

# Ecological site R023XF087CA VERY SHALLOW STONY LOAM 9-12"

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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 Shallow Rocky 8-14 PZ Black Sagebrush 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/R023XY913NV>

This site occurs on escarpments as inclusions on among moderately deep and deep soils on all aspects. The plant community is very similar to the correlating Nevada site, and is dominated by bluebunch wheatgrass, black sagebrush, and Thurber's needlegress with a production range of 200 lbs/ac to 600 lbs/ac. This site has five stable states.

**Table 1. Dominant plant species**

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

## Physiographic features

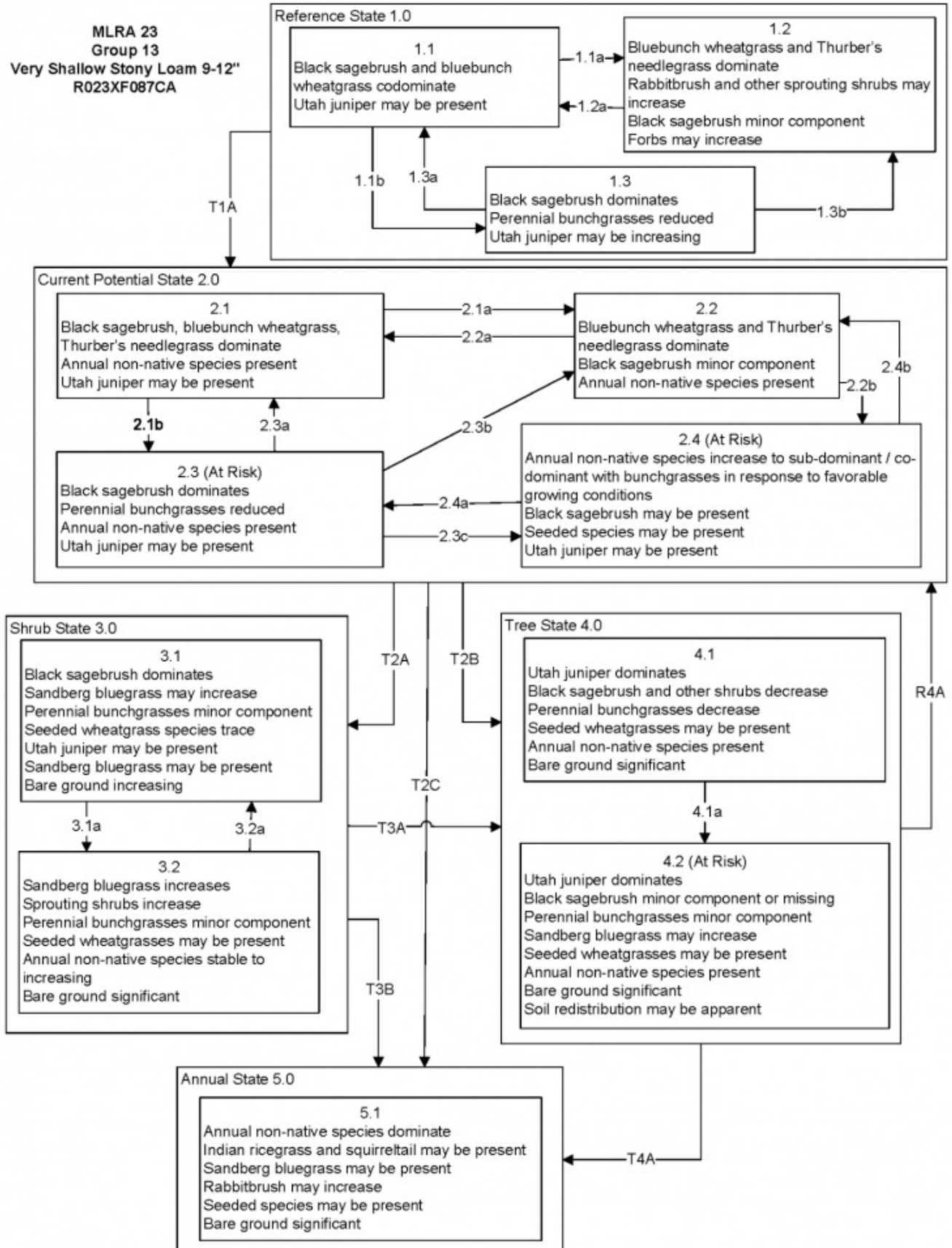
## Climatic features

## Influencing water features

## Soil features

# Ecological dynamics

## State and transition model



MLRA 23  
Group 13  
Very Shallow Stony Loam 9-12"  
R023XF087CA  
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 would also reduce perennial understory.
- 1.2a: Time and lack of disturbance allows for shrub regeneration.
- 1.3a: Low severity fire resulting in a mosaic pattern, fall/winter herbivory may cause mechanical damage to shrubs and reduce shrub density.
- 1.3b: High severity fire significantly reduces sagebrush cover and leads to early/mid-seral community, dominated by grasses and forbs.

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 shrub regeneration.
- 2.2b: Late spring moisture that favors the germination and production of non-native, annual grasses. Pathway typically occurs 3 to 5 years post-fire and may be a transitory plant community.
- 2.3a: Low severity fire resulting in a mosaic pattern. Brush management with minimal soil disturbance; late-fall/winter grazing causing mechanical damage to sagebrush.
- 2.3b: High severity fire significantly reduces sagebrush cover and leads to early/mid-seral community dominated by grasses and forbs; non-native annual species present.
- 2.3c: Fall and spring growing season conditions that favor the germination and production of non-native annual grasses. 2.4 may be a transitory plant community.
- 2.4a: Rainfall pattern favoring perennial bunchgrass production and reduced cheatgrass production (less than normal spring with higher than normal summer precipitation).
- 2.4b: Rainfall pattern favoring perennial bunchgrass production and reduced cheatgrass production (less than normal spring with higher than normal summer precipitation).

Transition T2A: Inappropriate grazing management (3.1). Fire or brush treatment; may be coupled with inappropriate grazing management (3.2).

Transition T2B: Time and lack of disturbance allows for maturation of trees, may be coupled with inappropriate grazing management (4.1).

Transition T2C: High severity fire, failed seeding.

Shrub State 3.0 Community Phase Pathways

- 3.1a: Fire or brush management (i.e. mowing) with minimal soil disturbance.
- 3.2a: Time and lack of disturbance.

Transition T3A: Time and lack of disturbance allows for tree maturation; may be coupled with inappropriate grazing management (4.1).

Transition T3B: Catastrophic fire and/or soil disturbing treatments (5.1).

Tree State 4.0 Community Phase Pathways

- 4.1a: Time and lack of disturbance allows maturation of tree community.

Transition T4A: Catastrophic fire and/or inappropriate tree removal practices (5.1).

Restoration R4A: Tree removal with minimal soil disturbance and seeding of desired species.

## Other references

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

## Contributors

T Stringham (UNR under contract with BLM)

## 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	04/14/2026
Approved by	Kendra Moseley
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

## Indicators

1. **Number and extent of rills:**

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2. **Presence of water flow patterns:**

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3. **Number and height of erosional pedestals or terracettes:**

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

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5. **Number of gullies and erosion associated with gullies:**

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6. **Extent of wind scoured, blowouts and/or depositional areas:**

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7. **Amount of litter movement (describe size and distance expected to travel):**

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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):**

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

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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):**

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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:

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):

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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):**

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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:**

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17. **Perennial plant reproductive capability:**

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