

Ecological site F006XY705OR

East Crater Lake Steep North 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>Arctostaphylos patula</i> (2) <i>Chrysolepis sempervirens</i>
Herbaceous	(1) <i>Carex inops</i>

Physiographic features

This site is on very steep, somewhat excessively drained and deep soils that formed from volcanic pumice and ash airfall.

Table 2. Representative physiographic features

Landforms	(1) Butte
Flooding frequency	None
Ponding frequency	None
Elevation	1,370 – 1,980 m
Slope	30 – 70 %
Water table depth	150 cm
Aspect	N

Climatic features

Precipitation is low for the site. A majority of the precip. comes as snow from November thru April. Limited rainfall occurs from May thru October. Winters are cold and summers are warm.

Table 3 Representative climatic features

Frost-free period (average)	70 days
Freeze-free period (average)	110 days
Precipitation total (average)	760 mm

Influencing water features

None

Soil features

This site is found on steep North-facing slopes of volcanic buttes; on soils formed in volcanic pumice and ash airfall and andesite lava deposits.

Table 4. Representative soil features

Surface texture	(1) Paragravelly loamy sand (2) Cobbly 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"	10 – 50 %
Surface fragment cover >3"	0 – 20 %
Available water capacity (0-101.6cm)	9.14 – 16.76 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)	20 – 50 %
Subsurface fragment volume >3" (Depth not specified)	0 – 30 %

Ecological dynamics

The historic climax plant community would be dominated by Ponderosa pine, with a small percentage of Shasta red fir. Lodgepole pine could be present, but not always.

Under normal ecological processes low-moderate severity fires would occur approximately every 10-40 years. This fire return interval would maintain Ponderosa pine since it is more fire resistant than associated trees. Large Shasta red fir trees, that have escaped fire damage, could be present, but not in great numbers. Lodgepole pine could be present, only if it escaped the fires.

A grass/carex understory would be more common when fire burned more frequently (10-15 years). A brush-carex understory would be more common when fire burns less frequently (30-40 years).

Excluding fire would benefit the more shade tolerant Shasta red fir. By excluding fire seedlings would establish under the canopy, and over time become more numerous than Ponderosa pine. Given enough time Shasta red fir would be dominant or co-dominant with the pine. White fir could also become established, but at low numbers.

Brush cover will increase, initially, with fire exclusion, then it will decrease as the canopy closes and sunlight does not reach the forest floor. As the canopy closes shade tolerant brush species will increase. Grass cover will decrease with increased shade and Carex species will slowly decrease in cover as the canopy cover increases.

A stand replacement fire can possibly kill all trees. After such a fire, Lodgepole pine usually is the first tree to re-establish. Stocking can be light to very heavy. Heavy to very heavily stocked stand will eventually become susceptible to mountain pine beetle infestations. If attacked, generally all lodgepole trees succumb. If other tree seedlings/saplings are present they will flourish, and if not Lodgepole will re-establish itself.

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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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:

17. Perennial plant reproductive capability:
