



Salmon of the Future

Planting conifer trees *now* may improve fish habitat *later*

Notable notes in forest research at Oregon State University College of Forestry



For centuries, rivers have been cleared and straightened to ease transportation. Scientists used to believe that smooth, deep channels also were ideal for seagoing (anadromous) fish, such as salmon and steelhead. Instead, salmon populations have declined.

That's because salmon need "complex" habitat like deep pools, rapids, and shallow gravel bars in order to reproduce, grow, and thrive. They use different types of habitat during different stages of their life cycles, as they move from small headwater streams to the ocean and back again.

How is this complex habitat created? Along coastal Oregon streams, it often comes from large conifer trees that fall into the water. The big logs create debris jams that trap boulders, sediment, branches, and leaves. Water flows around and over the jam, forming sinuous curves, pools, rapids, and eddies. The conifer logs decompose slowly, so the complex habitat they create persists for many years.

But what about streams that no longer have large old conifers along their banks? Professor Bill Emmingham and Badege Bishaw (Research Associate) in Forest Science at OSU and their colleagues have been finding ways to help solve this problem. One solution is to plant seedlings along streams now so they can grow tall and eventually fall into the water. That sounds simple, but it's much harder than you might think!

Deer, elk, beavers, and even voles eat young conifers—and they ate many of the first seedlings that the scientists planted. Those that survived often didn't get enough sunlight to grow well or were crowded out by blackberries and other shrubs.

The scientists had to learn how to help conifers, not only to survive but also to outgrow the competition quickly. First they made clearings in the brush to let in sunlight. In the clearings they planted larger, older seedlings, which were less vulnerable than smaller ones. Then they protected the trunks from animals with chicken wire and solid plastic tubes. Finally, they went back often to check on the trees and clear away the brush that had grown back. In a few years, the trees were large enough to survive on their own. After a few more decades, or even centuries, of growth, some of these trees should fall into the water, helping to create complex habitat for salmon of the future. In the meantime, they'll create shade for the salmon of today.

For more about growing trees along streams, see [A Moo-ving Story](#).

