



"The Observer
has come to stay,
and it won't
take water from
anything that
wiggles."

— George Hibbert
Observer Founding Editor
Dec. 28, 1900



CHINOOK OBSERVER

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Team effort spurs road removal

Conservancy, Refuge join forces on tree thinning project

By **ELIZABETH LONG**

Observer staff writer

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ELIZABETH LONG photo

A bulldozer digs up a culvert that once diverted water from a stream under the road. Now the water will be able to return to its natural, more stable, course.

PACIFIC COUNTY - Many people think of ecological restoration as an attempt to return the environment to its past. But two projects being done cooperatively between the Nature Conservancy and Willapa National Wildlife refuge demonstrate restoration is really an effort to leapfrog into the future.

One involves a forest thinning on 170 acres of reforested land and the other is a road removal project. In both cases, given time, the 20-year-old forest would develop into old-growth stands and the road would wash away. But it could take hundreds of years for the forest to reestablish a healthy ecosystem and a road washout and landslide could cause immense damage to property, fish habitat and water quality in the bay.

So people are stepping in to try and correct the damage done in the past and ease the transition into the future.



ELIZABETH LONG photo

David Burns, right, and Shaun Matthews discuss the progress of

Even the forests need to thin down

Eric Andersen with the Nature Conservancy, who is involved in both projects, describes the forestry project as "gardening on a large scale." The project is located up past a gravel pit, along some winding old logging roads and back up on the reserve next to Nature Conservancy land.

Trees along the road are like a dense curtain, impossible to see anything beyond. A machete or chainsaw would be needed to enter even one foot beyond the road. The air smells like Christmas, thick with the sent of evergreens. But there is hardly any sound. Even the

the road removal project. In the background is a completed section where the road once ran. The height of the fill once reached the top of the standing tree stump on the right.

birds have trouble penetrating the branches, and because no light reaches the ground, blocked by the trees, there is really nothing there for them to forage on. Nothing can grow in a forest where there is no sunlight.

But then a line is crossed where work has been done. Here, the trees have been thinned out. Instead of just a wall of green, blue sky can be seen through the trees. Birdsong can be heard and they can be seen fluttering among the trees.

The ultimate goal, said Anderson, is to answer the question, "Can we accelerate old-growth forests."

The trees are selectively thinned, based on species, to simulate the diversity found in older more established forests. For instance, cedar and spruce are thinned to 13-feet apart, hemlock and Douglas fir to 20-feet apart. Once cut, the trees are left on the ground. As they rot, they will return nutrients to the soil.

According to Anderson, the study seeks to answer four questions. Can spatial complexity be restored, turning the forest from one layer, the canopy, to several layers made up of groundcover, bushes and canopy like a ladder or multistory house. Can they increase the variety of plant species from just trees to include other plants such as ferns, and epiphytes - plants that grow on other plants such as moss and lichens.

Third, they want to know if they can reach a "target stem density," with a mixture of trees, 40 percent hemlock and 20 percent cedar, spruce and fir. They also want to know how hard it is to accomplish the thinning. Can it be done by contractors with a reasonable effort and cost. It took a crew of three from Longview one month to thin the 170 acres just as a gardener would thin a carrot patch.

"We are trying to make decisions as best we can," said Anderson, saying science is an ongoing process. What they learn from this study can be applied in other places. So they can compare thinned areas to non-thinned areas, there are also patches that were left untouched, as well as sections where all the trees were cut.

Later, those old logging roads that snake through the area will be removed, further restoring the area.

Tearing up the road.

In another section of the forest a crew is busy at work already engaged in a road removal. Anderson said restoration is good for the environment and good for the economy as well.

"People that worked putting the roads in can be put to work taking them out," he said.

Shaun Matthews with the U.S. Fish and Wildlife Service years earlier had helped construct the section of logging road that is now being removed. In a special, first-of-its-kind training, he along with others have been learning the delicate techniques of road decommissioning. Now he mans the same heavy equipment used to construct the road, undoing what he once did.

The training was overseen by David Burns, senior project manager and geomorphologist with Foothill Associates, a company with extensive experience in road removal.

"There are two types of roads," said Burns. "Those that have failed and those that are going to fail."

Roads are meant to be flat and smooth as possible, but in hilly areas that takes a lot of cutting and filling to the landscape to accomplish. Culverts are put in place so water runs under, not over the roads. But roads, just like people, fight a constant and losing battle against gravity. Culverts get plugged. Soils compress, get saturated and slump. Those quaint back road dips, rises and slopings are actually signs that the road is failing.

Which leads to another problem with roads. They must constantly be maintained, costing money. And according to Burns, there are other problems. Roads act like their own stream network, diverting water from its natural course down the road, also washing fine sediment, the worst kind, into streams, choking fish.

Roads are also susceptible to "wasting events," or landslides. Most big, devastating landslides, including in urban areas which take out houses, said Burns, originate at roads further uphill.

"It's just a matter of time before it all moves," said Burns, comparing those events to Mother Nature clearing out her arteries, the natural flow-patterns of water.

The process of road decommissioning at first appears to be the same as road construction; there's the roar of heavy equipment and massive amounts of earth are being moved. But instead of fighting against gravity, they are working with it.

All the fill is removed, as well as the culverts, another impediment to fish passage. That fill is then used to rebuild the hill's natural gradient, an "angle of repose" where the soil is least likely to slip downhill. To get the right angle requires extensive surveys and no small amount of technical skill and training. Then brush and trees are strewn across the old road to help stabilize the soil until new growth can establish itself.

Although the crew hopes to have this road finished - or unfinished as the case may be - by mid-September, the overall project will last for several years. There are lots of roads out there, lots of acres of trees that need thinning.

The result will benefit not only the forests, streams and fish, but the economy as well.

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