

Ecological site R009XY060OR Shrubby North 15+ 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.

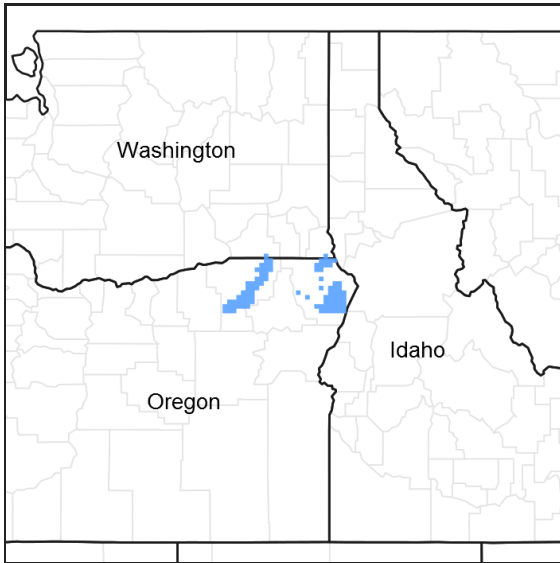


Figure 1. Mapped extent

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

R009XY030OR	South 17-22 PZ South 17-22" PZ
R009XY031OR	Shallow South 14+ PZ Shallow South 14"+ PZ
R009XY041OR	Deep North 14-17 PZ Deep North 14-17" PZ
R009XY045OR	North 17-24 PZ North 17-24" PZ
R009XY046OR	Shrubby Moist North 15+ PZ Shrubby Moist North 14"+ PZ
R009XY048OR	Shallow North 14+ PZ Shallow North 14"+ PZ

Similar sites

R009XY041OR	Deep North 14-17 PZ Deep North 14-17" PZ (lower production, lower elevation)
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R009XY046OR	Shrubby Moist North 15+ PZ Shrubby Moist North 14"+ PZ (higher production, greater subsurface flow)
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Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on the upper slopes of canyons and mountain plateaus adjacent to forestland. It is typically on steep slopes having north and northeast aspects. Slopes range from 15 to 90%, with gradients of 40 to 70% being the most typical. Elevation varies from 2800 to 5600 feet.

Table 2. Representative physiographic features

Landforms	(1) Canyon
Elevation	853–1,707 m
Slope	15–90%
Aspect	N, NE

Climatic features

The annual precipitation ranges from 15 to 30 inches with 15 to 22 inches being the most typical. The precipitation occurs as snow during the months of November through March followed by ample spring rainfall. Localized, occasionally severe, convection storms occur during the summer. The mean annual air temperature is approximately 43 degrees F. Extreme temperature ranges from 90 degrees F. to -30 degrees F. Soil temperature regimes are frigid. The frost-free period ranges from 30 to 100 days. The period of optimum plant growth is from mid April through July.

Table 3. Representative climatic features

Frost-free period (average)	100 days
Freeze-free period (average)	0 days
Precipitation total (average)	762 mm

Influencing water features

Soil features

The soils of this site are formed in loess and colluvium over basalt bedrock. They are moderately deep to deep. Stoniness is variable. Typically the surface layer is a stony silt loam about 10 inches thick over a very cobbly silt loam or clay loam subsoil. Soil permeability is moderate. The available water holding capacity (AWC) is 6 to 10 inches. Erosion potential is high.

Table 4. Representative soil features

Surface texture	(1) Stony silt loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderate

Ecological dynamics

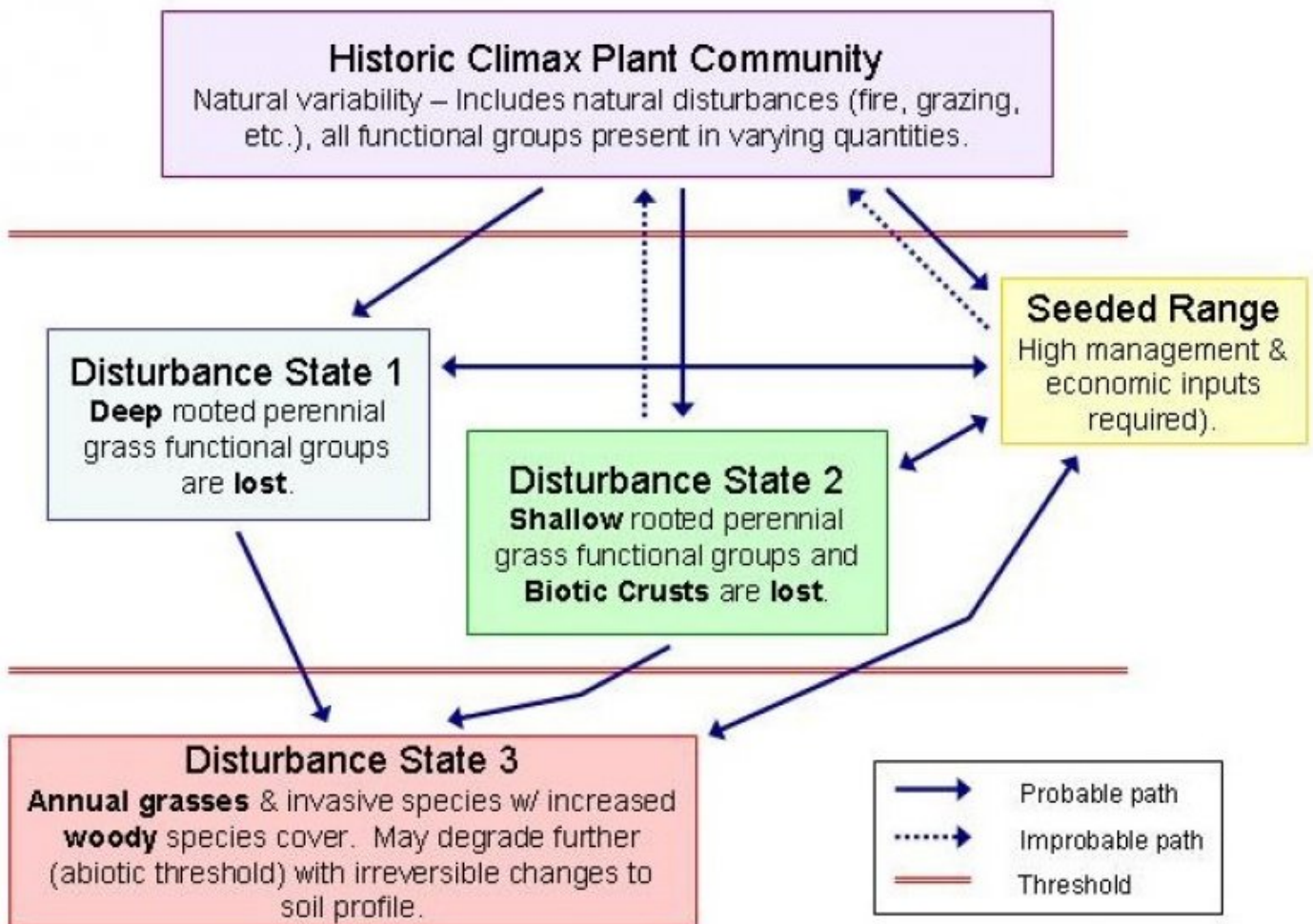
Range in Characteristics:

The production and density of shrubs is dependent on aspect, soil depth and the extent and duration of lateral subsurface waterflows. Mallow ninebark increases on north slopes having deep soils with greater water holding capacities and on shallower soils receiving seasonal subsurface flows. Snowberry increases in drier areas and on shallower soils. Shrubs occur in dense patches and present strong competition to the less stable grass/forb component if the site. Scattered ponderosa pine and Douglas-fir bearing fire scars are often present. As a site highly susceptible to fire, fire frequency will influence vegetative production and cover. Mallow ninebark and snowberry respond vigorously following a fire and increase in production, particularly during the second and third post-fire growing season.

Response to Disturbance:

If the condition of the site deteriorates as a result of overgrazing, Idaho fescue decreases along with other palatable understory grasses and forbs. Kentucky bluegrass, annuals and unpalatable forbs invade. Rhizomatous shrubs increase through shading and root competition of the weakened understory component. With further deterioration areas of bare ground under and adjacent to shrubs increase, forage production decreases and erosion and slumping accelerates.

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 mallow ninebark. Snowberry, rose and serviceberry are common. Currant, spirea, oceanspray, Idaho fescue and a variety of forbs are present. The potential vegetative composition is approximately 80 percent shrubs, 10 percent grass and 5 percent forbs.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Shrub/Vine	2074	2901	3727
Grass/Grasslike	252	476	701
Forb	84	168	252
Total	2410	3545	4680

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			196–420	
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	140–280	–
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	56–140	–
5	PPGG			56–280	
	sedge	CAREX	<i>Carex</i>	11–56	–
	pinegrass	CARU	<i>Calamagrostis rubescens</i>	11–56	–
	blue wildrye	ELGL	<i>Elymus glaucus</i>	11–56	–
	prairie Junegrass	KOMA	<i>Koeleria macrantha</i>	11–56	–
	bluegrass	POA	<i>Poa</i>	11–56	–
Forb					
7	Perennial All Dominant			56–112	
	cinquefoil	POTEN	<i>Potentilla</i>	28–56	–
	ragwort	SENEC	<i>Senecio</i>	28–56	–
9	PPFF			28–140	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	3–16	–
	onion	ALLIU	<i>Allium</i>	3–16	–
	milkvetch	ASTRA	<i>Astragalus</i>	3–16	–
	aster	EUCEP2	<i>Eucephalus</i>	3–16	–
	bedstraw	GALIUM	<i>Galium</i>	3–16	–
	Scouler's woollyweed	HISC2	<i>Hieracium scouleri</i>	3–16	–
	waterleaf	HYDRO4	<i>Hydrophyllum</i>	3–16	–
	lupine	LUPIN	<i>Lupinus</i>	3–16	–
	beardtongue	PENST	<i>Penstemon</i>	3–16	–
Shrub/Vine					
13	Perennial Deciduous Dominant			1681–2522	
	mallow ninebark	PHMA5	<i>Physocarpus malvaceus</i>	1401–1961	–
	common snowberry	SYAL	<i>Symphoricarpos albus</i>	280–560	–
14	Perennial Deciduous Sub-dominant			336–981	
	Saskatoon serviceberry	AMAL2	<i>Amelanchier alnifolia</i>	140–420	–
	rose	ROSA5	<i>Rosa</i>	140–420	–
	spirea	SPIRA	<i>Spiraea</i>	56–140	–
15	SSSS			56–224	
	hawthorn	CRATA	<i>Crataegus</i>	11–45	–
	oceanspray	HODI	<i>Holodiscus discolor</i>	11–45	–
	chokecherry	PRVI	<i>Prunus virginiana</i>	11–45	–
	wax currant	RICE	<i>Ribes cereum</i>	11–45	–
	elderberry	SAMBU	<i>Sambucus</i>	11–45	–
Tree					
16	Perennial Evergreen Dominant			56–112	
	ponderosa pine	PIPO	<i>Pinus ponderosa</i>	28–56	–
	Douglas-fir	PSME	<i>Pseudotsuga menziesii</i>	28–56	–

Animal community

Livestock Grazing:

This site is suited to late spring summer and fall use by cattle, sheep and horses under a planned grazing system. The key species is Idaho fescue is not present. Idaho fescue can be damaged if heavily grazed during periods of flowering and seed formation when root reserves are low. If Kentucky bluegrass is the key species, adequate ground cover and stubble should be left to prevent erosion and to maintain and improve plant vigor. Periodic prescribed burns or other brush control measures will temporarily improve the forage production capability of the site. As this site occurs on steep slopes, care should be taken to avoid trampling damage and soil compaction when soils are wet.

Wildlife:

When the ecological condition is high this site provides excellent food and cover for deer, elk, other mammals and upland birds. It is an important fall use area for deer and elk. wildlife cover values, thermal, hiding and escape, should be considered in designing treatment measures that alter the kind and amount of shrub species present.

Native Wildlife Associated With The Potential Climax Community:

Mule deer, white-tail deer, elk, rodents and a variety of upland birds use this site for food and cover. Cover is excellent when the ecological condition is high.

Hydrological functions

The soils of this site have excellent water holding capacities, providing late season water for plant growth and slow water release to streams. The hydrologic cover condition is excellent when the ecological condition is high.

Recreational uses

In the Blue Mountains this site occurs on upper plateau slopes interfingering with the forest. It appears as a mosaic providing diversity with the adjoining forest.

Wood products

A few scattered ponderosa pine and/or Douglas-fir may be present. These provide limited economic benefits in terms of wood products, but are of value for diversity and wildlife.

Other information

Periodic prescribed burns or other brush control measures will temporarily improve forage production and reduce wildlife cover values. These two opposite interacting effects should be considered in designing treatment measures that alter the kind and amount of shrub species present. When in poor condition the site has a high potential for mechanical range seeding on moderate slopes and low potential on steep slopes. Aerial seeding is practical on intensely burned areas, realizing forage production will reduce as shrubs resprout and improve in vigor.

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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Contact for lead author	Oregon NRCS State Rangeland Management Specialist
Date	07/30/2012
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, severe sheet & rill erosion hazard

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, 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):**
Moderately deep to deep, well drained, with a stony silt loam surface (up to 10" thick); 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 (90-110%) and moderate to 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: Mallow ninebark > Snowberry > Rose = Serviceberry > Idaho fescue > other grasses > Bluebunch wheatgrass > forbs > other shrubs > trees

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
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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: 3000, Normal: 2500, Unfavorable: 2000 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:** Perennial forb and brush species will increase with deterioration of plant community. Bluegrasses and annual bromes invade sites that have lost deep rooted perennial grass functional groups. Excessive erosion may occur, deteriorating site potential.
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17. **Perennial plant reproductive capability:** All species should be capable of reproducing annually
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