



Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE



Nevada Soil Survey and Ecological Site Update

Sagebrush Ecosystem Council

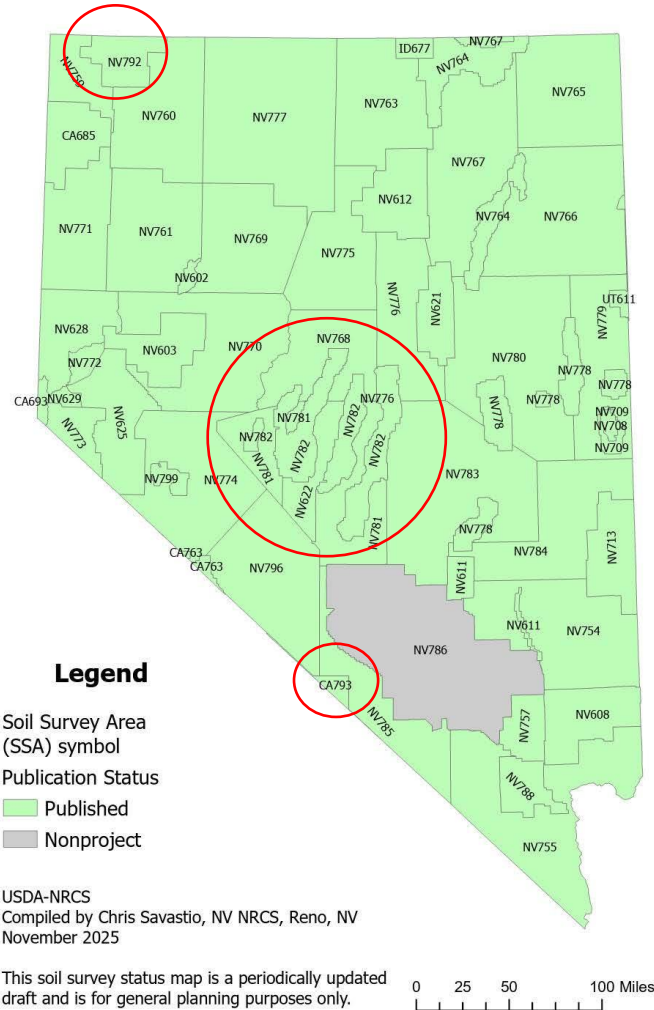
FARM PRODUCTION AND CONSERVATION
FSA | NRCS | RMA | Business Center

Objectives

- Status of published soil survey and ecological site information in Nevada
- What is a “provisional” ecological site description (ESD)?
- How can ESD’s help you?
- Where can I find this information?



Soil Survey Status of Nevada FY 2026



Soil map of Nevada – Completed 10/2025

- Sheldon Antelope Refuge (Klamath Falls SSO)
- Toiyabe National Forest, Central Part (Minden SSO)
- Death Valley National Park (Victorville SSO)

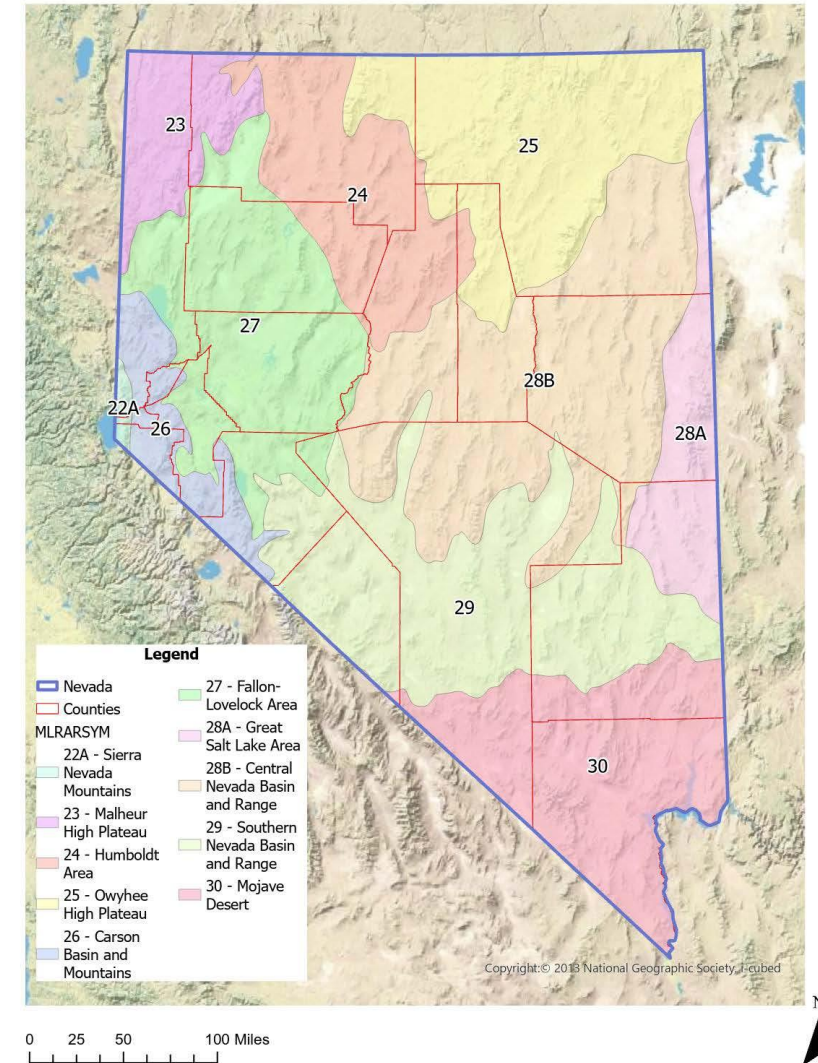
Provisional Ecological Site Initiative

- Completed in 2025
- Bring sites up to Provisional publication standards
- Provisional sites are scientifically rigorous
- Provisional sites are public

(MLRA = Major Land Resource Area)

	ESD	ESG
MLRA 22A		13
MLRA 23	26	21
MLRA 24	45	
MLRA 25	74	
MLRA 26	100	
MLRA 27	59	
MLRA 28A	88	
MLRA 28B	23	
MLRA 29	46	
MLRA 30	350	

Nevada Major Land Resource Areas



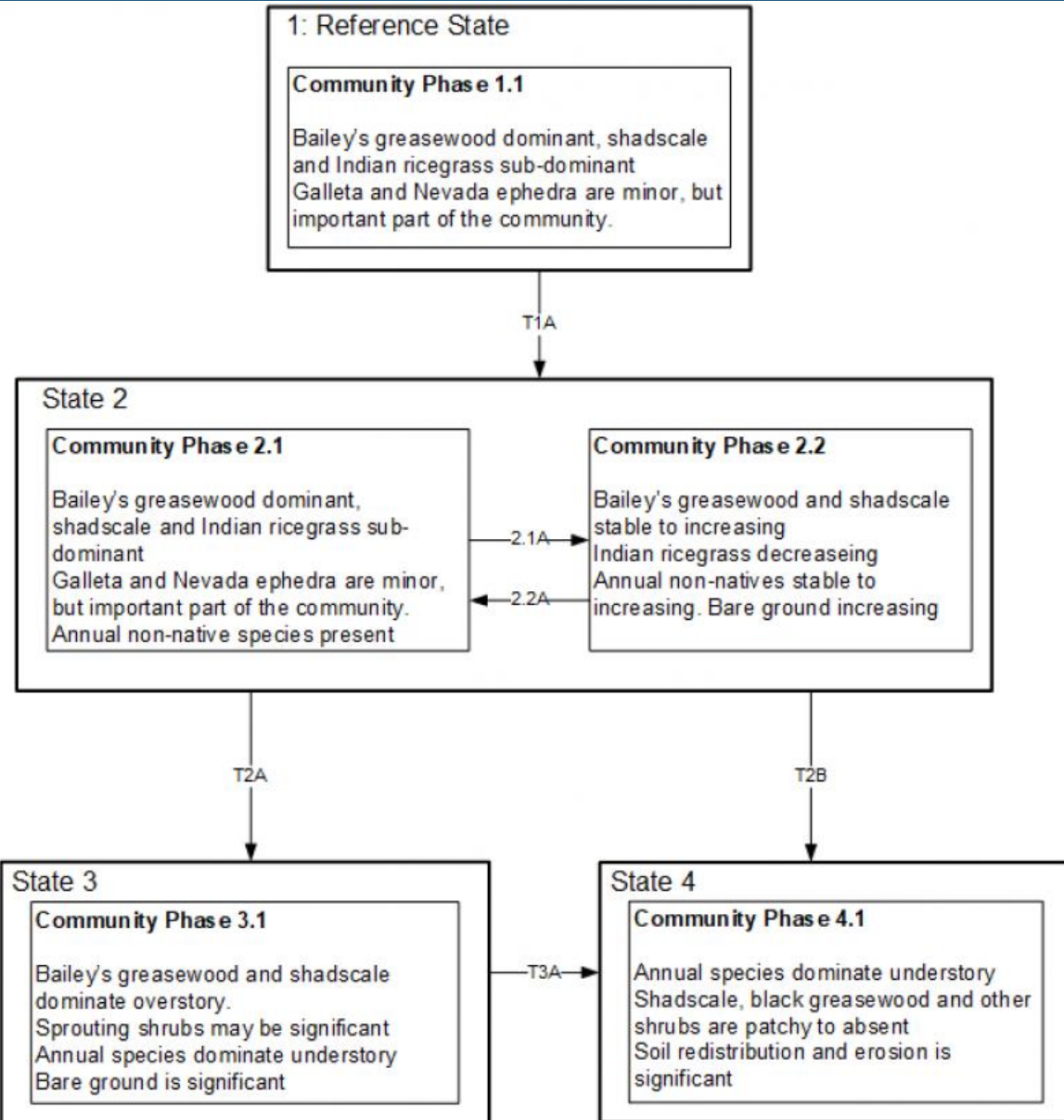
What is a Provisional Ecological Site?

- Site Characteristics: physiographic, climate, soil, and water features
- Plant Communities: plant species, vegetation states, and ecological dynamics
- Site Interpretations: management alternatives for the site and its related resources
- Supporting Information: relevant literature, information and data sources



State-and-Transition Models

- Provides actionable information about the ecological dynamics, the processes and mechanisms of ecosystem change, and management actions that can be used to influence change
- Developed using relevant published literature, expert knowledge, field data, existing inventory/datasets



How do Ecological Sites Help Me?

- Understand capability to respond to management activities or disturbance
- Conservation planning
 - Reclamation/rehabilitation
 - Wildlife habitat
 - Monitoring
 - Assessment
 - Resource inventory/evaluating alternatives
 - Management decisions
- Contractors
 - Predict potential site conditions
 - Draw boundaries
 - NEPA





Accessing ES Data through Web Soil Survey



USDA United States Department of Agriculture
Natural Resources Conservation Service

Contact Us | Subscribe | Archived Soil Surveys | Soil Survey Status | Glossary | Preferences | Link | Logout | Help

Area of Interest (AOI) | Soil Map | Soil Data Explorer | Download Soils Data | Shopping Cart (Free)

Search

Area of Interest

Import AOI

- Create AOI from Shapefile
- Create AOI from Zipped Shapefile

Quick Navigation

- Address
- State and County
- Soil Survey Area
- Latitude and Longitude or Current Location
- PLSS (Section, Township, Range)
- Bureau of Land Management
- Department of Defense
- Forest Service
- National Park Service
- Hydrologic Unit

Area of Interest Interactive Map

Legend

View Extent: Contiguous U.S.

Search

Area of Interest

Open All | Close All

AOI Properties

Clear AOI

AOI Information

Name

Map Unit Symbols

- ☒ Use Soil Survey Area Map Unit Symbols
- ☐ Use National Map Unit Symbols

Area (acres) 123.9

Soil Data Available from Web Soil Survey

Douglas County Area, Nevada (NV773)

Data Availability Tabular and Spatial, complete

Tabular Data Version 19, Sep 2, 2025

Spatial Data Version 10, Sep 2, 2025

Clear AOI

Import AOI

Export AOI

Quick Navigation

- Address
- State and County
- Soil Survey Area
- Latitude and Longitude or Current Location
- PLSS (Section, Township, Range)
- Bureau of Land Management
- Department of Defense
- Forest Service
- National Park Service
- Hydrologic Unit

Area of Interest Interactive Map

Legend

View Extent: Contiguous U.S.

USDA United States Department of Agriculture
Natural Resources Conservation Service

Contact Us | Subscribe | Archived Soil Surveys | Soil Survey Status | Glossary | Preferences | Link | Logout | Help

Area of Interest (AOI) | **Soil Map** | Soil Data Explorer | Download Soils Data | Shopping Cart (Free)

Search

Map Unit Legend

Douglas County Area, Nevada (NV773)
Douglas County Area, Nevada (NV773)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
483	Indian Creek very cobbly loam, 2 to 8 percent slopes	11.3	9.1%
6078	Boondock-Chalco complex, 8 to 30 percent slopes	18.9	15.2%
6902	Ackley gravelly sandy loam, 2 to 8 percent slopes	93.7	75.6%
Totals for Area of Interest		123.9	100.0%

Soil Map

Legend

Scale (not to scale)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: B
Ecological site: R026XY016NV - LOAMY 8-10 P.Z.
Other vegetative classification: GRAVELLY LOAM 8-10 P.Z.
(026XY098NV_2)
Hydric soil rating: No

Map Unit Description

Printable Version

Report — Map Unit Description

Douglas County Area, Nevada

6902—Ackley gravelly sandy loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: pmqs

Elevation: 5,500 to 5,700 feet

Mean annual precipitation: 8 to 12 inches

Mean annual air temperature: 48 to 52 degrees F

Frost-free period: 90 to 110 days

Farmland classification: Not prime farmland

Map Unit Composition

Ackley and similar soils: 95 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ackley

Setting

Landform: Fan remnants

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Alluvium derived from mixed

Typical profile

A - 0 to 10 inches: gravelly sandy loam

Bt - 10 to 34 inches: loam

Bk - 34 to 60 inches: fine sandy loam

Properties and qualities

Slope: 2 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat):

Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): 2e

Land capability classification (nonirrigated): 6c

Hydrologic Soil Group: B

Ecological site: R026XY016NV - LOAMY 8-10 P.Z.

Other vegetative classification: GRAVELLY LOAM 8-10 P.Z.

(026XY098NV_2)

Hvdric soil rating: No

EDIT –Ecosystem Dynamics Interpretive Tool

Get Started

Select a data catalog

Ecological Site Descriptions

Ecological sites are the basic component of a land-type classification system that describes ecological potential and ecosystem dynamics of land areas. All land/land use types are identified within the ecological site system, including rangeland, pasture, and forest land. An ecological site is defined as a distinctive kind of land with specific soil and physical characteristics that differ from other kinds of land in its ability to produce a distinctive kind and amount of vegetation and its ability to respond similarly to

U.S. Ecological Site Groups

This catalog features ecosystem dynamics of the United States by ecoregion. Ecoregions are subdivided into classes known as ecological site groups, and separate models of ecosystem dynamics are developed for each class. Models are used to characterize ecosystem dynamics occurring at the site (land unit) scale, with an emphasis on natural and semi-natural ecosystems. Models may be a generalization of those developed by the Natural Resources Conservation Service and its partners for



General information
Next steps
MLRA list
MLRA map
MLRA photos
Briefcase

EDIT –Ecosystem Dynamics Interpretive Tool

Major Land Resource Area list

SEARCH

FILTER BY

SORT BY

Viewing 3 of 3 [View all](#)



026X
Carson Basin and Mountains

...



126X
Central Allegheny Plateau

...



226X
Aleutian Islands-Western Alaska Peninsula

...

Viewing 3 of 3 [View all](#)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: B
Ecological site: R026XY016NV - LOAMY 8-10 P.Z.
Other vegetative classification: GRAVELLY LOAM 8-10 P.Z.
(026XY098NV_2)
Hydric soil rating: No

Carson Basin and Mountains

HOME / ESD CATALOG / MLRA 026X

Ecological site list

SEARCH

FILTER BY

SORT BY

Viewing 20 of 110 [View all](#)



F026XY044NV/F026XY044NV
Shallow Sandy Slope 10-12 P.Z.

PROVISIONAL

i

...



F026XY059NV/F026XY059NV
Sandy Flood Plain 8-10 P.Z

PROVISIONAL

i

...



F026XY060NV/F026XY060NV
Shallow Loamy Slopes 12-16 P.Z PIMO/ARTRV/ACTH7

PROVISIONAL

i

General information

Next steps

Ecological site list

Ecological site map

Ecological site keys

Ecological site photos

Print

Briefcase



EDIT –Ecosystem Dynamics Interpretive Tool



LOAMY 8-10 P.Z.

HOME / ESD CATALOG / MLRA 026X / ECOLOGICAL SITE R026XY016NV

USC METRIC

General information

Physiographic features

Climatic features

Water features

Soil features

Ecological dynamics

Interpretations

Supporting information

Reference sheet

Print options

All Sections

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.

MLRA notes

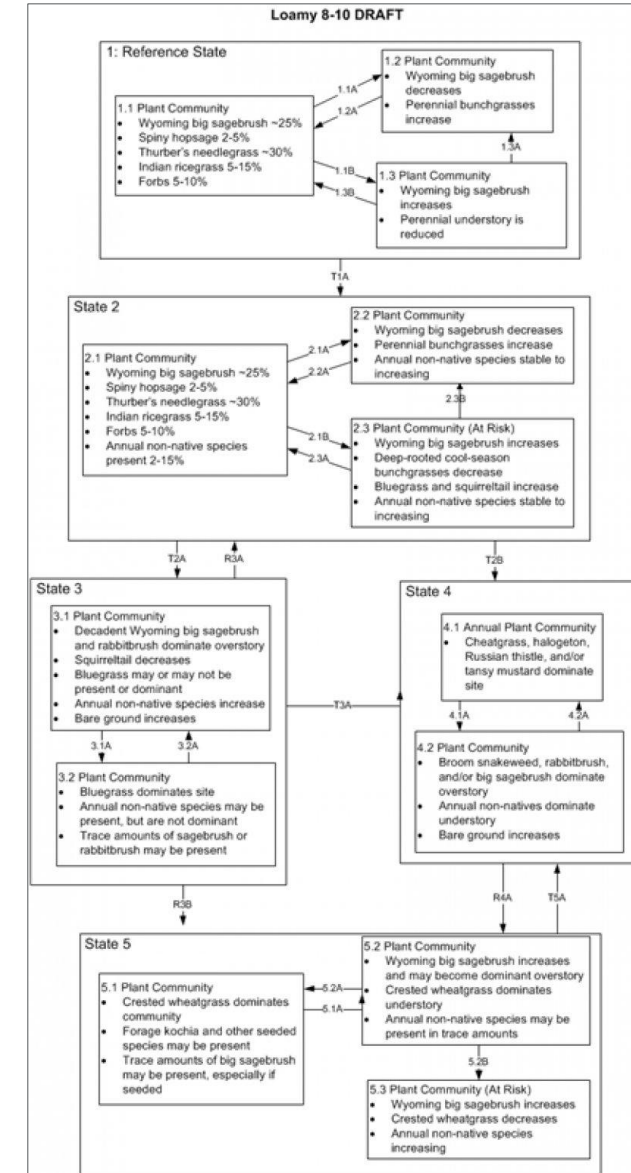
Major Land Resource Area (MLRA): 026X–Carson Basin and Mountains

The area lies within western Nevada and eastern California, with about 69 percent being within Nevada, and 31 percent being within California. Almost all this area is in the Great Basin Section of the Basin and Range Province of the Intermontane Plateaus. Isolated north-south trending mountain ranges are separated by aggraded desert plains. The mountains are uplifted fault blocks with steep side slopes. Most of the valleys are drained by three major rivers flowing east across this MLRA. A narrow strip along the western border of the area is in the Sierra Nevada Section of the Cascade-Sierra Mountains Province of the Pacific Mountain System. The Sierra Nevada Mountains are primarily a large fault block that has been uplifted with a dominant tilt to the west. This structure leaves an impressive wall of mountains directly west of this area. This helps create a rain shadow affect to MLRA 26. Parts of this eastern face, but mostly just the foothills, mark

Infilling by Pinyon?

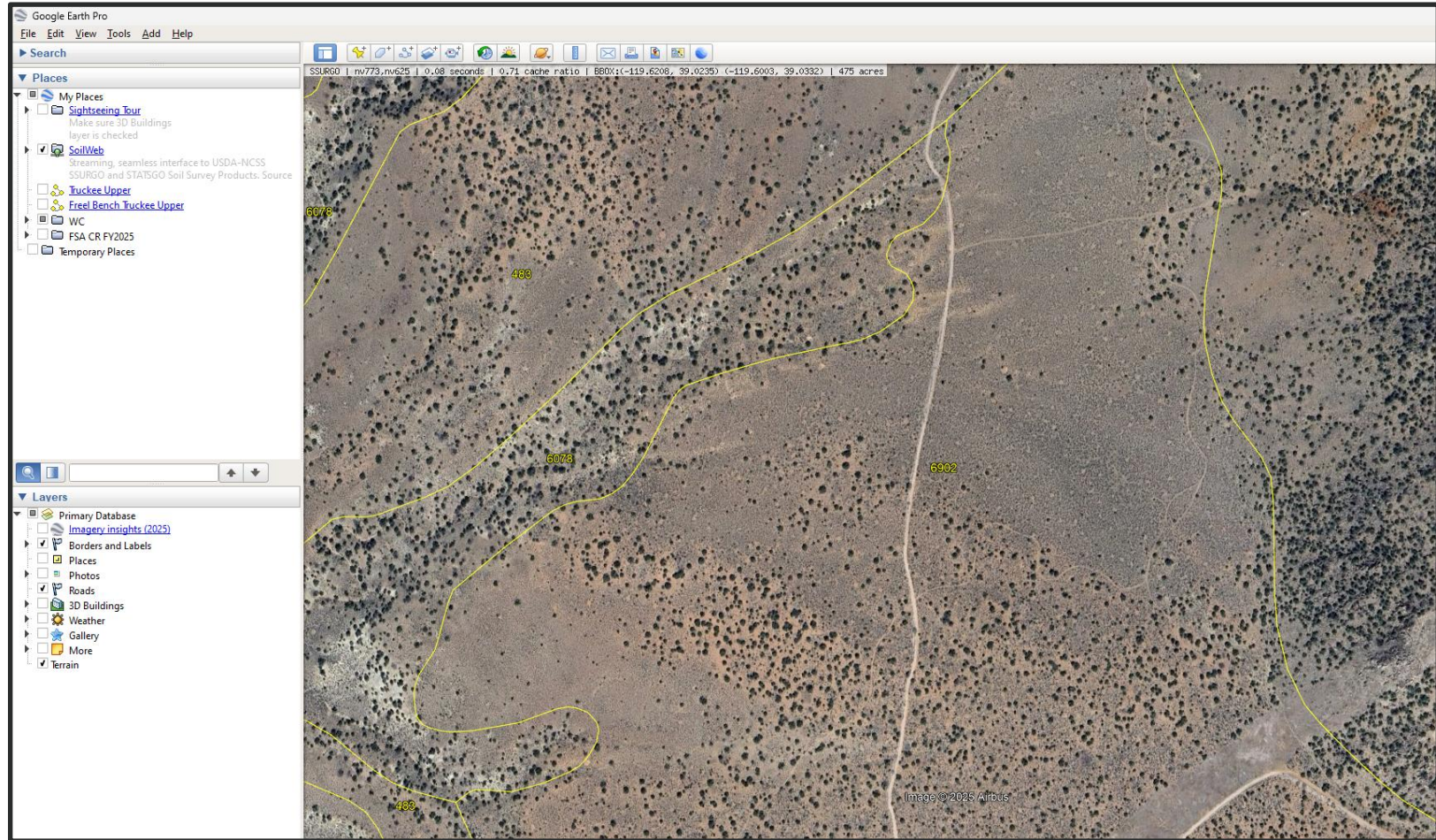
From Ecological Dynamics section:

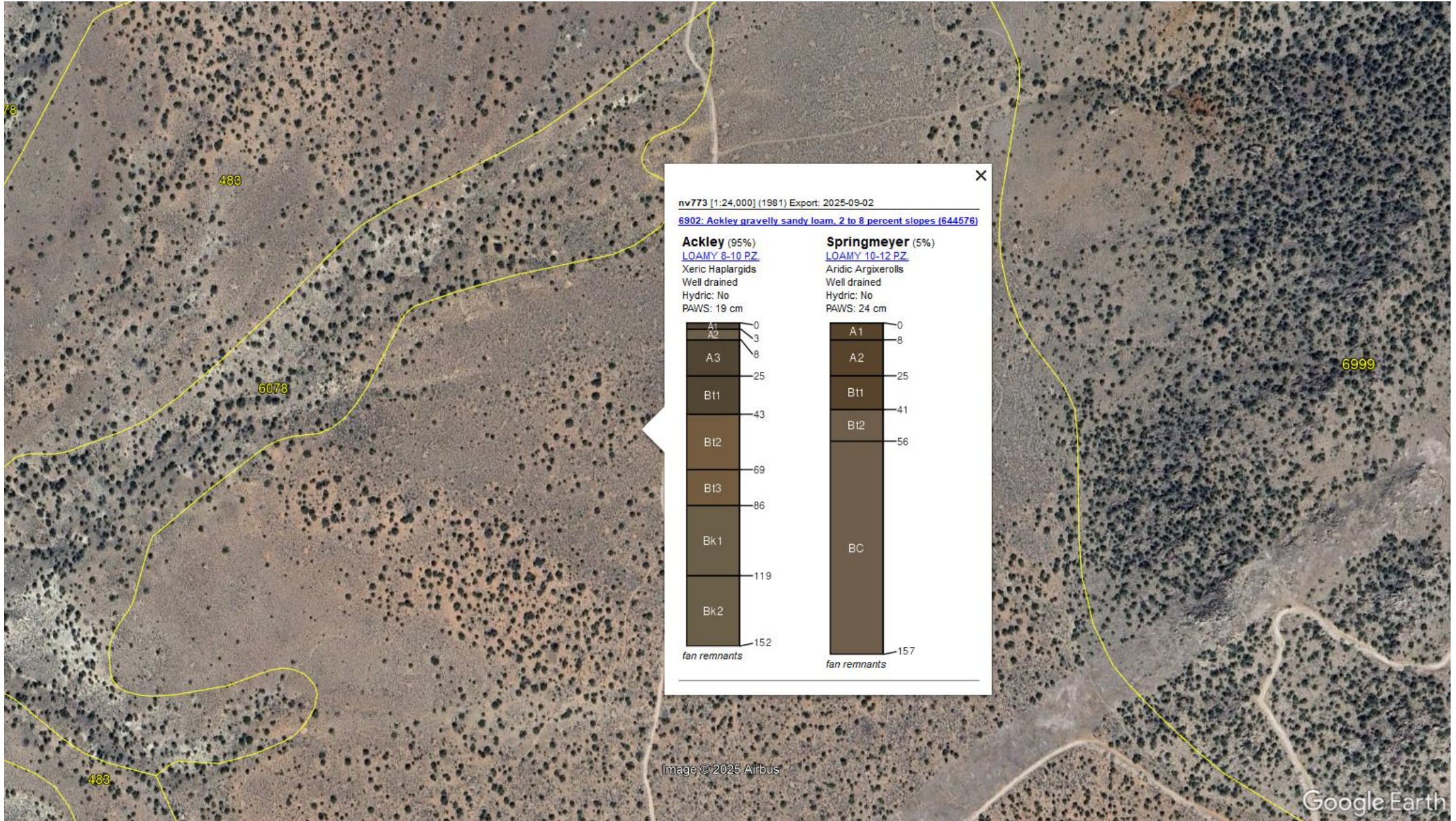
Infilling by singleleaf pinyon and Utah juniper may also occur with an extended fire return interval. Eventually, singleleaf pinyon and Utah juniper will dominate the site and out-compete sagebrush for water and sunlight severely reducing both the shrub and herbaceous understory (Lett and Knapp 2005, Miller et al. 2000). Bluegrasses may remain underneath trees on north-facing slopes. The potential for soil erosion increases as woodland matures and the understory plant community cover declines (Pierson et al. 2010).



SoilWeb for Google Earth

- Developed by UC Davis with NRCS assistance
- Multiple applications
- Links soil survey directly to EDIT
- User friendly interface





Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Nevada Ecological Site Descriptions

Access Provisional ESDs to Help Make Resource Management Decisions

Ecological Site Descriptions

Have you ever wondered where to find information about the characteristics, distribution, and dynamics of specific ecosystems? The Natural Resources Conservation Service (NRCS) actively partners with researchers and resource management professionals to catalog knowledge about the characteristics, spatial distribution, and temporal dynamics of ecosystems to support science-based resource management decisions.

Ecological Site Descriptions (ESDs) provide a framework for cataloging observations and expert knowledge about distinctive ecosystem classes and how they change over time. ESDs provide accessible, reliable ecosystem knowledge for those seeking to understand how disturbance and management affect ecosystem structure and processes. ESDs and associated information are used primarily to stratify the landscape for monitoring and assessment, interpretation of resource hazards and opportunities, and to prioritize and select management actions.

How Can ESDs Help Me?

ESDs are reports that provide detailed information about a particular kind of land—a distinctive ecological site. They provide land managers with the information needed to evaluate suitability for various land uses, capability to respond to different management activities or disturbances, and the ability to sustain productivity over the long term. Understanding the potential of ecosystems and how they might respond to disturbance and management inputs help natural resource professionals anticipate change and prioritize investment in conservation and restoration practices.

Publication Status in Nevada

Through a recent initiative by the NRCS' Soil and Plant Science Division, all of the Major Land Resource Areas within Nevada now feature published, publicly available ecological site data. This information is almost exclusively available at the "Provisional" approval level. This is the minimum standard for publication, which means that the site has undergone a rigorous scientific review process and contains the information which makes it most useful for land management decision-making.

Every provisional site features a state-and-transition model (STM). An STM describes the patterns, causes, and indicators of transitions between communities within an ecological site. STMs synthesize literature and informal knowledge tied to particular ecological sites to distinguish changes in vegetation and soils that are easily reversible versus changes that are subject to thresholds beyond which reversal is costly or impossible. The models describe all possible states, community phases (i.e., easily-reversible variants of states), and transitions between communities and states. Transitions contain information about mechanisms, triggers, thresholds, and indicators of threshold development (see figure on page 2).

Pyroon-Jumper community
Stony soils

Grassland community
Deep sandy loam soils

Mixed community
Sandy Wash

Blackbrush community
Very shallow soils

ESD information is presented in four major sections:

- Site Characteristics: physiographic, climate, soil, and water features
- Plant Communities: plant species, vegetation states, and ecological dynamics
- Site Interpretations: management alternatives for the site and its related resources
- Supporting Information: relevant literature, information, and data sources

January 2026

Helping People Help the Land

Nevada

Nevada ESD "2-pager"

- Description of ecological sites
- Summary of publication status in Nevada
- How to access information online



Contact Information

- Chris Savastio, State Soil Scientist, Nevada NRCS
 - Chris.Savastio@usda.gov



EDIT

<https://edit.sc.egov.usda.gov/>



Web Soil Survey:

<https://websoilsurvey.nrcs.usda.gov/>



Ecological Site Descriptions - An
Interdisciplinary and Interagency Effort (8
Session Webinar Series):

<https://www.nrcs.usda.gov/getting-assistance/technical-assistance/ecological-sciences/ecological-site-descriptions>