

Ecological site R025XY025OR ASHY PLATEAU 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.

Associated sites

R025XY017OR	SHALLOW GRAVELLY CLAYPAN 11-13 PZ Shallow Gravelly Loam 11-13" PZ
R025XY020OR	SOUTH SLOPES 11-13 PZ South Slopes 11-13" PZ
R025XY026OR	CLAYPAN SOUTH SLOPES 13-16 PZ Shallow South Slopes 11-13" PZ
R025XY030OR	DROUGHTY NORTH SLOPES 11-13 PZ Droughty North Slopes 11-13" PZ
R025XY032OR	NORTH SLOPES 11-13 PZ North Slopes 11-13" PZ

R025XY038OR	CLAYPAN NORTH SLOPES 11-13 PZ Shallow North Slopes 11-13" PZ
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Similar sites

R025XY010OR	LOAMY 8-11 PZ Loamy 8-11" PZ (lower precipitation)
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Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Artemisia tridentata subsp. trifida</i>
Herbaceous	(1) <i>Festuca idahoensis</i> (2) <i>Pseudoroegneria spicata subsp. spicata</i>

Physiographic features

This site occurs on tablelands. Slopes range from 2 to 12%. Elevation varies from 4,700 to 6,500 feet.

Table 2. Representative physiographic features

Landforms	(1) Plateau
Flooding frequency	None
Ponding frequency	None
Elevation	4,700–6,500 ft
Slope	0–15%
Water table depth	60 in
Aspect	Aspect is not a significant factor

Climatic features

Influencing water features

Soil features

The soils of this site are shallow to moderately deep and well drained. Typically the surface layer is a ashy silt loam to a depth of 14 inches. The subsoil is a clay loam and clay between 14 inches and bedrock which occurs at 26 inches. The permeability is slow and the soil is well drained. The available water holding capacity is about 4 to 6 inches for the profile. The potential for erosion is moderate.

Table 3. Representative soil features

Surface texture	(1) Silt loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderate
Soil depth	20–40 in
Available water capacity (0-40in)	4–6 in

Ecological dynamics

The potential native plant community is dominated by basin big sagebrush and Idaho fescue. Bluebunch wheatgrass is common in the stand. Cusick bluegrass and Sandberg bluegrass are present in the stand. Vegetative composition of the community is approximately 85% grasses, 5% forbs and 10% shrubs.

This site shows little variation in composition and production. Idaho fescue will increase on slight north aspects and at the upper end of the precipitation zone. Bluebunch wheatgrass will increase on the lower end of the precipitation zone. Production will increase at the upper end of the precipitation zone.

If the condition of the site deteriorates as a result of overgrazing, Idaho fescue and bluebunch wheatgrass will decrease while basin big sagebrush and Sandberg bluegrass increase. With further deterioration, cheatgrass and other annuals invade. Bare ground increases and excessive erosion in the bare soil interspaces markedly reduces the site productivity and contributes to downstream sedimentation.

State and transition model

Ecosystem states

1. Historic Climax Plant Community

State 1 submodel, plant communities

1.1. Historic Climax
Plant Community

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

The potential native plant community is dominated by basin big sagebrush and Idaho fescue. Bluebunch wheatgrass is common in the stand. Cusick bluegrass and Sandberg bluegrass are present. Vegetative composition of the community is approximately 85% grasses, 5% forbs and 10% shrubs.

Table 4. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	510	765	1020
Shrub/Vine	60	90	120
Forb	30	45	60
Total	600	900	1200

Additional community tables

Table 5. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass/Grasslike					
1	Dominant, perennial, deep rooted grasses			585–855	
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	405–585	–
2	Sub-dominant, perennial, deep rooted grasses			180–270	
	bluebunch wheatgrass	PSSPS	<i>Pseudoroegneria spicata</i> ssp. <i>spicata</i>	180–270	–
3	Sub-dominant, perennial, shallow rooted grasses			18–45	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	18–45	–
4	All other perennial grasses			36–117	
	Cusick's bluegrass	POCU3	<i>Poa cusickii</i>	18–90	–
	prairie Junegrass	KOMA	<i>Koeleria macrantha</i>	9–27	–
	squirreltail	ELEL5	<i>Elymus elymoides</i>	9–18	–
Forb					
5	All perennial forbs			50–100	
	milkvetch	ASTRA	<i>Astragalus</i>	10–20	–
	tapertip hawksbeard	CRAC2	<i>Crepis acuminata</i>	10–20	–
	lupine	LUPIN	<i>Lupinus</i>	10–20	–
	phlox	PHLOX	<i>Phlox</i>	5–10	–
	fleabane	ERIGE2	<i>Erigeron</i>	5–10	–
	onion	ALLIU	<i>Allium</i>	5–10	–
	pussytoes	ANTEN	<i>Antennaria</i>	5–10	–
Shrub/Vine					
6	Dominant, perennial shrub			45–90	
	basin big sagebrush	ARTRT	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	45–90	–
7	Other perennial shrubs			10–30	
	yellow rabbitbrush	CHVI8	<i>Chrysothamnus viscidiflorus</i>	5–15	–
	rubber rabbitbrush	ERNA10	<i>Ericameria nauseosa</i>	5–15	–

Animal community

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

Hydrological functions

The soils are in hydrologic group B. The soils of this site have moderately low 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

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.

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Contact for lead author	State Rangeland Management Specialist for NRCS in Oregon
Date	05/15/2017
Approved by	Kendra Moseley
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None.
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2. **Presence of water flow patterns:** Water flow patterns are none to rare. In areas subject to summer convection storms and rapid snowmelt, short (<1m) and stable flow patterns can be expected. Flow paths are not connected.
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3. **Number and height of erosional pedestals or terracettes:** Pedestals are none to few on this site. As clay content in soil increases slight pedestalling may occur.
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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):** Bare Ground 15-35% depending on amount of surface gravels.
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5. **Number of gullies and erosion associated with gullies:** None.
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6. **Extent of wind scoured, blowouts and/or depositional areas:** None.
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7. **Amount of litter movement (describe size and distance expected to travel):** Fine litter (foliage from grasses and annual & perennial forbs) – limited movement; expected to move no more than the distance of slope length during intense summer convection storms or rapid snowmelt events. Persistent litter (large woody material) will remain in place except during large rainfall events.
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8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):** Moderate to high resistance to erosion. Aggregate stability values should be 2 to 4 on most soil textures found on this site.
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Surface texture is typically ashy silt loam. Soil surface color is typically brown (10YR3/3) (dry). Surface structure is weak thin platy (A1--0-9 cm) and medium and fine subangular blocky (A2--9-27 cm)(Babala). Rock fragments range from 0-35 percent.
*Draft Soil Survey-subject to change.
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Typical vegetation composition is 80 percent grasses, 5 percent forbs, and 15 percent shrubs. Perennial herbaceous plants (i.e. Idaho fescue & bluebunch wheatgrass) slow runoff and increase infiltration. Shrub canopy and associated litter break raindrop impact and provide opportunity for snow catch and accumulation on site.
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11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):** Compacted layers are none. Weak thin platy structure near surface and fine subangular blocky structure or subsoil argillic horizons are not to be interpreted as compacted layers.
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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, perennial bunchgrasses (Idaho fescue > bluebunch wheatgrass)

Sub-dominant: Tall shrubs (Basin big sagebrush)

Other: Other perennial grasses>forbs=other shrubs

Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Normal decadence and mortality for this site is expected to be low 2-5%. As composition of sagebrush increases decadence and mortality will also increase.

14. **Average percent litter cover (%) and depth (in):** Between plant interspaces

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Favorable – 1200 lbs/ac, Average -- 900 lbs/ac, Unfavorable – 600 lbs/ac. Spring moisture significantly affects total 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:** Potential invaders include cheatgrass, medusahead, annual mustards in response to disturbance.

17. **Perennial plant reproductive capability:** All functional groups should reproduce in average (or normal) and above average growing season years. Reduced growth and reproduction occur during extreme or extended drought conditions.
