

Results of the 2007 Survey of the Reintroduced Sea Otter Population in Washington State

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The 2007 Washington sea otter survey was conducted from 17-19 July 2007, and included the inshore area from Point Grenville on the outer Washington coast to Tongue Point in the Strait of Juan de Fuca. Biologists and volunteers from the Washington Department of Fish and Wildlife, U.S. Geological Survey (USGS), U.S. Fish and Wildlife Service, Olympic Coast National Marine Sanctuary, The Seattle Aquarium and Point Defiance Zoo and Aquarium participated in the survey. Counting conditions this year ranged from fair to excellent for the ground observer component and poor to excellent for the aerial survey component.

Methods

All of the sea otter range in Washington was surveyed from a fixed-winged aircraft (Cessna 185) and included coverage of coastal waters from Point Grenville on the outer coast to Tongue Point in the Strait of Juan de Fuca. Observers made additional counts on the ground at Cape Johnson, Sand Point, Cape Alava, Duk Point (near Seafield Creek), inshore of Father and Son Rocks, and Makah Bay. Typically, two south to north surveys are conducted each day over a period of 3 or 4 days, weather permitting. Thus, when conditions are favorable, six surveys of the entire range are completed. Since 1999, we have also been conducting an offshore aerial survey leg roughly 3 miles for the coastline to detect open water groups. This year, we completed 3 complete surveys of the sea otter's range in Washington. Inclement weather precluded completing scheduled surveys on 18 and 19 July.

The 2007 survey total was calculated by summing the highest daily totals for the southern segment (Point Grenville to La Push) and northern segment (La Push to Tongue Point) of the sea otter's known range along the Washington coast. The high count this year was on the 17 July survey for both the southern and northern segments of the range. This method of splitting the coast at La Push into southern and northern segments, assumes little or no movement between the two segments during our survey period. Examination of survey data from years past, as well as documented movements of instrumented sea otters by USGS researchers in Washington support this assumption. Large groups (>20) observed from the air were generally estimated and photographed with a digital camera. Digital images were later counted several times for consistency and the resulting numbers were used when 1) image quality of groups was good and ground counts were not available or 2) the aerial count

from the digital image was deemed to be more accurate than the coinciding ground count of the same group of otters.

Results

The highest count for this year's Washington survey was 1,125 sea otters on July 17. The 2005 and 2006 high sea otter counts were 814 and 790 otters respectively (Table 1; Figure 1). The 2007 survey was a substantial increase (42%) over 2006 and likely represents an unusually high proportion of the population resting at major concentration areas than we normally encounter during July surveys. Overall, the finite rate of increase for this population since 1989 is 8.3%. This year 54 pups were counted during the high count and were observed in groups at Destruction Island, inshore from Perkins Reef (Rocks 443), Giants Graveyard, Yellow Banks, Sand Point, Cape Alava, Duk Point (off Seafield Creek), inshore of Father and Son Rocks, and north of Anderson Point in Makah Bay. More pups are now being detected in aerial counts of rafted groups because of the use of digital photography, which allows close examination of animals in a group to accurately identify if pups are present when the digital image is counted. In some cases pups may not appear in the summary because they were not observed during the highest counts. The pup to independent ratio this year was 5:100.

Survey results for 2007 indicate growth of the Washington sea otter population continues to remain positive overall (Figure 1). However, results from the northern segment (La Push to Tongue Point) indicate that this segment may be approaching equilibrium density. For the segment north of La Push there has been no population growth since 2000 (-1%, $R^2 = 0.11$). Nevertheless, there still appears to be some quality unoccupied habitat available north of Point of Arches, and again this year sea otters were sighted near Anderson Point in Makah Bay. (Table 1). In the southern segment (La Push to Point Grenville), the sea otter population has been growing at almost 20% per year since 1989 ($R^2 = 0.94$). These results illustrate the importance of continuing annual surveys to monitor population trends and changes in distribution. The disparity in growth between the southern and northern population segments is a perplexing question, especially since we know that large numbers of sea otters have used the area in the Strait of Juan de Fuca as far east as Pillar Point and prey of sea otters is present although patchy in nature throughout this area.

The distribution of Washington's sea otter population has continued to change in recent years with an increasing and larger proportion of the total Washington sea otter population now occurring in the southern segment south of La Push (Figures 2 & 3). In 2002, the survey segment south of La Push accounted for about the same percentage of the total population as the northern segment, 49% and 51% respectively. However in 2003 the distribution shifted in favor of the southern segment with 54% south and 46% north of La Push; in 2004 the distribution was 55% south and 45% north of La Push; in 2005 the distribution was 54% south and 46% north of La Push; and in 2006 the distribution was 61% south and 39% north of La Push. For the 2007 survey, 68% of the population was in the southern segment south of La Push and 32% of the population was in northern segment north of La Push, respectively.

The single largest concentration of sea otters continues to be located at Destruction Island with 474 otters counted this year. Consistent with recent surveys, a large male group continues to use the northeast reef and kelp bed areas for resting, while a reproducing female

raft is still located at the west end of the island. Counts made at other locations in the southern portion of the range suggest that females may be regularly moving between rafting areas located at Destruction Island, Diamond Rock (off the mouth of the Hoh River), inshore of Perkins Reef (Rocks 443), and Giants Graveyard.

As in past surveys, we did not include any coverage of inland waters east of Tongue Point, although we are aware of credible sightings of scattered individual sea otters in the San Juan Islands and Puget Sound in recent years. Most of these sightings have been of one or two animals. No groups of multiple animals have been noted from any confirmed inland water sea otter sighting reports to date and we believe the small number of sea otters frequenting the inland waters would not add significantly to the population total. Also of note, the groups that moved into the western Strait of Juan de Fuca during fall and winter months has not been reported since 2000. Two sea otters were observed at Tatoosh Island this year, which has often been the case in years past. A single sea otter observed near Willoughby Rock was the most southerly sighting during the 2007 survey. These records do not appear in the summary table because they were not observed during the high count survey on 17 July and are included here to note regular presence of sea otters in these areas.

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Table 1. Results of the 2006 and 2007 July sea otter surveys in Washington State.

	2007			2006		
	INDEPENDENT	PUPS	TOTAL	INDEPENDENT	PUPS	TOTAL
KALALOCH/BROWNS PT.	0	0	0	1	0	1
DESTRUCTION I. ¹	470	4	474	298	4	302
HOH RIVER MOUTH	1	0	1	0	0	0
DIAMOND ROCK ²	3	0	3	22	0	22
HOH HEAD	1	0	1	2	0	2
PERKINS REEF (ROCKS 443) ^{1,2}	251	6	252	65	0	65
ALEXANDER I. / GOODMAN CREEK	3	0	3	8	1	9
TOLEAK/STRAWBERRY PT.	0	0	0	2	0	2
GIANTS GRAVEYARD	20	5	25	76	5	81
QUILLAYUTE NEEDLES	0	0	0	1	0	1
S. CAPE JOHNSON/CHILEAN MEMORIAL	1	0	1	7	0	7
CAPE JOHNSON/BLUFF PT. ^{*1,2}	97	0	97	76	0	76
SANDY I.	3	0	3	11	0	11
CEDAR CREEK	5	0	5	51	2	53
NORTH KAYOSTLA BEACH	3	0	3	1	0	1
YELLOW BANKS AREA ¹	42	6	48	29	1	30
SAND PT.*	22	6	28	4	2	6
INSHORE WHITE ROCK /WEDDING ROCKS	2	0	2	3	0	3
SOUTH END OZETTE ISLAND	1	0	1	6	0	6
OZETTE/CAPE ALAVA/BODELTEH* ¹	31	11	42	47	4	51
OZETTE RIVER		0	1	31	3	34
DUK PT.*	84	11	95	2	0	2
FATHER AND	12	3	15	18	5	23
POINT OF ARCHES	2	0	2	0	0	0
ANDERSON PT.	17	2	19	1	0	1
WAATCH PT.	0	0	0	0	0	0
TATOOSH ISLAND	0	0	0	1	0	1
TOTALS	1071	54	1125	763	27	790

¹ Includes count from aerial photograph.

* Counted from land-based stations.

² Pups were observed at these locations during the survey period, but not when the high count was made.

Figure 1 . Growth of Washington sea otter population, showing 3-yr running average of counts, 1989-2007

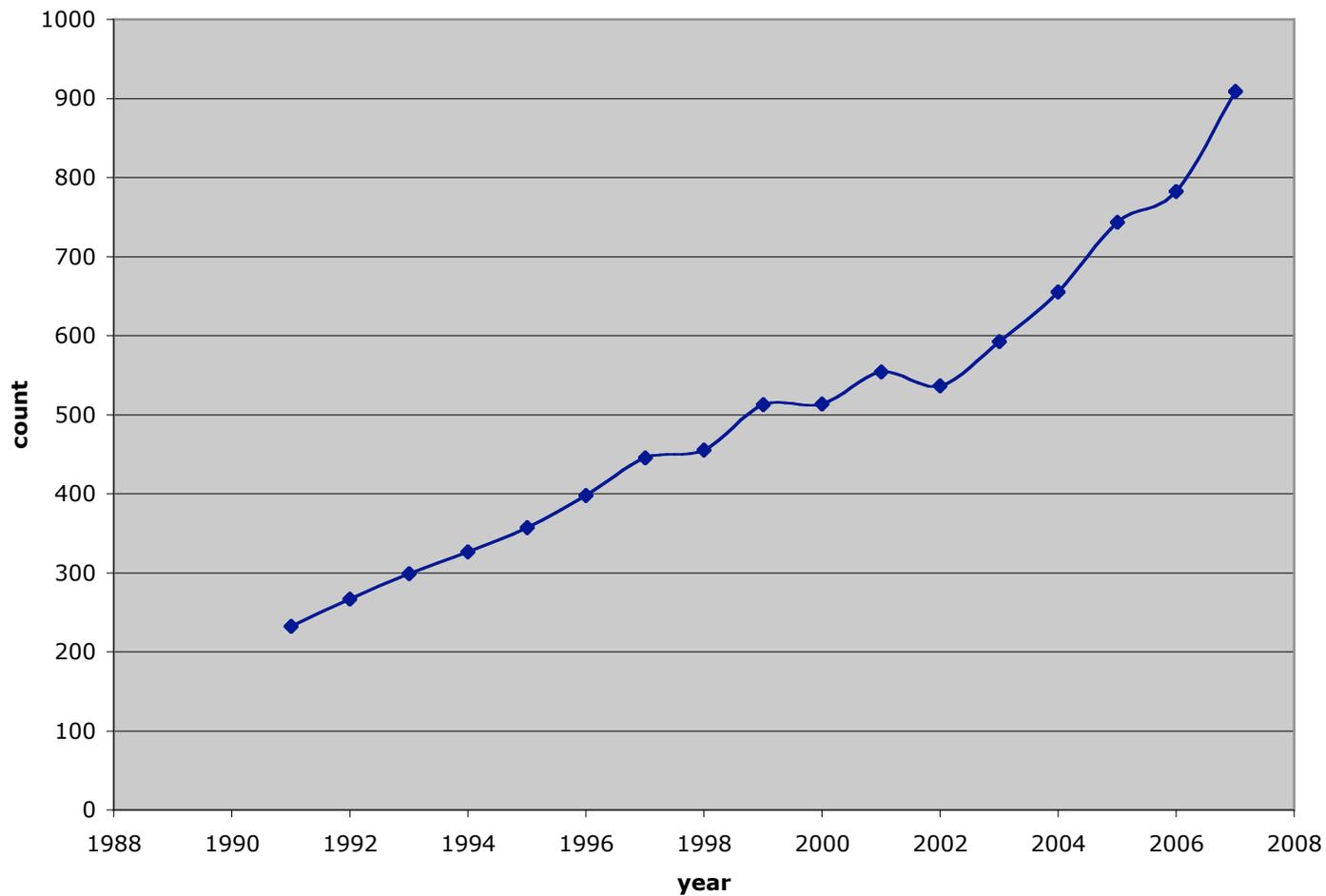


Figure 2 . Distribution of sea otters in Washington as a percentage of total population count within north and south segments, 1989-2007.

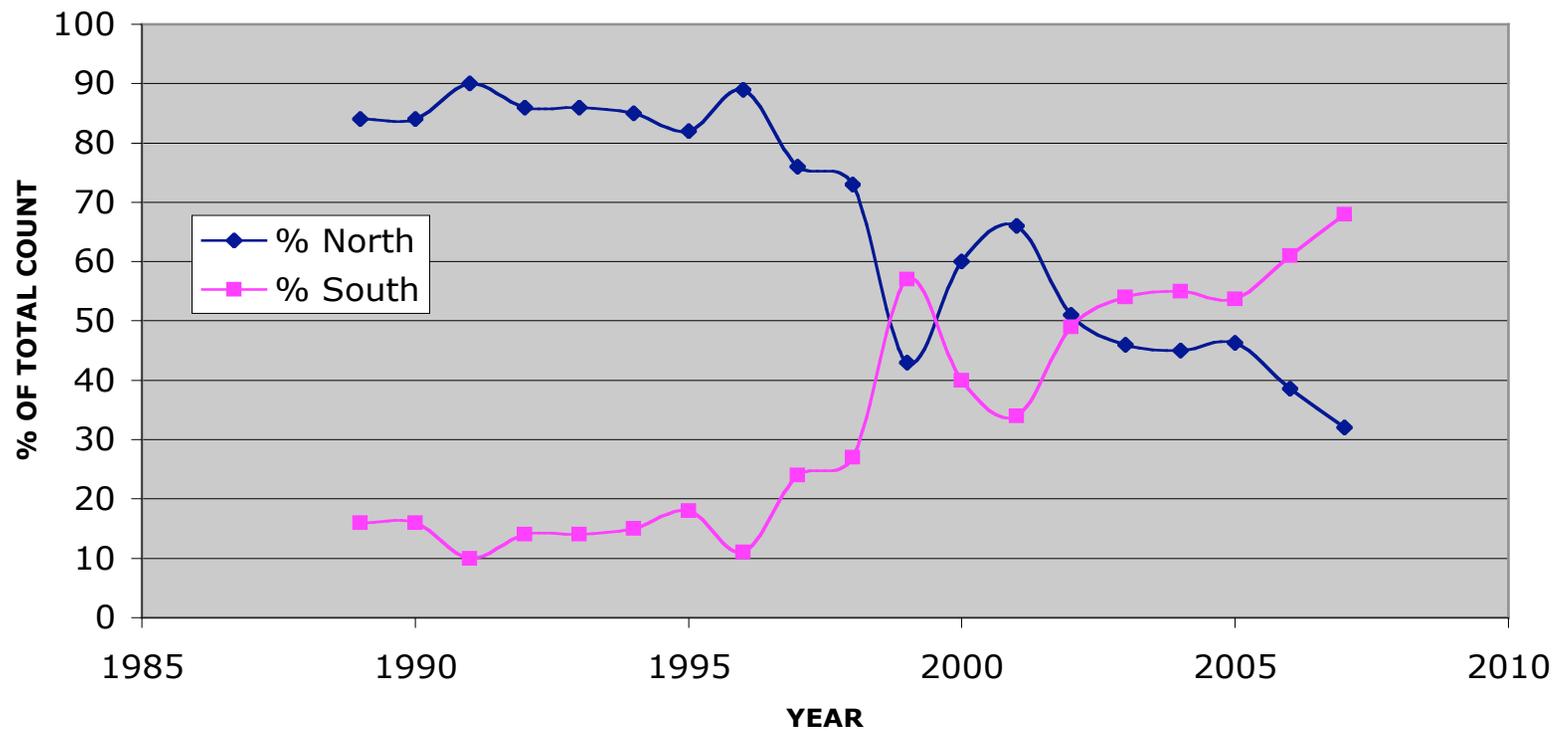


Figure 3. Locations of sea otter groups along the coast of Washington, 17 July 2007.

