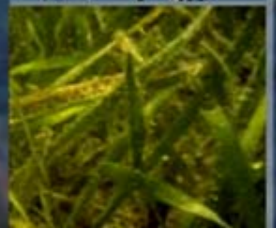
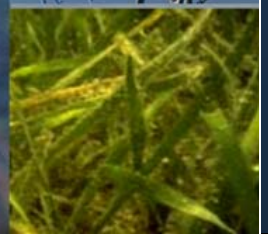


Southwest Florida FEASIBILITY STUDY

January 2010



Southwest Florida Feasibility Study (SWFFS)

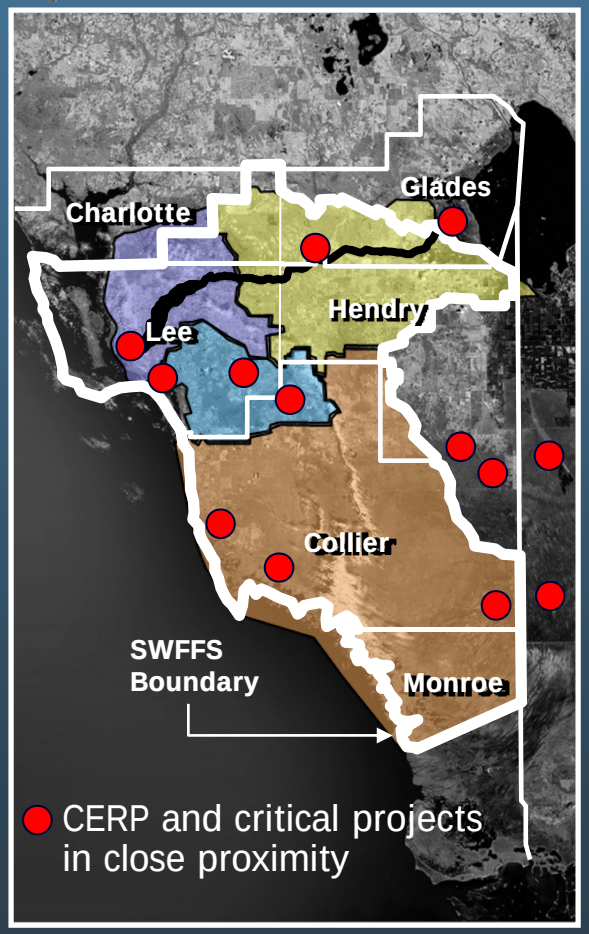
Presentation Outline

- Study Area Overview
- Comprehensive Watershed Master Plan
- Tentatively Selected Plan

Images courtesy of Angie Dunn, staff biologist

Southwest Florida Feasibility Study (SWFFS)

Purpose and Relationship to Comprehensive Everglades Restoration Plan (CERP) and Critical Projects



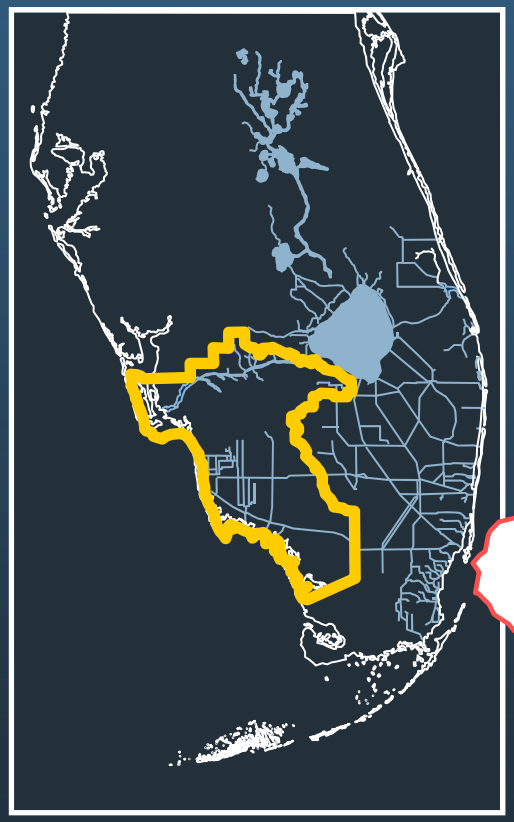
The Restudy or "Yellow Book" assessed water resource issues only as they related to the Caloosahatchee sub-basins (top two)

The Restudy recommended a separate Comprehensive watershed study for Southwest Florida with the following purposes:

- Health of aquatic ecosystems
- Water flows
- Water quality
  (including appropriate pollution reduction targets)
- Water supply
  (Lower West Coast Water Supply Plan)
- Flood damage reduction
- Wildlife and biological diversity
- Natural habitat
- Recreation (opportunity)

Southwest Florida Feasibility Study (SWFFS)

Study Area



- 4300 square miles
- ½ the size of New Jersey
- Project boundaries = South Florida Water Management District (SFWMD) Lower West Coast Water Supply Plan Planning Area

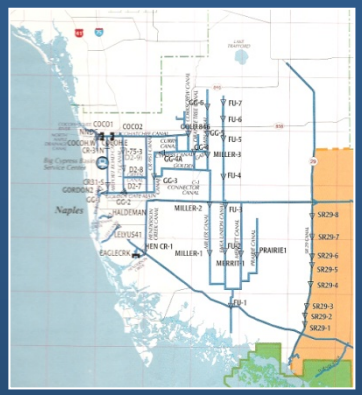
11 municipalities in the study area: Bonita Springs, Cape Coral, Clewiston, Everglades City, Fort Myers, Fort Myers Beach, LaBelle, Marco Island, Moore Haven, Naples, and Sanibel; also includes unincorporated areas of Lehigh Acres, Golden Gate Estates, and Immokalee.

Southwest Florida Feasibility Study (SWFFS)
The Problem – "In a Nutshell"

Pre-development landscape:

- Low, flat landscape
- Slow, sheet flow drainage patterns to coast
- Seasonally fluctuating shallow water table
- Low nutrient levels

Canals, levees, development alter landscape



- Flow patterns and watershed boundaries altered
- Rate of flow is increased and sheet flow is concentrated into point discharges
- Increased nutrients
- Habitat fragmentation

Habitat declines, aquifer recharge capability diminished, wet/dry cycle exaggerated

23 endangered or threatened species

Landscape connectivity and habitat corridors altered

Unnatural freshwater flows to to estuaries and wetlands

Invasive Species

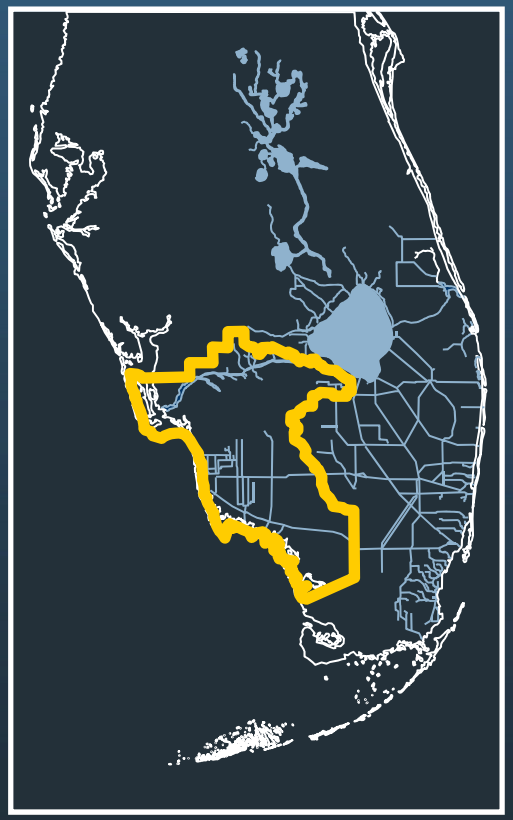
Long-term water supply impacted (freshwater aquifers)

Nuisance species

Unnatural fire regime

Problems anticipated to accelerate by 2050: significant increases in urban and agricultural land uses; SW Florida population projected to double by 2050

Study Area
Primary Sub-basins

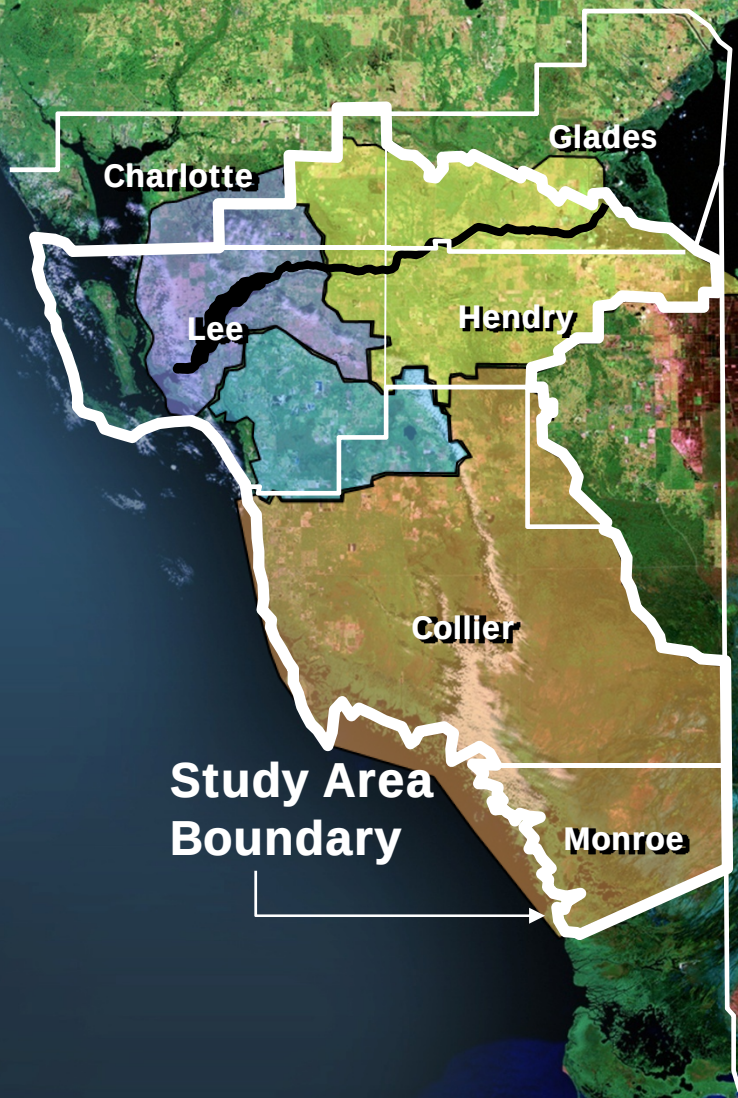


Freshwater Caloosahatchee

Tidal Caloosahatchee

Estero Bay

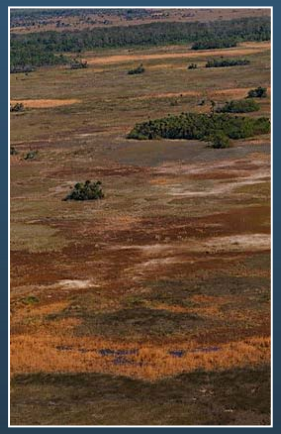
Big Cypress Basin



Study Area Landscape

Northern Inland Areas

- Sandy, pine flatwoods
- Small to medium depressions with herbaceous marshes and forested cypress wetlands

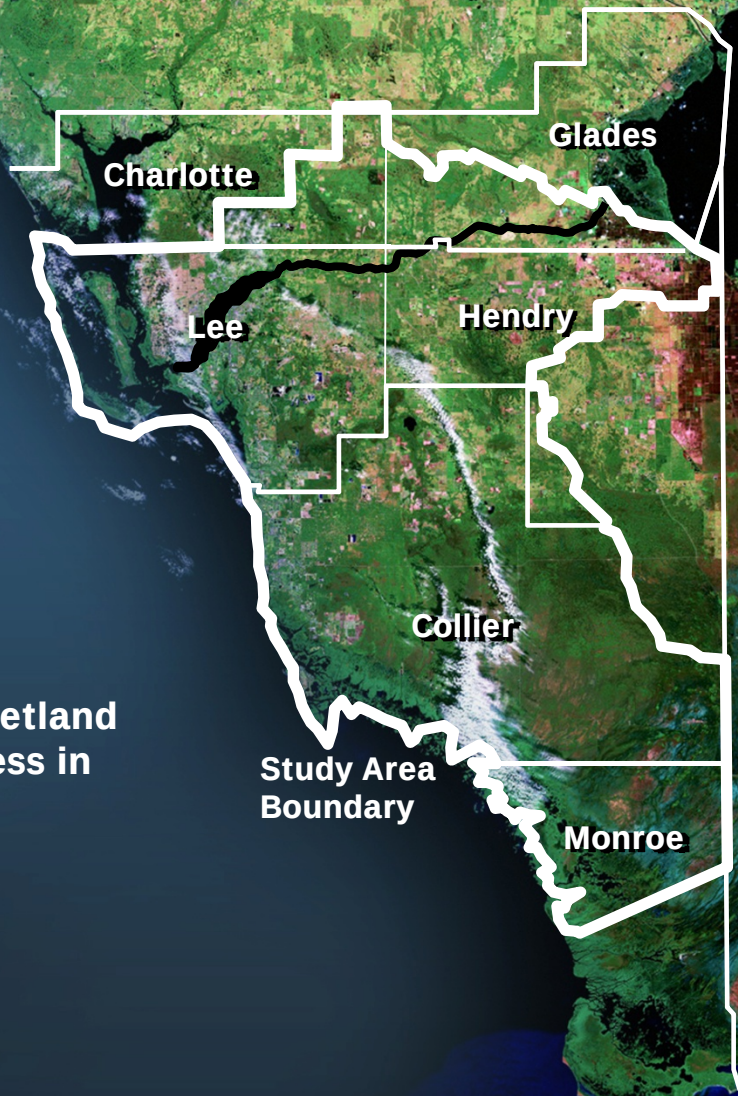


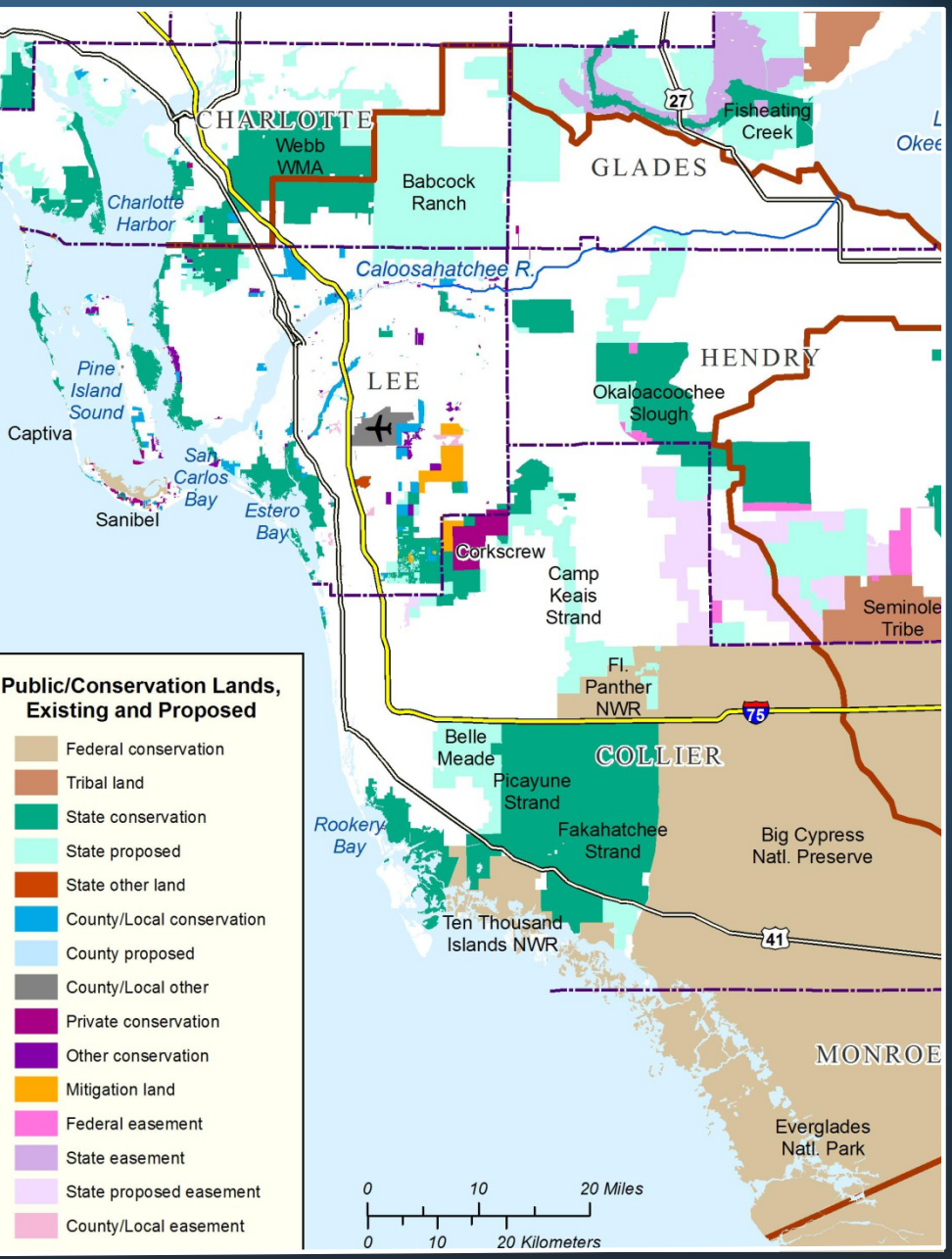
Southern Inland Areas

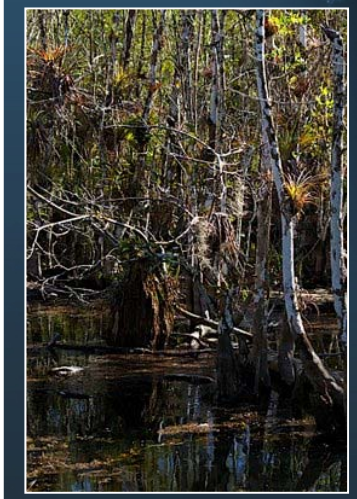
- Shallow sandy soils; rock and marl substrates common
- Forested wetlands fringed by marshes
- Diverse habitat created by an upland-wetland complex (pine on higher sites and cypress in between high and low areas)

Coastal Areas

- Brackish marshes and mangrove forests along coasts (Monroe, Collier, Lee counties)
- Seagrass and oyster beds







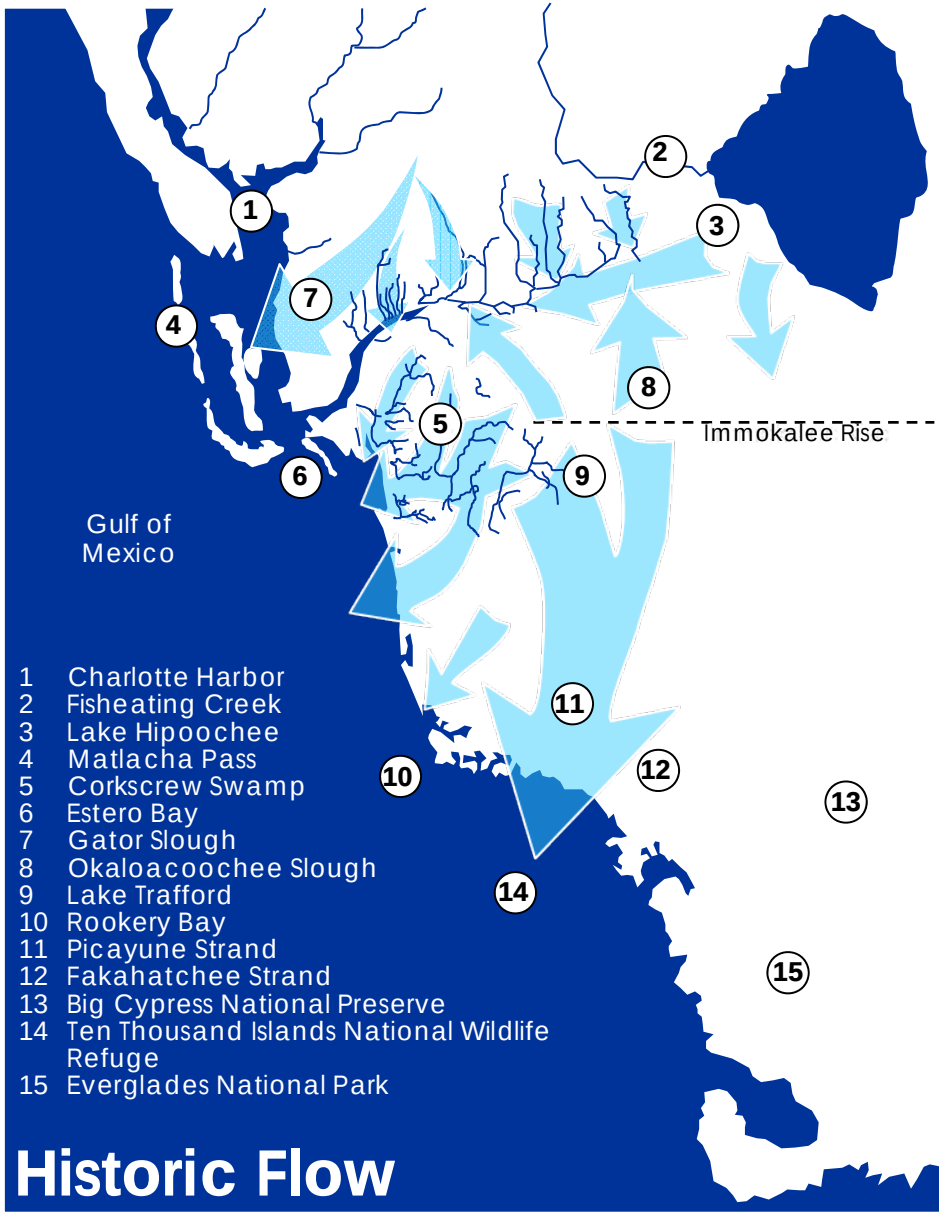
Fakahatchee Strand - largest bald cypress forest in the world

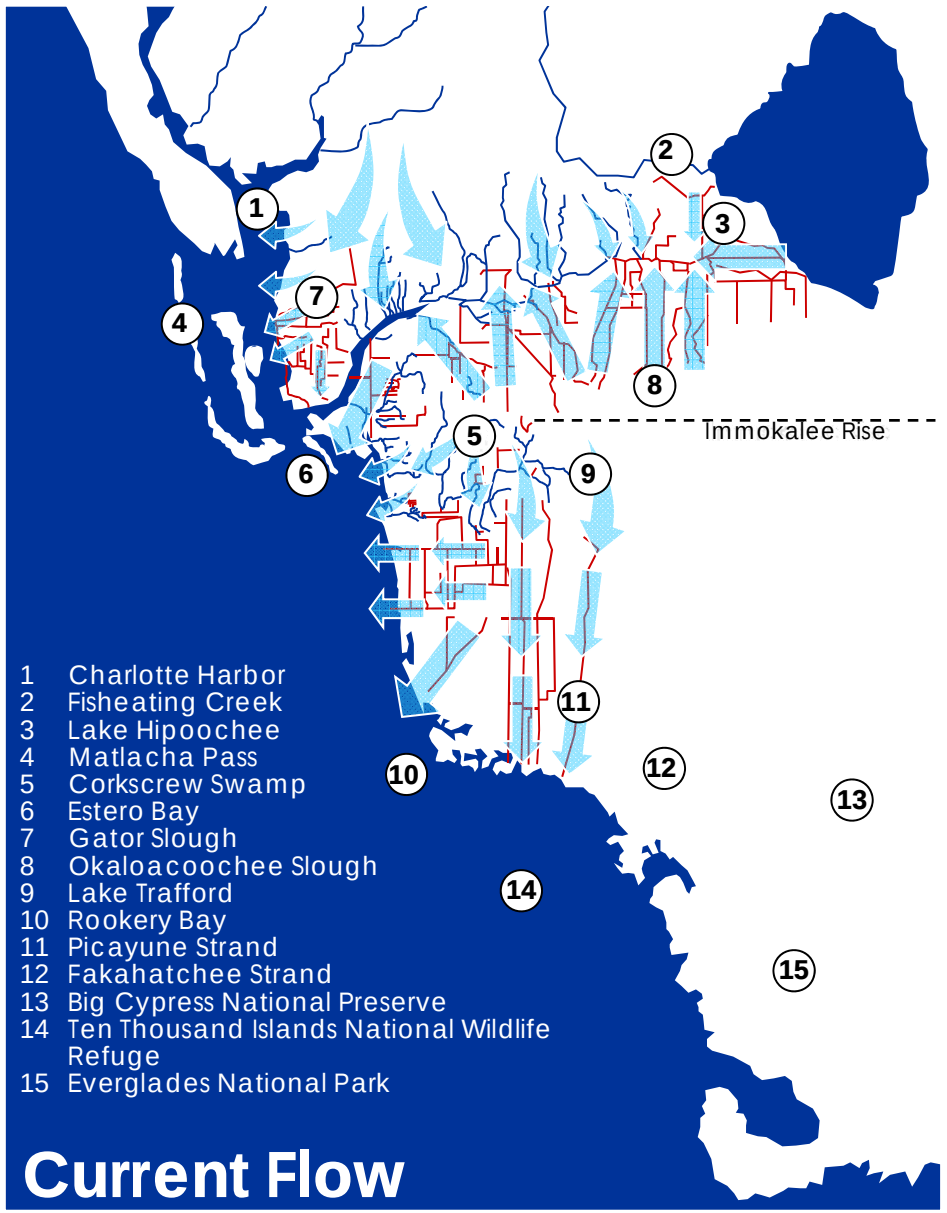
Charlotte
Glades
Lee
Hendry
Collier
Monroe

Study Area

Public/Conservation Lands

SWFFS





Southwest Florida

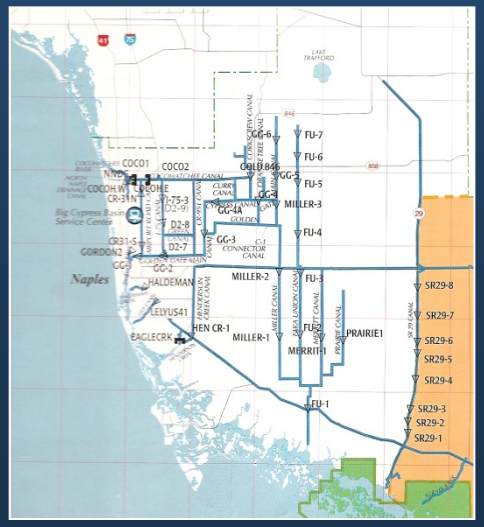
- **Development has led to channelization of flow throughout the system - draining inland wetlands, lowering the water table, and flushing coastal estuaries with unnatural pulses of freshwater**

SWFFS

2050 Plan Objectives

Hydrologic

- Restore to within 10% of pre-development conditions (natural system):
  - total freshwater flows to coastal estuaries (improve/eliminate point discharges from channels)
  - overland sheet flow
  - groundwater recharge

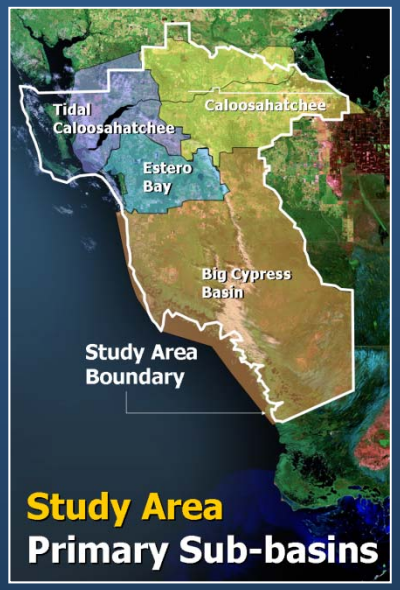


Ecological

- Reduce 2050 habitat connectivity loss by 20 percent
- Establish freshwater flows to the coastal estuaries to maintain an annual average salinity of:
  - 10 - 25 ppt in the Caloosahatchee Estuary
  - 15 - 25 ppt in the Estero Bay
  - 20 - 30 ppt in Rookery Bay, Blackwater Bay, Buttonwood Bay, and Pumpkin Bay
  - 10 - 30 ppt in Faka Union Bay
  - 20 - 30 ppt in Fakahatchee Bay
  - 16 - 30 ppt in the Ten Thousand Islands and Barron River Estuary

Water Quality

- Establish an annual average Total Nitrogen load reduction of:



5.7 million lbs/yr:
Caloosahatchee watershed

12.0 million lbs/yr:
Tidal Caloosahatchee watershed

753 thousand lbs/yr:
Estero Bay watershed

3.5 million lbs/yr:
Big Cypress Basin watershed

Plan Formulation Definitions

Management Measures

Building blocks (structural and non-structural solutions) for meeting planning objectives, such as stormwater treatment areas or reservoirs

Component

One or more management measures within a specific geographic area

Functional Group

One or more components that provide synergistic, comprehensive regional restoration and other water resources opportunities for critical hydrologic locations achieving project planning objectives

Comprehensive Watershed Master Plan (CWMP)

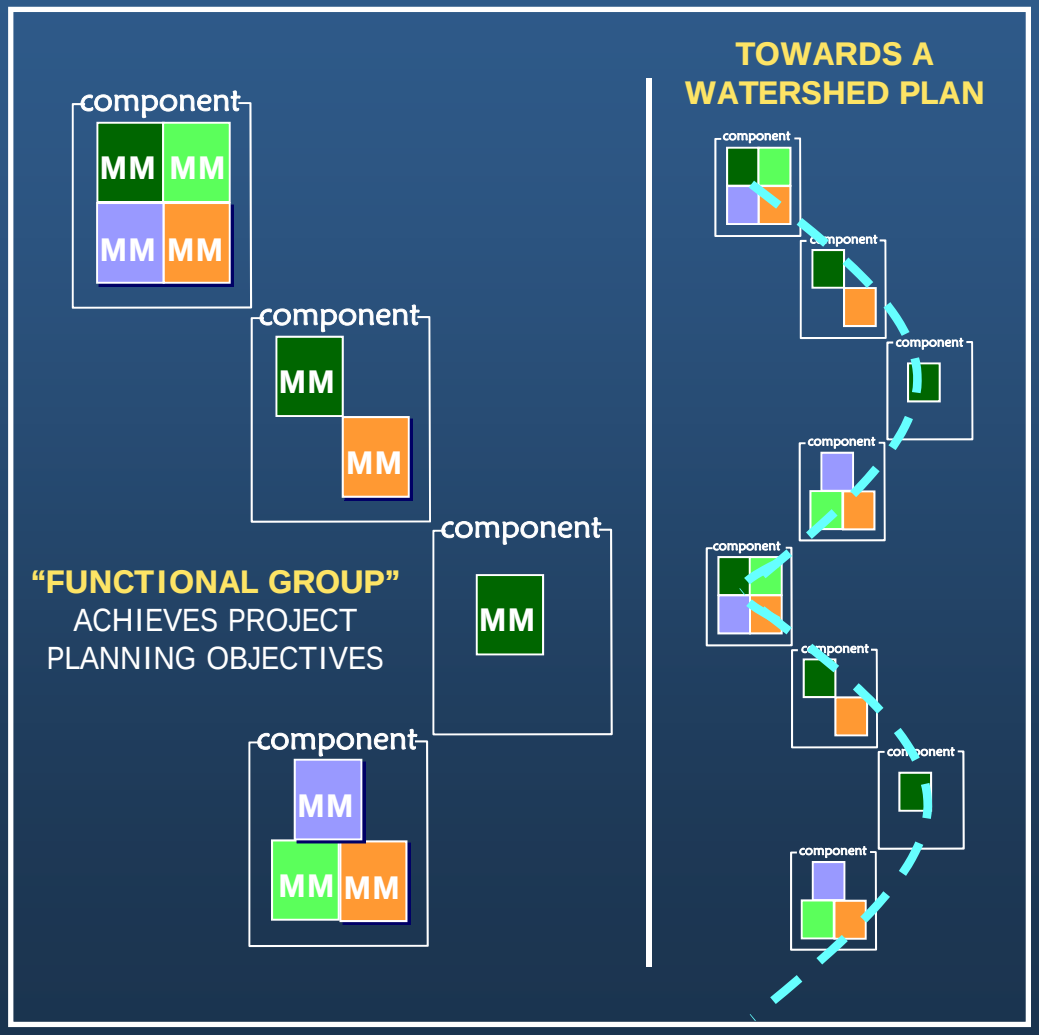
A multi-agency collaborative plan that meets the needs of stakeholders and agencies represented by the PDT, while achieving the project planning objectives and providing substantial system-wide ecological benefits

Tentatively Selected Plan

Subset of functional groups in comprehensive watershed master plan that are cost-sharable by the Corps and the SFWMD

Plan Formulation: CWMP Building Blocks

- Management Measures (MM)
- Components
- Functional Groups



(A)
Barron River Flow-way
- Pump and spreader canal
- Canal backfill
- Culverts

(B)
Coastal Fakahatchee
- Berm removal
- Backfill ditches
- Culverts
- Invasive species removal

2 Functional Groups
Achieving Water Quality and Large Mammal Connectivity

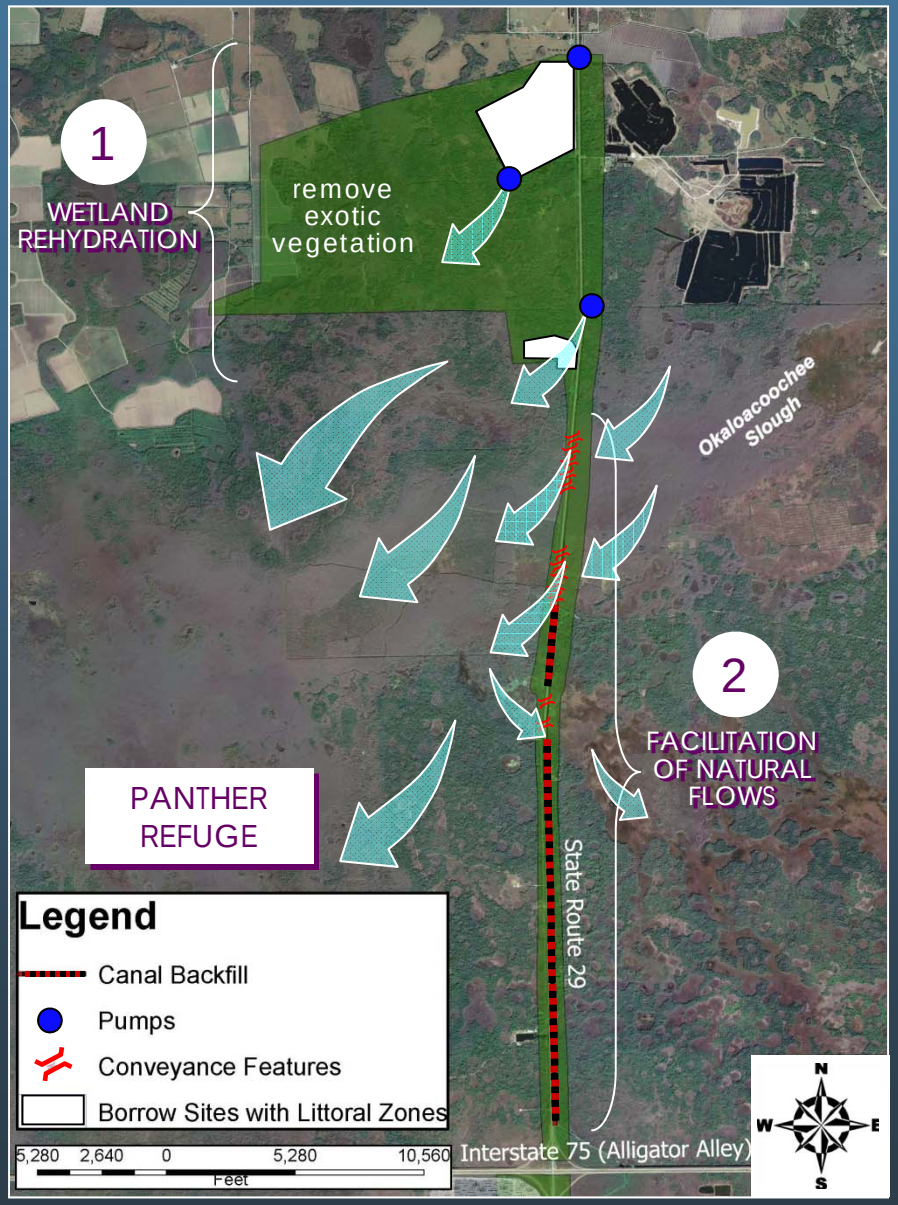
FUNCTIONAL GROUP

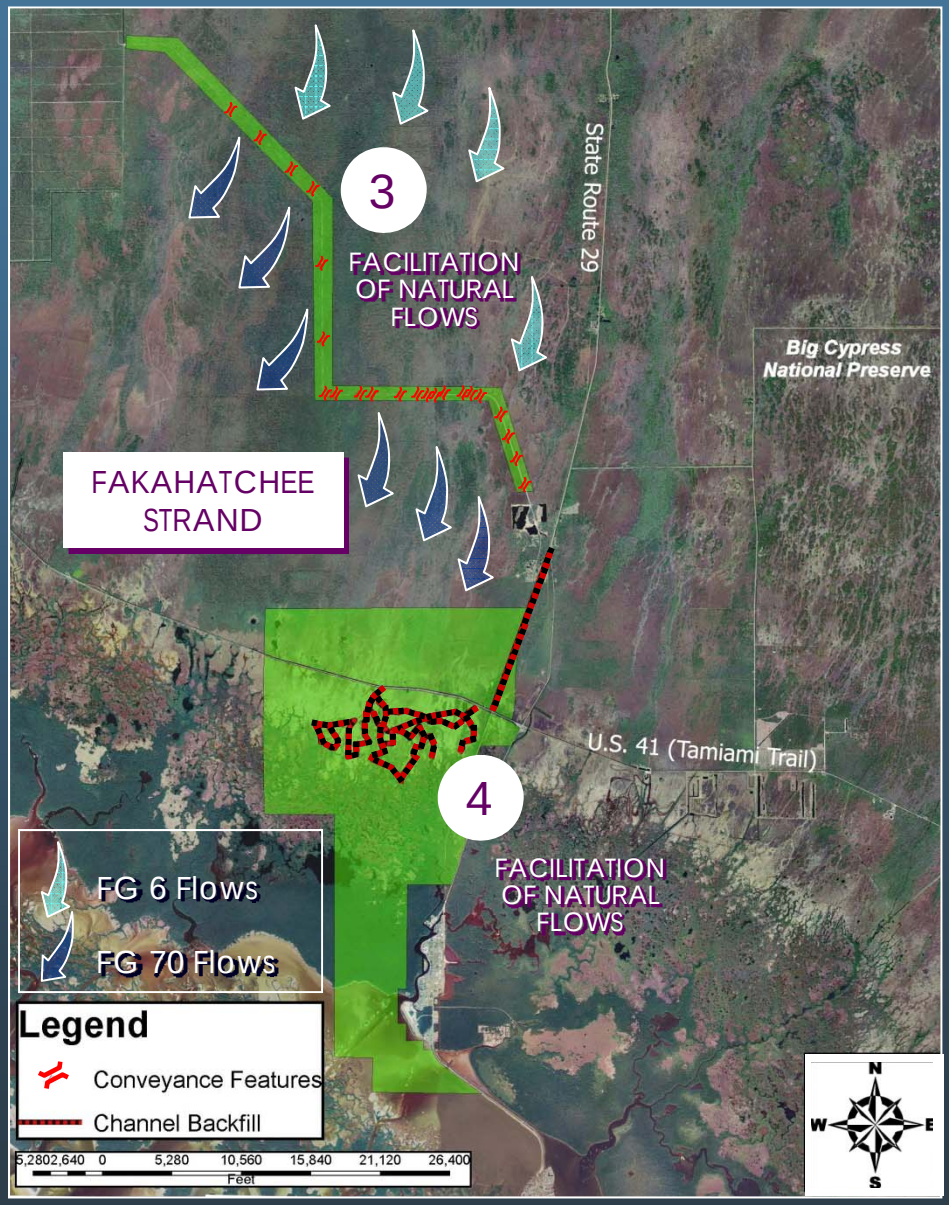
management measures comprising components facilitate flows southward

TO

FUNCTIONAL GROUP

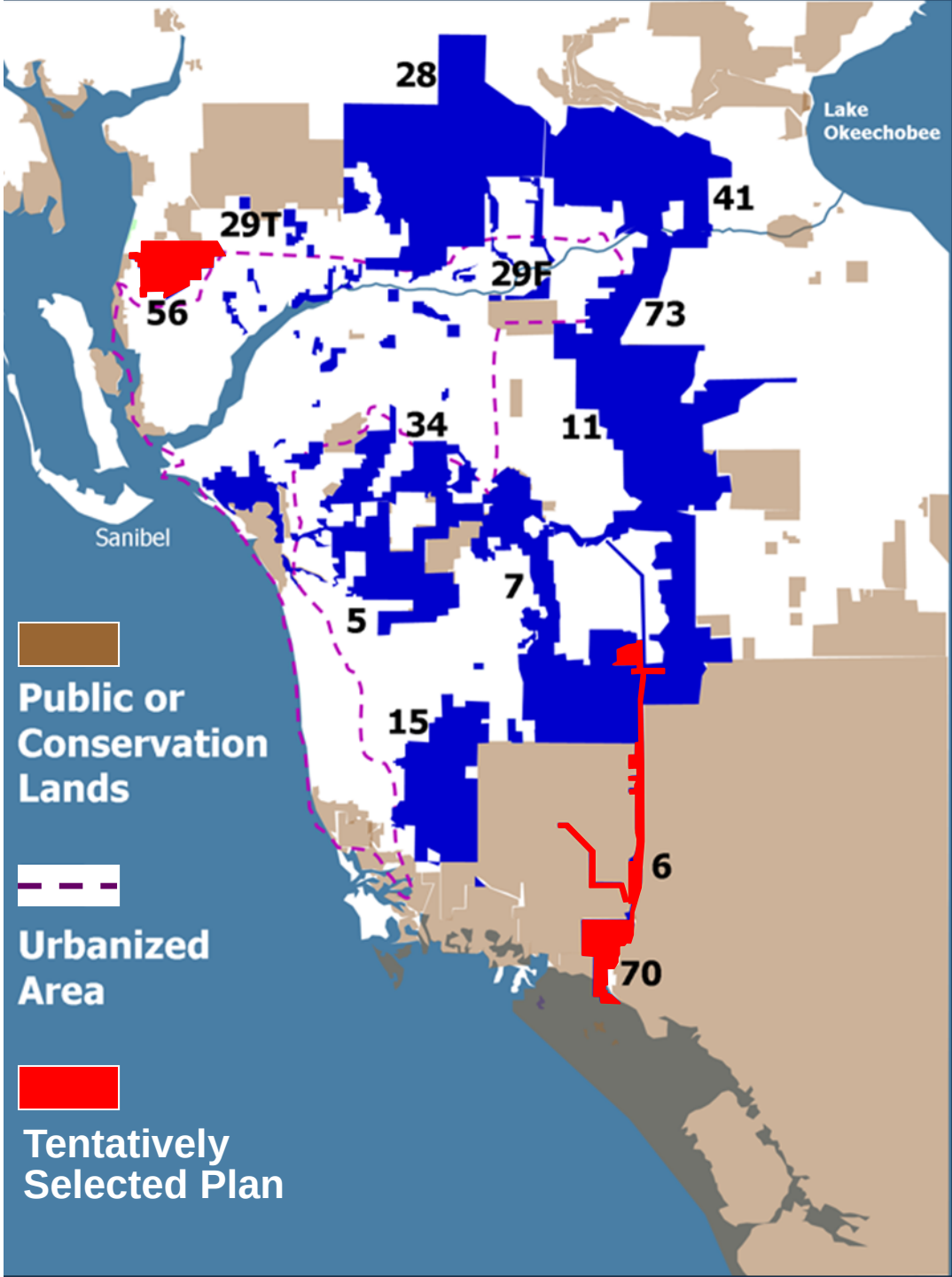
Components facilitate flows from FG 6 to FG 70 and ultimately to the coast benefiting estuarine habitat

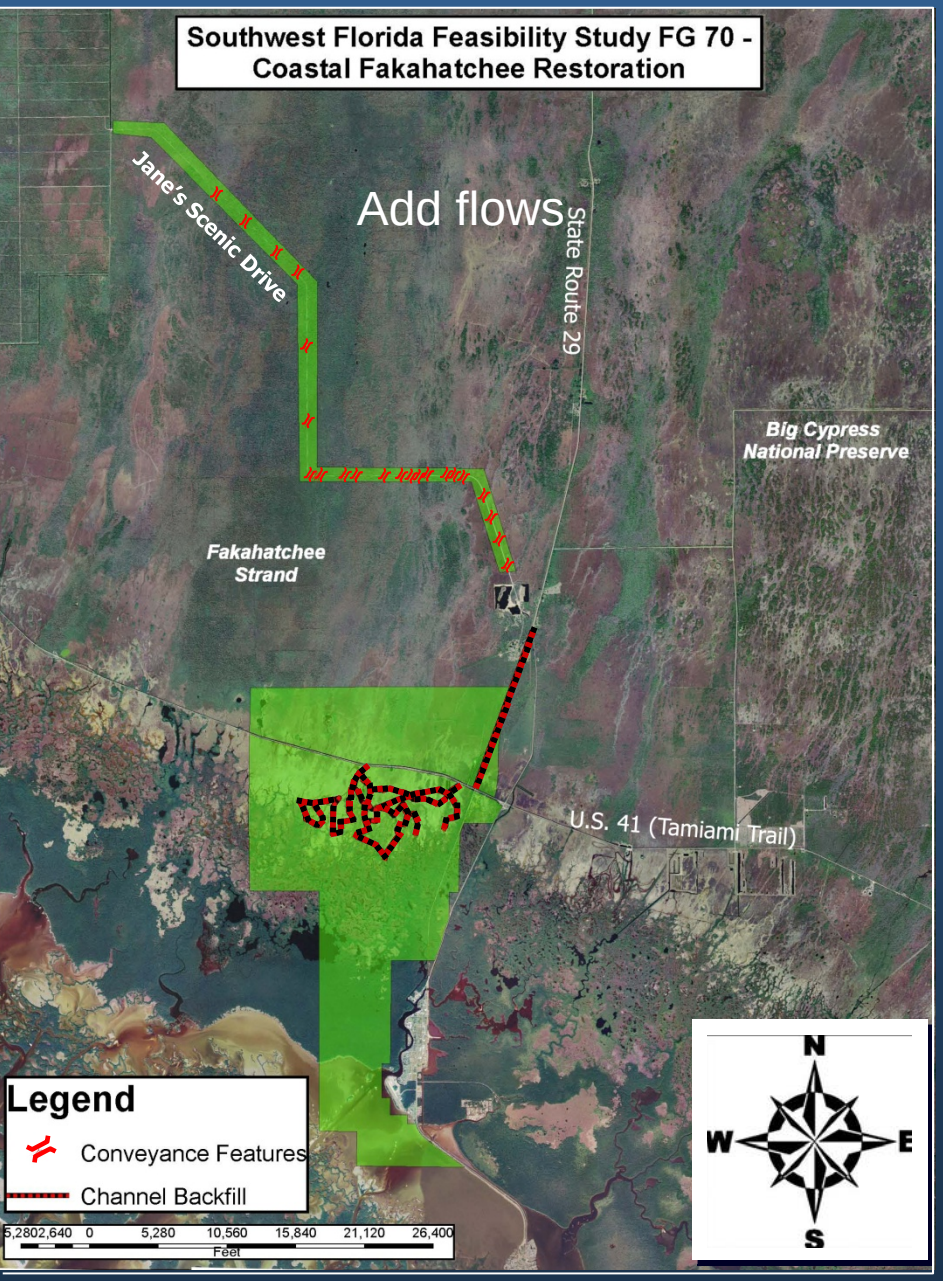




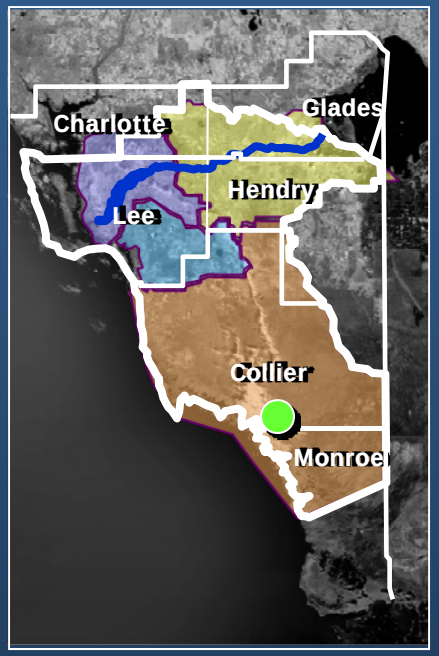
Building the SWFFS Comprehensive Watershed Master Plan

- Babcock Ranch (28)
- Estero Creeks and Headwaters Flow-ways (34)
- South Caloosahatchee Ecoscape (73)
- Caloosahatchee Creeks Tidal (29T)
- Caloosahatchee Creeks Freshwater (29F)
- Belle Meade Flow-way Restoration (15)
- Okaloacoochee Slough (11)
- SR 29 / Barron River Flow-way Restoration (6)
- Yucca Pens (56)
- North Caloosahatchee Ecoscape (41)
- Corkscrew Watershed (5)
- Coastal Fakahatchee (70)
- Camp Keais Strand (7)

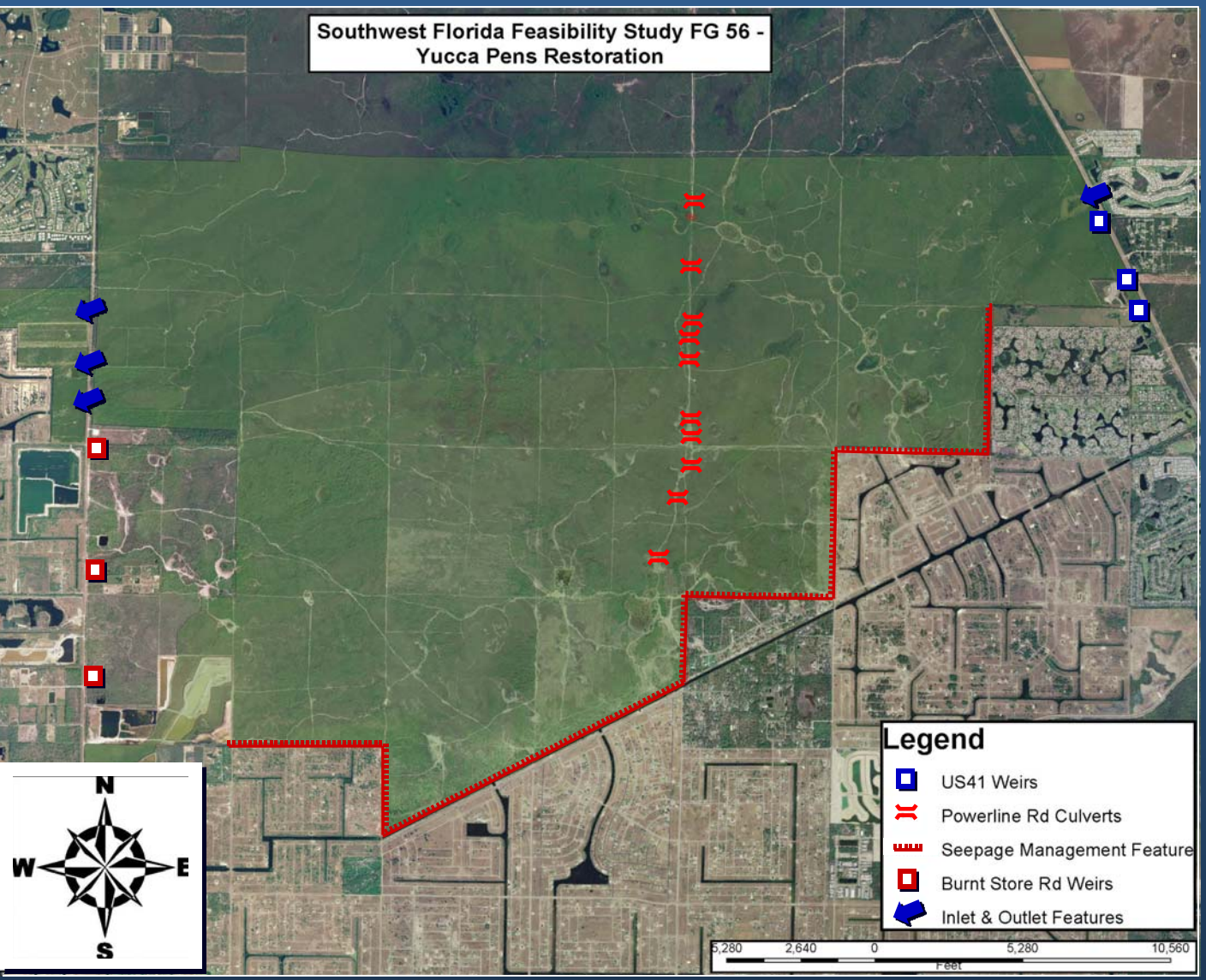


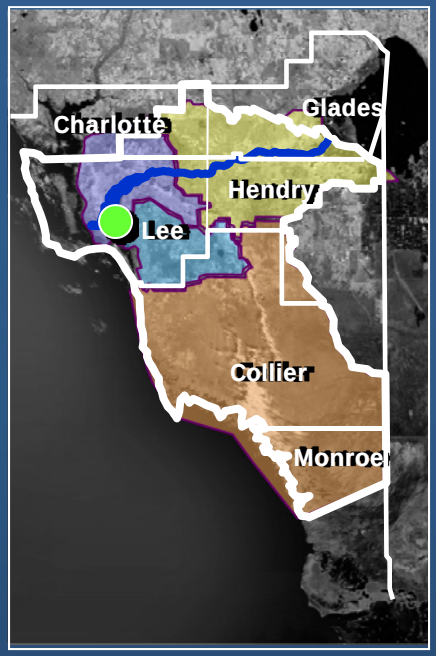


TSP Summary
Functional Group 70
(11,405 acres)



- Improves hydrology throughout area with additional culverts, berm removal, and canal and weir improvements
- Provides landscape connectivity between Ten Thousand Islands estuary to Fakahatchee Strand and Big Cypress National Preserve

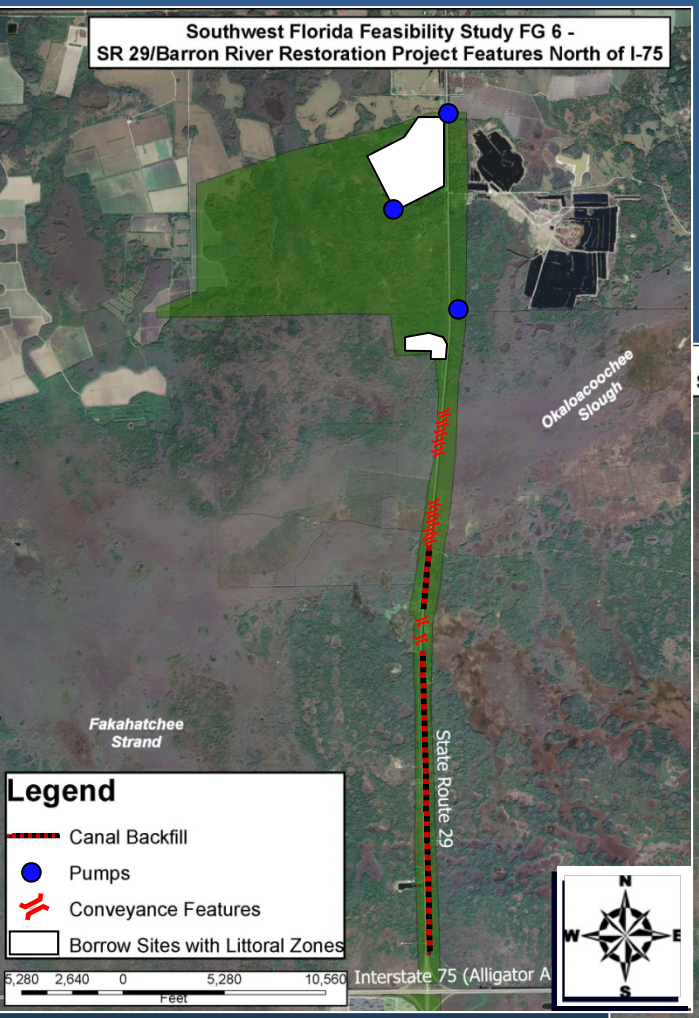


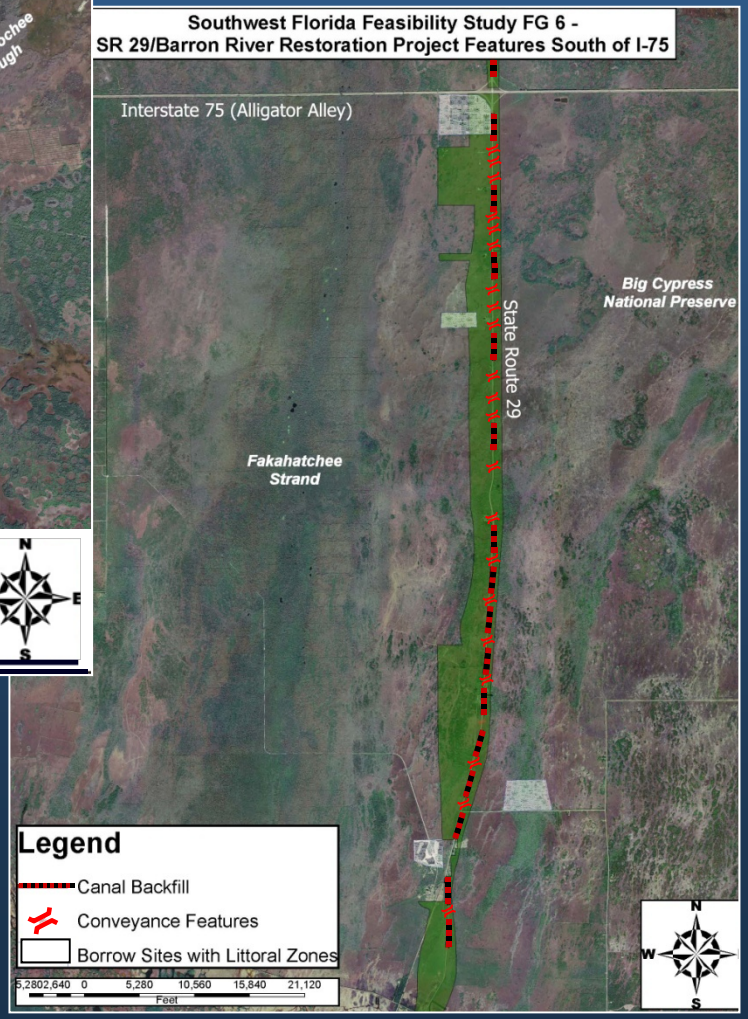


TSP Summary Functional Group 56 (13,879 acres)

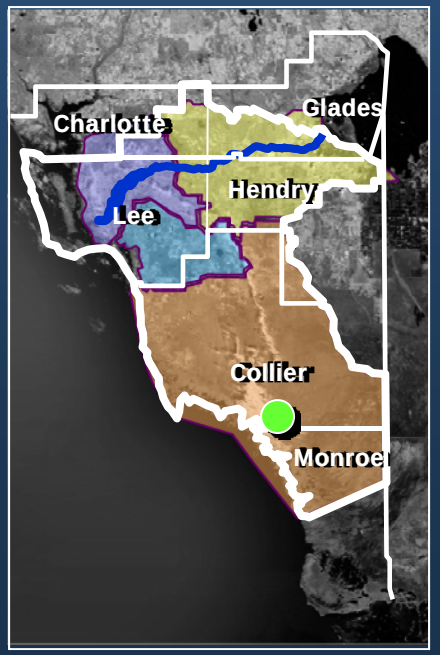
- Restores natural flow-way through Gator Slough to the coast
- Provides landscape connectivity from Lake Okeechobee, through Fisheating Creek, to Babcock Ranch, and CM Webb conservation lands to Charlotte Harbor National Estuary
- Reduces pulses of freshwater discharge to Charlotte Harbor National Estuary and Matlacha Pass
- Removes exotics

TSP Summary
Functional Group 6
(10,671 acres)





- Backfills 50 % of SR29 canal from estuary north, beyond I-75
- Provides water quality improvement and distributes water to the southwest through Fakahatchee Strand to restore natural hydrology and re-establish flow-way to coast
- Provides landscape connectivity with Okaloacoochee Slough and the Florida Panther NWR to the north, Big Cypress Basin National Preserve to the east, and Fakahatchee Strand to the west



SWFFS Study Milestone Schedule

Submit Draft Report to HQ for Review	Apr 2010
Alternative Formulation Briefing	May 2010
NEPA/Public Review of Draft Report	Jun 2010
Final Report in Federal Register	Dec 2010
Chief's Report	Feb 2011

FG 70 and FG 6

FG 56