

Proposed Douglas-Fir National Monument

Protect the Best, Restore the Rest

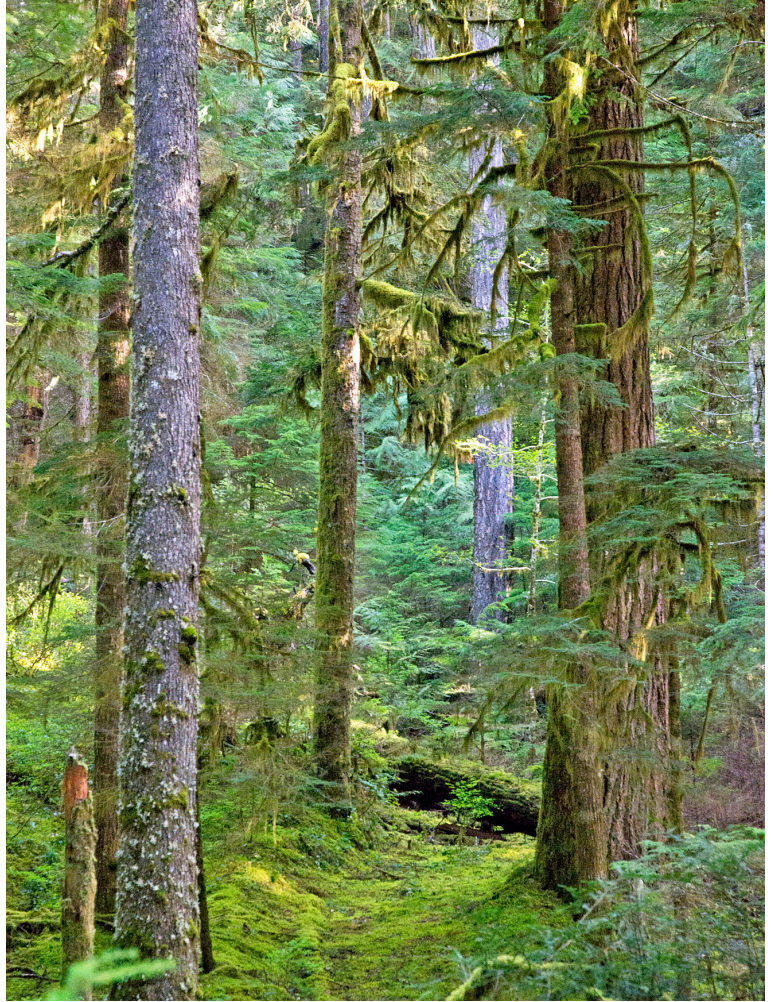
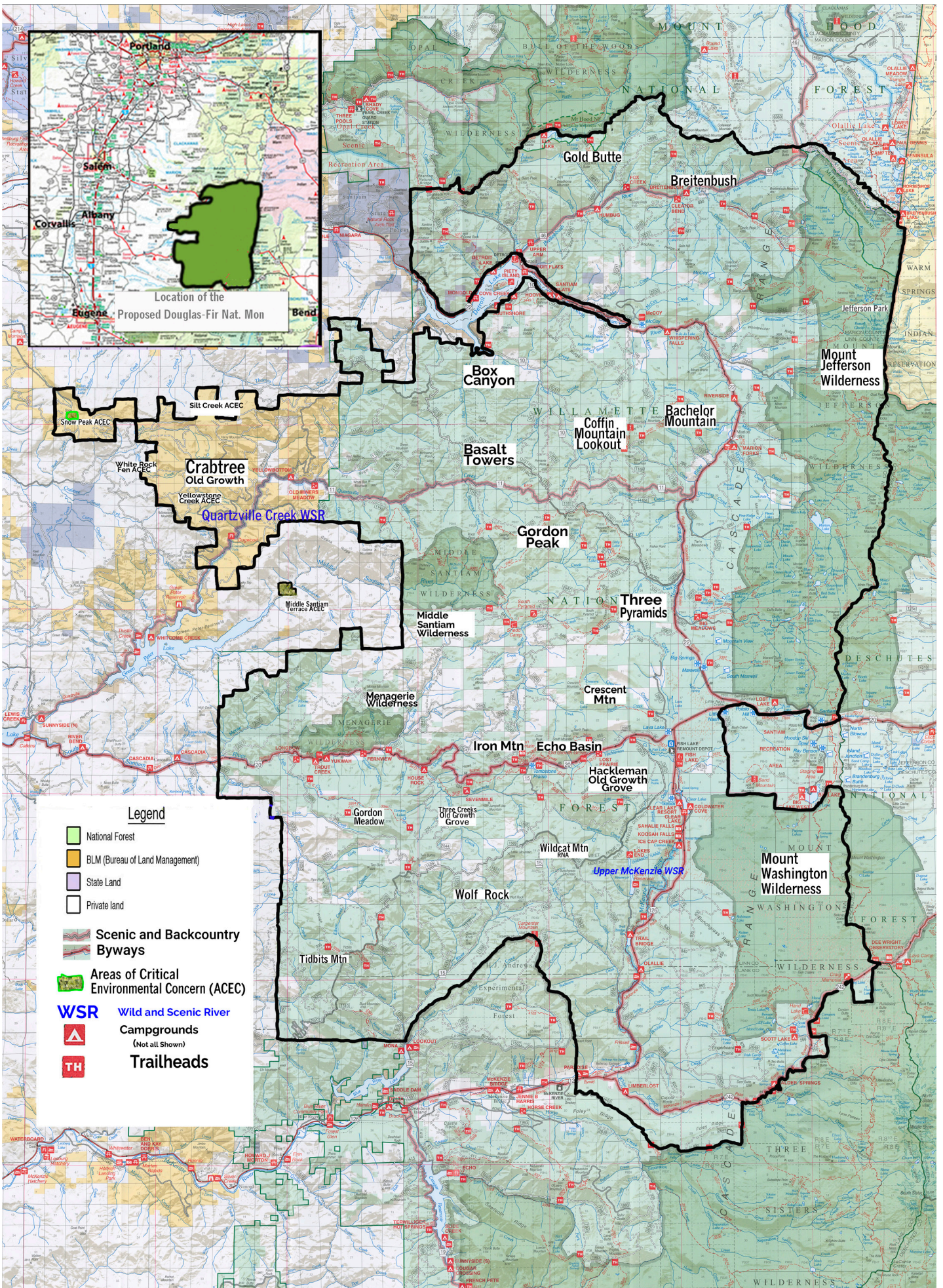


Photo by Tanya Harvey



Friends of Douglas-Fir National Monument
www.douglasfirnationalmonument.org



Legend

-  National Forest
-  BLM (Bureau of Land Management)
-  State Land
-  Private land
-  Scenic and Backcountry Byways
-  Areas of Critical Environmental Concern (ACEC)
-  **WSR** Wild and Scenic River
-  Campgrounds (Not all Shown)
-  Trailheads

Executive Summary of the Proposed Douglas-Fir National Monument

How it can be established: By Act of Congress or presidential proclamation as authorized by the Antiquities Act of 1906

Size: 700,000+ acres (1,094 square miles, or a square 33 miles on a side), all federal public land

Administering agency: It is proposed that it be administered by the US Forest Service

Location: In Oregon's Cascade Range, including upper watersheds of the North Santiam River, Breitenbush River, Middle Santiam River, Crabtree Creek, South Santiam River, Calapooia River, and McKenzie River on and near the Willamette National Forest in Marion, Linn, and Lane Counties

The landscape: Vast stands of mature and old-growth forests, young natural forests, lakes, wet and dry meadows, free-flowing streams, high alpine meadows and peaks, talus slopes, and more

Objects of historic or scientific interest and/or outstanding values (“monumental values”): *biological diversity* (including native fish and wildlife); air and water quality; *climate change mitigation and adaptation*; *wildlands and free-flowing streams*; *gorgeous views*; *quiet recreation*; *objects of historical and scientific interest*; *geological and botanical features*; *archeological, paleontological, and cultural resources*; *dark skies*; and *natural forest succession*—across the landscape and over time, from open meadows to young forests to old growth and back again through natural disturbance from fire, windstorms, and even volcanos

Threats to monumental values: (1) Logging of native forest; (2) energy development; (3) mineral development; (4) unmanaged recreation

What it will be managed for: For the conservation and restoration of nature for the benefit of this and future generations

Allowed uses: Pleasure driving, hiking, biking, birding, nature study, hunting, fishing, horseback riding, camping, and other compatible uses

Prohibited uses: (1) *Logging* for purely commercial purposes (any logging is limited to scientifically sound ecological restoration thinning of monoculture plantations to put them on a path to becoming older complex forests, where any commercial logs are a by-product; (2) *mineral exploitation*, subject to valid existing rights; (3) *off-road vehicle use* (limited to designated routes)

How it will be managed: Mostly passive management where nature—in all its glory and fury—is not just tolerated but encouraged; some active management, to include scientifically sound ecological restoration thinning of monoculture tree plantations to put them back on a path to becoming older complex forest, during a several-decade restoration period

Economic and social benefits: More money is to be made and more happiness is to be created by leaving old forests standing than by clear-cutting them and running them through the mill.

For more information: Friends of Douglas-Fir National Monument
(<https://www.douglasfirnationalmonument.org/>)

Help needed: Only if enough people come together and convince the Oregon congressional delegation and/or the president will a Douglas-Fir National Monument come to be.

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Introduction

At a few times in our nation's history, a species of tree has seemed so magnificent that either the president has proclaimed a national monument or Congress has established a unit of the National Park System to honor and protect that tree in a significant portion of its range. The coast redwood in northwestern California and southwestern Oregon, the giant sequoia in the Sierra Nevada, the Joshua tree in the Mojave Desert, the tree-like saguaro and organ pipe cacti in the Sonoran Desert, the bald and pond cypresses in Florida—all have namesake national monuments or national parks. Each of these tree species is magnificent in its own way, and so is the Douglas-fir.

In California, both national and state parks pay homage to the redwoods. Nothing comparable exists for the Douglas-fir, even though it is a more important species in its range and significance, and old-growth forests of Douglas-fir are as magnificent as those of coast redwoods—often with greater ecological diversity. The proposed Douglas-Fir National Monument would protect, conserve, and restore one of America's greatest natural treasures—the coast Douglas-fir forest ecosystem in Oregon's western Cascades—for the benefit of this and future generations.

Throughout most of its range, Douglas-fir is found in stands mixed with other species; north of Oregon's Umpqua River, coast Douglas-fir is often the dominant overstory tree species in these stands. But more than a century of intensive logging on both private and public lands has converted most original Douglas-fir forests to monoculture plantations. The Douglas-fir landscape is highly fragmented, and relatively few parts remain undisturbed. The proposed national monument would contain some of the finest remaining stands of ancient temperate conifer forest in the world, as well as substantial areas of older mature forest that would in time become old-growth forest. The previously logged stands (plantations) within the proposed national monument would be allowed to recover their full native community of plants and animals—sometimes passively through natural forest succession and sometimes actively through scientifically sound ecological restoration thinning that could yield commercially valuable logs for several decades.



Old growth Douglas-fir near Middle Santiam Wilderness

In addition to encompassing old-growth Douglas-fir forests, the proposed national monument would include old-growth stands of other tree species (Appendix A). It would also protect numerous native fish (Appendix B) and wildlife species (Appendix C) along with objects of historic (archeological, paleontological, and cultural) and scientific (ecological, geological, and hydrological)

interest, including wildflower-strewn meadows, small lakes and waterfalls, free-flowing streams, and striking volcanic features. Magnificent views would be preserved, as well as dark skies, pure air, and clean water. Recreation compatible with the conservation of the values for which the national monument is established would be protected and encouraged. Pleasure driving, hiking, biking, horseback riding, nature study, birding, hunting, fishing, swimming, backpacking, camping, and related activities are some of the ways the national monument could be enjoyed and appreciated.

We are now at a historical crossroads in our relationship to the natural world that supports and nourishes us. Ecosystems of every sort are increasingly disrupted by fragmentation and resource extraction. Plants and animals are under unprecedented pressure as habitat shrinks to isolated islands in a sea of human activity. Conservation biologists tell us that in order to prevent catastrophic extinctions, we must preserve approximately half of the earth in an essentially natural condition. The proposed national monument could be part of that preserve and could protect a significant relic of the globally unique Pacific Northwest temperate rainforest. It could provide a haven for species found only in old-growth forests and could offer Americans an opportunity to visit a world not seen for more than a hundred years.

Further, in an era of climate change, preserving mature and old-growth forests—and allowing cutover forests to regrow into such forests—can make a major contribution to carbon sequestration and help to slow global warming. The conservation and restoration of the magnificent Douglas-fir should be part of this effort.

In short, the national monument could become a significant natural, cultural, and economic resource for the region and the world, and it would appropriately honor Oregon's official state tree.

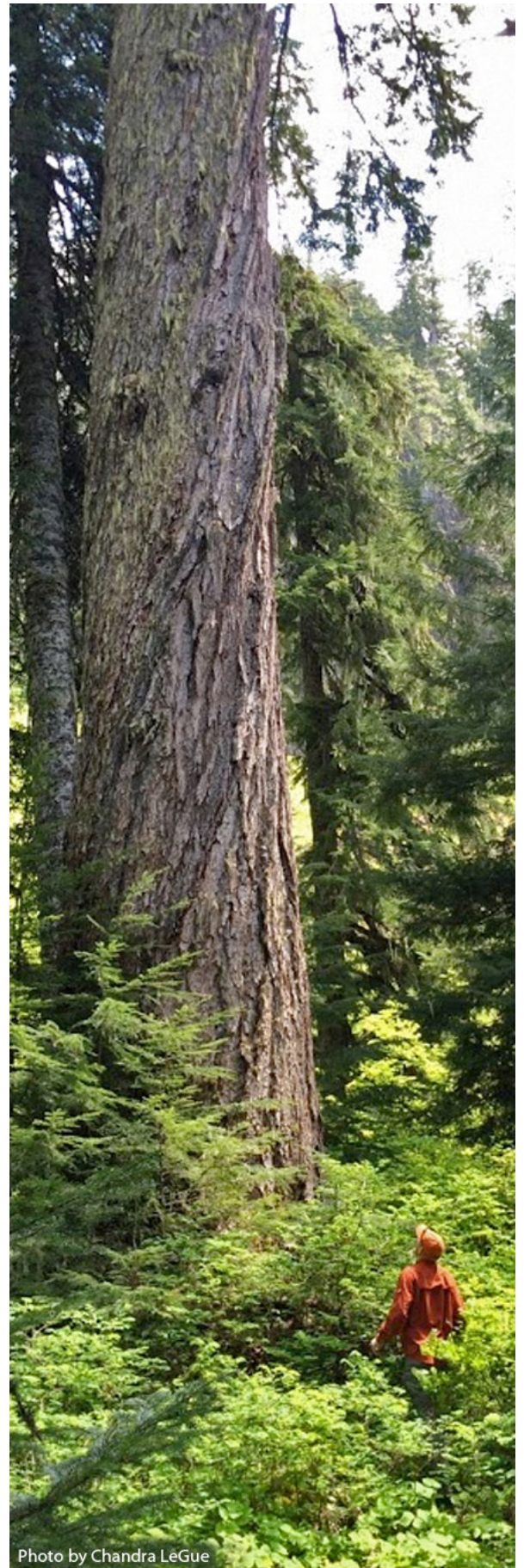


Photo by Chandra LeGue

Giant Douglas-fir in the Crabtree Valley

The Magnificent Douglas-fir

The Douglas-fir is Oregon's most common tree species and the second tallest tree species in the world, behind only the coast redwood. It can grow to more than 300 feet tall and 10 feet in diameter (far too large for one person to hug!). The Scottish pioneer botanist David Douglas, for whom the tree is named, noted trees in the lower valleys of western Washington that averaged 17 feet thick. The tallest Douglas-firs were logged first and no one knows for sure how tall these were, but the trunk of the Nooksack Giant, cut in 1897, was said to be 465 feet long.

Douglas-firs can live for more than five hundred years, and the oldest known tree reached fourteen hundred years old. Douglas-firs and other tree species in Crabtree Valley and the Millennium Grove near Gordon Meadows within the proposed national monument are believed to be nearly a thousand years old.

The Douglas-fir (*Pseudotsuga menziesii*) is scientifically named in honor of Archibald Menzies (1754–1842), a Scottish naturalist, botanist, and surgeon who accompanied Royal Navy captain George Vancouver on his circumnavigation of the globe from west to east. The voyage contacted five continents, and one stop was in what we now call the Pacific Northwest, where Menzies “discovered” (more accurate to say “described for western science”) the Douglas-fir in 1791.

The genus name, *Pseudotsuga*, translates to “false hemlock.” The Douglas-fir has been variously called the Douglas spruce, red fir, Oregon pine, and Columbia pine. Neither spruce nor pine, it's also not a true fir (a member of the *Abies* genus), despite its common name. (The hyphen in Douglas-fir was put there by botanists to signal it isn't actually a true fir.)

Douglas-fir has three recognized variants:

- coast (*P. menziesii* var. *menziesii*);
- Rocky Mountain (*P. menziesii* var. *glauca*); and
- Mexican (*P. menziesii* var. *lindleyana*).

Glauca is Latin for bluish gray, blue, or blue-green, signifying that the Rocky Mountain variant is somewhat bluish. The coast variant tends to be a darker green. The Mexican variant is most closely related to the Rocky Mountain variant. There is also a bigcone Douglas-fir (*P. macrocarpa*), but it's a different species found in the mountains of southern California.

Scientists have found that the root system of one Douglas-fir tree will graft to the roots of adjoining trees, and collectively they share hormones and starches. This is one of many ways that a forest is much more than a mere collection of individual trees. The needle surface area of two average old-growth Douglas-fir trees is equal to the playing area of an American football field, making each tree an amazing collector of moisture and carbon dioxide from the atmosphere.

The Douglas-fir ecosystem supports not only the threatened northern spotted owl and one of its primary food sources, the red tree vole, but many other animals as well. Elk and black-tailed deer

use the Douglas-fir as sustenance. Porcupines eat the inner bark of younger Douglas-firs. Fir seeds are very important food for mice, voles, shrews, and chipmunks; the Douglas ground squirrel caches cones for use throughout the winter. Any number of birds eat the seeds of Douglas-fir, including song sparrows, white-crowned and golden-crowned sparrows, dark-eyed juncos, pine siskins, purple finches, and red crossbills. Black bears are known to hibernate in the rotted-out cavities at the base of older Doug-firs. All of these birds and mammals, and many more, use the Douglas-fir forest as a home during some or all of the year.



Green shows the range of the coast variety of Douglas-fir; blue shows the Rocky Mountain variety. The red dot is the location of the proposed Douglas-Fir National Monument. Map courtesy of Wikipedia.

The Once and Future Douglas-Fir Forest

Until the twentieth century, most of Oregon west of the Cascade crest was covered by coniferous forest, composed of about 60 percent coast Douglas-fir, 17 percent hemlocks (*Tsuga* spp.—western and mountain), 15 percent true firs (*Abies* spp.—white, noble, subalpine, Pacific silver, grand, and California red), and small percentages of other trees. Douglas-fir was the foundation species of this magnificent forested landscape, which extended nearly 2,800 miles from 19°N in the mountains of central Mexico northward to 55°N in central British Columbia.

Yet the once-great conifer forests of Oregon have mostly been logged and replanted in even-aged stands that lack most of the ecological characteristics of a natural forest. Most natural Douglas-fir forests have been clear-cut and replaced with monoculture plantations of Douglas-fir trees—all evenly spaced and of the same height. Such plantations are more akin to a cornfield than a forest. Today, pristine stands of mature and old-growth Douglas-fir cover but a small fraction of their former extent.

The conversion of diverse ancient Douglas-fir forest to monocultural plantations is almost complete on private and state timberlands. Clear-cutting has been followed by replanting with Douglas-fir seedlings only, herbicide spraying to kill competing plants, and clear-cutting again in thirty-five to fifty years. The resulting “forest” is impoverished for fish and wildlife, destructive to soils and streams, and devoid of scenic value—and in the long run, it is not sustainable.

Nearly all remaining old-growth Douglas-fir forests are on federal public lands, mostly administered by the US Forest Service (USFS), some by the Bureau of Land Management (BLM). Clear-cut logging of old-growth forests on federal public lands in the Pacific Northwest took off after the end of World War II and mostly came to an abrupt end in the early 1990s, culminating in the Northwest Forest Plan (NWFP) of 1995. With the NWFP, logging operations on public lands transitioned to trees established in plantations after clear-cutting of old-growth forests.

The national forest lands in the proposed national monument are currently managed by the USFS under the NWFP, which established conservation areas called late successional (older forest) reserves and riparian (stream-side) reserves, along with matrix land (open to logging). A lot of matrix land in the proposed monument contains mature and old-growth forest. While the NWFP is the best large landscape conservation plan ever implemented by any government in the world, it is not ecologically sufficient to conserve and restore ancient coast Douglas-fir forests, and it is under attack and may not survive. More must be done. Establishing a national monument would confer permanent protection on the national forest lands included in the monument and shield them from evolving policies within the federal land management agencies.

The goal of creating this new national monument is not merely to preserve the scattered fragments of older Douglas-fir forest that remain today but also to restore ecological and hydrological integrity to a region that has undergone profound alteration since large-scale industrial logging began after World War II. Portions of the proposed national monument have already been designated by Congress as wilderness areas (Middle Santiam, Mount Jefferson, Mount Washington, and Menagerie) and as wild and scenic rivers (Quartzville Creek and McKenzie River), both designations that can confer enduring conservation for the benefit of this and future generations. Some excellent groves of ancient Douglas-fir forest are permanently protected in places like the Middle Santiam and Mount Jefferson Wildernesses, but all of the older Douglas-fir forest stands in the area need to be afforded this level of protection by including these lands in the national monument.



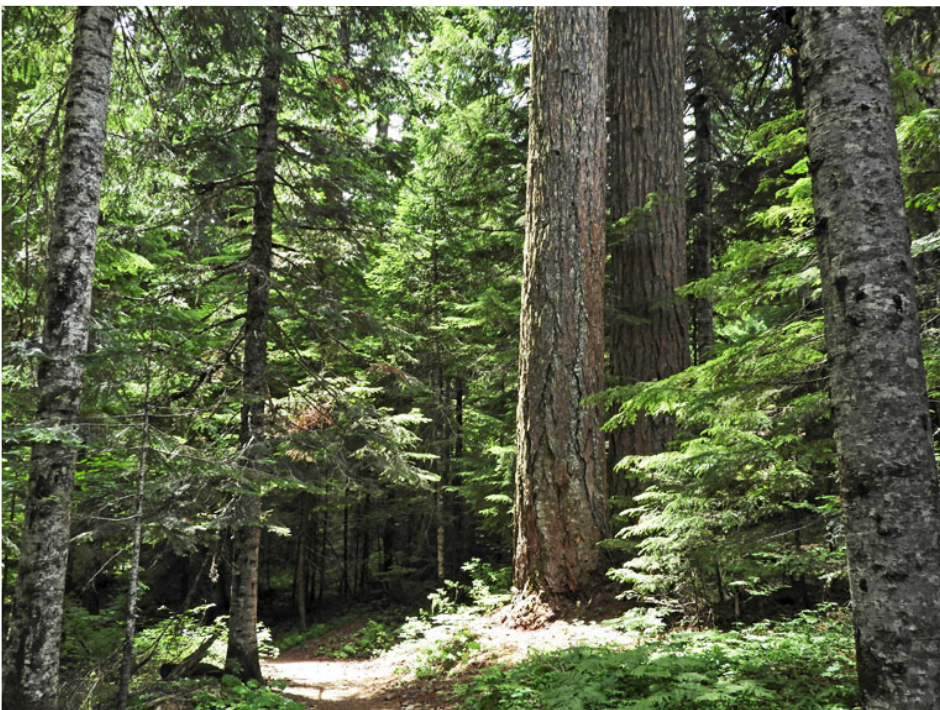
An old-growth Douglas-fir forest above Crabtree Lake

Douglas-Fir National Monument would preserve some of the best remaining old growth and allow eventual restoration of significant stands of future old-growth forests. Almost all federal forestlands have been significantly fragmented by past logging. Federal forestlands also have many stands that



were logged long ago and now are beginning to approach maturity. True ancient forests—with trees at least two hundred years old and of great structural complexity—are scarce almost everywhere, and the best stands are generally accessible only by driving many miles on logging roads and then hiking. However, mature and old-growth forests in the proposed national monument are the rule, not the exception.

Many magnificent stands of old-growth Douglas-fir are scattered across the proposed national monument. Some of the oldest stands are in Crabtree Valley and the Gordon Meadows roadless area and in areas adjacent to the Middle Santiam Wilderness. In areas such as the Millennium Grove near Gordon Meadows, for example, there are large-diameter trees more than eight hundred years old. These survivors of an ancient fire stand tall among smaller trees that survived a different fire about two hundred years ago (still old growth in anybody's book).



Besides many cathedral groves of ancient forest—where one can walk among majestic ancient trees that are incomparably awe-inspiring—much of the remaining old-growth forest consists of younger (though often well over a century or two in age) stands with old-growth trees scattered within them. This pattern reflects the history of large natural cataclysmic events—predominantly fires, but also windstorms and unstable soils, which have left a naturally patchy mosaic on the landscape.

Older forests like these with a mixture of trees of different ages, abundant snags, and downed logs that would be protected within the national monument are the most favorable for wildlife and provide the best conditions for healthy watersheds.

The proposed national monument would also contain vast Douglas-fir plantations. The trees in these stands are generally all of the same age and spacing. Judicious ecological restoration thinning of such stands can accelerate the onset of late-successional (older forest) characteristics, putting these stands on a fast track to again becoming old-growth forests. Thinning a stand can allow the remaining Douglas-fir trees to get bigger faster. (Bigness is a characteristic of an ecologically complex old forest.) Where bigleaf maple, alder species, and other native conifer species have established themselves in the plantations, thinning can favor the growth of these stalwart survivors, increasing the diversity of the stands. In addition, small openings can be created to benefit deer and elk.

Thus, the establishment of a Douglas-Fir National Monument would not lead to the immediate end of all logging on public lands in the area and in fact could yield commercially valuable logs for several decades. For at least another twenty to thirty years, the careful ecologically sound restoration thinning of many of the monoculture plantation stands would continue. This would allow the stands to evolve again into mature and then old-growth forests while providing timber to local mills.

If all remaining blocks of coast Douglas-fir were preserved, if the natural young and mature stands were allowed to continue to grow older, and if the young plantations were managed over the long term for ecological diversity instead of commercial log production, then the western and high Cascades within the proposed national monument would have a chance to recover much of the wild quality they had before the era of massive clear-cutting. The proposed Douglas-Fir National Monument would preserve the best of what is left and restore the rest.

Location and Extent of the Proposed National Monument

The Middle Santiam Wilderness was established in 1984 to set aside an example of old-growth Douglas-fir forest. But the example was just a sample, and the de facto Middle Santiam wildland is more than twice the size of the Middle Santiam Wilderness. To achieve the necessary task of preserving a meaningful and useful component of the Douglas-fir ecosystem in the Pacific Northwest, what is needed is a much larger expanse of wilderness, roadless areas, and already impacted areas that—with proper management—can gradually return to a natural state. A national monument to preserve and honor the Douglas-fir needs to include a lot of Douglas-fir forest of all ages and conditions across a large landscape.

The proposed Douglas-Fir National Monument would consist of federal public land within and near the Willamette National Forest in Oregon's Cascade Range. It would include the upper watersheds of the North Santiam River, Breitenbush River, Middle Santiam River, Crabtree Creek, South Santiam River, Calapooia River, and McKenzie River in Marion, Linn, and Lane Counties. The proposed national monument is entirely within the EPA's Cascades level III ecoregion and contains four level IV ecoregions (see Appendix D).



Crabtree Valley
Photo by Darryl Lloyd

The northern boundary would abut the Opal Creek Scenic Recreation Area, Opal Creek Wilderness, and Bull of the Woods Wilderness. The southern boundary takes in the Calapooia River, the upper Blue River and upper McKenzie River watersheds, the old McKenzie Highway, and the southern edge of the Mount Washington Wilderness. The eastern boundary would be the Cascade crest, except where the boundary excludes the Santiam Pass OHV Motorized Recreation Area between the Mount Jefferson and Mount Washington Wilderness Areas.

The western boundary would generally follow the existing western boundary of the Willamette National Forest but would include the contiguous area of BLM holdings centered on the Quartzville Creek Wild and Scenic River and Crabtree Valley, home to the oldest known Douglas-firs in Oregon. West of the Crabtree Valley, the boundary would extend to include Snow Peak, home to old-growth stands and the deer cabbage, a wetland botanical species (*Nephrophyllidium cristagalli*), found nowhere else in Oregon. It would also include a 191-acre BLM parcel along the Middle Santiam River above Green Peter Reservoir, an exceptional remnant of magnificent low-elevation, old-growth Douglas-fir forest. (For a more detailed discussion of the proposed boundary, see Appendix E.)

Within the proposed national monument boundary are 1,270 acres in nine scattered parcels that are part of Santiam State Forest and some blocks of private timberland totaling about 50,000 acres—the legacy of nineteenth-century railroad land grants. National monument designation would not affect the ownership or management of these parcels. If any private or other nonfederal lands were to come into federal ownership due to sale or gift by willing sellers, such lands would become part of the national monument. The communities of Detroit and Idanha (as well as Detroit Reservoir) are outside the proposed monument boundary.

Between the southern and northern limits of the proposed monument is a span of more than 40 miles, and 20 to 25 miles between the eastern and western limits. There is an elevation difference of nearly 10,000 feet from the peak of Mount Jefferson to the South Santiam River within the monument boundary. At more than 700,000 acres (1,094 square miles, or a square 33 miles on a side), the proposed Douglas-Fir National Monument would be on the same scale as many other major national monuments around the country. For instance, Cypress National Preserve in Florida protects 720,566 acres, and Joshua Tree National Park in California protects 790,636 acres.

Existing Special Areas Within the Proposed National Monument

Many discrete portions of the proposed Douglas-Fir National Monument have received either specific congressional protection, special administrative designation, or other areas recognized by other entities as important. National monument designation would bring all of these special areas together under one administrative umbrella.

Congressionally Protected Areas

Within the boundary of the proposed national monument are a tapestry of special areas that are already set aside as part of the National Wilderness Preservation System, the National Wild and Scenic Rivers System, or the National Trails System.

Wilderness. Areas. The Middle Santiam and Menagerie Wildernesses and the portions of the Mount Jefferson and Mount Washington Wildernesses west of the Cascade crest are within the boundaries of the proposed Douglas-Fir National Monument. Also within its boundaries are a total of ~159,000 acres of roadless areas that qualify for inclusion in the National Wilderness Preservation System (see Appendix F). Expanding the Wilderness areas would enhance, but is not necessary for, the creation of the national monument.



Menagerie Wilderness

Wild and Scenic Rivers. The Quartzville Creek and Upper McKenzie Wild and Scenic Rivers are within the boundaries of the proposed Douglas-Fir National Monument. Also within its boundaries are numerous other rivers, creeks, and small lakes that qualify for inclusion in the National Wild and Scenic Rivers System (see Appendix G). Inclusion would confer not only additional recognition of the outstandingly remarkable values of these water bodies but also additional protection against dams and other water diversions.



McKenzie River

Protection in a national monument would preserve the beauty of these rivers while Congress considers the River Democracy Act, which includes all of these water bodies as candidates but has not yet been enacted into law.

National Trails. A portion of the Pacific Crest National Scenic Trail traverses the area, as does the McKenzie River National Recreation Trail, both part of the National Trails System.

Administratively Designated Areas

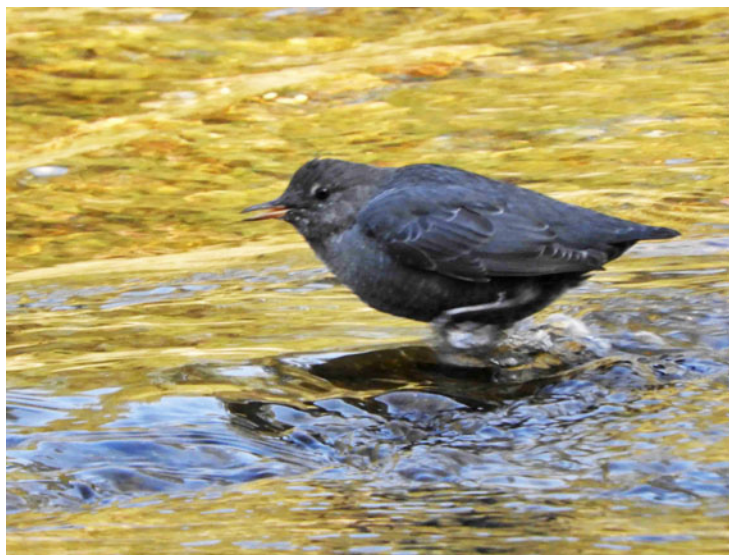
The Bureau of Land Management has established several areas of critical environmental concern (Appendix H) and the Forest Service has established several research natural areas (Appendix I) in the proposed Douglas-Fir National Monument. The Douglas-fir National Monument would strengthen the protection of these areas, and place them in the larger context of a stabilized Douglas-fir ecosystem.

Other Recognized Areas and Values

The proposed national monument would also include recognized state and national scenic byways and bikeways, birdways, and Oregon Department of Fish and Wildlife Oregon conservation opportunity areas.

Scenic Byways and Bikeways. Parts of three national scenic byways (Quartzville Back Country Byway; West Cascades National Scenic Byway and Breitenbush River Road; and the McKenzie Pass–Santiam Pass National Scenic Byway), an Oregon scenic bikeway (McKenzie Pass Oregon Scenic Bikeway, OR 242), and an Oregon scenic byway (the Over the River and Through the Woods Oregon Scenic Byway, US 20) traverse the proposed national monument. A “byway” designation confers only recognition of scenic and recreation resources along the route, while a national monument designation would confer protection of such resources.

Birdways. Most of the Mount Jefferson and Three Sisters Loops of the Oregon Cascades Birding Trail are within the proposed national monument. While not directly affording any conservation protection of bird habitat, the birding trail confers important recognition of avian habitats within the area. Further, the American Birding Association has named Quartzville Creek among its Important Bird Areas of Oregon since it is home to 20 to 25 percent of the state's breeding population of harlequin ducks. A national monument designation would confer protection of such habitats.



Dipper in Quartzville Creek

Oregon Conservation Opportunity Areas. The Oregon Department of Fish and Wildlife has developed the Oregon Conservation Strategy, a blueprint for conserving fish and wildlife in Oregon. One component of the strategy is identified Conservation Opportunity Areas (COAs), specific areas where conservation efforts and financial investments can be focused to increase the likelihood of long-term success over larger areas. Four COAs are partially or wholly within the proposed Douglas-Fir National Monument: Central Cascades Crest, West; McKenzie River; Quartzville Creek; and Breitenbush River.

Ecological Benefits of the Proposed National Monument

Landscape conservation and restoration of the Douglas-fir ecosystem

The proposed national monument would provide a tremendous opportunity to conserve and restore ecosystem integrity and a full complement of biological diversity to a significant part of the range of the Douglas-fir. The western Cascades are home to 322 regularly occurring species of vertebrates, including 187 birds, 74 mammals, 18 amphibians, and 12 reptiles. More than 7,000 species of arthropods (insects and spiders)—comparable to numbers found in tropical forests—and thousands of different species of plants, fungi, and lichens are also found there. These species do not live in isolation but in complex networks of interaction. Most of their interrelationships are still unknown to science and are important to maintaining the ecosystem.



Northern Spotted Owl

Especially important to the health of the forest, but largely invisible, are more than 2,000 species of mycorrhizal fungi that nourish the roots of large trees and provide food for small mammals such as the northern flying squirrel, a primary prey species for the northern spotted owl. These fungi are largely destroyed by the kind of forestry that has prevailed for the last century but will recover in time—if left alone. Larger ecosystems have more resilience than small ones and can recover better from natural disruptions such as wildfires. A national monument would provide a significant buffer against disturbance, a local environmental insurance policy in a time of global climate change.



Northern Flying Squirrel



Hygrophorus punicea, a mycorrhizal fungus

More and Better Fish and Wildlife Habitat



Conditions for wildlife would improve enormously with the establishment of a national monument. Many animal species—not only northern spotted owls but also pileated woodpeckers, northern goshawks, many amphibians, and mammals such as the wolverine, fisher, and marten—need older forest to thrive. Animals that prefer more open forest stages would benefit from the restoration of natural young forests, a landscape consisting of diverse habitats rather than tree farms.

Of particular importance would be the protection and enhancement of streams for native fish such as bull trout, steelhead, and chinook salmon. Habitat for fish would be enhanced by protecting streams and entire watersheds from the effects of logging—and from the erosion caused by roads. Restoration of salmon habitat has been under way for some time in Moose Creek, a stream within the proposed monument,

Moose Creek

and the restoration of healthy riparian habitats would be one of the major goals of the area's management.

The proposed national monument would also improve connectivity between areas of prime wildlife habitat, reducing the fragmentation that can trap animals in shrinking islands of their preferred range. Many animals need to travel over large areas to feed or find mates, or, like the spotted owl, they may use one type of habitat for nesting and another for foraging. At the proposed size, the national monument would allow the free and necessary movement of the larger mammals.

The ecosystem would benefit from rewilding—that is, the restoration of all of its natural components, including large predators. An exciting midterm possibility is that wolves could return to this area and—in the longer term—grizzly bears. Recent research has demonstrated that ecosystems lacking their traditional top predators are out of balance, leading to overpopulation of ungulates such as deer and elk, and impoverished vegetation. The proposed national monument has the potential to become a key component of what has been called the Pacific Wildway, a mega-linkage for wildlife that could potentially extend from Baja California to Alaska.



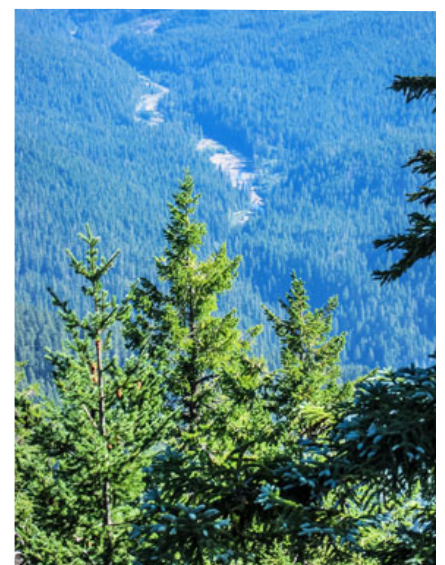
Gray Wolf

The proposed national monument could also serve as a refuge for wildlife in a time of global warming. Climate change is already causing stress to many animal populations. Older forest with its greater shade, abundant moisture, complexity of vegetation, and variety of structural and functional features offers the best chance for long-term survival of countless species. North-facing slopes of mature forest often provide the most protective habitat for animals in need of shelter from a warming climate.

Helping the climate through carbon storage

Mature and old-growth forests provide one of the most effective mechanisms of carbon storage in existence. Forests contribute to atmospheric stability in two ways: (1) they actively remove carbon dioxide through photosynthesis that puts carbon into vegetation and soils, as forests simultaneously release oxygen, and (2) they store enormous amounts of carbon in their biomass—both above and below ground. Because of their massive amounts of biomass, unlogged Douglas-fir forests store huge amounts of carbon.

Scientific studies have shown that conversion of old-growth forests to plantation monocultures significantly increases atmospheric carbon. Even when the long-term sequestration of carbon in wooden buildings is taken into account, logging forests



A forest storing carbon along the Middle Santiam River

results in more carbon in the atmosphere than not logging forests. Older forests store more carbon, and younger forests do not approach old-growth storage capacity for at least two hundred years. If these forests were logged, this carbon would be released into the atmosphere and contribute to global warming.

Providing a laboratory for monitoring and studying adaption to climate change

The proposed national monument would provide a scientific laboratory to study how an extensive mature and maturing ecosystem adapts to climate change and accommodates the increased risk of wildfires. Existing mature forests of the monument could provide a standard to measure changes and compare with how maturing forests adapt to changing climate.

Economic and Social Benefits of the Proposed National Monument

For better or worse, the Willamette Valley will continue to increase in population and urbanization, making the protection of a nearby wilderness resource more important than ever before. The local economies in the North Santiam Canyon and along the South Santiam River are in transition. The days of huge logging levels attained by the clear-cutting of old-growth forests are long gone. Almost all state and private lands have been converted to plantations, and society has decided that the old-growth forest still left on the public lands has higher and better uses than as an unsustainable wood supply.

In fact, studies have shown that local economies can benefit more from keeping forests standing than from cutting them down. Our remaining older forests are more valuable for the watershed, recreation, and ecosystem goods and services they provide than for the timber they yield. Establishment of the proposed Douglas-Fir National Monument could aid the economic transition and diversification of local communities. It could spur economic growth in Linn County, creating more jobs and raising per capita income.

Tourism, outdoor recreation, and spiritual renewal

By giving the Douglas-fir forest official recognition as a place of value, a unique treasure of the Pacific Northwest, the proposed national monument would attract visitors from across Oregon, from elsewhere in the nation, and from around the globe. As the younger portions of the area again



grew into mature forest—and the now-mature forest approached the conditions of old growth—the attractiveness of the monument would steadily increase, drawing more and more visitors to the region and having a significant positive impact on the region's economic health. The proposed monument's proximity to the major metropolitan areas of Oregon and to two airports with interstate and international connections would make it easily accessible to these visitors.

The area of the proposed national monument has thirty-eight campgrounds and around fifty-five trailheads serving about 500 miles of trails. As heavy visitor use of Opal Creek Scenic Recreation Area before the 2020 Beachie Creek Fire demonstrated, large numbers of people, from families with young children to the elderly, want to explore trails in old forests, especially trails that follow streams or ridgelines with commanding views. The proposed national monument also offers opportunities for skiing/snowboarding, sledding/tubing, snowmobiling, cross-country skiing, and snowshoeing, and road bikers use the area.

People of all ages and beliefs would also be drawn to the proposed national monument for spiritual renewal and contemplation of our place in nature. It would be a setting where visitors could gain a wider perspective, a sense of humility, and the knowledge that we are but one part of a large and vastly complex world. It would be a place to experience actual, rather than virtual, reality.



Old growth grove above Crabtree Lake after a late spring snowfall

Growth of local businesses

Studies have found that communities near important protected natural resource sites, such as national parks or national monuments, experience an increase in the diversity of locally based business. Part of this is an increase in recreation-based businesses, and part is the tendency of new businesses that can locate anywhere to choose such areas because of their proximity to the national monument or national park.

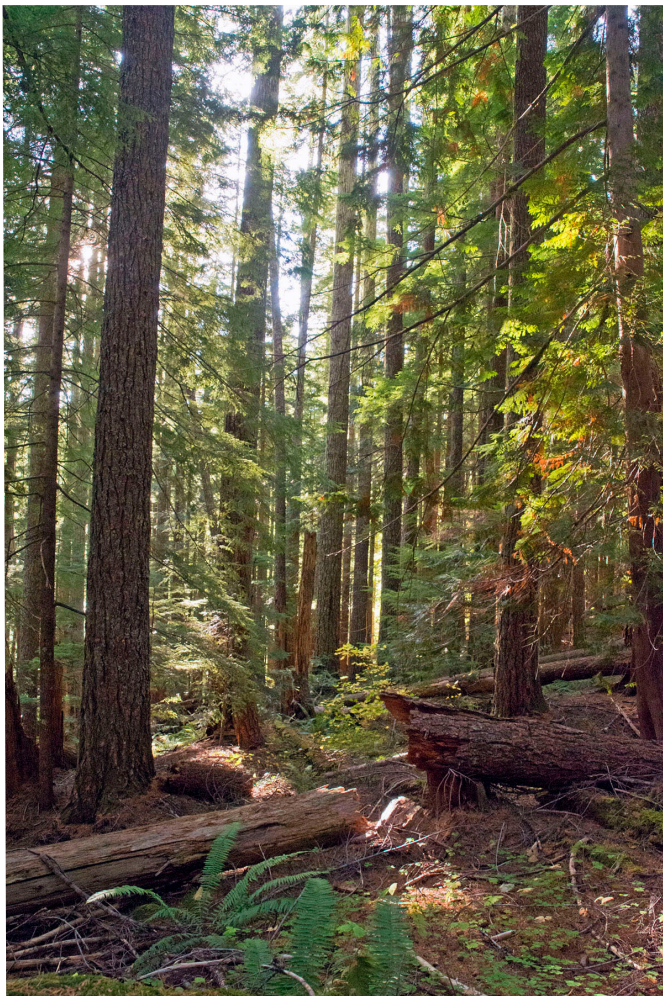


Photo by Tanya Harvey

Gordon Meadows
Photo by Tanya Harvey

The evidence is clear that counties with national monuments do better economically than similar surrounding rural counties. The proposed Douglas-Fir National Monument could benefit the economy of Linn County, where most of the proposed monument would be located and which contains most of the access points to the proposed monument, in several ways:

- Outdoor recreation industry jobs in Oregon are on the increase, and the outdoor recreation industry in Oregon is well positioned to create economic growth in Linn County upon creation of the proposed national monument.
- People who came to see and enjoy the vast forests of Douglas-fir in the proposed national monument would need lodging, food, drink, supplies, and guides. Linn County's existing services sector, now the largest part of the Linn County economy, could grow to accommodate increased visitation. The number of tourism and recreation-related jobs would grow.
- The monument would increase the attractiveness of the county to potential employees and thus aid employer recruitment efforts.
- The monument would attract retirees and members of the mobile employment sector seeking to live close to outdoor recreation, thus infusing new dollars into the local retail and service economy.
- Along with these demographic changes would come support for more and better public facilities that would serve everyone in the area.
- Increased and more diverse economic activity would increase property values and thus local government revenues, supporting improved public services.

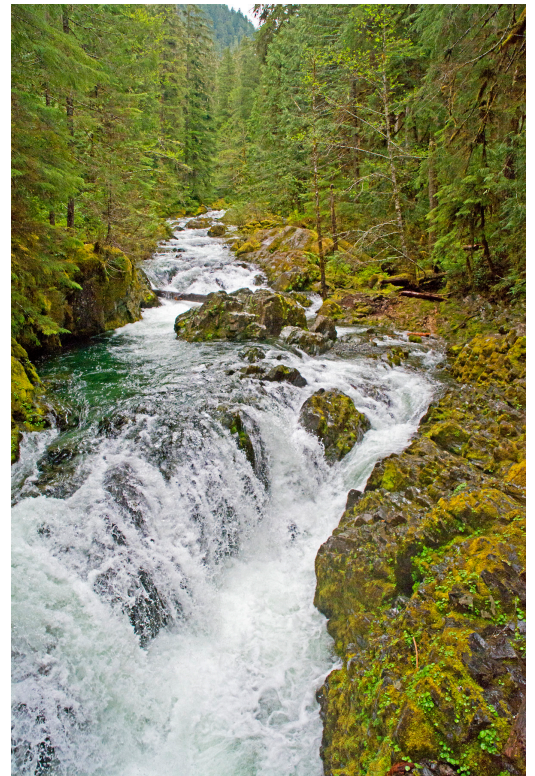


Marion County, with lands in its southeast corner that would be included in the proposed monument, and Lane County, with lands in its northeast corner that would be included, would likely benefit in similar ways to Linn County, if to a lesser degree.

Millennium Grove

Increased water quality and decreased treatment costs

Ancient forests provide the best water quality and quantity on the planet. Over time, all of the towns and cities downstream from the proposed national monument—including the communities of Salem, Eugene, Lebanon, Mill City, Stayton, and Sweet Home—would see a decrease in their costs for filtration and water treatment as the quantity of sediment in the water decreased, and this enhanced water quality would be provided at no extra cost to residents.



Mitigation of climate-change-related costs

Climate change is costly to society in ways that affect all of us, whether through rising sea levels, more severe storms, disruptions to agriculture, impacts on water supplies, increased cooling costs, or the spread of invasive species and pathogens. By conserving older forests and allowing the continued growth of younger ones, the monument would help mitigate these costs. Additionally, as carbon pollution is properly priced in the market, the carbon stored in the proposed national monument could be economically recognized.



*Researchers on a canopy platform
250' high in an old-growth Douglas-fir forest*

Opportunities for education and scientific study

The proposed national monument could provide a place for people young and old to learn about plants, animals, stream life, and ecosystems. It could also be a site for advanced scientific study, since science still has much to discover about the dynamics of natural forests and about many of the organisms that live there. In addition to uncovering the importance of mycorrhizal fungi, the last few decades of research have yielded scientific findings including the following:

- the discovery of an amazing diversity of life in the canopy of old forests, with trees of many other species sprouting from moss-covered limbs high in the air.
- the isolation of paclitaxel (now synthesized), the active ingredient in the cancer-fighting drug Taxol, from the bark of the Pacific yew (*Taxus brevifolia*), once considered a weed tree.



- Research that suggests millipedes play key roles in the maintenance of forest soils, showing that some of the most seemingly humble organisms can turn out to be the most important; and

Millipedes in a coastal Oregon forest

- The discovery that the lichen *Lobaria oregana*, called lung lichen, or Oregon lettuce, is a primary source of fixed atmospheric nitrogen in old forests. It is an organism that supplies free fertilizer to the ecosystem, but it cannot grow in tree plantations with short rotation cycles.

Lobaria oregana, lung lichen, on a tree limb in an old-growth Cascades Douglas-fir forest



A thinning operation

Prolongation of timber industry jobs

The timber industry has declined in Oregon due to factors such as the globalization of trade, public policies that favor protection of forest products such as wildlife and water, and automation of both mills and logging, and it will never again dominate employment in Linn County, or Lane or Marion Counties, like it once did. Under the Northwest Forest Plan, as implemented, logging on the federal lands within the proposed national monument has generally been limited to

ecological restoration thinning of previously logged stands, and this would continue for several decades in the proposed national monument, as, scientifically sound ecological restoration thinning could yield commercially valuable logs for several decades.

Establishing and Administering the Proposed National Monument

A Douglas-Fir National Monument could be established either by an Act of Congress or by a presidential proclamation under the authority granted by Congress in the Antiquities Act of 1906.

We believe that the national monument could best be administered by the US Forest Service. The federal public forestlands currently administered by the Bureau of Land Management would be incorporated into the Willamette National Forest. The mandate and clear goal of monument designation would be the conservation and protection of the natural environment; only uses compatible with that goal would be allowed in the national monument.



South from the ridge between Cone Peak and Iron Mountain

Forestry

Forestry within the national monument would be limited to previously logged lands in ways that would aid the reestablishment of natural ecosystem and watershed dynamics, such as variable density thinning to accelerate the re-creation of older forest characteristics. Any logs produced by logging within the national monument would be a by-product of ecological restoration. No salvage logging after fire, windstorm, disease occurrence, or insect event would be allowed, as these disturbances are natural and beneficial. (A key study by Noss et al., 2006, found that “post-fire logging in naturally disturbed forest landscapes generally has no direct ecological benefits and many potential negative impacts.”) A post-disturbance forest—also called a snag forest or complex early seral forest—is one of the rarest and most biologically diverse stages of a forest ecosystem. This forest is full of wildlife, including species that require or prefer those kinds of forest conditions.

Roads

No new roads would be built. Existing US and state highways would not be affected by national monument designation, although the scenic views they afford would improve over time as logged-over forests recovered. Necessary roads, including those that also support private uses in the

area, could be maintained and improved to make public travel safer and to make such roads more wildlife and watershed friendly. Unnecessary roads would be allowed or encouraged to revert to nature, through recontouring of the slope and the like. Some might become hiking, horseback riding, or mountain biking trails.



Fire management

Natural wildfire is either the rebirth or the continuation of a forest. As a general rule, fires would be left to burn naturally until they ran out of fuel or the rains came. The protection of buildings would be accomplished primarily through vegetation management directly adjacent to those buildings and ensuring the buildings themselves were resistant to fire.

Restoration of biological diversity and wildlife

A key component of national monument management would be to restore as much as possible the full complement of native species of plants and animals that was historically present in the western Oregon Cascades. Habitats favored by species that are rare, threatened, or endangered, such as the northern spotted owl and the fisher, would be given highest priority for protection, and access to these habitats would be restricted as needed to preserve and increase populations at risk. Reestablishment of beavers (the Oregon state mammal) in their historic range and the return of wolves and grizzly bears would be allowed. The managing agency would endeavor to maintain national monument lands in a condition that enhanced their use as wildlife corridors.

Management of mining claims

Subject to valid existing rights, the federal public lands within the proposed national monument would be withdrawn from all forms of mineral exploitation. Any valid existing right to mine would be respected unless it were acquired by the federal government through compensation.

Recreation management

Recreation compatible with the conservation goals of the national monument—such as hiking, birding, botanizing, photography, camping and pleasure driving—would be encouraged. Hunting and fishing would remain under the jurisdiction of the State of Oregon. Off-highway motorized recreation use would be limited to existing designated routes and to ways that would not harm the values for which the national monument was established.

Existing homes and businesses

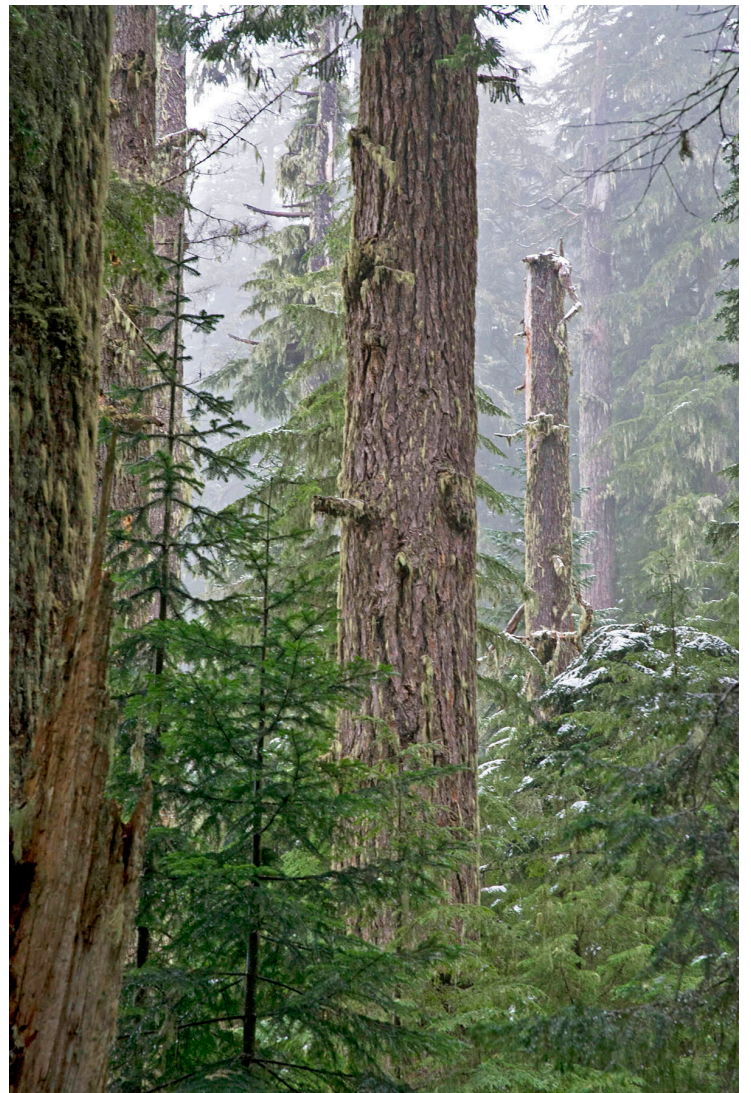
The cities of Detroit and Idanha (as well as Detroit Reservoir) are not included within the proposed national monument boundary. The status of privately owned inholdings on federal land would remain unchanged, and traditional access would be preserved.



Quartzville Creek

Native American interests

The establishment of the national monument would not increase, decrease, or change any Native American rights. Native American tribes with interests in the proposed national monument area would be especially consulted as to the development and implementation of the management plan.



Old-growth forest above Crabtree Lake

Conclusion

Douglas-Fir National Monument would offer a myriad of benefits to the region, the state of Oregon, and the world. It would provide great ecological and social benefits by restoring a complex community of life that is unique to the western Cascades, honoring and preserving one of the greatest ecosystems on earth, and attracting visitors to Oregon from around the globe. It would result in an improved protective environment for many of the endangered and threatened species native to the Pacific Northwest and could be used as a scientific laboratory for studies of the renewal of an extensive area of old-growth forests and how these areas respond to climate change.

The monument would provide a large net benefit to the economy of Oregon through an increase in recreation-related activities, improvement of water quality, and sequestration of carbon. Money could still be made and jobs could still be had by scientifically sound ecological restoration thinning of monoculture plantations on public lands to put them on a path to becoming older complex forests. Increasingly, money could also be made and jobs generated by a sustainable tourism- and recreation-based economy. The trees of the national forest would still be producing economic value for local communities, but without giving their lives to do so.

The bottom line is that if currently degraded forests were included in a national monument dedicated to long-term conservation, our grandchildren would be able to see the vast landscape of old-growth Douglas-fir forests that our grandparents once saw.



View of Mount Jefferson from the ridge above Crabtree Lake

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Appendix A

Major Tree Species in the Proposed National Monument

Coniferous Trees

While Douglas-fir (*Pseudotsuga menziesii*) is the most prevalent coniferous tree species in the proposed national monument, at least seventeen others also grow there:



Alaska yellow cedar (*Chamaecyparis nootkatensis*) in Echo Basin

- dwarf (common) juniper (*Juniperus communis*)
- Engelmann spruce (*Picea engelmannii*)
- grand fir (*Abies grandis*)
- incense cedar (*Libocedrus decurrens*)
- lodgepole pine (*Pinus contorta*)
- mountain hemlock (*Tsuga metersiana*)
- noble fir (*Abies magnifica*)
- Pacific silver fir (*Abies amabilis*)
- Pacific yew (*Taxus brevifolia*)
- ponderosa pine (*Pinus ponderosa*)
- subalpine fir (*Abies lasiocarpa*)
- sugar pine (*Pinus lambertiana*)
- western hemlock (*Tsuga heterophylla*)
- western red cedar (*Thuja plicata*)
- western white pine (*Pinus monticola*)
- white fir / grand fir hybrid (*Abies concolor* / *Abies grandis*)

Interestingly, of the seventeen species or species hybrids listed above, all but two (incense cedar and sugar pine) are found on a mere quarter section (160 acres) on Echo Mountain Ridge in the heart of the proposed national monument.

Deciduous Trees

Deciduous tree species include:

- big leaf maple (*Acer macrophyllum*)
- black cottonwood (*Populus trichocarpa*)
- chinquapin (*Castanopsis chrysophylla*)
- Oregon White oak (*Quercus garryana*)
- Pacific dogwood (*Cornus nuttallii*)
- Pacific Madrone (*Arbutus menziesii*)
- red alder (*Alnus rubra*)
- Sitka alder (*Alnus sinuate*)
- vine maple (*Acer circinatum*)



Moss covered Big-Leafed Maple along the South Fork of the Santiam River

Appendix B
Native Fish Species in the Proposed National Monument

- Resident cutthroat trout are common to almost every stream in the proposed national monument.
- Resident rainbow trout are found in a few streams within the proposed national monument.
- Pacific lamprey are struggling to hold on in the South Santiam and Calapooia basins.
- Spring chinook salmon are present in the Breitenbush, North Santiam, McKenzie, Calapooia, and South Santiam watersheds, despite several downstream dams operated by the US Army Corps of Engineers.
- Bull trout, a species listed under the Endangered Species Act, were historically found in the North Santiam and South Santiam River basins and could be again.
- Summer steelhead are found in the upper McKenzie main stem.

Source: Oregon Fish Habitat Distribution



Mist above Blue River

Appendix C
Native Wildlife Species in the Proposed National Monument

Amphibians

Bullfrog	<i>Rana catesbeiana</i>
Cascade torrent salamander	<i>Rhyacotriton cascadae</i>
Cascades frog	<i>Rana cascadae</i>
Clouded salamander	<i>Aneides ferreus</i>
Coastal tailed frog	<i>Ascaphus truei</i>
Dunn's salamander	<i>Plethodon dunni</i>
Ensatina	<i>Ensatina eschscholtzii</i>
Foothill yellow-legged frog	<i>Rana boylei</i>
Long-toed salamander	<i>Ambystoma macrodactylum</i>
Northwestern salamander	<i>Ambystoma gracile</i>
Oregon slender salamander	<i>Batrachoseps wrightorum</i>

Amphibians (cont.)

Oregon spotted frog
Pacific chorus frog
Pacific giant salamander
Roughskin newt
Southern torrent salamander
Western redback salamander
Western toad

Rana pretiosa
Pseudacris regilla
Dicamptodon tenebrosus
Taricha granulosa
Rhyacotriton variegatus
Plethodon vehiculum
Bufo boreas

Rufous Hummingbird



Birds

Acorn woodpecker
American bittern
American coot
American dipper
American goldfinch
American kestrel
American pipit
American robin
American three-toed woodpecker
American wigeon
Anna's hummingbird
Ash-throated flycatcher
Bald eagle
Band-tailed pigeon
Bank swallow
Barn owl
Barn swallow
Barrow's goldeneye
Belted kingfisher
Bewick's wren

Melanerpes formicivorus
Botaurus lentiginosus
Fulica americana
Cinclus mexicanus
Carduelis tristis
Falco sparverius
Anthus rubescens
Turdus migratorius
Picoides dorsalis
Anas americana
Calypte anna
Myiarchus cinerascens
Haliaeetus leucocephalus
Patagioenas fasciata
Riparia riparia
Tyto alba
Hirundo rustica
Bucephala islandica
Ceryle alcyon
Thryomanes bewickii

Birds (Cont.)

Black swift	<i>Cypseloides niger</i>
Black tern	<i>Chlidonias niger</i>
Black-backed woodpecker	<i>Picoides arcticus</i>
Black-capped chickadee	<i>Poecile atricapillus</i>
Black-crowned night-heron	<i>Nycticorax nycticorax</i>
Black-headed grosbeak	<i>Pheucticus melanocephalus</i>
Black-throated gray warbler	<i>Dendroica nigrescens</i>
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>
Blue-winged teal	<i>Aegolius funereus</i>
Brewer's blackbird	<i>Euphagus cyanocephalus</i>
Brewer's sparrow	<i>Spizella breweri</i>
Brown creeper	<i>Certhia americana</i>
Brown-headed cowbird	<i>Molothrus ater</i>
Bufflehead	<i>Bucephala albeola</i>
Bullock's oriole	<i>Icterus bullockii</i>
Burrowing owl	<i>Athene cunicularia</i>
Bushtit	<i>Psaltriparus minimus</i>
California gull	<i>Larus californicus</i>
California quail	<i>Callipepla californica</i>
Calliope hummingbird	<i>Stellula calliope</i>
Canada goose	<i>Branta canadensis</i>
Canvasback	<i>Aythya valisineria</i>
Cassin's finch	<i>Carpodacus cassinii</i>
Cassin's vireo	<i>Vireo cassinii</i>
Cedar waxwing	<i>Bombycilla cedrorum</i>
Chestnut-backed chickadee	<i>Poecile rufescens</i>
Chipping sparrow	<i>Spizella passerina</i>
Cinnamon teal	<i>Anas cyanoptera</i>
Clark's nutcracker	<i>Nucifraga columbiana</i>
Cliff swallow	<i>Petrochelidon pyrrhonota</i>
Common merganser	<i>Mergus merganser</i>
Common nighthawk	<i>Chordeiles minor</i>
Common poorwill	<i>Phalaenoptilus nuttallii</i>
Common raven	<i>Corvus corax</i>
Common yellowthroat	<i>Geothlypis trichas</i>
Cooper's hawk	<i>Accipiter cooperii</i>
Cordilleran flycatcher	<i>Empidonax occidentalis</i>
Dark-eyed junco	<i>Junco hyemalis</i>
Double-crested cormorant	<i>Phalacrocorax auritus</i>
Downy woodpecker	<i>Picoides pubescens</i>
Dusky flycatcher	<i>Empidonax oberholseri</i>
Eared grebe	<i>Podiceps nigricollis</i>
Eastern kingbird	<i>Tyrannus tyrannus</i>

Birds (Cont.)

European starling	<i>Sturnus vulgaris</i>
Evening grosbeak	<i>Coccothraustes vespertinus</i>
Ferruginous hawk	<i>Buteo regalis</i>
Flammulated owl	<i>Otus flammeolus</i>
Forster's tern	<i>Sterna forsteri</i>
Fox sparrow	<i>Passerella iliaca</i>
Gadwall	<i>Anas strepera</i>
Glaucous-winged gull	<i>Larus glaucescens</i>
Golden eagle	<i>Aquila chrysaetos</i>
Golden-crowned kinglet	<i>Regulus satrapa</i>
Grasshopper sparrow	<i>Ammodramus savannarum</i>
Gray jay	<i>Perisoreus canadensis</i>
Gray-crowned rosy-finch	<i>Leucosticte tephrocotis</i>
Great blue heron	<i>Ardea herodias</i>
Great egret	<i>Ardea alba</i>
Great gray owl	<i>Strix nebulosa</i>
Great horned owl	<i>Bubo virginianus</i>
Greater yellowlegs	<i>Tringa melanoleuca</i>
Green heron	<i>Butorides virescens</i>
Green-tailed towhee	<i>Pipilo chlorurus</i>
Green-winged teal	<i>Anas crecca</i>
Hairy woodpecker	<i>Picoides villosus</i>
Hammond's flycatcher	<i>Empidonax hammondii</i>
Harlequin duck	<i>Histrionicus histrionicus</i>
Hermit thrush	<i>Catharus guttatus</i>
Hermit warbler	<i>Dendroica occidentalis</i>
Hooded merganser	<i>Lophodytes cucullatus</i>
Horned grebe	<i>Podiceps auritus</i>
Horned lark	<i>Eremophila alpestris</i>
House finch	<i>arpodacus mexicanus</i>
House sparrow	<i>Passer domesticus</i>
House wren	<i>Troglodytes aedon</i>
Hutton's vireo	<i>Vireo huttoni</i>
Killdeer	<i>Charadrius vociferus</i>
Lark sparrow	<i>Chondestes grammacus</i>
Lazuli bunting	<i>Passerina amoena</i>
Lesser goldfinch	<i>Carduelis psaltria</i>
Lesser scaup	<i>Aythya affinis</i>
Lewis's woodpecker	<i>Melanerpes lewis</i>
Lincoln's sparrow	<i>Melospiza lincolnii</i>
Loggerhead shrike	<i>Lanius ludovicianus</i>
Long-eared owl	<i>Asio otus</i>
Macgillivray's warbler	<i>Oporornis tolmiei</i>

Birds (cont.)

Marsh wren	<i>Cistothorus palustris</i>
Mountain bluebird	<i>Sialia currucoides</i>
Mountain chickadee	<i>Poecile gambeli</i>
Mountain quail	<i>Oreortyx pictus</i>
Mourning dove	<i>Zenaida macroura</i>
Nashville warbler	<i>Vermivora ruficapilla</i>
Northern flicker	<i>Colaptes auratus</i>
Northern pintail	<i>Anas acuta</i>
Northern pygmy-owl	<i>Glaucidium gnoma</i>
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>
Northern saw-whet owl	<i>Aegolius acadicus</i>
Northern shoveler	<i>Anas clypeata</i>
Olive-sided flycatcher	<i>Contopus cooperi</i>
Orange-crowned warbler	<i>Vermivora celata</i>
Osprey	<i>Pandion haliaetus</i>
Peregrine falcon	<i>Falco peregrinus</i>
Pied-billed grebe	<i>Podilymbus podiceps</i>
Pileated woodpecker	<i>Dryocopus pileatus</i>
Pine grosbeak	<i>Pinicola enucleator</i>
Pine siskin	<i>Carduelis pinus</i>
Pinyon jay	<i>Gymnorhinus cyanocephalus</i>
Prairie falcon	<i>Falco mexicanus</i>
Purple finch	<i>Carpodacus purpureus</i>
Purple martin	<i>Progne subis</i>
Pygmy nuthatch	<i>Sitta pygmaea</i>
Red-breasted nuthatch	<i>Sitta canadensis</i>
Red-breasted sapsucker	<i>Sphyrapicus ruber</i>
Red-eyed vireo	<i>Vireo olivaceus</i>
Red-naped sapsucker	<i>Sphyrapicus nuchalis</i>
Red-necked grebe	<i>Podiceps grisegena</i>
Red-shouldered hawk	<i>Buteo lineatus</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Redhead	<i>Aythya americana</i>
Ring-billed gull	<i>Larus delawarensis</i>
Ring-necked duck	<i>Aythya collaris</i>
Ring-necked pheasant	<i>Phasianus colchicus</i>
Rock pigeon	<i>Columba livia</i>
Rock wren	<i>Salpinctes obsoletus</i>
Ruby-crowned kinglet	<i>Regulus calendula</i>
Ruffed grouse	<i>Bonasa umbellus</i>
Rufous hummingbird	<i>Selasphorus rufus</i>
Sage thrasher	<i>Oreoscoptes montanus</i>

Birds (cont.)

Sandhill crane	<i>Grus canadensis</i>
Savannah sparrow	<i>Passerculus sandwichensis</i>
Sharp-shinned hawk	<i>Accipiter striatus</i>
Short-eared owl	<i>Asio flammeus</i>
Song sparrow	<i>Melospiza melodia</i>
Sora	<i>Porzana carolina</i>
Spotted owl	<i>Strix occidentalis</i>
Spotted sandpiper	<i>Actitis macularius</i>
Spotted towhee	<i>Pipilo maculatus</i>
Steller's jay	<i>Cyanocitta stelleri</i>
Swainson's thrush	<i>Catharus ustulatus</i>
Townsend's solitaire	<i>Myadestes townsendi</i>
Townsend's warbler	<i>Dendroica townsendi</i>
Tree swallow	<i>Tachycineta bicolor</i>
Trumpeter swan	<i>Cygnus buccinator</i>
Turkey vulture	<i>Cathartes aura</i>
Varied thrush	<i>Ixoreus naevius</i>
Vaux's swift	<i>Chaetura vauxi</i>
Vesper sparrow	<i>Pooecetes gramineus</i>
Violet-green swallow	<i>Tachycineta thalassina</i>
Virginia rail	<i>Rallus limicola</i>
Warbling vireo	<i>Vireo gilvus</i>
Western bluebird	<i>Sialia mexicana</i>
Western grebe	<i>Aechmophorus occidentalis</i>
Western gull	<i>Larus occidentalis</i>
Western kingbird	<i>Tyrannus verticalis</i>
Western meadowlark	<i>Sturnella neglecta</i>
Western screech-owl	<i>Megascops kennicottii</i>
Western tanager	<i>Piranga ludoviciana</i>
Western wood-pewee	<i>Contopus sordidulus</i>
White-breasted nuthatch	<i>Sitta carolinensis</i>
White-crowned sparrow	<i>Zonotrichia leucophrys</i>
White-headed woodpecker	<i>Picoides albolarvatus</i>
White-tailed kite	<i>Elanus leucurus</i>
White-throated swift	<i>Aeronautes saxatalis</i>
White-winged crossbill	<i>Loxia leucoptera</i>
Wild turkey	<i>Meleagris gallopavo</i>
Williamson's sapsucker	<i>Sphyrapicus thyroideus</i>
Willow flycatcher	<i>Empidonax traillii</i>
Wilson's phalarope	<i>Phalaropus tricolor</i>
Wilson's snipe	<i>Gallinago delicata</i>
Wilson's warbler	<i>Wilsonia pusilla</i>
Wood duck	<i>Aix sponsa</i>

Birds (cont.)

Wrentit	<i>Chamaea fasciata</i>
Yellow warbler	<i>Dendroica petechia</i>
Yellow-billed cuckoo	<i>Coccyzus americanus</i>
Yellow-breasted chat	<i>Icteria virens</i>
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>
Yellow-rumped warbler	<i>Dendroica coronata</i>

Mammals

Allen's chipmunk	<i>Neotamias senex</i>
American badger	<i>Taxidea taxus</i>
American beaver	<i>Castor canadensis</i>
Belding's ground squirrel	<i>Spermophilus beldingi</i>
Big brown bat	<i>Eptesicus fuscus</i>
Black bear	<i>Ursus americanus</i>
Black-tailed deer	<i>Odocoileus hemionus</i>
Black-tailed jack rabbit	<i>Lepus californicus</i>
Bobcat	<i>Lynx rufus</i>
Brush rabbit	<i>Sylvilagus bachmani</i>
Bushy-tailed woodrat	<i>Neotoma cinerea</i>
California ground squirrel	<i>Spermophilus beecheyi</i>
California myotis	<i>Myotis californicus</i>
California vole	<i>Microtus californicus</i>
Camas pocket gopher	<i>Thomomys bulbivorus</i>
Canada lynx	<i>Lynx canadensis</i>
Coast mole	<i>Scapanus orarius</i>
Common gray fox	<i>Urocyon cinereoargenteus</i>
Common porcupine	<i>Erethizon dorsatum</i>
Common raccoon	<i>Procyon lotor</i>
Coyote	<i>Canis latrans</i>
Creeping vole	<i>Microtus oregoni</i>
Dark kangaroo mouse	<i>Microdipodops megacephala</i>
Deer mouse	<i>Peromyscus maniculatus</i>
Dusky-footed woodrat	<i>Neotoma fuscipes</i>
Eastern cottontail	<i>Sylvilagus floridanus</i>
Eastern gray squirrel	<i>Sciurus carolinensis</i>
Elk	<i>Cervus canadensis</i>
Fisher	<i>Martes pennanti</i>
Fog shrew	<i>Sorex sonomae</i>
Fringed myotis	<i>Myotis thysanodes</i>
Golden-mantled ground squirrel	<i>Spermophilus lateralis</i>
Gray Wolf	<i>Canis lupus</i>
Gray-tailed vole	<i>Microtus canicaudus</i>
Heather vole	<i>Phenacomys intermedius</i>

Mammals (cont.)

House mouse	<i>Mus musculus</i>
Least chipmunk	<i>Neotamias minimus</i>
Little brown myotis	<i>Myotis lucifugus</i>
Long-eared myotis	<i>Myotis evotis</i>
Long-legged myotis	<i>Myotis volans</i>
Long-tailed vole	<i>Microtus longicaudus</i>
Long-tailed weasel	<i>Mustela frenata</i>
Mink	<i>Neovison vison</i>
Montane vole	<i>Microtus montanus</i>
Mountain beaver	<i>Aplodontia rufa</i>
Mountain goat	<i>Oreamnos americanus</i>
Mountain lion	<i>Puma concolor</i>
Muskrat	<i>Ondatra zibethicus</i>
Northern pocket gopher	<i>Thomomys talpoides</i>
Northern river otter	<i>Lontra canadensis</i>
Norway rat	<i>Rattus norvegicus</i>
Nutria	<i>Myocastor coypus</i>
Nuttall's cottontail	<i>Sylvilagus nuttallii</i>
Pacific jumping mouse	<i>Zapus trinotatus</i>
Pacific water shrew	<i>Sorex bendirii</i>
Pallid bat	<i>Antrozous pallidus</i>
Pinon mouse	<i>Peromyscus truei</i>
Red fox	<i>Vulpes vulpes</i>
Red tree vole	<i>Arborimus longicaudus</i>
Ringtail	<i>Bassariscus astutus</i>
Shrew-mole	<i>Neurotrichus gibbsii</i>
Silver-haired bat	<i>Lasionycteris noctivagans</i>
Siskiyou chipmunk	<i>Neotamias siskiyou</i>
Snowshoe hare	<i>Lepus americanus</i>
Striped skunk	<i>Mephitis mephitis</i>
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>
Townsend's chipmunk	<i>Neotamias townsendii</i>
Townsend's mole	<i>Scapanus townsendii</i>
Townsend's vole	<i>Microtus townsendii</i>
Trowbridge's shrew	<i>Sorex trowbridgii</i>
Vagrant shrew	<i>Sorex vagrans</i>
Virginia opossum	<i>Didelphis virginiana</i>
Water vole	<i>Microtus richardsoni</i>
Western gray squirrel	<i>Sciurus griseus</i>
Western jumping mouse	<i>Zapus princeps</i>
Western pocket gopher	<i>Thomomys mazama</i>
Western red-backed vole	<i>Myodes californicus</i>
Western spotted skunk	<i>Spilogale gracilis</i>

Mammals (cont.)

White-footed vole	<i>Arborimus albipes</i>
White-tailed deer	<i>Odocoileus virginianus</i>
Wolverine	<i>Gulo gulo</i>
Yellow-bellied marmot	<i>Marmota flaviventris</i>
Yellow-pine chipmunk	<i>Neotamias amoenus</i>
Yuma myotis	

Reptiles

Common garter snake	<i>Thamnophis sirtalis</i>
Gopher snake	<i>Pituophis catenifer</i>
Northern alligator lizard	<i>Elgaria coerulea</i>
Northwestern garter snake	<i>Thamnophis ordinoides</i>
Painted turtle	<i>Chrysemys picta</i>
Racer	<i>Coluber constrictor</i>
Ringneck snake	<i>Diadophis punctatus</i>
Rubber boa	<i>Charina bottae</i>
Sagebrush lizard	<i>Sceloporus graciosus</i>
Sharptail snake	<i>Contia tenuis</i>
Southern alligator lizard	<i>Elgaria multicarinata</i>
Western fence lizard	<i>Sceloporus occidentalis</i>
Western rattlesnake	<i>Crotalus oreganus</i>
Western skink	<i>Eumeces skiltonianus</i>
Western terrestrial garter snake	<i>Thamnophis elegans</i>

Source: Wildlife Explorer / Wildlife Viewer

Appendix D

Ecoregions in the Proposed National Monument

Ecoregions, as defined by the Environmental Protection Agency (EPA), are “areas where ecosystems (and the type, quality, and quantity of environmental resources) are generally similar.” A Roman numeral classification scheme indicates different hierarchical levels of ecoregions, from level I for the most general to level IV for the most detailed. The proposed national monument is entirely within the EPA’s Cascades level III ecoregion.

The mountains of the Cascades are widely underlain by Cenozoic volcanic rocks and have been affected by alpine glaciation. Maximum elevations of up to 11,239 feet occur on active and dormant volcanic peaks in the eastern part of the ecoregion (the high Cascades). The western portion of this ecoregion, the western Cascades, is older and lower, and is dissected by numerous steep-sided stream valleys. The Cascades have a moist, temperate climate that supports an extensive and highly productive coniferous forest that has been intensively managed for logging. Subalpine meadows occur at high elevations.

Further refining the ecoregion, EPA scientists divide Oregon's Cascades level III ecoregion into six additional level IV ecoregions, four of which are found in the proposed national monument:

- The Western Cascades Lowlands and Valleys ecoregion includes the lower slopes of the Cascades. Its mild, wet climate promotes lush forests of western hemlock and Douglas-fir. Soils are warmer than in higher-elevation ecoregions. The steep valleys contain high-gradient rivers and streams that support cold-water salmonids, including the threatened chinook salmon, steelhead, and bull trout. Reservoirs store winter snowmelt for irrigation and municipal water supply in the Willamette Valley.
- The Western Cascades Montane Highlands ecoregion is composed of steeply sloping, dissected mountains between about 3,000 and 6,500 feet in elevation. The western Cascades are older and more eroded than the lava plateau and prominent snow-covered cones of the high Cascades (the Cascade Crest Montane Forest and Cascades Subalpine/Alpine ecoregions); they are composed of dark basalt in contrast to the gray andesite of the high Cascades. The Western Cascades Montane Highlands ecoregion has lower temperatures and receives more winter snow than the Western Cascades Lowlands and Valleys ecoregion. Soils have frigid or cryic temperature regimes, in contrast to the mesic temperature regime of soils in the Western Cascades Lowlands and Valleys. Abundant precipitation supports forests dominated by Douglas-fir, western hemlock, noble fir, and Pacific silver fir.



The upper slopes of Cone Peak

- The Cascade Crest Montane Forest ecoregion consists of an undulating plateau punctuated by volcanic mountains and lava flows. Volcanism in the Pliocene epoch overtopped the existing Miocene volcanics of the Western Cascades Montane Highlands. Later Pleistocene glaciation left numerous naturally fishless lakes. Today, this ecoregion contains forests dominated by mountain hemlock and Pacific silver fir. It has a shorter summer drought and fewer intermittent streams than the High Southern Cascades Montane Forest.

- The Cascades Subalpine/Alpine ecoregion contains the prominent volcanic peaks of the high Cascades. Pleistocene glaciation reshaped the mountains above 6,500 feet, leaving moraines, glacial lakes, and U-shaped glacial canyons. Glaciers and permanent snowfields still occur on the highest peaks. The vegetation is adapted to high elevations, cold winter temperatures, a short growing season, and a deep winter snowpack. Herbaceous subalpine meadow vegetation and scattered patches of mountain hemlock, subalpine fir, and whitebark pine occur near timberline.



Mount Jefferson from Russel Lake
Photo by George Wuerthner

Source: “Ecoregions of Oregon”

Appendix E **General Boundaries of the Proposed Douglas-Fir National Monument**

The boundaries of the Douglas-Fir National Monument are generally designed to follow the designated heights of land (watershed boundaries) when cutting through federal (National Forest) land, or the boundaries separating federal land from private land or special purpose land. Private and state lands included within the boundaries described are excluded from the proposed national monument.

More specifically, the proposed boundary would run:

Beginning at the peak of Mr. Jefferson, north along the western boundary of the Warm Springs Indian Reservation to the southern tip of the Olallie Lake Scenic Area. Then northwest along the watershed boundary between the Breitenbush River watershed and the Olallie Lakes watershed (within the Olallie Lake SA) to the intersection of National Forest Road 380 and Forest Road 4220, then west to the Forest Service Boundary between Mt Hood National Forest and Willamette

National Forest. Then west along the National Forest boundary to the intersection of this boundary and the southern boundary of the Bull of the Woods Wilderness, then west along the southern boundary of the Bull of the Woods and the Opal Creek Wilderness to the point of the French Creek Trailhead along French Creek Road, then due west to the western boundary of the Willamette National Forest, then south to where the boundary encounters the North Santiam Highway (State Highway 22). Then generally southeast along the right of way of Highway 22 and then generally both southeast and northeasterly along the northern right of way of Highway 22 to that point where Highway 22 turns southeast to cross Detroit Lake and enters the town of Detroit. From the point of such southeast turn, the boundary will become the ordinary high-water mark of Detroit Lake northeast to the point where the Breitenbush River enters the lake. The boundary will cross the Breitenbush River and continue south west along the ordinary high water line of the Lake to the point where the boundary encounters private property within and around the city limits of the town of Detroit. The boundary will continue generally south east, along the boundary of federal and private land of Detroit and other private property along Highway 22, through the area of Idanha until the boundary line encounters the right of way of State Highway 22. The boundary will then proceed southeast along the northern boundary of State Highway 22 to the area of the town of Idanha. Using the same boundary of federal land and private property, the boundary shall skirt Idanha to exclude the areas of private property within the Willamette National Forest located generally north, east and south of Idanha. Where the boundaries of such private property reapproaches the North Santiam River, on the south side of the river, the boundary will proceed north west along the ordinary high water mark of the North Santiam River and then the boundary of Detroit Lake, proceeding along the ordinary high water mark of Detroit Lake, except where necessarily further inshore to exclude state and private property, until the boundary reaches the western boundary of the Willamette National Forest, where the boundary of the National Monument shall also be the boundary of the National Forest, running south, then west, then north, west and south until the boundary of the National Forest encounters with and intersects the northeast boundary corner of the land managed by the Bureau of Land Management including the Crabtree Valley area. The boundary of the National Monument shall then proceed west, then south, then east to include all United States lands managed by the BLM touching on and including the watershed of Crabtree Creek. The northern boundary of this portion shall extend along the boundary of BLM land to include all of Section 12, T11S, R2E WM. Continuing from a point at the Northwest corner of Section 12, T11S, R2E WM, the boundary shall proceed west to include all the US property of Sections 2, 3, 4 and 5, then south along the western boundary of section 4, T11S, R2E WM and section 8, T11S, R2E WM, where the boundary shall include all of the portion of Section 8 owned by the United States, then east along the southern boundary of the United States property in Section 8, then south and then east along the boundaries of first section 9, then the southern boundary of Section 10, T11S, R2E WM, then north along the eastern boundary of Section 10 to the southern boundary of Section 2, T11S, R2E WM, then east to the northwest corner of Section 12, T11S, R2E WM. The boundary will then proceed south, east and west to include the BLM land within the watersheds of Crabtree Creek, Bonnie Creek, and Whiterock Creek, and then south and east to include Yellowstone Mountain and as much of the watershed of Yellowstone Creek and Four Bit Creek as lie within BLM Jurisdiction, then east of the southern edge of the area of BLM land east of Gobbler's Knob to cross Quartzville Creek and south, east and north of that section of BLM land adjacent to the section crossing Quartzville Creek then north and east along the boundaries of BLM controlled

land to that point where the contiguous elements of BLM land again encounter the boundary of the Willamette National Forest. The Douglas-fir National Monument shall also include the non-contiguous element known as the Middle Santiam Terrace, consisting of all of the property owned by the United States and managed by the BLM within Section 19, T12S, R4E W. Resuming the boundary of the Monument at a place where the above described portion of BLM land encounters the boundary contiguous of the boundary of the National Forest, the National Monument shall proceed east then south along the westernmost boundary of the National Forest, including the western boundary of the Middle Santiam Wilderness, to the area of checkerboard National Forest and private land south of the Middle Santiam River. The National Monument boundary shall include all national forest land west and south including land in the area generally designated as Moose Ridge, south along the western boundary of the National Forest lands across the South Santiam River, then east and then south along the westernmost boundary of the National Forest boundary to that point where the national forest boundary line crosses the Linn – Lane County line at the southern edge of the Calapooya watershed. The boundary shall then proceed due south approximately 600 feet to the parallel of forty four degrees, twelve minutes thirty seconds north. The Monument boundary shall run east along said parallel to cross the Blue River just north of Carmen Smith Reservoir to the height of land marking the watershed boundary between the Blue River and its tributary Lookout Creek. The boundary shall then proceed northeastward along the height of land marking the watershed boundary of Lookout Creek (also marking the boundary of the H. J. Andrews Experimental Forest) to the height of land known as Carpenter Mountain. The Monument boundary shall then proceed in a southeasterly direction, following the boundary of the H J Andrews Experimental Forest and the watershed boundary of Lookout Creek to Frissell Point, where the boundary shall run due south, crossing state Highway 126 to pass slightly east of Little Smokey peak to the centerline of Forest Service Road 2643 (Foley Ridge Road). The boundary then goes in a generally eastward direction along the centerline of Road 2643 to the junction of 2643 and Road 480. At that point the boundary line goes south approximately 200 feet to the boundary of the Three Sisters Wilderness. The boundary then goes in a northeasterly direction along the northern and western boundary of Three Sisters Wilderness until that boundary meets the boundary of Deschutes County. From that point the boundary of the Monument travels in a northerly direction along the western boundary of Deschutes County (eastern boundary of Linn County) to the intersection of the Deschutes and Linn County line with the southern boundary of the Santiam Recreation Area, the northern boundary of the Mt. Washington wilderness area, where the boundary turns west to a point due south of Sand Mountain. At that point, the boundary of the Monument runs due north to the centerline of Highway 20, where the boundary runs east along the centerline of Highway 20 to the boundary of Linn County and Deschutes County, where the boundary turns north along the eastern boundary of Deschutes County to the beginning point at the peak of Mt. Jefferson.

Appendix F

Roadless Areas Within the Proposed Douglas-Fir National Monument

A total of ~159,000 acres of roadless areas lie within the proposed monument. The presence of these large areas of mature and old-growth forests, as well as other natural areas, contribute to the value of the area as a national monument.

Wilderness Areas

- Mount Jefferson Wilderness Additions (23,854 acres). The Mount Jefferson Wilderness is magnificent already but could be made more biologically diverse with the addition of adjacent roadless lands that are of lower elevation and more forested with older forests. The South Breitenbush River National Recreational Trail in the proposed wilderness additions affords recognition but not protection.
- Mount Washington Wilderness Additions (16,508 acres). The Mount Washington Wilderness, already magnificent, could be made even better and more diverse with the addition of adjacent roadless lands that are of lower elevation and more forested with older forests. The current wilderness boundary goes through Robinson Lake and approximately follows a trail that goes in and out of the wilderness area several times.
- Menagerie Wilderness Additions (1,906 acres). The Menagerie Wilderness was named after The Menagerie, a series of volcanic plug rock pinnacles that tower above the thick forest of mature Douglas-fir, western hemlock, and western redcedar.
- Middle Santiam Wilderness Additions (9,219 acres). In 1984, when Congress established the Middle Santiam Wilderness, it included very significant amounts of majestic old-growth forest (including Chimney Peak). Still, adjacent comparable old growth was excluded. It should be added.

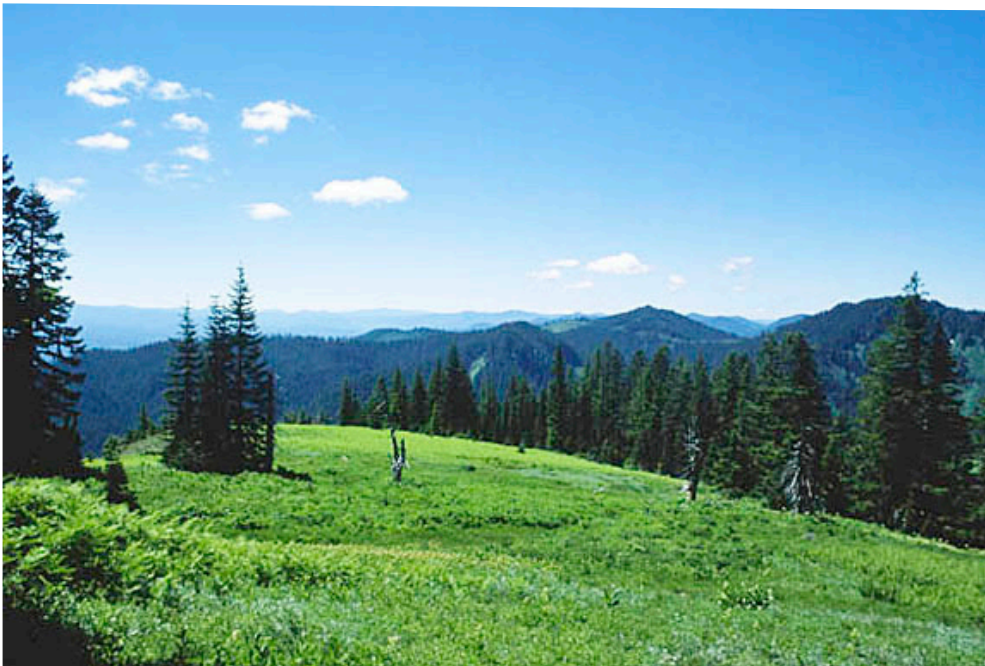


- Opal Creek and Bull of the Woods Wildernesses Additions (3,928 acres). These roadless lands adjacent to the proposed National Monument are in the Breitenbush River watershed and a small portion of the Collawash River watershed that includes Elk Lake (but not the road into and the campground beside it) and Beachie Saddle.

*Along the McQuade Creek Trail,
Middle Santiam Wildernes*

Other Roadless Areas

- Bachelor Mountain Roadless Area (3,901 acres). Featuring several miles of ridgeline and canyon trails, this area is a haven for songbirds and wildflowers and may be habitat for the critically endangered lynx. It also contains very large Engelmann spruce and sugar pine. Cascade peaks visible from here range from Mount Hood in the north to Diamond Peak in the south.
- Blowout Creek Roadless Area (1,295 acres). Runs of winter steelhead and spring chinook salmon probably spawned in the lower two miles before Detroit Dam. The Army Corps of Engineers is required to improve anadromous fish passage so Blowout Creek could again host ocean-going salmonids—if habitat is maintained.
- Box Canyon Roadless Area (2,582 acres). The area has steep rocky canyons and crags amid significant old growth forest. Runs of winter steelhead and spring chinook salmon probably spawned in the lower 1.5 miles below the first falls in Box Canyon Creek. The Army Corps of Engineers is required to improve anadromous fish passage so Box Canyon Creek could again host ocean-going salmonids—if habitat is maintained.
- Browder Ridge Roadless Area (4,622 acres). Passing through old-growth forest, alpine meadows, and mature true fir forests, this rugged 4.4-mile hike treats you to views of Mount Jefferson, Mount Washington, and Three Sisters. Abundant early summer wildflowers and many butterflies.



Browder Ridge
Photo by George Wuerthner

- Byars Creek Roadless Area (1,616 acres). The area is a scenic backdrop to those driving the road along the Breitenbush River.
- Carpenter Mountain Roadless Area (3,594 acres). Only a portion of the roadless area is within the proposed national monument; the remainder is within the H. J. Andrews Experimental Forest.

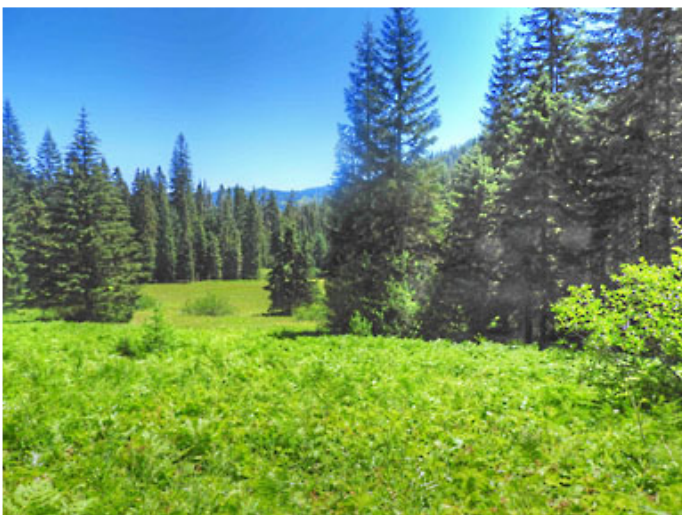
- Cliff Creeks Roadless Area (1,323 acres). Cliff Creek flows into the Breitenbush River at the popular Humbug Campground.
- Crabtree Valley Roadless Area. (1,822 acres). An island of pristine forest surrounded by a sea of industrial clear-cuts. The valley's old-growth Douglas-fir and western redcedar are perhaps a thousand years old.
- Gordon Meadows Roadless Area (10,125 acres). The area contains lakes and meadows in various stages of succession. Towering over the lakes and meadows is Soapgrass Ridge. Here one will find the Millennium Grove, a unique stand of seven-hundred-to-nine-hundred-year-old old-growth Douglas-fir interspersed with other younger, two-hundred-to-three-hundred-year-old trees. It also includes an Alaska cedar forest mosaic important to scientific research and a portion of the historic Santiam Wagon Road.
- Hoover Ridge Roadless Area (2,305 acres). A scenic backdrop for anglers and boaters on Detroit Reservoir.
- Iron Mountain and Cone Peak Roadless Area (8,808 acres). At the headwaters of the North, Middle, and South Santiam Rivers, this area is home to more than three hundred species of flowering plants belonging to eighteen distinct plant communities. More than sixty species found here are unusual or rare for the western Cascade Mountains, including *Ivesia gordonii*.



Iron Mountain
Photo by Lori Humphreys

- Jumpoff Joe Roadless Area (6,298 acres). An impressive rock outcropping that is easily seen from US Highway 20. The Old Santiam Wagon Road traverses the unit.
- Minniece Point Roadless Area (1,438 acres). This area is in the geologically interesting Quartzville Creek watershed.
- Moose Creek Roadless Area (5,528 acres). Moose Creek has a falls and is kyakable for the most hardy. Moose Creek is the lowest point of elevation in the proposed national monument and hosts spawning for ocean-going salmon and steelhead.

- Olallie Lakes Roadless Area (~1,900 acres; total area 7,607 acres). The roadless area is within the Olallie Lakes Scenic Area and is known for its plethora of small lakes. A glaciated region, it is forested with noble fir, western hemlock, Pacific silver fir, mountain hemlock, and other species. A portion of the Pacific Crest National Scenic Trail traverses the area.
- Scorpion Mountain Roadless Area (4,868 acres). The roadless area is on the Collawash-Breitenbush Divide and includes a trail to the summit of Scorpion Mountain.
- Tamolitch Falls Roadless Area (2,287 acres). The Upper McKenzie Wild and Scenic River flows through the area, which is larger than the narrow protected corridor of the wild and scenic river. The McKenzie River National Recreation Trail follows the river.
- Three Creeks Roadless Area (4,167 acres). These eroding volcanic plugs tower over wildflower meadows and huge noble firs.
- Tidbits Mountain Roadless Area (5,339 acres). Hosts a beautiful hike through old-growth forest.
- Tumble Lake Roadless Area (2,460 acres). The Tumble Creek Trail goes through both mature and old-growth forest and open ridges with views of Mount Jefferson.
- Wildcat Mountain Roadless Area (6,426 acres). A portion of the roadless area is a Research Natural Area, designated to represent ecosystems common to the Pacific Silver Fir Zone. It includes slopes of a moderately high mountain ridge with rocky cliffs, meadows, and brush fields, and first-, second-, and third-order streams and associated wetlands. Late-successional Pacific silver fir forests, as well as cliff, talus, rock garden, and mesic meadow communities are also present. The predominant tree species is noble fir. Pacific silver fir, Douglas-fir, and mountain hemlock are also common. Sitka alder is found in association with wetlands.
- There are also several other roadless areas: Cook Creek (1,877 acres), Daly Lake (1,295 acres), Mount Bruno (3,239 acres), Pyramid Creek (2,310 acres), Quentin Creek (1,934 acres), Slate Rock (2,598 acres), Two Girls (3,111 acres), Upper Soda (1,131 acres), and White Bull Mountain (1,273 acres).



Tombstone Meadows

Appendix G

Waters Within the Proposed National Monument That Have Identified Outstanding Values

- Portions or all of the following free-flowing stream segments and waters within the proposed Douglas-Fir National Monument qualify for inclusion in the National Wild and Scenic Rivers System and are included in Senator Ron Wyden's (D-OR) proposed 2024 River Democracy Act.
- Middle Santiam River. The mainstem and its tributaries Pyramid and South Pyramid Creeks (15.2 miles). Outstandingly remarkable values: recreation, scenery, fish, wildlife/ ecological/biological diversity.
- North Santiam River. The mainstem and its tributary Whitewater Creek (26.9 miles). Outstandingly remarkable values: recreation, scenery, fish, wildlife, water quality.
- South Santiam River. The mainstem and its tributaries Sevenmile, Latiwi, Sheep, Cub, Boulder, Moose, and Falls Creeks (45.6 miles). Outstandingly remarkable values: wildness, recreation, scenery, fish, wildlife, history/culture, geology.
- Breitenbush River. The mainstem, the North Fork and South Forks upstream and its tributaries French, East Fork Humbug, and Devils Creeks (37.5 miles). Outstandingly remarkable values: recreation, scenery, fish, wildlife, wildness, ecology/geology.



Breitenbush River

- Crabtree Creek. The mainstem and its source, Crabtree Lake (5.2 miles). Outstandingly remarkable values: recreation, scenery, wildlife, ecology/biology.
- Quartzville Creek. The upper mainstem (Forest Service land; BLM land is a wild and scenic river, established in 1988), as well as an important tributary, Yellowstone Creek (28 miles). Outstandingly remarkable values: recreation, scenery, fish, wildlife, ecology/biology.
- Lava Lake. The lake and its tributary Park Creek (9 miles). Outstandingly remarkable values: scenery, wildlife, recreation, geology/hydrology, water.
- Calapooia River. The upper mainstem (4.1 miles). Outstandingly remarkable values: recreation, fish, wildlife.

Appendix H

Bureau of Land Management Areas of Critical Environmental Concern within the Proposed Douglas-Fir National Monument

Congress defined “areas of critical environmental concern” as

areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards (43 USC 1702(a))

Since 1976, BLM has been parsimonious in establishing ACECs, and where ACECs have been established, often the “special management attention” is inadequate to “protect and prevent irreparable damage.” As examples, BLM often allows mining, livestock grazing, logging, and off-road vehicles in ACECs. All the reasons for a national monument.

There are six small, but ecologically critical, ACECs within the proposed Douglas-Fir National Monument.

Crabtree Complex Area of Critical Environmental Concern

Acres: 1,251

Historic, Cultural, Scenic: Scenic qualities such as forest cover type, complex of habitats and geologic features considered exceptional within the Salem District.

Fish and Wildlife: Several Bureau Special Status wildlife species and northern spotted owl; cliffs provide unique habitat with potential for raptor use.

Natural Process or System: Relatively undisturbed old-growth forest; fills several West Cascades Ecosystem elements identified in the [Oregon Natural Areas Plan]; area has a population of Alaska-cedar that is fairly uncommon in this region.

Natural vegetation communities represented in the Carolyn's Crown-Shafer Creek Research Natural Area, which is within the Crabtree Complex ACEC include

- Western hemlock/devil's club;
- Old growth western red cedar types;
- Silver fir/rhododendron/beargrass;
- Silver fir/Alaska huckleberry/bunchberry with rhododendron; and
- Silver fir/Oregon oxalis.

Three species of special concern are also present: *Andreaea schofieldiana* (moss), *Pilophorus nigri-caulis* and *Stereocaulon spathuliferum* (both lichens).

Middle Santiam Terrace Area of Critical Environmental Concern

Acres: 206

Historic, Cultural, Scenic: Includes a Native American cultural site that is one of few in the region on public lands.

Natural Process or System: Old-growth fir and hemlock forest at a relatively low elevation river terrace with an increased value for research; represents several native plant community types in the Western hemlock zone in western slopes of the Cascades.

The ACEC is also designated as a Middle Santiam Terrace Research Natural Area. Natural vegetation communities found in the area include:

- hemlock/rhododendron-Alaska huckleberry;
- Western hemlock/dwarf Oregon grape/oxalis;
- Western hemlock/oxalis;
- Western hemlock/rhododendron-Alaska huckleberry; and
- River terrace forest with Douglas fir, western red cedar, western hemlock and associated hardwoods.

Two species of special concern are also present: *Lobaria linita* and *Pseudocyphellaria mallota* (both lichens).

Silt Creek Area of Critical Environmental Concern

Acres: 118

Natural Process or System: Active, natural landslide with an old-growth forest and unique habitat related to the slow but continual mass earth movement; host to an abnormally large population of *Pseudocyphellaria rainierensis*, “old growth specklebelly,” an epiphytic tripartite lichen. (This lichen is globally rare; “tripartite” in this context means that the fungus has a symbiotic relationship with both a green algae and a cyanobacteria within the lichen.)



Old growth specklebelly,
Pseudocyphellaria rainierensis

Snow Peak Area of Critical Environmental Concern

Acres: 1,186

Fish and Wildlife: High quality natural ecosystem supporting considerable biological diversity; northern spotted owl; various migratory bird species.

Natural Process or System: Elevation of 4,280 ft. very close to the Willamette Valley; A variety of special habitats in close proximity, including wet meadows, dry meadows, rock outcrops/crevice habitat, talus slopes, mature to old- growth forests, headwater streams with adjacent riparian and brushy thickets; rare botanical fungi, lichens, and vascular plants, including several Bureau Sensitive species; deer cabbage, a wetland botanical species (*Nephrophyllidium cristagalli*), found nowhere else in Oregon.



Deer cabbage (Nephrophyllidium cristagalli) is only found in one location in Oregon, on Snow Peak in the proposed Douglas-Fir National Monument

Photo: Gerald and Buff Corsi © California Academy of Sciences

White Rock Fen Area of Critical Environmental Concern

Acres: 66

Fish and Wildlife: Nesting and foraging potential for neotropical migratory birds and other wildlife species.

Natural Process or System: Four fens are unique to the region and are fragile; streams that have cut through the glacial moraine have left behind a unique and diverse remnant of subalpine habitat for botanical, wildlife, and aquatic species.

Yellowstone Creek Area of Critical Environmental Concern

Acres: 805

Historic, Cultural, Scenic: The creek contains numerous waterfalls and cascades in a steep, v-shaped canyon surrounded by old-growth forest, lower portions are in the Quartzville Creek Wild and Scenic River; the diversity and old age of the vegetation combined with geologic features creates high quality scenery.

Fish and Wildlife: Northern spotted owl.

Natural Process or System: This tributary to Quartzville Creek is an undisturbed area of low elevation (1,200-3,100 feet), high-quality, contiguous, old growth forest; supports a broad diversity of overstory tree species including Douglas-fir, western hemlock, western redcedar, Pacific yew, Pacific silver-fir, noble fir, western white pine, sugar pine, bigleaf maple, red alder and black cottonwood.

Source: USDI Bureau of Land Management. 2016. Proposed Resource Management Plan/Final Environmental Impact Statement: Western Oregon.

Appendix I

Forest Service Special Protection Areas within the Proposed Douglas-Fir National Monument

Wildcat Mountain Research Natural Area

Acres: 1,495 acres

Summary: The Wildcat Mountain Research Natural Area (RNA) was designated to represent ecosystems common to the Pacific Silver Fir Zone. The original RNA includes slopes of a moderately high mountain ridge with rocky cliffs, meadows, and brush fields. The RNA was expanded in 1998 to include first, second and third order streams and associated wetlands. Late-successional Pacific silver fir (*Abies amabilis*) forests, as well as cliff, talus, rock garden, and mesic meadow communities are also present in the expansion. The predominant tree species in the original section is noble fir (*Abies procera*). Pacific silver fir (*Abies amabilis*), Douglas-fir (*Pseudotsuga menziesii*), and mountain hemlock (*Tsuga mertensiana*) are also common. Successional trends indicate that

Pacific silver fir (*Abies amabilis*) will likely replace most other tree species over time. Sitka alder (*Alnus viridis* ssp. *sinuata*) is found in association with wetlands in the expanded section. The understory consists of queen's cup (*Clintonia uniflora*), vanilla leaf (*Carphephorus odoratissimus*), beargrass (*Nolina* sp.), and big huckleberry (*Vaccinium membranaceum*).

Natural Vegetation Communities: Silver fir/Alaska huckleberry/bunchberry with rhododendron; and Silver fir/coolwort foamflower and silver fir/vine maple/coolwort foamflower communities.

Known Special Species of Concern: *Strix occidentalis caurina* (Northern spotted owl) and *Boechea hastatula* (Hells Canyon rockcress).

Three Creeks Research Natural Area

Acres: 727

Three Creek Research Natural Area (RNA) was established to represent an Alaska-cedar forest mosaic. The RNA is bounded by the steep, rocky ridgelines of Twin Buttes and Soapgrass Mountain peaks. Below the ridgeline, the RNA is divided into two main drainages that form the headwaters of Three Creek. Slopes range from gently sloping to steep with high cliffs and massive slumping. A steep talus and forested slope descend to the north boundary of the RNA. Western hemlock (*Tsuga heterophylla*) Douglas-fir (*Pseudotsuga menziesii*), and noble fir (*Abies procera*) dominate lower elevations of the RNA while mountain hemlock (*Tsuga mertensiana*) dominates upper elevations. The shrub layer is predominantly vine maple (*Acer circinatum*) and thin-leaved blueberry (*Vaccinium membranaceum*). Pacific rhododendron (*Rhododendron macrophyllum*) and dull Oregon grape (*Berberis nervosa*) are common on drier sites while devil's club (*Oplopanx horridum*) and salmonberry (*Rubus spectabilis*) dominate riparian areas. Starry solomon-plume (*Smilacina stellata*), coolwort foamflower (*Tiarella trifoliata* var. *unifoliata*), vanilla leaf (*Acilys triphylla*), dogwood bunchberry (*Cornus canadensis*), and queen's cup (*Clintonia uniflora*) are common herbs throughout the understory while Oregon oxalis (*Oxalis oregana*) is common on moist sites.

Natural Vegetation Community: Alaska yellow cedar forest mosaic.

McKenzie Pass Research Natural Area

Acres: 284

McKenzie Pass Research Natural Area (RNA) was established to represent lava flow with accompanying vegetation. The terrain varies from flat to rolling with a variety of small ridges and rock outcrops. The RNA is covered with small seasonal drainages that generally flow northwest. Depressions once carved out by glaciers contain several shallow ponds and meadows. Recent lava flows into the western, southern, and eastern portions of the RNA created a surface of sharp basaltic rock. Mountain hemlock (*Tsuga mertensiana*), subalpine fir (*Abies lasiocarpa*), Pacific silver fir (*Abies amabilis*) and lodgepole pine (*Pinus contorta*) dominate the RNA while occasional patches of Engelmann spruce (*Picea engelmannii*), western white pine (*Pinus monticola*), ponderosa pine (*Pinus ponderosa*), whitebark pine (*Pinus albicaulis*), Douglas-fir (*Pseudotsuga menziesii*), noble fir (*Abies procera*), and white fir (*Abies grandis*) are scattered throughout. The shrub layer is dominated by grouseberry (*Vaccinium scoparium*), thin-leaved blueberry (*Vaccinium membranaceum*), and dwarf bramble (*Rubus lasiococcus*). Herbs in the wetter meadows are dominated by water sedge

(*Carex aquatilis*), beaked sedge (*Carex rostrata*), and Jeffrey's shooting star (*Dodecatheon jeffreyi*), while herbs in less common dry meadows are dominated by bluejoint reedgrass (*Calamagrostis canadensis*). There are also patches of Redwoods violet (*Viola sempervirens*), one-sided wintergreen (*Orthilia secunda*), beargrass (*Xerophyllum tenax*), and broadleaf lupine (*Lupinus latifolius*).

Natural Vegetation Community: Lava flow with representative vegetation (range from mid to high elevations).

General Source: Oregon Natural Areas Plan 2015.

The trail leads on...

