

# Restoration plan will emerge from foresters' inventory

\$750,000 grant is step toward creating healthier forest environment

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LONG ISLAND — Willapa National Wildlife Refuge Manager Charlie Stenvall steers the government airboat across a broad mudflat toward this five-mile-long island in Willapa Bay.

A 15-minute walk through dense hemlock and cedar stands takes Stenvall and foresters Marc Barnes and Darin Stringer to the heart of the island, a 274-acre grove where full-size hemlocks grow from monster western red cedars and huge spiked crowns or "candelabras" top other 1,000-year-old cedar giants.

Fire scarred some of these trees centuries ago, carving hollows tall enough to stand in. Even the cedar stumps, tall as a man and large as a dining room table, tell a story. Deep notches show where springboards held loggers and their saws high above the forest floor.

Black bears and black-tailed deer live on the island, along with a herd of Roosevelt elk. There are marbled murrelets, but no spotted owls. "We expect next year to have our first chum salmon back up in here," Stenvall said.

When the refuge acquired Long Island from Weyerhaeuser Co. in 1994, it got the ancient cedars, but it also got hundreds of acres of 40-year-old trees and tracts recently logged.

Stringer and Barnes are restoration foresters. They own Integrated Resource Management, a company with offices in Philomath and Medford, Ore., that conducts forest inventories and designs restoration projects for conservation-minded timberland owners. They have been hired to inventory the forests of Long Island, the rest of the Willapa refuge and the entire Ellsworth Creek watershed, which is owned by the

## Did you know?

■ Long Island, part of the Willapa National Wildlife Refuge, is open to the public. Five primitive campsites are available on a first-come, first-served basis. The island is accessible only by boat. Launch facilities are available at the Nahcotta Mooring Basin on the Long Beach Peninsula and at refuge headquarters on Highway 101. Tidal fluctuations, currents, extensive mudflats and weather can make getting to and from the island difficult and occasionally dangerous.

acres in all.

From the data they gather, a plan to restore this cutover land will emerge. A \$750,000 U.S. Department of the Interior grant, the only one of its kind in the nation, is supporting this work.

Barnes and Stringer set to work taking the measure of a younger stand at the edge of the ancient cedar grove: the ages and species of live trees, the distribution of standing dead snags and fallen debris, the extent of the canopy cover. Their tools are tape measures and borers, mobile field computers and Relaskops, gadgets that measure tree height and diameter and the distance between trees.

Barnes counts eight trees more than 5½ inches in diameter in the plot and two huge stumps 40 feet apart. He extracts a core sample from a cedar and counts the growth rings: the tree is 54 years old. He estimates 90 percent canopy closure; that means that from the ground, only 10 percent of the sky is visible.

Analyzing this data will tell the foresters how rapidly trees in the stand are growing. That's important, Barnes says, because the refuge's

of younger stands to mature forests of large-diameter trees.

Scattered among the younger stands of cedar and hemlock on the island are "wolf trees," remnant old trees left behind by early loggers because of their low limbs, irregular shape and state of decay. "These trees are often the lifeboats," Stringer says. They hosts lichens and other small plants that colonize the young plantations.

Stenvall says the refuge faces a controversial choice on Long Island: To let the stands thin out naturally, over many centuries, or to manage them through active thinning, which will open them to sunlight and spur the growth of the remaining trees.

"Why not just let nature take its course?" Stenvall poses the question and answers it. For one thing, he says, with so much of the island in young stands, fire could threaten the ancient cedar grove, which has stood essentially unchanged for 3,000 years. "If you have a climax forest, how often can you have fire come through and wipe it out?" Thinning, he said, would create less flammable conditions.

Thinning to hasten old-growth characteristics will, over time, create better habitat on the refuge, he added. "We hope ... in 100 years that you will not find a difference between old growth and this cutover forest."

The refuge could realize some revenue from allowing commercial harvests on the island, Stenvall said, but that's not driving the decision to do active restoration.

Working with the Nature Conservancy to restore the lands that surround the small pockets of untouched coastal rain forest makes sense, he said.

Long Island's ancient cedar grove "is nothing more than a blueprint. But if you start talking about all our combined lands, we will have a much better, healthier environment. This grant gets us our first