USDA icon **Natural Resources Conservation Service**

Major Land Resource Area 002X
Willamette and Puget Sound Valleys

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Ecological site keys

MLRA 2

I. Site resides in north of the Columbia River

A. Mesic areas in or near the Puget Sound that were modified by Pleistocene continental or alpine glaciation - LRU A Puget Lowlands

1 Area is located in San Juan or Island Counties

i. Area with soils that meet hydric criteria

a. Soil meets hydric criteria 1 or 4

1) Soil meets hydric criteria 1; Histosols ... R002XN603WA – Bog or Fen

2) Soil meets hydric criteria 4 and is tidally influenced ... R002XN713WA – Tidal Meadow

b. Soil meets hydric criteria 2 or 3

1) Forested soil that meets hydric indicator 2 or 3 ... F002XN904WA – Sitka spruce - red alder/salmonberry/field horsetail

2) Non-forested soil that meets hydric indicator 2 or 3 ... R002XN613WA – Cool Wet Prairie

ii. Area with soils that do not meet hydric criteria

a. Forested areas

1) Soils that are dry between 60 and 90 consecutive days in the soil moisture control section

a) Between 60 and 75 days dry in the soil moisture control section ... F002XN906WA – Western hemlock-western redcedar/red huckleberry-salal/western swordfern

b) Between 75 and 90 days dry in the soil moisture control section ... F002XN901WA – Douglas-fir - Pacific madrone/oceanspray/rattlesnake plantain

2) Soils that are dry between 45 and 60 consecutive days in the soil moisture control section

a) Soils with andic subgroups ... F002XN902WA – Western hemlock - Douglas-fir/Cascade Oregongrape

b) Soils without andic subgroups ... F002XN903WA – Western redcedar - Douglas-fir/salal/swordfern

b. Non-forested areas

1) Soils that are excessively drained and isolated to steep bluffs adjacent to salt water ... R002XN723WA – Salt Water Bluff

2) Other non-forested soils

a) **Soils with a lithic contact ...** R002XN202WA – Prairie Bald

b) **Soils without a lithic contact ...** R002XN502WA – Xeric Prairie

2 Area is not located in San Juan or Island Counties

i. Area is in a tidal zone ... AX002X01X002 – Puget Lowlands Tidal Flat

ii. Area is not in a tidal zone

a. Area with soils that meet hydric criteria 1, 2 or 3

2) Soil meets hydric criteria 2 or 3 ... AX002X01X007 – Puget Lowlands Wet Hemlock Forest

1) Soil meets hydric criteria 1; Histosols ... AX002X01X003 – Puget Lowlands Peat Wetlands

b. Area with soils that do not meet hydric criteria 1, 2, or 3

1) Site located in a floodplain or riparian area and has flooding frequency of occasional or frequent ... AX002X01X008 – Puget Lowlands Riparian Forest

2) Other soils not located in a floodplain or riparian area or has a flooding frequency of none, very rare, or rare

a) Xeric sites with soils that are dry between 45 and 75 consecutive days in the soil moisture control section

(1) Soils that are dry between 45 and 60 consecutive days in the soil moisture control section ... AX002X01X005 – Puget Lowlands Moist Forest

(2) Soils that are dry between 60 and 75 consecutive days in the soil moisture control section ... AX002X01X004 – Puget Lowlands Forest

b) Xeric sites with soils that are dry between 75 and 90 consecutive days in the soil moisture control section

(1) Forested sites ... AX002X01X001 – Puget Lowlands Dry Forest

(2) Non-forested sites ... AX002X01X006 – Puget Lowlands Dry Prairie

c) Udic sites or frigid sites - Refer to MLRA 1 or MLRA 3

B. Mesic areas in the Portland basin and Surrounding Hills - LRU B Portland Basin and Hills

1 Area with soils that meet hydric criteria 1, 2 or 3

i. Soil meets hydric criteria 1; Histosols ... AX002X02X003 – Portland Basin Bogs and Fens

ii. Soil meets hydric criteria 2 or 3 ... AX002X02X007 – Portland Basin Wet Forest

2 Area with soils that do not meet hydric criteria 1, 2, or 3

i. Site located in a floodplain or riparian area and has flooding frequency of occasional or frequent ... AX002X02X008 – Portland Basin Riparian Forest

ii. Site not located in a floodplain or riparian area or has a flooding frequency of none, very rare, or rare

a. Xeric sites with soils that are dry between 45 and 75 consecutive days in the soil moisture control section ... AX002X02X004 – Portland Basin Forest

b. . Xeric sites with soils that are dry between 75 and 90 consecutive days in the soil moisture control section ... AX002X02X001 – Portland Basin Dry Douglas-fir Forest

c. Udic sites or frigid sites - Refer to MLRA 1 or MLRA 3

II. Site resides in south of the Columbia River

A. Floodplains; soil composed of alluvium

1 Summer-flooding; located along the Columbia River go to LRU B (Portland Basin and Hills) Key

2 Winter-flooding; located along the Willamette River or its tributaries go to LRU C (Willamette Valley) Key

B. Valley-floor landforms; elevation <400'; soil composed entirely of Missoula Flood deposits

1 Soil is gravelly or sandy go to LRU B Key

2 Soil is silty, clayey, or loamy go to LRU C Key

C. Hills and valley-border landforms; elevation is 150' to 1500'; soils below 400' may contain silty Missoula Flood deposits in the upper part

1 Located north of Newberg-Canby-Molalla (towns); cooler summer temperatures; soils may contain loess and fragipans go to LRU B Key

2 Located south of Newberg-Canby-Molalla; warmer summer temperatures; loess and fragipans absent go to LRU C Key

D. Mesic areas in the Portland Basin and Surrounding Hills - LRU B Portland Basin and Hills

1 Floodplains usually of the Columbia River; associated river is tidally-influenced but not brackish; annual flooding peaked in June or July prior to flood control

i. Soil poorly drained ... R002XB001OR – Backswamp Group

ii. Soil well to excessively well drained ... F002XB002OR – Levee Group

2 Terraces; soil formed entirely in Missoula Flood deposits

i. Soil formed in sandy or gravelly glaciofluvial deposits ... F002XB003OR – Gravelly Terrace Group

ii. Soil formed in loamy, silty, or clayey glaciolacustrine deposits go to 3c (main valley floor) in Oregon LRU C Key

3 Hills and valley-border landforms

i. Soil rejuvenated by loess; superactive cation-exchange activity class; Inceptisols or Alfisols with fragic soil properties

a. Seasonal water table usually perched above an aquitard occurs within 20 inches of the soil surface ... F002XB004OR – Fragipan Hill Group

b. Seasonal water table absent or located below 20 inches ... F002XB005OR – Loess Hill Group

ii. Loess influence is absent or subtle; soil formed in colluvium and residuum; active cation-exchange activity class; Ultisols and Alfisols ... F002XB006OR – Foothill Group

E. Mesic areas in the Willamette Valley - LRU C Willamette Valley

1 Active floodplains; floods occur during winter; sandy or gravelly material in or below soil profile

i. High-energy flooding with fluvial scour and sand/gravel deposition; upper part of soil is coarse-loamy or coarser; well to excessively drained ... F002XC001OR – Riparian Group

ii. Overbank deposition a dominant process; upper part of soil is fine-loamy or finer

a. Soil poorly or somewhat poorly drained ... F002XC002OR – Backswamp Group

b. Soil well or moderately well drained ... F002XC003OR – Low Flood Plain Group

2 Relict floodplains or low stream terraces; if flooding occurs, it is low-energy

i. Soil very poorly drained with layers of organic soil material ... R002XC004OR – Marsh Group

ii. Soil poorly or somewhat poorly drained ... R002XC005OR – High Flood Plain Group

iii. Soil well or moderately well drained ... R002XC006OR – Stream Terrace Group

3 Main valley-floor; soils formed entirely in silty, clayey, or loamy Missoula Flood deposits

i. Soil poorly drained or somewhat poorly drained; seasonal water table; droughty in summer ... R002XC007OR – Valley Swale Group

ii. Soil well or moderately well drained ... R002XC008OR – Valley Terrace Group

4 Hills and valley-border landforms

i. **Soil < 50cm to bedrock; located on warm exposures ...** R002XC009OR – Bald Group

ii. **Soil >50cm to bedrock**

a. **Footslopes, terraces, and alluvial fans; soil usually contains a discontinuity between contrasting parent materials**

1) **Soil poorly or somewhat poorly drained; often with a seasonally perched water table; droughty in summer ...** R002XC010OR – Claypan Low Hill Group

2) **Soil well or moderately well drained ...** R002XC011OR – Low Hill Group

b. **Hillslopes, mountain slopes, or landslides; soil parent material is residuum or colluvium**

1) **Old, red soils on stable landscape positions; Ultisols ...** R002XC012OR – Red Hill Group

2) **. Younger, brown soils subject to active transport processes; Inceptisols or Alfisols ...** F002XC013OR – Foothill Group