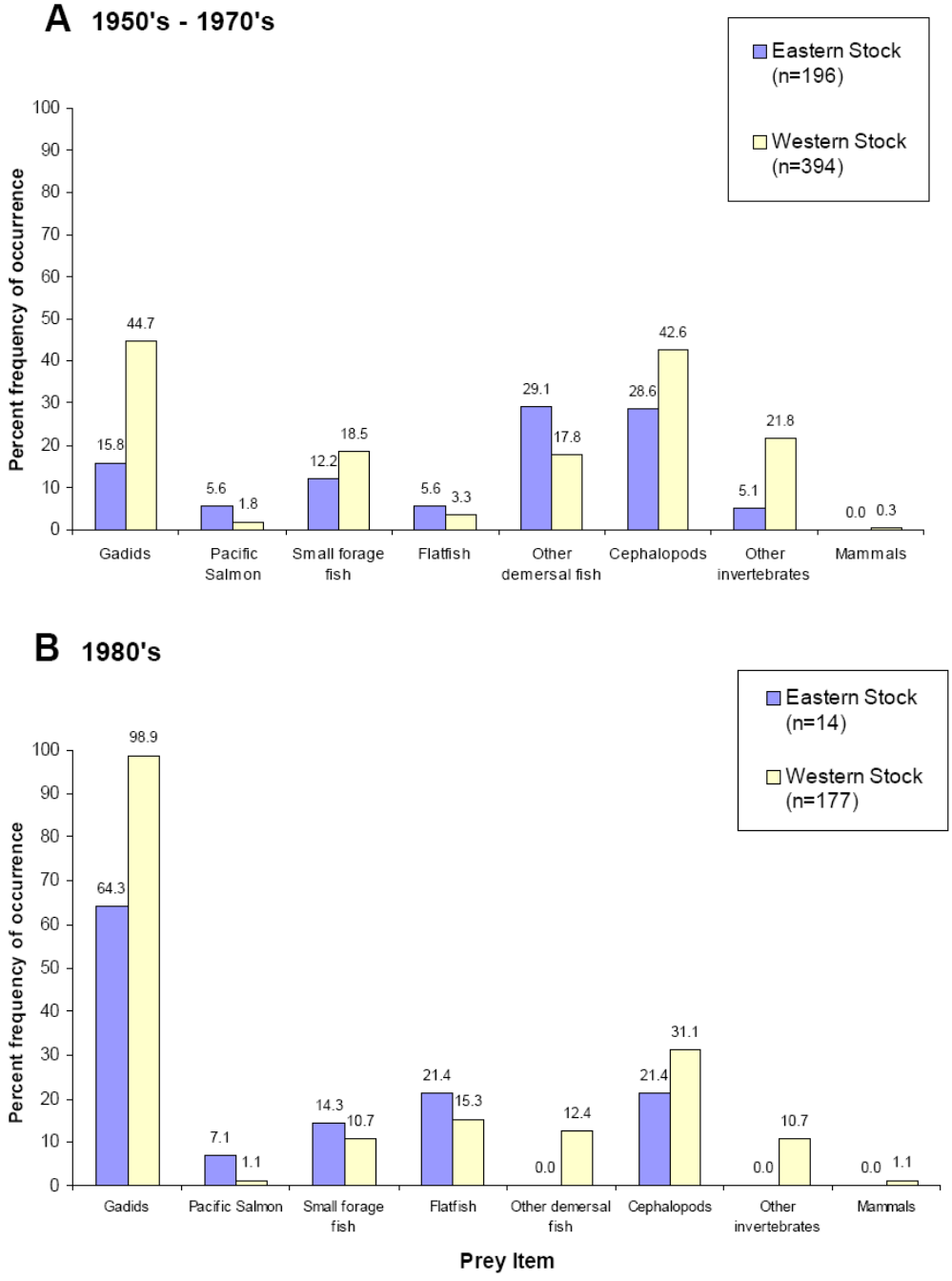
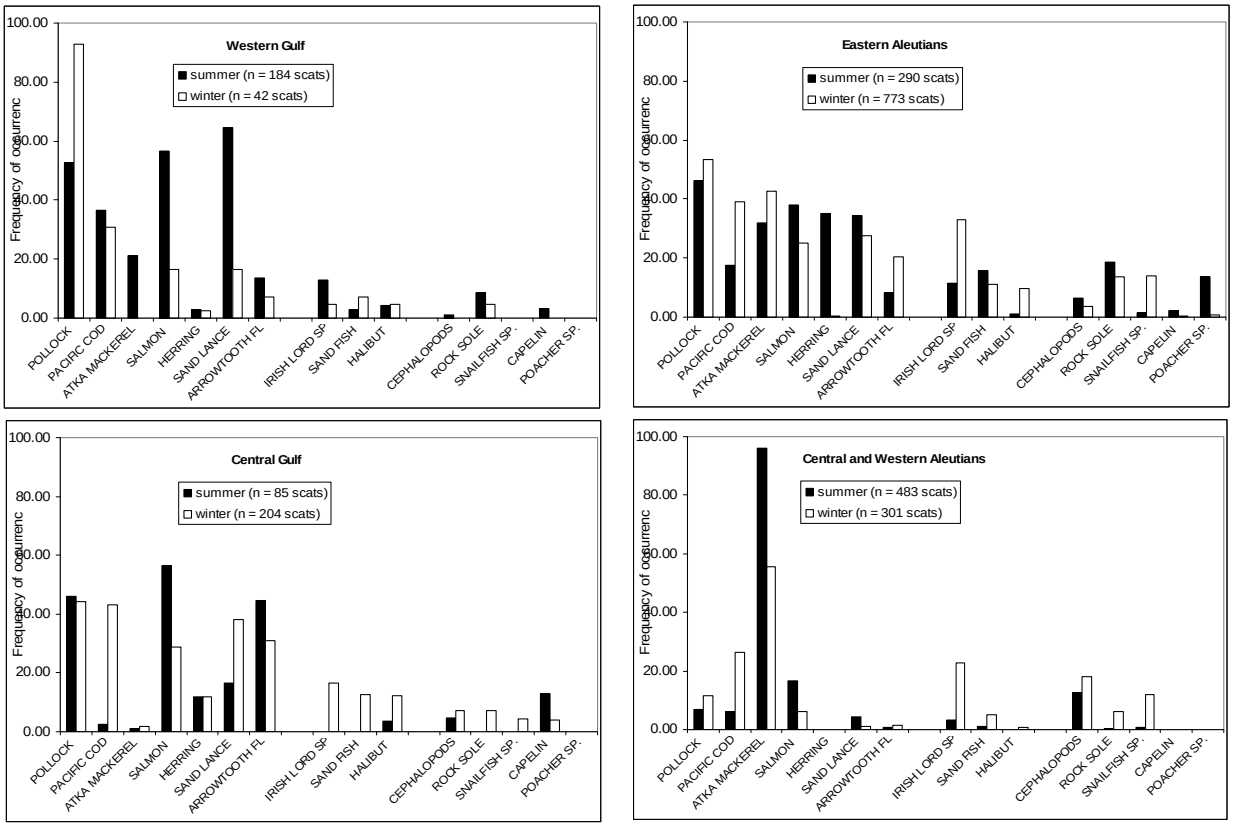


**Figure 3.23** Percent frequency of occurrence of prey occurring in Steller sea lion scats collected from 1999 to 2005 (NMFS 2006b).



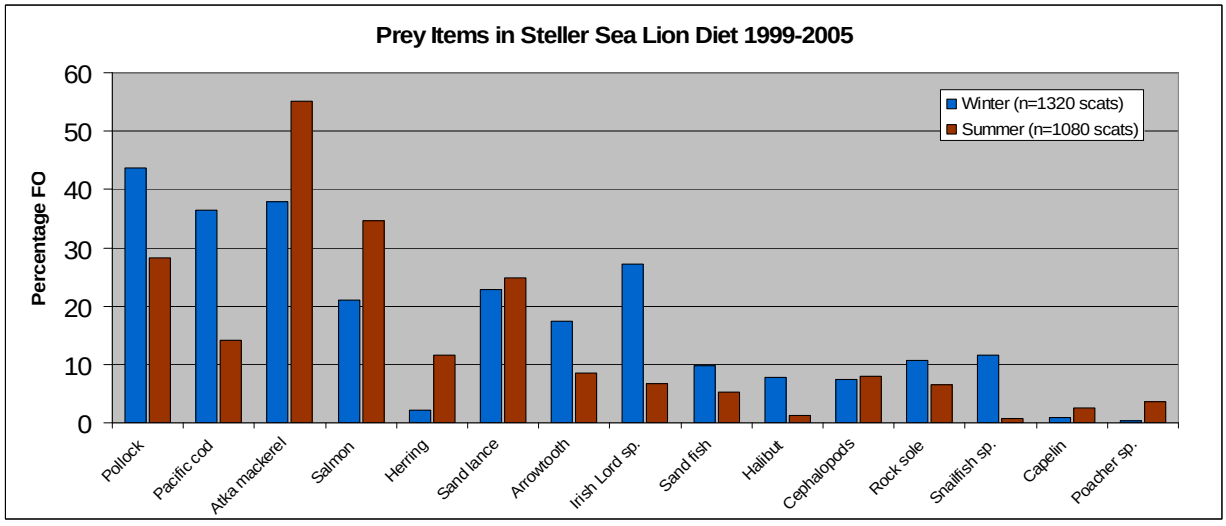



**Figure 3.24** Schematic of the Steller sea lion life-cycle, with an emphasis on reproduction.

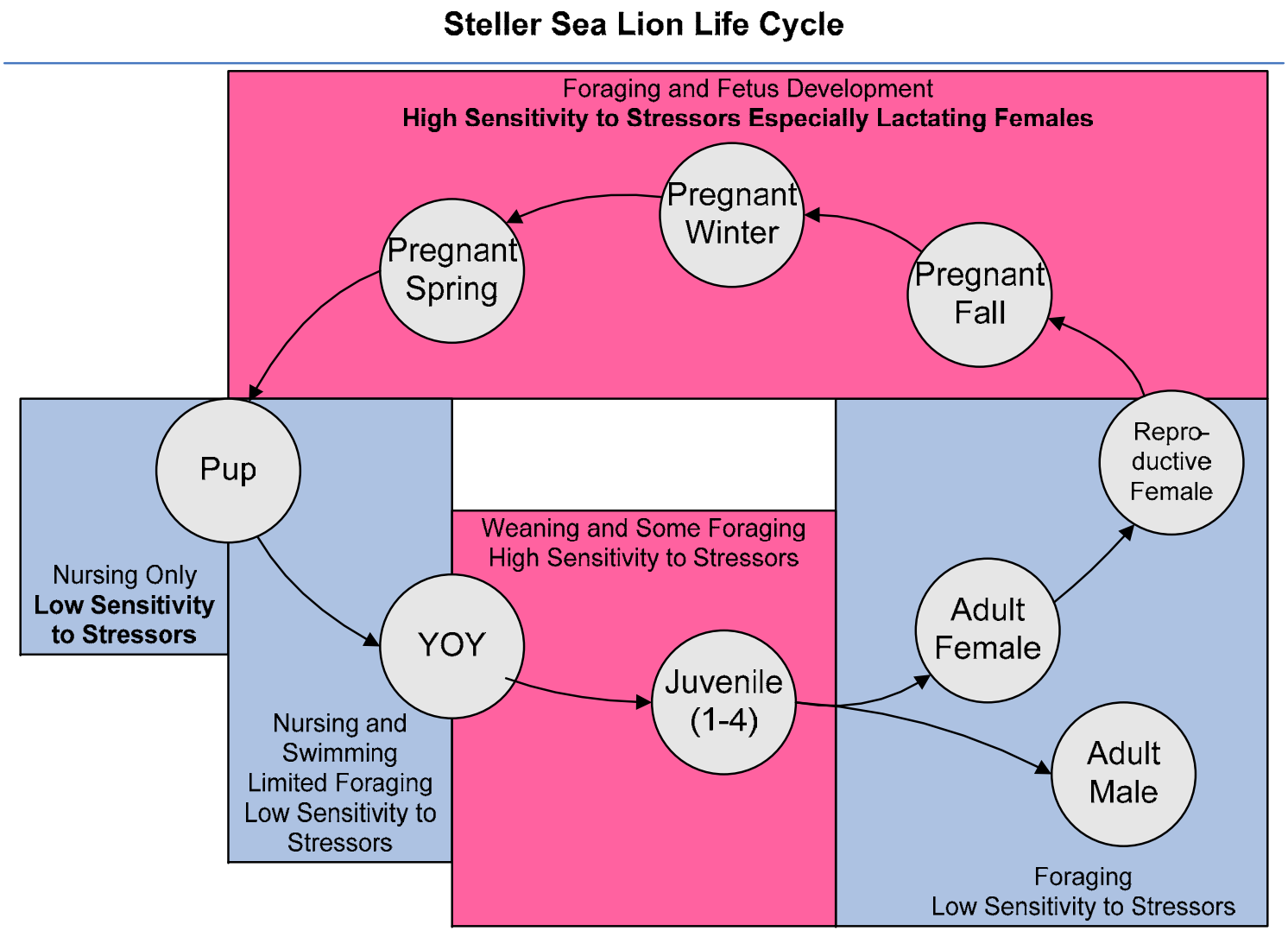


**Figure 4.1.** Time series index of bottom trawl catch for all species, including fish and invertebrates, at three sites in the southeast Bering Sea. Index units are CPUE in Kg/ha. (from Conners *et al.* 2002, NMFS 2006b).

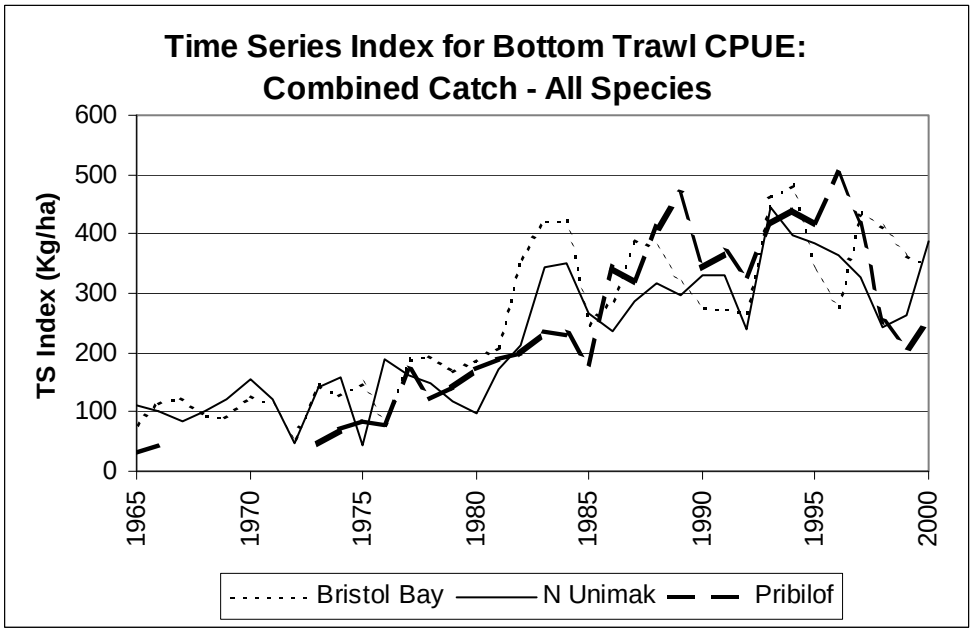


**Figure 4.2** Total stock assessment biomass (mmt) and percentage of biomass by length class for major groundfish predators (top), walleye pollock (middle), and small flatfish (bottom). Biomass values come from age-structured stock assessment models as published in NPFMC (2005).

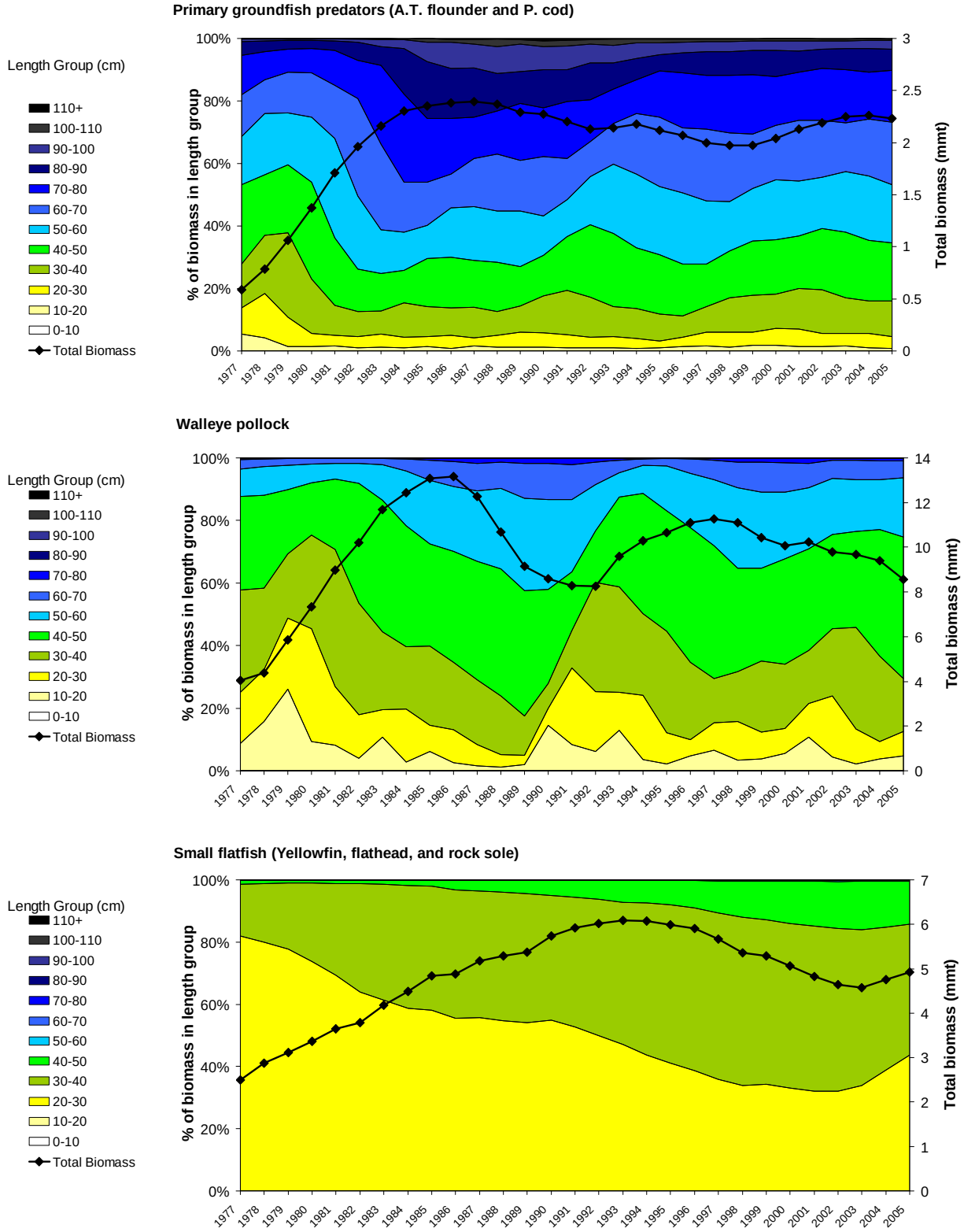


**Figure 4.3.** Average recruitment of EBS pollock at age 1 under different "regimes" based on estimates computed from within the stock assessment model. Vertical lines represent ± two standard deviations.

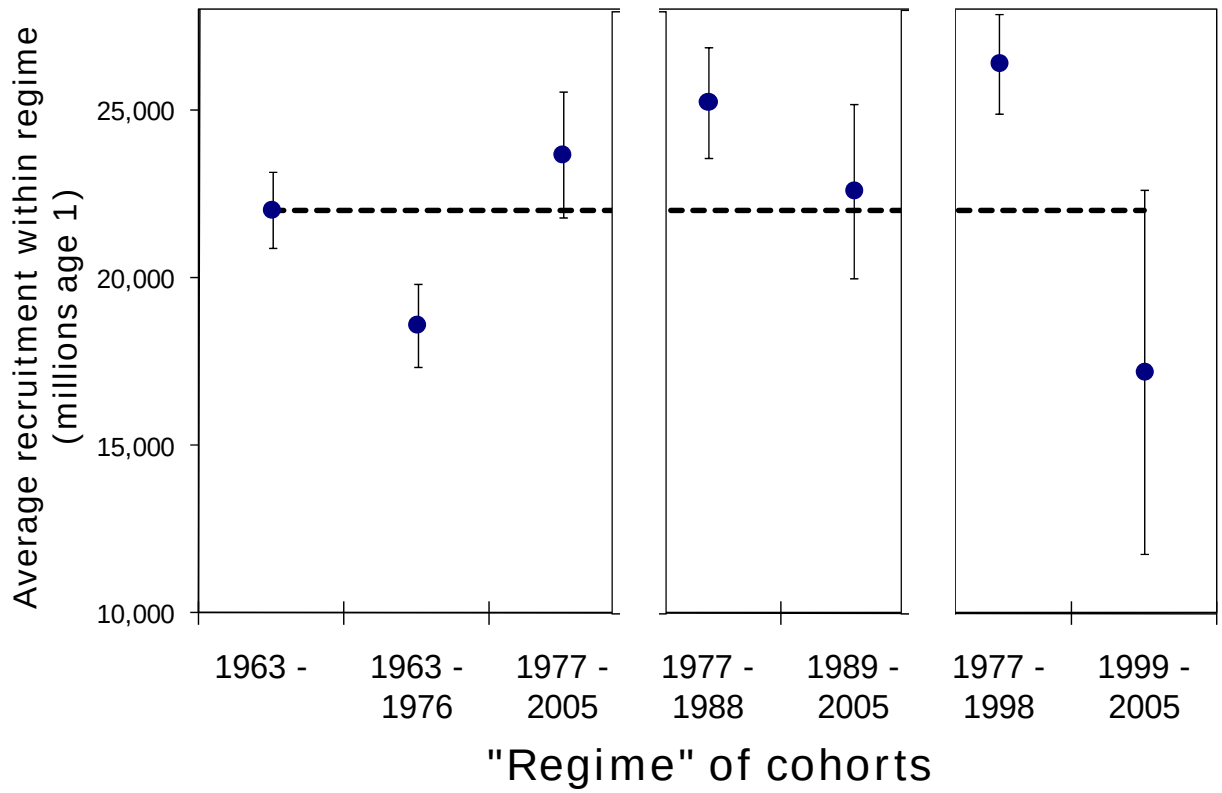


**Figure 4.4.** Estimated year class abundance for Gulf of Alaska pollock from Dorn et al. (2007 ). Vertical lines separate climate regimes with stong (solid line) and moderate (dashed line) signal strength (modified from Fritz and Hinckley 2005).

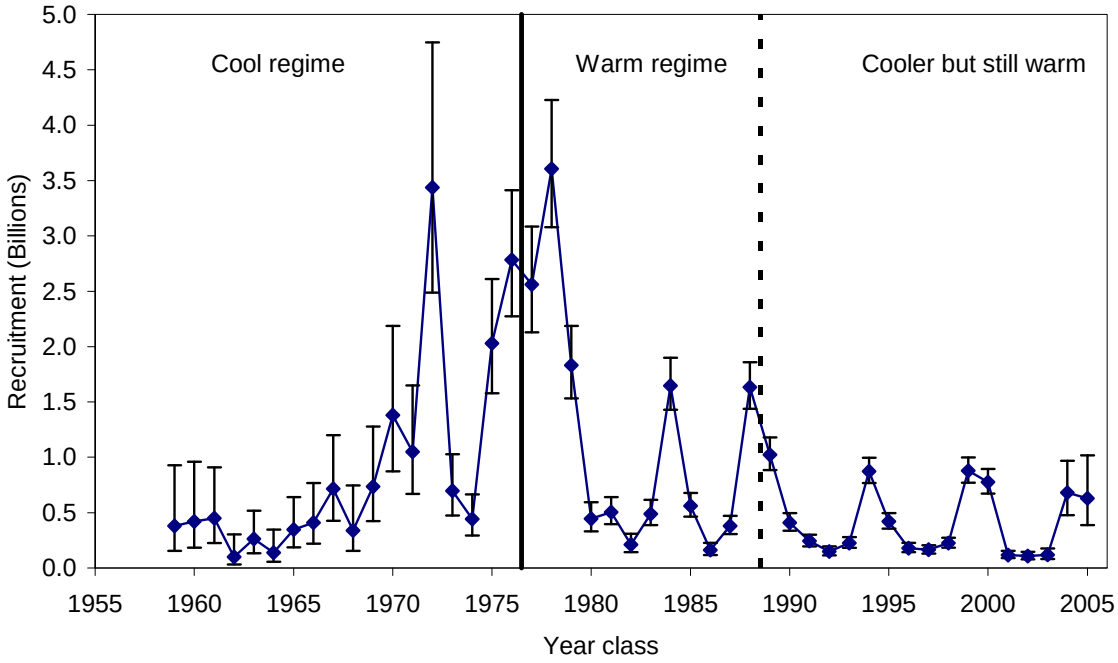


**Figure 4.5.** Annual harvest rates for pollock in 1994-2007 in the Bogoslof area, Gulf of Alaska, and eastern Bering Sea (left), and percent annual change in survey biomass during the same period (right).

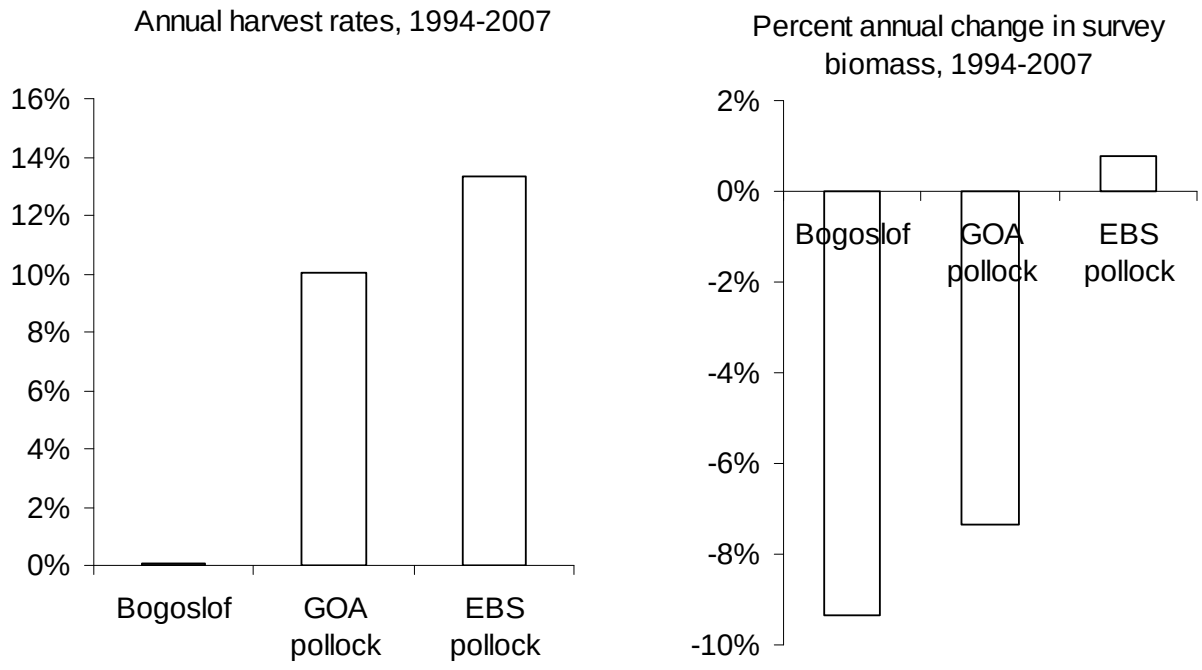


**Figure 4.6.** Spawning biomass trajectories for simulated unfished populations of Gulf of Alaska pollock compared to stock assessment model estimates.

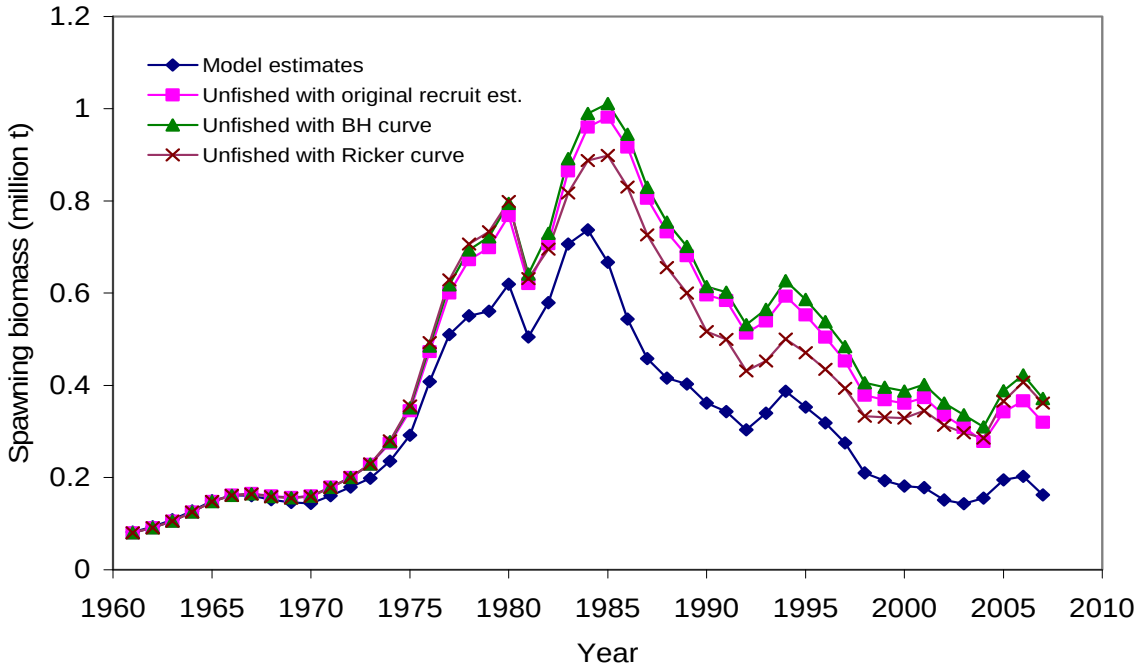


**Figure 4.7.** Example 1000-year simulation of spawning stock dynamics under current Gulf of Alaska pollock harvest control rule. Random recruitments were drawn from a lognormal distribution with the same variance and autocorrelation as the historical recruitment time series. The estimated 42-year trend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

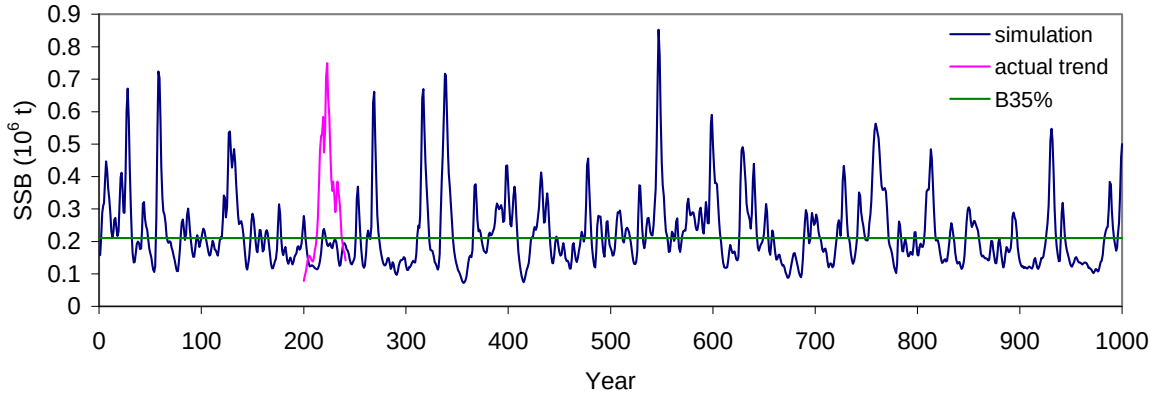


**Figure 4.8.** NMFS summer trawl survey gridded CPUE means by year for pollock, 1984-1991. The Steller sea lion critical habitat area is indicated by the line.

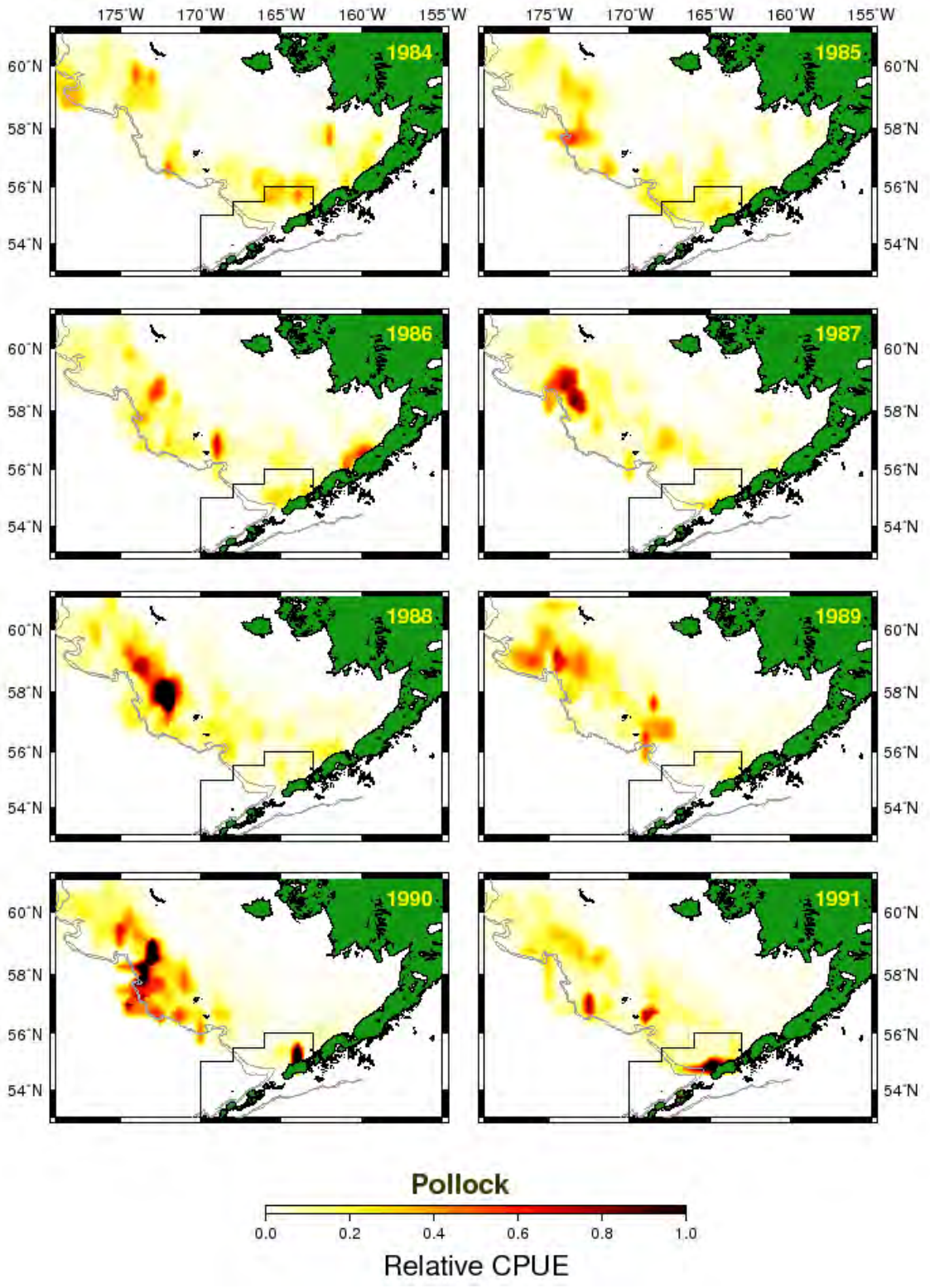


**Figure 4.9** NMFS summer trawl survey gridded CPUE means by year for pollock, 1992-1999. The Steller sea lion critical habitat area is indicated by the line.

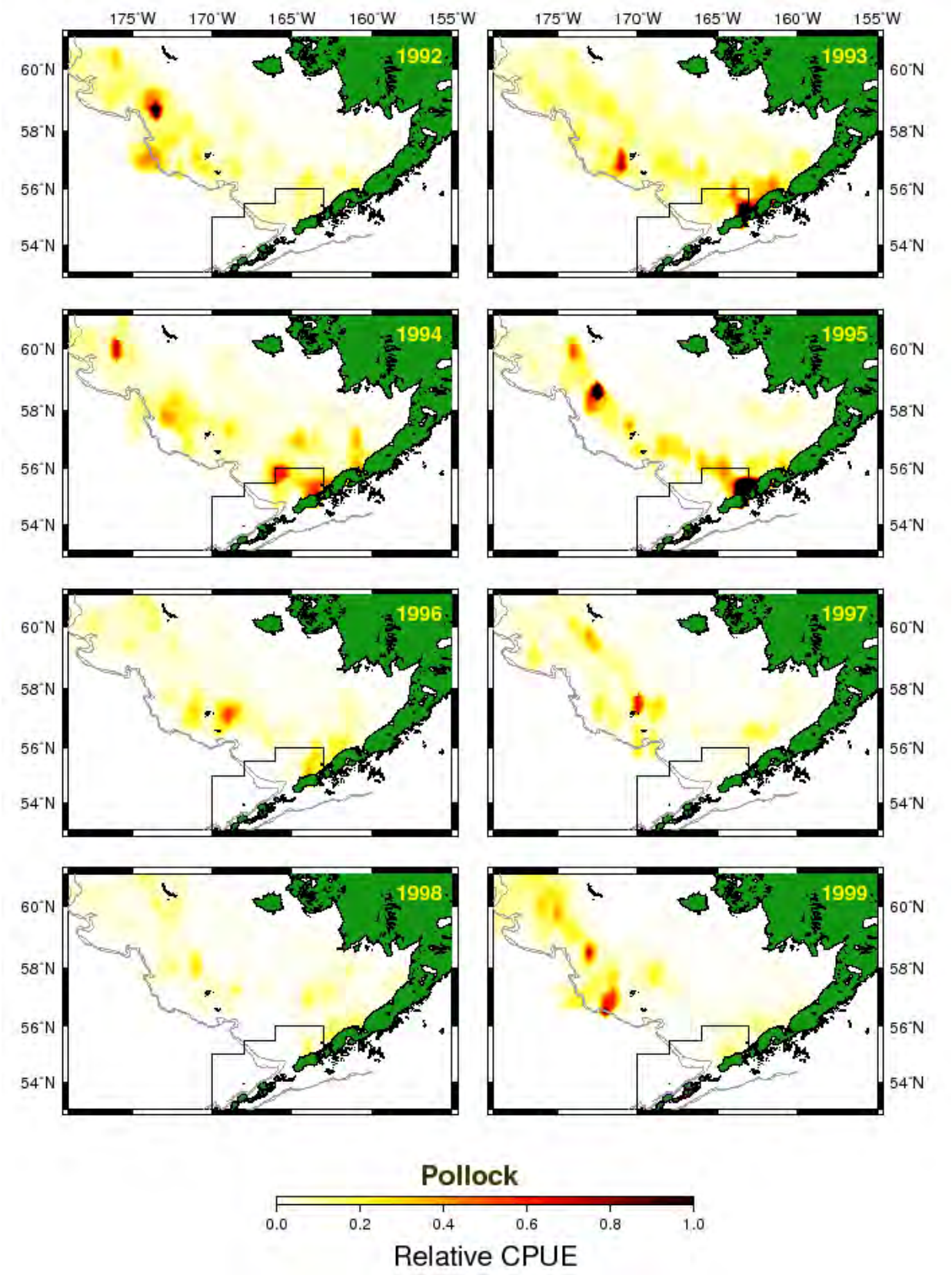


**Figure 4.10** NMFS summer trawl survey gridded CPUE means by year for pollock, 2000-2007. The Steller sea lion critical habitat area is indicated by the line.

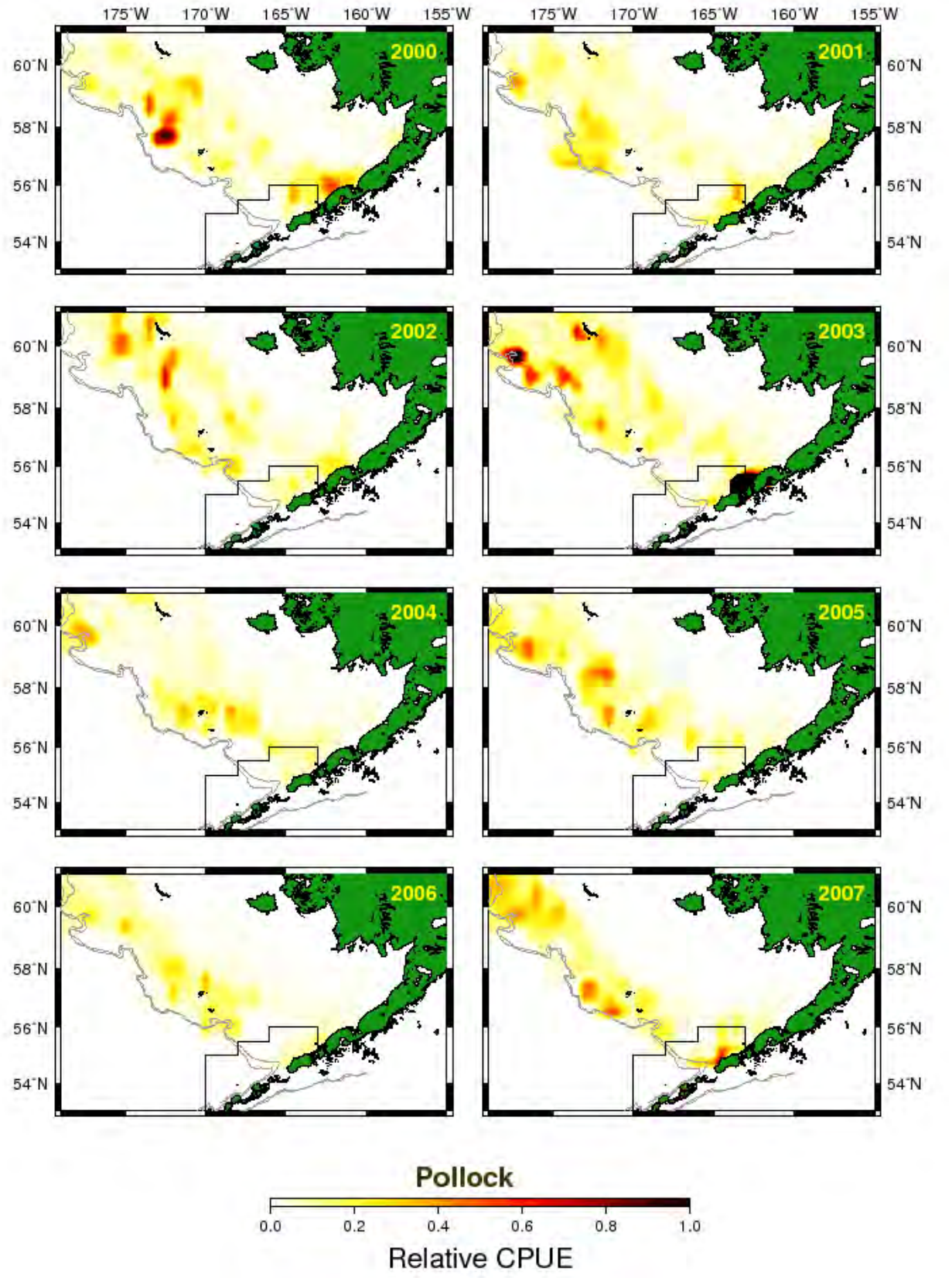


**Figure 4.11** NMFS summer trawl survey gridded CPUE means by year for Pacific cod, 1982-1989. The Steller sea lion critical habitat area is indicated by the line.

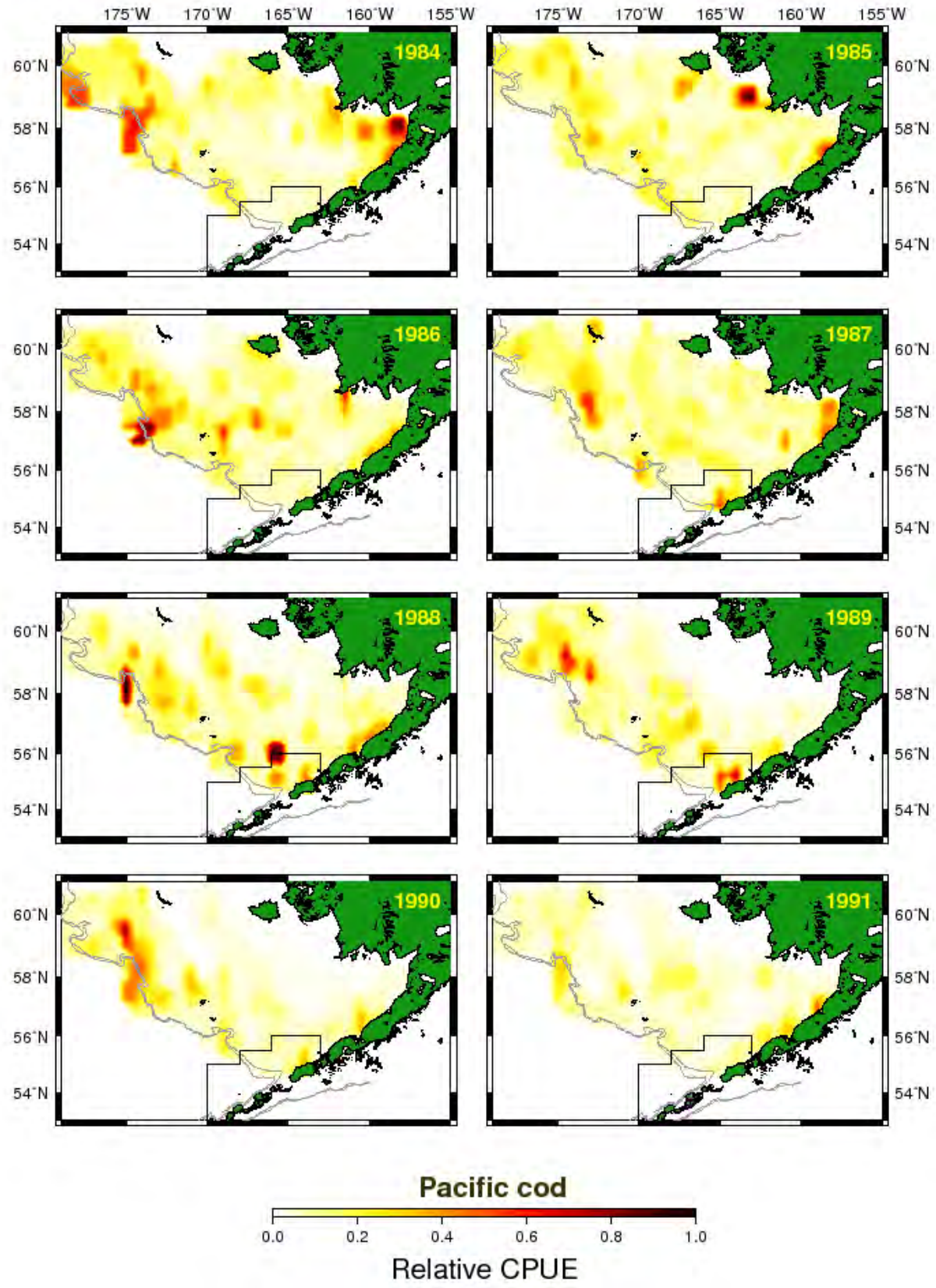


**Figure 4.12** NMFS summer trawl survey gridded CPUE means by year for Pacific cod, 1990-1997. The Steller sea lion critical habitat area is indicated by the line.

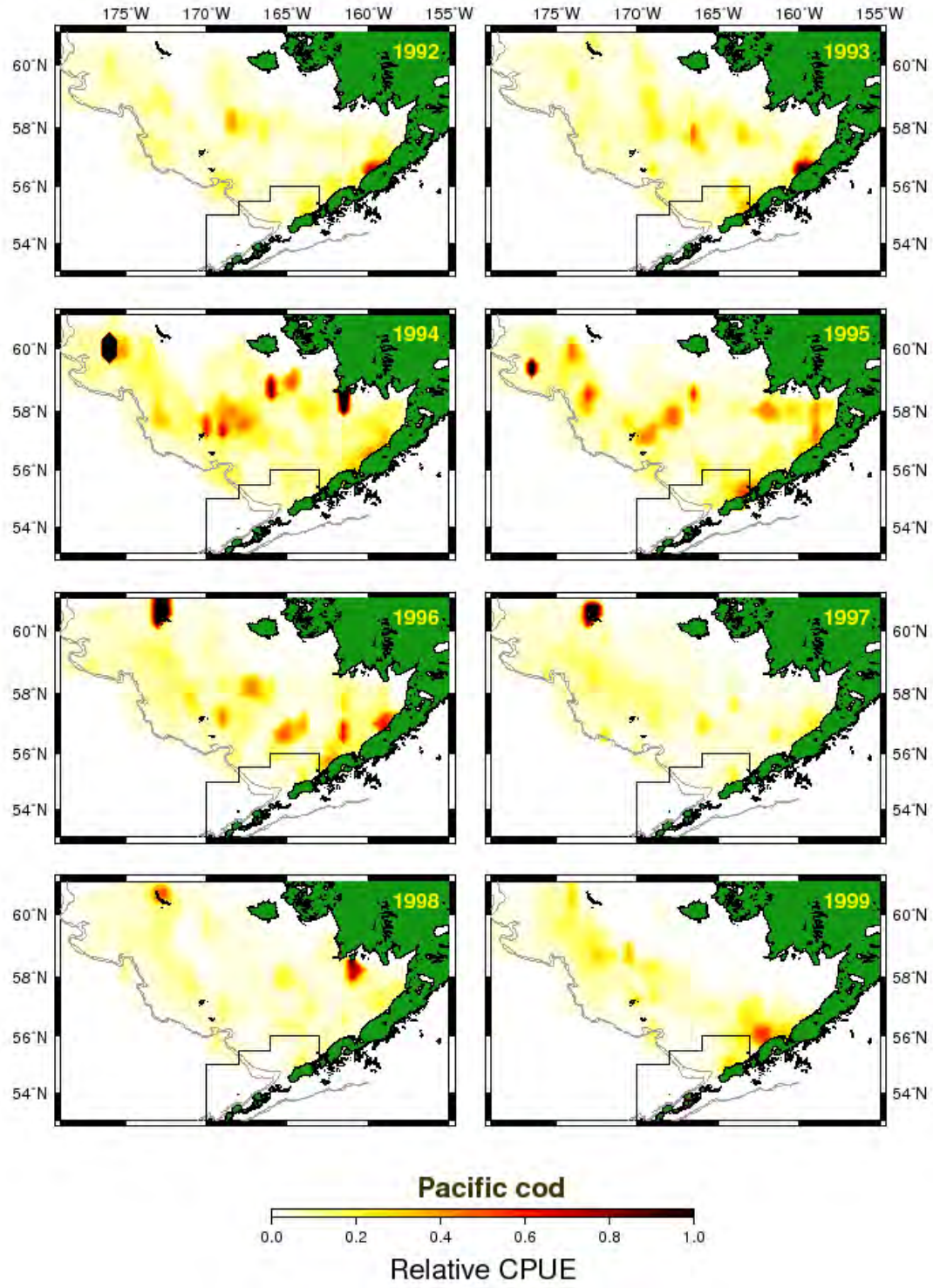


**Figure 4.13** NMFS summer trawl survey gridded CPUE means by year for Pacific cod, 1996 - 2005. The Steller sea lion critical habitat area is indicated by the line.

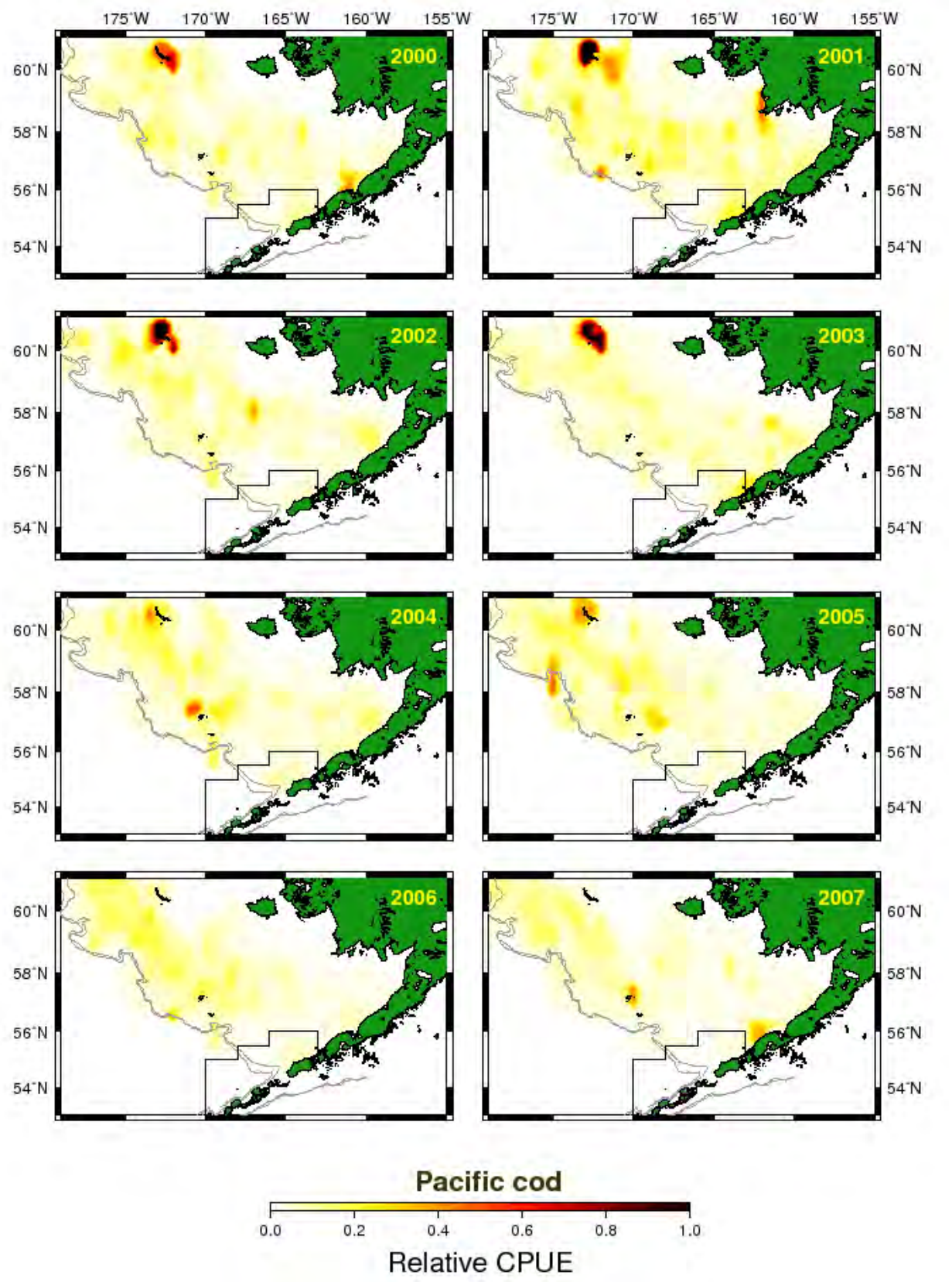


**Figure 4.14** NMFS summer trawl survey mean CPUE weighted centers of abundance by year for pollock (top panel) and Pacific cod (bottom panel). The size of the year symbol is proportional to the mean CPUE for that year.

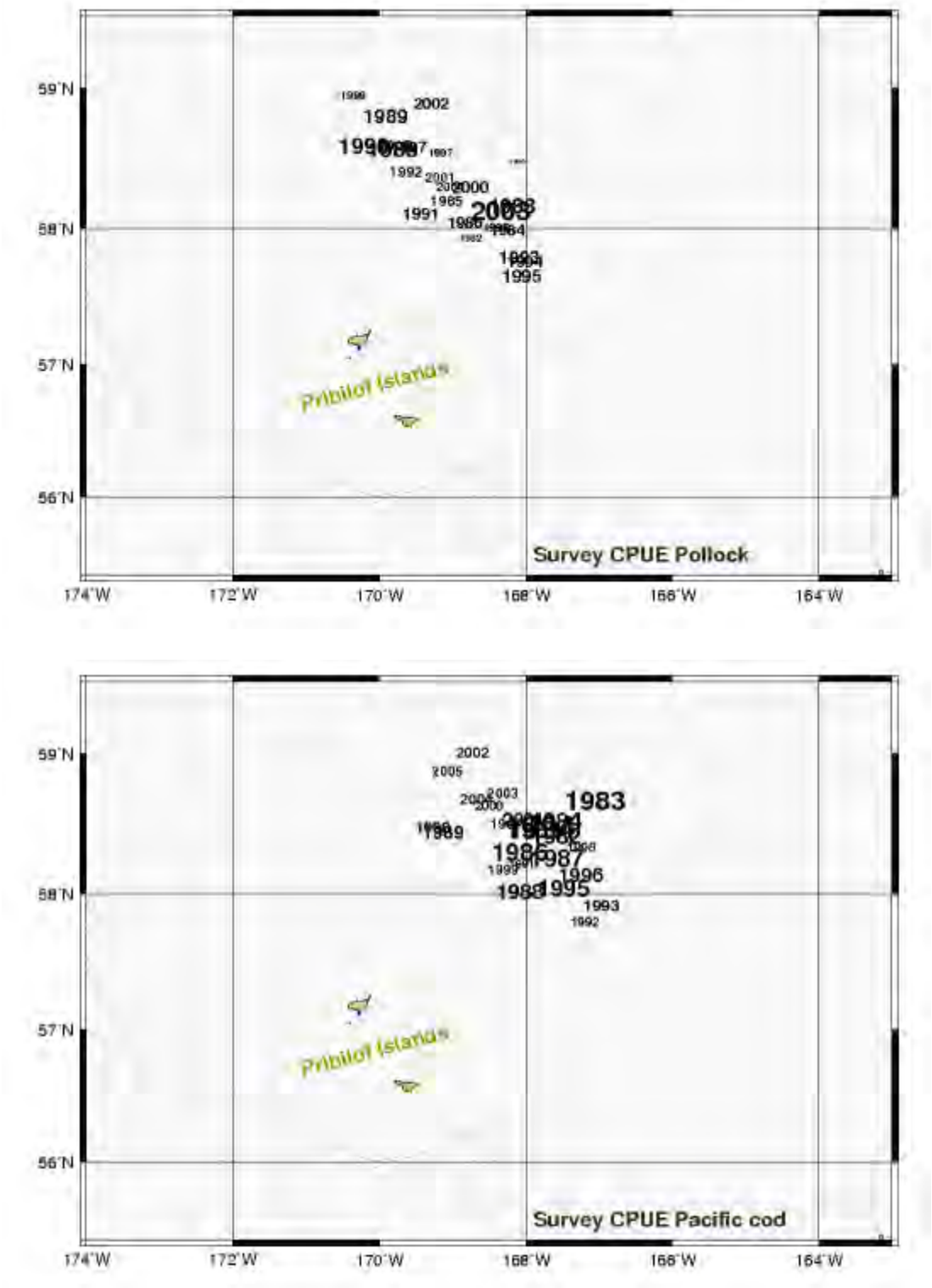
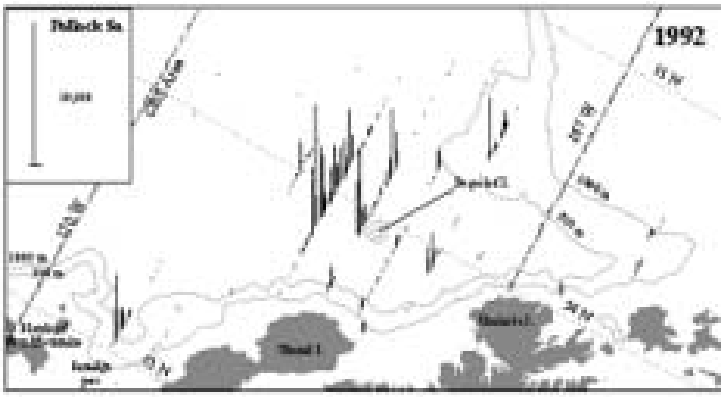
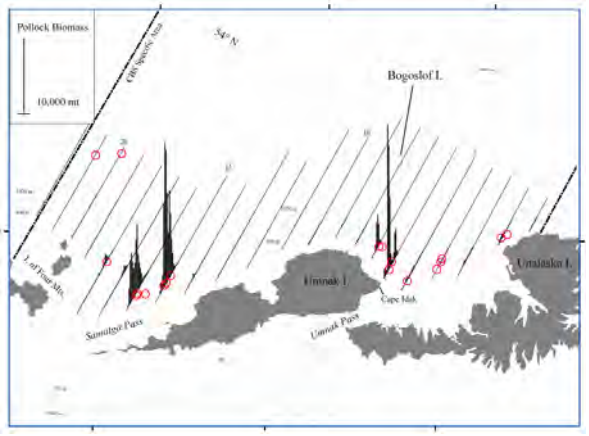


**Figure 4.15** Ratio of average NMFS summer trawl survey CPUE **inside** Steller sea lion critical habitat over the average CPUE **outside** of critical habitat by year (top panel) and by 5-year periods (bottom panel) for pollock and Pacific cod.

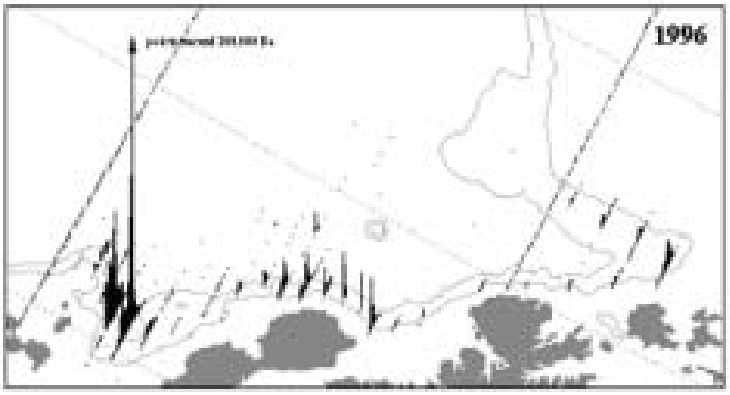
**Figure 4.16** Bogoslof Island region pollock backscatter (sA) along tracklines during winter in three selected years.



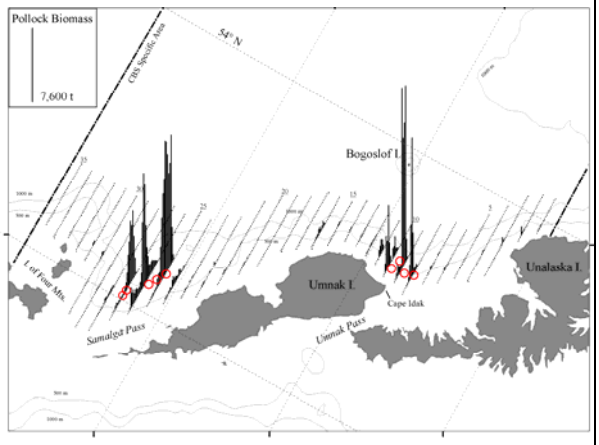

**1992**




**2005**




**1996**




**2007**

**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).

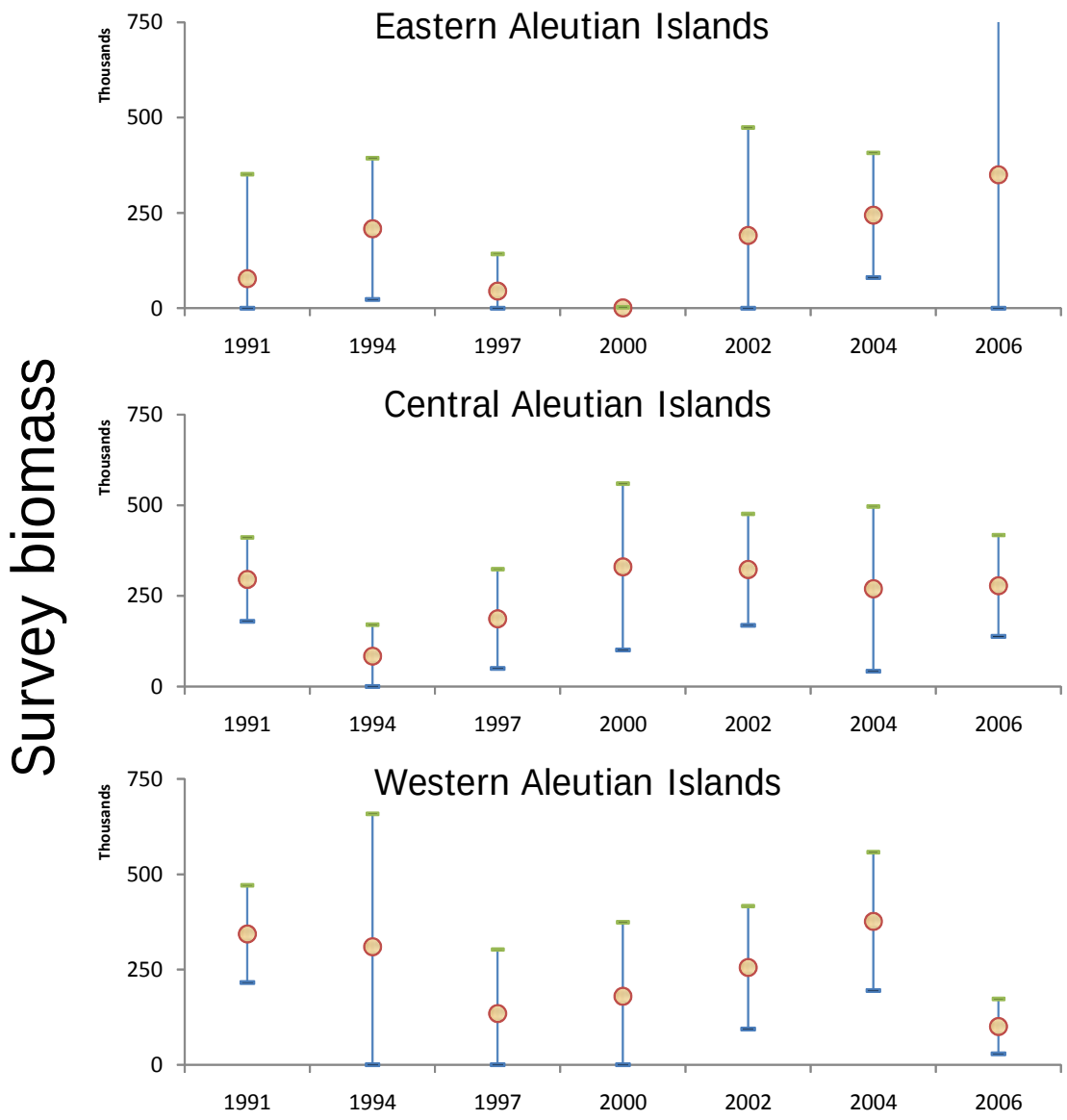


**Figure 4.18** Atka mackerel Aleutian survey station CPUE (bar height), 2000-2006 (Lowe *et al.* 2007).

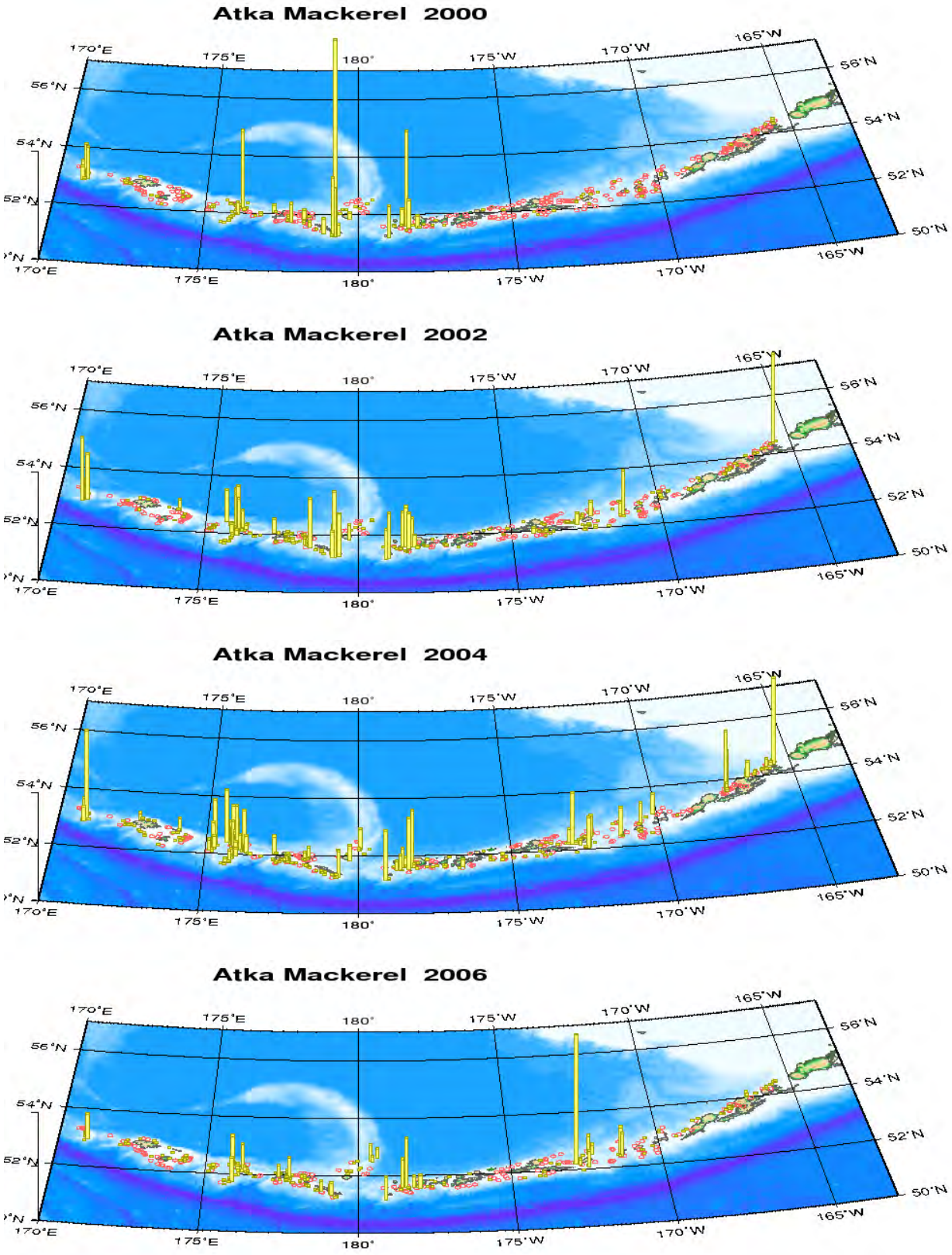


**Figure 4.19** Pacific cod GOA survey station CPUE (bar height), 2001-2007.

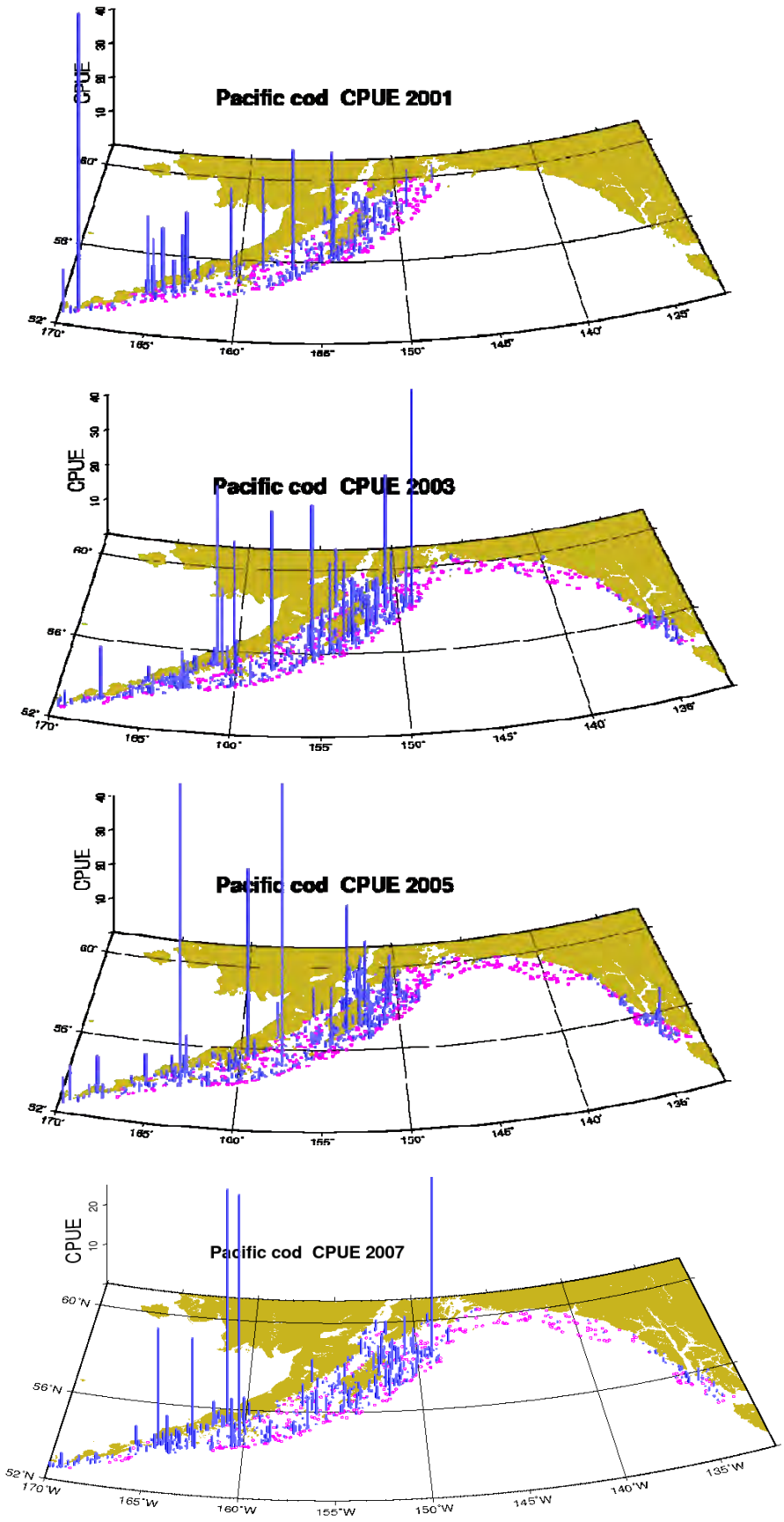
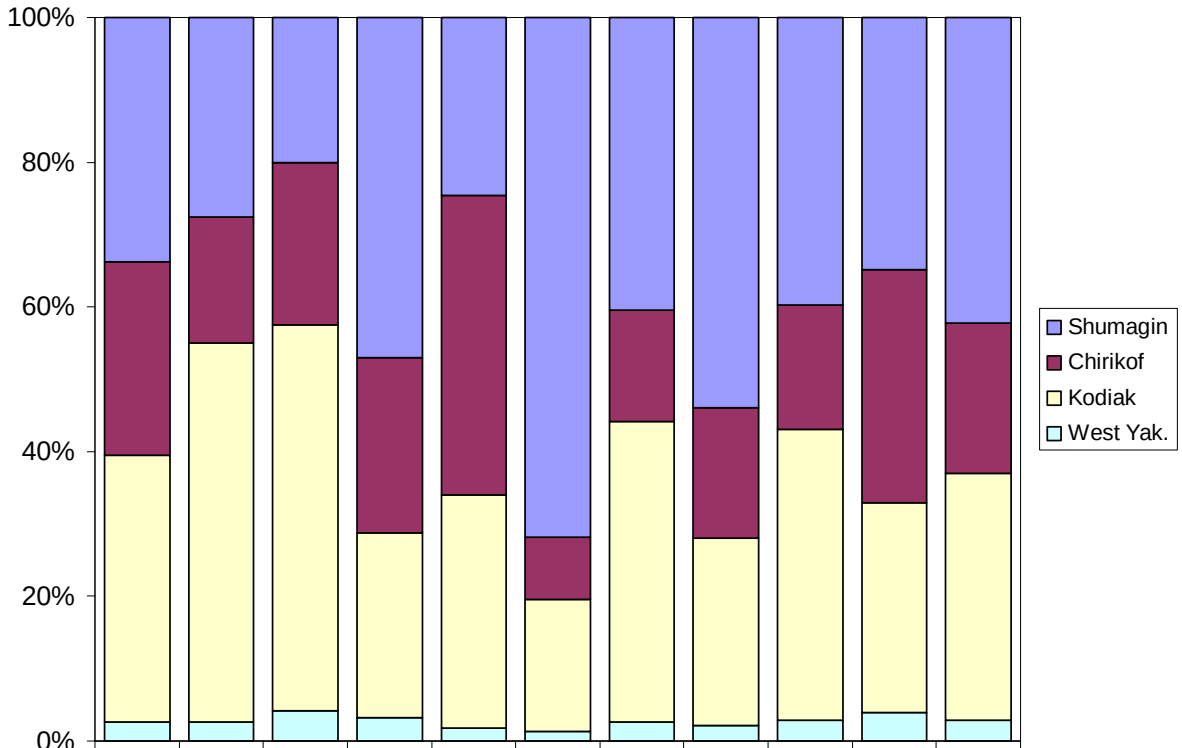
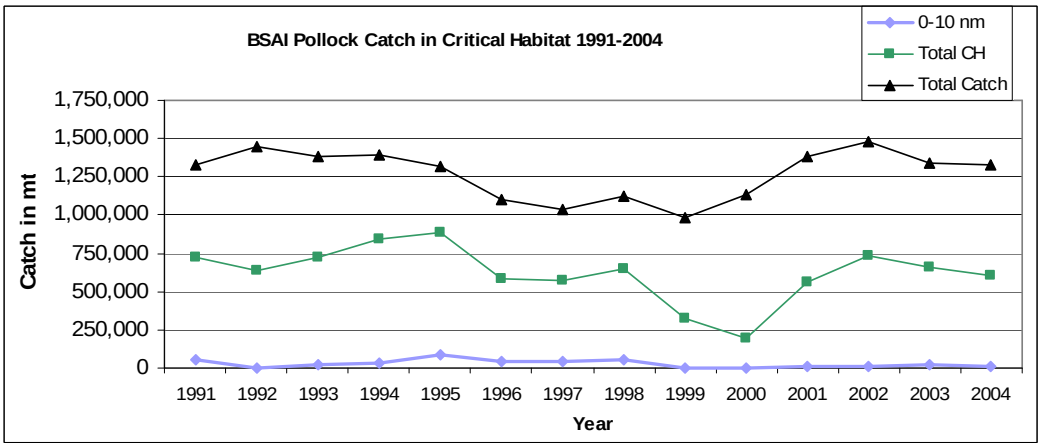


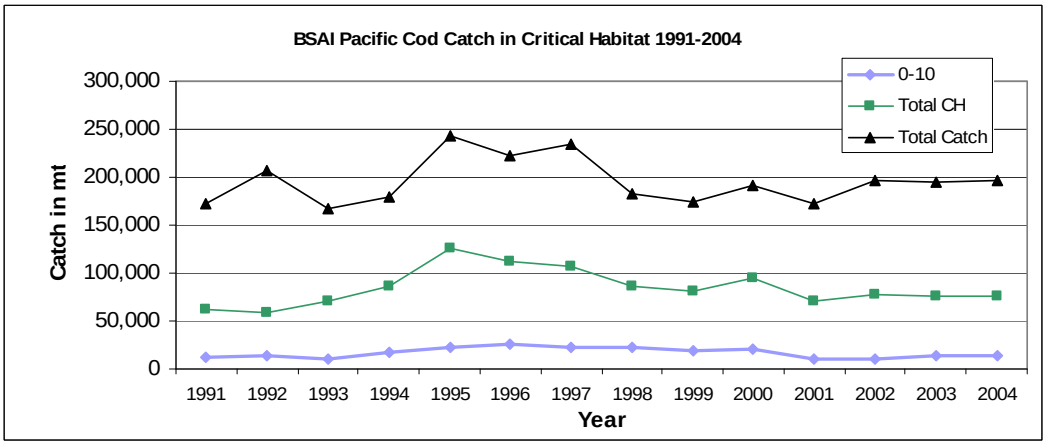
**Figure 4.20** Percent distribution of Gulf of Alaska pollock biomass west of 140° W longitude. in NMFS bottom trawl surveys in 1984-2005. The percent in West Yakutat in 1984, 1987, and 2001 was set equal to the mean percent in 1990-99 (from Dorn *et al.* 2007).




| | 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.



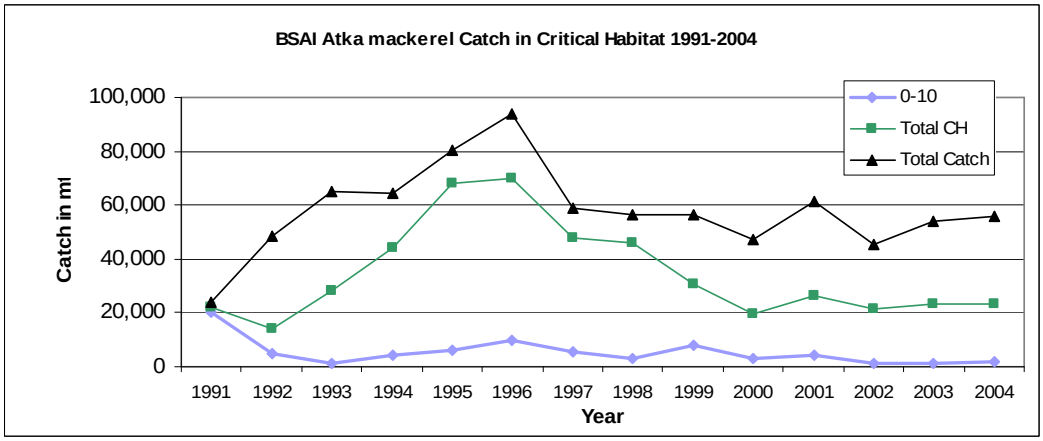
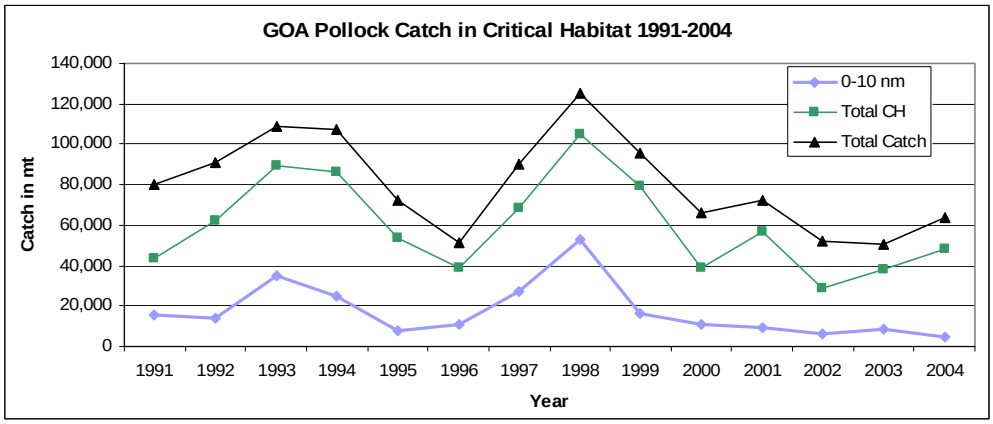



**Figure 4.22** Catch of Pollock and Pacific cod in critical habitat in the Gulf of Alaska (GOA) from 1991-2004.



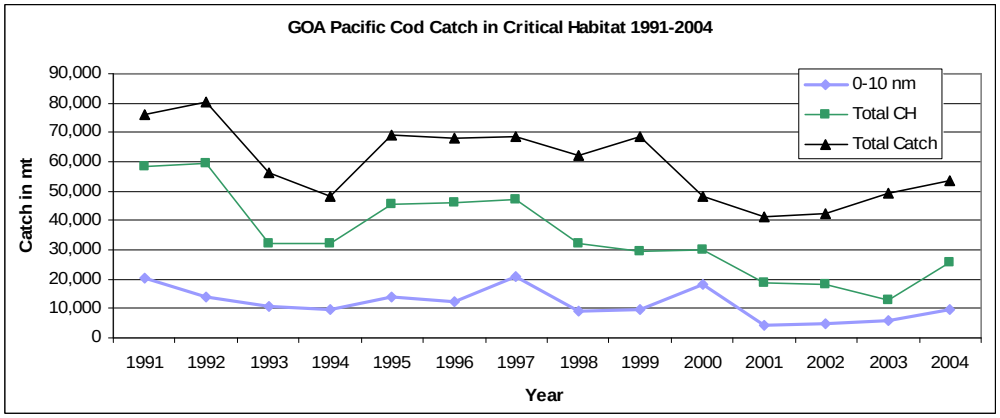



**Figure 4.23** (A) Catch and estimated age 3+ biomass of walleye pollock, Pacific cod and Atka mackerel in the eastern Bering Sea, Aleutian Islands and "Donut Hole" (international waters of the central Bering Sea) from 1964-2004. Estimated biomass is from stock assessments and includes Bogoslof pollock 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).

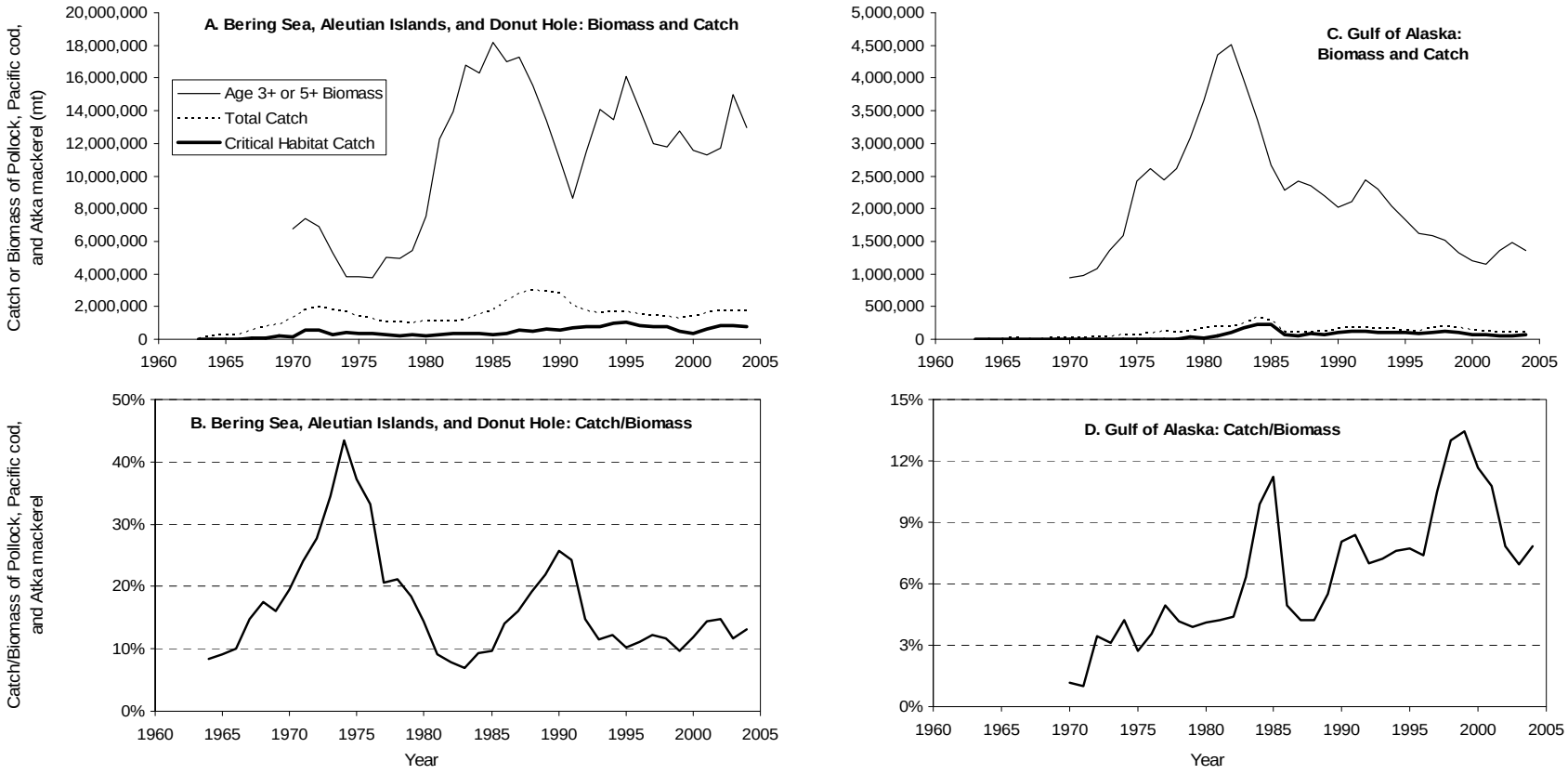


Figure 4.24 Exposure risk analysis schematic.

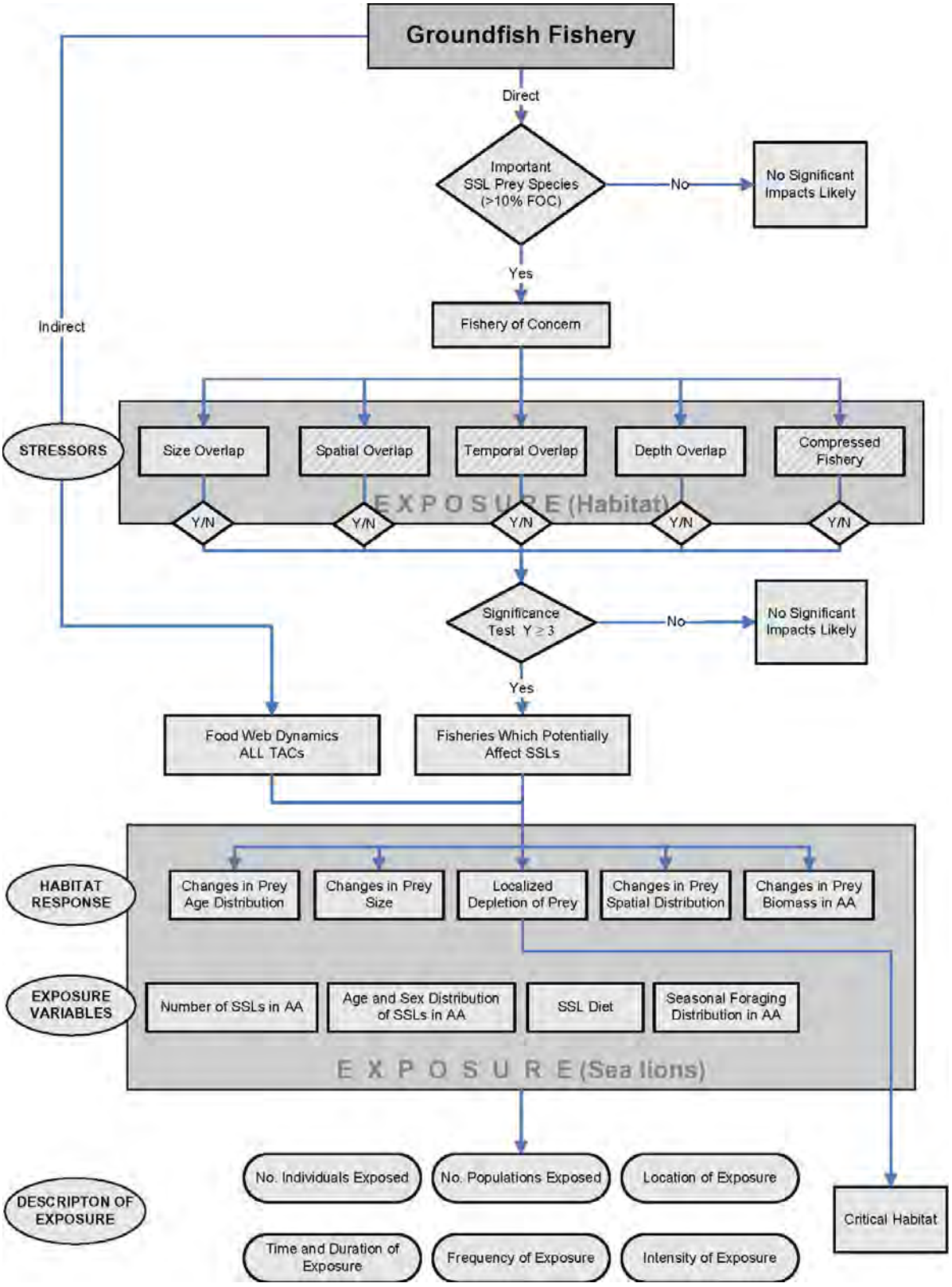


Figure 4.25 Schematic of a

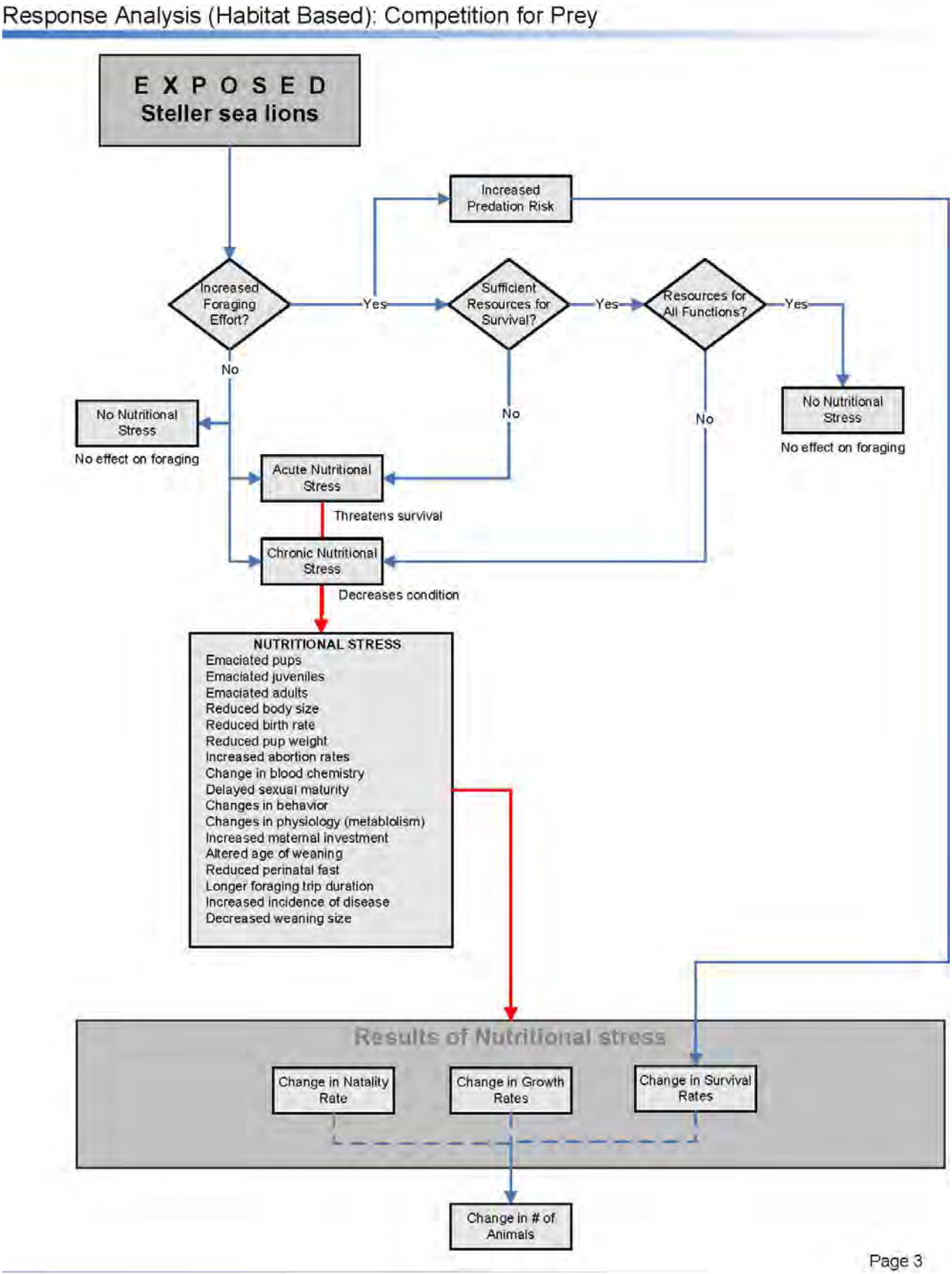


**Figure 4.26:** Areas used to designate "Expanded Observer Data" as catch taken in the Bering Sea (BS), Gulf of Alaska (GOA), or the Aleutian Islands (AI) regions.

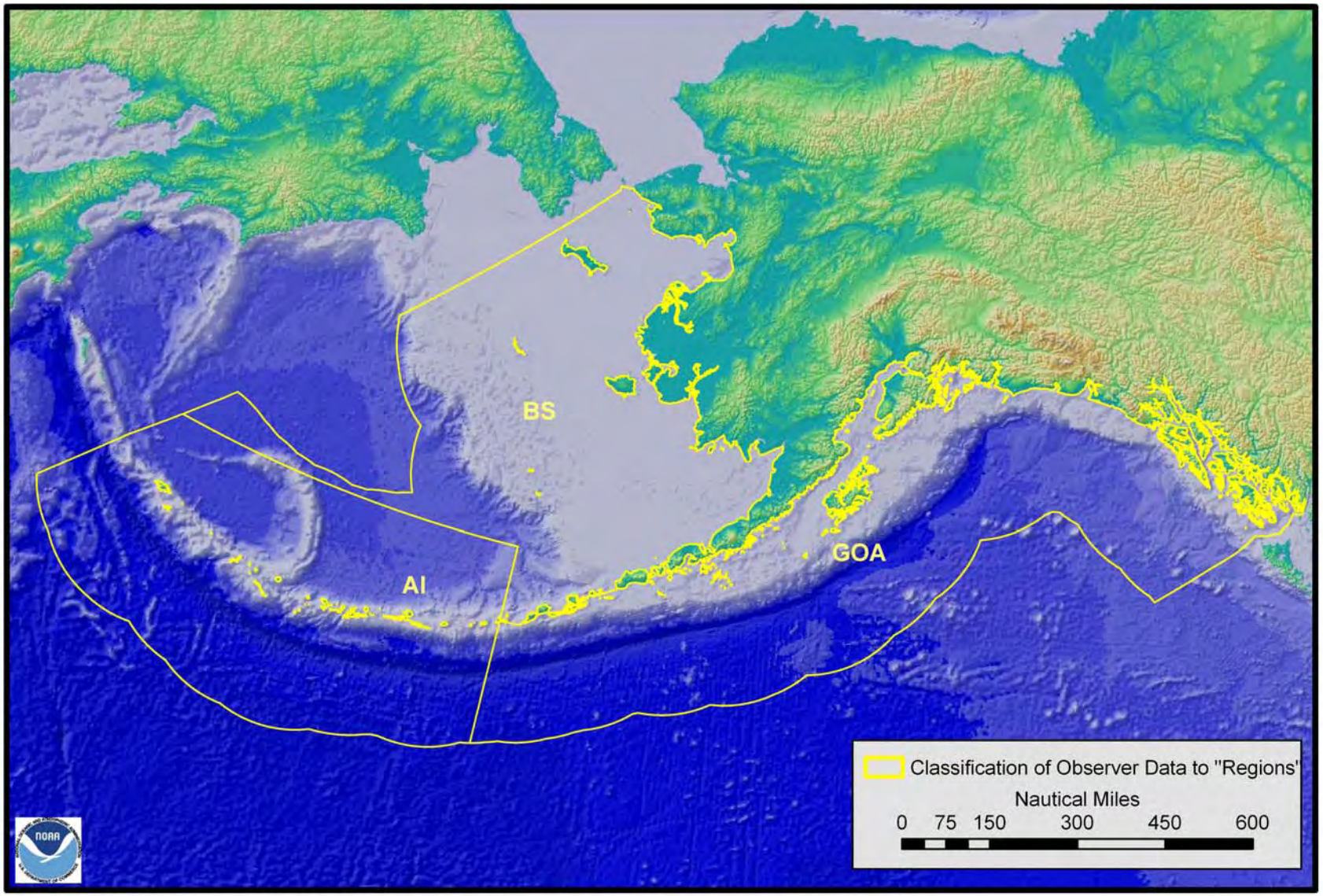
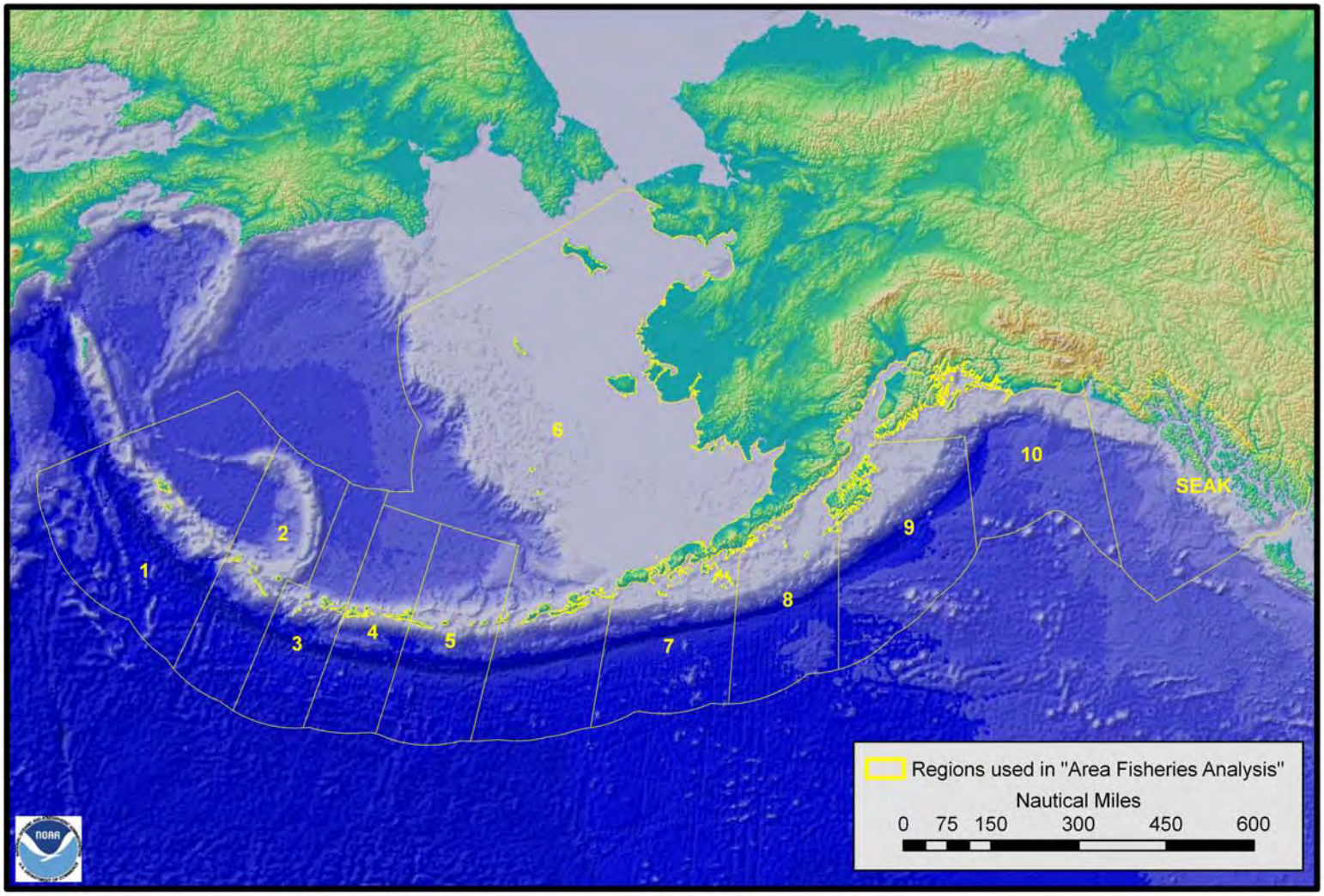


Figure 4.27: Polygons used in the “RCA” analysis to classify expanded observer fisheries catch data.



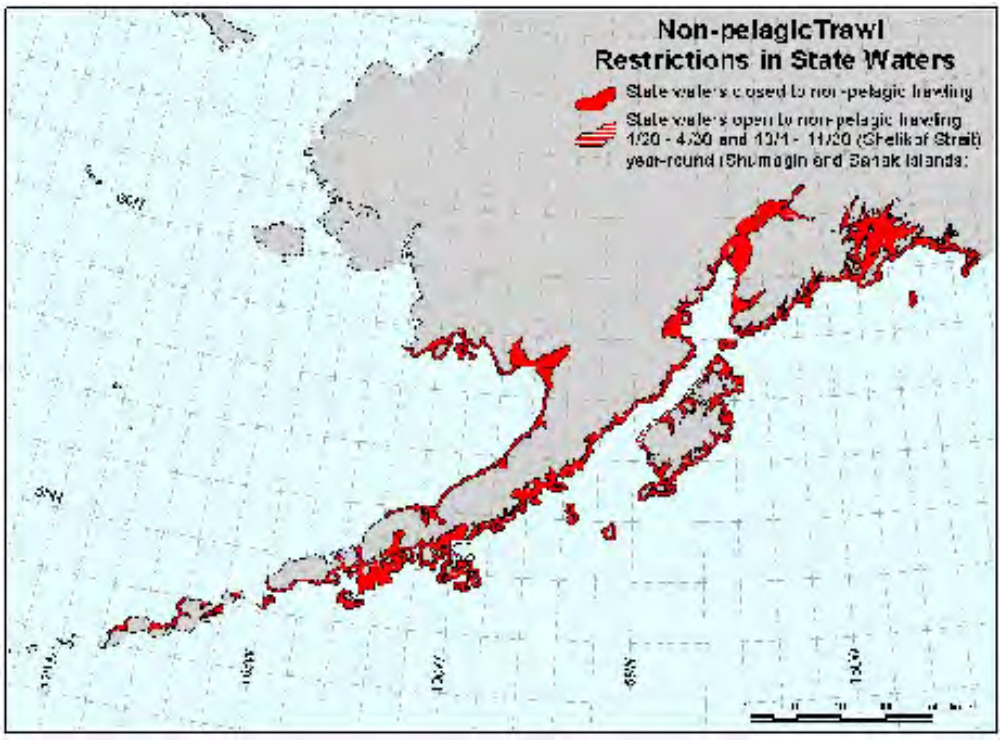



**Figure 4.28** Non-pelagic trawl restrictions in state waters west of 144W.

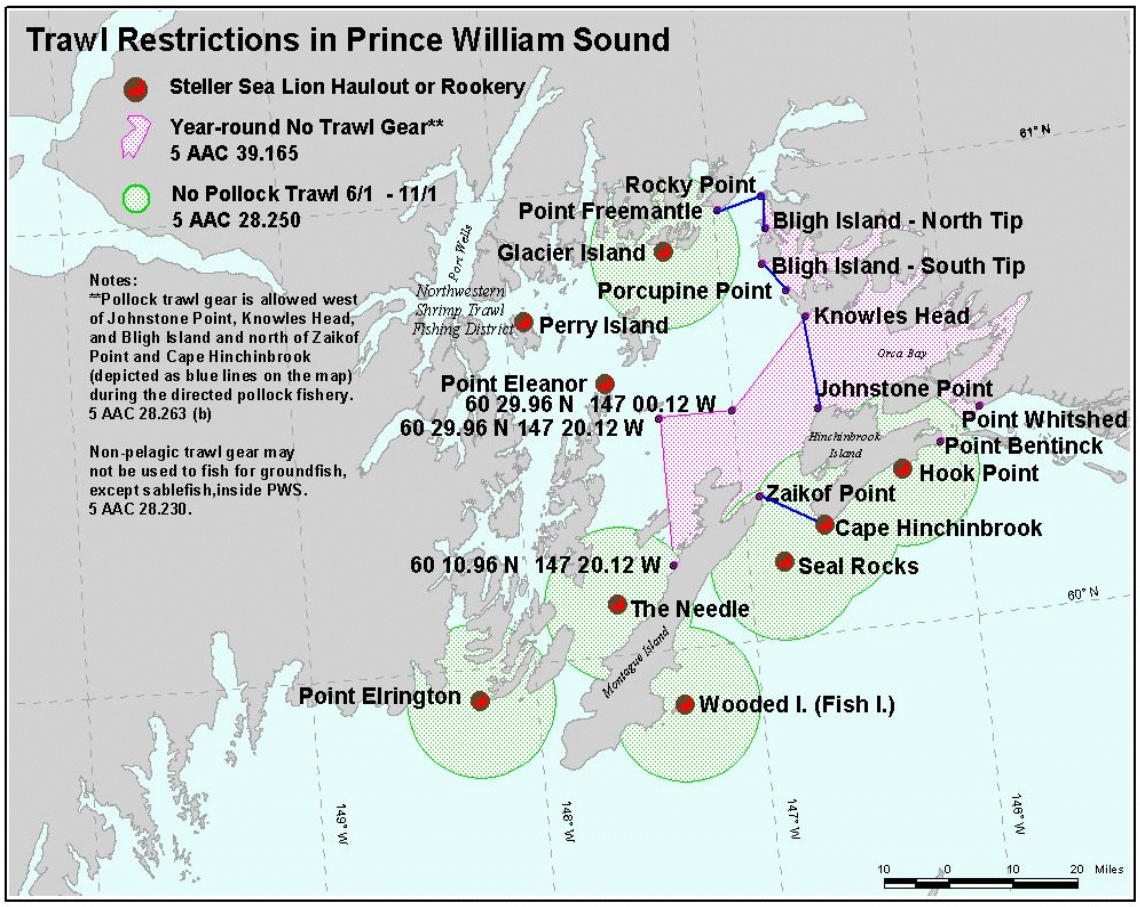



**Figure 4.29** Year-round and seasonal trawl restrictions in Prince William Sound.

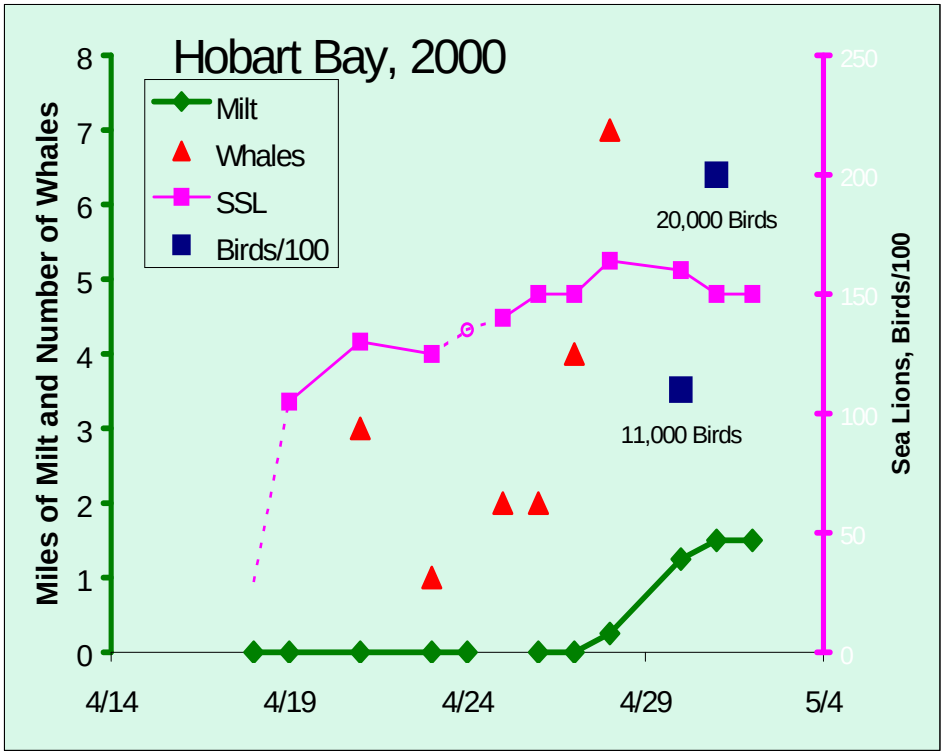



**Figure 4.30** Response of marine mammals to herring in Hobart Bay, 2000.

Figure 4.31(from NMFS 2001)

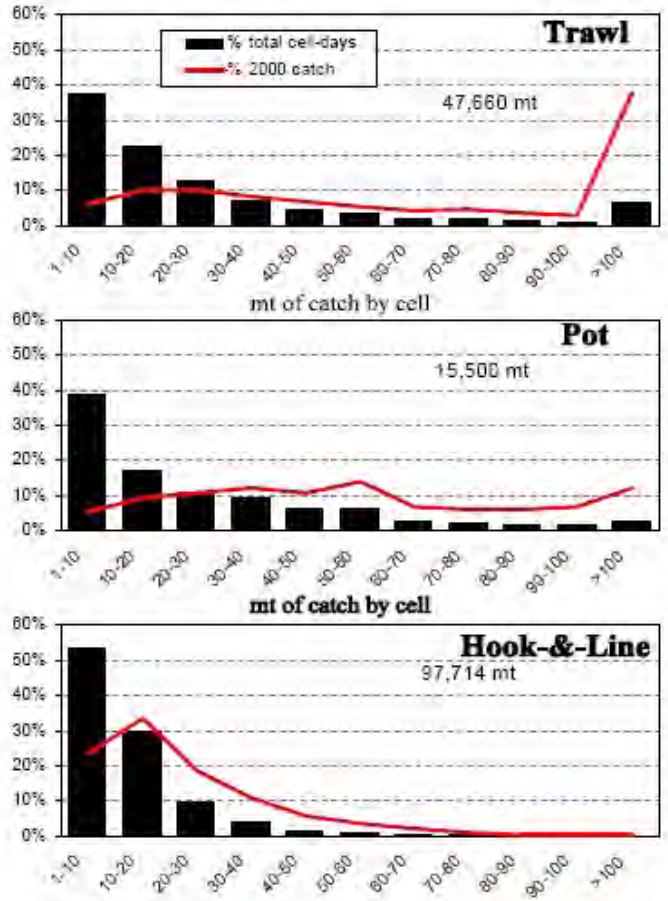



**Figure 5.1** Distribution of catch in the BSAI Pacific cod fishery in 2000. The x-axis represents the rate of catch in mt broken out in areas of 100 km$^2$. Bars represent the relative amount of days in which 100 km$^2$ cells had a particular catch rate. The line graph represents the cumulative percentage of the total catch in each bin.

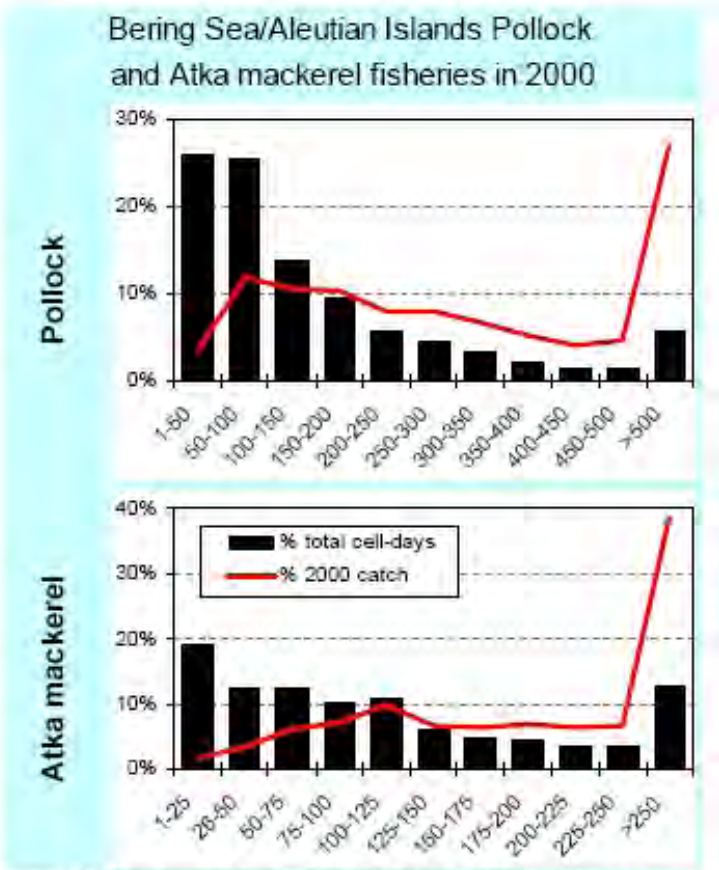



**Figure 5.2.** Distribution of catch in the BSAI pollock and Atka mackerel fisheries in 2000. The x-axis represents the rate of catch in mt broken out in areas of 100 km$^2$. Bars represent the relative amount of days in which 100 km$^2$ cells had a particular catch rate. The line graph represents the 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).

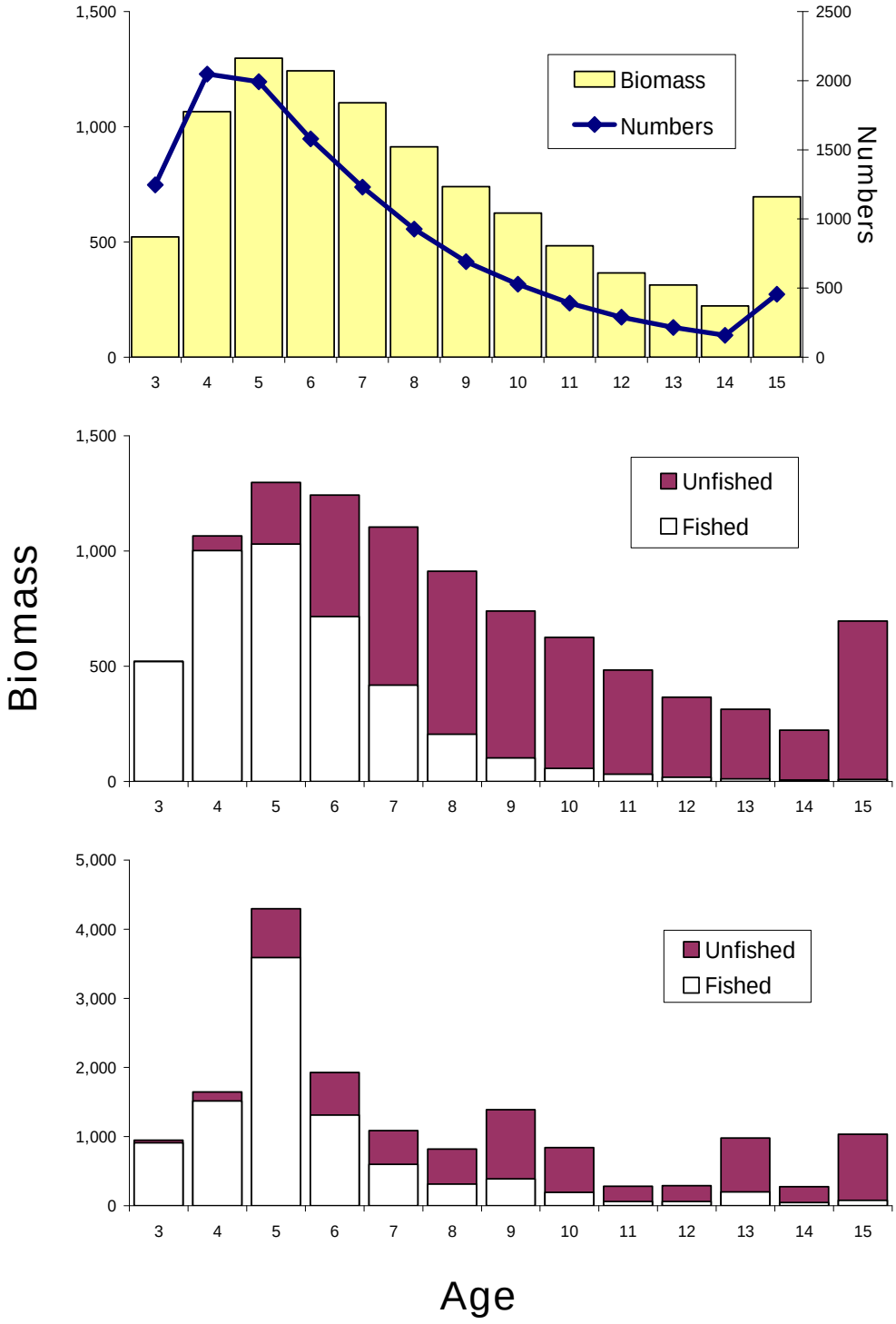


Figure 4.33. EBS pollock spawning stock biomass estimates from Ianelli et al. (2007) compared to values had no fishing occurred during this period. The unfished stock size calculations assume the same natural mortality, mean weights-at-age, and estimates of numbers at age one as used in the assessment.

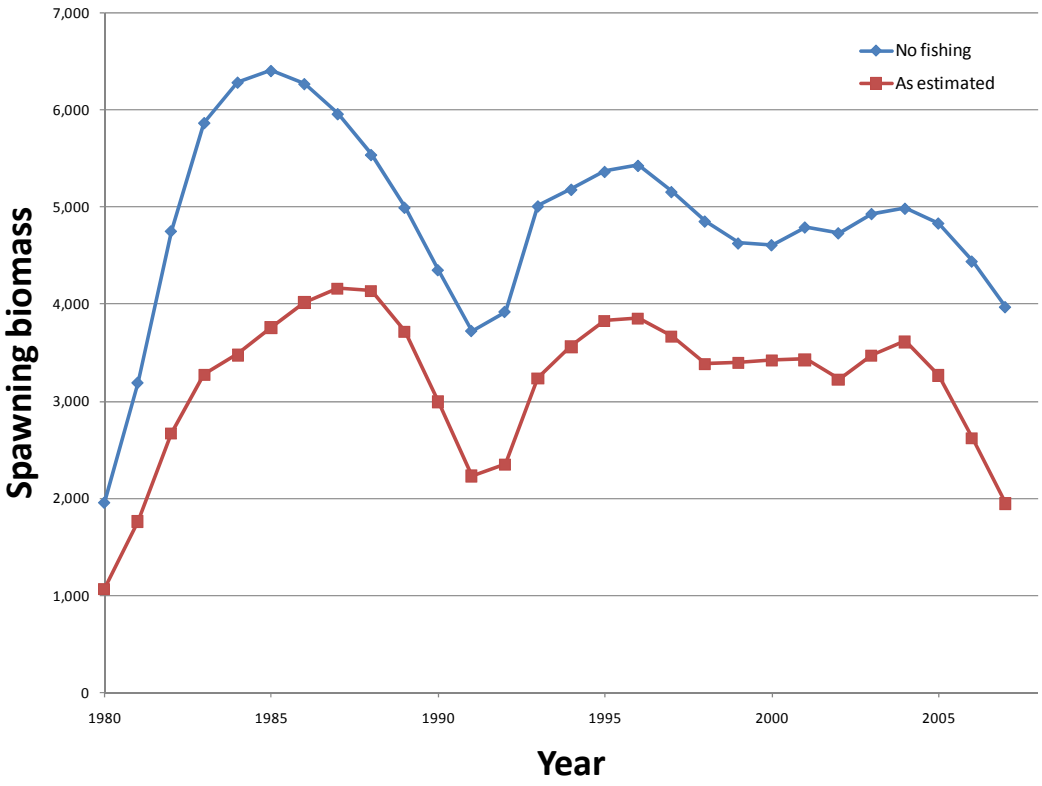
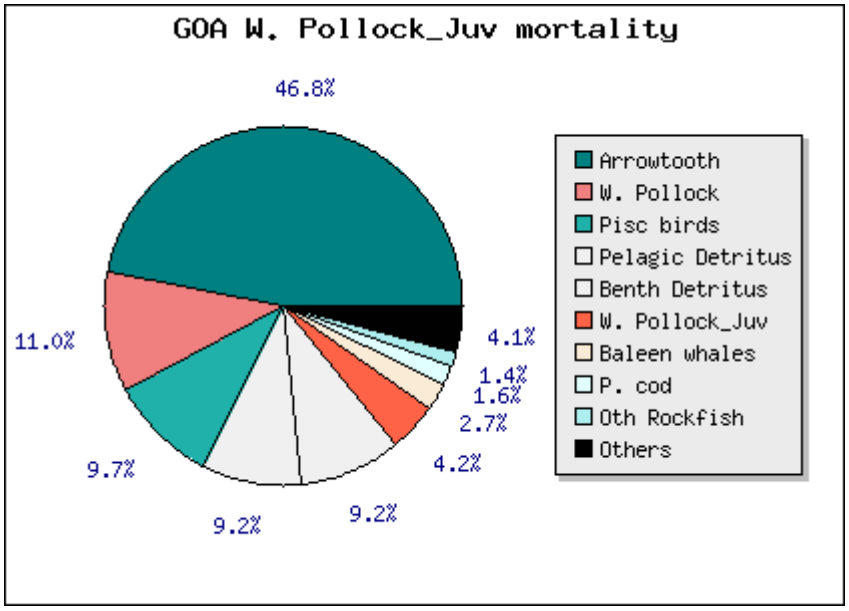


**Figure 4.34** Sources of mortality for walleye pollock juveniles (top) and adults (bottom) from an ECOPATH model of the Gulf of Alaska (Gaichas 2006). Pollock less than 20cm are considered juveniles.



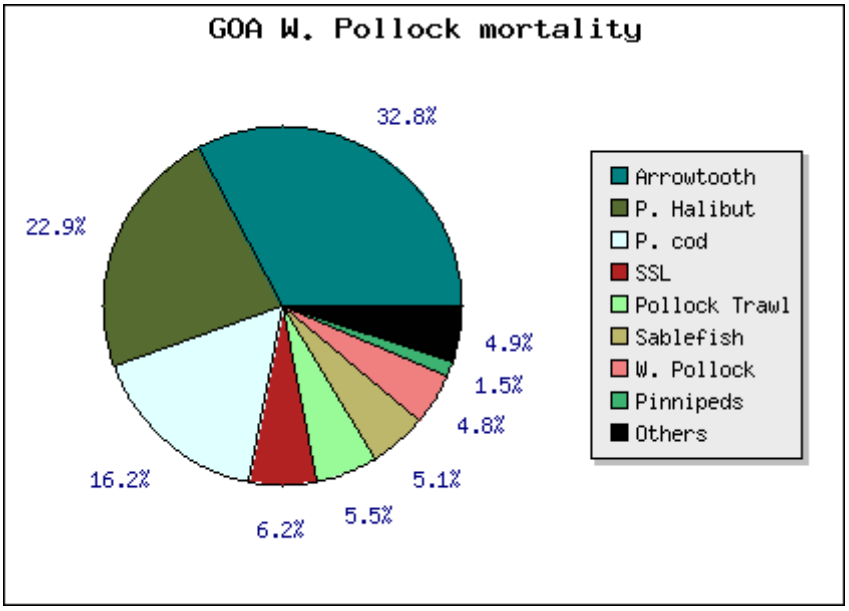



**Figure 4.35** Historical trends in GOA walleye pollock, Pacific cod, Pacific halibut, arrowtooth flounder, and Steller Sea Lions, from stock assessment data.

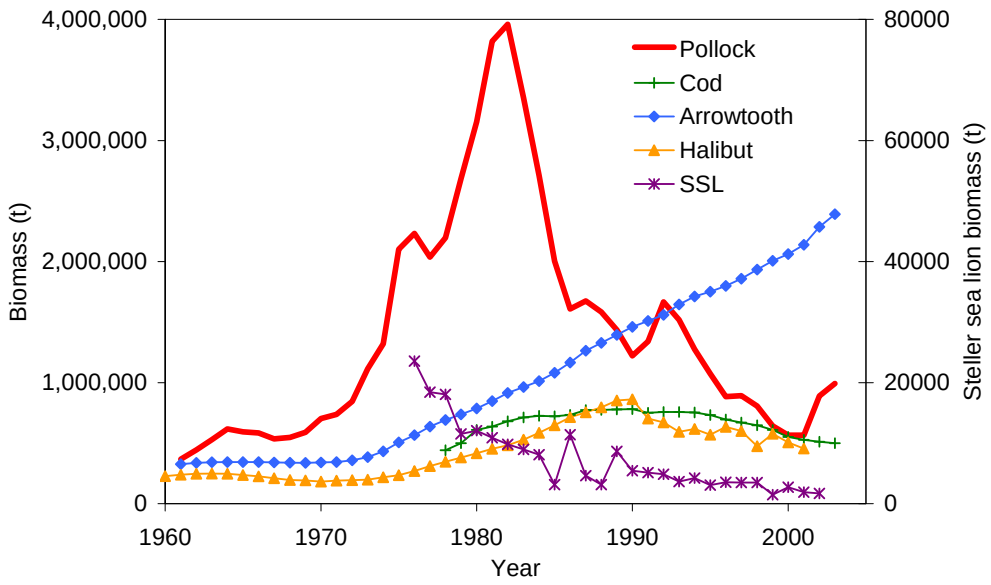


**Figure 4.36** Comparison of potential outcomes of reducing or stopping pollock fishing on pollock biomass in the GOA given different assumptions of predation and which fisheries are stopped.

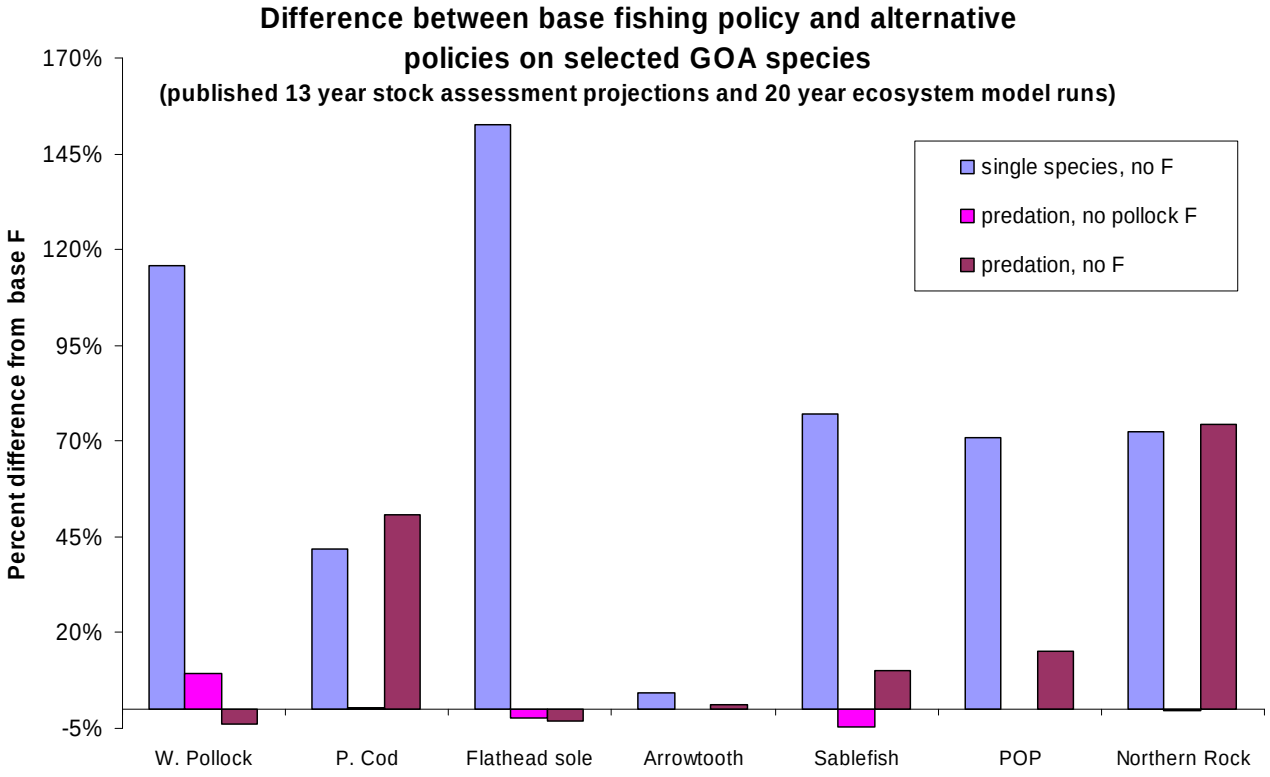


Figure 4.37. Humpback whale entanglements in Alaska by gear type. Source: NMFS Alaska Region Stranding Program 2010.

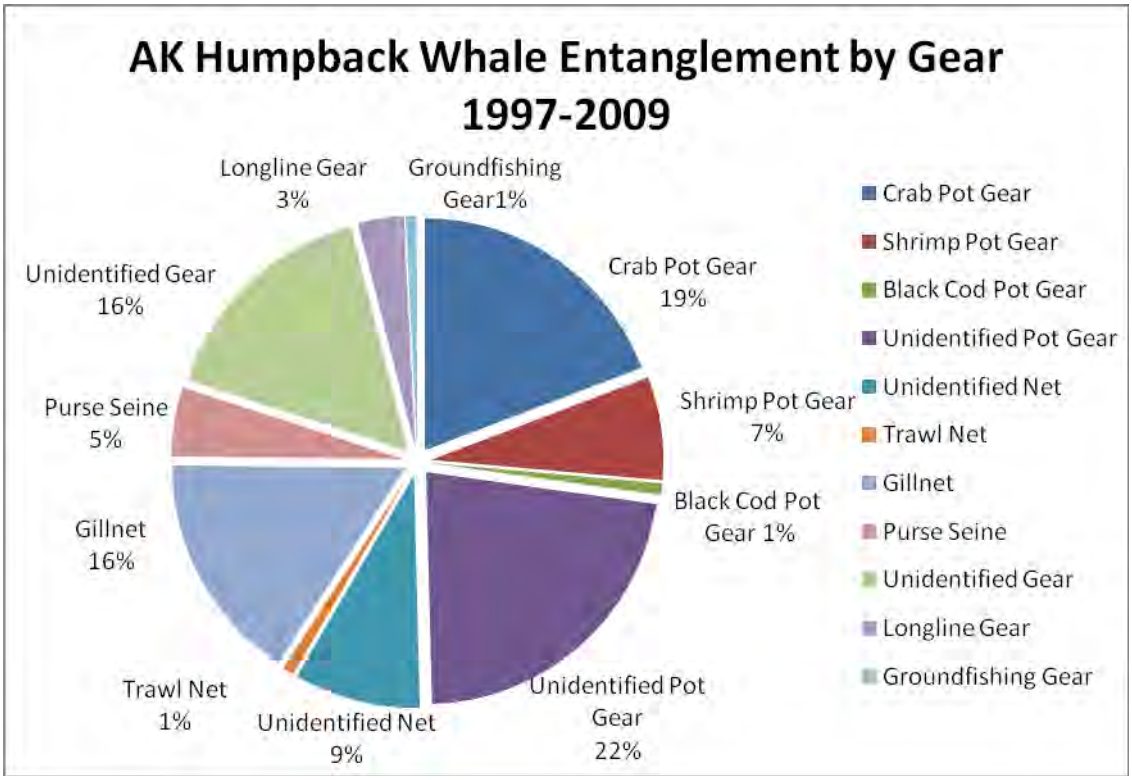


**Figure 5.1.** Population trend estimates and 95% confidence bounds for each RCA of the Western DPS of Steller sea lions by three methods (AFSC 2010c).

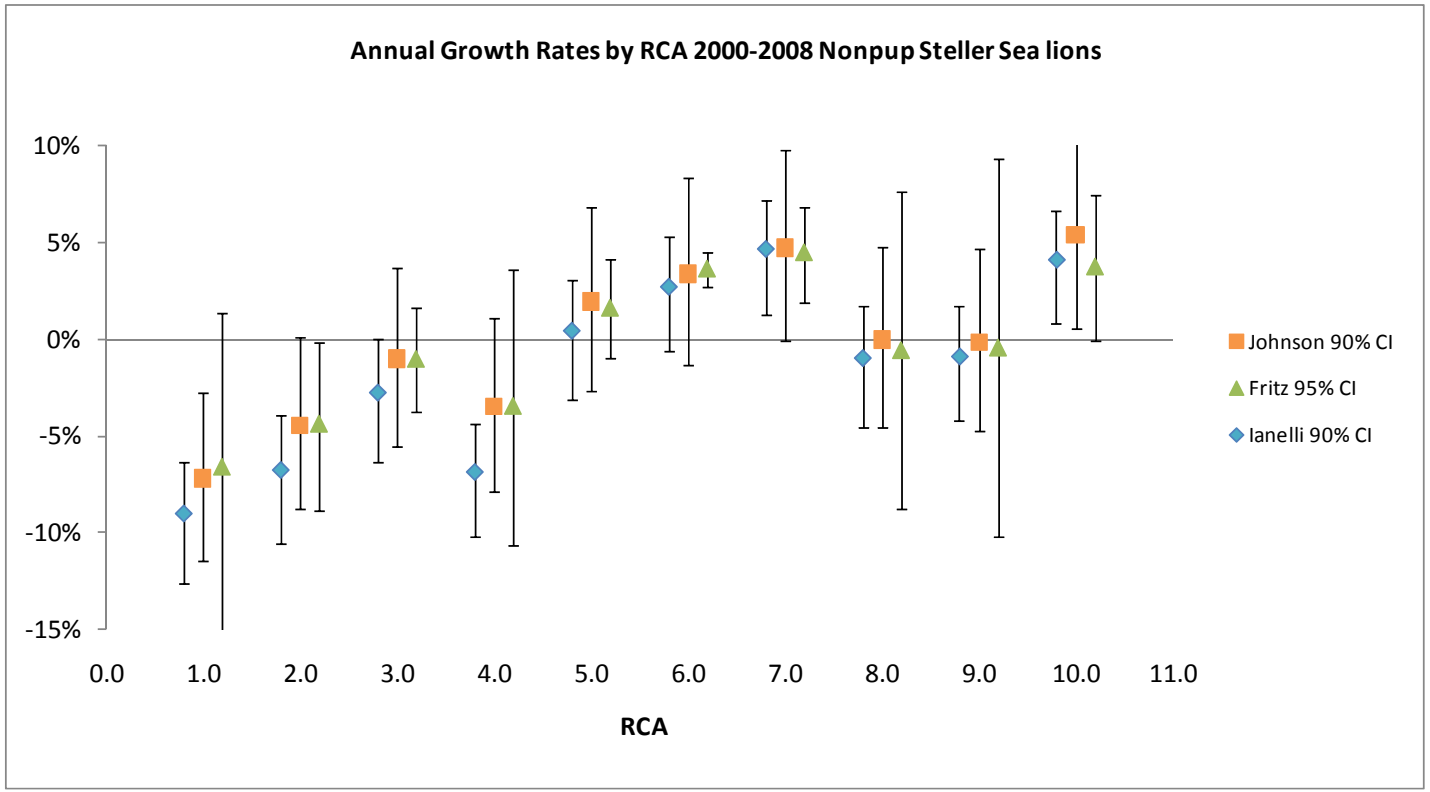


Figure 5.2. Examples of the distribution of catch (mt) of Atka mackerel in RCAs 1-3; pink circular regions show designated Steller sea lion critical habitat.

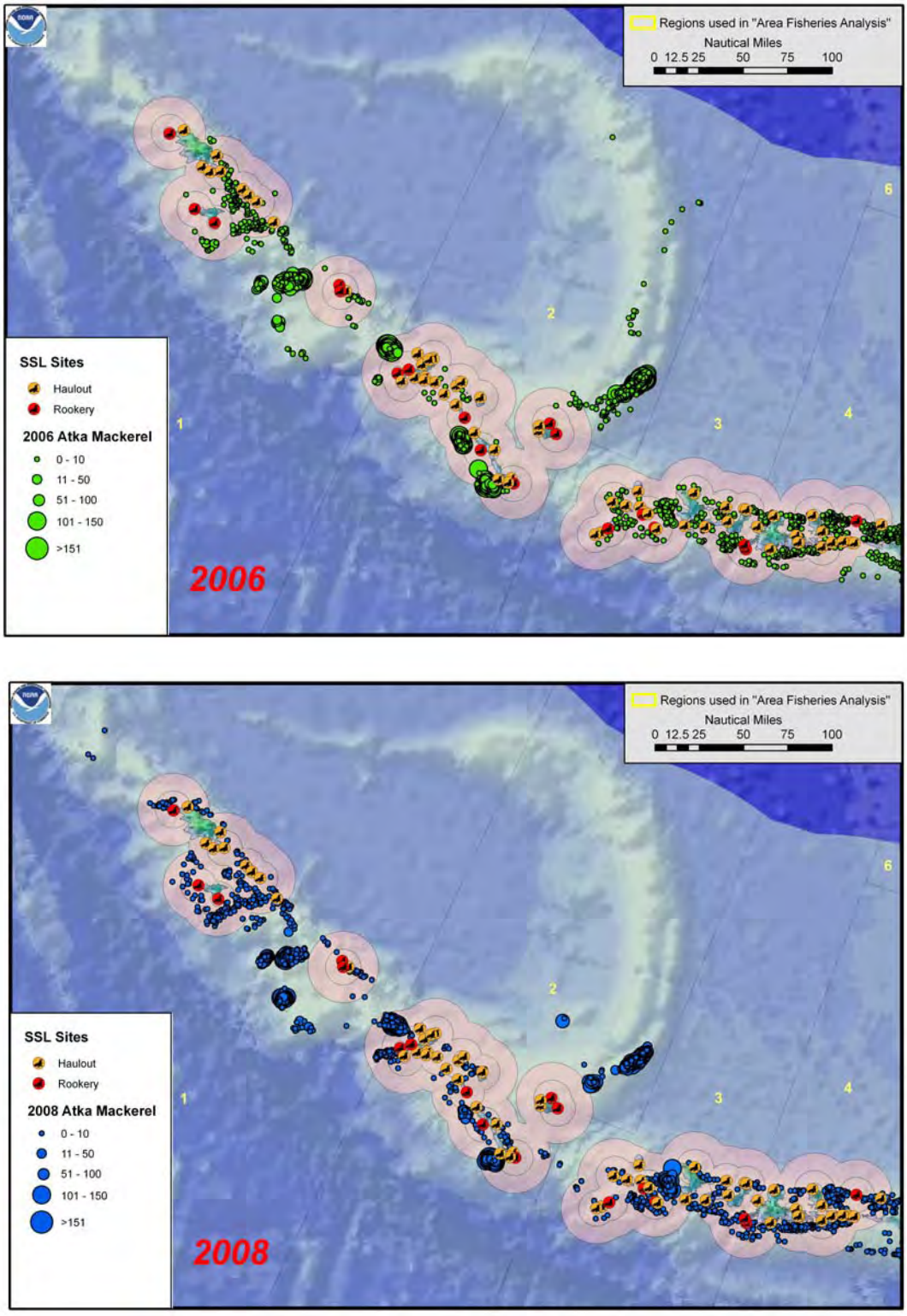
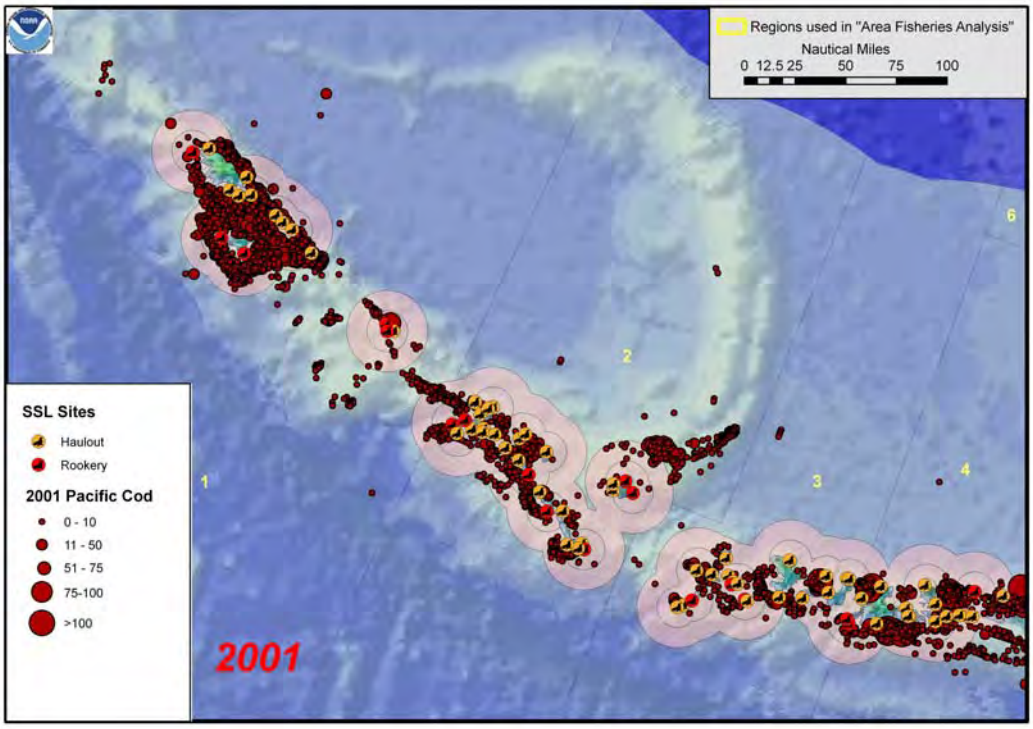


Figure 5.3. Examples of the distribution of catch (mt) of Pacific cod in RCAs 1-4; pink circular regions show designated Steller sea lion critical habitat.



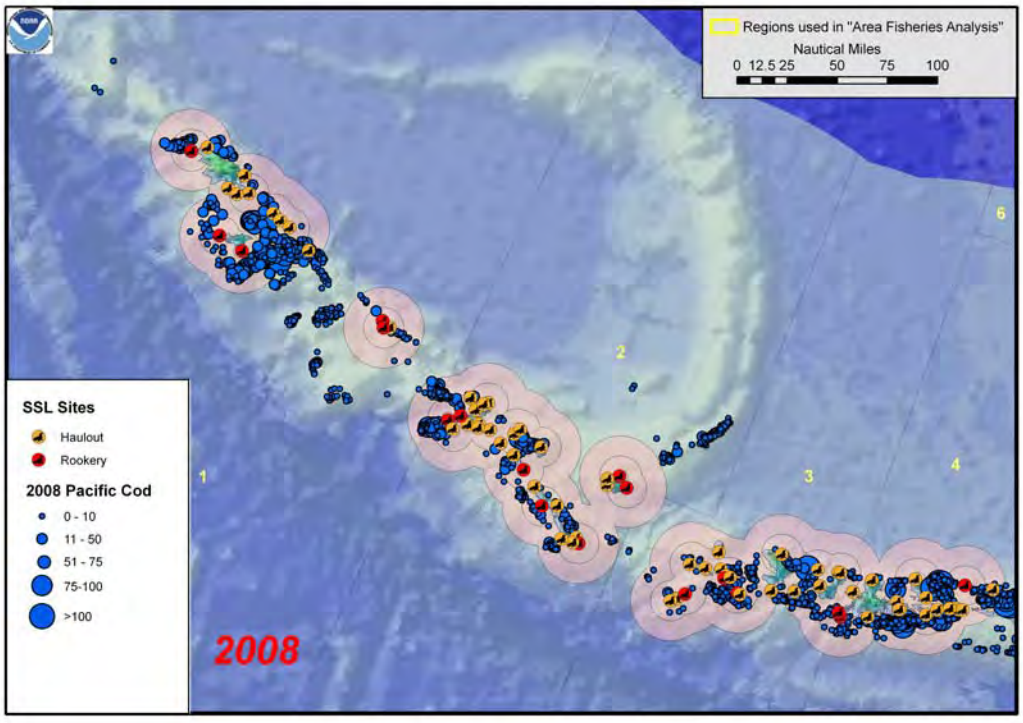
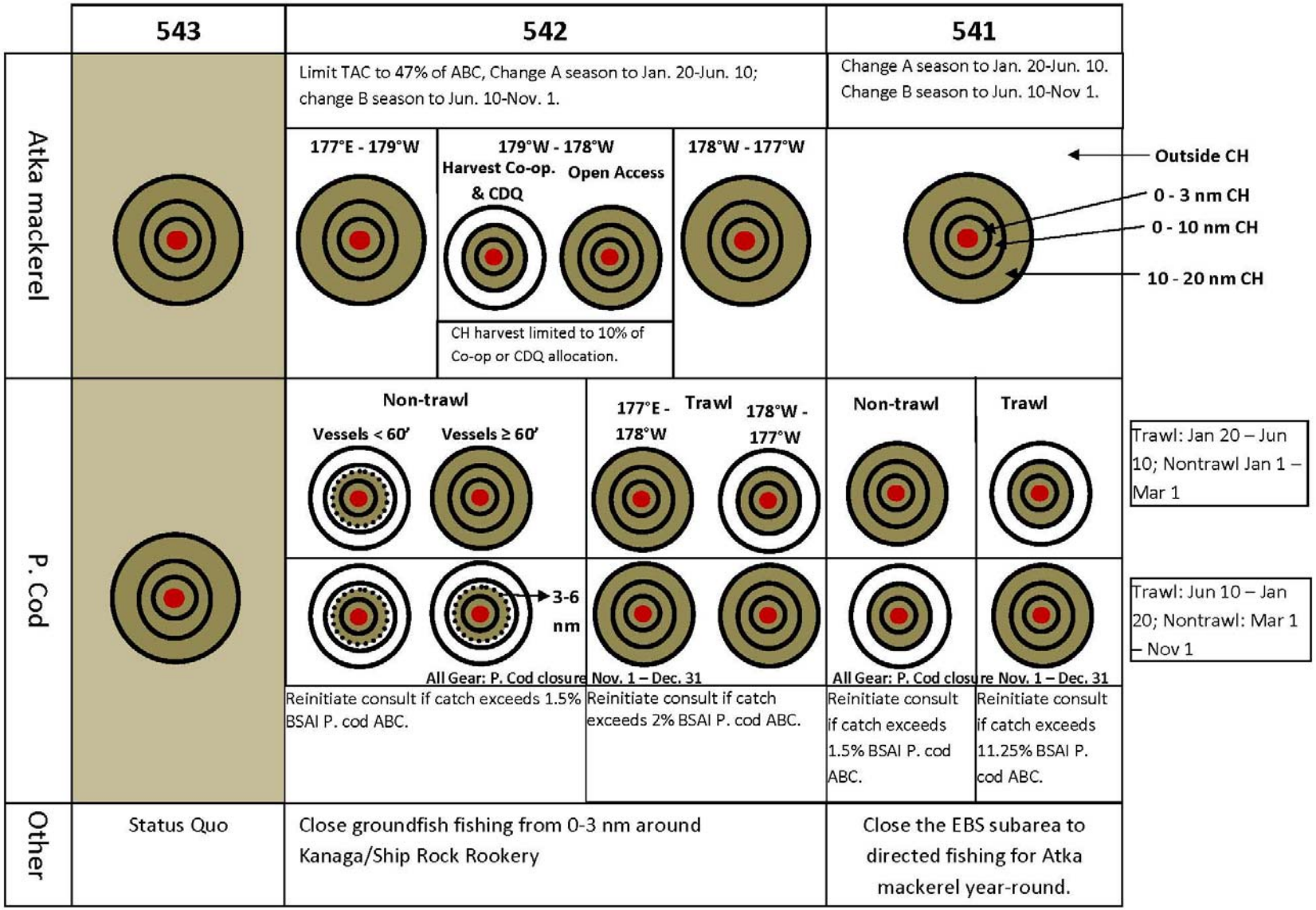



**Figure 8.1.** Depiction of the RPA for Fishery Management Areas 543, 542, and 541. Red circles represent designated Steller sea lion critical habitat sites, circles around the sites represent the 0-3, 3-10, and 10-20 nm zones of critical habitat and areas outside of the zones represent areas beyond critical habitat. Shaded areas represent areas that would be closed in each Fishery Management Area under the RPA.



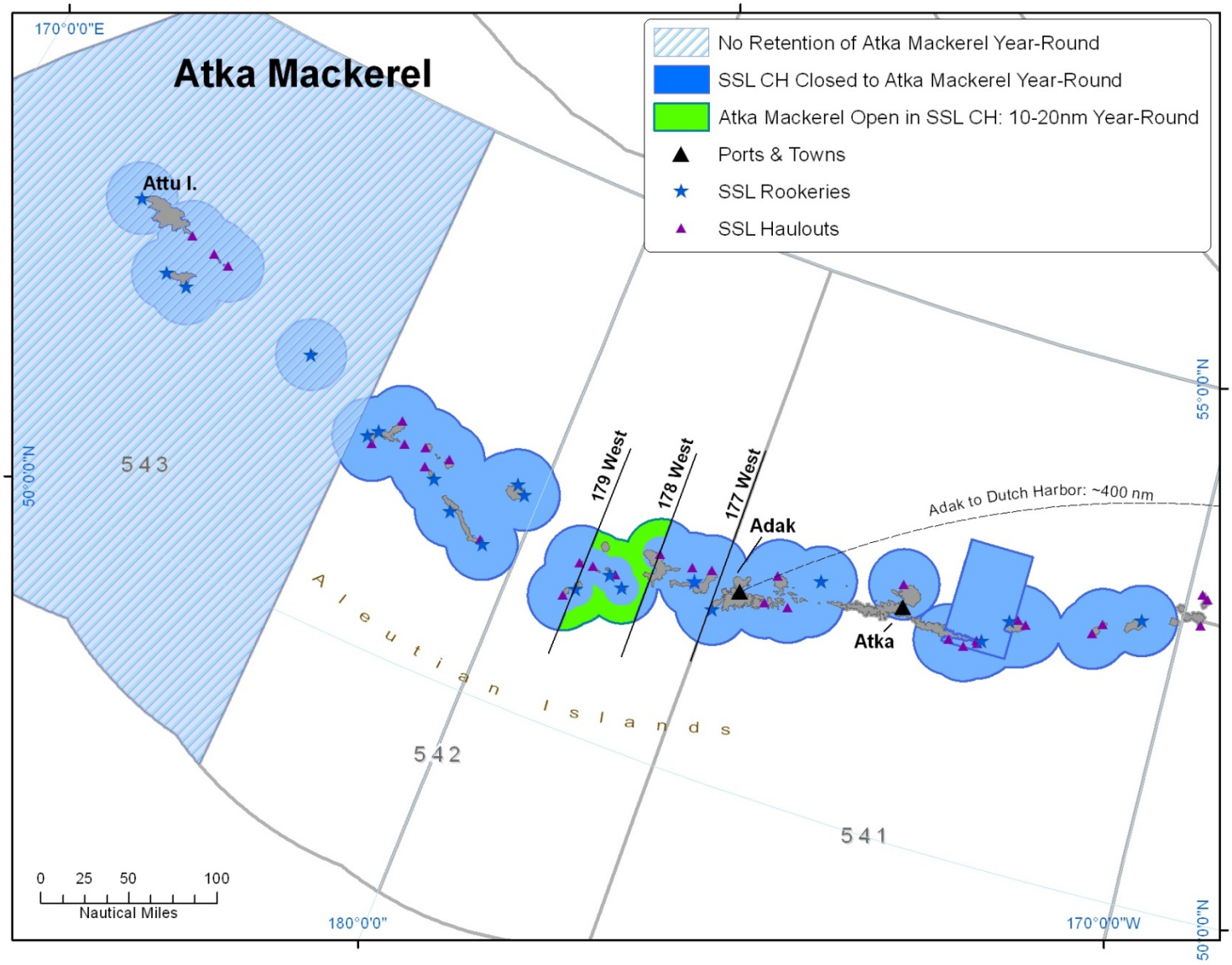



Figure 8.2. Map of the RPA for Atka mackerel fisheries in Areas 543, 542, and 541.

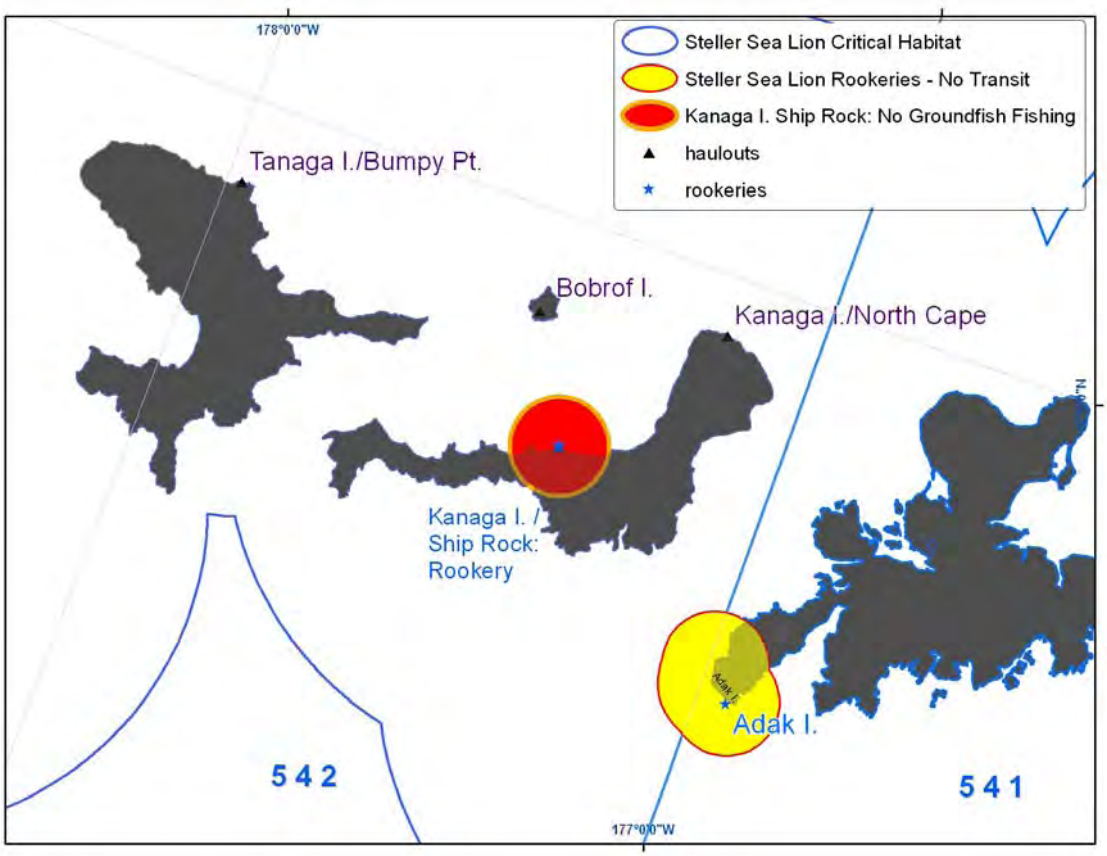



Figure. 8.3 Kanaga Island/Ship Rock closure from 0 to 3 nm.

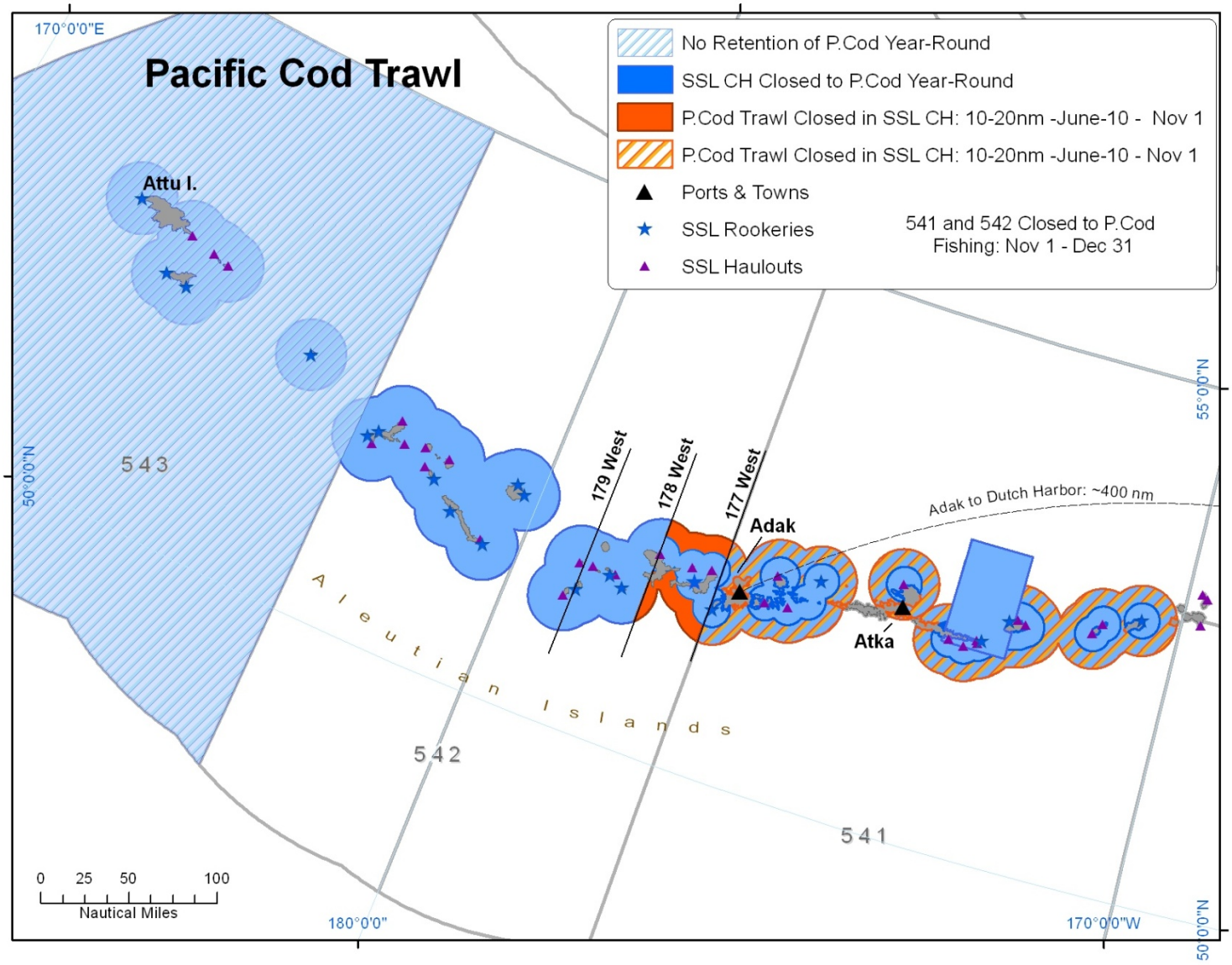



Figure 8.4. Map of the RPA for Pacific cod trawl fisheries in Areas 543, 542, and 541.

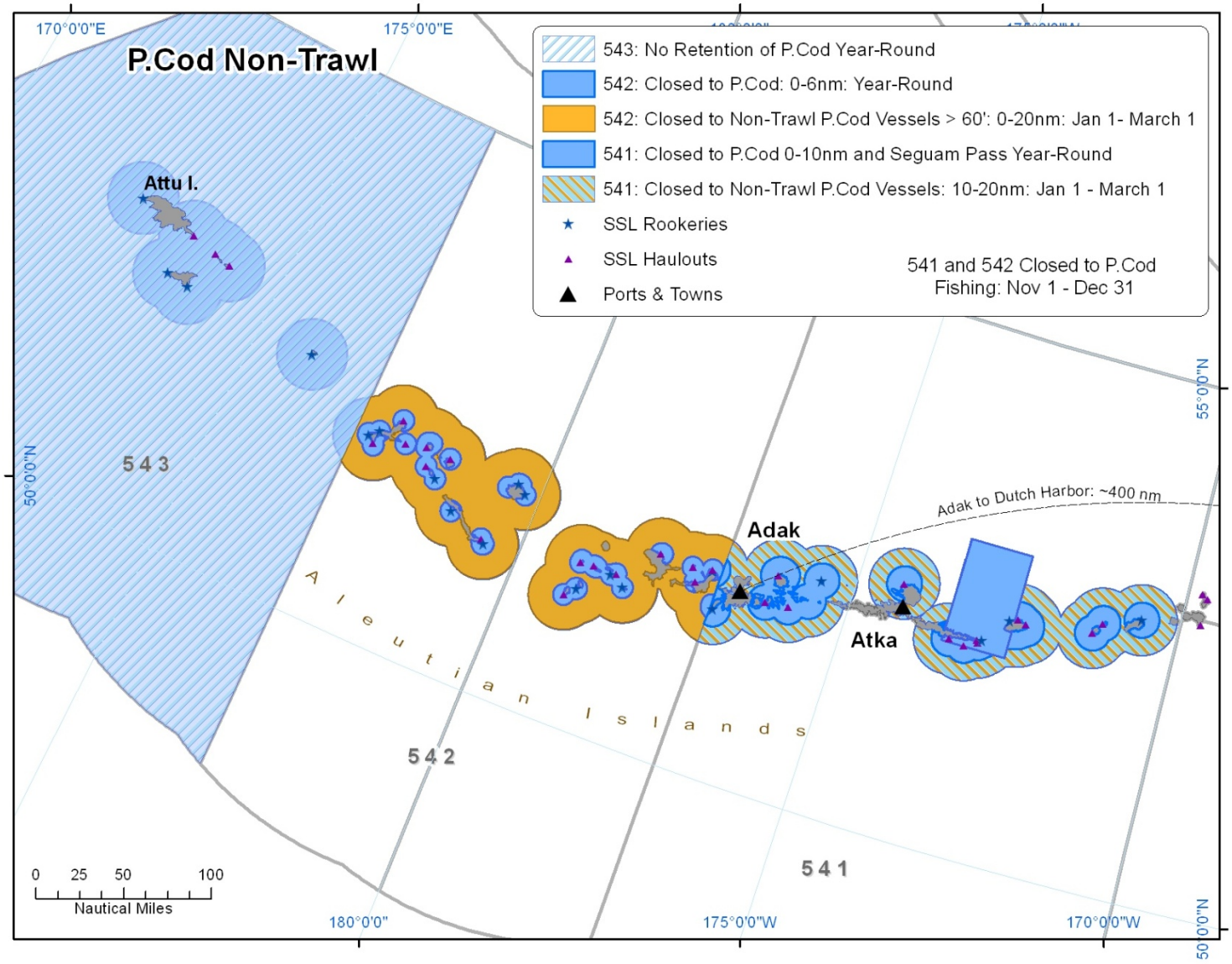
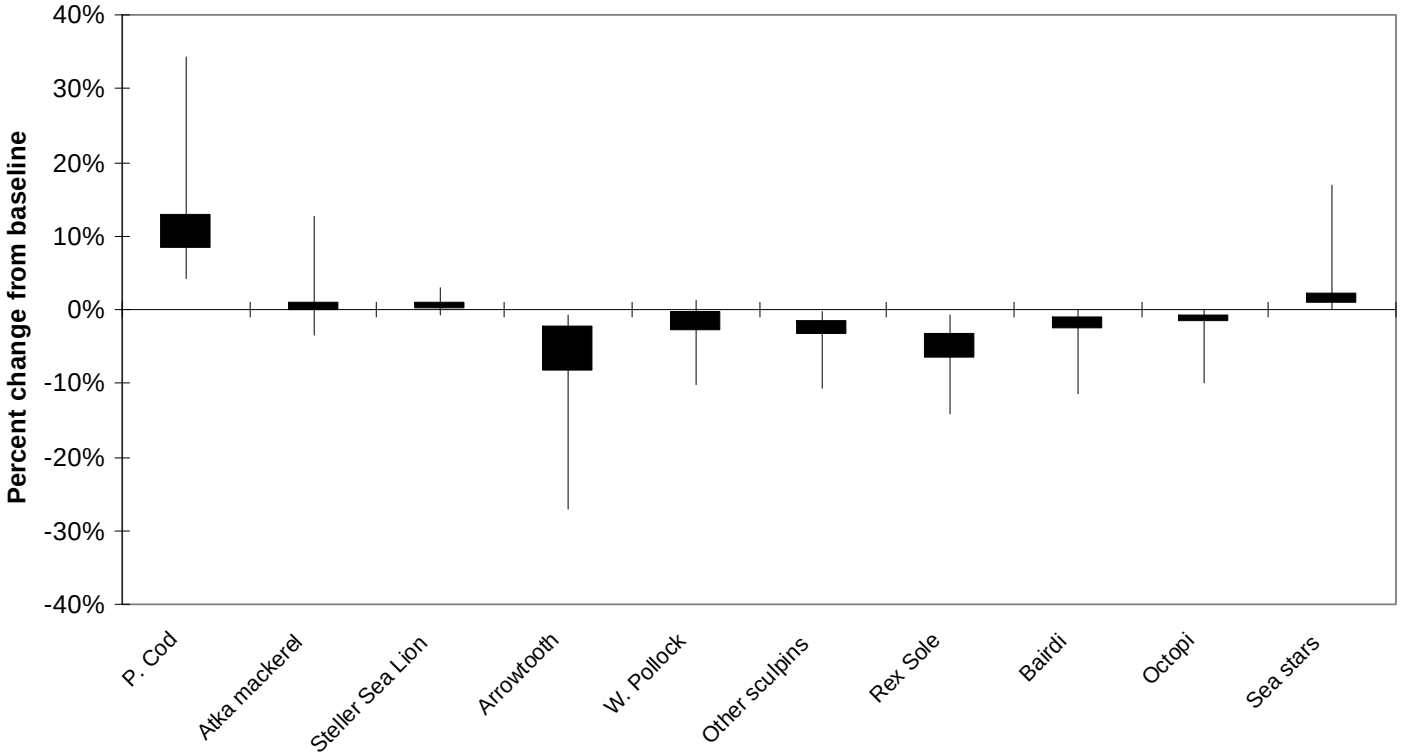



Figure 8.5. Map of the RPA for Pacific cod nontrawl fisheries in Areas 543, 542, and 541.

**Figure 8.6.** The effects on the Aleutian Islands food web model (percent change of biomass from baseline) of reducing Pacific cod mortality by 10% (manipulated species shown by arrow). Only selected species are shown. Bars and lines show 50% and 95% of results obtained from 500 ecosystems drawn from parameter distributions based on uncertainty in input parameters of biomass, production rates, consumption rates, and diets, as described in Aydin et al. 2007 (Source: Aydin 2010).



# TABLES

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

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| **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.<br>**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.<br><br>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.<br><br>**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.<br>**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.<br>**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.<br>**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.<br>**Atka mackerel**: up to 2% of the eastern Aleutian Islands and Bering Sea TACs will be allocated to vessels using jig gear.<br>**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.<br><br>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.<br>**Pollock**: The use of non-pelagic trawl gear in the directed fishery for pollock is prohibited. |

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| **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.<br>**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.<br>**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.<br>**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.<br>**Marine mammal measures**: Regulations implementing the FMP may include conservation measures that temporally and spatially limit fishing effort around areas important to marine mammals.<br>**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.<br><br>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.<br><br>**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.<br>***C. bairdi* crab**: Established in regulation for trawl fisheries based on population abundance; attainment closes Zone 1 or Zone 2.<br>***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.<br>**Pacific halibut**: Halibut mortality limits established in regulation for trawl and non-trawl fisheries.<br>**Pacific herring**: 1% of the annual biomass of eastern Bering Sea herring, for trawl fisheries; attainment may close the Herring Savings Areas.<br>**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.<br>**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.<br>**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.<br>**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.<br><br>**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.<br><br>**Access**: Limits pollock fishery access to named vessels and processors; included a buyout of 9 catcher/processor vessels.<br>**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.<br>**Cooperatives**: Creates standards and limitations for the creation and operation of cooperatives.<br>**Sideboards**: Establishes harvesting and processing restrictions on AFA pollock participants to protect other fisheries.<br>**Catch monitoring**: Increases observer coverage and scale requirements for catcher/processors. |

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| **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.<br><br>**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.<br><br>**Sablefish**: 20% of the fixed gear TAC<br>**Pollock**: 10% of the TAC<br>**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.<br><br>**Processors**: Shall report necessary information for the management of the groundfish fisheries as specified in regulations.<br>**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.<br><br>**Management Policy**: Objectives in the management policy statement will be reviewed annually.<br>**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.

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| **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.<br><br>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.<br><br>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.<br><br>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.<br><br>**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.<br>**Pacific cod:** TAC shall be allocated 90% to the inshore sector and 10% to the offshore sector.<br>**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%.<br>**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.<br><br>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.<br>**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.<br>**All vessels:** Fishing or anchoring within the Sitka Pinnacles Marine Reserve is prohibited at all times.<br>**All trawl**: Use of trawl gear is prohibited at all times in the Southeast Outside district.<br>**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.<br>**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.<br>**Anchoring:** Anchoring by fishing vessels in the Gulf of Alaska Coral and Alaska Seamount Habitat Protection Areas is prohibited.<br>**Marine mammal measures:** Regulations implementing the FMP may include conservation measures that temporally and spatially limit fishing effort around areas important to marine mammals.<br>**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. |

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| **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.<br><br>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.<br><br>**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.<br>**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.<br><br>**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.<br>**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.<br><br>**Processors**: Shall report necessary information for the management of the groundfish fisheries as specified in regulations.<br>**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.<br><br>**Management Policy**: Objectives in the management policy statement will be reviewed annually.<br>**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/rougheye 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.<br>• Shooting banned to reduce Steller sea lion mortality.<br>• 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)<br>• 10nm around rookeries<br>• 20nm around some rookeries in the A Season.<br>• Donut Hole closed by internal convention |
| 1993 | Steller Sea Lion Critical Habitat Established under 50 CFR Part 226. (Figure 2.30)<br>• 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.<br>• Groundfish Fishery Biological Opinion 2 issued.<br>• Ban on forage fishing as important to marine mammals. |
| 1999 | No trawl zones- Figure 2.31<br>• NMFS closes the Aleutian Islands Subarea (541, 542, 543) to directed fishing for Pollock<br>• CH/CVOA in the Bering Sea Created inside the Bogoslof Foraging Area<br>• Atka Mackerel Total Allowable Catch for inside and outside of Steller sea lion Critical Habitat<br>• Additional RFRPA Pollock No Trawl Areas – A Season and/or B Season.<br>• 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.<br>• 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).<br>• Emergency Rule Expired June 2001. Management reverted to November 30, Biological Opinion (Figure 2.32).<br>• 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<br>Pot<br>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.<br>• No directed fishing for Atka mackerel with trawl gear 0-10 W of 178º W and 0-20 nm E of 178ºW.<br>• 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.<br>• 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.<br><br>Agligadak I. closed to P. cod trawl 0-20 nm. |
| Haulouts AI | • No directed pollock fishing 0-20 nm<br>• No P. cod trawl 0-3 nm.<br>• No P. cod trawl 0-20 during HLA Atka mackerel fishery.<br>• No P. cod pot or hook and line fishing 0-20 nm in E portion of EAI.<br>• 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.<br>• No directed fishing for P. cod by trawl varies 0-3 nm to 0-20 nm.<br>• No directed fishing for P. cod with pot or hook-and-line gear varies 0-3 nm to 0-20 nm.<br>• 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.<br>• No directed fishing for P. cod with hook and line or pot gear 0-3 nm.<br>• 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.<br>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.<br>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 %<br>C/P 40 %<br>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)<br>• Bering Sea Pollock Restriction Area closed to pollock fishing in A season (679.22(a)(7)(ii))<br>• Bogoslof Area and Seguam Foraging Area closed to directed fishing for pollock, cod, and mackerel. (679.22(a)(7)(I) and (a)(8)(i))<br>• No fishing for pollock in CH in the AI ( 679.22(a)(8)(ii))<br>• 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))<br>• No fishing for Atka mackerel in the HLA except during assigned periods and locations of HLA fishery (679.20(a)(8)(iii))<br>• 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)<br>• Walrus Protection Area closure to fishing 3-12 nm around Round Island and the Twins 4/1-9/30 (679.22(a)(4))<br>• No trawling in Pribilof Island Habitat Conservation Zone (679.22(a)(6))<br>• CVOA closed to pollock C/Ps in the B season (679.22(a)(5))<br>• Near Shore Bristol Bay Trawl Closure between 4/1-6/15 (679.22 (a)(9)) |

| | | | |
|---|---|---|---|
| **Season Closures** | • No trawling 1/1 to 1/20;<br>• no trawling for pollock, cod, or mackerel 11/1 to 1/20;<br>• 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))<br>• Closure period between GOA pollock B and C seasons (679.23(d)(2))<br>• Closure period between AI Atka mackerel A and B seasons (679.23(e)(3))<br>• Closure period between BSAI P. cod pot A and B seasons (679.23(e)(5))<br>• 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%);<br>• 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))<br>• BS 1/20-6/10 (40%), 6/10-11/1 (60%); (679.20(a)(5)(i)(B))<br>• 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%);<br>• 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))<br>• BSAI longline- 1/1-6/10 (60%), 6/10-12/31 (40%) (679.20(a)(7)(iii))<br>• BSAI pot - 1/1-6/10 (60%), 9/1-12/31 (40%) (679.20(a)(7)(iii))<br>• BSAI jig- 1/1-4/30 (40 %), 4/30-8/31 (20 %), 8/3-12/31 (40%) (679.20(a)(7)(iii))<br>• W/C GOA trawl - 1/20-6/10 (60%), 9/1-12/31 (40%) (679.20(a)(11))<br>• 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%);<br>• 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))<br>• 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))<br>• 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))<br>• 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)<br>• 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:<br>Seal Rocks \1\..<br>Fish I.\1\ | <br>60 10.0N<br>59 53.0N | <br>146 50.0W<br>147 20.5W | | |
| Southeast Alaska:<br>Forrester I.<br>Hazy I.<br>White Sisters | <br>54 51.0N<br>55 52.0N<br>57 38.0N | <br>133 32.0W<br>134 34.0W<br>136 15.5W | <br>54 52.5N<br>55 51.5N | <br>133 35.5W<br>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\.<br>Attu/Chirikof Pt.\1\<br>Shemya I.\1\.. | 52 45.0N<br>52 30.0N<br>52 44.0N | 173 56.5E<br>173 26.7E<br>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 3-1**a. 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 3.9**. Population trend estimates for the western DPS of Steller sea lions from non-pup counts from 2000-2008, presented as annualized trend data (i.e., percent per year change). A 90$^{th}$ percentile confidence interval is provided for each estimate. Panel A represents counts grouped by the 10 RCAs in the western DPS; panel B represents counts grouped by each of the 6 sub-regions in US; and panel C represents counts grouped by each of 3 fishery management areas in the Aleutian Islands region.

Panel A.

| **RCA** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
|---|---|---|---|---|---|---|---|---|---|---|
| Median | -7.19 | -4.43 | -1.00 | -3.48 | 1.96 | 3.38 | 4.74 | 0.00 | -0.14 | 5.39 |
| Upper CI | -2.75 | 0.15 | 3.74 | 1.14 | 6.84 | 8.33 | 9.76 | 4.78 | 4.64 | 10.43 |
| Lower CI | -11.43 | -8.79 | -5.52 | -7.89 | -2.70 | -1.34 | -0.04 | -4.57 | -4.70 | 0.57 |

Panel B.

| **Sub-Region** | **wAI** | **cAI** | **eAI** | **wGOA** | **cGOA** | **eGOA** |
|---|---|---|---|---|---|---|
| Median | -7.19 | -1.82 | 3.22 | 4.30 | -0.14 | 5.07 |
| Upper CI | -2.52 | 0.62 | 8.41 | 9.55 | 3.39 | 10.35 |
| Lower CI | -11.63 | -4.20 | -1.72 | -0.69 | -3.54 | 0.04 |

Panel C.

| **Fishery Management Area** | **543** | **542** | **541** |
|---|---|---|---|
| Median | -6.83 | -2.33 | -0.39 |
| Upper CI | -1.91 | 1.29 | 3.31 |
| Lower CI | -11.50 | -5.83 | -3.95 |

**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 Allow Catches (TAC) set by the North Pacific Fishery Management Council from 1978 to t 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).

| | Latitude | | Longitude | | | Latitude | | Longitude | | | | Non-Pup Count Criteria | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | 1990-2005 | | | 1956-2005 | | |
| Sitename | D | Min | D | Min | | D | Min | D | Min | | Region | Breeding | Non-Breeding | Annual | Breeding | Non-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] (N/A) |
| | 2003 | | 21.7 | 0 | 0 | |
| | 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<br>2003<br>2004<br>2005<br>2006 | obs data | 11.2 | 0<br>0<br>0<br>0<br>3 | 0<br>0<br>0<br>0<br>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**. Combined biomass (mt) of Pacific cod, Atka mackerel and pollock from 1999 through 2009 in the Aleutian Islands regions based on survey mean values (with years used shown in last column). Italicized values represent interpolations between years where survey means were computed. The Western Aleutians is NMFS Area 543, the Central Aleutians is NMFS Area 542, and the Eastern Aleutians is NMFS Area 541.

| Year | Western Aleutians | Central Aleutians | Eastern Aleutians | S. Bering | Survey years used for average |
|---|---|---|---|---|---|
| 1999 | *271,701* | *272,925* | *190,945* | *117,214* | |
| 2000 | 247,688 | 275,334 | 179,950 | 114,289 | 1994, 1997, 2000 |
| *2001* | *238,450* | *324,106* | *171,096* | *133,195* | |
| 2002 | 229,213 | 372,878 | 162,243 | 152,101 | 1997, 2000, 2002 |
| *2003* | *266,863* | *380,850* | *211,579* | *212,660* | |
| 2004 | 304,513 | 388,821 | 260,915 | 273,219 | 2000, 2002, 2004 |
| *2005* | *287,416* | *373,633* | *320,820* | *273,897* | |
| 2006 | 270,319 | 358,445 | 380,726 | 274,574 | 2002, 2004, 2006 |
| *2007* | *269,530* | *340,158* | *401,686* | *272,135* | |
| *2008* | *268,742* | *321,871* | *422,645* | *269,697* | |
| *2009* | *267,954* | *303,584* | *443,605* | *267,258* | |

**Table 5.2**. Biomass and catch (mt) of pollock, Pacific cod, and Atka mackerel from 1999 through 2009 by NMFS management areas in the Aleutian Islands based on NMFS survey mean values (years used shown in Table 5.1). Catch values are based on NMFS catch accounting database.

| | | Biomass | | | Catch | | |
|---|---|---|---|---|---|---|---|
| | | 543 | 542 | 541 | 543 | 542 | 541 |
| Pollock | 1999 | 15,052 | 36,424 | 44,532 | 105 | 420 | 484 |
| | 2000 | 12,813 | 35,636 | 43,993 | 169 | 461 | 615 |
| | 2001 | 12,606 | 49,147 | 46,873 | 105 | 386 | 332 |
| | 2002 | 12,399 | 62,659 | 49,753 | 133 | 180 | 842 |
| | 2003 | 10,465 | 58,469 | 62,003 | 326 | 758 | 569 |
| | 2004 | 8,531 | 54,280 | 74,253 | 248 | 513 | 397 |
| | 2005 | 8,526 | 50,199 | 76,571 | 517 | 415 | 689 |
| | 2006 | 8,520 | 46,118 | 78,890 | 220 | 488 | 1,036 |
| | 2007 | 8,134 | 39,440 | 82,983 | 124 | 476 | 1,919 |
| | 2008 | 7,748 | 32,762 | 87,076 | 116 | 290 | 872 |
| | 2009 | 7,362 | 26,084 | 91,169 | 227 | 314 | 979 |
| Pacific cod | 1999 | 30,528 | 40,067 | 53,124 | 2,322 | 5,275 | 20,534 |
| | 2000 | 26,949 | 39,415 | 51,146 | 9,073 | 8,799 | 21,812 |
| | 2001 | 27,021 | 34,880 | 42,339 | 12,767 | 7,358 | 14,082 |
| | 2002 | 27,094 | 30,345 | 33,532 | 2,259 | 7,133 | 21,401 |
| | 2003 | 26,336 | 28,754 | 37,468 | 2,934 | 6,519 | 22,740 |
| | 2004 | 25,579 | 27,164 | 41,403 | 3,657 | 6,804 | 18,408 |
| | 2005 | 21,651 | 24,760 | 40,775 | 4,268 | 3,534 | 14,824 |
| | 2006 | 17,724 | 22,356 | 40,147 | 4,583 | 4,630 | 14,966 |
| | 2007 | 17,513 | 21,254 | 39,976 | 5,008 | 4,656 | 24,374 |
| | 2008 | 17,302 | 20,152 | 39,804 | 7,418 | 5,434 | 18,180 |
| | 2009 | 17,091 | 19,050 | 39,633 | 7,031 | 6,221 | 13,088 |
| Atka mackerel | 1999 | 226,121 | 196,433 | 93,289 | 16,366 | 22,419 | 17,453 |
| | 2000 | 207,927 | 200,284 | 84,811 | 10,503 | 22,383 | 14,105 |
| | 2001 | 198,823 | 240,079 | 81,884 | 20,309 | 32,829 | 8,161 |
| | 2002 | 189,720 | 279,875 | 78,957 | 18,077 | 22,291 | 4,920 |
| | 2003 | 230,061 | 293,626 | 112,108 | 17,885 | 25,435 | 5,641 |
| | 2004 | 270,403 | 307,377 | 145,259 | 19,554 | 30,169 | 3,681 |
| | 2005 | 257,239 | 298,674 | 203,474 | 19,743 | 35,069 | 3,661 |
| | 2006 | 244,074 | 289,971 | 261,689 | 14,637 | 39,836 | 4,246 |
| | 2007 | 243,883 | 279,464 | 278,727 | 9,097 | 26,723 | 19,922 |
| | 2008 | 243,692 | 268,957 | 295,765 | 16,642 | 22,328 | 18,719 |
| | 2009 | 243,500 | 258,451 | 312,803 | 15,405 | 24,531 | 20,537 |

**Table 5.3**. Ratio of pollock, Pacific cod, and Atka mackerel catch from 1999 through 2009 divided by biomass estimates in Table 5.2 for NMFS management areas in the Aleutian Islands.

| | | Catch/Biomass | | |
|---|---|---|---|---|
| | | 543 | 542 | 541 |
| Pollock | 1999 | 1% | 1% | 1% |
| | 2000 | 1% | 1% | 1% |
| | 2001 | 1% | 1% | 1% |
| | 2002 | 1% | 0% | 2% |
| | 2003 | 3% | 1% | 1% |
| | 2004 | 3% | 1% | 1% |
| | 2005 | 6% | 1% | 1% |
| | 2006 | 3% | 1% | 1% |
| | 2007 | 2% | 1% | 2% |
| | 2008 | 1% | 1% | 1% |
| | 2009 | 3% | 1% | 1% |
| Pacific cod | 1999 | 8% | 13% | 39% |
| | 2000 | 34% | 22% | 43% |
| | 2001 | 47% | 21% | 33% |
| | 2002 | 8% | 24% | 64% |
| | 2003 | 11% | 23% | 61% |
| | 2004 | 14% | 25% | 44% |
| | 2005 | 20% | 14% | 36% |
| | 2006 | 26% | 21% | 37% |
| | 2007 | 29% | 22% | 61% |
| | 2008 | 43% | 27% | 46% |
| | 2009 | 41% | 33% | 33% |
| Atka mackerel | 1999 | 7% | 11% | 19% |
| | 2000 | 5% | 11% | 17% |
| | 2001 | 10% | 14% | 10% |
| | 2002 | 10% | 8% | 6% |
| | 2003 | 8% | 9% | 5% |
| | 2004 | 7% | 10% | 3% |
| | 2005 | 8% | 12% | 2% |
| | 2006 | 6% | 14% | 2% |
| | 2007 | 4% | 10% | 7% |
| | 2008 | 7% | 8% | 6% |
| | 2009 | 6% | 9% | 7% |

**Table 5.4**. Combined biomass (mt) of Pacific cod, Atka mackerel and pollock in the Gulf of Alaska based on NMFS survey mean values (with years used shown in last column). Italicized values represent interpolations between years where survey means were computed. The western GOA is NMFS Management Area 610; the Central GOA is NMFS Management Areas 620, 630, and 640; and the Eastern GOA is NMFS Management Area 650.

| Year | Western GOA | Central GOA | Eastern GOA | Survey years used for average |
|---|---|---|---|---|
| 1999 | 579,405 | 599,514 | 73,132 | 1993, 1996, 1999 |
| 2000 | *570,639* | *534,050* | *77,225* | |
| 2001 | 561,873 | 468,587 | 81,317 | 1996, 1999, 2001 |
| *2002* | *503,934* | *395,618* | *69,415* | |
| 2003 | 445,995 | 322,649 | 57,513 | 1999, 2001, 2003 |
| *2004* | *416,367* | *328,375* | *54,657* | |
| 2005 | 386,739 | 334,101 | 51,801 | 2001, 2003, 2005 |
| *2006* | *361,929* | *340,018* | *52,422* | |
| 2007 | 337,120 | 345,934 | 53,043 | 2003, 2005, 2007 |
| *2008* | *370,266* | *444,219* | *55,889* | |
| 2009 | 403,413 | 542,505 | 58,735 | 2005, 2007, 2009 |

**Table 5.5.** Biomass and catch (mt) of pollock, Pacific cod, and Atka mackerel in the Gulf of Alaska with biomass based on NMFS survey mean values (years used shown Table 5.4) and catch based on NMFS catch accounting database. The WGOA is NMFS Area 610; the CGOA is NMFS Areas 620, 630, and 640; and the EGOA is NMFS Area 650.

| | | Biomass | | | Catch | | |
|---|---|---|---|---|---|---|---|
| | | W GOA | C GOA | E GOA | W GOA | C GOA | E GOA |
| pollock | 1999 | 315,713 | 339,191 | 54,858 | 23,385 | 72,201 | 2,679 |
| | 2000 | 271,502 | 297,873 | 59,498 | 22,074 | 51,099 | 10 |
| | 2001 | 227,292 | 256,555 | 64,139 | 30,471 | 41,605 | 20 |
| | 2002 | 235,699 | 204,528 | 51,596 | 17,462 | 34,473 | 7 |
| | 2003 | 244,107 | 152,502 | 39,053 | 16,510 | 34,170 | 0 |
| | 2004 | 195,315 | 159,799 | 38,138 | 23,450 | 40,297 | 0 |
| | 2005 | 146,523 | 167,097 | 37,222 | 30,921 | 49,908 | 0 |
| | 2006 | 148,320 | 175,064 | 38,823 | 24,691 | 47,259 | 0 |
| | 2007 | 150,117 | 183,030 | 40,425 | 17,955 | 34,164 | 1 |
| | 2008 | 150,084 | 226,771 | 43,438 | 17,257 | 34,607 | 2 |
| | 2009 | 150,052 | 270,512 | 46,452 | 14,937 | 26,981 | 0 |
| Pacific cod | 1999 | 140,108 | 259,755 | 18,275 | 23,150 | 45,132 | 0 |
| | 2000 | 142,290 | 235,612 | 17,726 | 21,867 | 32,440 | 202 |
| | 2001 | 144,473 | 211,469 | 17,178 | 14,161 | 27,366 | 318 |
| | 2002 | 125,723 | 189,751 | 17,691 | 17,177 | 25,201 | 395 |
| | 2003 | 106,974 | 168,033 | 18,204 | 21,801 | 30,675 | 137 |
| | 2004 | 110,631 | 165,950 | 16,263 | 21,798 | 34,625 | 144 |
| | 2005 | 114,288 | 163,866 | 14,322 | 18,078 | 29,428 | 29 |
| | 2006 | 111,120 | 161,534 | 13,384 | 20,091 | 27,612 | 55 |
| | 2007 | 107,952 | 159,202 | 12,447 | 19,220 | 32,006 | 180 |
| | 2008 | 128,512 | 214,601 | 12,362 | 20,973 | 37,532 | 248 |
| | 2009 | 149,072 | 270,000 | 12,278 | 17,248 | 30,151 | 218 |
| Atka mackerel | 1999 | 123,583 | 568 | 0 | 260 | 1 | 0 |
| | 2000 | 156,846 | 565 | 0 | 167 | 5 | 0 |
| | 2001 | 190,108 | 562 | 0 | 58 | 18 | 0 |
| | 2002 | 142,511 | 1,338 | 128 | 55 | 30 | 0 |
| | 2003 | 94,914 | 2,114 | 257 | 421 | 161 | 0 |
| | 2004 | 110,421 | 2,626 | 257 | 780 | 38 | 0 |
| | 2005 | 125,927 | 3,138 | 257 | 413 | 386 | 0 |
| | 2006 | 102,489 | 3,420 | 214 | 561 | 315 | 0 |
| | 2007 | 79,051 | 3,702 | 171 | 1,277 | 175 | 0 |
| | 2008 | 91,670 | 2,847 | 88 | 1,787 | 323 | 0 |
| | 2009 | 104,289 | 1,993 | 5 | 1,714 | 505 | 0 |

**Table 5.6.** Ratio of pollock, Pacific cod, and Atka mackerel catch from 1999 through 2009 divided by biomass estimates in Table 5.5 for NMFS management areas in the Gulf of Alaska. The WGOA is NMFS Area 610; the CGOA is NMFS Areas 620, 630, and 640; and the EGOA is NMFS Area 650.

| | | Catch/Biomass | | |
|---|---|---|---|---|
| | | W GOA | C GOA | E GOA |
| pollock | 1999 | 7% | 21% | 5% |
| | 2000 | 8% | 17% | 0% |
| | 2001 | 13% | 16% | 0% |
| | 2002 | 7% | 17% | 0% |
| | 2003 | 7% | 22% | 0% |
| | 2004 | 12% | 25% | 0% |
| | 2005 | 21% | 30% | 0% |
| | 2006 | 17% | 27% | 0% |
| | 2007 | 12% | 19% | 0% |
| | 2008 | 11% | 15% | 0% |
| | 2009 | 10% | 10% | 0% |
| Pacific cod | 1999 | 17% | 17% | 0% |
| | 2000 | 15% | 14% | 1% |
| | 2001 | 10% | 13% | 2% |
| | 2002 | 14% | 13% | 2% |
| | 2003 | 20% | 18% | 1% |
| | 2004 | 20% | 21% | 1% |
| | 2005 | 16% | 18% | 0% |
| | 2006 | 18% | 17% | 0% |
| | 2007 | 18% | 20% | 1% |
| | 2008 | 16% | 17% | 2% |
| | 2009 | 12% | 11% | 2% |
| Atka mackerel | 1999 | 0% | 0% | |
| | 2000 | 0% | 1% | |
| | 2001 | 0% | 3% | |
| | 2002 | 0% | 2% | 0% |
| | 2003 | 0% | 8% | 0% |
| | 2004 | 1% | 1% | 0% |
| | 2005 | 0% | 12% | 0% |
| | 2006 | 1% | 9% | 0% |
| | 2007 | 2% | 5% | 0% |
| | 2008 | 2% | 11% | 0% |
| | 2009 | 2% | 25% | 0% |

**Table 5.7.** 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

**Table 5.8**. 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 crtical habitat by RCA; biomass and harvest rates by NMFS Management Area.

| SSL Sub-Region | Fishery Management Area | RCA | Trend Sites (n)/Rookeries (n)[1] | Non-Pup Counts at SSL Trend Sites 2008A[2] | SSL Trend Sites Avg Annual Growth Rate, 2000-2008 (%) | | Overall Difference in SSL Counts, 2000-2008A (%) | | Pups (2009): Adult Females (2008)[5] | Primary Prey (% FO)[6] | | Fraction of 2008 Harvest Amount by Zone[7] | | | | | | | | | | | | Estimated Biomass 2008 (top row) and Total Harvest 2008 (bottom row)[8] | | | Fraction of 2008 Biomass Harvested by Fishery Management Area | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | Atka Mackerel | | | | Pacific Cod | | | | Pollock | | | | | | | | | |
| | | | | | Non-Pups[3] | Pups[1] | Non-Pups[2] | Pups[4] | | Summer | Winter | 0-3 | 3-10 | 10-20 | Foraging | 0-3 | 3-10 | 10-20 | Foraging | 0-3 | 3-10 | 10-20 | Foraging | 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) | 0.00 | 0.00 | 0.65 | | 0.00 | 0.32 | 0.63 | | 0.00 | 0.32 | 0.30 | | 243,692<br>16,642 | 17,302<br>7,418 | 7,748<br>116 | 0.07 | 0.43 | 0.01 |
| Central AI | 542 | 2 | 12/4 | 772 | -4 | -4 | -11 | -7 | 0.39 | | | 0.00 | 0.01 | 0.47 | | 0.02 | 0.66 | 0.20 | | 0.00 | 0.02 | 0.25 | | 268,957 | 20,152 | 32,762 | 0.08 | 0.27 | 0.01 |
| | 542 | 3 | 12/4 | 1896 | -1 | -4 | | | | | | 0.00 | 0.02 | 0.98 | | 0.00 | 0.76 | 0.24 | | 0.04 | 0.74 | 0.21 | | 22,328 | 5,434 | 290 | | | |
| | 541 | 4 | 13/2 | 1351 | -3 | 2 | | | | | | 0.00 | 0.96 | 0.02 | | 0.00 | 0.52 | 0.30 | | 0.00 | 0.05 | 0.10 | | 295,765 | 39,804 | 87,076 | 0.06 | 0.46 | 0.01 |
| | 541 | 5 | 12/2 | 1645 | 2 | 2 | | | | | | 0.00 | 0.00 | 0.01 | | 0.00 | 0.03 | 0.72 | | 0.00 | 0.03 | 0.81 | | 18,719 | 18,180 | 872 | | | |
| Eastern AI | 610 | 6 | 31/7 | 6519 | 3 | 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) | 0.00 | 0.11 | 0.79 | 0.01 | 0.00 | 0.02 | 0.06 | | 0.00 | 0.00 | 0.07 | 0.17 | 91,670 | 128,512 | 150,084 | 0.02 | 0.16 | 0.11 |
| | 610 | 7 | 16/5 | 5274 | 5 | 3 | | | | | | 0.00 | 0.10 | 0.26 | | 0.00 | 0.26 | 0.38 | | 0.00 | 0.43 | 0.27 | | 1,787 | 20,973 | 17,257 | | | |
| Western GOA | 620 | 8 | 11/3 | 1492 | 0 | 1 | 39 | 23 | 0.38 | 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) | | | | | 0.00 | 0.00 | 0.05 | 0.70 | 0.00 | 0.00 | 0.40 | 0.16 | 2,847 | 214,601 | 226,771 | | | |
| Central GOA | 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), Sandlance (38), Arrowtooth (31), Salmon (29), Irish Lord (17) | | | | | 0.00 | 0.12 | 0.36 | 0.00 | 0.01 | 0.00 | 0.72 | 0.00 | | | | 0.11 | 0.17 | 0.15 |
| Eastern GOA | 640 | 10 | 19/4 | 3675 | 5 | 4 | 58 | 57 | 0.38 | Salmon (84), Sand Lance (39), Herring (24), Capelin (13), Pollock (8), P. Cod (5), Arrowtooth (5) | not available | | | | | 0.12 | 0.27 | 0.49 | | 0.00 | 0.00 | 0.60 | | 323 | 37,532 | 34,607 | | | |

Source Tables:
[1] AFSC 2010a
[2] Table 3.1(b)
[3] Table 3.9
[4] Table 3.2
[5] Table 3.6
[6] Table 3.16
[7] Table IV 1999-2008 Areas 1-10
[8] Table IV-12