USDA Natural Resources
Conservation Service

Ecological site R009XY010OR
Loamy 14-17 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.

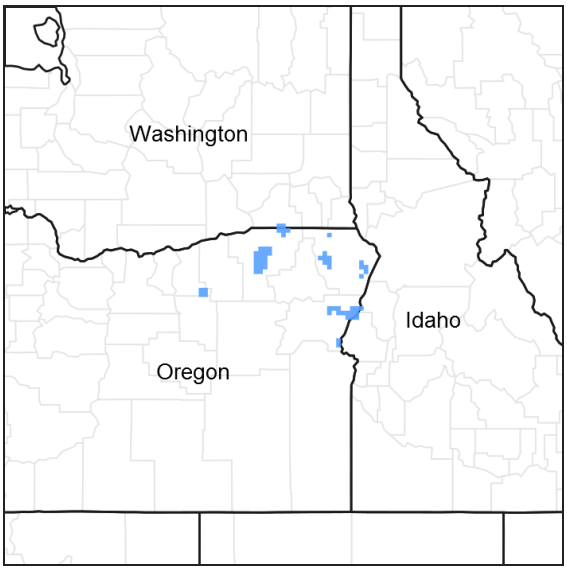


Figure 1. Mapped extent

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

R009XY021OR	**Shallow Clayey 17-22 PZ** Shallow Clayey 14-17" PZ
R009XY025OR	**Very Shallow 14-18 PZ** Very Shallow 14-18" PZ
R009XY031OR	**Shallow South 14+ PZ** Shallow South 14" +

Similar sites

R009XY015OR	**Clayey 14-17 PZ** Clayey 14-17 PZ

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs near forestland on basalt tablelands. It is typically on the northwestern edge of the blue mountains as one of the last grassland sites before the forest. Slopes generally range from 0 to 12%, but occasionally to 20%. Elevation varies from 2000 to 3800 feet.

Table 2. Representative physiographic features

Landforms	(1) Alluvial fan
Elevation	610–1,036 m
Slope	0–12%
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 14 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 mesic with a mean annual air temperature of 48 degrees F. Temperature extremes range from 110 to -40 degrees F. Teh frost free period ranges from 90 to 130 days. The optimum period for plant growth is from late April to mid-July.

Table 3. Representative climatic features

Frost-free period (average)	130 days
Freeze-free period (average)	0 days
Precipitation total (average)	432 mm

Influencing water features

Soil features

The soils of this site are moderately deep to deep over basalt bedrock or duripan and are well drained. Typically the surface layer is a silt loam or loam. The subsoil is silt loam, silty clay loam, or clay loam. Coarse fragments may occur in the lower subsoil. Permeability is moderate above the duripan or bedrock. The available water holding capacity (AWC) is about 5 to 10 inches for the profile. The potential for ersion is moderate.

Table 4. Representative soil features

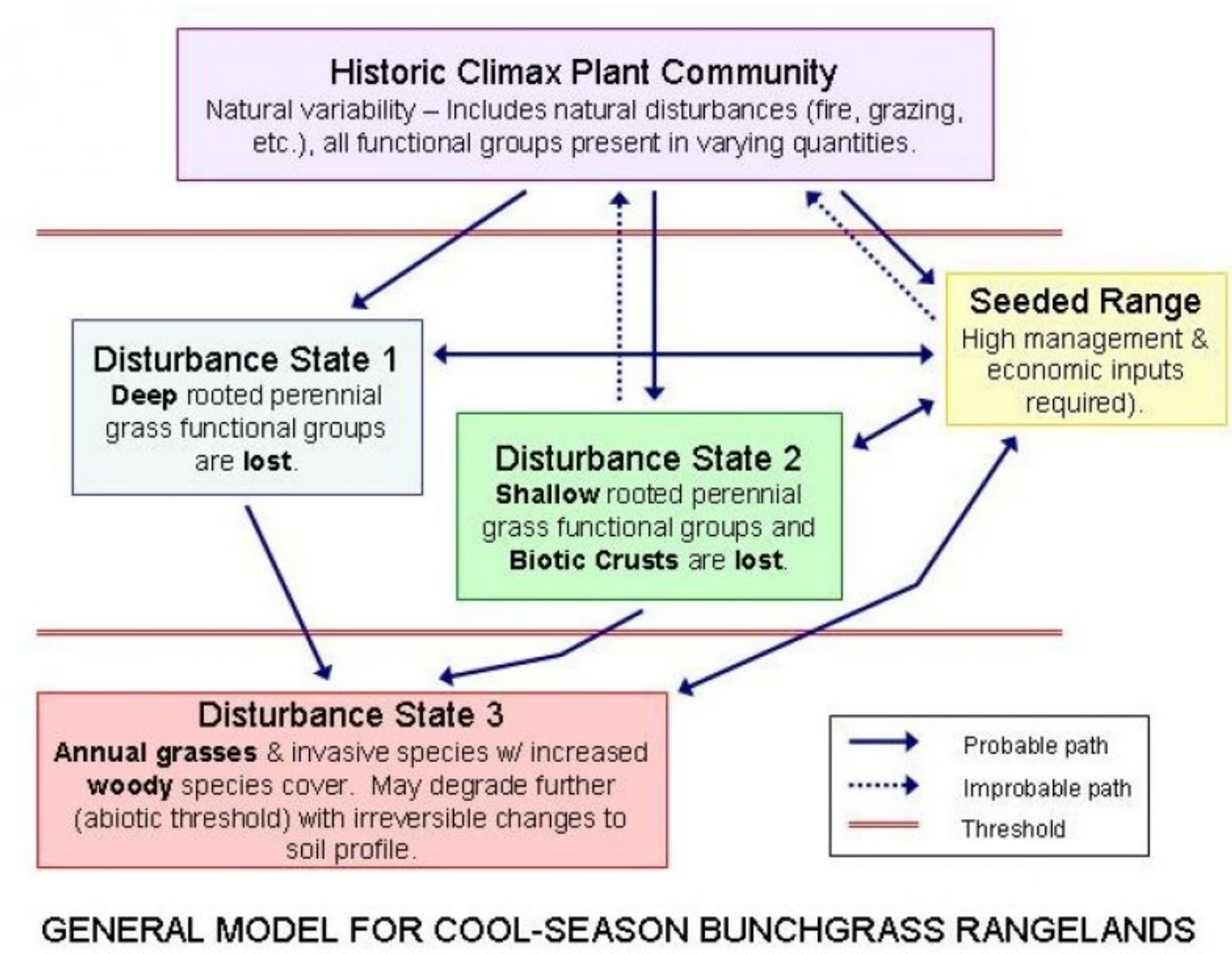
Surface texture	(1) Silt loam (2) Loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderate

Ecological dynamics

Range in Characteristics:
Variablity in plant composition and yeild is dependent on 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 southwesterly slopes. Conversely, Idaho fescue is in higher proportion with higher overall production on north slopes with approximately 40 inches depth.
Response to Disturbance:
If the site condition deteriorates as a result of overgrazing, Idaho fescue decreases and bluebunch wheatgrass increases. Idaho fescue is the prefered species during early summer. with further deterioration, bluebunch

wheatgrass decreases. Annual fescues, chaetgrass and other annuals rapidly invade. Smaller amounts of various bluegrasses such as bulbous and Canada bluegrass invade. Under deteriorated conditions, annuals and unpalatable forbs dominate.

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 dominanted by Idaho fescue. Bluebunch wheatgrass is prominent in the stand. 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	1471	1668	1865
Forb	36	81	126
Total	**1507**	**1749**	**1991**

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**			1255–1435	
	Idaho fescue	FEID	*Festuca idahoensis*	1255–1435	–
2	**Perennial Deep-rooted Sub-dominant**			179–359	
	bluebunch wheatgrass	PSSP6	*Pseudoroegneria spicata*	179–359	–
4	**Perennial Shallow-rooted Sub-dominant**			18–36	
	prairie Junegrass	KOMA	*Koeleria macrantha*	18–36	–
	Sandberg bluegrass	POSE	*Poa secunda*	18–36	–
Forb					
7	**Perennial All Dominant**			18–54	
	common yarrow	ACMI2	*Achillea millefolium*	18–54	–
9	**PPFF**			18–72	
	agoseris	AGOSE	*Agoseris*	2–9	–
	milkvetch	ASTRA	*Astragalus*	2–9	–
	brodiaea	BRODI	*Brodiaea*	2–9	–
	hawksbeard	CREPI	*Crepis*	2–9	–
	fleabane	ERIGE2	*Erigeron*	2–9	–
	buckwheat	ERIOG	*Eriogonum*	2–9	–
	desertparsley	LOMAT	*Lomatium*	2–9	–
	lupine	LUPIN	*Lupinus*	2–9	–

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 aviod trampling damage and soil compaction when soils are wet.
Wildlife:
This site is important as a late fall, winter and spring grazing site for deer and elk.
Native Wildlife Associated With The Potential Climax Community:
Rodents, songbirds, Red-tailed hawk, Coyote, mule deer, rocky mountain elk.

Hydrological functions

The hydrologic cover condition is good at higher condition classes. The soils are dominantly in hydrologic group B.

Recreational uses

On the northwestern edge of the Blue Mountians this site occurs on ridgetops as one of the last grassland sites before the forest. It provides a pleasing visual diversity near the forests.

Other information

This site has 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 (biscuts).

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	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 to some

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 = 2-4

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Moderately deep to deep, well drained, with a silt loam or loam surface; moderate OM (2-4%)

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Significant ground cover (75-80%) and gentle slopes (0-12% sometimes to 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 > other forbs >common yarrow > Sandberg bluegrass = Prairie junegrass

    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: 2000, Normal: 1600, Unfavorable: 1100 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:** With deterioration of plant community, annual fescues, cheatgrass, and medusahead invade sites that have lost deep rooted perennial grass funtional groups

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