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Scorched forests best left alone, study finds

Biscuit salvage - Logging after the fire killed seedlings and added tinder, research by an OSU-led team says

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MICHAEL MILSTEIN
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Logging in the wake of southwest Oregon's giant 2002 Biscuit Fire destroyed more than two-thirds of seedlings sprouting from scorched ground and littered the soil with tinder that could fuel another blaze, scientists found.

A research team led by Oregon State University concluded that in the first few years after a fire forests can recover as well or better on their own than if they are logged and replanted.

The findings, published Thursday in online editions of the journal *Science*, undermine arguments behind a U.S. Forest Service program to salvage burned trees and plant seedlings across thousands of acres blackened by the Biscuit blaze. Among the goals of the work, backed by the timber industry and the Bush administration, was accelerating forest regrowth and clearing dead trees so they do not feed another inferno.

But the research showed that, so far, the cutting did the opposite.

"There's no overall gain by going through that effort," said Daniel Donato, a graduate student at Oregon State's College of Forestry who is the lead author of the peer-reviewed report. "The take-home (message) is that forests can often be more resilient than we give them credit for."

Although logging targeted less than 5 percent of the some 500,000 acres encompassed by the Biscuit burn, it was among the largest federal timber sales planned in recent years. So far, though, only 18 percent of the wood has been cut.

The Biscuit remains at the center of a national debate over salvage of trees burned by severe wildfires sweeping the West. Reps. Greg Walden, R-Ore., and Brian Baird, D-Wash., have sponsored federal legislation to speed logging and replanting of burned forests.

Environmental groups, arguing that charred slopes are especially fragile and that blackened trees are vital to wildlife, tried but failed to stop the cutting in the Biscuit's older forest reserves, arguing charred slopes are especially fragile and blackened trees vital to wildlife.

Economic reasons

The OSU scientists said logging makes sense after a fire if the point is to salvage the dollar value of burned trees for sawmills. But it can set back natural regrowth and leave forests prone to repeat fires that might incinerate seedlings and further cook the soil.

"If we're going to log for economic goals, we should be honest with ourselves and say it's for economic reasons," Donato said.

Logging is typically supposed to be followed by controlled burning to clear away leftover tinder. But a lack of funding sometimes means the burning does not get done, the scientists said.

Oregon State, a center of the salvage logging debate, has researchers on all sides. Professor Emeritus Michael Newton, who also studied forest recovery in southwest Oregon, called Donato's report superficial.

He said the real test of a forest's recovery is not how many seedlings survive the first years after a fire but how many last the first few decades to grow into trees.

The past few years in the typically warm, dry Siskiyou Mountains where the Biscuit burned have been unusually wet, which would have helped more seedlings take root. A drought year could kill them off.

"Out on a limb"

"I think they're way out on a limb," Newton said. "You need to prove this over time."

Donato and other scientists studied five sections of forest that burned severely. They found that about 300 seedlings -- mainly Douglas fir -- grew back on each acre by themselves, a prolific rate that meets standards for restoring forests.

But logging destroyed 71 percent of the seedlings by churning up soil and burying them under debris, the team found.

Many had figured logging would not leave much debris behind because the first blaze would have burned away branches and other small material.

The researchers found, however, that less than 10 percent of the wood actually burned. By falling trees and discarding their tops and branches, logging moved leftover fuel from the treetops to the ground, where it is in easier reach of future flames.

Controlled burning

About a third of the acres logged will be burned under controlled conditions to clear off such debris, said Rob Shull, forest staff officer for the Rogue River-Siskiyou National Forest. The other two-thirds do not hold enough debris to warrant burning.

But the scientists said the burning may add insult to injury because as the excess debris smolders it may kill more seedlings and further damage the soil. There would be less risk by leaving dead trees standing where they gradually would decay while keeping their tinder above the reach of flames, they said.

Forest managers emphasized that more than 95 percent of the Biscuit acreage will be left on its own and said logging hinged on public goals for the land.

"No doubt there are areas where nature will beat us to the punch; it will do better than we can," Shull said. "But there are some places where it won't."

A poll last year found that about three-quarters of Oregonians want federal forests restored through logging and replanting. Jim Golden, deputy regional forester for the Forest Service, said cutting brings in revenue to pay for important recovery work, such as stabilizing hillsides that otherwise might erode.

"It's a revenue source that we shouldn't be passing up," he said.

But Jerry Franklin, a forestry professor at the University of Washington and an authority on Northwest forests, said charred trees are especially important because they are the only source of wood to nourish forest recovery and lend shelter to wildlife.

From that standpoint, "it's usually far better ecologically to take a green tree from a live forest than a dead tree from a burned forest." "Salvage almost never achieves any ecological goal," he said. "It almost always is a tax on the ecological process."

Michael Milstein: 503-294-7689; michaelmilstein@news.oregonian.com