USDA Natural Resources
Conservation Service

Ecological site R030XY022NV
WET MEADOW

Last updated: 2/24/2025
Accessed: 05/14/2025

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.

Ecological site concept

This site occurs on flood plains on all exposures. Slopes range from 0 to 2 percent. Elevations are 1000 to 2300 feet. The soils associated with this site are very deep alluviums from mixed sources. These soils are high in organic material. Textures are sandy loams to silty clay loams.

Please refer to group concept R030XB023CA to view the provisional STM.

Similar sites

R030XY024NV	**SALINE BOTTOM** SPAI dominant plant; ATLE dominant shrub
R030XY055NV	**WETLAND** Soils saturated to within 5 inches (or less) of the surface during growing season

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	(1) *Juncus* (2) *Carex*

Physiographic features

This site occurs on flood plains on all exposures. Slopes range from 0 to 2 percent. Elevations are 1000 to 2300 feet.

Table 2. Representative physiographic features

Landforms	(1) Flood plain
Flooding duration	Very brief (4 to 48 hours)
Flooding frequency	Occasional
Ponding frequency	None
Elevation	305–701 m
Slope	0–2%
Water table depth	46 cm
Aspect	Aspect is not a significant factor

Climatic features

The climate is hot and arid, with mild winters and very hot summers. Precipitation is greatest in the winter with a lesser secondary peak in summer, typical of the Mojave Desert. Average annual precipitation is 3 to 11 inches. Mean annual air temperature is 55 to 76 degrees F. The average growing season is about 140 to 360 days.

Table 3. Representative climatic features

Frost-free period (average)	360 days
Freeze-free period (average)	
Precipitation total (average)	279 mm

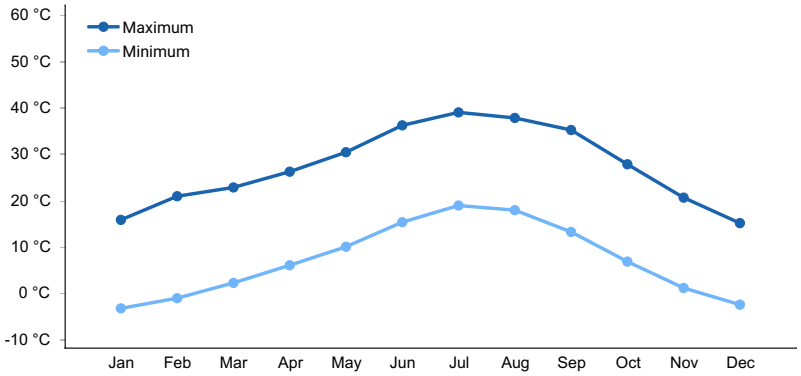

Figure 1. Monthly average minimum and maximum temperature

Influencing water features

This site offers free water much of the year from seeps, springs, or adjacent perennial streams.

Soil features

The soils associated with this site are very deep alluviums from mixed sources. These soils are high in organic material. Textures are sandy loams to silty clay loams. Soils are poorly drained and are ponded during the late winter and early spring. A high water table is present and the soils are saturated within 20 inches of the surface throughout most of the growing season. This site offers free water much of the year from seeps, springs or adjacent perennial streams. The soil series associated with this site include: Caslo.

Table 4. Representative soil features

Surface texture	(1) Silty clay loam
Family particle size	(1) Loamy
Drainage class	Poorly drained
Permeability class	Slow
Soil depth	183–213 cm
Surface fragment cover <=3"	0%
Surface fragment cover >3"	0%
Available water capacity (0-101.6cm)	19.56–19.81 cm
Calcium carbonate equivalent (0-101.6cm)	40–60%
Electrical conductivity (0-101.6cm)	2–32 mmhos/cm

Sodium adsorption ratio (0-101.6cm)	1–30
Soil reaction (1:1 water) (0-101.6cm)	8.5–9.6
Subsurface fragment volume <=3" (Depth not specified)	0%
Subsurface fragment volume >3" (Depth not specified)	0%

Ecological dynamics

Please refer to group concept R030XB023CA to view the provisional STM.

As ecological condition deteriorates, sedge and grass component is reduced as rush species and forbs, such as dock, increase. With further degradation woody species such as rubber rabbitbrush and willow increase or invade this site. Where severe stream entrenchment occurs, the soil moisture balance of this site is altered resulting in a more xeric potential plant community. Annual species are also likely to invade this site.

Fire Ecology:
Rush is fire tolerant when dormant and top-killed by fire during the growing season. It establishes after fire through seed and/or lateral spread by rhizomes. Sedge is top-killed by fire, with rhizomes protected by insulating soil. The rhizomes of sedge species may be killed by high-severity fires that remove most of the soil organic layer. Reestablishment after fire occurs by seed establishment and/or rhizomatous spread. Common reed stands are typically dense and contain much dead material. Standing dead canes and litter often constitute twice as much biomass as living shoots. This abundant dead fuel carries fire well, allowing stands to burn during midsummer when the current year’s shoots are green. Common reed’s rhizomes are deeply buried in soil and are often under water as well. The heat from most fires does not penetrate deep enough into the soil to injure these regenerative structures. When fire consumes the above ground foliage, new top growth is initiated from the surviving rhizomes.

State and transition model

Ecosystem states

1. Reference Plant Community

State 1 submodel, plant communities

1.1. Reference Plant Community

State 1
Reference Plant Community

Community 1.1
Reference Plant Community

The reference plant community is dominated by rush and sedges. Potential vegetative composition is about 88% grasses, 10% forbs, and 2% shrubs. Approximate ground cover (basal and crown) is less than 65 to 85 percent.

Table 5. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Grass/Grasslike	1480	2762	4932
Forb	168	314	560
Shrub/Vine	34	63	112
Total	**1682**	**3139**	**5604**

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/Grasslikes**			1255–2354	
	rush	JUNCU	*Juncus*	628–1098	–
	sedge	CAREX	*Carex*	471–785	–
	common reed	PHAU7	*Phragmites australis*	157–471	–
2	**Secondary Perennial Grasses/Grasslikes**			471–785	
	saltgrass	DISP	*Distichlis spicata*	16–157	–
	bulrush	SCIRP	*Scirpus*	16–157	–
	alkali sacaton	SPAI	*Sporobolus airoides*	16–157	–
	cattail	TYPHA	*Typha*	16–157	–
3	**Annual Grasses**			31–94	
	feather fingergrass	CHVI4	*Chloris virgata*	31–94	–
Forb					
4	**Perennial**			157–471	
	dock	RUMEX	*Rumex*	16–94	–
5	**Annual**			31–94	
Shrub/Vine					
6	**Primary Shrubs**			1–94	
	catclaw acacia	ACGR	*Acacia greggii*	31–63	–
	big saltbush	ATLE	*Atriplex lentiformis*	31–63	–
	rubber rabbitbrush	ERNAN5	*Ericameria nauseosa ssp. nauseosa var. nauseosa*	31–63	–
	mesquite	PROSO	*Prosopis*	31–63	–
	willow	SALIX	*Salix*	31–63	–

Animal community

Livestock Interpretations:
This site is suitable for livestock grazing. Grazing management should be keyed to perennial grass production. Rush is described as a fair to good forage species for cattle. On average, rush’s palatability is considered medium to moderately low. Rush is considered palatable early in the growing season when plants are young and tender, but as stems mature and toughen palatability declines. Sedge provides good to fair forage for domestic grazing. Common reed is moderately tolerant of grazing, but prolonged heavy grazing tends to reduce the extent and size of stands.

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:
Rush provides food for several wildlife species and waterfowl. Rush is an important cover species for a variety of small birds, upland game birds, birds of prey, and waterfowl. Sedges have a medium value for mule deer. Common reed provides shade, nesting, and cover habitat for mammals, waterfowl, song birds, and fishes. Common reed is not rated as a high-value wildlife food unless plants are young.

Hydrological functions

Runoff is high. Permeability is slow.

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

The stems of rush were historically used by Native Americans as a foundation for coiled basketry. Common reed was utilized as a food source and as a medicine by Native Americans. Shoots were eaten raw or cooked. Flour was made from dried shoots and rhizomes. Common reed rhizomes provided a year-round food source. Seeds were harvested and ground into a high fiber meal. The plant material was used to construct pipestems, arrows, mats, nets, and prayer sticks.

Other information

Rush's production of deep and fibrous roots originating from a mass of coarse and creeping rhizomes makes it a valuable species for stabilizing streambanks and protecting against soil erosion. Ease of establishment, rapid vegetative spread, and high tolerance of disturbance make common reed an understandable choice for rehabilitation. However, these same traits make common reed a nuisance or weedy species in some areas. In natural or wild areas, the use of native common reed haplotypes may be required or preferred.

Type locality

Location 1: Nye County, NV	
Township/Range/Section	T18S R50E S13
UTM zone	N
UTM northing	563427
UTM easting	4027088
Latitude	36° 23′ 12″
Longitude	116° 17′ 34″
General legal description	Ash Meadows area in vicinity of Bole and Big Spring, Nye County, Nevada. This site also occurs in Clark and souther Lincon Counties, Nevada.
Location 2: Nye County, NV	
Township/Range/Section	T18S R50E S24
UTM zone	N
UTM northing	563439
UTM easting	4025466

Latitude	36° 22′ 20″
Longitude	116° 17′ 34″
General legal description	Ash Meadows area in vicinity of Bole and Big Spring, Nye County, Nevada. This site also occurs in Clark and souther Lincon Counties, 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

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Approval

Sarah Quistberg, 2/24/2025

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	05/14/2025
Approved by	Sarah Quistberg
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:**
