

Ecological site R009XY017OR

Cold Loamy 13-17 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

R009XY027OR	Cold Very Shallow 13+ PZ Mountain shallow 13"+ PZ (Shallower soil)
R009XY034OR	Cold South 13-17 PZ Mountain South 13-17" PZ
R009XY040OR	North 14-17 PZ North 14-17" PZ

Similar sites

R009XY018OR	Cold Loamy 17-24 PZ Mountain Loamy 17-22" PZ (higher ppt.)
R009XY022OR	Cold Shallow 13+ PZ Mountain Shallow 13"+ PZ (Shallower soil)

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified

Herbaceous	Not specified
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Physiographic features

This site occurs as open graslands on basalt table lands north of the Wallowa Mountains. Slopes range from 0 to 20%. Elevation varies from 3400 to 5000 feet.

Table 2. Representative physiographic features

Landforms	(1) Mountain
Elevation	1,036–1,524 m
Slope	0–20%
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 13 to 17 inches, most of which occurs in the form of snow during the months of November through March followed by ample spring rainfall. Localized, occasionally severe, convectional storms occur during the summer. The soil temperature regime is frigid with the mean annual air temperature of 42 degrees F. The frost-free period ranges from 60 to 95 days. The optimum period for plant growth is from late april to mid-July.

Table 3. Representative climatic features

Frost-free period (average)	95 days
Freeze-free period (average)	0 days
Precipitation total (average)	432 mm

Influencing water features

Soil features

The soils of this site are deep and moderately deep over basalt bedrock, and are well drained. Typically the surface layer is a silt loam or loam. The subsoil is a silt loam or loam. The subsoil is a silt loam, silty clay loam, or a clay loam. Coarse fragments are present in some soils on which this site occurs. Depth to basalt bedrock is typically less than 30 inches. Permeability is moderate to moderately slow. The available water holding capacity (AWC) is about 3 to 11 inches for the profile. The potential for erosion is moderate. See Appendix II for soil on which this site occurs.

Table 4. Representative soil features

Surface texture	(1) Silt loam (2) Loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderate to moderately slow

Ecological dynamics

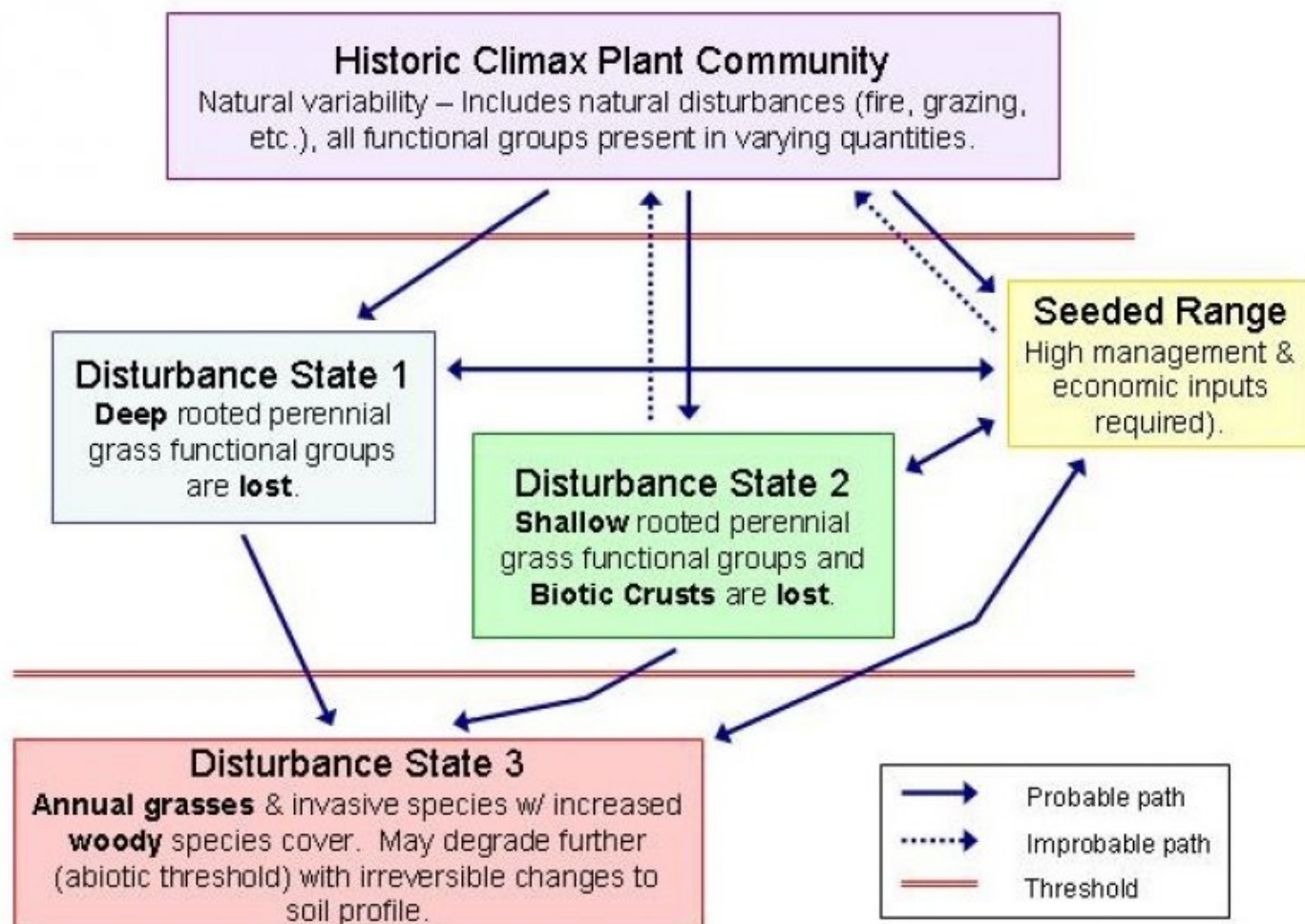
Range in Characteristics:

Variability in plant composition and yield is dependent on the aspect and soil depth rather than on precipitation and elevation ranges that occur within the site. There tends to be a higher proportion of bluebunch wheatgrass and lower overall production on south and south westerly slopes. Conversely, Idaho Fescue is in higher proportion and there is increased overall production on north slopes.

Response to Disturbance:

If the condition of the site deteriorates as a result of overgrazing, Idaho fescue decreases and bluebunch wheatgrass increases. Idaho fescue is the preferred species during early summer use. With further deterioration, bluebunch wheatgrass decreases, forbs increase and soft chess, cheatgrass and other annuals invade. Smaller amounts of various bluegrasses such as bulbous and Canada bluegrass invade. Under deteriorated conditions, annuals and unpalatable forbs dominate the site.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1

Historic Climax Plant Community

Community 1.1

Historic Climax Plant Community

The potential native plant community is strongly dominated by Idaho fescue. Bluebunch wheatgrass is prominent in the stand. Prairie junegrass, lupine, buckwheat and a variety of other forbs are present. The vegetative composition of the community is approximately 95 percent grasses and 5 percent forbs.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	1089	1237	1385
Forb	13	20	27
Total	1102	1257	1412

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
Grass/Grasslike					
1	Perennial Deep-rooted Dominant			1076–1345	
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	807–942	–
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	269–404	–
5	PPGG			13–40	
	needle and thread	HECO26	<i>Hesperostipa comata</i>	4–13	–
	prairie Junegrass	KOMA	<i>Koeleria macrantha</i>	4–13	–
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	4–13	–
Forb					
7	Perennial All Dominant			40–81	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	13–27	–
	buckwheat	ERIOG	<i>Eriogonum</i>	13–27	–
	lupine	LUPIN	<i>Lupinus</i>	13–27	–
9	PPFF			13–54	
	agosseris	AGOSE	<i>Agoseris</i>	2–7	–
	milkvetch	ASTRA	<i>Astragalus</i>	2–7	–
	brodiaea	BRODI	<i>Brodiaea</i>	2–7	–
	hawksbeard	CREPI	<i>Crepis</i>	2–7	–
	fleabane	ERIGE2	<i>Erigeron</i>	2–7	–
	old man's whiskers	GETR	<i>Geum triflorum</i>	2–7	–
	phlox	PHLOX	<i>Phlox</i>	2–7	–
	cinquefoil	POTEN	<i>Potentilla</i>	2–7	–

Animal community

Livestock Grazing:

This site is suited to use by cattle and sheep in the summer and fall. It has few limitations. Care should be taken to avoid trampling damage and soil compaction when soils are wet.

Wildlife:

This site is important as a late fall, winter and spring feeding site for deer and elk.

Native Wildlife Associated With The Potential Climax Community:

Rodents, Songbirds, Red-tailed hawk, Coyote, Mule deer, and Rocky Mountain elk.

Hydrological functions

The hydrologic cover condition is good at higher condition classes. The soils are in hydrologic groups B and C.

Recreational uses

North of the Wallowa Mountains this site occurs on ridge tops in complex with other sites as extensive rolling grasslands. It provides a pleasing visual diversity with the distant canyons and mountains.

Other information

This site has a potential for range seeding when it occurs in large enough units. As a complex with shallow sites the potential for range seeding is often low because it occurs as small mounds (biscuits).

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
Contact for lead author	Oregon NRCS State Rangeland Management Specialist
Date	07/30/2012
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 sheet & rill erosion hazard

2. **Presence of water flow patterns:** None

3. **Number and height of erosional pedestals or terracettes:** None

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 10-15%

5. **Number of gullies and erosion associated with gullies:** None

6. **Extent of wind scoured, blowouts and/or depositional areas:** None, slight wind erosion hazard

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 = 3-5
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Deep and moderately deep, well drained with silt loam or loam surface. Depth to basalt bedrock is typically less than 30 inches; low 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 ground cover (60-70%) and gentle slopes (0-20%) moderately limit rainfall impact and overland flow
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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: Idaho fescue > Bluebunch wheatgrass > forbs > other grasses
- 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: 1600, Normal: 1200, Unfavorable: 900 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:** Forb species will increase with deterioration of plant community. Bluegrass, cheatgrass, and

medusahead invade sites that have lost deep rooted perennial grass functional groups.

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