# Ecological site F005XY700OR
# South-facing andesitic slopes

Accessed: 05/30/2026

## General information

**Provisional**. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

## Similar sites

| | |
|---|---|
| **F003XY709OR** | **Pseudotsuga menziesii/Vaccinium membranaceum/Chimaphila umbellata**<br><br>This site has Shasta red fir in the overstory instead of White fir. Also, site is in MLRA 3 and not MLRA 5. |

**Table 1. Dominant plant species**

| | |
|---|---|
| Tree | (1) *Pseudotsuga menziesii* |
| Shrub | (1) *Mahonia nervosa* |
| Herbaceous | (1) *Chimaphila umbellata* |

## Physiographic features

This site is found on steep and very steep slopes of south facing sidewalls.

**Table 2. Representative physiographic features**

| | |
|---|---|
| Landforms | (1) Glacial drainage channel |
| Flooding frequency | None |
| Ponding frequency | None |
| Elevation | 1,220 − 1,550 m |
| Slope | 30 − 70 % |
| Water table depth | 150 cm |

| | |
|---|---|
| Aspect | SE, S, SW |

### Climatic features

Precipitation is received mostly in the fall, winter and spring. Summer thunderstorms do occur and can provide small to large amounts of rainfall in a short period of time. Winters are cool and moist , and summers are hot and dry.

**Table 3 Representative climatic features**

| | |
|---|---|
| Frost-free period (average) | 120 days |
| Freeze-free period (average) | 160 days |
| Precipitation total (average) | 1,680 mm |

### Influencing water features

None

### Soil features

This site is found on soils developed in andesite lava flows on south facing, and very steep glacial sidewalls.

**Table 4. Representative soil features**

| | |
|---|---|
| Surface texture | (1) Very gravelly sandy loam<br>(2) Gravelly loam |
| Family particle size | (1) Loamy |
| Drainage class | Well drained |
| Permeability class | Moderately slow to moderate |
| Soil depth | 50 – 100 cm |
| Surface fragment cover <=3" | 10 – 40 % |
| Surface fragment cover >3" | 20 – 40 % |
| Available water capacity (0-101.6cm) | 12.95 – 19.3 cm |

| | |
|---|---|
| Calcium carbonate equivalent (0-101.6cm) | Not specified |
| Electrical conductivity (0-101.6cm) | Not specified |
| Sodium adsorption ratio (0-101.6cm) | Not specified |
| Soil reaction (1:1 water) (0-101.6cm) | 5.6 – 6.5 |
| Subsurface fragment volume <=3" (Depth not specified) | 20 – 60 % |
| Subsurface fragment volume >3" (Depth not specified) | 10 – 40 % |

**Ecological dynamics**

Douglas-fir is the dominant tree in the historic climax plant community. Other tree species that may be present in the stand are Sugar pine and White fir.

Douglas-fir was maintained by the frequent occurrence of fire. Douglas-fir can with stand low to moderate severity fires, depending upon tree age. The frequent fires maintained Douglas-fir dominance by consuming fire intolerant trees and ground vegetation, thus preparing a seedbed for regeneration.

Fire exclusion will lead to the establishment of shade tolerant, fire intolerant tree community. In this ecological site White fir will invade. White fir will establish itself and grow up into the canopy. All Douglas-fir will not be displaced. Large dominant old growth trees will survive, but White fir will be the largest component in the overstory. Without some disturbance White fir will maintain its dominance. When White fir becomes dominant a threshold has been crossed and a new state has developed.

Significant inputs are needed to move back to the HCPC (see state & transition model).

The introduction of prescribed burning can halt the dominance of white fir. A low to moderately intense fire will kill much of the younger white fir trees. But, older trees will not be killed and some other method of control or removal is needed to limit regeneration to encourage movement back to the HCPC.

Harvesting/clearcutting the white fir is also a possible management tool to move back to the HCPC. After removing all or most of all white fir, plant douglas-fir seedlings, and control competing vegetation. If competing vegetation is not controled it will limit seedling establishment.

A stand replacement fire will halt the progression towards a fire intolerant plant community. In a SRF situation all trees are generally consumed. It is possible that large, old Douglas-fir with thick bark will survive and be the seed source for the start of a new HCPC.

**State and transition model**

## Additional community tables

**Table 5. Community 1.1 plant community composition**

| Group | Common Name | Symbol | Scientific Name | Annual Production () | Foliar Cover (%) |
|---|---|---|---|---|---|

**Table 6. Community 2.1 plant community composition**

| Group | Common Name | Symbol | Scientific Name | Annual Production () | Foliar Cover (%) |
|---|---|---|---|---|---|

## Animal community

The climax plant community has a moderate flora abundance. The major animals that use these plants are deer, elk and an assortment of birds.

## Hydrological functions

The hydrology of the site is influenced by the moisture patterns. Rain occurs in the fall and spring, and snow occurs in the winter. Spring runoff can be heavy and a rain on snow event could cause flooding and heavy damage. Summer thunderstorms can provide intense down pours leading to heavy short term runoff and possible severe erosion.

## Recreational uses

The site is limited in its recreational use. The steep slopes limits the use of the area to hiking trails that lead to other destinations. Flatter locations could be used as small camp sites.

## Wood products

Possible wood products that can be obtained would be sawlogs, poles, veneer logs and fire wood.

## Other products

Native plants could possibly be collected.

## Other information

None

## Type locality

| Location 1: Klamath County, OR | |
|---|---|
| Township/Range/Section | T32S R5E S8 |
| General legal description | SW corner of Crater Lake National Park. |

## Contributors

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## Rangeland health reference sheet

**Interpreting Indicators of Rangeland Health** is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

| | |
|---|---|
| Author(s)/participant(s) | |
| Contact for lead author | |
| Date | |
| Approved by | |
| Approval date | |
| Composition (Indicators 10 and 12) based on | Annual Production |

**Indicators**

1. **Number and extent of rills:**

   _____

2. **Presence of water flow patterns:**

   _____

3. **Number and height of erosional pedestals or terracettes:**

   _____

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

   _____

5. **Number of gullies and erosion associated with gullies:**

   _____

6. **Extent of wind scoured, blowouts and/or depositional areas:**

   _____

7. **Amount of litter movement (describe size and distance expected to travel):**

   _____

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

   _____

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

   _____

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

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11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

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12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

    **Dominant:**

    **Sub-dominant:**

    **Other:**

    **Additional:**

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**

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14. **Average percent litter cover (%) and depth ( in):**

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**

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16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:**

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17. **Perennial plant reproductive capability:**

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