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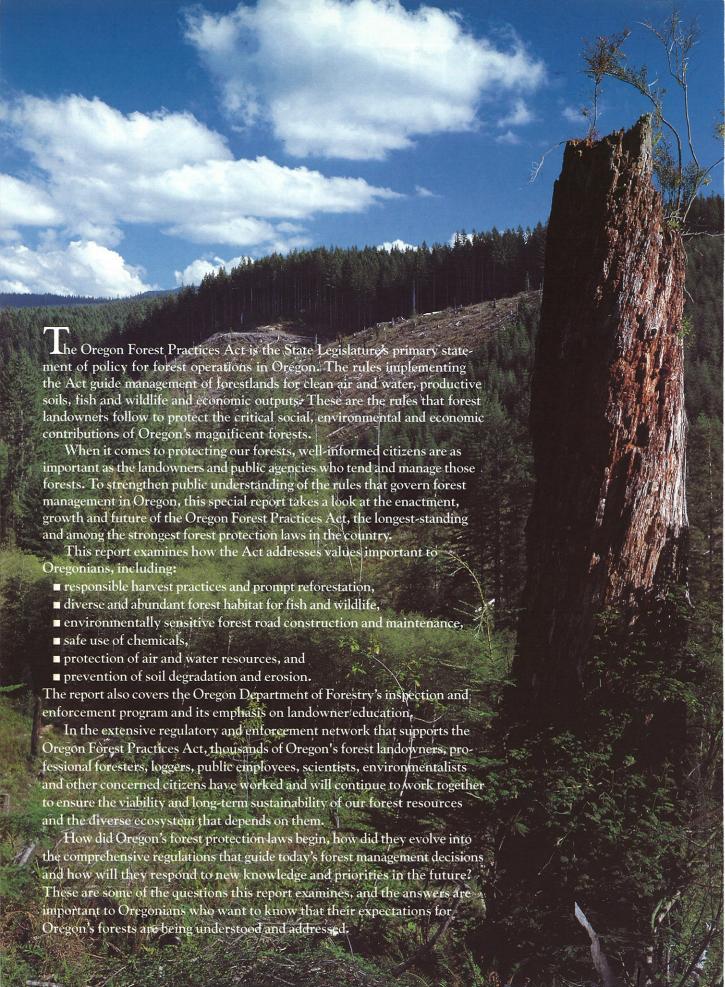
Law Responds

To Changing

Values, New

Knowledge

A Special Report From The Oregon Forest Resources Institute



# OREGON'S FOREST PROTECTION LEGACY

"Forests make a vital contribution to Oregon by providing jobs, products, tax base and other social and economic benefits, by helping to maintain forest tree species, soil, air and water resources and by providing a habitat for wildlife and aquatic life. Therefore, it is declared to be the public policy of the State of Oregon to encourage economically efficient forest practices that ensure the continuous growing and harvesting of forest tree species and the maintenance of forestland for such purposes as the leading use on privately owned land, consistent with sound management of soil, air, water, fish and wildlife resources and scenic resources within visually sensitive corridors ... and to ensure the continuous benefits of those resources for future generations of Oregonians."

Policy Statement: Oregon Forest Practices Act Oregon Revised Statute (ORS) 527.630

When Oregonians were asked in a 1999 public opinion survey what they know about the Oregon Forest Practices Act, 70 percent of the respondents knew little or nothing. The survey indicated that people believe it is important to have forest protection laws requiring reforestation and protection of environmental values such as water and wildlife. Yet Oregonians know very little about the detailed laws that govern all forest operations. This lack of awareness is all the more striking because historically Oregon is a leader in forest protection. In 1971 it became the first state in the country to adopt a forest practices act. Today the Oregon Forest Practices Act (OFPA) contains some of the most comprehensive forest protection regulations in the country, and it continues to grow and evolve, serving as a model in other states and abroad.

### The Roots of Protection Legislation

The OFPA was not Oregon's first forest protection legislation. The state had adopted the Oregon Forest Conservation Act in 1941, but its primary objectives were limited to reforestation and fire protection, according to Ed Schroeder, former state forester. Schroeder was an assistant inspector for the Oregon Department of Forestry (ODF) when the 1941 act was established.

By the late 1960s, however, findings from research and on-the-ground observation suggested that much more could be done to protect Oregon's forests. Schroeder, who by then headed the Oregon Department of Forestry (ODF) as state forester, says it had become obvious to ODF and to the Oregon Board of Forestry that Oregon's forest protection laws needed to be updated.

"We called in natural resources experts and representatives of the Legislature and began working with the governor and the Board of Forestry to draft a bill that would get support," Schroeder recalls. "It was the consensus of the Board and the Department that the law established in 1941 did not go far enough in ensuring effective reforestation and protecting other forest values. It was time to face up to our responsibilities and submit



**Ted Lorensen**Forest Practices
Program Director
Oregon Department
of Forestry
Salem, Oregon

Ted Lorensen is intimately familiar with the Oregon Forest **Practices Act, since** he has primary responsibility for updating and maintaining the 200-page book of forest practice rules that govern all harvest activity in the state. "It's approaching its 30th birthday," he says of the OFPA, "and it continues to change as science and monitoring tell us more about the nature of the forest ecosystem."

Lorensen says the
Act has evolved —
both in the Department of Forestry's
expanding regulatory
authority and in the
levels of forest protection — in every
session of the Oregon
Legislature since
1985.



Jim James General Manager Western Timber & Logging Willamette Industries Albany, Oregon

Jim James gives the Department of Forestry a lot of credit for its educational outreach to landowners and for the job it does of explaining forest protection laws. "At our company and many others," says James, "we look at the forest practices laws as our minimum standards. Willamette exceeds them in many areas. We have a biodiversity plan coordinated by two full-time and many part-time wildlife biologists. Our plan assures that a variety of healthy forest structure is found in our forests. For us, environmental protection is a way of doing business."

a bill to the Legislature for a new Forest Practices Act."

It was a momentous decision that concerned many landowners at the time because of the financial burdens it created. "But we had industry support on the Board of Forestry," Schroeder said, "and enough landowners got on the bandwagon that in the end a good bill was passed." That bill, the landmark Oregon Forest Practices Act, was passed by the Legislature in 1971 and today enjoys broad support among Oregon's forest landowners.

George Brown, dean emeritus of the College of Forestry at Oregon State University, says the '71 legislation marked the first time that any state had taken a comprehensive look at forestry and its effect on the environment. "It's clear to me," he says, "that forest products leaders knew it was in their best interest to do things right and do a responsible job or long-term they wouldn't be able to continue operating." Brown also attributes support for the Act to the fact that it was based on sound science.

Adds Bob Kintigh, former state senator and manager of a family forest near Springfield, "I have never found the Oregon Forest Practices Act to be a burden in the management of my forestlands. The required actions are generally good forestry." With what he knows today, he says, "I would be doing most of them even if I weren't required to do so."

## **Forest Protection Laws Today**

Ted Lorensen, Forest Practices Program director with the Oregon Department of Forestry (ODF), says the Act has grown over the years in two primary areas: the levels of forest protection stipulated and the regulatory authority of the Department.

Over the years, the Board of Forestry, which is responsible for rule changes under the Forest Practices Act, has initiated or evaluated new scientific research on wildlife habitat, water quality, alternative harvest methods and other subjects as a basis for improving resource protection. This has led to forest practice laws that are broader today than at their inception. The success of this evolutionary process has depended heavily on the expertise of Oregon's state agencies, scientific researchers, forest landowners and environmental interest groups.

### **Enforcing the Protection Laws**

ODF Assistant State Forester Charlie Stone, head of the Department's Forest Protection Division, provides the policy lead to an education and enforcement group of more than 50 on-the-ground forest practices foresters, supported by wildlife biologists, hydrologists, geotechnical engineers and monitoring experts — all ODF professionals — who are responsible for enforcing OFPA laws.

ODF has and exercises the authority to levy fines, but in practice compliance is extremely high — about 98 percent in 1999, the most recent year for which data is available. ODF does issue anywhere from 150 to 300 citations and civil penalties among the 20,000 operations planned annually, but the essential spirit of the Forest Practices Act is in prevention and education. "Our real success," says Stone, "is in helping landowners understand the scientific and environmental reasons for the regulations and reassuring them that the rules are beneficial for everyone."

### The Planning Process

Every landowner in Oregon planning any kind of commercial forest operation is required to file a written notification and site map with the Oregon Department of Forestry and follow the rules set forth in the Forest Practices Act. Once the notification is submitted, the landowner must wait 15 days before beginning operations to give the assigned ODF forester time to review the site. Forest practices foresters read and evaluate some 20,000 operations notifications each year and make on-site inspections on a large portion of them. After review, ODF informs landowners of any protected resources in the vicinity that may require the rules' protective measures. These may include operations within specified distances of streams and lakes; sites involving threatened or endangered wildlife species; sensitive bird nesting, roosting and watering sites; stream habitat enhancement sites; sites prone to rapidly moving landslides, or sites requiring cable yarding (aerial removal of logs) across certain types of streams.

If the site is particularly sensitive, a written plan must be submitted and adjusted until it has written approval from the forest practices forester. The chart at left illustrates

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this process as it would apply in most situations.

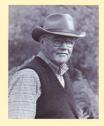
### The Complexity of Compliance

Martin Lugus of U.S. Timberlands
Company in Klamath Falls described the complexity of the process for operators.

"The laws touch just about every forest-related activity starting with harvest planning," he said. "Most all major landowners today use the computer to manage their land and help determine areas for harvest.

"First we program in the characteristics for all our land. We put in detailed data for stand age, stocking characteristics, forest road locations, specific site attributes and growth projections for every acre.

"Then we begin entering data specific to the Forest Practices Act. Do we have lakes or streams on the land? If so, we have to line up the correct buffer zones in the riparian areas. Are there sensitive or endangered species on the land? In our case we have spotted owls, eagles and bull trout, among others. So we have to enter



**Bill Arsenault** Small Woodland Owner Elkton, Oregon

Bill Arsenault, who owns and manages 270 acres of mostly Douglas fir and grand fir forestland in the Umpqua Valley, says Oregon's forest protection laws are very much a part of his life. "They help us develop good stewardship," he says.

Having worked for a large forest products manufacturer and now very involved in the Small Woodlands Association, Arsenault says ODF service foresters "are a great resource to small landowners who may not have access to staff biologists or foresters like the larger companies."



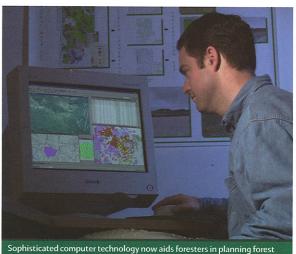
Janet McLennan Former Chair Oregon Board of Forestry Portland, Oregon

**The Oregon Forest Practices Act does** a very good job in framing the regulations in a way that specifies the goal to the people who use it," says Janet McLennan, an attorney. "That way, foresters know what they're trying to achieve and why." Having been Governor Straub's natural resources adviser and former chair of the Board of Forestry, she has observed first-hand the work of the Board and says it is doing a good job of representing the public interest through development and adoption of the rules to implement the Forest Practices Act.

all those locations into the computer as well because there are specific OFPA requirements for each situation.

"Now consider that we do this for every acre we own, which in our case is 600,000. Then remember that forests are dynamic. They are constantly growing and changing. Wildlife doesn't stay in one place either. And of course the forest protection laws change too. When a riparian zone is enlarged for certain types of streams, that data must become part of our programming. What all this says is that a lot of work goes into responsible forestry."

While the OFPA enjoys broad support among forest landowners today, its requirements can represent a significant financial burden on them as well. For example, it would not be unusual to find the value of trees left in buffers along streams, as required



Sophisticated computer technology now aids foresters in planning forest operations and assuring compliance with forest protection laws. Experts like Willamette Industries GIS forester Jeff Grogan are able to integrate stand structure and size data to keep their forestland healthy, plan operations more effectively and assure compliance with forest protection laws.

in the stream protection rules, to be \$3,000 or \$4,000 per acre of buffer.

The current version of the Oregon Forest Practice Rules and Statutes, published by ODF, is about 200 pages, and the accompanying Forest Practices Field Guide is nearly as large. It is in the best interest of every forest manager or landowner to be thoroughly familiar with the law. Dan Newton, land and timber manager at

Roseburg Forest Products, compares it with driving a car: "We need to be so familiar with the speed limits and rules of the road that we hardly have to think about them consciously," he says. "It's the same with the OFPA laws."

John Poppino, landowner and current president of the Oregon Small Woodlands Association as well as a retired research project leader for the Forest Service, follows OFPA laws whether or not they are applicable. "Clearcuts on my 116-acre family tree farm are usually too small to fall under OFPA 'leave-tree' guidelines, which require leaving snags or live trees as well as down logs for wildlife on harvest units larger than 25 acres," he says, "but I follow them anyway. We manage our property for the ecosystem."

# Oregon's Forest Protection Laws

The broad categories covered in the Oregon Forest Practices Act include planning and conducting forest harvesting operations, road construction and maintenance, fish and wildlife protection, chemical use and reforestation.

### **Planning and Conducting Forest Operations**

Most forest operations — whether actual harvest, forest road construction, culvert and stream enhancement work, pre-commercial thinning, slash treatment or chemical use — require state notification. Some operations, like routine road maintenance and tree planting, may be mandatory but do not always require notification. No regulated activity can take place until 15 days have passed from the time of notification or until receipt of written approval.

Beyond the regulatory boundaries it establishes, the OFPA generally encourages practices that current research and other key information suggest will be beneficial. In fact, many landowners go beyond OFPA requirements. John Shelk, managing director of Ochoco Lumber Company in Prineville, says his company philosophy is that the Act stipulates minimum conditions. "It's not our habit to manage land to minimum requirements," he says. "It's in our interest to take good care of our lands, and that guides our habits and ethics."

Other landowners express the same sentiment. Monitoring data collected by the Oregon Department of Forestry show that it is not at all uncommon for large and small landowners knowing the needs of forest resources such as birds, fish or other wildlife, for example, to go beyond OFPA regulations in planning harvesting, roads and reforestation.

### **Road Construction and Maintenance**

Because forest roads can have an adverse effect on water quality and aquatic habitat, Oregon's forest protection laws strictly regulate their location, design, construction and

maintenance. Road designs must respond to the terrain and soil conditions of the site and the amount and type of use the road will have. Poorly designed and maintained roads have the potential to impact forest resources through soil erosion, fill failures or landslides, and if enough of the sediment reaches a stream, it can damage water quality and aquatic habitat. Planners who understand the potential for problems can minimize them by using ditches, culverts, filtering vegetation and other appropriate road features that prevent muddy water from entering streams. Much also has been learned in recent years about designing and placing culverts so that they do not fail or inhibit fish access to upstream habitat.

The law requires that all forest roads

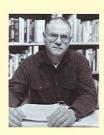


be placed to allow fish passage in all seasons and of adequate size to handle maximum water flows. Many,

like this one, have open bottoms to maintain the integrity

**Ed Schroeder**Former State Forester
Department of Forestry
Salem, Oregon

**Ed Schroeder was** State Forester at the time the Oregon **Forest Practices Act** was written and enacted. "By the late 60s we could see that there were too many areas not being reforested successfully," he recalls. "So the Oregon Department of Forestry put together a report for the Board of Forestry, and they told us to do something about it. The result was the Oregon Forest **Practices Act. No** state had done anything like this, and there was a lot of initial concern. But we worked with industry and environmentalists until we reached concurrence."



Dave Gilbert
Chair
Oregon Board
of Forestry
Joseph, Oregon

As a physicist and retired president of Eastern Oregon University, Dave Gilbert knew little about forestry until he became a member of the Board of Forestry in 1991. The process amazes me," he says. "We debate some issues for more than a year, hear testimony from scientists and environmentalists, look at the values we're trying to perpetuate, and even go into the woods to witness things we're discussing. And then it's our tradition to reach consensus. We've never had a split vote in my decade on the Board.

meet construction and maintenance standards that minimize erosion and sediment runoff. All roads must have a stable surface and an operating drainage system. Good road design becomes particularly important where roads approach and cross streams because of the increased potential for sediment entering the water, altering stream structure and clogging spawning beds.

Landowners know that efficient road design and adequate maintenance protect their substantial investment in the road system. Gary Blanchard, chief forester with Starker Forests in Corvallis, recalls with a smile founder T.J. Starker's advice about roads: "He always said that you can't grow trees in the middle of a road, meaning that our roads should be few and narrow and well-maintained, and we follow that philosophy today."

### **Stream Protection**

Water quality becomes an issue when forest operations take place in the vicinity of streams. More than half of ODF's Forest Practices Field Guide is devoted to areas along stream banks and to the complex matrix of laws that govern forest activity in and around them.

The law requires limiting forest operations and avoiding ground disturbance near streams. It also requires retaining riparian management areas (RMAs) of trees and other vegetation along the edges of fish-bearing streams. This is intended to protect against erosion, to maintain shade cover to keep water temperatures desirably cool and to provide insect habitat and nutrients for other aquatic organisms that fish depend on for food. In addition, large trees are retained in RMAs so that they periodically fall across streams, creating pools that provide areas for young fish to rest and mature. Many landowners — to support the guidelines of the Oregon Plan for Salmon and Watershed Restoration — voluntarily place conifer logs and boulders in streams to create or restore pools that scientists have learned are essential to fish.

Forest landowners in recent years also have made major voluntary financial commitments to state restoration efforts by critically examining forest roads and their relation-



of the regulations

ship to salmon habitat. At an estimated cost in excess of \$130 million over a ten-year period, forest landowners are conducting a comprehensive inventory of road conditions, vacating and reforesting obsolete roads, replacing and improving culverts to facilitate fish passage, and maintaining drainage and surfacing to support water quality and stream habitat.

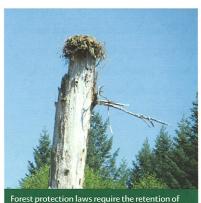
### **Wildlife Protection**

Over the years, wildlife research has identified some key forest habitat features and effective methods for protecting and enhancing them. As a result, the OFPA requirements for protecting wildlife have been strengthened.

Specifically, two snags or green trees and two good-sized down logs must be left for every acre harvested on units larger than 25 acres where tree stocking is reduced enough to limit habitat availability. These trees and snags can be left in clumps or scattered across the unit. Woodpeckers make holes in the softer wood of decaying snags, and these make excellent nesting cavities for many birds and other wildlife. Green trees left after harvest serve as nesting and roosting sites for birds, while down logs provide ground-level wildlife habitat and enrich the soil during the process of decaying.

### **Reforestation Measures**

According to the 1999 public opinion research commissioned by the Oregon Forest Resources Institute, 40 percent of Oregonians do not know there are forest protection laws in Oregon requiring new trees to be planted after harvest. In fact, Oregon has



Forest protection laws require the retention of snags (dead, standing tree trunks) during harvest operations. Wildlife biologists have learned the importance of snags to wildlife abundance and diversity. Birds and other animals use them for nesting (like the osprey nest here), feeding and perching.

been actively reforesting harvested land since the first law requiring reforestation was passed in 1941, and the forests we see today reflect this legacy.

In the predominantly pine forests east of the Cascades, reforestation often takes advantage of pre-existing natural seedlings and seed trees left after harvest. Trees grow slowly in eastern Oregon's dry climate, and retaining established seedlings and saplings speeds up reforestation.

West of the Cascades, forests are dominated by Douglas fir and other relatively fast-growing conifers. The sunlight that Douglas fir needs

to grow most effectively is usually provided in managed forests by creating open areas through clearcutting, followed by planting nursery-grown seedlings.

Whatever the type of forest management, protection laws require effective reforestation. The new trees must be protected from competing vegetation and animal damage, if necessary, until they reach a state known as "free to grow." While most forest managers reach this condition within two to four years of harvest, the law requires that it be reached no later than six years after harvesting.

Oregon's land use laws also help ensure that forestland remains in forest use. About 91 percent of the forestland that existed in Oregon prior to European settlement remains today. The 9 percent that has been lost has primarily been due to land being permanently converted to agriculture, urban development, highways and electric power transmission lines.



Y. Sherry Sheng
Deputy Director
Oregon Economic &
Community
Development
Department
Salem, Oregon

"I knew very little about forestry before I joined the Board of Forestry," says Sherry Sheng. "However, being trained in fisheries and having worked in natural resources, I was very aware of how human actions are intertwined with the fate of wildlife. In my experience on the Board, I was exposed to many woodland owners and continued to be surprised by their intense passion for the land and the care with which they managed their land for wood and wildlife."



### Adam Davis Principal, Davis & Hibbitts Public Opinion Research Portland, Oregon

Adam Davis, whose firm conducts research on Oregonians attitudes toward forestry, says a 1999 survey showed people believe it is very important to have forest protection laws requiring reforestation and protection of environmental values such as water and wildlife. The same survey showed that most Oregonians know little or nothing about the Oregon Forest Practices Act. "Taken together," he says, "these findings represent a significant public education challenge to those concerned about the future of forest management in Oregon."

# THE FUTURE OF FOREST PROTECTION LAWS

Landowner compliance and reforestation success under the Oregon Forest Practices Act are very high, placing Oregon's protection laws among the most successful in the nation. Even so, the forest practices rules are periodically reviewed and refined in an effort to respond to changing public values and new scientific findings.

The process for review and refinement begins with the Oregon Board of Forestry, whose seven members are appointed by the governor and confirmed by the Oregon Senate. By law, only three of the seven members may earn a substantial income from any aspect of forest products manufacturing, and all seven members are required to represent the interests of the public. To implement changes to the Forest Practices Act, the Board recommends measures to improve forest protection to the Legislature and then turns approved bills into on-the-ground regulations.

The Oregon Department of Forestry is responsible for drafting additions and alterations to the regulations. The state forester, who heads the ODF, reports to the Board of Forestry. Current Board Chair Dave Gilbert says the Board debates the ODF proposals and holds hearings involving everyone from concerned individuals and environmental leaders to forest landowners and scientists in the field. When information gaps are discovered, the Board commissions new research, often by experts at universities or other professional research organizations like the USDA Forest Service's Pacific Northwest Research Station. The process may take more than a year and continues until every one of the seven members is in agreement. "We have a tradition of working until we have consensus," says Gilbert.

Seeking the counsel of diverse interests closely involved with the issues, the Board recently commissioned a report from an ad hoc Forest Practices Advisory Committee (FPAC) to consider means of ensuring proper practices to restore salmon runs and watershed health. Longview Fibre Company's Blake Rowe, a former FPAC member, says the committee looked at forest roads, landslides, fish passage in streams and a variety of other riparian zone issues. Using this information, the Board will consider related changes in forest practices, including new regulations and landowner incentives.

Rowe sees better long-term results if landowners are directly engaged in proposing forest policies. "For example, if landowners understand what we want to achieve in riparian zones," he says, "and are given the opportunity to provide what the stream needs as part of their overall management of riparian forests, then we stand a better chance of success." Current State Forester Jim Brown concurs, saying that collaboration with landowners has been the key to the success of the OFPA over the years.

Janet McLennan, a former chair of the Board of Forestry, sees the Act's role as largely constructive rather than punitive. "Oregon has 50 to 60 large owners and about 55,000 small owners of its 10 million acres of private forestland," she says. "The large owners understand and apply the rules because they employ professional foresters and biologists who work with them every day. Many smaller landowners do as well, but others may

harvest infrequently. Keeping the latter group abreast of changing regulations is more of a challenge, but one the Oregon Department of Forestry has managed to meet surprisingly well."

### **OFPA the Key to Success**

This report has traced the Oregon Forest Practices Act from its origins through its dynamic evolution over three decades in response to changing public values and new scientific knowledge. Today the Act addresses harvest and reforestation practices, fish and wildlife protection, the quality of water in forest streams, lakes and wetlands and the protection of soil. It also regulates forest road construction and maintenance and the use of chemicals.

But the evolution of the OFPA is far from over, as progress continues toward changes that will better address forest roads, landslides, fish passage in streams and other issues. In addition, the Oregon Department of Forestry is finalizing a new assessment of conditions in Oregon's forests based on international standards of sustainability that will lead to the Board of Forestry's adoption of a revised "Forestry Program for Oregon" in June, 2003.

Former Board of Forestry Chair McLennan sees the future of forestry in Oregon's forest protection laws. "We're past the point of thinking that just leaving the forest alone is a viable answer," she says. "If you're really focused on a diverse ecosystem and the welfare of animals, then you want the forests out there. Forestland converted to other uses is lost forever. Active management, including planting and occasional harvest on private forestland under laws protecting and fostering all the forest's resources, gives

those landowners an economic reason to perpetuate these forests and not let them be lost by development for other uses."

State Forester Brown sums it up when he says: "It's up to the citizens of Oregon to decide the array of values they want from our forests. Then it's up to landowners to provide them. The public, in turn, must then give the owners the freedom they need to make certain the forests meet those values. We're talking about values that are environmental and social as well as economic. Ultimately, our success in realizing them lies in the protection laws of the Oregon Forest Practices Act."



Oregon's forest protection laws, among the strictest in the nation, require that reforestation begin within one year of clearcut harvest and that landowners tend and protect young trees until they are able to grow on their own. Replanting assures rapid regeneration of the forest. More than 45 million seedlings are planted in Oregon each year.



J. Martin Goebel President, Sustainable Northwest Portland, Oregon

Martin Goebel understands the value of the Oregon Forest Practices Act and has interesting ideas for its future development. "The OFPA is among the best in the country," he says, "but it must remain dynamic, responding to our growing understanding of the way forest ecosystems react to human intervention. So far it has done a good job of responding to the changing face of forestry. But the next wave of advancement in environmental protection can best be achieved through local efforts combined with compatible economic development, so I'm encouraged by the new concept of stewardship incentives in forestry. Ideally I'd like to see an incentive-based system that is responsive to local conditions, knowledge and needs, moving away from a one size fits all' regulation."



Rediscover Oregon's Forests

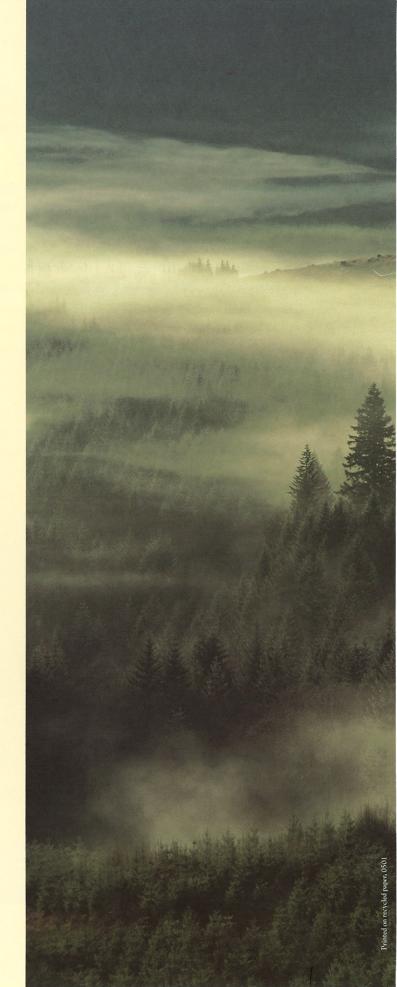
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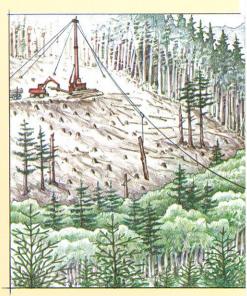
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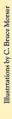
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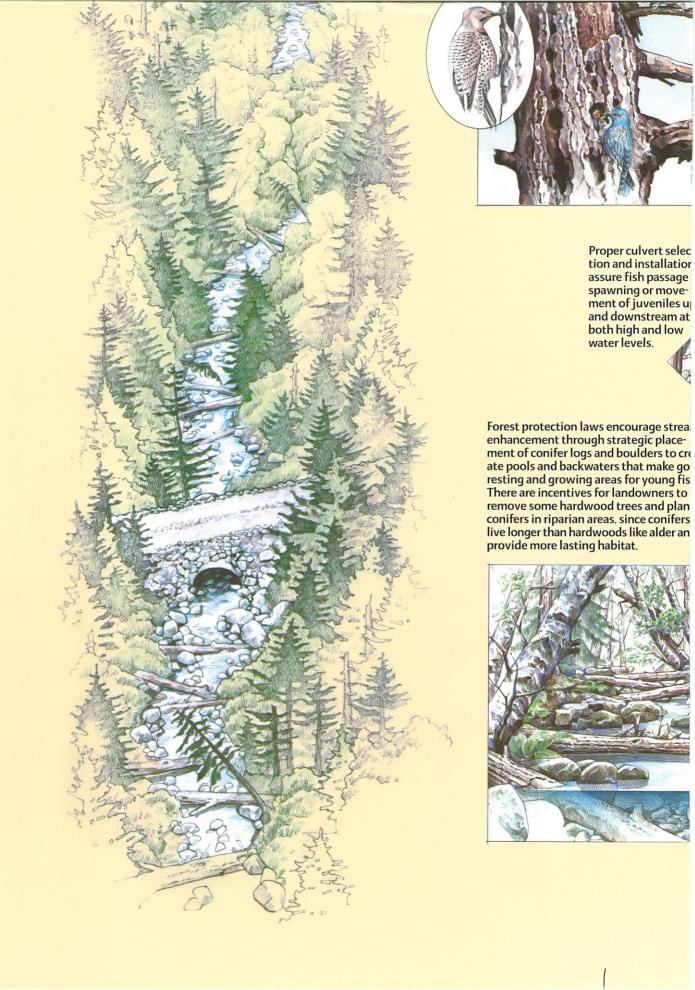




The "cable yarding" harvest system, where a tower and cable provide for the aerial removal of logs, minimizes disturbance on the harvest site. It is often used on steep slopes and for harvesting activity near streams.

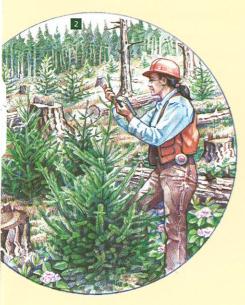
In Oregon, forest protection laws require reforesting with at least 100 trees on the eastside and 200 trees on the westside on every acre after harvesting. Landowners plant some 50 million new trees every year in Oregon forests.





# FON'S ECTION LAWS





Every forest landowner in Oregon planning any kind of forest operation is required to notify the Oregon Department of Forestry (ODF) and follow the laws set forth under the Oregon Forest Practices Act (OFPA). The OFPA sets the legal framework for forestry in Oregon and is broadly conceived to:

- ensure responsible harvest practices,
- promote rapid reforestation,
- foster the diversity and abundance of fish and wildlife,
- govern road construction and maintenance,
- regulate the use of chemicals,
- maintain water quality in streams, wetlands and lakes, and
- protect soil and minimize erosion.

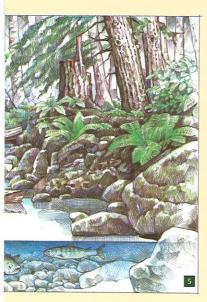
ODF has a major enforcement function. More than 50 forest practices foresters annually review some 20,000 operations notifications and conduct thousands of site visits. Established in 1971, the OFPA was the first of its kind in the country. Oregon has become a model for other states in forest protection laws as a result of its extensive regulatory experience.

# ■ PLANNING FOREST OPERATIONS

With very few exceptions, forest operations — even those that do not actually involve cutting trees — require written notification to the Department of Forestry. ODF foresters review all notifications, written operations plans and site maps. They conduct site visits when appropriate and provide written recommendations. They check to make sure that landowners select harvest and regeneration methods

the western bluebird (shown here), are associated with open forest areas and use snags for nesting. Woodpeckers (far left) make many more holes than they use, thus providing habitat for other birds.

10



# ■ Reforestation — Growing New Forests

Oregon's reforestation laws are among the strictest in the nation. All harvested land must meet reforestation requirements. Seedlings of most native tree species in Oregon grow best in the open light of clearcut areas, helping promote rapid reforestation. Clearcuts are replanted, while with other harvest methods natural regeneration is possible. OFPA laws require that replanting begin within one year of harvest and that the site be monitored to control brush and animal browsing until the new trees are "free to grow" (healthy and out-growing competing vegetation). Successful reforestation must be reached within six years.

# **■ WILDLIFE PROTECTION**

In any harvest unit larger than 25 acres, landowners are required by law to leave at least two green trees or snags per acre as well as two down logs. These trees and snags can be left in clumps or scattered across the unit. Wildlife biologists have learned how important snags are to the many species that use them for nesting, feeding and perching. Many large landowners today have staff biologists, who review all operations plans and, depending on site characteristics, often specify leaving more than the minimum number of snags required.

### 4 FOREST ROADS

All aspects of forest roads — from construction to maintenance to retiring them — are governed by OFPA laws. Much has been learned in recent years about road design, location, construction and maintenance, and forest protection laws include requirements in each of these categories. Poorly built roads of the past are being upgraded or vacated, so that today's forest road system minimizes soil erosion and water quality problems.

For example, relief cross-drainage diverts water from roads to the nearby forest floor so that sediment does not flow into the stream.

Depressions built in the road—known as armored relief dips — allow overflow water to pass over the road without eroding the fill dirt, which could damage downstream spawning gravel.

# **■ PROTECTING STREAM AND WATER QUALITY**

Stream and water quality protection is a complex and critically important part of the forest protection laws. Regulations have become even more stringent in recent years, with repeated modifications as researchers learn more about fish and wildlife needs. The rules for stream-side riparian areas focus on retaining vegetation and avoiding soil erosion in order to protect water quality and aquatic habitat.