

RESULTS OF THE 1977 SEA OTTER SURVEYS IN OREGON AND WASHINGTON

18 June to 4 July 1977

By

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INTRODUCTION

During the period from 1969-1971 sea otters (*Enhydra lutris*) were translocated from Amchitka Island, Alaska, to selected sites along the Oregon and Washington coastlines. Both states received two shipments of otters; Oregon 29 in 1970 and 64 in 1971; Washington 29 in 1969 and 30 in 1970. The Oregon Cooperative Wildlife Research Unit and the U. S. Fish and Wildlife Service have been monitoring the Oregon population since November 1971. Sightings in Washington have been sporadic and the 1977 survey, to my knowledge, is the first systematic surface survey.

METHODS

Surveys were conducted from landbased observation points onshore and from a boat. Onshore searches were aided by the use of a 50 to 80 power telescope and 9X30 and 8X30 binoculars. An 8 meter vessel, owned and operated by Eric Reutercrona of Sixes, Oregon, was used for the offshore work in Oregon, and a 6 meter dory, provided by the Quillayute Indians and operated by Walt Larrick, was used in Washington. Reutercrona and Larrick also acted as observers during the offshore surveys.

When otters were sighted, their number, location, and activity were recorded. Photographs were also taken at each site. Pertinent observations of other marine mammals and marine birds were also recorded.

Interviews were conducted with local biologists and personnel of the National Park Service to obtain any information they may have regarding sea otters in the area.

The Oregon coastline was searched from Coos Bay (Lat. 43° 21' N, Long. 124° 21' W) to the California border from shore, and offshore areas within about 16 kilometers north and south of Port Orford (Lat. 42° 44' N, Long. 24° 30' W) were searched from a boat. Approximately 32 kilometers of beach were surveyed for otter carcasses and skeletal material. Other marine birds and mammals were also noted.

In Washington, the entire area from Destruction Island (Lat. 47° 41' N, Long 124° 29' W) to the Bodeliteh Islands (Lat. 48° 11' N, Long. 124° 40' W), a distance of approximately 65 kilometers, was surveyed from a boat. Where possible, land-based shoreline surveys were also made. Several beaches in Washington were searched for sea otter carcasses and skeletal material as well as other marine birds and mammals. However, because of time limitations and logistic problems, only about 20 percent of the beaches within the survey area were covered.

## RESULTS AND DISCUSSION

### Oregon

Only 4 sea otters were sighted in Oregon, none of these were pups (Table 1). All were sighted during the boat survey of Blanco Reef (Lat. 42° 50' N, Long, 124° 36' W). Otters have been observed consistently there for the past several years. This count is down over 60 percent from the 1976 count of 11, and down 80 percent from the 1972-74 three-year average of 22 (Jameson unpublished data; Jameson 1975).

The high counts for 1972, 1973, and 1974 were 21, 23, and 21 respectively. The highest count made in 1975 was 13 otters; indicating that the population may have begun to decline at that time. Effort in 1976 and 1977 was adequate --

to insure reasonable confidence in our results, which we feel indicate a declining population of sea otters in Oregon.

This opinion is also supported by the lack of pups in our recent surveys. Reproductive success appeared to be good during the period from 1972 to 1974 with a total of 15 otter pups observed. However, since the beginning of 1975 only 2 pups have been sighted, bringing the total to 17, and none were seen in 1977.

The apparent decline in the Oregon sea otter population has probably resulted from a combination of factors. Initial post-release mortality was relatively low. To date, 11 sea otters are known to have died in Oregon waters. During the period from 18 July, 1970 to 3 August 1973, eight otters died; two of these prior to being released. Since 1973, three more carcasses have been located; one gravid female, one stillborn male pup, and one adult male. The female's stomach was empty and about one-third of the mucosa was covered by shallow ulcers, probably induced by some kind of stress which was not immediately apparent (Richard Stroud, DVM, Clinical Necropsy Record, Dept. Veterinary Medicine, Oregon State University). Kenyon found an adult male near Floras Lake (Lat. 42° 04' N, Long. 124° 31' W) on 28 September 1976 that showed evidence of shark attack; however, no shark tooth fragments were found. Both the gravid female and adult male otherwise appeared to be in good condition.

Emigration may also have been an important factor in the decline of the translocated population. No hard data exist to support this hypothesis, but since massive mortality does not appear to have occurred, it seems to be the only plausible alternative explanation. These factors, mortality and emigration, probably reduced the population to a point where any further mortality and/or

emigration would have precluded population growth.

No sea otter remains were found on any of the 1977 beach surveys. A badly decomposed Steller's sea lion (*Eumetopias jubatus*, TL approx. 2.5 meters) 1 kilometer south of Hubbard Creek and a badly decomposed harbor seal (*Phoca vitulina*, TL = 140 cm) on the north side of Cape Blanco were the only dead marine mammals found during beach surveys. All beaches were noticeably devoid of bird and mammal carcasses.

#### OTHER MARINE MAMMALS

Marine mammal observations in Oregon are summarized in Table 1. The number of pinnipeds in the survey area appears to be comparable to counts made in years past, with one notable exception. We saw only one *Eumetopias* pup on Orford Reef (Lat. 42° 47' N, Long. 124° 37' W) during our boat survey of 21 June. Mate (1973) reported 1045 adult *Eumetopias* and 365 pups at this location in 1971. Although we did not make a total count of the sea lions on Orford Reef, we estimated that they numbered approximately 500 individuals, considerably down from the 1971 count made by Mate and an estimate made by Jameson of 850 adults in 1974. The later figure was obtained during an aerial survey and pups were not recorded. The 1977 data are not inconsistent with trends observed in other *Eumetopias* populations in the eastern Pacific (Robert DeLong, pers. comm.). A small *Eumetopias* rookery at Simpson Reef (Lat. 43° 22' N, Long. 124° 23' W) reported by Mate (1973), has apparently ceased to exist. Jameson has been observing this area since 1973 and has observed no pups, and this year on 18 June no *Eumetopias* were observed using the area. During a later survey on 9 July, 33 *Eumetopias*, mostly subadult males, were observed.

TABLE 1. Maximum counts of marine mammals at selected sites in Oregon from 18 June 1977 to 25 June 1977.

Location	Sea otter	Harbor seal	Steller's sea lion	California sea lion	Gray whale
Simpson Reef	0	380	33	5	0
Pigeon Point	0	70	0	0	0
Blanco Reef	4	35	1	0	0
Orford Reef	0	10	500	0	0
The Heads	0	3	0	0	2
Humbug Mt.	0	18	0	0	0
Island Rk	0	8	0	0	0
Hunters Island	0	103	0	0	0
Total	4	627	534	5	2

Washington

The Washington coast from Destruction Island north to the Bodeliteh Islands was surveyed from 26 June to 4 July 1977. A total of 18 sea otters, including four pups, was seen at four locations during the boat surveys: Destruction Island, 3 adults and 3 pups; Giants Graveyard (Lat. 47°50'N, Long. 124°33'W), 2 adults and 1 pup; Bald Island (Lat. 48°0'N, Long. 124°42'W), 1 adult; and the Bodeliteh Islands, 8 adults (Table 2). Beach surveys yielded no otter carcasses or skeletal materials. Live otters were seen from the beach at two locations, two at Destruction Island on 26 June and three near Cape Alava (Lat. 48°10'N, Long. 124°44'W) on 29 June. These counts have not been included in the total count since the same areas were resurveyed by boat at a later date. They do, however, provide information on local distribution and utilization of these areas.

Prior to this survey, the largest number of sea otters seen in Washington was nine adults and one pup. They were observed during an aerial survey on 14 June 1977 at Destruction Island (three adults and one pup) and the Bodeliteh Islands (six adults) (Steve Jeffries, pers. comm.). Students from the University of Washington saw otters consistently at Destruction Island during 1974 and 1975. They had maximum counts of 7 adults and 2 pups in 1974 and 5 adults in 1975 (Dave Nysewander, pers. comm.). A helicopter survey was conducted by the U. S. Fish and Wildlife Service in 1974 and only one otter was sighted near Cape Johnson (Lat. 47° 58' N, Long. 124° 41' W). This survey did not include Destruction Island, but Ozette Island (Lat. 48° 10' N, Long. 124° 45' W) and the Bodelitehs were surveyed with negative results.

Fifty-nine sea otters were released in Washington. Many of the 27 otters released at Point Grenville (Lat. 47° 19' N, Long. 124° 18' W) in 1969 died, possibly more than 50 percent, and little information exists regarding the fate of the 32 otters released near La Push (Lat. 47° 55' N, Long. 124° 37' W) in 1970.

The abundance and distribution of sea otters observed during a survey of the Washington coast from Destruction Island to the Bodeliteh Islands, 26 June to 4 July 1977.

Date	Location	Independent	Pups	Comments
26 June	Destruction Island	2		Observed from shore
29 June	Cape Alava	3		Observed from shore
1 July	Destruction Island	3	3	All pups large
1 July	Giants Graveyard	2	1	Adult male and female w/small pup
1 July	Bald Island	1		Probably adult male
4 July	Bodeltehs Islands	8		At least 1 adult male

In view of the above information, we were surprised to find as many sea otters as we did, but it would be overly optimistic to state that a viable population has been established in Washington.

All sea otters observed were associated with offshore islands or sea stacks with dense beds of kelp nearby. At three sites, Destruction Island, Giants Graveyard, and Ozette Island, giant kelp (*Macrocystis integrifolia*) was most abundant; and at two locations, Bald Island and the Boldeltechs, bull kelp (*Nereocystis lutkeana*) predominated.

The area from Destruction north to La Push includes some excellent sea otter habitat, but it is patchily distributed. This is probably due to the number of large rivers entering the ocean and depositing large amounts of sediment in this area. Sea otter habitat north of La Push is nearly continuous to the Bodeltech Islands; rocky substrates prevail and kelp beds occur frequently in shallow water.

We were not able to survey sublittoral prey populations, but an investigation of the littoral zone at Destruction Island suggests that sea urchins (*Strongylocentrotus* spp.), turban snails (*Tegula* spp.), mussels (*Mytilus* spp.) and clams (*Protothoeca* spp. and *Saxidomus* spp.) were abundant. A single food item, a red sea urchin (*S. franciscanus*), was observed being eaten by a sea otter at the Bodeltech Islands. Interviews with local biologists indicate that these organisms are abundant in the lower littoral and sublittoral zones.

#### MARINE BIRD AND MAMMAL OBSERVATIONS

No marine mammal carcasses were discovered on the beach surveys. The most notable marine bird observations were of bald eagles (*Haliaeetus leucocephalus*) which were distributed from the Bodeltech Islands to Second Beach (Lat. 47° 54' N, Long. 124° 37' W), a distance of about 43 km. Table 3 summarizes our sightings of bald eagles. On 4 July we saw eight eagles along a segment of

Table 3. Number of bald eagles observed during sea otter survey, Washington, 27 June to 4 July 1977.

<u>Date</u>	<u>Location</u>	<u>Adults</u>	<u>Subadults</u>
26 June	Second Beach	1	
28 June	First Beach		6
29 June*	Ozette Island	2	
4 July	Ozette Island	4	1
4 July	White Rock	2	
4 July	Approx. 1 km South White Rock	1	

\*These birds were probably recounted on the 4 July survey.

coast about 5 km long (Ozette Island to Sand Point), or about 1.6 eagles per km.

Bald eagles are known to prey upon sea otter pups at Amchitka Island, Alaska; however, this depredation probably has little or no effect on a large otter population such as the one found at Amchitka (Sherrod et al. 1975). However, the effects of eagle predation on a small population, such as the one found in Washington, may not be negligible and could adversely affect population growth. A population of 20 sea otters should produce three or more pups a year. It becomes obvious that any pup mortality would certainly slow and possibly stop population growth in such small insular populations. Such factors should be considered in any future translocations.

Harbor seals were found throughout the survey area and because of limited time we made only sporadic counts; 146 Ozette Island on 29 June; 28 Destruction Island on 30 June; 25 Giants Graveyard on 1 July; and 21 Bald Island on 1 July.



We were asked by Cliff Fiscus of the National Marine Fisheries Service to closely scrutinize Carroll Island (Lat. 48° 01' N, Long. 124° 41' W) for the presence of breeding sea lions. NMFS has received reports of a breeding population of *Eumetopias* at this location. The south end of Carroll Island contains a sea arch, and it is here that the breeding sea lions are supposed to be located.

We surveyed the area twice by boat. On 1 July we saw three subadult *Eumetopias* and two adult male California sea lions (*Zalophus californianus*). On 4 July we observed an adult male *Zalophus* at Carroll Island.

Carroll Island provides marginal breeding habitat for sea lions. Hauling areas are small and limited in number, and the aforementioned sea arch is awash at high tide. Pup survival under these conditions would be extremely low. We found no evidence of a breeding population of sea lions at Carroll Island, or anywhere within the approximately 64 kilometers of coastline surveyed.

A single gray whale (*Eschrichtius robustus*) was sighted approximately 3 km northeast of Destruction Island near south rock on 1 July.

On 3 July, during a beach survey, Jameson observed four river otters (*Lutra canadensis*), a female with 2 pups and a single adult, foraging in the sublittoral about 2 km south of Cape Johnson. The pups were left on a rock about 50 meters from shore while the female foraged nearby; the food items were too small to be identified. The single adult foraged in the same area after the departure of female and pups. It made only two dives before departing, and on one obtained a large rock crab (probably *Cancer antennarius*). Sea otters also prey on rock crabs, and it would be interesting to know how intense the competition for food resources was prior to the extirpation of sea otters. It is possible that river otters may have been competitively

excluded from the marine environment. This, of course, is strictly hypothetical, but does pose some interesting questions regarding competition and resource partitioning of sympatric species.

#### CONCLUSIONS AND RECOMMENDATIONS

The sea otter population in Oregon appears to be declining, with no evidence of reproduction observed this year. We doubt that we saw all the sea otters, but we feel confident that if any were missed they were widely scattered individuals and not groups.

The results of surveys from 1973 to the present indicate that the Oregon translocation has failed to establish a viable sea otter population in that state. One explanation for this is that the population was reduced, almost immediately, after release to a level that was at or below the "threshold" level for population growth; reproduction has been less than losses due to mortality and emigration.

The data on the Washington population are incomplete and sporadic. This year's survey was the most thorough effort to assess the size of the population; and, therefore, it is impossible to discern trends in its growth. However, the survey completed this year will provide a baseline for comparison with future counts. The number of pups observed in Washington is encouraging, but we are hesitant to conclude that a viable population of sea otters now occurs in the state.

We recommend that the annual surveys be continued until such time as the populations have become firmly established or have become extinct. We also suggest that both states be considered as potential translocation sites for future translocation of sea otters from the threatened California population.

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