

Ecological site R021XY302OR

NORTH SLOPE 10-14 PZ

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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.

Associated sites

R021XY200OR	LOAMY 10-14 PZ
R021XY300OR	SOUTH SLOPES 10-14 PZ
R021XY310OR	SHALLOW NORTH 14-18 PZ

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on north-facing sideslopes adjacent to lake basins.

Table 2. Representative physiographic features

Landforms	(1) Mountain slope
Elevation	1,250–1,524 m

Slope	15–65%
Aspect	N

## Climatic features

The annual precipitation ranges from 10 to 14 inches, most of which occurs in the form of snow during the months of October through April. The soil temperature regime is mesic with a mean annual air temperature of about 47 degrees F. Temperature extremes range from 100 to -30 degrees F. The frost free period ranges from 80 to 120 days. The optimum period for plant growth is from mid-April through June.

**Table 3. Representative climatic features**

Frost-free period (average)	120 days
Freeze-free period (average)	0 days
Precipitation total (average)	356 mm

## Influencing water features

### Soil features

The soils of this site are well drained, have a loamy surface texture and contain 1 to 2 percent organic matter in the surface. The soils lack any root restrictive layers within the upper 10 inches or more of the soil surface. The subsoil textures are loamy or clayey and rock fragment content is variable. The soils range in depth from 10 to over 60 inches deep to bedrock. Runoff is medium to rapid. Erosion hazard by water is moderate to high.

**Table 4. Representative soil features**

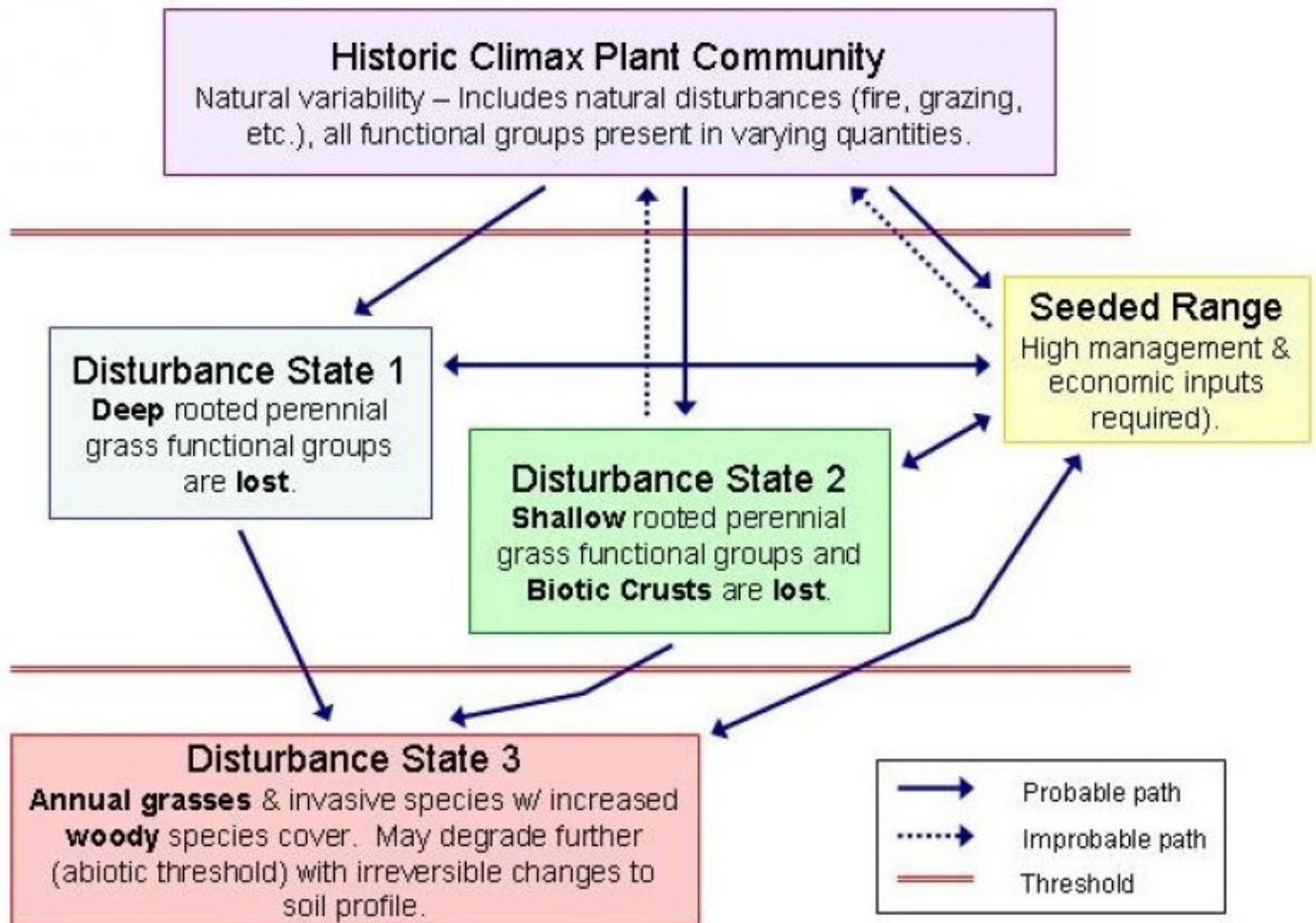
Surface texture	(1) Loam
Family particle size	(1) Loamy
Drainage class	Well drained
Soil depth	25–152 cm

## Ecological dynamics

If the condition of the site deteriorates as a result of overgrazing, bluebunch wheatgrass and Idaho fescue decrease while Thurber needlegrass and Sandberg bluegrass increase. With further deterioration, big sagebrush, prickly gilia and annuals increase. Excessive erosion in the bare interspaces markedly reduces the site potential and contributes to downstream sedimentation.

Bluebunch wheatgrass is the dominant species in the potential community. Idaho fescue increases on the steep, due north aspects. Thurber needlegrass increases on soils with a higher percentage of coarse fragments.

## State and transition model



## GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

### State 1

HCPC, PSSP6-FEID/ARTRT

### Community 1.1

HCPC, PSSP6-FEID/ARTRT

The potential native plant community is dominated by basin big sagebrush, bluebunch wheatgrass, and Idaho fescue. Antelope bitterbrush, Thurber needleglass, and Sandberg bluegrass are common in the stand. The vegetative composition of the community 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	565	752	938
Shrub/Vine	91	141	192
Forb	50	106	161
<b>Total</b>	<b>706</b>	<b>999</b>	<b>1291</b>

Figure 4. Plant community growth curve (percent production by month).  
OR5553, D21 Low Elev., North, Good Conition. HCPC Growth Curve.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	15	30	45	10	0	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>			504–807	
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	404–605	–
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	101–202	–
2	<b>Sub-dominant deep rooted perennial grasses</b>			40–81	
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	20–50	–
	basin wildrye	LECI4	<i>Leymus cinereus</i>	20–30	–
4	<b>Sub-dominant shallow rooted perennial grasses</b>			20–50	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	20–50	–
<b>Forb</b>					
7	<b>Dominant perennial forbs</b>			20–81	
	lupine	LUPIN	<i>Lupinus</i>	20–81	–
8	<b>Sub-dominant perennial forbs</b>			10–50	
	hawksbeard	CREPI	<i>Crepis</i>	10–50	–
9	<b>Other perennial forbs</b>			20–30	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	0–6	–
	buckwheat	ERIOG	<i>Eriogonum</i>	0–6	–
<b>Shrub/Vine</b>					
11	<b>Dominant evergreen shrubs</b>			50–101	
	basin big sagebrush	ARTRT	<i>Artemisia tridentata ssp. tridentata</i>	50–101	–
12	<b>Sub-dominant evergreen shrubs</b>			10–20	
	mountain big sagebrush	ARTRV	<i>Artemisia tridentata ssp. vaseyana</i>	10–20	–
13	<b>Dominant deciduous (or 1/2 shrubs) shrubs</b>			20–50	
	antelope bitterbrush	PUTR2	<i>Purshia tridentata</i>	20–50	–
14	<b>Sub-dominant deciduous (or 1/2 shrubs) shrubs</b>			10–20	

## Animal community

This site provides summer food and cover for deer.

## Hydrological functions

The soils are in hydrologic groups B, C, and D.

## Other products

This site is suited to use by cattle, sheep and horses in summer and fall under a planned grazing system. When the site is interspersed with shallower sites, the limitation of these shallower sites needs to be considered.

## 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	08/22/2012
Approved by	Bob Gillaspay
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

## Indicators

1. **Number and extent of rills:** None to some, moderate to severe sheet & rill erosion hazard

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2. **Presence of water flow patterns:** Some in interspaces

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3. **Number and height of erosional pedestals or terracettes:** Some to few; limited by vegetation density

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 10-30%

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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):** Moderately resistant to erosion: aggregate stability = 4-5

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Shallow to deep, well drained loams and stony loams: Moderate OM (1-2%)

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Moderate vegetative cover (55-70%) provides some protection from run off; slopes range from 15-65%; infiltration is moderately rapid
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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
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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: Bluebunch wheatgrass > Idaho fescue > Basin big sagebrush > dominant forbs > other grasses > other forbs > other shrubs
- 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):** Normal decadence and mortality expected
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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):** Favorable: 1300, Normal: 900, Unfavorable: 600 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 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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