

Ecological site F070AY023NM Riverine Riparian

Last updated: 9/12/2023
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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.

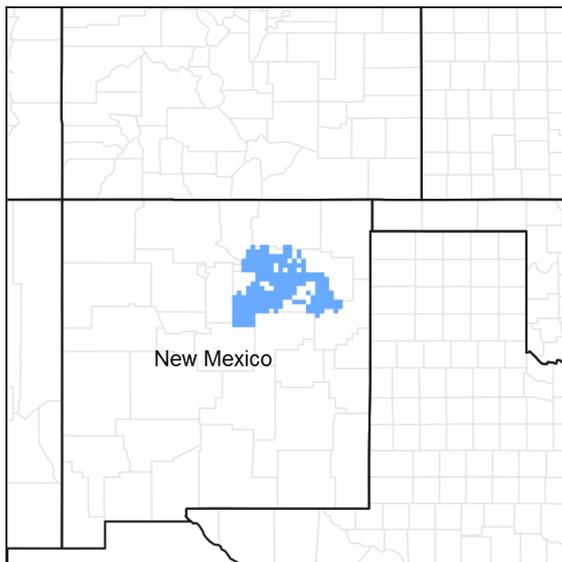


Figure 1. Mapped extent

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.

Ecological site concept

This site applies to floodplains along major drainageways in MLRA 70A. It correlates to the Run-on ecological site group.

Similar sites

GX070A01X010	Riparian The Riparian site is specific to LRU 70A.1.
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Table 1. Dominant plant species

Tree	(1) <i>Populus fremontii</i>
Shrub	(1) <i>Salix exigua</i>
Herbaceous	(1) <i>Pascopyrum smithii</i> (2) <i>Carex nebrascensis</i>

Physiographic features

Area adjacent to channel of Canadian and Pecos Rivers, and to other perennial streams in this MLRA.

Site occurs on flood-plains along major drainageways. Slope is 0 to 2 percent. Elevation 5,500 to 8,500 feet.

Table 2. Representative physiographic features

Landforms	(1) V-shaped valley (2) U-shaped valley (3) Overflow stream channel
Flooding duration	Long (7 to 30 days) to very brief (4 to 48 hours)
Flooding frequency	Frequent to occasional
Slope	0–3%
Water table depth	12–36 in
Aspect	Aspect is not a significant factor

Climatic features

The average annual precipitation is 14 to 18 inches, the average annual temperature is 44 to 52 degrees F, and the frost-free period is 90 to 160 days.

Table 3. Representative climatic features

Frost-free period (characteristic range)	90-160 days
Freeze-free period (characteristic range)	
Precipitation total (characteristic range)	14-18 in

Influencing water features

Since this site occurs on floodplains along perennial streams, it experiences periodic flooding. It also benefits from a relatively high water table.

Wetland description

Wetlands and hydric soils occur on lower floodplains.

Soil features

This site is correlated to a number of minor soil components (inclusions) classified broadly as Ustifluvents and Fluvaquents. As inclusions, these minor components are poorly populated in the NASIS database. These components do appear as majors in a few map units, with a description of Ustifluvents taken from the Mora County, New Mexico soil survey manuscript (as follows).

"Ustifluvents are extremely variable in their characteristics. These soils formed in mixed alluvial material. They are on flood plains along major drainageways. Slope is 0 to 2 percent. Elevation is 5,500 to 8,500 feet. The average annual precipitation is 14 to 18 inches, the average annual temperature is 44 to 52 degrees F, and the frost-free period is 90 to 160 days.

Sample pedon of Ustifluvents, frequently flooded(...):

A11--0 to 4 inches; yellowish brown (10YR 5/4) loam, dark brown (10YR 4/3) moist; moderate medium granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many very fine and fine roots; many fine interstitial pores; neutral; abrupt smooth boundary.

A12--4 to 12 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 4/3) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common very fine and fine roots; many fine interstitial pores; neutral; clear smooth boundary.

AC--12 to 26 inches; brown (10YR 4/3) loam, dark brown (10YR 3/3) moist; weak medium subangular blocky

structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many fine interstitial pores; mildly alkaline; gradual smooth boundary.

Ab--26 to 35 inches; dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure; hard, very friable, sticky and plastic; very few fine and very fine roots; many fine tubular pores; mildly alkaline; clear smooth boundary.

C--35 to 60 inches; brown (10YR 5/3) loam, dark brown (10YR 4/3) moist; massive; slightly hard, loose, slightly sticky and slightly plastic; few very fine and fine roots; many fine interstitial pores; mildly alkaline."

Brief description of the Fluvaquents NASIS component for Fluvaquents-Jaralosa-Bosquecito families complex, 0 to 3 percent slopes, flooded:

0 to 10 inches; gravelly loam; weak medium granular structure.

10 to 60 inches; stratified extremely gravelly sand/very cobbly sandy loam OR stratified extremely cobbly sand/extremely cobbly loamy sand OR stratified stratified loamy fine sand/fine sandy loam; single-grained.

This component is listed as meeting hydric criteria.

It is likely that Fluvaquents would be hydric soils on lower floodplains, and Ustifluvents would be somewhat better-drained soils on floodplain steps, and less commonly appear as hydric. Neither of these Entisols would exhibit much soil development beyond simple hydromorphic features, and some hydric soils may not present enough development to meet a hydric indicator. Since these are young, fluvial soils, texture is likely to be stratified in most profiles, and variable over lateral distances.

Based on recent observations in MLRA 70A, most floodplain soils will be generally coarse in texture (loamy sand and sandy loam) with strata of gravelly materials. Both soil components are likely to exhibit redoxomorphic features--these features appearing closer to the surface in Fluvaquents.

Table 4. Representative soil features

Parent material	(1) Alluvium
Surface texture	(1) Loam (2) Gravelly sandy loam
Drainage class	Moderately well drained to very poorly drained
Soil depth	60–200 in

Ecological dynamics

This site is made up from the consolidated and unconsolidated depositional sediments found immediately adjacent to perennial streams like the Canadian and Pecos Rivers. Plant community structure and function are determined largely by the hydrology of the stream, the frequency of flooding and ponding and the occasional complete altering of the stream channel position and function by flood events as the stream channel constantly seeks equilibrium with its flow regime and constraining landscape features. Plant communities in this system fluctuate widely across the site in response to routine disturbance but re-establish quickly in predictable patterns in relation to available water and depositional features.

State and transition model

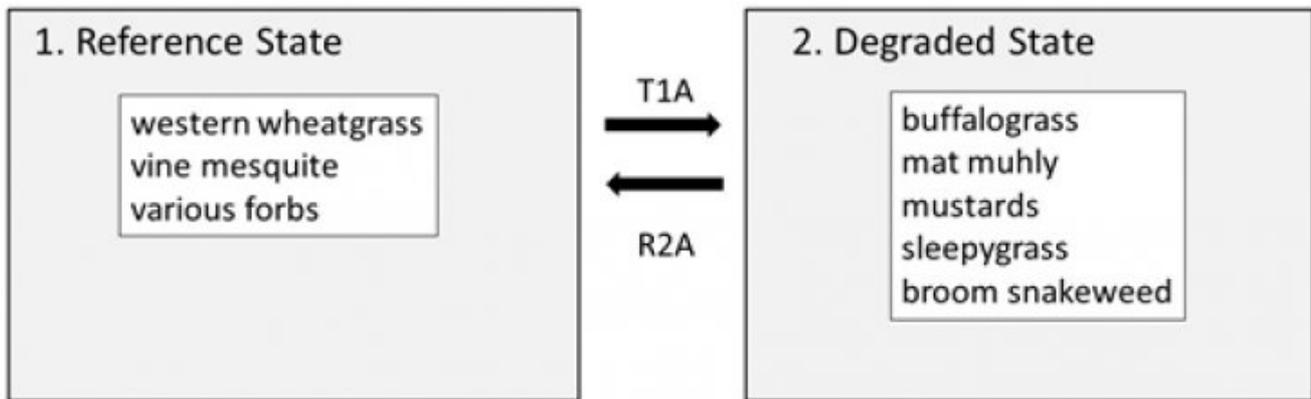


Figure 2. Generalized STM for run-on sites in 70A.

**State 1
Reference State**

This state represents the most ecologically stable conditions in terms of resistance to erosion. Moreover, this state has the highest potential for productivity and plant diversity.

**State 2
Degraded**

This state contains a plant community in which highly palatable species such as western wheatgrass and vine mesquite are poorly-represented.

**Transition T1A
State 1 to 2**

Season-long grazing providing little rest and recovery for preferred grazed plants during critical growing periods, coupled with high utilization.

**Restoration pathway R2A
State 2 to 1**

Restoration pathway resulting from the implementation of prescribed grazing.

Conservation practices

Grazing Management Plan - Applied

Contributors

John Tunberg, former range specialist for NRCS.

Approval

Kendra Moseley, 9/12/2023

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	07/27/2024
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:**
