

Sea otter survey encouraging, but comes up short of the 'perfect story'

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The southern sea otter, *Enhydra lutris nereis*, continues its climb toward recovery, according to the annual count released today by the U.S. Geological Survey and partners. For the first time, southern sea otters' numbers have exceeded 3,090, which is the threshold that must be exceeded for three consecutive years in order for the U.S. Fish and Wildlife Service to consider de-listing the species as "threatened" under the Endangered Species Act. However, localized population declines at the northern and southern ends of the range continue to be a cause for concern among resource management officials.

This year's survey results suggest an increasing trend over the last five years of more than 3 percent per year. The population index, a statistical representation of the entire population calculated as the three-year running average of census counts, has climbed to 3,272, up from 2,939 in 2013. The growth is accounted for by an unexpected jump in numbers in the center of the sea otter's range, an area that spans the Californian coast from Monterey south to Cambria.

"We believe the high count this year is partly explained by excellent viewing conditions, but it also appears to reflect increased food availability in the range center," says Dr. Tim Tinker, a research ecologist who leads the USGS sea otter research program. "The boom in sea urchin abundance throughout northern and central California has provided a prey bonanza for sea otters, and that means more pups and juveniles are surviving to adulthood."

While the overall population index continues to trend upward, the northern and southern subsets of the population continue a negative five-year decline, dropping 2.5 percent and 0.6 percent per year. "We are still seeing large numbers of stranded otters near the range peripheries, a high percentage of which have lethal shark bite wounds," says Mike Harris, a biologist with the California Department of Fish and Wildlife, "These deaths may explain the lack of population growth in those areas."

Declines at the range ends have implications for the long term outlook for sea otter recovery. "Negative population trends at the edges of the range are probably responsible for the lack of range expansion over the last decade," explained Tinker. "These are the portions of the population that typically fuel the colonization of new habitats."

In addition to the sea otter population along the mainland coast, the USGS also surveys the subpopulation at San Nicolas Island in the southern California Bight. This population, established by translocation in the late 1980s, struggled at low numbers through the 1990s, but over the last decade has been growing rapidly with a mean growth rate of 13 percent per year. "The sea otters at San Nicolas Island continue to thrive, and some may eventually emigrate to and colonize other Channel Islands in southern California," says Brian Hatfield, the USGS biologist who coordinates the annual census.

Since the 1980s, USGS scientists have computed the annual population index and evaluated trends in the southern sea otter. For southern sea otters to be considered for removal from threatened species listing under the Endangered Species Act, the population index would have to exceed 3,090 for three consecutive years, according to the threshold established under the [Southern Sea Otter Recovery Plan](#) by the USFWS. To reach the optimum sustainable population level under the Marine Mammal Protection Act, which is the number of animals that will result in the maximum productivity of the population while considering carrying

capacity and ecosystem health, the [southern sea otter](#) population would likely have to reach as many as 8,400 animals in California.

"The population index has exceeded 3,090 for the first time, and that's encouraging," said Lilian Carswell, Southern Sea Otter Recovery Coordinator for USFWS, "but sustained population growth will require range expansion, which means that sea otters will somehow have to get past the shark gauntlets near the ends of the current range. Over the longer term, it's not just sea otter numbers we're after, but the restoration of ecological relationships in the ecosystems where sea otters and other nearshore species coevolved."

The [sea otter](#) survey and stranding programs are just one part of a larger research program investigating sea otters and their role as predators in coastal ecosystems. In Elkhorn Slough, located between Santa Cruz and Monterey, [a recent study](#) suggests that sea otters' appetite for crabs can improve the health of seagrass beds, and USGS scientists are collaborating with biologists from the Monterey Bay Aquarium, the Elkhorn Slough National Estuarine Research Reserve, University of California, Santa Cruz and the CDFW to study the population in this unique habitat. A new study from UCSC, USGS and the Monterey Bay Aquarium is investigating how sea otters near Monterey are responding to the increase in sea urchins, which may be in part a result of loss of predatory sea stars from wasting disease. The scientists are studying whether sea otters play a key role in preventing urchins from overgrazing kelp forests in the absence of sea stars.

Survey Methodology

- The annual population index is calculated from visual surveys conducted via telescope observations from shore and via low-flying aircraft along the California coastline by researchers, students and volunteers from USGS, CDFW's Office of Spill

Prevention and Response, Monterey Bay Aquarium, UCSC, USFWS and U.S. Bureau of Ocean Energy Management.

- This year, the surveyed coastline spanned from Pillar Point in San Mateo County, south to Rincon Point near the Santa Barbara/Ventura County line, and also included San Nicolas Island.

Sea Otter Facts

- Sea otters were presumed extinct in California after the fur trade years, but were rediscovered in the 1930s, when about 50 animals were documented persisting near Bixby Creek north of Big Sur.
- Sea otters are considered a keystone species of rocky sub-tidal ecosystems because they prey on sea urchins that, if left unchecked, can decimate kelp beds.
- Scientists also study sea otters as [an indicator of nearshore ecosystem health](#), since sea otters feed and live near the coast and often are the first predators exposed to pollutants and pathogens washed down from coastlands, [such as the microbial toxin microcystin](#).
- The public can report sightings of stranded sea otters [to institutions listed on this webpage](#).

More detailed survey results and maps are available in the full report "Spring 2016 California Sea Otter Census Results," which is [available online](#).

Provided by U.S. Fish and Wildlife Service

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