USDA Natural Resources
Conservation Service

Ecological site R009XY048OR
Shallow North 14+ 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

R009XY029OR	**South 14-17 PZ** South 14-17" PZ
R009XY031OR	**Shallow South 14+ PZ** Shallow south 14"+ PZ
R009XY040OR	**North 14-17 PZ** North 14-17" PZ
R009XY045OR	**North 17-24 PZ** North 17-24 PZ
R009XY046OR	**Shrubby Moist North 15+ PZ** Shrubby Moist North 15"+ PZ
R009XY060OR	**Shrubby North 15+ PZ** Shrubby North 15"+ PZ

Similar sites

R009XY040OR	**North 14-17 PZ** North 14-17" PZ (higher production)

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on the slopes of canyon and mountain plateaus. It si typically on slopes having north and northwest aspects. Slopes ranges from 15 to 90% with slopes of 30 to 60% being most typical. Elevation varies from 2000 to 5000 feet.

Table 2. Representative physiographic features

Landforms	(1) Mountain (2) Plateau
Elevation	610–1,524 m
Slope	15–90%
Aspect	N, NW

Climatic features

The annual precipitation ranges from 1 to 30 inches with 17 to 24 inches being most typical. Teh precipitation occurs as snow during the months of November through March followed by spring rainfall. Localized, occasionally severe covectional storms occur during the summer. The mean annual air temperature is approximatley 43 degrees F. Extreme temperatures range from 90 degrees F. to -30 degress F. Soil temperature regimes are frigid to near frigid. The frost-free period ranges from 30 to 100 days. The period of optimum plant growth is from mid April through June.

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 formed in loess and colluvium over basalt bedrock. They are shallow. Typically the surfce layer is a very stony clay loam over a cobbly clay loam subsoil. Soil permeabillty is slow. The avialable water holding caacity (AWC) is 2 to 4 inches. Erosion potential is high.

Table 4. Representative soil features

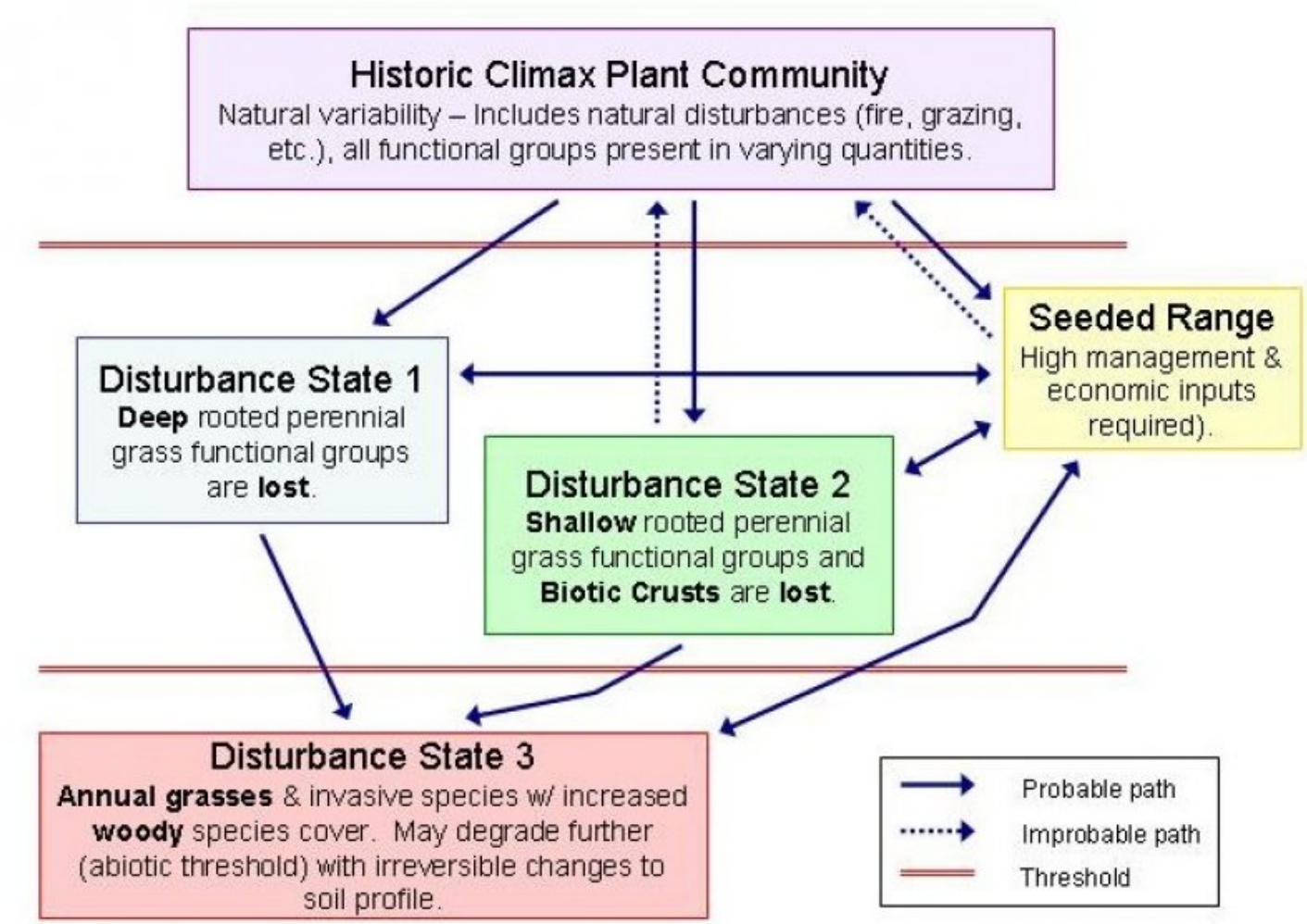
Surface texture	(1) Stony clay loam
Family particle size	(1) Clayey
Drainage class	Well drained
Permeability class	Slow

Ecological dynamics

Range in Characteristics:
Variability in plant composition and yeild is dependant on aspect and soil depth. Production increases as soil depth

approaches 20 inches. Idaho fescue decreases amd bluebunch wheatgrass increases as aspect changes to northeast and northwest. Scattered shrubs, snowberry and rose increase on steep due north slopes. Soil depth, production and composition changes occur in short distances as this site is normally in complex with sites having deeper soils.
Response to Disturbance:
If the condidition of the site deteriorates as a result of overgrazing, Idaho fescue decreases and bluebunch wheatgrass and Sandberg bluegrass increase. Bluegrasses such as bulbous bluegrass, annuals and unpalatable forbs invade. With further deterioration, bluebunch wheatgrass decreases, annuals strongly invade and production decreases. Under deteriorated conditions areas of bareground appear, soil erosion accelerates and potential site productivity decreases.

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 dominanted by Idaho fescue. Bluebunch wheatgrass is common along with Sandberg bluegrass, prairie junegrass and a variety of forbs. Shrubs, common snowberry and rose, are minor and scattered. The potential vegetative composition is approximately 90 percent grass, 5 percent forbs and 5 percent shrubs.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	841	998	1154
Forb	34	67	101
Shrub/Vine	22	39	56
Total	**897**	**1104**	**1311**

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**			785–1009	
	Idaho fescue	FEID	*Festuca idahoensis*	560–673	–
	bluebunch wheatgrass	PSSP6	*Pseudoroegneria spicata*	224–336	–
4	**Perennial Shallow-rooted Sub-dominant**			56–146	
	Sandberg bluegrass	POSE	*Poa secunda*	34–90	–
	prairie Junegrass	KOMA	*Koeleria macrantha*	22–56	–
Forb					
7	**Perennial All Dominant**			22–45	
	lupine	LUPIN	*Lupinus*	11–22	–
	cinquefoil	POTEN	*Potentilla*	11–22	–
9	**PPFF**			11–56	
	common yarrow	ACMI2	*Achillea millefolium*	1–4	–
	onion	ALLIU	*Allium*	1–4	–
	twin arnica	ARSO2	*Arnica sororia*	1–4	–
	milkvetch	ASTRA	*Astragalus*	1–4	–
	arrowleaf balsamroot	BASA3	*Balsamorhiza sagittata*	1–4	–
	kittentail	BESSE	*Besseya*	1–4	–
	mariposa lily	CALOC	*Calochortus*	1–4	–
	fleabane	ERIGE2	*Erigeron*	1–4	–
	old man's whiskers	GETR	*Geum triflorum*	1–4	–
	hawkweed	HIERA	*Hieracium*	1–4	–
	western stoneseed	LIRU4	*Lithospermum ruderale*	1–4	–
	beardtongue	PENST	*Penstemon*	1–4	–
Shrub/Vine					
15	**SSSS**			22–56	
	scabland sagebrush	ARRI2	*Artemisia rigida*	6–15	–
	rose	ROSA5	*Rosa*	6–15	–
	spirea	SPIRA	*Spiraea*	6–15	–
	common snowberry	SYAL	*Symphoricarpos albus*	6–15	–

Animal community

Livestock Grazing:

This site si suited to late spring, summer and fall use by cattle, sheep and horses under a planned grazing system. The key species is Idaho fescue. Idaho fescue can be damaged if heavily grazed during periods of flowering and seed formation when root reserves and soil moisutre is low. Use in the spring should be postponed until the soils are firm enough to prevent tramping damage, soil compaction and soil mass movement.
Wildlife:
When the ecological condition is high this site provides food for deer, elk, other mammals and upland birds. Adjacent to sites with excellent cover, it is an important summer and fall use area for deer and elk.
Native Wildlife Associated With The Potential Climax Community:
Mule deer, elk, rodents, and a variety of upland birds use this site.

Hydrological functions

The soils of this site have lower water holding capacities providing little late season water for plant growth. The hydrologic cover condiditon is fair when the ecological condiditon is high.

Other information

When in poo condition this site has a low potential for range seeding because of stoniness, soil depth and slope.

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
Contact for lead author	State Rangeland Management Specialist for NRCS in Oregon
Date	04/24/2003
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

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

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

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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):** Significantly resistant to erosion: aggregate stability = 4-6

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Moderate medium to strong fine granular structure, dry color value of 4, 4 - 8 inches thick; low to moderate OM (2-5%)

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 very steep slopes (15-90%) 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: Deep-rooted, cool-season, bunchgrasses (FEID > PSSP6 > others)

    Sub-dominant: Perennial forbs > shrubs

    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: 1500, Normal: 1000, Unfavorable: 700 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:** Bluegrasses, annual bromes, 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