USDA Natural Resources Conservation Service

Ecological site R009XY018OR
Cold Loamy 17-24 PZ

Accessed: 05/13/2025

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.

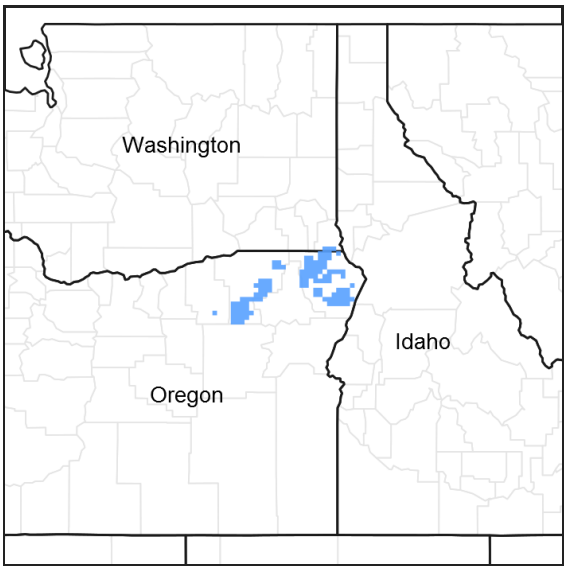


Figure 1. Mapped extent

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

R009XY022OR	**Cold Shallow 13+ PZ** Mountain Shallow 13"+ PZ
R009XY027OR	**Cold Very Shallow 13+ PZ** Mountian Very Shallow 13"+ PZ

Similar sites

R009XY017OR	**Cold Loamy 13-17 PZ** Mountain Loamy 13-17" PZ

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs near and within forestland on terraces, tablelands and mountian plateaus 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 17 to 24 inches, most of which occurs in the form of snow during the months of Novenmber through March followed by ample early summer rainfall. Localized convection al storms occasionally occur during the summer. The soil temperature regime is frigid with a mean annual air temperature of 43 degrees F. The frost-free period ranges from 60 to 100 days. The optimum period for plant growth is from late April to late July.

Table 3. Representative climatic features

Frost-free period (average)	100 days
Freeze-free period (average)	0 days
Precipitation total (average)	610 mm

Influencing water features

Soil features

The soils of this site are dominantly moderately deep over basalt bedrock and are well drained. Typically the surface layer is a loam, gravelly loam, or very cobbly silt loam. The subsoil is a silt loam or silty clay loam over a clay loam to clay. Coarse fragments range to greater than 35% throughout some soils. Permeability ranges from very slow to moderate. The available water holding capapcity (AWC) is about 5 to 7 inches for the profile. The potential for erosion is moderate.

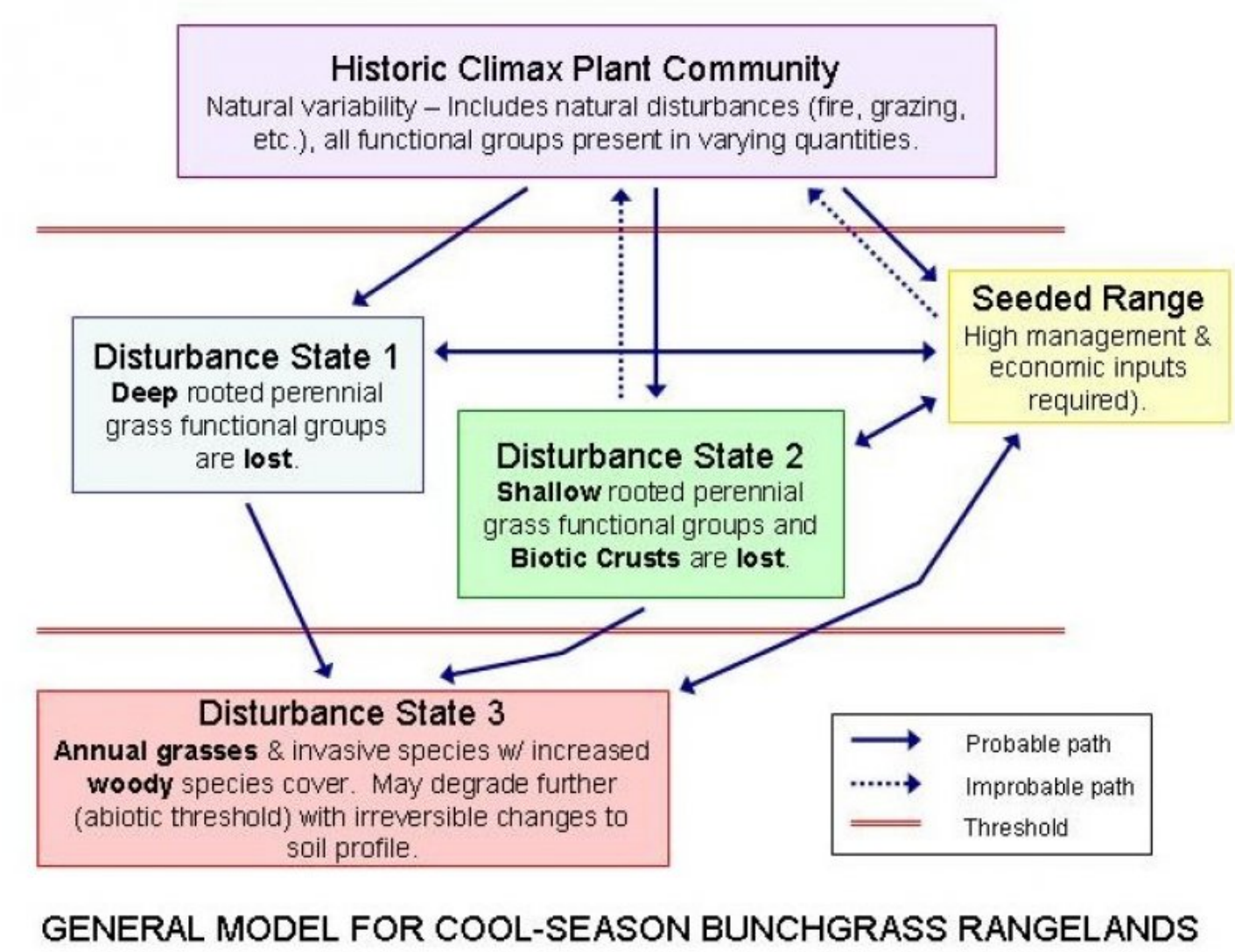
Table 4. Representative soil features

Surface texture	(1) Loam (2) Very gravelly loam (3) Silt loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Very slow to moderate

Ecological dynamics

Range in Characterisitics:
Variability in plant composition and yeild is dependent on aspect and soil depth rather than on precipitation and elelvation ranges that occur within the site. There tends to be a higher proportion of bluebunch wheatgrass and lower total production on south and southwesterly slopes particularly at shallower depths. Conversely, Idaho fescue is in higher proportion with greater total production on north slopes.
Response to disturbance:
If the condition of the site deteriorates as a result of overgrazing, Idaho fescue decreases and buckwheat, cinquefoil and yarrow increases. Kentucky bluegrass rapidly invades replacing Idaho fescue the preferred species during early summer use. With further deterioration, forbs continue to increase and soft chess, cheatgrass, tarweed and other annuals 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 dominated by Idaho fescue. Bluebunch wheatgrass, prairie junegrass, buckwheat, lupine and a variety of other forbs are prominent in the stand. The vegetative composition of the community is approximatley 90 percent grasses and 10 percent forbs.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	1553	1796	2038
Forb	81	192	303
Shrub/Vine	40	61	81
Total	**1674**	**2049**	**2422**

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**			1412–1614	
	Idaho fescue	FEID	*Festuca idahoensis*	1412–1614	–
2	**Perennial Deep-rooted Sub-dominant**			101–303	
	bluebunch wheatgrass	PSSP6	*Pseudoroegneria spicata*	101–303	–
4	**Perenial Shallow-rooted Sub-dominant**			40–121	
	prairie Junegrass	KOMA	*Koeleria macrantha*	20–81	–
	Sandberg bluegrass	POSE	*Poa secunda*	20–40	–
Forb					
7	**Perennial All Dominant**			40–121	
	parsnipflower buckwheat	ERHE2	*Eriogonum heracleoides*	20–61	–
	lupine	LUPIN	*Lupinus*	20–61	–
8	**Perennial All Sub-dominant**			20–40	
	cinquefoil	POTEN	*Potentilla*	20–40	–
9	**PPFF**			20–141	
	common yarrow	ACMI2	*Achillea millefolium*	2–15	–
	agoseris	AGOSE	*Agoseris*	2–15	–
	milkvetch	ASTRA	*Astragalus*	2–15	–
	brodiaea	BRODI	*Brodiaea*	2–15	–
	mariposa lily	CALOC	*Calochortus*	2–15	–
	hawksbeard	CREPI	*Crepis*	2–15	–
	fleabane	ERIGE2	*Erigeron*	2–15	–
	old man's whiskers	GETR	*Geum triflorum*	2–15	–
	Scouler's woollyweed	HISC2	*Hieracium scouleri*	2–15	–
	beardtongue	PENST	*Penstemon*	2–15	–
Shrub/Vine					
13	**Perennial Deciduous Dominant**			40–81	
	rose	ROSA5	*Rosa*	20–40	–
	common snowberry	SYAL	*Symphoricarpos albus*	20–40	–

Animal community

Livestock Grazing:
This site is suited to use by cattel and sheep in the summer and fall. It has few limitations. Care should be taken to avoid trampling damage and soil compaction when sils are wet.
Wildlife:
This site is important as a spring, summer and fall feeding site for deer and elk. The sites are usually adjacent to forested areas which provide hiding and thermal cover.
Native Wildlife Associated With The Potentail Climax Community:
Mule deer, Rocky Mountain elk, Hawks, Coyote, Rodents, and White-tailed deer.

Hydrological functions

The hydrologic cover condition is good at higher condidtion classes. The soils in this site are dominantly in hydrologic group C.

Recreational uses

North of the Wallowa Mountains this site occurs on ridgetops interfingering with the forest. It provides a pleasing visual diversity with forests.

Wood products

A few scatterd ponderosa pine may occur. These provide limited benefits in terms of wood products, shade and diversity.

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

A. Bahn
Cici Brooks
Justin Gredvig

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 Gillaspy
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):** 5-10%

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

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

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Deep and moderately deep, well drained with a loam, gravelly loam, or very cobbly silt loam surface. Coarse fragments range to greater than 35% throughout some soils; low OM (1-2%)

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Significant ground cover (80-90%) and gentle slopes (0-20%) effectively limit rainfall impact and overland flow

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: Idaho fescue > Bluebunch wheatgrass > forbs > shrubs > other grasses

    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):**

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Favorable: 2300, Normal: 1800, Unfavorable: 1400 lbs/acre/year at high RSI (HCPC)

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. Bluegrasses, 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

---