

Results of the 2008 Survey of the Reintroduced Sea Otter Population in Washington State

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The 2008 Washington sea otter survey was conducted from 7-10 July 2008 and included the inshore area from the South Jetty at to mouth of the Columbia River on the outer Washington coast to Pillar Point in the Strait of Juan de Fuca. Biologists and volunteers from the Washington Department of Fish and Wildlife, U.S. Fish and Wildlife Service, Olympic Coast National Marine Sanctuary, Makah Tribal Fisheries, The Seattle Aquarium and Point Defiance Zoo and Aquarium participated in the survey. Counting conditions this year ranged from poor to good for the ground observer component and poor to fair for the aerial survey component. With the exception of the initial reconnaissance flight flown on 7 July when conditions were excellent, low clouds and fog hampered aerial survey coverage on all days.

Methods

All of the known sea otter range in Washington was surveyed from a fixed-winged aircraft (Cessna 185) and included coverage of coastal waters from the South Jetty at the mouth of the Columbia River (covered only on 7 July reconnaissance survey), north to Point Grenville (Point Grenville was the starting location for surveys on 8-10 July) and Cape Flattery then east to Tongue Point in the Strait of Juan de Fuca. Ground observers made additional counts from locations at Cape Johnson, Sand Point, Cape Alava, Duk Point (near Seafeld Creek), and inshore of Father and Son Rocks. 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.

The 2008 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 Pillar Point) of the sea otter's known range along the Washington coast. The high count this year was the combined total from the southern segment on 9 July and the northern segment on 10 July. 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

This year, we were only able to conduct one complete aerial and ground survey on 10 July. Although aerial surveys covered the area from Point Grenville to Tongue Point on all survey days, low clouds and fog limited aerial survey coverage on most survey days. Ground observers were able to conduct surveys at their respective locations on all survey days.

The highest count for this year's Washington survey was 1,073 sea otters. The 2005, 2006 and 2007 high sea otter counts were 814, 790 and 1,125 otters respectively (Table 1; Figure 1). Overall, the finite rate of increase for this population since 1989 is 8.4 %. This year 80 pups were counted during the high count and were observed in groups at Destruction Island, Diamond Rock/North Rock, Giant's Graveyard, north of Cedar Creek, Yellow Banks, Sand Point, Cape Alava, Duk Point (off Seafield Creek), and inshore of Father and Son Rocks. 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 8.1:100.

Survey results for 2008 indicate growth of the Washington sea otter population continues to remain positive overall (Figure 1). Results from the northern segment (La Push to Pillar Point) indicate that this segment may be approaching equilibrium density. For the segment north of La Push there was a slight increase this year (3%, $R^2 = 0.32$), and there still appears to be some quality unoccupied habitat available north of Point of Arches. Sea Otters were again 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 ($R^2 = 0.93$). 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 eastward as far 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 (Figure 2). 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 the distribution was 68% south and 32% north, respectively. Results of the 2008 survey indicated 60% of the population was

distributed south of LaPush and 40% was north of LaPush. Aerial coverage of the area from Neah Bay to Tongue Point was unable to detect any sea otters in the Strait of Juan de Fuca.

The single largest concentration of sea otters continues to be located at Destruction Island with 402 otters counted this year. Consistent with recent surveys, a large male group continues to use the northeast reef and eastern 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 indicate that females may be regularly moving between rafting areas located at Destruction Island, Diamond Rock/North 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. No sea otters were observed at Tatoosh Island this year. A single sea otter observed near Willoughby Rock was the most southerly sighting during the 2008 survey. These extralimital records do not appear in the summary table because they were not observed during the 2008 surveys on 9 or 10 July and are mentioned here to continue to note regular presence of sea otters in these areas.

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Table 1. Results of the 2007 and 2008 July sea otter surveys in Washington State.

	2008			2007		
	Independent	Pup	Total	Independent	Pup	Total
WILLOUGHBY ROCK	1	0	1	0	0	0
SOUTH BEACH CAMPGROUND	2	0	2	0	0	0
KALALOCH	1	0	1	0	0	0
BROWNS POINT	1	0	1	0	0	0
NORTH BROWN PT.	1	0	1	0	0	0
DESTRUCTION I. ¹	388	14	402	470	4	474
HOH RIVER MOUTH	3	0	3	1	0	1
MIDDLE RK/DIAMOND ROCK ¹	135	12	147	3	0	3
NORTH ROCK ¹	66	9	75	0	0	0
HOH HEAD	1	0	1	1	0	1
PERKINS REEF (ROCK 443)	1	0	1	251	6	257
ALEXANDER ISLAND	0	0	0	3	0	3
TOLEAK/STRAWBERRY PT.	1	0	1	0	0	0
GIANTS GRAVEYARD ¹	7	3	10	20	5	25
S. CAPE JOHNSON/CHILEAN MEMORIAL ¹	26	2	28	1	0	1
CAPE JOHNSON/BLUFF PT. ¹	144	4	148	97	0	97
SANDY I. ¹	0	0	0	3	0	3
CEDAR CRK./NORWEGIAN MEM. ¹	36	3	39	5	0	5
MIDWAY POINT	0	0	0	3	0	3
OFFSHORE YELLOW BANKS	0	0	0	42	6	48
YELLOW BANKS AREA ¹	42	4	46	0	0	0
SAND PT.* ¹	21	6	27	22	6	28
INSHORE WHITE ROCK /WEDDING ROCKS*	2	0	2	2	0	2
WEDDING ROCKS	2	0	2	0	0	0
OZETTE I.	9	1	10	1	0	1
OZETTE/CAPE ALAVA/BODELTEH*	43	8	51	31	11	42
DUK PT.* ¹	33	5	38	84	11	95
FATHER AND SON*	14	9	23	12	3	15
PT. OF ARCHES	0	0	0	2	0	2
ANDERSON PT.*	13	0	13	17	2	19
	993	80	1073	1071	54	1125

* Counted from land-based stations.

¹ 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, 1989-2008

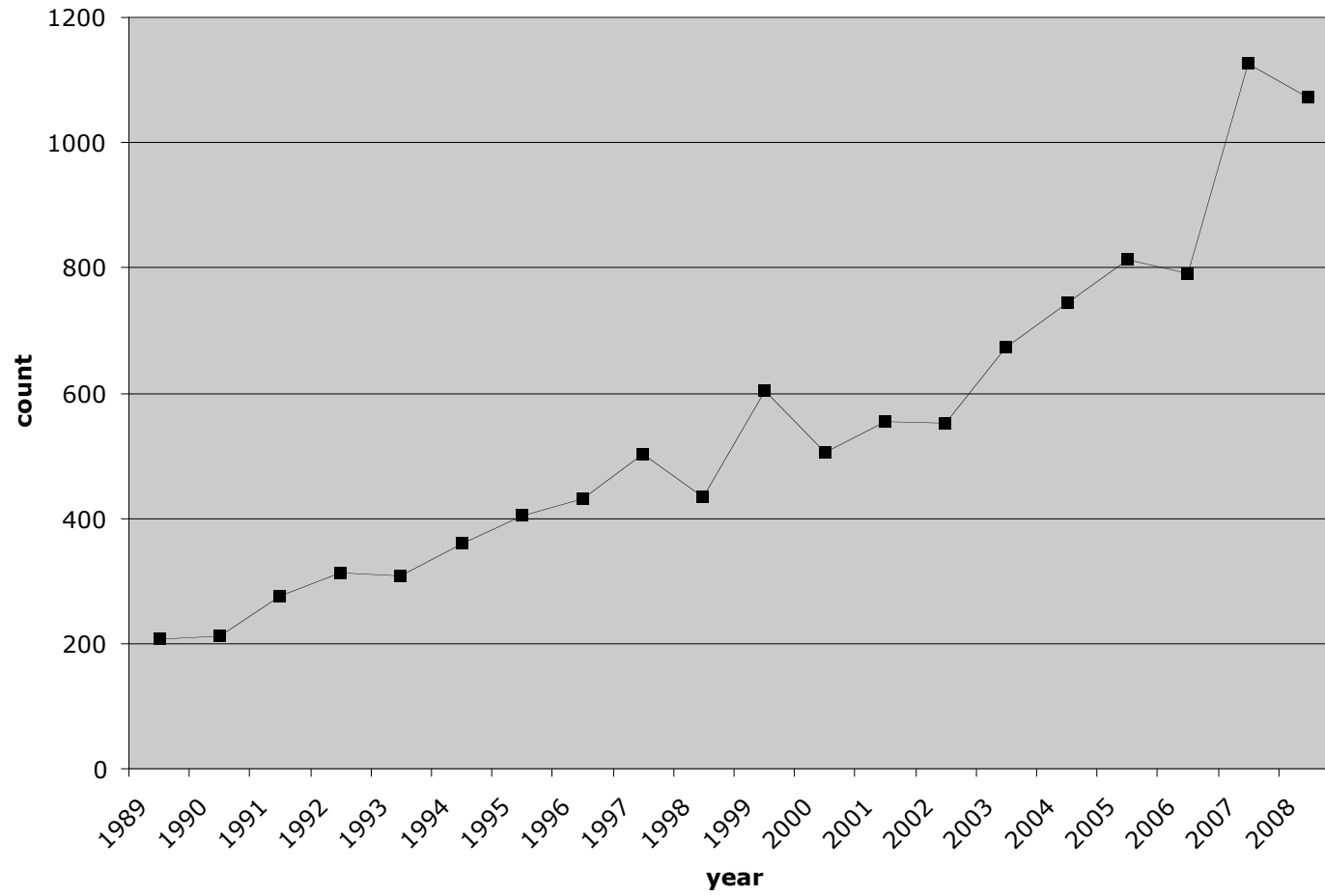


Figure 2. Distribution of sea otters in Washington as a percentage of total population count within north and south segments, 1989-2008.

