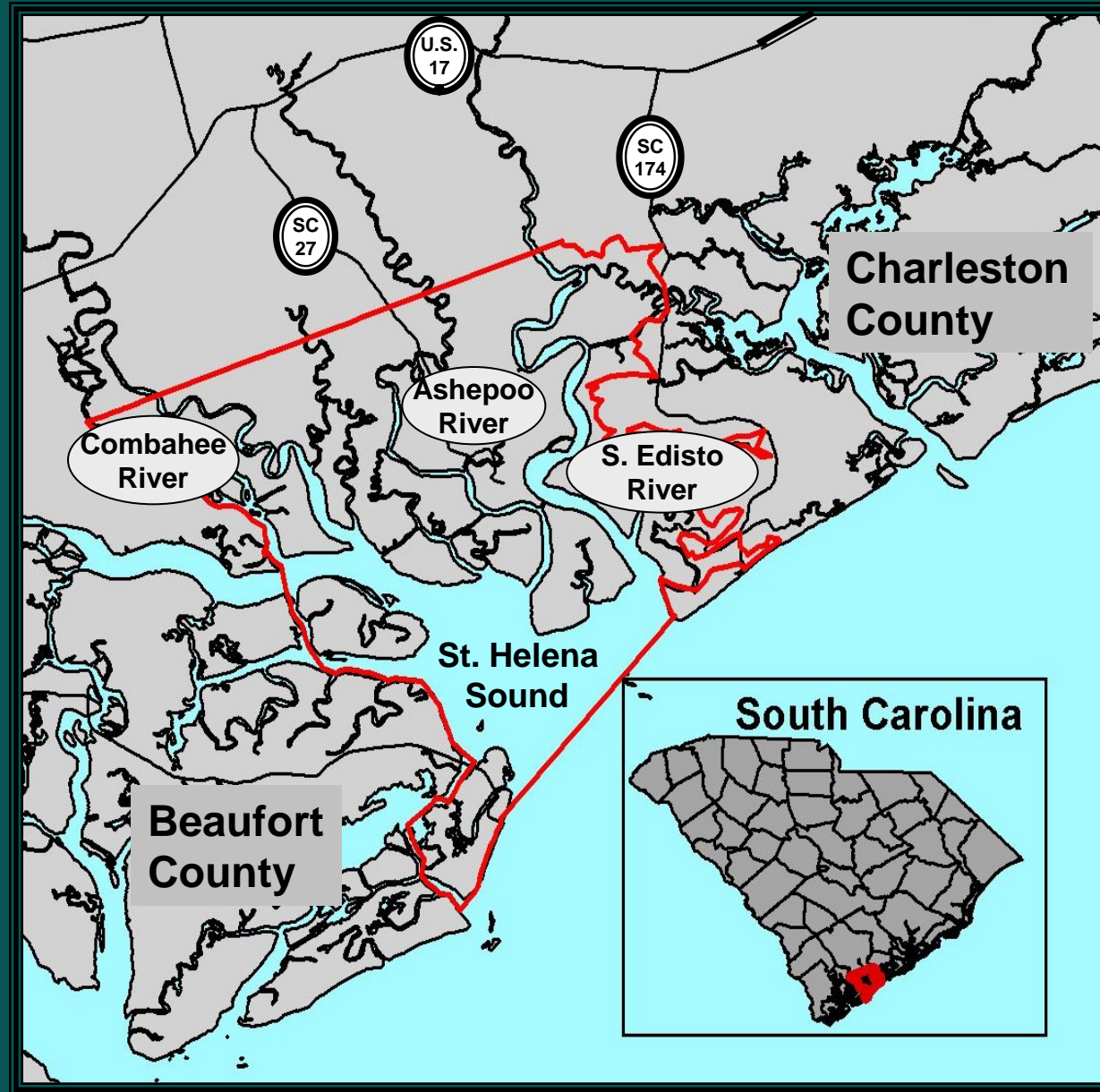


# ACE Basin NERR



# Goals

- **Develop baseline land cover maps of Reserve habitat**
- **Establish the protocol for estimating the change in land use and land cover during the last 50-60 years**
- **Develop remote sensing methods to discriminate between wetland plant species**

# Objectives

- Map the present land cover at YSI monitoring
- Determine the effectiveness of multispectral imagery to discriminate between *Phragmites australis* and other wetland grass species
- Document how historical land use patterns have changed composition of plant communities

# Plan of Action

- **Acquire variety of remote sensing data**
  - ❖ USGS B & W aerial photography
  - ❖ NAPP photography
  - ❖ Multispectral imagery
  - ❖ Hyperspectral Imagery
- **Process Photographs**
  - ❖ Scan photographs
  - ❖ Geo-rectify photographs
  - ❖ Mosaic photographs covering each study area
- **Categorize land cover for each mosaic**
- **Conduct Change Detection Analysis**

# Historical Photography Acquisition

- Purchase USGS B & W aerial photography
  - & Years 1939, 1951, 1960 and 1979 photographs for Morgan Island
  - & Years 1939, 1949, 1957, 1963 and 1979 photographs for Edisto Beach, Jehossee Island and Bailey Island
  - & Years 1949, 1958 and 1963 photographs for Pon Pon Plantation and Mosquito Creek watershed
- Download NAPP 1994 aerial photography for all study areas from SCDNR website



# Multispectral Flyover Areas

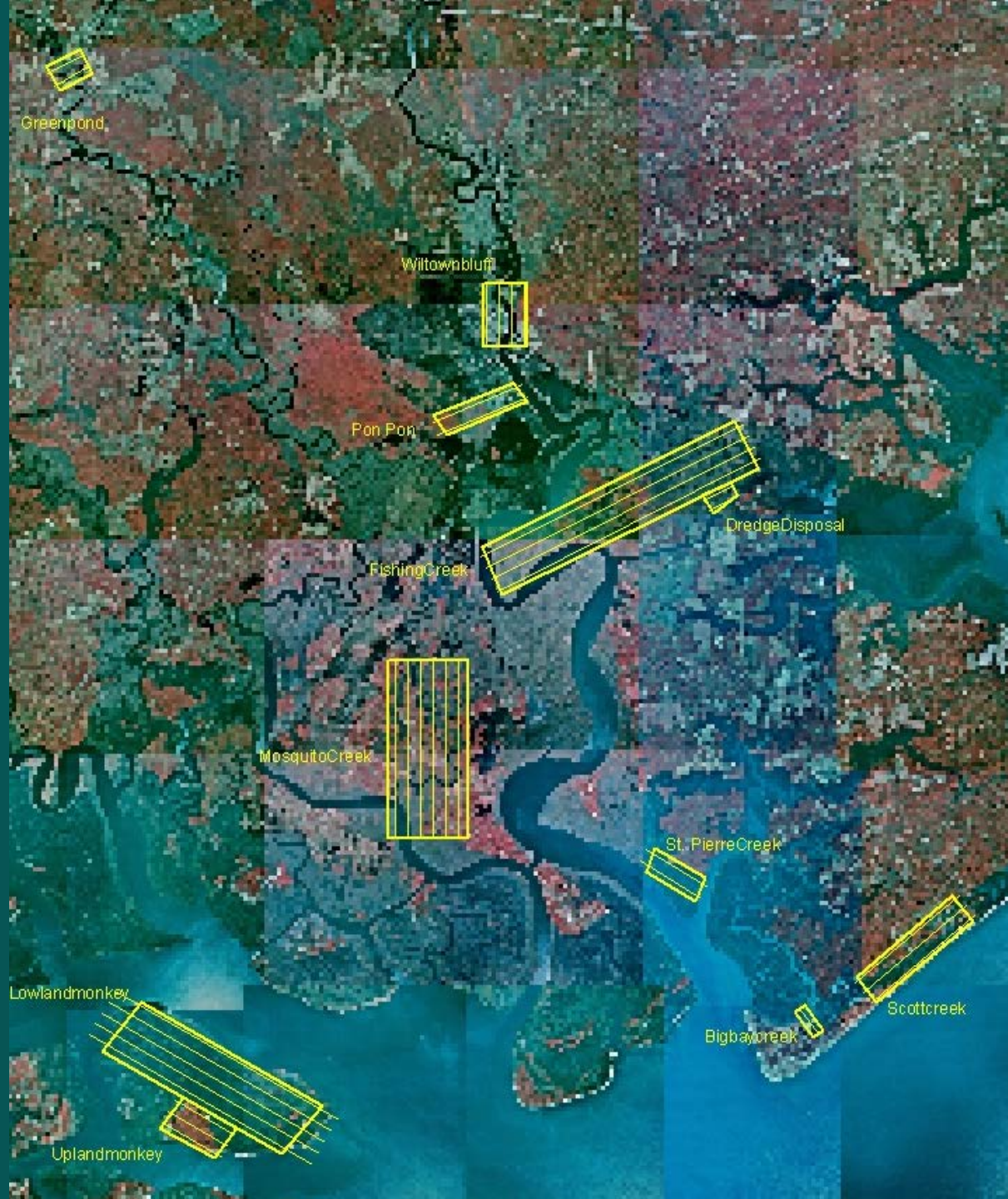




# Hyperspectral Flyover Sites

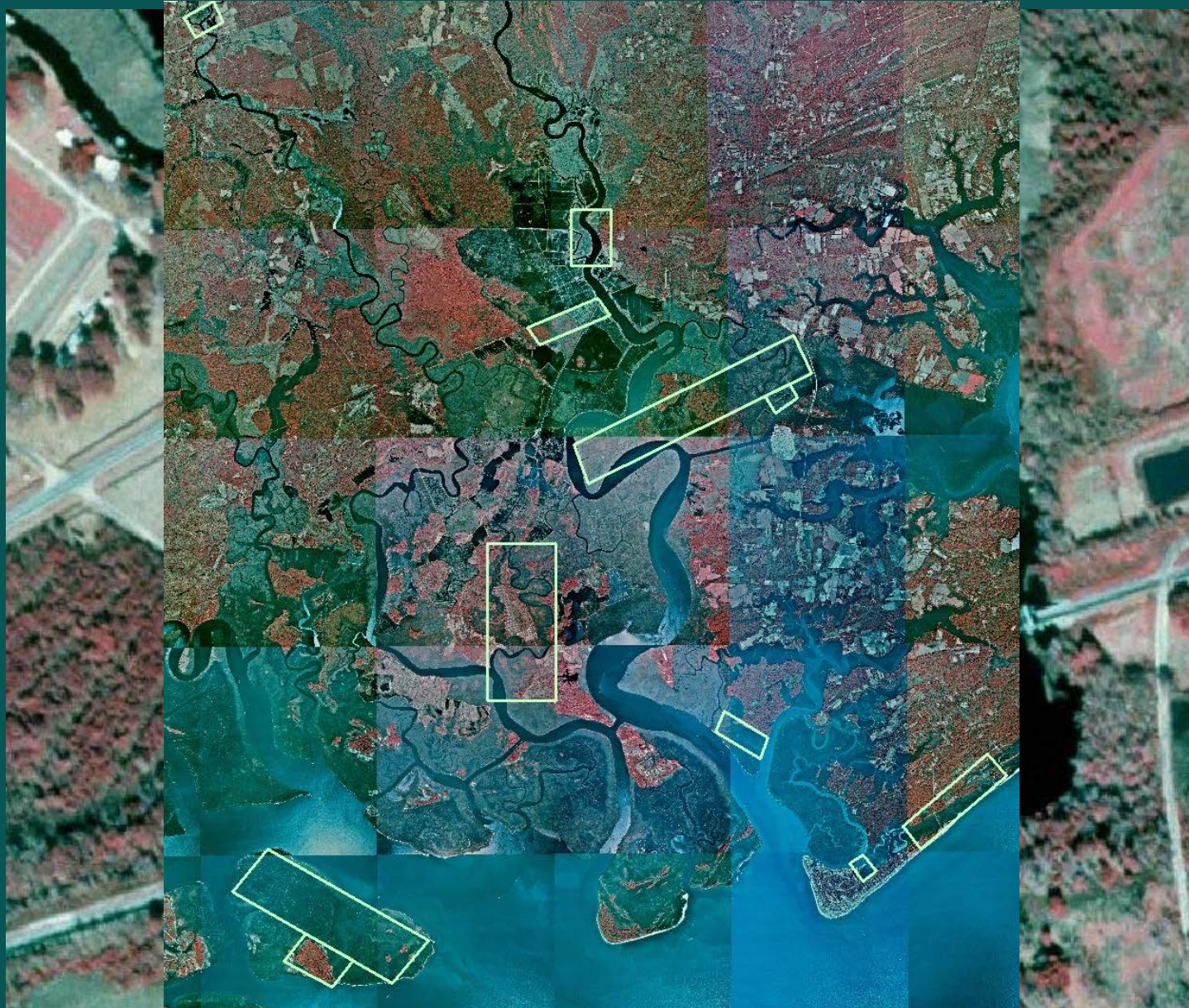






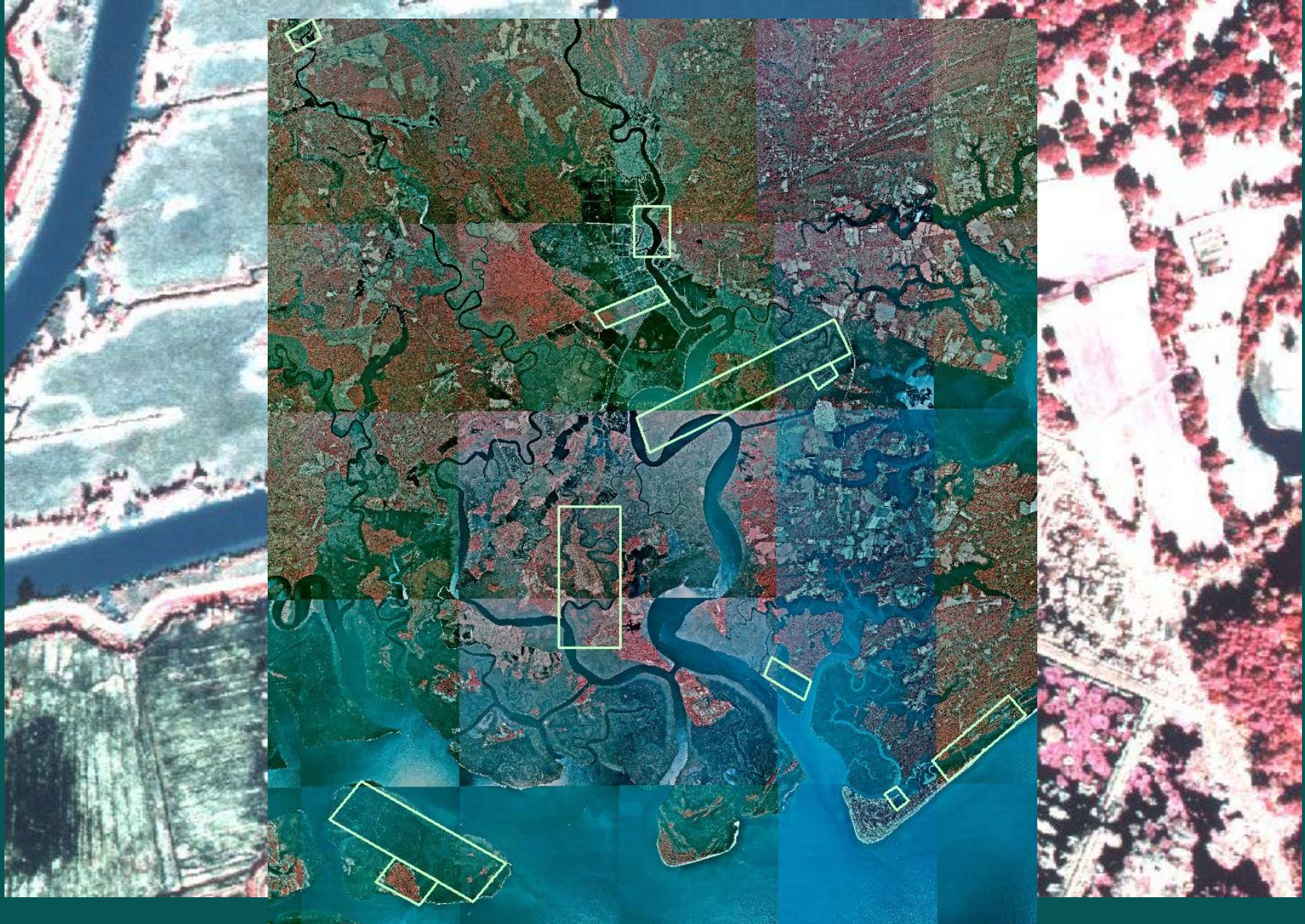


# Ashepoo YSI Station – Green Pond



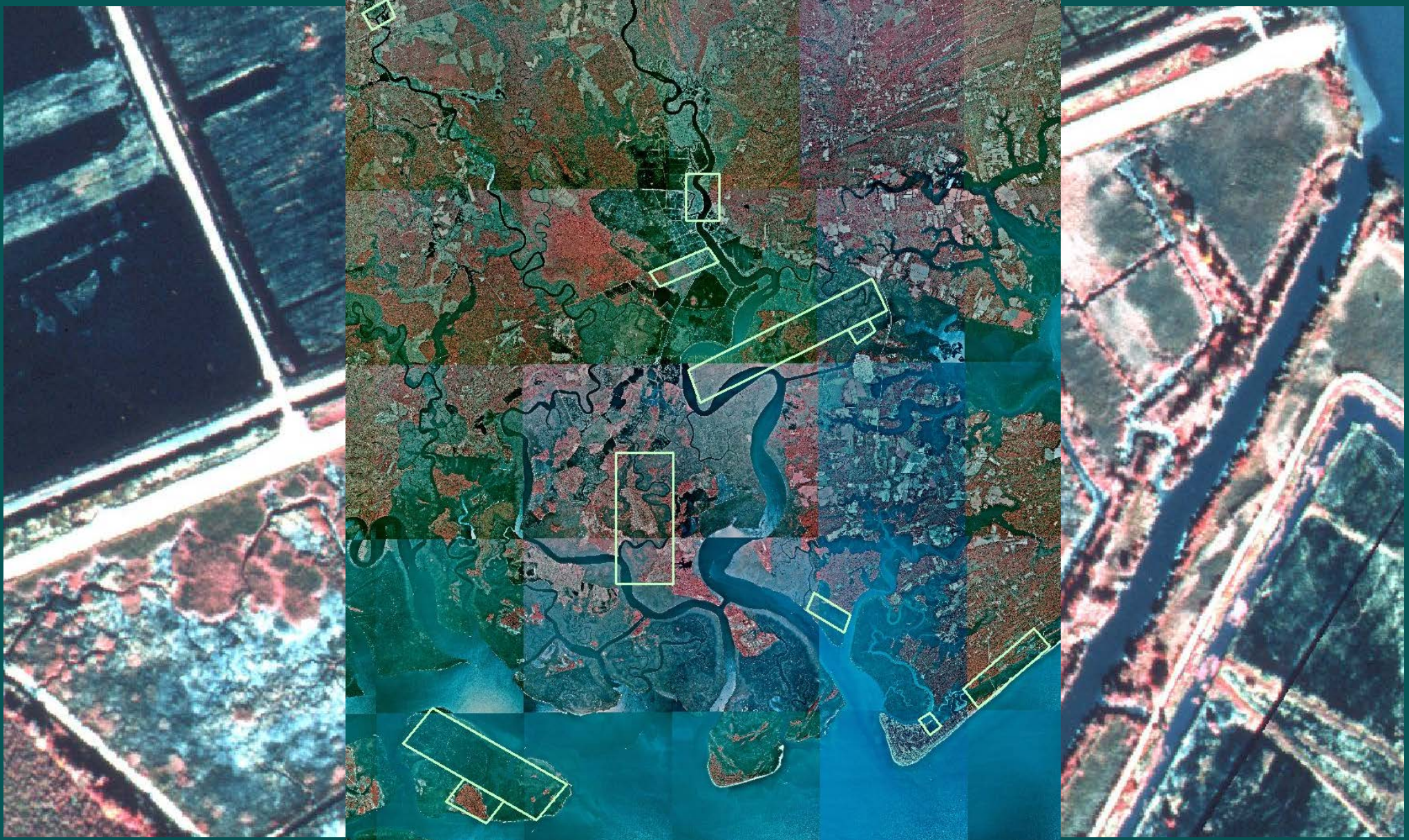


# Mixed Marsh Site -Wiltown Bluff



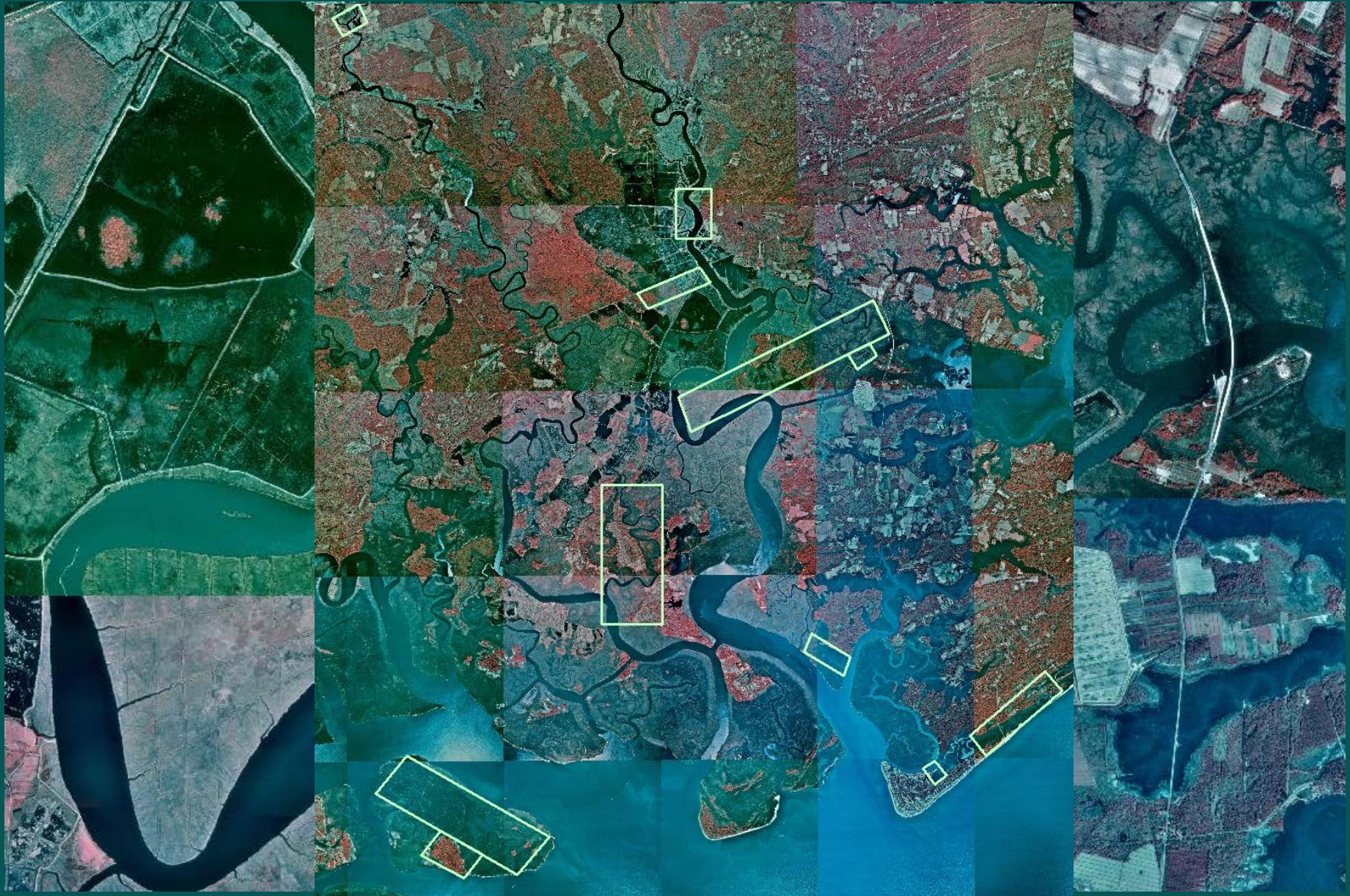


# *Phragmites australis* Site - Pon Pon Plantation





# Jehossee Island





# Fishing Creek YSI Station - Jehossee Island





# *Phragmites australis* Site - Jehossee Island



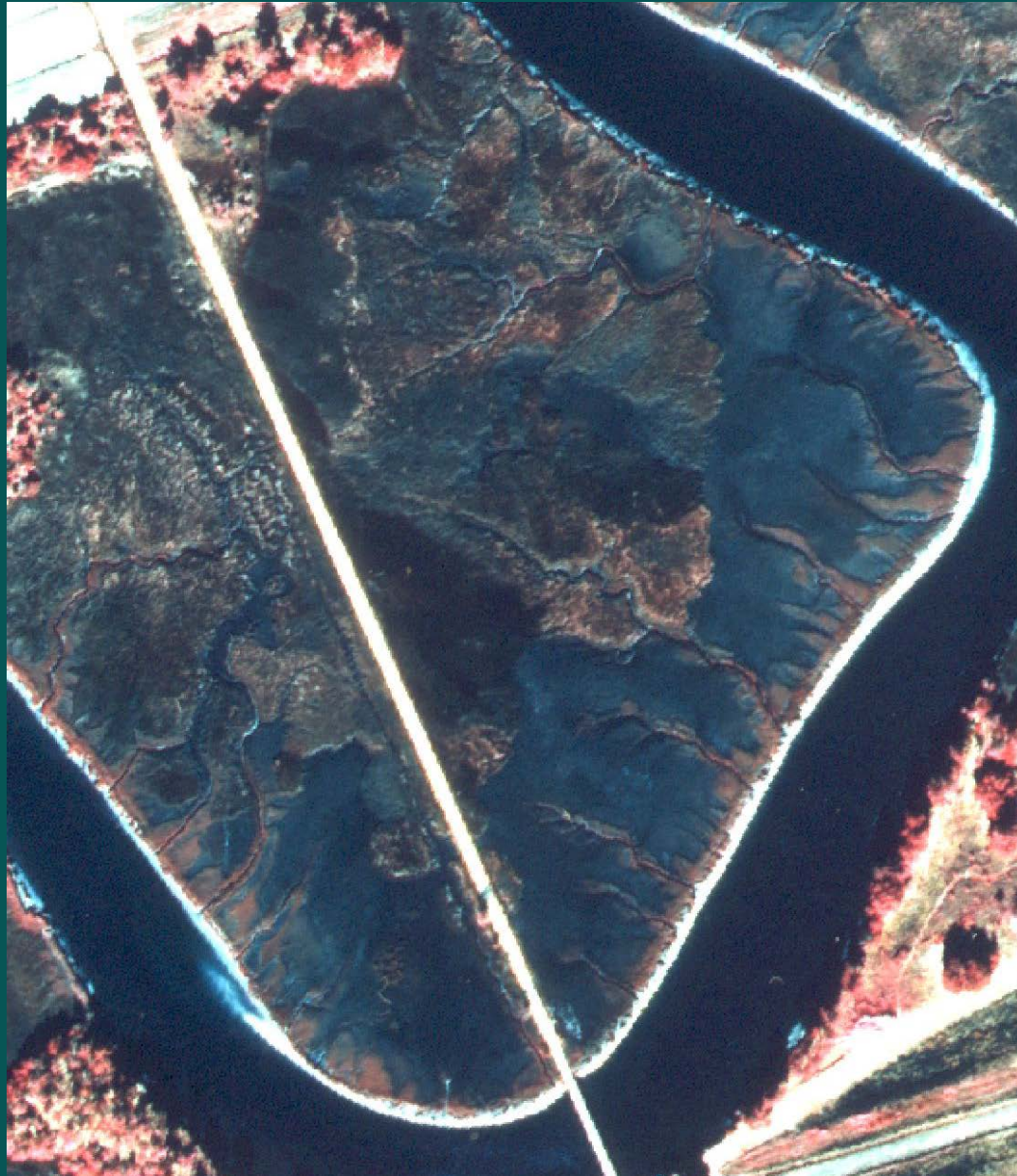


# Mosquito Creek Watershed – Bennett's Point





# Mosquito Creek YSI Station – Bennett's Point





# Spartina Dieoff Areas





# Bailey Island



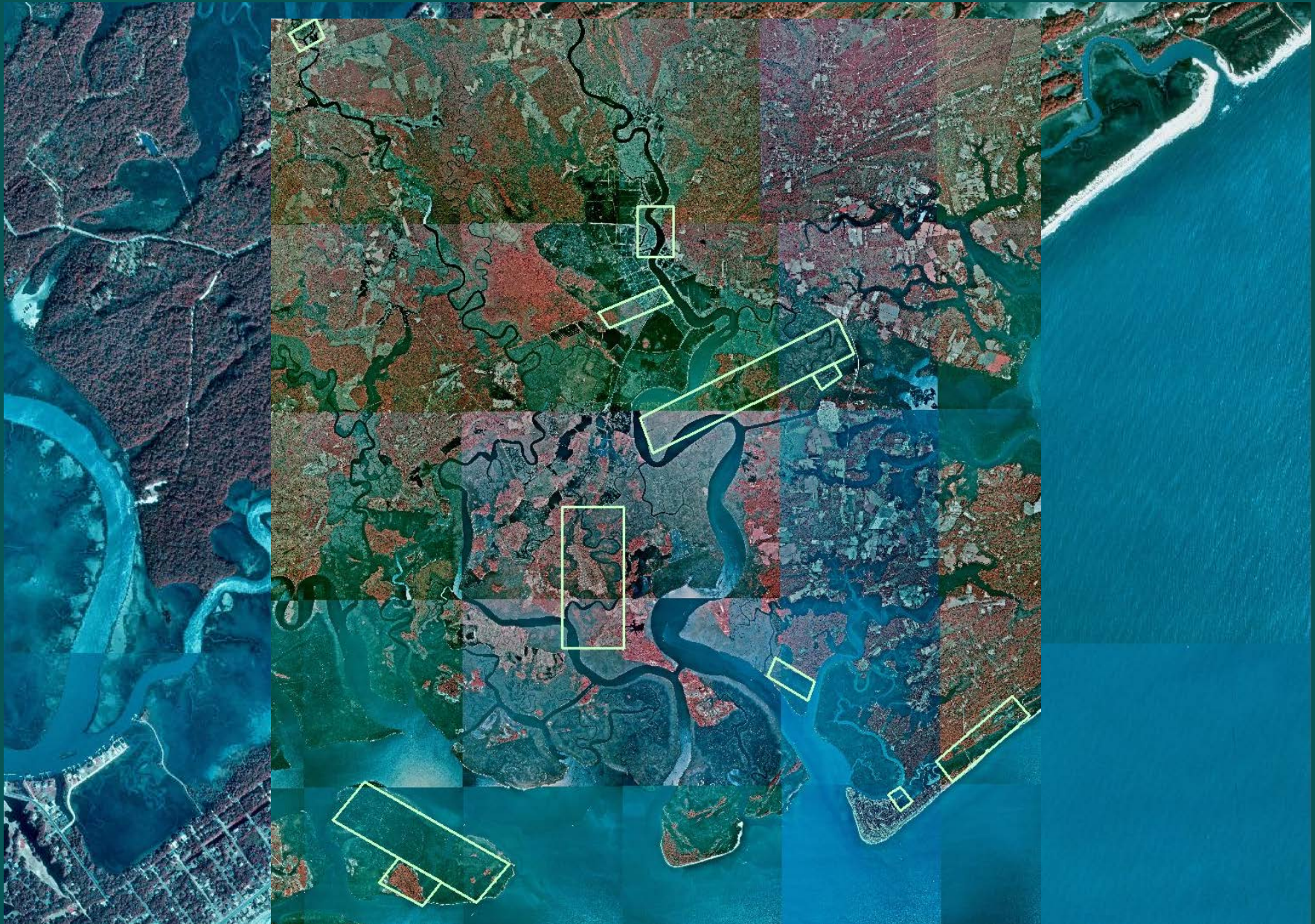


# St. Pierre Creek YSI Station – Bailey Island





# Scott Creek Watershed



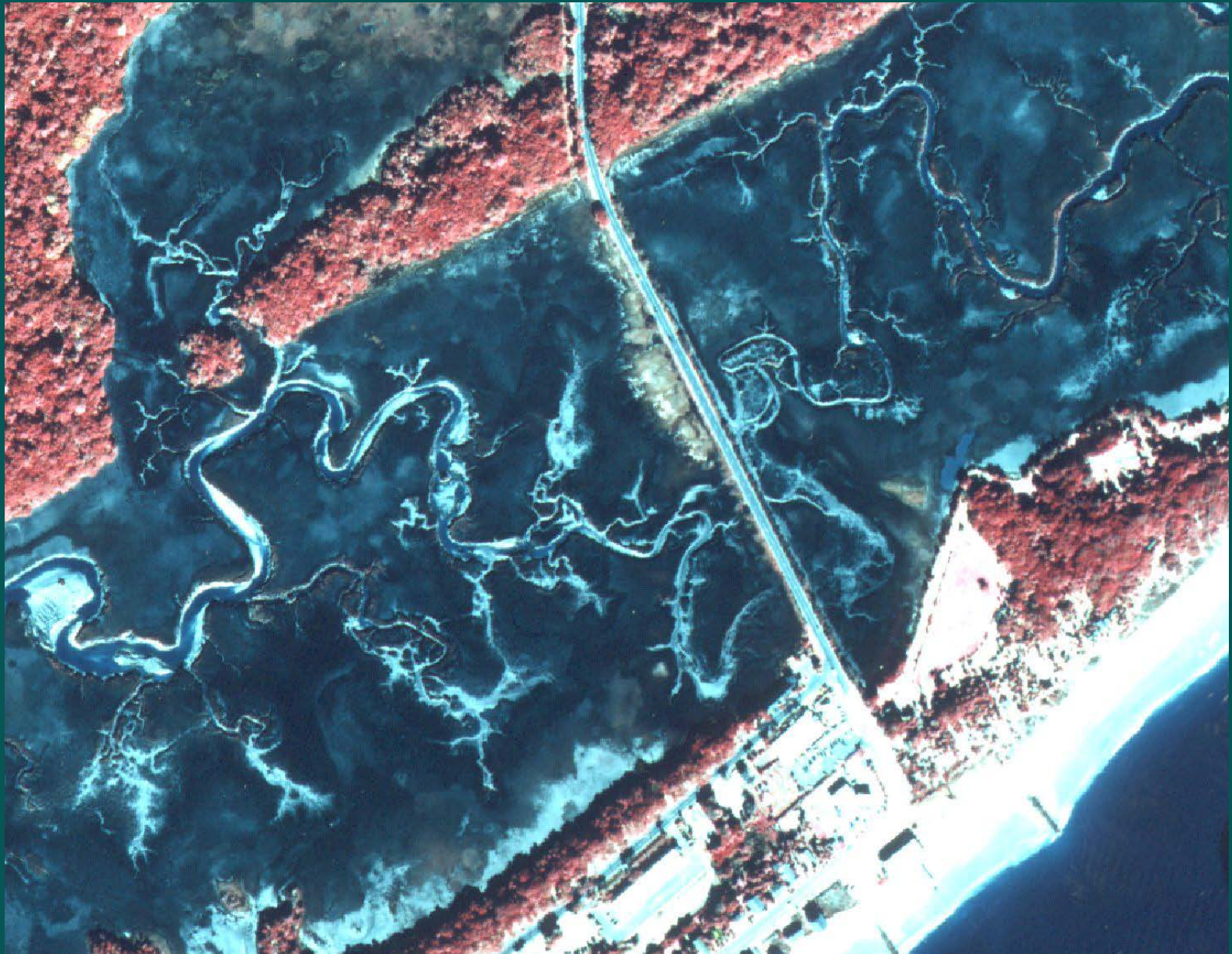


# YSI Monitoring Station - Big Bay



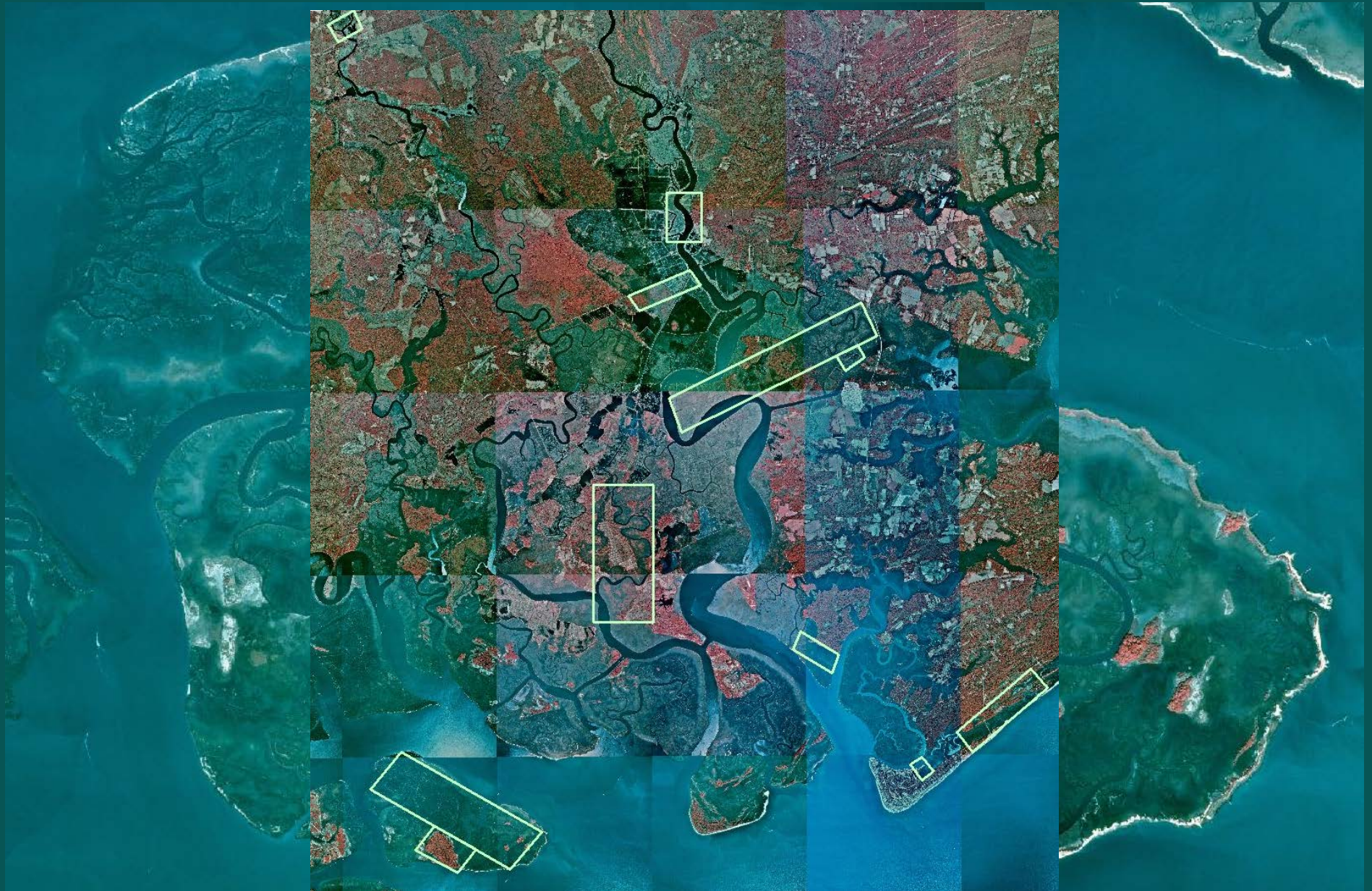


# Scott Creek Site





# Morgan Island





# Process Aerial Photography

- Scan photography
- Geo-rectify scanned images
- Mosaic individual frames of each area





1939



1963



1994



2002



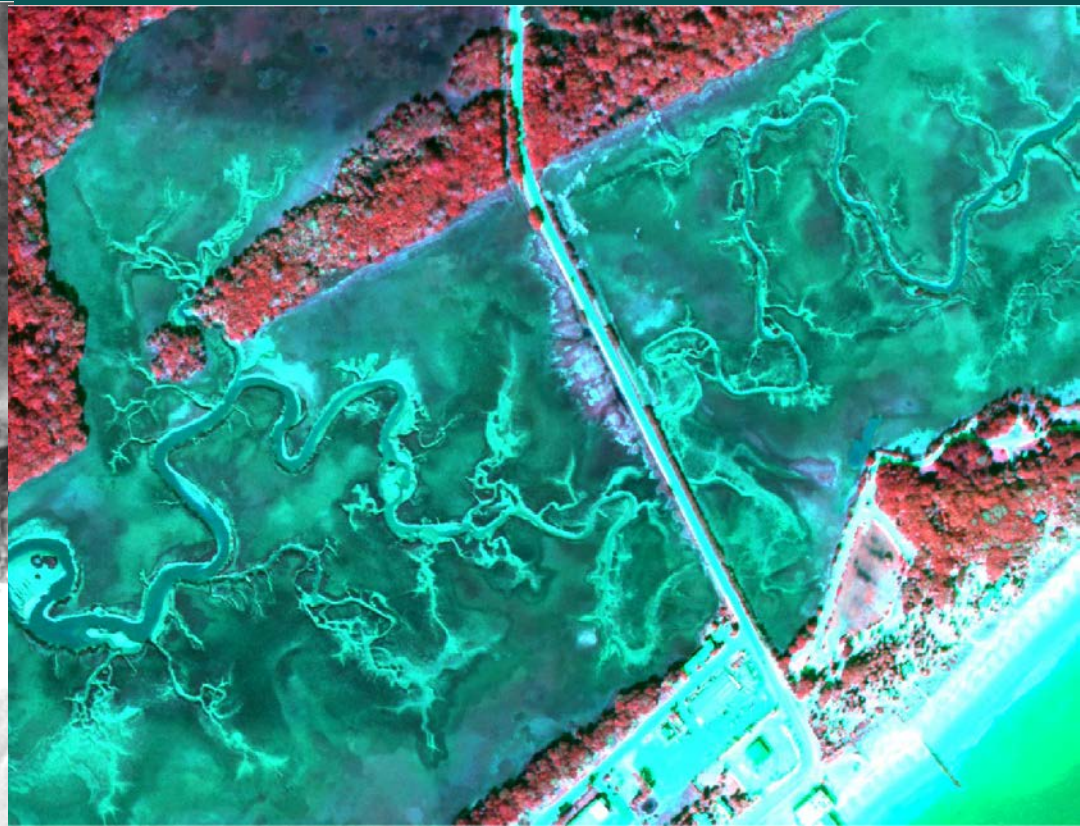
# Scott Creek

## Tidal Restriction at Causeway

Causeway in 1939



Causeway in 2002





# Morgan Island Forested Area

1939



2002





**Next Steps?**