Results of the 2006 Survey of the Reintroduced Sea Otter Population in Washington State

Prepared by

Ronald J. Jameson
Washington Department of Fish and Wildlife
United States Geological Survey (retired)
and
Steven Jeffries
Washington Department of Fish and Wildlife
Marine Mammal Investigations

The survey was conducted from 11-13 July, and included the inshore area from Pt. Grenville to Tongue Pt. Biologists and volunteers from the Washington Department of Fish and Wildlife, United States 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 (Seafield Creek), and inshore of Father and Son Rocks. Typically, two 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. An offshore leg added in 1999 to detect open water groups was included again this year. This year, we completed five surveys of the sea otter's range in Washington.

The survey total was calculated by summing the highest daily total for the southern (Pt Grenville to La Push) and northern (La Push to Pillar Point) segments of the sea otter range. The high count this year was on 13 July for both segments of the range. This method assumes little or no movement between the two segments during the 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 (3 times) and the resulting numbers were used when image quality was good and ground counts were not available or were less than the digital image count.

Results

The highest count for the survey was 790 sea otters, a decline of about 3% from 2005 (***Table*** 1). The finite rate of increase for this population since 1989 is 8%. This year 27 pups were counted during the high counts and were observed at Destruction Island (DI), Diamond Rock, inshore from Perkins Reef (Rock 443), Goodman Creek, Giants Graveyard, Cedar Creek,

Yellow Banks, Sand Pt., Cape Alava, Ozette River, and Father and Son. More pups are now being recorded in aerial counts because of the use of digital photography, which allows close examination of animals in groups 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 only 4:100.

Survey results this year indicate growth of the Washington sea otter population continues to remain positive overall (***Figure*** 1). However, results from north of La Push indicate that segment may be approaching equilibrium density. There, the rate of increase since 2000 has shown no growth (-0.1%, R2 = 0.03). 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 Pt. (Table 1). South of La Push the population has been growing at about 20% per year since 1989, and since 2000 the rate is about the same at 19% ($R^2 = 0.93$). These results illustrate the importance of continuing annual surveys to monitor population trends and changes in distribution. Why the disparity in growth between the north and south is a perplexing question, especially since we know that large numbers of sea otters have used the area into the Strait of Juan de Fuca east as far as Sekiu.

The distribution (***Figure*** 2) of Washington's sea otter population has continued to change in recent years with the larger proportion of the population now occurring south of La Push (***Figure*** 3). In 2002, the southern segment accounted for about the same percentage of the total population as the northern, 49 and 51 percent respectively; however in 2003 the percentage shifted in favor of the south end with 46% north and 54% south, in 2004 it was 45% and 55%, 46% and 54% in 2005, and this year the shift was even more dramatic at 39% and 61%, respectively.

The Diamond Rock raft located about 4 kilometers south of the Perkins Reef (Rock 443) group and 1.5 kilometers north of the Hoh River mouth was still present. Pups have been seen in this group for several years and along with the female group at DI represent the most southern groups of breeding females in Washington. The single largest concentration of sea otters continues to be located at DI with 302 otters counted this year. Consistent with recent surveys, a large male group continues to use the northeast reef and kelp bed areas for resting and a reproducing female raft is still located at the west end of the island. Counts made at the south portion of the range over the survey suggest that females move regularly between four locations, Destruction Island, Diamond Rock, Perkins Reef (Rock 443), and Giants Graveyard.

As in 2005, our survey area did not include inland waters east of Port Angeles, 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 single animals. No groups have been noted to date and we believe the 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 the past winters have not appeared since 2000. A single sea otter was observed at Tatoosh Island this year, which has often been the case in years past, and a single sea otter observed near Brown Point was the most southerly sighting.

2006 Survey Participants

The following individuals participated in the survey: Steve Jeffries and Jim Hodgson from Washington Department of Fish and Wildlife; Deanna Lynch from U.S. Fish and Wildlife

Service; Mark Stafford; Shawn Larson, Pat McMahon, Kathryn Kegel and Carolyn Hempstead from The Seattle Aquarium; Lisa Triggs and Terre Zorman from Pt. Defiance Zoo and Aquarium; and Ed Bowlby and Barb Blackie from Olympic Coast National Marine Sanctuary.

Table 1. Results of the July 2005 and 2006 sea otter surveys in Washington State.

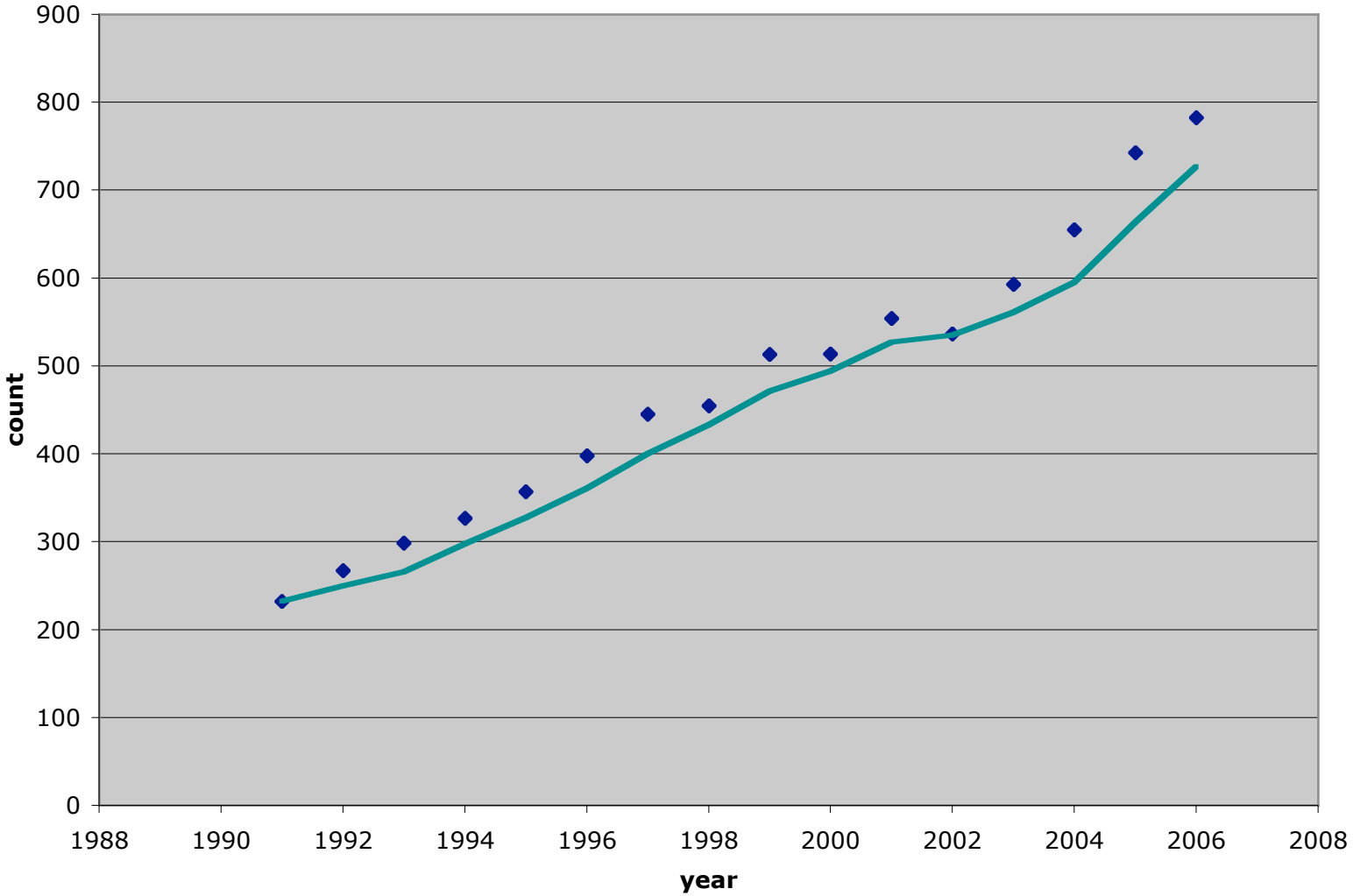
	2006			2005		
	INDEPENDENT	**PUPS**	**TOTAL**	**INDEPENDENT**	**PUPS**	**TOTAL**
KALALOCH/BROWNS PT.	1	0	1	14	0	14
DESTRUCTION I.[1]	298	4	302	303	4	307
HOH RIVER MOUTH	0	0	0	3	0	3
DIAMOND ROCK[2]	22	0	22	68	1	69
HOH HEAD	2	0	2	1	0	1
PERKINS REEF (ROCK 443)[1,2]	65	0	65	19	0	19
GOODMAN CREEK	8	1	9	0	0	0
TOLEAK/STRAWBERRY PT.	2	0	2	0	0	0
GIANTS GRAVEYARD	76	5	81	22	0	22
QUILLLAYUTE NEEDLES	1	0	1	2	0	2
S. CAPE JOHNSON/CHILEAN MEMORIAL	7	0	7	5	0	5
CAPE JOHNSON/BLUFF PT.[*1,2]	76	0	76	103	1	104
SANDY I.	11	0	11	3	1	4
CEDAR CREEK	51	2	53	29	3	32
NORTH KAYOSTLA BEACH	1	0	1	1	1	2
YELLOW BANKS AREA[1]	29	1	30	28	3	31
SAND PT.*	4	2	6	19	3	22
INSHORE WHITE ROCK /WEDDING ROCKS	3	0	3	6	4	10
SOUTH END OZETTE ISLAND	6	0	6	13	0	13
OZETTE/CAPE ALAVA/BODELTEH*[1]	47	4	51	47	14	61
OZETTE RIVER	31	3	34	0	0	0
DUK PT.*	2	0	2	21	6	27
FATHER AND SON*	18	5	23	28	9	37
ANDERSON PT.	1	0	1	22	3	25
BAHOBOHOSH PT.	0	0	0	2	0	2
WAATCH PT.	0	0	0	2	0	2
TATOOSH ISLAND	1	0	1	0	0	0
TOTALS	763	27	790	761	53	814

[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, 1989-2006



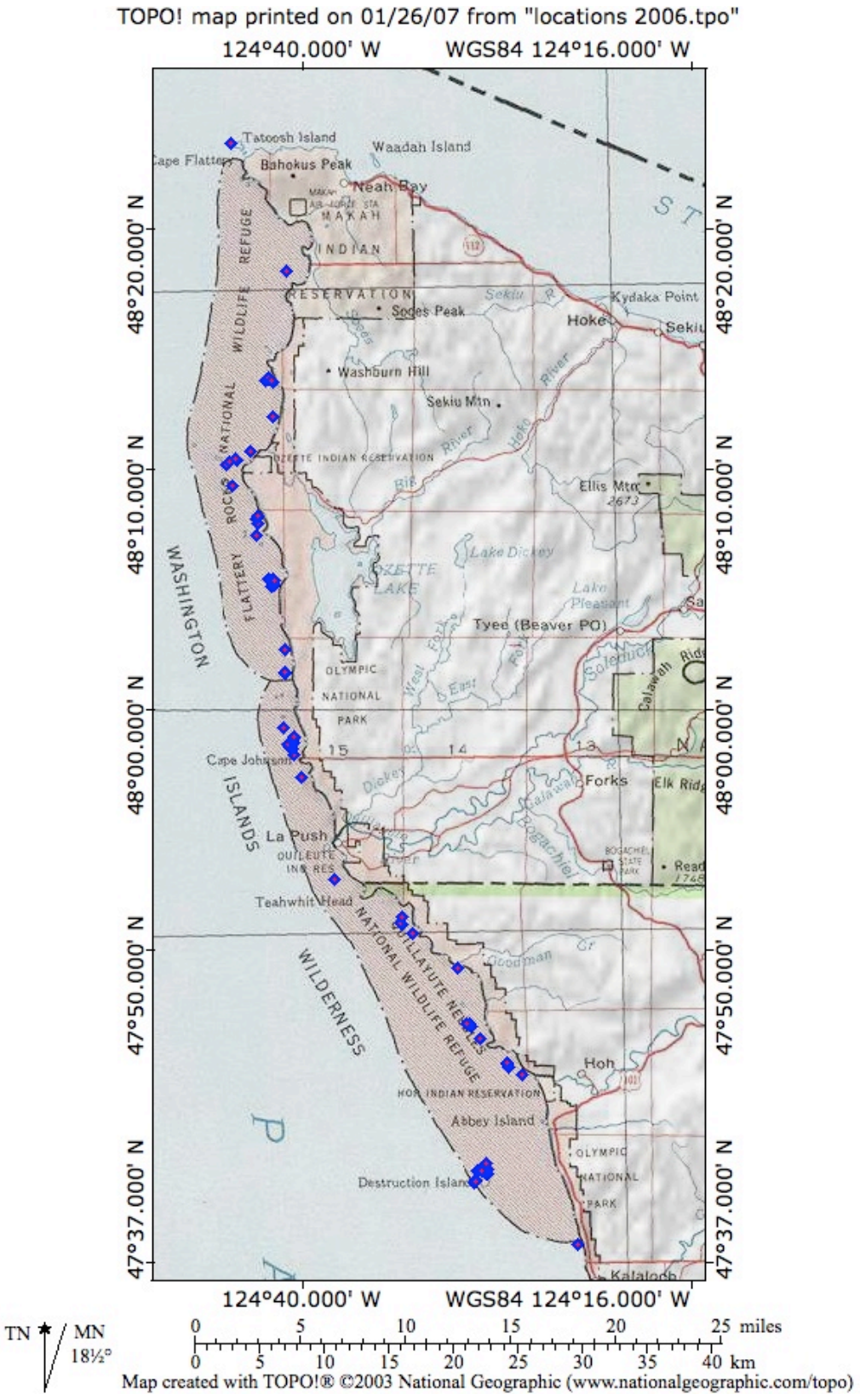


***Figure* 2.** Distribution of sea otter along the Washington Coast, July 2006, blue/red diamonds represent locations of sea otters sighted during survey.

Figure 3. Distribution of sea otters in Washington as a percentage of total population count within north and south segments, 1989-2006.