

Ecological site F006XY707OR East Crater Lake Stratovolcano Slopes

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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.

Table 1. Dominant plant species

Tree	(1) <i>Pinus ponderosa</i>
Shrub	(1) <i>Ceanothus velutinus</i>
Herbaceous	(1) <i>Carex inops</i>

Physiographic features

This site is found on deep, well drained, moderately sloping soils that formed from ash deposits and lava flows.

Table 2. Representative physiographic features

Landforms	(1) Ash flow
Flooding frequency	None
Ponding frequency	None
Elevation	1,590 – 1,830 m
Slope	0 – 40 %
Water table depth	150 cm
Aspect	Aspect is not a significant factor

Climatic features

Winter are long, cold and snowy. Snow makes up a large amount of the effective precipitation. Summers days are warm, and nights are cool. Summer precipitation comes as infreqesnt rain storms. Summer thunderstorms can drop moderately heavy amounts of rain, but only for a short period of time.

Table 3 Representative climatic features

Frost-free period (average)	80 days
Freeze-free period (average)	110 days
Precipitation total (average)	760 mm

Influencing water features

None

Soil features

This site is found on soils formed in andesite lava flows and air fall pumice and ash deposits.

Table 4. Representative soil features

Surface texture	(1) Paragravelly loamy fine sand (2) Very gravelly loamy sand (3) Ashy loamy sand
Family particle size	(1) Sandy
Drainage class	Somewhat excessively drained to excessively drained
Permeability class	Rapid to very rapid
Soil depth	150 cm
Surface fragment cover <=3"	0 – 40 %
Surface fragment cover >3"	0 – 20 %
Available water capacity (0-101.6cm)	12.19 – 22.86 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)	5.1 – 7.3
Subsurface fragment volume <=3" (Depth not specified)	10 – 50 %
Subsurface fragment volume >3" (Depth not specified)	0 – 40 %

Ecological dynamics

The historic climax plant community has an overstory made up of mostly of Ponderosa pine with some White fir. Fire is the major influencing factor that maintained Ponderosa as the dominant tree specie.

Fire return intervals have been shown to be approximately 10 to 40 years. This return interval favors Ponderosa pine since it can withstand low and moderate severity fires. White fir survives in areas where fire does not readily burn (rock outcrops) or where fire severity is low.

Fire exclusion benefits White fir. It easily regenerates under shade. Extended periods of fire exclusion will allow white fir to grow up into and take a dominant position in the canopy. With increased canopy cover and litter cover Ponderosa pine does not regenerate. The percentage of pine in the stand will decline over time.

The understory vegetation composition changes only slightly until the canopy cover closes in. When this happens vegetation cover decreases. Rock outcrop areas remain better vegetated.

Fire exclusion allows for the build up of large amounts of fuels on the forest floor, increasing the potential for a stand replacement fire. When one occurs all vegetation is usually consumed. Lodgepole pine (a pioneer specie) is usually the first tree specie to re-establish on the site.

Stocking can be light to very heavy. Heavy to very heavily stocked stands become susceptible to mountain pine beetle infestations as the stand matures. Beetle out-breaks usually kill all trees. After the out-break, either lodgepole regenerates or if a seed source of pine or fir is available then other seedlings could regenerate.

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 (%)
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Table 6. Community 2.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 7. Community 3.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Type locality

Location 1: Klamath County, OR	
General legal description	Site description taken northeastern portion 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:

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

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:

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

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

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

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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