



California sea otter population reaches record high number

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In a historic rebound, California sea otters, the frolicking ocean ambassadors of Monterey Bay and Big Sur, have reached their highest population level since 1982, when federal and state officials first began keeping track.

A growth in the amount of sea urchins, one of the otters' favorite foods, seems to be the leading reason why otter numbers along the California coast have grown to 3,272 this year, up 11 percent since 2013, experts said as they released the latest survey Monday.

"The population is slowly but steadily recovering," said Tim Tinker, a research biologist in Santa Cruz who leads the U.S. Geological Survey's otter program. "And that's good news because sea otters bring ecological benefits."

In fact, the otter population is likely at its highest level in at least 100 years, Tinker said. And for the first time, the otter numbers have exceeded 3,090, the total that the U.S. Fish and Wildlife Service says is needed to be met for three years in a row before they can be considered for removal from the endangered species list.

That said, there are still some troubling trends.

Chief among them is that the otter population is booming between Monterey and Morro Bay. But the fuzzy marine mammals have not been able to expand their range north, past Año Nuevo State Park in San Mateo County, or farther south, past Santa Barbara, because they are being killed by great white sharks.

No one knows for sure why shark bites have become the chief source of mortality for California sea otters. But one theory is that the Marine Mammal Protection Act of 1972 banned the killing of elephant seals and sea lions, both of which are food sources for white sharks. The populations of those animals soared, particularly off Año Nuevo and Piedras Blancas near Hearst Castle. With more food, the sharks may have expanded in number also, or they may have changed their range.

"We don't think sharks eat otters; they just bite them and spit them out because sea otters don't have blubber," said Lilian Carswell, southern sea otter recovery and marine conservation coordinator for the U.S. Fish and Wildlife Service. "There's not much there, just fur and bones. So they may be really targeting juvenile elephant seals and sea lions and biting otters instead."

The annual survey, conducted by the USGS, U.S. Fish and Wildlife Service, Monterey Bay Aquarium, California Department of Fish and Game, and others, is done in the spring by airplane and by people counting from shore. To improve accuracy, each year's total is a three-year average.

Historically there were about 16,000 southern sea otters, commonly known as California sea otters that lived from Oregon to Baja, Mexico. But they were hunted relentlessly in the late 1700s and early 1800s by Russian, British and American fur traders for their pelts, which are denser and softer than mink fur.

California sea otters were feared to be extinct until a small number, about 50, were discovered in remote coves off Big Sur in the 1930s. They were protected by the Endangered Species Act in 1977 and began a slow comeback.

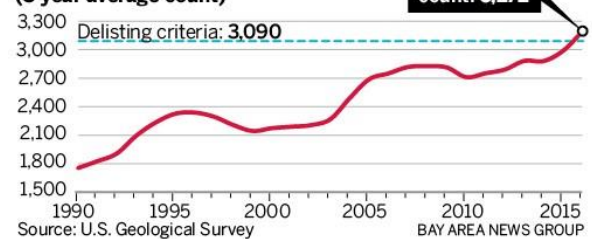
Having more sea urchins to eat has likely helped young otters survive because the urchins are nutritious and abundant. One reason there may have been so many more sea urchins in recent years, scientists say, is because of a disease that killed huge numbers of sea



SEA OTTER POPULATION GROWING

The number of otters along the California coast has for the first time passed the level at which the federal government is required to begin studying whether the otters should be removed from the endangered species list.

Number of otters (3-year average count)



Source: U.S. Geological Survey. BAY AREA NEWS GROUP

stars, or starfish, along the West Coast. Sea stars eat sea urchins, and although the sea stars have slowly started to recover, the urchin population has grown dramatically.

SEA OTTER CENSUS

Distribution of sea otters along the mainland coast and San Nicolas Island according to spring 2016 census results.



Source: U.S. Geological Survey
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“It’s sort of like a perfect storm where we just had a blast of food,” said Carswell. “How long is that going to last? It’s not a long-term solution. The long-term solution is range expansion.”

Tinker said no scientists are calling for white sharks to be killed to protect the otters because that would cause other environmental problems. At some point, there may be efforts to move some otters to new locations, like San Francisco Bay or farther up the California coast toward Oregon, he said.

Other attempts to move otters have met with mixed results. A project in the 1970s to transfer some from the Aleutian Islands to southeastern Alaska succeeded. But an effort in the 1980s to move them to San Nicolas Island off the Southern California coast was considered a failure because many swam back to the mainland or died. However, their numbers at San Nicolas are finally growing and now near 100.

Moving otters would likely be controversial, particularly among fishermen, since they eat abalone, crabs and urchins, all of which are fished commercially.

Otters are a keystone species, and they affect all levels of the food chain. They help boost kelp beds, which provide a home to fish and other species, for example, because they eat urchins, which eat kelp. And recent research in Elkhorn Slough in Monterey County has found otters help boost sea grass, also a key home for fish, because they eat crabs. With fewer crabs, the population of sea slugs grows. Sea slugs eat the algae that builds up on sea grass from human runoff of fertilizer and other nutrients. With less algae, the sea grass prospers, providing a nursery for young fish.

“Over the longer term, it’s not just sea otter numbers we’re after, but the restoration of ecological relationships,” said Carswell.

Homework Directions: Read the article on Page 1-2 and then answer the questions below.

1) Part One: Summarize the article on a **separate sheet of paper**. Use the sentence starters below to keep you organized and on track. Remember in a summary, there is **no opinion**. Just state the facts from the article.

Make sure to give specific details from the article.

- The purpose of this article was
- The article informed me of...
- The importance of this article is...
- In conclusion, ...



Use these only if needed!

2) Part Two: What other words could you use here? Use a dictionary for help!

a) “the **frollicking** ocean ambassadors.”

Other word(s) for **frollicking**: _____

b) “. By the turn of the century, sea otters had almost been **exterminated**...”

Other word(s) for **exterminated**: _____

c) “But, by 1830, the **exploitation** of the otter industry had all but wiped out the otter population..”

Other word(s) for **exploitation**: _____

Part Three: Answer these questions below using complete sentences.

- 1) What is the criteria for the removal of the sea otter from the Endangered Species List?

- 2) What led to the decline of the sea otter population in the Pacific Ocean?

- 3) Why do scientists think there are so many sea urchins right now?

- 4) What happened when scientists tried to transplant/relocate otters to the Aleutian Islands in Alaska?

- 5) How have the otters helped in Elkhorn Slough?

- 6) Pretend you are a scientist concerned with increasing the sea otter populations. Would you want to regulate the great white shark or orca populations? Explain.

- 7) Predict the size of the otter population in the future off the California coast. Why do you think this?



Part One Graphic Organizer: Use this to help you organize your thoughts for Part One's Summary

