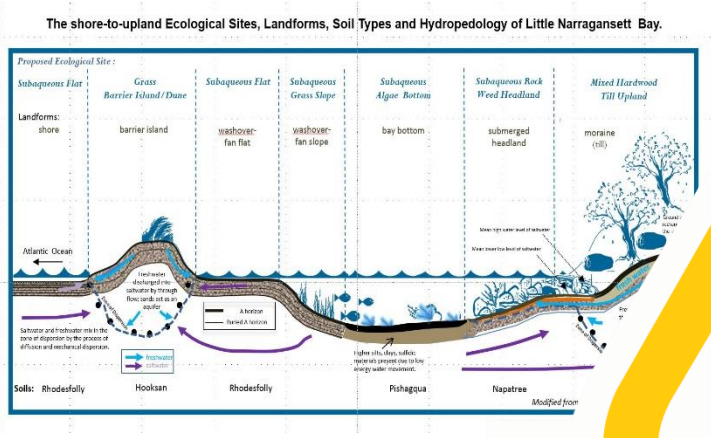
United States Department of Agriculture

Ecological Site Description Overview

2018 Coastal Zone Soil Survey (CZSS) Work Planning Conference Savannah, GA January 9th, 2018



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The Ecological Site…

A CONCEPTUAL division of the landscape.

Defined as:

- **A distinctive kind of land based on recurring soil, landform, geological, and climate characteristics that differs from other kinds of land in its ability to produce distinctive kinds and amounts of vegetation and in its ability to respond similarly to management actions and natural disturbances.**

In other words…. An Eco Site is:

- Distinctive kinds of land with specific soil, landform and physical characteristics that produces distinctive kinds and amounts of vegetation
- Responds similarly to management actions and natural disturbances
- Serves as a concept for organizing the landscape
- A soil mapunit can contain several Eco Sites

The Ecological Site…

Each Ecological Site is the product of all the Environmental Factors responsible for its development.

- Soils
- Geomorphology
- Climate

These abiotic factors interact to govern how plant species are distributed along environmental gradients, and how they respond to other factors such as disturbances and management:

- Fire
- Herbivory
- Drought
- Storms
- Salinity

The Ecological Site Description…

Reports with associated data that document the characteristics of an ecological site (including its climate, soils, and state-and-transition model) and the interpretation of its properties related to use and management.

- **Describe physiographic features, soil properties and other site conditions**
- **Describe vegetation**
- **State and transition model and legend**
- **Ecological processes and management interpretations.**
- **These reports are not static.**

ESD's Contain…

General Information :

- Administrative information
- Physiographic Features
- Climate Features
- Water Features
- Soil Features
- Plant Communities
  - Ecological Dynamics
  - Vegetation Composition and Structure
  - Production information

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Ecological Site Description

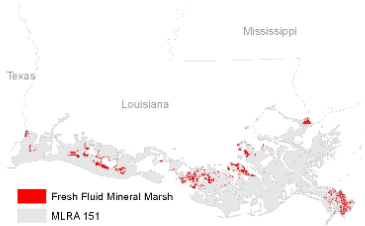
Section I: Ecological Site Characteristics

Ecological Site Identification and Concept

Site stage: **Approved**

Approved: an ESD at the approved status represents a tier of documentation that fully describes all distinguishing features of the ecological site, to include both tabular and narrative entries. The reference state and community phase in the state and transition model is fully described, including both tabular and narrative entries. All other alternative states are at least described in narrative form. The approved ESD has undergone both quality control and quality assurance protocols.

Site name: **Fresh Fluid Marsh 60-64 PZ**
Site type: Rangeland
Site ID: R151XY008LA
Major land resource area (MLRA): 151-Gulf Coast Marsh



Fresh Fluid Mineral Marsh

Major land resource area (MLRA)151, Gulf Coast Marsh, is in Louisiana (95 percent), Texas (4 percent), and Mississippi (1 percent). It makes up about 8,495 square miles (22,015 square kilometers). The towns of Gretna, Chalmette, and Marrero, Louisiana, and the city of New Orleans, Louisiana, are in the eastern part of this MLRA. The town of Port Arthur, Texas, is in the western part. Interstate 10 and U.S. Highway 90 cross the area. The New Orleans Naval Air Station is in this MLRA. Fort Jackson, overlooking the mouth of the Mississippi River, and the Jean Lafitte National Historic Park and Preserve are in the MLRA. A number of national wildlife refuges and State parks occur throughout this area. MLRA 151 is a very complex ecosystem with active deltaic development and subsidence with extreme anthropogenic impact by man with construction of flood protection levees and channelization occurring on the eastern portion of the MLRA. The Western portion of the MLRA is more stable in that portions of the landscape is protected naturally by the Chenier's, although there is Anthropogenic affects of the interior due to channelization for navigation.

Ecological Site Concept

These areas are on low gulf coastal fresh water marshes at elevations of 1 foot or less. Slopes range from 0 to 0.1 percent. The soils formed in moderately thick, well decomposed herbaceous organic plant remains overlying fluid clayey or silty sediments or they formed in fluid clayey or loamy sediments deposited under water that have never air-dried and consolidated. The unconsolidated mineral and organic sediments are too soft for cattle to graze. These areas flood very frequently and frequently with fresh water during high water levels from the local rivers and during severe storms by sea water from the Gulf of Mexico; and remain ponded for very long duration. When water depths range from minus 2 inches to plus 6 inches and the water contains less than 0.5 ppt salt, Jamaica sawgrass is dominant. As average water depth increases to 0 to 12 inches, giant cutgrass and American lotus dominates. Giant cutgrass also prefers a salt content of less than 0.5 ppt. In the deepest fresh marsh, where water levels average 1 to 12 inches and salt content is from 5 to 10 ppt, maidencane is dominant. Cattails grow with the California bulrush, especially in water 2 to 18 inches deep and containing up to 15 ppt salt. These plant communities intergrade where water tolerance levels overlap. Other plants such as switchgrass and common reed are locally prominent where their optimum water levels and salinity content are found.

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ESDs Contain… State-and-Transition Model (STM).

Describes vegetation dynamics and management and disturbance interactions.

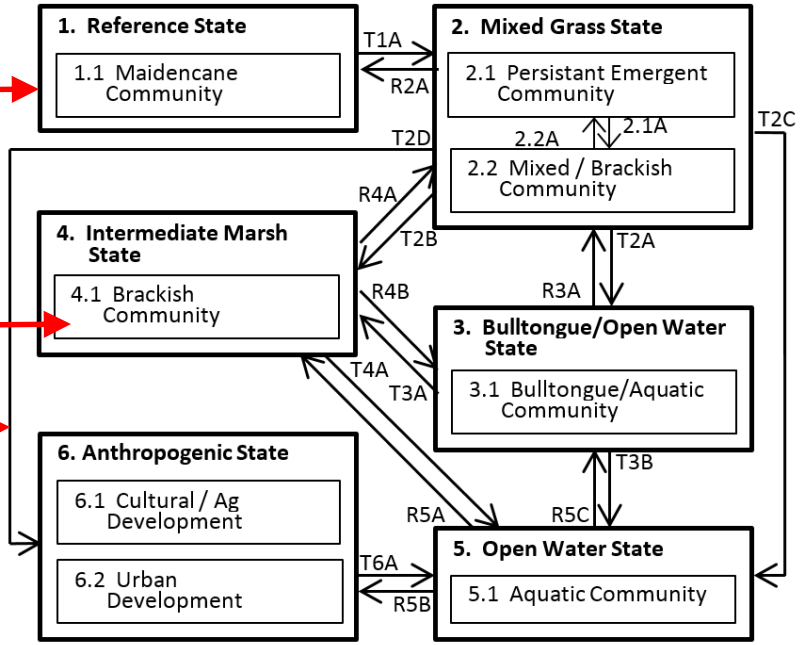
Reference and Alternative **"States"**

Composed of Different Plant Communities **"Phases"**

Arrows denote **"Transitions"**

"**Legend**" highlights causes of transitions

Simplified
R151XY008LA
Fresh Fluid Marsh



Legend Code	*Drivers / Practices*
T1A / R2A	surface water depth > 2" / < 2"
2.1A /2.2A	salinity > 1.5 / <1.5
T2A / R3A	surface water depth > 12" / < 12"
T2B, T3A / R4A, R4B	salininity > 3 / < 3
T3B, T4A, T2C / R5A, R5C	surface water depth > 18" / < 18"
T2D, R5B /T6A	lower water level & Levees / failure

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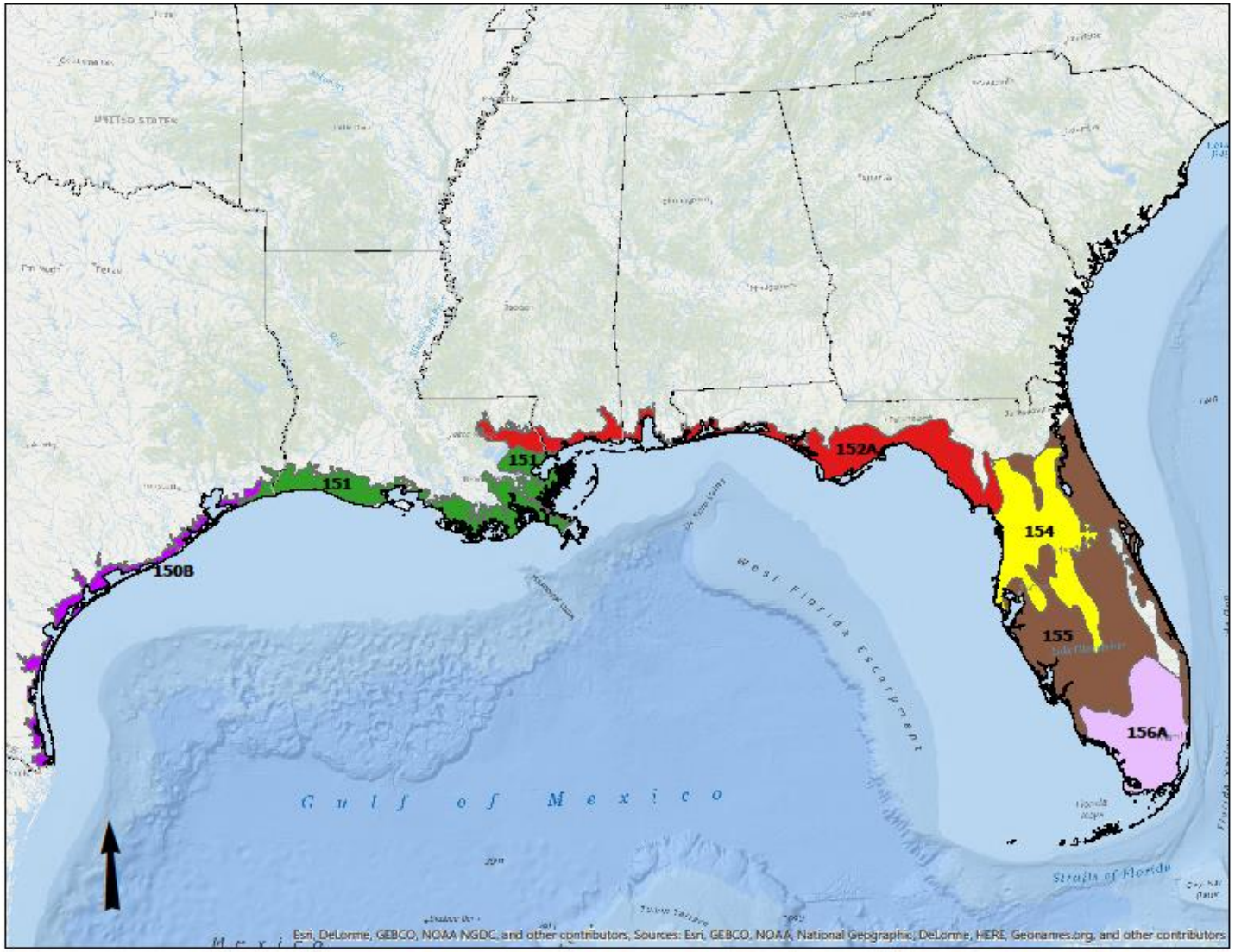
Ecological Site Description & Inventory: Goals

- To organize ecological knowledge into a decision-making framework across highly variable and complex landscapes. These landscapes can be subdivided and classified into units that behave similarly, called Ecological Sites (ES).
- Ecological sites will provide a consistent framework for stratifying and describing soil, vegetation, and abiotic features; for delineating units that share similar capabilities to respond to management activities or disturbance processes; and for estimating what ecosystem services can be expected from particular soil/vegetation combinations.
- Can serve as a repository of knowledge.
- Knowing the make up of each ecological site better defines the limitations and opportunities for conservation, making the ESD a very powerful land management tool.

ESD's and MLRA's



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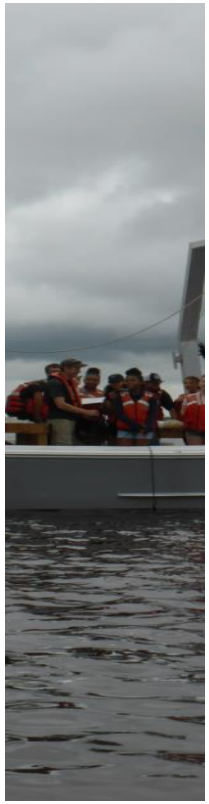
How are Staff Involved?

- **Foresters, grazing specialists, wildlife biologists, etc. can assist with identification of potential sites and data collection**

- **SRCs & SSSs offer staff support, knowledge of data and management practices, and help organize work across political boundaries**

- **Appropriate local experts should assist with management interpretations and STM model development**

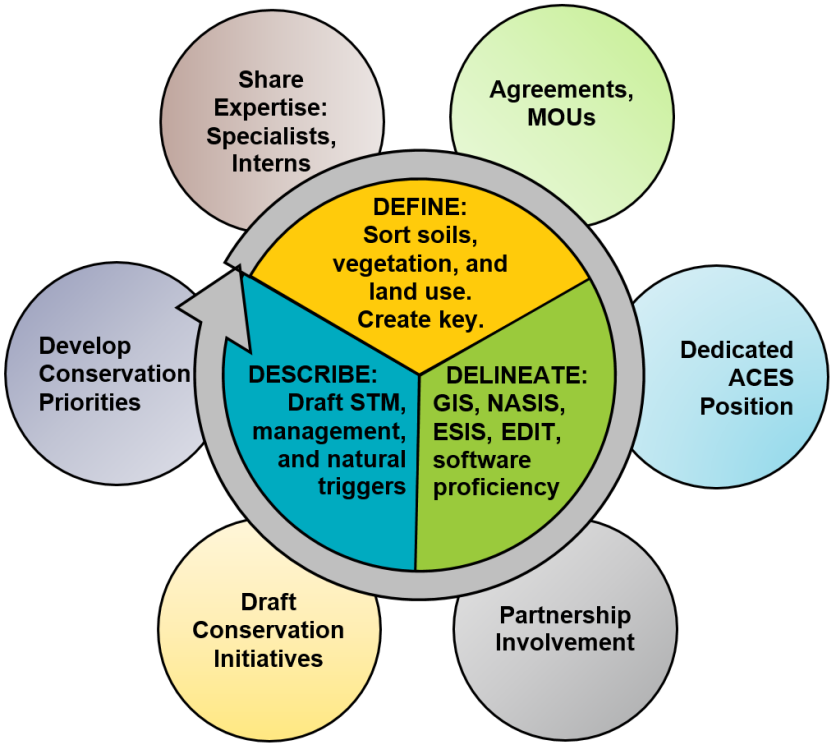


Your help is NEEDED!

You are the local experts that know the landscape of your area the best.

We need your help:

- Identifying Reference sites
- Identifying Typical Alternative states
- How these sites are utilized and managed
- Collect data and find existing data
- Access to willing landowners
- **Keep on track for a beneficial product!!**



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Questions?

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Additional ESD information available at:
http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/ecoscience/desc/

ESD's can be found at:
https://esis.sc.egov.usda.gov/Welcome/pgReportLocation.aspx?type=ESD