

Ecological site R021XY310OR

SHALLOW NORTH 14-18 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

R021XY312OR	NORTH SLOPES 14-18 PZ
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Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occurs on north-facing sideslopes.

Table 2. Representative physiographic features

Landforms	(1) Mountain slope
Elevation	1,433–1,981 m
Slope	30–70%
Aspect	N

Climatic features

The annual precipitation ranges from 14 to 18 inches, most of which occurs in the form of snow during the months of October through April. The soil temperature regime is frigid with a mean annual air temperature of about 45 degrees F. Temperature extremes range from 90 to -30 degrees F. The frost free period ranges from 50 to 70 days. The optimum period for plant growth is from June through July.

Table 3. Representative climatic features

Frost-free period (average)	70 days
Freeze-free period (average)	0 days
Precipitation total (average)	457 mm

Influencing water features

Soil features

The soils of this site are very shallow to a claypan or subsoil layer containing over 35 percent rock fragments (typically over 50 percent) which restrict root penetration. The surface layer is loamy and typically contains over 35 percent cobbles and stones. Permeability is slow or moderately slow. The soils are shallow to deep over bedrock. Runoff is medium to rapid. Erosion hazard by water is moderate to high.

Table 4. Representative soil features

Surface texture	(1) Cobbly loam
Permeability class	Slow to moderately slow
Soil depth	25–152 cm
Surface fragment cover >3"	35–50%

Ecological dynamics

If the condition of the site deteriorates as a result of overgrazing, Idaho fescue and bluebunch wheatgrass decrease while Thurber needlegrass and Sandberg bluegrass increase. With further deterioration big sagebrush, shrubby buckwheat, annual grasses and a variety of forbs may dominate the site. Excessive erosion in the bare interspaces markedly reduces the site potential and contributes to downstream sedimentation.

Idaho fescue is the dominant grass on due north aspects. Bluebunch wheatgrass and Sandberg bluegrass increase on soils with coarser surface textures and on more easterly or westerly aspects.

State and transition model



GENERAL MODEL FOR COOL-SEASON BUNCHGRASS RANGELANDS

State 1

HCPC, FEID-PSSP6/ARAR8

Community 1.1

HCPC, FEID-PSSP6/ARAR8

The potential native plant community is dominated by Idaho fescue and low sagebrush. Bluebunch wheatgrass and a variety of other forbs are present in the stand. Vegetative composition of the community is approximately 75% grasses, 5% forbs, and 20% shrubs.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	545	661	777
Shrub/Vine	141	217	293
Forb	50	91	131
Total	736	969	1201

Figure 4. Plant community growth curve (percent production by month).
OR5555, D21 Mid Elev., North, Good Condition. HCPC Growth Curve.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	0	25	50	20	5	0	0	0	0

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 grasses			404–504	
	Idaho fescue	FEID	<i>Festuca idahoensis</i>	404–504	–
2	Sub-dominant deep rooted perennial grasses			111–171	
	bluebunch wheatgrass	PSSP6	<i>Pseudoroegneria spicata</i>	101–151	–
	Thurber's needlegrass	ACTH7	<i>Achnatherum thurberianum</i>	10–20	–
4	Sub-dominant shallow rooted perennial grasses			20–50	
	Sandberg bluegrass	POSE	<i>Poa secunda</i>	20–50	–
5	Other perennial grasses			10–50	
	sedge	CAREX	<i>Carex</i>	0–6	–
	onespike danthonia	DAUN	<i>Danthonia unispicata</i>	0–6	–
	squirreltail	ELEL5	<i>Elymus elymoides</i>	0–6	–
	prairie Junegrass	KOMA	<i>Koeleria macrantha</i>	0–6	–
Forb					
7	Dominant perennial forbs			40–81	
	Hooker's balsamroot	BAHO	<i>Balsamorhiza hookeri</i>	10–20	–
	desertparsley	LOMAT	<i>Lomatium</i>	10–20	–
	lupine	LUPIN	<i>Lupinus</i>	10–20	–
	phlox	PHLOX	<i>Phlox</i>	10–20	–
9	Other perennial forbs			10–50	
	milkvetch	ASTRA	<i>Astragalus</i>	0–6	–
	mariposa lily	CALOC	<i>Calochortus</i>	0–6	–
	fleabane	ERIGE2	<i>Erigeron</i>	0–6	–
	buckwheat	ERIOG	<i>Eriogonum</i>	0–6	–
	largehead clover	TRMA3	<i>Trifolium macrocephalum</i>	0–6	–
Shrub/Vine					
11	Dominant evergreen shrubs			101–202	
	little sagebrush	ARAR8	<i>Artemisia arbuscula</i>	101–202	–
12	Sub-dominant deciduous shrubs			20–40	
	mountain big sagebrush	ARTRV	<i>Artemisia tridentata</i> ssp. <i>vaseyana</i>	10–20	–
	slender buckwheat	ERMI4	<i>Eriogonum microthecum</i>	10–20	–
14	Sub-dominant deciduous (or 1/2 shrubs) shrubs			20–50	
	antelope bitterbrush	PUTR2	<i>Purshia tridentata</i>	20–50	–

Animal community

This site provides food for mule deer.

Hydrological functions

The soils are in hydrologic groups C and D.

Other products

This site has limited suitability for livestock grazing due to steep slopes and coarse fragments. At slopes greater than 50%, cattle use will be reduced.

Other information

This site has limited suitability for seeding due to steep slopes and coarse fragments.

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)	Jeff Repp
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Date	08/22/2012
Approved by	Bob Gillaspy
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:** None to some, moderate to severe sheet & rill erosion hazard

2. **Presence of water flow patterns:** Some in interspaces

3. **Number and height of erosional pedestals or terracettes:** Some to few; limited by vegetation density

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
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7. **Amount of litter movement (describe size and distance expected to travel):** Fine - limited movement
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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):** Moderately resistant to erosion: aggregate stability = 4-6
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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):** Very shallow to deep (limited by a claypan or subsurface layer with >50% rock fragments), well drained gravelly or stony loams or cobbly clay loams: Low OM (1-2%)
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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:** Moderate vegetative cover (55-70%) provides some protection from run off; slopes range from 30-70%; infiltration is slow
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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):** None
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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: Idaho fescue > Low sagebrush > Bluebunch wheatgrass > Antelope bitterbrush = Sandberg bluegrass = dominant forbs > other grasses = other forbs = other shrubs
- Sub-dominant:
- Other:
- Additional:
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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):** Normal decadence and mortality expected
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14. **Average percent litter cover (%) and depth (in):**
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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):** Favorable: 1200, Normal: 900, Unfavorable: 500 lbs/acre/year at high RSI (HCPC)
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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: Perennial brush species and forbs will increase with deterioration of plant community. Western Juniper may invade the site. Cheatgrass and Medusahead invade sites that have lost deep rooted perennial grass functional groups.

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