

DRAFT 11/18/92

MANUAL OF OREGON ACTUAL VEGETATION

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OREGON ACTUAL VEGETATION MAP AND MANUAL

A map of actual vegetation cover of Oregon was developed as part of the Oregon Gap Analysis Program, a project of the Idaho Cooperative Fish and Wildlife Research Unit, in cooperation with the Oregon Department of Fish and Wildlife and the Oregon Natural Heritage Program. The Idaho Geographic Information Center of the Idaho Department of Water Resources digitized the original maps and subsequent four edits using ARC/INFO GIS software. The digital data layer has been deposited at the Oregon GIS Service Center, Department of Energy, 625 Marion St., N.E., Salem, Oregon 97310.

LANDSAT Multi-Spectral Scanner false-color infrared positive prints at a scale of 1:250,000 were visually photo-interpreted to identify boundaries of different vegetation cover types. Mr. Jimmy Kagan, Coordinator/Ecologist of the Oregon Natural Heritage Program, was responsible for boundary delineation and labeling for non-forested portions of Oregon. Mr. Steve Caicco, a private consultant who previously developed a vegetation map of Idaho in his capacity as ecologist for the Idaho Natural Heritage Program, was responsible for boundary delineation and labeling for forested portions of Oregon. A variety of ancillary maps were used to assist in labeling vegetation polygons, including U.S. Forest Service and Bureau of Land Management large-scale vegetation maps of various dates. Statewide coverage of ancillary maps at the same level of detail was not available, so map resolution and accuracy may be expected to vary between regions. Vegetation types should be generalized at least to vegetative complexes (see below) for analysis.

The nominal minimum mapping unit was 320 ac (133 hectares), although most polygons are larger than this. The average polygon size is 8,141 acres. The median polygon size is somewhat smaller, on the order of a few thousand acres. A report on the number of polygons and acres in each vegetation type is contained in Appendix 4.

This vegetation map was developed to determine the amount of Oregon's biodiversity that occurs in nature reserves or other areas managed primarily for their natural values. While there are many environmental factors that determine the distribution of plant and animal species, we believe, as Jack Ward Thomas states in his book, *Wildlife Habitats in Managed Forests: the Blue Mountains of Oregon and Washington*, "The plant community type...can be considered an integrator of the many factors interacting on a site."

The dean of North American vegetation mapping, A. W. Kuchler, has stated that the classification of a vegetation map should be related to its purpose. Vegetation classification is hierarchical, and mapping is possible at many levels in this hierarchy. Since our goal is an assessment of the distribution and status of plant communities as an indicator of biodiversity, we have labeled our map with the names of dominant overstory plant species.

Each polygon is assigned a three-digit label. The following manual describes 133 primary vegetation types, grouped into 5 cultural land cover types, 7 natural land cover types, and 54 vegetative complexes. Vegetative complexes are described by the dominant or codominant plant species in the uppermost vegetation layer. Because of the 320 acre minimum mapping unit, and because some plant communities are not visible in satellite imagery, there are valid vegetation types in Oregon that are not described in this manual or mapped on the map. Although many of these communities are of conservation concern, the scale of this mapping effort precluded their inclusion. The Oregon Natural Heritage Program maintains a database on the location of examples of plant communities of special concern, and this database should be used to supplement the map for conservation planning.

This is a map of actual vegetation rather than potential vegetation. Large areas in early successional stages, such as those resulting from recent timber harvest, are mapped as such. Most landscape-size areas will contain inclusions of earlier successional stages. These are important to many species, but could not be shown on a map of this scale. Neither the age or condition of a vegetation polygon can be determined from the satellite imagery used in this mapping effort.

The LANDSAT imagery was mostly from dates in July, 1988. Three scenes along the Idaho/Oregon border were provided by the Idaho Department of Water Resources. These were taken in the summer of 1986. Because prints of the LANDSAT MSS imagery contained geographic distortion due to the curvature of the earth, a correction was made based on the location of about 12 widely-separated features on each scene that were also located on 1:250,000 scale-base mylar U.S. Geological Survey topographic maps. Some residual displacement of features remains in the digital data layer, but this should not be significant for applications typical of small-scale vegetation maps. Neither the labeling nor the geographic accuracy of the map has been field validated as of this writing (November 1992), although validation is contemplated for 1993. All information is subject to field validation.

11/18/92

OREGON LAND COVER TYPES

AND

OREGON VEGETATION TYPES BY DOMINANT PLANT SPECIES

Map Code	Common Name (Latin Name)
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CULTURAL LANDSCAPE COVER TYPES

Agriculture

002 agricultural cropland and improved pasturelands

Urban and Industrial Areas

003 urban and industrial areas

Grass Seedings and Grasslands following Fire or Clearing

001	cheatgrass and other annual grasslands
004	crested wheatgrass and other perennial bunchgrass seedings
011	bluebunch wheatgrass
012	bottlebrush squirreltail
013	Sandberg bluegrass

Brushfields, Recent Clearcuts and Fires

005	brushfields
010	clearings, brushfields, conifer plantations, sparse conifer stands, hardwoods, and bare ground

Rural Pasture with Remnant Bottomlands

463 Oregon ash-black cottonwood-bottomland pasture mosaic

NATURAL LANDSCAPE COVER TYPES

Shoreline Communities

007 American and European beachgrass, shorepine, seashore bluegrass and lupine

Coastal Saltmarsh

032 saltmarsh

Inland Sand Dunes

008 inland sand dunes

Open Water

009 open water

Bare Playa

327 bare playa

Lava Fields

018 lava fields

309 big sagebrush lava fields

Alpine Fell Fields

040 alpine communities

VEGETATIVE COMPLEXES

Cottonwood Riparian Woodland
(*Populus trichocarpa* riparian woodland)

021 cottonwood riparian woodland

Willow Riparian Woodland
(*Salix* ssp. riparian woodland)

020 black hawthorn riparian and bottomlands

022 willow species floodplain riparian

Bluebunch Wheatgrass Grasslands
(*Agropyron spicatum* grasslands)

016 bluebunch wheatgrass-Idaho fescue-Sandberg bluegrass canyon grassland

Bluebunch Wheatgrass-Cheatgrass Grasslands
(*Agropyron spicatum*-*Bromus tectorum* grasslands)

015 sandy palouse grasslands

Idaho Fescue Grasslands
(*Festuca idahoensis* grasslands)

017 Idaho fescue-junegrass canyon grassland

024 Idaho fescue-bluebunch wheatgrass-Sandberg bluegrass palouse grasslands

025 Idaho fescue-junegrass plateau, ridgetop and palouse grasslands

026 Idaho fescue, green fescue and sheep fescue montane grasslands

Reed Canary Grass Wetland
(*Phalaris arundinaceae* wetland)

030 reed canary grass wetland

Hardstem bulrush-Cattail-Burreed Marsh
(*Scirpus acutus*-*Typha latifolia*-*Sparganium emersum* wetland)

031 hardstem bulrush-cattail-burreed marsh
035 alkaline grasslands and seasonal wetlands

Sedge Montane Meadows and Wetlands
(*Carex* spp. meadows and wetlands)

036 sedge montane meadows and wetlands

Tufted Hairgrass Meadows
(*Deschampsia caespitosa* meadows)

038 tufted hairgrass-bluegrass montane meadows
039 tufted hairgrass valley prairie

Big Sagebrush Scrub
(*Artemisia tridentata* scrub)

298 big sagebrush/needle-and-thread grass
299 big sagebrush/cheatgrass
300 big sagebrush/basin wildrye
301 big sagebrush/bluebunch wheatgrass
303 big sagebrush/Idaho fescue
304 big sagebrush/Sandberg bluegrass
305 big sagebrush/bottlebrush squirreltail
306 big sagebrush/western needlegrass
307 big sagebrush/Thurbers needlegrass
308 big sagebrush/crested wheatgrass
310 big sagebrush ash beds
440 Owyhee uplands canyon, shrubland-grassland ash mosaic

Three-tip Sagebrush Scrub
(*Artemisia tripartata* scrub)

311 three-tip sagebrush/bunchgrass

Low Sagebrush Scrub
(*Artemisia arbuscula* scrub)

313 low sagebrush/bluebunch wheatgrass
314 low sagebrush/Idaho fescue
315 low sagebrush/Sandbergs bluegrass
316 low sagebrush/bottlebrush squirreltail

Low Sagebrush-Mountain Big Sagebrush Scrub
(*Artemisia arbuscula*-*Artemisia tridentata* ssp. *vaseyana* scrub)

312 low sagebrush-mountain big sagebrush/Idaho fescue

Black Sagebrush Scrub
(*Artemisia nova* scrub)

317 black sagebrush/Sandbergs bluegrass

Low Sagebrush-Black Sagebrush-Big Sagebrush Scrub
(*Artemisia nova*-*Artemisia arbuscula*-*Artemisia tridentata* scrub)

319 low sagebrush-black sagebrush/bottlebrush squirreltail

Rigid Sagebrush Scrub
(*Artemisia rigida* scrub)

321 rigid sagebrush/Sandbergs bluegrass

Mountain Big Sagebrush Scrub
(*Artemisia tridentata* ssp. *vaseyana* scrub)

322 mountain big sagebrush/Sandbergs bluegrass

323 mountain big sagebrush/Idaho fescue

324 mountain big sagebrush/bluebunch wheatgrass-bottlebrush squirreltail

Budsage Scrub
(*Artemisia spinescens* scrub)

325 budsage

Silver Sagebrush Scrub
(*Artemisia cana* scrub)

326 silver sagebrush playa or bottomland

Black Greasewood Scrub
(*Sarcobatus vermiculatus* scrub)

361 black greasewood playa or bottomland

362 black greasewood/saltgrass

363 black greasewood/bottlebrush squirreltail

364 black greasewood/basin wildrye

Shadscale Scrub
(*Atriplex confertifolia* scrub)

365 shadscale/bottlebrush squirreltail salt desert shrub

366 shadscale/cheatgrass salt desert shrub

368 shadscale/Sandbergs bluegrass

Spiny Hopsage-Shadscale-Black Greasewood Scrub
(Atriplex spinosa-Atriplex confertifolia-Sarcobatus vermiculatus scrub)

367 spiny hopsage/bottlebrush squirreltail salt desert shrub

Saltsage-Budsage Scrub
(Atriplex nuttallii scrub)

370 saltsage

Winterfat Scrub
(Eurotia lanata scrub)

371 winterfat

Big Sagebrush-Squawapple Shrubland
(Artemisia tridentata-Peraphyllum ramosissimum shrubland)

348 big sagebrush-squawapple/Idaho fescue

Big Sagebrush-Bitterbrush Shrubland
(Artemisia tridentata-Purshia tridentata shrubland)

349 big sagebrush-bitterbrush/Idaho fescue

350 big sagebrush-bitterbrush/bluebunch wheatgrass

Bitterbrush Scrub
(Purshia tridentata scrub)

351 sandy bitterbrush steppe

352 bitterbrush/Idaho fescue and bluebunch wheatgrass and western needlegrass and dry sedges

Mountain Snowberry Shrubland
(Symphoricarpos oreophyllus shrubland)

355 mountain snowberry/bunchgrass

460 Blue Mountain canyon shrubland

Mountain Mahogany Shrubland
(Cercocarpus ledifolius shrubland)

380 curleaf mountain mahogany

381 mountain mahogany-western juniper rimrock and canyon slopes

Quaking Aspen-Serviceberry-Bittercherry-Snowbrush Shrublands
(Populus tremuloides-Amelanchier alnifolia-Prunus emarginata-Ceanothus velutinus shrublands)

450 serviceberry, bitterbrush, bittercherry, snowbrush mountain brush

Quaking Aspen Forests
(*Populus tremuloides* forests)

391 quaking aspen groves

Ponderosa Pine-Western Juniper Woodland
(*Pinus ponderosa*-*Juniperus occidentalis* woodland)

401 western juniper-ponderosa pine/big sagebrush

Western Juniper Woodlands
(*Juniperus occidentalis* woodlands)

- 410 western juniper/bunchgrass
- 411 western juniper/low sagebrush/Idaho fescue
- 412 western juniper/low sagebrush/Sandberg bluegrass
- 413 western juniper/low sagebrush/tall bunchgrass
- 420 western juniper/big sagebrush/Sandbergs bluegrass
- 421 western juniper/big sagebrush/bluebunch wheatgrass
- 423 western juniper/big sagebrush/bottlebrush squirreltail-Thurbers needlegrass
- 424 western juniper/big sagebrush/Idaho fescue
- 425 western juniper/big sagebrush/cheatgrass
- 427 western juniper/mountain big sagebrush/Idaho fescue
- 429 western juniper/big sagebrush-bitterbrush
- 430 western juniper/bitterbrush/bluebunch wheatgrass
- 431 western juniper/bitterbrush/Idaho fescue
- 445 sagebrush, juniper, mountain mahogany, serviceberry, currents, rose and chokecherry

Buckbrush-Manzanita Chaparral
(*Ceanothus* ssp.-*Arctostaphylos* ssp. chaparral)

470 southern Oregon chaparral

Sitka Spruce-Western Hemlock Forest
(*Picea sitchensis*-*Tsuga heterophylla* forest)

501 Sitka spruce-western hemlock forest

Redwood Forest
(*Sequoia sempervirens* forest)

502 redwood forest

Oregon White Oak-Ponderosa Pine Woodland
(*Quercus garryana*-*Pinus ponderosa* woodlands)

475 Oregon white oak-ponderosa pine/bitterbrush/poison oak

Oregon White Oak-California Oak Woodland
(*Quercus garryana*-*Quercus kelloggii* woodlands)

476 Oregon oak-California oak/Douglas fir-ponderosa pine pasture

Oregon White Oak-Douglas Fir Woodlands
(*Quercus garryana*-*Pseudotsuga menziesii* woodlands)

505 Douglas fir-Oregon white oak forests and woodlands

Oregon White Oak-California Oak-Pacific Madrone Woodlands
(*Quercus garryana*-*Quercus kelloggii*-*Arbutus menziesii* woodlands)

506 oak-Pacific madrone forests and woodlands

Douglas Fir-Tanoak-Pacific Madrone Forests
(*Pseudotsuga menziesii*-*Lithocarpus densiflorus*-*Arbutus menziesii* forests)

507 Siskiyou mixed evergreen forests

Bigleaf Maple-Red Alder-Douglas Fir Forests
(*Acer macrophyllum*-*Alnus rubra*-*Pseudotsuga menziesii* forests)

510 mixed evergreen broadleaf deciduous forests

Douglas Fir Forests
(*Pseudotsuga menziesii* forests)

511 Douglas fir-true fir-ponderosa pine (western larch)
512 Douglas fir-western hemlock-western red cedar forests
513 silver fir-western hemlock-nobel fir forests
523 Douglas fir-ponderosa pine-incense cedar forests

Jeffery Pine Forests
(*Pinus jefferyi* woodlands)

508 Sierra-type mixed conifer woodland on ultramafic substrate

White Fir-Douglas Fir-Incense Cedar Forests
(*Abies concolor*-*Pseudotsuga menziesii*-*Libocedros decurrens* forests)

509 Siskiyou-Sierra mixed conifer forest

Ponderosa Pine Forests
(*Pinus ponderosa* forests)

503 ponderosa pine forest and woodlands
504 ponderosa pine forests and woodlands on pumace
528 ponderosa pine-Douglas fir-true fir
534 ponderosa pine-lodgepole pine
535 ponderosa pine-Oregon white oak

Ponderosa Pine-Douglas Fir Forests
(*Pinus ponderosa*-*Pseudotsuga menziesii* forests)

527 ponderosa pine-Douglas fir (western larch-lodgepole pine)
537 western larch-Douglas fir-ponderosa pine-lodgepole pine

White Fir-Grand Fir Forests
(*Abies concolor*-*Abies grandis* forests)

- 522 true fir-Douglas fir forests
- 530 true fir-lodgepole pine-western larch (Douglas fir)
- 532 true fir-lodgepole pine

Lodgepole Pine Forests
(*Pinus contorta* forests)

- 514 montane lodgepole pine forest
- 515 subalpine lodgepole pine forests
- 516 montane lodgepole pine forest and woodland on pumice
- 531 montane lodgepole pine-true fir
- 538 montane lodgepole pine-western larch

Western Larch-Douglas Fir-White Fir Forests
(*Larix occidentalis*-*Pseudotsuga menziesii*-*Abies concolor* forests)

- 541 western larch-Douglas fir-true fir

Subalpine Fir-Englemann Spruce Forests
(*Abies lasiocarpa*-*Picea engelmannii* forests)

- 518 subalpine fir-Engelman spruce forests and woodlands

Mountain Hemlock-Red Fir Forests
(*Tsuga mertensiana*-*Abies magnifica* var. *shastensis* forests)

- 519 mountain hemlock-Shasta fir forests and woodlands

Mountain Hemlock Forests
(*Tsuga mertensiana* forests)

- 517 mountain hemlock forests and woodlands
- 533 mountain hemlock-subalpine fir-lodgepole pine
- 536 mountain hemlock-true fir-lodgepole pine
- 544 mountain hemlock parkland

Red Fir Forests
(*Abies magnifica* var. *shastensis* forests)

- 548 high elevation (>5,000 ft) Sierra-type mixed conifer forest

The following descriptions of Oregon vegetation types are arranged in numerical order by map code. Not all three numeral combinations were used. This provided flexibility in the assignment of codes during the mapping process and will allow the addition of new codes within a numerical sequence.

Map codes reflect five general vegetation groups:

100 SERIES

Codes 001-040 are used for landscape cover types, grasslands and wetlands as well as riparian and alpine vegetation types.

300 SERIES

Codes 298-391 are used for shrublands and other non-forested vegetation types, including quaking aspen groves.

400 SERIES

Codes 401-476 are used for woodlands (primarily juniper woodlands with a sagebrush understory, but also Oregon white oak woodlands).

500 SERIES

Codes 501-548 are used for coniferous and mixed forest vegetation types.

600, 700, 800 SERIES

Codes 600-817 are used for vegetation polygons in which there is a mosaic of two vegetation types (See Appendix 3 for details).

MAPCODE: 001
MAPNAME: Annual grasslands

COMNAMES: cheatgrass and other annual grasslands

ACRONAME: BROTEC
CROSSWALK:

VEGSTRUCT: Open to dense, low (< 0.5 m) annual grasses. Weedy native and exotic annual forbs may also be present, or even dominant. Native bunchgrasses and shrubs may be locally common.

ECOLOGY: Can be the result of hot fires, unsuccessful seedings, historic overgrazing, or abandoned farming.

DISTRIBUT: Common throughout much of eastern Oregon. Most abundant in Columbia Basin, Hells Canyon, and in southeastern Oregon.

DIAGGRASS: *Bromus tectorum* dominates most areas. *B. commutatus*, *B. mollis*, *Tanietantherum caput-medusae* all dominate some areas. Plants of these bunchgrasses are also occasionally found: *Agropyron spicatum*, *Aristida longiseta*, *Festuca idahoensis*, *Oryzopsis hymenoides*, *Poa nevadensis*, *P. secunda*, *Spiroboris cryptandrus*, *Stipa comata*, *S. thurberiana*.

DIAGSHRUB: *Chrysothamnus nausosus* and *C. viscidiflorus* often are common. *Artemisia tridentata* also occurs locally.

DIAGTREES:

FORBS: Weedy forbs such as *Sisymbrium* species, *Erodium cicutarium*, *Centaurea* species, *Salsola kali* and *Cirsium* species can be common.

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 500 UPPER-ELEVATION: 5000

UPDATE: 90-02-06 JSK

MAPCODE: 002

MAPNAME: Agricultural cropland and pastureland

COMNAMES: Agricultural cropland and improved pasturelands

VEGSTRUCT: Generally low stature annual cropland and intensively grazed pastureland. Fruit tree orchards and vineyards occur locally.

DISTRIBUT: Major type throughout southern Idaho, and parts of northern Idaho. May include patches and corridors of shrub and/or tree-dominated types.

LOWER-ELEVATION: 750

UPPER-ELEVATION: 5000

MAPCODE: 003

MAPNAME: Urban and industrial

COMNAMES: urban and industrial areas

ACRONAME:

CROSSWALK:

VEGSTRUCT: Usually a mosaic of cultural features and exotic deciduous forest.

DISTRIBUT: Urban and industrial areas throughout Oregon.

LOWER-ELEVATION: 10

UPPER-ELEVATION: 5000

MAPCODE: 004

MAPNAME: Perennial bunchgrass seedings

COMNAMES: crested wheatgrass and other perennial bunchgrass seedings

ACRONAME: AGRCRI

CROSSWALK:

VEGSTRUCT: Somewhat open to dense, medium tall (< 1 m) bunchgrass community with few forbs.
Annual grasses may be abundant.

ECOLOGY: Usually deep soiled areas, in sagebrush steppe.

DISTRIBUT: Major type throughout much of eastern Oregon.

DIAGGRASS: numerous cultivars have been introduced

DIAGTREES: None

OTHSHRUB: *Artemisia tridentata* ssp. *tridentata*, *A. tridentata* ssp.
wyomingensis, *Chrysothamnus nauseosus*, *C. viscidiflorus*

OTHTREES: None.

LOWER-ELEVATION: 2300

UPPER-ELEVATION: 5000

MAPCODE: 005

MAPNAME: Brushfields. Largely defined by the westside, recent clearcut areas. Different from mountain brush & chaparral

COMNAMES: Brushfields

ACRONAME:

CROSSWALK:

VEGSTRUCT: Not distinguishable from recent timber harvest areas (010)

ECOLOGY:

DISTRIBUT:

DIAGGRASS:

DIAGSHRUB:

DIAGTREES:

FORBS:

OTHSHRUB:

OTHTREES:

LOWER-ELEVATION:
UPDATE:

UPPER-ELEVATION:

MAPCODE: 007

MAPNAME: Coastal Sand Dunes, Spits and Beaches, including shorepine.

COMNAMES: American and European beachgrass, shorepine, seashore bluegrass and lupine.

ACRONAME: ELYMOL dunes, LUPLIT-POAMAC, FESRUB stabilized dunes, GALSHA-VACOVA shrub dunes, and dune forests.

CROSSWALK:

VEGSTRUCT: Open coastal sand dunes with areas partially to totally stabilized by introduced grasses and shrubs, native grasses, shrubs, and tree islands. Mostly open dunes, pine forests, and beachgrass, with extensive deflation plain wetlands between dunes.

ECOLOGY: Unstabilized to stabilized sandy areas, varying widely in size and structure. Entirely coastal, with salt spray and desiccation a major ecological factor.

DISTRIBUT: Along the ocean. Concentrations are just south of Columbia River, between Netarts and Sand Lake, between Florence and Reedsport (Oregon Dunes NRA), and at the mouth of other major rivers.

DIAGGRASS: *Ammophila arenaria* (introduced) is the most common dune grass. Natives include *Elymus mollis* and *Poa macrantha* in unstabilized areas, *Festuca rubra* and *Danthonia californica* in more stabilized areas with *Anthoxanthum odoratum*. Wetlands with *Juncus*, *Carex*

DIAGSHRUB: *Gaultheria shallon*, *Vaccinium ovatum*, *Arctostaphylos uva-ursi*, *A. columbiana*, and *Lupinus arborimus* and *Baccharis pilularis* in the south. Deflation plain wetlands have *Salix hookeriana*, *Ledum glandulosum*, *Myrica californica*, and *Spiraea douglasii*. Both *Cytisus scoparius* and *Ulex europaeus* (introduced) dominate disturbed areas.

DIAGTREES: Dune islands have *Picea sitchensis*, *Pseudotsuga menziesii*, *Tsuga heterophylla*, and *Chamaecyparis lawsoniana* (in southern Oregon). *Pinus contorta* is the most widespread tree species in the dunes.

FORBS: *Lupinus littoralis*

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 1

UPPER-ELEVATION: 500

UPDATE: 90-06-06 JSK

MAPCODE: 008
MAPNAME: Inland sand dunes

COMNAMES: Shrub dominated, inland sand dunes

ACRONAME: ATRCAN/ORYHYM

CROSSWALK: ATRCAN/ORYHYM, ELYCIN, ARTTRI-PUTTRI/ORYHYM-STICOM, ATRSPI-SARVER/ORYHYM, ARTTRI-ATRCAN-SARVER/ORYHYM

VEGSTRUCT: Open sand dunes with medium-tall shrubs. Occasional bunchgrasses, rhizomatous grasses and FORBS occur among widely spaced shrubs.

ECOLOGY: Inland sand dunes, on flats at the margins of inland, playa basins. Alkaline, sands in the inland basins, more similar to salt desert shrublands, and non-saline sands along the Columbia and Snake Rivers.

DISTRIBUT: Along the Columbia River, between The Dalles and Boardman in the Columbia Basin, and in the Basin & Range, mostly along the eastern edge of playa basins. The most significant are the Alvord, Catlow, Guano and Christmas Valley Dunes.

DIAGGRASS: *Oryzopsis hymenoides* is the characteristic grass. *Stipa comata*, *Agropyron dasystachum*, and *Sitanian hystrix* also are important In the Columbia Basin, while *Sporobolus airoides* is important in the Basin and Range. Annual grasses (*Bromus* sp.) occur also.

DIAGSHRUB: *Artemisia tridentata*, *Tetrademia spinosa* & *Purshia tridentata* occur on most dunes in the Columbia Basin. In the Basin & Range, *Atriplex canescens*, *Artemisia spinescens*, *Tetrademia spinosa*, and *Chrysothamnus nauseosus*, and *C. viscidiflorus* are most important

DIAGTREES: Trees rarely occur in these dunes, although occasional *Juniperus occidentalis* trees are found.

FORBS: *Oenothera caespitosa*, *O. scapoidea*, *Astragalus geyeri* (B&R), *A. succumbens* and *A. sclerocarpus* (CB), *Penstemon acuminatus*, *Chaetadelpa wheeleri*, *Malacothrix sonchoides* and *Lupinus* species.

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 100
UPDATE: 90-02-02 JSK

UPPER-ELEVATION: 5000

MAPCODE: 009
MAPNAME: Open water

COMNAMES: Open water

ACRONAME:
CROSSWALK:

VEGSTRUCT:

ECOLOGY:

DISTRIBUT:

DIAGGRASS:

DIAGSHRUB:

DIAGTREES:

FORBS:

OTHSHRUB:

OTHTREES:

LOWER-ELEVATION:
UPDATE:

UPPER-ELEVATION:

MAPCODE: 010
MAPNAME: Recent timber harvest areas

COMNAMES: Recent timber harvest areas

ACRONAME:
CROSSWALK:

VEGSTRUCT:

ECOLOGY:

DISTRIBUT:

DIAGGRASS:

DIAGSHRUB:

DIAGTREES:

FORBS:

OTHSHRUB:

OTHTREES:

LOWER-ELEVATION:
UPDATE:

UPPER-ELEVATION:

MAPCODE: 011
MAPNAME: *Agropyron spicatum*

COMNAMES: bluebunch wheatgrass

ACRONAME: AGRSPI
CROSSWALK: AGRSPI, ARTTRI/AGRSPI

VEGSTRUCT: A grassland community dominated by tall grasses, with occasional shrubs, including some tall and low shrubs. Can be lacking in forbs if a result of spraying, or can be fairly natural if a result of fire.

ECOLOGY: Variable type, on rocky flats, steep slopes, and plains. A result of brush removal by chaining or spraying, or from natural fires.

DISTRIBUT: Common throughout the southern High Lava Plains and Basin and Range, in Lake, Harney and Malheur Counties, and southern Deschutes and Crook Counties. Occurs too often in southeastern Oregon.

DIAGGRASS: *Agropyron spicatum* dominates the understory. *Poa secunda* is usually present. *Sitanian hystrix*, *Festuca idahoensis*, *Stipa occidentalis*, and *S. thurberiana* can be locally important. Annual grasses are almost always present, with *Bromus tectorum* being the most widespread increaser with cattle grazing.

DIAGSHRUB: *Chrysothamnus nausoseus* and *C. viscidiflorus* usually occur in this community.

DIAGTREES: None.

FORBS: Forbs are occasionally entirely absent. *Astragalus purshii*, *Achillea millefolium*, *Eriogonum* and *Erigeron* species can be important.

OTHSHRUB: Occasional individuals of *Artemisia tridentata* shrubs can be usually found.

OTHTREES: *Juniperus occidentalis* often occurs as individuals in this type.

LOWER-ELEVATION: 4000 UPPER-ELEVATION: 6000

UPDATE: 90-04-13 JSK

MAPCODE: 012
MAPNAME: Sitanian hystrix

COMNAMES: bottlebrush squirreltail

ACRONAME: SITHYS
CROSSWALK: SITHYS, ARTTRI/SITHYS

VEGSTRUCT: A grassland community dominated by tall grasses, with occasional shrubs, including some tall and low shrubs. Can be lacking in forbs if a result of spraying, or can be fairly natural if a result of fire.

ECOLOGY: Occurs on flats and slopes. Often widespread as a result of brush control (chaining or spraying of herbicides). Occasionally the result of a wildfire.

DISTRIBUT: Common throughout the southern High Lava Plains and Basin and Range, in Lake, Harney and Malheur Counties, and southern Deschutes and Crook Counties. Occurs as a major type in southeastern Oregon.

DIAGGRASS: Sitanian hystrix dominates the understory, and is often the only grass. *Poa secunda*, *Agropyron spicatum*, *Stipa occidentalis*, and *S. thurberiana* can be locally important. Annual grasses are often important, with *Bromus tectorum* being the most widespread.

DIAGSHRUB: None.

DIAGTREES: None.

FORBS:

OTHSHRUB: *Chrysothamnus* species are often important. *Gutierrezia* and *Tetradymia* species and *Artemisia tridentata* occur as occasional individuals.

OTHTREES:

LOWER-ELEVATION: 4000
UPDATE: 90-06-06 JSK

UPPER-ELEVATION: 6000

MAPCODE: 013
MAPNAME: Poa secunda

COMNAMES: Sandberg bluegrass

ACRONAME: POASEC
CROSSWALK: POASEC, ARTTRI/POASEC

VEGSTRUCT: A grassland community dominated by short grasses, with occasional shrubs, including some tall and low shrubs. Can be lacking in forbs if a result of spraying.

ECOLOGY: Shallow soiled areas, usually on flats or gentle slopes. Typically basalt scablands or compacted, stony volcanic soils. A result of brush control efforts (spraying or chaining) in areas, or from fire or edaphic conditions.

DISTRIBUT: Uncommon but regular throughout the southern High Lava Plains and Basin and Range, in Lake, Harney and Malheur Counties, and southern Deschutes and Crook Counties.

DIAGGRASS: Poa sandbergii is the dominant and often the only grass. Agropyron spicatum, Sitanian hystris, Stipa occidentalis, and S. thurberiana, and other Poa species (nevadensis, canbyi, or scrabrella) can be locally important. Annual grasses are occasionally important, with Bromus tectorum being the most widespread increaser with cattle grazing.

DIAGSHRUB: Chrysothamnus species often occurs in this type.

DIAGTREES: None.

FORBS:

OTHSHRUB: Artemisia tridentata, A. arbuscula and Purshia tridentata can occur occasionally in this type.

OTHTREES: Juniperus occidentalis can occur as individuals in this type.

LOWER-ELEVATION: 4000 UPPER-ELEVATION: 6000
UPDATE: 90-05-23 JSK

MAPCODE: 015
MAPNAME: Sandy palouse grasslands.

COMNAMES: Bluebunch wheatgrass-Sandberg bluegrass-needle-and-thread grasslands

ACRONAME: AGRSPI-POASEC-STICOM

CROSSWALK: Includes AGRSPI-POASEC, STICOM-POASEC, AGRSPI-STICOM, and AGRDAS-STICOM communities.

VEGSTRUCT: Medium-tall grasslands with scattered shrub patches, primarily big sagebrush, bitterbrush and rabbitbrush.

ECOLOGY: On flat, gentle slopes with dry, deep loess, sandy soils. Often occurs in a patchwork with sand dunes and dune shrublands.

DISTRIBUT: The Columbia Basin of Oregon, at low elevations by the Columbia River, from Arlington to Pendleton. Largely replaced by wheat, with most remnants near Boardman or Arlington, in Wheeler and Morrow Counties.

DIAGGRASS: *Agropyron spicatum*, *Stipa occidentalis*, and *Poa secunda* are the characteristic dominants. *Bromus tectorum* often is codominant, depending on the condition having up to 50% cover.

DIAGSHRUB: *Chrysothamnus* spp. are common associates. *Artemisia tridentata* occurs in areas with deeper soils, *Purshia tridentata* in the sandy, flats. *Tetrademia* and other weedy shrubs occur.

DIAGTREES: None.

FORBS:

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 1000
UPDATE: 90-01-31 JSK

UPPER-ELEVATION: 2500

MAPCODE: 016
MAPNAME: Agropyron spicatum canyon grasslands

COMNAMES: Bluebunch wheatgrass-Idaho fescue-Sandberg bluegrass canyon grassland

ACRONAME: AGRSPI-FESIDA-POASEC

CROSSWALK: Includes AGRSPI-POASEC, AGRSPI-BALSAG, AND AGRSPI-FESIDA canyon types.

VEGSTRUCT: Medium-tall grasslands with scattered shrub patches. Often found in a mosaic with Sandberg bluegrass and rigid sagebrush scablands, and with sagebrush and juniper steppe.

ECOLOGY: Occurs on steep, shallow soiled areas, on basaltic substrates, occasionally with loess patches.

DISTRIBUT: In Columbia Plateau and in High Lava Plains of north central Oregon, in Wasco, Sherman, Morrow & Wheeler Cos. Also occasionally found in the Owyhee Uplands and the East Slope of the Cascades Provinces. Uncommon in canyons of the Basin and Range.

DIAGGRASS: Agropyron spicatum is the characteristic grass. Poa sandbergii is codominant. Festuca idahoensis can be codominant on north slopes, but is characteristic of other canyon grasslands. Stipa occidentalis, Koeleria nitida, and Bromus tectorum occur here.

DIAGSHRUB: Cercocarpus ledifolius, Artemisia tridentata, Purshia tridentata, Prunus sp., Holidiscus discolor, Berberis sp., and other central Oregon canyon shrubs are occasionally found here. Shrub cover is always extremely low in this grassland type.

DIAGTREES: Isolated Juniperus occidentalis and Pinus ponderosa trees are occasionally found in this type.

FORBS: Balsamorhiza sagittata is characteristic. Phlox longifolia, Eriogonum heracleoides,

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 100
UPDATE: 90-01-30 JSK

UPPER-ELEVATION: 5000

MAPCODE: 017
MAPNAME: Festuca idahoensis canyon grasslands

COMNAMES: Idaho fescue-Junegrass canyon grassland

ACRONAME: FESIDA-AGRSPI-KOENIT

CROSSWALK: Includes FESIDA-KOENIT Canyon types, Hell's Canyon grass & shrublands:
PHYMAL/AGRSPI, RHUGLA/AGRSPI, AGRSPI-OPUPOL

VEGSTRUCT: Medium-tall grasslands with scattered shrub patches. A mosaic of Fescue, bluebunch wheatgrass, and junegrass slopes with canyon shrubs (hackberry, ninebark, smooth sumac, snowberry, serviceberry, and hawthorn).

ECOLOGY: Occurs on steep canyon slopes, and occasional ridges. Often with loess deposits over basalt, but always with some soil development.

DISTRIBUT: Primarily in the Blue Mountains of northeastern Oregon. Extensive in the Hell's Canyon area, and occurring throughout Wallowa, Union, eastern Umatilla and Baker Co. Occasional in the southern parts of the Columbia Basin in Wasco, Sherman, and Morrow Co

DIAGGRASS: Festuca idahoensis is the characteristic grass. Agropyron spicatum, Koeleria nitida, and Poa sandbergii area codominant. Moist sites have Stipa occidentalis, Elymus glaucus, and E. cinereus. Spirobilis cryptandrus and Aristida longeseta occur on river

DIAGSHRUB: Physocarpus malvacioides, Amelanchier alnifolia, Rhus glabra, Celtis reticulata, Symphoricarpos albus, Berberis sp., Glossopetalon nevadense and Cercocarpus ledifolius. Shrub cover is various. The majority of the type is grasslands but shrub dominated patches are not uncommon.

DIAGTREES: Isolated Pinus ponderosa trees are common in this type.

FORBS: Balsamorhiza sagittata is characteristic. Phlox colubrina, Eriogonum heracleoides,

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 100
UPDATE: 90-06-05 JSK

UPPER-ELEVATION: 5000

MAPCODE: 018
MAPNAME: Lava Fields

COMNAMES: Lava Fields

ACRONAME:
CROSSWALK:

VEGSTRUCT: Unvegetated recent lava flows.

ECOLOGY:

DISTRIBUT:

DIAGGRASS:

DIAGSHRUB:

DIAGTREES:

FORBS:

OTHSHRUB:

OTHTREES:

LOWER-ELEVATION: UPPER-ELEVATION:
UPDATE:

MAPCODE: 020

MAPNAME: Crataegus douglasii riparian and bottomlands. (maybe combine with 022 (willow riparian) since it is so limited now.

COMNAMES: black hawthorn riparian and bottomlands

ACRONAME: CRADOU

CROSSWALK: CRADOU/ELYCIN, CRADOU-SALEXI/ROSWOO, CRADOU/FESIDA, CRADOU/SYMALB

VEGSTRUCT: Tall shrubland or short, riparian woodland (3-6 meters tall), including partially closed canopy to very open canopy areas with grasslands, sedge wetlands interspersed, and low shrubs in the understory of the closed canopy areas.

ECOLOGY: These are riparian areas in broad, low elevation floodplains. They require seasonal flooding, but are low gradient and are rarely scoured. They are quite sensitive to heavy grazing.

DISTRIBUT: Formerly widespread along the low elevation, low gradient streams in eastern Oregon, primarily in the Columbia Basin and Blue Mountains. Only common now in the Grand Ronde Valley of Union County.

DIAGGRASS: Elymus cinereus is the most important native. Carex species, Deschampsia cespitosa, Elymus glaucus, Festuca rubra, Agropyron caninum, and Poa secunda occur. Weedy grasses include Phleum pratense, Alopecurus pratensis, Poa pratensis, P. compressa, Bromustectorum, B. inermis, and Festuca arundinacea.

DIAGSHRUB: Rosa woodsii, Symphoricarpos albus, Amelanchier alnifolia, and Berberis and Ribes species occur in the understory. Occasionally, Cornus stolonifera is found.

DIAGTREES: Crataegus douglasii is the dominant tree or tall shrub. Populus tremuloides, P. trichocarpa, Betula occidentalis, Alnus incana, A. rhombifolia, Salix lasiandra and S. exigua all occasionally occur as well, but only Crataegus is dominant.

FORBS: Hiracleum lanatum is often important in the understory.

OTHTREES: Pinus ponderosa and Juniperus occidentalis occasionally occur in the riparian bottoms with Crataegus.

LOWER-ELEVATION: 200

UPPER-ELEVATION: 2500

UPDATE: 90-08-01 JSK

MAPNAME: Populus trichocarpa riparian

ACRONAME: POPTRI

UPDATE: 90-06-06 JSK

MAPCODE: 022
MAPNAME: Salix spp. floodplain riparian

COMNAMES: willow species floodplain riparian

ACRONAME: SALIX
CROSSWALK:

VEGSTRUCT: Tall shrub communities with dense cover of willows, occasionally interspersed with wetlands, sedge meadows or moist, forb rich, grasslands.

ECOLOGY: Occurs on broad valley floors as well as narrow riparian canyons, along rivers and streams.

DISTRIBUT: Major riparian type throughout eastern Oregon, including the basin and range. Major rivers usually have some cottonwood, except in some sites in the East Slope of the Cascades, and in the Basin and Range provinces.

DIAGGRASS: Clamagrostis canadensis, Elymus glaucus, Poa palustris, P. pratensis, Bromus tectorum.

DIAGTREES: Salix species (S. lasiandra, S. exigua, S. rigida, S. bebbiana, S. boothii, S. lemmonii, and S. geyeriana are the most important willows).

OTHSHRUB: Artemisia cana, A. tridentata, Crataegus douglasii, Lonicera involucrata, Ribes species, Rosa woodsii, Symphoricarpos albus.

OTHTREES: Populus tremuloides, P. trichocarpa, Alnus incana.

LOWER-ELEVATION: 1000
UPDATE: 90-06-06 JSK

UPPER-ELEVATION: 7000

MAPCODE: 024
MAPNAME: Fescue palouse grasslands.

COMNAMES: Idaho fescue-Bluebunch wheatgrass-Sandberg bluegrass palouse grasslands

ACRONAME: FESIDA-AGRSPI-POASEC

CROSSWALK: Includes AGRSPI-FESIDA, FESIDA-AGRSPI, AND POASEC-ERIO SCABLAND communities. ARTTRI/FESIDA LOESS SHRUBLAND included here

VEGSTRUCT: Medium-tall grasslands with few shrubs (only isolated rabbitbrush in poor condition areas, or big sagebrush by drainages. Diverse and forb rich communities.

ECOLOGY: On flat to gentle slopes with deep silty loess soils. Often occurs in a patchwork with Sandberg bluegrass scablands and canyon grasslands.

DISTRIBUT: The Columbia Basin of Oregon, at mid elevations between the sandy, low elevation grasslands and the Blue Mountains. Largely replaced by wheat. In Wasco, Wheeler, Sherman, and Umatilla Counties.

DIAGGRASS: *Festuca idahoensis*, *Agropyron spicatum*, and *Poa secunda* are the characteristic dominants. *Bromus tectorum* often is codominant, depending on the condition having up to 25% cover. *Koeleria cristata* and *Elymus cinereus* are locally important.

DIAGSHRUB: *Chrysothamnus* spp. are common associates. *Artemisia tridentata* occurs by stream drainages.

DIAGTREES: None.

FORBS: *Astragalus conjunctus*, *Lupinus latifolius*, *Eriogonum heracleoides*, *Balsamorhiza sagittata*, *Phlox longifolia*, *Achillea millefolium*, *Erigeron* sp.

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 1500
UPDATE: 90-01-31 JSK

UPPER-ELEVATION: 4000

MAPCODE: 025
MAPNAME: Plateau grasslands

COMNAMES: Idaho fescue-junegrass plateau, ridgetop and palouse grasslands

ACRONAME: FESIDA-KOENIT
CROSSWALK: FESIDA-KOENIT, FESIDA-SYMLB, FESIDA-ROSA, DANUNI-POASEC, ERIOG-POASEC

VEGSTRUCT: Medium-tall grasslands with scattered and diverse low shrub patches, but little big sagebrush. Very dense and diverse forb cover, with many of the bunchgrasses showing rhizomatous character.

ECOLOGY: Moist deep loess soils, occasionally in a patchwork with basalt scablands, or as biscuit scablands or Mima Mounds.

DISTRIBUT: Plateaus of northeastern Oregon, usually within Ponderosa pine forests. Large areas in Wallowa, Grant, Umatilla, and Union Counties. Intergrades with canyon grasslands in Hell's Canyon.

DIAGGRASS: *Festuca idahoensis* and *Koeleria nidita*. *Agropyron spicatum*, *Stipa occidentalis*, *Poa secunda*, and *Elymus glaucus* are occasionally important. Scablands are dominated by *Danthonia unispicata* and *Poa secunda*.

DIAGSHRUB: Isolated patches of *Symphoricarpos albus*, *Rosa* sp., *Crataegus douglasii*, and *Spiraea betulifolia*. Scablands are alternately dominated by Sandberg bluegrass or *Artemisia rigida*.

DIAGTREES: None.

FORBS: *Geum triflorum*, *Lithofragma bulbifera*, *Agoseris glauca*, *Brodiaea douglasii*, *Castilleja*, *Eriogonum* species.

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 2500
UPDATE: 90-01-30 JSK

UPPER-ELEVATION: 6000

MAPCODE: 026
MAPNAME: Montane and alpine fescue grasslands.

COMNAMES: Sheep fescue, green fescue and Idaho fescue montane grasslands

ACRONAME: FESVIR, FESIDA, FESVI, POASCR
CROSSWALK: FESVIR-LUPLAT, CARHOO-FESVIR, FESVI AND FESIDA-POASCR MONTANE GRASSLAND

VEGSTRUCT: Low to medium tall montane grasslands, fairly open. Range from forb rich to grass-sedge dominated. In northeastern Oregon they occur in a matrix with whitebark pine, in the Steens with aspen.

ECOLOGY: Occurs on steep to gentle slopes and occasional ridges, with montane meadows, scree slopes and parkland interspersed. Always in areas with some soil development.

DISTRIBUT: Ridges and slopes in the Wallowa Mountains of northeastern Oregon and in the Steens and isolated high peaks in the Basin and Range Province of southeastern Oregon.

DIAGGRASS: *Festuca idahoensis*, *Festuca ovina*, *Festuca viridula*, and *Poa scabrella* are all important species. *Carex hoodii*, *C. geyeri*, *C. rossii*, *Juncus parryi*, *Stipa occidentalis*, *Sitanian hystrix*, and *Trisetum spicatum* are locally important.

DIAGSHRUB: *Artemisia tridentata* ssp. *vaseyana* often occurs in these grasslands. *Artemisia arbuscula* also is found in scablands.

DIAGTREES: *Pinus albicaulis*, *Abies lasiocarpa*, and *Pinus flexilis* (in Wallowa Mts.); *Populus tremuloides* and *Cercocarpus ledifolius* (in Steens).

FORBS: *Lupinus laxiflorus*, *L. leucophyllus*, *L. lepidus*, *Agoseris glauca*, *Polygonum phytolaccaefolium*, *Arenaria* sp., *Eriogonum ovalifolium*, *Erigeron compositus*, *Achillea millefolium*.

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 7000
UPDATE: 90-02-01 JSK

UPPER-ELEVATION: 10000

MAPCODE: 030
MAPNAME: Phalaris arundinaceae

COMNAMES: Reed canary grass wetland

ACRONAME: PHAARU
CROSSWALK: PHAARU

VEGSTRUCT: Uniform, dense tall grassland in seasonally flooded areas, usually lake margins.

ECOLOGY: Occurs in disturbed areas, usually lake margins of shallow, man-made lakes.
Occasionally in riparian areas.

DISTRIBUT: Widely distributed throughout Oregon, occurring in most areas with large wetlands. Only a major type along the Columbia River and in the Willamette Valley.

DIAGGRASS: Phalaris arundinaceae dominates, often being the only grass. Carex obnupta, C. unilateralis, Deschampsia caespitosa and Hordeum brachyantherum are occasionally found.

DIAGSHRUBS: None. Spiraea douglasii is occasionally found.

DIAGTREES: None, although Fraxinus latifolia, Salix and Crataegus all are occasionally found nearby.

LOWER-ELEVATION: 10
UPDATE: 90-08-01 JSK

UPPER-ELEVATION: 4000

MAPCODE: 031
MAPNAME: Scirpus acutus-Typha latifolia-Sparganium marsh

COMNAMES: hardstem bulrush-cattail-burreed marsh

ACRONAME: SCIACU
CROSSWALK: SCIACU, SCIACU-TYPLAT, SPAEME, SCIVAL, TYPLAT, SCIMAR, PHRAUS

VEGSTRUCT: Open to dense, nearly monotypic, of tall (2 m) bulrush species. Usually found in standing water through much of the growing season. Patches of other tall emergent graminoids are common, especially in disturbed areas.

ECOLOGY: Marshes and wetlands in closed basins, in a mosaic with open water, often by lakeshores.

DISTRIBUT: Occurs in wet areas throughout Oregon, but very common in Klamath County. Large occurrences also found in the lake basins of Lake and Harney Counties.

DIAGGRASS: Scirpus acutus, S. validus, S. maritimus, S. americanus, and S. olneyi, Typha latifolia, Sparganium emersum are the most important graminoids. Carex rostrata, C. vesicaria, C. sitchensis and other Carex species occur in and around this type, along with Eleocharis and Juncus species.

DIAGSHRUB: Salix species occasionally occur along margins or in patches within this type.

DIAGTREES: None, although occurrences are found in riparian areas with Populus trichocarpa and Betula occidentalis.

FORBS: No forbs are found in this community. Aquatic plants such as Utricularia, Polygonum and Potamogeton often occur in patches of open water.

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 4000
UPDATE: 90-02-05 JSK

UPPER-ELEVATION: 6500

MAPCODE: 032
MAPNAME: Estuarine Saltmarsh

COMNAMES: Saltmarsh

ACRONAME: SCIMAR
CROSSWALK:

VEGSTRUCT: Vegetated or unvegetated intertidal marshes, dominated by sedge, rush, bulrush, forbs with silty, sandy or rocky substrates.

ECOLOGY: These are diverse areas characterized by the mixture of saltwater and freshwater input.

DISTRIBUT: Occurs along the coast, at the mouth of rivers and streams, and along the Columbia River.

DIAGGRASS: *Agrostis alba*, *Deschampsia caespitosa*, *Carex lyngbyei*, *Juncus balticus*, *Scirpus maritimus*, *S. americanus*, *S. olynei*, *Distichlis spicata*.

DIAGSHRUBS: None.

DIAGTREES: None.

FORBS: *Triglochin maritimum*, *Jamea carnosus*, *Salicornia virginica*.

LOWER-ELEVATION: 0
UPDATE: 90-08-01 JSK

UPPER-ELEVATION: 10

MAPCODE: 035
MAPNAME: Alkaline grasslands and seasonal wetlands

COMNAMES: Alkaline grasslands and seasonal wetlands

ACRONAME: DISSTR, ELYTRI, POAJUN, PUCLEM, ELEPAL
CROSSWALK: DISSTR, ELYTRI, POAJUN, PUCLEM, ELEPAL, DESCAE-CAREX, DISSTR-(SCINEV),
ELYTRI-POAJUN, POANEV-PUCLEM-SITHYS

VEGSTRUCT: Graminoid dominated, usually seasonal wetlands with low to medium tall grasses, rushes or sedges, with occasional forbs. Usually fairly continuous cover of graminoids, but occasionally with more widely spaced bunchgrasses on an alkali playa.

ECOLOGY: Flat, poorly drained floodplains, in internally drained basins or historic lake basins.

DISTRIBUT: Occurs in northeastern Oregon valley bottoms (Columbia, Powder, Grand Ronde, Willow Creek & Malheur River basins (Union, Baker & northern Malheur Cos), and in alkaline areas with perennial moisture in the Basin and Range of Lake, Harney and Malheur Cos.

DIAGGRASS:

DIAGSHRUB: None.

DIAGTREES: None.

FORBS:

OTHSHRUB: *Sarcobatus vermiculatus* found nearby, and occasionally in this type, and occasionally *Artemisia cana* is found.

OTHTREES: Riparian species such as *Alnus incana*, *Salix exigua*, *S. lasiandra*, and *Crataegus douglasii* or the introduced *Elaeagnus angustifolia* occur occasionally in the northern areas. No trees found in the Great Basin sites.

LOWER-ELEVATION: 2500
UPDATE: 90-06-05 JSK

UPPER-ELEVATION: 5000

MAPCODE: 036
MAPNAME: Carex montane meadows and wetlands.

COMNAMES: Sedge montane meadows and wetlands.

ACRONAME: CARNEB, CARVES, CARROS, CARAQU, CARSIT, CAREUR
CROSSWALK: CARNEB, CARVES, CARROS, CARAQU, CARSIT, CAREUR

VEGSTRUCT: Tall sedge meadows and wetlands, with dense, rhizomatous or tufted sedges. Usually these are forb poor.

ECOLOGY: Occurs on clay, pluvial deposits within alluvial montane meadows, along stream channels with *Alnus*, *Salix* or *Crataegus* riparian, or in seasonal stream channels. Sites are flat, with cool winters and a short growing season.

DISTRIBUT: Montane meadows in the Blue and Ochoco Mountains of central and northeastern Oregon, and in the valleys in the east slope of the Cascades. Most extensive in Klamath, Deschutes and western Lake Counties.

DIAGGRASS: Diverse sedges dominate various meadow, the most important are: *Carex sitchensis*, *C. rostrata*, *C. vesicaria*, *C. aquatilis*, *C. nevadensis*, and *C. eurycarpa*. *Deschampsia caespitosa* is the most important grass, occurring at the drier margins.

DIAGSHRUB: *Salix* species dominate streams which run through these meadows.

DIAGTREES: None.

FORBS: *Potentilla gracilis*, *Geum* sp., *Lupinus* sp., *Lomatium triternatum*

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 3000
UPDATE: 90-06-05 JSK

UPPER-ELEVATION: 7000

MAPCODE: 038

MAPNAME: Deschampsia caespitosa-Poa montane meadows.

COMNAMES: Tufted hairgrass - bluegrass montane meadows

ACRONAME: DESC AE, POANEV, POACUS

CROSSWALK: DESC AE-HORBRA, POANEV, POACUS, DESC AE-CAREX

VEGSTRUCT: Tall montane meadow grasslands, with dense, tufted grasses. These range from forb rich to grass-sedge dominated. Occasionally with hawthorn or willow riparian shrub, or silver sagebrush or black greasewood.

ECOLOGY: On silty alluvium in montane and high elevation valley bottoms, on flats, and occasionally found within riparian mosaic. In lower eastern Oregon valleys, is also found at moist sites adjacent to alkaline grasslands.

DISTRIBUT: Montane meadows in the Blue and Ochoco Mountains of central and northeastern Oregon, and in the valleys in the east slope of the Cascades. Is most extensive in Klamath and western Lake Counties.

DIAGGRASS: Deschampsia caespitosa is the most important and dominant species. In some areas Poa nevadensis or P. cusickii are entirely dominant. Poa pratensis dominates overgrazed areas, and is widespread. Danthonia californica, Hordeum brachyantherum, Festuca rubra, and Agropyron caninum are important in areas. Carex and Juncus species also are codominant in wetter margins.

DIAGSHRUB: Artemisia tridentata ssp. vaseyana, A. cana, and Crataegus douglasii often occur along the margins of this type. Salix species dominate streams which run through these meadows.

DIAGTREES: None.

FORBS: Potentilla gracilis, Geum sp., Lupinus sp., Lomatium triternatum

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 3000

UPPER-ELEVATION: 7000

UPDATE: 90-02-06 JSK

MAPCODE: 039
MAPNAME: Deschampsia caespitosa valley wet prairie

COMNAMES: Tufted hairgrass valley prairie

ACRONAME: DESCAE, DESCAE-DANCAL
CROSSWALK:

VEGSTRUCT: Open bunchgrass prairie, with widely spaced, tufted tall grasses and diverse forbs between, usually seasonally flooded from November to May.

ECOLOGY: Pluvial clay bottomlands, which are invaded by *Fraxinus latifolia* with fire suppression.

DISTRIBUT: Most common in the southern Willamette Valley. Formerly widespread in the Willamette and Umpqua Valleys, and occasional in the Rogue.

DIAGGRASS: *Deschampsia caespitosa*, *Hordeum brachyantherum*, *Danthonia californica*, *Festuca rubra*, *Carex unilateralis*, *C. aurea*, *Juncus oxymersis*, *J. tenuis*, and *Agrostis exarata* are important natives (with *Deschampsia* occasionally dominating totally). Introduced species are *Festuca arundinacea*, *Anthoxanthum odoratum*, *Cynosurus cristatus* and *Aira caryophyllaea*.

DIAGSHRUBS: None.

DIAGTREES: None.

OTHSHRUBS: *Spiraea douglasii* is often present, and *Rosa nutkana* also is usually present in varying amounts. *Vaccinium myrtillus* is found in some areas.

OTHTREES: *Fraxinus latifolia* invades these habitats. *Quercus garryana* is occasionally found.

FORBS: *Aster hallii*, *Aster curtus*, *Erigeron decumbens*, *Mentha arvensis*, *Grindelia integrifolia*, *Lomatium bradshawii*, *Gentiana septemloba*, *Plagiobothrys figuratus*, and *Centaurea umbellata*.

LOWER-ELEVATION: 50
UPDATE: 90-08-01 JSK

UPPER-ELEVATION: 600

MAPCODE: 040
MAPNAME: Alpine communities

COMNAMES: Alpine communities

ACRONAME: PHYEMP
CROSSWALK: PHYEMP, CASMER, CARSPE, TRISPI

VEGSTRUCT: Open to closed communities of dwarf (< 0.3 m) shrubs, graminoids, and forbs, usually occurring in a complex mosaic. Also includes talusslopes, boulderfields, cliffs and crevice habitats.

ECOLOGY: Steep slopes, cliffs, fell-fields and other rocky, alpine areas. Little soil development and no trees (except for krummholz). Characterized by very cold, snowy winters and short growing season.

DISTRIBUT: Major type at upper elevations in the Wallowa Mountains, and in the Cascades. Minor type in the Siskiyou Mountains, the Elkhorn Range of the Blue Mountains and the Strawberry Mountains.

DIAGGRASS: *Carex spectabilis*, *C. nigra*, *Deschampsia atropurpurea*, *D. cespitosa*, *Festuca idahoensis*, *F. ovina*, *Poa epilis*, *Trisetum spicatum*.

DIAGSHRUB: *Phyllodoce empetriformis*, *Cassiope mertensiana*, *Potentilla futicosa*, *Juniperus communis*.

DIAGTREES: None.

FORBS: *Agoseris glauca*, *Antennaria alpina*, *Arenaria congesta*, *Astragalus alpinus*, *Astragalus kentrophyta*, *Bupleurum americanum*, *Cymopterus bipinnatus*, *Draba densifolia*, *Erigeron compositus*, *E. simplex*, *Eritrichium nanum*, *Lupinus argenteus*, *Saxifraga rhomboidea*.

OTHSHRUB: *Artemisia tridentata* ssp. *vaseyana*, *Phlox pulvinata*, *Potentilla diversifolia*, *P. ovina*, *Ribes montigenum*. Also includes dwarf trees of *Pinus albicaulis*, *Abies lasiocarpa* and *Tsuga mertensiana*.

OTHTREES: None.

LOWER-ELEVATION: 9000
UPDATE: 90-05-08 JSK

UPPER-ELEVATION: 12000

MAPNAME: Artemisia tridentata/Stipa comata

ACRONAME: ARTTRI/STICOM

VEGSTRUCT: Tall to medium tall shrubland with medium tall, widely spaced bunchgrasses.

DISTRIBUT: Widespread in the southern Basin and Range of Lake and Harney Counties. Occasional in the southern parts of the Owyhee Uplands (Malheur County). Occurs often but in very small pockets in the Columbia Basin (although is somewhat different there).

DIAGSHRUB: *Artemisia tridentata* is the dominant and only important shrub. *Chrysothamnus* species are almost always present, along with *Tetrademia* and *Purshia tridentata*, which are occasionally present.

FORBS: Forbs make up little of the cover in this sandy type. The most significant include *Astragalus*, *Cryptantha*, *Oenothera* (Check tum tum lake plant list).

OTHTREES: *Juniperus occidentalis* and *Shepherdia argentea* occasionally occur in this type.

UPPER-ELEVATION: 4000

UPDATE: 90-06-13 JSK

MAPCODE: 299
MAPNAME: *Artemisia tridentata*/Bromus tectorum

COMNAMES: big sagebrush/cheatgrass

ACRONAME: ARTTRI/BROTEC
CROSSWALK: ARTTRI/BROTEC

VEGSTRUCT: Tall to medium tall shrubland with a cheatgrass understory. Varies from very dense sagebrush cover to widely spaced shrubs - but the understory is constant.

ECOLOGY: An ubiquitous type throughout eastern Oregon, on all slopes, aspects and soils. A result of disturbance, often overgrazing, failed agriculture or seedings, or very hot fires.

DISTRIBUT: Found everywhere in eastern Oregon. Most prevalent in the sagebrush plains of the southern High Lava Plains and the Basin and Range, but not uncommon in the Owyhee Uplands, the Columbia Basin and the sagebrush zone of the Blue Mountains.

DIAGGRASS: Bromus tectorum is the dominant grass, making up most of the cover. Individuals of Sitianian hystrix and Poa secunda are usually present. Plants of other native bunchgrasses can sometimes be found.

DIAGSHRUB: Artemisia tridentata is the dominant and characteristic shrub. Chrysothamnus nauseosus, C. viscidiflorus, Guttierrezia sarothrae are often present and can be codominant.

DIAGTREES: None.

FORBS: Characterized by weedy mustards (Sisymbrium and Lepidium species), Opuntia polyacantha (in areas), and Erodium cicutarium.

OTHSHRUB:

OTHTREES:

LOWER-ELEVATION: 100
UPDATE: 90-06-08 JSK

UPPER-ELEVATION: 6000

MAPCODE: 300
MAPNAME: *Artemisia tridentata*/*Elymus cinereus*

COMNAMES: big sagebrush/basin wildrye

ACRONAME: ARTTRI/ELYCIN
CROSSWALK: ARTTRI/ELYCIN, ARTTRI/AGRDAS

VEGSTRUCT: Tall to medium tall shrubland with tall, widely spaced bunchgrasses.

ECOLOGY: Occurs in moist playas or along stream bottoms, or occasionally in sandy areas. Non-sandy soils are usually moderately but not extremely alkaline, but better drained than *Artemisia cana* bottoms. Sandy areas include alluvial flats and seasonal drainages.

DISTRIBUT: Widespread in the Basin and Range of Lake and Harney Counties. Occasional in the Owyhee Uplands (Malheur County), and in the Columbia Basin.

DIAGGRASS: *Elymus cinereus* is the typical dominant. In some sandy areas or playas, *Agropyron dasystichium* is dominant. *Stipa comata*, *Oryzopsis hymenoides*, and *Bromus tectorum* are often found.

DIAGSHRUB: *Artemisia tridentata* is the dominant and only important shrub. *Chrysothamnus* species are almost always present, along with *Tetrademia* and *Purshia tridentata*, which are occasionally present.

DIAGTREES: No trees occur in this habitat.

FORBS: This is a forb poor type.

OTHSHRUB:

OTHTREES: *Juniperus occidentalis* and *Shepherdia argentea* occasionally occur in this type.

LOWER-ELEVATION: 500
UPDATE: 90-05-25 JSK

UPPER-ELEVATION: 4000

MAPCODE: 301
MAPNAME: *Artemisia tridentata*/Agropyron spicatum

COMNAMES: big sagebrush/bluebunch wheatgrass

ACRONAME: ARTTRI/AGRSPI
CROSSWALK: ARTTRI/AGRSPI, ARTTRIW/AGRSPI, ARTTRIT/ARTSPI

VEGSTRUCT: Tall shrub community in which Wyoming and basin big sagebrush predominate. Patches of a low shrub community in which low sagebrush predominates may be common, especially on shallow soils. Low, early blooming bunchgrasses predominate between the shrubs.

ECOLOGY: Occurs on flats, benches, canyon slopes and foothills. Widespread and diverse, including all aspects, slopes and many soil types. Rarely on very shallow soils.

DISTRIBUT: Very common throughout the southern High Lava Plains and Basin and Range, in Lake, Harney and Malheur Counties, and southern Deschutes and Crook Counties. Occurs throughout eastern Oregon.

DIAGGRASS: Agropyron spicatum dominates the understory, usually with some *Poa secunda*. *Sitanian hystrix*, *Festuca idahoensis*, *Stipa occidentalis*, and *S. thurberiana* can be found. *Bromus tectorum* is ubiquitous in all but the most pristine sites, often being codominant.

DIAGSHRUB: *Artemisia tridentata* dominates. *Artemisia arbuscula* or *A. rigida* communities occur in shallow soiled areas typical of this type. *Chrysothamnus viscidiflorus*, *C. nauseosus* and *Gutierrezia sarothrae* occur in disturbed areas.

DIAGTREES: None.

FORBS: *Achillea millefolium*, *Balsamorhiza sagittata*, *Eriogonum*, *Erigeron*, *Astragalus*, and *Phlox* species.

OTHSHRUB:

OTHTREES: *Juniperus occidentalis* often occurs as individuals in this type. It also dominates narrow canyons which occur in this type, along with *Cercocarpus ledifolius*.

LOWER-ELEVATION: 1000
UPDATE: 90-06-07 JSK

UPPER-ELEVATION: 6000

MAPCODE: 303
MAPNAME: *Artemisia tridentata*/*Festuca idahoensis*

COMNAMES: big sagebrush/Idaho fescue

ACRONAME: ARTTRI/FESIDA
CROSSWALK: ARTTRI/FESIDA, ARTTRIW/FESIDA, ARTTRIT/FESIDA

VEGSTRUCT: Tall shrub community in which Wyoming and basin big sagebrush predominate. Patches of a low shrub community in which low sagebrush predominates may occur. Low, early blooming bunchgrasses predominate between the shrubs.

ECOLOGY: Occurs on deeper soiled flats, plateaus and slopes. The highest elevation regular sagebrush type, occurring primarily in the mountains of the Basin and Range. In central and northern Oregon, it occurs on north slopes at lower elevations, at other moist sites.

DISTRIBUT: Common throughout the southern High Lava Plains and Basin and Range, in Lake, Harney and Malheur Counties, and southern Deschutes and Crook Counties. Occurs as a major type in southeastern Oregon.

DIAGGRASS: *Poa sandbergii* dominates the understory, and is often the only grass. *Agropyron spicatum*, *Sitanian hystris*, *Stipa occidentalis*, and *S. thurberiana*, and other *Poa* species (*nevadensis*, *canbyi*, or *scrabrella*) can be locally important. Annual grasses are rarely important, but *Bromus tectorum* increases with cattle grazing.

DIAGSHRUB: *Artemisia tridentata* dominates. *Artemisia arbuscula* communities occur in shallow soiled areas typical of this type. *Chrysothamnus viscidiflorus*, *C. nauseosus* and *Gutierrezia sarothrae* occur in disturbed areas.

DIAGTREES: None.

FORBS:

OTHSHRUB:

OTHTREES: *Juniperus occidentalis* often occurs as individuals in this type. It also dominates narrow canyons which occur in this type, along with *Cercocarpus ledifolius*.

LOWER-ELEVATION: 4000
UPDATE: 90-04-13 JSK

UPPER-ELEVATION: 6000

MAPCODE: 304
MAPNAME: *Artemisia tridentata*/*Poa secunda*

COMNAMES: big sagebrush/Sandberg bluegrass

ACRONAME: ARTTRI/POASEC
CROSSWALK: ARTTRI/POASEC, ARTTRI/POASAN

VEGSTRUCT: Tall shrub community in which Wyoming and basin big sagebrush predominate. Patches of a low shrub community in which low sagebrush predominates are common, especially on very shallow soils. Low, early blooming bunchgrasses predominate between the shrubs

ECOLOGY: Extremely widespread type, on shallow soiled, stony or cobbly plains which have enough soil to support some big sagebrush. Could be an artifact of grazing in some shallow soiled areas.

DISTRIBUT: Common throughout the southern High Lava Plains and Basin and Range, in Lake, Harney and Malheur Counties, and southern Deschutes and Crook Counties. Occurs as a major type in southeastern Oregon.

DIAGGRASS: *Poa sandbergii* dominates the understory, and is often the only grass. *Agropyron spicatum*, *Sitanian hystris*, *Stipa occidentalis*, and *S. thurberiana*, and other *Poa* species (*nevadensis*, *canbyi*, or *scrabrella*) can be locally important. Annual grasses are rarely important, but *Bromus tectorum* increases with cattle grazing.

DIAGSHRUB: *Artemisia tridentata* dominates. *Artemisia arbuscula* communities occur in shallow soiled areas typical of this type. *Chrysothamnus viscidiflorus*, *C. nauseosus* and *Gutierrezia sarothrae* occur in disturbed areas.

DIAGTREES: None.

FORBS:

OTHSHRUB:

OTHTREES: *Juniperus occidentalis* often occurs as individuals in this type. It also dominates narrow canyons which occur in this type, along with *Cercocarpus ledifolius*.

LOWER-ELEVATION: 4000 UPPER-ELEVATION: 6000
UPDATE: 90-04-13 JSK

MAPCODE: 305
MAPNAME: *Artemisia tridentata*/Sitianian hystrix

COMNAMES: big sagebrush/bottlebrush squirreltail

ACRONAME: ARTTRI/SITHYS
CROSSWALK: ARTTRI/SITHYS, ARTTRIW/SITHYS, ARTTRIT/SITHYS

VEGSTRUCT: Tall shrub community in which Wyoming and basin big sagebrush predominate. Patches of a low shrub community in which low sagebrush predominates may occur. Tall bunchgrasses predominate between the shrubs.

ECOLOGY: Occurs on sandy, moist, or moderately alkaline sagebrush plains. Is the most disturbance-linked natural type, and may be disturbed SITTHU, ELYCIN, STICOM or AGRSPI types. However, this may be an edaphic type in areas.

DISTRIBUT: Common and widespread throughout the southern High Lava Plains and Basin and Range, in Lake, Harney and Malheur Counties, and southern Deschutes and Crook Counties. Occurs as a major type in southeastern Oregon.

DIAGGRASS: Sitianian hysirix dominates the understory, usually with significant amounts of *Poa secunda*. *Agropyron spicatum*, *Stipa occidentalis*, *S. thurberiana*, and *Elymus cinereus* can be locally important, but usually occurs as isolated plants. *Bromus tectorum* is usually present, and often important.

DIAGSHRUB: *Artemisia tridentata* dominates. *Artemisia arbuscula* communities occur in shallow soiled areas typical of this type. *Chrysothamnus viscidiflorus*, *C. nauseosus* and *Gutierrezia sarothrae* occur in disturbed areas. *Atriplex confertifolia* occurs in semi-alkaline areas, while *Purshia tridentata* and *Artemisia cana* often occur in or near this type.

DIAGTREES: None.

FORBS:

OTHSHRUB:

OTHTREES: *Juniperus occidentalis* often occurs as individuals in this type. It also dominates narrow canyons which occur in this type, along with *Cercocarpus ledifolius*.

LOWER-ELEVATION: 4000
UPDATE: 90-06-13 JSK

UPPER-ELEVATION: 6000

MAPCODE: 306
MAPNAME: *Artemisia tridentata*/*Stipa occidentalis*

COMNAMES: big sagebrush/western needlegrass

ACRONAME: ARTTRI/STIOCC
CROSSWALK: ARTTRI/STIOCC, ARTTRIW/STIOCC, ARTTRIT/STIOCC

VEGSTRUCT: Tall shrub community in which Wyoming and basin big sagebrush predominate. Tall bunchgrasses predominate between the shrubs.

ECOLOGY: Sandy to silty sandy flats, plateaus and dry stream drainages, rarely in very stony areas, usually with fairly deep soils.

DISTRIBUT: A minor type in the southwestern High Lava Plains and northwestern Basin and Range, in northern Lake and southern Deschutes and Crook Counties. Also occurs as pockets in western juniper habitats in central Deschutes County.

DIAGGRASS: *Stipa occidentalis* dominates the understory. *Agropyron spicatum*, *Sitanian hystrix*, *Festuca idahoensis*, and *Stipa thurberiana* and *Poa sandbergii* can be locally important. *Bromus tectorum* and *Poa bulbosa* increase with heavy cattle grazing and can be codominant.

DIAGSHRUB: *Artemisia tridentata* dominates. *Purshia tridentata* occurs in moister areas, and can occasionally be important. *Chrysothamnus viscidiflorus*, *C. nauseosus* and *Gutierrezia sarothrae* occur in disturbed areas.

DIAGTREES: *Juniperus occidentalis* often occurs along the margins of this community. In central Deschutes County, *Pinus ponderosa* also occurs in this type.

FORBS:

OTHSHRUB:

OTHTREES: *Juniperus occidentalis* often occurs as individuals in this type. It also dominates narrow canyons which occur in this type, along with *Cercocarpus ledifolius*.

LOWER-ELEVATION: 3500 UPPER-ELEVATION: 5000
UPDATE: 90-05-08 JSK

MAPCODE: 307
MAPNAME: *Artemisia tridentata*/*Stipa thurberiana*

COMNAMES: big sagebrush/Thurbers needlegrass

ACRONAME: ARTTRI/STITHU
CROSSWALK: ARTTRI/STITHU, ARTTRIW/STITHU, ARTTRIT/STITHU

VEGSTRUCT: Tall shrub community in which Wyoming and basin big sagebrush predominate. Patches of a low shrub community in which low sagebrush predominates may occur. Tall bunchgrasses predominate between the shrubs.

ECOLOGY: Occurs on moderately deep soiled plains and slopes. Found on all slopes and aspects. Very similar to Big sagebrush/bluebunch wheatgrass, but on slightly more sandy or gravelly soils.

DISTRIBUT: Common throughout the southern High Lava Plains and Basin and Range, in Lake, Harney and Malheur Counties, and southern Deschutes and Crook Counties. Occurs as a major type in southeastern Oregon.

DIAGGRASS: *Stipa thurberiana* dominates the understory, although *Poa secunda* is usually present. *Agropyron spicatum*, *Sitanian hystrix*, *Stipa occidentalis*, *S. comata*, and *Oryzopsis hymenoides* can also sometimes be found. *Bromus tectorum* is usually present, especially in disturbed or overgrazed areas.

DIAGSHRUB: *Artemisia tridentata* dominates. *Artemisia arbuscula* communities occur in shallow soiled areas typical of this type. *Chrysothamnus viscidiflorus*, *C. nauseosus* and *Gutierrezia sarothrae* occur in disturbed areas.

DIAGTREES: None.

FORBS:

OTHSHRUB:

OTHTREES: *Juniperus occidentalis* often occurs as individuals in this type. It also dominates narrow canyons which occur in this type, along with *Cercocarpus ledifolius*.

LOWER-ELEVATION: 4000 UPPER-ELEVATION: 6000
UPDATE: 90-04-13 JSK

MAPCODE: 308
MAPNAME: *Artemisia tridentata*/Agropyron cristatum

COMNAMES: big sagebrush/crested wheatgrass

ACRONAME: ARTTRI/AGRCRI
CROSSWALK: ARTTRI/AGRCRI, ARTTRIW/AGRCRI, ARTTRIT/ARTCRI

VEGSTRUCT: Tall shrub community in which Wyoming and basin big sagebrush predominate. Patches of a low shrub community in which low sagebrush predominates may be common, especially on shallow soils. Low, early blooming bunchgrasses predominate between the shrubs.

ECOLOGY: This is an old crested wheatgrass seeding which has been reinvaded by big sagebrush. Usually on flats to gentle slopes, with moderately deep soils - rarely very stony. Often very depauperate flora and fauna in these areas.

DISTRIBUT: Common throughout the southern High Lava Plains and Basin and Range, in Lake, Harney and Malheur Counties, and southern Deschutes and Crook Counties. Occurs as a major type in southeastern Oregon.

DIAGGRASS: Agropyron cristatum dominates the understory, and is often the only grass. Agropyron spicatum, Sitanian hystrix, Stipa occidentalis, and S. thurberiana, and Poa secunda occur, along with Bromus tectorum.

DIAGSHRUB: Artemisia tridentata dominates. Artemisia arbuscula communities occur in shallow soiled areas typical of this type. Chrysothamnus viscidiflorus, C. nauseosus and Gutierrezia sarothrae occur in disturbed areas.

DIAGTREES: None.

FORBS:

OTHSHRUB:

OTHTREES: Juniperus occidentalis often occurs as individuals in this type. It also dominates narrow canyons which occur in this type, along with Cercocarpus ledifolius.

LOWER-ELEVATION: 3500 UPPER-ELEVATION: 6000
UPDATE: 90-04-13 JSK

MAPCODE: 309
MAPNAME: Artemisia tridentata lava fields

COMNAMES: big sagebrush lava fields

ACRONAME: ARTTRI LAVA
CROSSWALK:

VEGSTRUCT: Barren lava fields with occasional isolated patches of tall shrub communities in which Wyoming and basin big sagebrush predominate. Low shrub communities in which low sagebrush predominates may also occur.

ECOLOGY: Includes barren, recent lava flows, and lava flows with big sagebrush inclusions (kapukas), and recently invaded flows. All are flat or include very gentle slopes.

DISTRIBUT: Recent lava fields of the central and southeastern High Desert Area, primarily in Owyhee Uplands, Malheur Lake Basin, and Christmas Valley, but distributed throughout southeastern Oregon.

DIAGGRASS: Agropyron spicatum and Poa sandbergii are the most common grasses. Elymus cinereus dominates some sites. Stipa sp., Festuca idahoensis, and Koeleria nitida also occur. However, bare lava characterizes this type.

DIAGSHRUB: Artemisia tridentata is the principal dominant. Artemisia arbuscula is common at certain sites. Chrysothamnus viscidiflorus and C. nauseosus are also associates.

DIAGTREES: None.

FORBS:

OTSHRUB: Philadelphus lewisii, Ribes aureum, Purshia tridentata.

OTHTREES:

LOWER-ELEVATION: 4500
UPDATE: 90-01-31 JSK

UPPER-ELEVATION: 5500

MAPCODE: 310
MAPNAME: *Artemisia tridentata* ash beds

COMNAMES: big sagebrush ash beds

ACRONAME: ARTTRI ASH
CROSSWALK:

VEGSTRUCT: Mosaic of barren or forb dominated ash beds, and tall shrub communities in which big sagebrush predominates. Western juniper is occasionally codominant in vegetated areas, as well as in the ash deposits.

ECOLOGY: Typical sagebrush steppe including flats, gentle to steep slopes of all exposures.

DISTRIBUT: Exposed ash beds are widespread in the John Day basin of central Oregon, Wheeler & Grant Cos (Fossil Beds National Monument), as well as in the northern and central Owyhee Uplands, Malheur Co. (Honeycombs, Leslie Gulch, Succor Cr.) and in southern Baker Co.

DIAGGRASS: Ash beds are barren or forb dominated. Around the beds, *Agropyron spicatum*, *Festuca idahoensis* and *Poa sandbergii* are the most common grasses. *Elymus cinereus* dominates some sites. *Stipa thurberiana*, *S. comata*, *Sporobolus cryptandrus* and *Oryzopsis hymenoides* also are locally important.

DIAGSHRUB: *Artemisia tridentata* is the principal dominant. *Atriplex confertifolia*, *Perophyllum ramossissum*, *Purshia tridentata*, and *Cercocarpus ledifolius* are common at certain sites. *Chrysothamnus viscidiflorus* and *C. nauseosus* are also constant associates.

DIAGTREES: *Juniperus occidentalis* is occasionally codominant with *Artemisia tridentata* around ash beds.

FORBS: *Lepidium*, *Sphaeralphia*, *Chaenactis*, *Cleome*, *Mentzelia*, *Polygonum*, *Phspecies*, and *Phacelia lutea*. Many endemic forbs occur on these ash beds.

OTHSHRUB:

OTHTREES: None.

LOWER-ELEVATION: 2000
UPDATE: 90-06-06 JSK

UPPER-ELEVATION: 5000

MAPCODE: 311
MAPNAME: *Artemisia tripartata*.

COMNAMES: three-tip sagebrush/bunchgrass

ACRONAME: ARTTRI2
CROSSWALK: ARTTRI2/AGRSPI, ARTTRI2/FESIDA, ARTTRI2/SITHYS

VEGSTRUCT: Medium tall shrubland with medium to tall bunchgrasses, usually in areas with developed soils, often forb rich.

ECOLOGY: Moist site type, on deep alluvial, loess or silty soils, often in along valley margins.

DISTRIBUT: Occurs occasionally in the Blue Mountains, in Baker and Union County, and more abundantly in the Basin and Range Province in central and Eastern Harney County.

DIAGGRASS: *Festuca idahoensis*, *Agropyron spicatum*, *Stipa thurberiana*, *Sitanian hystrix*, and *Poa secunda* can all be dominant on these sites. (In the Blue Mountains, *Festuca idahoensis* usually dominates, while further south the others are more important). *Bromus tectorum* can be important at sites, and individuals of *Elymus cinereus* can be found.

DIAGSHRUB: *Artemisia tripartita* is the dominant shrub. *Artemisia tridentata* is usually present, as are *Chrysothamnus* species.

DIAGTREES: None.

FORBS: *Castilleja*, *Eriogonum*, *Astragalus*, *Orthocarpus*, *Antennaria* and *Phlox* species can be important.

OTHSHRUB: *Purshia tridentata*, *Perophyllum ramossisum*.

OTHTREES:

LOWER-ELEVATION: 3500
UPDATE: 90-06-13 JSK

UPPER-ELEVATION: 4500

MAPCODE: 312
MAPNAME: *Artemisia arbuscula*-*Artemisia tridentata* ssp. *vaseyana*/*Festuca idahoensis*

COMNAMES: low sagebrush-mountain big sagebrush/Idaho fescue

ACRONAME: ARTARB-ARTTRIV/FESIDA
CROSSWALK: ARTTRIV/FESIDA, ARTARB/FESIDA, ARTARB-ARTTRIV/FESIDA

VEGSTRUCT: A mosaic of tall and low shrub communities in which mountain big sagebrush predominates, but low sagebrush is common, especially on shallow soils.

ECOLOGY: A reoccurring mosaic of low sagebrush and mountain big sagebrush, Idaho fescue communities, on high plateaus in the desert mountains. Occurs on shallow basalts, with mountain big sagebrush occurring in the deep soiled patches.

DISTRIBUT: Found most commonly in the Steens, Oregon Canyon, Trout Creek, Pueblo and Hart Mountains of Lake, Harney and Malheur Cos. Also found in southern portions of the Blue Mountains in Malheur, Harney and Grant Cos.

DIAGGRASS: *Festuca idahoensis* is the dominant grass. *Danthonia californica*, *Koeleria nidita*, *Stipa occidentalis*, *Poa secunda*, *Agropyron spicatum*, *Festuca ovina* and *Sitanian hystrix* are all found in this type.

DIAGSHRUB: *Artemisia tridentata* ssp. *vaseyana* and *A. arbuscula* are the dominant shrubs, comprising most of the cover.

DIAGTREES: None.

FORBS:

OTHSHRUB: *Artemisia cana*, *A. tripartita*, *A. nova*, *A. rigida*, *Purshia tridentata*, *Symphoricarpos orephilus*.

OTHTREES: *Juniperus occidentalis* is occasionally found, as is *Populus tremuloides*.

LOWER-ELEVATION: 5000
UPDATE: 90-06-06 JSK

UPPER-ELEVATION: 7500

MAPCODE: 313
MAPNAME: *Artemisia arbuscula*/Agropyron spicatum

COMNAMES: low sagebrush/bluebunch wheatgrass

ACRONAME: ARTARB/AGRSP
CROSSWALK: ARTARB/AGRSP

VEGSTRUCT: Low shrub communities or low to medium shrub mosaics in which low sagebrush is dominant, typically dominated by tall bunchgrasses.

ECOLOGY: On flats, plateaus or gentle slopes with little soil development and extensive areas with exposed rock, gravel or compacted soil.

DISTRIBUT: A minor type which is widely distributed in the Owyhee uplands in southeastern Malheur County, and throughout Lake, Harney, and Malheur County. Usually occurs on low, scabby plateaus above lake basins.

DIAGGRASS: Agropyron spicatum and Poa sandbergii are the dominant grasses. Sitanian hystrix and Stipa thurberiana are found at low cover values. Koeleria nitida, Festuca idahoensis, Poa scabrella, and Danthonia unispicata occasionally occur. Bromus tectorum increases with heavy disturbance.

DIAGSHRUB: Artemisia arbuscula is the primary dominant, and often the only shrub present. In areas, these low sage stands are extensive, but occasionally occur in a mosaic with Artemisia tridentata or Juniperus occidentalis steppe. Purshia tridentata is occasionally found as well.

DIAGTREES: None.

FORBS:

OTHSHRUB: Artemisia nova

OTHTREES: None.

LOWER-ELEVATION: 3500
UPDATE: 90-02-12 JSK

UPPER-ELEVATION: 6500

MAPCODE: 314
MAPNAME: *Artemisia arbuscula*/*Festuca idahoensis*

COMNAMES: low sagebrush/Idaho fescue

ACRONAME: ARTARB/FESIDA
CROSSWALK: ARTARB/FESIDA

VEGSTRUCT: Low shrub communities or low to medium shrub mosaics in which low sagebrush is dominant, typically dominated by tall bunchgrasses.

ECOLOGY: Shallow soiled scablands or plateaus with compacted, stony volcanic soil, or areas with little soil development, on moist sites.

DISTRIBUT: A minor type which is widely distributed in the Owyhee uplands in southeastern Malheur County, and throughout Lake, Harney, and Malheur County.

DIAGGRASS: *Festuca idahoensis* is the dominant grasses. *Koeleria nitida* and *Poa secunda* are usually present. *Agropyron spicatum*, *Stipa occidentalis*, and *Danthonia unispicata* occasionally occur. *Poa bulbosa* and *Bromus tectorum* increase with disturbance.

DIAGSHRUB: *Artemisia arbuscula* is the primary dominant, and often the only shrub present. In areas, these low sage stands are extensive, but occasionally occur in a mosaic with *Artemisia tridentata* or *Juniperus occidentalis* steppe. *Purshia tridentata* is occasionally found as well.

DIAGTREES: None.

FORBS: *Eriogonum*, *Erigeron* and *Phlox* species.

OTHSHRUB: *Artemisia nova*, *A. rigida*, *A. tridentata* and *Purshia tridentata*.

OTHTREES: *Pinus ponderosa* and *Juniperus occidentalis* occur as individuals.

LOWER-ELEVATION: 5000
UPDATE: 90-02-12 JSK

UPPER-ELEVATION: 6500

MAPCODE: 315
MAPNAME: *Artemisia arbuscula*/*Poa secunda*

COMNAMES: low sagebrush/Sandbergs bluegrass

ACRONAME: ARTARB/POASEC
CROSSWALK: ARTARB/POASEC

VEGSTRUCT: Low shrub communities or low to medium shrub mosaics in which low sagebrush is dominant, typically dominated by short bunchgrasses.

ECOLOGY: These are the shallowest soiled scablands. Occurring on plateaus and gentle slopes. The sites have extensive areas of exposed rock, and often do not have enough vegetation to support wildfires.

DISTRIBUT: One of the most important and widespread types in southeast Oregon. distributed throughout the Owyhee Uplands and the Basin and Range provinces of Lake, Harney, and Malheur County. Also occurs in the High Lava Plains of Crook, Grant, and Baker Cos.

DIAGGRASS: *Poa secunda* is the dominant grasses, making up most of the vegetation cover. *Sitanian hystris*, *Stipa thurberiana*, *Koeleria nitida*, *Festuca idahoensis*, *Agropyron spicatum*, and *Danthonia unispicata* occasionally occur.

DIAGSHRUB: *Artemisia arbuscula* is the primary dominant, and often the only shrub present. In areas, these low sage stands are extensive, but occasionally occur in a mosaic with *Artemisia tridentata* or *Juniperus occidentalis* steppe. *Purshia tridentata* is occasionally found as well.

DIAGTREES: None.

FORBS: *Eriogonum*, *Erigeron* and *Phlox* species.

OTHSHRUB: *Artemisia nova*, *A. cana* (in playas) and *Chrysothamnus nauseosus*.

OTHTREES: None.

LOWER-ELEVATION: 3500
UPDATE: 90-02-12 JSK

UPPER-ELEVATION: 7000

MAPCODE: 316
MAPNAME: *Artemisia arbuscula*/Sitanian hystrix

COMNAMES: low sagebrush/bottlebrush squirreltail

ACRONAME: ARTARB/SITHYS
CROSSWALK: ARTARB/SITHYS, ARTARB/STITHU

VEGSTRUCT: Low shrub communities or low to medium shrub mosaics in which low sagebrush is dominant, typically dominated by tall bunchgrasses, and with little soil development and extensive areas of exposed rock, gravel or soil.

ECOLOGY: Occurs in rocky scablands and shallow soiled plateaus or plains with little soil development and much exposed rock and/or gravel. This is one of two, distinct communities, both which are quite similar to the low sagebrush/bluebunch wheatgrass type.

DISTRIBUT: A minor type which is widely distributed in the Owyhee uplands in southeastern Malheur County, and throughout Lake, Harney, and Malheur County.

DIAGGRASS: *Stipa thurberiana* and/or *Sitanian hystrix* are the dominant grasses. *Poa secunda* is usually present at low cover values. *Koeleria nitida*, *Festuca idahoensis*, and *Agropyron spicatum* occasionally occur. *Bromus tectorum* increases with heavy disturbance.

DIAGSHRUB: *Artemisia arbuscula* is the primary dominant, and often the only shrub present. In areas, these low sage stands are extensive, but occasionally occur in a mosaic with *Artemisia tridentata* or *Juniperus occidentalis* steppe. *Purshia tridentata* is occasionally found as well.

DIAGTREES: None.

FORBS: *Eriogonum*, *Erigeron* and *Phlox* species.

OTHSHRUB: *Artemisia nova*, *A. cana* and *Chrysothamnus* species.

OTHTREES: None.

LOWER-ELEVATION: 3500
UPDATE: 90-02-12 JSK

UPPER-ELEVATION: 6500

MAPCODE: 317
MAPNAME: Artemisia nova/Poa secunda

COMNAMES: black sagebrush/Sandbergs bluegrass

ACRONAME: ARTNOV/POASEC
CROSSWALK: ARTNOV/POASEC

VEGSTRUCT: Low shrub communities or low to medium shrub mosaics in which low sagebrush is dominant, typically dominated by short bunchgrasses.

ECOLOGY: These are the shallowest soiled scablands. Occurring on plateaus and gentle slopes. The sites have extensive areas of exposed rock, and often do not have enough vegetation to support wildfires.

DISTRIBUT: A rare type, occurring along the Nevada Boarder in southern Lake, Harney and Malhuer Cos, in the southern Basin and Range Physiographic Province.

DIAGGRASS: Poa secunda is the dominant grasses, making up most of the vegetation cover. Sitanian hystrix, Stipa thurberiana, Koeleria nitida, Festuca idahoensis, Agropyron spicatum, and Danthonia unispicata occasionally occur.

DIAGSHRUB: Artemisia nova is the primary dominant, and often the only shrub present. In areas, these black sage stands can be extensive, or occur in a mosaic with A. arbuscula, Artemisia tridentata or Juniperus occidentalis steppe. Purshia tridentata is occasionally found as well.

DIAGTREES: None.

FORBS: Eriogonum, Erigeron and Phlox species.

OTHSHRUB: Artemisia arbuscula, A. cana (in playas) and Chrysothamnus nauseosus.

OTHTREES: None.

LOWER-ELEVATION: 4500
UPDATE: 90-02-12 JSK

UPPER-ELEVATION: 7000

MAPCODE: 319
MAPNAME: Artemisia arbuscula-Artemisia nova/Sitanian hystrix

COMNAMES: low sagebrush-black sagebrush/bottlebrush squirreltail

ACRONAME: ARTARB-ARTNOV/SITHYS
CROSSWALK: ARTARB-ARTNOV/SITHYS, ARTNOV/SITHYS

VEGSTRUCT: Low shrub communities in which low sagebrush and black sagebrush are predominant, with low bunchgrasses in the understory.

ECOLOGY: Occurs on flat to gently sloping plateaus, with very shallow soils, usually on basalts.

DISTRIBUT: Minor type in southern Basin and Range, in central and southern Lake, Harney and Malheur Counties.

DIAGGRASS: Sitanian hystrix, Poa secunda, Festuca idahoensis, Elymus glaucus and Stipa species are all found here.

DIAGSHRUB: Artemisia nova, Artemisia arbuscula, and Artemisia tridentata all are found in this assemblage.

DIAGTREES:

FORBS: No forbs described, some present.

OTHSHRUB: A. tridentata ssp. vaseyana, Atriplex spinosa

OTHTREES: Populus tremuloides is found in seeps and moist areas, while Cercocarpus ledifolius is found on cliffs and rocky outcrops at higher elevations.

LOWER-ELEVATION: 4500 UPPER-ELEVATION: 7000
UPDATE: 90-06-07 JSK

MAPCODE: 321
MAPNAME: *Artemisia rigida*/*Poa secunda*

COMNAMES: rigid sagebrush/Sandbergs bluegrass

ACRONAME: ARTRIG/POASEC
CROSSWALK: ARTRIG/POASEC

VEGSTRUCT: Low shrub communities or shrub-bunchgrass mosaics in which rigid sagebrush is dominant with and understory of very short grasses and forbs, and exposed rock and cryptogams.

ECOLOGY: A widespread scabland type, on barren, usually fairly young basalts. Common on ridgetops and gentle slopes around ridgetops. Often in a mosaic with bluebunch wheatgrass canyon grassland, but occasionally in juniper woodlands or Ponderosa pine forests.

DISTRIBUT: A major type which is widely distributed in the High Lava Plains, and the southern canyonlands of the Columbia Basin, and at isolated spots throughout the Blue Mountains. In Wasco, Sherman, Crook, Jefferson, Wheeler, Umatilla, Grant, Wallowa & Union Cos.

DIAGGRASS: *Poa sandbergii* is the dominant grasses, making up most of the vegetative cover. *Danthonia unispicata*, *Stipa occidentalis* and *Oryzopsis hendersonii* are occasionally important. It occurs in a matrix with *Agropyron spicatum* and *Festuca idahoensis* grasslands.

DIAGSHRUB: *Artemisia rigida* is the primary dominant, and often the only shrub present. In areas, these rigid sage stands can be extensive, but usually occur in a mosaic with *Artemisia tridentata* or *Juniperus occidentalis* steppe. *Purshia tridentata* is occasionally found as well.

DIAGTREES: None.

FORBS: *Eriogonum douglasii*, *E. sphaerocephalum*, *E. caespitosum*, *Lewisia rediviva*, *Trifolium macrocephalum*, *Lomatium*, *Collomia*, *Erigeron* and *Arenaria* species.

OTHSHRUB: *Artemisia tridentata*

OTHTREES: None.

LOWER-ELEVATION: 2000
UPDATE: 90-06-07 JSK

UPPER-ELEVATION: 5500

MAPCODE: 322
MAPNAME: *Artemisia tridentata* ssp. *vaseyana*/Poa *secunda*

COMNAMES: mountain big sagebrush/Sandbergs bluegrass

ACRONAME: ARTTRIV/POASEC
CROSSWALK: ARTTRIV/POASEC, ARTTRIV/POANEW

VEGSTRUCT: Medium tall shrubland with widely spaced shrubs, and a short, bunchgrass understory.

ECOLOGY: Occurs on plateaus and rocky flats with minimal soil development (but more than A. arbuscula flats). Bare ground and basalt substrates are typical of this type.

DISTRIBUT: Uncommon but not rare type of the desert mountains of the Basin and Range Province, in southern Harney, Lake and Malheur Cos.

DIAGGRASS: Poa *secunda* is the most important and often the only grass species. Danthonia *unispicata*, Sitanian *hystrix* and Trisetum *canescens* occasionally are found.

DIAGSHRUB: *Artemisia tridentata* ssp. *vaseyana* is dominant. *Artemisia arbuscula* is a constant associate (but never dominates). *Purshia tridentata*, *Symphoricarpos oreophyllus*, and *Cercocarpus ledifolius* often occur.

DIAGTREES: None.

FORBS:

OTHSHRUB:

OTHTREES: *Populus tremuloides* groves are common in and around these habitats. *Juniperus occidentalis* also occasionally occurs.

LOWER-ELEVATION: 6000
UPDATE: 90-06-10 JSK

UPPER-ELEVATION: 8000

MAPCODE: 323
MAPNAME: *Artemisia tridentata* ssp. *vaseyana*/*Festuca idahoensis*

COMNAMES: mountain big sagebrush/Idaho fescue

ACRONAME: ARTTRIV/FESIDA
CROSSWALK: ARTTRIV/FESIDA, ARTTRIV/CARGEY, ARTTRIV/POAAMP, ARTTRIV/FESVIR

VEGSTRUCT: Medium to medium-tall shrubland, varying from widely spaced to fairly dense shrubs, with a bunchgrass and forb understory, and very little bare ground.

ECOLOGY: Deep soiled to stony flats, ridges and mountain slopes. This is the highest elevational sagebrush type, usually occurring in cool, moist areas with some snow.

DISTRIBUT: Common in the higher mountain of the Basin and Range and Owyhee Uplands Provinces of southern Harney, Malheur and Lake Cos. Also common in the Ochoco, Blue and Wallowa Mts. Province of Union, Wallowa, Baker and Grant Cos.

DIAGGRASS: *Festuca idahoensis* is the most common and diagnostic grass, and is always present. Some sites are dominated by *Agropyron caninum*, *Carex geyeri*, *Poa ampla* (or *scrabrella*), or *Festuca viridula*.

DIAGSHRUB: *Artemisia tridentata* ssp. *vaseyana* is the dominant and only important shrub. In the high mountains, it occurs with *Artemisia rigida* or other montane shrubs, while in the Basin and Range, it is commonly with *Artemisia arbuscula*.

DIAGTREES: None, although it often occurs in a matrix with *Cercocarpus ledifolius* and *Populus tremuloides* in the Basin and Range, and with *Juniperus occidentalis*, *Pinus ponderosa*, *P. albicaulis*, and *Abies lasiocarpa* in the Blue and Wallowa Mts.

FORBS: This is a forb rich type. *Castilleja*, *Potentilla* or *Geum*, *Lupinus*, and *Eriogonum* species are characteristic.

OTHSHRUB: *Prunus emarginata*, *Amalanchier alnifolia*, *Symphoricarpus oreophyllus*, *Purshia tridentata*, and *Ceanothus velutinus* occasionally occur in snowbank areas or other moist sites within this type.

OTHTREES:

LOWER-ELEVATION: 6000
UPDATE: 90-06-07 JSK

UPPER-ELEVATION: 9000

MAPCODE: 324
MAPNAME: *Artemisia tridentata* ssp. *vaseyana*/Agropyron spicatum-Sitanian hystrix

COMNAMES: mountain big sagebrush/bluebunch wheatgrass-bottlebrush squirreltail

ACRONAME: ARTTRIV/AGRSPI-SITHYS
CROSSWALK: ARTTRIV/AGRSPI, ARTTIRV/SITHYS, ARTTRIV/STITHU

VEGSTRUCT: Medium to tall shrub community with widely spaced to fairly dense shrubs, and a bunchgrass forb understory.

ECOLOGY: Occurs on rocky flats, plateaus and ridges at higher elevations, often on south and southwest exposures. Occasionally represents degraded mountain sagebrush/fescue communities.

DISTRIBUT: Scattered and not very common at the lower edges of the desert mountains of the Basin and Range and Owyhee Uplands Provinces, in southern Malheur, Harney and Lake Cos.

DIAGGRASS: Sitanian hystrix or *Stipa thurberiana* are the characteristic species. *Agropyron spicatum* can be occasionally important. *Poa secunda* is almost always important. *Bromus tectorum* can be present, but rarely dominates at these higher sites. *Poa bulbosa* and *P. pratensis* are the most significant weeds.

DIAGSHRUB: *Artemisia tridentata* ssp. *vaseyana* is the dominant shrub, making up most of the cover. *Chrysothamnus* species, *Purshia tridentata*, and *Artemisia arbuscula* are usually present, and occasionally important.

DIAGTREES: None.

FORBS: This is a forb rich type.

OTHSHRUB: *Symphoricarpos oreophyllus*

OTHTREES: *Cercocarpus ledifolius*, *Populus tremuloides* and *Juniperus occidentalis* all occur around this habitat.

LOWER-ELEVATION: 6000
UPDATE: 90-06-10 JSK

UPPER-ELEVATION: 8000

MAPCODE: 325
MAPNAME: *Artemisia spinescens*

COMNAMES: budsage

ACRONAME: ARTSPI
CROSSWALK: ARTSPI/SITHYS, ARTSPI/ORYHYM, ARTSPI/STICOM, ARTSPI/POASEC,
ARTSPI/BROTEC

VEGSTRUCT: Salt desert shrubland with widely spaced, mid-sized shrubs with desert pavement, patches of midsized or low bunchgrasses, and extensive bare ground, occasionally with low, alkaline dune ridges.

ECOLOGY: Salt desert shrub type.

DISTRIBUT: Very local type, reported from the alkaline areas around the Alvord Desert and Coyote Lake at the Harney - Malheur Co. border, as well as from southern Lake County. In the Basin and Range Province.

DIAGGRASS: *Stipa comata*, *Sitanian hystrix*, *Oryzopsis hymenoides* and *Poa sandbergii* are native bunchgrasses which can be important. *Bromus tectorum* often dominates overgrazed areas.

DIAGSHRUB: *Artemisia spinescens* is the dominant shrub. *Atriplex spinosa*, *A. confertifolia*, *Sarcobatus vermiculatus*, *Tetradymia nuttallii*, *Erotia lanata*, and *Allenrolfia occidentalis* occasionally occur with this species. *Artemisia tridentata* always occurs at low densities.

DIAGTREES: None

FORBS:

OTHSHRUB:

OTHTREES:

LOWER-ELEVATION: 4000
UPDATE: 90-06-07 JSK

UPPER-ELEVATION: 5000

MAPCODE: 326
MAPNAME: Artemisia cana playa or bottomland

COMNAMES: silver sagebrush playa or bottomland

ACRONAME: ARTCAN
CROSSWALK: ARTCAN/POANEV, ARTCAN/ELYCIN, ARTCAN/AGRCAN, ARTCAN/MUHRIC

VEGSTRUCT: Tall shrub communities with moderately to widely spaced silver sagebrush shrubs. Widely spaced, often robust bunchgrasses usually dominate the understory, although rhizomatous species occasionally occur.

ECOLOGY: Occurs in moist, semi-alkaline flats or valley bottomlands. Two distinct subspecies and types (the low elevation type is ssp. bolanderi). Some of the playas are very large, but most occur in a big sagebrush or juniper landscape. Includes 6 types.

DISTRIBUT: Common in southeastern Oregon, in Lake, Harney, Malheur and sometimes Klamath County. Also occurs in montane meadows in the southern Ochoco and Blue Mountains in Crook, Grant, and Baker Counties, although it tends to be in smaller patches there.

DIAGGRASS: Elymus cinereus is common in the more alkaline areas, with softer, deeper soils and some movement of water. Poa nevadensis, Agropyron caninum, Muhlenbergia richardsonii and Puccinella species can dominate silver sagebrush flats.

DIAGSHRUB: Artemisia cana is the dominant and characteristic shrub. In the northern valleys, Chrysothamnus viscidiflorus is a common (if weedy) associate. This type almost always grades into Artemisia tridentata communities, and rarely occurs with some Sarcobatus vermiculatus.

DIAGTREES: None.

FORBS: This type generally has extensive bare soil. In moist areas, Astragalus, Orthocarpus, Rorippa and species occur.

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 3500
UPDATE: 90-02-05 JSK

UPPER-ELEVATION: 7000

MAPCODE: 327
MAPNAME: Bare playa

COMNAMES: bare playa

ACRONAME:
CROSSWALK:

VEGSTRUCT: Barren alkali flats, characterized by total lack of vegetation, and by annual winter flooding and impoundment. Grasses and annual often succulent forbs occasionally found, along with a rare black greasewood shrub from adjacent greasewood flats.

ECOLOGY: Barren alkali flats, located in Pleistocene lake basins.

DISTRIBUT: Common in southeastern Oregon, in Lake, Harney and Malheur Counties. Most abundant in the larger, alkaline lake basins (Alvord, Summer, Silver, Malheur, Harney, Catlow, and Pueblo Slough), although found throughout the Basin & Range, and Owyhee Provinces

DIAGGRASS: *Distichlis stricta* occurs in patches on playas, and occasionally *Eleocharis*, *Muhlenbergia*, *Elymus* and *Sporobolus* species are found in these unvegetated areas.

DIAGSHRUBS: None.

DIAGTREES: None.

FORBS: The bare playa floor is the characteristic of this type.

OTHSHRUB: *Sarcobatus vermiculatus*, *Atriplex confertifolia* and *Suaeda intermedia*, *Alouenrolfea occidentalis*, *Erotia lanata*, *Tetradymia spinosa*, *T. glabrata* and *Chrysothamnus viscidiflorus* are rarely found in bare playas.

OTHTREES: None.

LOWER-ELEVATION: 3000
UPDATE: 90-02-02 JSK

UPPER-ELEVATION: 7500

MAPCODE: 348
MAPNAME: *Artemisia tridentata*-*Peraphyllum ramosissimum*/*Festuca idahoensis*

COMNAMES: Big sagebrush-squawapple/Idaho fescue

ACRONAME: ARTR-PERA/FEID
CROSSWALK: Unique to southeastern Oregon.

VEGSTRUCT: Open tall shrubland which is a typical sagebrush steppe, having widely spaced, tall to medium shrubs with a bunchgrass, often forb rich understory, usually on rolling hills.

ECOLOGY: Occurs usually in areas with ash or volcanic soils which are fine grained and fairly rich, and at the moist end of sagebrush steppe.

DISTRIBUT: Only discribed from southeastern Oregon in northern Malheur County, southern Baker County and occasionally from northeastern Harney and southeastern Grant County. In the Owyhee Uplands, Blue Mountains and northeastern Basin and Range Provinces.

DIAGGRASS: *Festuca idahoensis* is the dominant grass. *Koeleria cristata*, *Agropyron spicatum*, *Poa secunda* and *Stipa occidentalis* are occasionally important. Around the common ash outcrops found in this type, *Stipa comata* and *Oryzopsis hymenoides* can be found.

DIAGSHRUB: *Artemisia tridentata* is the dominant shrub (all three subspecies are found, although *vaseyana* and *tridentata* are most important). *Perophyllum ramosissimum* is a constant associate. *Cercocarpus ledifolius* & *Purshia tridentata* are occasionally found.

DIAGTREES: *Juniperus occidentalis* is occasionally found in this type, as are isolated *Pinus ponderosa* individuals - although this is a shrub community.

OTHTREES: None.

LOWER-ELEVATION: 4000
UPDATE: 90-01-28 JSK

UPPER-ELEVATION: 6000

MAPCODE: 349
MAPNAME: *Artemisia tridentata*-*Purshia tridentata*/*Festuca idahoensis*

COMNAMES: Big sagebrush-Bitterbrush/Idaho fescue

ACRONAME: ARTTRI-PURTRI/FESIDA
CROSSWALK: ARTTRI-PUTTRI/FESIDA

VEGSTRUCT: Medium-tall shrubland steppe with bunchgrass understory. Bitterbrush dominant or codominant with big sagebrush. On flats to gentle slopes of lakebeds with ash or pumice soils, or on basalt. Often occurs on margins of pine forests.

ECOLOGY: On flats to gentle slopes of lakebed with ash or pumice soils, or on basalts. Usually stony, well drained soils. Includes all aspects except for southerly. Often occurs on the margins of pine forests, or in a matrix with western juniper.

DISTRIBUT: The East Slope of Oregon Cascades, from Warm Springs south to Crater Lake, as well as the High Lava Plains in Crook, Grant, Deschutes and northern Lake counties.

DIAGGRASS: *Festuca idahoensis* is the characteristic native bunchgrass. *Stipa occidentalis*, *Poa nervosa* ssp. *wheeleri*, *Carex pennsylvanica*, and *Carex geyeri* are occasionally important.

DIAGSHRUB: *Purshia tridentata* and *Artemisia tridentata* are the characteristic shrubs, usually codominant. *Chrysothamnus* spp. are common associates. *Ceanothus velutinus* or *Cercocarpus ledifolius* are occasionally important.

DIAGTREES: *Juniperus occidentalis* and *Pinus ponderosa* occur occasionally as isolated individuals in this type.

FORBS:

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 2500
UPDATE: 90-01-31 JSK

UPPER-ELEVATION: 5500

MAPCODE: 350
MAPNAME: Artemisia tridentata-Purshia tridentata/Agropyron spicatum

COMNAMES: Big sagebrush-bitterbrush/bluebunch wheatgrass

ACRONAME: ARTTRI-PURTRI/AGRSP
CROSSWALK: ARTTRI-PUTTRI/AGRSP

VEGSTRUCT: Medium-tall shrubland steppe with bunchgrass or cheatgrass understory. Bitterbrush codominant with big sagebrush. Shrubs widely spaced, often in a matrix with western juniper steppe, or along the margins of desert mountains.

ECOLOGY: On flats to gentle slopes, on lakebeds filled with ash or pumice, or on plains, usually with a basalt substrate. On all slopes and aspects, but most commonly on gentle slopes and flats.

DISTRIBUT: Primarily in the High Lava Plains of central Oregon, in Deschutes, Jefferson, and Crook County, but also further west in Grant, and northern Lake Counties. Also, occasionally in the East Slope of Oregon Cascades and in the Basin and Range Provinces.

DIAGGRASS: Agropyron spicatum is the characteristic native bunchgrass. Stipa occidentals, S. thurberiana, S. comata, Poa sandbergii, and Sitanian hystrix can also be important.

DIAGSHRUB: Purshia tridentata and Artemisia tridentata are the characteristic shrub. Chrysothamnus spp. are common associates.

DIAGTREES: Juniperus occidentalis and Pinus ponderosa occur occasionally as isolated individuals in this type.

FORBS:

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 1500
UPDATE: 90-05-28 JSK

UPPER-ELEVATION: 5000

MAPCODE: 351
MAPNAME: Sandy Purshia tridentata steppe.

COMNAMES: Sandy bitterbrush steppe

ACRONAME: PURTRI/STICOM, PURTRI/BROTEC
CROSSWALK: PUTTRI/STICOM, PUTTRI/BROTEC

VEGSTRUCT: Medium-tall shrubland steppe with bunchgrass or cheatgrass understory. Bitterbrush usually entirely dominant.

ECOLOGY: On flats to gentle slopes of old dunes with dry, sandy soils. Often occurs in a patchwork with sand dunes and sandy palouse grasslands. Very sensitive to grazing, with needle-and-thread replaced by cheatgrass at most sites.

DISTRIBUT: The Columbia Basin of Oregon, at low elevations by the Columbia River, from Arlington to Pendleton. Largely replaced by circle irrigation, with most occurrences near Boardman or Arlington, in Wheeler and Morrow Counties.

DIAGGRASS: Stipa comata is the characteristic native bunchgrass. Bromus tectorum usually replaces it, depending on the condition having up to 75% cover. In the high quality remnant, Stipa comata and Poa sandbergii are co-dominant, Agropyron dasystachium occurs.

DIAGSHRUB: Purshia tridentata is the characteristic shrub. Chrysothamnus spp. and Tetrademia sp. are common associates. Artemisia tridentata occurs along the silty margins of the community, and Sarcobatus vermiculatus occurs on alkaline flats.

DIAGTREES: None.

FORBS:

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 500
UPDATE: 90-01-31 JSK

UPPER-ELEVATION: 1250

MAPCODE: 352
MAPNAME: Purshia tridentata/fescue steppe.

COMNAMES: Bitterbrush/Idaho fescue and bluebunch wheatgrass and western needlegrass and dry sedges.

ACRONAME: PURTRI/FESIDA
CROSSWALK: PURTRI/FESIDA, PURTRI/AGRSPI-FESIDA, PUTTRI/CARPEN-STIOCC.

VEGSTRUCT: Medium-tall shrubland steppe with bunchgrass or cheatgrass understory. Bitterbrush dominant or codominant with big sagebrush.

ECOLOGY: On flats to gentle slopes of lakebeds with ash or pumice soils, or on basalt. Often on margins of Ponderosa pine forests.

DISTRIBUT: The East Slope of Oregon Cascades, from Warm Springs south to Crater Lake.

DIAGGRASS: Festuca idahoensis is the characteristic native bunchgrass. Agropyron spicatum is codominant at lower elevations, while Stipa occidentalis, Carex pennsylvanica, and Carex geyeri replace it at the higher elevation sites.

DIAGSHRUB: Purshia tridentata is the characteristic shrub. Chrysothamnus spp. are common associates. Artemisia tridentata and A.tridentata ssp. vaseyana occur as codominants in areas, as well as Ceanothus velutinus.

DIAGTREES: Juniperus occidentalis and Pinus ponderosa occur occasionally as isolated individuals in this type.

FORBS:

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 1500
UPDATE: 90-01-31 JSK

UPPER-ELEVATION: 7000

MAPCODE: 355
MAPNAME: Symphoricarpos oreophyllus/Stipa thurberiana

COMNAMES: mountain snowberry/bunchgrass

ACRONAME: SYMORE, SYMMOL
CROSSWALK: SYMORE/STITHU, SYMMOL/AGRSPI-FESIDA

VEGSTRUCT: Low shrubland-grasslands mosaic with medium to tall bunchgrasses, diverse forbs in moist sites, with little bare ground.

ECOLOGY: Found on steep slopes, between alpine habitats and riparian or sagebrush steppe. Usually in areas with some soil development, northerly facing, often very steep slopes, in a mosaic with aspen groves.

DISTRIBUT: Occurs in high elevation areas of the Steens and Trout Creek Mountains in Harney Co, and at isolated mountains in Baker and Malheur Cos.

DIAGGRASS: Stipa thurberiana is the dominant grass. Agropyron spicatum, Festuca idahoensis, and Poa secunda are all also common.

DIAGSHRUB: Symphoricarpos oreophyllus is the dominant shrub. Symphoricarpos mollis occurs at some of the Malheur and Baker Co. sites.

DIAGTREES: Populus tremuloides groves and riparian occur in a patchwork with this type.

FORBS: Many forbs occur in this type.

OTHSHRUB: Cercocarpus ledifolius and Aremisia tridentata ssp. vaseyana occurs in and around this type.

OTHTREES: Juniperus occidentalis occurs at the lower elevational areas of this type.

LOWER-ELEVATION: 7500
UPDATE: 90-06-06 JSK

UPPER-ELEVATION: 9000

MAPCODE: 361
MAPNAME: *Sarcobatus vermiculatus* playa or bottomland

COMNAMES: black greasewood playa or bottomland

ACRONAME: SARVER
CROSSWALK: SARVEM/NITOC-SUAIN, SARVER/ANNUAL

VEGSTRUCT: Tall shrub communities with widely spaced black greasewood shrubs. Grasses and annual often succulent forbs widely spaced in understory.

ECOLOGY: Barren alkali flats or alkaline valley bottomlands, usually in closed drainage basins of Pleistocene lakes. Occurs around bare playas.

DISTRIBUT: Common in southeastern Oregon, in Lake, Harney and Malheur Counties. Most abundant in the larger, alkaline lake basins, but also occurs in the Power River, Malheur and Burnt River Valleys of east central Oregon.

DIAGGRASS: *Elymus cinereus* is common in areas with softer, deeper soils and some movement of water. *Distichlis stricta* is common elsewhere. In the more northerly valleys, *Puccinella lemmonii*, *Poa juncifolia*, and *Spartina patens* also occur.

DIAGSHRUB: *Sarcobatus vermiculatus* is the dominant and characteristic shrub. In the northern valleys, *Chrysothamnus viscidiflorus* is a common (if weedy) associate.

DIAGTREES: None.

FORBS: The bare playa floor is the characteristic of this type. *Thelypodium* sp., *Lepidium perfoliatum*, *Hudchinsia procumbens* and other weedy mustards also occur.

OTHSHRUB: *Atriplex confertifolia* and *Suaeda intermedia* are also abundant on flats. Also, *Allenrolfea occidentalis* and *Erotia lanata* also dominate some playas. *Tetradymia spinosa*, *T. glabrata* and *Chrysothamnus viscidiflorus* occur along drainage channels.

OTHTREES: None.

LOWER-ELEVATION: 3000
UPDATE: 90-02-02 JSK

UPPER-ELEVATION: 7000

MAPCODE: 362
MAPNAME: *Sarcobatus vermiculatus*/*Distichlis stricta*

COMNAMES: black greasewood/saltgrass

ACRONAME: SARVER/DISSTR
CROSSWALK: SARVER/DISSTR, ATRCON-SARVEM/DISSTR, SARVER/MUHRIC

VEGSTRUCT: Tall shrub communities with widely spaced black greasewood shrubs. Usually with a dense thatch of rhizomatous grasses, with some annual and perennial often succulent forbs also found.

ECOLOGY: Found on barren alkali flats or alkaline valley bottomlands, usually in closed drainage basins of Pleistocene lakes.

DISTRIBUT: Common in southeastern Oregon, in Lake, Harney and Malheur Counties. Most abundant in the larger, alkaline lake basins, but also occurs in the Power River, Malheur and Burnt River Valleys of east central Oregon.

DIAGGRASS: *Distichlis stricta* is the common grass, often with 80% vegetative cover. At some sites, *Muhlenbergia richardsonis* is entirely dominant. In the more northerly valleys, *Puccinella lemmonii*, *Poa juncifolia*, and *Spartina patens* also occur.

DIAGSHRUB: *Sarcobatus vermiculatus* is the dominant and characteristic shrub. In the northern valleys, *Chrysothamnus viscidiflorus* is a common (if weedy) associate.

DIAGTREES: None.

FORBS: *Cordylanthus*, *Thelypodium*, and *Lepidium* species along with *Suada*, *Nitrophila* and other succulent forbs occur.

OTHSHRUB: *Tetradymia spinosa*, *T. glabrata* and *Chrysothamnus viscidiflorus* occur along drainage channels.

OTHTREES: None.

LOWER-ELEVATION: 3000
UPDATE: 90-06-06 JSK

UPPER-ELEVATION: 5500

MAPCODE: 363
MAPNAME: *Sarcobatus vermiculatus*/Sitanian hystrich

COMNAMES: black greasewood/bottlebrush squirreltail

ACRONAME: SARVER/SITHYS
CROSSWALK: SARVEM/SITHYS, SARVEM/ELYCIN, SARVER/BROTEC

VEGSTRUCT: Tall shrub communities with widely spaced black greasewood shrubs on barren, alkali flats or alkaline valley bottomlands. Midsized bunchgrasses and forbs occur in understory.

ECOLOGY: Occurs on barren alkali flats or along the edges of alkaline valley bottomlands, often adjacent to saltgrass areas.

DISTRIBUT: Common in southeastern Oregon, in Lake, Harney and Malheur Counties. Most abundant in the larger, alkaline lake basins.

DIAGGRASS: Sitanian hystrich is the dominant grass. *Poa secunda*, *Puccinella* sp., *Agropyron dasystachyum*, and *Elymus cinereus* can occasionally be found.

DIAGSHRUB: *Sarcobatus vermiculatus* is the dominant and characteristic shrub. *Atriplex confertifolia*, *A. spinescens* and *Artemisia tridentata* are also often found.

DIAGTREES: None.

FORBS: Few forbs are found in this type.

OTHSHRUB: *Allenrolfea occidentalis* and *Erotia lanata* also dominate some playas in and around this type. *Tetradymia spinosa*, *T. glabrata* and *Chrysothamnus viscidiflorus* occur along drainage channels.

OTHTREES: None.

LOWER-ELEVATION: 4000
UPDATE: 90-06-06 JSK

UPPER-ELEVATION: 5000

MAPCODE: 364
MAPNAME: *Sarcobatus vermiculatus/Elymus cinereus*

COMNAMES: black greasewood/basin wildrye

ACRONAME: SARVER/ELYCIN
CROSSWALK: SARVEM/ELYCIN

VEGSTRUCT: Tall shrub communities with widely spaced black greasewood shrubs. Very tall bunchgrasses can be widely spaced, or occasionally form a dense lay in the understory, often with annual or succulent forbs widely spaced.

ECOLOGY: Barren alkali flats or alkaline valley bottomlands, usually in closed drainage basins of Pleistocene lakes. Occurs around bare playas. Usually found at the mouth of stream drainages or in areas with some freshwater input, and softer, deeper aluvial soils.

DISTRIBUT: Common in southeastern Oregon, in Lake, Harney and Malheur Counties. Most abundant in the larger, alkaline lake basins, but also occurs in the Power River, Malheur and Burnt River Valleys of east central Oregon.

DIAGGRASS: *Elymus cinereus* is the common and diagnostic grass. with softer, deeper soils and some movement of water. *Distichlis stricta*, *Mulhenbergia richardsonis*, *Puccinella lemmonii*, *Poa juncifolia*, and *Spartina patens* occasionally occur.

DIAGSHRUB: *Sarcobatus vermiculatus* is the dominant and characteristic shrub. In the northern valleys, *Chrysothamnus viscidiflorus* is a common (if weedy) associate.

DIAGTREES: None.

FORBS: The bare playa floor is the characteristic of this type. *Thelypodium* sp., *Lepidium perfoliatum*, *Hudchinsia procumbens*, *Suada* and other succulents occur.

OTHSHRUB: *Artemisia tridentata* occasionally occurs in this type, and often occurs in the margin of this community.

OTHTREES: None.

LOWER-ELEVATION: 3000
UPDATE: 90-06-06 JSK

UPPER-ELEVATION: 5500

MAPCODE: 365
MAPNAME: *Atriplex confertifolia*/Sitianian hystrix

COMNAMES: Shadscale/bottlebrush squirreltail salt desert shrub

ACRONAME: ATRCON/SITHYS
CROSSWALK: ATRCON/SITHYS, ATRCON-ATRSPI-SARVEM/NITOC-C-SUANIG, ATRCON-SARVER/ORYHYM

VEGSTRUCT: Low to tall shrub communities comprised of a number of species of widely spaced alkali tolerant shrubs. Grasses and annual, often succulent forbs widely spaced in understory.

ECOLOGY: Occurs in low alkaline dunes, around playas and on slopes above alkaline basins. Exposed, barren alkaline soils with little vegetative cover, often poor drainage.

DISTRIBUT: Common in southeastern Oregon, in Lake, Harney and Malheur Counties. Most abundant in the larger, alkaline lake basins (Alvord, Summer, Silver, Malheur, Harney, Catlow, and Pueblo Slough), although found throughout the Basin & Range, and Owyhee Provinces

DIAGGRASS: Sitianian hystrix, *Oryzopsis hymenoides*, *Elymus triticoides*, *E. cinereus*, *Poa sandbergii*, and *Bromus tectorum* are all occasionally found.

DIAGSHRUB: *Atriplex confertifolia*, *Chrysothamnus nauseosus* and *Sarcobatus vermiculatus* are the characteristic dominants, present at most sites. *Artemisia tridentata*, *A. spinescens*, *Ephedra viridis*, and *Atriplex nuttallii* are important in some areas.

DIAGTREES: None.

FORBS: *Sphaeralcea coccinea*, *Astragalus lentiginosus*, *Eriastrum sparsiflorum*, *Stephanomeria exigua*, and *Eriogonum baileyi*.

OTHSHRUB: *Atriplex canescens* is important in sandy areas, *Artemisia frigida*, *A. nova*, *Tanacetum nuttallii*, *Tetrademia canescens* and *Kochia vestata* can be minor components.

OTHTREES: None.

LOWER-ELEVATION: 3000
UPDATE: 90-02-02 JSK

UPPER-ELEVATION: 7500

MAPCODE: 366
MAPNAME: *Atriplex confertifolia*/Bromus tectorum

COMNAMES: Shadscale/cheatgrass salt desert shrub

ACRONAME: ATRCON/BROTEC
CROSSWALK: ATRCON/BROTEC, ATRCON-SARVER/BROTEC

VEGSTRUCT: Low to tall shrub communities comprised of a number of species of widely spaced alkali tolerant shrubs. Grasses and annual often succulent forbs widely spaced in understory.

ECOLOGY: Occurs on low alkaline dunes, around playas and on gentle slopes above alkaline basins.

DISTRIBUT: Common in southeastern Oregon, in Lake, Harney and Malheur Counties. Most abundant in the larger, alkaline lake basins (Alvord, Summer, Silver, Malheur, Harney, Catlow, and Pueblo Slough), although found throughout the Basin & Range, and Owyhee Provinces

DIAGGRASS: *Oryzopsis hymenoides*, *Sitanian hystrix*, *Elymus triticoides*, *E. cinereus*, *Poa sandbergii*, and *Bromus tectorum* are all occasionally found.

DIAGSHRUB: *Atriplex confertifolia*, *Atriplex spinosa* and *Sarcobatus vermiculatus* are the characteristic dominants, present at most sites. *Erotia lanata*, *Allenrolfea occidentalis*, *Artemisia tridentata*, *A. spinescens*, *Ephedra viridis*, and *Atriplex nuttallii* are important in some areas.

DIAGTREES: None.

FORBS: *Sphaeralcea coccinea*, *Astragalus lentiginosus*, *Eriastrum sparsiflorum*, *Stephanomeria exigua*, and *Eriogonum baileyi*.

OTHSHRUB: *Atriplex canescens* is important in sandy areas, *Artemisia frigida*, *A. nova*, *Tanacetum nuttallii*, *Tetrademia canescens* and *Kochia vestata* can be minor components.

OTHTREES: None.

LOWER-ELEVATION: 3000
UPDATE: 90-02-02 JSK

UPPER-ELEVATION: 7500

MAPCODE: 367
MAPNAME: *Atriplex spinosa*/Sitanian hystrix

COMNAMES: Spiny hopsage/bottlebrush squirreltail salt desert shrub

ACRONAME: ATRSPI/SITHYS
CROSSWALK: ATRSPI/SITHYS, ATRTRI-ARTSPI-EPHVIR/SALDOR, GRASPI/SITHYS

VEGSTRUCT: Low to tall shrub communities comprised of a number of species of widely spaced alkali tolerant shrubs. Grasses and annual often succulent forbs widely spaced in understory.

ECOLOGY: Occurs on low alkaline dunes, around playas and on gentle slopes above alkaline basins, or in small, poorly drained basins in sagebrush.

DISTRIBUT: Common in southeastern Oregon, in Lake, Harney and Malheur Counties. Most abundant in the larger, alkaline lake basins (Alvord, Summer, Silver, Malheur, Harney, Catlow, and Pueblo Slough), although found throughout the Basin & Range, and Owyhee Provinces

DIAGGRASS: *Oryzopsis hymenoides*, Sitanian hystrix, *Elymus triticoides*, *E. cinereus*, *Poa sandbergii*, *Disticlis stricta* and *Bromus tectorum* are all occasionally found.

DIAGSHRUB: *Atriplex spinosa*, *Atriplex confertifolia* and *Sarcobatus vermiculatus* are the characteristic dominants, present at most sites. *Erotia lanata*, *Allenrolfea occidentalis*, *Artemisia tridentata*, *A. spinescens*, *Ephedra viridis*, and *Atriplex nuttallii* are important in some areas.

DIAGTREES: None.

FORBS: *Sphaeralcea coccinea*, *Astragalus lentiginosus*, *Eriastrum sparsiflorum*, *Stephanomeria exigua*, and *Eriogonum baileyi*.

OTHSHRUB: *Atriplex canescens* is important in sandy areas, *Artemisia frigida*, *A. nova*, *Tanacetum nuttallii*, *Tetrademia canescens* and *Kochia vestata* can be minor components.

OTHTREES: None.

LOWER-ELEVATION: 4000
UPDATE: 90-02-02 JSK

UPPER-ELEVATION: 7500

MAPCODE: 368
MAPNAME: *Atriplex confertifolia*/*Poa secunda*

COMNAMES: shadscale/Sandbergs bluegrass

ACRONAME: ATRCON/POASEC
CROSSWALK: ARTCON/POASEC, ARTCON-ARTSPI/POASEC

VEGSTRUCT: Low to medium tall shrub communities, with widely spaced shrubs, and occasional grasses and forbs . Extensive bare ground and desert pavement.

ECOLOGY: Salt desert shrub type occurring on margins of playas and as isolated pockets in sagebrush. The type is found on flats and gentle slopes.

DISTRIBUT: Found in the Basin and Range of Oregon, in the southern portions of Lake, Harney and Malheur Counties. A widespread but minor type.

DIAGGRASS: *Poa secunda* is the dominant grass in this desert pavement type. *Oryzopsis hymenoides*, *Stipa comata*, *Sitanian hystrix* and *Agropyron dasystachium* can be found.

DIAGSHRUB: *Atriplex confertifolia* is the dominant shrub. *Atriplex spinosa*, *Artemisia tridentata* and *A. spinescens* also occur. Occurs adjacent to *Sarcobatus vermiculatus* playas and flats, and occasionally this tall shrub is present.

DIAGTREES: None

FORBS: There are few forbs in this community. *Erigeron*, *Castilleja*, and *Eriogonum* species are found.

OTHSHRUB:

OTHTREES:

LOWER-ELEVATION: 4000
UPDATE: 90-06-05 JSK

UPPER-ELEVATION: 5500

MAPCODE: 370
MAPNAME: *Atriplex nuttallii*

COMNAMES: saltsage

ACRONAME: ATRNUT
CROSSWALK: ATRNUT/SITHYS, ATRNUT/BROTEC

VEGSTRUCT: Salt desert shrubland with widely spaced, mid-sized shrubs with desert pavement, patches of midsized or low bunchgrasses.

ECOLOGY: A salt desert type on playa margins, or low alkaline dune ridges. Exposed bare ground, limited drainage, extremely droughty conditions.

DISTRIBUT: Restricted to the southern Basin and Range Province in southern Lake and Harney Counties, and in southwestern Malheur County.

DIAGGRASS: *Sitanian hystrix*, *Poa secunda*, and *Bromus tectorum* are the dominant grasses. *Oryzopsis hymenoides*, *Agropyron dasystachium* and *Stipa comata* are occasionally found in sandy areas, while *Stipa thurberiana* occurs in patches of deeper soil.

DIAGSHRUB: *Atriplex nuttallii* and/or *Artemisia spinescens* dominate this type. *Sarcobatus vermiculatus*, *Allenrolfia occidentalis*, *Atriplex confertifolia*, or *Erotia lanata* can occasionally be found. *Artemisia tridentata* is always nearby.

DIAGTREES: None.

FORBS: Few forbs found in this type.

OTHSHRUB:

OTHTREES:

LOWER-ELEVATION: 4000
UPDATE: 90-06-05 JSK

UPPER-ELEVATION: 5000

MAPCODE: 371
MAPNAME: *Erotia lanata*

COMNAMES: winterfat

ACRONAME: EROLAN
CROSSWALK: EROLAN/SITHYS, EROLAN/POASEC, EROLAN/BROTEC

VEGSTRUCT: Salt desert shrubland with widely spaced, mid-to-tall sized shrubs with desert pavement, patches of midsized or short bunchgrasses, and extensive bare ground.

ECOLOGY: Occurs on playas or desert pavement, or on low benches above playas with occasional low alkaline dune ridges. In Oregon, occurs as outcrops within big sagebrush and spiny hopsage steppe.

DISTRIBUT: Occurs in the southern Basin and Range Province, in southern Lake, Harney and Malheur Counties. All of the sites are close to the Nevada border.

DIAGGRASS: *Sitanian hystrix*, *Poa secunda* and *Bromus tectorum* are the dominant grasses. *Oryzopsis hymenoides*, *Stipa comata* and *Agropyron dasystachium* are occasionally found.

DIAGSHRUB: *Erotia lanata* is the dominant shrub. *Atriplex nuttallii* or *Halogeton glomeratus* are occasionally codominant.

DIAGTREES: None.

FORBS: Few forbs are found in this type.

OTHSHRUB: *Tetradymia glabrata*, *Atriplex confertifolia*, *Artemisia tridentata*, and *Allenrolfia occidentalis* are occasionally found.

OTHTREES:

LOWER-ELEVATION: 4500
UPDATE: 90-06-05 JSK

UPPER-ELEVATION: 5500

MAPCODE: 380
MAPNAME: Cercocarpus ledifolius shrubland or woodland

COMNAMES: Curleaf mountain mahogany

ACRONAME: CERLED
CROSSWALK: CERLED/CALRUB, CERLED/AGRSPI, CERLED/FESIDA,
JUNOCC/CERLED/BUNCHGRASS, CERLED/SYMORE, CERLED/SYMALB.

VEGSTRUCT: Tall shrub or low tree woodlands, with interspersed rimrock, or scree. Occasionally with mountain big sagebrush openings. Woodlands with a rhizomatous grass-forb understory, while rimrock or steep slopes with a bunchgrass understory.

ECOLOGY: Occurs on steep rimrock slopes, usually in areas of shallow soils or protected slopes. A fire sensitive species which has expanded its range greatly since fire suppression.

DISTRIBUT: Mostly in southeastern Oregon, in Owyhee Uplands (Mahogany Mountains) and the Oregon Canyon and Trout Creek Mountains. Isolated occurrences throughout canyons of central Oregon.

DIAGGRASS: Agropyron spicatum, A. caninum, Festuca idahoensis, Poa ampla, P. sandbergii, Calamagrostis rubescens, Bromus carinatus, Stipa occidentalis, S. lemmonii, Carex rossii, Melica geyeri, Elymus cinereus, and E. glaucus.

DIAGSHRUB: Cercocarpus ledifolius is the dominant. Artemisia tridentata ssp. vaseyana occurs in understory occasionally, or interspersed in CERLED openings. Prunus emarginata, Populus tremuloides, and Amelanchier occur in snowbanks along with CERLED, and Purshiaridentata is occasionally important. Symphoricarpos albus and S. oreophilus also can be dominant in the understory.

DIAGTREES: Juniperus occidentalis, and rarely in central Oregon, Pinus ponderosa.

FORBS: Balsamorhiza sagittata, Hieracium albertinum, Viola nuttallii, Achillea millefolium, Agoseris heterophylla, Arnica cordifolia, Senecio integerrimus.

OTHSHRUB: Ribes cereum, Chrysothamnus nauseosus, C. viscidiflorus.

OTHTREES: None.

LOWER-ELEVATION: 2000
UPDATE: 90-02-01 JSK

UPPER-ELEVATION: 8000

MAPCODE: 381

MAPNAME: Cercocarpus ledifolius-Juniperus occidentalis rimrock and canyon slopes.

COMNAMES: Mountain mahogany-western juniper rimrock and canyon slopes

ACRONAME: CERLED-JUNOCC

CROSSWALK:

VEGSTRUCT: Open rocky woodland. Five to fifteen meter tall woodland, often with open shrubby understory of bitterbrush, big sagebrush (but occasionally with no shrubs), and with bunchgrasses present.

ECOLOGY: Always stony slopes, with only pockets of well drained soils, usually pumice, alluvium or loess, in recent basalt or rhyolite. Typically on exposed, steep canyons, or on rimrock foothills surrounding desert mountains and pleistocene lake basins.

DISTRIBUT: Minor but widespread type in the High Lava Plains, the Basin and Range, and the Owyhee Uplands of central and southeastern Oregon. Common but never very significant.

DIAGGRASS: Grasses include Agropyron spicatum, Poa secunda, Poa nevadensis, Festuca idahoensis, Stipa thurberiana, and Stipa occidentalis. Carex geyeri, C. fillifolia, Danthonia unispicata, and Bromus carinatus can also be found.

DIAGSHRUB: Artemisia tridentata (all subspecies) is the most important shrub. Artemisia arbuscula, Purshia tridentata, and Ceanothus velutinus are occasionally found.

DIAGTREES: Juniperus occidentalis and Cercocarpus ledifolius are the dominants. Pinus ponderosa occasionally occurs, and Populus tremuloides is occasionally important at higher elevations and on northerly slopes.

FORBS: Balsamorhiza sagittata is typical. Phlox, Eriogonum, and Erigeron species are typical.

OTHSHRUB: Amalanchier alnifolia, Prunus emarginata and Populus tremuloides occur in moist areas and north slopes.

OTHTREES:

LOWER-ELEVATION: 1000

UPPER-ELEVATION: 7000

UPDATE: 90-05-27 JSK

MAPCODE: 391
MAPNAME: Populus tremuloides

COMNAMES: quaking aspen groves

ACRONAME: POPTRE
CROSSWALK:

VEGSTRUCT: Low woodland or forest community, ranging from wet, streamside areas to moist mountain slopes. The understory is shrub dominated on slopes, and dominated by dense grasses, sedges and forbs in seeps and wetlands.

ECOLOGY: Occurs on steep slopes or on seeps, at high elevation in desert mountains, or on north slopes in plateau grasslands.

DISTRIBUT: Widespread, variable, but minor type throughout eastern Oregon. Only widespread in higher elevations in the Steens Mountains of Harney County.

DIAGGRASS: Deschampsia caespitosa, Festuca idahoensis, Elymus glaucus and Carex species are all important in these stands.

DIAGSHRUB: Symphoricarpos albus is the most widespread shrub. Amelanchier alnifolia, Spiraea and Berberis also occur in the understory of some stands.

DIAGTREES: Populus tremuloides is the dominant and characteristic tree. It is the sole dominant in many stands. Pinus ponderosa and P. contorta are important in the east slope of the Cascades.

FORBS: Veratrum californicum is often common. Other forbs include Ranunculus and Potentilla species.

OTHSHRUB: Purshia tridentata, Artemisia tridentata, Salix geyeri.

OTHTREES: Picea engelmannii is important in central and northeastern Oregon. Riparian trees such as Populus trichocarpa, Alnus incana and Betula occidentalis are codominant in canyons.

LOWER-ELEVATION: 6000
UPDATE: 90-02-05 JSK

UPPER-ELEVATION: 9500

MAPCODE: 401
MAPNAME: Juniperus occidentalis-Pinus ponderosa/Artemisia tridentata dunes

COMNAMES: western juniper-Ponderosa pine/big sagebrush

ACRONAME: JUNOCC-PINPON/ARTTRI
CROSSWALK: PINPON/PURTRI (from Lost Forest), PINPON/ARTTRI, and JUNOCC-PINPON/ARTTRI.

VEGSTRUCT: Open woodland of western juniper trees and widely spaced Ponderosa pine trees on low sand dunes. Includes large areas with little juniper. Open areas of medium-tall sagebrush, bitterbrush and rabbitbrush are common, with a diverse, bunchgrass understory.

ECOLOGY: Occurs only in sandy areas, with long stabilized dunes, in flat basins. Very unusual type.

DISTRIBUT: Only known from the Lost Forest area of northern Lake County, and a similar area in northeastern California.

DIAGGRASS: Stipa thurberiana, S. comata, Sitanion hystrix, Oryzopsis hymenoides, Poa sandbergii, P. nevadensis and Festuca idahoensis.

DIAGSHRUB: Artemisia tridentata and Purshia tridentata dominate the understory along with Chrysothamnus viscidiflorus.

DIAGTREES: Pinus ponderosa and Juniperus occidentalis.

FORBS: Phlox diffusa, Lupinus sp., Eriogonum ovalivolum, Townsendia florifer.

OTHSHRUB:

OTHTREES: None.

LOWER-ELEVATION: 4200
UPDATE: 90-02-02 JSK

UPPER-ELEVATION: 4600

MAPCODE: 410
MAPNAME: *Juniperus occidentalis*/Agropyron spicatum

COMNAMES: western juniper/bunchgrass

ACRONAME: JUNOCC/AGRSPI
CROSSWALK: JUNOCC/AGRSPI, JUNOCC/FESIDA, JUNOC/STITHU, JUNOCC/POASEC

VEGSTRUCT: Open, medium tall woodland with 2-10 meter tall trees, widely spaced, with very little big sagebrush, and few shrubs. Bunchgrass understory, which well developed cryptogam layer.

ECOLOGY: Occurs on slopes and in areas with shallow soils at lower elevations, or in areas outside of sagebrush zones. Could be an artifact of fire killing sagebrush, or of juniper invading bunchgrass slopes. Diverse mosses and lichens occur on the ground in this type.

DISTRIBUT: An uncommon but widely occurring type, found throughout eastern Oregon.

DIAGGRASS: Agropyron spicatum and Poa sandbergii are the most common and widespread grasses. Festuca idahoensis, Stipa occidentalis, S. thurberiana and Bromus tectorum can be locally important.

DIAGSHRUB: No shrubs are important here.

DIAGTREES: Juniperus occidentalis is the dominant species.

FORBS: Achillea millefolium, Erigeron pumilis, Astragalus purshii, Balsamorhiza sagittata, Phlox longifolia, and Eriogonum species.

OTHSHRUB: Artemisia tridentata, Purshia tridentata and Chrysothamnus nauseosus occur occasionally.

OTHTREES: Pinus ponderosa is occasionally found.

LOWER-ELEVATION: 1500 UPPER-ELEVATION: 6000
UPDATE: 90-06-05 JSK

MAPCODE: 411
MAPNAME: *Juniperus occidentalis*/*Artemisia arbuscula*/*Festuca idahoensis*

COMNAMES: western juniper/low sagebrush/Idaho fescue

ACRONAME: JUNOCC/ARTARB/FESIDA
CROSSWALK: JUNOCC/ARTARB/FESIDA

VEGSTRUCT: Open woodlands of juniper trees up to 5 m in height interspersed in a mosaic with areas of low sagebrush (< 0.5 m). There is a tendency for the juniper to occur in higher areas, while the sagebrush is more common in depressions. With big sagebrush.

ECOLOGY: Shallow soiled, flats at mid to high elevations, usually on basalts.

DISTRIBUT: Occurs in higher elevations of the Owyhee Uplands in Malheur County and in the High Lava Plains along the margins of the Ochoco and Maury Mountains.

DIAGGRASS: *Festuca idahoensis* is the dominant and most common grass. *Stipa occidentalis*, *S. thurberiana*, *Poa sandbergii*, *Agropyron spicatum*, and *Sitanion hystrix* also occur.

DIAGSHRUB: *Artemisia arbuscula* is the dominant shrub, and is always present. The type often occurs in a matrix with (*Juniperus occidentalis*) *Artemisia tridentata* or *Purshia tridentata* types.

DIAGTREES: *Juniperus occidentalis* is the only dominant tree. *Pinus ponderosa* and *Cercocarpus ledifolius* can occasionally be found in this areas as well.

FORBS: *Antennaria dimorpha*, *Aster scopulorum*, *Astragalus atratus*, *A. beckwithii*, *Crepis acuminata*, *Lewisia rediviva*, *Phacelia linearis*, *Phlox longifolia*,

OTHSHRUB: *Artemisia cana*, *A. papposa*, *A. tridentata* ssp. *vaseyana*, *Chrysothamnus viscidiflorus*.

OTHTREES: None.

LOWER-ELEVATION: 4500
UPDATE: 90-05-04 JSK

UPPER-ELEVATION: 6500

MAPCODE: 412
MAPNAME: Juniperus occidentalis/Artemisia arbuscula/Poa secunda

COMNAMES: western juniper/low sagebrush/Sandberg bluegrass

ACRONAME: JUNOCC/ARTARB/POASEC, JUNOCC/ARTARB/DANUNI-POASEC
CROSSWALK:

VEGSTRUCT: Open woodlands of juniper trees up to 10 m in height interspersed in a mosaic with areas of low stature sagebrush (< 0.5 m). There is a tendency for the juniper to occur in higher areas, while the sagebrush occurs on the shallower scabs.

ECOLOGY: Occurs on shallow soiled areas or very stony flats, usually on basalts.

DISTRIBUT: Major type at middle to upper elevations in the Basin and Range Province, in Lake and Harney Counties. It is also found in the northern Owyhee Uplands of Malheur county and in the southern Blue Mountains.

DIAGGRASS: Poa secunda is the only important grass. Sitanian hystrix can be found in areas of deep soil, along with Stipa thurberiana, Agropyron spicatum and Festuca idahoensis.

DIAGSHRUB: Artemisia arbuscula is the dominant shrub. Pockets of Artemisia tridentata can be found. Cercocarpus ledifolius occurs on rimrock areas. Purshia tridentata is also occasionally found.

DIAGTREES: Juniperus occidentalis is the only dominant tree. Pinus ponderosa can be found along the southern edge of the Blue Mountains.

FORBS: Antennaria dimorpha, Eriogonum sp.

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 4500
UPDATE: 90-05-04 JSK

UPPER-ELEVATION: 6500

MAPCODE: 413
MAPNAME: *Juniperus occidentalis*/*Artemisia arbuscula*/Sitanian hystrix-*Stipa thurberiana*

COMNAMES: western juniper/low sagebrush/tall bunchgrass

ACRONAME: JUNOCC/ARTARB/SITHYS-STITHU
CROSSWALK: JUNOCC/ARTARB/SITHYS, JUNOCC/ARTARB/STITHU, JUNOCC/ARTARB/AGRSPI

VEGSTRUCT: Open woodlands of juniper trees up to 10 m in height interspersed in a mosaic with areas of low stature sagebrush (< 0.5 m), with tall grass. There is a tendency for the juniper to occur in higher areas, while the sagebrush is more often in depressions.

ECOLOGY: Stony flats and shallow soiled areas, with occasional rimrock outcrops, as well as gentle slopes and ridges. Usually on basalts.

DISTRIBUT: A common but not widespread type at middle to upper elevations in the Basin and Range Province, in Lake and Harney Counties.

DIAGGRASS: Sitanian hystrix, *Stipa thurberiana*, or *Agropyron spicatum* can be dominant, with the ubiquitous *Poa secunda*.

DIAGSHRUB: *Artemisia arbuscula* is the dominant shrub. Pockets of *Artemisia tridentata* can be found. *Cercocarpus ledifolius* occurs on rimrock areas. *Purshia tridentata* is also occasionally found.

DIAGTREES: *Juniperus occidentalis* is the only dominant tree.

FORBS: *Antennaria dimorpha*, *Eriogonum* sp.

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 4500
UPDATE: 90-05-04 JSK

UPPER-ELEVATION: 6500

MAPCODE: 420
MAPNAME: Juniperus occidentalis/Artemisia tridentata/Poa secunda

COMNAMES: western juniper/big sagebrush/Sandbergs bluegrass

ACRONAME: JUNOCC/ARTTRI/POASEC
CROSSWALK: JUNOCC/ARTTRI/POASEC

VEGSTRUCT: Open woodland or savanna with widely spaced juniper trees up to 10 meters, with widely spaced medium to tall big sagebrush shrubs, and a short bunchgrass dominated understory.

ECOLOGY: Occurs in areas of shallow or very compacted soils, or scablands, with deep enough patches to support big sagebrush (instead of low sagebrush). Vegetative cover is low, & bare soil tends to reduce fire frequency. May be artifact of overgrazing at sites.

DISTRIBUT: Common in the Basin and Range Province of Lake, Harney and Malheur Cos.

DIAGGRASS: Poa secunda is the dominant grass. Danthonia unispicata, Sitanian hystrix, Stipa thruberiana, S. occidentalis, Agropyron spicatum, and Festuca idahoensis are occasionally found, but are never important.

DIAGSHRUB: Artemisia tridentata is the dominant shrub, and is always present. Artemisia arbuscula occasionally occurs, and this type often occurs in a matrix with Artemisia cana playas. Chrysothamnus, Guttierrezia and Tetradymia species are sometimes present.

DIAGTREES: Juniperus occidentalis is the only common, dominant tree.

FORBS:

OTHSHRUB: Cercocarpus ledifolius is often present, especially in canyons or along rimrock or basalt outcrops. Purshia tridentata can also be present in patches.

OTHTREES: None.

LOWER-ELEVATION: 3000
UPDATE: 90-06-06 JSK

UPPER-ELEVATION: 6000

MAPCODE: 421
MAPNAME: *Juniperus occidentalis*/*Artemisia tridentata*/*Agropyron spicatum*

COMNAMES: western juniper/big sagebrush/bluebunch wheatgrass

ACRONAME: JUNOCC/ARTTRI/AGRSPI
CROSSWALK: JUNOCC/ARTTRI/AGRSPI

VEGSTRUCT: Open woodland with widely spaced juniper trees up to 10 m in height. Big sagebrush is widely spaced between the trees, and there is a bunchgrass understory.

ECOLOGY: Occurs on canyons and slopes, and on valley margins in central Oregon, and on fire protected sites in the northern Basin and Range province. Mosses occur the understory under juniper trees.

DISTRIBUT: Occurs throughout central and southeastern Oregon, in Crook, Grant, Jefferson, Deschutes, Lake, Harney, and Malheur Counties. Occasional in northeastern and north central Oregon.

DIAGGRASS: *Agropyron spicatum* is the dominant species. *Poa sandbergii*, *Stipa thurberiana* and *Sitanion hystrix* are constant associates. On north slopes *Festuca idahoensis* and *Elymus cinereus* are important, while sandy sites have *Stipa comata* and *Oryzopsis hymnenoides*. *Bromus tectorum* is often dominant in overgrazed or disturbed sites.

DIAGSHRUB: *Artemisia tridentata* is the characteristic shrub. *Cercocarpus ledifolius*, *Chrysothamnus nausosus* and *C. viscidiflorus* are constant associates. *Purshia tridentata*, *Artemisia arbuscula*, *A. rigida*, and *Tetrademia* species are important in areas.

DIAGTREES: *Juniperus occidentalis* is the only tree.

FORBS: *Antennaria dimorpha*, *Astragalus purshii*, *Balsamorhiza sagittata*, *Crepis acuminata*, *Erigeron pumilus*, *Lupinus caudatus*, *L. laxiflorus*, *Microseris nutans*, *Phlox longifolia*.

OTHSHRUB: None.

OTHTREES: In some canyons, isolated *Pinus ponderosa* individuals occur.

LOWER-ELEVATION: 2000
UPDATE: 90-02-03 JSK

UPPER-ELEVATION: 5000

MAPCODE: 423
MAPNAME: Juniperus occidentalis/Artemisia tridentata/Sitanian hystrix-Stipa thurberiana

COMNAMES: western juniper/big sagebrush/bottlebrush squirreltail-Thurbers needlegrass

ACRONAME: JUNOCC/ARTTRI/SITHYS-STITHU
CROSSWALK: JUNOCC/ARTTRI/SITHYS, JUNNOCC/ARTTRI/STITHU

VEGSTRUCT: Open woodland with widely spaced juniper trees up to 10 m in height. Big sagebrush occurs between the trees, and there is a bunchgrass understory. Bunchgrasses dominate the understory.

ECOLOGY: On flats and gentle slopes, in usually with stony soils isolated from wildfire by rocky outcrops or rimrock.

DISTRIBUT: Widespread but minor type in the Basin and Range Province of Harney and Lake Counties.

DIAGGRASS: Stipa thurberiana and Sitanian hystrix are the two dominant species, with most of the graminoid cover. Poa sandbergii, Agropyron spicatum, Stipa comata, S. occidentalis, Oryzopsis hymenoides, Festuca idahoensis and Elymus cinereus also occasionally occur

DIAGSHRUB: Artemisia tridentata is the characteristic shrub. Chrysothamnus nauseosus and C. viscidiflorus are constant associates.

DIAGTREES: Juniperus occidentalis is the only tree.

FORBS: Antennaria dimorpha, Astragalus purshii, Balsamorhiza sagittata, Crepis acuminata, Erigeron pumilus, Lupinus caudatus, L. laxiflorus, Microseris nutans, Phlox longifolia.

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 4000
UPDATE: 90-02-03 JSK

UPPER-ELEVATION: 5000

MAPCODE: 424
MAPNAME: Juniperus occidentalis/Artemisia tridentata/Festuca idahoensis

COMNAMES: western juniper/big sagebrush/Idaho fescue

ACRONAME: JUNOCC/ARTTRI/FESIDA
CROSSWALK: JUNOCC/ARTTRI/FESIDA

VEGSTRUCT: Open woodland with widely to moderately spaced juniper trees up to 10 m in height. Big sagebrush is widely spaced between the trees, and there is a bunchgrass and forb understory.

ECOLOGY: Occurs on slopes at the foothills and margins of the mountains, usually on deep, stony soils, mostly on northerly or easterly exposures.

DISTRIBUT: Occurs at the edges of the Ochoco and Blue Mountains in central Oregon, in Crook, Grant, Jefferson, Deschutes, and in southeastern Oregon, in Lake, Harney, and Malheur Counties.

DIAGGRASS: Festuca idahoensis is the dominant species. Poa sandbergii, Carex geyeri, C. rossii, Stipa occidetalis, Sitanian hystrix often occur. Elymus cinereus, Agropyron spicatum, and Poa nevadensis also occur. Poa pratensis, P. bulbosa, and Bromus tectorum are increasers in disturbed areas.

DIAGSHRUB: Artemisia tridentata is the characteristic shrub (var. vasyana in some sites), Cercocarpus ledifolius, Chrysothamnus nausosus are constant associates. Purshia tridentata, Artemisia arbuscula, A. rigida, and Tetrademia species are important in some areas.

DIAGTREES: Juniperus occidentalis is the only tree.

FORBS: Antennaria dimorpha, Astragalus purshii, Balsamorhiza sagittata, Crepis acuminata, Erigeron pumilus, Lupinus caudatus, L. laxiflorus, Microseris nutans, Phlox longifolia.

OTHSHRUB: Amalanchier alnifolia, Ribes sp., Peraphyllum ramosissimum, Symphoricarpos albus, and Berberis species occur here.

OTHTREES: Pinus ponderosa trees often occur at moist sites in this type. Populus tremuloides stands also occur in this type.

LOWER-ELEVATION: 4500
UPDATE: 90-02-03 JSK

UPPER-ELEVATION: 7000

MAPCODE: 425
MAPNAME: Juniperus occidentalis/Artemisia tridentata/Bromus tectorum

COMNAMES: western juniper/big sagebrush/cheatgrass

ACRONAME: JUNOCC/ARTTRI/BROTEC
CROSSWALK: JUNOCC/ARTTRI/BROTEC

VEGSTRUCT: Open woodland with widely spaced juniper trees up to 10 m in height. Big sagebrush varies from widely spaced to densely packed between the trees. There is a cheatgrass understory.

ECOLOGY: Occurs on canyons and slopes, and on valley margins in central Oregon, and on fire protected sites in the northern Basin and Range province. A disturbed version on the juniper/sagebrush/bluebunch wheatgrass and juniper/sagebrush/squirreltail types.

DISTRIBUT: Occurs throughout central and southeastern Oregon, in Crook, Grant, Jefferson, Deschutes, Lake, Harney, and Malheur Counties. Occasional in northeastern and north central Oregon.

DIAGGRASS: Agropyron spicatum is the dominant species. Poa sandbergii, Stipa thurberiana and Sitanion hystrix are constant associates. On north slopes Festuca idahoensis and Elymus cinereus are important, while sandy sites have Stipa comata and Oryzopsis hymenoides. Bromus tectorum is often dominant in overgrazed or disturbed sites.

DIAGSHRUB: Artemisia tridentata is the characteristic shrub. Cercocarpus ledifolius, Chrysothamnus nausosus and C. viscidiflorus are constant associates. Purshia tridentata, Artemisia arbuscula, A. rigida, and Tetrademia species are important in areas.

DIAGTREES: Juniperus occidentalis is the only tree.

FORBS: Forbs are limited in this type, with Sisymbrium, Lepidium species and Erodium cicutarium being the most important. Antennaria dimorpha, Astragalus purshii, Balsamorhiza sagittata, Crepis acuminata, Erigeron pumilus, and Achillea millefolium can occur.

OTHSHRUB: None.

OTHTREES: In some canyons, isolated Pinus ponderosa individuals occur.

LOWER-ELEVATION: 2000
UPDATE: 90-06-08 JSK

UPPER-ELEVATION: 5000

MAPCODE: 427

MAPNAME: *Juniperus occidentalis*/*Artemisia tridentata* ssp. *vaseyana*/*Festuca idahoensis*

COMNAMES: western juniper/mountain big sagebrush/Idaho fescue

ACRONAME: JUNOCC/ARTTRIV/FESIDA

CROSSWALK: JUNOCC/ARTTRIV/FESIDA

VEGSTRUCT: Open woodland to closed-canopied forests of juniper trees up to 10 m in height. Open areas of medium-tall (< 1.5 m) sagebrush are common, with a forb - bunchgrass understory.

ECOLOGY: Found on steep to gentle slopes and benches in the desert mountains and in the foothills of the Blue Mountains on north-facing slopes. Usually with good soil development.

DISTRIBUT: Major type at middle to upper elevations in Owyhee Uplands near the Idaho border and the Blue Mountains, as well as at middle elevations in the Steens, Warner and other mountains of south central Oregon.

DIAGGRASS: *Festuca idahoensis*, *Poa ampla*, *P. sandbergii*, *Agropyron spicatum*, *A. caninum*, *Stipa occidentalis*, *S. thurberiana*, *Sitanion hystrix*, *Carex geyeriana*, *C. rossii*, and *Elymus glaucus* occur in the bunchgrass dominated understory.

DIAGSHRUB: *Cercocarpus ledifolius* occurs as a codominant in areas. *Artemisia tridentata* ssp. *vaseyana* is the dominant shrub, occurring between junipers, and in openings.

DIAGTREES: Western Juniper is the only important dominant tree.

FORBS: *Antennaria dimorpha*, *Arabis holboellii*, *Astragalus beckwithii*, *A. purshii*, *Balsamorhiza sagittata*, *Crepis acuminata*, *Erigeron bloomeri*, *E. pumilus*, *Lupinus caudatus*, *L. laxiflorus*, *Microseris nutans*, *Phlox longifolia*.

OTHSHRUB: *Symphoricarpos* species, *Amelanchier alnifolia*, *Chrysothamnus viscidiflorus*, *Eriogonum heracleiodes*, *Berberis* species, *Prunus emarginata*, and *Pershia tridentata* occasionally are found in this type.

OTHTREES: *Pinus ponderosa* occurs in areas, along with *Populus tremuloides*.

LOWER-ELEVATION: 5000

UPPER-ELEVATION: 7500

UPDATE: 90-02-03 JSK

MAPCODE: 429
MAPNAME: Juniperus occidentalis/Artemisia tridentata-Purshia tridentata

COMNAMES: western juniper/big sagebrush-bitterbrush

ACRONAME: JUNOCC/ARTTRI-PURTRI
CROSSWALK: JUNOCC/ARTTRI-PURTRI/FESIDA, JUNOCC/ARTTRI-PURTRI/AGRSPI

VEGSTRUCT: Open woodland with widely to moderately spaced juniper trees up to 10 m in height. Big sagebrush and bitterbrush occur between the trees, and there is a bunchgrass or an occasional cheatgrass understory.

ECOLOGY: Occurs on flats and slopes often on stony, volcanic clays, silts or ash soils.

DISTRIBUT: Occurs at the edges along the East Slope of Cascades and in central Oregon, in Wasco, Jefferson, Deschutes, and Crook Counties, as well as in south-central Oregon, in Klamath and Lake Counties.

DIAGGRASS: Festuca idahoensis is the dominant species. Agropyron spicatum, Poa sandbergii, Stipa occidetalis, Sitanian hystrix can be codominant. Elymus cinereus, Stipa comata, and S. thurberiana are occasionally found. Bromus tectorum is an increaser which dominates some disturbed areas.

DIAGSHRUB: Artemisia tridentata and Purshia tridentata are codominant. Chrysothamnus nausosus and C. viscidiflorus are constant associates. Artemisia arbuscula, A. rigida, and Tetrademia species are important in some areas.

DIAGTREES: Juniperus occidentalis is the sole dominant tree. Pinus ponderosa occurs along the pine-juniper ecotone, on north slopes, and on canyons in this type.

FORBS: Antennaria dimorpha, Astragalus purshii, Balsamorhiza sagittata, Crepis acuminata, Erigeron pumilus, Lupinus caudatus, L. laxiflorus, Microseris nutans, Phlox longifolia.

OTHSHRUB: Amalanchier alnifolia, Ribes sp., Holidiscus discolor, Ceanothus velutinus, Symphoricarpos albus, and Berberis species occur in canyons or on steep slopes.

OTHTREES: None.

LOWER-ELEVATION: 3500
UPDATE: 90-02-04 JSK

UPPER-ELEVATION: 7000

MAPCODE: 430
MAPNAME: *Juniperus occidentalis*/*Purshia tridentata*/*Agropyron spicatum*

COMNAMES: western juniper/bitterbrush/bluebunch wheatgrass

ACRONAME: JUNOCC/PURTRI/AGRSP
CROSSWALK: JUNOCC/PURTRI/AGRSP

VEGSTRUCT: Open woodland with widely to moderately spaced juniper trees up to 10 m in height. Bitterbrush occurs between the trees, and there is a bunchgrass and forb understory.

ECOLOGY: Occurs on slopes, canyons and rocky flats, on basalt, usually in areas with fairly shallow, stony outcrops.

DISTRIBUT: Occurs along the east slope of the Cascades, in central Oregon, in Wasco, Jefferson, Deschutes, and Lake Counties, and occasionally in southeastern Oregon mountains in Grant, Harney, and Malheur Counties.

DIAGGRASS: *Festuca idahoensis* is the dominant species. *Poa sandbergii*, *Carex geyeri*, *C. rossii*, *Stipa occidetalis*, *Sitanian hystrix* often occur. *Elymus cinereus*, *Agropyron spicatum*, and *Poa nevadensis* also occur. *Poa pratensis*, *P. bulbosa*, and *Bromus tectorum* are increasers in disturbed areas.

DIAGSHRUB: *Purshia tridentata* is the characteristic shrub. *Chrysothamnus nauseosu* and *C. viscidiflorus* can be codominant. *Artemisia tridentata* and *A. rigida* are important in some areas.

DIAGTREES: *Juniperus occidentalis* is the dominant tree. Ponderosa pine often occurs, as this type is at the juniper-pine ecotone.

FORBS: *Antennaria dimorpha*, *Balsamorhiza sagittata*, *Crepis acuminata*, *Erigeron pumilus*, *Lupinus caudatus*, *L. laxiflorus*, *Penstemon pumilis* and *Eriogonum* species.

OTHSHRUB: *Artemisia tridentata* occurs at the drier margins of sites. *Amalanchier alnifolia*, *Ribes* sp., *Symphoricarpos albus*, *Berberis* species, *Holodiscus discolor* and occur on steeper, moist slopes.

OTHTREES: *Cercocarpus ledifolius* occurs on canyon slopes and walls, along with *Prunus virginiana*. Ponderosa pine occurs as isolated individuals in many sites.

LOWER-ELEVATION: 3500 UPPER-ELEVATION: 5500
UPDATE: 90-02-03 JSK

MAPCODE: 431
MAPNAME: Juniperus occidentalis/Purshia tridentata/Festuca idahoensis

COMNAMES: western juniper/bitterbrush/Idaho fescue

ACRONAME: JUNOCC/PURTRI/FESIDA
CROSSWALK: JUNOCC/PURTRI/FESIDA

VEGSTRUCT: Open woodland with widely to moderately spaced juniper trees up to 10 m in height. Bitterbrush occurs between the trees, and there is a bunchgrass and forb understory.

ECOLOGY: Occurs on slopes and rocky flats, on basalts, at deeper soiled and moister sites than the Juniper/bitterbrush/bluebunch wheatgrass type.

DISTRIBUT: Occurs along the east slope of the Cascades, in central Oregon, in Wasco, Jefferson, Deschutes, and Lake Counties, and occasionally in southeastern Oregon mountains in Grant, Harney, and Malheur Counties.

DIAGGRASS: Festuca idahoensis is the dominant species. Poa sandbergii, Carex geyeri, C. rossii, Stipa occidentalis, Sitanian hystrix often occur. Elymus cinereus, Agropyron spicatum, and Poa nevadensis also occur. Poa pratensis, P. bulbosa, and Bromus tectorum are increasers in disturbed areas.

DIAGSHRUB: Purshia tridentata is the characteristic shrub. Chrysothamnus species are constant associates. Artemisia arbuscula, A. rigida, and Tetrademia species are important in some areas.

DIAGTREES: Juniperus occidentalis is the dominant tree. Ponderosa pine often occurs, as this type is at the juniper-pine ecotone.

FORBS: Antennaria dimorpha, Balsamorhiza sagittata, Crepis acuminata, Erigeron pumilus, Penstemon pumilis, Lupinus caudatus, L. laxiflorus, Microseris nutans, Phlox longifolia.

OTHSHRUB: Artemisia tridentata occurs at the drier margins of sites. Amalanchier alnifolia, Ribes sp., Symphoricarpos albus, Berberis species, Holodiscus discolor and occur on steeper, moist slopes.

OTHTREES: None.

LOWER-ELEVATION: 3500
UPDATE: 90-02-03 JSK

UPPER-ELEVATION: 5500

MAPCODE: 440
MAPNAME: Owyhee Uplands canyon, shrubland, and ash mosaic

COMNAMES: Owyhee Uplands canyon, shrubland-grassland ash mosaic

ACRONAME: ARTTRI/AGRSPI-JUNOCC/AGRSPI-ASH FORB-ATRCN/SITHYS mosaic
CROSSWALK:

VEGSTRUCT: A mosaic of juniper canyons, rhyolitic canyons, barren ash slopes with forbs , salt desert shrub and tall shrub/bunchgrass habitats. Bunchgrass, cheatgrass and big sagebrush dominate most areas.

ECOLOGY: A varied mosaic in rugged, eroded primarily rhyolitic canyons, with recent red, green, tan and white ash deposits. Extremely dry, with diverse, alkaline vegetation in the flats and in many of the washes.

DISTRIBUT: Occurs only in the area around the Owyhee River Canyon in Malheur County, but is a fairly large unit.

DIAGGRASS: Agropyron spicatum and Bromus tectorum are the dominant grasses depending on the condition. Stipa comata, S. thurberiana, Oryzopsis hymenoides, Elymus cinereus, Sitanian hystrix, and Festuca idahoensis all occur regularly.

DIAGSHRUB: Artemisia tridentata and Atriplex confertifolia are the dominant shrubs. Along the ashy areas and in bottoms, Glossopetalon nevadense, Sarcobatus vermiculatus, Atriplex spinosa and Artemisia spinosa all can be found. Chrysothamnus nauseosus and C. viscidiflorus are both ubiquitous.

DIAGTREES: Juniperus occidentalis and Cercocarpus ledifolius are both common, but rarely dominant anywhere. Prunus and Salix species occasionally occur in the stream bottoms of the seasonal gulches.

FORBS: Numerous ash specific forbs , typical big sagebrush/bluebunch wheatgrass forbs and bluebunch wheatgrass canyon forbs .

OTHSHRUB:

OTHTREES:

LOWER-ELEVATION: 3000
UPDATE: 90-06-07 JSK

UPPER-ELEVATION: 5500

MAPCODE: 445
MAPNAME: Rimrock and canyon shrubland, with sagebrush.

COMNAMES: Sagebrush, serviceberry, currents, rose and chokecherry canyon and rimrock walls and slopes.

ACRONAME:
CROSSWALK:

VEGSTRUCT: Diverse tall and medium shrubs, barren slopes often with bunchgrasses and forbs interspersed. Variable type, often with only sagebrush and bunchgrass, often with mixed shrubs, but without significant amounts of juniper or mahogany.

ECOLOGY: Steep canyon slopes and rimrock cliffs, talus garlands, including all aspects.

DISTRIBUT: Canyons and rimrock valley edges throughout central, southeastern and south-central Oregon.

DIAGGRASS: *Agropyron spicatum* and *Bromus tectorum* are the most widespread grasses. *Elymus cinereus* is abundant in patches. *Elymus glaucus*, *Stipa occidentalis*, *S. comata*, *Sitanian hystrix*, *Festuca idahoensis* and *Poa sandbergii* occur.

DIAGSHRUBS: *Cercocarpus ledifolius*, *Ribes* spp., *Amalanchier alnifolia*, *Glossepetalon nevadense*, *Prunus virginiana*, *Artemisia tridentata*, *A. arbuscula*, *A. papposa*, *Atriplex confertifolia*, *Rosa* sp., and *Purshia tridentata*.

DIAGTREES: *Juniperus occidentalis*.

FORBS: *Balsamorhiza sagittata*, *Phlox* sp., *Eriogonum* sp.

OTHSHRUB: None.

OTHTREES: None.

LOWER-ELEVATION: 2000
UPDATE: 90-02-01 JSK

UPPER-ELEVATION: 7000

MAPCODE: 450

MAPNAME: Mountain Brush - Mixed Chaparral foothill, plateau, and valley margin mosaic

COMNAMES: Serviceberry, bitterbrush, bittercherry, snowbrush mountain brush

ACRONAME: AMAALN, PURTRI, PRUEMA, CEOVEL, POPTRE

CROSSWALK:

VEGSTRUCT: Tall shrublands (> 1 meter), including closed canopy, dense chaparral and open, widely spaced shrubs.

ECOLOGY: This includes all, southeastern and south-central Oregon chaparral types, found either in desert mountains or on canyonlands, but excludes sagebrush steppe, mountain mahogany and black hawthorn valley margins.

DISTRIBUT: Widespread in the southern portion of the east slope of the Cascades of Klamath County, where it merges with the more common southwest Oregon chaparral types. Also in the Owyhee, Mahogany, Steens, Trout Creek and other desert mountains.

DIAGGRASS: *Elymus cinereus*, *E. glaucus*, *Festuca idahoensis*, *Agropyron spicatum*, and *Poa secunda* are usually present.

DIAGSHRUBS: *Populus tremuloides* (as a shrub in snowbanks), *Amelanchier alnifolia*, *Prunus emarginata*, *P. virginiana*, *P. subcordata*, *Ceanothus velutinus*, *Purshia tridentata*.

OTHSHRUBS: *Artemisia tridentata* is often found nearby, or as part of this type.

OTHTREES: *Pinus ponderosa* and *Juniperus occidentalis* are occasionally found.

LOWER-ELEVATION: 4000

UPPER-ELEVATION: 9000

UPDATE: 90-08-01 JSK

MAPCODE: 460
MAPNAME: Blue Mountain Canyon, Valley Margin and Foothill Shrubland

COMNAMES: Blue Mountain and Columbia Basin Canyon, Valley Margin, and Foothill Shrubland

ACRONAME: SYMALB/FESIDA
CROSSWALK: SYMALB/FESIDA, CELRET/AGRSPI, GLONEV/AGRSPI, PRUEMA/AGRSPI, PHYMAL-SYMALB, RHUGLA/AGRSPI, ROSWOO-SYMALB, CRADOUSYMALB/F

VEGSTRUCT: Mosaic of tall to medium shrublands and bunchgrass slopes with diverse forbs in moist sites, with little bare ground. Often with dense stands of hawthorn and isolated Ponderosa pine or aspen.

ECOLOGY: A number of types, usually found on steep canyon slopes, in the Blue Mts. and the margins of the Columbia Basin. In areas with some soil development, either loess deposits or volcanic clays, occurring on all aspects.

DISTRIBUT: Common in canyons of Wallowa, Union, Baker and Umatilla Co's, and along the southeastern edge of the Columbia Basin in Umatilla and Morrow Cos.

DIAGGRASS: *Festuca idahoensis* is the dominant grass. *Koeleria nidita*, *Agropyron spicatum*, *Poa secunda* and *Stipa* species are constant associates.

DIAGSHRUBS: *Symphoricarpos albus*, *Physocarpus malvaceus*, *Rhus glabra*, *Rosa nutkana*, *Crataegus douglasii*, *Prunus emarginata*, *Glossopetalon nevadense*, and *Celtis reticulata* are the important shrubs.

DIAGTREES: None.

FORBS: *Geum triflorum*, *Potentilla gracilis*, *Lomatium triternatum*, *Balsamorhiza sagittata*, *Eriogonum*, *Phlox*, and *Erigeron* species are important.

OTHSHRUB: *Artemisia tridentata* occasionally occurs, along with *Chrysothamnus* sp. in weedy areas.

OTHTREES: *Pinus ponderosa*, *Populus trichocarpa* and rarely *Pseudotsuga menziesii* are found in and adjacent to this type.

LOWER-ELEVATION: 3000
UPDATE: 90-06-06 JSK

UPPER-ELEVATION: 5000

MAPCODE: 463
MAPNAME: Fraxinus latifolia-Populus trichocarpa/pasture mosaic

COMNAMES: Oregon ash-black cottonwood-bottomland pasture mosaic

ACRONAME: FRALAT
CROSSWALK:

VEGSTRUCT: A mosaic of bottomland alluvial riparian forest and developed farmland and pasturelands. Tall, closed canopy, deciduous woodlands with significant conifer invasion and a dense shrub and forb understory interspersed with farms, pastures and wetlands.

ECOLOGY: These are what is left of the bottomland, alluvial gallery forests which dominated the floodplain areas of the western interior valleys. Agricultural development and upstream dams have allowed for both conifer invasion and wetlands filling.

DISTRIBUT: Widely distributed along rivers and streams in the Willamette and Umpqua Valleys. Also occurs many coastal areas, in the Rogue Valley, and occasionally in eastern Oregon.

DIAGGRASS: Deschampsia caespitosa, Carex obnupta, Carex unilateralis and Hordeum brachyantherum are important natives. Phalaris arundinacea, Festuca arundinacea, and Dactylus glomerata are the important non-natives. Corn, wheat, ryegrass and other crops are grown.

DIAGSHRUB: Rubus discolor is abundant (and non native). Rosa species, Symphoricarpos albus, Gaultheria shallon, Vaccinium parvifolium, and Spiraea douglasii are all important. Salix species occur along the streams and rivers along with the riparian trees.

DIAGTREES: Populus trichocarpa, Alnus rubra, Fraxinus latifolia, and Acer macrophyllum are the characteristic dominants. Thuja plicata, Abies grandis, Pseudotsuga menziesii and Tsuga heterophylla are the common conifers.

FORBS: Urtica dioica, Oxalis oregana, Maianthemum dilatatum, Rubus ursinus, Oenanthe sarmentosa, Montia parviflora.

OTHTREES: Quercus kelloggii is important in the Rogue Valley. Quercus garryana is occasionally found, along with Calocedrus decurrens.

LOWER-ELEVATION: 10
UPDATE: 90-08-01 JSK

UPPER-ELEVATION: 2000

MAPCODE: 470
MAPNAME: Chaparral

COMNAMES: Southern Oregon chaparral

ACRONAME: Any type of chaparral (PREM, QUBR, CECU, ARCI, ARVI...)
CROSSWALK:

VEGSTRUCT: Includes medium to tall shrublands, which range from closed canopy to widely spaced shrubs.

ECOLOGY: Includes serpentine chaparral which is an edaphic climax, to typical, fire dependent chaparral on low elevation areas in southwestern Oregon as well as some Siskiyou Mountain chaparral types occurring mixed with conifer forests.

DISTRIBUT: Widespread in southern Oregon. Most abundant in the foothills surrounding the Rogue and Illinois Valleys.

DIAGGRASS: *Festuca idahoensis*, *F. californica*, *Danthonia californica*, *Stipa lemmonii*, *S. occidentalis*, and *Poa secunda* are the native grasses. Introduced species include *Bromus carinatus*, *B. mollis*, *Elymus caput-medasue*, and *Cynosorus echinatus*.

DIAGSHRUB: *Ceanothus cuneatus*, *C. integerrimus*, *Arctostaphylos viscidus*, *A. nevadensis*, *A. cinerea*, *A. columbiana*, *Cercocarpus betuloides*, *Prunus emarginata*, *P. subcordata*, *P. virginiana*, *Quercus breweriana*, *Q. vaccinifolia*, and *Q. sabiniana*.

DIAGTREES: None.

OTHTREES: *Pinus ponderosa*, *P. jeffreyi*, *P. contorta*, *P. sabiniana*, *Pseudotsuga menziesii*, *Picea breweri*, *Calocedrus decurrens*, *Quercus garryana* and *Q. kelloggii* all occasionally found within or adjacent to these types.

OTHSHRUB:

LOWER-ELEVATION: 1000
UPDATE: 90-08-01 JSK

UPPER-ELEVATION: 5000

Oregon Vegetation Map Forest Classification
(February 22, 1992)

COASTAL FORESTS

Sitka spruce-western hemlock forest (501)
redwood forest (502)

FOOTHILLS HARDWOOD FORESTS AND WOODLANDS

oak-Pacific madrone forest and woodland (506)
oak-Douglas fir-ponderosa pine/pasture-urban mosaic (476)
Douglas fir-Oregon white oak forest and woodland (505)
Oregon white oak-ponderosa pine (475)
ponderosa pine-Oregon white oak forest and woodland (535)

MONTANE MIXED EVERGREEN FORESTS

Siskiyou mixed evergreen forest (507)

LOWLAND AND MONTANE MIXED CONIFER FORESTS AND WOODLANDS

Western Slope of the Cascade Range, the Coast Range, and the Siskiyou Mountains
Douglas fir-western hemlock-grand fir forest (512)
mixed conifer and broadleaf deciduous forest (510)
silver fir-western hemlock-noble fir forest (513)

Douglas fir-ponderosa pine-incense cedar forest (523)
Siskiyou-Sierra mixed conifer forest (509)
Siskiyou-Sierra mixed conifer woodland on ultramafic substrates (508)

Eastern Slope of the Cascade Range and the Blue Mountains
ponderosa pine forest and woodland (503)
ponderosa pine forest and woodland on pumice (504)
ponderosa pine-lodgepole pine forest (534)

ponderosa pine-Douglas fir (western larch-lodgepole pine forest) (527)
western larch-Douglas fir-ponderosa pine-lodgepole pine (537)
ponderosa pine-Douglas fir-true fir forest (528)

Douglas fir-true fir-ponderosa pine (western larch) forest (511)
western larch-Douglas fir-true fir forest (541)

true fir-Douglas fir forest (522)
true fir-lodgepole pine-western larch (Douglas fir) forest (530)
true fir-lodgepole pine forest (532)

montane lodgepole pine forest (514)
montane lodgepole pine forest and woodland on pumice (516)

montane lodgepole pine-true fir forest (531)
montane lodgepole pine-western larch forest (538)

UPPER MONTANE AND SUBALPINE FORESTS, WOODLANDS AND PARKLANDS

mountain hemlock forest (517)
mountain hemlock parkland (544)
mountain hemlock-true fir-lodgepole pine forest (536)
mountain hemlock-subalpine fir-lodgepole pine forest (533)
mountain hemlock-red fir woodland (519)
subalpine fir-Engelmann spruce forest and parklands (518)
subalpine lodgepole pine forest and woodland (515)
Siskiyou mixed conifer forest, high elevation (548)

OREGON FOREST TYPES ORDERED BY MAPCODE

Forests

475 Oregon white oak-ponderosa pine
476 oak-Douglas fir-ponderosa pine/pasture-urban mosaic
501 Sitka spruce-western hemlock forest
502 redwood forest
503 ponderosa pine forest and woodland
505 Douglas fir-Oregon white oak forest and woodland
506 oak-Pacific madrone forest and woodland
507 Siskiyou mixed evergreen forest
508 Siskiyou-Sierra mixed conifer woodland on ultramafic substrates
509 Siskiyou-Sierra mixed conifer forest
510 mixed conifer and broadleaf deciduous forest
511 Douglas fir-true fir-ponderosa pine (western larch) forest
512 Douglas fir-western hemlock-grand fir forest
513 silver fir-western hemlock-noble fir forest
514 montane lodgepole pine forest
515 subalpine lodgepole pine forest and woodland
516 montane lodgepole pine forest and woodland on pumice
517 mountain hemlock forest
518 subalpine fir-Engelmann spruce forest and parklands
519 mountain hemlock-red fir woodland
522 true fir-Douglas fir forest
523 Douglas fir-ponderosa pine-incense cedar forest
527 ponderosa pine-Douglas fir (western larch-lodgepole pine forest)
528 ponderosa pine-Douglas fir-true fir forest
530 true fir-lodgepole pine-western larch (Douglas fir) forest
531 montane lodgepole pine-true fir forest
532 true fir-lodgepole pine forest
533 mountain hemlock-subalpine fir-lodgepole pine forest
534 ponderosa pine-lodgepole pine forest
535 ponderosa pine-Oregon white oak forest and woodland
536 mountain hemlock-true fir-lodgepole pine forest
537 western larch-Douglas fir-ponderosa pine-lodgepole pine
538 montane lodgepole pine-western larch forest
540 ponderosa pine forest and woodland on pumice
541 western larch-Douglas fir-true fir forest
544 mountain hemlock parkland
548 Siskiyou mixed conifer forest, high elevation

OREGON FOREST KUCHLER TYPES

- 1 Spruce-cedar-hemlock forest (Picea-Thuja-Tsuga)
- 2 Cedar-hemlock-Douglas fir forest (Thuja-Tsuga-Pseudotsuga)
- 3 Silver fir-Douglas fir forest (Abies-Pseudotsuga)
- 4 Fir-hemlock forest (Abies-Tsuga)
- 5 Mixed conifer forest (Abies-Pinus-Pseudotsuga)
- 6 Redwood forest (Sequoia-Pseudotsuga)
- 22 Oregon oakwoods (Quercus)
- 25 California mixed evergreen forest (Quercus-Arbutus-Pseudotsuga)
- 10 Western ponderosa forest (Pinus)
- 13 Grand fir-Douglas fir forest (Abies-Pseudotsuga)
- 14 Western spruce forest (Picea-Abies)

MAPCODE: 475
MAPNAME: Quercus garryana-Pinus ponderosa forest and woodland

COMNAMES: Oregon white oak-ponderosa pine forest and woodland

DESCRIPTION: An open woodland to closed-canopied forest in which Oregon white oak predominates. Ponderosa pine may be locally common, but more often occurs as scattered individuals. There are rich shrub and herbaceous layers, which become less lush as the degree of canopy closure increases.

DISTRIBUT: East side of the Cascade Range near the Columbia River Gorge.

DIAGGRASS: Bromus carinatus, Festuca idahoensis, Koeleria cristata

DIAGSHRUB: Ceanothus prostrata, Purshia tridentata, Rhus diversiloba, Symphoricarpos albus

DIAGTREES: Pinus ponderosa, Quercus garryana

FERNS AND ALLIES: None

FORBS: Achillea millefolium, Arenaria macrophylla, Balsamorhiza sagittata, Clarkia rhomboidea, Collinsia grandiflora, Delphinium nuttallianum, Fragaria vesca, Fritillaria pudica, Hieracium albertinum, H. albiflorum, Hydrophyllum capitatum, Lathyrus lanszwertii, Lithophragma glabra, Lomatium macrocarpum, L. triternatum, Lupinus caudatus, L. leucophyllus, Luina nardosmia, Montia perfoliata, Osmorhiza sp., Sedum stenopetalum, Smilacina racemosa, Vicia americana

OTHGRASS: Agropyron spicatum, Bromus tectorum, Carex geyeri, Elymus glaucus, Festuca occidentalis, Poa bulbosa, Sitanion hystrix, Stipa occidentalis

OTHSHRUB: Amelanchier alnifolia, Arcostaphylos patula, Berberis repens, Ceanothus integerrimus, Chrysothamnus nauseous, Holodiscus discolor, Rosa gymnocarpa, R. nuttallii, Symphoricarpos mollis

OTHTREES: Pseudotsuga menziesii

ELEVATION (ft): 100-3300

KUCHLER NAME: Oregon oakwoods (Quercus)
KUCHLER NUMBER: 22

SAF NAME: Oregon white oak (in part)
SAF NUMBER: 233

OTHER REFERENCES: Franklin and Dyrness (1973), p. 310-311.

MAPCODE: 476

MAPNAME: Quercus spp.-Pseudotsuga menziesii-Pinus ponderosa/pasture-urban mosaic

COMNAMES: Oak-Douglas fir-ponderosa pine/pasture-urban mosaic

DESCRIPTION: Open woodland to closed-canopied forests in which Oregon white oak and/or California oaks dominate, although either Douglas fir menziesii or ponderosa pine may be common locally. The abundance of conifers, as well as the degree of canopy closure, has increased due to fire suppression. Stands in the Willamette Valley may be comprised solely of Oregon oak, but the importance of California oak increases toward the south. These are usually woodlots surrounded by crop or pasture land or residential areas. These are all too small to map individually.

DISTRIBUT: Occurs along the periphery of the Willamette Valley, and along the interior valleys of the Rogue and Umpqua Rivers.

DIAGGRASS: Agrostis idahoensis, Bromus ciliatus, B. inermis, B. mollis, B. pacificus, B. rigidus, B. vulgaris, Dactylis glomerata, Danthonia californica, D. intermedia, Holcus lanatus, Poa pratensis, Trisetum cernuum

DIAGSHRUB: Amelanchier alnifolia, Arctostaphylos viscida, Ceanothus integerrimus, Corylus cornuta, Holodiscus discolor, Prunus avium, Rhus diversiloba, Rosa gymnocarpa, R. nutkana, Symphoricarpos albus,

DIAGTREES: Pseudotsuga menziesii, Pinus ponderosa, Quercus garryana, Q. kelloggii

FERNS AND ALLIES: Polystichum munitum, Pteridium aquilinum

FORBS: Apocynum pumilum, Brodiaea elegans, Fragaria vesca, F. virginiana, Galium triflorum, Gilia capitata, Hypericum perforatum, Ligusticum apiifolium, Lupinus albifrons, Madia madioides, Marsh oreganus, Navarretia intertexta, Osmorhiza chilensis, Perideridia bolanderi, Plantago lanceolata, Psoralea physoides, Sanicula crassicaulis, Satureja douglasii, Tellima grandiflora, Vicia americana

OTHGRASS: Elymus glaucus, Festuca californica, F. rubra, Phleum pratense, Stipa lettermanii

OTHSHRUB: Berberis piperi, Cercocarpus betuloides, Crataegus douglasii, Lonicera ciliosa, L. hispida, Osmaronia cerasiformis, Rubus parviflorus, R. ursinus, Whipplea modesta

OTHTREES: Abies concolor, A. grandis, Acer macrophyllum, Arbutus menziesii, Pinus lambertiana

ELEVATION (ft): 75-1500

KUCHLER NAME: Oregon oakwoods (Quercus) & cedar-hemlock-Douglas fir forest (Thuja-Tsuga-Pseudotsuga)

KUCHLER NUMBER: 22 & 2

SAF NAME: Oregon white oak (in part)

SAF NUMBER: 233

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 111-115; Atzet and McCrimmon (1990), pp. 324- 327.

MAPCODE: 501
MAPNAME: *Picea sitchensis*-*Tsuga heterophylla* forest

COMNAMES: Sitka spruce-western hemlock forest

DESCRIPTION: Closed-canopied forest with dense understory of shrubs, forbs, ferns, and cryptograms. Along the northern and central Oregon Coast, Sitka spruce is associated with western hemlock and western redcedar. Along the southern Oregon Coast, the latter two species become less common and Sitka spruce is found with grand fir and Douglas fir. These forests are more closely related to those described from the Northern California Coast. All of the Sitka spruces forests in Oregon have been mapped as a single entity.

DISTRIBUT: Restricted to a narrow coastal zone a few kilometers in width except where it extends up river valleys.

DIAGGRASS: *Bromus vulgaris*, *Festuca californica*, *Luzula campestris*

DIAGSHRUB: *Acer circinatum*, *Gaultheria shallon*, *Menziesia ferruginea*, *Oplopanax horridum*, *Rhamnus purshiana*, *Rubus parviflorus*, *R. spectabilis*, *R. ursinus*, *Sambucus racemosa*, *Vaccinium alaskaense*, *V. ovatum*, *V. parviflorum*

DIAGTREES: *Alnus rubra*, *Picea sitchensis*, *Pseudotsuga menziesii*, *Thuja plicata*, *Tsuga heterophylla*

FERNS AND ALLIES: *Adiantum pedatum*, *Athyrium filix-femina*, *Blechnum spicant*, *Dryopteris austriaca*, *Polypodium glycyrrhiza*, *Polystichum munitum*, *Pteridium aquilinum*

FORBS: *Actaea rubra*, *Achlys triphylla*, *Adenocaulon bicolor*, *Anemone deltoidea*, *Asarum caudatum*, *Clintonia uniflora*, *Disporum formosa*, *D. hookeri*, *Galium triflorum*, *Hieracium albiflorum*, *Lysichitum americanum*, *Maianthemum dilatatum*, *Montia siberica*, *Oxalis oregana*, *Smilacina stellata*, *Streptopus amplexifolius*, *Stachys mexicana*, *Tiarella trifoliata*, *Tolmiea menziesia*, *Trientalis latifolia*, *Trillium ovatum*, *Vancouveria hexandra*, *Viola glabella*, *V. sempervirens*

OTHGRASS: *Carex obnupta*, *Festuca occidentalis*, *Festuca subuliflora*

OTHSHRUB: *Berberis nervosa*, *Castanopsis chrysophylla*, *Corylus cornuta*, *Cornus nuttallii*, *Holodiscus discolor*, *Ribes bracteosa*, *Rosa gymnocarpa*, *Whipplea modesta*

OTHTREES: *Abies amabilis*, *Abies grandis*, *Acer macrophyllum*, *Castanopsis chrysophylla*, *Pinus contorta*, *Taxus brevifolia*

ELEVATION (ft): sea level-1000

KUCHLER NAME: Spruce-cedar-hemlock forest (*Picea*-*Thuja*-*Tsuga*)
KUCHLER NUMBER: 1

SAF NAMES: Western hemlock-Sitka spruce
SAF NUMBER: (225)

OTHER REFERENCES Franklin and Dyrness (1973), pp. 58-63; Franklin (1988), pp. 111-113; Hemstrom and Logan (1986), pp. 61-74; apparently also Mayer and Laudenslayer (1988), p. 52 - see CROSSWALK on p. 24 cf. CNDDDB 82100.

MAPCODE: 502
MAPNAME: Sequoia sempervirens forest

COMNAMES: redwood forest

DESCRIPTION: Closed-canopied forest in which redwood and Douglas fir are commonly predominate, although numerous other tree species may occur.

DISTRIBUT: A minor type at the northern limit of its range along the southwestern Oregon coast.

DIAGGRASS: Festuca occidentalis, Hierchloe occidentalis

DIAGSHRUB: Gaultheria shallon, Rhododendron macrophyllum, Vaccinium ovatum, V. parvifolium

DIAGTREES: Alnus rubra, Arbutus menziesii, Calocedrus decurrens, Lithocarpus densiflorus, Pseudotsuga menziesii, Sequoia sempervirens, Umbellularia californica

FERNS AND ALLIES: Polystichum munitum, Pteridium aquilinum

FORBS: Adenocaulon bicolor, Anemone deltoidea, Asarum caudatum, Disporum hookeri, D. smithii, Galium aparine, Goodyera oblongifolia, Hieracium albiflorum, Montia siberica, Oxalis oregana, Tiarella unifoliata, Trientalis latifolia, Trillium ovatum, Viola glabella, V. orbiculata

OTHGRASS: Festuca spp., Luzula parviflora

OTHSHRUB: Berberis nervosa, Ceanothus thrysifolia, Cornus nuttallii, Rhamnus purshiana, Rubus ursinus

OTHTREES: Abies grandis, Acer macrophllum, Chamaecyparis lawsoniana, Picea sitchensis, Taxus brevifolia, Thuja plicata, Tsuga heterophylla

ELEVATION (ft): sea level-1500

KUCHLER NAME: Redwood forest (Sequoia-Pseudotsuga)
KUCHLER NUMBER: 6

SAF NAME: Redwood
SAF NUMBER: 232

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 67-68; Atzet and Wheeler (1984), p. 158. Franklin (1988), pp. 113; Mayer and Laudenslayer (1988), pp. 60-61.

MAPCODE: 503
MAPNAME: Pinus ponderosa

COMNAMES: ponderosa pine forest and woodland

DESCRIPTION: Open woodlands to closed-canopied forest in which ponderosa pine is the only dominant tree species. The understory may include dense stands of shrubs or be dominated by grasses, sedges, or herbaceous species.

DISTRIBUT: This type occurs in the foothills of the Blue Mountains and along the eastern base of the Cascade Range. In the latter area, it is mapped outside of the central Oregon pumice region.

DIAGGRASS: Agropyron spicatum, Bromus carinatus, Bromus tectorum, Carex geyeri, Elymus glaucus, Festuca idahoensis, F. occidentalis, Koeleria cristata, Poa nervosa, P. sandbergii, P. wheeleri, Sitanion hystrix

DIAGSHRUB: Amelanchier alnifolia, Artemisia tridentata, Berberis repens, Ceanothus integerrimus, C. prostratus, Chrysothamnus viscidiflorus, Purshia tridentata, Symphoricarpos albus

DIAGTREES: Pinus ponderosa

FERNS AND ALLIES:

FORBS: Achillea millefolium, Arenaria macrophylla, Balsamorhiza sagittata, Clarkia rhomboidea, Collinsia grandiflora, Delphinium nuttallianum, Fritillaria pudica, Fragaria vesca, Hieracium albiflorum, H. albertinum, Hydrophyllum capitatum, Lathyrus lanszwertii, L. nevadensis, Lithophragma glabra, Lomatium triternatum, Lupinus caudatus, L. leucophyllus, Luina nardosmia, Montia perfoliata, Nemophila parviflora, Sedum stenopetalum, Smilacina racemosa, Vicia americanum, Wyethia mollis

OTHGRASS: Carex rossii, Poa bulbosa, P. pratensis, Stipa occidentalis

OTHSHRUB: Arctostaphylos patula, Cercocarpus ledifolius, Chrysothamnus nauseosus, Holodiscus discolor, Physocarpus malvaceus, Rosa gymnocarpa, Symphoricarpos mollis

OTHTREES: Juniperus occidentalis, Pseudotsuga menziesii, Quercus garryana

ELEVATION (ft): 2000-3500

KUCHLER NAME: Western ponderosa forest (Pinus)
KUCHLER NUMBER: 10 (in part)

SAF NAME: Interior ponderosa pine
SAF NUMBER: 237

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 168-183; Hall (1973) pp. 25-29; Marsh (1987), pp. 28-35; Hopkins (1979a), pp. 25, 27-29; Hopkins (1979b), p. 15; Johnson and Simon (1987); Mayer and Laudenslayer (1988), pp. 58-59 (in part).

MAPCODE: 504
MAPNAME: Pinus ponderosa (pumice)

COMNAMES: ponderosa pine forests and woodlands on pumice

DESCRIPTION: Somewhat open-canopied woodlands and forests along the base of the eastern slope of the central Oregon Cascades. Ponderosa pine is the usually canopy dominant, though lodgepole pine may be present as well. The edaphic effects of pumice-derived soils include a reduction in total plant cover, especially on xeric sites, and a depauperate herbaceous flora.

DISTRIBUT: East slope of the Cascade Range from the vicinity of Mt. Jefferson, south to Crater Lake.

DIAGGRASS: Carex rossii, Festuca idahoensis, Sitanion hystrix, Stipa occidentalis

DIAGSHRUB: Arctostaphylos patula, Purshia tridentata, Ceanothus velutinus

DIAGTREES: Pinus ponderosa

FERNS AND ALLIES: None

FORBS: Achillea millefolium, Antennaria corymbosa, A. geyeri, Apocynum androsaemifolium, Arabis rectissima, Collinsia parviflora, Chimaphila umbellata, Cryptantha affinis, Epilobium angustifolium, Eriophyllum lanatum, Fragaria chiloensis, Gayophytum nuttallii, Hieracium cynoglossoides, Lomatium triternatum, Lupinus caudatus, Madia minima, Paeonia brownii, Phacelia heterophylla, Phlox gracilis, Pyrola picta, Senecio integerrimus, Viola purpurea,

OTHGRASS: Carex pennsylvanica

OTHSHRUB:

OTHTREES: Pinus contorta, Abies concolor, Pinus lambertiana

ELEVATION (ft): 2500-6000

KUCHLER NAME: Western ponderosa forest (Pinus)
KUCHLER NUMBER: 10 (in part)

SAF NAME: Interior ponderosa pine
SAF NUMBER: 237

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 176-179; Volland (1976), pp. 53-68; Hopkins (1979a), p. 26; Hopkins (1979b), p. 14.

MAPCODE: 505
MAPNAME: Pseudotsuga menziesii-Quercus garryana forests and woodlands

COMNAMES: Douglas fir-Oregon white oak forests and woodlands

DESCRIPTION: Mixed forests and woodlands in which Douglas fir and Oregon white oak are the usual dominants and vary in proportion. Under a natural fire regime, Douglas fir was of only minor importance, and oaks often occurred in groves or savannahs. Much of this original woodland has been cleared, and successful efforts at fire suppression have allowed the nearly ubiquitous invasion of Douglas fir.

DISTRIBUT: A common type around the periphery of the Willamette Valley.

DIAGGRASS: Bromus rigidus, B. vulgaris, Dactylis glomerata, Festuca arundinacea, Holcus lanatus, Poa pratensis

DIAGSHRUB: Acer circinatum, Berberis nervosa, Amelanchier alnifolia, Corylus cornuta, Holodiscus discolor, Oemleria cerasiformis, Prunus avium, Rosa gymnocarpa, R. nutkana, Rhus diversiloba, Rubus parviflorus, R. ursinus, Symphoricarpos albus, S. mollis, Whipplea modesta

DIAGTREES: Acer macrophyllum, Arbutus menziesii, Calocedrus decurrens, Pseudotsuga menziesii, Quercus garryana

FERNS AND ALLIES: Polystichum munitum, Pteridium aquilinum

FORBS: Achillea millefolium, Achlys triphylla, Adenocaulon bicolor, Anemone deltoides, Arenaria macrophylla, Campanula scouleri, Chimaphila menziesii, C. umbellata, Clintonia uniflora, Disporum hookeri, Fragaria vesca, F. virginiana, Galium oreganum, G. triflorum, Goodyera oblongifolia, Hieracium albiflorum, Hypericum perforatum, Linnaea borealis, Montia siberica, Osmorhiza chilensis, Sanicula crassicaulis, Satureja douglasii, Smilacina stellata, Synthyris reniformis, Tellima grandiflora, Trientalis latifolia, Vancouveria hexandra, Viola sempervirens

OTHGRASS: Danthonia californica, Elymus glaucus, Festuca californica, F. occidentalis, F. rubra

OTHSHRUB: Acer glabrum, Berberis aquifolium, Crataegus douglasii, Gaultheria shallon, Lonicera ciliosa, L. hispida, Pachistima myrsinites, Rhododendron macrophyllum, Rubus parviflorus, R. ursinus, Rosa eleganteria, Vaccinium parvifolium

OTHTREES: Abies grandis, Pinus lambertiana, Quercus kelloggii, Tsuga heterophylla

ELEVATION (ft): 75-1000

KUCHLER NAME: Oregon oakwoods (Quercus) & cedar-hemlock-Douglas fir forest (Thuja-Tsuga-Pseudotsuga)

KUCHLER NUMBER: 22 & 2

SAF NAME: Oregon white oak (in part)

SAF NUMBER: 233

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 111-114; Hemstrom et al. (1987), pp. 63-64; Atzet and McCrimmon (1990), pp. 318-319.

MAPCODE: 506
MAPNAME: Quercus spp.-Arbutus menziesii forests and woodlands

COMNAMES: oak-Pacific madrone forests and woodlands

DESCRIPTION: This is an open woodland to closed-canopied forest in which either Oregon white oak and/or California oak, and Pacific madrone are the canopy dominants. Conifers are generally restricted to ravines and small patches on north-facing slopes.

DISTRIBUT: Interior valleys of the Rogue and Umpqua Rivers in southwestern Oregon.

DIAGGRASS: Agrostis idahoensis, Bromus ciliatus, B. inermis, B. mollis, B. pacificus, B. rigidus, B. vulgaris, Dactylis glomerata, Danthonia californica, D. intermedia, Holcus lanatus, Poa pratensis, Trisetum cernuum

DIAGSHRUB: Amelanchier alnifolia, Arctostaphylos viscida, C. integrerrimus, Corylus cornuta, Holodiscus discolor, Prunus avium, Rhus diversiloba, Rosa gymnocarpa, R. nutkana, Symphoricarpos albus

DIAGTREES: Arbutus menziesii, Quercus garryana, Q. kelloggii

FERNS AND ALLIES: Polystichum munitum, Pteridium aquilinum

FORBS: Apocynum pumilum, Brodiaea elegans, Fragaria vesca, F. virginiana, Galium triflorum, Gilia capitata, Hypericum perforatum, Ligusticum apiifolium, Lupinus albifrons, Madia madioides, Marsh oregonus, Navarretia intertexta, Osmorhiza chilensis, Perideridia bolanderi, Plantago lanceolata, Psoralea physodes, Sanicula crassicaulis, Satureja douglasii, Tellima grandiflora, Vicia americana

OTHGRASS: Elymus glaucus, Festuca californica, F. rubra, Phleum pratense, Stipa lettermanii

OTHSHRUB: Berberis piperi, Cercocarpus betuloides, Crataegus douglasii, Lonicera ciliosa, L. hispida, Osmaronia cerasiformis, Rubus parviflorus, R. ursinus, Whipplea modesta

OTHTREES: Acer macrophyllum, Libocedrus decurrens, Pinus ponderosa, Pseudotsuga menziesii

ELEVATION (ft): 500-2000

KUCHLER NAME: Oregon oakwoods (Quercus)
KUCHLER NUMBER: 22 (in part)

SAF NAME: Oregon white oak (in part)
SAF NUMBER: 233

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 111-115; Atzet and McCrimmon (1990), pp. 324- 327.

MAPCODE: 507
MAPNAME: Pseudotsuga menziesii-Lithocarpus densiflorus-Arbutus menziesii

COMNAMES: Siskiyou mixed evergreen forests

DESCRIPTION: A somewhat open-canopied woodland or forest of conifers (usually Douglas fir) and sclerophyllus hardwoods, especially tanoak and Pacific madrone. There is a rich, though open-canopied, shrub layer. The herbaceous understory is usually sparse.

DISTRIBUT: Siskiyou Mountains of southwestern Oregon

DIAGGRASS: Festuca occidentalis, Melica harfordii

DIAGSHRUB: Berberis nervosa, Quercus chrysolepis, Q. sadleriana, Rhus diversiloba, Rosa gymnocarpa, Rubus ursinus

DIAGTREES: Arbutus menziesii, Castanopsis chrysophylla, Quercus chrysolepis, Lithocarpus densiflorus, Pseudotsuga menziesii

FERNS AND ALLIES: Polystichum munitum, Pteridium aquilinum

FORBS: Achyls triphylla, Achillea millefolium, Anemone deltoidea, Apocynum pumilum, Chimaphila umbellata, Disporum hookeri, Galium aparine, Goodyera oblongifolia, Hieracium albiflorum, Lonicera hispidula, Smilacina stellata, Trientalis latifolia, Vaccinium ovatum, Whipplea modesta, Xerophyllum tenax

OTHGRASS:

OTHSHRUB: Acer circinatum, Arctostaphylos nevadensis, A. viscida, Berberis piperiana, Cornus nuttallii, Corylus cornuta, Gaultheria shallon, Holodiscus discolor, Linnaea borealis, Lonicera hispidula, Philadelphus gordoniana, Rhododendron macrophyllum, Symphoricarpos mollis, Taxus brevifolia

OTHTREES: Acer macrophyllum, Abies concolor, A. magnifica var. shastensis, Chaemaecyparis lawsoniana, Libocedrus decurrens, Pinus lambertiana, P. ponderosa, P. monticola, Quercus kelloggii, Tsuga heterophylla, Umbellularia californica

ELEVATION (ft): sea level-4500

KUCHLER NAME: California mixed evergreen forest
KUCHLER NUMBER: 25

SAF NAME: Douglas-fir-tanoak-Pacific madrone
SAF NUMBER: 234

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 133-135; Atzet and Wheeler (1984), pp. 157, 159-177; Franklin (1988), pp. 113-116; Mayer and Laudenslayer (1988), pp. 52-53.

MAPCODE: 508
MAPNAME: Pinus jeffreyi-P. monticola woodland

COMNAMES: Siskiyou-Sierra mixed conifer woodland on ultramafic substrates

DESCRIPTION: Open woodlands in which numerous conifers may occur but Jeffrey pine is most common. The understory is rich but often sparse.

DISTRIBUT: On ultramafic substrates in the Siskiyou Mountains of southwestern Oregon. Some outliers lie to the northeast in the foothills of the southern Cascades, but were too small to map. These woodlands are sparse, especially when compared to the dense forests which surround them.

DIAGGRASS: Elymus glaucus, Festuca idahoensis, F. oregana, Festuca ovina, Poa sandbergii, Stipa lemmonii

DIAGSHRUB: Arctostaphylos nevadensis, A. viscida, Berberis piperi, B. pumila, Ceanothus cuneatus, C. integerrimus, C. pumilus, Garrya buxifolia, Lithocarpus densiflorus, Vaccinium parvifolium, Quercus chrysolepis, Q. vaccinifolia, Rhus diversiloba, Rosa gymnocarpa, Rubus ursinus, Umbellularia californica

DIAGTREES: Libocedrus decurrens, Pinus jeffreyi, P. lambertiana, P. monticola, Pseudotsuga menziesii

FERNS AND ALLIES: Aspidotis densa, Pteridium aquilinum

FORBS: Achillea millefolium, Agoseris heterophylla, Allium falcifolium, Arenaria howellii, Calochortus apiculata, Campanula prenanthoides, Claytonia lanceolata, Cynoglossum grande, Dodecatheon hendersonii, Epilobium minutum, Eriogonum ternatum, Eriophyllum lanatum, Fragaria vesca, Galium ambiguum, Gilia capitata, Githopsis specularioides, Hieracium albiflorum, Iris chrysophylla, Lomatium macrocarpum, Lupinus spp., Madia exigua, M. madioides, Monardella villosa, Osmorhiza chilensis, Polygala californica, Psoralea physodes, Pyrola dentata, Ranunculus occidentalis, Sedum laxum, Xerophyllum tenax

OTHGRASS: Aira caryophyllea, Bromus spp., Carex spp., Danthonia californica, Festuca microstachys, Koeleria cristata, Melica geyeri, Sitanion jubatum

OTHSHRUB: Chrysothamnus nauseosus, Eriodictyon californicum, Rhododendron macrophyllum

OTHTREES: Chamaecyparis lawsoniana, Pinus attenuata

ELEVATION (ft): 1000-6500

KUCHLER NAME: not applicable

KUCHLER NUMBER: not mapped

SAF NAME: Jeffrey pine

SAF NUMBER: 247

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 306-307; Atzet and Wheeler (1984), pp. 38-44, 228, 247-255; Atzet and McCrimmon (1990), pp. 321-323; Mayer and Laudenslayer (1988), pp. 54-55..

MAPCODE: 509
MAPNAME: Pinus-Pseudotsuga-Libocedrus-Abies

COMNAMES: Siskiyou-Sierra mixed conifer forest

DESCRIPTION: An open to closed-canopied montane forest in which numerous conifers are co-dominant. There is a rich assemblage of tree, shrubs, and forbs.

DISTRIBUT: Western slopes of the southern Cascade Range and the eastern Siskiyou Mountains

DIAGGRASS: Bromus vulgaris

DIAGSHRUB: Acer circinatum, Arctostaphylos nevadensis, Berberis nervosa, Gaultheria shallon, Holodiscus discolor, Rhododendron macrophyllum, Rosa gymnocarpa, Symphoricarpos mollis, Taxus brevifolia

DIAGTREES: Abies concolor, Libocedrus decurrens, Pinus lambertiana, P. ponderosa, Pseudotsuga menziesii

FERNS AND ALLIES: Polystichum munitum, Pteridium aquilinum

FORBS: Achyls triphylla, Anemone deltoidea, Apocynum androsaemifolium, Arenaria macrophylla, Chimaphila umbellata, Disporum hookeri, Goodyera oblongifolia, Hieracium albiflorum, Iris chrysophylla, Linnaea borealis, Pyrola secunda, Smilacina stellata, Trientalis latifolia, Viola sempervirens, Whipplea modesta, Xerophyllum tenax

OTHGRASS:

OTHSHRUB: Arctostaphylos patula, Berberis aquifolium, B. nervosa, B. piperiana, Ceanothus prostratus, Garrya fremontii, Gaultheria ovatifolia, Lonicera hispidula, Rhus diversiloba, Rubus nivalis, R. ursinus, Vaccinium membranaceum

OTHTREES: Abies magnifica var. shastensis, Acer macrophyllum, Arbutus menziesii, Chaemaecyparis lawsoniana, Chrysolepis chrysophylla, Picea breweriana, P. monticola, Thuja plicata, Tsuga heterophylla

ELEVATION (ft): 2500-5500

KUCHLER NAME: Mixed conifer forest
KUCHLER NUMBER: 5

SAF NAME: Sierra mixed conifer
SAF NUMBER: 243

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 137-148; Atzet and Wheeler (1984), pp. 45-106; Franklin (1988), pp. 116-117; Atzet and McCrimmon (1990), pp. 203-293; Mayer and Laudenslayer (1988), pp. 46-51.

MAPCODE: 510
MAPNAME: Acer macrophyllum-Alnus rubra-Pseudotsuga menziesii forest

COMNAMES: Mixed evergreen and broadleaf deciduous forest

DESCRIPTION: This is a closed-canopied lowland and lower montane forest in which bigleaf maple and red alder are common overstory dominants. In general, maple is more prevalent in the Cascades foothills and alder is more common in the Coast Range. These are primarily second- growth forests resulting from prior timber harvest or, especially in the Coast Range, historic wildfires within the Douglas fir-western hemlock type. Douglas fir is nearly always present and may be accompanied by several other needleleaf conifers. The conifers may form a sub-canopy which is obscured by the deciduous overstory in aerial photographs and remote sensing imagery.

DISTRIBUT: A common type in the western Cascades and the Coast Range. South of Eugene, the type becomes increasingly coastal in distribution.

DIAGGRASS: Bromus vulgaris, Festuca californica, F. occidentalis, F. subulata,

DIAGSHRUB: Acer circinatum, Amelanchier alnifolia, Berberis nervosa, Chimaphila umbellata, Corylus cornuta, Gaultheria shallon, Holodiscus discolor, Menziesia ferruginea, Rhododendron macrophyllum, Rubus parviflora, R. spectabilis, Symphoricarpos mollis, Vaccinium alaskaense, V. ovalifolium, V. parvifolium, V. membranaceum

DIAGTREES: Acer macrophyllum, Alnus rubra, Pseudotsuga menziesii.

FERNS AND ALLIES: Adiantum pedatum, Athyrium filix-femina, Blechnum spicant, Dryopteris austriaca, Polystichum munitum, Polypodium glycyrrhiza, Pteridium aquilinum

FORBS: Achlys triphylla, Actaea rubra, Adenocaulon bicolor, Anemone deltoidea, Apocynum androsaemifolium, Arnica latifolia, Arenaria macrophylla, Asarum caudatum, Aster radulinus, Clintonia uniflora, Collomia heterophylla, Coptis laciniata, Cornus canadensis, Dicentra formosa, Disporum hookeri, Galium oreganum, G. triflorum, Goodyera oblongifolia, Heuchera micrantha, Hieracium albiflorum, Lathyrus polyphyllus, Linnaea borealis, Lysichitum americanum, Madia gracilis, Maianthemum dilatatum, Montia siberica, Osmorhiza chilensis, O. purpurea, Oxalis oregana, Pyrola secunda, Smilacina racemosa, S. stellata, Stachys cooley, Streptopus amplexifolius, Synthyris reniformis, Tiarella trifoliata, Tolmeia menziesii, Trientalis latifolia, Trillium ovatum, Vancouveria hexandra, Viola glabella, V. sempervirens, Whipplea modesta, Xerophyllum tenax
OTHGRASS: Carex obnupta, C. stipata,

OTHSHRUB: Berberis aquifolium, Castanopsis chrysophylla, Cornus nuttallii, Oplopanax horridum, Rhus diversiloba, Ribes bracteosa, Rosa gymnocarpa, Rubus nivalis, R. pedatus, R. ursinus, Sambucus racemosa, Symphoricarpos albus

OTHTREES: Abies amabilis, A. grandis, A. procera, Picea sitchensis, Taxus brevifolia, Thuja plicata, Tsuga heterophylla.

ELEVATION (ft): sea level-3500

KUCHLER NAME: not applicable
KUCHLER NUMBER: not a potential vegetation type

SAF NAME: Red alder
SAF NUMBER: 221

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 85-87; Halverson et al., 1986); Hemstrom and Logan (1986), pp. 75-105; Hemstrom et al. (1987), pp. 78-86, 178-242; Atzet and McCrimmon (1990), pp. 109-187.

MAPCODE: 511
MAPNAME: Pseudotsuga menziesii-Abies spp.-Pinus ponderosa (Larix occidentalis) forest

COMNAMES: Douglas fir-true fir-ponderosa pine (western larch) forest

DESCRIPTION: This is a closed-canopied montane forest in which Douglas fir is predominant with lesser amounts of white fir and/or grand fir. Ponderosa pine is also common. Western larch is of high constancy and may be locally common, but it is seldom a community dominant. The general pattern suggests that these are older second-growth forests which had their origin in logging or fire.

DISTRIBUT: There are two geographical variants, one along the eastern slope of the Cascades and the other in the Blue Mountains. It is also of minor occurrence in western Oregon.

DIAGGRASS: Bromus vulgaris, Calamagrostis rubescens, Carex concinnoides, C. geyeri, Festuca idahoensis, F. occidentalis, Koeleria cristata, Melica bulbosa

DIAGSHRUB: Acer glabrum, Amelanchier alnifolia, Berberis repens, C. velutinus, Holodiscus discolor, Lonicera ciliosa, Pachistima myrsinites, Rosa gymnocarpa, Salix scouleriana, Spiraea betulifolia, Symphoricarpos albus, S. mollis, Vaccinium membranaceum, V. scoparium,

DIAGTREES: Abies concolor, A. grandis, Larix occidentalis, Pinus contorta, P. ponderosa, Pseudotsuga menziesii

FERNS AND ALLIES: Pteridium aquilinum

FORBS: Achillea millefolium, Adenocaulon bicolor, Anemone oregana, A. piperi, A. lyallii, Apocynum androsaemifolium, Arenaria macrophylla, Arnica cordifolia, Balsamorhiza sagittata, Campanula scouleri, Chimaphila umbellata, Clarkia rhomboidea, Disporum hookeri, Epilobium angustifolium, Fritillaria lanceolata, Fragaria chiloensis, F. vesca, Galium aparine, G. triflorum, Goodyera oblongifolia, Hieracium albertinum, Hieracium albiflorum, Hydrophyllum capitatum, Lathyrus nevadensis, Linnaea borealis, Lupinus caudatus, L. latifolius, L. laxiflorus, Mitella stauropetala, Montia perfoliata, Osmorhiza chilensis, Pyrola asarifolia, P. picta, P. secunda, Smilacina racemosa, S. stellata, Thalictrum occidentale, Trientalis latifolia, Trillium ovatum, Valeriana sitchensis, Vicia americanum, Viola glabella

OTHGRASS: Agropyron spicatum, Bromus carinatus, Carex rossii, Poa bulbosa, P. nevadensis, Sitanion hystrix, Stipa occidentalis.

OTHSHRUB: Acer circinatum, Arctostaphylos nevadensis, A. patula, Berberis aquifolium, B. nervosa, Castanopsis chrysophylla, Corylus cornuta, Cornus nuttallii, Physocarpus malvaceus, Rubus parviflora

OTHTREES: Abies lasiocarpa, A. magnifica var. shastensis, Libocedrus decurrens, Picea engelmannii, Pinus lambertiana, P. monticola, Quercus garryana, Thuja plicata, Tsuga heterophylla, T. mertensiana

ELEVATION (ft): 3500-6500

KUCHLER NAME: Grand fir-Douglas fir forest
KUCHLER NUMBER: 13

SAF NAME: Grand fir
SAF NUMBER: 213

OTHER REFERENCES: Daniels (1969); Franklin and Dyrness (1973), pp. 193-198; Hall (1973), pp. 37- 39; Volland (1976), pp. 67-78; Hopkins (1979a), pp. 30-36; Hopkins (1979b), pp. 17-21; Marsh (1987), pp. 40-54; Topik et al. (1988), pp. 71-105; Johnson and Simon (1987).

MAPCODE: 512
MAPNAME: Pseudotsuga menziesii-Tsuga heterophylla-Thuja plicata forest

COMNAMES: Douglas fir - western hemlock - western redcedar forest

DESCRIPTION: Closed-canopied lowland and lower montane forests in which Douglas fir is usually the dominant tree species, although numerous other evergreen conifers and deciduous trees may be abundant. These forest generally have a well-developed shrub layer, and a rich assemblage of ferns, forbs, herbs, mosses, and lichens.

DISTRIBUT: West slope of the Cascades, and the Coast Range.

DIAGGRASS: Bromus vulgaris, Festuca californica, F. occidentalis, F. subulata

DIAGSHRUB: Acer circinatum, Amelanchier alnifolia, Berberis nervosa, Chimaphila umbellata, Cornus nuttallii, Corylus cornuta, Gaultheria shallon, Holodiscus discolor, Menziesia ferruginea, Rhododendron macrophyllum, Rubus parviflora, R. spectabilis, Symphoricarpos mollis, Vaccinium alaskaense, V. ovalifolium, V. parvifolium, V. membranaceum

DIAGTREES: Pseudotsuga menziesii, Thuja plicata, Tsuga heterophylla

FERNS AND ALLIES: Adiantum pedatum, Athyrium filix-femina, Blechnum spicant, Dryopteris austriaca, Polystichum munitum, Polypodium glycyrrhiza, Pteridium aquilinum

FORBS: Achlys triphylla, Actaea rubra, Adenocaulon bicolor, Anemone deltoidea, Apocynum androsaemifolium, Arnica latifolia, Arenaria macrophylla, Asarum caudatum, Aster radulinus, Clintonia uniflora, Collomia heterophylla, Coptis laciniata, Cornus canadensis, Dicentra formosa, Disporum hookeri, Galium oreganum, G. triflorum, Goodyera oblongifolia, Heuchera micrantha, Hieracium albiflorum, Lathyrus polyphyllus, Linnaea borealis, Lysichitum americanum, Madia gracilis, Maianthemum dilatatum, Montia siberica, Osmorhiza chilensis, O. purpurea, Oxalis oregana, Pyrola secunda, Smilacina racemosa, S. stellata, Stachys cooleyi, Streptopus amplexifolius, Synthyris reniformis, Tiarella trifoliata, Tolmeia menziesii, Trientalis latifolia, Trillium ovatum, Vancouveria hexandra, Viola glabella, V. sempervirens, Whipplea modesta, Xerophyllum tenax

OTHGRASS: Carex disperma, C. hendersonii

OTHSHRUB: Berberis aquifolium, Castanopsis chrysophylla, Oplopanax horridum, Rhus diversiloba, Ribes bracteosa, Rosa gymnocarpa, Rubus nivalis, R. pedatus, R. ursinus, Sambucus racemosa, Symphoricarpos albus

OTHTREES: Abies amabilis, A. grandis, A. procera, Acer macrophyllum, Alnus rubra, Arbutus menziesii, Libocedrus decurrens, Myrica californica, Picea sitchensis, Pinus contorta, P. lambertiana, Taxus brevifolia

ELEVATION (ft): sea level-3500

KUCHLER NAME: Cedar-hemlock-Douglas fir forest (Thuja-Tsuga-Pseudotsuga)
KUCHLER NUMBER: 2

SAF NAME: Douglas fir-western hemlock
SAF NUMBER: 230

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 70-82; Franklin (1988), pp. 105-111; Halverson, et al. (1986); Hemstrom and Logan (1986), pp. 75-105; Hemstrom et al. (1987), pp. 78- 56, 178-242; Atzet and McCrimmon (1990), pp. 109-187.

MAPCODE: 513
MAPNAME: Abies amabilis-Tsuga heterophylla-Abies procera forest

COMNAMES: silver fir-western hemlock-noble fir forest

DESCRIPTION: Middle to upper-montane forests with a closed canopy in which silver fir, western hemlock, noble fir, and Douglas fir have a high constancy. The latter species dominates large areas.

DISTRIBUT: West slope of the Cascade Range south to vicinity of Diamond Peak, and on the east slope of the Cascades in the vicinity of Mt. Hood.

DIAGGRASS:

DIAGSHRUB: Acer circinatum, Berberis nervosa, Chimaphila menziesii, C. umbellatum, Oplopanax horridum, Pachistima myrsinites, Rhododendron albiflorum, Rosa gymnocarpa, Rubus ursinus, Vaccinium alaskaense, V. membranaceum, V. ovalifolium, V. parvifolium

DIAGTREES: Abies amabilis, A. procera, Pseudotsuga menziesii, Tsuga heterophylla

FERNS AND ALLIES: Adiantum pedatum, Athyrium filix-femina, Blechnum spicant, Gymnocarpium dryopteris, Polystichum munitum, Pteridium aquilinum

FORBS: Achlys triphylla, Adenocaulon bicolor, Anemone deltoidea, A. lyallii, Asarum caudatum, Campanula scouleri, Clintonia uniflora, Coptis laciniata, Cornus canadensis, Disporum hookeri, Erythronium montanum, Galium oreganum, G. triflorum, Goodyera oblongifolia, Osmorhiza chilensis, Oxalis oregana, Linnaea borealis, Montia siberica, Pedicularis racemosa, Pyrola picta, P. secunda, Smilacina stellata, Tiarella trifoliata, Streptopus roseus, Trientalis latifolia, Trillium ovatum, Vancouveria hexandra, Viola orbiculata, Xerophyllum tenax V. sempervirens

OTHGRASS:

OTHSHRUB: Cornus nuttallii, Castanopsis chrysophylla, Gaultheria shallon, Menziesia ferruginea, Rhododendron macrophyllum, Rubus leucodermis, R. parviflorus, R. pedatus, R. spectabilis, Vaccinium scoparium,

OTHTREES: Abies concolor, A. grandis, A. lasiocarpa, Chamaecyperis nootkatensis, Picea engelmannii, Pinus contorta, P. monticola, Taxus brevifolia, Thuja plicata, Tsuga mertensiana,

ELEVATION (ft): 3500-5500

KUCHLER NAME: Silver fir-Douglas fir forest (Abies-Pseudotsuga)
KUCHLER NUMBER: 3

SAF NAME: Coastal true fir-hemlock
SAF NUMBER: 226

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 93-100; Franklin (1988), pp. 117-119; Hemstrom et al. (1982); Hemstrom et al. (1987), pp. 98-160; Atzet and McCrimmon (1990), pp. 71-84.

MAPCODE: 514
MAPNAME: montane Pinus contorta forest

COMNAMES: montane lodgepole pine forest

DESCRIPTION: A generally closed-canopied forest dominated by lodgepole pine, but usually associated with any of a large number of other montane conifers. These forests are, for the most part, early successional forests which had their origin in fires.

DISTRIBUT: Montane areas in the Blue Mountains and along the eastern slope of the Cascade Range.

DIAGGRASS: Bromus vulgaris, Calamagrostis rubescens, Carex concinnoides, C. geyeri, Festuca idahoensis, F. occidentalis, Koeleria cristata, Melica bulbosa

DIAGSHRUB: Acer glabrum, Amelanchier alnifolia, Berberis repens, C. velutinus, Holodiscus discolor, Lonicera ciliosa, Pachistima myrsinites, Rosa gymnocarpa, Salix scouleriana, Spiraea betulifolia, Symphoricarpos albus, S. mollis, Vaccinium membranaceum, V. scoparium

DIAGTREES: Pinus contorta

FERNS AND ALLIES: Pteridium aquilinum

FORBS: Achillea millefolium, Adenocaulon bicolor, Anemone oregana, A. piperi, A. lyallii, Apocynum androsaemifolium, Arenaria macrophylla, Arnica cordifolia, Balsamorhiza sagittata, Campanula scouleri, Chimaphila umbellata, Clarkia rhomboidea, Disporum hookeri, Epilobium angustifolium, Fritillaria lanceolata, Fragaria chiloensis, F. vesca, Galium aparine, G. triflorum, Goodyera oblongifolia, Hieracium albertinum, Hieracium albiflorum, Hydrophyllum capitatum, Lathyrus nevadensis, Linnaea borealis, Lupinus caudatus, L. latifolius, L. laxiflorus, Mitella stauropetala, Montia perfoliata, Osmorhiza chilensis, Pyrola asarifolia, P. picta, P. secunda, Smilacina racemosa, S. stellata, Thalictrum occidentale, Trientalis latifolia, Trillium ovatum, Valeriana sitchensis, Vicia americanum, Viola glabella

OTHGRASS: Agropyron spicatum, Bromus carinatus, Carex rossii, Poa bulbosa, P. nevadensis, Sitanion hystrix, Stipa occidentalis.

OTHSHRUB: Acer circinatum, Arctostaphylos nevadensis, A. patula, Berberis aquifolium, B. nervosa, Philadelphus lewisii, Physocarpus malvaceus, Rubus parviflora

OTHTREES: Abies concolor, A. grandis, A. magnifica var. shastensis, Larix occidentalis, Libocedrus decurrens, Pinus lambertiana, P. monticola, P. ponderosa, Pseudotsuga menziesii

ELEVATION (ft): 5000-9000

KUCHLER NAME: not applicable
KUCHLER NUMBER: not considered a potential vegetation type

SAF NAME: Lodgepole pine (in part)
SAF NUMBER: 237

OTHER REFERENCES: Hall (1973), pp. 35-37; Volland (1976), pp. 36,38,43; Hopkins (1979a) pp. 21, 23; Johnson and Simon (1987)

MAPCODE: 515
MAPNAME: subalpine *Pinus contorta* forests

COMNAMES: subalpine lodgepole pine forests

DESCRIPTION: A closed-canopied subalpine forest in which lodgepole pine is the dominant species. Other high-elevation species occur only as scattered individuals or small patches. Reproduction of other conifers may be abundant in the understory of the forest. This type is distinguished from other lodgepole pine forests by its occurrence at higher elevation.

DISTRIBUT: Broad plateau areas along the crest of the Cascade Range and in the Blue Mountains. Some of these forests occur in low-lying frost pockets, wet areas, or under edaphic control (usually pumice) and are relatively long-lasting features of the landscape. Others occurrences are short-term seral stages after fire.

DIAGGRASS: *Danthonia californica*, *D. intermedia*, *Calamagrostis canadensis*, *Carex pennsylvanica*, *C. rossii*, *Poa pratensis*, *Sitanion hystrix*, *Stipa occidentalis*

DIAGSHRUB: *Amelanchier alnifolia*, *Haplopappus bloomeri*, *Lonicera caerulea*, *L. conjugialis*, *L. involucrata*, *Ribes cereum*, *Rosa gymnocarpa*, *Rubus ursinus*, *Spiraea menziesii*, *Vaccinium occidentale*, *V. scoparium*

DIAGTREES: *Pinus contorta*, *Populus tremuloides*

FERNS AND ALLIES: None

FORBS: *Arnica latifolia*, *Antennaria corymbosa*, *Aster alpigenus*, *Chimaphila umbellata*, *Cornus canadensis*, *Fragaria virginiana*, *Haplopappus greenei*, *Hieracium albiflorum*, *Ligusticum grayi*, *Linanthastrum nuttallii*, *Linnaea borealis*, *Lupinus andersonii*, *L. argenteus*, *L. bicolor*, *L. caudatus*, *Phyllodoce empetrifomis*, *Pyrola secunda*, *Senecio triangularis*, *Smilacina racemosa*, *Spraguea umbellata*, *Viola nuttallii*, *Xerophyllum tenax*

OTHGRASS: *Carex nebrascensis*, *Elymus glaucus*, *Festuca idahoensis*, *Stipa lemmonii*

OTHSHRUB: *Arctostaphylos nevadensis*, *Berberis nervosa*, *Gaultheria shallon*, *Menziesia ferruginea*, *Pachistima myrsinites*, *Sorbus sitchensis*, *Vaccinium alaskaense*

OTHTREES: *Abies concolor*, *A. lasiocarpa*, *A. magnifica* var. *shastensis*, *Picea engelmannii*, *Pinus albicaulis*, *P. monticola*, *Tsuga mertensiana*

ELEVATION (ft): 5500-8000

KUCHLER NAME: not applicable
KUCHLER NUMBER: not considered a potential vegetation type

SAF NAME: Lodgepole pine
SAF NUMBER: 218

OTHER REFERENCES: Hall (1973), pp. 36; Volland (1976), pp. 32-33, 46-49, 51-52; Hopkins (1979a), pp. 19-20; Hopkins (1979b), pp. 11, 13; Atzet and McCrimmon (1990), pp. 59-61.

MAPCODE: 516
MAPNAME: montane Pinus contorta (pumice)

COMNAMES: montane lodgepole pine forest and woodland on pumice

DESCRIPTION: Pure, or nearly pure, stands of lodgepole pine, often with a dense canopy and sparse understory developed on soils derived from pumice.

DISTRIBUT: East slope of the Cascade Range from the vicinity of Mt. Jefferson south to the vicinity of Crater Lake.

DIAGGRASS: Calamagrostis rubescens, Carex geyeri, Danthonia californica, Elymus glaucus, Festuca idahoensis, Stipa occidentalis

DIAGSHRUB: Arctostaphylos patula, A. nevadensis, A. uva-ursi, Ceanothus velutinus, Lonicera involucrata, Purshia tridentata, Ribes cereum, Vaccinium uliginosum

DIAGTREES: Pinus contorta

FERNS AND ALLIES: Pteridium aquilinum

FORBS: Achillea millefolium, Antennaria corymbosa, Arnica chamissonis, Aster canescens, Epilobium angustifolium, Eriogonum umbellatum, Eriophyllum lanatum, Fragaria chiloensis, F. virginiana, Hieracium albiflorum, Horkelia fusca, Lupinus andersoni, L. caudatus, L. lepidus, Mimulus breweri, Penstemon euglaucus, Pyrola secunda, Senecio canus, Spraguea umbellata, Trifolium longipes, Viola nuttallii, V. purpurea

OTHGRASS: Agrostis scabra, Calamagrostis inexpansa, Carex lasiocarpa, C. nebrascensis, C. rossii, Danthonia intermedia, D. unispicata, Deschampsia elongata, Hordeum nodosum, Koeleria cristata, Muhlenbergia filiformis, Sitanion hystrix, Stipa thurberiana

OTHSHRUB: Artemisia tridentata, Chrysothamnus viscidiflorus, Lonicera conjugialis, Ribes viscosissimum, Spiraea douglasii, S. menziesii, Vaccinium caespitosum, V. occidentale,

OTHTREES: Abies concolor, A. magnifica var. shastensis, Pinus monticola, P. ponderosa, Populus tremuloides.

ELEVATION (ft): 4000-6000

KUCHLER NAME: not applicable
KUCHLER NUMBER: not considered a potential vegetation type

SAF NAME: Lodgepole pine (in part)
SAF NUMBER: 237

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 185-189; Volland (1976), pp. 34-45,50; Hopkins (1979a), pp. 21,22; Hopkins (1979b), p. 12.

MAPCODE: 517
MAPNAME: Tsuga mertensiana forest

COMNAMES: mountain hemlock forest

DESCRIPTION: A closed-canopied upper montane forest in which the predominant tree species is mountain hemlock (*Tsuga mertensiana*). Other tree species with high constancy include Pacific silver fir (*Abies amabilis*), noble fir (*Abies procera*), western white pine (*Pinus monticola*) and Douglas fir (*Pseudotsuga menziesii*). Western hemlock (*Tsuga heterophylla*) may also be present but is restricted to the most mesic sites. Understory shrubs with high constancy include *Vaccinium membranaceum* and *V. scoparium*. *Xerophyllum tenax* may be common in the understory, but otherwise the herbaceous layer is sparse.

DISTRIBUT: Common type at middle to upper elevations along the Cascade Range. On the west side of the Cascades, this type occurs south to about the Calapooia Divide between the Willamette and Umpqua National Forests. It is mapped south to about the Winema Forest on the eastern side of the Cascades. South of these areas, *Abies magnifica* var. *shastensis* increases in importance and the forests have been mapped as type 519 to reflect this.

DIAGGRASS: *Carex nigricans*, *Festuca viridula*, *Juncus drummondii*

DIAGSHRUB: *Gaultheria ovatifolia*, *Rhododendron macrophyllum*, *Rubus lasiococcus*, *Vaccinium membranaceum*, *V. scoparium*

DIAGTREES: *Abies amabilis*, *A. lasiocarpa*, *A. procera*, *Pseudotsuga menziesii*, *Pinus monticola*, *Tsuga mertensiana*

FERNS AND ALLIES: *Blechnum spicant*, *Pteridium aquilinum*

FORBS: *Achlys triphylla*, *Anemone deltoidea*, *A. lyallii*, *Arnica latifolia*, *Asarum caudatum*, *Aster alpigenus*, *A. ledophyllus*, *Campanula scouleri*, *Cassiope mertensiana*, *Castilleja parviflora*, *Chimaphila menziesii*, *C. umbellata*, *Clintonia uniflora*, *Cornus canadensis*, *Epilobium alpinum*, *Goodyera oblongifolia*, *Luetkea pectinata*, *Ligusticum grayi*, *Linnaea borealis*, *Lupinus latifolius*, *Pedicularis racemosa*, *Phyllodoce empetriformis*, *Potentilla flabellifolia*, *Pyrola picta*, *P. secunda*, *Senecio triangularis*, *Smilacina stellata*, *Tiarella trifoliata*, *Trillium ovatum*, *Veratrum viride*, *Viola orbiculata*, *V. sempervirens*, *Xerophyllum tenax*

OTHGRASS:

OTHSHRUB: *Acer circinatum*, *Arctostaphylos nevadensis*, *Berberis nervosa*, *Castanopsis chrysophylla*, *Gaultheria shallon*, *Menziesia ferruginea*, *Pachistima myrsinites*, *Rosa gymnocarpa*, *Rubus parviflorus*, *R. ursinus*, *Sorbus sitchensis*, *Vaccinium alaskaense*, *V. ovatum*, *V. parvifolium*

OTHTREES: *Abies concolor*, *Abies magnifica* var. *shastensis*, *Picea englemannii*, *Pinus contorta*, *Tsuga heterophylla*

ELEVATION (ft): 4000-6500

KUCHLER NAME: Fir-hemlock forest (*Abies*-*Tsuga*)
KUCHLER NUMBER: 4

SAF NAME: Mountain hemlock
SAF NUMBER: 205

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 101-108, p. 269; Hemstrom et al. (1982), pp. 63-68; Hemstrom et al. (1987), pp. 162-176; Marsh (1987), pp. 66-73; Hopkins (1979b), p. 24.

MAPCODE: 518
MAPNAME: *Abies lasiocarpa* - *Picea engelmannii* forests and woodlands

COMNAMES: subalpine fir - Engelmann spruce forests and woodlands

DESCRIPTION: Closed-canopied forests to woodlands in which subalpine fir and Engelmann spruce are the predominant trees, although lodgepole pine and whitebark pine may be important locally.

DISTRIBUT: Upper elevations in the Blue Mountains.

DIAGGRASS: *Calamagrostis canadensis*, *C. rubescens*, *Carex geyeri*, *Deschampsia caespitosa*, *Festuca idahoensis*, *F. viridula*, *Juncus parryi*, *Stipa occidentalis*

DIAGSHRUB: *Pachistima myrsinites*, *Vaccinium membranaceum*, *V. scoparium*

DIAGTREES: *Abies lasiocarpa*, *Picea engelmannii*, *Pinus contorta*.

FERNS AND ALLIES: None

FORBS: *Achillea millefolium*, *Agoseris glauca*, *Anemone oregana*, *Arenaria capillaris*, *A. macrophylla*, *Arnica cordifolia*, *Aster foliaceus*, *Chimaphila umbellata*, *Hieracium albiflorum*, *Lupinus latifolius*, *L. wyethii*, *Mitella stauropetala*, *Pedicularis racemosa*, *Phacelia hastata*, *Polygonum phytolaccaefolium*, *Potentilla diversifolia*, *Pyrola secunda*, *Senecio integerrimus*

OTHGRASS: *Agropyron spicatum*, *Bromus vulgaris*, *Carex concinnoides*, *C. hoodii*, *C. rossii*, *Melica bulbosa*, *Poa pratensis*, *P. sandbergii*

OTHSHRUB: *Artemisia arbuscula*, *A. tridentata* ssp. *vaseyana*, *Juniperus communis*, *Ribes lacustre*, *R. montigenum*, *Spiraea betulifolia*

OTHTREES: *Abies grandis*, *Larix occidentalis*, *Pinus albicaulis*, *P. monticola*, *Pseudotsuga menziesii*

ELEVATION (ft): 5000-9500

KUCHLER NAME: Western spruce forest (*Picea*-*Abies*)
KUCHLER NUMBER: 14

SAF NAME: Engelmann spruce-subalpine fir
SAF NUMBER: 206

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 204-208; Hall (1973), pp. 40-41; Johnson and Simon (1987)

MAPCODE: 519
MAPNAME: Tsuga mertensiana-Abies magnifica var. shastensis woodlands

COMNAMES: mountain hemlock-red fir woodlands

DESCRIPTION: Mostly open-canopied woodlands in which mountain hemlock and red fir are the predominant species.

DISTRIBUT: Both sides of the southern Cascade Range.

DIAGGRASS: Bromus carinatus, B. vulgaris, Carex pennsylvanica, Festuca subulata

DIAGSHRUB: Arctostaphylos nevadensis, A. patula, Berberis nervosa, Pachistima myrsinites, Ribes viscosissimum, Rosa gymnocarpa, Rubus ursinus, Symphoricarpos mollis, Vaccinium ovalifolium, V. scoparium

DIAGTREES: Abies concolor, A. magnifica var. shastensis, A. procera, Chaemaecyparis nootkatensis, Pinus contorta, Tsuga mertensiana

FERNS AND ALLIES: None

FORBS: Achillea millefolium, Arenaria macrophylla, Arnica latifolia, Asarum caudatum, Chimaphila umbellata, Corallorhiza maculata, Crepis pleurocarpa, Epilobium angustifolium, Eriophyllum lanatum, Erythronium grandiflorum, Galium oreganum, G. triflorum, Goodyera oblongifolia, Hieracium albiflorum, Lupinus leucophyllus, Mertensia ciliolata, Montia siberica, Orthocarpus cryptanthus, Osmorhiza chilensis, Phacelia heterophylla, Phlox diffusa, Polemonium pulcherrimum, Pyrola picta, Pyrola secunda, Sedum oreganum, Smilacina stellata, Stellaria crispa, Trientalis latifolia, Valeriana sitchensis, Vancouveria hexandra, Veratrum californica, Vicia americana, Viola glabella, Xerophyllum tenax.

OTHGRASS: Elymus glaucus, Luzula glabrata

OTHSHRUB: Castanopsis chrysophylla, Vaccinium membranaceum

OTHTREES: Abies lasiocarpa, Libocedrus decurrens, Pinus lambertiana, P. monticola, Pseudotsuga menziesii

ELEVATION (ft): 4000-7000

KUCHLER NAME: Fir-hemlock forest (Abies-Tsuga)
KUCHLER NUMBER: 4

SAF NAME: Mountain hemlock
SAF NUMBER: 205

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 154-158; Hopkins (1979b), 21-23; Franklin (1988), p. 119; Atzet and McCrimmon (1990), pp. 47-53.

MAPCODE: 522
MAPNAME: Abies spp.-Pseudotsuga menziesii forest

COMNAMES: true fir-Douglas fir forest

DESCRIPTION: This is a closed-canopied montane forest in which white fir and/or grand fir is the dominant tree species with subordinate amounts of Douglas fir. Successional species are present only as scattered individuals or small patches, suggesting that there has been no widespread disturbance by fire or logging in the recent past.

DISTRIBUT: Widely distributed throughout the Blue Mountains and, to a lesser extent, along the east slope of the Oregon Cascades.

DIAGGRASS: Bromus vulgaris, Calamagrostis rubescens, Carex concinnoides, C. geyeri, Festuca idahoensis, F. occidentalis, Koeleria cristata, Melica bulbosa

DIAGSHRUB: Acer glabrum, Amelanchier alnifolia, Berberis repens, C. velutinus, Holodiscus discolor, Lonicera ciliosa, Pachistima myrsinites, Rosa gymnocarpa, Salix scouleriana, Spiraea betulifolia, Symphoricarpos albus, S. mollis, Vaccinium membranaceum, V. scoparium,

DIAGTREES: Abies concolor, A. grandis, P. ponderosa, Pseudotsuga menziesii

FERNS AND ALLIES: Pteridium aquilinum

FORBS: Achillea millefolium, Adenocaulon bicolor, Anemone oregana, A. piperi, A. lyallii, Apocynum androsaemifolium, Arenaria macrophylla, Arnica cordifolia, Balsamorhiza sagittata, Campanula scouleri, Chimaphila umbellata, Clarkia rhomboidea, Disporum hookeri, Epilobium angustifolium, Fritillaria lanceolata, Fragaria chiloensis, F. vesca, Galium aparine, G. triflorum, Goodyera oblongifolia, Hieracium albertinum, Hieracium albiflorum, Hydrophyllum capitatum, Lathyrus nevadensis, Linnaea borealis, Lupinus caudatus, L. latifolius, L. laxiflorus, Mitella stauropetala, Montia perfoliata, Osmorhiza chilensis, Pyrola asarifolia, P. picta, P. secunda, Smilacina racemosa, S. stellata, Thalictrum occidentale, Trientalis latifolia, Trillium ovatum, Valeriana sitchensis, Vicia americanum, Viola glabella

OTHGRASS: Agropyron spicatum, Bromus carinatus, Carex rossii, Poa bulbosa, P. nevadensis, Sitanion hystrix, Stipa occidentalis.

OTHSHRUB: Acer circinatum, Arctostaphylos nevadensis, A. patula, Berberis aquifolium, B. nervosa, Castanopsis chrysophylla, Corylus cornuta, Cornus nuttallii, Physocarpus malvaceus, Rubus parviflora

OTHTREES: Abies lasiocarpa, A. magnifica var. shastensis, Libocedrus decurrens, Larix occidentalis, Picea engelmannii, Pinus contorta, P. lambertiana, P. monticola, Quercus garryana, Thuja plicata, Tsuga heterophylla, T. mertensiana

ELEVATION (ft): 3500-6500

KUCHLER NAME: Grand fir-Douglas fir forest
KUCHLER NUMBER: 13

SAF NAME: Grand fir
SAF NUMBER: 213

OTHER REFERENCES: Daniels (1969); Franklin and Dyrness (1973), pp. 193-198; Hall (1973), pp. 37-39; Volland (1976), pp. 67-78; Hopkins (1979a), pp. 30-36; Hopkins (1979b), pp. 17-21; Marsh (1987), pp. 40-54; Topik et al. (1988), pp. 71-105; Johnson and Simon 1987).

MAPCODE: 523
MAPNAME: Pseudotsuga menziesii-Pinus ponderosa-Calocedrus decurrens forest

COMNAMES: Douglas fir-ponderosa pine-incense cedar forest

DESCRIPTION: A lower to middle-montane forest with a closed to open canopy. Douglas fir is commonly the dominant tree species, although numerous conifers may be present. There is also a rich shrub and herbaceous assemblage.

DISTRIBUT: Primarily along the western slope of the southern Oregon Cascades.

DIAGGRASS: Bromus vulgaris, B. pacificus, Elymus glaucus, Festuca californica, F. occidentalis

DIAGSHRUB: Acer circinatum, Berberis nervosa, Chimaphila umbellatum, Cornus nuttallii, Corylus cornuta, Gaultheria shallon, Holodiscus discolor, Rhus diversiloba, Rosa gymnocarpa, Rubus ursinus, Symphoricarpos mollis, Whipplea modesta

DIAGTREES: Calocedrus decurrens, Pinus ponderosa, Pseudotsuga menziesii

FERNS AND ALLIES: Polystichum munitum, Pteridium aquilinum

FORBS: Achyls triphylla, Aconitum columbianum, Adenocaulon bicolor, Anemone deltoidea, Arenaria macrophylla, Arnica cordifolia, Calochortus tolmiei, Campanula prenanthoides, C. scouleri, Cynoglossum grande, Disporum hookeri, Fragaria vesca, Galium aparine, Goodyera oblongifolia, Hieracium albiflorum, Lathyrus polyphyllus, Linnaea borealis, Madia madioides, Osmorhiza chilensis, Phlox adsurgens, Prunus vulgaris, Smilacina racemosa, S. stellata, Synthyris reniformis, Trientalis latifolia, Vancouveria hexandra, Vicia americana, Viola glabella, Xerophyllum tenax

OTHGRASS: Cynosurus echinatus

OTHSHRUB: Amelanchier alnifolia, Arctostaphylos patula, Purshia tridentata, Berberis piperi, Lonicera ciliosa, L. hispida, Pachistima myrsinites, Rhamnus purshiana, Symphoricarpos albus, Vaccinium membranaceum

OTHTREES: Abies concolor, Acer macrophyllum, Arbutus menziesii, Castanopsis chrysophylla, Pinus lambertiana, Quercus kelloggii

ELEVATION (ft): 2000-3500

KUCHLER NAME: Mixed conifer forest (Abies-Pinus-Pseudotsuga)
KUCHLER NUMBER: 5 (in part)

SAF NAME: Pacific ponderosa pine-Douglas fir
SAF NUMBER: 244

OTHER REFERENCES: Volland (1976), pp. 70-71, 74-76; Hopkins (1979b), pp. 17-18; Hemstrom et al. (1987), pp. 67-86; Atzet and McCrimmon (1990), pp. 311-317.

MAPCODE: 527
MAPNAME: Pinus ponderosa-Pseudotsuga menziesii (Larix occidentalis-Pinus contorta) forest

COMNAMES: ponderosa pine-Douglas fir (western larch-lodgepole pine) forest

DESCRIPTION: This is a closed canopied montane forest in which ponderosa pine and Douglas fir share dominance. Such successional species as western larch and lodgepole pine are present locally in patches too small to map. These appear to be predominantly older second-growth forests related to disturbance by fire or logging.

DISTRIBUT: Along the eastern slope of the Oregon Cascades and in the Blue Mountains.

DIAGGRASS: Bromus vulgaris, Calamagrostis rubescens, Carex concinnoides, C. geyeri, Festuca idahoensis, F. occidentalis, Koeleria cristata, Melica bulbosa

DIAGSHRUB: Acer glabrum, Amelanchier alnifolia, Berberis repens, C. velutinus, Holodiscus discolor, Lonicera ciliosa, Pachistima myrsinites, Rosa gymnocarpa, Salix scouleriana, Spiraea betulifolia, Symphoricarpos albus, S. mollis, Vaccinium membranaceum, V. scoparium,

DIAGTREES: Larix occidentalis, Pinus contorta, P. ponderosa, Pseudotsuga menziesii

FERNS AND ALLIES: Pteridium aquilinum

FORBS: Achillea millefolium, Adenocaulon bicolor, Anemone oregana, A. piperi, A. lyallii, Apocynum androsaemifolium, Arenaria macrophylla, Arnica cordifolia, Balsamorhiza sagittata, Campanula scouleri, Chimaphila umbellata, Clarkia rhomboidea, Disporum hookeri, Epilobium angustifolium, Fritillaria lanceolata, Fragaria chiloensis, F. vesca, Galium aparine, G. triflorum, Goodyera oblongifolia, Hieracium albertinum, Hieracium albiflorum, Hydrophyllum capitatum, Lathyrus nevadensis, Linnaea borealis, Lupinus caudatus, L. latifolius, L. laxiflorus, Mitella stauropetala, Montia perfoliata, Osmorhiza chilensis, Pyrola asarifolia, P. picta, P. secunda, Smilacina racemosa, S. stellata, Thalictrum occidentale, Trientalis latifolia, Trillium ovatum, Valeriana sitchensis, Vicia americanum, Viola glabella

OTHGRASS: Agropyron spicatum, Bromus carinatus, Carex rossii, Poa bulbosa, P. nevadensis, Sitanion hystrix, Stipa occidentalis.

OTHSHRUB: Acer circinatum, Arctostaphylos nevadensis, A. patula, Berberis aquifolium, B. nervosa, Castanopsis chrysophylla, Corylus cornuta, Cornus nuttallii, Physocarpus malvaceus, Rubus parviflora

OTHTREES: Abies concolor, A. grandis, Acer macrophyllum, Libocedrus decurrens, Pinus lambertiana, P. monticola, Thuja plicata, Tsuga heterophylla

ELEVATION (ft): 3000-6000

KUCHLER NAME: Grand fir-Douglas fir forest
KUCHLER NUMBER: 13 (east slope of Cascade Range mapped as Western ponderosa forest (10) on 1985 map).

SAF NAME: Grand fir
SAF NUMBER: 213

OTHER REFERENCES: Daniels (1969); Franklin and Dyrness (1973), pp. 193-198; Hall (1973), pp. 37- 39; Volland (1976), pp. 67-78; Hopkins (1979a), pp. 30-36; Hopkins (1979b), pp. 17-21; Marsh (1987), pp. 40-54; Topik et al. (1988), pp. 71-105; Johnson and Simon (1987).

MAPCODE: 528
MAPNAME: Pinus ponderosa-Pseudotsuga menziesii-Abies spp. forest

COMNAMES: ponderosa pine-Douglas fir-true fir forest

DESCRIPTION: This is a closed-canopied montane forest in which ponderosa pine is dominant, with lesser amounts of Douglas fir, and grand fir and/or white fir. Other trees are present as scattered individuals or patches too small to map. This forest differs from 511 in its dominance by pine as opposed to Douglas fir and the lack of significant amounts of western larch. Successional relationships of this type are complex. The differences may reflect a more xeric portion of the overall montane forest, or in some (perhaps many) cases may reflect disturbance by fire or logging.

DISTRIBUT: Along the eastern slope of the Oregon Cascades and in the Blue Mountains.

DIAGGRASS: Bromus vulgaris, Calamagrostis rubescens, Carex concinnoides, C. geyeri, Festuca idahoensis, F. occidentalis, Koeleria cristata, Melica bulbosa

DIAGSHRUB: Acer glabrum, Amelanchier alnifolia, Berberis repens, C. velutinus, Holodiscus discolor, Lonicera ciliosa, Pachistima myrsinites, Rosa gymnocarpa, Salix scouleriana, Spiraea betulifolia, Symphoricarpos albus, S. mollis, Vaccinium membranaceum, V. scoparium,

DIAGTREES: Abies concolor, A. grandis, Pinus ponderosa, Pseudotsuga menziesii

FERNS AND ALLIES: Pteridium aquilinum

FORBS: Achillea millefolium, Adenocaulon bicolor, Anemone oregana, A. piperi, A. lyallii, Apocynum androsaemifolium, Arenaria macrophylla, Arnica cordifolia, Balsamorhiza sagittata, Campanula scouleri, Chimaphila umbellata, Clarkia rhomboidea, Disporum hookeri, Epilobium angustifolium, Fritillaria lanceolata, Fragaria chiloensis, F. vesca, Galium aparine, G. triflorum, Goodyera oblongifolia, Hieracium albertinum, Hieracium albiflorum, Hydrophyllum capitatum, Lathyrus nevadensis, Linnaea borealis, Lupinus caudatus, L. latifolius, L. laxiflorus, Mitella stauropetala, Montia perfoliata, Osmorhiza chilensis, Pyrola asarifolia, P. picta, P. secunda, Smilacina racemosa, S. stellata, Thalictrum occidentale, Trientalis latifolia, Trillium ovatum, Valeriana sitchensis, Vicia americanum, Viola glabella

OTHGRASS: Agropyron spicatum, Bromus carinatus, Carex rossii, Poa bulbosa, P. nevadensis, Sitanion hystrix, Stipa occidentalis.

OTHSHRUB: Acer circinatum, Arctostaphylos nevadensis, A. patula, Berberis aquifolium, B. nervosa, Castanopsis chrysophylla, Corylus cornuta, Cornus nuttallii, Physocarpus malvaceus, Rubus parviflora

OTHTREES: Larix occidentalis, Libocedrus decurrens, Picea engelmannii, Pinus contorta, P. lambertiana, P. monticola, Quercus garryana, Thuja plicata, Tsuga heterophylla

ELEVATION (ft): 3500-6500

KUCHLER NAME: Grand fir-Douglas fir forest
KUCHLER NUMBER: 13

SAF NAME: Grand fir
SAF NUMBER: 213

OTHER REFERENCES: Daniels (1969); Franklin and Dyrness (1973), pp. 193-198; Hall (1973), pp. 37- 39; Volland (1976), pp. 67-78; Hopkins (1979a), pp. 30-36; Hopkins (1979b), pp. 17-21; Marsh (1987), pp. 40-54; Topik et al. (1988), pp. 71-105; Johnson and Simon (1987).

MAPCODE: 530
MAPNAME: Abies spp.-Pinus contorta-Larix occidentalis (Pseudotsuga menziesii) forest

COMNAMES: true fir-lodgepole pine-western larch (Douglas fir) forest

DESCRIPTION: This is a closed-canopied montane forest comprised of a mosaic of either grand fir and/or white fir, lodgepole pine and western larch. The latter two species are commonly successional species after disturbance. Douglas fir is present in scattered patches, too small to map. These forests appear to be younger second-growth forests after fire or logging.

DISTRIBUT: This type is mapped primarily in the Blue Mountains. It is also present locally along the east slope of the Oregon Cascades.

DIAGGRASS: Bromus vulgaris, Calamagrostis rubescens, Carex concinnoides, C. geyeri, Festuca idahoensis, F. occidentalis, Koeleria cristata, Melica bulbosa

DIAGSHRUB: Acer glabrum, Amelanchier alnifolia, Berberis repens, C. velutinus, Holodiscus discolor, Lonicera ciliosa, Pachistima myrsinites, Rosa gymnocarpa, Salix scouleriana, Spiraea betulifolia, Symphoricarpos albus, S. mollis, Vaccinium membranaceum, V. scoparium,

DIAGTREES: Abies concolor, A. grandis, Larix occidentalis, Pinus contorta, P. ponderosa, Pseudotsuga menziesii

FERNS AND ALLIES: Pteridium aquilinum

FORBS: Achillea millefolium, Adenocaulon bicolor, Anemone oregana, A. piperi, A. lyallii, Apocynum androsaemifolium, Arenaria macrophylla, Arnica cordifolia, Balsamorhiza sagittata, Campanula scouleri, Chimaphila umbellata, Clarkia rhomboidea, Disporum hookeri, Epilobium angustifolium, Fritillaria lanceolata, Fragaria chiloensis, F. vesca, Galium aparine, G. triflorum, Goodyera oblongifolia, Hieracium albertinum, Hieracium albiflorum, Hydrophyllum capitatum, Lathyrus nevadensis, Linnaea borealis, Lupinus caudatus, L. latifolius, L. laxiflorus, Mitella stauropetala, Montia perfoliata, Osmorhiza chilensis, Pyrola asarifolia, P. picta, P. secunda, Smilacina racemosa, S. stellata, Thalictrum occidentale, Trientalis latifolia, Trillium ovatum, Valeriana sitchensis, Vicia americanum, Viola glabella

OTHGRASS: Agropyron spicatum, Bromus carinatus, Carex rossii, Poa bulbosa, P. nevadensis, Sitanion hystrix, Stipa occidentalis.

OTHSHRUB: Acer circinatum, Arctostaphylos nevadensis, A. patula, Berberis aquifolium, B. nervosa, Castanopsis chrysophylla, Corylus cornuta, Cornus nuttallii, Physocarpus malvaceus, Rubus parviflora

OTHTREES: Abies lasiocarpa, A. magnifica var. shastensis, Acer macrophyllum, Libocedrus decurrens, Picea engelmannii, Pinus lambertiana, P. monticola, Quercus garryana, Thuja plicata, Tsuga heterophylla, T. mertensiana

ELEVATION (ft): 3500-6500

KUCHLER NAME: Grand fir-Douglas fir forest
KUCHLER NUMBER: 13

SAF NAME: Grand fir
SAF NUMBER: 213

OTHER REFERENCES: Daniels (1969); Franklin and Dyrness (1973), pp. 193-198; Hall (1973), pp. 37- 39; Volland (1976), pp. 67-78; Hopkins (1979a), pp. 30-36; Hopkins (1979b), pp. 17-21; Marsh (1987), pp. 40-54; Topik et al. (1988), pp. 71-105; Johnson and Simon (1987).

MAPCODE: 531
MAPNAME: Pinus contorta-Abies spp. forest

COMNAMES: lodgepole pine-true fir forest

DESCRIPTION: The is a montane forest which is predominantly lodgepole pine, but there are a large number of widely scattered patches of grand and/or white fir too small to map. Other tree species are also present, but seldom occur in large amounts. This forest is probably the result of widespread recent wildfire. The fir patches are probably remnants of an older forest.

DISTRIBUT: Along the eastern slopes of the Oregon Cascades and in the Blue Mountains.

DIAGGRASS: Bromus vulgaris, Calamagrostis rubescens, Carex concinnoides, C. geyeri, Festuca idahoensis, F. occidentalis, Koeleria cristata, Melica bulbosa

DIAGSHRUB: Acer glabrum, Amelanchier alnifolia, Berberis repens, C. velutinus, Holodiscus discolor, Lonicera ciliosa, Pachistima myrsinites, Rosa gymnocarpa, Salix scouleriana, Spiraea betulifolia, Symphoricarpos albus, S. mollis, Vaccinium membranaceum, V. scoparium,

DIAGTREES: Abies concolor, A. grandis, Pinus contorta

FERNS AND ALLIES: Pteridium aquilinum

FORBS: Achillea millefolium, Adenocaulon bicolor, Anemone oregana, A. piperi, A. lyallii, Apocynum androsaemifolium, Arenaria macrophylla, Arnica cordifolia, Balsamorhiza sagittata, Campanula scouleri, Chimaphila umbellata, Clarkia rhomboidea, Disporum hookeri, Epilobium angustifolium, Fritillaria lanceolata, Fragaria chiloensis, F. vesca, Galium aparine, G. triflorum, Goodyera oblongifolia, Hieracium albertinum, Hieracium albiflorum, Hydrophyllum capitatum, Lathyrus nevadensis, Linnaea borealis, Lupinus caudatus, L. latifolius, L. laxiflorus, Mitella stauropetala, Montia perfoliata, Osmorhiza chilensis, Pyrola asarifolia, P. picta, P. secunda, Smilacina racemosa, S. stellata, Thalictrum occidentale, Trientalis latifolia, Trillium ovatum, Valeriana sitchensis, Vicia americanum, Viola glabella

OTHGRASS: Agropyron spicatum, Bromus carinatus, Carex rossii, Poa bulbosa, P. nevadensis, Sitanion hystrix, Stipa occidentalis.

OTHSHRUB: Acer circinatum, Arctostaphylos nevadensis, A. patula, Berberis aquifolium, B. nervosa, Castanopsis chrysophylla, Corylus cornuta, Cornus nuttallii, Physocarpus malvaceus, Rubus parviflora

OTHTREES: Abies lasiocarpa, A. magnifica var. shastensis, Acer macrophyllum, Larix occidentalis, Picea engelmannii, Pinus lambertiana, P. monticola, P. ponderosa, Pseudotsuga menziesii, T. mertensiana

ELEVATION (ft): 3500-6500

KUCHLER NAME: Grand fir-Douglas fir forest
KUCHLER NUMBER: 13

SAF NAME: Grand fir
SAF NUMBER: 213

OTHER REFERENCES: Daniels (1969); Franklin and Dyrness (1973), pp. 193-198; Hall (1973), pp. 37- 39; Volland (1976), pp. 67-78; Hopkins (1979a), pp. 30-36; Hopkins (1979b), pp. 17-21; Marsh (1987), pp. 40-54; Topik et al. (1988), pp. 71-105; Johnson and Simon (1987).

MAPCODE: 532
MAPNAME: Abies spp.-lodgepole pine forest

COMNAMES: true fir-lodgepole pine forest

DESCRIPTION: This is a closed-canopied forest of roughly equal proportions of grand fir and/or white fir and lodgepole pine cover types. The latter tend to occur as discrete patches within the fir matrix. The pattern appears to represent older fir forests with have a recent history of local wildfire.

DISTRIBUT: These forests occur in both the Blue Mountains and the eastern slope of the Oregon Cascades.

DIAGGRASS: Bromus vulgaris, Calamagrostis rubescens, Carex concinnoides, C. geyeri, Festuca idahoensis, F. occidentalis, Koeleria cristata, Melica bulbosa

DIAGSHRUB: Acer glabrum, Amelanchier alnifolia, Berberis repens, C. velutinus, Holodiscus discolor, Lonicera ciliosa, Pachistima myrsinites, Rosa gymnocarpa, Salix scouleriana, Spiraea betulifolia, Symphoricarpos albus, S. mollis, Vaccinium membranaceum, V. scoparium,

DIAGTREES: Abies concolor, A. grandis, Pinus contorta

FERNS AND ALLIES: Pteridium aquilinum

FORBS: Achillea millefolium, Adenocaulon bicolor, Anemone oregana, A. piperi, A. lyallii, Apocynum androsaemifolium, Arenaria macrophylla, Arnica cordifolia, Balsamorhiza sagittata, Campanula scouleri, Chimaphila umbellata, Clarkia rhomboidea, Disporum hookeri, Epilobium angustifolium, Fritillaria lanceolata, Fragaria chiloensis, F. vesca, Galium aparine, G. triflorum, Goodyera oblongifolia, Hieracium albertinum, Hieracium albiflorum, Hydrophyllum capitatum, Lathyrus nevadensis, Linnaea borealis, Lupinus caudatus, L. latifolius, L. laxiflorus, Mitella stauropetala, Montia perfoliata, Osmorhiza chilensis, Pyrola asarifolia, P. picta, P. secunda, Smilacina racemosa, S. stellata, Thalictrum occidentale, Trientalis latifolia, Trillium ovatum, Valeriana sitchensis, Vicia americanum, Viola glabella

OTHGRASS: Agropyron spicatum, Bromus carinatus, Carex rossii, Poa bulbosa, P. nevadensis, Sitanion hystrix, Stipa occidentalis.

OTHSHRUB: Acer circinatum, Arctostaphylos nevadensis, A. patula, Berberis aquifolium, B. nervosa, Castanopsis chrysophylla, Corylus cornuta, Cornus nuttallii, Physocarpus malvaceus, Rubus parviflora

OTHTREES: Abies lasiocarpa, A. magnifica var. shastensis, Acer macrophyllum, Libocedrus decurrens, Picea engelmannii, Pinus lambertiana, P. monticola, P. ponderosa, Pseudotsuga menziesii, Quercus garryana, Thuja plicata, Tsuga heterophylla, T. mertensiana

ELEVATION (ft): 3500-6500

KUCHLER NAME: Grand fir-Douglas fir forest
KUCHLER NUMBER: 13

SAF NAME: Grand fir
SAF NUMBER: 213

OTHER REFERENCES: Daniels (1969); Franklin and Dyrness (1973), pp. 193-198; Hall (1973), pp. 37- 39; Volland (1976), pp. 67-78; Hopkins (1979a), pp. 30-36; Hopkins (1979b), pp. 17-21; Marsh (1987), pp. 40-54; Topik et al. (1988), pp. 71-105; Johnson and Simon (1987).

MAPCODE: 533
MAPNAME: Tsuga mertensiana-Abies lasiocarpa-Pinus contorta forest

COMNAMES: mountain hemlock-subalpine fir-lodgepole pine forest

DESCRIPTION: This is a closed-canopied upper montane forest in which mountain hemlock is predominate with an admixture of subalpine fir and lodgepole pine. The major distinction between this forest and 536 is the replacement of silver fir by subalpine fir, suggesting a more severe environment.

DISTRIBUT: Primarily along the upper eastern slope of the Oregon Cascades.

DIAGGRASS: Calamagrostis rubescens, Carex pennsylvanica, C. rossii, Festuca viridula, Juncus drummondii

DIAGSHRUB: Pachistima myrsinites, Rhododendron macrophyllum, Rubus lasiococcus, Sorbus scopulina, S. sitchensis, Spiraea sp., Vaccinium membranaceum, V. scoparium

DIAGTREES: Abies lasiocarpa, Pinus contorta, Tsuga mertensiana
FERNS AND ALLIES: Blechnum spicant, Pteridium aquilinum

FORBS: Achillea millefolium, Anemone oregana, Pedicularis racemosa, Aster alpigenus, Chimaphila umbellata, Cornus canadensis, Luetkea pectinata, Ligusticum grayi, Linnaea borealis, Lomatium martindalei, Luina stricta, Lupinus bicolor, Pyrola secunda, Senecio triangularis, Smilacina stellata, Tiarella trifoliata, Veratrum viride, Viola orbiculata, V. sempervirens, Xerophyllum tenax

OTHGRASS: Elymus glaucus, Poa pratensis, Stipa lemmonii, S. occidentalis

OTHSHRUB: Arctostaphylos nevadensis, Castanopsis chrysophylla, Menziesia ferruginea, Pachistima myrsinites, Rosa gymnocarpa, Rubus parviflorus, R. ursinus, Vaccinium alaskaense, V. ovatum, V. parvifolium

OTHTREES: Abies amabilis, A. concolor, A. magnifica var. shastensis, A. procera, Picea englemannii, Populus tremuloides

ELEVATION (ft): above 4500

KUCHLER NAME: Fir-hemlock forest (Abies-Tsuga)
KUCHLER NUMBER: 4

SAF NAME: Mountain hemlock
SAF NUMBER: 205

OTHER REFERENCES: Franklin and Dyrness (1973), p. 106.; Hopkins (1979b), p. 13; Marsh (1987), pp. 68-73; Volland (1976), pp. 32-33, 46-49, 51; Atzet and McCrimmon (1990), pp. 59-61.

MAPCODE: 534
MAPNAME: Pinus ponderosa-Pinus contorta forest

COMNAMES: ponderosa pine-lodgepole pine forest

DESCRIPTION: This is predominantly a matrix of ponderosa pine with patches of lodgepole pine too small to map individually, yet large enough to make a significant contribution to the overall structural diversity of the forest. The pattern of the mosaic reflects both substrate variability and a disturbance history related to logging and fire.

DISTRIBUT: A major type along the base of the eastern slope of the Oregon Cascades.

DIAGGRASS: Agropyron spicatum, Bromus carinatus, Bromus tectorum, Carex geyeri, Elymus glaucus, Festuca idahoensis, F. occidentalis, Koeleria cristata, Poa nervosa, P. sandbergii, P. wheeleri, Sitanion hystrix

DIAGSHRUB: Amelanchier alnifolia, Artemisia tridentata, Berberis repens, Ceanothus integerrimus, C. prostratus, Chrysothamnus viscidiflorus, Purshia tridentata, Symphoricarpos albus

DIAGTREES: Pinus contorta, P. ponderosa

FERNS AND ALLIES: Pteridium aquilinum

FORBS: Achillea millefolium, Antennaria corymbosa, Arenaria macrophylla, Arnica chamissonis, Aster canescens, Balsamorhiza sagittata, Clarkia rhomboidea, Collinsia grandiflora, Delphinium nuttallianum, Epilobium angustifolium, Eriogonum umbellatum, Eriophyllum lanatum, Fragaria chiloensis, F. virginiana, Fritillaria pudica, Hieracium albiflorum, H. albertinum, Horkelia fusca, Hydrophyllum capitatum, Lathyrus lanszwertii, L. nevadensis, Lithophragma glabra, Lomatium triternatum, Lupinus andersoni, L. caudatus, L. lepidus, L. leucophyllus, Luina nardosmia, Mimulus breweri, Montia perfoliata, Nemophila parviflora, Penstemon euglaucus, Sedum stenopetalum, Senecio canus, Smilacina racemosa, Spraguea umbellata, Vicia americanum, Viola nuttallii, V. purpurea, Wyethia mollis

OTHGRASS: Agrostis scabra, Carex nebrascensis, C. rossii, Danthonia californica, D. intermedia, Deschampsia elongata, Hordeum nodosum, Koeleria cristata, Muhlenbergia filiformis, Poa bulbosa, P. pratensis, Stipa occidentalis, S. thurberiana

OTHSHRUB: Arctostaphylos nevadensis, A. patula, A. uva-ursi, Ceanothus velutinus, Cercocarpus ledifolius, Chrysothamnus nauseosus, Holodiscus discolor, Lonicera involucrata, L. conjugialis, Physocarpus malvaceus, Ribes cereum, R. viscosissimum, Rosa gymnocarpa, Spiraea menziesii, Symphoricarpos mollis, Vaccinium uliginosum

OTHTREES: Juniperus occidentalis, Pseudotsuga menziesii, Quercus garryana

ELEVATION (ft): 2000-4000

KUCHLER NAME: Western ponderosa forest (Pinus)
KUCHLER NUMBER: 10 (in part)

SAF NAME: Interior ponderosa pine
SAF NUMBER: 237

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 168-189; Volland (1976), pp. 34-45,50; Hopkins (1979a), pp. 21-22,25, 27-29; Hopkins (1979b), pp. 12,15..

MAPCODE: 535
MAPNAME: Pinus ponderosa-Quercus garryana forest

COMNAMES: ponderosa pine-Oregon white oak forest

DESCRIPTION: A mostly closed-canopied forest in which ponderosa pine predominates. There is commonly a dense sub-canopy of Oregon white oak. The shrub and herbaceous layers become less lush as the degree of canopy closure increases.

DISTRIBUT: East of the Cascades in the vicinity of Mt. Hood. Also in the Mutton Mountains on the Warm Springs Indian Reservation.

DIAGTREES: Pinus ponderosa, Quercus garryana

DIAGSHRUB: Ceanothus prostrata, Purshia tridentata, Rhus diversiloba, Rubus ursinus, Symphoricarpos albus

DIAGGRASS: Bromus carinatus, Festuca idahoensis, Koeleria cristata, Poa sandbergii

FERNS AND ALLIES: Pteridium aquilinum

FORBS: Achillea millefolium, Adenocaulon bicolor, Apocynum androsaemifolium, Balsamorhiza sagittata, Fragaria vesca, Galium aparine, Hieracium albertinum, Hydrophyllum capitatum, Lathyrus lanszwertii, Lithophragma glabra, Lomatium triternatum, Lupinus caudatus, L. leucophyllus, Luina nardosmia, Montia perfoliata, Osmorhiza chilensis, Sedum stenopetalum, Smilacina racemosa, Synthyris reniformis, Vicia americana

OTHTREES: Abies concolor, A. grandis, Calocedrus decurrens, Juniperus occidentalis, Pinus lambertiana, Pseudotsuga menziesii

OTHSHRUB: Amelanchier alnifolia, Arcostaphylos patula, Berberis repens, Ceanothus integerrimus, Chrysothamnus nauseosus, Holodiscus discolor, Rosa gymnocarpa, R. nuttallii, Symphoricarpos mollis

OTHGRASS: Agropyron spicatum, Bromus tectorum, Carex geyeri, Elymus glaucus, Festuca occidentalis, Poa bulbosa, Sitanion hystrix, Stipa occidentalis

ELEVATION (ft): 2000-3500

KUCHLER NAME: Western ponderosa forest (Pinus)
KUCHLER NUMBER: 10 (in part)

SAF NAME: Interior ponderosa pine
SAF NUMBER: 237

OTHER REFERENCES: Franklin and Dyrness (1973), p. 310-311; Marsh (1987), pp. 76-77; Topik et al. (1988), pp. 43-49; Atzet and McCrimmon (1990), pp. 315-320; Mayer and Laudenslayer (1988), pp. 56-57 (in part).

MAPCODE: 536
MAPNAME: Tsuga mertensiana-Abies spp.-Pinus contorta forest

COMNAMES: mountain hemlock-true fir-lodgepole pine forest

DESCRIPTION: This is a closed-canopied upper montane forest in which mountain hemlock is predominant, with an admixture of silver fir and lodgepole pine. The major distinction between this forest and 517 is the greater abundance of lodgepole pine, and the absence of some of the more mesic tree and shrub species.

DISTRIBUT: These forests occur along upper slopes of the Oregon Cascades. They are particularly common on the eastern slope, often extending into depressions and flat-lying areas along the crest of the Cascades. The substrate is often pumice.

DIAGGRASS: Calamagrostis rubescens, Carex pennsylvanica, C. rossii, Festuca viridula, Juncus drummondii

DIAGSHRUB: Pachistima myrsinites, Rhododendron macrophyllum, Rubus lasiococcus, Sorbus scopulina, S. sitchensis, Spiraea sp., Vaccinium membranaceum, V. scoparium

DIAGTREES: Abies amabilis, Pinus contorta, Tsuga mertensiana

FERNS AND ALLIES: Blechnum spicant, Pteridium aquilinum

FORBS: Achillea millefolium, Anemone oregana, Pedicularis racemosa, Aster alpigenus, Chimaphila umbellata, Cornus canadensis, Luetkea pectinata, Ligusticum grayi, Linnaea borealis, Lomatium martindalei, Luina stricta, Lupinus bicolor, Pyrola secunda, Senecio triangularis, Smilacina stellata, Tiarella trifoliata, Veratrum viride, Viola orbiculata, V. sempervirens, Xerophyllum tenax

OTHGRASS: Elymus glaucus, Poa pratensis, Stipa lemmonii, S. occidentalis

OTHSHRUB: Arctostaphylos nevadensis, Castanopsis chrysophylla, Menziesia ferruginea, Pachistima myrsinites, Rosa gymnocarpa, Rubus parviflorus, R. ursinus, Vaccinium alaskaense, V. ovatum, V. parvifolium

OTHTREES: Abies concolor, Abies lasiocarpa, magnifica var. shastensis, A. procera, Picea englemannii, Populus tremuloides

ELEVATION (ft): above 4500

KUCHLER NAME: Fir-hemlock forest (Abies-Tsuga)
KUCHLER NUMBER: 4

SAF NAME: Mountain hemlock
SAF NUMBER: 205

OTHER REFERENCES: Franklin and Dyrness (1973), p. 106.; Hopkins (1979b), p. 13; Marsh (1987), pp. 68-73; Volland (1976), pp. 32-33, 46-49, 51; Atzet and McCrimmon (1990), pp. 59-61.

MAPCODE: 537
MAPNAME: Larix occidentalis-Pseudotsuga menziesii-Pinus ponderosa-P. contorta forest

COMNAMES: western larch-Douglas fir-ponderosa pine-lodgepole pine forest

DESCRIPTION: This is a closed-canopied montane forest in which dominance is shared by western larch, Douglas fir, ponderosa pine, and lodgepole pine. It appears to be younger second-growth forests after disturbance by logging or fire.

DISTRIBUT: Along the eastern slope of the Oregon Cascades and in the Blue Mountains.

DIAGGRASS: Bromus vulgaris, Calamagrostis rubescens, Carex concinnoides, C. geyeri, Festuca idahoensis, F. occidentalis, Koeleria cristata, Melica bulbosa

DIAGSHRUB: Acer glabrum, Amelanchier alnifolia, Berberis repens, C. velutinus, Holodiscus discolor, Lonicera ciliosa, Pachistima myrsinites, Rosa gymnocarpa, Salix scouleriana, Spiraea betulifolia, Symphoricarpos albus, S. mollis, Vaccinium membranaceum, V. scoparium,

DIAGTREES: Larix occidentalis, Pinus contorta, P. ponderosa, Pseudotsuga menziesii

FERNS AND ALLIES: Pteridium aquilinum

FORBS: Achillea millefolium, Adenocaulon bicolor, Anemone oregana, A. piperi, A. lyallii, Apocynum androsaemifolium, Arenaria macrophylla, Arnica cordifolia, Balsamorhiza sagittata, Campanula scouleri, Chimaphila umbellata, Clarkia rhomboidea, Disporum hookeri, Epilobium angustifolium, Fritillaria lanceolata, Fragaria chiloensis, F. vesca, Galium aparine, G. triflorum, Goodyera oblongifolia, Hieracium albertinum, Hieracium albiflorum, Hydrophyllum capitatum, Lathyrus nevadensis, Linnaea borealis, Lupinus caudatus, L. latifolius, L. laxiflorus, Mitella stauropetala, Montia perfoliata, Osmorhiza chilensis, Pyrola asarifolia, P. picta, P. secunda, Smilacina racemosa, S. stellata, Thalictrum occidentale, Trientalis latifolia, Trillium ovatum, Valeriana sitchensis, Vicia americanum, Viola glabella

OTHGRASS: Agropyron spicatum, Bromus carinatus, Carex rossii, Poa bulbosa, P. nevadensis, Sitanion hystrix, Stipa occidentalis.

OTHSHRUB: Acer circinatum, Arctostaphylos nevadensis, A. patula, Berberis aquifolium, B. nervosa, Castanopsis chrysophylla, Corylus cornuta, Cornus nuttallii, Physocarpus malvaceus, Rubus parviflora

OTHTREES: Abies concolor, A. grandis, Acer macrophyllum, Libocedrus decurrens, Pinus lambertiana, P. monticola, Thuja plicata, Tsuga heterophylla

ELEVATION (ft): 3000-6000

KUCHLER NAME: Grand fir-Douglas fir forest
KUCHLER NUMBER: 13

SAF NAME: Grand fir
SAF NUMBER: 213

OTHER REFERENCES: Daniels (1969); Franklin and Dyrness (1973), pp. 193-198; Hall (1973), pp. 37- 39; Volland (1976), pp. 67-78; Hopkins (1979a), pp. 30-36; Hopkins (1979b), pp. 17-21; Marsh (1987), pp. 40-54; Topik et al. (1988), pp. 71-105; Johnson and Simon (1987).

MAPCODE: 538
MAPNAME: Pinus contorta-Larix occidentalis forest

COMNAMES: lodgepole pine-western larch forest

DESCRIPTION: This is a closed-canopied montane forest in which lodgepole pine and western larch are co-dominant. Other conifer species are present as scattered individuals or in patches too small to map. This is probably a young second-growth forest which had its origin in fire or logging disturbance.

DISTRIBUT: Mapped only in the Blue Mountains of north-eastern Oregon.

DIAGGRASS: Bromus vulgaris, Calamagrostis rubescens, Carex concinnoides, C. geyeri, Festuca idahoensis, F. occidentalis, Koeleria cristata, Melica bulbosa

DIAGSHRUB: Acer glabrum, Amelanchier alnifolia, Berberis repens, C. velutinus, Holodiscus discolor, Lonicera ciliosa, Pachistima myrsinites, Rosa gymnocarpa, Salix scouleriana, Spiraea betulifolia, Symphoricarpos albus, S. mollis, Vaccinium membranaceum, V. scoparium,

DIAGTREES: Larix occidentalis, Pinus contorta, P. ponderosa,

FERNS AND ALLIES: Pteridium aquilinum

FORBS: Achillea millefolium, Adenocaulon bicolor, Anemone oregana, A. piperi, A. lyallii, Apocynum androsaemifolium, Arenaria macrophylla, Arnica cordifolia, Balsamorhiza sagittata, Campanula scouleri, Chimaphila umbellata, Clarkia rhomboidea, Disporum hookeri, Epilobium angustifolium, Fritillaria lanceolata, Fragaria chiloensis, F. vesca, Galium aparine, G. triflorum, Goodyera oblongifolia, Hieracium albertinum, Hieracium albiflorum, Hydrophyllum capitatum, Lathyrus nevadensis, Linnaea borealis, Lupinus caudatus, L. latifolius, L. laxiflorus, Mitella stauropetala, Montia perfoliata, Osmorhiza chilensis, Pyrola asarifolia, P. picta, P. secunda, Smilacina racemosa, S. stellata, Thalictrum occidentale, Trientalis latifolia, Trillium ovatum, Valeriana sitchensis, Vicia americanum, Viola glabella

OTHGRASS: Agropyron spicatum, Bromus carinatus, Carex rossii, Poa bulbosa, P. nevadensis, Sitanion hystrix, Stipa occidentalis.

OTHSHRUB: Acer circinatum, Arctostaphylos nevadensis, A. patula, Berberis aquifolium, B. nervosa, Castanopsis chrysophylla, Corylus cornuta, Cornus nuttallii, Physocarpus malvaceus, Rubus parviflora

OTHTREES: Abies concolor, A. grandis, A. lasiocarpa, A. magnifica var. shastensis, Picea engelmannii, P. monticola, Pseudotsuga menziesii

ELEVATION (ft): 3500-6500

KUCHLER NAME: Grand fir-Douglas fir forest
KUCHLER NUMBER: 13

SAF NAME: Grand fir
SAF NUMBER: 213

OTHER REFERENCES: Daniels (1969); Franklin and Dyrness (1973), pp. 193-198; Hall (1973), pp. 37- 39; Volland (1976), pp. 67-78; Hopkins (1979a), pp. 30-36; Hopkins (1979b), pp. 17-21; Marsh (1987), pp. 40-54; Topik et al. (1988), pp. 71-105; Johnson and Simon (1987).

MAPCODE: 541
MAPNAME: Larix occidentalis-Pseudotsuga menziesii-Abies spp. forest

COMNAMES: western larch-Douglas fir-true fir forest

DESCRIPTION: This is a closed-canopied montane forest with roughly equal amounts of western larch, Douglas fir, and either grand fir and/or white fir. The pattern suggest an older second- growth forest after fire or logging disturbance.

DISTRIBUT: This type is mapped only in the Blue Mountains.

DIAGTREES: Abies concolor, A. grandis, Larix occidentalis, Pseudotsuga menziesii

DIAGGRASS: Bromus vulgaris, Calamagrostis rubescens, Carex concinnoides, C. geyeri, Festuca idahoensis, F. occidentalis, Koeleria cristata, Melica bulbosa

DIAGSHRUB: Acer glabrum, Amelanchier alnifolia, Berberis repens, C. velutinus, Lonicera ciliosa, Pachistima myrsinites, Rosa gymnocarpa, Salix scouleriana, Spiraea betulifolia, Symphoricarpos albus, Vaccinium membranaceum, V. scoparium,

FERNS AND ALLIES: Pteridium aquilinum

FORBS: Achillea millefolium, Adenocaulon bicolor, Anemone oregana, A. piperi, A. lyallii, Apocynum androsaemifolium, Arenaria macrophylla, Arnica cordifolia, Balsamorhiza sagittata, Campanula scouleri, Chimaphila umbellata, Clarkia rhomboidea, Disporum hookeri, Epilobium angustifolium, Fritillaria lanceolata, Fragaria chiloensis, F. vesca, Galium aparine, G. triflorum, Goodyera oblongifolia, Hieracium albertinum, Hieracium albiflorum, Hydrophyllum capitatum, Lathyrus nevadensis, Linnaea borealis, Lupinus caudatus, L. latifolius, L. laxiflorus, Mitella stauropetala, Montia perfoliata, Osmorhiza chilensis, Pyrola asarifolia, P. picta, P. secunda, Smilacina racemosa, S. stellata, Thalictrum occidentale, Trientalis latifolia, Trillium ovatum, Valeriana sitchensis, Vicia americanum, Viola glabella

OTHGRASS: Agropyron spicatum, Bromus carinatus, Carex rossii, Poa bulbosa, P. nevadensis, Sitanion hystrix, Stipa occidentalis.

OTHSHRUB: Holodiscus discolor, Physocarpus malvaceus, Rubus parviflora, Spiraea betulifolia

OTHTREES: Abies lasiocarpa, Picea engelmannii, Pinus contorta, P. monticola, P. ponderosa,

ELEVATION (ft): 3500-6500

KUCHLER NAME: Grand fir-Douglas fir forest
KUCHLER NUMBER: 13

SAF NAME: Grand fir
SAF NUMBER: 213

OTHER REFERENCES: Daniels (1969); Franklin and Dyrness (1973), pp. 193-198; Hall (1973), pp. 37- 39; Volland (1976), pp. 67-78; Hopkins (1979a), pp. 30-36; Hopkins (1979b), pp. 17-21; Marsh (1987), pp. 40-54; Topik et al. (1988), pp. 71-105; Johnson and Simon (1987).

MAPCODE: 544
MAPNAME: Tsuga mertensiana parkland

COMNAMES: mountain hemlock parkland

DESCRIPTION: Scattered individuals and islands of mountain hemlock within a parkland matrix. The pattern is one of patches of 517 within a matrix of 040. It can be considered the subalpine zone, i.e., the area above continuous forest but below the upper limit of upright tree growth.

DISTRIBUT: High elevations along the both sides of the Cascade Range.

DIAGGRASS: Calamagrostis canadensis, Carex nigricans, C. spectabilis, Deschampsia caespitosa, Festuca viridula, Juncus drummondii

DIAGSHRUB: Alnus sinuata, Amelanchier alnifolia, Oplopanax horridum, Rubus parviflorus, R. spectabilis, Vaccinium membranaceum, V. scoparium

DIAGTREES: Abies amabilis, A. lasiocarpa, Pinus contorta, Tsuga mertensiana

FERNS AND ALLIES: Pteridium aquilinum.

FORBS: Achillea millefolium, Anemone occidentalis, Aquilegia formosa, Arnica latifolia, Aster alpigenus, A. ledophyllus, A. occidentalis, Cassiope mertensiana, Castilleja parviflora, Cornus canadensis, Dodecatheon jeffreyi, Epilobium alpinum, Erigeron peregrinus, Geum macrophyllum, Heracleum lanatum, Luetkea pectinata, Hieracium gracile, Ligusticum grayi, Lupinus latifolius, Pedicularis groenlandica, P. racemosa, Phyllodoce empetrifomis, Polygonum bistortoides, Potentilla flabellifolia, Senecio triangularis, Smilacina stellata, Solidago multiradiata, Valeriana sitchensis, Veratrum californica, V. viride, Viola glabella, Xerophyllum tenax

OTHGRASS: Agrostis hallii, A. thurberiana, Carex lenticularis, C. muricata, C. vesicaria, Elymus glaucus, Juncus spp., Trisetum canscens

OTHSHRUB: Menziesia ferruginea, Pachistima myrsinites, Rhododendron albiflorum, Rosa gymnocarpa, Rubus parviflorus, R. ursinus, Sorbus sitchensis, Vaccinium alaskaense, V. deliciosum, V. ovalifolium

OTHTREES: Abies magnifica var. shastensis, Chamaecyparis nootkatensis, Picea englemannii

ELEVATION (ft): above 4500

KUCHLER NAME: Fir-hemlock forest (Abies-Tsuga)
KUCHLER NUMBER: 4

SAF NAME: Mountain hemlock
SAF NUMBER: 205

OTHER REFERENCES: Franklin and Dyrness (1973), p. 101-109, 269; Franklin (1988), pp. 119-121.

MAPCODE: 548
MAPNAME: Pinus-Pseudotsuga-Libocedrus-Abies
COMNAMES: Siskiyou mixed conifer forest, high elevation

DESCRIPTION: An open-canopied high elevation forest with a rich assemblage of trees, shrubs, and forbs. Red fir tends to predominate, but white fir, Douglas fir, incense cedar, and numerous other conifers may be common locally.

DISTRIBUT: Restricted to the Siskiyou Mountains of southwestern Oregon.

DIAGGRASS: *Bromus carinatus*, *B. vulgaris*, *Carex pennsylvanica*, *Festuca subulata*

DIAGSHRUB: *Arctostaphylos patula*, *Berberis nervosa*, *Pachistima myrsinites*, *Ribes binominatum*, *R. cereum*, *R. velutinum*, *R. viscosissimum*, *Rosa gymnocarpa*, *Rubus ursinus*, *Symphoricarpos albus*, *S. mollis*, *Vaccinium membranaceum*

DIAGTREES: *Abies concolor*, *A. magnifica* var. *shastensis*, *A. procera*, *Pinus contorta*, *Tsuga mertensiana*

FERNS AND ALLIES: None

FORBS: *Achillea millefolium*, *Actaea rubra*, *Arenaria macrophylla*, *Arnica latifolia*, *Asarum caudatum*, *Chimaphila umbellata*, *Corallorhiza maculata*, *Crepis pleurocarpa*, *Epilobium angustifolium*, *Eriophyllum lanatum*, *Erythronium grandiflorum*, *Galium oreganum*, *G. triflorum*, *Goodyera oblongifolia*, *Hieracium albiflorum*, *Lupinus leucophyllus*, *Mertensia ciliolata*, *Montia siberica*, *Orthocarpus cryptanthus*, *Osmorhiza chilensis*, *Phacelia heterophylla*, *Phlox diffusa*, *Polemonium pulcherrimum*, *Pyrola picta*, *Pyrola secunda*, *Sedum oreganum*, *Smilacina stellata*, *Stellaria crispa*, *Trientalis latifolia*, *Valeriana sitchensis*, *Vancouveria hexandra*, *Veratrum californica*, *Vicia americana*, *Viola glabella*, *Xerophyllum tenax*.

OTHGRASS: *Elymus glaucus*, *Luzula glabrata*

OTHSHRUB: *Arctostaphylos nevadensis*, *Castanopsis chrysophylla*, *Holodiscus discolor*, *Lonicera conjugialis*, *Pachistima myrsinites*, *Ribes lacustre*, *R. lobbii*, *R. marshallii*, *R. sanguineum*, *Rubus parviflora*, *Sambucus racemosa*, *Vaccinium membranaceum*

OTHTREES: *Abies lasiocarpa*, *Libocedrus decurrens*, *Picea breweriana*, *Pinus lambertiana*, *P. monticola*, *Pseudotsuga menziesii*, *Quercus sadleri*

ELEVATION (ft): 4000-7300

KUCHLER NAME: Mixed conifer forest (*Abies*-*Pinus*-*Pseudotsuga*)
KUCHLER NUMBER: 5 (not shown in OR on 1985 map)

SAF NAME: Red fir
SAF NUMBER: 207

OTHER REFERENCES: Franklin and Dyrness (1973), pp. 154-158; Atzet and Wheeler (1984), pp. 14-37; Mayer and Laudenslayer (1988), pp. 40-43.

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Structural modifiers

Because recent timber harvest patterns are easily seen in satellite imagery and the recent upsurge in interest in habitat fragmentation, structural modifiers representing states of internal fragmentation have been appended to the labels assigned to vegetation polygons.

A fourth byte is assigned to those polygons where areas of recent timber harvest are visible. Areas of recent timber harvest in excess of 320 contiguous acres are mapped separately. No fourth byte is assigned if the polygon has had only incidental recent timber harvest. The other possibilities include a fourth byte value of "L", "M", or "H". A value of "L" indicates a low degree of habitat fragmentation related to timber harvest practices. This value indicates that up to about one-third of the area within the polygon has recently been harvest, usually as scattered clearcuts of less than 40 acres in size. A value of "H" assigned to a forest polygon indicates that more than two-thirds of the area within the polygon has recently been harvested. The rest of the area remained as highly-fragmented forest (usually in scattered patches) as of the date of the imagery (July 1988). Polygons with a moderate degree of internal fragmentation are assigned a fourth byte value of "M". Precise boundaries for these categories are seldom possible.

FFFFFFFFFFFF	F FFF FFF F	F F FF F FF	F FF
FFFFFFFFFFFF	FFF FFF FF F	FF FFF F	F F F
FFFF FFFFFFFF	FF FF F FF	F FF FF F F	F FF F
FFFFFFFFFFFF	FF FFFF FF F	F F FF F F	F F F F

incidental	Low	Moderate	High
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(not coded)

---increasing degree of internal forest fragmentation--->

GLOSSARY OF ACRONYMS

ACRONAME: The plant community(ies) code(s) used by some

CROSSWALK: federal agencies that correspond to the plant community described in this manual.

Codes consist of the first three letters of the Latin generic and specific names of dominant plants in the tree, shrub and herb layer, separated with a slash.

COMNAMES: Common names of dominant plants in the vegetation type.

DESCRIPTION: Description of the vegetation type.

DIAGGRASS: Dominant graminoid species in the herbaceous vegetation layer.

DIAGSHRUB: Dominant woody shrubs in the shrub vegetation layer.

DIAGTREES: Dominant tree species in the canopy layer of forested vegetation types.

DISTRIBUT: General description of the distribution of the vegetation type in Oregon.

ECOLOGY: Short summary of environmental conditions and unusual ecological characteristics for the vegetation type.

FERNS AND ALLIES: List of ferns and other non-flowering plants typically associated with the vegetation type.

FORBS: List of non-woody, broadleaf plant species typically associated with the vegetation type.

KUCHLER NAME: Name of the vegetation type(s) corresponding to the described type in the 1964 publication by A. W. Kuchler (Potential natural vegetation of the Conterminous United States. Am. Geog. Soc. Special Publ. 36:1-38 + 116 plates).

KUCHLER NUMBER: Number assigned to the vegetation type(s) corresponding to the described type in Kuchler (1964--see reference above)

LOWER-ELEVATION: Approximate lowest elevation (in feet) at which the vegetation type can be found.

MAPCODE: Three number code for the vegetation type. Used to label areas of the vegetation type on the Map of Oregon Actual Vegetation.

MAPNAME: Latin names of dominant plants in the vegetation type. Slashes separate canopy, shrub and herbaceous layers.

OTHGRASS: Names of graminoids typically found in the vegetation type that are not usually dominants in the herbaceous layer.

OTHSHRUB: Names of woody shrubs typically found in the vegetation type that are not usually dominants in the shrub layer.

OTHTREES: Names of trees typically found in the vegetation type that are not usually canopy dominants.

SAF NAME: Name of vegetation type(s) corresponding to the described type as listed by the Society of American Foresters.

SAF NUMBER: Number of vegetation type(s) corresponding to the described type as listed by the Society of American Foresters.

UPDATE: Date vegetation type description was prepared or date of latest revision. Date is followed by initials of preparer.

UPPER-ELEVATION: Approximate highest elevation (in feet) at
 which vegetation type can usually be found.

VEGSTRUCT: Description of the vegetation type.

11/18/92

APPENDIX 2: OREGON PRIMARY VEGETATION COVER TYPES

Map Code	Common Name
001	cheatgrass and other annual grasslands
002	agricultural cropland and improved pasturelands
003	urban and industrial areas
004	crested wheatgrass and other perennial bunchgrass seedings
005	brushfields (undescribed)
007	American and European beachgrass, shorepine, seashore bluegrass and lupine
008	inland sand dunes
009	open water
010	clearings, brushfields, conifer plantations, sparse conifer stands, hardwoods, and bare ground
011	bluebunch wheatgrass
012	bottlebrush squirreltail
013	Sandberg bluegrass
015	sandy palouse grasslands
016	bluebunch wheatgrass-Idaho fescue-Sandberg bluegrass canyon grassland
017	Idaho fescue-junegrass canyon grassland
018	lava fields
020	black hawthorn riparian and bottomlands
021	cottonwood riparian woodland
022	willow species floodplain riparian
024	Idaho fescue-bluebunch wheatgrass-Sandberg bluegrass palouse grasslands
025	Idaho fescue-junegrass plateau, ridgetop and palouse grasslands
026	sheep fescue, green fescue and Idaho fescue montane grasslands
030	reed canary grass wetland
031	hardstem bulrush-cattail-burreed marsh
032	saltmarsh
035	alkaline grasslands and seasonal wetlands
036	sedge montane meadows and wetlands
038	tufted hairgrass-bluegrass montane meadows
039	tufted hairgrass valley prairie
040	alpine communities
298	big sagebrush/needle-and-thread grass
299	big sagebrush/cheatgrass
300	big sagebrush/basin wildrye
301	big sagebrush/bluebunch wheatgrass
303	big sagebrush/Idaho fescue
304	big sagebrush/Sandberg bluegrass
305	big sagebrush/bottlebrush squirreltail
306	big sagebrush/western needlegrass
307	big sagebrush/Thurbers needlegrass
308	big sagebrush/crested wheatgrass
309	big sagebrush lava fields
310	big sagebrush ash beds
311	three-tip sagebrush/bunchgrass
312	low sagebrush-mountain big sagebrush/Idaho fescue
313	low sagebrush/bluebunch wheatgrass
314	low sagebrush/Idaho fescue
315	low sagebrush/Sandbergs bluegrass
316	low sagebrush/bottlebrush squirreltail

317 black sagebrush/Sandbergs bluegrass
319 low sagebrush-black sagebrush/bottlebrush squirreltail
321 rigid sagebrush/Sandbergs bluegrass
322 mountain big sagebrush/Sandbergs bluegrass
323 mountain big sagebrush/Idaho fescue
324 mountain big sagebrush/bluebunch wheatgrass-bottlebrush squirreltail
325 budsage
326 silver sagebrush playa or bottomland
327 bare playa
348 big sagebrush-squawapple/Idaho fescue
349 big sagebrush-bitterbrush/Idaho fescue
350 big sagebrush-bitterbrush/bluebunch wheatgrass
351 sandy bitterbrush steppe
352 bitterbrush/Idaho fescue and bluebunch wheatgrass and western needlegrass and dry sedges
355 mountain snowberry/bunchgrass
361 black greasewood playa or bottomland
362 black greasewood/saltgrass
363 black greasewood/bottlebrush squirreltail
364 black greasewood/basin wildrye
365 shadscale/bottlebrush squirreltail salt desert shrub
366 shadscale/cheatgrass salt desert shrub
367 spiny hopsage/bottlebrush squirreltail salt desert shrub
368 shadscale/Sandbergs bluegrass
370 saltsage
371 winterfat
380 curleaf mountain mahogany
381 mountain mahogany-western juniper rimrock and canyon slopes
391 quaking aspen groves
401 western juniper-ponderosa pine/big sagebrush
410 western juniper/bunchgrass
411 western juniper/low sagebrush/Idaho fescue
412 western juniper/low sagebrush/Sandberg bluegrass
413 western juniper/low sagebrush/tall bunchgrass
420 western juniper/big sagebrush/Sandbergs bluegrass
421 western juniper/big sagebrush/bluebunch wheatgrass
423 western juniper/big sagebrush/bottlebrush squirreltail-Thurbers needlegrass
424 western juniper/big sagebrush/Idaho fescue
425 western juniper/big sagebrush/cheatgrass
427 western juniper/mountain big sagebrush/Idaho fescue
429 western juniper/big sagebrush-bitterbrush
430 western juniper/bitterbrush/bluebunch wheatgrass
431 western juniper/bitterbrush/Idaho fescue
440 Owyhee uplands canyon, shrubland-grassland ash mosaic
445 sagebrush, juniper, mountain mahogany, serviceberry, currents, rose and chokecherry
450 serviceberry, bitterbrush, bittercherry, snowbrush mountain brush
460 Blue Mountain canyon shrubland
463 Oregon ash-black cottonwood-bottomland pasture mosaic
470 southern Oregon chaparral
475 Oregon white oak-ponderosa pine/bitterbrush/poison oak
476 Oregon oak-California oak/Douglas fir-ponderosa pine pasture
501 Sitka spruce-western hemlock forest
502 redwood forest
503 ponderosa pine forest and woodland
504 ponderosa pine forests and woodlands on pumice
505 Douglas fir-Oregon white oak forests and woodlands
506 oak-Pacific madrone forests and woodlands (incomplete)

507 Siskiyou mixed evergreen forests
508 Sierra-type mixed conifer woodland on ultramafic substrate
509 Sierra-type mixed conifer forest
510 mixed evergreen broadleaf deciduous forest
511 Douglas fir-true fir-ponderosa pine (western larch)
512 Douglas fir-western hemlock-western red cedar forest
513 silver fir-western hemlock-noble fir forest
514 montane lodgepole pine forest (undescribed)
515 subalpine lodgepole pine forests
516 lodgepole pine forest and woodland on pumice
517 mountain hemlock forests and woodlands
518 subalpine fir-Engelman spruce forests and woodlands
519 mountain hemlock-Shasta fir forests and woodlands
522 true fir-Douglas fir forests
523 Douglas fir-ponderosa pine-incense cedar forests
527 ponderosa pine-Douglas fir (western larch-lodgepole pine)
528 ponderosa pine-Douglas fir-true fir
530 true fir-lodgepole pine-western larch (Douglas fir)
531 lodgepole pine-true fir
532 true fir-lodgepole pine
533 mountain hemlock-subalpine fir-lodgepole pine
534 ponderosa pine-lodgepole pine
535 ponderosa pine-Oregon white oak
536 mountain hemlock-true fir-lodgepole pine
537 western larch-Douglas fir-ponderosa pine-lodgepole pine
538 lodgepole pine-western larch
541 western larch-Douglas fir-true fir
544 mountain hemlock parkland
548 high elevation (>5,000 ft) Sierra-type mixed conifer forest

Appendix 3: Key to Mosaic Vegetation Type Codes

All small scale vegetation maps represent cartographic idealizations of vegetation cover. In reality, few vegetation stands are homogeneous: most contain inclusions of other vegetation types or early seral stages. The Oregon Actual Vegetation Map assigns a vegetation type label to an area if 60% or more of that area appears to be covered by a single vegetation type in our source imagery. Some large areas are covered with a mosaic of two primary vegetation types, each component of which is too small to be mapped individually. For example, irrigated alfalfa fields may occur in a matrix of big sagebrush scrub. When the total coverage of each primary type is between 40% to 60% of the total area, a new three-digit code is assigned to the area. The new code indicates approximately equal coverage of the area by each of two primary vegetation types. A list of mosaic codes used on the Map of Oregon Actual Vegetation is given below.

Mosaic Code	Primary Types
524	410 503
525	427 511
526	429 503
529	503 313 321
539	503 025
540	503 016 or 017
542	527 016 445
543	503 460
545	503 314 or 315
546	511 450
600	001 002
601	001 004
602	001 011
603	001 012
604	001 015
605	001 024
606	001 298
607	001 299
608	001 301
609	001 305
612	001 351
613	001 352
614	001 367
615	001 410
616	001 316
617	002 004
618	002 021
619	002 031
620	002 032
621	002 035
622	002 299
623	002 303
624	002 304
625	002 362
626	002 361
627	004 011
629	004 301
630	008 367
631	011 012
632	001 301

634	012	013
635	012	305
638	016	017
639	016	024
640	016	299
641	016	301
642	016	302
643	016	321
645	035	298
646	017	025
647	035	364
648	031	035
650	035	361
651	035	362
652	035	305
654	298	299
658	300	362
659	299	361
660	299	301
661	299	303
662	299	304
663	299	308
664	299	310
665	299	315
666	299	362
667	299	363
668	299	421
669	299	305
670	300	301
671	300	321
672	300	364
673	301	303
674	301	304
675	301	305
676	301	307
677	301	310
678	301	313
679	301	314
680	301	315
682	301	321
684	301	367
685	301	410
686	301	421
687	302	321
688	301	355
689	303	424
690	303	304
691	303	307
692	303	310
693	303	314
694	303	321
695	303	423
697	303	450
698	303	460
699	303	315
700	304	310

701	304	315
702	304	326
703	304	316
704	305	307
705	305	315
706	305	316
707	305	319
708	305	326
709	305	371
710	305	367
711	307	314
712	307	348
713	310	410
714	310	413
715	307	326
716	312	316
717	312	321
718	312	355
719	312	380
720	312	391
722	313	314
723	313	315
724	313	321
725	314	316
726	314	315
727	314	427
728	315	323
729	315	324
730	315	326
731	315	391
732	315	421
733	314	324
734	316	324
735	316	413
736	315	427
737	321	421
738	321	411
739	321	322
740	321	423
741	321	429
742	317	352
743	323	324
744	323	355
745	323	391
746	352	380
747	326	366
748	327	362
749	348	349
750	315	412
751	350	445
752	361	364
754	361	362
755	363	365
756	362	363
757	365	366
758	361	367

759	380	391
760	362	367
761	381	410
762	381	421
763	362	365
764	410	412
765	410	421
766	410	423
767	362	364
768	411	420
769	411	421
771	411	423
772	411	427
773	412	424
774	413	421
775	413	424
776	421	424
777	421	425
778	421	427
779	420	423
780	427	431
781	413	427
782	429	445
783	430	431
784	431	462
785	304	313
786	304	305
787	314	423
788	307	423
789	304	307
790	305	363
791	004	304
792	004	012
793	411	424
794	299	307
795	001	362
796	412	413
797	423	427
798	035	363
799	305	412
801	321	349
802	321	348
803	001	016
805	022	036
806	036	303
807	025	310
808	314	421
809	303	410
810	002	016
811	313	410
813	016	445
814	025	321
815	463	503
816	305	365
817	002	038