



POST-RESTORATION MONITORING OF PICAYUNE STRAND RESTORATION PROJECT

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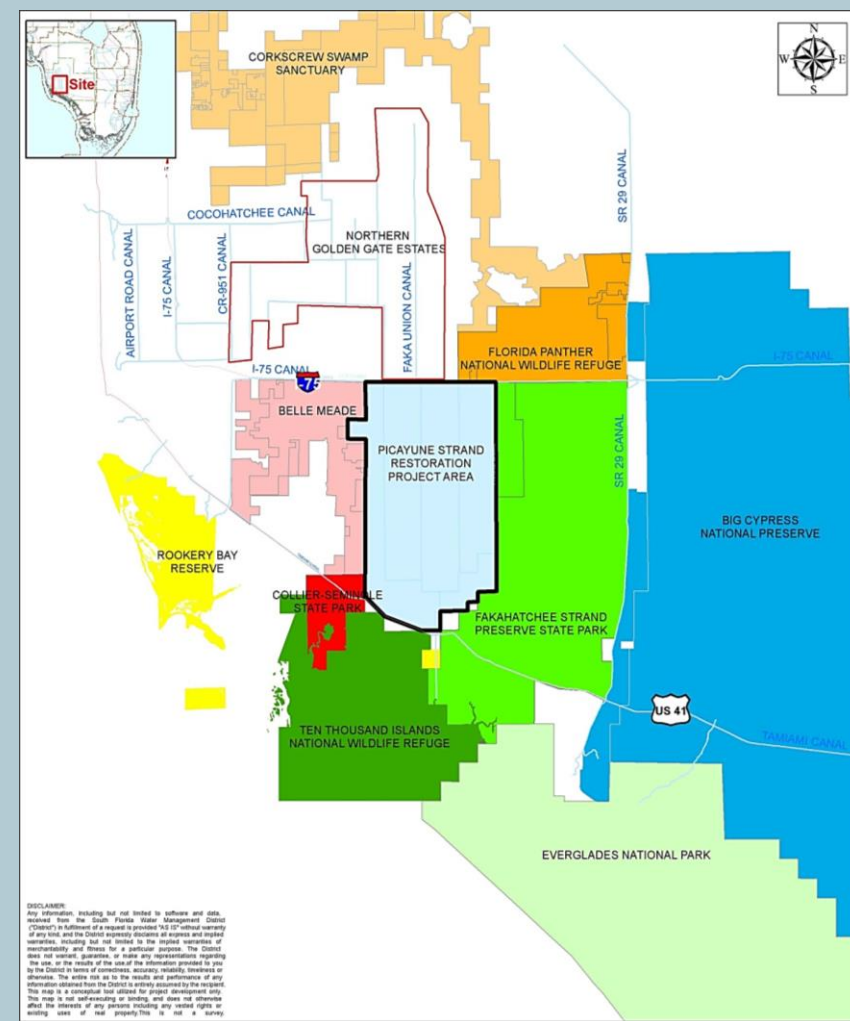
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Background

❖ The Picayune Strand Restoration (PSRP) encompasses an area of sensitive natural land and is located southwest of Florida Panther National Wildlife Refuge, north of Ten Thousand Islands National Wildlife Refuge, east of the South Belle Meade State Conservation and Recreation Lands project, west of Fakahatchee Strand Preserve State Park, and northeast of Collier-Seminole State Park



❖ The 55,000-acre restoration project will restore close to 100,000 acres, including adjacent and downstream state and federal conservation lands

❖ Initial road removal and canal plugging on Prairie began 2004, completed 2007

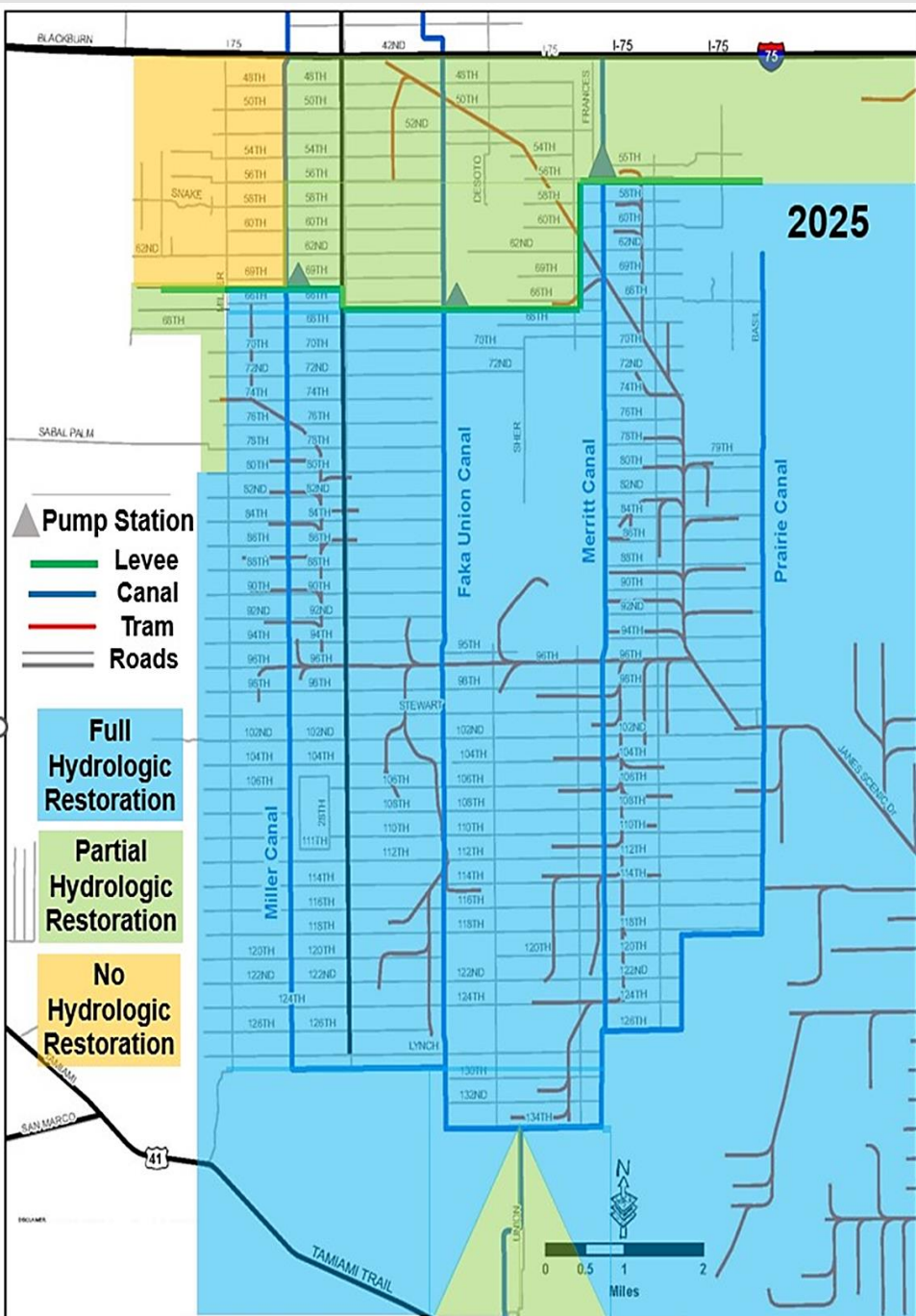
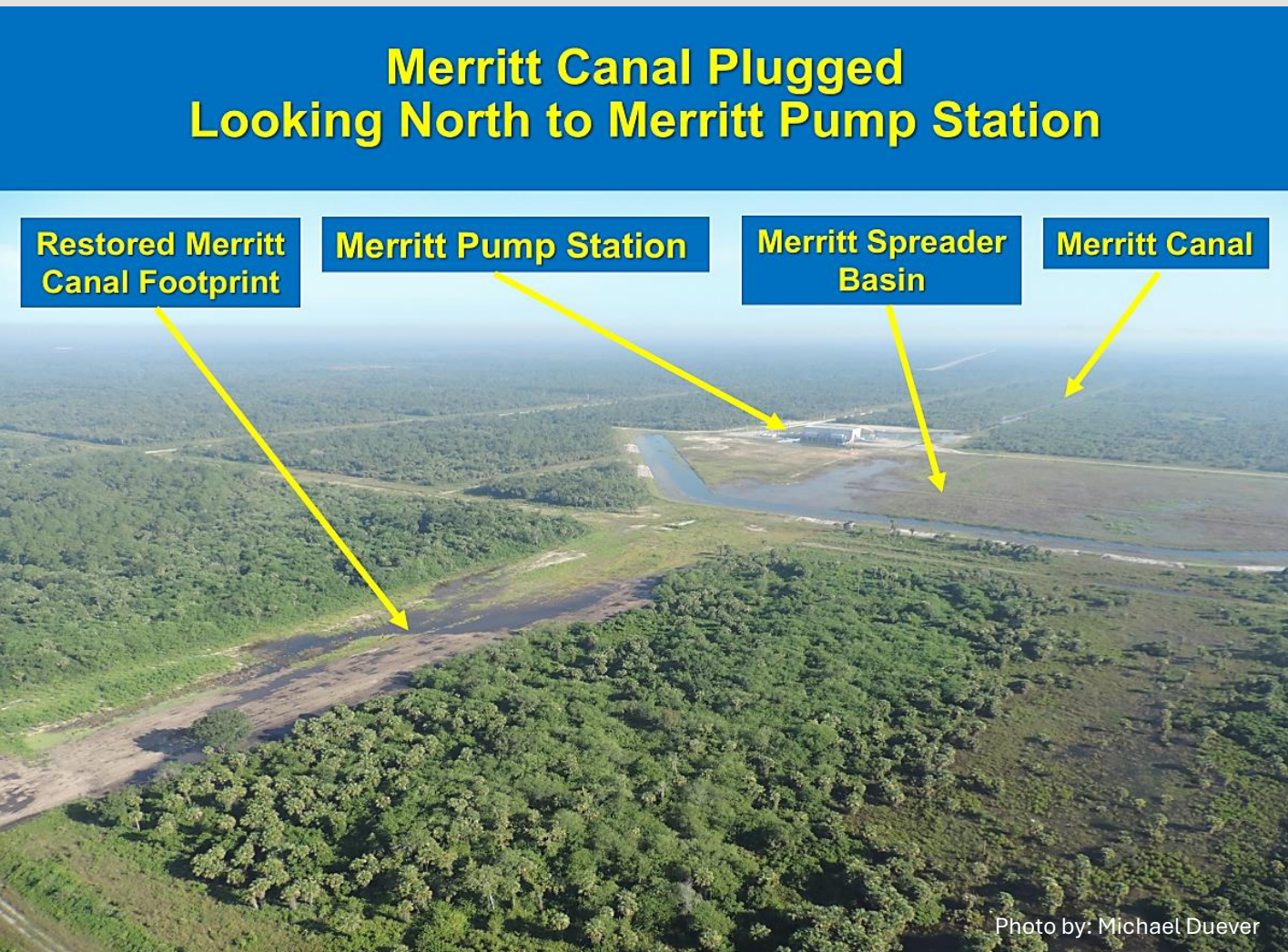
❖ Merritt Pump Station, road removal, and canal plugging initiated 2009, completed 2015

❖ Manatee mitigation feature completed 2016

Restoration Objectives

Reestablish hydrologic and fire regimes, plant communities, and wildlife habitats in a critical area of the Greater Everglades

- ✓ Restore wet season shallow sheetflow
- ✓ Restore dry season groundwater flows
- ✓ Restore 263 miles of roads
- ✓ Restore 62 miles of logging trams



Restoration Progress

- ❖ As of March 2025, ~99% of project complete
- ❖ ~99% partially or fully rehydrated

To determine if project is meeting the restoration objectives, monitoring is conducted within and downstream of the footprint.

Ecosystem benefits observed in hydrated areas:

- ❖ Increased wetland species in the vegetation communities
- ❖ Reduced upland species, wildfires, and exotic vegetation

Manatee Mitigation Feature – 3 October 2024



Two-acre warm water refugium area south of Port of the Island Marina along the western bank of the Faka Union Canal

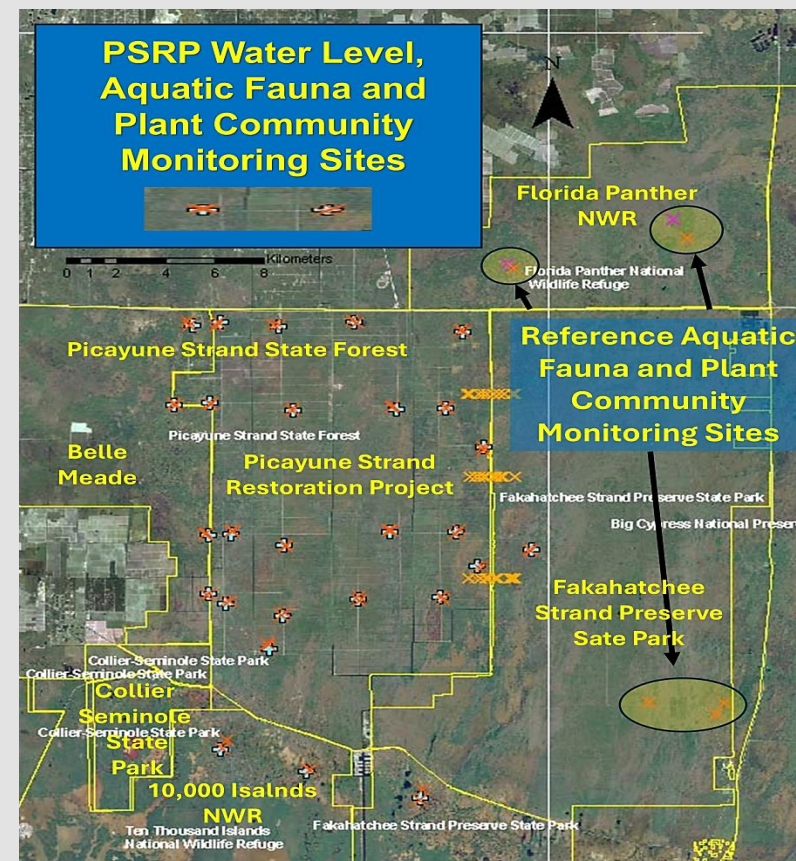


Ecological Monitoring

- ❖ Plays a key role in:
 - ❖ Measuring changes in ecological conditions
 - ❖ Assessing effectiveness of restoration efforts and long-term sustainability
- ❖ Performance metrics and targets have been developed for plant communities, aquatic fauna, and hydrology, to ensure restored hydrological conditions align with restoration goals.

Baseline & Post-Project Monitoring

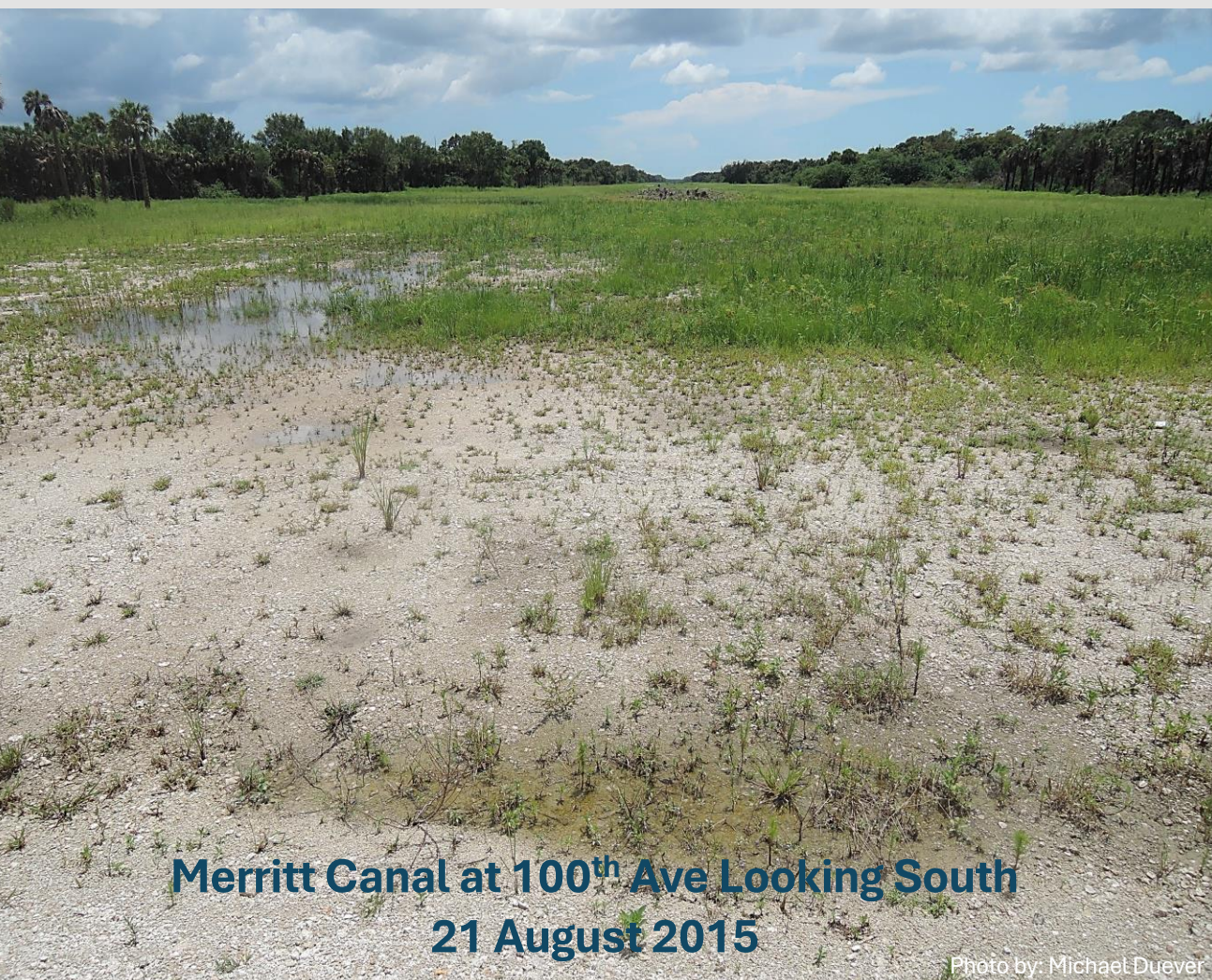
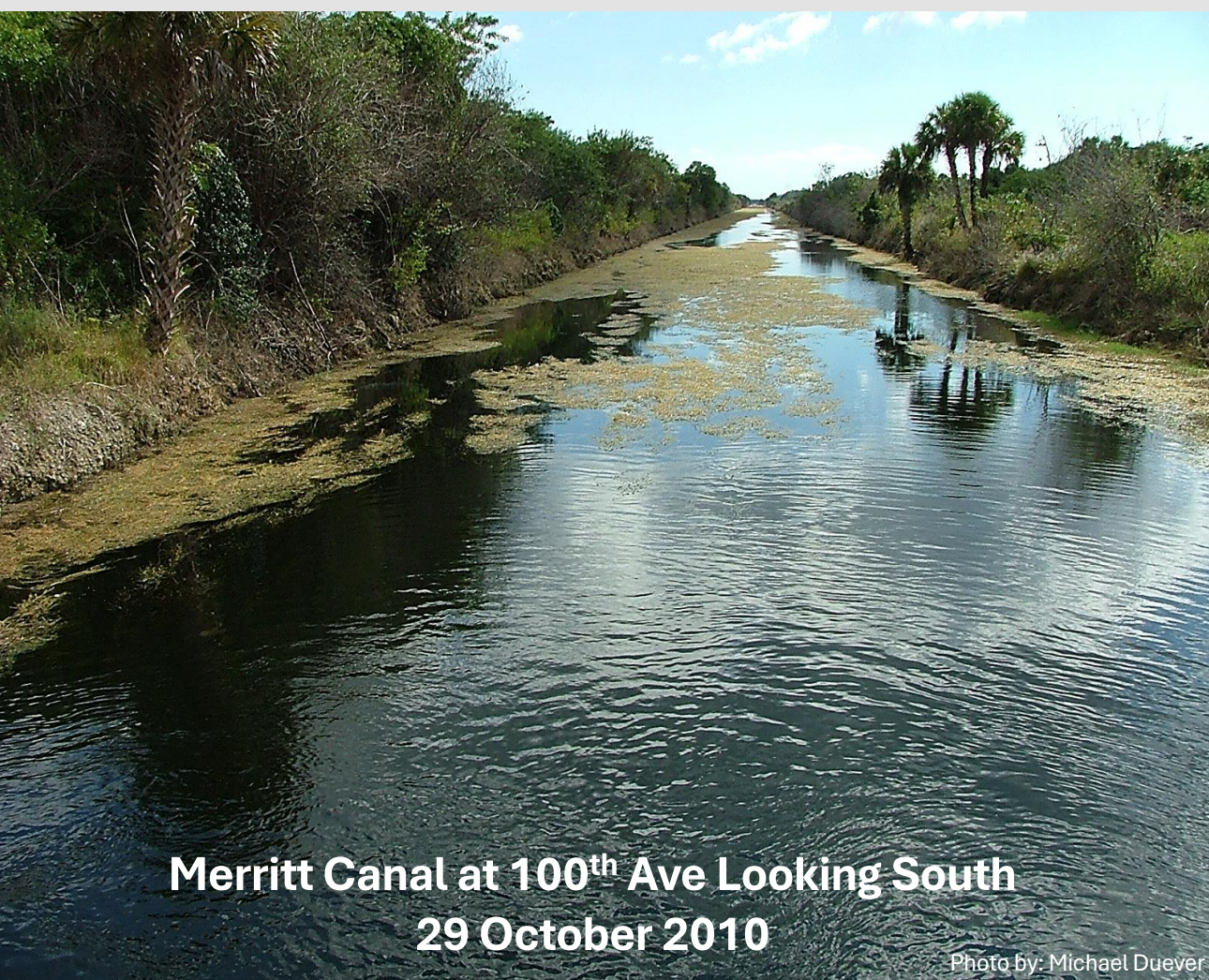
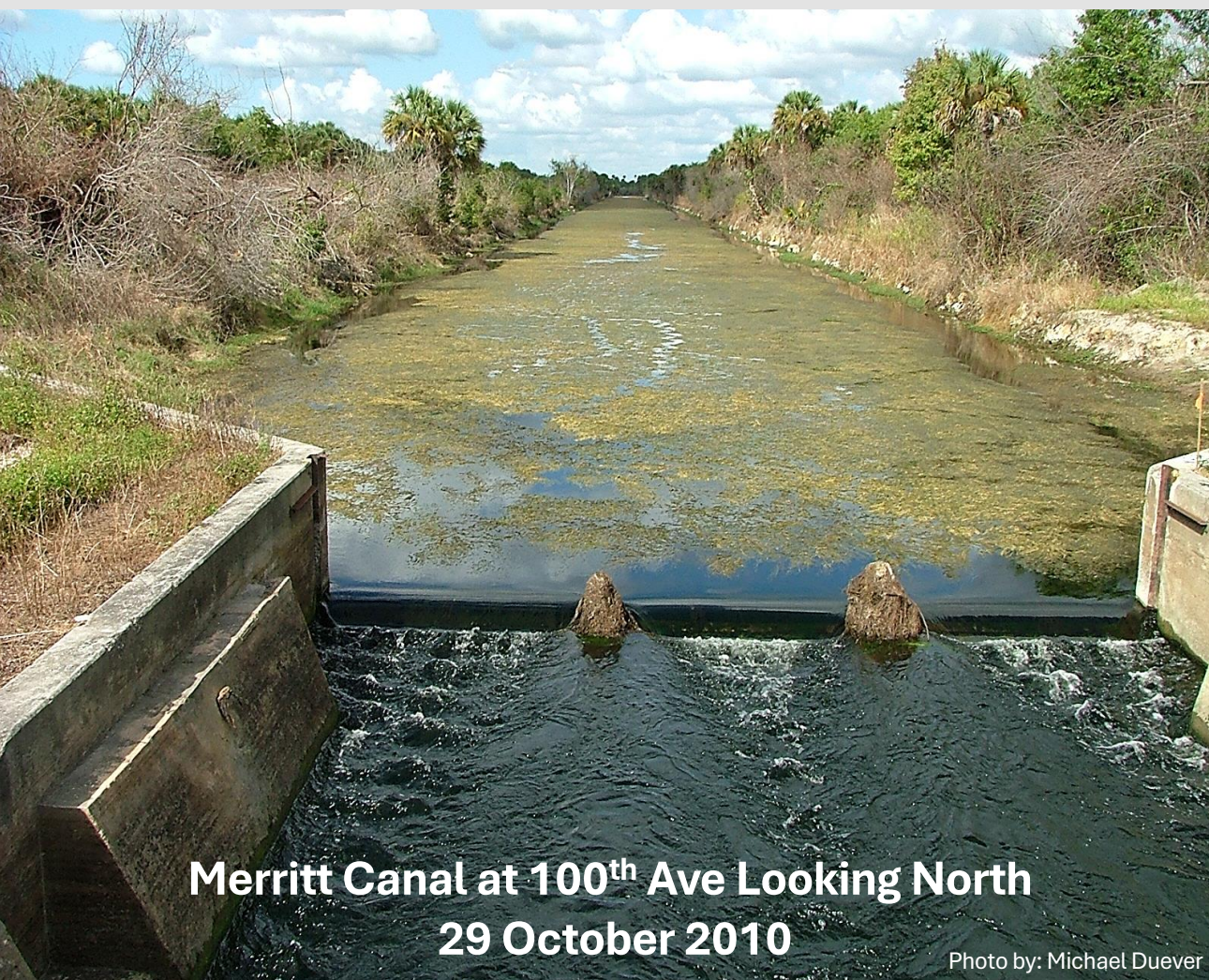
- ❖ Data collected in the mid-2000s provides a baseline for documenting changes occurring post-restoration from PSRP implementation
- ❖ Monitoring within the project footprint includes vegetation, fish, anurans
- ❖ Downstream monitoring includes estuarine oysters and benthic substrate



Example: Aquatic fauna at 31 sites near 27 monitoring wells and at 10 reference sites representing three major plant communities:

- ❖ Pine flatwoods
- ❖ Cypress
- ❖ Wet prairie

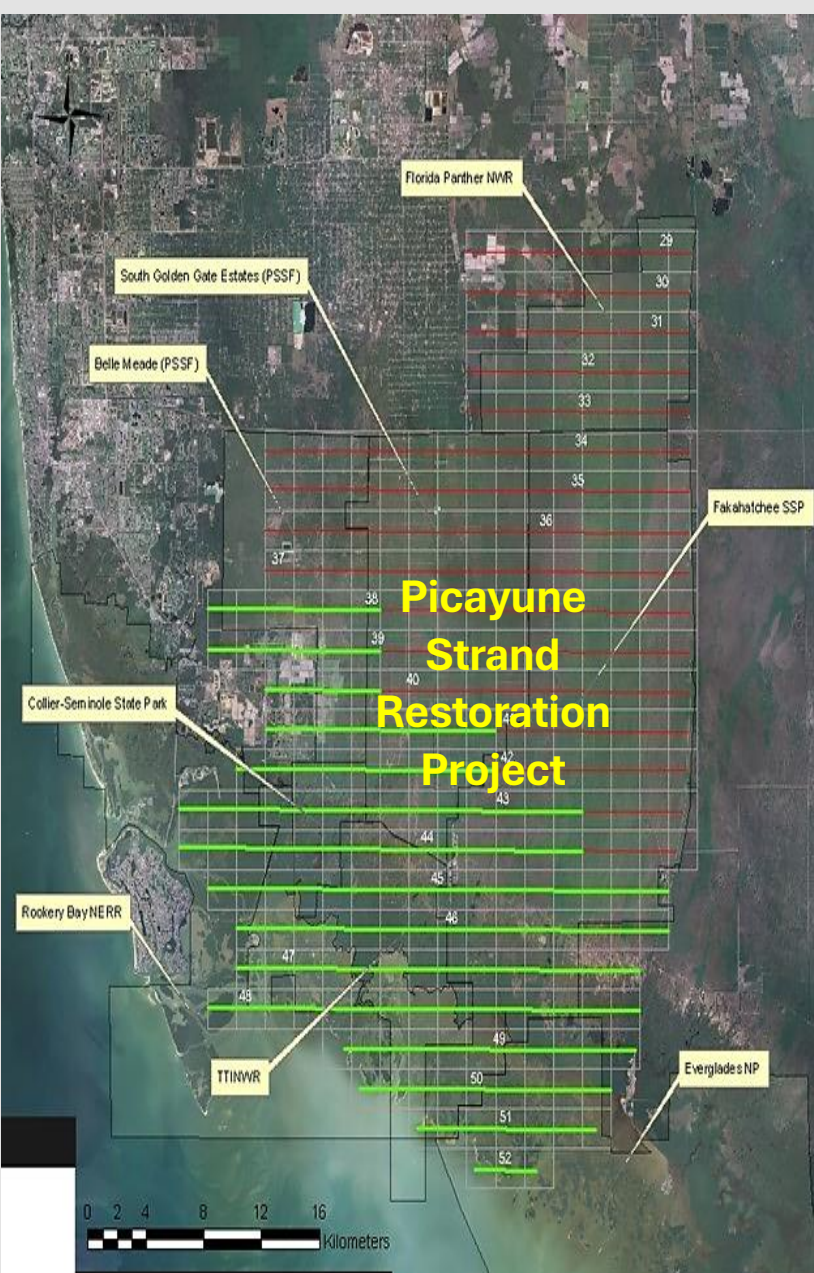
Landscape Responses to Hydrologic Restoration



Post-project monitoring also includes :

- ❖ West Indian manatee
- ❖ Florida panther and their prey
- ❖ Wood storks and wading birds

Location of Wading Bird Aerial Transects within the Picayune Strand Restoration Project Area



- ❖ Study area includes adjacent public lands and coastal areas consistent with other CERP wading bird surveys
- ❖ Assess the distribution and abundance of wood storks and other wading birds
- ❖ Target – establishment of natural hydroperiods suitable for wading birds



Wood Storks and other wading birds
Miller Pump Station 7 Dec 2024



Roseate Spoonbills and other wading birds – Miller Pump Station 7 Dec 2024



Great Blue Heron – Miller Pump Station 7 Dec 2024

Presence-absence and spatial distribution of Panther prey within the PSRP area. Prey species relative abundance based on daily photos



Dave Shindle setting up a panther and panther prey infrared-triggered remote monitoring cameras