

Ecological site F227XY800AK

Escarpments

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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>Picea glauca</i>
Shrub	(1) <i>Betula glandulosa</i>
Herbaceous	(1) <i>Equisetum</i>

Physiographic features

: This site consists of moderately steep to very steep escarpments and bluffs formed by mass wasting and accelerated erosion during downcutting by rivers through thick glacial and glaciolacustrine deposits. Thermokarst features are evident on these sites where the river has undercut slopes and exposed permafrost. Slopes range from 20 to 80 percent. Slope aspect and gradient are the most influential characteristics on soils formation and present vegetation. Permafrost is often found within 60 inches of the surface on more northerly exposures and is generally absent on other aspects. Areas of mass wasting and accelerated erosion are extensive on the steepest slopes. Elevation is from 1850 to 2900 feet (564 to 884 m).

In the Gulkana River area, this site is found along all reaches of the River. The best development occurs within the Canyon on the Main Stem, along the mid portions of the West Fork, and near the West Fork-Main Stem confluence. This site is common along other major rivers and streams elsewhere in the Copper River basin.

Table 2. Representative physiographic features

Landforms	(1) Escarpment
Flooding frequency	None
Elevation	580 – 880 m
Slope	20 – 80 %
Water table depth	150 cm
Aspect	Aspect is not a significant factor

Climatic features

The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 19 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

Table 3 Representative climatic features

Frost-free period (average)	80 days
Freeze-free period (average)	0 days
Precipitation total (average)	480 mm

Influencing water features

Soil features

The soils on this site are formed in coarse grained alluvium, gravelly glacial till, and fine-grained glaciolacustrine deposits. Some soils have a mantle of silty eolian material up to 2 inches (5 cm) thick. Other characteristics range from poorly to moderately well developed, shallow to very deep over permafrost, and well to somewhat excessively drained.

Table 4. Representative soil features

Surface texture	(1) Silty clay (2) Sandy loam (3) Clay loam
Family particle size	(1) Clayey
Soil depth	30 – 150 cm
Available water capacity (0-101.6cm)	0.36 – 0.51 cm

Ecological dynamics

Vegetation on escarpments varies widely. Very steep, unstable slopes subject to on-going mass wasting and accelerated soil erosion are barren to occasionally sparsely vegetated with scattered shrubs and herbs (Cover type - Sparsely vegetated escarpments). In a few locations along the West Fork, dense herbaceous vegetation has developed and apparently stabilized the slope. On more stable slopes, escarpments support open to closed forest and scrub. Depending on such factors as aspect, slope, soil materials, and fire history, vegetation cover includes Quaking aspen forest, Quaking aspen-white spruce forest, White spruce forest, Spruce/alder woodland, Spruce/shrub birch woodland, and Low shrub birch scrub.

Moderately closed White spruce forest apparently is the most successional advanced and stable vegetation type found on warm aspects and moderately steep and steep slopes. Spruce/shrub birch woodland is the latest successional stage on cooler, northerly aspects.

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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Table 8. Community 4.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 9. Community 5.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 10. Community 6.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
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Table 11. Community 7.1 plant community composition

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

Michelle Schuman

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:
