

Ecological site R009XY040OR
North 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

R009XY029OR	South 14-17 PZ Occurs on south aspect sites that are moderately deep to very deep (20" to greater than 60").
R009XY031OR	Shallow South 14+ PZ Occurs on south aspect sites that are shallow (10" to 20").

Similar sites

R009XY042OR	Low Elevation North 14-17 PZ Low Elevation North 14-17" PZ (mesic, Idaho Fescue is co-dominant with Bluebunch Wheatgrass)
R009XY045OR	North 17-24 PZ North 17-24" PZ (higher production (2000 lbs/ac normal), different composition (more shrubs))
R009XY043OR	Low Elevation Deep North 14-17 PZ Deep Low Elevation North 14-17" PZ (mesic, Idaho Fescue is co-dominant with Bluebunch Wheatgrass)

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified

Herbaceous	(1) <i>Festuca idahoensis</i> (2) <i>Pseudoroegneria spicata</i>
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Physiographic features

This site occurs near forestlands on the backslopes of canyons, tablelands and mountain plateaus. It is typically on slopes with north and northeast aspects as one of the last grassland sites before the forest. Slopes range from 5 to 80%. Elevation varies from 2000 to 5000 feet.

Table 2. Representative physiographic features

Landforms	(1) Mountain (2) Plateau (3) Canyon
Flooding frequency	None
Ponding frequency	None
Elevation	2,000–5,000 ft
Slope	5–80%
Aspect	N, NE

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 and frigid with a mean temperature range of 42-45 degrees F. The frost-free period ranges from 50 to 115 days. The optimum period for plant growth is from late April to mid-July.

Table 3. Representative climatic features

Frost-free period (average)	115 days
Freeze-free period (average)	0 days
Precipitation total (average)	17 in

Influencing water features

Soil features

The soils of this site are moderately deep over basalt or consolidated sedimentary bedrock and are well drained. Areas of rock outcrop and talus are common. Typically the surface layer is a very stony or cobbly loam to clay loam. The subsoil includes a very stony clay loam, a very gravelly silty clay loam, or very gravelly or cobbly clay. Depth to bedrock averages 24 to 36 inches. Permeability is moderate to slow in the clay subsoils. The available water holding capacity (AWC) is about 2 to 6 inches for the profile. The potential for erosion is severe.

Table 4. Representative soil features

Parent material	(1) Loess–basalt
Surface texture	(1) Very stony silt loam (2) Very cobbly loam (3) Gravelly silty clay loam
Family particle size	(1) Clayey
Drainage class	Well drained
Permeability class	Moderately slow to moderately rapid

Soil depth	20–60 in
Surface fragment cover ≤3"	0–10%
Surface fragment cover >3"	0–30%
Available water capacity (0–40in)	2–6.5 in
Calcium carbonate equivalent (0–40in)	0%
Electrical conductivity (0–40in)	0–2 mmhos/cm
Sodium adsorption ratio (0–40in)	0
Soil reaction (1:1 water) (0–40in)	5.6–7.3
Subsurface fragment volume ≤3" (Depth not specified)	6–20%
Subsurface fragment volume >3" (Depth not specified)	10–55%

Ecological dynamics

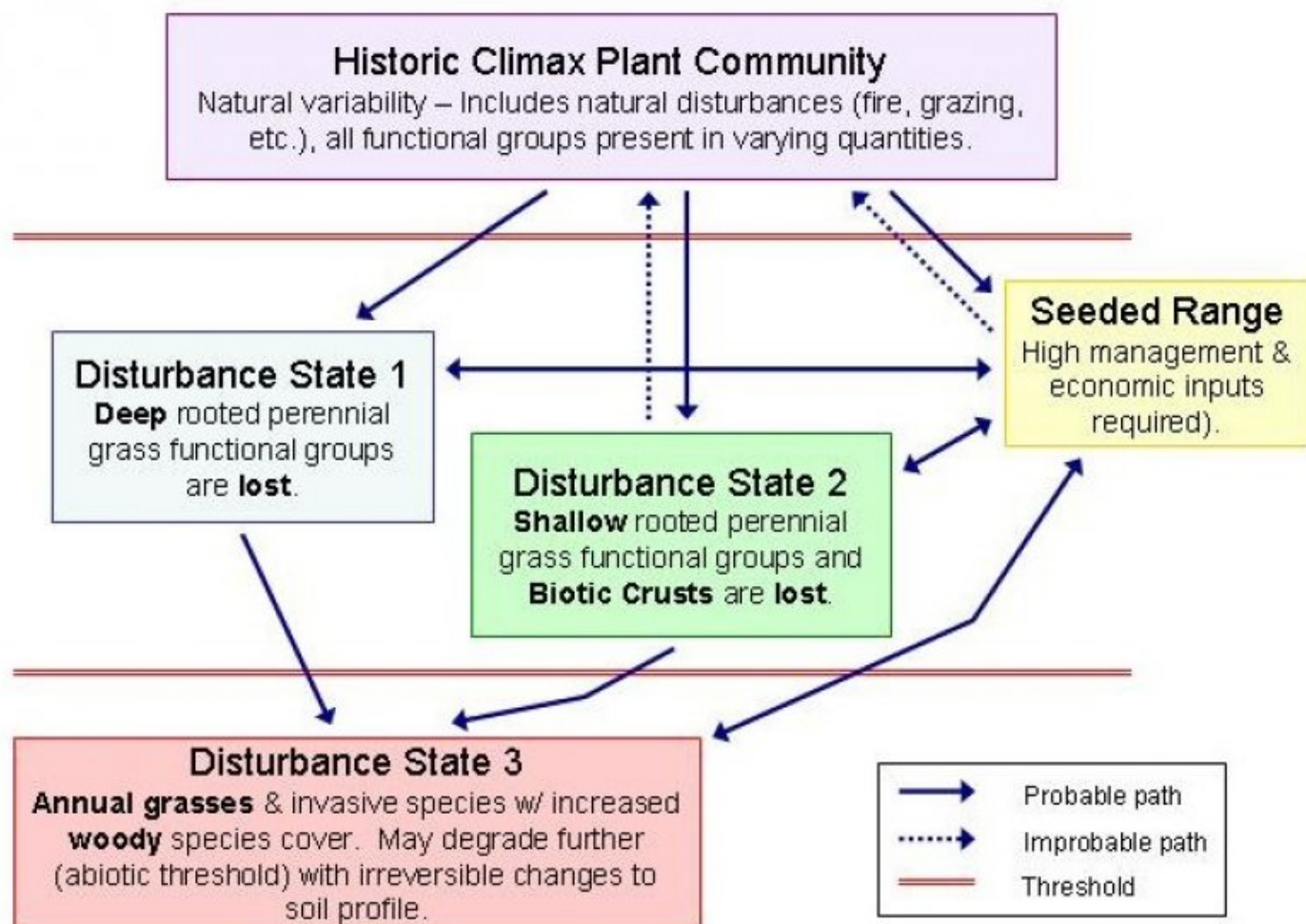
Range in Characteristics:

Variability in plant composition and yield is dependant on aspect, soil depth and coarse fragments rather than on precipitation and elevation ranges within the site. There tends to be higher amounts of bluebunch wheatgrass on northwest and northeast slopes. Production increases as soil depth approaches 40 inches. Lower yields occur on soils with high coarse fragments and depths of 20 inches. Shrubs are scattered. They increase in areas of higher precipitation and on inclusions of deeper colluvium.

Response to Disturbance:

If the condition of the site deteriorates as a result of overgrazing, Idaho fescue decreases and bluebunch wheat grass increases. Idaho fescue is the preferred species during early summer use. With further deterioration, bluebunch wheatgrass decreases and cheatgrass, soft chess 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. Areas of bare ground increase and erosion is accelerated.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1

Historic Climax Plant Community

Community 1.1

Reference Plant Community

The potential native plant community is strongly dominated by Idaho fescue. Bluebunch wheatgrass is prominent in the stand along with a variety of forbs. Shrubs are minor and widely scattered. The vegetative composition of the community is approximately 90 percent grasses, 8 percent forbs and 2 percent shrubs.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	1080	1530	1980
Forb	96	136	176
Shrub/Vine	24	34	44
Total	1200	1700	2200

Figure 3. Plant community growth curve (percent production by month). OR2771, B9 Mtn. and North sites RPC. B9 Mountain and North site RPC.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	15	30	40	15	0	0	0	0	0

Additional community tables

Table 6. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	Perennial moderately deep-rooted bunchgrass			1190–1360	
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	1190–1360	–
2	Moderately deep-rooted perennial bunchgrass			85–255	
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	85–255	–
3	Shallow rooted perennial bunchgrass			17–85	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	0–68	–
	prairie Junegrass	KOMA	<i>Koeleria macrantha</i>	0–34	–
4	Moderately deep rooted perennial bunchgrass			0–34	
	needle and thread	HECO26	<i>Hesperostipa comata</i>	0–34	–
5	Deep rooted perennial bunchgrass			0–34	
	basin wildrye	LECI4	<i>Leymus cinereus</i>	0–34	–
Forb					
7	Perennial Forbs			34–102	
	arrowleaf balsamroot	BASA3	<i>Balsamorhiza sagittata</i>	17–51	–
	lupine	LUPIN	<i>Lupinus</i>	17–51	–
9	Perennial Forbs			17–102	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	0–17	–
	agoseris	AGOSE	<i>Agoseris</i>	0–17	–
	milkvetch	ASTRA	<i>Astragalus</i>	0–17	–
	Indian paintbrush	CASTI2	<i>Castilleja</i>	0–17	–
	hawksbeard	CREPI	<i>Crepis</i>	0–17	–
	buckwheat	ERIOG	<i>Eriogonum</i>	0–17	–
	Scouler's woollyweed	HISC2	<i>Hieracium scouleri</i>	0–17	–
	western stoneseed	LIRU4	<i>Lithospermum ruderae</i>	0–17	–
	cinquefoil	POTEN	<i>Potentilla</i>	0–17	–
	ragwort	SENEC	<i>Senecio</i>	0–17	–
Shrub/Vine					
12	Deciduous Shrub			17–51	
	rose	ROSA5	<i>Rosa</i>	17–51	–
13	Evergreen Shrub			17–34	
	yellow rabbitbrush	CHVI8	<i>Chrysothamnus viscidiflorus</i>	17–34	–
14	Deciduous Shrub			17–34	
	common snowberry	SYAL	<i>Symphoricarpos albus</i>	17–34	–

Animal community

Livestock Grazing:

This site is suited to use by cattle and sheep in the summer and fall. As this site often occurs on steep and rocky slopes these limitations need to be carefully considered in developing alternatives. Care should be taken to avoid trampling damage and soil compaction when soils are wet.

Wildlife:

This site can be important as a late spring, summer, and fall 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 group C.

Recreational uses

On the edge of the Blue Mountains and north of the Wallowa this site occurs on north slopes as one of the last grassland sites before the forest. It provides a pleasing visual diversity near the forests.

Other information

This site has a good potential for range seeding when it occurs on moderate slopes in large enough units. On steep slopes or where coarse fragments are high it has limited potential for range seeding.

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 Franssen
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Date	04/01/2007
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.

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

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

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not**

bare ground): 0-5%.

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

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

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 to significantly resistant to erosion: aggregate stability = 3-6.

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** weak to strong medium and fine granular to subangular blocky structure, dry color values 3 - 5, 4 to 12 inches thick, low to moderate OM (2-4%).

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Steep slopes (5-80%) moderately 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: Moderately deep rooted perennial bunch grasses.

Sub-dominant: Perennial forbs.

Other: Shrubs (both deciduous and evergreen).

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: 2200, Normal: 1700, Unfavorable: 1200 lbs/acre/year.

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: Bulbous bluegrass, annual bromes, 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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