

Protecting  
Species Of  
Northwest  
Old-Growth  
Forests



# SAVING

| All The Parts



## TABLE OF CONTENTS:

Introduction .....	3
Background .....	4
The Survey and Manage Program protects old-growth forests and species.....	5
Cobble Knob and the Cryptic paw lichen.....	5
Old-growth logging and rare snails.....	6
Lungless salamanders—denizens of old-growth forests.....	8
The Survey and Manage Program protected the Oregon red tree vole .....	10
The ecological and societal importance of the Survey and Manage species .....	11
Species warranting protection under the Endangered Species Act .....	15

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*Hydromantes shastae, Plethodon larselli, Plethodon stormi, Plethodon vandykei, Arborimus longicaudus longicaudus,*

## INTRODUCTION

More than one hundred little-known species will lose key habitats and are likely to become extinct under an obscure but momentous rule change engineered by the Bush Administration to boost logging in mature and old growth forests in northwest California, western Oregon, and western Washington.

With little fanfare, the Bush Administration dropped rules that require the Forest Service and Bureau of Land Management (BLM) to survey for rare species and to refrain from logging where necessary to ensure their survival. The "Survey and Manage" Program provides a safety net for hundreds of terrestrial species.<sup>1</sup> Like the now-famous northern spotted owl, these Survey and Manage species are imperiled by a century of logging of old-growth forests. But because they live in small areas and cannot move as easily as owls, these species are not adequately protected by the system of reserves established for the owl.

Ignoring the costs of potential species extinction and ecosystem degradation, the Bush Administration argues that eliminating the Survey and Manage Program is a minor bureaucratic adjustment to save money and speed resource extraction. This report shows that, on the

contrary, survival of these species does matter. Many serve important roles maintaining the health and productivity of Northwest forests and provide other valuable benefits to society.

In fact, the Survey and Manage Program has worked as designed, shielding otherwise unprotected species from the loss of their old forest habitat. If the Survey and Manage Program has a weakness, it has been lax enforcement by agencies more intent on logging remnant old-growth forests than protecting the creatures in those forests. In many instances, the Survey and Manage Program allowed too much logging in rare species' habitats.

Now that the Bush Administration has succeeded in its efforts to eliminate the Survey and Manage Program, hundreds of species lack sufficient protection. Many are at risk of local or regional extirpation or even global extinction. Through careful examination of the available information, we identified 106 species that will likely warrant listing as threatened or endangered under the Endangered Species Act since they have lost the protection of the Survey and Manage Program. The final section of this report discusses how we identified these species and includes a full list of the species.



**The fungi *Sowerbyella rehnana* occurs only in mature forests with a diversity of tree species, deep mossbeds, and decaying wood in the soil.**

PHOTO SOURCE

<http://www.fs.fed.us/pnw/mycology/survey/images/index.html>

<sup>1</sup> A parallel program, the Aquatic Conservation Strategy, protects species dependent on healthy rivers, streams, wetlands, and riparian forest habitat. Although the program is critical to recovery of endangered salmon and trout, the Bush Administration has just significantly weakened the ACS and made it much easier to extensively clearcut forests and build damaging roads through the national forests.



## BACKGROUND

In 1994, President Clinton's Northwest Forest Plan created a network of reserves to protect the northern spotted owl, marbled murrelet and several species of salmon. Although a substantial step forward, the plan targeted for logging roughly one million acres of mature and old-growth forest (about 20% of the remaining old forests on public lands.) In a commendable effort to ensure this logging wouldn't drive numerous species to extinction, the Clinton Administration asked panels of scientists to evaluate whether the Plan would ensure the survival of over 1,000 species.

Scientists were chosen for expertise on individual or groups of species, such as mollusks and lichens. They were asked to rate the likelihood that the Northwest Forest Plan would provide sufficient habitat to "allow species populations to stabilize, well distributed across federal lands."<sup>2</sup> Looking at factors like species' rarity, affinity for old forests, presence or absence in reserves, and ability to disperse between isolated habitat patches, the scientists concluded the reserve system was unlikely to shelter several hundred species. The experts were also asked to identify mitigation to reduce or avoid adverse impacts. The Survey and Manage Program was consistently identified as an essential mitigation to keep federal logging from causing the extinction of certain species by searching for and protecting remaining refuges of occupied habitat.<sup>3</sup>

The Survey and Manage Program originally included over 400 species in several levels of protection. For 77 species, the Forest Service and BLM agreed to survey

before allowing any ground-disturbing activities and to create protected buffers where the species were found. The agencies, however, planned numerous timber sales without the required surveys. In 1998, a coalition of conservation groups sued. Judge Dwyer, whose 1990 injunctions prompted creation of the Northwest Forest Plan and who ruled the plan was barely legal in 1994, halted nearly 100 timber sales until surveys were conducted. The court underscored the importance of the Survey and Manage Program:

"The...survey requirements are clear, plain, and unmistakable....Far from being minor or technical violations, widespread exemptions from the survey requirements would undermine the management strategy on which the [Northwest Forest Plan] depends. The surveys are designed to identify and locate species; if they are not done before logging starts, plants and animals listed in the [Northwest Forest Plan] will face a potentially fatal loss of protection."

In part because of the Forest Service's failure to conduct those promised surveys, the agency has never been able to log at levels desired by the timber industry. In response, President Bush, whose party received over a million dollars in campaign donations from the Northwest timber industry within one week of a Bush campaign visit to Portland in May 2000, has taken aim at the Survey and Manage Program. In March, 2004, the Administration totally eliminated the Survey and Manage program.

**The Klamath Sideband snail  
(*Monadenia fidelis Klamathica*) is known from 11 sites,  
but has been seen at only one site in recent years.**

PHOTO BY BARRY ROTH



<sup>2</sup> U.S. Department of Agriculture Forest Service and U.S. Department of Interior Bureau of Land Management. 1994. Final supplemental environmental impact statement on management of habitat for late-successional and old-growth forest related species within the range of the northern spotted owl. February, 1994.

<sup>3</sup> id.

*Alpova alexsmithii, Arcangeliella camphorata, Bridgeoporus nobilissimus, Cortinarius barlowensis, Cortinarius wiebeae, Cudonia monticola,*



## THE SURVEY AND MANAGE PROGRAM PROTECTS OLD-GROWTH FORESTS AND SPECIES

The Survey and Manage Program has identified and protected important habitat for rare species, some on the brink of extinction. Often this has saved remnant stands of old-growth forests in otherwise degraded landscapes. These islands of biodiversity provide refugia from which old forest species can recolonize recovering forests. The Bush Administration's rule change will allow logging of these important habitats. The following are but a few examples of the places and species protected under the Survey and Manage Program.

### The cryptic paw lichen (*Nephroma occultum*) and the Cobble Creek timber sale

In 1996, the BLM began cutting trees in the 110 acre Cobble Creek Timber Sale on Cobble Knob in southwestern Oregon. With Douglas-fir and sugar pine over six feet in diameter, the old-growth forest found on Cobble Knob is an island in a sea of young tree plantations—the last wild place of its size for miles and a textbook example of a refugium for old forest species.



The cryptic paw lichen (*Nephroma occultum*) only grows in the branches of very old trees (over 400 years).

PHOTO BY BRUCE McCUNE, OREGON STATE UNIVERSITY

Indeed, after the BLM began cutting trees, the cryptic paw lichen (*Nephroma occultum*) was found in some of the felled trees by Abby Rosso, an Oregon State University researcher. This species disperses poorly, so its elimination from Cobble Knob could easily have meant its permanent loss from the watershed.

The cryptic paw lichen primarily occurs high in the branches of trees older than 400 years, in low elevation old-growth forests. Because more than 95% of low elevation forests have been logged and because protected forests are almost entirely at middle and upper elevations, low elevation species like the cryptic paw lichen are at particular risk of extinction. The cryptic paw lichen converts nitrogen from the atmosphere to a form plants can use. Its loss could harm the health of Northwest forests, since the availability of fixed nitrogen is a critical factor in their growth.

The Cobble Creek Timber Sale typifies the success of the Survey and Manage Program. After the lichen was found, the BLM worked closely with Oregon State University researchers and others to determine whether logging would extirpate the lichen. The scientists concluded that cutting the timber sale was not compatible with the BLM's responsibility to protect the species:

"Maintenance of the *N. occultum* population within the Cobble Knob area will require the maintenance of an old-growth stand. Placing Cobble Knob in a normal harvest rotation is likely to eventually eliminate *N. occultum* from the stand, even with green-tree retention. As the older trees are eliminated over time but not replaced, the *N. occultum* population would likely also be eliminated."<sup>4</sup>

<sup>4</sup> Rosso, A. L., B. McCune, T. R. Rambo. 2000. Ecology and conservation of a rare, old-growth-associated canopy lichen in a silvicultural landscape. *Bryologist* 103:117-127.

Based on these conclusions, the Cobble Creek Timber Sale was canceled and a remnant, biologically important stand of old-growth forest was protected, benefiting the lichen, other old-forest dependent species and in the long run, the whole ecosystem.



**Ancient Douglas-fir on Cobble Knob.**

PHOTO BY FRANCIS EATHERINGTON, UMPQUA WATERSHEDS INC.

## **Old-growth logging threatens rare land snails in Oregon and northern California; new species discovered by the Survey and Manage Program**

Mollusks, including snails, slugs and clams, are a major component of the biological diversity of the Pacific Northwest, with at least 350 species known, of which 102 are closely associated with old-growth forests. Mollusk species help cycle nutrients in forested ecosystems by consuming leaves and other plant matter, and are an important food source for many aquatic and terrestrial species. The Northwest Forest Plan was less effective at protecting mollusks than any other group because Northwest mollusk species have small ranges, and are concentrated at low elevation where there are fewer reserves. It is thus not surprising that mollusks have been located in many old-growth timber sales. The following are just a few examples of timber sales that were stopped or modified to ensure the survival of rare mollusks under the Survey and Manage Program:



**Old-growth Douglas-fir marked to be cut in the Juncrock Timber Sale.**

PHOTO BY ROLF SKAR

## **Old-growth mollusk habitat slated for logging in the Juncrock Timber Sale**

Bordering the White River Wild and Scenic Area on the Mt. Hood National Forest, the Juncrock Timber Sale will remove old-growth western hemlock, grand fir and Douglas-fir trees from 550 acres, removing up to 85% of the canopy in

*Gymnomyces nondistincta*, *Gymnopilus punctifolius*, *Hebeloma olympianum*, *Hydnotriza inordinate*, *Hydnotriza subnix*, *Hygrophorus vernalis*,



some stands. Because of the Survey and Manage Program, a rare snail called the Columbia oregonium (*Cryptomastix hendersoni*) was found in four locations in the timber sale. The snail was originally believed associated with seeps and spring-fed streams along the Columbia Gorge, but with further surveys was also found to occur in mature, closed canopy western hemlock stands. The Forest Service placed 10-acre buffers around all snail locations, providing minimal assurance the species would not be extirpated, but allowing some logging to continue.

The Juncrock Timber Sale story doesn't show evidence of the pointless bureaucratic impediment the Bush Administration portrays in the Survey and Manage Program. Rather, a snail we knew little about was found in a new habitat type, and protections implemented had little impact on the overall economy, but assured a species wouldn't be extirpated.

## Meteor Timber Sale

Cutting trees up to six feet in diameter, the 744-acre Meteor Timber Sale on the Klamath National Forest will, along with two neighboring timber sales, liquidate much of the remaining low-elevation old-growth forest in the Salmon River watershed, increasing stream sediments and impacting a number of old forest dependent species. After surveys required by the Survey and Manage Program, the Trinity shoulderband snail (*Helminthoglypta talmadgei*) was found in 18 of 40 cutting units on the Meteor Sale. The snail is restricted to 25 locations in northern California and known to be sensitive to the removal of vegetation, which exposes the snails to desiccation. Snail locations were given 85' buffers where no logging will occur, protecting the snail's remnant old-growth habitat. In many cases, the Klamath National Forest has had to be forced to conduct surveys.<sup>5</sup> Now that the Survey and Manage Program has been eliminated, surveys are unlikely to be conducted and protection will not be offered to unique species like the Klamath shoulderband.

The Trinity shoulderband (*Helminthoglypta talmadgei*) occurs in small, isolated populations in the Klamath Mountains of Northern California, on rocky tree covered slopes.

PHOTO BY BARRY ROTH



## Deadwood Timber Sale

The Deadwood Timber Sale on the Six Rivers National Forest plans to cut 5.5 million board feet on 368 acres in the Grouse Creek watershed with much of this volume coming from remnant old-growth stands. The sale is expected to impact many old-growth dependent species, including the spotted owl, northern goshawk, and Pacific fisher, as well as a critical wildlife corridor on some of the only public lands in a landscape of highly degraded, private industrial timberlands.

In conducting surveys, Forest Service biologists found a new species of snail, called Schlick's shoulderband after the biologist who discovered the snail. Following discovery of this new species, the Forest Service created protected buffers, some up to 10 acres in size, around all inhabited sites. This new species owes its discovery and survival to the Survey and Manage Program.

<sup>5</sup> Personal communication from Regina Chichizola, Klamath Siskiyou Wildlands Center.



**Ancient forest marked for logging in the Deadwood Timber Sale.**

PHOTO BY SCOTT GREACEN, EPIC

The Deadwood sale is still moving forward, demonstrating that the Survey and Manage Program has hardly prevented all logging or even all logging that degrades and destroys old-growth habitat. Rather, it has protected key areas for species survival and moderated the rate of loss of old-growth habitat. In its drive to accelerate logging, the Bush Administration can't even tolerate this degree of moderation.

## **Lungless salamanders—denizens of old-growth forests**

Of the Survey and Manage species, some of the most interesting are the plethodon, or lungless salamanders. Unlike other salamanders, plethodon salamanders hatch directly from eggs without an aquatic larval stage. Plethodons breathe through their skin and although they don't live directly in water, they do need moist, shaded climes to survive, making them particularly sensitive to removal of the forest canopy by logging. They are generally found in old forest and are slow to return to forests following cutting. Five species are covered by the Survey and Manage Program: the Larch Mountain, Siskiyou Mountains, Van Dyke's, Del Norte and Shasta salamanders. The Survey and Manage Program has been highly successful at locating and protecting these salamanders.

## **La Roux Timber Sale**

The La Roux Timber Sale on the Gifford Pinchot National Forest would have logged 6.2 million board feet from 360 acres, including 52 acres of old-growth habitat in the Little White Salmon River watershed. This old-growth logging



**The rare Larch Mountain salamander lives in moisture laden old forests, and forests with deep talus and rocky substrates.**

PHOTO BY HANK WALLAY, <http://el.b.cs.berkeley.edu/photos/about.shtm>

*Phaeocollybia californica*, *Phaeocollybia dissiliens*, *Phaeocollybia fallax*, *Phaeocollybia gregaria*, *Phaeocollybia olivacea*, *Phaeocollybia oregonensis*,



was planned despite the fact that the Forest Service had concluded that old-growth forest was “fragmented” and “limited” in the Little White Salmon basin. The Forest Service initially tried to offer the sale without required surveys, but after an appeal and lawsuit by the Northwest Ecosystem Alliance, were forced to do the surveys. This was fortunate for the Larch Mountain salamander.

Only found in the Cascade Mountains of southern Washington and northern Oregon, the Larch Mountain salamander is extremely rare. Despite extensive surveys in Washington, less than 100 sites have been found. Surveys conducted in the La Roux Timber Sale found 47 new salamander sites, including 38 in a single logging unit, a true hotspot for the rare Larch Mountain salamander.



**Ancient tree in the La Roux Timber Sale protected by the Survey and Manage Program.**

PHOTO BY EMILY PLATT, GIFFORD PINCHOT TASK FORCE

Larch Mountain salamanders are very sensitive to changes in their cool and moist forest habitat. According to salamander experts, logging the La Roux Timber Sale was expected to alter the temperature and humidity of the salamander habitat, and could jeopardize the long-term viability of this important population.

All units containing the salamander or old-growth forest were dropped from the La Roux Timber Sale. These changes protected both an important salamander population and remnant old-growth forest, once again demonstrating the benefit of the Survey and Manage Program to Northwest forest ecosystems.

## Westpoint Timber Sale

Next to the Marble Mountain Wilderness on the Klamath National Forest, the Westpoint Timber Sale will log 1,026 acres, about half of which contains remnant old-growth stands, impacting five northern spotted owl home ranges, a Wild and Scenic River and inventoried roadless areas.

Because of the Survey and Manage Program, the Forest Service found a rare population of the Siskiyou Mountains salamander in Westpoint units. Recent genetic studies of the Siskiyou Mountains salamander, which occupy a very small range in coastal old-growth forests near the Oregon-California border, have found distinct population segments that may prove to be new subspecies. One of these populations, the Scott Bar Group, has been identified as being of substantial concern because of its exceedingly limited distribution and small size. The Forest Service recently concluded that the Scott Bar population of the Siskiyou Mountains salamander is “at high risk of extirpation.”<sup>6</sup>

After salamanders from the Scott Bar population were found in the Westpoint Timber Sale, the Forest Service created 120’ buffers around inhabited sites and dropped one unit. These protections for a highly imperiled population of a rare salamander would not have occurred without the Survey and Manage Program.

<sup>6</sup> USDA Forest Service and USDI Bureau of Land Management 2004.

## The Survey and Manage Program protected the Northwest's most unique mammal: the Oregon red tree vole



The unique Oregon red tree vole feeding on Conifer needles.

PHOTO BY CHRIS MASER

Found only in western Oregon and northwestern California, the Oregon red tree vole is truly an arboreal mammal, living high in the tree-tops of old-growth Douglas-fir and other trees and feeding only on conifer needles. Living its entire life-cycle in trees, the red tree vole is highly sensitive to disturbance from logging. And because the voles occupy a very small area of forest and are poor dispersers, logging and road building isolates populations, leading to decline and extirpation.

The Oregon red tree vole is one of the 77 species the Forest Service promised to survey before allowing any ground disturbing activities and to protect occupied habitat with 10-acre protective buffers. The voles can be found by searching for nests on branches, in cavities, or on the top of broken trees, ideally by climbing trees. The Forest Service was assisted in their search for tree voles by an active group of citizen volunteers called the "Northwest Ecosystem Survey Team" (NEST). Captivated by the canopy-dwelling existence of the Oregon red tree vole, NEST volunteers made it their mission to protect the voles by climbing thousands of trees in numerous timber sales.

In the Straw Devil Timber Sale, for example, NEST volunteers spent over a month climbing five-foot diameter Douglas-fir and incense cedar, finding over two dozen nest sites in one cutting unit alone. This 100 acre old-growth timber sale on the Willamette National Forest now has been modified, protecting some of this biologically important remnant low-elevation old-growth forest. In total, over 12 timber sales have been withdrawn or reduced in size to safeguard the red tree vole. Because the red tree vole is one of the northern spotted owl's primary food sources, it is not too much to say that protecting the vole helps to provide for the owl.



A NEST volunteer ready to climb and look for red tree voles.

PHOTO BY JAMES JOHNSTON

*Ramaria amyloidea*, *Ramaria araiospora*, *Ramaria aurantiiscescens*, *Ramaria cyaneigranosa*, *Ramaria gelatiniaurantia*, *Ramaria largentii*,



## THE SURVEY AND MANAGE SPECIES AND THEIR ECOLOGICAL AND SOCIETAL IMPORTANCE

One of the Bush Administration's stated reasons for removing the Survey and Manage Program is to reduce management costs from an estimated \$25.9 million to an estimated \$7.5 million per year. Although this savings is not insubstantial, it pales in comparison to the potential costs to society from extinction of Survey and Manage species and the loss of thousands of acres of mature and old-growth forests protected by the Program.



The mycorrhizal fungi *Phaeocollybia attenuata* is endemic to the range of the northern spotted owl, and only occurs in mature or old-growth forests.

PHOTO SOURCE

<http://www.fs.fed.us/pnw/mycology/survey/images/index.html>



Habitat for *Plethodon elongatus*, the Del Norte salamander.

PHOTO BY G. NAFIS

Loss of species biodiversity, even uncommon species, has real economic costs. Species pollinate most of our crops, control pests, provide food, create soils and are a major source of medicines and other useful products.<sup>7</sup> Of the 150 most common prescription drugs used in the United States, for example, 118 are derived from natural sources.<sup>8</sup> Pacific yew that grow in Northwest old-growth forests has already given us a multi-billion dollar life-saving drug for cancer. One of the Survey and Manage species could very well contain another life-saving compound.

Biodiversity is also essential to the sustainable functioning of ecosystems, with the loss of even one key species potentially resulting in the collapse of an ecosystem.<sup>9</sup> The Survey and Manage species are no exception. The following are just a few examples of the critical roles played by Survey and Manage species:

<sup>7</sup> Pimental, D., C. Wilson, C. McCullum, R. Huang, P. Dwen, J. Flack, Q. Tran, T. Saltman, and B. Cliff. 1997. Economic and environmental benefits of biodiversity. *Bioscience* V. 47, No. 11.

<sup>8</sup> Council for Agriculture, Science and Technology. 1999. Benefits of Biodiversity. Co-chairs G. David Tilman and Donald N. Duvick. Available at [www.cast-science.org](http://www.cast-science.org).

<sup>9</sup> Pimental et al. 1997

*Ramaria rainierensis*, *Ramaria rubrievanescens*, *Ramaria rubripermanens*, *Ramaria verlotensis*, *Rhizopogon chamaleontinus*,

🌳 Mycorrhizal fungi, including many Survey and Manage species, form a symbiotic relationship with plants, growing on their roots and aiding in the uptake of nutrients. Loss of mycorrhizal fungi to destructive forest practices has resulted in failure of forest vegetation to regrow following cutting. Fungi are a key source for antibiotics and show great potential as anticarcinogens.

🌳 Arboreal lichens fix atmospheric nitrogen, making it available to plants, and capture fog, retaining moisture in the forest canopy. Lichens also provide nesting material and forage for numerous animal species. Certain lichens have potential as antibiotics.

🌳 Bryophytes, including mosses, liverworts, and hornworts, are key to nutrient cycling in old-growth forests, intercepting and absorbing nutrients and water in the canopy and understory.<sup>10</sup> They also contribute to soil structure and stability.<sup>11</sup> Marbled murrelets lay their eggs directly on branches with only mosses keeping the eggs in place.

🌳 Mollusks feed on deciduous tree leaves, understory vegetation, large fungi, and inner bark layers, helping to recycle forest nutrients and enrich soils. Mollusks provide prey for a wide variety of mammals, snakes, birds, and fish.

🌳 Arthropods help to break down wood, contribute to organic matter in the soil and litter, pollinate flowering plants, and are a key component of the food chain in streams and rivers.

🌳 Amphibians are an important link in the food chain, serving as a major food source for other animals and controlling populations of the many terrestrial and aquatic species that comprise their prey.



**Madrone and Douglas-fir on Cobble Knob.**

PHOTO BY FRANCIS EATHERINGTON, UMPQUA WATERSHEDS INC.

<sup>10</sup> Brown, D.S., and J.W. Bates. 1990. Bryophytes and nutrient cycling. Bot. J. Linn. Soc. 104:129-147.

<sup>11</sup> Forest Ecosystem Management Assessment Team. 1993. Forest ecosystem management: an ecological, economic, and social assessment. U.S. Department of Agriculture Forest Service, U.S. Department of Interior Bureau of Land Management, Fish and Wildlife Service, and National Park Service, U.S. Department of Commerce National Marine Fisheries Service, Environmental Protection Agency.

*Thaxterogaster pavelekii*, *Tuber pacificum*, *Bryoria pseudocapillaris*, *Bryoria spiralifera*, *Nephroma occultum*, *Ancotrema voyanum*,





*Ramaria araiospora*, a rare old-growth forest fungi.

PHOTO SOURCE <http://www.fs.fed.us/pnw/mycology/survey/images/index.html>



High lichen diversity in the Juncrock Timber Sale.

PHOTO BY BARK



The Dunn's salamander.

PHOTO BY G. NAFIS

*Cryptomastix devia*, *Cryptomastix hendersoni*, *Deroceras hesperium*, *Fluminicola* n. sp. 1, *Fluminicola* n. sp. 11, *Fluminicola* n. sp. 14,





**Old-growth habitat on the Straw Devil Timber Sale in the Willamette National Forest.**

PHOTO BY JOSH LAUGHLIN, CASCADIA WILDLANDS PROJECT

Clearly, species covered by the Survey and Manage Program are critical to the maintenance, productivity, and functioning of old-growth forests. Old-growth forests in turn provide invaluable services to society. They are a source of clean water, filtered down through layers of organic duff and soil, for cities like Portland, Oregon. Old-growth trees filter pollution from the air and store significant quantities of greenhouse gasses that would otherwise contribute to global warming. Large old-growth forest stands moderate temperature extremes and increase precipitation.<sup>12</sup> They stabilize steep slopes, moderate the frequency and intensity of landslides.<sup>13</sup> Old-growth riparian forests hold soil in place along streams, slowing erosion and keeping streams free of sediments, helping fish and other aquatic organisms. Old-growth trees bank large quantities of nutrients in otherwise nutrient-poor systems.<sup>14</sup>

A source of awe, mystery and spiritual inspiration for humans of many cultures, old-growth forests provide a connection to a wilder past. The large trees and beauty of old-growth forests make them popular recreation areas, offering solitude and unparalleled opportunities for hiking, fishing and wildlife viewing. Just as these services provide value to society well in excess of the small cost of the Survey and Manage Program, the value of additional timber extracted is regularly exceeded by the damages incurred in logging pristine lands.

12 Countryman, C.M. 1955. "Old-growth conversion also converts fire climate." Pages 158-160 in *Proceedings of the Society of American Foresters Annual Meeting*. Harr, R.D. 1982. "Fog drip in the Bull Run municipal watershed, Oregon." *Water Resources Bulletin*. 18(5): 785-789. Chen, J., J.F. Franklin, and T.A. Spies. 1995. Growth-season microclimatic gradients from clearcut edges into old-growth Douglas-fir forests. *Ecological Applications* 5(1):74-86

13 Beschta, R. L. (1978). "Long-term patterns of sediment production following road construction and logging in the Oregon Coast Range." *Water Resources Research*, 14(6), 1011-1016. Error! Main Document Only.Amaranthus, M. P., Rice, R. M., Barr, N. R., and Ziemer, R. R. (1985). "Logging and forest roads related to increased debris slides in Southwestern Oregon." *Journal of Forestry*, April, 229-233.

14 Sollins, P. 1982. "Input and decay of coarse woody debris in coniferous stands in western Oregon and Washington." *Canadian Journal of Forest Research*. 12: 18-28. Franklin, J.F. and T.A. Spies. 1991. "Ecological definitions of old-growth douglas-fir forests." In: *Wildlife and vegetation of unmanaged Douglas-fir forests*. U.S.D.A. Forest Service Pacific Northwest Research Station. *General Technical Report PNW-GTR-285*.



**The rare lichen *Pseudocyphellaria rainierensis* is eliminated by clearcutting and slow to disperse to young developing stands, making it vulnerable to extirpation.**

PHOTO BY CHARLIE FERRANTI, BARK

*Fluminicola n. sp. 15, Fluminicola n. sp. 16, Fluminicola n. sp. 17, Fluminicola n. sp. 18, Fluminicola n. sp. 19, Fluminicola n. sp. 2, Fluminicola n. sp. 20,*



## SPECIES WARRANTING PROTECTION UNDER THE ESA NOW THAT THE SURVEY AND MANAGE PROGRAM HAS BEEN ELIMINATED



Rare nitrogen fixing lichen, *Pseudocyphellaria rainierensis*.

PHOTO BY JIM RILEY

With the elimination of the Survey and Manage Program, many species previously shielded by its provisions will require protection as threatened or endangered species under the Endangered Species Act (ESA). Indeed, the Survey and Manage Program was in part created to avoid listing more species, precisely because existing Forest Service and BLM programs had failed to protect the species habitat.

We have conducted a preliminary analysis of the Survey and Manage species to determine those likely to qualify for ESA protection. These species now facing extirpation or extinction are endemic to the Pacific Northwest with a few exceptions, and have a vulnerable (G3), imperiled (G2), or critically imperiled (G1) rating by the Oregon Natural Heritage Program, or a determination by the Forest Service that removal of the Survey and Manage Program would place the species at risk of extirpation in all or part of its range.<sup>1</sup> Based on these factors, we identified 106 species or subspecies that are candidates for threatened or endangered status, including the Oregon red tree vole, Siskiyou Mountains and Larch Mountain salamander, many unique snail species, rare old-growth fungi and others. (See Table 1 on page 17.)

The ESA allows citizens to petition to list species as threatened or endangered and requires the U.S. Fish and Wildlife Service to respond with a determination of whether the species requires protection. In answer to the Bush Administration's cynical removal of protection for the Survey and Manage species, we intend to petition the U.S. Fish and Wildlife Service to list most or all of the 106 species. Although removing the Survey and Manage Program may allow the Forest Service and BLM to cut valuable old-growth timber, in the near term, the eventual protection of numerous species under the ESA will eventually provide similar or greater protection for the species. During the interim, society as a whole will suffer incalculable costs from the loss or decline of the Survey and Manage species and the remnant old-growth forests they depend on.

There is another way. Instead of destroying the nation's natural heritage, polarizing Pacific Northwest communities, and causing unnecessary conflict and controversy by cutting old forests, the Bush Administration could meet most of the Northwest Forest Plan's social

<sup>1</sup> 15 USFS and BLM 2004.



and economic goals by encouraging active restoration of forests and watersheds. By focusing management activities on restoring highly degraded landscapes, Forest Service and BLM projects would enjoy broader public support and encounter fewer conflicts and delays.

To help protect mature and old-growth forests and their inhabitants, please contact the Forest Service and Bureau of Land Management, and your Congressional representatives. Ask them to revive the Survey and Manage Program until all remaining mature and old-growth forests in the Pacific Northwest are permanently protected. Tell them that you support the restoration of our national forests, not the obliteration of old-growth and their rare wildlife.

**Contact your Senator and Representative at:**

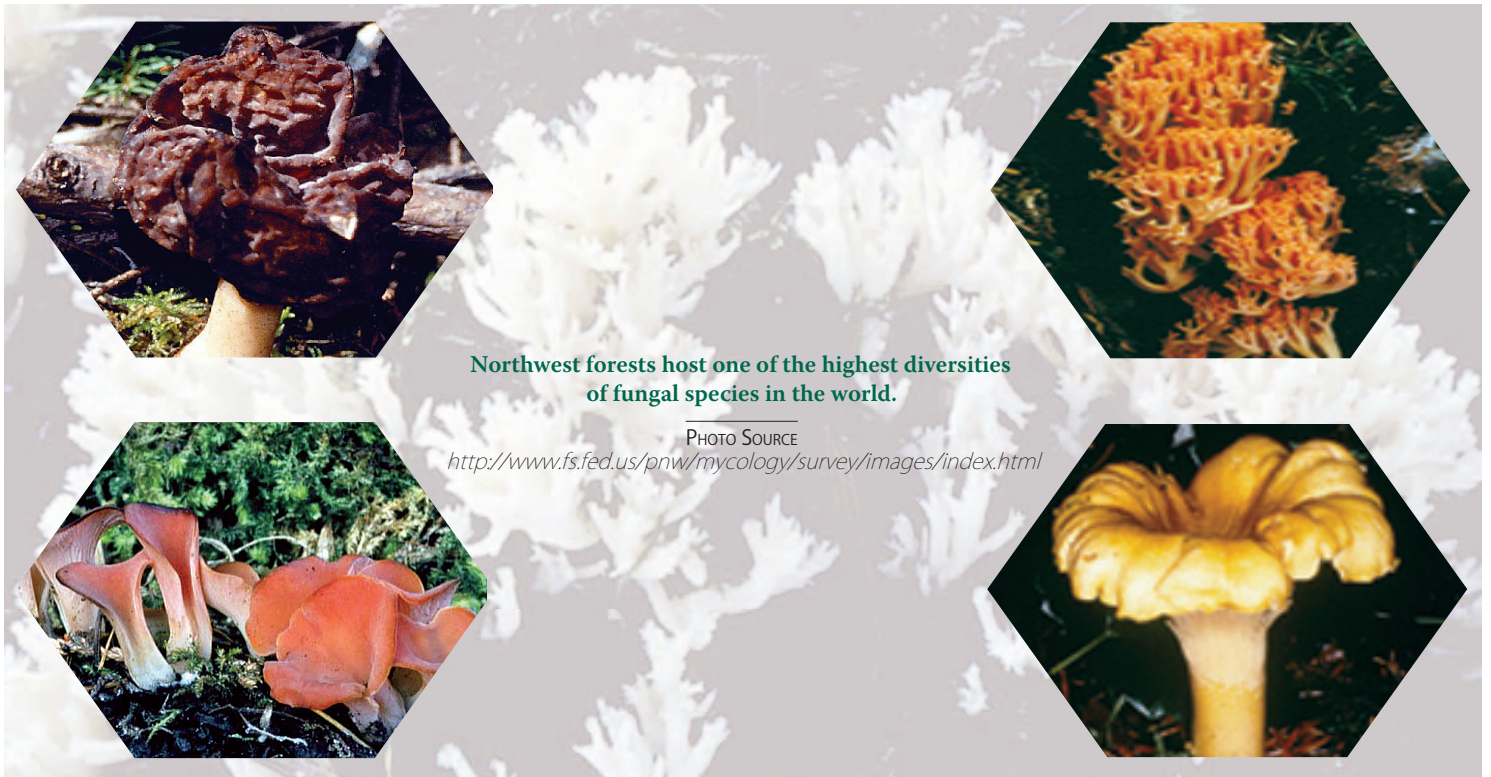
1-800-839-5276

**Write or call the Forest Service at:**

Mark E. Rey  
Undersecretary for Natural Resources and Environment  
U.S. Department of Agriculture, Whitten Building, Room 217E  
1400 Independence Avenue, S.W.  
Washington, DC 20250  
202-720-7173  
*Mark.Rey@usda.gov*

**Write or call Bureau of Land Management at:**

Rebecca Watson  
Assistant Secretary for Land and Minerals Management  
U.S. Department of Interior, Room 6613  
1849 C Street, N.W.  
Washington, DC 20240  
202-208-6734



Northwest forests host one of the highest diversities  
of fungal species in the world.

PHOTO SOURCE

<http://www.fs.fed.us/pnw/mycology/survey/images/index.html>

*Hemphillia pantherina*, *Juga* (O.) n. sp. 2, *Juga* (O.) n. sp. 3, *Lyogyrus* sp. 1, *Lyogyrus* sp. 2, *Lyogyrus* sp. 3, *Megomphix hemphilli*, *Monadenia chaceana*,



**Table 1.**

Species meriting listing as threatened or endangered under the ESA if the Survey and Manage Program is eliminated.

Species	Common name	Group	NWFP Endemic	PNW Endemic	Few Sites (<100)	DEIS lists as at high risk under Alt 2	Global Heritage rank
Hydromantes shastae	Shasta salamander	Amphibian	X		X		G1S1
Plethodon larselli	Larch Mountain Salamander	Amphibian	X		X		G3
Plethodon stormi	Siskiyou Mountains Salamander	Amphibian	X				G2G3
Plethodon vandykei	Van Dyke's Salamander	Amphibian	X		X		G3
Arborimus longicaudus longicaudus	Oregon red tree vole	Mammal	X				G3G4T3T4S1-4
Arborimus longicaudus silvicola	Dusky red tree-vole	Mammal	X		X		G3G4T1S1
Brotherella roellii		bryophyte		X	X		G2
Encalypta brevicolla var. crumiana		bryophyte	X		X		G4T1S1
Iwatsukiella leucotricha		bryophyte			X		G2G3S1-2
Albatrellus avellaneus		Fungi	X		X		G2
Alpova alexsmithii		Fungi		X	X		G2
Arcangeliella camphorata		Fungi	X		X		G2
Bridgeoporus nobilissimus	Fuzzy Sandozi	Fungi	X		X		G2?S2
Cortinarius barlowensis		Fungi	X		X	Yes	G3?
Cortinarius wiebeae		Fungi	X		X		G2
Cudonia monticola		Fungi			X	Yes	G3
Dermocybe humboldtensis		Fungi	X		X		G1G2S1
Destuntzia fusca		Fungi			X		G2S1-2
Fevansia aurantiaca		Fungi	X		X		G1
Gastroboletus vividus		Fungi			X		G2?S1-2
Gastrosuillus umbrinus		Fungi	X		X		G1Q
Gomphus bonarii		Fungi			X	Yes	G3?Q
Gymnomyces nondistincta		Fungi	X		X		G1
Gymnopilus punctifolius		Fungi		X	X	Yes	G3G4 (CA only)
Hebeloma olympianum		Fungi	X		X		G1G2
Hydnotrya inordinata		Fungi	X		X		G2
Hydnotrya subnix		Fungi	X		X		G1
Hygrophorus vernalis		Fungi	X		X		G2
Leucogaster citrinus		Fungi	X		X	Yes	G3G4
Macowanites lymanensis		Fungi	X		X		G1G2
Macowanites mollis		Fungi	X		X		G1G2
Octavianina cyanescens		Fungi	X		X		G2?
Otidea smithii		Fungi			X		G2
Phaeocollybia attenuata		Fungi	X		X	Yes	G3
Phaeocollybia californica		Fungi	X		X	Yes	G2?
Phaeocollybia dissiliens		Fungi	X		X	Yes	G2G3
Phaeocollybia fallax		Fungi		X	X	Yes	G4?
Phaeocollybia gregaria		Fungi	X		X		G1G2
Phaeocollybia olivacea		Fungi		X	X	Yes	G2

*Monadenia fidelis lamathica, Monadenia fidelis minor, Monadenia fidelis ochramphalus, Monadenia troglodytes troglodytes,*

Species	Common name	Group	NWFP Endemic	PNW Endemic	Few Sites (<100)	DEIS lists as at high risk under Alt 2	Global Heritage rank
<i>Phaeocollybia oregonensis</i>		Fungi	X		X	Yes	G2?
<i>Phaeocollybia piceae</i>		Fungi		X	X	Yes	G3?
<i>Phaeocollybia pseudofestiva</i>		Fungi		X	X	Yes	G3
<i>Phaeocollybia scatesiae</i>		Fungi	X		X	Yes	G3?
<i>Phaeocollybia sipei</i>		Fungi	X		X	Yes	G3?
<i>Phaeocollybia spadicea</i>		Fungi	X		X	Yes	G3G4
<i>Pseudaleuria quinaultiana</i>		Fungi	X		X		G2
<i>Ramaria amyloidea</i>		Fungi	X		X	Yes	G3
<i>Ramaria araiospora</i>		Fungi	X		X	Yes	G4
<i>Ramaria aurantiiscescens</i>		Fungi	X		X	Yes	G3
<i>Ramaria cyaneigranosa</i>		Fungi	X		X	Yes	G4
<i>Ramaria gelatiniaurantia</i>		Fungi	X		X	Yes	G4
<i>Ramaria largentii</i>		Fungi	X		X	Yes	G3
<i>Ramaria rainierensis</i>		Fungi		X	X		G2
<i>Ramaria rubrievanescens</i>		Fungi		X	X	Yes	G4
<i>Ramaria rubripermanens</i>		Fungi		X		Yes	G4
<i>Ramaria verlotensis</i>		Fungi	X		X		G1G2
<i>Rhizopogon chamaleontinus</i>		Fungi	X		X		G1G2
<i>Thaxterogaster pavelekii</i>		Fungi	X		X		G2
<i>Tuber pacificum</i>		Fungi	X		X		G2
<i>Bryoria pseudocapillaris</i>		Lichen			X		G1G2
<i>Bryoria spiralis</i>		Lichen			X		G1
<i>Nephroma occultum</i>	Cryptic paw lichen	Lichen		X	X		G3
<i>Ancotrema voyanum</i>	Hooded lancetooth	Mollusk	X		X		G2
<i>Cryptomastix devia</i>	Puget Oregonian	Mollusk	X		X		G2
<i>Cryptomastix hendersoni</i>	Columbia Oregonian	Mollusk	X		X		G1G2
<i>Deroceras hesperium</i>	Evening fieldslug	Mollusk		X	X		G1G2
<i>Fluminicola</i> n. sp. 1	Klamath pebblesnail	Mollusk	X		X		G1G2
<i>Fluminicola</i> n. sp. 11	Nerite pebblesnail	Mollusk	X		X		G1
<i>Fluminicola</i> n. sp. 14	Potem pebblesnail	Mollusk	X		X		G1G2
<i>Fluminicola</i> n. sp. 15	Flat-top pebblesnail	Mollusk	X		X		G1
<i>Fluminicola</i> n. sp. 16	Shasta springs pebblesnail	Mollusk	X		X		G1
<i>Fluminicola</i> n. sp. 17	Disjunct pebblesnail	Mollusk	X		X		G1
<i>Fluminicola</i> n. sp. 18	Globular pebblesnail	Mollusk	X		X		G1
<i>Fluminicola</i> n. sp. 19	Umbilicate pebblesnail	Mollusk			X		G1
<i>Fluminicola</i> n. sp. 2	Tall pebblesnail	Mollusk	X		X		G1
<i>Fluminicola</i> n. sp. 20	Lost Creek pebblesnail	Mollusk			X		G1
<i>Fluminicola</i> n. sp. 3	Diminutive pebblesnail	Mollusk	X		X		G1
<i>Fluminicola seminalis</i>	Nugget pebblesnail	Mollusk	X		X		G2
<i>Helminthoglypta hertleini</i>	Oregon shoulderband	Mollusk	X		X		G1
<i>Helminthoglypta talmadgei</i>	Trinity shoulderband	Mollusk	X		X		G2G3

*Monadenia troglodytes wintu*, *Oreohelix* n. sp., *Pristiloma articum crateris*, *Trilobopsis roperi*, *Trilobopsis teamana*, *Verspericola pressleyi*,



Species	Common name	Group	NWFP Endemic	PNW Endemic	Few Sites (<100)	DEIS lists as at high risk under Alt 2	Global Heritage rank
<i>Hemphillia barringtoni</i>	Burrington jumping-slug	Mollusk	X		X		G1G2
<i>Hemphillia malanei</i>	Malone jumping-slug	Mollusk	X				G1G2
<i>Hemphillia pantherina</i>	Panther jumping-slug	Mollusk	X		X		G1
<i>Juga</i> (O.) n. sp. 2	Basalt juga	Mollusk	X		X		G2
<i>Juga</i> (O.) n. sp. 3	Cinnamon juga	Mollusk	X		X		G1G2
<i>Lyogyrus</i> sp. 1	Columbia duskysnail	Mollusk	X		X		G2
<i>Lyogyrus</i> sp. 2	Masked duskysnail	Mollusk	X		X		G1
<i>Lyogyrus</i> sp. 3	Canary duskysnail	Mollusk	X		X		G1
<i>Megomphix hemphilli</i>	Oregon megomphix	Mollusk	X		X		G2G3
<i>Monadenia chaceana</i>	Siskiyou sideband	Mollusk	X		X		G2
<i>Monadenia fidelis klamathica</i>	Klamath sideband	Mollusk	X		X		G4G5T1
<i>Monadenia fidelis minor</i>	Dalles sideband	Mollusk	X		X		G4G5T2
<i>Monadenia fidelis ochramphalus</i>	Yellow-based sideband	Mollusk	X		X		G4G5T2
<i>Monadenia troglodytes troglodytes</i>	Shasta sideband	Mollusk	X		X		G1G2T1
<i>Monadenia troglodytes wintu</i>	Wintu sideband	Mollusk	X		X		G1G2T1
<i>Oreohelix</i> n. sp.	Chelan mountainsnail	Mollusk	X		X		G1
<i>Pristiloma articum crateris</i>	Crater Lake tightcoil	Mollusk	X		X		G2G3T1
<i>Trilobopsis roperi</i>	Shasta chaparral	Mollusk	X		X		G1
<i>Trilobopsis tehamana</i>	Tehama chaparral	Mollusk	X		X		G1
<i>Verspericola pressleyi</i>	Big Bar hesperian	Mollusk	X		X		G1
<i>Vertigo</i> n. sp.	Hoko vertigo	Mollusk	X		X		G1
<i>Vespericola shasta</i>	Shasta hesperian	Mollusk	X		X		G1
<i>Vorticifex klamathensis sinitsini</i>	Sinitsin rams-horn	Mollusk	X		X		G1QT1
<i>Vorticifex</i> n. sp. 1	Knobby rams-horn	Mollusk	X		X		G1
<i>Corydalis aquae-gelidae</i>	Cold-water corydalis	Plant	X		X		G5T3S2-3



**Ancient forest on Cobble Knob.**

PHOTO BY FRANCIS EATHERINGTON, UMPQUA WATERSHEDS INC.

*Vertigo* n. sp., *Vespericola Shasta*, *Vorticifex klamathensis sinitsini*, *Vorticifex* n. sp. 1, *Corydalis aquae-gelidae*

