

# Ecological site R025XY022OR SHRUBBY SOUTH SLOPES 11-13 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.

#### **MLRA** notes

Major Land Resource Area (MLRA): 025X-Owyhee High Plateau

MLRA 25 lies within the Intermontane Plateaus physiographic province. The southern half is in the Great Basin Section of the Basin and Range Province. This part of the MLRA is characterized by isolated, uplifted fault-block mountain ranges separated by narrow, aggraded desert plains. This geologically older terrain has been dissected by numerous streams draining to the Humboldt River. The northern half of the area lies within the Columbia Plateaus geologic province. This part of the MLRA forms the southern boundary of the extensive Columbia Plateau basalt flows. Deep, narrow canyons drain to the Snake River which incise the broad volcanic plain. The Humboldt River, route of a major western pioneer trail, crosses the southern half of this area. Reaches of the Owyhee River in this area have been designated as National Wild and Scenic Rivers.

#### Similar sites

R025XY020OR	SOUTH SLOPES 11-13 PZ
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Table 1. Dominant plant species

Tree	Not specified
	<ul><li>(1) Purshia tridentata</li><li>(2) Artemisia tridentata subsp. tridentata</li></ul>
Herbaceous	(1) Pseudoroegneria spicata subsp. spicata

#### Physiographic features

This site occurs on south-facing slopes of tablelands and canyon sideslopes. Slopes range from 15 to 70%. Elevation varies from 4,300 to 4,800 feet.

Table 2. Representative physiographic features

Landforms	(1) Valley side (2) Plateau (3) Canyon
Elevation	4,300–4,800 ft
Slope	15–70%
Aspect	S, SW

#### **Climatic features**

The annual precipitation ranges from 11 to 13 inches, most of which occurs in the form of snow during the months of December through March. Localized convection storms occasionally occur during the summer. The soil temperature regime is mesic bordering on frigid with a mean annual air temperature of 45 degrees F. Temperature extremes range from 100 to -30 degrees F. The frost free period ranges from less than 60 to 90 days. The optimum growth period for native plants is from April through July.

Table 3. Representative climatic features

Frost-free period (average)	90 days
Freeze-free period (average)	
Precipitation total (average)	13 in

# Influencing water features

#### Soil features

The soils of this site are typically moderately deep to very deep and well drained. Typically, the surface layer is an extremely stony ashy fine sandy loam about 2 to 3 inches thick. The subsoil varies from a very gravelly ashy fine sandy loam to a very gravelly ashy loam that is 16 to 22 inches thick. A moderate to heaavy argillic is typically found below 20 inches. Depth to bedrock or an indurated pan varies from moderately deep to very deep. The permeability is slow to moderate. The available water holding capacity is about 4 to 6 inches for the profile. The erosion potential is moderate to severe.

Table 4. Representative soil features

Surface texture	(1) Ashy fine sandy loam (2) Extremely stony
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Slow to moderate
Soil depth	20–60 in
Available water capacity (0-40in)	4–6 in

# **Ecological dynamics**

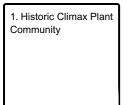
The potential native plant community is dominated by antelope bitterbrush, basin big sagebrush and bluebunch wheatgrass. Basin wildrye, Cusick's bluegrass and Sandberg bluegrass are present. Vegetative composition of the community is approximately 70 percent grasses, 5 percent forbs and 25 percent shrubs.

Antelope bitterbrush increases on areas of deeper colluvium and fractured substratums. Production will increase at the upper end of the precipitation zone and on deeper foot slope soils. As a fire susceptible site, the amount of antelope bitterbrush and basin big sagebrush is influeneced by fire frequency.

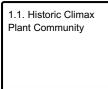
If the condition of the site deteriorates as a result of overgrazing, antelope bitterbrush and bluebunch wheatgrass will decrease while basin big sagebrush increases and annuals invade. Cheatgrass is a strong invader. With further deterioration, bare ground increases and excessive erosion in the bare soil interspaces reduces the stie productivity and contributes to downstream sedimentation.

### State and transition model

#### **Ecosystem states**



#### State 1 submodel, plant communities



# State 1 Historic Climax Plant Community

# **Community 1.1 Historic Climax Plant Community**

The potential native plant community is dominated by antelope bitterbrush, basin big sagebrush and bluebunch wheatgrass. Basin wildrye, Cusick's bluegrass and Sandberg bluegrass are present. Vegetative composition of the community is approximately 70 percent grasses, 5 percent forbs and 25 percent shrubs.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	
Grass/Grasslike	700	840	980
Shrub/Vine	250	300	350
Forb	50	60	70
Total	1000	1200	1400

# **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	Dominant deep rooted	perennial	grasses	480–720	
	bluebunch wheatgrass	PSSPS	Pseudoroegneria spicata ssp. spicata	480–720	-
2	Subdominant deep roo	ted peren	nial grasses	24–60	
	basin wildrye	LECI4	Leymus cinereus	24–60	_
3	Sub-dominant shallow rooted perennial grasses			24–60	
	Sandberg bluegrass	POSE	Poa secunda	24–60	-
4	Other perennial grasse	es		48–96	
	Thurber's needlegrass	ACTH7	Achnatherum thurberianum	12–24	_
	squirreltail	ELEL5	Elymus elymoides	12–24	_
	Idaho fescue	FEID	Festuca idahoensis	12–24	_
	Cusick's bluegrass	POCU3	Poa cusickii	12–24	_
Forb			•		
5	Dominant, perennial fo	orbs		48–96	
	milkvetch	ASTRA	Astragalus	12–24	_
	arrowleaf balsamroot	BASA3	Balsamorhiza sagittata	12–24	_
	tapertip hawksbeard	CRAC2	Crepis acuminata	12–24	_
	lupine	LUPIN	Lupinus	12–24	_
6	Other perennial forbs			9–57	
	common yarrow	ACMI2	Achillea millefolium	1–7	_
	desertparsley	LOMAT	Lomatium	1–7	_
	phacelia	PHACE	Phacelia	1–7	_
	phlox	PHLOX	Phlox	1–7	_
	deathcamas	ZIGAD	Zigadenus	1–7	_
	fleabane	ERIGE2	Erigeron	1–7	_
	buckwheat	ERIOG	Eriogonum	1–7	_
	stoneseed	LITHO3	Lithospermum	1–5	_
	agoseris	AGOSE	Agoseris	1–5	_
	onion	ALLIU	Allium	1–5	_
Shrub	/Vine				
7	Dominant, perennial s	hrubs		180–240	
	antelope bitterbrush	PUTR2	Purshia tridentata	180–240	_
8	Sub-dominant, perenn	ial shrubs		60–120	
	basin big sagebrush	ARTRT	Artemisia tridentata ssp. tridentata	60–120	_
9	All other perennial shrubs			14–68	
	Wyoming big sagebrush	ARTRW8	Artemisia tridentata ssp. wyomingensis	7–14	_
	yellow rabbitbrush	CHVI8	Chrysothamnus viscidiflorus	7–14	_
	rubber rabbitbrush	ERNA10	Ericameria nauseosa	7–14	_
	wax currant	RICE	Ribes cereum	7–14	_

This site offers food and cover for antelope, mule deer, rodents and a variety of birds. It is an important wintering area for mule deer.

### **Hydrological functions**

The soils are in hydrologic group C. The soils of this site have moderately high runoff potential.

# Other products

This site is suited to use by cattle, sheep and horses in late spring, summer and fall under a planned grazing system. Use should be postponed until the soils are firm enough to prevent trampling damage and soil compaction.

#### **Contributors**

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## **Approval**

Kendra Moseley, 4/25/2024

bare ground):

# 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)	
Contact for lead author	
Date	05/20/2024
Approved by	Kendra Moseley
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Inc	Indicators		
1.	Number and extent of rills:		
2.	Presence of water flow patterns:		
3.	Number and height of erosional pedestals or terracettes:		
4.	Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not		

5.	Number of gullies and erosion associated with gullies:
6.	Extent of wind scoured, blowouts and/or depositional areas:
7.	Amount of litter movement (describe size and distance expected to travel):
8.	Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):
9.	Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):
10.	Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:
11.	Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):
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:
	Sub-dominant:
	Other:
	Additional:
13.	Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):
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):
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:
7.	Perennial plant reproductive capability: