

Dry Open Forests

East Cascades Slopes and Foothills Ecoregion

From the snowline in the High Cascades to the Oregon portion of the Sagebrush Sea, the 6.8 million acres of the East Cascades Slopes and Foothills Ecoregion in Oregon are defined by their location within the rainshadow of the Cascade Mountains. The highest point in the ecoregion is Crane Mountain, which rises to 8,456 feet in the Warner Mountains.

Beyond Oregon, this ecoregion extends north into Washington and south into California.

The East Cascades Slopes and Foothills Ecoregion is characterized by volcanism in the form of lava flows, cinder cones and volcanic buttes, with some basin and range topography mixed in. Much of the ecoregion's western portion is covered with a layer (from 2 inches to 50 feet thick) of pumice ash from the cataclysmic eruptions of the late Mount Mazama, the remnant of which is Crater Lake.

The dry continental climate in this area has greater temperature extremes than the Cascades Range. Rainfall varies from 20 to 120 inches annually. Summers are very dry.

Open lodgepole pine and ponderosa pine forests are common here. Both species are highly adapted to wildfire. Ponderosa pine tends to resist fire, while lodgepole seeds prolifically after being killed by a fire.

Wildlife in this ecoregion includes mule deer, Rocky Mountain elk, black bear, beaver, river otter, skunk, marten, raccoon, coyote, cougar, numerous species of songbirds, hawks, owls and increasing numbers of peregrine falcon. Although bald and golden eagles are uncommon in the ecoregion as a whole, the largest wintering population of bald eagles in the lower 48 states is found in the Klamath Basin. Fish species include rainbow and bull trout, as well as several Pacific salmon stocks.

A major distinguishing feature of the East Cascades Slopes and Foothills Ecoregion is the abundance of ponderosa pine. Ponderosa is found west of the Cascade Crest, but nowhere in such abundance as here.

Descending eastward out of the hemlock forest types of the High Cascades, there are a variety of forest types associated with ponderosa pine.

Ponderosa/Douglas-fir/True Fir is commonly found in the eastern portion of the northern Cascades in Oregon. Lower in elevation are the **Ponderosa/Douglas-fir/Western Larch/Lodgepole** and **True Fir/Lodgepole/Western Larch/Douglas-fir** forest types, where western larch is really just a minor component.

Following fire, **Subalpine Lodgepole** and **Lodgepole** grow in near monoculture

conditions. The same is true of **True Fir/Lodgepole** until true fir eventually overtops the lodgepole.

Mountain Hemlock is often found in pure stands at high elevations. **Mountain Hemlock/Red Fir/Lodgepole** is found south of the Three Sisters and on Newberry Crater.

Some **Subalpine Fir/Engelmann Spruce Parklands** are found at higher elevations in the Fremont National Forest. Such occurrences are the far western outliers of this Rocky Mountain forest type.

At lower elevations, especially east of US 97, one can find predominantly park-like stands of **Ponderosa**, as well as **Ponderosa on Pumice** that are characterized by low understory plant cover.

At even lower elevations, one will find **Ponderosa/Oregon White Oak** localized south of The Dalles and **Oregon White Oak/Ponderosa** in the lower Klamath Basin.

Further east and approaching Oregon's portion of the tree-free Sagebrush Sea, the ponderosa forests give way to a variety of juniper woodlands, including **Juniper/Ponderosa**, **Juniper/Mountain Big Sage**, **Juniper/Big Sage**, **Juniper/Bitterbrush**, **Juniper/Low Sage** and **Juniper/Grasslands**.

South of Bend, the ecoregion widens to the east and includes **Ponderosa/Lodgepole** where the latter species predominates in cold pockets and wetter sites.

Near the California border where the Cascade Crest is lowest, one finds **Douglas-fir/Ponderosa/True Fir**. This same association is common on the face of the Warner Mountains. Also on the slopes of the Warner Mountains are stands of **Douglas-fir/Ponderosa/Incense Cedar**, where incense cedar is as prevalent as the other tree species.

Yamsay Mountain and Gearhart Mountain are relatively cooler islands of **True Fir/Douglas-fir** surrounded by drier ponderosa pine forests.

Quaking Aspen grows widely but in small stands on the eastern slopes of the Cascades (and is almost nonexistent west of the Cascade Crest). However, it is delightfully the dominant species in a small band of forest southwest of Silver Lake. Larger stands of quaking aspen are also found on Steens Mountain and Hart Mountain in the Northern Great Basin Ecoregion.

Recent geologic activity has created **Open Lava**, where the vegetation is often

The open country of the East Cascades Slopes and Foothills Ecoregion often allows one to see where one is going. ►



EAST CASCADES SLOPES AND FOOTHILLS ECOREGION

Ecoregions of Oregon's East Cascades Slopes and Foothills

The East Cascades Slopes and Foothills is in the rainshadow of the Cascade Range. It experiences greater temperature extremes and receives less precipitation than ecoregions to the west. Open forests of ponderosa pine and some lodgepole pine distinguish this region from the higher ecoregions to the west where hemlock and fir forests are common and the lower, drier ecoregions to the east where shrubs and grasslands are predominant. The vegetation is adapted to the prevailing dry, continental climate and frequent fire. Historically, creeping ground fires consumed accumulated fuel and devastating crown fires were less common in dry forests.

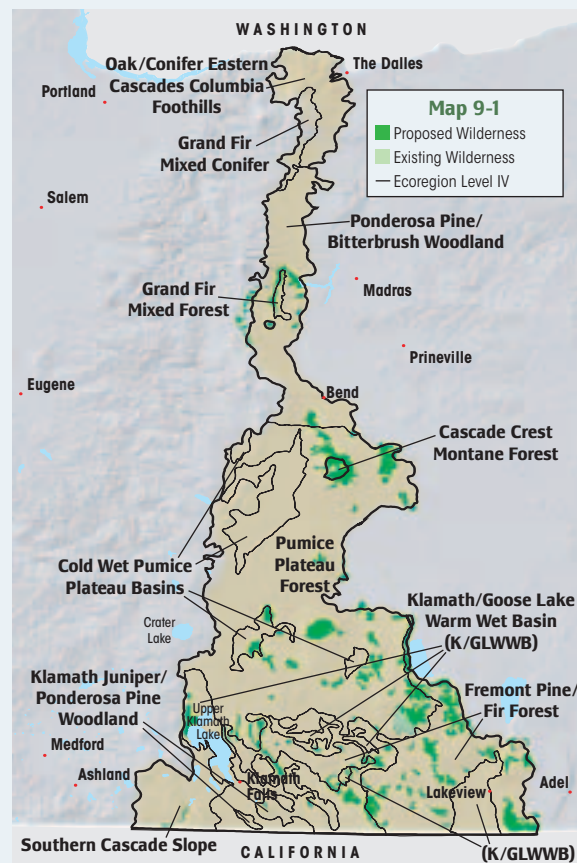
Further refining this ecoregion, scientists classify Oregon's East Cascades Slopes and Foothills Level III Ecoregion into nine additional Level IV ecoregions:

The **Grand Fir Mixed Forest** ecoregion is mostly outside the limit of maritime climatic influence. It is characterized by high, glaciated plateaus and mountains, frigid soils and a snow-dominated, continental climate. Grand fir, Douglas-fir, ponderosa pine and larch occur. This ecoregion is higher and moister than the Oak/Conifer Foothills Ecoregion, but the boundary between them is not sharp.

The **Oak/Conifer Foothills** ecoregion is more diverse than other parts of the East Cascade Slopes and Foothills. Marine weather enters this ecoregion via the Columbia River Gorge, moderating its otherwise continental climate. As a result, soil, climate and vegetation share characteristics of both eastern and western Oregon. Grasslands, oak woodlands and forests dominated by ponderosa pine and Douglas-fir occur. This ecoregion is lower and drier than the Grand Fir Mixed Forest ecoregion.

The undulating volcanic plateaus and canyons of the **Ponderosa Pine/Bitterbrush Woodland** have well-drained, frigid soils that are often derived from ash. Ponderosa pine is common; lodgepole pine is largely absent unlike in the Pumice Plateau. Understory vegetation varies with elevation; at lower elevations, antelope bitterbrush is important winter browse for deer.

The **Pumice Plateau** ecoregion is a high volcanic plateau. This ecoregion is characteristically covered by thick deposits of pumice and volcanic ash. Soils are very deep, highly permeable and droughty. Spring-fed creeks and marshes occur. Ponderosa pine forests are



common on slopes; colder depressions and flats are dominated by lodgepole pine and higher elevations have white fir. Freezing temperatures are possible any time of year.

The **Pumice Plateau Basins** ecoregion includes Sycan Marsh, Klamath Marsh and La Pine Basin. All three areas function as catch-basins for cold air during the winter and have lower minimum temperatures than the Pumice Plateau ecoregion. Soils in this ecoregion have water tables at or near the surface for significant periods of the year in contrast to the Pumice Plateau Ecoregion. Marshes and forested wetlands provide important habitat for migratory waterfowl.

The **Klamath/Goose Lake Basins** ecoregion covers river floodplains, terraces and lake basins. A variety of wildrye, bluegrass and wheatgrass species once covered the basins, but most of the wet meadows and wetlands have been drained for agriculture. Several marshland wildlife refuges are key to preserving regional biodiversity, particularly at-risk bird and fish species.

The **Fremont Pine/Fir Forest** ecoregion contains mid-elevation mountains and high plateaus that rarely exceed timberline. Closed canopy forests contrast with the savanna of the Klamath Juniper Woodland. Ponderosa pine is widespread, but white fir, sugar pine and incense cedar also grow above 6,500 feet and on north slopes. Residual soils are common in contrast to the Pumice Plateau Ecoregion, where residual soils have been deeply buried

by pumice and ash. This ecoregion has a high density of lakes and reservoirs.

The **Southern Cascades Slope** ecoregion is a transitional zone between the Cascades and the drier Eastern Cascade Slopes and Foothills. This ecoregion is higher and moister than the Fremont Pine/Fir Forest and it has a greater mix of forest types. Ponderosa pine woodland becomes mixed with white fir, incense cedar, Shasta red fir and Douglas-fir at higher elevations.

The **Klamath Juniper Woodland** ecoregion is composed of undulating hills, benches and escarpments covered with a mosaic of rangeland and woodland. Western juniper grows on shallow, rocky soils with an understory of low sagebrush, big sagebrush, bitterbrush and bunchgrasses. Other shrubland/grasslands include shrub species uncommon in eastern Oregon, such as woolly wyethia, Klamath plum and birchleaf mountain mahogany. The diverse shrublands provide important wildlife habitat.

Text gratefully adapted from Thor D. Thorson, Sandra A. Bryce, Duane A. Lammers, Alan J. Woods, James M. Omernik, Jimmy Kagan, David E. Pater, Jeffrey A. Comstock. 2003. Ecoregions of Oregon (color poster with map, descriptive text, summary tables and photographs). USDI-Geological Survey, Reston, VA (map scale 1:1,500,000).

SHERRY WELLBORN



Besides all those rims, the proposed Fremont Rims also has abundant Stringer Morrows.

limited to lichens and scattered trees that have found small pockets of soil that have collected in the lava flow. **Scrub**, characterized by black greasewood and shadscale, is found on the ever-fluctuating shallow inland lake basins that have high salinity and alkaline conditions. **Marsh/Wet Meadow** communities, characterized by bullrush, cattail and burr reed are common in the lower, tree-free wetlands.

The lowest elevations of the Eastern Cascades Slopes and Foothills are below timberline and are often comprised of **Big Sage/Shrub**, **Big Sagebrush**, **Bitterbrush Scrub** and **Low Sagebrush**.

At some time in their existence, most forest communities will be set back to early successional forest and are classified as **Cutover/Burned** forest. This can occur naturally — from lightning-caused wildfires, native insect or disease events, or blow-down by wind — or unnaturally, by way of logging, human-caused fire, human-caused blowdown (due to unnatural and vulnerable forest edges caused by clearcuts), non-native disease and insects or aggressive fire-fighting. Particularly troubling are “backburns,” where firefighters intentionally burn the forest in front of an oncoming wildfire. In many cases, the backburns are far more intense and destructive than the natural burn would have been.

Fifty-four percent of Oregon’s East Cascades Slopes and Foothills Ecoregion is federal public lands. Major federal holdings include all of the Fremont National Forest,

much of the Deschutes and Winema, and a portion of the Mount Hood National Forests. The western halves of the BLM Lakeview and Prineville Districts are also located in the ecoregion.

Currently, only one entire Wilderness area (Gearhart Mountain) and portions of eight other Wilderness areas (Badger Creek, Mount Jefferson, Mount Washington, Three Sisters, Diamond Peak, Mount Thielsen, Sky Lakes and Mountain Lakes) are found in Oregon’s East Cascades Slopes and Foothills, comprising but 0.7 percent of the ecoregion.

Conservationists are proposing four new multi-unit Wilderness areas for the region: Fremont Rims, Klamath Basin, Metolius and Newberry Volcano. If designated, Wilderness protection would increase to a total of 8.8 percent of the ecoregion.

Proposed Fremont Rims Wilderness

Old-Growth Ponderosa Pine, Shimmering Quaking Aspen and Rimrock

The Fremont National Forest is the least visited and thus the least known national forest in Oregon. Even local use is limited given the limited number of locals.

The variety of habitats — which include wildflower meadows, sagebrush flats, wet meadows, dense forests, open forests, mahogany covered ridges, glacially carved calderas, park-like stands of ponderosa pine, aspen groves, riparian zones and springs — conspire to provide a highly scenic, distinctive and varied landscape. The rims that define the Fremont are either volcanic in origin or caused by tectonic uplift. Average annual precipitation varies from 16 to 40 inches, usually with a long summer drought. Temperatures range from -30 to 100° F.

The proposed Wilderness encompasses all the remaining wildlands on the Fremont National Forest within the Great Basin. Vegetation ranges from sagebrush on the lower gentle flats, to whitebark pine forests on the North Warner Mountains, Gearhart Mountain and Dead Horse Rim. In between, one can find lush and not so lush conifer forests, meadows and scablands. The most prominent, if no longer dominant, species is ponderosa pine. White fir dominate on higher elevation, north-facing slopes. Western white pine, sugar pine, incense cedar, subalpine fir, quaking aspen, mountain mahogany, western juniper and lodgepole pine are the area’s other major tree species.

LEVEL IV ECOREGIONS

Fremont Pine/Fir Forest (64%), Pumice Plateau (32%), Klamath/Goose Lake Basins (<1%); Northern Basin and Range Level III Ecoregion: High Lava Plains (2%), Semiarid Uplands (<1%), High Desert Wetlands (<1%)

VEGETATION TYPES

Ponderosa (41%), Ponderosa on Pumice (24%), Lodgepole on Pumice (9%), Big Sagebrush (5%), Cutover/Burned (5%), True Fir/Douglas-fir (3%), Juniper/Low Sage (3%), Juniper/Grasslands (2%), Juniper/Mountain Big Sage (2%), Juniper/Big Sage (1%), Lodgepole (<1%), Low Sagebrush (1%), Bitterbrush Scrub (1%), Marsh/Wet Meadow (<1%), Quaking Aspen (1%), Rimrock Shrublands (<1%), Scrub (<1%), Subalpine Fir/Engelmann Spruce Parklands (<1%), Big Sage/Scrub (<1%), Douglas-fir/Ponderosa/Incense Cedar (<1%), Douglas-fir/Ponderosa/True Fir (<1%)

DRAINAGE SUBBASINS

Goose Lake, Lake Abert (Closed), Summer Lake (Closed), Warner Lakes

ELEVATION RANGE

4,196-8,456 feet

UNITS

Abert Rim, Bald Mountain, Barry Point, Basin Springs, Bear Creek, Benny Creek, Blue Mountain, Boulder Springs, Brattain Butte, Buck Mountain, Chewaucan River, Club Cliff, Coleman Rim, Cox Creek, Crane Mountain, Crooked Creek, Dead Horse Rim, Deep Creek, Devils Ball Diamond, Doe Mountain, Drake Peak, East Duncan Creek, Elder Creek, Fawn Creek, Fitzwater Point, *Gearhart Mountain Additions* (Brownsworth Creek-Camp Creek, Cougar Creek-Dairy Creek, Nottin Creek), Government Harvey Pass, Grasshopper Flat, Grizzly Peak, Guyer Creek, Hadley Butte, Hager Mountain, Hanan Trail, Hay Creek, Horseshoe Creek, Horseshoe Meadow, Jones Canyon, Juniper Creek, Little Honey Creek, Little Muddy Creek, Lower Sycan Butte, Mill Creek, Moss-Pass Butte, Mount Bidwell, Muddy Creek, Myers Canyon, Newell Creek, North Fork Deep Creek, Parker Hills, Pine Creek, Ring Corral Creek, Silver Creek, Skull Creek, Smoke Creek, South Fork Sycan River, Thomas Creek, Upper Lapham Creek, Wart Peak, Watson Peak, White Rock Creek, Winter Ridge

EXISTING WILDERNESS INCORPORATED

portion of Gearhart Mountain

SIZE

212,476 acres (332 square miles, not including 5,793 acres of currently protected Wilderness)

COUNTIES

Klamath, Lake

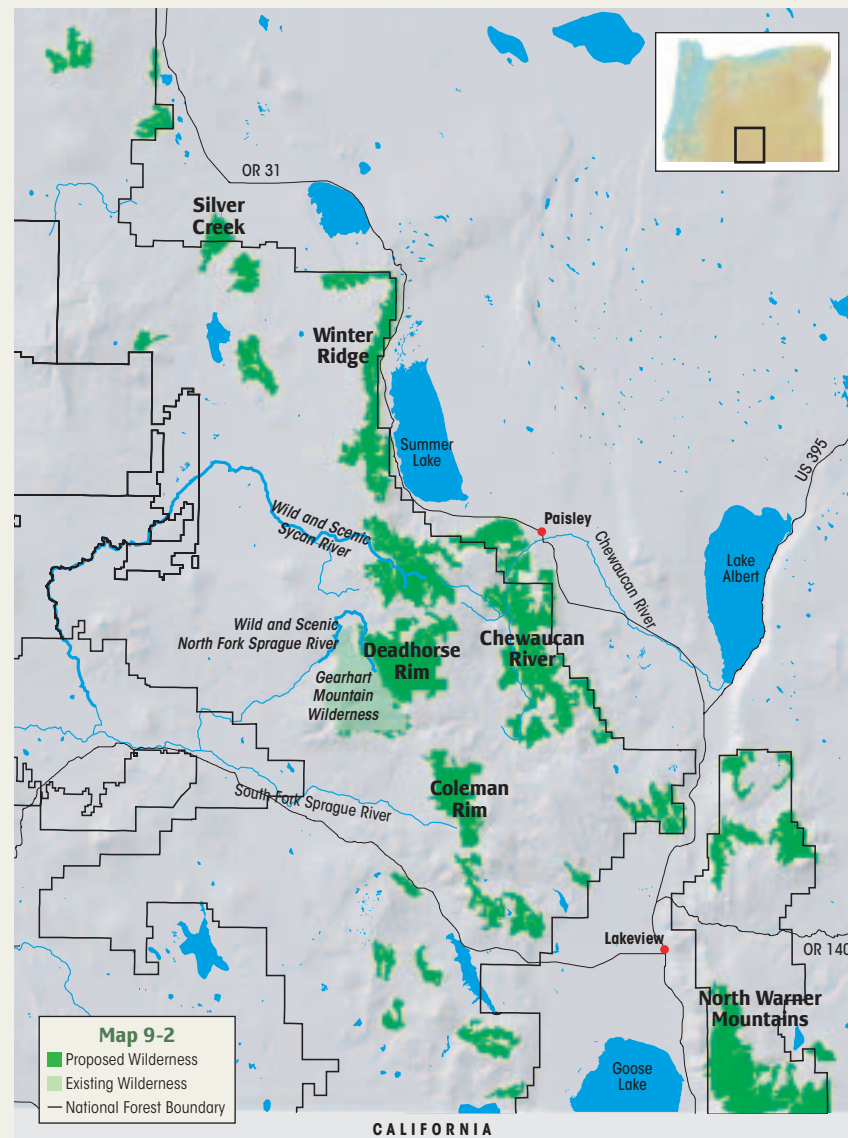
FEDERAL**ADMINISTRATIVE UNITS**

Fremont National Forest, BLM Lakeview District

CONGRESSIONAL DISTRICT

2nd

Proposed Fremont Rims Wilderness



Some of the units in the proposed Wilderness are highlighted below.

The **Chewaucan River** units include portions of the river and vast highlands covered with mountain-mahogany, western juniper and sagebrush. Stands of quaking aspen and pockets of sugar pine are also present. The Chewaucan River is an important source of aquatic diversity in the area.

Coleman Rim contains the largest stand of ponderosa pine and mixed conifer old-growth forest remaining on the Fremont. Park-like stands of yellow-bellied ponderosa pine are interspersed with wet and dry meadows that are blanketed with wildflowers in the spring.

Dead Horse Rim is featured on page 159.

The **North Warner Mountains** units extend seamlessly into the South Warner Mountains in California and include the last refuge for cougar on the Fremont National Forest. California bighorn sheep, more common in the Sagebrush Sea to the east, are found here. The scarp of Crane Mountain (8,456-feet) is the highest point on the Fremont National Forest and contains some of the forest's largest pure stands of quaking aspen. At the northern end of these units is a center of concentration of rare and endemic plant species. Several streams in the North Warners contain native redband trout.

Over half of the **Silver Creek** unit is blanketed in pure stands of quaking aspen.

The **Winter Ridge** units include a massive fault scarp that towers over Summer Lake. The long views east out into the Sagebrush Sea (as far as Steens Mountain) are spectacular, as are the short views to nearby old-growth ponderosa pine and quaking aspen.

WENDELL WOOD



Dead Horse Rim in the Dead Horse Unit of the proposed Fremont Rims Wilderness.

FEATURED UNIT

Dead Horse Rim

Standing on the summit of Dead Horse Rim on a clear spring day, one can peer outward into the Sagebrush Sea and see as far as the sky islands of Steens Mountain and Hart Mountain. Gazing downward, one overlooks extensive stands of virgin forest.

This is a landscape carved by uplift, eruption and glaciation. Dead Horse Rim is part of the eruptive volcanic center of Gearhart Mountain. West of the rim is a gentle downward slope, while to the east the drop is precipitous.

Nine-tenths of the unit is blanketed with forests. Whitebark pine grows at the highest elevations. At slightly lower elevations are vast stands of lodgepole pine. At the next level down are

extensive stands of mixed-conifer old-growth forests. The very lowest elevations host extensive stands of almost pure ponderosa pine old-growth forests. These intact stands contain the rare green-tinged paintbrush (*Castilleja chlorotica*) and blue-leaved penstemon (*Penstemon glaucinus*).

Several perennial streams originate in the unit. Dead Cow Creek drains into the North Fork of the Sprague River, part of the National Wild and Scenic Rivers System. Augur, Dead Horse and Tamarack Creeks empty into the Chewaucan River.

The various conifer types contrast with stands of quaking aspen, rock outcroppings and moist meadows to create a memorable landscape. Walking up the lower stretch of Augur Creek is a stroll through a cathedral-like forest. Thus far conservationists have successfully halted Forest Service plans to road and log Augur Creek. The unit contains approximately 20 miles of maintained hiking trails.

PROPOSED WILDERNESS

Fremont Rims

LOCATION

20 miles northeast of Bly

LEVEL IV ECOREGION

Pumice Plateau (100%)

VEGETATION TYPES

Ponderosa on Pumice (64%), Lodgepole on Pumice (31%), Cutover/Burned (6%)

TERRAIN

A glaciated volcanic rim.

DRAINAGE SUBBASINS

Lake Abert, Sprague

ELEVATION RANGE

5,975-8,203 feet

SIZE

16,685 acres

COUNTY

Lake

FEDERAL

ADMINISTRATIVE UNIT

Fremont National Forest (Bly and Paisley Ranger Districts)

USGS 7.5' QUAD MAPS

Coleman Point, Cougar Point

Major shrub species here include bitterbrush, various sagebrush species and currant. Wildflower species include arrowhead balsamroot, aster, bleeding heart, fireweed, clarkia, penstemon, phacelia, spreading phlox, twinflower, lupine and western yarrow.

The Chewaucan is the only “river” (really a very small stream) that originates in the Fremont Rims country. Like the rest of creeks that drain this country, the Chewaucan flows into the Great Basin, its waters never reaching any ocean.

Over 300 species of fish and wildlife have been identified here. Major game species include Rocky Mountain elk, mule deer and pronghorn. Large predators include black bear, mountain lion and bobcat. Smaller animals of note include shrews, bats, pika, white-tailed and black-tailed jackrabbits, marmot, badger, mink, long-tailed weasel, marten, fisher and porcupine. Squirrel species include the California, Belding ground and golden-mantled.

Over 220 bird species have been identified on the Fremont Forest. Of these, the bald eagle and the peregrine falcon are most threatened. Other raptors include the northern goshawk, osprey, American kestrel, prairie falcon, golden eagle, merlin (“pigeon hawk”) and several hawk species, including sharp-shinned, Cooper’s, Swainson’s, red-tailed, rough-legged and ferruginous. Waterfowl species include ducks and Canada geese. Numerous songbirds are found here, along with blue grouse (which are common) and the ruffed and sage grouse (less common). Owl species include barn, western screech, northern pygmy, long-eared, northern saw-whet, flammulated, great horned, great gray and short-eared. All of the region’s woodpecker species are found in the proposed Wilderness: the northern flicker, Lewis’, downy, white-headed, hairy, black-backed, three-toed and pileated woodpeckers, as well as the red-breasted, Williamson’s and red-naped sapsuckers.

The American Fisheries Society has identified several aquatic diversity areas within the proposed Wilderness. Redband trout, although widely distributed, are in decline here due to roading, logging and grazing. The Pit-Klamath brook lamprey is endemic to the region, mostly found in the upper Klamath Basin, but also found in Crooked Creek and other drainages. Many of the streams within the proposed Wilderness are part of this species’ historic and current range.

Rare plant species here include the pumice grape fern (*Botrychium pumicola*), which is generally found at much higher elevations in the Cascade Range. This fern grows in frost pockets in lodgepole pine forests in several locations on the Fremont.

The diversity of habitats in the proposed Wilderness accounts for the numerous butterfly species. Butterflies are excellent indicators of ecosystem health. Approximately 120 species and subspecies of butterflies are found in Klamath and Lake counties. Many units of the proposed Wilderness also have unusual concentrations of rare species and endemic animals. The Oregon Biodiversity Project has identified the Gearhart Mountain Conservation Opportunity Area as important habitat, which

A little wetland in the Coleman Rim Unit of the proposed Fremont Rims Wilderness. ►



encompasses both the Coleman Rim and Dead Horse Rim units.

Fishing (there are few lakes, but many streams) and hunting are the major recreational activities in this area, although opportunities for backpacking, horseback riding, hiking, cross-country skiing and dancing through park-like stands of ponderosa pine are plentiful.

The best way to see the proposed Wilderness is to escape two weeks and hike the 175-mile Fremont National Recreation Trail. Beginning in the Yamsay Mountain unit of the proposed Klamath Basin Wilderness, the trail heads eastward to Winter Ridge. It continues southward along Winter Ridge, then turns southeasterly to the Chewaucan River. The trail continues southeasterly to Crooked Creek along US 395, then heads east up Crooked Creek, where it forks in the North Warner Mountains. One spur heads northward to Vee Lake by Drake Peak and McDowell Peak and the other spur meanders southward along the North Warners over Crane Mountain, where it ends just across the California border.

Major threats to the proposed Wilderness include logging, roading, mining, livestock grazing and off-road vehicles.

Proposed Klamath Basin Wilderness Upland Portion of the “Everglades of the West”

The Klamath River Basin stretches from Crater Lake National Park on the Cascade Crest in Oregon to Redwoods National Park on the Pacific Ocean in California. The upper river basin lies mostly in Oregon above Iron Gate Dam on the Klamath River and is known as the Klamath Basin. Much of the Klamath Basin was blanketed with pumice and ash by the explosion of Mount Mazama (now Crater Lake) 7,700 years ago.

Although 75 percent of the Klamath Basin’s wetlands have been destroyed by agriculture and water diversions, the area remains immensely important to Pacific Northwest fish and wildlife. The Klamath Basin is both a stopover and breeding habitat for nearly 80 percent of ducks and geese and numerous other species of water birds migrating along the Pacific Flyway. It hosts the largest wintering bald eagle and wild redband trout populations in the lower forty-eight states. It has become known as the “Everglades of the West.”

The Klamath was once the third largest salmon-producing river on the West Coast and remains a vital resource for riverine and coastal salmon-dependent

The Sycan River in the proposed Klamath Basin Wilderness. ►



LEVEL IV ECOREGIONS

Pumice Plateau (41%), Klamath Juniper Woodland (24%), Fremont Pine/Fir Forest (17%), Klamath/Goose Lake Basins (9%), Pumice Plateau Basins (7%), South Cascade Slope (1%)

VEGETATION TYPES

Ponderosa (26%), Ponderosa on Pumice (15%), True Fir/Douglas-fir (15%), Juniper/Low Sage (13%), Juniper/Grasslands (9%), Marsh/Wet Meadow (8%), Juniper/Mountain Big Sage (4%), Lodgepole on Pumice (3%), Low Sagebrush (2%), Cutover/Burned (2%), Big Sagebrush (1%), Douglas-fir/Ponderosa/True Fir (1%), Juniper/Big Sage (1%), Open Water (<1%), Oregon White Oak/Ponderosa (<1%), Siskiyou Mixed Evergreen (<1%)

DRAINAGE SUBBASINS

Lost, Sprague, Summer Lake (Closed), Upper Klamath, Upper Klamath Lake, Williamson

ELEVATION RANGE

2,799-8,196 feet

UNITS

Abraham Flat, Adobe Flat, Arkansas Flat, Bad Lands, Barnes Valley Creek (mid), Barnes Valley Creek (upper), Barry Point, Box Springs, Brown Creek, Bryant Mountains, Chock toot Creek, Crystal Spring-Malone Springs, Devil Lake, Devils Garden, Dicks Spring, Fishhole Lakes, Fivemile Creek, Fourmile Creek, Gearhart Mountain Additions (Nottin Creek), Gerber Rim, Goodlow Rim, Haystack Draw, Horse Camp Rim, J Spring, Klamath River, Long Branch Creek, Lower Sycan River, Merritt Creek, Miller Creek, Modoc Mountain, Modoc Point, Norcross Springs, North Chiloquin Ridge, Paddock Butte, Paradise Creek, Pole Creek, Preacher Flat, RNA Spring, Rock Creek, Rogger Peak, Round Butte, Round Valley, Saddle Mountain, Shake Creek, Silver Dollar Flat, South Chiloquin Ridge, South Sycan Flat, Sprague River, Stump Pond, Swan Lake Rim, Sycan Flat, Sycan River, Three Creeks, Upper Dams Canyon, Upper Wildhorse Creek, Whiskey Creek, Wildhorse Creek, Wocus Bays, Ya Whee Plateau Rim, Yamsay Mountain, Yoss Creek Meadow, Yoss Ridge

EXISTING WILDERNESS INCORPORATED

portion of Gearhart Mountain

SIZE

199,533 acres (312 square miles, not including 17,016 acres of currently protected Wilderness)

COUNTIES

Klamath, Lake

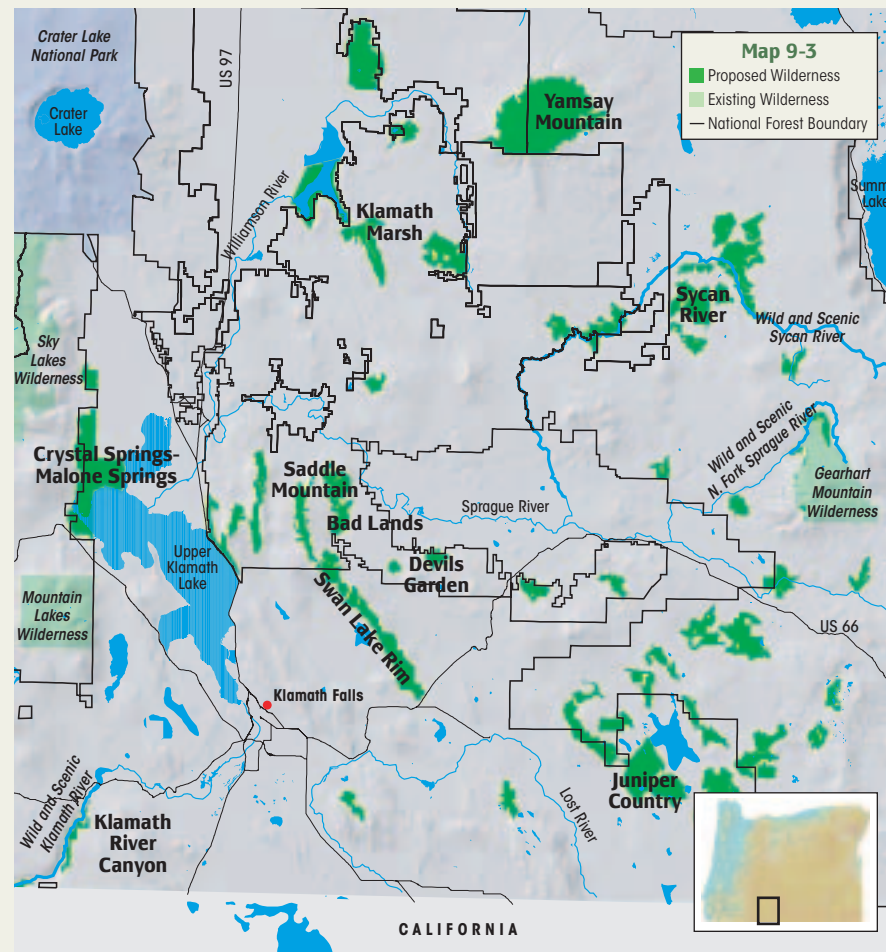
FEDERAL ADMINISTRATIVE UNITS

Winema and Fremont National Forests; BLM Lakeview District; Upper Klamath Lake National Wildlife Refuge (US Fish and Wildlife Service)

CONGRESSIONAL DISTRICT

2nd

Proposed Klamath Basin Wilderness



Some of the units in the proposed Wilderness are highlighted below.

The **Bad Lands** is an elevated rock formation surrounded by forest.

Crystal Spring-Malone Springs is a tule marsh where wocus and bullrush also grow. If the lake is not drained for irrigation, standing water covers the marsh for most of the growing season. This unit should be included in the adjacent Upper Klamath Lake National Wildlife Refuge. A canoe trail is the only access to the unit.

The **Devils Garden** is mostly barren rock with scattered brushy areas surrounding an elevated maar (a flat, generally circular, volcanic crater often filled with water). The maar formed from a volcanic eruptive

center on the floor of an ancient lake. It later filled in with sediments and then was re-exposed by erosion and uplift.

The various **Juniper Country** units near Gerber Reservoir contain a variety of western juniper communities variously associated with ponderosa pine, sagebrush and grasslands.

The **Klamath Marsh** units include both primary wetland habitats and adjacent forest edges of mature and old growth lodgepole and ponderosa pine.

Most of the steep canyons and cliffs of the **Klamath River Canyon** units are already protected within Wild and Scenic River and Oregon Scenic Waterway designations. However, maintenance of the wilderness experience of the canyon depends on the large adjacent roadless areas beyond the narrow river corridor also being protected as Wilderness. The units include some of the finest trout fishing in Oregon and are home to ringtail cats, river otter, ruffed grouse and many other species. Rafters love the Class IV (one thinks one may die) and Class V (one may well die) rapids.

Saddle Mountain, east of Upper Klamath Lake, is home to the most eastern occurrence of northern spotted owls.

Swan Lake Rim would make a tremendous national wildlife refuge if the adjacent Swan Lake was also acquired for public ownership.

The **Sycan River** units are critical habitat for the endangered bull trout. The nearby Sycan Marsh Preserve, owned by The Nature Conservancy, is a haven for bald eagles, waterfowl and sandhill cranes. It could be heaven for wildlife if water wasn't diverted for agricultural use and if livestock didn't graze the "preserve."

Yamsay Mountain is featured on page 163.

GEORGE WUERTNER



Looking down the Buck Creek drainage in the Yamsay Mountain Unit of the proposed Klamath Basin Wilderness.

FEATURED UNIT

Yamsay Mountain

Ecologists classify Yamsay Mountain as a large block of relatively wet “True Fir/Douglas-fir forest,” although presently there is not much, if any, Douglas-fir in the mix. The mountain rises above a drier landscape dominated by ponderosa pine. Yamsay’s higher slopes present the easternmost example of the mountain hemlock/Shasta red fir ecotype, more commonly found along the Cascade Crest. Lodgepole pine is commonly found throughout and manzanita is common in the understory. Under the mixed conifers, one can also find snowbrush and grouse huckleberry.

A shield volcano, Yamsay Mountain was covered with 15 to 20 inches of ash from the explosions of the late Mount Mazama thirty miles due west. The north side of Yamsay’s caldera then blew out and later glaciation created a gorgeous little valley in the remnant cone.

The soils are quite porous and most of the 25 to 30 inches of annual precipitation, which falls mainly in autumn and winter as snow, drains directly into the ground. The mountain’s creeks — which often rise as springs — dissect the slopes and meander through the surrounding rolling hills and tablelands that are dotted by small buttes.

Jackson Creek begins in the caldera itself, escaping northward through the blown-out side and then westward to the Williamson River. Hoyt, Dry, Sheep, Aspen and Deep Creeks also contribute their waters to the Williamson. Long

Creek flows south, then east toward the Sycan Marsh and Sycan Wild and Scenic River. The North and West Forks of Silver Creek, along with Guyer, Buck and Bridge Creeks, flow eastward into the Great Basin.

The larger creeks support riparian ecosystems. Long Creek is home to the endangered bull trout. Redband trout are found in Buck Creek. Dotting the streams are open wet meadows, where Rocky Mountain elk can often be seen.

The snow is usually gone from Yamsay’s summit by late July. On top, one can see Cascade volcanoes (Mount Shasta to the Three Sisters) to the west and the Fort Rock Basin to the east. However, the view is marred to the south by severely logged private lands.

Yamsay Mountain is the northwestern terminus of the Fremont National Recreation Trail. A fire lookout once sat on the summit. A steep zigzagging former road to the summit has been closed and is being reclaimed by nature. Similarly, a jeep trail through the heart of the area has been converted to a hiking trail.

PROPOSED WILDERNESS

Klamath Basin

LOCATION

20 miles southwest of Silver Lake

LEVEL IV ECOREGION

Pumice Plateau (100%)

FOREST TYPES

True Fir/Douglas-fir (96%), Ponderosa on Pumice (4%), Cutover/Burned (<1%)

TERRAIN

Mountainous.

DRAINAGE SUBBASINS

Sprague, Summer Lake Closed, Williamson

ELEVATION RANGE

5,394–8,196 feet

SIZE

25,908 acres

COUNTIES

Klamath, Lake

FEDERAL

ADMINISTRATIVE UNITS

Winema and Fremont National Forests (Chemult and Silver Lake Ranger Districts)

USGS 7.5' QUAD MAPS

Gordon Lake, Rodman Rock, Yamsay Mountain

commercial, recreational and tribal fisheries and associated communities. The growing ecological crisis in the Klamath Basin, combined with the chronic economic crisis in basin agriculture, presents both an unprecedented need and a new opportunity to conserve, protect and restore this incomparable ecosystem.

Most of the controversy in the Klamath Basin has centered on its wetlands — which are mostly privately owned or within national wildlife refuges. However, the proposed Klamath Basin Wilderness is comprised primarily (although not exclusively) of uplands — publicly owned and still roadless and undeveloped. Many species of fish and wildlife need both uplands and wetlands. Intact functioning uplands are necessary for intact functioning wetlands.

The Wood and Williamson Rivers, as well as many tributary streams that arise in the proposed South Cascades Wilderness (see pages 141-144), flow into Upper Klamath Lake. Before the damming of the Klamath River, spring, summer and fall chinook salmon and steelhead found their way through Upper Klamath Lake to spawn in streams above the lake. Salmon will not return to the Klamath Basin until six main-stem Klamath River hydroelectric dams are either modified to provide fish passage or are removed.

The American Fisheries Society has identified several “aquatic diversity areas” that include units of the proposed Wilderness, as does the Oregon Biodiversity Project’s Upper Klamath Basin Wetlands Conservation Opportunity Area. The entire Klamath Basin is a concentration or “hotspot” of rare and endemic plants and animals, including many that are of special conservation concern.

The basin’s roadless lands are refuges of cold, clean water, which provide spawning and rearing habitat for bull trout and redband trout — both native to the basin and widely distributed. Four (maybe five) lamprey species are found in the Klamath Basin, including three endemic ones: Klamath River, Pit-Klamath Brook and Miller Lake lamprey. Several species of mullet (pejoratively called “suckers” by some) are also found in the basin, including the C’wam and Qapdo (a.k.a. Lost River and shortnose “suckers”).

Other species found in the Klamath River Basin and whose numbers are declining include the bald eagle, golden eagle, prairie falcon, peregrine falcon, western pond turtle and Townsend’s big-eared bat.

The combination of elevation, aspect, uplands and wetlands creates a diversity of habitats and an abundance of wildlife in the proposed Klamath Basin Wilderness. After leaving the upper basin, the Klamath River cuts through the Cascade Range, something only one other river in Oregon does.

Recreational opportunities here include hunting, hiking, canoeing, fishing, backpacking, horseback riding, kayaking, rafting and lamprey watching.

Major threats to the proposed Klamath Basin Wilderness include roading, logging, mining, livestock grazing, water diversions for agriculture and off-road vehicles.

Proposed Metolius Wilderness

Green and Brown Bull Trout with Red Spots, Yellow-Bellied Ponderosas, Golden Larch and Aquamarine Waters

Gushing forth from springs at the base of Black Butte, the Metolius River is one of the largest spring-fed streams in the United States. A relatively constant 50,000 gallons per minute of pristine water flows out of the ground into a fully formed river at the Head of the Metolius. The view downstream toward Mount Jefferson is one of the most photographed scenes in Oregon. The Metolius River is both a State Scenic Waterway and a federal Wild and Scenic River.

Both the quantity and quality of the river’s water depend upon protecting the remaining wildlands in the Metolius Basin. However, the Metolius Basin is special for more than just the river. From the Cascade Crest to Green Ridge, the Metolius Basin is noted for its unique ponderosa pine forests, extraordinary fish and wildlife populations, cool, clean streams and springs, outstanding views, mountain air and mountain views.

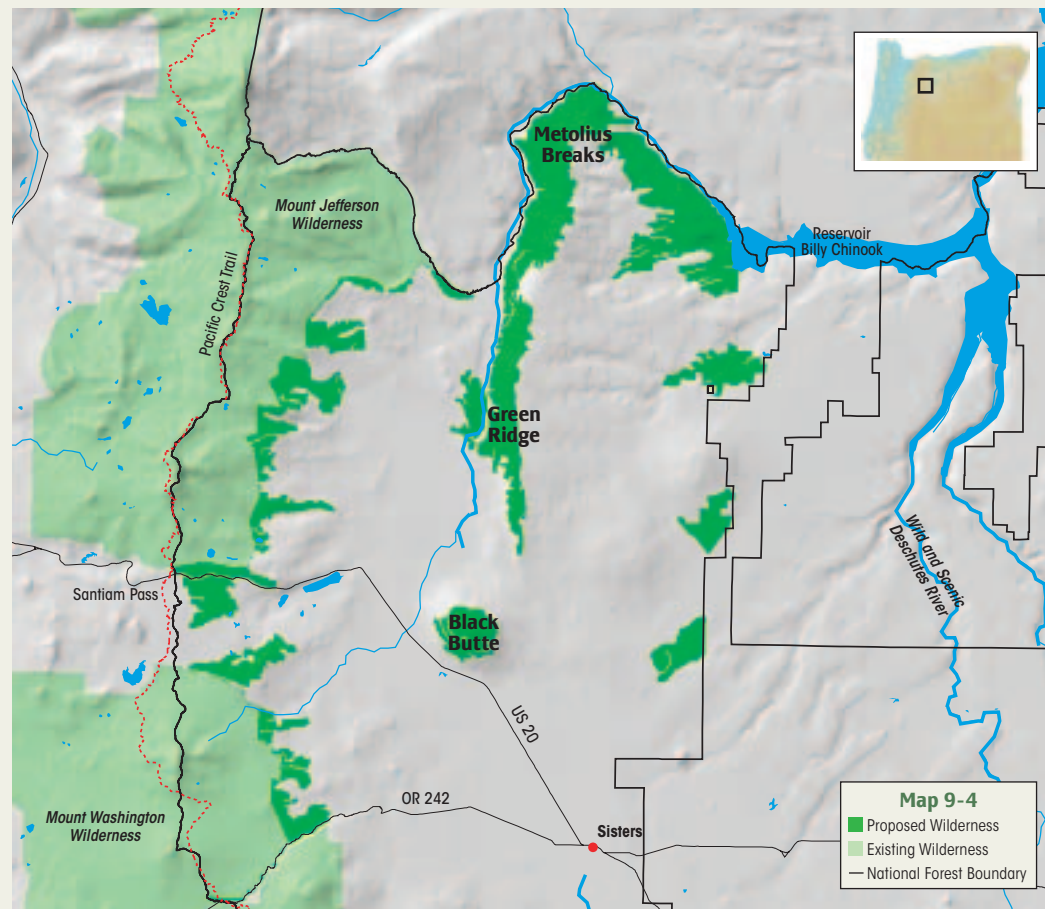
Among the Metolius’s important tributary streams that begin high in the Cascade Range are Jefferson, Abbot, Brush, Roaring, Canyon, Jack, Spring, Lake, Candle and Cache Creeks. Alder, vine maple, serviceberry, snowberry and thimbleberry line their banks.

The Metolius Basin is known for its big yellow-bellied old-growth ponderosa pine with an open understory largely of bitterbrush and rabbitbrush. Some gnarled old western junipers can be found here as well, along with lodgepole pine, sugar pine, golden chinquapin, incense cedar, western larch, mountain hemlock, Douglas-fir and white fir. The mixed understory may also include snowbrush, pine-grass, sedge, bracken fern, snowberry and/or wildflowers.

The American Fisheries Society has identified several aquatic diversity areas within the proposed Wilderness. Similarly, the Oregon Biodiversity Project has identified the Metolius River Conservation Opportunity Area in recognition of the large population of bull trout and because it is a “hotspot” for many unique species of plants and animals. The federal government has also recognized the area as a center of concentration of species rarity and endemism for both plants and animals.

The endangered bull trout, declining throughout so much of its range, is doing well in the Metolius Basin, an argument for conserving and restoring cold, clean water within bull trout range. The species has been eliminated from much of its natural range

Proposed Metolius Wilderness



Some of the units in the proposed Wilderness units are highlighted below.

Black Butte contains a major volcanic peak set off from the Cascade Crest. The distinctive form and color of Black Butte make it noticeable from long distances.

Green Ridge includes the Metolius Research Natural Area. An aggressive program of fire reintroduction is restoring the area's classic park-like stands of open ponderosa pine. Fire exclusion over the decades has resulted in thickets of young trees — both of ponderosa pine and other species — and dense brush growing on the forest floor. Much of the ponderosa pine forests in the developed portions of the Metolius Basin have been high-graded for timber. The result is that one very

rarely sees a snag — a standing dead tree — in the area. Snags are vital wildlife habitat for numerous bird species (including white-headed and pileated woodpeckers) and other wildlife. The research natural area hasn't been logged, so one sees many more snags here.

The Metolius Breaks is featured on page 166.

The **Mount Jefferson Additions** and **Mount Washington Additions** units are adjacent to the existing Mount Jefferson and Mount Washington Wildernesses. The current Wilderness boundaries were drawn to exclude forests that might be valuable for logging. Including these forests will protect these vulnerable areas and increase the ecological diversity of the basin.

LEVEL IV ECOREGIONS

Ponderosa Pine/Bitterbrush Woodland (58%), Grand Fir Mixed Forest (11%); Cascades Level III Ecoregion: Cascade Crest Montane Forest (29%), Cascade Subalpine/Alpine (<3%)

VEGETATION TYPES

Ponderosa on Pumice (47%), Ponderosa/Douglas-fir/Western Larch/Lodgepole (15%), Ponderosa/Douglas-fir/True Fir (11%), Mountain Hemlock (10%), Ponderosa (4%), True Fir/Lodgepole/Western Larch/Douglas-fir (4%), True Fir/Douglas-fir (2%), Juniper/Mountain Big Sage (2%), Lodgepole on Pumice (2%), Open Lava (1%), Juniper/Bitterbrush (1%), Ponderosa/Lodgepole (1%), Alpine Barren Fell Field (<1%), Cutover/Burned (<1%), Subalpine Lodgepole (<1%)

DRAINAGE SUBBASIN

Upper Deschutes

ELEVATION RANGE

1,998-6,436 feet

UNITS

Black Butte, Cache Mountain, Circle Lake, Fly Creek, Green Ridge, Lower Canyon Creek, Metolius Breaks, *Mount Jefferson Additions* (Bear Valley, Brush Creek, Parker Creek Lava Flow, Round Lake), *Mount Washington Additions* (Dugout Lake), Squaw Back Ridge, Stevens Canyon

EXISTING WILDERNESSES INCORPORATED

portions of Mount Jefferson and Mount Washington

SIZE

39,411 acres (62 square miles, not including 47,488 acres of currently protected Wilderness).

COUNTIES

Deschutes, Jefferson

FEDERAL ADMINISTRATIVE UNIT

Deschutes National Forest

CONGRESSIONAL DISTRICT

2nd

PROPOSED WILDERNESS

Metolius

LOCATION

10 miles north of Camp Sherman

LEVEL IV ECOREGIONS

Ponderosa Pine/Bitterbrush Woodland (87%), Grand Fir Mixed Forest (12%)

VEGETATION TYPES

Ponderosa on Pumice (52%), Ponderosa/Douglas-Fir/Western Larch/Lodgepole (34%), Juniper/ Ponderosa (9%), Mountain Big Sage (5%), Ponderosa/Douglas-Fir/True Fir (1%)

TERRAIN

Deep river canyon.

DRAINAGE SUBBASIN

Upper Deschutes

ELEVATION RANGE

1,998-5,049 feet

SIZE

14,949 acres

COUNTY

Jefferson

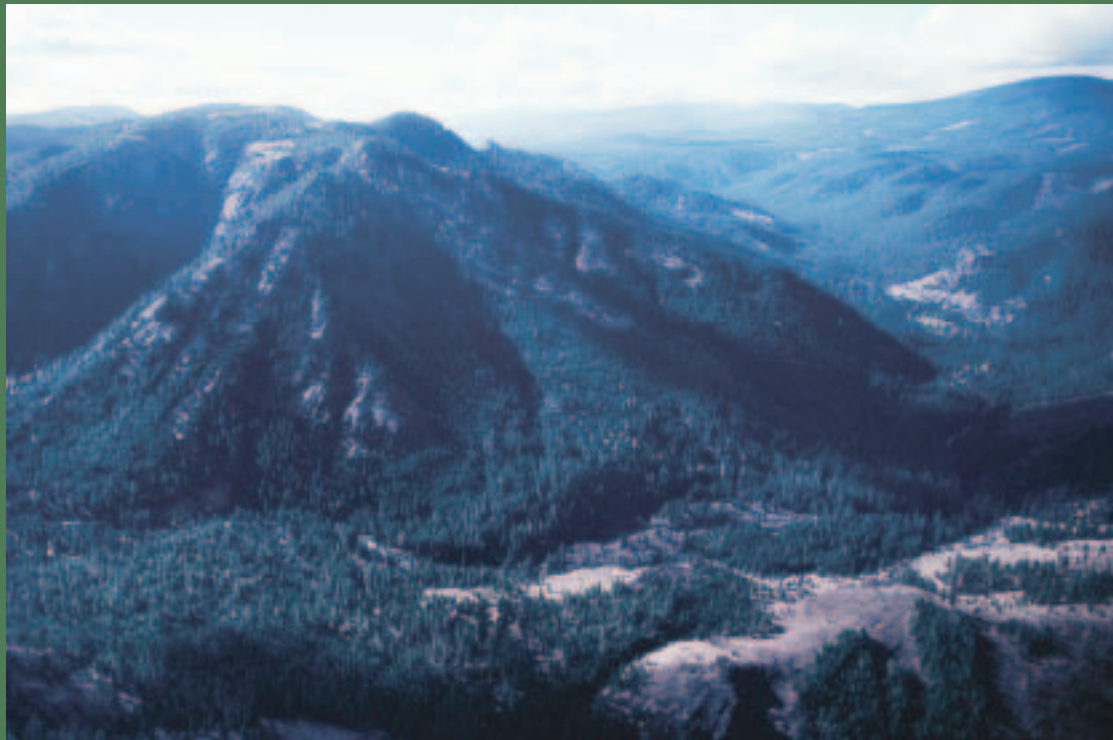
FEDERAL**ADMINISTRATIVE UNIT**

Deschutes National Forest (Sisters Ranger District)

USGS 7.5' QUAD MAPS

Candle Creek, Fly Creek, Little Squaw Back, Metolius Bench, Prairie Farm Spring, Round Butte Dam, Shitike Butte

SANDY LONSDALE



The Metolius River flowing through the Metolius Breaks Unit of the proposed Metolius Wilderness. The Castle Rocks can also be seen above the trees.

FEATURED UNIT

Metolius Breaks

Downstream from its confluence with Candle Creek until it empties into the stagnant backwater of Reservoir Billy Chinook, the Metolius River flows through a beautiful canyon that is in places up to 1,400 feet deep.

The fishing is outstanding, as is the whitewater rafting and kayaking with three long Class III rapids. A trail along the east/south bank provides for leisurely hiking and camping. The west/north bank is within the Warm Springs Indian Reservation where public access is prohibited.

Wildlife in the area is abundant and includes black bear, cougar and the western rattlesnake. Rocky Mountain elk and mule deer are very common here. The intact old-growth forest is habitat for many songbirds. Bald eagles and osprey nest along the river. Peregrine falcons may make their homes high in the cliffs above.

Moving west to east, the forest becomes progressively drier.

The western portion of the unit is a mixed conifer forest, with lots of ponderosa pine. The understory can include snowberry, snowbrush and pine-grass. Golden chinquapin can dominate the west- and north-facing slopes. Toward the east, the forests become almost purely ponderosa pine. Pine-grass, bitterbrush and bunchgrass dominate the dry forest understory. The wetter riparian zones along streams include mountain maple, bigleaf maple and Pacific dogwood. Even further east, the forest finally gives way to desert ecotypes: western juniper woodlands, big sagebrush and grass shrublands.

In the uplands near the northernmost Horn of the Metolius is a unique geological feature called Castle Rocks.

The 171 miles of the federally designated Metolius Wild and Scenic River in the Metolius Breaks Unit is classified as "scenic" under the law. "Scenic" is a more protective classification than "recreational," but less so than "wild." Congress applied the lesser "scenic" classification due to the presence of two old dead-end roads. However, the roads are now trails, thereby opening the way for this river segment to be classified as "wild."

where these conditions are lacking, including much of the “blue ribbon fishery” on the Deschutes River. Redband trout are also present in the Metolius. Before Round Butte Dam was constructed and blocked ocean migration, the Metolius was also a major salmon river. Its sockeye salmon runs were tremendous, but now only exist genetically in the form of kokanee, the landlocked variety of sockeye salmon.

The Metolius Basin is a refuge not only for fish and wildlife, but also for people. The river is popular for whitewater rafting, hiking and camping. Fly-fishers revere the Metolius’ cold, clear water (although the water’s clarity and glassy surface give fish a huge advantage over all but the most expert anglers). Other recreational opportunities include hunting, hiking and horseback riding, as well as marveling at the old-growth yellow-bellied ponderosa pine and the rare sight of a river that springs fully formed from a mountain. The lower river, adjacent to the Warm Springs Indian Reservation, is managed to prevent public motorized access.

Over 27,000 acres of the proposed Wilderness are not currently slated for logging. Due to constant and well-organized pressure from local permanent and seasonal residents, the Forest Service has dramatically — but not totally — scaled back its logging plans for the basin. However, a recent large fire of suspicious origin will cause some to want to log the burned trees. Other major threats to the proposed Wilderness include roading, livestock grazing and off-road vehicles.

Proposed Newberry Volcano Wilderness Volcanic Wonderland

The Newberry Volcano is 630-square miles in size and features over 400 cinder cones. Rather than the classic steep-side stratovolcano shape common to High Cascades peaks, Newberry Volcano is a huge, gently sloping shield volcano. Extending from just south of Bend to just a few miles short of Oregon 31 southeast of La Pine, the volcano is approximately 34 miles north to south and 22 miles east to west at its widest point.

Rising steeply to over 4,000 feet above the surrounding volcanic butte-strewn plateau are the Paulina Mountains. At the center and highest part of the Paulina Mountains is Newberry Crater, a large rim that contains a 17 square-mile caldera.

The highest elevations in the Paulina Mountains are not actually part of the East Cascades Slopes and Foothills Ecoregion, but are instead an outlier of the Cascades Ecoregion.

Newberry Volcano is far from extinct, being both seismically and geothermally active. It is estimated that its magma chamber is merely two to five kilometers below the land surface. Eruptions have occurred over the last 600,000 years, the most recent

◀ Old-growth ponderosa pine (*Pinus Ponderosa*) in the proposed Metolius Wilderness. ONRC Eastern Field Representative Tim Lillebo provides scale.

LEVEL IV ECOREGIONS

Pumice Plateau (71%), Ponderosa Pine/Bitterbrush Woodland (6%); Cascades Level III Ecoregion: Cascade Crest Montane Forest (20%); Northern Basin and Range Level III Ecoregion: High Lava Plains (<2%), Pluvial Lake Basins (<2%)

VEGETATION TYPES

Ponderosa on Pumice (30%), Lodgepole on Pumice (24%), Mountain Hemlock/Red Fir/Lodgepole (13%), Open Lava (12%), Ponderosa/Lodgepole (10%), Juniper/Mountain Big Sage (4%), Ponderosa/Douglas-fir/True Fir (3%), Juniper/Big Sage (3%), Big Sagebrush (2%), Bitterbrush Scrub (<1%), Open Water (<1%)

DRAINAGE SUBBASINS

Lower Crooked, Little Deschutes, Summer Lake Closed, Upper Deschutes

ELEVATION RANGE

3,970-7,984 feet

UNITS

Aspen Flat, Benham Falls, Burnt Butte, Coyote Flat, East Pine Mountain, Firestone Butte, Lava Butte, Lava Cast Forest, Lava River Cave, Long Butte, Lower Ground Hog Butte, Lower Sugar Pine Butte, Mokst Butte, Nameless Lava, North Paulina Peak, North Pot Holes, Paulina Creek, Paulina Peak, Pine Mountain Summit, Pumice Springs, Sand Butte, Scattered Lava, Stu Garrett, Sugar Pine Ridge, Surveyor's Lava Flow, Topso Butte, West Lava Cast Forest, West of Sand Spring

EXISTING WILDERNESS INCORPORATED

None

SIZE

99,307 acres (155 square miles)

COUNTIES

Deschutes, Lake

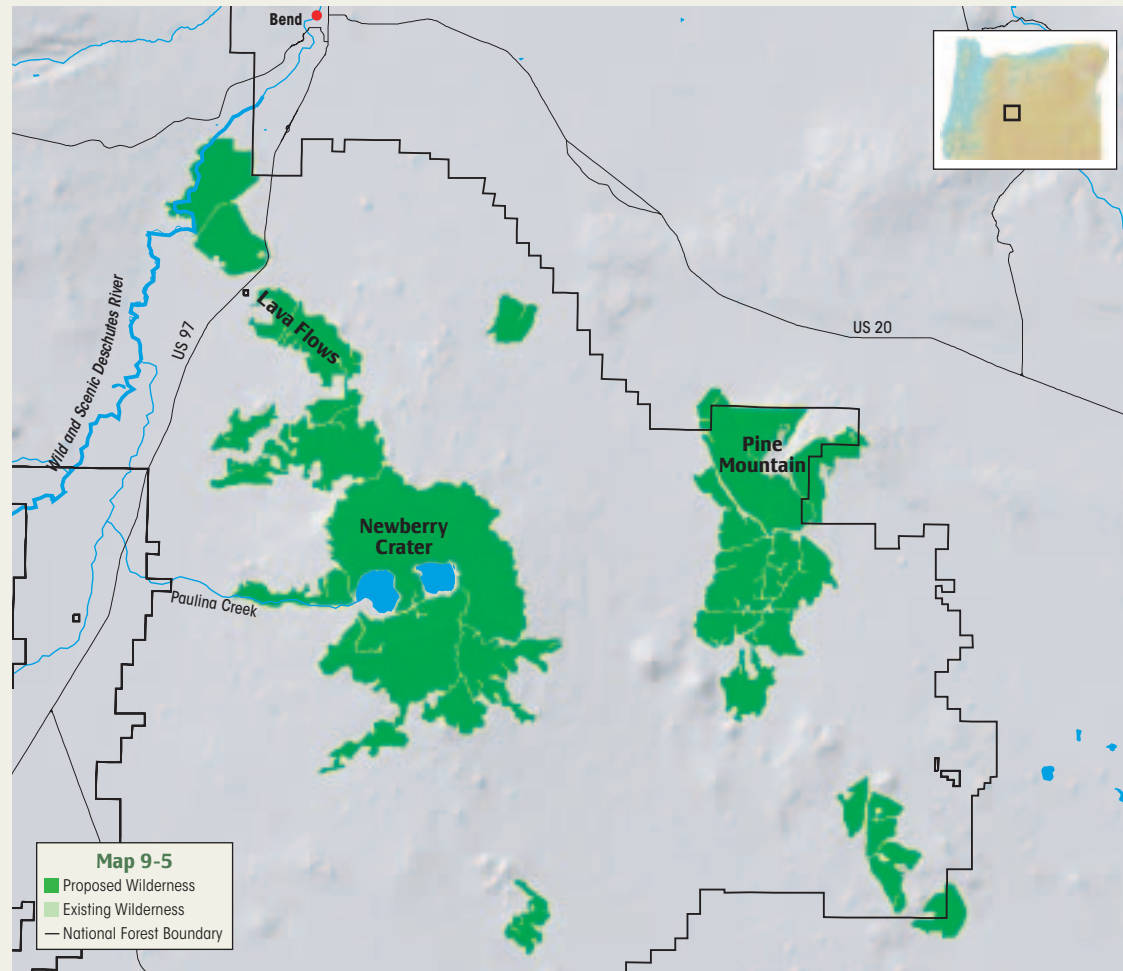
FEDERAL ADMINISTRATIVE UNITS

Deschutes National Forest; BLM Prineville and Lakeview Districts

CONGRESSIONAL DISTRICT

2nd

Proposed Newberry Volcano Wilderness



Some of the units in the proposed Wilderness are highlighted below.

The **Lava Flows** units consist mostly of relatively recent and basalt lava flows to the northwest of Newberry Crater. They include numerous ring fractures, cinder cones and tree casts. Tree casts formed in a matter of seconds as molten lava flowed around live trees. The trees were killed instantly, being reduced mostly to smoke, but not before the molten lava had cooled in the form of the tree. Several miles of the Upper Deschutes Wild and Scenic River flow through these units. One unit includes Benham Falls on the Deschutes River, which was created by the lava flow.

The **Newberry Crater** units are featured on page 169.

The **Pine Mountain** units are near the north end of Newberry Volcano. Pine Mountain is best known for the University of Oregon's astronomical observatory. The mountain contains several long, high ridges separated by broad valleys. The higher elevations contain a pure old-growth ponderosa pine forest.



One sees numerous Cascade peaks from Paulina Peak in the proposed Newberry Volcano Wilderness.

FEATURED UNIT

Newberry Crater

Four roadless units (North Paulina Peak, Paulina Creek, Paulina Peak and Sand Butte) are in Newberry Crater. It is possible to circumnavigate the entire Newberry Crater on 25 miles of trail. One will generally be between 6,500 and 7,500 feet in elevation, save for the Paulina Lake's outlet on the western edge at 6,331 feet. If one hikes after all the snow has melted, one must carry water. There is little open water in the crater's streams.

The views can be tremendous. At other times, however, one will travel through what appear to be monocultures of mountain hemlock or lodgepole pine. One will also walk across open flats and bare ridges. Much of the vegetation is dwarfed and stunted by the very long snow cover, very short growing season and poor soils.

While a geological gem, the unit is not a wildlife wonderland due the harshness of the landscape and climate.

If one begins at the lodge on the west edge of Paulina Lake and hikes clockwise, one will first climb gently and then more steeply on switchbacks to North Paulina Peak (7,720'). The trail does not go over the summit directly, so one has to pick a cross-country route to reach it. After bagging the peak, continue eastward and stay high on the caldera rim around the east side.

Eventually one will cross an all-weather road and now be heading west along the rim, above Pumice Flat (accurately described, if not originally named) and Big Obsidian Flow (ditto). The latter is one of the newest geologic features in central Oregon, the lava having last flowed around 650 AD. In 1964, NASA tested their moon suits on Big Obsidian Flow. At the lower end of the lava flow is Lost Lake, where an annual August migration of frogs hops across the flow. (Watch your step!)

Upon reaching Paulina Peak (7,984'), one may likely find hordes of tourists who have driven to the summit on a road. Descending steeply back to the lodge, it is time for that beer (or other cherished beverage) one has been dreaming about day and night.

PROPOSED WILDERNESS

Newberry Volcano

LOCATION

15 miles west-northwest of La Pine

LEVEL IV ECOREGIONS

Pumice Plateau (41%); Cascades Level III Ecoregion: Cascade Crest Montane Forest (59%).

VEGETATION TYPES

Mountain Hemlock/Fir/Lodgepole (41%), Lodgepole On Pumice (26%), Ponderosa on Pumice (17%), Ponderosa/Lodgepole (9%), Ponderosa/Douglas-Fir/True Fir (7%), Open Water (<1%)

TERRAIN

A steep, rugged caldera.

DRAINAGE SUBBASINS

Little Deschutes, Lower Crooked, Summer Lake Closed

ELEVATION RANGE

5,804-7,984 feet

SIZE

31,447 acres

COUNTY

Deschutes

FEDERAL ADMINISTRATIVE UNIT

Deschutes National Forest (Fork Rock Ranger District)

USGS 7.5' QUAD MAPS

East Lake, Fuzztail Butte, Lava Cast Forest, Paulina Peak



one being 1,300 year ago.

Inside the volcano's caldera are depressions that contain two little crater lakes: East Lake (170-feet deep) and Paulina Lake (250-feet deep). In times past, there may have been only one large lake some 1,600-feet deep.

Cinder cones, lava (basalt) flows, obsidian (rhyolite) flows, pumice flats and lava caves are just some of the unmistakable evidence of volcanism in this region.

In 1990, Congress established the 55,000-acre (86 square miles) Newberry National Volcanic Monument, covering about one-seventh of Newberry Volcano.

One can drive to the summit of Paulina Peak and view the entirety of Newberry Crater, the Big Obsidian Flow and the caldera's lakes. In the distance one can see other Cascade Peaks to the west and can look east into Oregon's Sagebrush Sea as far as Hart Mountain.

Precipitation falls mainly as snow here. Runoff into streams is minimal due to the very porous nature of the pumice soils. Redband trout may be found in the area's few streams.

This land is harsh, having been overlain with a generous helping of Mazama ash, a deep deposit of Newberry pumice or both. Basalt outcroppings poke through the terrain. As elevation increases, the vegetation becomes increasingly sparse. One will not find lush forests in this proposed Wilderness. The lower elevations have some dry open forests and some mixed conifer forest with an understory of snowbrush, manzanita or both. One may find a western white pine on the wetter north-facing slopes. Lupine grows on the pumice. At the lowest elevations, ponderosa pine, with bitterbrush, manzanita and/or needlegrass is common. Upslope, old-growth lodgepole pine is dominant in various associations with manzanita, needlegrass, lupine, grouse huckleberry and bitterbrush. Old-growth mountain hemlock is also found high up, often with grouse huckleberry underneath.

A rare endemic species known as pumice grape fern (*Botrychium pumicola*) is found in just three locations at Newberry Crater. Small and inconspicuous, the pumice grape fern favors high-silica pumice, very cold weather and full sun. It is also found in the High Cascades (from Broken Top to Crater Lake) and in frost pockets of lodgepole pine-covered pumice in several locations in the East Cascades Slopes and Foothills. At least 13,000 grape fern plants are known to exist. A perennial, it usually regrows annually to two to four inches in height. Reproduction occurs in underground darkness and is self-fertilizing at that. (Not really much of a social life.) The absence of fire to periodically clear out the lodgepole pine is hindering the grape fern's chances of survival, as does the relentless onslaught of human "progress" (roads, logging, fire suppression, etc.).

Bald eagles live near the two caldera lakes. Mule deer, Rocky Mountain elk and black bear may also be found here. The Clark's nutcracker is common in the lodgepole

SANDY LONSDALE



The roadless land that surrounds Paulina Lake is the Newberry Crater Unit of the proposed Newberry Volcano Wilderness.

and whitebark pine forest.

Recreational opportunities include hiking, horseback riding, hunting and spelunking.

The major threats to the remaining wildlands in the proposed Newberry Volcano Wilderness are geothermal power development, the winter assault of loud, polluting snowmobiles and the summer onslaught of off-road vehicles.

Geothermal power development is a distinct possibility for the area as Newberry Crater is one of the hottest landscapes in North America. In the center of the caldera between the lakes, a test well showed a temperature of 509° F at 3,058 feet depth. Any geothermal development would require government subsidies, as power generation by this means is still more expensive than other methods. And any increase in demand for electrical power can easily be met by conservation measures. Compact fluorescent light bulbs, new efficient appliances and insulation are more worthy of subsidies and would allow the Newberry Crater to be protected as Wilderness. Besides, although geothermal is often advertised as “renewable energy,” the optimal rate of exploiting the resource in order to maximize profit is more than the natural rate of reheating.

The other plagues upon the proposed Wilderness are logging, roading and livestock grazing.

