

New Forestry: Trying logging with a lighter touch

By **KATHIE DURBIN** and **PAUL KOBERSTEIN**
of *The Oregonian* staff

BLUE RIVER — The tour was billed as an introduction to New Forestry — and the 100 people who took it on a hot summer day got both a crash course and an earful of the controversy that term stirs up among foresters.

On the H.J. Andrews Experimental Forest, where experiments in New Forestry began 20 years ago, forest ecologist Jerry Franklin gestured up into the canopy and down toward the decaying logs on the forest floor as he described what New Forestry is — and isn't.

It's not a single prescription or a single set of practices, he said. It's a range of techniques designed to mimic or preserve natural processes in a forest stand while allowing commercial logging to occur.

It's not a value judgment about whether 40 years of clear-cutting was right or wrong. It's a recognition that society wants its forests managed differently now.

Call it logging with a lighter touch. Its aim: to preserve the structure of natural forests for wildlife and for the health of the new forests that will grow up in their place.

Franklin, chief plant ecologist for the Forest Service's Pacific Northwest Research Station, has lectured college students and briefed members of Congress and his own boss, Forest Service Chief F. Dale Robertson, on what New Forestry is all about.

But on the July 12 tour, Franklin faced a tough audience.

"New Forestry is being sold to the American people like a bar of soap," said Bill Atkinson, head of the forestry engineering program at Oregon State University. "People are using New Forestry to get at clear-cutting. We're getting New Forestry by decree, by dogma. We don't have Chairman Mao; we've got Jerry."

Clear-cutting in small patches, the brand of plantation forestry that Oregon State has taught over the years, has its problems, Atkinson conceded.

Destructive logging practices have been costly, he said, and harmful to wildlife, fish and riparian areas.

"But it grows trees," Atkinson argued. "Plantations outgrow natural forests by 30 to 40 percent. These second-growth forests are going to save the industry."

Franklin, visibly angry, got in the last word later that day.

"If you want to, you can argue ecological values aren't important enough to interfere with economic values. But it ain't a debate about where it should come down . . . Let's not argue about the train that's coming down

the track."

Fred Swanson, leader of the Forest Service's Pacific Northwest Research Station team on the Andrews Experimental Forest, says professional squabbles over New Forestry concepts or the pros and cons of clear-cutting shouldn't obscure the broad social implications of the new debate that's raging over forest management.

"The tough issue is, how do we move away from this allocation battle and look at what we want from our forests in the future?" Swanson asked. "In this state, we don't seem to have even an initial effort under way to do that."

In 1970, on the Andrews forest near Blue River, 40 miles east of Eugene, Franklin and a small team of scientists probed the mysteries of the old-growth forest with a grant from the International Biome Program, established to study all the world's ecosystems.

"There was a feeling that scientific information on old growth should be gathered before the forests were all gone," Franklin said.

The scientists learned that dead and decaying material in forests of centuries-old trees plays a vital role in cycling nutrients to living plants and animals. They learned how the needles of branches in the high forest canopy draw moisture from the air and how the trees store it. They learned that the structure of ancient forests — large conifer trees, dead standing snags, fallen logs — provides homes for mouse-like voles, flying squirrels and northern spotted owls.

"We came to the uncomfortable recognition that what was good for wood production wasn't necessarily good for other forest values," Franklin said.

In recent years, the team of researchers has experimented with leaving large live trees, dead standing snags and decaying logs on logged sites. Working closely with the Willamette National Forest and logging contractors, the team has designed timber sales in which more acres were logged but fewer trees per acre were removed.

"The New Forestry," "New Perspectives," new silvicultural prescriptions. Whatever its label, the search for alternatives to clear-cutting is gaining steam.

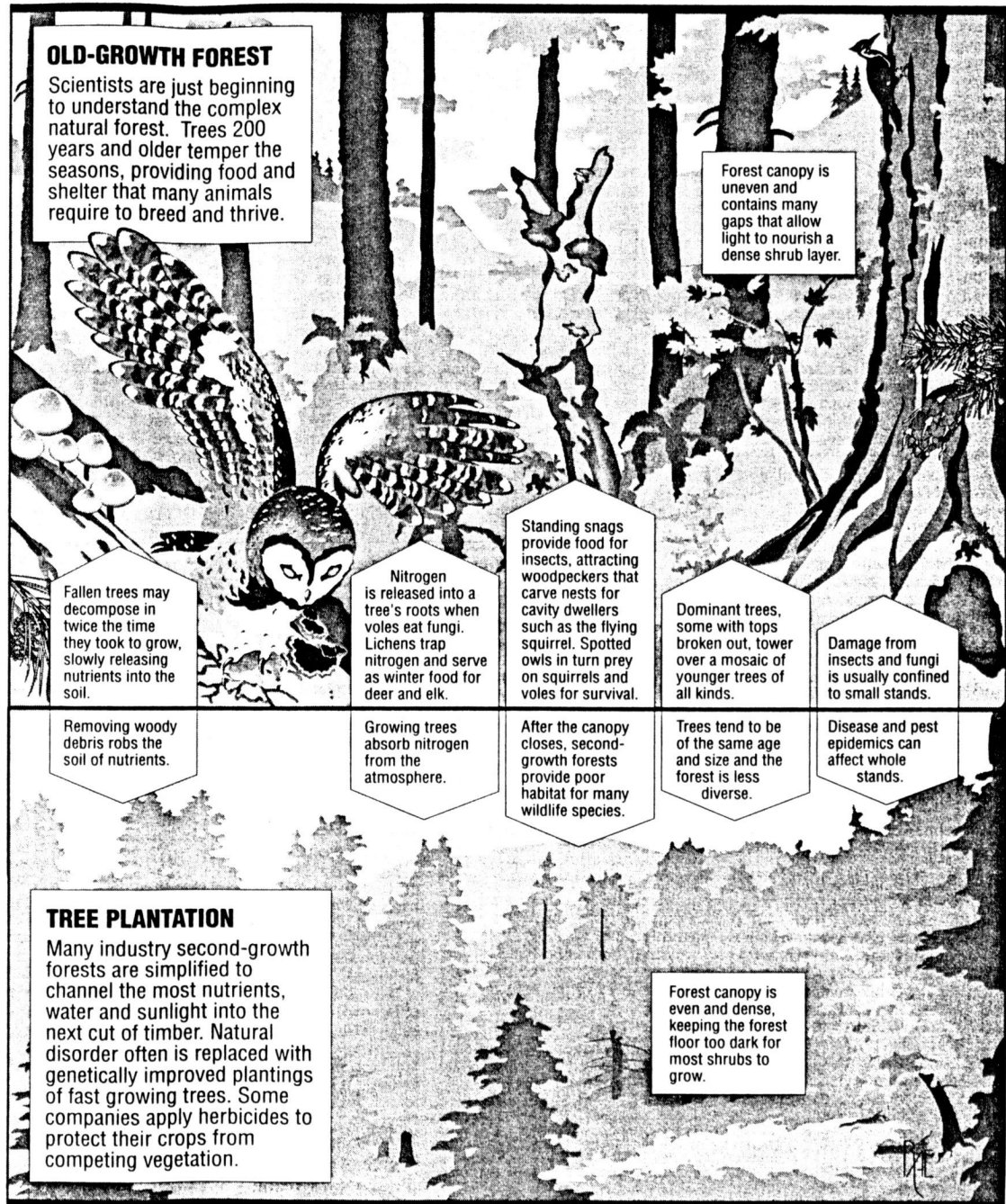
Traditional forestry in the Northwest, the kind increasingly evident from the air and from mountain roads, calls for cutting all the trees, tractor-piling the logging slash into heaps and burning it.

But although fresh clear-cuts mar the landscape, their appearance is not the main thing driving New Forestry. A growing body of research shows that clear-cutting, tractor-piling and slash burning can have severe environmental consequences.

Some soils are ruined by clearcutting and burning. Some slopes are so unstable that they will slide downhill into streams if tree roots



FRANKLIN



OLD-GROWTH FOREST

Scientists are just beginning to understand the complex natural forest. Trees 200 years and older temper the seasons, providing food and shelter that many animals require to breed and thrive.

Forest canopy is uneven and contains many gaps that allow light to nourish a dense shrub layer.

Fallen trees may decompose in twice the time they took to grow, slowly releasing nutrients into the soil.

Nitrogen is released into a tree's roots when voles eat fungi. Lichens trap nitrogen and serve as winter food for deer and elk.

Standing snags provide food for insects, attracting woodpeckers that carve nests for cavity dwellers such as the flying squirrel. Spotted owls in turn prey on squirrels and voles for survival.

Dominant trees, some with tops broken out, tower over a mosaic of younger trees of all kinds.

Damage from insects and fungi is usually confined to small stands.

Removing woody debris robs the soil of nutrients.

Growing trees absorb nitrogen from the atmosphere.

After the canopy closes, second-growth forests provide poor habitat for many wildlife species.

Trees tend to be of the same age and size and the forest is less diverse.

Disease and pest epidemics can affect whole stands.

TREE PLANTATION

Many industry second-growth forests are simplified to channel the most nutrients, water and sunlight into the next cut of timber. Natural disorder often is replaced with genetically improved plantings of fast growing trees. Some companies apply herbicides to protect their crops from competing vegetation.

Forest canopy is even and dense, keeping the forest floor too dark for most shrubs to grow.

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aren't there to hold them. The 40- to 60-acre clearcuts on federal land carve up and destroy habitat for wildlife, notably the northern spotted owl. The straight edges of clearcuts leave trees on the periphery vulnerable to wind, heat and cold. And the vast clear-cuts on private timberlands in the Northwest — some covering as much as two square miles — will reshape the landscape for centuries.

The New Forestry is a catch-all phrase that encompasses a variety of concepts designed to allow some logging while protecting wildlife, scenery, watersheds and the forests themselves.

It may mean leaving several green trees per acre standing in the forest to shade young seedlings and create future snags and stands of multiple-age trees.

It may mean leaving plenty of decaying logs on the ground to return nutrients to the soil.

It may mean cutting fewer trees per acre but logging much larger areas.

It may mean leaving the centers of pristine roadless areas intact and selling timber only around the edges, or marking trees individually and removing them by helicopter.

And in some cases, it may mean putting vast tracts of timberland off-limits to logging for centuries, to create old-growth forests for the future. This "landscape ecology" is the essence of the controversial owl protection plan proposed by the Jack Ward Thomas scientific committee.

The owl, officially listed this year as a threatened species, lives primarily in old-growth forests.

Some forest managers hope New Forestry will help bridge the stormy waters that swirl around forest policy as competition for the shrinking old-growth forests intensifies.

But neither environmentalists nor timber industry representatives — nor forestry professors, as the July 12 exchange demonstrated — have embraced the concept wholeheartedly.

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Participants in a tour of the Andrews forest get a close look at experimental forestry techniques on the Willamette National Forest that require loggers to leave more trees.

The Oregonian/JOEL DAVIS

Other companies are adopting a wait-and-see attitude.

"It would be hard for me to go to our board (of directors) and ask for permission to do this without hard data," said Paul Figueroa, a forester for Weyerhaeuser Co.

Brian Boyle, Washington's elected director of state lands, plans to submit legislation in the next legislative session that would require loggers to leave behind dead snags, live conifers and woody material on the ground after harvesting.

Environmentalists say that if the Legislature fails to enact a measure, they will use the initiative process to place one on the Washington ballot.

If such a measure were enacted it would be the Northwest's first law requiring New Forestry on private land.

Some of the concepts that go by the name New Forestry have been practiced continuously for 50 years in the 90,500-acre Almanor Forest, a private tract in northeast California owned by Collins Pine Co.

The forest, located on the eastern

this wholesale environmental change. No one can predict its long-term consequences.

But a new science called restoration forestry is studying ways to repair the damage by reintroducing biological complexity into second-generation forests and getting wildlife to return.

On the Olympic Peninsula, one of the most fragmented landscapes in the Pacific Northwest, only a few large tracts of intact old growth remain. What's left is mostly along river valleys in rugged Olympic National Park and in a few small wilderness areas in the adjacent Olympic National Forest. Second-growth plantations in private ownership cover vast areas, and one section of the Olympic National Forest, known as the Shelton unit, was almost totally clear-cut over a 40-year period under a special arrangement with Simpson Timber Co. approved by Congress.

But it's not too late to repair damage done by logging on areas such as the Shelton unit, Franklin said.

The Oregon Natural Resources Council opposes substituting New Forestry for the preservation of old-growth forests.

"We think that since we're down to 10 percent of ancient forests, it's inappropriate to log any of it," said conservation director Andy Kerr. "New Forestry should be practiced only on new forests. It should not be used to cut down the old forests."

The timber industry, on the other hand, worries about how it will make up the reduced timber yields that result when more trees are left standing in the forest after logging.

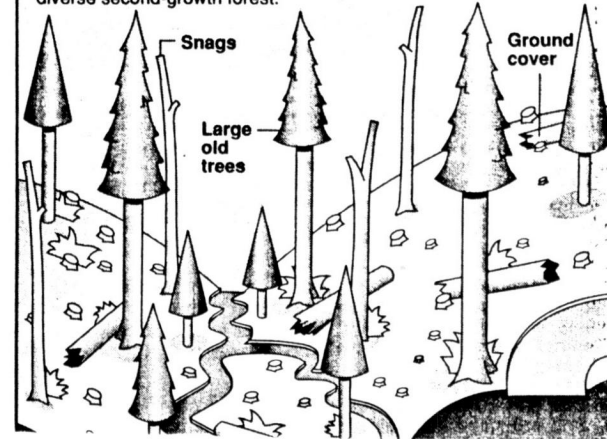
"That's a real concern to us," said Greg Miller of the Southern Oregon Timber Industries Association. Within the field of professional forestry, where clear-cutting has reigned for more than 40 years, conservatives say: "Show me."

Dean S. DeBell, principal silviculturist for the Forest Service's Pacific Northwest Research Station in Olympia, says it is important to remember that many New Forestry concepts are "interesting hypotheses" at this point, with little sci-

THE NEW FORESTRY

New Forestry practices

In this version of a "sloppy clearcut," loggers preserve pieces of the natural forest by leaving dead snags, living trees of many ages, fallen logs and other debris. Slash may be burned or left on the ground. Forest ecologists say the technique retains habitat for some old-growth species, returns nutrients to the soil and creates more a diverse second-growth forest.



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But neither environmentalists nor timber industry representatives — nor forestry professors, as the July 12 exchange demonstrated — have embraced the concept wholeheartedly.

The U.S. Forest Service is pioneering its concepts under the banner "New Perspectives in Forestry." The Willamette National Forest's Blue River district has adopted New Forestry techniques as standard operating procedure, and practices such as individual tree selection have been proposed for sensitive soils on the Siskiyou National Forest.

The Washington Department of Natural Resources has agreed to adopt a special commission's recommendation for creation of a 260,000-acre experimental forest on the Olympic Peninsula, where New Forestry techniques will be applied.

A few private timberland owners such as Plum Creek Timber Co., of Seattle, are dabbling in the new silvicultural techniques as well.

Plum Creek, the Northwest's second largest timberland owner, experimented this summer with leaving mature conifers on 20 percent of its land, and company president David Leland says he plans to expand the experiment to most logging sites next year.

"We don't think it's appropriate to stick our heads in the sand and do things the way we've always done them," Leland said.

Loggers are leaving about 25 percent of a stand's value on the ground, but Leland said those trees can be harvested later on — at least partially recouping their value.

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Some of the concepts that go by the name New Forestry have been practiced continuously for 50 years in the 90,500-acre Almanor Forest, a private tract in northeast California owned by Collins Pine Co.

The forest, located on the eastern slope of Mount Lassen about 120 miles northwest of Reno, Nev., yields 35 million board feet of timber per year and provides a steady flow of wood for the Collins mill in nearby Chester, Calif., which employs 300 workers.

And the company does it without clear-cutting the forest.

"We have never clear-cut any of the acreage here," said Larry Potts, Collins' vice president and general manager.

Instead, Collins selectively harvests individual sugar pines, ponderosa pines, Douglas firs, white firs and incense cedars. The standing trees range in age from young seedlings to old-growth conifers. Loggers cut down the less vigorous trees, leaving the older, healthier specimens to restock the forest.

"We at Collins believe that our forest practices have been superior to most others in the industry," he said.

Logging has transformed vast natural forests in the Northwest to tree plantations.

In the process, it has simplified complex ecosystems, reducing their value as habitat for many wildlife species, from elk and pileated woodpeckers to tree voles and northern spotted owls.

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river valleys in rugged Olympic National Park and in a few small wilderness areas in the adjacent Olympic National Forest. Second-growth plantations in private ownership cover vast areas, and one section of the Olympic National Forest, known as the Shelton unit, was almost totally clear-cut over a 40-year period under a special arrangement with Simpson Timber Co. approved by Congress.

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Aggressive commercial thinning to open the tight second-growth canopy can allow young seedlings to sprout and grow. Early harvests of mature trees, leaving behind plenty of trees to become old growth, will restore wildlife habitat over time.

"The one potential for that area," Franklin said, "would be to develop some restoration forest practices to help move that area back into a mixed-age stand."

Some lawmakers tout New Forestry as a key to resolving the conflict over the management of federal forests.

Rep. Jolene Unsoeld, D-Wash., has drafted a bill that would require trials of New Forestry techniques in areas set aside for the northern spotted owl, to test whether owls can coexist with the new silvicultural techniques.

But neither side in the polarized old-growth battle has rushed to endorse the concept.

"Interestingly, it's difficult for both the industry and traditional environmental groups to deal with," Franklin said. "The industry is dumbstruck. At the same time, some elements of the environmental community are trying to come to grips with the fact that biological diversity and sustainability are really what it's all about — not preserva-

make up the reduced timber yields that result when more trees are left standing in the forest after logging.

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No one knows whether they will produce the desired results over the long term, DeBell said in a speech to the Society of American Foresters Coos Bay chapter last April.

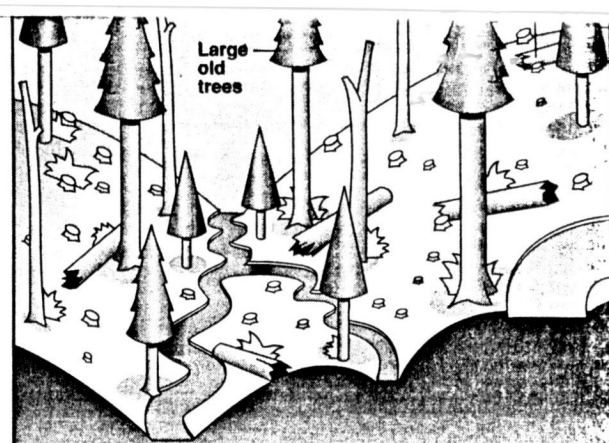
For instance, leaving snags and standing trees may provide structures used by the northern spotted owl, but habitat for red-tailed hawks and great horned owls, both predators of the owl, also would be improved.

"It could be argued that the net effect of such practices would be increased spotted owl losses due to predation and displacement," DeBell wrote.

The Thomas committee, taking note of such concerns, recommended against using owl habitat areas for experiments in New Forestry until the techniques have a chance to prove themselves.

But Franklin says science wasn't the main factor in the Forest Service's decision to adopt small, scattered clear-cuts as a standard logging method. Public opposition to huge clear-cuts on private land was what drove the choice, he said.

"The decision was very much a socio-political decision," he said. "We wanted distance between the Forest Service and the continuous clear-cuts on private land."



Traditional Forestry

Clearcutting, still the dominant logging technique in the Northwest, removes all trees from a forest tract, burns the slash and reforests with seedlings to create a single-age plantation. Advocates of clearcutting say it remains the best way to grow Douglas fir, which grows best in open areas where the soil has been prepared by burning.

