

Ecological site R023XF084CA CLAY UPLAND 9-16"

Last updated: 4/10/2025
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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.

Ecological site concept

Currently there is only a draft of the initial concept for this ecological site. The initial concept for this site places it within the Clayey Plateaus 10-12 PZ Sagebrush with Rhizomatous Grass Ecological Site Group. To view the General STM and other information available for this ESG please go to <https://edit.jornada.nmsu.edu/catalogs/esg/023X/R023XY915NV>

This site occurs on upland plateaus with soils that are characterized by surface shrink-swell fracturing. The plant community is very similar to the correlating NV modal site with an overstory of big sagebrush, little horsebrush, and an understory of bottlebrush squirreltail, western wheatgrass, and beardless wildrye. It is less productive, ranging from 500 lbs/ac to 900 lbs/ac, with 700 lbs/ac in normal years.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

Climatic features

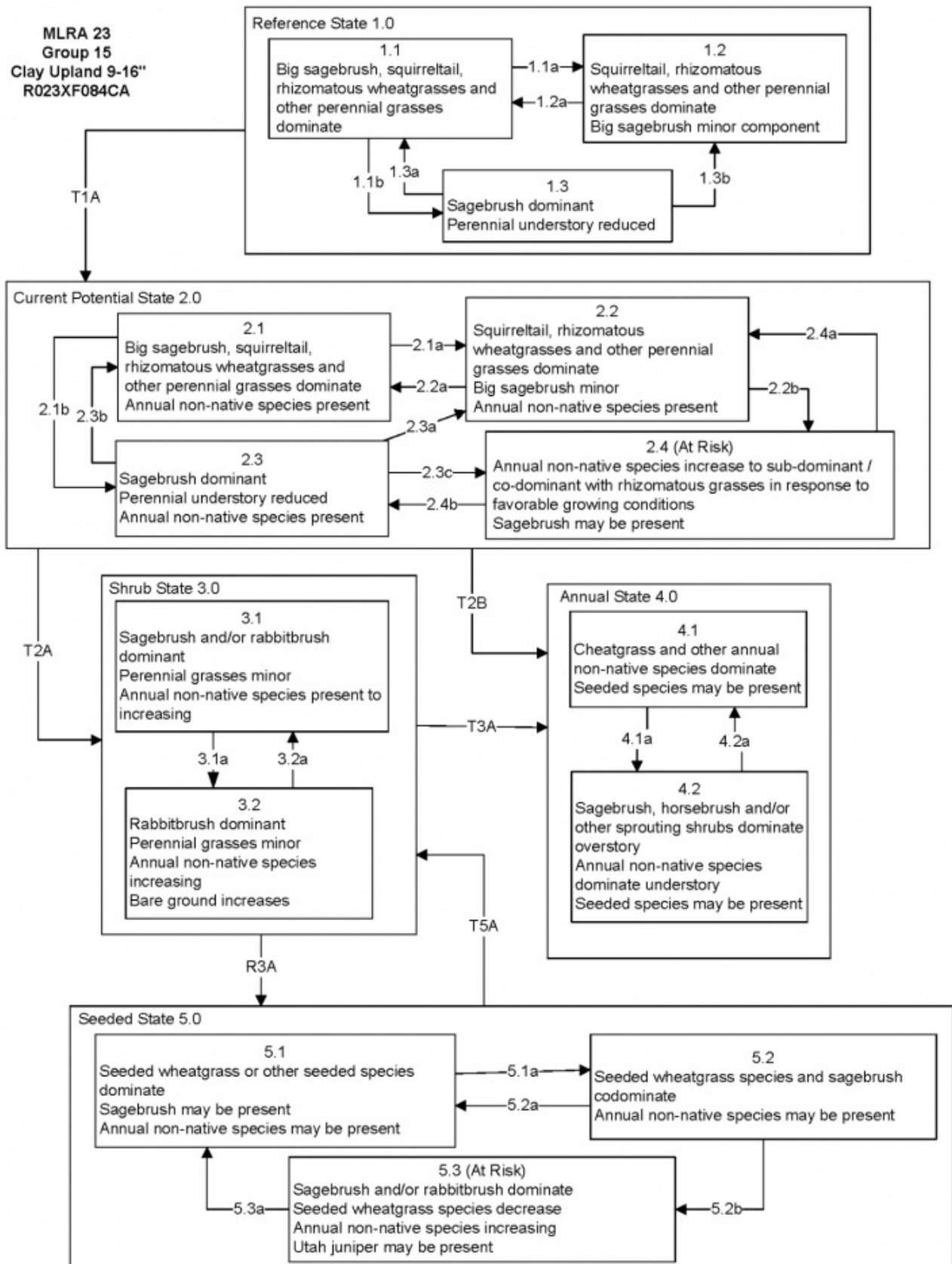
Influencing water features

Soil features

Ecological dynamics

State and transition model

MLRA 23
Group 15
Clay Upland 9-16"
R023XF084CA



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KEY**

Reference State 1.0 Community Phase Pathways

- 1.1a: Low severity fire creates grass/sagebrush mosaic; high severity fire significantly reduces sagebrush cover and leads to early/mid-seral community, dominated by grasses and forbs.
- 1.1b: Time and lack of disturbance such as fire or drought. Excessive herbivory may also decrease perennial understory.
- 1.2a: Time and lack of disturbance allows for shrub regeneration.
- 1.3a: High severity fire significantly reduces sagebrush cover leading to early/mid-seral community.
- 1.3b: Low severity fire or Aroga moth infestation resulting in a mosaic pattern.

Transition T1A: Introduction of non-native species such as bulbous bluegrass, cheatgrass and thistles.

Current Potential State 2.0 Community Phase Pathways

- 2.1a: Low severity fire creates grass/sagebrush mosaic; high severity fire significantly reduces sagebrush cover and leads to early/mid-seral community dominated by grasses and forbs; non-native annual species present.
- 2.1b: Time and lack of disturbance such as fire or drought. Inappropriate grazing management may also reduce perennial understory.
- 2.2a: Time and lack of disturbance allows for regeneration of sagebrush.
- 2.2b: Fall and spring growing conditions that favors the germination and production of non-native, annual grasses. Pathway typically occurs 3 to 5 years post-fire and 2.4 may be a transitory plant community.
- 2.3a: Low severity fire or Aroga moth infestation creates sagebrush/grass mosaic. Brush management with minimal soil disturbance; late-fall/winter grazing causing mechanical damage to sagebrush.
- 2.3b: High severity fire significantly reduces sagebrush cover leading to early mid-seral community.
- 2.3c: Fall and spring growing season conditions that favors the germination and production of non-native annual grasses. 2.4 may be a transitory plant community.
- 2.4a: Growing season conditions favoring perennial bunchgrass production and reduced cheatgrass production.
- 2.4b: Growing season conditions favoring perennial bunchgrass production and reduced cheatgrass production.

Transition T2A: Time and lack of disturbance and/or inappropriate grazing management (3.1).

Transition T2B: High severity fire and/or soil disturbance (4.1). Inappropriate grazing that favors shrubs in the presence of non-native annual species (4.2).

Shrub State 3.0 Community Phase Pathways

- 3.1a: Fire.
- 3.2a: Time and lack of disturbance.

Transition T3A: Catastrophic fire and/or soil disturbance (4.1). Inappropriate grazing management in the presence of non-native annual species (4.2).

Restoration R3A: Brush management, combined with seeding of desired species.

Annual State 4.0 Community Phase Pathways

- 4.1a: Time and lack of fire.
- 4.2a: Fire.

Seeded State 5.0 Community Phase Pathways

- 5.1a: Time and lack of disturbance may be coupled with inappropriate grazing management.
- 5.2a: Low severity fire.
- 5.2b: Inappropriate grazing management reduces bunchgrasses and increases density of sagebrush; usually a slow transition.
- 5.3a: Fire or brush treatment with minimal soil disturbance.

Transition T5A: Inappropriate grazing management favoring shrub dominance and reducing perennial bunchgrasses will lead to phase 3.1. Soil disturbing treatments and/or fire will lead to phase 3.2.

Other references

Great Basin Ecological Site Development Project: State and Transition Models for Major

Contributors

T Stringham (UNR under contract with BLM)

Approval

Kendra Moseley, 4/10/2025

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	05/20/2025
Approved by	Kendra Moseley
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:**
