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**SOUTHERN SEA OTTER, THE PROCESS TO TRANSLOCATE AND THE RESULTS OF THE
INITIAL YEAR, AUGUST 1987 - AUGUST 1988**

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The relatively small size and limited range of the California (southern) sea otter population, and the otter's vulnerability to mortality from oil spills, were the main factors that resulted in its being listed as "threatened" under the provisions of the Federal Endangered Species Act in 1977. Since that time, the population has not increased in size, and appears to have declined from 1976 to 1982. Deterioration in the status of the California sea otter population is believed to have been a result of entanglement mortality in gill nets. From June 1982 to June 1984, the California Department of Fish and Game (Department) estimates that an average of 80 otters were drowned in gill and trammel nets each year. This source of mortality has been reduced however, by action of the State of California to close waters of the sea otter range to large-mesh gill and trammel net fishing activities, and recent surveys show encouraging signs that population growth has resumed as a result. However, entanglement mortality still is occurring within the sea otters' range and State legislation is being pursued to provide additional closures to eliminate this source of mortality.

The need to take action to promote the recovery of the population is still urgent, as the potential for serious oil spills resulting from accidents of tankers and Outer Continental Shelf (OCS) oil and gas development near the sea otter range continues to increase. The Southern Sea Otter Recovery Plan, approved in 1982, identified the establishment of at least one additional colony within the otters' historic range as a primary action needed to promote recovery of the southern sea otter.

Because of the small size of the sea otter population, its restricted geographic distribution, and the physiological sensitivity of sea otters to the effects of oil contact, successful establishment of a second, or reserve, breeding colony of sea otters at a location separate from the existing population could substantially reduce the impacts on the population as a whole if a major oil spill were to occur. Furthermore, it would minimize the possibility that such an event would jeopardize the continued existence of the southern sea otter. The translocation is also viewed as an experiment in establishing a new colony as well as providing an opportunity to conduct research to obtain data helpful to understand the optimum sustainable population (OSP) size consistent with the maintenance of the health and stability of the marine ecosystem.

In 1984 the U.S. Fish and Wildlife Service (Service) initiated development of an Environmental Impact Statement (EIS) to assess the environmental consequences of the proposal by the Service to translocate and maintain an experimental population of southern sea otters. This EIS described and analyzed the consequences of a translocation to one of three potential sites: San Nicolas Island off southern California; coastal northern California; and coastal southern Oregon. Also described were the consequences of: 1) no action, 2) greater protection to the existing sea otter population without translocation, and 3) translocation combined with partial containment of growth and range expansion of the existing California sea otter population. As suggested by the Council on Environmental Quality, an Interagency Project Review Team (IPRT) was established to participate in scoping and provide suggestions for the content of the Draft EIS. Meetings of the IPRT were open to the public and were attended by individuals from Federal and State Agencies, and private interest groups representing a variety of environmental and economic interests.

During the drafting of the EIS, special legislation was proposed before Congress to permit long-term management of a translocated colony which otherwise is prohibited by the Federal Marine Mammal Protection Act. In November 1986, Public Law 99-625 was signed into effect. This law specifically authorized the translocation and management of an experimental population of California sea otters and establishment of Translocation and Management Zones. The translocated population is afforded essentially the same protection as the present population in the central California range, but these protections apply only within the Translocation Zone, delineated to include the sea otter habitat and a surrounding buffer zone to further the conservation of the species. Within the Translocation Zone both incidental and intentional killing is prohibited and the sea otters are fully protected under both the Endangered Species Act and Marine Mammal Protection Act.

The Management (otter-free) Zone is maintained around the Translocation Zone to prevent dispersal and establishment of the experimental population in surrounding areas where serious conflicts with fisheries and other human activities might occur. To accomplish this, the Service has been authorized under PL 99-625 to use all feasible non-lethal means to capture and remove sea otters from the Management Zone. And because this Management Zone is set up to prevent, to the maximum extent feasible, conflict with other fishery resources, any sea otter mortality that occurs incidental to otherwise legal fishing activity is not a violation of either the Endangered Species Act or Marine Mammal Protection Act. Therefore, within the Management Zone, sea otters do not have the same stringent protections as do otters in the Translocation Zone.

In May 1987, the final EIS was released and by August, the Service received the necessary Federal and State permits to proceed with the translocation.

Capture operations were initiated August 24, 1987. Teams of biologists from the Service and the Department effectively coordinated and conducted the capture of sea otters and their transport and release at San Nicolas Island. Capture teams carried out their activities over the southern third of the sea otter range, from approximately Point Buchon north to Lopez Point. Three techniques were used: dip nets, underwater Wilson traps operated by SCUBA divers, and floating tangle-nets. The first sea otters were captured on August 24, 1987, and by mid-July 1988, 124 sea otters had been caught along the central California coast. About 40% of these were immediately released at their capture site because of sex or size limitations. Seventy-four of the otters were transported by van to the Monterey Bay Aquarium, tagged on the rear flippers, screened for health abnormalities, and prepared for shipment to San Nicolas Island. Four died while at the Aquarium and a fifth sea otter was returned to its original capture site and released. The remaining 69 sea otters (16 males, and 53 females) were flown to San Nicolas Island in 13 groups of one to 24 sea otters.

By the end of the first year of translocation, late August 1988, 14 sea otters were routinely sighted around the island and appeared to be doing well. Censusing the sea otters at the island has been difficult because of poor weather and sea conditions, access limitations, and the difficulty of seeing the color-coded flipper tags. Censuses have not only been hampered by winter storms, including one of the worst on record for southern California, but also by San Nicolas Island closures during weapon tests (the island is part of the Navy's Pacific Missile Test Center at Point Mugu). When surveys are possible, each sea otter is observed until the unique color combination and position of the flipper tags is determined.

As of late August 1988, the disposition of 24 sea otters that were no longer at San Nicolas Island was known or suspected. Thirteen sea otters left the island and returned to the parent population. Another sea otter was found in the "no otter" Management zone in southern California in late December 1987. She was caught along with her newborn pup, and moved back to her original capture site off the mainland. Three males died at San Nicolas Island from "stress" related to their capture and transportation. Two females were found dead on beaches in southern California (one of these had been shot and the other cause of death was undetermined). Three sea otters are suspected of having died in fishing gear. Two radio-tagged sea otters probably died, based on their sudden disappearance. Thus a theoretical population of 45 sea otters (69 minus 24) remained at the island. During the last weeks of August 1988, 14 of the 45 sea otters were identified at the island.

Consequently, 31 sea otters were considered "missing" (45 minus 14), including 7 that were never sighted after their release at the island. Although the whereabouts of the remaining 31 missing sea otters is presently unknown, to assume that all are dead is premature. The 13 that returned to the parent population were also considered "missing", for periods of time between 26 and 208 days, until they were sighted on the mainland. Surveys for these missing sea otters continue and finding some of them back in the parent population is expected. However, some of the missing 31 sea otters may have lost their flipper tags, thus making identification impossible.

As a comparison, it is useful to review the history another reintroduction effort in Washington State. Fifty-nine were released during 1969 and 1970. At least 16 of 29 released in 1969 died within 2 weeks. No data are available on deaths after the second release of 30 sea otters 1970. Very few data on this reintroduction were recorded until 1977, when Service biologists conducted the first intensive survey. At that time only 19 sea otters, including 4 pups, were observed. However, population surveys during the 1980's suggest that the Washington population has been slowly increasing. Total counts in 1981, 1983, 1985, and 1987 were 36, 52, 65, and 94, respectively. Thus, barring any disasters, it appears sea otter population off Washington is established and should continue to grow.

If the Washington reintroduction is used as a model, it could take at least 5 years before the new colony at San Nicolas Island shows evidence of growth. However, for the San Nicolas Island reintroduction, Federal and State permits authorize the option to move up to 250 sea otters from the parent population over a 5 year period to assist in this effort.

The Service has trained two Wildlife Officers specifically for sea otter law enforcement and containment. Their activities include patrol work and contact with fishing vessels in the Translocation and Management Zones. Contacts are made to inform divers and boat operators of the laws concerning sea otters.

As of October 1, 1987, the Service's Ventura Endangered Species Recovery Office (Ventura, California) has been responsible for development and implementation of a containment program pursuant to PL 99-625. A containment contingency plan has been prepared which serves as a working guideline for the verification, monitoring and capturing of otters found in the Management Zone. Both Federal and State biologists are cooperating in the implementation of this program.

In summation, the success of the initial year's effort at re-establishing a founder population at San Nicolas Island is less than expected. However, based on the Washington State translocation example, it may take many years before the success of the translocation at San Nicolas Island can be determined. The results of the first year's experiment indicate that much can be done to enhance the establishment of a colony of sea otters on San Nicolas Island, particularly in reducing the tendency for translocated sea otters to disperse and in minimizing stress-related mortality. Physiological stress is suspected of being one of the primary factors contributing to sea otter mortality. As a result, future translocation methods have been modified to reduce stress and improve the likelihood of sea otter survival, primarily by minimizing the number of steps and time periods that sea otters are held or transported prior to their release at the island.

The experience of the first year of translocation has provided other useful information. The data indicate that adult sea otters are most likely to leave the island colony and attempt to return to the parent population, and that very young and very old sea otters are more susceptible to the stresses of translocation. Therefore, only sea otters within a weight range of 25 to 35 pounds will be translocated beginning the second year of the project. In addition, the rate of sea otter dispersal may have been partially related to the amount of boat traffic in the area. During the upcoming year the surveillance of boat activity, especially during lobster season, will be increased. Radio-telemetry technology has yielded less information than expected during this initiation year. However, as the project continues, and as new equipment such as the flipper tag radio transmitter is tested, the information obtained will no doubt improve.

Monitoring of the Translocation Zone has confirmed that the available habitat surrounding San Nicolas Island is capable of supporting a population of sea otters even under adverse weather conditions. In spite of one of California's worst winter storms on record, sufficient kelp beds have remained around the island in which the sea otters can raft and easily obtain prey items. However, experience during the first year has shown that a number of the sea otters have attempted to return to the parent range on the mainland. In order to do so, the sea otters had to pass through the Management Zone, and their travels back to the mainland range probably account for the majority of sightings in this Zone.

Monitoring of the Management Zone has revealed that no sea otters are known to have remained in any given area in the Management Zone for more than a few days. Most importantly, no new sea otter colonies are becoming established in the Management Zone. California Department of Fish and Game biologists have been trained by the Navy and have subsequently developed a program for using rebreathers, instead of conventional SCUBA, for the capture of sea otters. This change in technique has significantly improved their ability to capture sea otters, which will enhance the effectiveness of the containment and translocation efforts.

The Service capture team is currently seeking approval for rebreather training.

A successful translocation programme requires success in research, law enforcement and containment efforts inclusively. If successful, the translocation will establish a second breeding colony of southern sea otters (contained within a designated zone) and accomplish certain goals and requirements of the Endangered Species Act and the Marine Mammal Protection Act. The second colony will : 1) reduce the probability that more than a small proportion of the population could be decimated by any single natural or man-caused catastrophe; and 2) allow additional data to be obtained for assessing translocation and containment techniques, population status, and the influence of sea otters on the nearshore marine community, which will facilitate a better understanding of the characteristics and impacts of a sea otter population at an optimum sustainable level.