

A wide-angle photograph of a marsh restoration site. The foreground and middle ground are filled with rows of young, green, grass-like plants growing in dark, sandy soil. In the background, a person is visible, standing in the marsh. The sky is a clear, pale blue. The entire image is framed by a dark blue border.

# Bessie Heights Marsh Restoration Project

## The Epic Begins

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# Why is restoration necessary?



# TPWD's Goals in Restoring Bessie Heights Marsh

- ❖ Restore hydrology
- ❖ Restore elevation
- ❖ Create a system of ponds, channels, and emergent marsh to provide habitat for a variety of wildlife and fish species
- ❖ Restore native vegetation, prevent exotics
- ❖ Protect restored areas from loss or degradation by erosion and salt water intrusion

# Approaches to Restoration

## ❖ Terracing

- ❖ Project done earlier but incorporated into the project discussed today

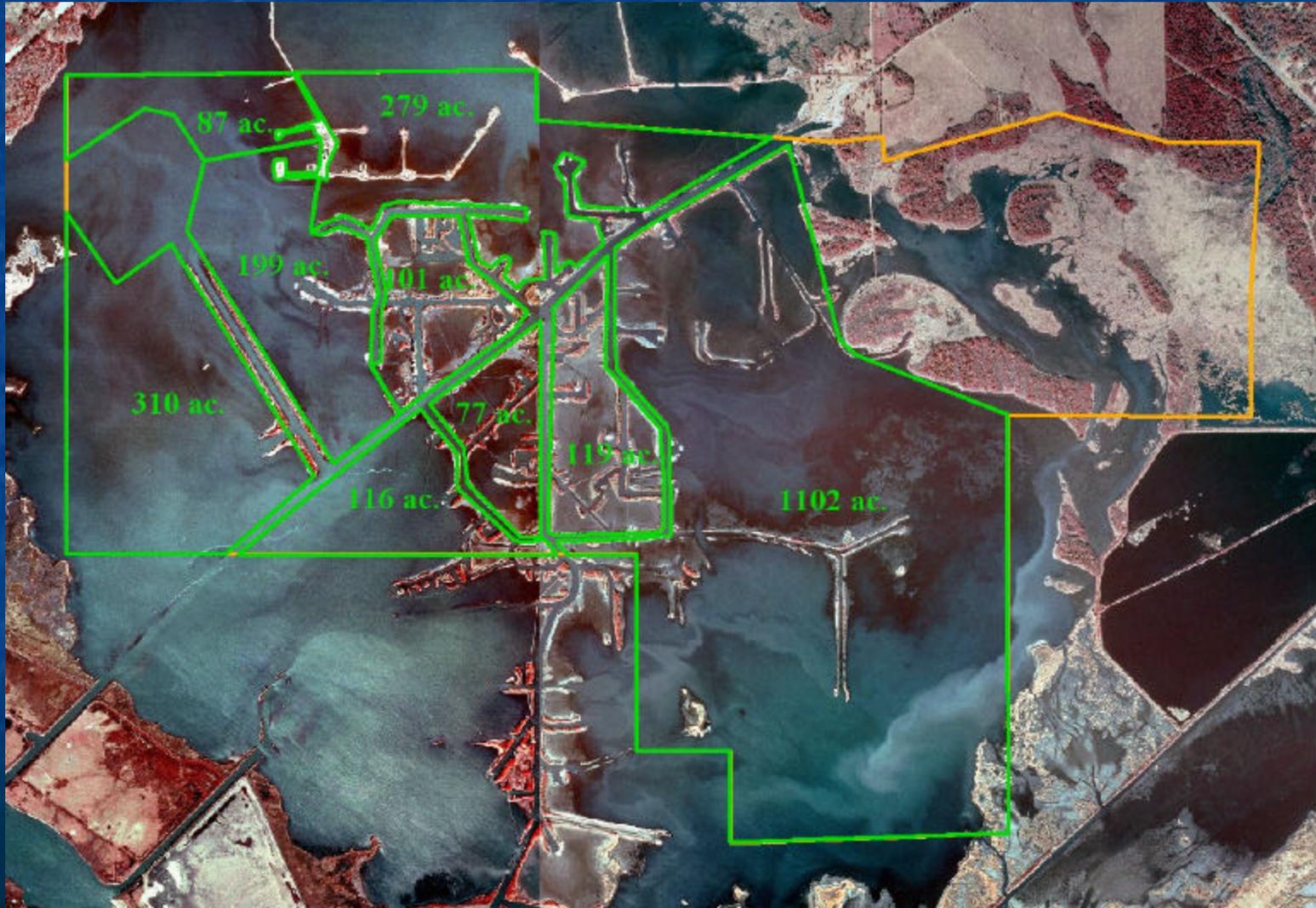
## ❖ Beneficial Uses of Dredged Material

- ❖ Topic of today's discussion

# TPWD's Perspective

- ❖ Vegetation on the restoration project should resemble “reference” marsh remaining in Bessie Heights.
- ❖ Restored marsh must provide habitats for multiple species of wildlife and fish by creating ponds and channels in a matrix of emergent marsh vegetation.
- ❖ A shallow-water pond should be created to provide refuge for waterfowl and other wildlife during “Norther’s”.
- ❖ Project must be self-sustaining and last several decades under “average” conditions.

# Where to place the project?



Chosen location:



# Pre-construction conditions



# Raising elevation



# Post-pumping



# Bird's eye view



# Planting



Are we meeting our goals?

**Restore hydrology:**

Beyond the scope of this project.

# Are we meeting our goals?

**Restore native vegetation:**

Having a problem with salt cedars invading the restored area, but many native species are volunteering.

Are we meeting our goals?

**Restore elevation:**

It is still early but elevation appears to be meeting our goal of creating emergent marsh.

# Are we meeting our goals?

**Create habitat mosaic:**

Disappointing lack of pond and channel formation within project site outside of excavated channels and borrow areas.

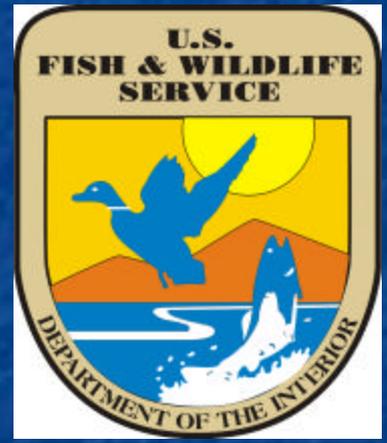
# Are we meeting our goals?

**Protection from loss or degradation:**

Erosion on the south levee has altered shape of levee and required some local repairs. Need to incorporate lessons learned from this project into future projects.



Co-operating Agencies  
for this Phase in the  
Restoration of Bessie  
Heights Marsh.



*Jefferson County  
Waterway and  
Navigation  
District*

