

Ecological site R010XC063OR SR Droughty North 9-12 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.

Associated sites

R010XC020OR	SR Loamy 9-12 PZ SR Loamy 9-12" PZ
R010XC021OR	SR Clayey 9-12 PZ SR Clayey 9-12" PZ
R010XC025OR	SR Sandy 9-12 PZ SR Sandy 9-12 PZ
R010XC043OR	SR South 9-12 PZ SR South 9-12" PZ
R010XC064OR	SR North 9-12 PZ SR North 9-12 PZ

Similar sites

R010XC064OR	SR North 9-12 PZ SR North 9-12 PZ (cooler site, predominant on due north aspects, different composition- Idaho fescue dominant)
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Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Artemisia tridentata</i> var. <i>wyomingensis</i> (2) <i>Artemisia tridentata</i> ssp. <i>tridentata</i>
Herbaceous	(1) <i>Pseudoroegneria spicata</i> ssp. <i>inermis</i> (2) <i>Festuca idahoensis</i>

Physiographic features

This site occurs on north facing aspects of mid elevation terraces in the Malheur, Owyhee and adjacent Snake River drainage. Slopes can vary from northeast to northwest and typically range from 15 to 70%. Elevations range from 2,200 to 3,500 feet.

Table 2. Representative physiographic features

Landforms	(1) Terrace
Elevation	671–1,067 m
Slope	15–70%
Aspect	N, NE, NW

Climatic features

The annual precipitation ranges from 9 to 12 inches, most of which occurs in the form of rain and snow during the months of December through March. Localized convection storms occasionally occur during the summer. The soil temperature regime is mesic with a mean air temperature of 51 degrees F. Temperature extremes range from 100 to -20 degrees F. The frost free period ranges from 110 to 150 days. The optimum growth period for plant growth is April through June.

Table 3. Representative climatic features

Frost-free period (average)	150 days
Freeze-free period (average)	0 days
Precipitation total (average)	305 mm

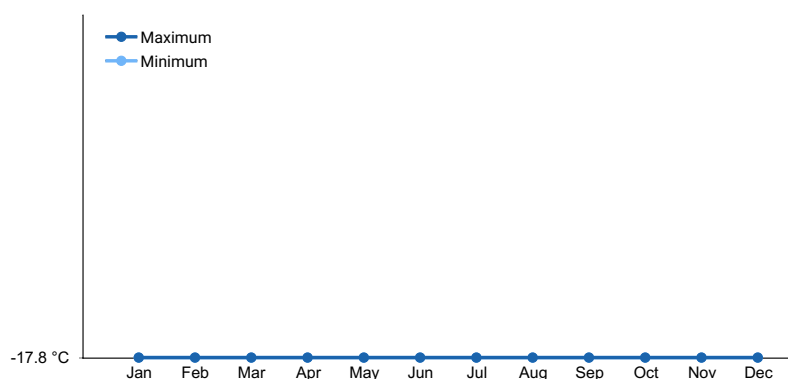


Figure 1. Monthly average minimum and maximum temperature

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 a silt loam to a very fine sandy loam 5 to 20 inches thick. The subsoil is a silty loam to clay loam 15 to over 30 inches thick. Depth to lacustrine or tuffaceous sediments ranges from 20 to over 60 inches. Permeability is moderate to moderately slow. The available water holding capacity (AWC) is about 4 to 6 inches for the profile. The erosion potential is moderate to severe.

Table 4. Representative soil features

Surface texture	(1) Silt loam (2) Very fine sandy loam
Family particle size	(1) Loamy
Drainage class	Well drained
Permeability class	Moderate to moderately slow
Soil depth	51–152 cm
Available water capacity (0-101.6cm)	10.16–15.24 cm

Ecological dynamics

The potential native plant community is dominated by Idaho fescue and bluebunch wheatgrass. Wyoming big sagebrush and lesser amounts of basin big sagebrush are common. Sandberg bluegrass and a variety of forbs and other shrubs are present. Vegetative composition of the community is approximately 85 percent grasses, 5 percent forbs and 10 percent shrubs. The approximate ground cover is 80 to 90 percent (basal and crown).

Range in Characteristics:

Idaho fescue increases on due north slopes. Beardless wheatgrass increases on a silty surface and on easterly and westerly exposures. Thurber's needlegrass increases on a very fine sandy loam surface and on drier sites. Basin big sagebrush increases as precipitation approaches 12 inches. Spiny hopsage increases on droughty slump areas. Production increases on deeper foot slope soils and at the upper end of the precipitation zone.

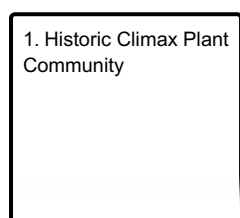
Response to Disturbance:

When the condition of the site deteriorates as a result of over grazing, Idaho fescue species decreases. Beardless and bearded bluebunch wheatgrass, Sandberg bluegrass, Wyoming and basin big sagebrush increase. With continued deterioration bluebunch wheatgrass decreases and annuals strongly invade. With fire big sagebrush is severely impacted. Under deteriorated conditions rabbitbrush increases slightly and the site is dominated by cheatgrass, other annuals, and biennial forbs. Bare ground increases and excessive erosion particularly in incised channel areas, contributes to downstream sedimentation.

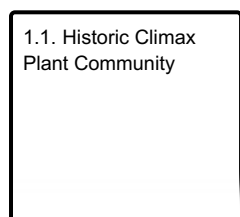
States: ARTRW/PSSPI-POSE-BRTE; CHVI8/ POSE-BRTE/biennial forbs(following fire on degraded range)

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 beardless wheatgrass and Idaho fescue. Wyoming big sagebrush and lesser amounts of basin big sagebrush are common. Bearded bluebunch wheatgrass, Thurber's needlegrass, Sandberg bluegrass and a variety of forbs and other shrubs are present. Vegetative composition of the community is approximately 85 percent grasses, 5 percent forbs and 10 percent shrubs. The approximate ground cover is 80 to 90 percent (basal and crown).

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	857	1143	1143
Shrub/Vine	101	135	202
Forb	50	67	101
Total	1008	1345	1446

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	Dominant, deep rooted perennial grass			673–807	
	beardless wheatgrass	PSSPI	<i>Pseudoroegneria spicata</i> ssp. <i>inermis</i>	673–807	–
2	Sub-dominant, deep-rooted perennial grasses			404–740	
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	269–404	–
	bluebunch wheatgrass	PSSPS	<i>Pseudoroegneria spicata</i> ssp. <i>spicata</i>	67–202	–
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	67–135	–
4	Sub-dominant, shallow-rooted perennial grass			13–40	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	13–40	–
5	Other grasses			6–72	
	needle and thread	HECO26	<i>Hesperostipa comata</i>	0–27	–
	basin wildrye	LECI4	<i>Leymus cinereus</i>	0–27	–
	squirreltail	ELEL5	<i>Elymus elymoides</i>	6–18	–
Forb					
7	Dominant perennial forbs			45–72	
	arrowleaf balsamroot	BASA3	<i>Balsamorhiza sagittata</i>	18–27	–
	lupine	LUPIN	<i>Lupinus</i>	18–27	–
	common yarrow	ACMI2	<i>Achillea millefolium</i>	9–18	–
9	Other forbs			36–103	
	hawksbeard	CREPI	<i>Crepis</i>	7–13	–
	milkvetch	ASTRA	<i>Astragalus</i>	7–13	–
	buckwheat	ERIOG	<i>Eriogonum</i>	7–13	–
	stoneseed	LITHO3	<i>Lithospermum</i>	4–11	–
	desertparsley	LOMAT	<i>Lomatium</i>	3–9	–
	fleabane	ERIGE2	<i>Erigeron</i>	3–9	–
	bastard toadflax	COMAN	<i>Comandra</i>	0–9	–
	Indian paintbrush	CASTI2	<i>Castilleja</i>	0–7	–
	brodiaea	BRODI	<i>Brodiaea</i>	1–4	–
	agoseris	AGOSE	<i>Agoseris</i>	1–4	–
	phlox	PHLOX	<i>Phlox</i>	1–4	–
	woodland-star	LITHO2	<i>Lithophragma</i>	1–4	–
Shrub/Vine					
11	Dominant, evergreen shrubs			54–108	
	Wyoming big sagebrush	ARTRW8	<i>Artemisia tridentata</i> ssp. <i>wyomingensis</i>	40–67	–
	basin big sagebrush	ARTRT	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	13–40	–
14	Other shrubs			9–74	
	yellow rabbitbrush	CHVI8	<i>Chrysothamnus viscidiflorus</i>	9–27	–
	spiny hopsage	GRSP	<i>Grayia spinosa</i>	0–27	–
	threetip sagebrush	ARTR4	<i>Artemisia tripartita</i>	0–20	–

Animal community

Livestock Grazing:

This site is suitable for livestock grazing use in the spring, early 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. Grazing management should be keyed for Idaho fescue the preferred species over bluebunch wheaygrass. Deferred grazing or rest is recommended at least once every three years.

Native Wildlife Associated with the Potential Climax Community:

This site is commonly used by pronghorn antelope, mule deer, rabbits, rodents, upland birds and various predators. It is a preferred site for sage grouse rearing. Antelope and mule deer make excellent use of the site for fall, late winter and spring forage.

Hydrological functions

The soils of this site are in an upland topographic position. They have moderately high runoff potential and medium infiltration rates when the hydrologic cover is high. Hydrologic cover is high when the bluebunch wheatgrass and Idaho fescue and other deep rooted bunchgrass components are >70 percent of potential. The soils are in hydrologic group C.

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)	
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:**
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