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Display Until September 11, 2001

an emeraldusa magazine

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New Hope for Sea Otters, Kelp Forests

A healthy ecosystem
...is also the key to
renewing the rich
legacy of Coastal
Indian culture.



Photo/Lionel Pozzoli

FOR DIVERS, THE KELP FORESTS OF THE North American Pacific Coast are one of the true wonders of the underwater world. Not only are they beautiful, with softly undulating fronds and shafts of buttery light, they are also teeming with life. In otherwise cold, deep and deserted waters, the kelp forests are like oases, full of invertebrates, fish and marine mammals. And although they appear eternal, kelp forests are rather fragile.

They depend on a delicate balance of species to remain healthy. And this balance depends in part upon the lovable sea otter. Where these mammals thrive, so does the kelp. Where they have been decimated, kelp has suffered or even disappeared.

The problem is sea urchins, which devour kelp at an alarming rate. If plentiful, otters eat enough sea urchins to keep them in check. If not, the kelp suffers and so does the ecosystem that depends upon it. A good example is Alaska, where some 80 percent of Aleutian

Sea Otters have disappeared in the last decade. As a result, urchins have flourished, greatly reducing the kelp forests and undermining nearshore productivity. For this reason, the sea otter is considered a "keystone" predator.

In Oregon, a major new effort is underway to understand sea otter biology and perhaps to reintroduce the animal to the Oregon coast, where it has been extinct for nearly a century.

It all started with a man named David Hatch, an engineer for the City of Portland and a member of the Confederated Tribe of the Siletz Indians. Several years ago, he became interested in the history of the Oregon Sea Otter, or *Elakha*, and its complex relationship with his ancestors. He recognized that the fates of the two were intimately connected, and became a tireless advocate for reestablishment of the *Elakha*, both in the minds of Oregonians and in reality.

Native coastal peoples relied on the *Elakha*

for pelts. When the pelts of the *Elakha* and the other sea otter subspecies found their way to Europe in the late 1700s, their popularity spawned a mass market. Fur hunters from Russia, England, Spain and the U.S. invaded the coast, decimating the populations of sea

Sea otters are a keystone species of the kelp forest.

otters—and the indigenous peoples who depended upon them. Settlers followed the hunters. In 1906, the last sea otter pelt in Oregon was sold for \$900.

In 1911, sea otters were placed under international protection, but only a handful of the animals remained in the wild and none in Oregon. As the sea otter declined,

so did the kelp ecosystem on which they depended, and the Indians who relied on this bounty for their sustenance.

Hatch wants to restore *Elakha* populations along the Oregon coast, but his concerns reach far beyond that. A healthy ecosystem is the foundation not

only for the rebirth of the sea otter; it is also the key to renewing the rich legacy of coastal Indian culture.

His first step was to serve on the committee that named the new Oregon State University research vessel after the *Elakha*. He then helped to found the *Elakha* Alliance, a nonprofit group that represents a collaboration between the Oregon Zoo, the Oregon Coast Aquarium, tribal councils, state wildlife officers, university scientists and northwest environmental groups such as Ecotrust.

So far, the *Elakha* Alliance has

inspired cutting edge interdisciplinary research at Portland State University and Oregon State University. Using bones and teeth from OSU archives, Portland State biologists are analyzing mitochondrial DNA from the extinct *Elakha* (excavated from coastal middens). By comparing these samples with DNA from the existing southern and northern subspecies, the scientists may be able to determine the *Elakha*'s genetic lineage.

The research should help us reconstruct the history of the *Elakha*. Given the richness of available specimens, the researchers may be able to trace genetic variation *before* the great sea otter hunts of the 18th century, helping us understand how the species evolved.

The research will also inform attempts to restore sea otters to the Oregon coast. The *Elakha* is gone forever, but the DNA studies may identify which subspecies may be close enough genetically to be suitable for colonization. However, even if scientists turn up a match with either the southern or northern subspecies, resettlement remains a daunting challenge. An attempt to relocate northern sea otters to Oregon failed in the 1970s for unknown reasons.

But in Canada, the experiment has worked. A pilot project begun in 1969 reintroduced the animals to Vancouver

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Island. With few natural predators, the population has grown by some 18 percent per year, and now numbers reach over 1,500. The kelp flourished as well, and now harbors a substantial diversity of invertebrate and fish life.

As David Hatch wrote recently on the regional website (www.tidepool.org), "The ocean we see today is not the healthy ocean which belongs here." As he has recognized, the otter and the kelp certainly do belong. Bringing them back after an absence of over a century may be a tall order, both logistically and legally, but will prove well worth it if success is met.

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