

SEA OTTER TRANSPLANTS TO OREGON IN 1970 AND 1971

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The history of sea otters along the coast of the Pacific Northwest is sketchy at best. The exploitation of sea otters began soon after Vitus Bering discovered them to the north in 1741. Captain Robert Gray mentioned sea otters for the first time in his log on 10 April 1792 near Grays Harbor, Washington. One month later, he discovered the mouth of the Columbia River where he purchases 150 sea otter pelts from the natives. Later he sold the pelts in Canton for more than \$400 each. In the short period from 1881 to 1890, American fur companies sold over 47,000 pelts. A confirmed sighting of an otter in November 1969 at Yachats, Oregon, was the first observation of otter along Oregon in this century (Orr, pers. comm.).

After long planning, the Oregon State Game Commission arranged with the Alaska Department of Fish and Game to transplant sea otters from Amchitka, Alaska, with the cooperation of the U. S. Atomic Energy Commission. Oregon sent representatives to assist in and observe the collection operations. The animals were caught in large gill nets 300 feet long and 15 feet deep. Sponge plastic floats formed the cork line and the lead line was eliminated. One end of the net was anchored, while the other was allowed to drift through kelp beds frequented by otters. When an otter attempted to go through the net, it became entangled and because there was no lead line was still able to float to the surface easily. Nets were checked regularly and few animals were lost in the nets.

After capture, otters were held in four wooden pools constructed on Amchitka. Each pool had circulating sea water and could hold up to 70 otters. During this holding period, otters were fed three times daily and consume 10 to 15 pounds per day of fish fillet or squid. Some animals eat immediately after capture while others take up to 24

hours. During the 1970 transplant operations, 86 animals were caught, 24 of which died either in the nets or more commonly in the holding ponds during the first four days due to complications caused by capture. Of the 79 animals caught during 1971 for transplant, 15 died in the nets or holding ponds (several of these were weak animals sacrificed to determine their problems) (Schneider, pers. comm.).

Animals were transported in specially constructed cages with water tight bottoms capable of holding several inches of water and tops of metal frame and nylon web construction. The water was changed several times during the eight hour air flight from Amchitka to Oregon. The water seemed to have a soothing effect and provided evaporative cooling. The AEC provided a C-130 Hercules for transportation.

On 18 July 1970, 31 sea otters arrived on the southern Oregon coast at Port Orford. The otters were taken from the airport by truck to the nearby fishing village, where the state police transported the otter cages out to the holding pens anchored in Nellie's Cove. The holding pens themselves were designed by the Alaska Department of Fish and Game and consisted of styrofoam covered with planking to form a floating square with a hollow center. The deck around the square was wide enough for comfortable walking and haul out for the otters. Nylon netting was supported by vertical uprights to form a 4 foot high wall and was also suspended under the floating pen so that animals could swim freely in the open center. Of the 21 females and 10 males placed in the holding pens, one of each sex died during the first 12 hours. These two animals as well as two others did not swim at all when first released into the pens; instead they curled up individually along the walkways and shivered continuously. All four of the animals were presented with food but refused it. Two of the four animals were forced into the water. One of these was known to survive and it was believed that the other also survived. Presumably the two animals remaining on the deck were not able to get their fur cleaned before they succumbed to exposure. Neither animal was necropsied. The animals were held in pens to protect them and prevent them from dispersing until they had gotten their fur in shape. They

were able to swim or haul out at their discretion. Most of the animals remained in the water most of the daylight hours, although the more anxious ones would crawl up on the deck at feeding times. There were no observations made during the night.

The animals were fed three times each day, the food consisting of a variety of fish fillets and squid. There was a very strong preference for the fillets while they lasted and all of the animals exhibited a hoarding behavior. Each individual would grab as many fillets as he could hold, stuffing them under both arms and infrequently holding one between his hind feet. After consuming a fillet, an otter would grab another from the water rather than deplete his personal holdings. This was the case at each feeding period during the two days the animals were held. Only after all the fillets had been eaten, would otters start to eat the squid. If one otter still had fillets, those without the preferred food would attack him. Carl Schneider of the Alaska Department of Fish and Game reports that otters occasionally have a preference for either fillets or squid at different times while being held at Amchitka. While eating squid, the otters removed the pens before eating the fleshy portion.

The animals looked so good on the evening of the nineteenth that it was decided to release them the next day if they still looked fit. A very strong wind and white caps were reasons for concern the next day. The otters were to be released near Humbug Mountain, 4 miles to the south, because of the particularly dense kelp in that area. Two commercial fishing boats were enlisted to tow the holding pens south to the desired location. This was accomplished only after much effort because of the weather. The net walls of the pens were cut down to allow the otters access over the deck and out of the pens. The netting was also cut from the bottom of the pens so that the otters could swim out from under the pens. The otters stubbornly refused to leave the pens and had to be forced out using long poles. It took the boats two hours to make their way back to port, where they were greeted by an otter at the main dock. The otter had been there over half an hour by then and had "cleaned up" several filleted carcasses

presented to him by the dock workers. By that evening, three of the otters were back close to where the pens were originally moored.

Seven days after the release of the otters at Port Orford, an old female, one of the four reluctant to get in the water and clean her fur, was well up into the bay at Coos Bay, 50 miles to the north. She stayed in one location in the bay, right next to highway 101, for two days eating nothing but crab, Cancer magister. On 26 August an attempt was made to determine the distribution of the otter as well as possible for one person in one day. Only four of the most likely areas were examined and these were not surveyed as completely as desired due to time limitations at each site. A total of seven otters were observed: three south of Humbug Mountain, 2 at Cape Blanco, 2 at Simpson's Reef south of Coos Bay and the one female in the bay at Coos Bay. Another intensive effort was made on 19 and 20 October with a concentration on one of the two major areas each day. A total of 14 animals were observed and this was felt to be a very complete count of each area. The animals in the southern observation area were distributed as follows: 4 at Humbug Mountain, 2 at Cape Blanco, 3 at Gull Island and 4 at Port Orford Reef. It was very encouraging to see so many otters in a relatively small area (15 miles) quite close to where they had been released. The northern observation area contained only the old female in Coos Bay. On 26 April, 3 otters were seen during an aerial survey of the Port Orford Reef area. An individual otter was seen on 2 May just south of Coos Bay, but it could not be determined if this was the old female that had regularly frequented the bay. It can be said with certainty that at least some of the otters stayed in the area of southern Oregon and made it through the winter.

A second transplant was attempted on 24 June 1971. This time 64 otters were brought from Amchitka through the cooperation of the Alaska Department of Fish and Game and the AEC. The animals were to be released at two different sites: south cove of Cape Arago State Park (which includes Simpson's Reef) and at Nellie's Cove near Port Orford. The plane arrived at North Bend airport and 41 animals were

loaded on a truck before the plane continued on to Port Orford with the remaining 23 animals. The holding pens at Port Orford and at Cape Arago were positioned to protect them from the predominantly northwest winds and where the otters could be released directly without moving the pens. The pens could be left in these locations so that the otters could come and go from them as they pleased. Once again the weather did not cooperate and the wind was blowing strongly from the south (a most unusual situation during the summer). The boats left the Charleston docks with the otters on board and proceeded south to the south cove of Cape Arago. The wind and wave action were so bad that it was impossible to even approach the pens with the boats. The same problem was encountered at Fort Orford and it was decided to release the otters immediately as there were no holding facilities on shore. At Port Orford, a sudden rocking of one of the boats sent three individual cages overboard. Fortunately, two of them opened and only one otter was lost. At Coos Bay, it was decided to release the otters behind Simpson's Reef, which affords shelter from most any wind. This area is surrounded by kelp and is densely populated with two species of urchin: Stronglyocentrotus pupuratus and S. franciscanus as well as a variety of other invertebrates.

The next day the weather was calm and an intensive search of the area from Cape Arago north 10 miles to Coos Bay revealed 6 otters at Simpson's Reef and 5 individual animals spread evenly to the north. One of these was hauled out on a sandy beach and refused to go back to the water even though many people approached it. This animal was found dead the next day in almost the same location. By the third day after the release, two distinct groups had formed. One of these was at Arago Lighthouse near Sunset Bay State Park and consisted of five animals, one of which developed a large swelling on its back on 28 June and disappeared along with the rest of this group on 2 July. This particular group was visited continually by spectators despite warnings by concerned individuals that this may cause the otters to abandon the area. Many scuba divers were attracted to the area by the unusually bold otters, who would accept an urchin or fish from a

passing diver. The second group formed at Simpson's Reef and was made up of 2 males, 2 females and a young animal almost always seen in the company of a female. This group has been very stable. On 23 July an aerial survey from Crescent City, California, to Florence, Oregon, (about in the middle of the Oregon coast) revealed eight otters: 3 at Cape Blanco, 2 at Wiskey Run, 2 at Simpson's Reef and 1 at the Arago Lighthouse. On 2 November, 2 otters were seen just south of Cape Sebastian near some offshore rocks and 7 were observed at Simpson's Reef. An aerial survey on 15 December showed 2 otters at Port Orford Reed, 2 at Gull Island just north of Cape Blanco and 4 at Simpson's Reef. A count from shore that same day indicated 5 otters at Simpson's Reef. Otters have been observed almost exclusively in groups of two or more otters, rarely alone. On 19 January 9 otters were observed at Simpson's Reef, forming the largest concentration of otters observed thus far.

It has been relatively easy to observe the otters at Simpson's Reef feeding. The two species of urchin mentioned before are the most common food species. These are opened using the forepaws and teeth against the ventral surface of the urchin. Otters have also been observed eating the mussel, Mytilus californianus; the turban snail, Tegula sp.; the commercial crab, Cancer magister; the kelp crab, Pugettia gracilis; and an unidentified fish. No tool using has been observed, as is common among sea otters in California, although on two separate occasions an animal was observed smashing two food items together.

To date, seven otters are known to have died in Oregon since the transplants started in 1970; two, as described, during the 1970 transplant operations and five during the 1971 transplant. One of these was the cage mishap at Port Orford, three appeared to be from natural causes shortly after release, and one was apparently shot where it had been seen feeding for several days near a buoy marking the channel entrance to Coos Bay.

The sea otters which we are now observing have already been exposed to several severe winter storms. They have chosen areas that

afford them excellent protection from raging winds and sea, provide hauling areas not easily reached by man, and support an abundant supply of food species. These factors should give the sea otters the best possible chance of establishing a successful breeding colony along the Oregon coast.

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