

Ecological site R024XY011OR **SILTY 6-10 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.

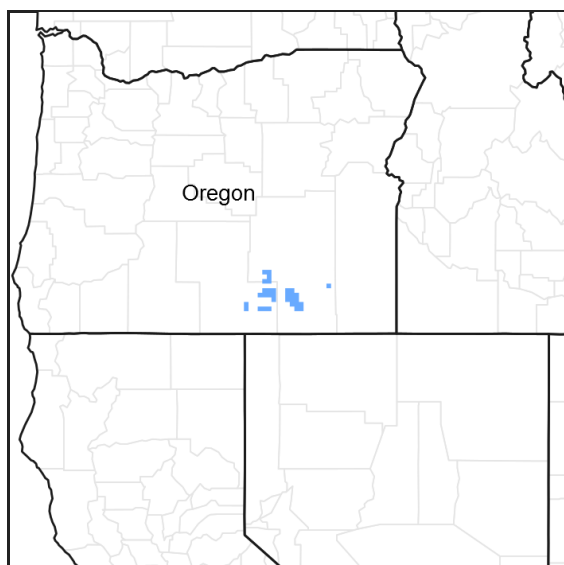


Figure 1. Mapped extent

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

R024XY007OR	DRY PONDED CLAY 6-10 PZ Dry Pondered Clay (swale position, loam over clayey subsoil, different composition - ARTRT/LETR5 association)
R024XY014OR	SODIC TERRACE 6-10 PZ Sodic Terrace 6-10 PZ (higher terrace position, higher salts and carbonates, different composition - ARTRT-GRSP-SAVE4/ACHY association)
R024XY015OR	DESERT LOAM 6-10 PZ Desert Loam 6-10 PZ (higher salts and carbonates, shallow soil, different composition - ATCO-PIDE4 dominant)
R024XY016OR	LOAMY 8-10 PZ Loamy 8-10 PZ (loam over clayey subsoil, different composition - ARTRW9/ACTH7-ACHY-PSSPS association)
R024XY017OR	SHALLOW LOAM 8-10 PZ Shallow Loam 8-10 PZ (shallow soil, loam over clayey subsoil, different composition - ARTRW8/ACTH7-ACHY-PSSPS association)
R024XY018OR	SANDY LOAM 8-10 PZ Sandy Loam 8-10 PZ (sandy loam surface, different composition – ARTRW8/HECO26-ACHY association)

R024XY122OR	DRY LAKEBED 6-10 PZ Dry Lakebed 6-10 PZ (clayey soil, different composition - KRLA2-ATNU2/ELEL5 association)
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Similar sites

R024XY122OR	DRY LAKEBED 6-10 PZ Dry Lakebed 6-10 PZ (calyey soil, different composition - KRLA2-ATNU2/ELEL5 association)
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Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Krascheninnikovia lanata</i>
Herbaceous	(1) <i>Achnatherum hymenoides</i>

Physiographic features

This site occurs on low terraces and along droughty drainages in dry lake basins and valley floors. It is typically found on nearly level positions. Slopes range from 0-3 percent and elevations from 4000-4600 feet.

Table 2. Representative physiographic features

Landforms	(1) Valley floor (2) Terrace (3) Drainageway
Flooding duration	Extremely brief (0.1 to 4 hours)
Flooding frequency	None to very rare
Ponding duration	Very brief (4 to 48 hours)
Ponding frequency	None to rare
Elevation	4,000–4,600 ft
Slope	0–3%
Aspect	Aspect is not a significant factor

Climatic features

The annual precipitation ranges from 6 to 10 inches, most of which occurs in the form of rain during the months of November through March. The soil temperature is mesic with a mean air temperature of 48 degrees F. Temperature extremes range from 100 to -10 degrees F. The frost-free period ranges from 90 to 120 days. The optimum period for plant growth is from April through June.

Table 3. Representative climatic features

Frost-free period (average)	120 days
Freeze-free period (average)	0 days
Precipitation total (average)	10 in

Influencing water features

Soil features

The soils of this site are typically very deep, silty and well drained. Surface textures are silt loams. Subsoils vary from silt loams to silty clay loams. Stones and gravels are not present. Permeability is moderate. The available water holding capacity (AWC) is 6 to 10 inches. Depth to the water table is greater than 6 feet. The potential for

erosion is moderate.

Representative soils for this site-
Norad silt loam, 0-2%.

Table 4. Representative soil features

Parent material	(1) Loess–rhyolite
Surface texture	(1) Silt loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderate
Soil depth	72 in

Ecological dynamics

The potential native plant community is strongly dominated by a uniform stand of winterfat. Indian ricegrass is the dominant deep rooted grass. Bottlebrush squirreltail and Sandberg bluegrass are present. Forbs are a minor component. The potential vegetative composition is approximately 70 percent shrubs, 25 percent grasses and 5 percent forbs. The approximate ground cover is 40-50 percent (basal and crown).

Range in Characteristics-

This site is uniform in appearance with little variation.

Response to Disturbance-States

If heavy grazing causes site deterioration, winterfat and Indian ricegrass decrease in the stand. Squirreltail increases and annual forbs strongly invade along with cheatgrass. With further deterioration annual forbs continue to invade and areas of bare soil become extensive.

States: ELEM5-POSE-bare ground; Annuals-bare ground

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1 Reference State

Community 1.1 Reference Plant Community

The potential reference plant community is strongly dominated by a uniform stand of winterfat. Indian ricegrass is the dominant deep rooted grass. Bottlebrush squirreltail and Sandberg bluegrass are present. Forbs are a minor component. The potential vegetative composition is approximately 70 percent shrubs, 25 percent grasses and 5 percent forbs. The approximate ground cover is 40-50 percent (basal and crown).

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Shrub/Vine	150	262	375
Grass/Grasslike	40	70	100
Forb	10	18	25
Total	200	350	500

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, perennial, moderate rooted bunchgrass			48–70	
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	48–70	–
2	Sub-dominant, moderate rooted bunchgrasse			18–35	
	squirreltail	ELEL5	<i>Elymus elymoides</i>	18–35	–
3	Dominant, perennial, shallow rooted grass			8–20	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	8–20	–
4	Other perennial grasses			4–12	
	beardless wildrye	LETR5	<i>Leymus triticoides</i>	4–12	–
Forb					
5	Perennial forbs			8–30	
	woollypod milkvetch	ASPU9	<i>Astragalus purshii</i>	2–8	–
	buckwheat	ERIOG	<i>Eriogonum</i>	2–8	–
	phlox	PHLOX	<i>Phlox</i>	2–8	–
	scarlet globemallow	SPCO	<i>Sphaeralcea coccinea</i>	2–6	–
Shrub/Vine					
6	Dominant evergreen, sprouting shrub			210–245	
	winterfat	KRLA2	<i>Krascheninnikovia lanata</i>	210–245	–
7	Minor Shrubs			30–50	
	sickle saltbush	ATFA	<i>Atriplex falcata</i>	18–35	–
	bud sagebrush	PIDE4	<i>Picrothamnus desertorum</i>	7–18	–
8	Other Shrubs			7–28	
	Wyoming big sagebrush	ARTRW8	<i>Artemisia tridentata ssp. wyomingensis</i>	0–7	–
	shadscale saltbush	ATCO	<i>Atriplex confertifolia</i>	0–7	–
	yellow rabbitbrush	CHVI8	<i>Chrysothamnus viscidiflorus</i>	0–7	–
	spiny hopsage	GRSP	<i>Grayia spinosa</i>	0–7	–
	shortspine horsebrush	TESP2	<i>Tetradymia spinosa</i>	0–7	–

Animal community

Livestock grazing-

This site is suited to fall and winter use by cattle, sheep and horses under a planned grazing system. The key species is winterfat. Winterfat can be severely damaged by heavy late winter/early spring grazing. Care should be also be taken to avoid trampling damage and soil compaction by spring grazing when the soils are wet. Rest is recommended at least once every three years.

Wildlife-

This site is very important as a wintering area for many species of wildlife. Antelope and mule deer make good use of winterfat for fall and winter forage. Small mammals and their associated predators are also common.

Hydrological functions

Watershed-

The hydrologic cover condition is good when the ecological condition is high. The soils of this site have moderate infiltration rates and relatively low runoff potential.

Other information

This site has relatively low potential for range seeding when in poor condition due to problems associated with winterfat re-establishment. Locally, winterfat seed has had poor germination with low establishment rates. This is compounded by the droughty nature of the site.

Contributors

CT,TB,AB
J.Joye(OSU)
NRCS/BLM Team
SCS/BLM Team, Burns

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	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

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 bare ground):**

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:**
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17. **Perennial plant reproductive capability:**
