Oregon Wildlife Habitat Types

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INTRODUCTION

In 2018, the Institute for Natural Resources (INR) updated the Oregon statewide habitat map, with assistance from the Oregon Department of Fish and Wildlife, and from Oregon's DAS Geographic Enterprise Office. The map was created using the best available data from multiple sources, and the methodology is described in detail in the metadata document.

This document describes the mapped habitats, which have been slightly modified from previous maps. Modifications to the habitat classification were a result of having improved information on forest structure attributes that are important to wildlife which INR wanted to include in the map. Modifications were also made so that updating the habitat map would be simpler and easier, and so habitats included would better reflect factors which drive animal distributions.

There are 71 natural or semi-natural habitats mapped and described, plus an additional 6 man-made types, for a total of 77 classes. Forests are represented by 14 forest types including nine conifer types and four hardwood or mixed hardwood-conifer forest types plus an early-shrub tree class. Ten of these 14 forest types also include information on forest structure and have been attributed as either young, medium, mature, or old growth. The combination of forest types and structural attributes where available created a total of 40 different mapped forest habitat classes, or just over half (53%) of the habitats.

There are 8 aquatic types representing wetlands, riparian habitats, lakes, rivers, and bays; six shrub types representing shrublands and steppe, three of which (the sagebrush types) are split into two condition classes. And there are four types representing the native grasslands. The diverse high elevation habitats have been grouped into two types, subalpine and alpine habitats. There are six sparsely vegetated habitat types, such as dunes, playa, cliffs and canyons, and lava fields. The remaining types include two characterized by disturbed natural habitats, recent burns or areas dominated by exotic species, as well as six man-made habitat categories.

The remainder of the document includes descriptions of these habitat types. The elevation information and the details of species composition refer to these habitats within Oregon only. For habitat types representing natural or semi-natural vegetation, links to the NatureServe summaries for the ecological systems which make them up are included. These can provide references and details for many of the habitat attributes they contain, as well as information on their distribution and status outside of Oregon. The habitat code used in the coverage is included in **bold** after the name, except for the forest types, where the habitat codes are found with the list of age-structure classes. References are not included in this document, although most of the habitats include

imbedded links that provide additional details, along with references for the vegetation that compose each type.

Conifer Forest and Woodland Habitats

Coastal Spruce, Cedar, or Redwood – Conifer forests often dominate the coastal strip from northern California to Alaska, often in areas with frequent coastal fog, generally below 2,500 feet in elevation. In Oregon, they are commonly Sitka spruce dominated forests extending from central Oregon north to Alaska, Port Orford cedar forests found from Coos Bay south to Brookings, and Coast Redwood forests found near the California border. They are generally wet, foggy conifer forests, often with dense evergreen shrub understories. This habitat type also includes the more open shorepine forests and woodlands, found on forested dunes and the sandstone coastal plains in southern Oregon.

Ecological systems include either the North Pacific Hypermaritime Sitka Spruce Forest or California Coastal Redwood Forest, or occasionally the California Coastal Closed-Cone Conifer Forest and Woodland for the shorepine woodlands. These are mapped in 4 age classes, young (less than 30 years old, **73**), medium (31-80 years old, **66**), mature (>80 without old-growth characteristics, **63**), and old-growth (stands with old-growth characteristics, **72**).

Douglas-fir - Western Hemlock – These are the common, giant conifer forests in Western Oregon, found in the Coast Range and lower Cascades foothills, Willamette Valley and sometimes in the Klamath Mountains. These forests are found just above sea level at the coast up to 5,000 feet in the Cascades, although are mostly below 4,000 feet. They are dominated primarily by three confers: Douglas-fir, western hemlock and western red cedar. These conifer forests historically had large trees and often formed very old stands.

This type includes three ecological systems, two which are the wetter and more productive types with significant amounts of western hemlock: North Pacific Maritime Dry-Mesic Douglas-fir-Western Hemlock Forest and North Pacific Maritime Mesic Douglas-fir-Western Hemlock Forest. It also includes a drier type representing the common dry Douglas-fir forests and woodlands found throughout western Oregon, usually with Douglas-fir as the only conifer. These are mapped in four age classes: young (less than 30 years old, **59**), medium (31-80 years old, **33**), mature (greater than 80 years old without old-growth characteristics, **14**), and old-growth (stands with old-growth characteristics, **75**).

Ponderosa Pine – Ponderosa pine forests dominate the lower elevations in the mountains and foothills of the East Cascades and Blue Mountains, from 100 feet elevation in the gorge and isolated western Oregon stands to 5,500 feet in the Blue Mountains. They are dominated by Ponderosa pine, although near the California border they can sometimes include non-serpentine Jeffrey pine. They also occur in southwestern Oregon and less frequently in the Willamette Valley and West Cascades. They have declined as fire has been suppressed, since fires maintain the open woodland conditions they usually require.

Most of the Ponderosa pine habitats are in the Northern Rocky Mountain Ponderosa Pine Woodland and Savanna ecological system, although a few can be mapped as the California Montane Jeffrey Pine Woodland system. These are mapped in four age classes: young (less than 30 years old, **48**), medium (31-80 years old, **8**), mature (greater than 80 years old without old-growth characteristics, **48**), and old-growth (stands with old-growth characteristics, **47**).

Mixed Conifer (White or Douglas Fir/Pine) – These forests occur primarily in eastern Oregon, above 4,000 feet in elevation. But they are sometimes found between 1,000 – 5,000 feet in the West Cascades, Klamath Mountains, the eastern edge of the Willamette Valley and Hells Canyon. They are characterized by a mix of conifers, usually with some Douglas-fir, Ponderosa pine, or western larch present, and with fire suppression grand/white fir becoming important. In the East Cascades they occasionally have some western red cedar or lodgepole pine, while in the Klamath Mountains, incense cedar or sugar pine. These forests usually occur above the Ponderosa pine zone and below subalpine forests.

Ecological systems include the Northern Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest, Northern Rocky Mountain Mesic Montane Mixed Conifer Forest, East Cascades Mesic Montane Mixed-Conifer Forest and Woodland, and the Northern Rocky Mountain Western Larch Woodland and Savanna. These are mapped in four age classes: young (less than 30 years old, **40**), medium (31-80 years old, **4**), mature (greater than 80 years old without old-growth characteristics, **3**), and old-growth (stands with old-growth characteristics, **21**).

Siskiyou Mixed Conifer – The most diverse forest habitats in Oregon are the Siskiyou Mixed Conifer forests and woodlands. They include a mix of 14 different conifer species, habitats found on various soils, including serpentine (heavy mineral), granitic, and sedimentary, and a range of conditions from giant moist conifers with a tall, evergreen hardwood understory to open pine savanna. They occur primarily in southwestern Oregon, but extend north in both the East and West Cascades, and are found occasionally in the Warner Mountains. They occur from 500 to 7,000 feet in elevation.

This habitat includes six main ecological systems: Mediterranean California Dry-Mesic Mixed Conifer Forest and Woodland, Mediterranean California Mesic Mixed Conifer Forest and Woodland, Mediterranean California Red Fir Forest, Klamath-Siskiyou Lower Montane Serpentine Mixed Conifer Woodland, Klamath-Siskiyou Upper Montane Serpentine Mixed Conifer Woodland, and part of the Mediterranean California Mixed Evergreen Forest. These are mapped in four age classes: young (less than 30 years old, **54**), medium (31-80 years old, **7**), mature (greater than 80 years old without old-growth characteristics, **53**), and old-growth (stands with old-growth characteristics, **52**).

Lodgepole Pine – Lodgepole pine is most common in the East Cascades, where it occurs on deep pumice from the explosion of Mount Mazama that created Crater Lake, ranging from 3,000 to 7,500 feet in elevation. They also occur throughout the Blue Mountains, in the West Cascades (especially just north of Crater Lake), and occasionally in the Siskiyou Mountains. These are dense, usually fire dependent Montane forests.

They mostly are included in two systems, the Rocky Mountain Poor Site Lodgepole Pine Forest on ash and lava, and Rocky Mountain Lodgepole Pine Forest on more typical sites in the Blue Mountains, and the uncommon Sierra Nevada Subalpine Lodgepole Pine Forest and Woodland found in the Klamath Mountains and southern Cascades. These are mapped in two age classes: young (less than 30 years old, **45**) and medium-mature (older than 30 years old, **5**).

Silver Fir - Mountain Hemlock – The most common montane conifer forests west of the Cascade crest, dominated by Pacific silver fir, mountain hemlock, noble fir, and Shasta red fir are included in this habitat. They are tall conifer forests, found between 3,000 and 7,500 feet in the mountains, with a wide range of understory conditions.

There are 4 ecological systems within this habitat group: North Pacific Mountain Hemlock Forest, North Pacific Mesic Western Hemlock-Silver Fir Forest, North Pacific Dry-Mesic Silver Fir-Western Hemlock-Douglas-fir Forest, and part of the Mediterranean California Red Fir Forest ecological system (which includes noble fir forests). These are mapped in four age classes: young (less than 30 years old, **51**), medium (31-80 years old, **6**), mature (greater than 80 years old without old-growth characteristics, **49**), and old-growth (stands with old-growth characteristics, **50**).

Spruce – Subalpine Fir – The highest elevation forests in the Cascades, Blue Mountains and Wallowa Mountains, found from 5,000 feet to timberline. They are dominated by a mix of high elevation conifers, mainly subalpine fir, Engelmann spruce, mountain hemlock (open woodlands) and rarely whitebark or limber pine.

They include two forest ecological systems and two subalpine parkland systems: Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland, Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland, North Pacific Maritime Mesic Subalpine Parkland, and Northern Rocky Mountain Subalpine Woodland and Parkland. These are mapped in three age classes: young (less than 30 years old, **55**), medium to mature (31-80 years old or older stands without old-growth characteristics, **64**), and old-growth (stands with old-growth characteristics, **1**).

Western Juniper 39 – Western juniper woodlands and savannas are widespread in the Blue Mountains, the southern part of the East Cascades, and in the Northern Basin and Range, where their range is expanding. Over the last 30 years, juniper has also invaded many of the grasslands and shrublands in the western parts of the Columbia Plateau. Oregon represents the center of the distribution for western juniper, which historically formed ancient open woodlands covering much of central Oregon and the Steens Mountains. These old-growth juniper woodlands continue to decline with the rapid development occurring around Bend. However, for a number of reasons not widely agreed upon, western juniper is invading many of the sagebrush steppe areas in southeastern and central Oregon, creating problems for many sagebrush habitats.

In Oregon, this habitat is entirely included in the Western Columbia Plateau Western Juniper Woodland and Savanna ecological system. While these were initially mapped separately as two age classes, old-growth and other, in the 2018 map they are combined, due to difficulties distinguishing them and their rapid spread.

HARDWOOD AND HARDWOOD-CONIFER MIXED FORESTS AND WOODLANDS

Mixed Hardwood-Conifer – Bigleaf maple, red alder and mixed low-elevation conifers characterize this mesic habitat which is widespread in western Oregon, and extends into western Washington and northern California. Common conifers include Douglas-fir, western hemlock, and western red cedar, although all westside conifers can occur. They range from sea level up to 5,000 feet, although mostly are found below 3,000 feet.

This habitat includes two primary systems. The first is the North Pacific Lowland Hardwood – mixed Conifer Forest ecological system, including the bigleaf maple – Douglas-fir forests, and the second is the North Pacific Broadleaf Landslide Forest and Shrubland, including the red alder communities that dominate areas disturbed by fires and landslides, sometimes in poorly replanted clearcuts. These forests are mapped in four age classes: young (less than 30 years old, **44**), medium (31-80 years old, **18**), mature (greater than 80 years old without old-growth characteristics, **12**), and old-growth (stands with old-growth characteristics, **13**).

Mixed Oak-Conifer – Significant numbers of the mixed conifer - hardwood forests in Oregon are drier forests and woodlands, composed of Oregon white oak, California black oak, canyon live oak, and/or madrone, growing with conifers, usually either Ponderosa pine or Douglas-fir, although occasionally Port Orford cedar or incense cedar occurs in these woodlands. They are most commonly found below 3,000 feet in the Willamette Valley and below 4,000 feet in the Klamath Mountains, but also occur at the east end of the Columbia Gorge and south along the East Cascades to Warm Springs, and at the southern ends of the Cascades near the California border.

Forests and woodlands with madrone codominant are included in the North Pacific Dry Douglas-fir – Madrone Forest and Woodland ecological system. Those with black oak dominant are generally part of the Mediterranean California Lower Montane Black Oak-Conifer Forest and Woodland system, and stands in which white oak is the most common hardwood are placed in the East Cascades Oak-Ponderosa Pine Forest and Woodland system. These are mapped in 3 age classes, young to medium (less than 80 years old, **43**), mature (greater than 80 years old without old-growth characteristics, **41**), and old-growth (stands with old-growth characteristics, **42**).

Oak 34 – Oregon white oak characterizes most oak woodlands and savannas, which are found at low elevations throughout western Oregon, in the Columbia Gorge and in western Klamath County. They have been declining in many areas, becoming mixed oak-conifer woodlands with fire suppression. These woodlands and savannas are important to wildlife and are a priority habitat in most western Oregon ecoregions. From Eugene south, California black oak increases in importance, and in southwestern Oregon a number of other oaks, including Brewer oak, canyon live oak, tanoak, and chinquapin can be important parts of this habitat.

Oak woodlands and savannas are included in two ecological systems: North Pacific Oak Woodland, Willamette Valley Upland Prairie and Savanna, and Mediterranean California Mixed Oak Woodland. Because so many of these stands are open woodlands and savannas, age classes are not differentiated for oak woodlands.

Quaking Aspen 23 – Quaking aspen can dominate small forest and woodland stands in the mountains and foothills throughout eastern Oregon, and occasionally in western Oregon, from 140 feet in the Willamette Valley to 9,000 feet in Steens Mountain and Eagle Cap. While not very abundant, they can be very important to many species of wildlife, especially in the Northern Basin and Range where they are often the only tree. In 2018, the available gradient nearest neighbor species map separated riparian forests and woodlands dominated by aspen, and both are included here. Because of changes in fire and grazing pressure, they are declining in many areas and are a strategy habitat.

The mixed aspen and conifer forests and woodlands with significant cover of aspen are included here, so in Oregon this habitat includes two ecological systems: Inter-Mountain Basins Aspen-Mixed Conifer Forest and Woodland and Rocky Mountain Aspen Forest and Woodland.

Early Shrub-Tree 17 – This is a landcover type that occupies many of the low and mid elevation forested areas in Oregon, including regenerating or recently planted clear cuts, burns, and other areas that are likely to recover into forests following disturbance. These areas are usually dominated by a combination of shrubs, grasses and saplings and occur in areas that support forests.

Riparian, Wetland, and Aquatic Habitats

Interior Lowland and Foothill Riparian 67 – The lowland riparian forests and shrublands in eastern Oregon are part of this habitat type, most commonly found 100 feet to around 4,000 feet in elevation, but extending up to 5,700 feet in the mountains. They are quite diverse, including forests, woodlands and shrublands along rivers and streams, but occupy narrow strips so are poorly mapped. They are also often damaged by overuse and habitat manipulation.

They are part of either the Columbia Basin Foothill Riparian Woodland and Shrubland, Great Basin Foothill and Lower Montane Riparian Woodland and Shrubland, Rocky Mountain Lower Montane-Foothill Riparian Woodland and Shrubland, or Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland ecological system.

Coastal and Valley Riparian 37 – These are diverse, wet habitats found along rivers and streams, and in the valley bottoms throughout western Oregon, mostly below 4,000 feet, but extending up to 5,700 feet in the mountains. They include riparian gallery forests, open riparian woodlands and shrublands, and valley bottomlands with willows, sedges or forbs. They occur in small patches, so tend to be under-mapped.

They are part of these four ecological systems: North Pacific Lowland Riparian Forest and Shrubland, Mediterranean California Foothill and Lower Montane Riparian Woodland, Mediterranean California Serpentine Foothill and Lower Montane Riparian Woodland and Seep.

Montane Wetlands 38 – These are montane wetlands, wet meadows and riparian woodlands, generally occurring above 5,700 feet (1,750 m) in Oregon. They occur both woody wetlands dominated by trees and shrubs, along with montane wet meadows and bogs. They include subalpine and montane shrublands and forested wetlands, high elevation riparian forests and shrublands, and

other montane bogs and fens. They are mostly found along the Cascades crest and in the Blue Mountains, although examples occur in the East Cascades, Northern Basin and Range, and only occasionally in the Coast Range and Klamath Mountains ecoregions.

They are small, but include a diverse array of wetlands in seven ecological systems: North Pacific Montane Riparian Woodland and Shrubland, Rocky Mountain Subalpine-Montane Fen, Rocky Mountain Subalpine-Montane Riparian Shrubland, Rocky Mountain Subalpine-Montane Riparian Woodland, Rocky Mountain Alpine-Montane Wet Meadow and Temperate Pacific Subalpine-Montane Wet Meadow.

Lowland Woody Wetlands and Swamps 68 – Forested and shrub-dominated swamps and wetlands found along the coast, valleys, and foothills of Oregon are included in this rare habitat type. Lodgepole pine, aspen, willow, spiraea, and spruce are the most important trees and shrubs in this habitat, which generally occurs below 4,000 feet.

This type includes three ecological systems: North Pacific Hardwood-Conifer Swamp, North Pacific Shrub Swamp, and the Northern Rocky Mountain Conifer Swamp.

Marshes, Bogs and Emergent Wetlands 15 – The many diverse types of bogs, marshes and non-woody wetlands found throughout the state are merged into this habitat type. They are found in all ecoregions and at almost any elevation in the state below 5,700 feet (1,700 meters).

Many of these habitats are poorly mapped because most patches are either small or narrow. They include 12 ecological systems: North Pacific Bog and Fen, Columbia Plateau Vernal Pool, Inter-Mountain Basins Alkaline Closed Depression, Mediterranean California Serpentine Fen, North American Arid West Emergent Marsh, Modoc Basalt Flow Vernal Pool, North Pacific Hardpan Vernal Pool, Northern California Claypan Vernal Pool, Northern California Volcanic Vernal Pool, Northern Columbia Plateau Basalt Pothole Ponds, Temperate Pacific Freshwater Aquatic Bed, and Temperate Pacific Freshwater Emergent Marsh.

Saltmarsh 28 – These are marshes associated with coastal water bodies at the mouths of rivers and bays, characterized by tidal influences and usually saltwater intrusions.

There are three ecological systems, the North Pacific Intertidal Freshwater Wetland, North Pacific Intertidal Freshwater Wetland, Temperate Pacific Tidal Salt and Brackish Marsh, associated with this habitat type.

Bays and Estuaries 70 – These include coastal water bodies at the mouths of rivers, bays and in estuaries, usually a mix of salt and freshwater. They include open water, mudflats, eelgrass, and protected intertidal habitats. Saltmarshes are included in a separate habitat types.

Bays are part of three ecological systems, the Temperate Pacific Freshwater Mudflat, Temperate Pacific Intertidal Mudflat and North Pacific Maritime Eelgrass Bed.

Open Water (Big Rivers, Reservoirs, Lakes and Ponds) 27 – Larger open water bodies, including reservoirs and large rivers are included in this habitat type. These are freshwater water bodies, primarily derived from the National Hydrology Dataset (NHD) or the Atlas of Oregon Lakes. Seasonal lakes, vernal pools, or small stock ponds are often not mapped.

Shrubland and Steppe Habitats

Mountain Big Sagebrush – The mountains of eastern Oregon support large areas dominated by mountain big sagebrush, generally forb-rich shrublands. While mountain big sagebrush dominates these areas, mountain snowberry, and occasionally snowbrush or bitterbrush can be locally important. Because of the winter snow and higher moisture, these areas are not as sensitive to cheatgrass invasion as is the drier big sagebrush habitat.

These are primarily included in the Inter-Mountain Basins Montane Sagebrush Steppe ecological system, although some sites are part of the North Pacific Montane Shrubland. These are mapped in two condition classes, to reflect the variation in quality of sagebrush habitats in Oregon: fair to good condition, with native bunchgrasses, some mountain sagebrush cover, and very low cover of western juniper invasion, **10**), and poor condition, sites with significant juniper invasion, almost no cover of sagebrush from recent fires, or rarely high cover of exotic species, **77**).

Low Sagebrush – The volcanic plateaus of eastern Oregon create large areas of shallow soil and unique habitats, dominated by Sandberg bluegrass, buckwheat, rigid sagebrush, low sagebrush or black sagebrush. While all support dense and showy spring wildflowers, they can appear barren later in the summer. They vary from low cover areas with lots of exposed lichen covered rocks, to productive low sagebrush steppe habitats higher in the mountains. Two classes of low sagebrush habitats were mapped to reflect differing conditions.

These habitats are found in two ecological systems: Columbia Plateau Scabland Shrubland and Columbia Plateau Low Sagebrush Steppe. These are mapped in two condition classes, to reflect the variation in quality of sagebrush habitats in Oregon: fair to good condition, with native bunchgrasses, some mountain sagebrush cover, and very low cover of western juniper invasion, **9**), and poor condition, sites with significant juniper invasion, almost no cover of sagebrush from recent fires, or high cover of exotic species with limited bunchgrasses or perennial forbs, **76**).

Big Sagebrush 2 – Wyoming and Basin Big Sagebrush, along with bitterbrush, dominate these shrublands and steppe habitats that dominate most of southeastern and southcentral Oregon. They are critical to the western sage grouse and a number of other sagebrush species, and are threatened by invasive species, altered fire regimes, invasion of juniper, and overuse. However, the Northern Basin and Range in southeastern Oregon has some of the best, intact sagebrush habitats remaining in the western U.S., and they are surprisingly diverse.

The habitat includes four main ecological systems representing sagebrush, the Inter-Mountain Basins Big Sagebrush Shrubland and the Inter-Mountain Basins Big Sagebrush Steppe, Great Basin Xeric Mixed Sagebrush Shrubland, Inter-Mountain Basins Semi-Desert Shrub-Steppe. The steppe and shrubland types mostly differ in the cover of shrubs present, while the different types support

other arid shrub species in association with sagebrush. Also included is the Columbia Plateau Steppe and Grassland ecological system that represents areas where fire has converted sagebrush into grasslands, as well as the Columbia Plateau Silver Sagebrush Seasonally Flooded Shrub-Steppe, a playa shrubland that usually occurs in small patches within sagebrush steppe. These are mapped in two condition classes, to reflect the variation in quality of sagebrush habitats in Oregon: fair to good condition, with native bunchgrasses, some big sagebrush cover, and very low cover of western juniper invasion, **2**), and poor condition, sites with significant juniper invasion, or almost no cover of sagebrush from recent fires, or places with high cover of exotic species and limited cover of native bunchgrasses or perennial forbs, **71**).

Salt Desert Scrub 11 – In southeastern and south central Oregon, the large historic lake basins support significant patches of salt desert scrub habitat. In addition to the playas, valley margins often have slopes with alkaline, wind-deposited soils, or alkaline ash deposits that also support salt desert scrub habitats. They include mixtures or pure stands of Black greasewood, spiny hopsage, shadscale, fourwing saltbush, iodine bush and bud sagebrush shrubs, with few forbs and grasses. The less common winterfat, mostly calcareous playas are also included here along with desert washes or hillslopes with Mormon tea. In southeast Oregon, these shrubs are generally widely spaced in these relatively barren and dry habitats found between 3,500 and 6,000 feet in elevation. Small examples can be found in the Columbia Basin and Blue Mountain valleys between 1,000 – 3,500 feet in elevation.

There are three ecological systems found in Oregon containing habitats mapped as salt desert scrub: Inter-Mountain Basins Greasewood Flat, Inter-Mountain Basins Mixed Salt Desert Scrub, and Inter-Mountain Basins Semi-Desert Shrub-Steppe.

Chaparral 19 – While occupying only small areas, mostly in southwestern Oregon, chaparral shrublands in Oregon are exceptionally diverse. The most common chaparral species is buckbrush, a deciduous ceanothus, but most of the types are dominated by tall evergreen shrubs, many of which are manzanita or ceanothus species, and most of which require fire for maintenance and reproduction. In the East Cascades, some of these areas are dominated by shrubby members of the rose family (Klamath plum, chokecherry, bitter cherry, and birchleaf mountain mahogany). On serpentine, areas often have high cover of dwarf evergreen oaks (huckleberry, Brewer's, and Sadler's oak) along with ceanothus or manzanita. And along the southwest Oregon coast, members of the blueberry family (rhododendron, manzanita, huckleberry, and salal) are most common. They are found at very low elevations at the south coast, and above 6,000 feet in the Cascades.

There are 6 different chaparral ecological systems represented by this habitat type in Oregon: Klamath-Siskiyou Xeromorphic Serpentine Savanna and Chaparral, California Maritime Chaparral, Northern and Central California Dry-Mesic Chaparral, Northern California Coastal Scrub, California Montane Woodland and Chaparral, California Xeric Serpentine Chaparral.

Canyon Shrubland 22 – Canyon shrublands represent an important and diverse habitat found in small patches throughout eastern Oregon. This system includes the curl-leaf mountain mahogany shrublands that occur on cliffs, canyons and shallow soiled areas in the mountains of eastern Oregon. Mountain mahogany is an important wildlife species historically restricted to locations

protected from fire. It is a very small tree or tall shrub, and is expanding a bit with fire suppression, but does not compete with the much taller conifers in areas where soils support conifer growth. The diversity of this type is best represented in Hells Canyon, and the other river canyons in the Blue Mountains and Columbia Plateau. Smooth sumac, hackberry (often a small tree), black and Columbia hawthorn, spiny greasebush, bitterbrush, serviceberry, snowberry and ninebark are the most important shrubs, but these are varied from dense tall shrublands to more open grassy areas with well distributed shrubs. Because of their diversity they are found at most elevations in Oregon.

Ecological systems include the Inter-Mountain Basins Mountain Mahogany Woodland and Shrubland, the Northern Rocky Mountain Montane-Foothill Deciduous Shrubland and the Northern Rocky Mountain Subalpine Deciduous Shrubland types, all primarily dominated by deciduous shrubs.

Grassland Habitats

Columbia Basin Grasslands and Prairie 74 – This type includes the majority of the grasslands in eastern Oregon. They are made up of three systems. The first is a bluebunch wheatgrass, Idaho fescue, Sandberg bluegrass, and needlegrass dominated bunchgrass community found in the canyons, foothills and prairies of eastern Oregon. It includes canyon and foothill areas with some shrubs, but still supports a wide array of native prairie species. It also includes the deep soiled, bunchgrass prairie, formerly widespread in eastern Washington, western Idaho, and occasional in north-central Oregon. These have almost been entirely converted to farmlands, with only small prairie remnants remaining. Idaho fescue, bluebunch wheatgrass, junegrass, Sandberg bluegrass dominate, with occasional basin wildrye, snowberry and rose growing as forbs, and patches of hawthorn and serviceberry. The third type represents the mid elevation grasslands found in the mountains and valleys in northwest Oregon. They are dominated by large bunchgrasses (bluebunch wheatgrass, Idaho fescue, junegrass, or rough fescue) often with low cover of scattered (usually deciduous) shrubs and a diverse range of forbs. Some areas in southeastern Oregon where sagebrush has been removed by a series of fires but the bunchgrasses and forms remain intact also are mapped as this habitat. These occur from 500 feet in elevation near the Columbia River up to 6,000 feet at Zumwalt Prarie or in the northern Great Basin.

These are included in either the Columbia Basin Foothill and Canyon Dry Grassland, the Columbia Basin Palouse Prairie, or the Northern Rocky Mountain Lower Montane, Foothill and Valley Grassland ecological system.

Montane Grasslands and Dry Meadows 16 – Found in eastern Oregon or the high Cascades, these are higher elevation grasslands occurring above 5,500 feet in elevation. They include the upper montane to subalpine grasslands, usually composed of dense bunchgrasses, found on ridges and mountain slopes, most commonly south facing areas. They occur as small isolated, sometimes moist grasslands in open montane conifer woodlands or subalpine parklands, or more extensive dry grasslands. It also includes the dry, mountain grasslands in the Cascades and coastal mountains of the northwest, found on openings in mountain forests, and moist meadows found in small valley openings. Bunchgrasses dominate the dry meadows, while sedges, rushes and bunchgrasses dominate the meadows.

These are found in four different ecological systems: Northern Rocky Mountain Subalpine-Upper Montane Grassland and the Rocky Mountain Subalpine-Montane Mesic Meadow include most of the eastern Oregon examples, while those in western Oregon are in either the North Pacific Montane Grassland or the Temperate Pacific Subalpine-Montane Wet Meadow system type.

Alkali and Desert Grasslands 26 – These include dry grasslands, almost always dominated by widely spaced perennial bunchgrasses, usually in valley bottoms, flats or margins, in desert areas between 2,000 and 5,000 feet in elevation. These typically intergrade into salt-desert shrubs or sagebrush, and support grasslands due to unusual soils (sand, gravel or alluvium), and low rainfall. They also include seasonally flooded areas dominated by alkaline grasses, such as basin wildrye, saltgrass and alkaligrass.

They are either in the Inter-Mountain Basins Semi-Desert Grassland or the Inter-Mountain Basins Alkaline Closed Depression ecological system.

Coastal and Valley Grasslands 36 – These are either dry, upland prairies and savannas found in the valleys and foothills of Western Washington and Oregon, or grass and forb dominated cliffs, bluffs and grass balds found throughout these same areas. Dominated by native bunchgrasses and diverse forbs, they often have a minor savanna component of Oregon white oak, Douglas-fir and/or Ponderosa pine. They are rarely found above 4,000 feet in elevation.

They are part of either the Willamette Valley Upland Prairie and Savanna or the North Pacific Herbaceous Bald and Bluff ecological system.

Mixed, High-elevation Habitats

Subalpine Parkland 35 – These are open, high mountain woodlands, usually mixed with open subalpine and alpine parklands, found in the northern Rocky Mountains. They are usually dominated by whitebark pine, subalpine fir, or mountain hemlock patches mixed with subalpine meadows and shrubs. They occur high elevation ridgetops, mountain slopes, talus slopes, rocksides and in cirque basins. They are often dry and windblown, with a limited understory of alpine sedges, grasses, forbs and dwarf shrubs, although they often include mountain meadows and wetlands around lakes.

Ecological systems within this habitat are the Northern Rocky Mountain Subalpine Woodland and Parkland, Northern Rocky Mountain Subalpine Deciduous Shrubland, and North Pacific Maritime Mesic Subalpine Parkland.

Alpine 20 – Alpine habitats support unique species in Oregon's high mountains. Most of the grass, forb and shrub dominated meadows, rocklands and slopes occur in a matrix with subalpine-woodlands, and are often folded into the subalpine parkland habitat below, so these are generally under-represented in our habitat maps.

In spite of hardly being mapped, they are diverse enough to include 10 shrubland, herbaceous or barren ecological systems:

1) Shrubland: Mediterranean California Alpine Fell-Field, North Pacific Dry and Mesic Alpine Dwarf-Shrubland, Fell-field and Meadow, Rocky Mountain Alpine Dwarf-Shrubland;
2) Herbaceous: Mediterranean California Alpine Dry Tundra, North Pacific Alpine and Subalpine Dry Grassland, Rocky Mountain Alpine Fell-Field, Rocky Mountain Alpine Turf; and
3) Barren: Mediterranean California Alpine Bedrock and Scree, North American Alpine Ice Field, North Pacific Alpine and Subalpine Bedrock and Scree, Rocky Mountain Alpine Bedrock and Scree.

Also included are the sometimes lower elevation, very steep, montane shrublands in two ecological systems: the North Pacific Avalanche Chute Shrubland and the North Pacific Montane Shrubland.

Sparsely Vegetated Natural Habitats

Coastal Dunes and Beaches 24 – Coastal beaches, open sand dunes, dune wetlands (including deflation plain wetlands and estuaries in dunes), shrublands and forests occur all along the coast. The largest areas are along the central Oregon coast between Coos Bay and Florence, most in the Oregon Dunes National Recreation Area. Extensive dunes also occur below the Columbia River, at Sand Lake, at Pistol River, and just north of the California border.

They include four ecological systems: North Pacific Maritime Coastal Sand Dune and Strand, Mediterranean California Northern Coastal Dune, Mediterranean California Coastal Interdunal Wetland, and the North Pacific Coastal Interdunal Wetland.

Rocky Coast 31 – The headlands and islands along the coast include dense evergreen shrublands, open grasslands and forblands, exposed cliffs, and patches of wind-pruned conifers. They are small and are barely mapped, but support a distinct set of wildlife species.

They are largely included in two ecological systems: North Pacific Hypermaritime Shrub and Herbaceous Headland and California Northern Coastal Grassland.

Inland Dunes 25 – These are active or partially stabilized sand dunes in the arid regions of the western U.S. Shifting sand, patches of shrubs and sand adapted bunchgrasses make up the usually sparse vegetation. This system includes dry areas near major rivers, such as Bruneau Dunes and Boardman dunes, where the river-sand based habitats support sagebrush and bitterbrush. It also includes closed basin, or lakes basin dunes, with finer, alkaline sands supporting salt-bush, greasewood and other salt desert dune shrubs.

It is all included in the Intermountain Basins Active and Stabilized Dune ecological system.

Lava 29 – This barren habitat includes exposed rock, lava flows, or large areas of exposed mountain rock, and is often treated as barren in landcover maps. Most of these occur in the Northern Basin and Range and support small patches of sagebrush or juniper, although there are some large recent flows in the Cascade Mountains with small patches of subalpine trees and shrubs.

This habitat includes three ecological systems: North Pacific Wooded Volcanic Flowage (often mapped with montane forests), North Pacific Volcanic Rock and Cinder Land and the Inter-Mountain Basins Volcanic Rock and Cinder Land.

Playa and Barren Ash 30 – In southeastern Oregon, there are extensive areas receiving less than 7 inches of rain annually, and when this occurs on saline or alkaline soils, they create conditions that limit vegetation growth. Most Oregon playas are seasonally wet. These have spring blooms typical of deserts, yet are barren most of the year. These also include extensive areas dominated by exposed ash and tuff, which support annual and desert shrubs, but generally have very sparse vegetation. These may get more rain, but the ash keeps the habitats open.

This habitat includes the Intermountain Basins Playa, Inter-Mountain Basins Wash and the Columbia Plateau Ash and Tuff Badland ecological systems.

Cliffs and Canyons 62 – Cliffs and canyons can be extremely important for many wildlife, while providing critical nesting sites for some. They occur throughout the state, and vary with the geography and vegetation.

Because of the diversity of Oregon's landscapes, there are 7 cliff or canyon ecological systems in Oregon:

1) Inter-Mountain Basins Cliff and Canyon,
2) Klamath-Siskiyou Cliff and Outcrop,
3) North Pacific Coastal Cliff and Bluff,
4) North Pacific Montane Massive Bedrock, Cliff and Talus,
5) Rocky Mountain Cliff, Canyon and Massive Bedrock,
6) Sierra Nevada Cliff and Canyon, and
7) Columbia Basin Foothill and Canyon Dry Grassland.

Disturbance Habitats

Burns 69 – These are places where a recent fire has removed all of the vegetation, and it is impossible to map the habitat that is present.

Exotic Grasslands and Annuals 65 – These are places where non-native grasses, or other non-native species are the primary species present. They include the non-native grasslands found throughout eastern Oregon. The most common dominants are annual grasses such as cheatgrass, medusa-head and ventenata, perennial grasses such as crested wheatgrass, quackgrass and bulbous bluegrass. Areas dominated by non-native annual forbs such as white-top, star thistle, knapweed, Russian thistle, and tumblemustard, or perennials such as pepperweed, Canadian or bull thistle.

MAN-MADE HABITATS (DESCRIPTIONS FROM THE NLCD LEGEND)

Urban (High Intensity Developed) 32 – These are highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80% to 100% of the total cover.

Suburban (Developed Medium Intensity) 56– These represent areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50% to 79% of the total cover. These areas most commonly include single-family housing units.

Rural Residential (Developed Low Intensity) 61– This type includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20% to 49% percent of total cover. These areas most commonly include single-family housing units.

Parks and Developed Open Space 60 – These are areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.

Cultivated Crops 57 – This type includes those areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20% of total vegetation. This class also includes all land being actively tilled.

Pasture or Hay 58 – areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20% of total vegetation.