

Ecological site R029XY159NV DEEP SILTY 5-8 P.Z.

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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.

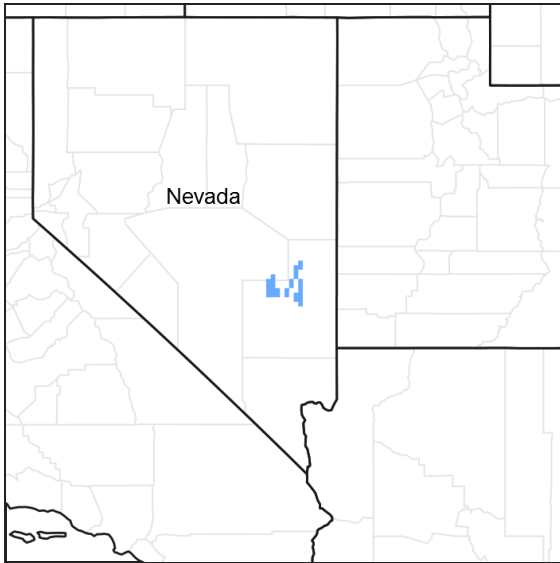


Figure 1. Mapped extent

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

R029XY020NV	SILTY 5-8 P.Z.
R029XY042NV	COARSE SILTY 5-8 P.Z.
R029XY046NV	SANDY LOAM 5-8 P.Z.
R029XY059NV	SHALLOW SILTY 5-8 P.Z.
R029XY117NV	SILTY PLAIN

Similar sites

R029XY017NV	LOAMY 5-8 P.Z. ATCO-ARSP5 codominant; not on basin floors
R029XY117NV	SILTY PLAIN ATBO dominant shrub; less productive site
R029XY059NV	SHALLOW SILTY 5-8 P.Z. Essentially a pure ATCO site
R029XY024NV	SODIC TERRACE 5-8 P.Z. SAVE4 dominant shrub

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Atriplex confertifolia</i> (2) <i>Atriplex bonnevillensis</i>
Herbaceous	(1) <i>Achnatherum hymenoides</i>

Physiographic features

This site occurs on basin floors. Slopes range from 0 to 2 percent. Elevations are 4900 to about 5600 feet.

Table 2. Representative physiographic features

Landforms	(1) Basin floor (2) Alluvial flat
Flooding duration	Extremely brief (0.1 to 4 hours)
Flooding frequency	Rare
Ponding duration	Brief (2 to 7 days) to very brief (4 to 48 hours)
Ponding frequency	None to rare
Elevation	1,494–1,707 m
Slope	0–2%
Aspect	Aspect is not a significant factor

Climatic features

The climate is semiarid with cool, moist winters and warm dry summers. Average annual precipitation is 5 to 8 inches. Mean annual air temperature is 53 to 57 degrees F. The average growing season is about 120 to 160 days.

Table 3. Representative climatic features

Frost-free period (average)	160 days
Freeze-free period (average)	0 days
Precipitation total (average)	203 mm

Influencing water features

There are no influencing water features associated with this site.

Soil features

The soils associated with this site are very deep, well drained soils formed in alluvium and lacustrine deposits from mixed limestone and welded tuff. Surface textures are usually silt loam to loams. The soils are moderately to strongly alkaline. These soils have slow to moderately rapid water intake rates, available water capacity is moderate, and runoff is negligible or very low. Potential for sheet and rill erosion is slight.

Soil series associated with this site are Colval and Saltydog.

Table 4. Representative soil features

Surface texture	(1) Silt loam (2) Loam
Family particle size	(1) Loamy
Drainage class	Well drained

Permeability class	Slow to moderately rapid
Soil depth	183–213 cm
Surface fragment cover <=3"	0%
Surface fragment cover >3"	0%
Available water capacity (0-101.6cm)	16–17.53 cm
Calcium carbonate equivalent (0-101.6cm)	0–40%
Electrical conductivity (0-101.6cm)	0–8 mmhos/cm
Sodium adsorption ratio (0-101.6cm)	1–45
Soil reaction (1:1 water) (0-101.6cm)	7.9–10
Subsurface fragment volume <=3" (Depth not specified)	0%
Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

Where management results in abusive livestock use by cattle and/or feral horses, shadscale, rabbitbrush and horsebrush increase, while Bonneville saltbush, greenmolly kochia, Nevada ephedra and Indian ricegrass decrease. Species likely to invade this site are cheatgrass, annual mustards, and Russian thistle.

Fire Ecology:

The mean fire return interval for salt-desert shrub communities ranges from 35 to 100 years. Increased presence of non-native annual grasses, such as cheatgrass, can alter fire regimes by increasing fire frequency under wet to near-normal summer moisture conditions. When fire does occur, the effect on the ecosystem may be extreme. Increased presence of non-native annual grasses, such as cheatgrass, can alter fire regimes in shadscale communities by increasing fire frequency under wet to near-normal summer moisture conditions. When fire does occur, the effect on the ecosystem may be extreme. Greenmolly kochia has medium fire tolerance. Indian ricegrass can be killed by fire, depending on severity and season of burn. Indian ricegrass reestablishes on burned sites through seed dispersed from adjacent unburned areas. Bottlebrush squirreltail's small size, coarse stems, and sparse leafy material aid in its tolerance of fire. Postfire regeneration occurs from surviving root crowns and from on- and off-site seed sources. Frequency of disturbance greatly influences postfire response of bottlebrush squirreltail. Undisturbed plants within a 6 to 9 year age class generally contain large amounts of dead material, increasing bottlebrush squirreltail's susceptibility to fire.

State and transition model

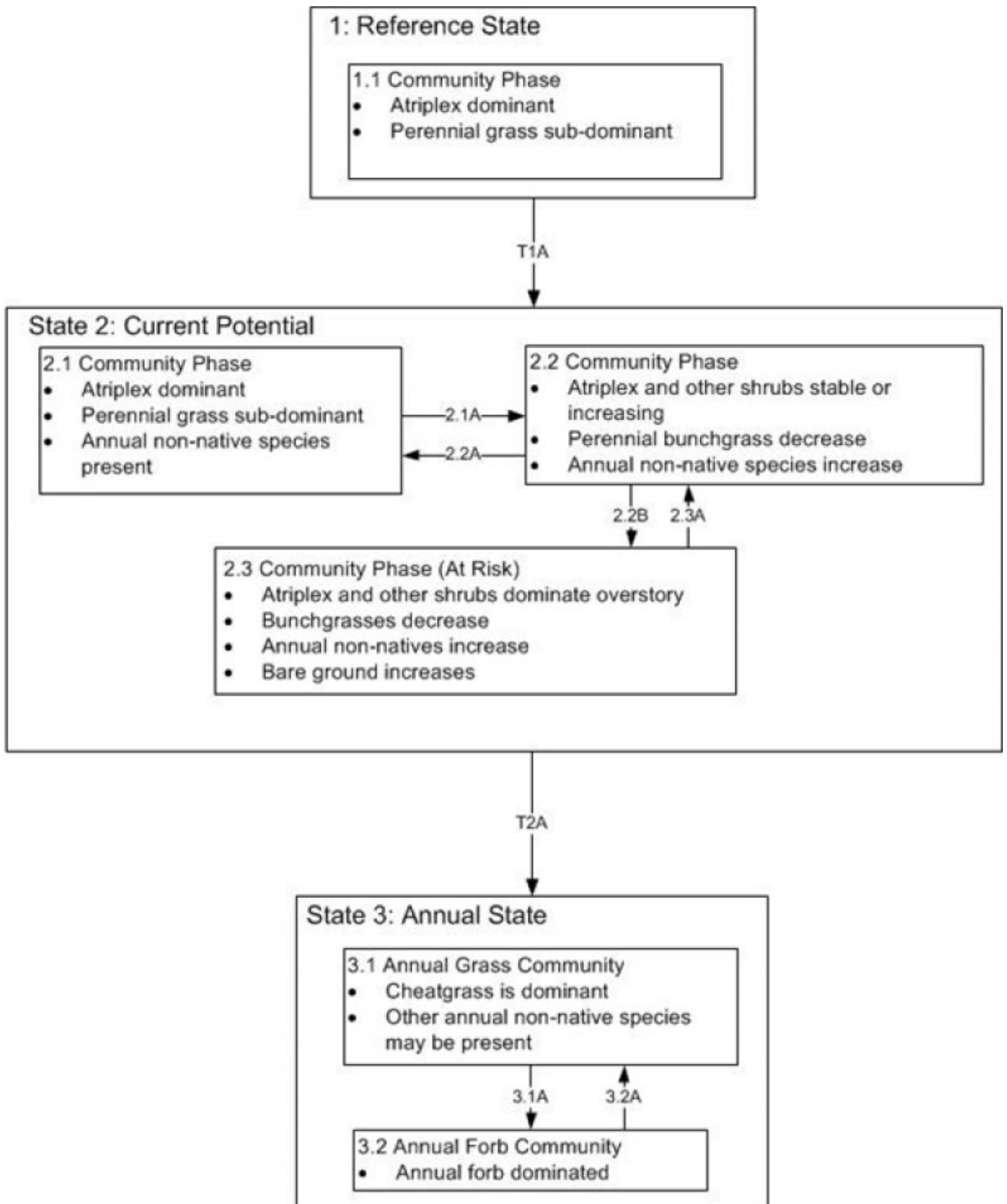


Figure 3. DRAFT STM

T1A: introduction of non-native species

2.1A: prolonged drought/ inadequate rest and recovery from defoliation

2.2A: rest and recovery

2.2B: prolonged drought/ inadequate rest and recovery from defoliation

2.3A: recovery or changes in management

T2A: Inadequate rest and recovery from defoliation and/or prolonged drought/Catastrophic wildfire.

3.1A: fire or cheatgrass die off

3.2A: time

Figure 4. DRAFT STM LEGEND

State 1

Reference State

Community 1.1

Reference Plant Community

The reference plant community is dominated by Bonneville saltbush and shadscale. Greenmolly kochia and Indian ricegrass are other important species associated with this site. Potential vegetative composition is about 20% grasses, 5% forbs and 75% shrubs. Approximate ground cover (basal and crown) is 15 to 25 percent.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Shrub/Vine	126	252	420
Grass/Grasslike	34	67	112
Forb	9	17	28
Total	169	336	560

State 2

Current Potential State

State 3

Annual State

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	Primary Perennial Grasses			40–84	
	Indian ricegrass	ACHY	<i>Achnatherum hymenoides</i>	34–67	–
	squirreltail	ELEL5	<i>Elymus elymoides</i>	7–17	–
2	Secondary Perennial Grasses			7–20	
	threeawn	ARIST	<i>Aristida</i>	2–7	–
	King's eyelashgrass	BLKI	<i>Blepharidachne kingii</i>	2–7	–
Forb					
3	Perennial			7–17	
	globemallow	SPHAE	<i>Sphaeralcea</i>	2–7	–
4	Annual			1–10	
Shrub/Vine					
5	Primary Shrubs			135–230	
	Bonneville saltbush	ATBO	<i>Atriplex bonnevillensis</i>	67–101	–
	shadscale saltbush	ATCO	<i>Atriplex confertifolia</i>	50–78	–
6	Secondary Shrubs			13–40	
	chrysactinia	CHRYS	<i>Chrysactinia</i>	3–10	–
	Nevada jointfir	EPNE	<i>Ephedra nevadensis</i>	3–10	–
	horsebrush	TETRA3	<i>Tetradymia</i>	3–10	–

Animal community

Livestock Interpretations:

This site is suitable for livestock grazing. Grazing management should be keyed to Indian ricegrass production. Indian ricegrass is highly palatable to all classes of livestock in both green and cured condition. It supplies a source of green feed before most other native grasses have produced much new growth. Bottlebrush squirreltail is very palatable winter forage for domestic sheep of Intermountain ranges. Domestic sheep relish the green foliage. Overall, bottlebrush squirreltail is considered moderately palatable to livestock. Shadscale is a valuable browse species, providing a source of palatable, nutritious forage for a wide variety of wildlife particularly during spring and summer before the hardening of spiny twigs. It supplies browse, seed, and cover for birds, small mammals, rabbits, deer, and pronghorn antelope. Greenmolly provides excellent forage for sheep and cattle. It has a high protein content in the fall and is often used as winter forage for sheep.

Stocking rates vary over time depending upon season of use, climate variations, site, and previous and current management goals. A safe starting stocking rate is an estimated stocking rate that is fine tuned by the client by adaptive management through the year and from year to year.

Wildlife Interpretations:

Shadscale is a valuable browse species, providing a source of palatable, nutritious forage for a wide variety of livestock. Shadscale provides good browse for domestic sheep. Shadscale leaves and seeds are an important component of domestic sheep and cattle winter diets. Greenmolly is an excellent forage for deer. Bottlebrush squirreltail is a dietary component of several wildlife species. Bottlebrush squirreltail may provide forage for mule deer and pronghorn. Indian ricegrass is an important forage for several wildlife species.

Hydrological functions

Runoff is negligible to very low. Permeability is slow to moderately rapid.

Recreational uses

Aesthetic value is derived from the diverse floral and faunal composition and the colorful flowering of wild flowers and shrubs during the spring and early summer. This site offers rewarding opportunities to photographers and for nature study. This site is used for camping and hiking and has potential for upland and big game hunting.

Other products

Seeds of shadscale were used by Native Americans of Arizona, Utah and Nevada for bread and mush. Indian ricegrass was traditionally eaten by some Native Americans. The Paiutes used seed as a reserve food source.

Other information

Bottlebrush squirreltail is tolerant of disturbance and is a suitable species for revegetation.

Type locality

Location 1: Lincoln County, NV	
Township/Range/Section	T1S R60E S17
Latitude	37° 51' 45"
Longitude	115° 16' 45"
General legal description	Section 17, T1S. R60E. MDBM. Approximately 1.5 miles east of Murphy Gap Reservoir and 50 feet south of dirt road. USGS Murphy Gap SE 7.5 minute topographic quadrangle. Lincoln County, Nevada.

Other references

Fire Effects Information System (Online; <http://www.fs.fed.us/database/feis/plants/>).

USDA-NRCS Plants Database (Online; <http://www.plants.usda.gov>)

Contributors

CMJ/JWM/PN-E

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:**

17. **Perennial plant reproductive capability:**
