



# An Idea in Search of a Definition

Tree rings will tell you how old a tree is, but they won't tell you if it's old growth. Loggers cut a tree in the Willamette National Forest.

Old growth is a term that conjures up images of mossy giants, thick-barked ancients, forest primeval untouched by humankind—**images that are accurate, but not inclusive.**

About a half-mile up the Trestle Creek Trail, in Oregon's Umpqua National Forest, there's a snag. Seventy feet of gnarled, barkless, decaying Douglas-fir mottled with holes, some beetle-sized, some raccoon-sized. Dining-room-table-sized slabs of thick bark, scarred black in places from a long-gone fire, surround the snag's base. Above is a hole in the canopy that was once filled by the swooping branches of this giant, and a wave of a half-dozen skinny hemlock and Douglas-fir grow toward the light. The Douglas-fir will

by Jessica MacMurray

# Ancient Forests

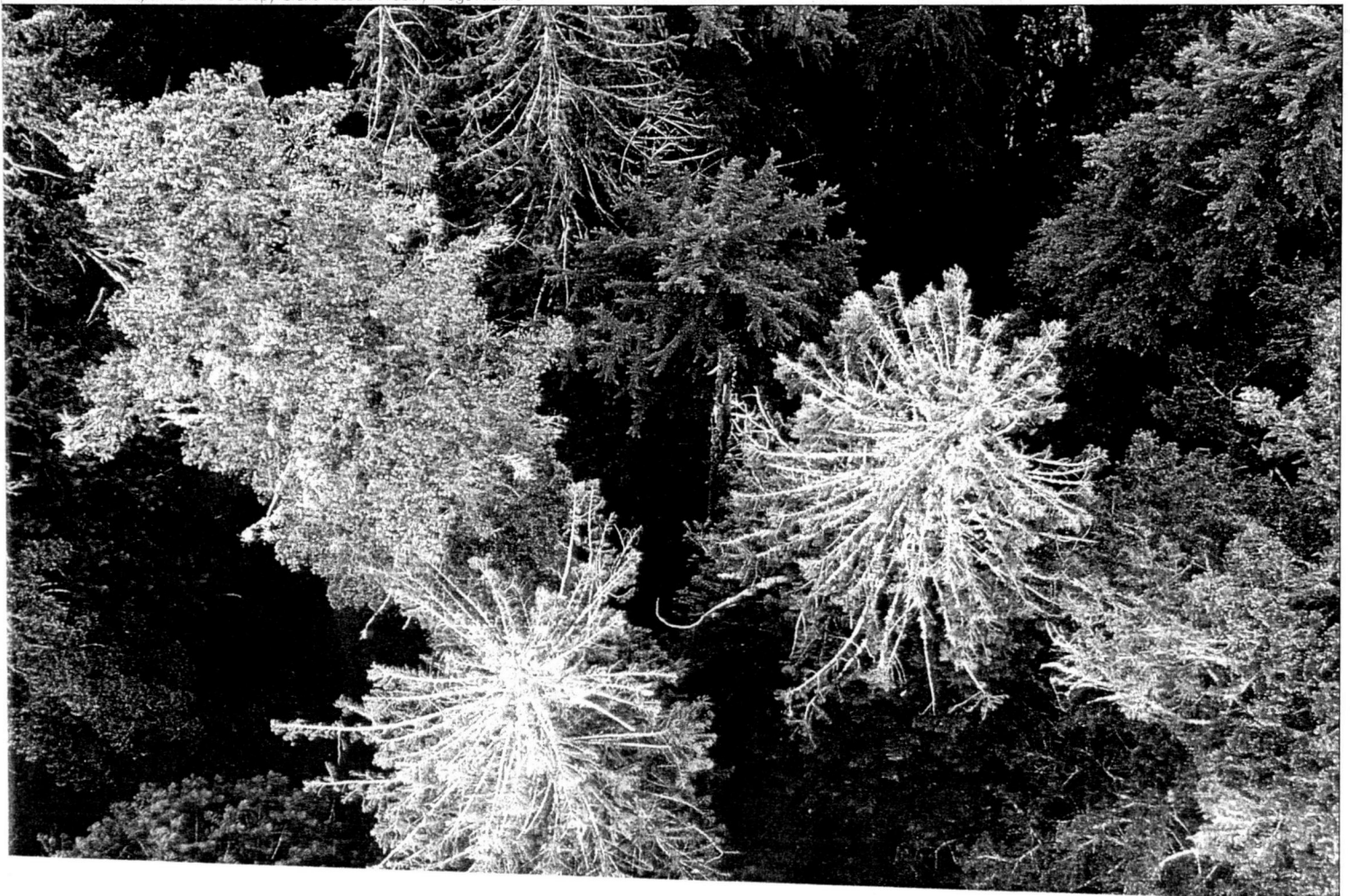
win the race, but some of the hemlock will survive, growing slowly, tolerating the shade.

Gravity is evident everywhere you look. Scientists call forests like this one “bottom loaded,” but to the nonexpert eye, it just looks as though there’s a lot of plant matter on the ground. Under a towering canopy of fir and cedar, downed trees, recently reaching for the sky, seem to melt into the topography. Some of them went down with their roots attached, raising a wall of earthy snarl. Pillows of moss and determined ferns sprout from the underside of the upturned roots. Some of the downed trees snapped, leaving craggy stumps, ferns and seedlings sprouting from their crevices. It’s hard to tell where solid ground is, underneath thigh-deep Oregon grape and ferns—and solid ground is a misnomer. The ground here is spongy-soft, layers of decaying damp. Silvery moss hangs from most every branch, scrawny big leaf maple and giant fir alike.

This is spotted owl territory, a poster child for Pacific Northwest old-growth forest. It’s diverse, woody, picture perfect. But it’s not the giant sequoia forest, where the trees reach into the 1,000-year range, nor is it anything like a red oak forest in the Midwest, where the trees die after 150 years to be replaced by new species, or even an old-growth ponderosa stand on the east side of the Cascades, where a good hot fire every once in a while keeps the underbrush down and competition at bay. Forests like this one represent a bit of a problem. *Old growth* is a term that conjures up images of mossy giants, thick-barked ancients, forest primeval untouched by humankind—images that are accurate, but not inclusive. And it’s a buzzword that became the Save the Whales of the environmental movement of the late 1980s and 1990s. But no one seems to be able to come up with a definition that fits across the board. What is old growth, exactly?

There doesn't seem to be a widely accepted single definition—instead, there are volumes of interpretation, pages of description, paragraphs full of words like **variable,**  
**generally and sometimes.**”

Courtesy Wind River Canopy Crane Research Facility Image Archive





In definitions, a few phrases come up again and again. "Old growth means, to us ...," "For our purposes ...," "shifting mosaic" and most often "hard to define." There doesn't seem to be a widely accepted single definition—instead, there are volumes of interpretation, pages of description, paragraphs full of words like *variable*, *generally* and *sometimes*.

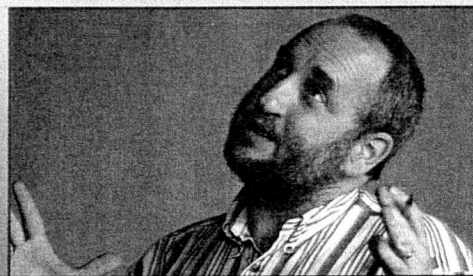
*Old growth* is more a popular and political term than a scientific one. But definitions do matter. *The Encyclopedia of Southern Appalachian Forest Ecosystems* addresses the necessity directly: "Definitions matter in practice ... How old growth is defined may lead directly to decisions about what forest areas can be commercially harvested and which cannot."

Definitions don't follow patterns down political lines. Some industry representatives like to get specific—Boise Cascade Corporation posts a page-long definition on its website, complete with acreage size and age of stands—while others keep the term vague. "There are 100-some definitions out there," says Tom Partin, president of the American Forest Resource Council, an association of forest product companies. "But mainly it just means that older trees are dominant in a landscape." Fred Swanson, a researcher at Oregon State University's College of Forestry and the H. J. Andrews Experimental Forest offers a different approach, identifying old trees, but pointing out that true old-growth stands also have a lot of variety. "They're not all big and cathedral-like; sometimes they look sort of old and ratty," he says. "Some old-growth forests have a lot of young shade-tolerant trees—so are they still old growth?" Scientists and conservationists are equally divided: some work to identify specific old-growth characteristics in varying forest types; others work to keep the definitions flexible and the protections wide-reaching.

There are a few things on which almost everyone agrees. In order for a forest to be considered old growth, there have to be old trees—old, big trees in their last stage of life. There also have to be young trees, downed trees, a multilayered understory and a healthy dose of biodiversity, both floral and faunal. But beyond these loose descriptions, not many forest types will submit to generalization. Their value, though, crosses boundaries of forest types. "Old-growth forests are amazing historians. They

An old-growth forest canopy is one indication of the health of the forest. Tree species variety is evident in this photo taken from a crane.

## Who Won the Owl War?



### Andy Kerr

**Then:** Conservation Director, Oregon Natural Resources Council

**Now:** Director of the National Public Lands Grazing Campaign and Senior Counselor to the Oregon Natural Resources Council

#### The war isn't over.

The California spotted owl has yet to join the northern and Mexican spotted owl as protected under the Endangered Species Act. More than a million acres of virgin federal forest is scheduled for logging.

The Northwest Forest Plan changed a hot war into a cold war. As the Bush administration undoes the plan through rule changes, capitulation to meritless lawsuits, logging big, old fire-resistant trees in the name of Smokey Bear and clear-cutting the forest in order to make it healthy, this war will go hot again.

Ironically, most of the timber industry, the counties that were once addicted to federal timber revenues and the region's elected federal politicians have moved on. During the first hot war, it was local elected federal officials who fought to deliver big timber to Big Timber.

As Bush's reelection team seeks to solidify his support in Oregon by wooing special-interest groups, the war will heat up again.

And when the war goes hot a second time, a new generation of activists is fully prepared to put their lives between the chain saws and the felling of any more giants. Such was not the case the first time.

## Feds Define Old-Growth



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- 1. A forest stand usually at least 180–220 years old with moderate to high canopy closure**
- 2. A multilayered, multispecies canopy dominated by large overstory trees**
- 3. High incidence of large trees, some with broken tops and other indications of old and decaying wood (decadence)**
- 4. Numerous large snags, and heavy accumulations of wood, including large logs on the ground**

From the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl*.

keep a deep record of history in the tree rings, in the forest structure,” Swanson says. “The record keepers are the trees themselves, and it’s moving to be around trees that are so old. Their time-depth relative to humans is incredible.”

The aesthetic values of old-growth forests are distinct, but Swanson and his team have a specific learning objective about them. “They can give us so much guidance about how to manage the federal plantations that had been planted for maximum wood production,” Swanson says.

Habitat is the fulcrum for a lot of the fuss about old growth. The spotted owl controversies that led to the Northwest Forest Plan and the protection of most of the Northwest’s old growth were about habitat, using the needs of an threatened indicator species to preserve and promote biodiversity. Spotted owls—and red tree voles and marbled murrelets—tend not to live in replanted clear-cuts. “The old growth-spotted owl issue triggered profound changes in federal forestry,” Swanson says. “Starting in the late 1980s, there was less emphasis on timber production and a strong focus on species conservation.” With that change came a more pressing need to define old growth.

The terms can add to the confusion. *Old growth* is often used interchangeably with *late-successional forest*, *ancient forest* and *forest primeval*. Definitions can be conceptual, identifying the general idea of old growth based primarily on theory, or operational, identifying characteristics of old-growth forests based on forest structure, tree diameter and age.

One way that old growth can be defined—and a hotly contested one—is through age. Until the late 1980s, an old-growth forest was one that hadn’t been logged and had reached an age of 250 years. In the Pacific Northwest, a little more than 5 percent of federal forest land is considered to be more than 200 years old, compared with just less than 2 percent nationally. However, many tree species—some of which are the dominant species in forests—don’t reach that age, ever. Lodgepole pine, for example, rarely reach 200 years because the natural burn regime in forests where lodgepole are dominant means an average of one big fire a century.

There are other ways of looking at age. Stand development definitions designate old growth as a forest that has reached that particular forest type’s final stage. Another criterion that has, for the most part, fallen by the wayside is a minimum amount of continuous old-growth acreage. Boise Cascade’s old-growth policy includes both, citing in its definition “a watershed-level forest of 5,000 acres or more in size, that has been left undisturbed and predominantly has trees that are 200–1,000 years old.”

Another way to define old growth lies in structural characteristics of the forest. A 1986 study that attempted to formalize definitions for some Douglas-fir and conifer forests in Oregon and California defines old growth as any forest that meets a long list of criteria that includes at least eight trees per acre larger than thirty-two inches in diameter, at least four dead standing trees greater than twenty inches in diameter and more than four dead trees per acre.



A simple approach to preserving a few species isn't going to do it."

It's easy to get lost in the semantics, statistics and criteria, so should old growth be the only litmus test for protection? The Forest Service has a management definition for old growth under the Northwest Forest Plan (see page 28) but it hasn't solved the confusion.

Industry representatives cite ecological value in areas other than old growth. "There are a number of wildlife species, deer and elk especially, that depend on the open spaces from timber harvests," says Partin.

Swanson agrees, sort of. He is interested in preserving and encouraging a variety of landscapes, not just old growth. "At present, our policy isn't where we'd like it to be to deal with a mix of landscapes," Swanson says. "A simple approach to preserving a few species isn't going to do it."

Instead of focusing on the minutiae of the various ecosystem types, Swanson relies on a coarse-filter method of management. This approach allows for disturbances—fires and floods, insect infestations and blight—but the variety of the landscape helps to buffer the severity of that disturbance. "A mix of forest conditions within the natural range will help retain native species that we know about and some we don't," Swanson says. "We can't optimize for everything all the time—and it's a good reason for taking a landscape view."

The old-growth discussion is ongoing and nebulous. "Old-growth forests are so pivotal in understanding the relationship between humans and nature, and the changing interaction there," Swanson says. "We've moved from valuing and cutting the wood to an aesthetic appreciation of the forest as a whole, and it's still changing. We may be smarter than yesterday, but we don't have it all down yet."

Despite suffering from a lack of classifications and definitions, forests like the one surrounding the Trestle Creek Trail keep doing what forests do. Douglas-fir and hemlock race to the light, bugs and birds make their homes in snags, and every inch is covered with life.

## Who Won the Owl War?

### Patrick Parenteau

**Then:** Special counsel to the U.S. Fish and Wildlife Service during the spotted owl exemption proceedings

**Now:** Professor of Law, Vermont Law School; Director of the Environmental and Natural Resources Law Clinic



Courtesy Vermont Law School

**From a legal perspective, several lessons** can be gleaned from the past two decades. First, without the ability of citizens to go to court to stop the destruction of the old-growth forest, it would have simply disappeared, as have all the other virgin forests of the nation. Second, by holding the government accountable to the rule of law, the litigation fulfilled the promise of participatory democracy. Third, the judicial decisions actually produced a new field of law called ecosystem management. Using the spotted owl as the proxy for ecosystems, and with the help of conservation biologists and their bombproof population models, lawyers were able to put some teeth into the otherwise squishy concepts of ecosystem management and sustainable development. Finally, the legal victories helped galvanize broader public support for the conservation cause. They gave the owl, the murrelet, the salmon and other species that depend on old-growth forests and healthy watersheds a seat at the table. They helped unmask the truth that logging was not only destroying the forest but destroying the economy of the Northwest as well. In the end, the issue was not jobs versus owls; it was, and is, bad resource policies versus good resource policies.

The gains of the past can never be taken for granted. But wherever there are dedicated activists, talented lawyers and skilled scientists, there is at least the chance that truth will prevail.