Revised 6/10/2013

STELLER SEA LION (*Eumetopias jubatus*): Eastern U. S. Stock

STOCK DEFINITION AND GEOGRAPHIC RANGE

Steller sea lions range along the North Pacific Rim from northern Japan to California (Loughlin et al. 1984), with centers of abundance and distribution in the Gulf of Alaska and Aleutian Islands (Fig. 3). The species is not known to migrate, but individuals disperse widely outside of the breeding season (late May-early July), thus potentially intermixing with animals from other areas (Sease and York 2003). Despite the wide-ranging movements of juveniles and adult males in particular, exchange between rookeries by breeding adult females and males (other than between adjoining rookeries) is low, although males have a higher tendency to disperse than females (NMFS 1995, Trujillo et al. 2004, Hoffman et al. 2006). A northward shift in the overall breeding distribution has occurred, with a contraction of the range in southern California and new rookeries established in southeastern Alaska (Pitcher et al. 2007).

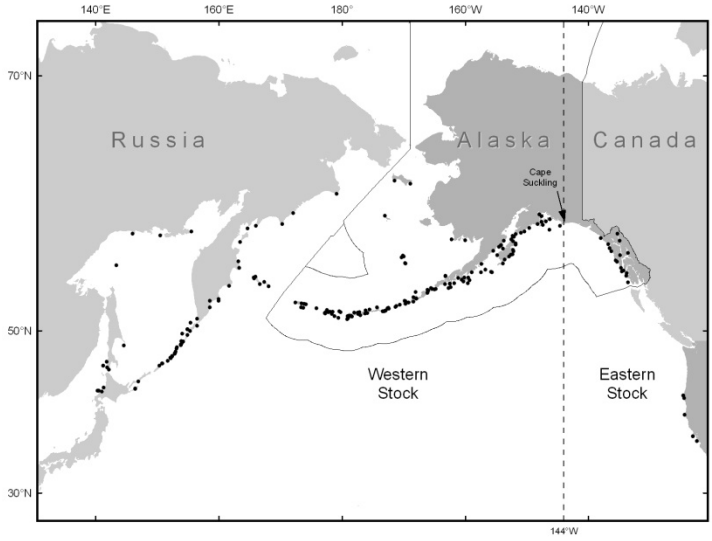

Figure 3. Approximate distribution of Steller sea lions in the North Pacific. Major U.S. haulouts and rookeries (50 CFR 226.202, 27 August 1993) and active Asian haulouts and rookeries (Burkanov and Loughlin, 2005) are depicted (points). Black dashed line (144° W) indicates stock boundary (Loughlin 1997). Note: Haulouts and rookeries in British Columbia are not shown.

Loughlin (1997) considered the following information when classifying stock structure based upon the phylogeographic approach of Dizon et al. (1992): 1) Distributional data: geographic distribution continuous, yet a high degree of natal site fidelity and low (<10%) exchange rate of breeding animals between rookeries; 2) Population response data: substantial differences in population dynamics (York et al. 1996); 3) Phenotypic data: unknown; and 4) Genotypic data: substantial differences in mitochondrial DNA (Bickham et al. 1996). Based on this information, two separate stocks of Steller sea lions were recognized within U. S. waters: an eastern U. S. stock, which includes animals east of Cape Suckling, Alaska (144°W), and a western U. S. stock, which includes animals at and west of Cape Suckling (Loughlin 1997, Fig. 3).

Steller sea lions that breed in Asia have been considered part of the western stock since the two stocks were first delineated in 1997. Since then, analyses of genetic data differ in their interpretation of separation between Asian and Alaskan sea lions. In Asian waters, Steller sea lions seasonally inhabit coastal waters of Japan in the winter, but breeding rookeries are currently only located in Russia (Burkanov and Loughlin 2005). Based on analysis of mitochondrial DNA, Baker et al. (2005) found evidence of a genetic split between the Commander Islands (Russia) and Kamchatka that would include Commander Island sea lions within the western U.S. stock and sea lions west of there in an Asian stock. However, Hoffman et al. (2006) did not support this split based on analysis of nuclear microsatellite markers indicating high rates of male gene flow. All genetic analyses confirm a strong separation between western and eastern stocks and there may be sufficient morphological differentiation to support elevating the two recognized stocks to subspecies (Phillips et al. 2009) despite the observation that western stock haplotypes are present at two northern southeast Alaska rookeries (Gelatt et al. 2007).

POPULATION SIZE

The eastern stock of Steller sea lions breeds on rookeries located in southeast Alaska, British Columbia, Oregon, and California; there are no rookeries located in Washington. Counts of pups on rookeries conducted near the end of the birthing season are nearly complete counts of pup production. Calkins and Pitcher (1982) and Pitcher

et al. (2007) concluded that the total Steller sea lion population abundance could be estimated by multiplying pup counts by a factor based on the birth rate, sex and age structure, and growth rate of the population. The most recent pup counts available by region are 7,462 in 2009 for southeast Alaska (DeMaster 2009), 5,485 in 2010 for British Columbia (Olesiuk pers. comm., Dept. Fisheries and Oceans Canada, 04 December 2012; NMFS 2012), 1,418 in 2009 for Oregon (NMFS, unpublished data), and 673 in 2011 for California (NMFS unpublished data). Using pup multipliers of either 4.2 or 5.2 (Pitcher et al. 2007), the population is estimated to be within the range of 63,160 (15,038 × 4.2) and 78,198 (15,038 × 5.2). These are not minimum population estimates, since they are extrapolated from pup counts from photographs taken in 2009-2011, and demographic parameters estimated for an increasing (at 3.1% per year) population. The extrapolation factor varied depending on the vital rate parameter that resulted in the growth rate: as low as 4.2 if it were due to high fecundity, and as high as 5.2 if it were due to low juvenile mortality.

Minimum Population Estimate

The minimum population estimate was calculated by adding the most recent non-pup and pup counts from all sites surveyed (Table 7).

Table 7. Non-pup and pup counts from rookery and haulout sites of eastern Steller sea lions, by region. The most recent counts for each site were used to calculate the minimum population estimate (N_{MIN}) for the entire eastern stock, and for the US portion.

Region	Year	Non-pups	Pups	Total count
Southeast Alaska (USA)	2009	16,985	7,462	24,447
British Columbia (Canada)	2010	17,996	5,485	23,481
Washington (USA)		1,749	--	1,749
Oregon (USA)	2008	4,090	--	4,090
Oregon (USA)	2009	--	1,418	1,418
California (USA)	2011	2,108	673	2,781
N_{MIN} (entire eastern stock)				57,966
N_{MIN} (U.S. portion of eastern stock)				34,485

This results in an N_{MIN} for the eastern U. S. (only) stock of Steller sea lions of 34,485 based on counts as old as 2008 for sea lions hauled out in Oregon (Oregon Dept. of Fish and Wildlife, unpublished data) to as recent as 2011 for sites in Washington and California. Including counts in British Columbia (Canada) yields an N_{MIN} for the entire eastern stock of 57,966. These counts are considered minimum estimates of population size because they have not been corrected for animals at sea.

Current Population Trend

The best available information indicates the eastern stock of Steller sea lion increased at a rate of 4.18% per year (90% confidence bounds of 3.71 - 4.62% per year) between 1979 and 2010 based on an analysis of pup counts in California, Oregon, British Columbia and Southeast Alaska (NMFS Eastern DPS Status review). A similar analysis of non-pup counts in the same regions plus Washington yielded an estimate of population increase of 2.99% per year (2.62-3.31% per year; NMFS Eastern DPS Status review). Pitcher et al. (2007) reported that the eastern U.S. stock increased at a rate of 3.1% per year during a 25-year time period from 1977-2002; however, they used a slightly different method to estimate population growth than the methods reported in NMFS (2012). The eastern U.S. stock increase has been driven by growth in pup counts in all regions (NMFS 2012).

Steller sea lion numbers in California, especially in southern and central California, have declined from historic numbers. Counts in California between 1927 and 1947 ranged between 4,000 and 6,000 non-pups with no apparent trend, but have subsequently declined by over 50%, and were between 1,500 and 2,000 non-pups during 1980-2011. At Año Nuevo Island off central California, a steady decline in ground counts started around 1970, and there was an 85% reduction in the breeding population by 1987 (LeBoeuf et al. 1991). Counts of non-pups at trend sites in California have been relatively stable, while those in Oregon and Washington have been increasing since the 1990; non-pup counts in southeast Alaska and British Columbia have increased more rapidly (Table 8, Fig. 4).

Table 8. Counts of adult and juvenile Steller sea lions observed at consistently surveyed rookery and haulout (trend) sites by year and region for the eastern U. S. stock from 1990 through 2011.* California (CA) includes Año Nuevo, Farallon Islands, and St George Reef. Oregon (OR) includes counts at all sites. Washington (WA) includes Split Rock Complex, Sea Lion Rock/Carroll Island, Bodelteh/Cape Alava/Guano Rock, and Tatoosh. British Columbia (BC) includes counts from all sites. Southeast Alaska (SEAK) includes counts from 24 trend sites.

Region	1990	1991	1992	1994	1996	1998	2000	2002	2006	2008	2009	2010	2011
CA	1,329	1,163	969	1,046	1,369	1,277[1]	1,215	1,096			1,236		935
OR	2,414		3,581	3,293	3,205	3,971	2,927	4,169	4,506	4,090			
WA	89[2]	274	278	384	595	470	681	650	714	1,198	1,343	1,421	1,749
BC	6,122[3]	--	7,378	8,104	--	9,818	--	12,122	15,721	15,061		17,996	--
SEAK	9,149	9,294		11,524	10,778	11,117	12,412	15,138	--	13,902	16,635	15,431	--
Total	19,103		21,500[4]	24,351		26,653		33,176		35,414[5]		40,174[6]	

*Data sources for counts of adult and juvenile Steller sea lions: NMFS 1995; Strick et al. 1997; Sease et al. 1999; Sease and Loughlin 1999; Sease et al. 2001; Olesiuk 2003; 2008; Brown et al. 2002; NMFS 2008; ODF&W unpubl. data, 7118 NE Vandenberg Ave., Corvallis, OR 97330; WDF&W unpubl. data, Marine Mammal Investigations, 7801 Phillips Road SW, Lakewood WA 98498; Point Reyes Bird Observatory, unpubl. data, 4990 Shoreline Hwy., Stinson Beach, CA 94970; NMFS unpublished data (M. Lowry, SWFSC); DeMaster 2009; NMFS 2012.

[1] This count was conducted in 1999.
[2] This count was conducted in 1989.
[3] This count was conducted in 1987.
[4] Total includes 1991 SEAK count.
[5] Total includes 2004 CA count of 1,163.
[6] Total includes 2008 OR and 2009 CA count.

CURRENT AND MAXIMUM NET PRODUCTIVITY RATES

There are no estimates of maximum net productivity rates for Steller sea lions. Pitcher et al. (2007) observed a rate of population increase of 3.1% per year for the eastern stock, but concluded this rate did not represent a maximum rate of increase. NMFS (2012) estimated that the eastern stock increased at rates of 4.18% per year using pup counts, and 2.99% per year using non-pup counts between 1979 and 2009. Hence, until additional data become available, it is recommended that the pinniped maximum theoretical net productivity rate (R_{MAX}) of 12% be used for this stock (Wade and Angliss 1997).

POTENTIAL BIOLOGICAL REMOVAL

Under the 1994 reauthorized Marine Mammal Protection Act (MMPA), the potential biological removal (PBR) is defined as the product of the minimum population estimate, one-half the maximum theoretical net productivity rate, and a recovery factor: $PBR = N_{MIN} \times 0.5R_{MAX} \times F_R$. The default recovery factor (F_R) for stocks listed as "threatened" under the Endangered Species Act (ESA) is 0.5 (Wade and Angliss 1997). However, in 2012 NMFS proposed removing the eastern stock of Steller sea lion from the list of threatened and endangered species. As such, the recovery factor is set at 0.75, midway between 0.5 (recovery factor for a "threatened" stock) and 1.0 (recovery factor for a stock within its optimal

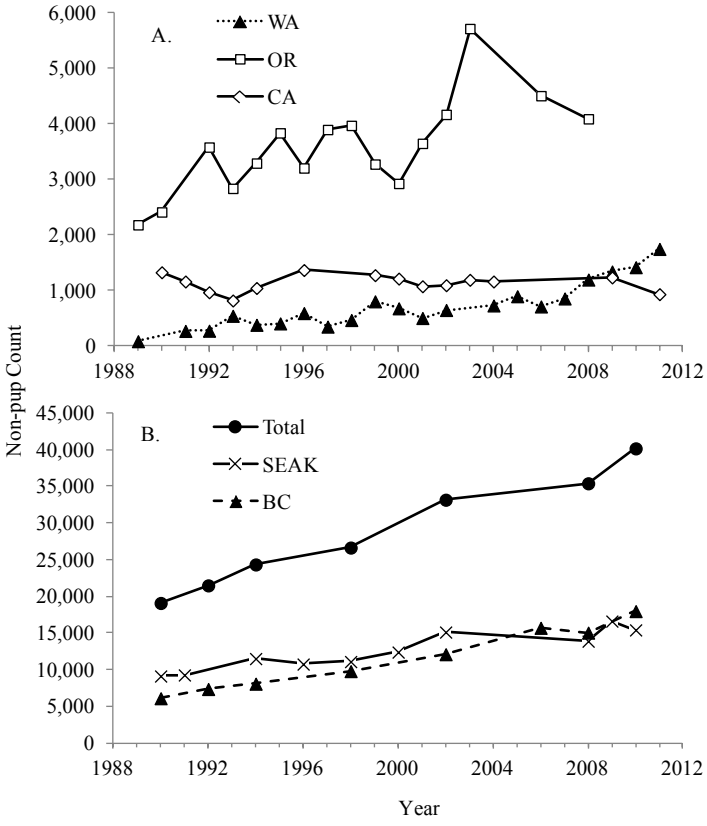

Figure 4. Counts of adult and juvenile Steller sea lions at rookery and haulout trend sites by region throughout the range of the eastern U.S. stock, 1990-2011. Data from Oregon and British Columbia include all sites. Region abbreviations and data are in Table 4. A. CA, OR, and WA. B. BC, SEAK, and Total Eastern stock.

sustainable population level; OSPL). This approach is consistent with recommendations of the Alaska Scientific Review Group since it has not been determined if the eastern stock of Steller sea lion is within its OSPL. Thus, for the eastern (U.S. portion only) stock of Steller sea lions, PBR = 1,552 animals (34,485 × 0.06 × 0.75). If this stock is considered to be within its OSPL, PBR = 2,069 (34,485 × 0.06 × 1.0).

ANNUAL HUMAN-CAUSED MORTALITY AND SERIOUS INJURY

New Serious Injury Guidelines

NMFS updated its serious injury designation and reporting process, which uses guidance from previous serious injury workshops, expert opinion, and analysis of historic injury cases to develop new criteria for distinguishing serious from non-serious injury (Angliss and DeMaster 1998, Andersen *et al*. 2008, NOAA 2012). NMFS defines serious injury as an "*injury that is more likely than not to result in mortality.*" Injury determinations for stock assessments revised in 2013 or later incorporate the new serious injury guidelines, based on the most recent 5-year period for which data are available.

Fisheries Information

Until 2003, there were six different federally regulated commercial fisheries in Alaska that could have interacted with Steller sea lions and were monitored for incidental mortality by fishery observers. As of 2003, changes in fishery definitions in the List of Fisheries have resulted in separating these 6 fisheries into 22 fisheries (69 FR 70094, 2 December 2004). This change does not represent a change in fishing effort, but provides managers with better information on the component of each fishery that is responsible for the incidental serious injury or mortality of marine mammal stocks in Alaska.

Fishery observers monitored four commercial fisheries during the period from 1990 to 2005 in which Steller sea lions from this stock were taken incidentally: the California (CA)/Oregon (OR) thresher shark and swordfish drift gillnet, WA/OR/CA groundfish trawl, northern Washington (WA) marine set gillnet, and Gulf of Alaska sablefish longline fisheries. The best data available on the rates of serious injury and mortality incidental to these fisheries is presented in Table 9. There have been no observed serious injuries or mortalities incidental to the CA/OR thresher shark and swordfish drift gillnet fishery in recent years (Carretta 2002, Carretta and Chivers 2003, Carretta and Chivers 2004). In the WA/OR/CA groundfish trawl (Pacific whiting component only) one Steller sea lion was observed killed in each year in 2000-03. No data are available after 1998 for the northern Washington marine set gillnet fishery. Between 2005-2009, several Steller sea lion mortalities occurred in WA/OR/CA groundfish fisheries, including the limited trawl sector, California halibut trawl, and the at-sea hake sector, with a mean annual mortality in these fisheries of 5.71 (Jannot et al. 2011). There have been no observer reported mortalities in the Gulf of Alaska sablefish longline since 2000 (Perez unpubl. ms.). During the 4-year period from 2007-2010, a total of 45 Steller sea lions mortalities occurred in fisheries operating south of 49°N latitude (2007 = 14 mortalities, 2008 = 6 mortalities, 2009 = 0 mortalities, 2010 = 25 mortalities), with an average annual take of 11.25 animals. These takes were reported as animals killed by gear; however, they could not be assigned to a particular fishery. The total mean annual mortality rate from all fisheries is 17.0 Steller sea lions. No mortalities were reported by fishery observers monitoring drift gillnet and set gillnet fisheries in Washington and Oregon this decade; though, mortalities have been reported in the past.

Table 9. Summary of incidental mortality of Steller sea lions (eastern U. S. stock) due to commercial fisheries from 2005 to 2009 and calculation of the mean annual mortality rate. The most recent 5 years of available data are used in the mortality calculation when more than 5 years of data are provided for a particular fishery. N/A indicates that data are not available. Data for observer coverage, observed mortality and estimated mortality not in parentheses are values from non-breeding season (Aug.-Apr.), those in parentheses are from breeding season (May-Jul.). Details of how percent observer coverage is measured is included in Appendix 6.

Fishery name	Years	Data type	Observer coverage	Observed mortality (in given yrs.)	Estimated mortality (in given yrs.)	Mean annual mortality
WA/OR/CA groundfish (limited entry trawl sector)	2005 2006 2007 2008 2009	Obs data	22 (5) 21 (5) 18 (4) 20 (5) 26 (5)	0 (0) 0 (0) 0 (0) 0 (0) 3 (1)	0 (0) 0 (0) 0 (0) 0 (0) 11.56 (--)	2.51 (CV = 0.47)
WA/OR/CA California halibut trawl	2005 2006 2007 2008 2009	Obs data	10 13 12 37 N/A	0 0 1 1 N/A	0 0 -- 2.68 N/A	0.74 (CV = 0.63)
WA/OR/CA groundfish (at-sea hake sector)	2005 2006 2007 2008 2009	Obs data	100 98 99 99 100	0 (2) 0 (3) 0 (3) 1 (0) 0 (0)	0 (2.99) 0 (3.78) 0 (4.22) 1.3 (0) 0 (0)	2.46 (CV = 0.17)
Observer program total						5.71 (CV = 0.23)

[1] A "—" indicates bycatch estimate not provided due to the high coefficient of variation for that estimate.

Strandings of Steller sea lions provide additional information on fishery-related mortality. Estimates of fishery-related mortality from stranding data are considered minimum estimates because not all entangled animals strand, and not all stranded animals are found or reported. A total of 148 observations of Steller sea lions with flashers hanging from their mouth were reported in Southeast Alaska and northern British Columbia between 2007 and 2011 (Raum-Suryan et al. 2009; pers. comm., Lauri Jemison, Steller Sea Lion Program, Alaska Department of Fish and Game, 1255 West 8th Street, P.O. Box 115526, Juneau, AK 99811; 03 January 2013; Allen et al. 2014; Table 10) indicating an average rate of hook ingestion of 29.6 per year. It is not clear whether entanglements with hooks and flashers involved the recreational or commercial component of the salmon troll fishery. Based on guidelines presented in 77FR3233, 23 January 2012, these fishery interactions are considered "serious injuries". The average annual serious injury and mortality attributed to entanglement in fishing gear and ingestion of gear other than troll gear between 2007-2011 was 1.6. There were 3 fishery-related strandings of Steller sea lions in Washington, Oregon, or California between 2007 and 2011, all occurring in 2010, resulting in a mean annual mortality of 0.6.

Table 10. Summary of eastern Steller sea lion mortalities and serious injuries by year and type reported to the NMFS Alaska Regional Office, marine mammal stranding database, and ADF&G for the 2007-2011 period (Allen et al. 2014).

Cause of Injury	2007	2008	2009	2010	2011	Mean Annual Mortality
Dependent animal with seriously injured mother	0	2	0	0	0	0.4
Entanglement (foreign high seas gillnet)	0	0	0	1	0	0.2
Entanglement (halibut gangion line)	0	0	0	0	1	0.2
Entanglement (troll gear)	1	1	0	0	0	0.4
Entanglement (unknown marine debris / gear)	0	1	0	0	0	0.2
Entanglement (unknown pot fishery gear)	0	1	0	0	0	0.2
Ring neck entanglement (fishing line)	0	0	0	1	1	0.4
Ring neck entanglement (unknown marine debris / gear)	1	5	0	2	3	2.2
Vessel strike (unknown vessel)	1	0	1	0	0	0.4
Gunshot	0	0	1	2	0	0.6
Swallowed troll gear	23	38	15	42	30	29.6
Swallowed unknown fishing gear	0	0	0	1	0	0.2
Swallowed unknown marine debris / gear	0	1	0	0	0	0.2
Minimum total annual mortality						34.6*

*Total excludes gushot animals from Alaska since these animals are likely already accounted for in the "struck and lost" from the Alaska Native harvest estimates.

Due to limited observer program coverage, no data exist on the mortality of marine mammals incidental to Canadian commercial fisheries (i.e., those similar to U.S. fisheries known to take Steller sea lions). As a result, the number of Steller sea lions taken in Canadian waters is not known.

The minimum estimated mortality rate incidental to commercial and recreational fisheries (both U.S. and Canadian) is 49 sea lions per year, based on fisheries observer data (17.0), opportunistic observations , and stranding data (29.6 + 1.6 + 0.6 = 31.8).

Subsistence/Native Harvest Information

The subsistence harvest of Steller sea lions during 2004-2008 is summarized in Wolfe et al. (2009b). During each year, data were collected through systematic interviews with hunters and users of marine mammals in approximately 2,100 households in about 60 coastal communities within the geographic range of the Steller sea lion in Alaska. Approximately 16 of the interviewed communities lie within the range of the eastern U.S. stock. As of 2009, data on community subsistence harvests are no longer being collected. Therefore, the most recent 5-years of data (2004-2008) will be retained and used for estimating an annual mortality estimate. The average number of animals harvested and struck but lost is 12 animals/year (Table 11).

An unknown number of Steller sea lions from this stock are harvested by subsistence hunters in Canada. The magnitude of the Canadian subsistence harvest is believed to be small. Alaska Native subsistence hunters have initiated discussions with Canadian hunters to quantify their respective subsistence harvests, and to identify any effect these harvests may have on management of the stock.

Table 11. Summary of the subsistence harvest data for the eastern stock of Steller sea lions, 2004-2008. As of 2009, data on community subsistence harvests are no longer being collected. Therefore, the most recent 5-years of data (2004-2008) will be retained and used for estimating an annual mortality estimate.

Year	Estimated total number taken	Number harvested	Number struck and lost
2004	12[1]	5	7
2005	19[2]	0	19
2006	12.6[3]	2.5	10.1
2007	6.1[4]	0	6.1
2008	9.7[5]	1.7	8.0
Mean annual take (2004-2008)	11.9	1.8	10.0

[1] Wolfe et al. 2005; [2] Wolfe et al. 2006; [3] Wolfe et al. 2008; [4] Wolfe et al. 2009a; [5]Wolfe et al. 2009b.

Other Mortality

Illegal shooting of sea lions in U.S. waters was thought to be a potentially significant source of mortality prior to the listing of sea lions as threatened under the ESA in 1990. (Note: the 1994 amendments to the MMPA made intentional lethal take of any marine mammal illegal except for subsistence hunting by Alaska Natives or where imminently necessary to protect human life).

Steller sea lions were taken in British Columbia during commercial salmon farming operations (Table 9). Preliminary figures from the British Columbia Aquaculture Predator Control Program indicated a mean annual mortality of 45.8 Steller sea lions from this stock over the period from 1999 to 2003 (Olesiuk 2004). Starting in 2004, aquaculture facilities were no longer permitted to shoot Steller sea lions (P. Olesiuk, Pacific Biological Station, Canada, pers. comm.).

Strandings of Steller sea lions with gunshot wounds do occur, along with strandings of animals entangled in material that is not fishery-related. During the period from 2007 to 2011, there were 3 reported strandings of animals from this stock with gunshot wounds in Oregon and Washington, 2 in 2007 and 1 in 2010, resulting in an estimated annual mortality of 0.6 Steller sea lions. This estimate is considered a minimum because not all stranded animals are found, reported, or cause of death determined (via necropsy by trained personnel). Three mortalities from gunshots were reported in Alaska (1 in 2009 and 2 in 2010); however, Steller sea lions reported in the Alaska stranding database as shot are not included in this estimate, as they may result from animals struck and lost in the Alaska Native subsistence harvest. In addition, human-related stranding data are not available for British Columbia. Two Steller sea lion mortalities attributed to vessel collisions were reported to the Alaska stranding network (0.4 mean annual mortality). Other sources non-fishery human-related serious injury and mortality include ingestion of unknown marine debris/ gear (0.2), entanglement in unknown marine debris/ gear (2.2 + 0.2 = 2.4), and dependent of a serious injured or dead mother (0.4) (Table 10).

Mortalities may occasionally occur incidental to marine mammal research activities authorized under MMPA permits issued to a variety of government, academic, and other research organizations. Between 2006 and 2010, there was 1 incidental mortality (2010) resulting from research on the eastern stock of Steller sea lions, which results in an annual average of 0.2 mortalities per year from this stock (Tammy Adams, pers. comm., Permits, Conservation, and Education Division, Office of Protected Resources, NMFS, 1315 East-West Highway, Silver Spring, MD 20910; 11 January 2012). Two Steller sea lions died in 2008 in traps at Bonneville Dam, part of the lethal take program targeting California sea lions, averaging 0.4 mortalities per year.

The mean average human-caused mortality and serious injury of eastern Steller sea lions for 2007-2011 from sources other than fisheries and Alaska Native harvest is 4.2 based on OR/WA gunshot (0.6), ingestion of unknown marine debris/ gear (0.2), vessel collision (0.4), unknown marine debris/ gear entanglement (2.4), dependent of a seriously injured mother (0.4), and research mortality (0.2).

STATUS OF STOCK

Based on currently available data, the minimum estimated U. S. commercial fishery-related mortality and serious injury for this stock (17.0) is less than 10% of the calculated PBR (10% of PBR = 155 or 207) and, therefore, can be considered to be insignificant and approaching a zero mortality and serious injury rate. The estimated annual level of total human-caused mortality and serious injury (49 (commercial and recreational fisheries) + 11.9 (subsistence) + 4.2 (other human-caused mortality) = 65.1) does not exceed the PBR (1,552 or 2,069) for this stock. The eastern U.S. stock of Steller sea lion is currently listed as "threatened" under the ESA, and therefore designated as "depleted" under the MMPA. As a result, this stock is classified as a strategic stock. The eastern stock of Steller

sea lion is being considered for removal from listing under the ESA by NMFS (NMFS 2008, NMFS 2012), based in part on its consistent increase in abundance since the mid-1970s. On June 29, 2010, NMFS initiated a review of the eastern Distinct Population Segment population status to reassess the listing classification under the ESA (75 FR 37385). On August 30, 2010, NMFS received a petition to delist the eastern DPS from the states of Washington and Oregon; and on September 1, 2010, the Secretary of Commerce received a petition to delist this DPS from the State of Alaska. NMFS Alaska Region Protected Resources Division prepared a draft status review to address the petitions to delist the eastern DPS and is prepared to issue a final de-listing decision in late 2013. Any resultant changes to the status of the stock based on the outcome of the decision will be included in the draft 2014 SARs and reviewed by the SRG at the 2014 annual meeting. Although the stock size has increased, the status of this stock relative to its Optimum Sustainable Population size is unknown. The overall estimated annual rates of increase of 3.1% (Pitcher et al. 2007), 2.99%, and 4.18% (NMFS 2012) of the eastern U. S. stock has been consistent and long-term, and may indicate that this stock is reaching OSP size.

Habitat Concerns

Unlike the western U. S. stock of Steller sea lion, there has been a sustained and robust increase in abundance of the eastern U. S. stock throughout almost its entire range. The eastern U. S. stock is increasing throughout the northern portion of its range (Southeast Alaska and British Columbia), and is stable or increasing slowly in the central (Oregon through central California). In the southern end of its range (Channel Islands in southern California), it has declined considerably since the late 1930s, and several rookeries and haulouts south of Año Nuevo Island have been abandoned. Changes in the ocean environment, particularly warmer temperatures, may be factors that have favored California sea lions over Steller sea lions in the southern portion of the Steller's range (NMFS 2008). A revised Recovery Plan reviewing current threats to the eastern and western U.S. stocks and proposing actions and guidelines for recovery was released by NMFS in March 2008 (NMFS 2008) and a status review will be released by NMFS in late 2013.

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