

# Ecological site R021XY416OR ASPEN GROVE

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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.



**Figure 1. Mapped extent**

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

**Table 1. Dominant plant species**

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

## Physiographic features

This site occurs along drainageways and in concave areas in mountains. These areas receive additional moisture from melting snow or from seeps.

**Table 2. Representative physiographic features**

Landforms	(1) Drainageway
Elevation	1,768–2,256 m
Slope	5–20%
Aspect	Aspect is not a significant factor

## Climatic features

The annual precipitation ranges from 18 to 32 inches, most of which occurs in the form of snow during the months of October through May. The soil temperature regime is frigid with the mean annual air temperatures of about 45 degrees F. Temperature extremes range from 85 to -30 degrees F. The frost free period is less than 50 days. The optimum period for plant growth is from June through July.

**Table 3. Representative climatic features**

Frost-free period (average)	50 days
Freeze-free period (average)	0 days
Precipitation total (average)	813 mm

## Influencing water features

### Soil features

The soils of this site are deep and moderately well drained. The soils have loamy textures and contain over 35 percent rock fragments throughout the profile. The organic matter content is 1 to 4 percent throughout the upper 20 inches of the soil. The available water holding capacity is about 3 to 7 inches. Supplemental moisture from seeps and runoff keep the soil moist during most of the growing season. Permeability is moderately slow. Runoff is medium. Erosion hasard by water is slight to moderate.

**Table 4. Representative soil features**

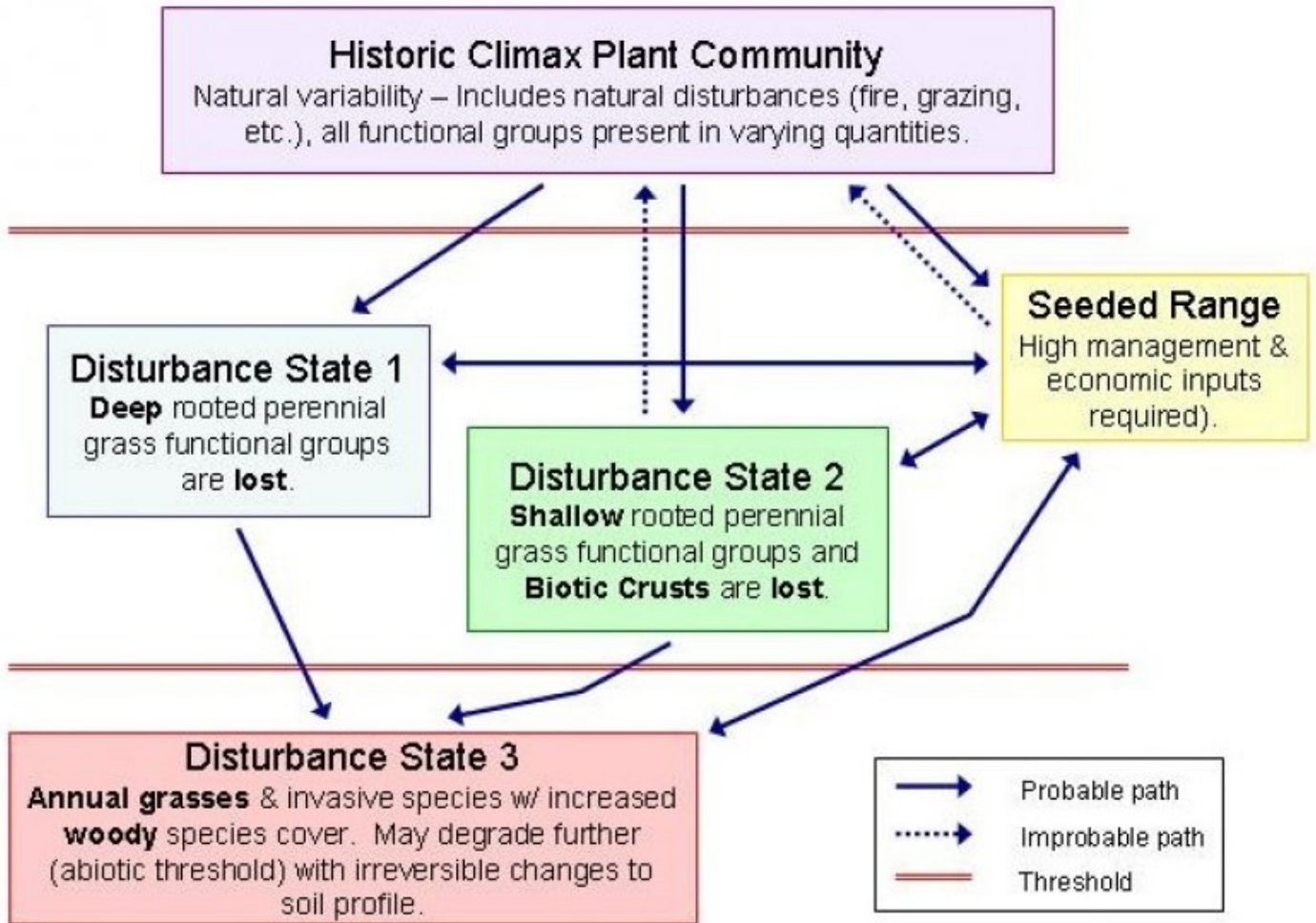
Surface texture	(1) Loam
Family particle size	(1) Loamy
Drainage class	Moderately well drained
Permeability class	Moderately slow
Soil depth	152 cm
Surface fragment cover <=3"	0–35%
Available water capacity (0-101.6cm)	7.62–17.78 cm
Subsurface fragment volume <=3" (Depth not specified)	0–35%

## Ecological dynamics

If the condition of the site deteriorates as a result of overgrazing, the preferred forage grasses will decline in vigor and eventually diminish in the stand. Kentucky bluegrass, timothy, meadow barley, mountain brome and weedy forbs will increase or invade the site. Big sagebrush and green rabbitbrush will increase in the stand.

With a lack of occasional fire, the aspen will tend to become decadent and the canopy will decrease. This will encourage an increase in less shade-tolerant species.

## State and transition model



## GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

### State 1

HCPC, POLE-POSE/SYAL/POTR5

### Community 1.1

HCPC, POLE-POSE/SYAL/POTR5

The potential native plant community is dominated by quaking aspen in the overstory. The understory vegetation is dominated by snowberry and bluegrasses. Vegetative composition is approximately 75% grasses, 10% forbs, and 15% shrubs.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	336	525	713
Shrub/Vine	229	316	404
Tree	161	242	323
Forb	94	168	242
<b>Total</b>	<b>820</b>	<b>1251</b>	<b>1682</b>

Figure 4. Plant community growth curve (percent production by month). OR5557, D21 High Elev, NA / South, Good Condition. HCPC Growth Curve.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	0	5	30	50	15	0	0	0	0

## Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
<b>Grass/Grasslike</b>					
1	<b>Dominant deep rooted perennial grasses</b>			229–471	
	Leiberg's bluegrass	POLE	<i>Poa leibergii</i>	135–269	–
	slender wheatgrass	ELTR7	<i>Elymus trachycaulus</i>	67–135	–
	basin wildrye	LECI4	<i>Leymus cinereus</i>	27–67	–
2	<b>Sub-dominant deep rooted perennial grasses</b>			13–40	
	melicgrass	MELIC	<i>Melica</i>	27–40	–
3	<b>Dominant shallow rooted perennial grasses</b>			67–135	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	67–135	–
5	<b>Other perennial grasses</b>			27–67	
	Columbia needlegrass	ACNE9	<i>Achnatherum nelsonii</i>	0–6	–
	mountain brome	BRMA4	<i>Bromus marginatus</i>	0–6	–
	sedge	CAREX	<i>Carex</i>	0–6	–
	meadow barley	HOB2	<i>Hordeum brachyantherum</i>	0–6	–
	prairie Junegrass	KOMA	<i>Koeleria macrantha</i>	0–6	–
	timothy	PHLEU	<i>Phleum</i>	0–6	–
<b>Shrub/Vine</b>					
11	<b>Dominant evergreen shrubs</b>			67–135	
	mountain big sagebrush	ARTRV	<i>Artemisia tridentata ssp. vaseyana</i>	67–135	–
13	<b>Dominant deciduous (or 1/2 shrubs) shrubs</b>			135–202	
	common snowberry	SYAL	<i>Symphoricarpos albus</i>	135–202	–
15	<b>Other shrubs</b>			27–67	
	bitter cherry	PREM	<i>Prunus emarginata</i>	0–6	–
	chokecherry	PRVI	<i>Prunus virginiana</i>	0–6	–
	rose	ROSA5	<i>Rosa</i>	0–6	–
<b>Tree</b>					
18	<b>Dominant deciduous trees</b>			135–269	
	quaking aspen	POTR5	<i>Populus tremuloides</i>	135–269	–
19	<b>Sub-dominant deciduous trees</b>			27–54	
	alder	ALNUS	<i>Alnus</i>	13–27	–
	willow	SALIX	<i>Salix</i>	13–27	–

## Animal community

This site is suited for livestock grazing in late spring, summer and fall under a planned grazing system.

## Hydrological functions

The soils are in hydrologic group C.

## Wood products

This site is a source of aspen for specialty products and firewood.

## Other products

This site is suited for livestock grazing in late spring, summer and fall under a planned grazing system.

## 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)	Jeff Repp
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Date	09/05/2012
Approved by	Bob Gillaspy
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

## Indicators

1. **Number and extent of rills:** None, slight to moderate sheet & rill erosion hazard
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2. **Presence of water flow patterns:** None
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3. **Number and height of erosional pedestals or terracettes:** None
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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** <5%
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5. **Number of gullies and erosion associated with gullies:** None
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6. **Extent of wind scoured, blowouts and/or depositional areas:** None, slight wind erosion hazard

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7. **Amount of litter movement (describe size and distance expected to travel):** Fine - limited movement
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8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Significantly resistant to erosion: aggregate stability = 4-6
- 
9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Deep, moderately well drained cobbly loams (>35% rock fragments throughout the soil profile): Moderate to High OM (1-4%)
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Significant vegetative cover (70-90%), litter cover, and gentle slopes (5-20%) effectively limit rainfall impact and overland flow; infiltration is moderately slow
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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):** None
- 
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: Leiberg bluegrass > Quaking aspen > Snowberry > other dominant grasses > Mountain big sagebrush > forbs > other grasses + other shrubs > other trees
- Sub-dominant:
- Other:
- Additional:
- 
13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Normal decadence and mortality expected
- 
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):** Favorable: 1800, Normal: 1200, Unfavorable: 1000 lbs/acre/year at high RSI (HCPC)
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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: Perennial brush and weedy forb species will increase with deterioration of plant community. Western Juniper may invade the site. Cheatgrass and Medusahead invade sites that have lost deep rooted perennial grass functional groups.

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17. **Perennial plant reproductive capability:** All species should be capable of reproducing annually
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