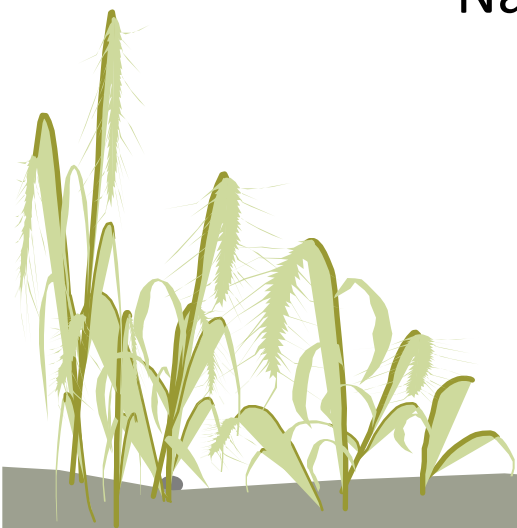


The New and Improved Closed Upland Depression ESD

What is an Ecological Site Description and How it Used?

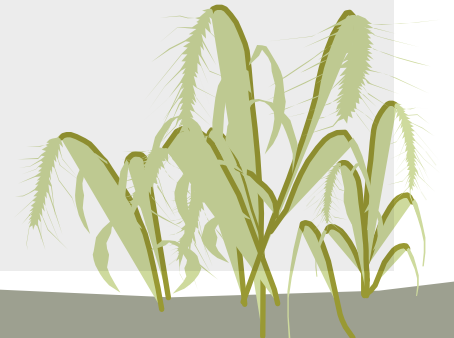
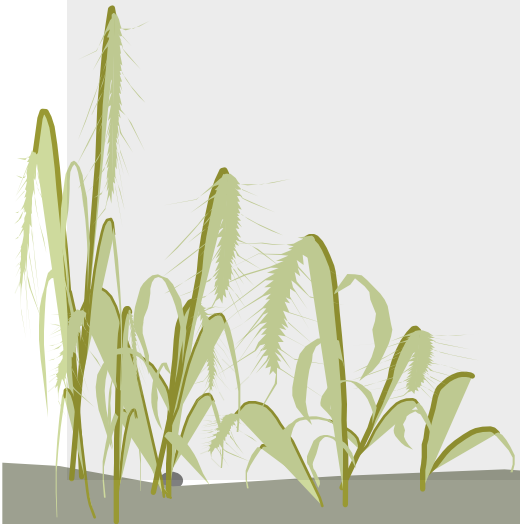
Nadine Bishop, NRCS State Rangeland Management Specialist

nadine.bishop@usda.gov



Closed Upland Depression ESD

- What is an Ecological Site?
- How are Ecological Sites Classified and Organized?
 - Major Land Resource Areas
 - Ecological Site Concepts
 - Ecological Site Keys
- What is an Ecological Site Description?
- Closed Upland Depression Ecological Site Description for the Rain Water Basin
 - Site Concepts
 - Physical Features
 - Physiographic Features
 - Water Features
 - Soil Features
 - Ecological Dynamics
 - State and Transition Model
 - States & Communities
 - Community Pathways and Transitions





What Is an Ecological Site?

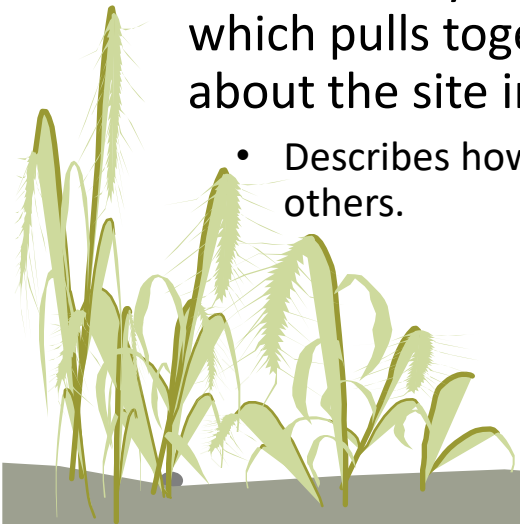
A distinctive kind of land that:

- Specific geophysical attributes
 - Soils (texture, depth, horizon development, chemistry, water holding capacity)
 - Water Features (flooding, ponding, water table)
 - Aspect, slope and topography
 - Parent material
- Differs from other kinds of land in its ability to produce a **distinctive kind and amount of vegetation**
- Differs from other kinds of land in its **response to** management actions and natural **disturbances**.

Ecological Sites are classified on a Major Land Resource Area basis.

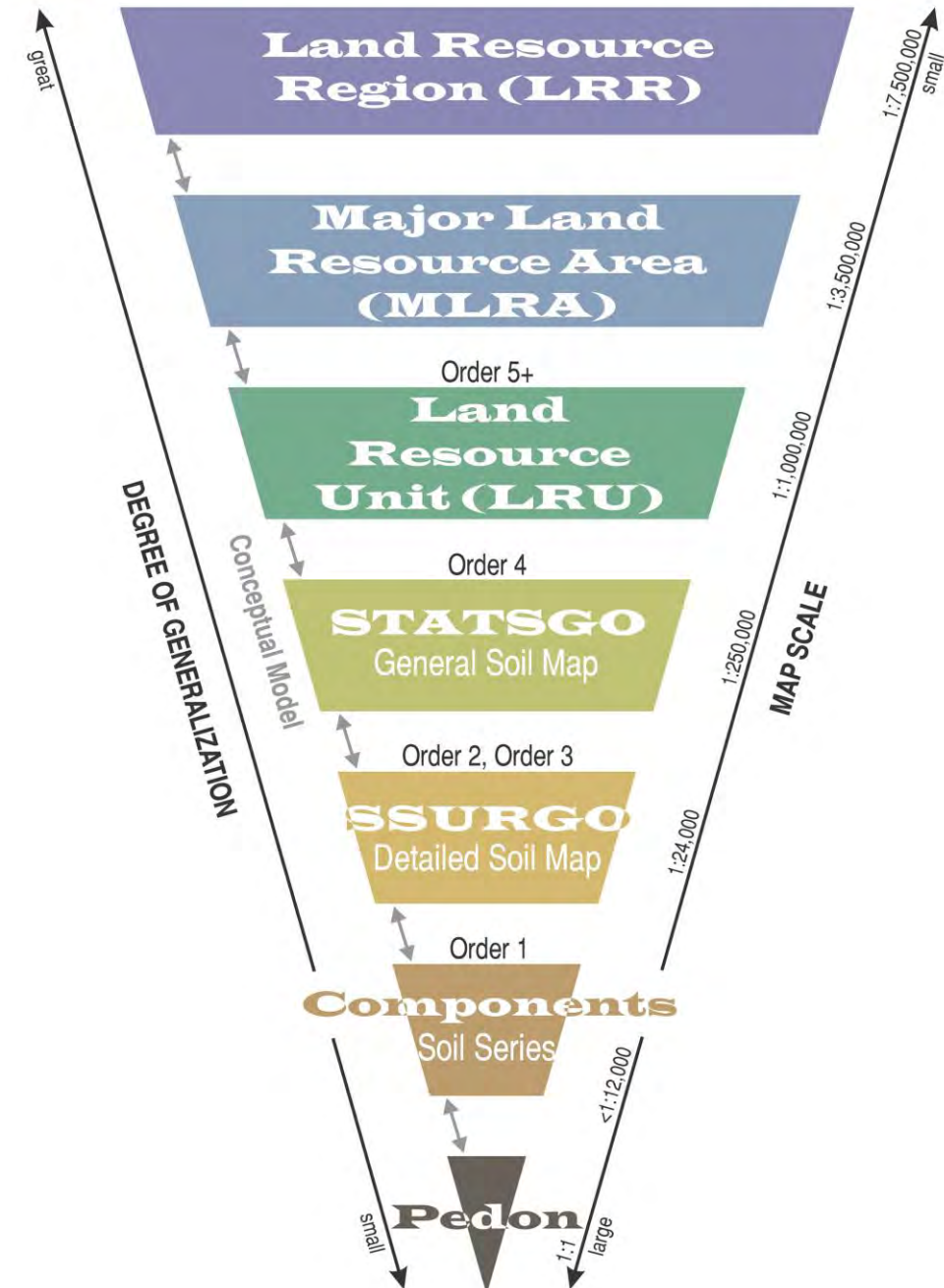
An Ecological Site:

- Is a division of the landscape, a classification analogous to species.
- Has specific capabilities and capacities
- Changes over time; distinguished by speed of change and vulnerability to changes
- Is grouped and described by Major land Resource Area
- Described by an ecological site description, which pulls together the unique information about the site in a written document.
 - Describes how an ecological site is different from others.



LRR-MLRA-LRU

Land Resource Hierarchy

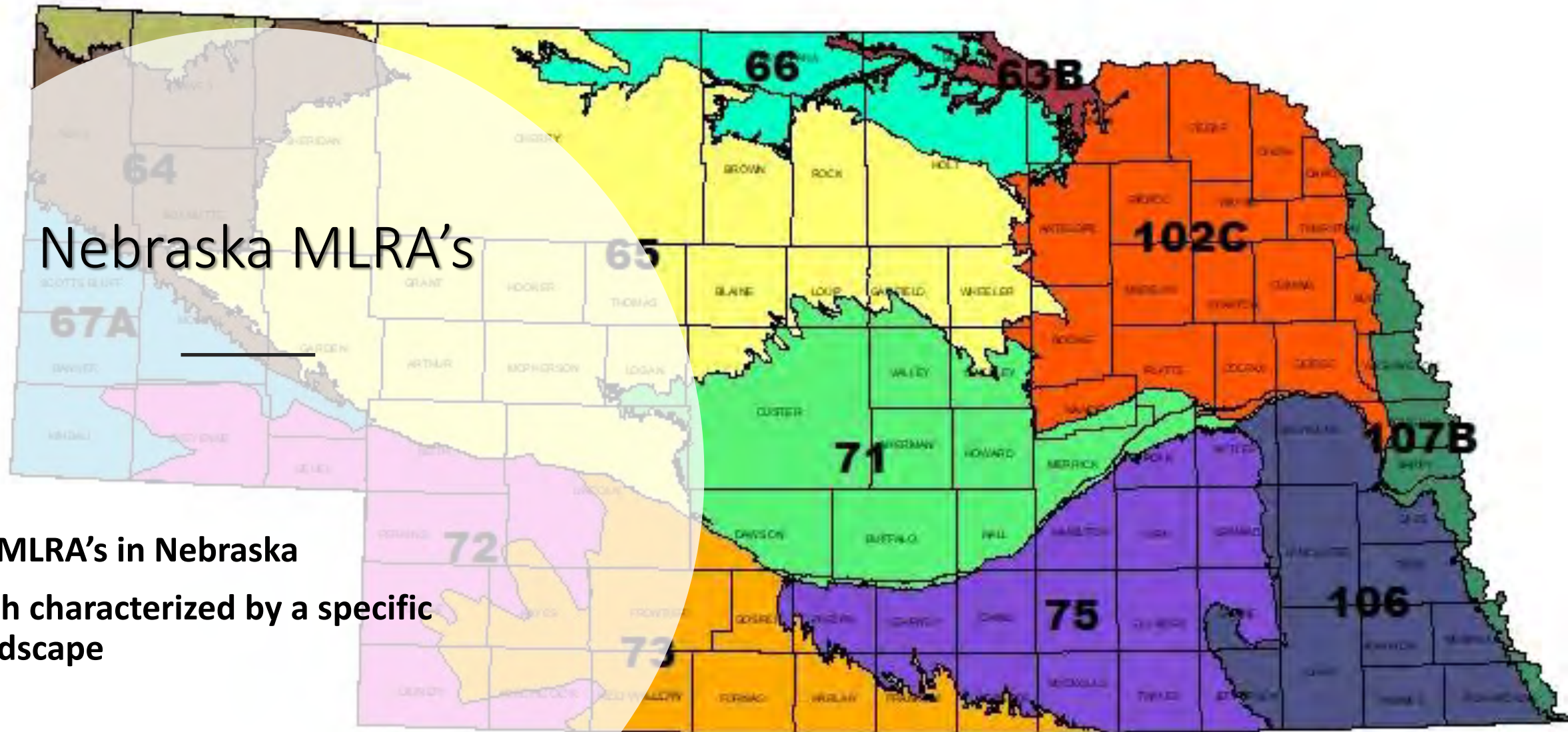


What is a MLRA?

Part of the land use hierarchy.

Geographically associated land resource units featuring a particular pattern of soils, water, climate, vegetation, land use and type of farming





Nebraska MLRA's

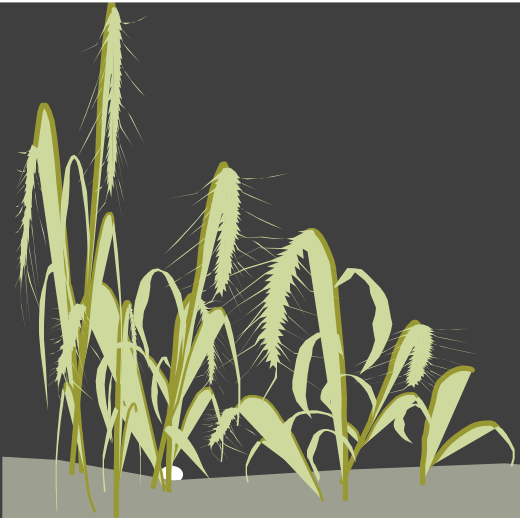
13 MLRA's in Nebraska

Each characterized by a specific landscape



MLRA's in Nebraska

MLRA 65 Nebraska Sandhills



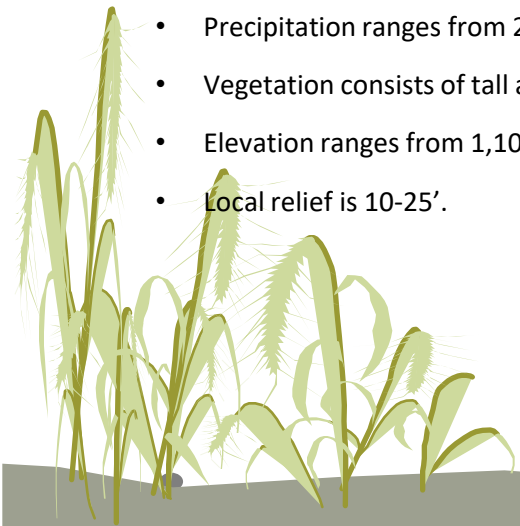
A wide-angle photograph of a grassy plain in Nebraska. The foreground is filled with tall, golden-brown grass. In the middle ground, there are patches of green grass and scattered rocks. The background shows a flat horizon under a blue sky with scattered white clouds. A dark circular overlay with a white border is positioned on the left side of the image, containing white text.

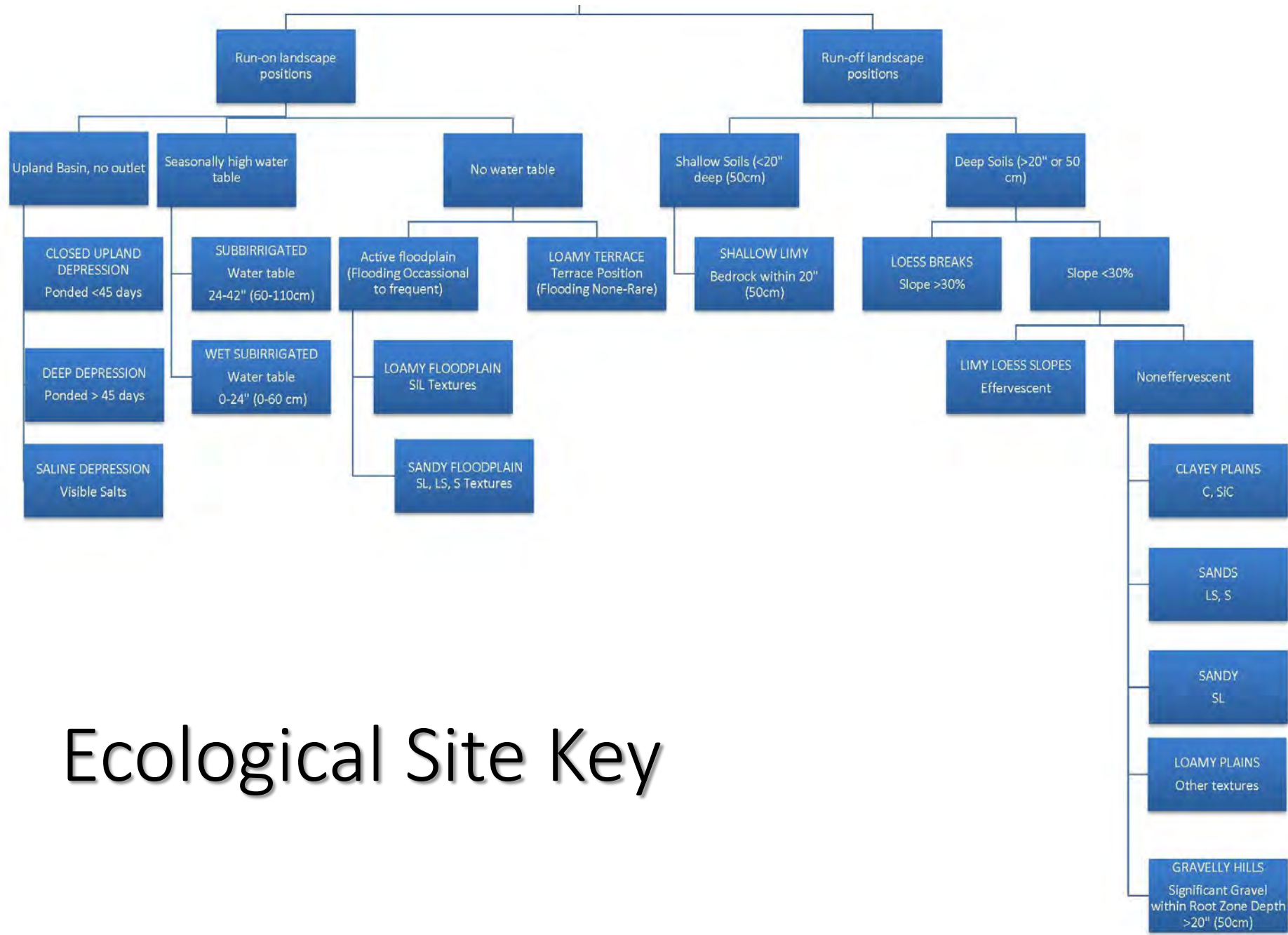
MLRA's in
Nebraska –
MLRA 67A
Central High
Plains North

Nebraska MLRA's - MLRA 75 Central Loess Plains

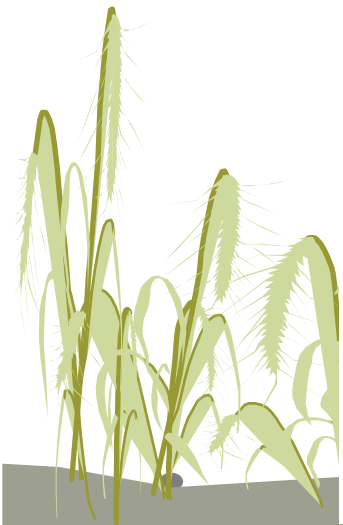
Central Loess Plains

- Gently rolling plains.
- Numerous narrow, shallow stream valleys and broad river valleys with a number of stream terraces.
- The soils are deep, silty soils formed in loess.
- Dominant soil order is Mollisols.
- Mesic Temperature regime.
- Precipitation ranges from 23-36"
- Vegetation consists of tall and mid-grasses
- Elevation ranges from 1,100'-3,000' above sea level
- Local relief is 10-25'.





Ecological Site Key





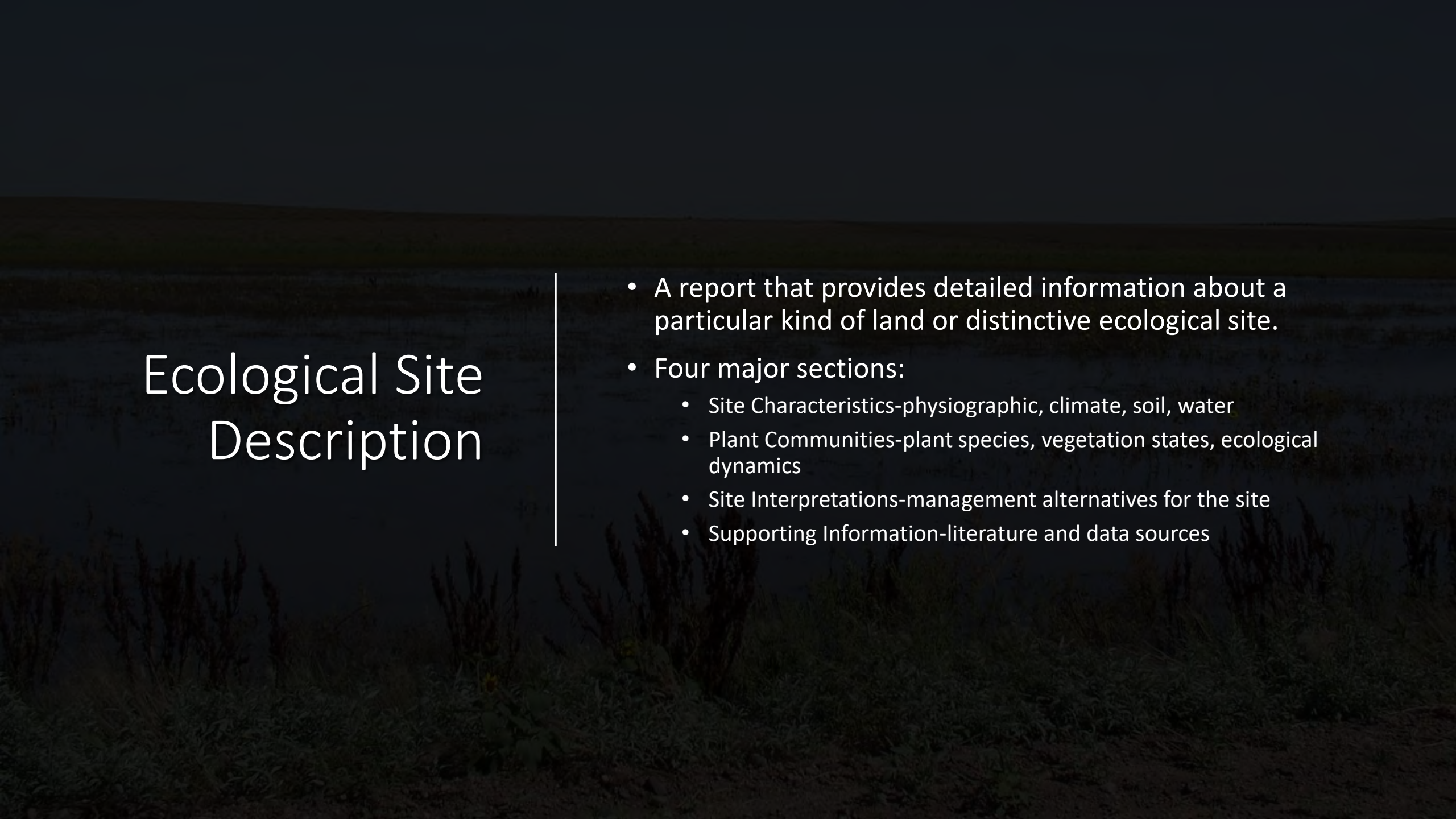
Why Split Ecological Sites on MLRA Boundaries?

CLOSED UPLAND DEPRESSION – MLRA 72



Why Split Ecological Sites on MLRA Boundaries?

CLOSED UPLAND DEPRESSION – MLRA 75

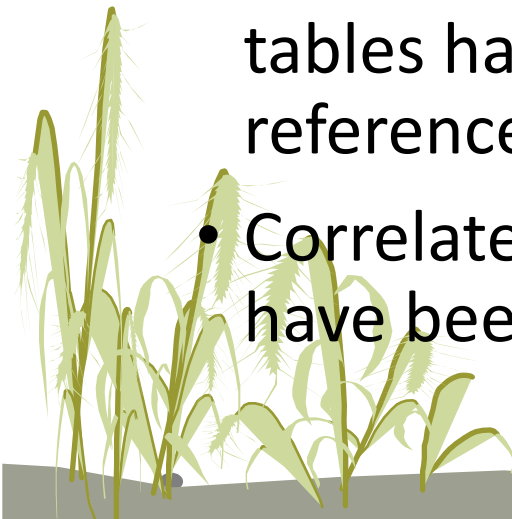


Ecological Site Description

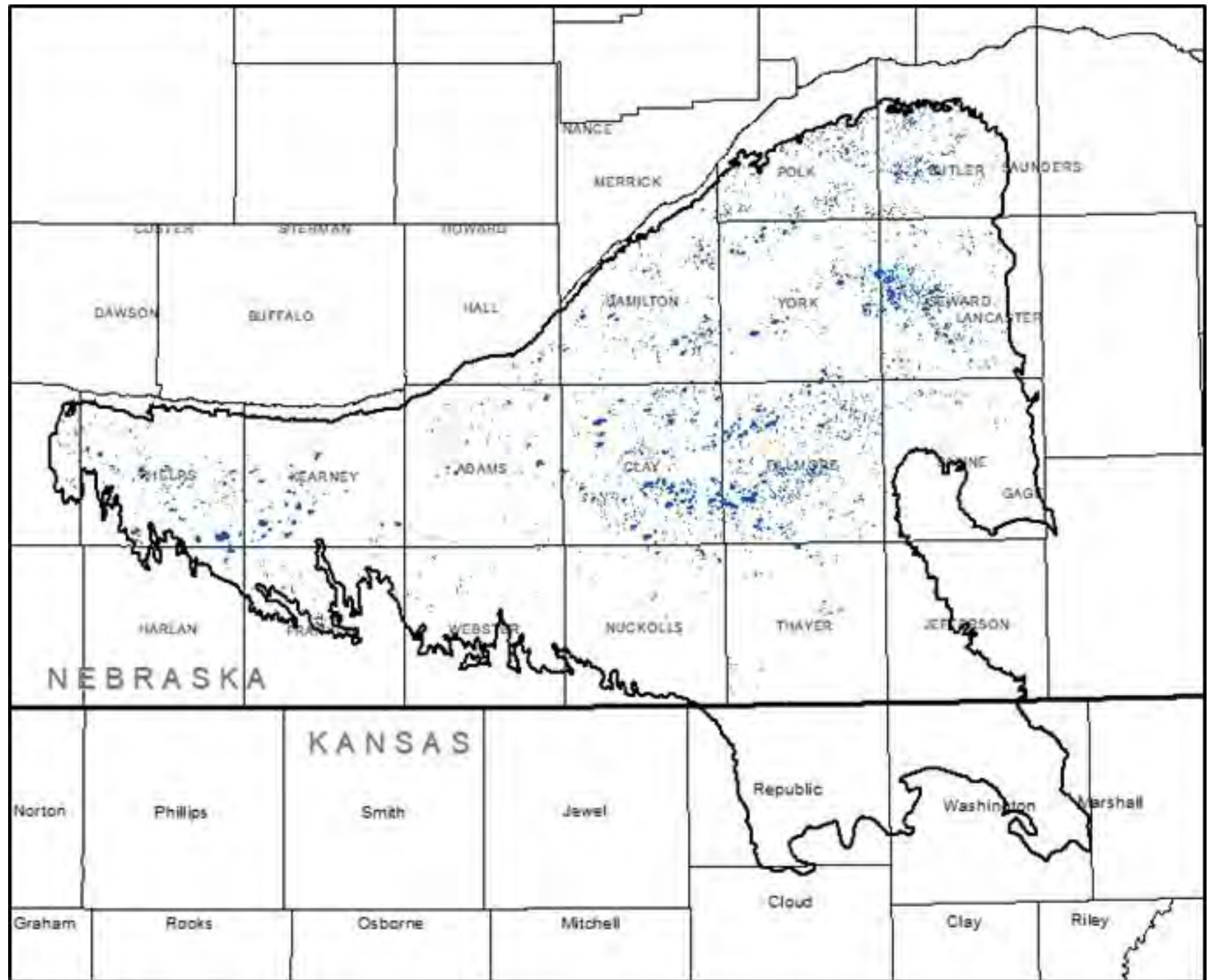
- A report that provides detailed information about a particular kind of land or distinctive ecological site.
- Four major sections:
 - Site Characteristics-physiographic, climate, soil, water
 - Plant Communities-plant species, vegetation states, ecological dynamics
 - Site Interpretations-management alternatives for the site
 - Supporting Information-literature and data sources

Ecological Site Descriptions - Levels

- Provisional – Grouping of soil units that respond similarly to ecological processes. Has a state-and-transition model that captures the ecological processes and vegetative states and community phases.
- Approved – Fully describes the distinguishing features of the site. The reference state communities are described **AND** plant composition tables have been developed for each plant community in the reference state.
- Correlated – Highest level of documentation. Plant community tables have been developed for **every** state and plant community.



CLOSED
UPLAND
DEPRESSION
ESD – MLRA
75



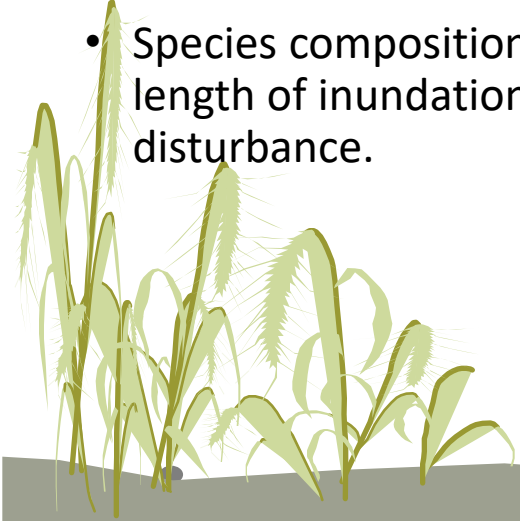
Deep Dive into the CUD ESD

- General MLRA Information
- Ecological Site Concept
- Physiographic Features
- Climatic Features
- Influencing Water Features
- Representative Soils Features



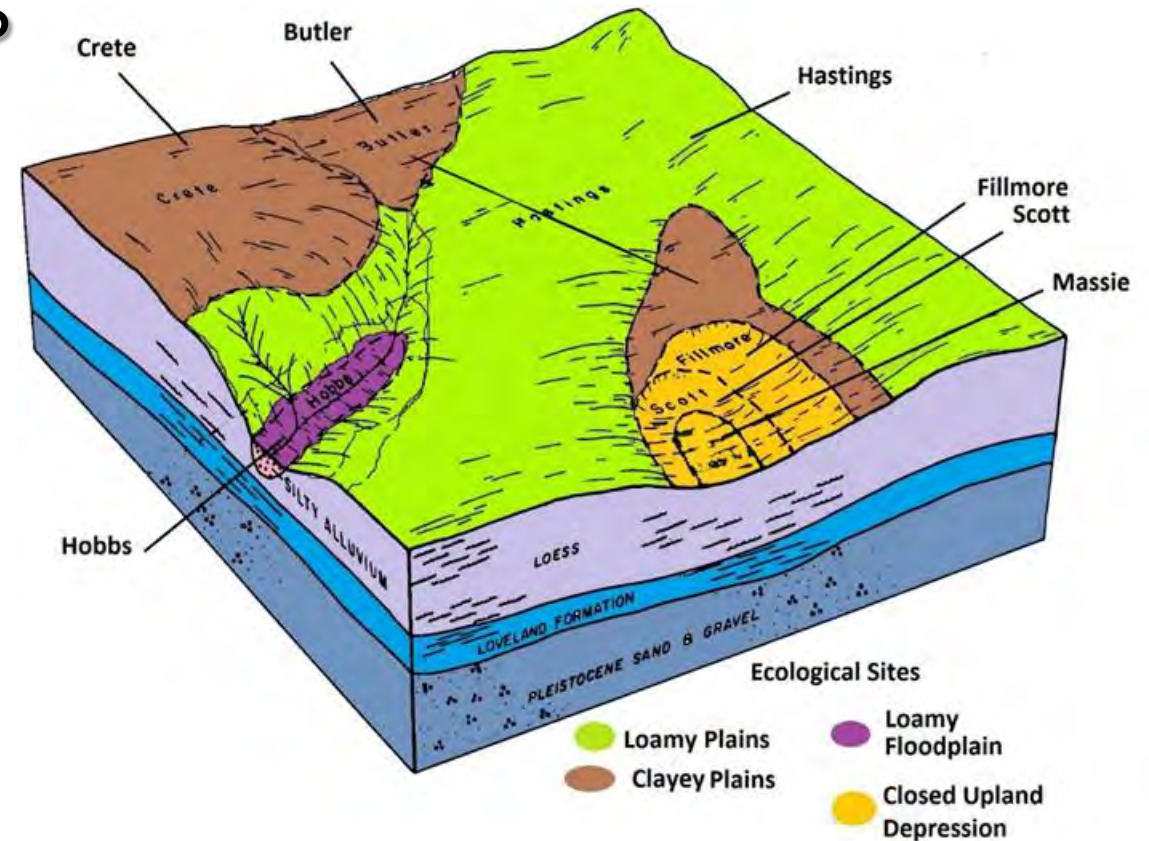
Ecological Site Concept

- Playa wetlands, embedded in upland portion of landscape, no natural outlet.
- Not connected to any drainage.
- Temporary, seasonal, or semi-permanent water regimes
- Ponded for weeks or months annually.
- Can remain ponded or dry for extended periods of more than a year.
- Species composition driven by depth and length of inundation and level of disturbance.



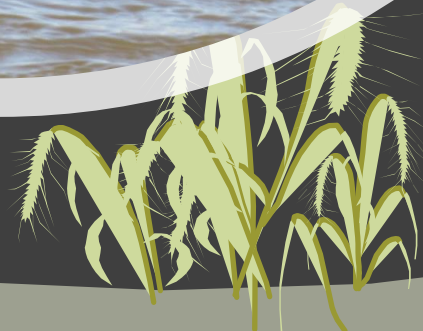
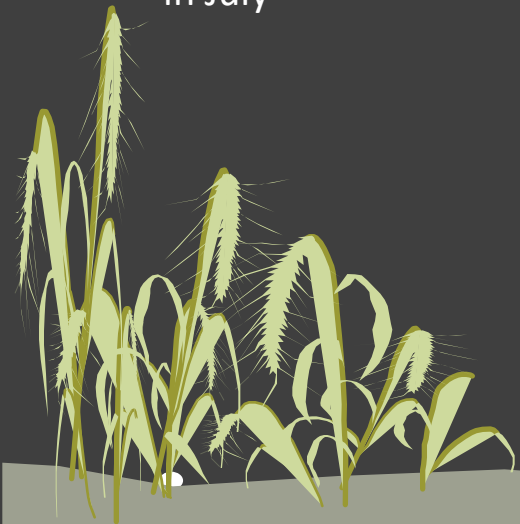
Physiographic Features

- Sites occur in playas and depressions of uplands
- Receive runoff from areas higher on the landscape
- Ponded for brief to long periods from run-in water
- Not subject to flooding
- Slopes 0-2%



CLIMATIC FEATURES

- Regime of extremes – hot in summer, cold in winter
- Winters can be open with bare ground most of the season or closed with up to several feet of snow persisting through spring
- Frost-free period ranges from 155-178
- Average Annual Precipitation is 29.36
- May, June and July are the wettest months
- Average high temperatures range from 36.2 in January to 87.89 in July
- Average low temperatures range from 14.1 in January to 64.7 in July



Influencing Water Features

- Temporary, seasonal or semi-permanently ponded
- Fill as a result of runoff or snow melt or precipitation events
- Independent of ground water influence
- Hydroperiod depends on sized of drainage area, infiltration rate, type and amount of vegetative cover, rainfall (intensity, frequency, amount)
- Depth of depression
- Hydroperiod can change annually.

