

THE OFFICIAL MAGAZINE OF THE OCEANOGRAPHY SOCIETY

Oceanography

CITATION

Dybas, C.L. 2015. Ripple marks—The story behind the story. *Oceanography* 28(2):8–9, <http://dx.doi.org/10.5670/oceanog.2015.49>.

DOI

<http://dx.doi.org/10.5670/oceanog.2015.49>

COPYRIGHT

This article has been published in *Oceanography*, Volume 28, Number 2, a quarterly journal of The Oceanography Society. Copyright 2015 by The Oceanography Society. All rights reserved.

USAGE

Permission is granted to copy this article for use in teaching and research. Republication, systematic reproduction, or collective redistribution of any portion of this article by photocopy machine, reposting, or other means is permitted only with the approval of The Oceanography Society. Send all correspondence to: info@tos.org or The Oceanography Society, PO Box 1931, Rockville, MD 20849-1931, USA.

Ripple Marks

The Story Behind the Story **BY CHERYL LYN DYBAS**

COASTAL GOLD RUSH:

SOUTHEAST ALASKA'S SEA OTTERS SWING FROM BOOM TO BUST TO BOOM

A young warrior named Natsilane was destined to become chief of his tribe, folktales of the Tlingit and Haida peoples of Southeast Alaska say. Natsilane's brothers were jealous of his stature, however, and plotted to depose him.

The brothers took Natsilane out to sea, ostensibly to fish, then threw him overboard and rowed away.

But the chief-to-be wasn't alone in the deep blue sea.

He was rescued by a sea otter who carried him to an island. The otter took care of the boy, showing him the best hunting and fishing grounds.

Eventually, though, the sea otter had to return to its life in the water. It offered a last gift to Natsilane, a pouch of seeds, telling him to sow them across the island. Natsilane complied, and the seeds grew into tall trees. He then used wood from the trees to build a boat, returned to his village, and became chief.

To this day, according to legend, the lives of humans and sea otters are intertwined.

OUT OF BALANCE: OTTERS AND PEOPLE

Intertwined, but not in balance, says Dennis Nickerson, environmental planner for the Organized Village of Kasaan, a federally recognized Alaska tribal government established in 1938. The village perches on the east side of Prince of Wales Island, some 50 km northwest of Ketchikan.

Like the gold rush, Nickerson says, we've gone from boom to bust to boom in our relationship with sea otters. Is the next bust—in the commercially valuable shellfish otters eat—on the horizon?

THE BOOM: SEA OTTERS BEFORE US

Sea otters are marine mammals native to the North Pacific Ocean. The otters were once abundant from Hokkaido, Japan, through the Kuril Islands, the Kamchatka Peninsula, Commander Islands, Aleutian Islands, peninsular and coastal Alaska, and south to Baja California.

Sea otters live just off the coast, where they dive to the bottom to forage for invertebrates like sea urchins. The otters control populations of urchins that would otherwise mow down kelp forests and take out entire ecosystems.

But sea otters' diets include species like clams and crabs that are also top choices on human menus, leading to conflicts between otters and fishers.

To track the number of sea otters and their effects on fisheries, biologists

Ginny Eckert of the University of Alaska

Fairbanks (UAF), Verena Gill of the US Department of the Interior, and other scientists are working together on the Alaska Sea Grant-supported Southeast Alaska Sea Otter Project.

Public perceptions of sea otters have changed dramatically over time, write Gill and co-authors in a chapter in the 2015 book *Sea Otter Conservation*. "Like other top predators such as wolves, sea otters inspire extremes of emotion, and sentiment toward them tends to coalesce into camps."

THE BUST:

FORTUNE-SEEKERS FROM SIBERIA

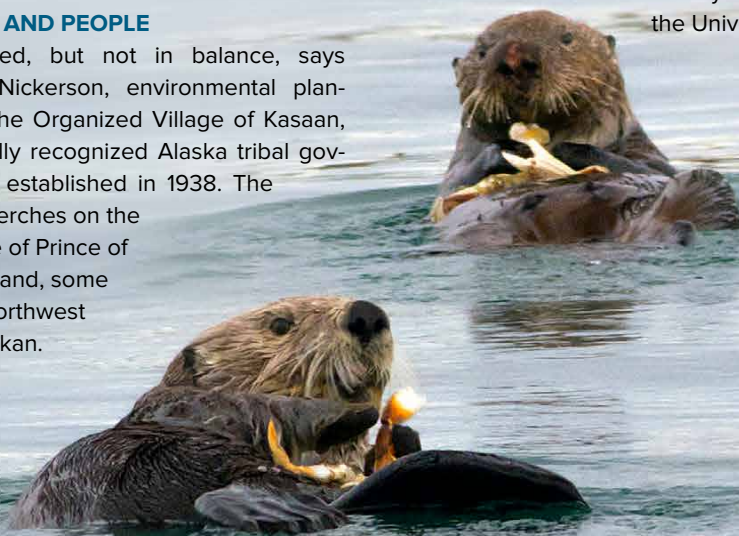
In the early 1700s, the global sea otter population was estimated at 150,000 to 300,000 otters, according to Eckert. "Until the mid-1700s," she says, "sea otters were common throughout their range."

Then came the Russian explorers who would turn fur traders.

Unlike most marine mammals, sea otters stay warm not with blubber but with thick coats of fur—blessings and, at times, curses. To Russian explorers, otter fur was a siren call.

"Fortune-seekers from Siberia reaped a harvest of riches more fabulous than the Spanish conquistadors," wrote Harold McCracken in his 1957 book *Hunters of the Stormy Sea*, an account of early sea otter hunting expeditions. "The sea otter's was the most valuable fur on earth. As a result, these golden fleeces of the stormy northern seas were virtually exterminated."

Extensive harvest over the next 150 years resulted in near-extirpation of the species. By the time sea otters were given protection under the North Pacific Fur Seal Treaty of 1911, fewer than 2,000 otters remained in 13 colonies.



RETURN TO BOOM TIMES: SEA OTTER REINTRODUCTIONS

“For many years sea otters were considered extinct,” wrote McCracken. One scientist of the late 1800s, Henry Elliott, searched for them throughout sea otter country. In an 1887 report, Elliott noted that he couldn’t locate a single live otter.

After the 1911 treaty, sea otters began to rebound. But no otters survived in Southeast Alaska.

“Something more appropriate should be made available for the proper rehabilitation of one of America’s most interesting wild creatures, which has provided mankind so much and which the greedy avarice of mankind brought so close to the limbo of total extermination,” McCracken stated.

As if in answer, between 1965 and 1969, 412 otters from Amchitka Island and Prince William Sound were translocated to sites in Southeast Alaska.

In 1972, sea otters were further protected under the US Marine Mammal Protection Act. Today, the region’s sea otter population is estimated at a healthy 25,712 otters. But that’s still less than what it likely was before the days of the fur trade, says Eckert.

THE LATEST BUST: SEA OTTERS’ PREY?

What are 25,712 otters eating?

Sea cucumbers, among other commercially important species, are feasts for the otters, found researcher Sean Larson of UAF. In his study, however, sea cucumbers made up only about 5% of a sea otter’s diet.

“Sea cucumbers and other species are no longer viable fisheries,” counters Phil Doherty, executive director of the Southeast Alaska Regional Dive Fisheries Association (SARDFA). SARDFA’s members harvest sea cucumbers, geoducks, and other subtidal species. “With no end in sight [to increasing sea otter numbers], some of the fisheries are inevitably going to go away.”

But Eckert says that “the abundance of shellfish that supported these commercial fisheries was likely anomalous and happened because so many sea otters were removed [by fur traders]. Now otters are beginning to return to their pre-harvest numbers.”

A version of this article appeared in Alaska magazine.



(left) Southeast Alaska visitors aboard cruise boats like M/V *Sikumi* see many more sea otters than a decade ago. Photo credit: Custom Alaska Cruises

When sea otters first move into an area, commercially important shellfish indeed can make up the majority of the otters’ diets, according to UAF biologist Zac Hoyt. But where otters have lived for 15 years or more, commercial species add up to less than 10% of their hauls. “Once otters have been around for a while, their diets shift from a few species to a big diversity,” says Eckert. “That range includes non-commercial crabs, shrimp, and small fish like Pacific sand lance.”

FINDING A BALANCE

Some Southeast Alaskans like Keegan McCarthy of Juneau, owner of the M/V *Sikumi* and Custom Alaska Cruises, see a benefit from more sea otters: increased wildlife-viewing opportunities

and a boost to ecotourism.

“We spot otters in every bay along the Inside Passage,” says McCarthy. “In many areas where there were none, now there are up to 100 locked arm-in-arm. Wrapped up in kelp, they watch as our boat or kayaks pass by. Clients love them.”

He’s concerned, though, that with so many sea otters, fishers may be forced out of their livelihoods. Somewhere, McCarthy says, there has to be a middle ground.

“Although otters and humans are sometimes in the way of each other,” offers Nickerson, “all of us have a right to sustenance from the sea. People need to come together at levels from the local to the national to find solutions.”

We owe it to sea otter, Natsilane might say, and to ourselves. 📷

Cheryl Lyn Dybas (cheryl.lynn.dybas@gmail.com), a Fellow of the International League of Conservation Writers, is a contributing writer for *Oceanography* and a marine ecologist and policy analyst by training. She also writes about science and the environment for *National Geographic*, *Natural History*, *World Wildlife*, *Africa Geographic*, *BioScience*, *National Wildlife*, *Scientific American*, and many other publications.