

Ecological site R009XY053OR

Very Shallow South

10-15 PZ

Last updated: 5/06/2025
Accessed: 08/22/2026

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.

Associated sites

R009XY003OR	Fan 10-15 PZ Fan 10-15" PZ
R009XY050OR	Loamy Bench 10-15 PZ Loamy Bench 10-15" PZ
R009XY051OR	Loamy South 10-15 PZ Loamy South 10-15" PZ
R009XY053OR	Very Shallow South 10-15 PZ Loamy Shallow South 10-15" PZ
R009XY054OR	Loamy North 10-15 PZ Loamy North 10-15" PZ

Similar sites

R009XY053OR	Very Shallow South 10-15 PZ Loamy Shallow South 10-15" PZ (higher production)
-------------	---

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on south facing aspects along the lower slopes of canyons. Slopes range from 2 to 90% with slopes of 30 to 60% being the most typical. Elevation varies from 800 to 2800 feet.

Table 2. Representative physiographic features

Landforms	(1) Canyon
Elevation	240 – 850 m
Slope	0 – 90 %
Aspect	S

Climatic features

The annual precipitation ranges from 10 to 15 inches. The precipitation occurs as rain and snow during the months of November through March. Localized, occasionally severe, convection storms occur during the summer. The mean annual air temperature is approximately 50 degrees F. Extreme temperatures range from 100 degrees F. to -20 degrees F. Soil temperature regimes are mesic. The frost-free period ranges from 90 to 140 days. The period of optimum plant growth is from early April through June.

Table 3 Representative climatic features

Frost-free period (average)	140 days
Freeze-free period (average)	
Precipitation total (average)	380 mm

Influencing water features

Soil features

The soils of the site are formed in colluvium over old, highly weathered lower Miocene basalt bedrock. They are very shallow, less than 10 inches thick, extremely gravelly loams. Soil permeability is moderate. The available water holding capacity (AWC) is 1 to 2 inches. The erosion potential is very high.

Table 4. Representative soil features

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

Ecological dynamics

Range in Characteristics:

Variability in plant composition and production is dependent on soil depth and surface texture. Buckwheat increases at shallower depths and on coarser textured surfaces. Bluebunch wheatgrass increases on deeper soils and on finer textured surfaces. Production increases with soil depth.

Response to Disturbance:

If the condition of the site deteriorates as a result of overgrazing, bluebunch wheatgrass decreases. Buckwheat, sand dropseed, and red threeawn, along with a variety of forbs increase. Cheatgrass and Japanese brome invade. With further deterioration all species decrease, areas of bare ground become extensive, soil erosion rapidly accelerates and potential site productivity is drastically reduced.

State and transition model

Additional community tables

Table 5. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production ()	Foliar Cover (%)
Grass/Grasslike					
1	Perennial Deep-rooted Dominant			45-90	
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	45-90	–
2	Perennial Deep-rooted Sub-dominant			7-18	
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	7-18	–
	sand dropseed	SPCR	<i>Sporobolus cryptandrus</i>	7-18	–
5	PPGG			4-9	
	purple threeawn	ARPU9	<i>Aristida purpurea</i>	2-4	–
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	2-4	–
Forb					
7	Perennial All Dominant			112-135	
	Blue Mountain buckwheat	ERST4	<i>Eriogonum strictum</i>	112-135	–
8	Perennial All Sub-dominant			4-13	
	plains pricklypear	OPPO	<i>Opuntia polyacantha</i>	2-7	–
	Oregon twinpod	PHOR2	<i>Physaria oregona</i>	2-7	–
9	PPFF			2-18	
	common yarrow	ACMI2	<i>Achillea millefolium</i>	0-1	–
	milkvetch	ASTRA	<i>Astragalus</i>	0-1	–
	Douglas' dustymaiden	CHDO	<i>Chaenactis douglasii</i>	0-1	–
	Elko cryptantha	CRIN9	<i>Cryptantha interrupta</i>	0-1	–
	shaggy fleabane	ERPU2	<i>Erigeron pumilus</i>	0-1	–
	hairy false goldenaster	HEVI4	<i>Heterotheca villosa</i>	0-1	–
	desertparsley	LOMAT	<i>Lomatium</i>	0-1	–
	tufted evening primrose	OECA10	<i>Oenothera caespitosa</i>	0-1	–
	beardtongue	PENST	<i>Penstemon</i>	0-1	–
	Oregon yampah	PEOR6	<i>Perideridia oregana</i>	0-1	–
	phacelia	PHACE	<i>Phacelia</i>	0-1	–
	phlox	PHLOX	<i>Phlox</i>	0-1	–
Shrub/Vine					
15	SSSS			2-9	
	yellow rabbitbrush	CHVI8	<i>Chrysothamnus viscidiflorus</i>	1-3	–
	rubber rabbitbrush	ERNA10	<i>Ericameria nauseosa</i>	1-3	–

	spiny greasebush	GLSP	<i>Glossopetalon spinescens</i>	1-3	–
--	------------------	------	---------------------------------	-----	---

Animal community

Livestock Grazing: This site is not suited to livestock grazing on steep slopes because of soil instability. On moderate slopes it is suited to very limited spring and fall use by livestock under a planned grazing system. The key species is bluebunch wheatgrass. Bluebunch wheatgrass can be damaged if heavily grazed during periods of flowering and seed formation when root reserves and soil moisture is low. Use in the spring should be postponed until the soils are firm enough to prevent trampling damage and soil mass movement.

Wildlife: When the ecological condition is high this site provides limited food for deer, other mammals and upland birds. Native Wildlife Associated With The Potentilla Climax Community: Mule deer, white-tail deer, rodents and a variety of upland birds make limited use of this site.

Hydrological functions

The soils of this site have very low water holding capacities providing little late season water for plant growth. The hydrologic cover condition is poor even when the ecological condition is high.

Other information

When in poor condition this site has virtually no potential for range seeding because it is droughty and stony. Technology for seeding is currently not available.

Contributors

AV. Bahn
Justin Gredvig

Approval

Kirt Walstad, 5/06/2025

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
Contact for lead author	Oregon NRCS State Rangeland Management Specialist
Date	07/30/2012
Approved by	
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):
5-15%

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 = 2-5

9. Soil surface structure and SOM content (include type of structure and A-horizon color and thickness): Very shallow, well
drained, with an extremely gravelly loam surface - bedrock at less than 10"; low to moderate OM (1-3%)

10. Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on
infiltration and runoff: Sparse ground cover (20-40%) and very steep slopes (2-90%) only slightly 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: Buckwheat > Bluebunch wheatgrass > Sand dropseed > other forbs > other grasses > shrubs

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: 400, Normal: 200, Unfavorable: 100 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: Buckwheat, sand dropseed and three-awn will increase with deterioration of plant community. Annual bromes and annual fescues invade sites that have lost deep rooted perennial grass functional groups. Excessive erosion may occur, deteriorating site potential.
-

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