USDA Natural Resources
Conservation Service

Ecological site R010XB070OR
JD North 12-16 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.

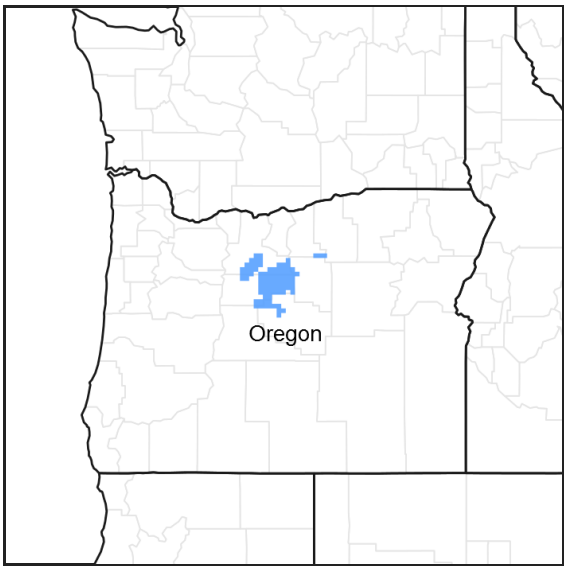


Figure 1. Mapped extent

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

R010XB027OR	**JD Clayey 12-16 PZ** JD Clayey 12-16" PZ
R010XB045OR	**JD Clayey South 12-16 PZ** JD Clayey South 12-16" PZ

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on north exposures of terraces, tablelands, and rolling uplands. It is typically on slopes with northerly aspects. Slopes range from 12 to 70 percent. Elevations range from 2100 to 4000 feet.

Table 2. Representative physiographic features

Landforms	(1) Terrace (2) Hill
Elevation	640–1,219 m
Slope	12–70%
Water table depth	152 cm
Aspect	N

Climatic features

The annual precipitation ranges from 12 to 16 inches, most of which occurs in the form of snow during the months of November through March. Localized, occasionally severe, convectional storms occur during the summer. The soil temperature regime is mesic with a mean annual air temperature of 50 degrees F. Temperature extremes range from 100 to -10 degrees F. The frost-free period ranges from 60 to 120 days. The optimum period for plant growth is from April through mid-July.

Table 3. Representative climatic features

Frost-free period (average)	120 days
Freeze-free period (average)	0 days
Precipitation total (average)	406 mm

Influencing water features

Soil features

The soils of this site are typically moderately deep to deep and well-drained. Typically the surface layer is a clay loam or silty clay loam about 8 inches thick. The subsoil is a cobbly clay loam about 25 inches thick. Depth to bedrock or sediments is 30 to 60 inches. Permeability is moderate. The available water holding capacity is about 4 to 6 inches for the profile. The potential for erosion is moderate to severe.

Table 4. Representative soil features

Surface texture	(1) Clay loam (2) Silty clay loam
Family particle size	(1) Clayey
Drainage class	Well drained
Permeability class	Moderate
Soil depth	76–152 cm
Available water capacity (0-101.6cm)	10.16–15.24 cm

Ecological dynamics

Range in Characteristics:

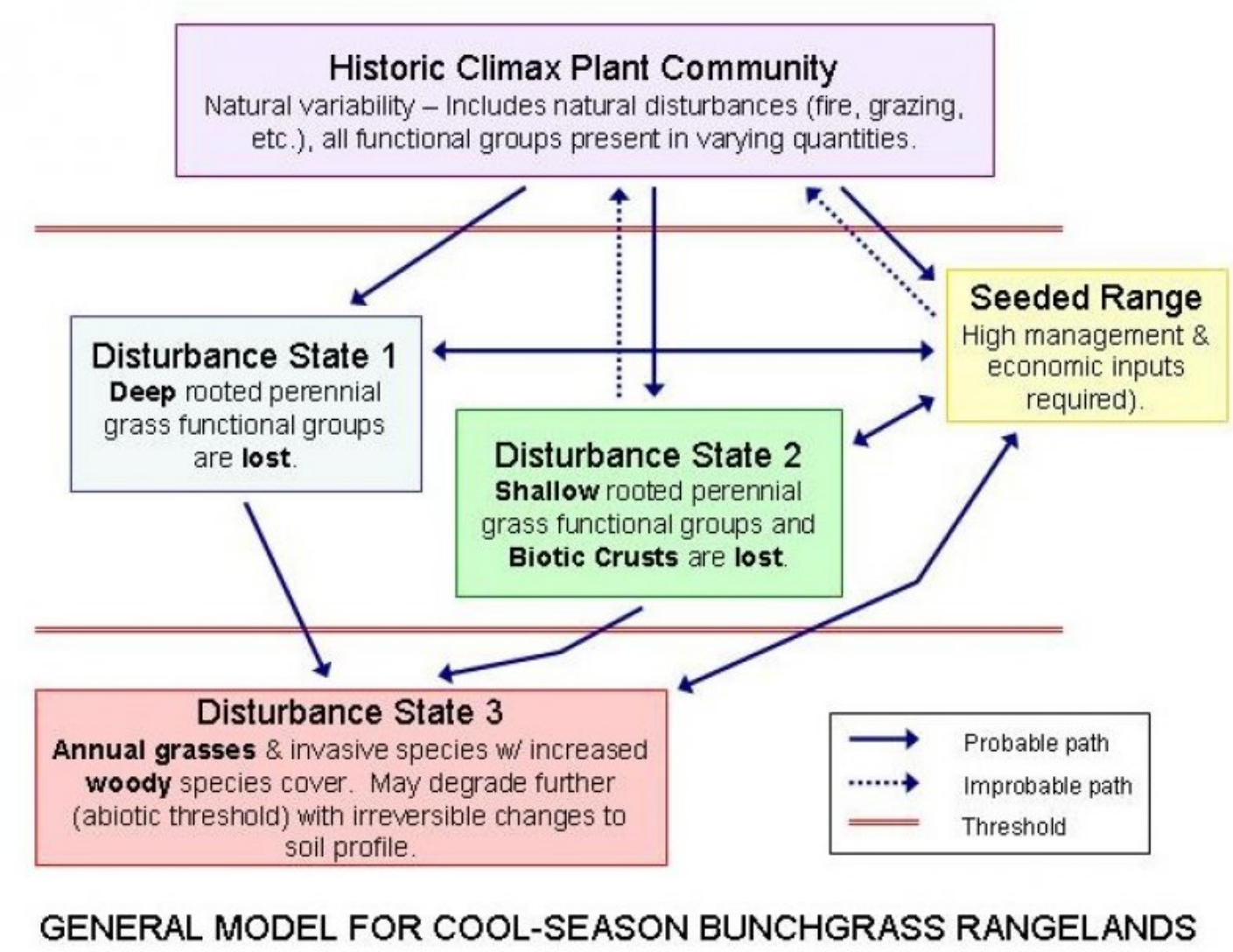
Bluebunch wheatgrass increases as aspect changes to more northwest or northeast slopes. Shrubs occur on deeper soils and on inclusions of colluvium. Western juniper may increase in the absence of fire.

Response to Disturbance:

If the condition of the site deteriorates as a result of overgrazing, Idaho fescue decreases while bluebunch wheatgrass and Sandberg bluegras increase. Idaho fescue is the preferred species during spring and summer.

With further deterioration, bluebunch wheatgrass decreases and shrubs and annuals invade. With further deterioration, juniper increases and annuals including soft chess, medusahead, and filaree invade and bare soil interspaces reduces the site productivity and contributes to downstream sedimentation.

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 is common in the stand. Vegetative composition of the community is approximately 90 percent grasses, 5 percent forbs, and 5 percent shrubs. Approximate ground cover is 60-70 percent (basal and crown).

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	1130	1397	1663
Forb	63	102	141
Shrub/Vine	47	71	94
Total	**1240**	**1570**	**1898**

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**			942–1255	
	Idaho fescue	FEID	*Festuca idahoensis*	942–1255	–
2	**Perennial, deep-rooted, sub-dominant**			157–314	
	bluebunch wheatgrass	PSSP6	*Pseudoroegneria spicata*	157–314	–
4	**Perennial, shallow-rooted, sub-dominant**			31–94	
	prairie Junegrass	KOMA	*Koeleria macrantha*	16–47	–
	Sandberg bluegrass	POSE	*Poa secunda*	16–47	–
Forb					
7	**Perennial, all, dominant**			47–94	
	common yarrow	ACMI2	*Achillea millefolium*	16–31	–
	milkvetch	ASTRA	*Astragalus*	16–31	–
	lupine	LUPIN	*Lupinus*	16–31	–
9	**Other perennial forbs, all**			16–47	
	agoseris	AGOSE	*Agoseris*	0–8	–
	arrowleaf balsamroot	BASA3	*Balsamorhiza sagittata*	0–8	–
	hawksbeard	CREPI	*Crepis*	0–8	–
	fleabane	ERIGE2	*Erigeron*	0–8	–
	buckwheat	ERIOG	*Eriogonum*	0–8	–
	desertparsley	LOMAT	*Lomatium*	0–8	–
Shrub/Vine					
11	**Perennial, evergreen, dominant**			31–63	
	basin big sagebrush	ARTRT	*Artemisia tridentata ssp. tridentata*	16–31	–
	rubber rabbitbrush	ERNA10	*Ericameria nauseosa*	16–31	–
13	**Perennial, deciduous, dominant**			16–31	
	broom snakeweed	GUSA2	*Gutierrezia sarothrae*	16–31	–

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 and Bruce Frannsen
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Date	08/07/2012
Approved by	Bob Gillaspy
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None to very few on steeper slopes, moderate to significant sheet & rill erosion hazard

2. **Presence of water flow patterns:** None to very few on steeper slopes

3. **Number and height of erosional pedestals or terracettes:** None to very few on steeper slopes (terracettes)

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** 0-10%

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

6. **Extent of wind scoured, blowouts and/or depositional areas:** None, moderate 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):** Moderately deep to deep, well drained silt loams, clay loams, stony or cobbly loams, or cobbly sandy loams: 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 (90-100%) and gentle to very steep slopes (12-70%) 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 > other grasses > 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: 1800, Normal: 1400, 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:** Western Juniper readily invades 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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