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Did Politics Doom The Northern Spotted Owl?

It's time to modernize the Endangered Species Act

Owl Be Damned

By Jim Petersen

In January the U.S. Fish and Wildlife Service published a call for proposals for development of a recovery plan for the northern spotted owl. It's about time. The owl was added to the nation's burgeoning list of threatened and endangered species nearly 16 years ago. That it took so long helps explain why only ten of 1,264 species listed under the 32-year-old federal Endangered Species Act (ESA) have ever recovered.

If my gut reading is correct, the owl won't be No. 11. It is already doomed across much of its range, and the reasons why are well known among field biologists who have been observing the bird for some 20 years. More aggressive barred owls are pushing them out of their 21 million-acre home range, or killing them, or both. Worse, increasingly frequent, uncharacteristically destructive wildfires are destroying spotted owl habitat in fire-prone forests, most notably in southwest Oregon and northern California. Put simply, spotted owls are fighting a losing battle, a fact that has me wondering if the US Fish & Wildlife Service isn't whistling past the graveyard.

Barred owls, not to be confused with common barn owls, migrated west from their native East Coast environs a century or more ago. No one knows why, and until they started killing already-threatened spotted owls, no one cared. Now they do. Just how long it will take the barreds to finish off their brethren isn't known, but the situation has become so precarious that a federal biologist recently opined that shooting barred owls might be the only way to save spotted owls.

Some biologists believe spotted owls still have a fighting chance in so-called "dry-site" forests east of the Cascades in Oregon and Washington. But there is a problem here too: absent are the low-intensity ground fires that kept these forests open for eons, shade tolerant grand fir is pushing Douglas fir aside just



Mike McMurray

A northern spotted owl perched in second growth timber on the old Rogue River National Forest near Butte Falls, Oregon. For reasons yet unexplained northern and California spotted owls are now cross-breeding in southern Oregon and northern California, leading some biologists to wonder if the two sub-species shouldn't be treated as one.

as barred owls are pushing spotted owls out of their home range. And it is stagnating grand fir that is fueling most of the stand replacing wildfires in this region. So, minus a long-term thinning program, opposed by the same environmental groups that pushed the 1990 threatened species listing, the habitat potential these forests still hold will soon be lost.

Astonishingly, the US Fish & Wildlife Service acknowledged this threat in their November 2004 Spotted Owl Status Review—a review in which the agency admitted that uncharacteristic wildfire has been the leading cause of owl habitat loss since 1994. What remains a mystery is why the agency continues to oppose the quite manageable low-level risk associated with thinning, while accepting the quite unmanageable, high level risk associated with catastrophic wildfire.

How and why the government failed so miserably in its costly attempt to protect spotted owls is a sordid tale that illustrates what happens when science is politicized. Begin with the fact that protecting owls was never the objective. Saving old growth forests from chainsaws was. The owl was simply a surrogate—a stand-in for forests that do not themselves qualify for ESA protection. But if a link could be established between harvesting in old growth forests and declining spotted owl numbers, the bird might well qualify for listing—a line of thinking that in 1988 led Andy Stahl, then a resource analyst with the Sierra Club Legal Defense Fund, to famously declare, "Thank goodness the spotted owl evolved in the Northwest, for if it hadn't, we'd have to genetically engineer it. It's the perfect species for use as a surrogate."

Indeed it was. But to back their play, the Sierra Club, the Audubon Society and their friends in the Clinton administration needed a good story for the judge. They found it in three obscure reports: a 1976 master's

thesis written by wildlife biology major Eric Forsman at Oregon State University; Mr. Forsman's 1980 doctoral dissertation and a 1984 report written by Forsman and two other biologists. All three reports suggested a strong link between declining owl populations and harvesting in old growth forests. Unfortunately, this hypothesis has never been tested. So despite 16 years of research, no link between old growth harvesting and declining owl populations has ever been established.

Moreover, we know little about the relationship between harvesting and owl populations. One such study—privately funded—infers an *inverse* relationship between harvesting and owls. In other words, in areas where some harvesting has occurred owl numbers are increasing a bit, or at least holding their own, while numbers are declining in areas

where no harvesting has occurred.

This news will come as no surprise to Oregon, Washington and California timberland owners who are legally required to provide habitat for owls. Their lands, which are actively managed, are home to the highest reproductive rates ever recorded for spotted owls. Why is this?

One possible answer is that the anecdotal evidence on which the listing decision was based is incomplete. No one denies the presence of owls in old growth forests, but what about the owls that are prospering in managed forests and in forests where little old growth remains? Could it be that spotted owls are more resourceful than we think?

We don't know—and the reason we don't know is that 16 years ago federal scientists chose to politicize their hypothesis rather than test it rigorously, to flatly reject critiques from biometricians who questioned the statistical validity of evidence on which the listing decision was based, to declare with by-god

certainty that once the old growth harvest stopped owl populations would begin to recover.

No doubt one or more environmental groups will use the government's call for recovery plans to demand that even more habitat be set aside for spotted owls. When that demand is made, someone ought to remind Congress of a recent U.S. Forest Service estimate that an additional 1.1 million acres of federal forestland in the Pacific Northwest have grown into old growth status since the owl's listing. But owl numbers continue to decline, underscoring the need for federal agencies to move beyond politics and interagency bickering. What's needed now is a science-based recovery plan that addresses the underlying reasons why owls are still in big trouble.

Perhaps the untold story of the northern spotted owl will lead the U.S. Senate to endorse changes in the federal Endangered Species Act ratified by the House of Representatives last fall. Among other things, the House version man-

dates immediate development and implementation of recovery plans for all listed species. To avoid repeats of the spotted owl fiasco, it would also be nice if scientists selected to peer-review listing proposals represented *all sides* of inevitably controversial questions.

It should not take 16 years to write a recovery plan. The fact that it did ought to prompt some very pointed questions about what went on behind locked doors in Portland, Oregon's U.S. Bank Tower—sadly nicknamed the "Tower of Power" by government scientists who gathered there—beyond public and congressional scrutiny, in the spring of 1990 to sift through the pieces of their story. Congress ought to ask for their notes. I'm told they were shredded daily.

"Owl Be Damned" is adapted from a Jim Petersen essay that first appeared in the *Wall Street Journal*, Feb. 18, 2006. Mr. Petersen is publisher of *Evergreen*.



Jim Petersen

More than 10,000 Oregon loggers and millworkers rallied against the spotted owl listing May 23, 1990 in Pioneer Square in downtown Portland. Their outcry was for naught: the owl was listed as a threatened species a month later. More than 70,000 lost their jobs in Oregon, Washington and northern California.

ESA: Triage or Roach Motel?

By Dave Skinner

As most years, 1973 had its ups and downs. George Steinbrenner bought the New York Yankees, America launched Skylab, first-class stamps cost eight cents, George Foreman was the heavyweight boxing champ, while Secretariat won the Triple Crown.

American troops withdrew from Viet Nam. Terry Meeuwsen of Wisconsin was crowned Miss America. Motor Trend's Car of the Year was the Chevy Monte Carlo, and Roberta Flack's "The First Time Ever I Saw Your Face" won the Grammy.

Computer scientist Vinton Cerf began developing the protocol later to be called TCP/IP, and Xerox's Palo Alto Research Center (PARC) built a prototype of the world's first personal computer, the Alto. It even had a mouse.

In reaction to Israel's victory in the Yom Kippur War, OPEC imposed the Arab oil embargo, while on the same day, December 28, 1973, at the Western White House in San Clemente, Richard M. Nixon signed the Endangered Species Act.

In the 33 years since, much has changed. Secretariat and Richard Nixon are long gone. American soldiers fight a guerrilla war in baking desert instead of steamy jungle. George Foreman peddles hamburger fryers. Skylab rests (mostly) across several thousand square miles of the Indian Ocean and Australia, while thousands of Monte Carlos all across America have been scrapped and recycled—possibly into 2006's Car of the Year, the Honda Civic.

Millions of Americans today use their personal computers (none made by Xerox) for correspondence, skipping the 39 cents for a stamp thanks to Cerf's Internet-access programming. Roberta Flack still sings. Her latest: Recording the Mr. Rogers' Neighborhood theme



Dave Skinner

Evergreen writer Dave Skinner in a self-portrait amid the ruin on the Siskiyou National Forest following the 2002 Biscuit Fire, which destroyed 500,000 acres of timberland, including 119,000 acres of spotted owl habitat. According to the US Forest Service, wildfires have destroyed five times more late successional reserve on the Siskiyou in the last 20 years than was harvested in 50 years.

song for a Fred Rogers tribute album. Miss America? You can look it up.

What hasn't changed? Steinbrenner still owns the Yankees, OPEC still controls most of the world's oil reserves and the Endangered Species Act is still law.

Whatever The Cost

Upon passage, the Endangered Species Act (ESA) was hailed as the most powerful environmental law ever written by any nation, ever. It still is.

In a nutshell, under ESA, all federal agencies must conserve endangered and threatened species, and are prohibited from authorizing, funding, or carrying out any action (as stated in Section 7, subsection 2 of the ESA) "likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected States, to be critical [...]" Furthermore, under Section 9's listing of prohibited acts, no entity or individual can "take any such species within the

United States or the territorial sea of the United States." The term "take" means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." In the words of the Supreme Court, the federal government's highest calling is "to halt and reverse the trend toward species extinction, whatever the cost."

Effective? Or not?

The ESA's reordering of federal priorities has created iconic social and political conflicts across the nation, from Tellico Dam to the Florida Everglades to Yellowstone to the Klamath Basin and beyond. But the law and its "whatever the cost" mandate

has, barring minor changes in 1978, 1982, and 1988, remained substantively unchanged for 32 years. Yet questions remain: Does the Endangered Species Act actually work? Is this "most powerful law" actually effective? It depends on who you ask.

There are any number of websites hosted by environmental organizations that claim the Endangered Species Act is 99 percent successful. After all, only a handful of the nearly 1300 species have been removed from the ESA rolls—"delisted"—due to extinction. Great. But the list of species delisted because the Act has helped them recover is even shorter. Worse, it appears that the present law actually impedes its central purpose as spelled out in Section 3 of the ESA: "(3) The terms "conserve," "conserving," and "conservation" mean to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary." Some may recall when, in May 1998, Interior

Secretary Bruce Babbitt announced a “new policy, to emphasize delisting” in order to prove “the Endangered Species Act works. Period. In the near future many species will be flying, splashing and leaping off the list. They made it. They are graduating.”

Unfortunately, of the 29 species Secretary Babbitt enthused over, 19 were coming off the list either because of data or taxonomic errors, or extinction. Only four species (three plants and the Pahrump pupfish) were coming off due to ESA policy. Three bird species (brown pelicans, peregrine falcons and bald eagles) were proposed for delisting, not because of ESA, but at least in part due to restrictions on DDT implemented in the 1970s. Six years later, by the way, only the peregrine falcon is actually off the list.

As of January 5, 2006, 1,264 species were listed under the Act. At a ceremony handing wolf management to the state of Idaho that day, Interior Secretary Gale Norton pointed out: “The goal of the Endangered Species Act is to recover to the point where (endangered animals) no longer need the protections.” Norton said, “It’s the same as a hospital. The purpose of a hospital is not to keep people there.”

Norton is not alone in comparing ESA’s purpose to that of a hospital. As Wildlife Mississippi executive director James L. Cummins put it to Congress last year, if endangered species management were health care, “we would have put 1,264 people in the hospital, kept 989 in intensive care (endangered), 275 in the regular ward (threatened) and released ten (delisted).” What Cummins doesn’t say is this “hospital” might actually be a Roach Motel—99 percent of species “patients” check in, but they don’t check out. Never mind that this “hospital” has, in the face of giant technological leaps outside its walls, pretty much remained the same as built 32 years ago. Except for a couple coats of Senate paint, new Congressional carpet, perhaps new USFWS-logo sheets on the beds, and fixing the windows broken in escape attempts...it’s just the same as it was in 1973, right down to the journals in the “doctor’s” lounge and the manual typewriters used by overwhelmed admissions staff. What could be done to



Mike McMurray

Perhaps more than any other species, the bald eagle underscores what can happen when proactive management is undertaken. There were only 417 nesting pairs of eagles left in the lower 48 states in the 1960s. Today, thanks to a ban on DDT, and protection from hunters, there are 5,748 nesting pairs. But eagles are still on the ESA list, six years after delisting was proposed. Might a similarly proactive approach with spotted owls have netted a better result?

improve and update this place? Plenty.

Evergreen decided to ask conservation experts their views and suggestions for improving and updating the Endangered Species Act. Their answers were wide ranging, but had one common theme:

It’s the Habitat, Stupid

Many species are on the Endangered Species list because they lack habitat, more specifically suitable, effective habitat. That much was obvious when ESA’s authors wrote and Congress approved the “critical habitat” provisions of the Act. But 32 years of study shows that of millions and millions of acres of land in America that could be suitable, effective habitat, very little is actually being managed to make it so. Why? Read on.

Private Habitat Management

Critical habitat designation on public lands in the western part of the United States has been a matter of intense controversy, much covered in *Evergreen*. But consider Aldo Leopold’s prescient 1934 warning: “Conservation will ultimately boil down to rewarding the private landowner who conserves the public interest.” After all, according to U.S. Department of Agriculture, while public forestlands total 317 million acres (42.38%), private forestlands comprise more: 431 million acres (57.62%), predominantly in the eastern United States. Furthermore, millions of acres of ranch and farmland nationwide provide habitat for wildlife.

In the report *Delisting Endangered Species: Process Analysis and Idaho Case Studies*, Mark McClure, Philip S. Cook and Jay O’Laughlin of the University of Idaho College of Natural Resources Policy Analysis Group write “designation of critical habitat has become a significant obstacle to obtaining landowner cooperation in recovery efforts for many species (USFWS 2003a). Although the ESA can compel agencies and landowners or managers not to harm listed species and not to cause significant adverse modification of their habitat when it injures members of the species,

the Service cannot compel them to take the positive steps needed to recover species. Such actions must be done voluntarily.”

“Most listed species are found in whole or in part on nonfederal lands, and the Service has found that state and private landowners are generally strongly opposed to having their property designated as critical habitat. This is a classic example of good intentions failing the test of reality (USFWS 2003a).”

The reality is, as James Cummins writes, “we are doing a great job of preserving the status quo of the red cockaded woodpecker. Its optimum habitat is characterized by old-growth pine forests with little or no hardwood understory” thanks to frequent natural and set fires. But “because of liability and the desire of many to not create a habitat favorable for regulation, controlled burns are not used as much. This lack of management has resulted in no colonies of the woodpecker to be found on private land in Mississippi.”

Most of the South is privately held, and as Cummins pointed out to *Evergreen*: “Eight of the top ten states with most listed species are in the South.” He feels that cooperation along the lines of what has been called “Southern rules of engagement” is the only way out of the status quo: “We’ve had enormous success with other environmental laws by providing incentives for private landowners” and suggests adding language to the ESA that does the same. A tiny step in the right direction is

legislation which Cummins worked closely with Senator Thad Cochran plus Congressmen Greg Walden and Scott McInnis to pass in the 108th Congress, the Healthy Forest Reserve Program (HFRP), part of the Healthy Forest Restoration Act. HFRP authorizes acquisition of 99-year or 30-year easements (not to exceed 99 years), or use of ten-year cost-share agreements to promote the recovery of threatened and endangered species on up to two million acres of qualifying lands. Participating landowners also get “safe harbor” protections as a reward for providing a net conservation benefit. But the current \$2.5 million appropriation doesn’t go very far across millions of acres. Boone and Crockett Club chairman Bob Model owns and runs the spectacular Mooncrest Ranch east of Yellowstone Park in Wyoming. He has built a successful ranch and outfitting operation despite the presence of wolves and grizzly bears on his property. Not all is peaches and cream for Mr. Model: “When I have a problem, it’s got to be solved. At the end of the day, all ranchers and farmers need some help. If it affects my ability to make a living, then I have an alternative, to sell. That’s the reality and that’s something people don’t seem to focus on.”

Another reality: When landowners like Model sell, they sell for residential subdivisions, which make rotten wolf and bear habitat. “If you have good habitat in a good partnership, you’re going to provide habitat for lots of critters and lots of plants,” Model points out. “There should be some kind of reward for doing the right thing, instead of punishment.”

Balancing of Harms

Case law, beginning with the Supreme Court’s ruling in the TVA vs Hill, has firmly established that under the Endangered Species Act, there is no balancing of economic or social burdens when it comes to endangered or threatened species. The introductory language of ESA mentions extinction “as a consequence of economic growth and development un-tempered by adequate concern and conservation” but there is no direct “tempering” language in the implementation sections at all.

In Dr. O’Laughlin’s view, “the Endangered Species Act was written purposely so there is no balancing

mechanism. The only economics in the act is the marginal economic analysis done during the designation of critical habitat as outlined in the 1978 Amendments. We don’t do any other kind of business in our society without considering costs and benefits, so [the ESA] is really different in that respect.”

Fine, but there is another balance, that of environmental risk, that ESA also ignores. To wit, as former Forest Service Chief of Research Robert Buckman put it to *Evergreen* in 2004, “What is the risk of doing something versus the risk of doing nothing?”

Obviously, for private landowners the risk of doing nothing for ESA-listed



Roy Decker, Wildlife Art Studio, Branchville, New Jersey

Wild turkey populations are flourishing in the U.S. today, thanks to the cooperation of private forestland owners who provide ample habitat for them in their well-managed forests. Years ago, when turkey populations were in serious decline, it was estimated that each nesting pair of turkeys required 5,000 acres of undisturbed bottomland hardwood as habitat, but thanks to proactive, science-based research we now know turkeys can do very well in managed forests.

species is far less than doing something. But what about on public lands or for federally funded projects?

Regulators and Managers

Under the ESA, federal agencies fall into two categories, regulators or managers. The U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration regulate land-based and ocean-going species, respectively. Everyone else has to “consult” with USFWS and NOAA (formerly the National Marine Fisheries Service or NMFS) before implementing a federal action.

Because the ESA treats “harm” as a prohibited take, and by extension, the

risk of harm, the regulators at both USFWS and NOAA take the position that if no action is taken, there is no risk and therefore, no harm. Case closed.

But, warns Alan Houston, a forester and wildlife biologist for the Ames Plantation in Tennessee, “when we leave forests to nature, as so many people seem to want to do, we get whatever nature serves up, which can be pretty devastating at times, but with forestry we have options, and a degree of predictability not found in nature.”

For example, the risk of fire in over-dense stands of timber increases as forest management or thinning decline. Do nothing long enough, and the odds simply catch up. As former Forest Service Chief Jack Ward Thomas, a nationally recognized wildlife biologist with over 400 published papers explained to *Evergreen*, land managers and “ecologists tend to think in terms of dynamic systems that respond and react to disturbance, such as fire, blowdown, disease, clearcuts, whatever. Disturbances happen, and there is an ecological reaction to that disturbance. In many cases, the effect of those disturbances are not measurable in the short-term, but are absolutely inevitable in the long-term.”

Ironically, when projects are stopped over short-term risk, but habitats go up in flame later, as did 119,000 acres of spotted owl nesting, roosting and dispersal habitat in the Biscuit conflagration of 2002, ESA regulators, by law, see no harm. Everyone else sees no, um, fowl.

Steve Mealey, consulting forester and retired Forest Service leader, explains how risk conflict stymied the Interior Columbia Basin

Ecosystem Management Plan. The original draft contained direction for active vegetation management and restoration that “included many acres of lowland areas of Condition Class 3 [high fire risk] riparian forests where a fire would have a very deleterious effect including stream heating and so on.”

Despite what Mealey describes as intense discussions about the consequences of inaction, “NFMS and USFWS said ‘no,’ while the intent was to prevent such effects in the long-term, you can’t demonstrate when and where that long-term effect will take place if you don’t do this. We couldn’t prove a negative.”

“The management agencies tried in vain to explain that long-term effects were knowable,” but the regulators refused. “The problem was there was no

mandate in the consultation process to consider short and long-term risks in a relative way. If I could fix one thing, it would be this overly precautionary character of the Act. If we could fix that, I could walk away confident it would work better.”

Congress has already partially fixed the risk problem in a recent law. Pertaining to judicial review of injunction requests against hazardous fuels management projects, Section 106 (3) of the Healthy Forest Restoration Act (Public Law 108-148) requires judges to “balance the impact to the ecosystem likely affected by the project of (A) the short- and long-term effects of undertaking the agency action; against (B) the short- and long-term effects of not undertaking the agency action.”

An ESA amendment requiring Section 7 consultations to “balance the impact” of all actions, at the agency level as well as in court, would work wonders in Mealey’s view. Jack Ward Thomas adds another suggestion, the establishment of a “permanent, standing review committee appointed by regulatory and land-management agencies that would study the comparative risks of a management proposal.” Because internal review processes are not as good as Thomas feels they could be, “inserting the review board between the field level and the courtroom would save time and money by allowing a legal review before confronting a judge.”

The bottom line would be less harm, and yep, more fowl.

Triage at the Roach Motel

With the Endangered Species Act, Congress set a priority for the U.S. Government: save and recover species. But there was no guidance on which species to save first—except a save-them-all-now, “no matter the cost” mandate. The resulting avalanche of litigation-driven listing petitions has overwhelmed federal wildlife regulators.

When disaster strikes, hospitals use triage to set priorities aimed at delivering limited care to the most patients in



Alan Carey, Bozeman, MT

Of all the charismatic mega-fauna roaming the West’s remote regions, none grabs more headlines than the grizzly bear, with the possible exception of the wolf. Grizzlies, wolves and bald eagles are now the focal point of delisting debates. Many experts believe the U.S. Fish & Wildlife Service now has the science it needs to manage these species after delisting, but the bureaucracy is reluctant to let go, as are environmental groups who use these species to maintain their political power bases.

the most effective way. The agency “admissions desk” is not allowed to do this. Steve Williams spent three years as USFWS director and is now president of the Wildlife Management Institute. His experiences at the “admissions desk” led him to the conclusion that “the Service should be allowed to prioritize pending petitions within the available resources, first on a biological basis. There need to be more objective standards, laid out in law, for listing. Standards really don’t currently exist, leaving USFWS open to a wide variety of legal challenges.”

Furthermore, there is the issue of setting not only biological priorities, but fiscal priorities that allow the most bang for the buck. Jay O’Laughlin declares, “We need to ask, where’s the funding going to be most effective for endangered species?”

Further, says Williams, “those same standards should apply to delisting,” a view which O’Laughlin shares: “You’ve got to make the recovery-plan part of the Act as real, with the same teeth, as the other parts of the ESA have. Right now, most ESA scholars say the recovery plan is the weakest part of the law, but if recovery is the goal, then it ought to be the strongest.”

Strong enough, that is, to actually allow a little flying, splashing and leaping despite the natural desires of bureaucrats to hold jurisdictional turf,

and of environmental groups to retain political relevance.

The bald eagle and grizzly are twin cases in point. In the 1960s, there were only 417 nesting pairs of bald eagles in the Lower 48. But the ban on DDT combined with legal protections has allowed the population to climb to more than 5,748 pairs of bald eagles nesting in the lower 48 states. The threat of extinction is no longer plausible, yet six years after delisting was proposed, the beat goes on. “In the case of the grizzly bear, the science is proved, the care and careful work done to bring the bear back met the recovery goals,” says Bob Model. “Now you’ve gotta let it go.”

Can we, and should we, “let go?” In James Cummins’ view, “USFWS has good knowledge of what most species need in terms of recovery. In many cases, it’s not simply a matter of leaving something alone and letting nature take its course. It’s management, so that the right habitat conditions for that species exist.”

Steve Mealey agrees. The agencies “have people who understand the problems and passionately want to fix them...but if you want to fix them, and let the agencies do what they know how to do, fix the laws.”

The Fix

Endangered Species Act reform is sure to be controversial. Special interests have built a political power structure upon the Act and will seek primarily to update and improve their power base, not the effectiveness of the Act in recovering species. Will Congress ever get past the power games and bickering? Well, as James Cummins put it to *Evergreen*: “How do you legislate common sense? We need to set the table so that common-sense discussions can take place. If we can all find ways to make the components of land management work for the benefit or at least not harm of the species, and we try to be reasonable about it, in the long run, the species will be the winner.”

Isn’t that the point?

The Evergreen Foundation: Exploring the art and science of forestry

The Evergreen Foundation is a non-profit forestry research and educational organization dedicated to the advancement of science-based forestry and forest policy. To this end, we publish *Evergreen*, a periodic journal designed to keep Foundation members and others abreast of issues and events impacting forestry, forest communities and the forest products industry.

In our research, writing and publishing activities, we work closely with forest ecologists, silviculturists, soil scientists, geneticists, botanists, hydrologists, fish and wildlife biologists, historians, economists, engineers, chemists, private landowners and state and federal agencies responsible for managing and protecting the nation's publicly owned forest resources.

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Since the 1990 listing of the northern spotted owl, well managed tree farms like this Seneca-Jones Timber Company plantation in southern Oregon have become the economic lifeblood of the West's lumber industry.

Jim Petersen

Cover photo by Mike McMurray taken in a managed redwood stand on Simpson Timber Company land near Korb, California. The highest reproductive rates ever recorded for northern spotted owls were recorded in intensively managed forests in northern California.

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