A Brief Unnatural History of Oregon's Forests

Deforestation in Oregon

If a man walks in the woods for the love of them half of each day, he is in danger of being regarded as a loafer; but if he spends his whole day as a speculator, shearing off the woods and making earth bald before her time, he is esteemed an industrious and enterprising citizen.

–Henry David Thoreau[1]

Deforestation in Oregon began well before statehood in 1859. John McLoughlin, the last Chief Factor of the Hudson's Bay Company in what is now Oregon, built a sawmill during the winter of 1842-43 at Oregon City that employed thirty Hawaiians to produce 3,000 board feet per day – about half of a modern flat bed trailer – for export. He was later deemed to be the "Father of Oregon."

Is "deforestation" an overstatement? No. In earlier times, deforestation clearly occurred as forests were eliminated to make way for farms and cities. Deforestation also occurred as forests were logged and left behind because loggers always believed there were more trees over the next hill. Deforestation is still occurring today. Although the law requires "reforestation" after logging, there are legal loopholes that are regularly invoked to avoid it. Even when clearcuts are replanted, the natural forests that were logged are replaced with very unnatural timber plantations.

A more accurate term to describe the conversion of large old forests to plantations of small young trees would be "*wee*forestation." While tiny trees may qualify as "forest cover" under the law, tree plantations are not real, diverse forests. Equating a timber plantation with a forest is like saying a sewer lagoon is a mountain lake, a cornfield is a native grassland or a blue-velvet Elvis is art.

As Oregon's timber industry grew, Oregon's forests were steadily deforested, first for local needs, then for the California Gold Rush, and later to rebuild San Francisco after the 1906 earthquake. After a brief decline during the Great Depression, logging levels ramped up to an all-time high in 1955. Another noticeable peak came in 1988, when the cut rose to extremely unsustainable levels. This continued until the cut was finally curtailed by a combination of over-cutting (on both private and public lands),

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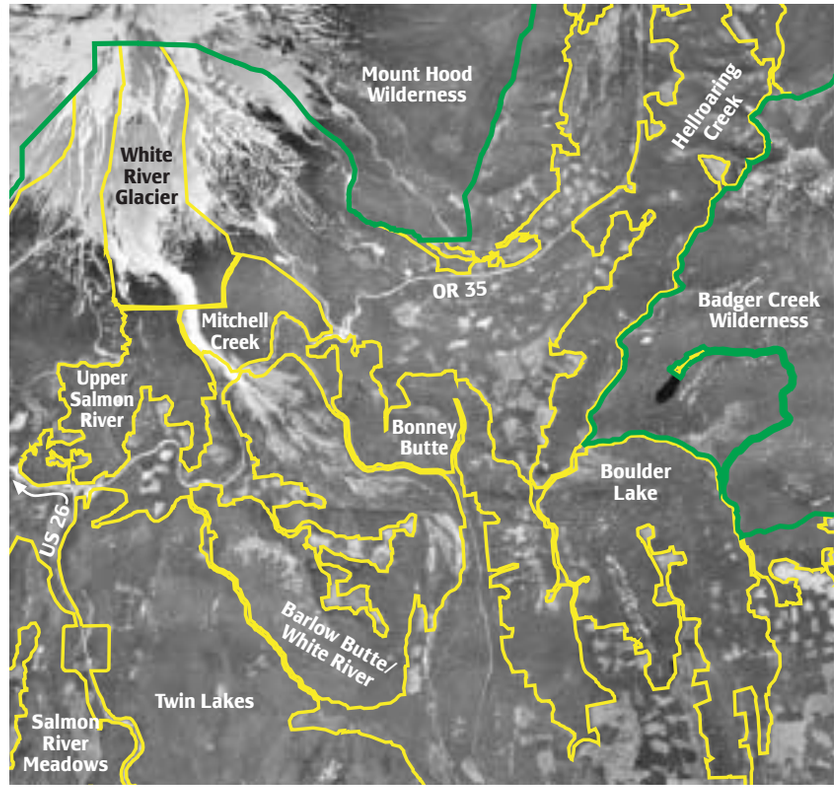


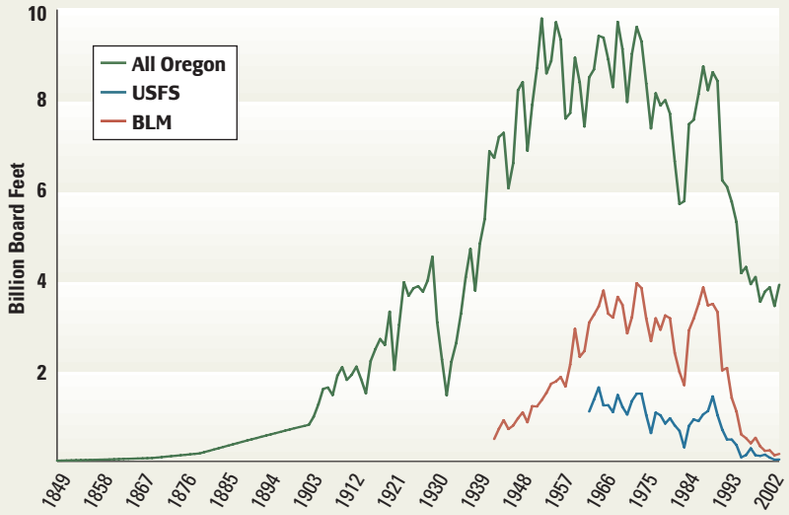
Mount Hood and vicinity. Green Wilderness boundaries and yellow roadless area boundaries in this photograph and elsewhere indicate simply what hasn't yet been roaded and logged. The tragedy of forest fragmentation is apparent to anyone who flies over or drives off of US 26 or OR 35.

court-ordered reductions imposed in the early 1990s to protect spotted owls, marbled murrelets and Pacific salmon and public lands agency actions to avoid more court orders.

Current controversies over endangered species and decimated watersheds are simply hastening the inevitable day of reckoning when Oregon must face the fact that it has severely over-cut its forests.

Only until recently (the last three decades) have a substantial number of

Chart 2-1. 20th Century Timber Cutting Levels by Major Landowners[2]



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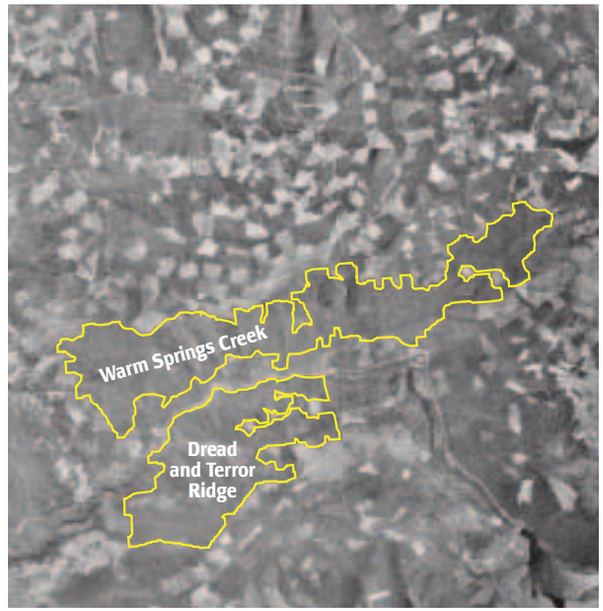


Forest fragmentation in the North Umpqua River Watershed on the Umpqua National Forest. The smallest visible clearcuts are approximately 40 acres in size. The Warms Springs Creek (4,019 acres) and Dread and Terror Ridge (2,504 acres) roadless areas are highlighted. A new timber sale has been awarded in these units. Litigation to block the sale was not successful. Now, it can only be stopped by an Act of Congress.

Oregonians questioned cutting levels. For more than one hundred years increasing timber cutting was generally viewed as a good thing. A few visionaries could see where these trends were headed (see *The Worst of All Microbes*, page 37), but the liquidation of old-growth forests in the Pacific Northwest was mostly seen as our "peculiar institution." Old-growth forest logging was questioned no more in mid-twentieth century Oregon than was slavery in mid-nineteenth century Mississippi. It is very difficult to get someone to understand something when their profits, wages, election or lifestyle depends upon them not understanding it.

Of course, much logging was necessary to make way for farms and to develop the state. However, logging has gone way too far. We have now reached the point where the state's landscape is literally being torn down. This is precipitating the extinction of species and entire ecosystems, the decimation of watersheds and the loss of clean drinking water. Logging has gone too far in Oregon when we have:

- *83-90% loss of old-growth forests in Douglas-fir region of Oregon and Washington;*
- *96% of original coastal temperate rainforests in Oregon logged; (and) ...*
- *92-98% loss of old-growth ponderosa pine forests in three sample national forests (Deschutes, Fremont, and Winema) in Oregon.*[3]

Logging in Oregon must be balanced with forest and other ecosystem values — something that society is still trying to achieve. This balance is easier to define by what it is not than what it is. Logging is not in balance when it causes species extinction, decimates salmon runs or pollutes our streams. Wood consumption is not in balance when the two items most prevalent in our landfills are wood and paper.

Although the timber industry in Oregon has downsized, it is still not in proportion with the state's forests' ability to provide sustainable levels of various forest products such as wildlife, fish, water and wood. Because it took several generations to log off Oregon's wildlands, many were under the impression that such logging was infinitely sustainable. The forests of the Pacific Northwest were so big and so vast that it took three generations of loggers to cut through them, unlike the forests of Maine, Mississippi or Michigan, which took only one generation. Many Oregonians assumed — their thinking often fogged by greed and selfishness (what did posterity ever do for us anyway?) — that if their granddaddies logged, their grandchildren would too.

Too few Oregonians ever considered forests as principal and the timber that could be had in perpetuity as the interest. Oregon not only allowed most of its forest capital to be consumed, but also ran up quite a debt on the ecological credit card. The boom is over now. We've just about cut it all. The timber industry isn't up against the spotted owl, it's up against the Pacific Ocean.

Charles Erskine Scott Wood

Charles Erskine Scott Wood is the most interesting Oregonian ever (so far). Familiar to many modern day Oregonians as "C. E. S. Wood," he was a poet, author, anarchist, lawyer (who defended Margaret Sanger on obscenity charges for selling the booklet "Family Planning" in Portland and also collected a $1 million fee for brokering and litigating one of history's largest land transfers from public to private ownership), artist, divorcee, bohemian, co-founder of the Arlington Club, co-founder of the Oregon National Guard, soldier, translator of Chief Joseph's most famous speech, founding trustee of the Portland Art Museum, director of the Portland Library Association and originator of the idea of what became the Rose Festival. In 1908, Wood lamented the loss of Oregon's old forests in the Pacific Monthly.

The Worst of All Microbes[4]

by Charles Erskine Scott Wood

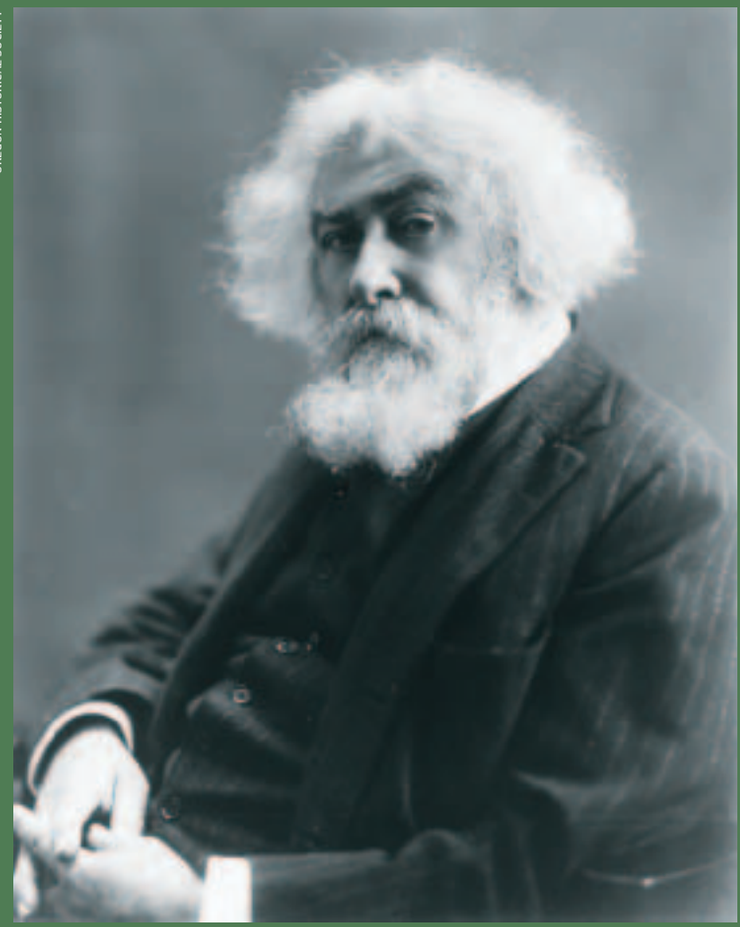
Like our great counterparts the Romans, we are, as I have said, a commercial and a utilitarian, not a poetic or artistic people. Our genius, too, is for construction; construction in institutions, as well as in stone and mortar. Our art finds its place in skyscrapers and bridges.

The dream has no place with us, though all which truly lives forever has begun as a dream. Three hundred billion board feet of timber in Oregon are impossible figures to count on the fingers, but they are easily grasped by arithmetic. It is no trouble to divide them by Portland's own cut of lumber (which is only part of the total cut), five hundred and fifty million feet a year, and guess at the day when Oregon forests shall not be.

The City of Roses carved from that forest will have to take its visitors even now far to show them so much as a few acres of an unbroken forest, and it is so everywhere. The dollar rules, and except for the Government reservations there has been no thought of preserving a specimen of what mysterious Nature was a thousand years in building into infinite beauty with infinite patience.

When I see a dead giant rising from the river and placed dripping and naked before the saw, stripped of its armor of rugged bark to which the lichens and mosses clung lovingly till the last, I am foolish enough to think of the past ages and the future, and to believe that it is not necessary all should be wiped off clean, and when I hear the shriek of the log at the first bite of the saw I am Greek enough to think of Daphne and the dryads* and the hamadryads,** and I like to think of the shadowy aisles of an untouched Oregon forest, where the sky is blotted out by the dark and over-arching roof of green and into the sky, smooth and clear and round, for one hundred, two hundred feet rise the great solemn columns of this cathedral, I smell the balsam and feel the soft carpet of needles and of moss and look into those bluish depths where the giant trunks become almost ghostly and, behind that veil, it sees to me still lingers the

OREGON HISTORICAL SOCIETY



Charles Erskine Scott Wood.

Great Spirit of Creation. The brooding Silence shuts out the world and in these temples there is perfect rest.

It seems to me that this great beauty and solemnity is perhaps as valuable as the shriek and clamor of the mill. It is a pity to have all this majesty of antiquity wholly destroyed. Man cannot restore it. It cannot be rebuilt by Nature herself in less than a thousand years, nor indeed ever, for it never is renewed the same. Nor do Government reservations preserve this to us; they, too, are wholly utilitarian and their plan contemplates the gradual sale and destruction of these Titans. There is no spot where the primeval forest is assured from the attack of the worst of all microbes, the dollar.

* In Greek Mythology, a divinity presiding over forests and trees; a wood nymph.[5]

** In Greek and Roman Mythology, a wood nymph who lives only as long as the tree of which she serves as the spirit.[6]

ELIZABETH FERYL, ENVIRONMENTAL IMAGES

Logging on both public and private lands.

So, what is a sustainable level of logging in Oregon? It all depends on what you want to sustain. From the standpoint of timber production, one must first decide if you want to sustain profits, jobs or timber volume. You can only choose one. Profits, jobs and logging levels do not correlate. If you choose profits, remember shareholders demand that profits must always be increasing (forcing companies to eradicate forests at far above sustainable levels). If you want to sustain jobs, you must factor in automation and modernization – both in the woods and the mills – which mean fewer timber workers are required to produce the same and higher volumes of timber. Corporations consider jobs a cost, rather than a benefit, of doing business, so they cut their workforce with automation whenever possible. If you want to sustain a constant output of timber, decide if you want that volume to be in the form of big trees for dimension lumber, or small trees for pulp and chips.

If you want to sustain clean water, salmon runs, grizzly bears, beautiful forests and other "non-timber" forest values, logging levels must be much lower.

The question now facing Oregonians is: What do we want forests – especially public forestlands (as opposed to private timberlands) – for?

For example, Siuslaw National Forest contains some of the best coniferous timber-growing land in the world. It is also a coastal rainforest that produces an infinite number of other environmental products and services, including tremendous quantities of salmon. Should the Siuslaw be primarily a producer of timber where we can only hope the salmon runs will not go extinct, or is this forest more valuable as a producer of salmon (among many other things)? Would not fishing jobs, derived by protecting and restoring the forest salmon habitat, have a greater probability of being sustainable than logging jobs that destroy forests?

Roading Oregon's Forests

(S)tudies in a variety of terrestrial and aquatic ecosystems have demonstrated that many of the most pervasive threats to biological diversity – habitat destruction and fragmentation, edge effects, exotic species invasions, pollution, and overhunting – are aggravated by roads.

Roads have been implicated as mortality sinks for animals ranging from snakes to wolves; as displacement factors affecting animal distribution and movement patterns; as population fragmenting factors; as sources of sediments that clog streams and destroy fisheries; as sources of deleterious edge effects; and as access corridors that encourage development, logging and poaching of rare plants and animals.

Road-building in National Forests and other public lands threatens the existence of de facto wilderness and the species that depend on wilderness.

—Reed Noss[7]

Whether a four-lane freeway blocking migration of large ungulates and predators, or a one-track forest road depositing sediment into a mountain stream, roads are one of the world's greatest ecological threats.

The National Forest System contains at least 370,000 miles of roads. There are more, but the Forest Service has lost count of them all. That's at least eight times more miles of roads than the U.S. Interstate Highway System, or enough to reach all the way to the moon and halfway back. Most of the Forest Service road system is in disrepair. To repair and maintain all Forest Service roads to minimum environmental and safety standards would cost taxpayers $8.2 billion – funding the agency is not likely to receive from any administration. The Forest Service would be wise to stop building new roads, repair and maintain only those roads that are necessary, as well as close and naturally rehabilitate the rest of its deteriorating road system.

Ecologist Reed Noss has summarized both the direct and indirect effects of roads. The direct effects include:

Road Kills. The Humane Society of the United States and the Urban Wildlife Research Center estimate that one million animals are killed each day on the nation's highways. Mammals are attracted to de-icing salts, birds to roadside gravel that aids their digestion and cold-blooded species to the warmth of dark asphalt on sunny winter days and cool mornings. Scavengers seek out roadkill, often becoming new roadkill themselves. Opportunistic omnivores such as crows and magpies tend to forage along road corridors, increasing the vulnerability of small animals trying to cross exposed roadways and of birds that nest in the roadside forest fringe. Noss believes the reported kill figure is conservative and that roadkill figures are biased toward mammals, and against reptiles, amphibians and probably birds. Of course, the figures don't include insects at all

because counting smashed bugs on grills and windshields is such a thankless task.

Road Aversion and Other Behavioral Modifications. Studies show some animals — especially game species — avoid roads because they associate them with humans (who carry weapons). When disturbed by and forced to flee from vehicles, animals use up important energy that may later increase their vulnerability to predators, weather and disease.

Fragmentation and Isolation of Populations. Roads are barriers to migration. Networks of roads isolate species into smaller and smaller populations. It's not just freeways and charismatic four-legged megafauna that we need to worry about, but also beetles, salamanders, mollusks and other enigmatic microfauna that can be impeded by a simple closed dirt track.

Pollution. Noise bothers animals. Air pollution from motor vehicles releases heavy metals that accumulate in roadside vegetation and can build to harmful levels as they climb the food chain.

Impacts on Terrestrial Habitats. Roadways directly destroy wildlife habitat and lead to further destruction of surrounding habitat from logging and other uses. Regardless of their surface and use, all roads severely compact soil, reducing its capacity to absorb water and make slopes more vulnerable to erosion and landslides. Finally, and perhaps most importantly, roads facilitate the invasion of exotic species and allow opportunistic species to take advantage of edge effects to the detriment of interior dwelling species.

Impacts on Hydrology and Aquatic Habitats. Groundwater levels, stream channel morphology, water quality and water quantity are all affected by alterations in hydrology caused by road construction. Next to every road is a ditch that collects run-off from the crowned, unnaturally hardened road surface. Rather than percolating into the soil, the surface water is directed into forest streams at much greater volumes and at much faster rates than in an unroaded forest. The resulting "peak flows" erode stream banks, scour out fish eggs and kill aquatic insect larvae.

The indirect effects of roads include:

Access. Roads create easy access for insensitive (and often unlawful) humans with off-road vehicles, chainsaws, weapons, unleashed pets, boom-boxes, careless smoking habits, tendencies to litter and misguided development plans — all to the detriment of wildlife.

Cumulative Effects. Combined, the sum of a road's effects on a forest is greater than the aforementioned individual harms.

For example, consider the impact of roads on native trout.

Stream sediment from roads can be greater than that from all other land activities combined. Excess sediment can give introduced non-native species a competitive advantage over native species. Native fish are an excellent indicator of ecological

ELIZABETH FERYL, *ENVIRONMENTAL IMAGES*

Dead Port Orford-cedar (*Chamaecyparis lawsoniana*) caused by root rot disease spread by roads. ►

JEREMY HALL

Road failures cause massive erosion.

integrity. If we want to conserve and restore our native trout, we need to conserve, protect and restore roadless areas. According to the Western Native Trout Campaign:

> *Trout require four habitat types during their life history: spawning habitat, rearing habitat, adult habitat and over-wintering habitat. Road construction negatively affects all of these habitats.... Though road construction effects can be many and complex, some of the more serious impacts are increased sediment loads, damaged riparian areas, increased water temperatures, and changes in peak flow timing and magnitude. When fish spawn, they lay eggs in the gravel in the stream bottom. Fine sediment from roads can completely cover the stream bottom, smothering eggs. Sediment also reduces available habitat by filling in pools, reducing their number or frequency. Pools are vital to trout survival and production.*[8]

Roads have additional direct impacts on native trout as they create increased access for overfishing, livestock grazing, stocking of non-native fish, pathogens (such as whirling disease) and an increased risk of toxic spills.

Scientists have found that roadless watersheds (1) recover from fire better than roaded watersheds, (2) that their pool-riffle ratios are stable or increasing (thereby slowing the stream's velocity), (3) that their downstream water quality and habitat quality are better and (4) that they are havens for native trout.

Why are roadless areas still roadless? Because there is most likely a combination of lower exploitation opportunities (for example, relatively small, few or no trees) and higher extraction costs (steeper slopes and unstable soils require more expensive road building and logging). Building roads in the last roadless areas, given their relatively steeper and unstable slopes, will have a disproportionately high impact on watersheds.

> *(T)he scientific literature, and pertinent government assessments indicates that in the face of the severe declines of these native trout and their dependence on high quality habitat frequently associated with roadless areas, the full protection of all roadless land, including uninventoried areas greater than 1000 acres, is essential for the restoration and protection of native trout in the West. While such protection is essential, it is not enough. Ensuring even the long term persistence of sensitive trout species will require widespread protection of depressed and scattered populations, and the recovery and restoration of much habitat. Full recovery of western trout will require proportionately more action yet.*[9]

Forests and Fire

> *We must restore fire to fire-adapted ecosystems on a large scale. We need to face up to this – that fire is with us.*
>
> – Jack Ward Thomas (scientist and former U.S. Forest Service Chief, formerly of La Grande, August 1996)[10]

It is not a question of whether a forest will burn, but when.

Both ecology and economics require us to rethink our attitudes toward wildfire. Smokey Bear needs to go to school and then get a new job.

Thanks to fifty years of indoctrination, 98 percent of Americans can finish this sentence: "Only you...." While humans can and should be careful with campfires and devices that can cause fire, humans cannot prevent lightning from starting thousands of fires in the West each year, nor should we want to.

In the arid West, fire is an ecologically vital component of ecosystem health and function. The same is true in the moister parts of the Pacific Northwest where periodic stand-replacing fires are part of a fully functioning natural ecosystem.

Much of the public, but few conservationists and no scientists, view a stand of trees as a picture of how it will be forever. We must look at forests broadly both across the landscape and over time. A stand of burned trees is but the beginning of the next forest; a stand of trees that has grown up nearby will help seed and replace the burned area (assuming it was not completely logged).

In Oregon's eastside forests, periodic fire is especially important for rejuvenating ecosystems. Fires maintain ecological integrity, control forest pests and release a steady supply of nutrients into the soil. Some trees need fire to open their cones and release

KEN CROCKER

seeds. In low- and mid-elevation ponderosa pine and mixed conifer forests, the natural fire-return interval is as short as seven years.

More than a century of logging, livestock grazing, fire suppression, road building and development have resulted in the degradation of these magnificent forests. Without periodic fires, fire-tolerant, sun-loving species such as ponderosa pine and western larch give way to fire-sensitive, shade-tolerant species such as Douglas-fir and true firs. (Logging has further decimated sun-loving tree species, which are more economically valuable than other eastside forest species.)

Natural fire frequency is much lower in moist, north-slope and streamside forests and in high elevation lodgepole pine and Engelmann spruce/subalpine fir forests. Consequently, these forests remain relatively unchanged by fire suppression. Unlogged roadless areas are also in relatively good shape. Fire suppression has caused the greatest ecological imbalance in low-elevation, south-slope ponderosa pine stands that evolved with a naturally high fire frequency and have been affected by logging and grazing. To restore these fire-dependent forests to complete health and function, fire must be reintroduced and logging and livestock grazing eliminated. During the transition period to this new management, sometimes the careful cutting of certain small-diameter understory trees can be ecologically beneficial in restoring natural conditions.

Logging not only diminishes the quantity and quality of a forest, it makes fires more intense. "In general, rate of spread and flame length were positively correlated with the proportion of area logged," states a report by Forest Service scientists.[11]

Where it is permitted, domestic livestock grazing has eliminated the fine fuels needed to carry low-intensity surface fires. This in turn allows ever-greater numbers of tree seedlings to survive to maturity, creating fuel build-ups.

Economically, fire suppression is foolish.

The government spends billions of dollars each summer on fire suppression and accomplishes almost nothing but environmental harm and fiscal waste. The science is clear. While most fires go out almost immediately, little can be done to stop those that persist due to high temperatures, low humidity and/or high winds. Notice that almost every news story about almost any fire will report that the fire was "contained" or "controlled" when the weather changed or there was nothing left to burn — not because thousands of firefighters were set to digging fire lines. It might be less expensive and more effective for the government to pour dollar bills out of C-5A cargo planes directly onto backcountry fires in an attempt to smother them.

Often, more ecological damage occurs "fighting" a fire than is caused by the fire itself. Bulldozed fire lines cause erosion and scar the land. However, fire lines can only work where there is a low-intensity burn — the most common (and the most environmentally beneficial) type of forest fire. In the summer of 2002, embers from a fire on the Oregon side of the Columbia Gorge ignited spot fires on the Washington

◀ Much of the 2002 Biscuit Fire in the proposed Kalmiopsis Wilderness Additions was a low-intensity ground fire.

The Warner Creek Fire

On October 10, 1991, an arson-caused fire burned in the mostly roadless Warner Creek area in the western Cascades, east of Oakridge, Oregon. The fire burned over Bunchgrass Ridge, covered 8,900 acres and was the object of a massive fire-fighting effort until it was extinguished by snow on October 23. The traditional response of the Forest Service is to fight fire, and on the Warner Creek fire it wasted one million dollars and deployed 2,500 firefighters on a fire far removed from any human habitation. (One third of the burned acreage was scorched by "backfires" designed to deny the encroaching wildfire any fuel. Do not waste your time trying to determine the logic.)

After the fire was out, the Forest Service began planning to "salvage" the burned timber. According to existing management plans designed to protect the northern spotted owl, the Warner Creek area was off-limits to logging, but there was a loophole big enough to drive a convoy of log trucks through. If the area burned, it would no longer qualify as spotted owl habitat and could be clearcut. "Light it, then log it" was becoming the latest way to perpetuate unsustainable logging levels.

In its zeal to log, local Forest Service officials were caught in numerous lies during their long disinformation campaign. They argued that to protect and restore the forest around Warner Creek, it had to be logged.

Local conservationists proposed that the area be preserved for research purposes to study the ecology of fire. Because the Forest Service has for so long routinely logged after wildfire, relatively little is known about natural recovery after a fire.

The Warner Creek timber sale was challenged in court. In 1995, the magistrate recommended to the judge that he rule in the plaintiffs' favor. However, that same year, Senator Mark Hatfield rammed through his "logging without laws" legislative rider that insulated all timber sales from federal environmental standards. So before the judge could finalize the magistrate's recommendation, the case was dismissed. No legal action could stop the sale.

With judicial review denied, a motley but heroic group of primarily young conservationists blockaded the sale area. The Forest Service had banned all entry here, except to loggers. These activists literally dug in for the winter and hand dug big pits (think "tank traps") across Forest Service Road 2408 to prevent the passage of logging equipment. They spent the winter in the woods, resupplied by other activists who trudged eight miles through the snow to reach them. To protest the sale, one activist went on a 75-day hunger strike in front of the federal courthouse and Willamette National Forest office in Eugene.

The protests received lots of publicity, including a story on the front page of the *New York Times*. Then, astoundingly, in August 1996, senior officials in the Forest Service (prodded by the Clinton White House) reconsidered the timber sale and ordered that it be bought back from the purchasers. Victory was at hand. However, a few weeks later local Forest Service officials, emulating Keystone cops, invaded the protest site and arrested several people, including two newspaper reporters. The concurrent confiscation of the reporters' First Amendment-protected notes did not endear the agency to the media.

ELIZABETH FERYL, *ENVIRONMENTAL IMAGES*

Natural recovery is rapid in the Warner Creek Burn on the Willamette National Forest (the fire scars at the base of the tree trunks are barely noticeable).

The "logging without laws" law expired in late 1996 and the sale was canceled. However, the Forest Service persisted and, under the cover of the so-called "lawless logging salvage rider," proposed a new and much larger timber sale in the Warner Fire Area. This sale was ultimately withdrawn (after much hard work by ONRC and many others) after the Clinton-appointed Secretary of Agriculture issued a directive prohibiting the Forest Service from using the authority of the salvage rider to log in inventoried roadless areas such as Warner Creek.

On October 30, 1996, the Oakridge Ranger Station was torched. The Oregon Natural Resources Council immediately offered a $1,000 reward for information leading to the arrest and conviction of the arsonist(s). The reward has yet to be claimed. The ranger station was rebuilt in 2002 in the Cascadian architectural style.

If you walk the Bunchgrass Ridge Trail in the proposed Upper Willamette Wilderness today, you'll see a healthy recovering forest, where the spotted owls remained even after the fire.

SANDY LONSDALE

side several miles away. If the unnatural firebreaks of I-84, U.S. 30, Washington 14, two railroad tracks and a dammed Columbia River couldn't prevent a fire from spreading, what chance does a single bulldozer-width ditch hastily bladed across the forest landscape have as soon as a breeze comes up?

An insidious fire-industrial complex, consisting of a severely bloated fire bureaucracy and a corps of fire contractors (fire-fighting crews, food service, transportation service, helicopters, tankers, lodging, et al.) has been created to "fight" fires. Every summer federal and state agencies are given what amounts to a blank check for fire fighting and have essentially no accountability. Some of those who stand to gain financially from "fighting" fires actually start fires.

Consider also that August, when many wildfires burn, is a slow news month. Congress isn't in session and much of the East Coast is on vacation. To escape the eastern humidity many reporters come West in search of "news." Though most forest fires are generally slow-burning ground fires, they make for lousy video. Footage of the relatively atypical "crown fires" is what makes the news as editors have to justify the expense of the mobile satellite feed trucks. Many reporters are lazy and are fed their news by government public relations flacks who are part of the fire bureaucracy. For example, in 1988 headlines screamed that Yellowstone Park was "destroyed" by fire. It wasn't.

Increasingly, resources are spent in an attempt to defend not forests from fire, but individual buildings located in the backcountry. "We should recognize that people who construct homes in fire-prone environments are just as imprudent as someone who parks their car on a railroad track," says ecologist and author George Wuerthner. Like a flood or a hurricane, a wildfire may not come often, but when it does the results are predictable. People who choose to live in the path of nature should accept the risks themselves and take appropriate steps to mitigate and insure against them.

While front-line fire fighters most always exhibit great valor and determination, their lives are often needlessly put in jeopardy in futile attempts to oppose natural and beneficial phenomena or to defend an isolated building from fire. The number of fire fighters that die in action is increasing.

Is it reasonable to expect taxpayers to repeatedly spend unlimited amounts of money and firefighters to repeatedly risk their lives to save a poorly maintained vacation retreat from natural fires?

The government should spend less money "fighting" fire and more money on fire management, including firebreaks around towns and property that can and should be defended. The most effective actions that can be taken, in terms of cost and fire prevention, involve making buildings less susceptible to inevitable wildfires. The single most important thing to do is to make roofs inflammable (metal roofs). The second is to remove vegetation and other flammable fuels directly adjacent to the building.

◀ A controlled burn in ponderosa pine on the Deschutes National Forest. Most forest fires naturally burn low and "cool" along the ground.

ELIZABETH FERYL, ENVIRONMENTAL IMAGES

Modern logging in the Oregon Coast Range.

Top Dozen Threats to Oregon's Forest Wilderness

Depending on a particular site (or one's mood), the threats at the bottom of this list may shuffle positions a bit, but those at the top are there to stay.

1. Logging. If logged, and especially if clearcut, a forest is no longer a forest. If logging looks bad, it is bad. Yet even if logging looks good, it is still bad. Even selective logging of virgin forest, while less displeasing to the eye than a clearcut, still impoverishes wildlife habitat, degrades water quality and quantity, compacts soil and fragments the landscape. (A small exception can sometimes be made for the logging of small-diameter trees in plantations or fire-suppressed and/or livestock-grazed stands where the ultimate goal is the restoration of naturalness and/or wildness.)

2. Road Building. Besides allowing the conveyance of cut trees away from and of alien species into a forest, roads degrade watersheds by altering hydrology, boosting peak flows and increasing erosion. Roads are also a barrier to both local wildlife movement and longer migrations.

3. Livestock Grazing. Bovine bulldozers have done more environmental damage in some forests than chainsaws. Livestock grazing severely degrades both streamside and upland areas by compacting soil and removing vegetation that is mostly converted to disgustingly large amounts of fecal material, much of which ends up in forest streams.

4. Excessive Consumption. Americans consume wood products at levels far greater than the rest of the world, greater even than comparably developed countries such as Japan and those in Western Europe. Gluttonous consumption has long ceased to have any correlation to individual happiness. While many other countries are more densely populated than the United States, excessive and unsustainable demands on the earth's resources make America the world's most overpopulated nation. In the short-run, unless we curtail both our population growth and rates of consumption, there will be no room for nature. And in the long run, nature won't have room for us. Nature bats last.

5. Exotic Species. Exotic species, including weeds, insects and diseases, are an increasing problem for forest ecosystems. The threat is worth mentioning even though most of the problem would abate if the other threats listed here were brought under control.

6. Mining. Even if a site where minerals, oil, gas or geothermal heat were extracted is "reclaimed," such does not yield a native forest ecosystem. Mining processes have both direct and long-term indirect impacts on forest ecosystems. Hard rock mineral claims on public lands can be bought for no more than $5.00 per acre. That price, set in the Mining Law of 1872, if indexed to inflation would be still be a bargain at $71.04 in today's dollars.

7. Climate Change. Deforestation has released significant amounts of carbon into the

atmosphere, as has the burning of fossil fuels. Humans can adapt somewhat to climate change. As the climate warms, to stay in historic climatic conditions, forest species (trees and wildlife) will likely try to move both northward and upslope. These attempts will probably prove futile, as the climate will likely change faster than these species can move away from the heat.

8. Developed Recreation. Ski areas, off-road vehicle staging areas and destination resorts degrade wilderness values.

9. Off-Road Vehicles. ORVs are loud, noxious and obnoxious to both people and wildlife, and are a primary vector for the introduction of alien species to forest ecosystems. They also compact soils, leave ugly scars on the landscape, pollute excessively and inevitably crush many living things. To be fair, it's the 90 percent of off-road vehicle users that do not follow the rules that make the other 10 percent look bad.

10. Primitive Recreation Overuse. The loss of wilderness means the loss of elbow-room. Too many hikers and backpackers can overrun protected Wilderness. In the short-term, increasing the supply to meet demand and diluting these recreational impacts can be achieved by designating more Wilderness areas. In the long-term, population must be stabilized.

11. Utility Corridors. Pipelines and powerlines have enormously detrimental impacts on public lands. For example, they create barriers to wildlife migration, they are subject to regular chemical spraying to control vegetation, become vectors for weeds and are aesthetically appalling. They are also some of the longest, linear clearcuts in the world.

12. Privatization. Any transfer of public lands out of public custody inevitably results in lost public values for those lands. Besides the usual closure to public access, private lands must produce income, usually at the expense of nature. Forest ecosystems quickly pay the price.

If only the list of threats stopped at an even dozen. Globalization of trade and the concurrent reduction in enforcement of national environmental laws, could result in successful corporate lawsuits against the United States for profits lost due to Wilderness protection. Genetically modified organisms, including the transfer of genes from one species into another, can pollute the wild gene pool that wilderness preserves and fosters. Greed is another, if not the overarching, threat to forest wilderness.

MINERAL POLICY CENTER

A very small cyanide heap leach mining operation.

KEN CROCKER

Salvage logging after a wildfire is akin to mugging a burn victim.

Wood decks and woodpiles next to a house can act as carefully laid kindling and facilitate forest fire flames or radiant heat to ignite the structure.

We should never forget that the only thing truly predictable about wildfire is that it is usually unpredictable. As land managers reintroduce controlled burns to these fire-dependent ecosystems, sometimes plans will go awry. Fires can burn out of control and cause damage to property and even to people. However, prescribed fires will cause nowhere near as much damage as continuing the futile policy of trying to prevent or suppress every wildfire. Summer firefighters should become year-round fire-technicians. Much work is needed to restore the natural fire balance that is beneficial to nature and can safely coexist with human communities.

The timber industry has its own axe to wield in this matter. Because the American people have rejected industry's arguments that national forests serve merely as timber mines, or that wildlife needs clearcuts, the timber industry is falling back on its last remaining argument: that logging mimics the ecological benefits of fire without the ecological costs. The only problem with this argument is that it is not true. Fire is natural and nature needs fire. Chainsaws and bulldozers are not part of the natural cycle. Post-fire salvage logging after a fire is not a solution to forest health problems either. Salvage logging after a wildfire is akin to mugging a burn victim.

However, in some cases, as part of a careful program to reintroduce natural fire into dry forest ecosystems, some logging of small-diameter trees that have grown in response to the lack of regular ground fires resulting from fire suppression and livestock grazing is appropriate. But additional logging of the large-diameter, fire-resistant trees in the same forests is not.

The ecological debt created by decades of fire suppression must be paid off by investing federal dollars in truly ecologically balanced forest restoration, not merely by continuing to subsidize timber sales of big old trees.

Livestock Grazing: A Major Factor in Unhealthy Forests

Livestock have actively participated in the destabilization of ponderosa pine and mixed coniferous forests. The hot fires that swept through central and eastern Washington and Oregon during the summer of 1994 may have, in fact, been partially a result of a century of livestock grazing.

—Dr. Joy Belsky and Dana Blumenthal[12]

The classic "park-like" stands of ponderosa pine and mixed conifer forests that once blanketed the interior West from British Columbia to New Mexico have changed dramatically for the worse since the European-American invasion. Only 2 to 8 percent of Oregon's original old-growth ponderosa pine stands still exist. The numbers are similar throughout the rest of the West.

What were once widely spaced, fire-tolerant stands of trees with a dense grass sward underneath have been converted over the last century into thick forest stands that are more susceptible to both fire and disease. Scientists, government foresters, the timber industry and conservationists point to two major causes of this transition: (1) suppression of low-intensity fires that prevented the establishment of fire-sensitive and shade-tolerant tree species such as Douglas-, grand and white firs and (2) logging of the economically valuable and fire-resistant ponderosa pine and western larch.

Today, there is much talk about the "forest health crisis." Of course, forest ecologists, mill owners or government bureaucrats will differ on what constitutes a healthy forest. They also differ vehemently on the relative importance of logging, fire suppression, disease and road building to forest sustainability. However, while these are very important factors in forest health, another factor that has been utterly overlooked in the debate is the effects of a century and a half of livestock grazing.

Livestock currently range over 284 million acres or 91 percent of all federal land in the eleven western states, including forested landscapes. Although livestock do not wield chainsaws or use fire-fighting equipment, they have a their own dramatic impact on forest composition and density.

Livestock grazing has modified forest dynamics by annually removing the understory grasses that serve two critical roles in a natural forest. First, healthy, thick

GEORGE WUERTHNER

Cow-bombed landscape along the Sprague River in the Fremont National Forest.

stands of grass out-compete conifer seedlings for space and water, preventing the establishment of dense stands of small trees.

Before the intrusion of domestic livestock, the typical eastside forest floor was carpeted with Idaho fescue, bluebunch wheatgrass, pine-grass and elk sedge. The old-growth grasses with their extensive roots could out-compete small seedlings for moisture and nutrients. A source of nutrients and organic matter, the grass cover was also critical for slowing surface water flow, enhancing water infiltration, insulating the soil from freezing and mitigating the erosive force of raindrops.

The second role of grasses in dry eastern forests is to carry forest-cleansing low- intensity ground fires that kill large percentages of seedlings and maintain open park-like stands of old growth. On dry, low-elevation south-facing slopes, the dominant tree is ponderosa pine. In wetter mid-level north-facing stands, the dominant trees are western larch, Douglas-fir, grand fir and white fir. Trees that survive to maturity evolve with fire by having self-pruning lower branches and thick fire-resistant bark. Ground fires that occur approximately every five to twelve years throughout the West usually pose no problem for the big old trees.

Gone with the grass are these beneficial fires. Dense stands of sapling- and pole-sized fire-sensitive species are now all too common. These species are more susceptible to stress during drought, which makes them more vulnerable to disease and insect infestation. Fuel loads have thus increased ten-fold in the last 25 years.

In their review of the scientific literature, Dr. Joy Belsky and her associate Dana Blumenthal found numerous studies comparing grazed and ungrazed forest stands (where domestic livestock was excluded, but not native wildlife). They found that ungrazed stands retained their park-like character, in spite of active fire prevention efforts.

To restore the stability and sustainability of our interior public forests, we must not only end logging of big trees and carefully reintroduce fire into the ecosystem, but also eliminate domestic livestock grazing from these forests so that native grasses can return.

The cow may be mightier than the chainsaw — not only in myth, but also in fact.◆

Notes

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