Sea Otter (*Enhydra lutris*)

Before commercial hunting began in the mid-1700s, an estimated 150,000 to 300,000 sea otters occurred in coastal waters throughout the rim of the North Pacific Ocean from northern Japan to Baja California, Mexico. In 1911 hunting was prohibited under the terms of an international treaty for the protection of North Pacific fur seals and sea otters signed by the United States, Japan, Great Britain (for Canada), and Russia. By then, only a few thousand otters remained. The survivors were scattered among small colonies in remote areas of Russia, Alaska, British Columbia, and central California.

After 1911 sea otters recolonized or were reintroduced into much of their historic range. By 1972, when the Marine Mammal Protection Act was passed, the California population had grown from as few as 50 to more than 1,000 individuals and had recolonized more than 370 km (200 mi) of the California coast. By the 1980s, remnant groups in Alaska had recolonized much of their historic range and grown in abundance to levels that may have approached historic levels. Several hundred otters were moved from Amchitka Island and Prince William Sound, Alaska, in the late 1960s and early 1970s to reestablish populations in southeastern Alaska and along the outer coasts of Washington and Oregon. The Oregon translocation failed, but the Washington population has grown steadily after a slow start. However, by the early to mid-1990s surveys indicated that populations in certain regions of Alaska had experienced sharp declines, and that growth and recovery had unexpectedly ceased in California. This section reviews the status and major issues pertaining to research and management of sea otters in Alaska, Washington, and California.

Sea Otters in Alaska

The range of sea otters in Alaska extends from the southeastern tip of the state to Attu Island near the western end of the Aleutian Islands in a nearly

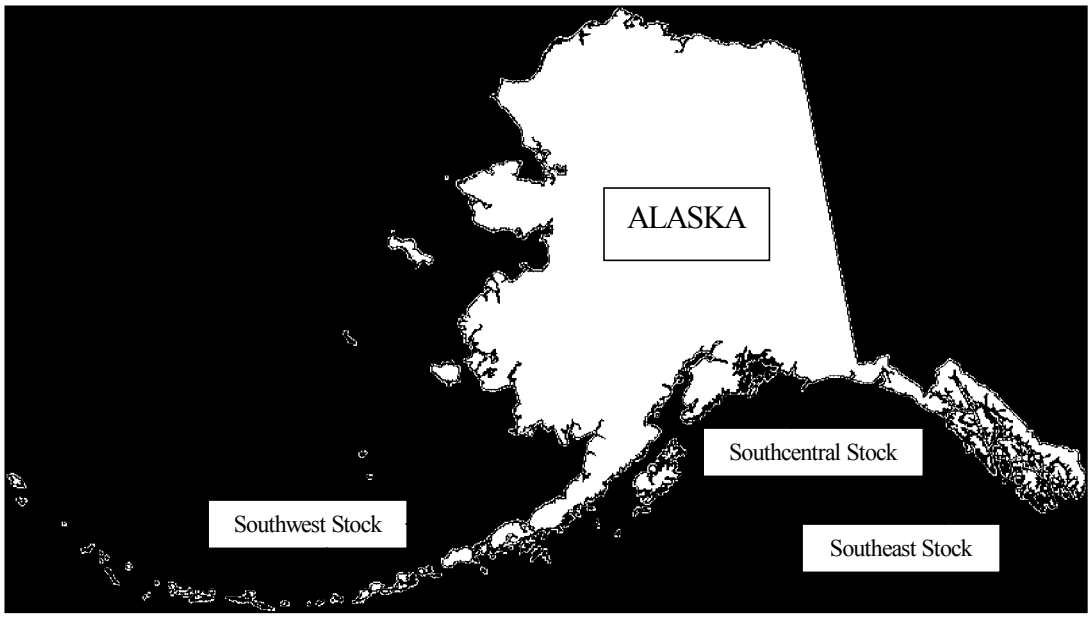

Figure 30. Range of Alaska sea otter stocks. (Figure courtesy of D. Burn.)

continuous arc stretching nearly 2,000 miles (Fig. 30). Because of their vast geographic range, research and management of sea otters present significant challenges due to the logistical difficulties associated with working in remote sites and the accompanying expense. As a result, abundance and trends of the species and the variable factors affecting them are evaluated by combining information from various subregions to provide an overall assessment.

Abundance and Trends—The Fish and Wildlife Service's most recent estimate of abundance in southeastern Alaska (from Cape Yakataga to the Dixon Entrance) is based on a combination of adjusted boat and aerial surveys conducted between 1994 and 1996. They indicate a best estimate of 12,632 otters and a minimum estimate of 9,266 otters, but the data are becoming outdated and less reliable as indicators of current abundance. The current population descended from 412 animals translocated from Prince William Sound in the late 1960s, and the translocation undoubtedly has been a success. Unpublished results of surveys conducted in the Cross Sound/Icy Strait area and in Glacier Bay since 1994 indicate continued growth, at least in these areas. Nonetheless, it is not clear that these observations are representative of trends throughout southeastern Alaska and, currently the overall trend in this region is uncertain.

The Service's most recent estimate of abundance for south-central Alaska (from Cape Yakataga to Cook Inlet, including Prince William Sound, the Kenai Peninsula coast, and Kachemak Bay) is based on surveys conducted in the northern Gulf of Alaska in 1996, Prince William Sound in 1999, and the Cook Inlet/Kenai Fjords region in 2002. The sum of these surveys provides a best estimate of 16,552 otters and a minimum estimate of 13,955 otters. The majority of those animals occur in Prince William Sound, where an estimated 750 to 2,650 otters were killed in 1989 as a result of the *Exxon Valdez* oil spill. Scientists from the U.S. Geological Survey estimate that, after the initial mortality from the spill, sea otter numbers in the western portion of the Sound increased by about 750, but have not changed since 1994. The 2002 estimate of sea otters in the Cook Inlet/Kenai Fjords area is slightly higher than an estimate from 1989. Based on these estimates, the Service believes that the number of sea otters in south-central Alaska is stable or increasing slightly.

Estimates of sea otter abundance and trends for southwestern Alaska (Alaskan Peninsula and Bristol Bay coasts, and Aleutian, Barren, Kodiak, and Pribilof Islands) contrast significantly with those in other regions of the state. A combination of surveys conducted throughout this region during the period from 2000 to 2002 indicates a best estimate of the total population of 41,474 otters and a minimum estimate of 33,203 otters. Surveys in the late 1950s and early 1960s indicated that sea otters in this region were recovering from the exploitation before 1911 and data collected in the 1980s indicate that they may have reached 55,000 to 74,000 animals. Beginning in 1992, however, evidence indicated that sea otter numbers

were declining in a number of areas in the southwestern part of the state. An aerial survey of the Aleutian Islands in 1992 revealed declines of more than 50 percent since 1965 in the central Aleutian Islands. These results were corroborated by independent boat surveys in the 1990s. In 2000 the aerial survey was repeated and found an overall decline of 70 percent since 1992. Surveys of the Alaskan Peninsula in 2000 and 2001 indicated that, since 1986, otter numbers had declined by more than 90 percent along the southern coast of the Alaskan Peninsula and between 30 to 50 percent along the northern coast. A 2001 survey of the Kodiak Archipelago indicated a decline of as much as 40 percent since 1994.

Causes of the Declines—The causes of the declines in southwestern Alaska are uncertain. Some evidence suggests that in certain regions (i.e., the central Aleutian Islands) the declines are due to increased mortality, perhaps due to killer whale predation. One hypothesis put forth to explain the declines is that the harvesting of nearly 500,000 large whales in the North Pacific (including the Gulf of Alaska and the Bering Sea) in the 1950s to 1970s may have reduced the availability of prey for killer whales, which then shifted their foraging to Steller sea lions. Because sea lion numbers have declined by 85 percent or more since the 1970s, the killer whales may have again altered their foraging patterns to include sea otters, leading to their decline. In view of the extensive range of sea otters in southwestern Alaska and recent reports that the number of marine mammal–eating killer whales is relatively small, the extent to which this hypothesis may explain the decline of sea otters is not clear. It is also not clear that the factors causing the decline are the same in all areas or have been the same throughout the period of the decline.

Stocks and Status—Immediately after its 2000 survey, the Fish and Wildlife Service designated the sea otter in the Aleutian Islands (Unimak Pass to Attu Island) as a candidate species for listing under the Endangered Species Act. Due to lack of funding no action was taken on the listing proposal in 2000 or the first half of 2001. In August 2001 the Center for Biological Diversity petitioned the Service to list the entire Alaska stock of sea otters as depleted under the Marine Mammal Protection Act. The Service denied the petition in November 2001. It based its determination on phylogeographic evidence that sea otters in Alaska actually comprise three se-parate stocks (southeast, south-central, and southwest) and that the southeastern and south-central stocks appear to be stable or increasing. In its notice, the Service stated that it planned to formally recognize three separate stocks by completing new assessments for each and then would propose to list the southwest stock under the Endangered Species Act. On 28 March 2002 the Service published a *Federal Register* notice requesting comments on the draft stock assessment reports. At the Marine Mammal Commission's annual meeting on 8–10 October 2002 representatives of the Service advised the Commission that, in late September 2002, the Alaska Regional Office had forwarded a proposal to list the southwest stock under the Endangered Species Act to the Service's headquarters in Washington, D.C. On 9 October 2002 the Service published in the *Federal Register* a notice announcing the availability of the final 2002 stock assessment reports for the three newly recognized sea otter stocks.

On 6 December 2002 the Marine Mammal Commission wrote to the regional director of the Fish and Wildlife Service commending the Service and other contributors for completing the stock assessment reports, reviewing research and management needs, and initiating the Endangered Species Act listing process for the southwest Alaska stock of otters. The Commission also recommended that the Service complete its listing process expeditiously and, assuming that the stock is listed, assemble a recovery team to develop a recovery plan. The Service responded to the Commission on 26 December 2002, noting that, due to a backlog of court-ordered Endangered Species Act rules, their goal was to publish the proposed rule in the first quarter of 2003.

Research—As noted in the Commission's 2001 annual report, representatives of the Fish and Wildlife Service presented an overview of the status and trends of sea otters in Alaska, related research, and anticipated management actions at the Commission's 2001 annual meeting in Anchorage, Alaska. As a result of the meeting, the Commission wrote to the Service on 31 December 2001 to recommend that the Service develop and implement a plan to investigate the nature of the decline of sea otters in southwestern Alaska and to facilitate recovery. Although listing under the Endangered Species Act would eventually lead to re-

search and recovery actions, the listing process, convening a recovery team, and developing a recovery plan could take several years. The Commission therefore recommended that the Service proceed immediately with research and recovery planning until such time as an official team and plan are in place. The Commission also recommended that the Service review its existing research program to ensure that funding and studies were being appropriately directed in view of the declining status of sea otters in southwestern Alaska. On 18 January 2002 the Service responded that, among other things, it had begun preparation for a workshop to develop a research and management plan.

The workshop was held on 3–4 April 2002 and included participants from federal agencies, Alaska Native organizations, academic institutions, the Alaska SeaLife Center, and conservation organizations. The participants identified needed research on reproduction, foraging and condition, disease, contaminants, human impacts, and predation. They emphasized the need to continue and to expand trend indices and develop standardized large-scale aerial surveys to better monitor abundance and trends. Finally, they emphasized the need for additional studies where declines were observed, collaboration with the National Marine Fisheries Service on predation studies, and use of the Commander Islands (where sea otter populations have not been declining) as a research control site.

Co-Management—Under section 119 of the Marine Mammal Protection Act, the Fish and Wildlife Service entered into an annual cooperative agreement with the Alaska Sea Otter and Steller Sea Lion Commission on 10 July 2002. This commission is composed of village representatives from Kodiak Island, the Chugach region, the Aleutian and Pribilof Islands, Cook Inlet, Bristol Bay; and southeastern Alaska. Under the agreement, the Service is to provide the Alaska Sea Otter and Steller Sea Lion Commission with $465,000 over two years to support its co-management efforts related to subsistence uses of sea otters in Alaska. The commission serves to coordinate Alaska Native activities related to sea otters within the region represented by its membership. Such activities include monitoring population trends, collecting biological samples to support research, and developing regional sea otter management plans.

Requests to Capture and Export Sea Otters—On 15 June 2001 the Fish and Wildlife Service published a notice in the *Federal Register* seeking comments on applications from Aquamarine Fukushima to collect three sea otters and Ibaraki Prefectural Oarai Aquarium to collect five sea otters from Alaska for export to Japan for public display. On 31 July 2001 the Marine Mammal Commission responded by noting that the Fish and Wildlife Service and the National Marine Fisheries Service had recently conducted a joint review of export provisions in the Marine Mammal Protection Act. The review indicated that the Act does not authorize the issuance of export permits, although transfers of marine mammals from domestic facilities to foreign facilities are authorized if certain requirements are met. On that basis, and because the applicants did not meet the requirements to obtain a permit to take the requested animals for purposes of public display, the Commission recommended that the Service refrain from issuing the requested permits, or any other export permits, until the Act is amended to accommodate those activities. The Service denied the permit applications on 26 July 2002 based on other grounds. In response to the Commission's comments, the Service said that it did not agree with the view that an export permit could not be issued but did not provide any rationale for its position.

In its comments on these applications, the Commission also noted that the 1994 amendments precluded the issuance of a permit to take marine mammals from areas subject to U.S. jurisdiction and export them directly to a foreign facility. Because it is not clear that this was the intent of Congress, the Commission encouraged the Service to work with appropriate congressional committees to identify and correct any unintended consequences of the 1994 amendments prohibiting the exportation of marine mammals.

Sea Otters in Washington

At the Marine Mammal Commission's 2002 annual meeting representatives of the U.S. Fish and Wildlife Service and the Washington Department of Fish and Wildlife provided an overview of the Washington sea otter population and major issues affecting research and recovery efforts. Prior to 1911 sea otters were extirpated from Washington by commercial hunting. In 1969 and 1970 a total of 59 otters was translocated from the Aleutian

Islands to the outer coast of Washington. After a period of adjustment, the translocated population began to grow, and in 1987 a survey revealed about 100 otters. Subsequent annual surveys indicate that the population has grown at about 8–10 percent annually (Fig. 31). In 2001 a total of 555 sea otters was counted. In 2002 a total of 551 sea otters was counted. The current population of sea otters in Washington is found primarily in the region between Pillar Point in the Strait of Juan de Fuca and Point Grenville on the outer coast, with most of the population concentrated between Cape Alava and Destruction Island (Fig. 32).

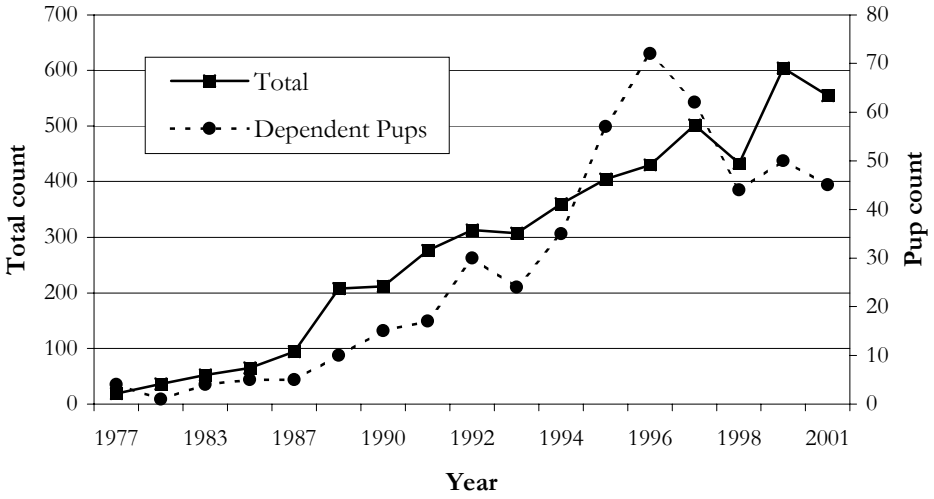

Figure 31. Washington sea otter spring counts, 1977–2001.

Status—At the Commission's meeting a representative of the Service indicated that the Service was preparing to solicit information for a status review of the Washington sea otter population. The need for a status review was prompted, in part, by recent genetic studies and estimates of the environmental carrying capacity for otters in their historic range in Washington (Columbia River to Port Townsend). The status of the population relative to its optimum sustainable population is unknown due to a number of uncertainties, such as habitat quality and use, population expansion, and preliminary evidence of declining growth rates in rocky habitat along the Olympic Peninsula. The Service representative indicated that a *Federal Register* notice announcing initiation of the status review would be published in the near future to inform the public about the review and to seek comments and other pertinent information. The notice had not been published as of the end of 2002.

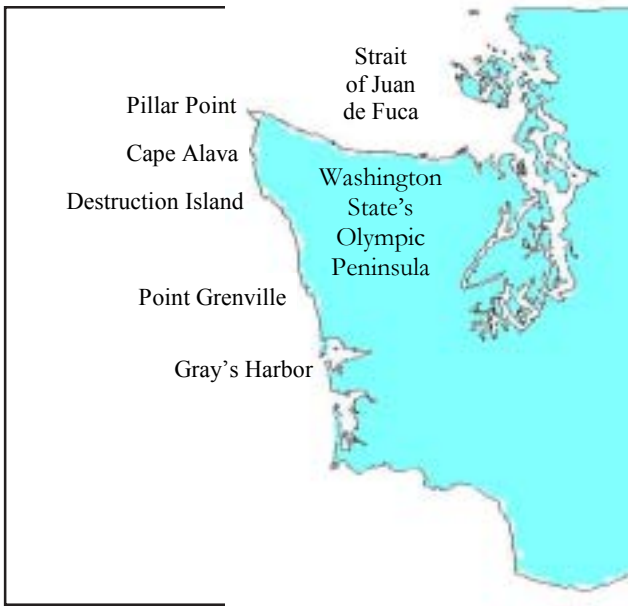

Figure 32. The current range of Washington sea otters extends primarily from Pillar Point to Point Grenville.

The Service and the Washington Department of Fish and Wildlife are updating the stock assessment report for Washington sea otters as required by the Marine Mammal Protection Act. The previous assessment was completed in 1996 and is outdated. Progress on the report was delayed while the agencies solicited information on sea otter interactions with tribal fisheries. That information has now been provided and the draft revised stock assessment report is expected to be available early in 2003.

The State of Washington has designated the sea otter population along its coast as endangered under state law and is in the process of revising their draft recovery plan originally released for public comment in 2000. The plan is expected to provide useful information for the Service's status review and to identify criteria for downlisting and delisting the Washington population of sea otters for the state's purposes if the population continues to grow.

Factors Affecting Recovery—At the Commission's meeting, representatives of the Service and the Washington Department of Fish and

Wildlife also described a number of factors that may be affecting sea otter recovery in Washington or may do so in the foreseeable future. The potential effects of oil spills are considered a significant concern because of the amount of shipping activity in nearby coastal regions (e.g., the Strait of Juan de Fuca, Gray's Harbor, Columbia River). Oil spills have occurred in this area in the past (e.g., spills from the vessels *Tenyo Maru*, *Nestucca,* and *New Clarissa*), and currents may carry oil to areas inhabited by sea otters.

Sea otter/fishery interactions are also a significant concern because sea otters occur in areas where salmon are fished with drift and set gillnets and where other fisheries occur for crabs, clams, and sea urchins. Interactions are expected to increase if the sea otter population expands its range to the south or into the Strait of Juan de Fuca, where commercial and recreational shellfisheries are more common.

Disease and mortality also may affect sea otter recovery in Washington. Twenty-two otter carcasses were reported in 2000 and 27 were reported in 2002. Investigations into the causes of death indicate that the otters had been exposed to a number of diseases including leptospirosis and protozoal encephalitis and, as should be expected, were infected with various parasites. Samples taken from live-captured animals also indicate that this population has come into contact with morbillivirus.

Management Needs—Finally, at the Commission's meeting, representatives of the Service and the Washington Department of Fish and Wildlife identified a number of resource and other needs to ensure effective management of sea otter recovery in Washington. Those included the following—

• *Funding to support recovery activities.* At present, Service support for management activities required by the Marine Mammal Protection Act (e.g., preparation of stock assessment reports) is largely limited to the allocation of year-end funds, if they are available.

• *Better coordination among federal, state, and tribal agencies and organizations involved in issues pertinent to sea otter recovery.* In addition to the U.S. Fish and Wildlife Service and the Washington Department of Fish and Wildlife, involved agencies include the U.S. Geological Survey, the National Park Service, the National Marine Sanctuary Program, the National Marine Fisheries Service, and tribal organizations. Cooperation is important to ensure sharing of information and coordination of activities where multiple parties have recovery-related responsibilities (e.g., sharing of fisheries bycatch information and responding to sea otter mortalities).

• *Funding to support an effective research and monitoring program.* Research and monitoring of the sea otter in Washington has been conducted by the U.S. Geological Survey and the lead scientist studying this population has retired. In the absence of his leadership and contributions to research and monitoring, funds historically allocated to the Survey for research on sea otters in Washington may no longer be available.

• *Collaboration with Canadian scientists and managers.* Sea otters were also reintroduced to the Vancouver Island region of southern British Columbia, and that population has grown to about 2,000 animals. The Vancouver and Washington populations may soon merge into a single transboundary stock if they have not done so already. Representatives of the Fish and Wildlife Service and Washington Department of Fish and Wildlife currently serve on the recovery team for the Canadian population, as is the retired scientist from the U.S. Geological Survey. Continued collaboration is needed to ensure that research and management efforts are consistent and coordinated across the border.

On 23 December 2002 the Marine Mammal Commission wrote to the Fish and Wildlife Service recommending that the Service (1) provide adequate resources to complete the stock assessment report for Washington sea otters, (2) establish a position for a Washington State sea otter coordinator or take other steps as may be necessary to ensure that the efforts of all cooperating agencies and groups are well coordinated, and (3) continue to support and facilitate cooperative research and management in Washington and British Columbia to resolve questions regarding the relationship between these two sea otter populations.

Sea Otters in California

Pelt hunters and trappers nearly eliminated sea otters in California prior to the early 1900s. Only a remnant population of about 50 animals or fewer remained along the central coast near Big Sur when hunting and trapping of sea otters was prohibited by international treaty in 1911. Since then the population gradually has spread north as far as Half Moon Bay, with occasional sightings

near or north of San Francisco, and south to Santa Barbara and the Channel Islands. Counts conducted since the early 1980s indicate that the population grew fairly steadily until 1995, then declined through 1999. The counts have been both higher and lower since then without a clear trend (Fig. 33). Counts of pups during the same period have been considerably more variable but indicate a coincident increase to 1996 and 1997, a sharp drop in 1998, and a return to mid-1990s levels since then. The apparent decline in total numbers since 1995 was not expected, given recent estimates that the state's coastal ecosystem could support as many as 16,000 otters. Recent counts indicate that the current statewide population is probably about 2,100 to 2,300 animals (Fig. 33).

Factors Affecting Recovery—At the Marine Mammal Com-mission's 2002 annual meeting representatives of the U.S. Geological Survey, Fish and Wildlife Service, California Department of Fish and Game, and various stakeholder groups presented information on potential factors that may be impeding recovery of sea otters in California. The existing evidence suggests that the lack of recovery since 1995 is probably not due to a reproductive failure. Instead, the available data suggest that the lack of recovery is due to additional mortality of all age classes, including the prime age classes from age three to ten. Factors known or suspected of causing mortality include starvation, entrapment or entanglement in fishing gear, disease, contaminants, sharks, and illegal shooting. Starvation does not appear to be a significant factor inasmuch as the majority of the dead animals recovered in past years appear to have been in relatively good condition at the time of death. Few animals are found each year with gunshot wounds, which suggests that shooting is not a large source of mortality. However, existing evidence, which is based on stranded animals, may not reliably indicate the number of animals actually shot. Nonetheless, at the Commission's meeting most of the discussion about factors affecting recovery focused on fisheries, disease, and contaminants.

Two types of fishing gear have caused most concern regarding bycatch mortality of sea otters in California waters. The first is large-mesh, set gill and trammel nets. Those nets were first banned in limited areas off southern California in September 2000, and in October 2002 the California Department of Fish and Game imposed a permanent ban on the use of gill and trammel nets in waters less than 60 fathoms deep between Point Reyes and Point Arguello. The prohibition was intended to protect sea otters as well as common murres and other marine life taken as bycatch in fisheries using these nets. In December 2002 a group of independent halibut and sea bass fishermen from San Luis Obispo County filed suit against the California Department of Fish and Game challenging the closure to 60 fathoms. Several conservation groups, led by the Defenders of Wildlife, are seeking to intervene on behalf of the Department. The plaintiffs claimed that the Department had unreasonably combined gill and trammel nets in the prohibition, that it had unreasonably combined the sea bass fishery with the halibut fishery, that there was no evidence of adverse impact on the common murre population from gill and trammel nets set between 30 and 60 fathoms, and that the prohibition was applied to an overly large area consisting of discrete, unrelated oceanic regions or geographic strata. That matter was pending as of the end of 2002.

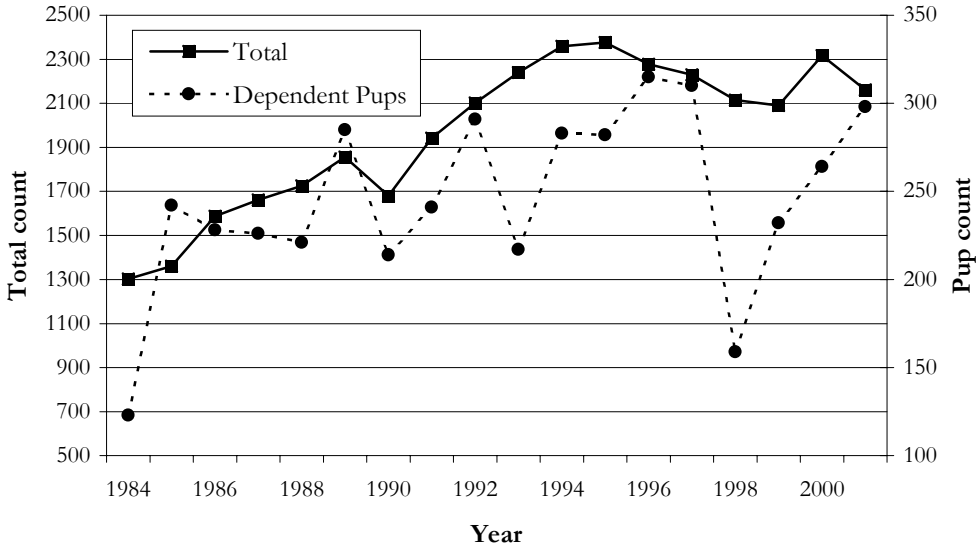

Figure 33. California sea otter population spring counts, 1984–2001.

Pots and traps are the other type of fishing gear that may cause sea otter mortality. Along the central California coast traps are used to catch cabezon, grass bass, sea trout, and gopher cod. In southern California they target sheepshead, lobster, and crab. The landings from trap fisheries in central California increased considerably and coincidentally with the halt of sea otter recovery after 1995. It is not clear that the two are related because little direct evidence is available to evaluate whether there is a cause-and-effect relationship. A trap fishermen from central California present at the Commission's 2002 meeting indicated that he had never taken a sea otter in his traps and that trap fisheries in central California must use 5-in.-dia .rings in the entrances to their traps, which are thought to be too small to allow most otters to enter or become entrapped. However, it is not clear that a 5-in. ring is sufficient to preclude small otters from entering the traps. The 5 inch restriction on ring diameter has been required by the California Department of Fish and Game since 2001 in waters north of Point Conception. The fisherman indicated that he did not believe that similar ring restrictions would work in waters south of Point Conception because they would preclude capture of the targeted species (sheepshead, lobster, and crab). Whether trap fisheries have contributed to the recent sea otter decline off central California is uncertain because only a small fraction of the fishing effort is monitored by observers.

At the Commission's meeting a representative of the California Department of Fish and Game also reviewed evidence pertaining to the role of disease in the dynamics of the California sea otter population. The available data from freshly dead animals indicate that disease was a significant factor in 35 to 45 percent of the deaths. Protozoan infections by *Toxoplasma gondii* or *Sarcocystis neurona* accounted for 20 to 25 percent of the disease findings, and evidence from live animals indicates that these infectious agents are common, particularly in waters near human population centers. Such results should be viewed with some caution because it is not yet clear that the freshly dead carcasses found are reliable indicators of all deaths in the population. Nonetheless, disease appears to play an important role in the population dynamics of the California sea otter and the evidence suggests that some of that disease results from human activities. The term "pathogen pollution" has recently been used to describe the prevalence of pathogens in certain areas due to human population or the translocation and introduction of nonnative or domestic fauna. The introduction or increasing prevalence of these pathogens may overwhelm the immune systems of native animals such as sea otters. Other diseases, such as acanthocephalan peritonitis (inflammation of the peritoneum due to infestation by acanthocephalan worms), and bacterial and fungal infections also were observed and their prevalence may vary geographically and temporally.

Contaminants also may affect California sea otters by impairing reproduction or compromising immune function, thereby increasing susceptibility to disease. In late January 2002 The Otter Project sponsored a workshop of experts on contaminants, disease, and the biology of sea otters to consider the possible effects of contaminants and to develop a research plan for investigating those effects. Potentially important contaminants include DDT and related compounds, PCBs, metals, and tributyltin. Because such contaminants often originate from or are concentrated by human activities, their effects may vary throughout the range of sea otters depending on human demographics.

Other factors affecting or potentially affecting the recovery of the sea otter in California include the risks of an oil spill and the translocation program initiated in 1987. The following sections describe those issues.

Oil Spill Prevention and Response—Concern that a large oil spill could kill a large portion of the California sea otter population has had significant influence on recovery efforts since 1977, when the population was listed as threatened. A number of steps have been taken to avoid such an impact, including the development of the translocation program described below. At the Marine Mammal Commission's 2002 annual meeting, a representative of the California Department of Fish and Game described the current state of efforts to prevent an oil spill and to respond, should one occur. In 1991 the Department created the Oil Spill Prevention and Response Division specifically for this purpose. The division assumes a number of responsibilities pertaining to oil spills, including monitoring and inspecting sites and activities that may result in spills, developing regulations to prevent such events, and developing con-

tingency plans describing what needs to happen should an event occur. In 1996 the division also initiated the Oiled Wildlife Care Network at the University of California at Davis. The network has since been expanded to include other facilities with the capacity to care for oiled wildlife, including otters. The division, in concert with various stakeholder groups and other management agencies (e.g., International Maritime Organization, California Department of Fish and Game, U.S. Coast Guard), has succeeded in moving oil tanker lanes 50 miles offshore, has developed a vessel traffic information system, and has established a monitoring program to determine the distribution of otters and other wildlife so that it can identify areas of particular concern and conduct appropriate prevention and response operations when necessary.

Translocation Program and Zonal Management—The potentially serious consequences of an oil spill, and concerns about sea otter effects on fisheries that had developed in the absence of the otters, led to the development of a translocation program. In 1980, after consultation with the Fish and Wildlife Service and the California Department of Fish and Game, the Marine Mammal Commission recommended to the Service that it address both concerns by developing a translocation program with zonal management.

The history of the program and the Marine Mammal Commission's involvement in it are described in detail in past reports. The potential utility of the program was recognized in the sea otter recovery plan completed in 1982. Although the Endangered Species Act at that time included provisions for translocating species, the Marine Mammal Protection Act did not. Therefore, Public Law 99-625 was passed in 1986 to address that problem and allow a translocation program to proceed. In 1987 the Fish and Wildlife Service developed regulations implementing Public Law 99-625, developed a plan for the program, and signed a memorandum of understanding with the California Department of Fish and Game to help coordinate the program. The program called for the establishment of a colony of sea otters within a "translocation zone" around San Nicolas Island. The goal was to build the colony to the point where it contained at least 150 otters and produced at least 20 offspring annually so that it could be used as a source of animals should a disaster make it necessary to seed recovery of the parent population along the central California coast. To avoid fishery interactions in southern California, other islands and coastal regions south of Point Conception to the Mexican border were incorporated into a "management zone" that was to be kept free of otters.

From 1987 to 1990 a total of 140 sea otters was released at San Nicolas Island. All but one of the otters were taken from the wild parent population. From 1987 to 1993 the Fish and Wildlife Service removed 24 otters from the management zone. The translocated population did not grow as expected, and many of the translocated animals and their offspring either returned to the mainland parent population, moved to other locations where they were not observed, or died. The number of independent animals at the island dropped from 27–28 during 1987–1990 to a low of 13 in 1992–1993. From 1987 to 2002 a total of 75 pups was born. Since 1993 the number of animals at the site has increased, albeit slowly. No animals were removed from the management zone after 1993 due to several factors, including the deaths of animals in 1993 during capture and release efforts. Beginning in the late 1990s relatively large numbers of otters from the parent population to the north started showing up seasonally in the management zone. Subsequent tracking studies have shown that those animals were not simply moving south of Point Conception from neighboring areas. Rather, many of them were males moving considerable distances from central California after the reproductive season. From 1998 to 2002, 50 to 150 animals have been observed in the management zone. The Fish and Wildlife Service, in consultation with the California Department of Fish and Game, decided not to remove those otters because of the expense and the difficulty of capturing the animals and moving them safely.

In 1998 the Service held public meetings to discuss the future of the translocation program and reinitiated consultation on it under section 7 of the Endangered Species Act. In April 2000 the Commercial Fishermen of Santa Barbara, Inc., and several other groups filed suit in the U.S. District Court for the Central District of California seeking to compel the Fish and Wildlife Service to remove the sea otters that had moved into the management zone. A number of conservation organizations (Friends of the Sea Otter, Defenders of Wildlife, Humane Society of the United States) in-

tervened on behalf of the Service. The plaintiffs contended that the Service's failure to remove the otters violated the regulations implementing Public Law 99-625. The Service completed its section 7 consultation on the translocation program in July 2000. The biological opinion issued as a result of that consultation concluded that continued efforts to contain sea otters north of Point Conception would likely jeopardize the continued existence of the population. The conclusion was based on the evidence of a decline in the parent population since 1995, concerns about potentially lethal effects of capturing otters from the management zone and potential disruption of the parent population with reintroduction, and a conclusion that expansion of the sea otters' range in California appears to be necessary to ensure recovery. At the same time the Service issued a press release indicating that it was undertaking a comprehensive review in accordance with the National Environmental Policy Act to determine whether the translocation and containment program should be continued, modified, or terminated. In January 2001 the Service published a notice in the *Federal Register* stating that it would not capture and remove otters from the area south of Point Conception pending completion of its reevaluation of the translocation and containment program. In July 2001 the Commercial Fishermen of Santa Barbara and other plaintiffs withdrew their lawsuit seeking to compel the Service to remove otters from the management zone, pending the Service's final decision as to whether the translocation program should be continued, modified, or terminated.

In 2002 the Service continued its evaluation of the translocation program. At the Commission's annual meeting a representative of the Service advised the Commission that the draft environmental impact statement could be released for review as early as February 2003. The statement would consider three alternatives: maintaining the management zone, reducing the size of the management zone, or declaring the translocation program a failure. Within the third alternative, the Service was also considering three options: removing all sea otters from the management zone and from the translocation zone in accordance with regulations implementing Public Law 99-625, removing all the otters from the translocation zone but leaving those in the management zone, and leaving all otters in place, whether in the management zone or the translocation zone.

At the Commission's 2002 annual meeting representatives of a number of groups urged the Commission to recommend to the Service that it declare the translocation program a failure. At the end of 2002 deliberations regarding the future of the translocation program were ongoing.

Recovery Planning—The California sea otter was listed as threatened under the Endangered Species Act in 1977, and the first recovery plan was completed in 1982. Among other things, the original plan recognized the threat posed by possible oil spills and aimed to minimize the associated risks; recommended the development of new sea otter colonies outside the then-existing sea otter range; advocated a reduction in vandalism, harassment, and incidental take; emphasized the importance of incorporating recovery measures into local coastal development plans; set the optimum sustainable population range as a target for recovery; and sought to establish an effective research program to assess and monitor the status of sea otters and their habitat.

In 1988 the Service informed the Commission that it was considering reconstituting the recovery team to help revise the recovery plan. The Commission concurred that a number of tasks identified in the original plan had been completed and that a review seemed appropriate but also suggested that the review and subsequent development of an implementation plan might be accomplished by the agencies and parties involved in recovery efforts without reconvening the team. The Service did not agree and reconstituted the team, which met once in 1989 and several times in 1990. The meetings considered, among other things, needed revisions to the recovery plan.

By 1991 a revised plan had been drafted and submitted to the Commission for review. After reviewing the draft plan the Commission replied that it reflected intuitively reasonable conclusions, but that they were not adequately supported by the information and analyses in the draft. A second draft was prepared by the Service and circulated to the recovery team late in 1994. It was under internal review by the Service until mid-1996, when it was released to the Commission and others for review. In September 1996 the Commission provided comments, but no further action

was taken to complete the recovery plan in 1996 or 1997. At the Commission's 1999 annual meeting in Seaside, California, the Service informed the Commission that it had developed a new schedule and planned to complete a draft revision of the recovery plan for public review early in 2000 and have the revised plan in place by midyear.

The Service released the new draft plan in February 2000. In April 2000 the Commission commented on the plan, noting that it failed to focus on what appeared to be the task of greatest immediate importance—identifying and eliminating or mitigating the cause or causes of the apparent ongoing population decline. The Commission therefore recommended that the revision be restructured to give priority to those measures necessary to stop and reverse the decline. At the Commission's October 2002 annual meeting, the Service informed the Commission that it expected to release a final revision of the draft recovery plan in January 2003.

At the 2002 meeting the Service and the Commission discussed the importance of finalizing the recovery plan and the complications imposed by the lack of an up-to-date plan to guide the recovery effort. Both recognized that progress had been made in some important areas and that revision of the plan clearly had been confounded by the number of difficult and controversial management issues to be addressed and the multiple stakeholder groups involved or interested in sea otter recovery. In a December 2002 follow-up letter from the Commission to the Service, the Commission recommended that the Service make every effort to meet its schedule for completing the final revised recovery plan in January 2003 and ensure that the plan describes how the recovery effort will be implemented, including the role of the recovery team, tasks to be accomplished, agencies or parties responsible for each task, means of coordinating recovery efforts, and the staffing and other resources needed to carry out those efforts. The Commission also recommended that the Service reconstitute the recovery team and convene periodic meetings to discuss recovery-related issues and develop advice for the Service and, as needed, facilitate common-ground meetings for the affected parties to express their concerns and seek resolution of recovery-related issues.