CENTRAL EVERGLADES PLANNING PROJECT

Working Group Sponsored Recreation Workshop

PRESENTED BY

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US Army Corps of Engineers, Jacksonville District

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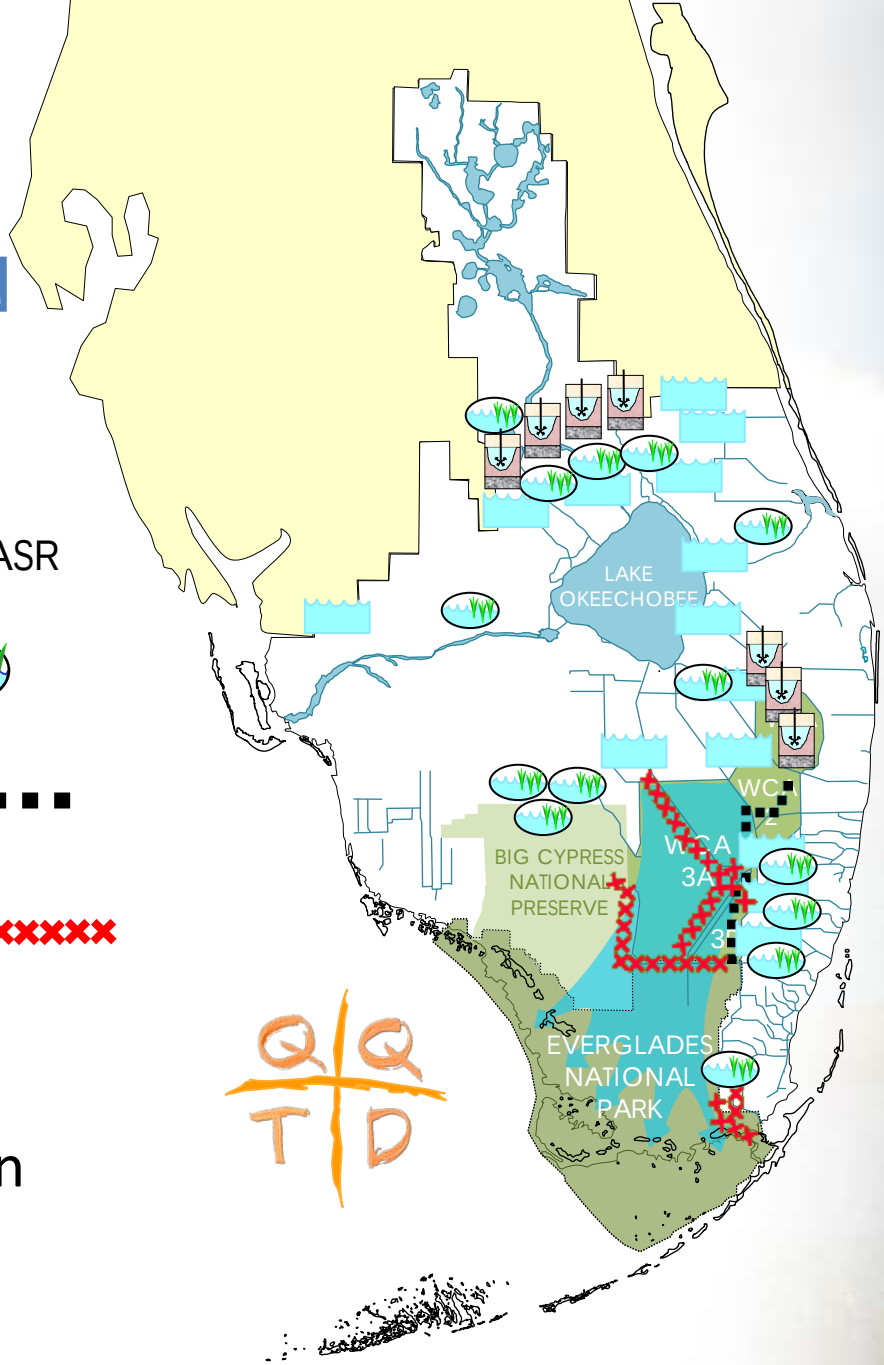
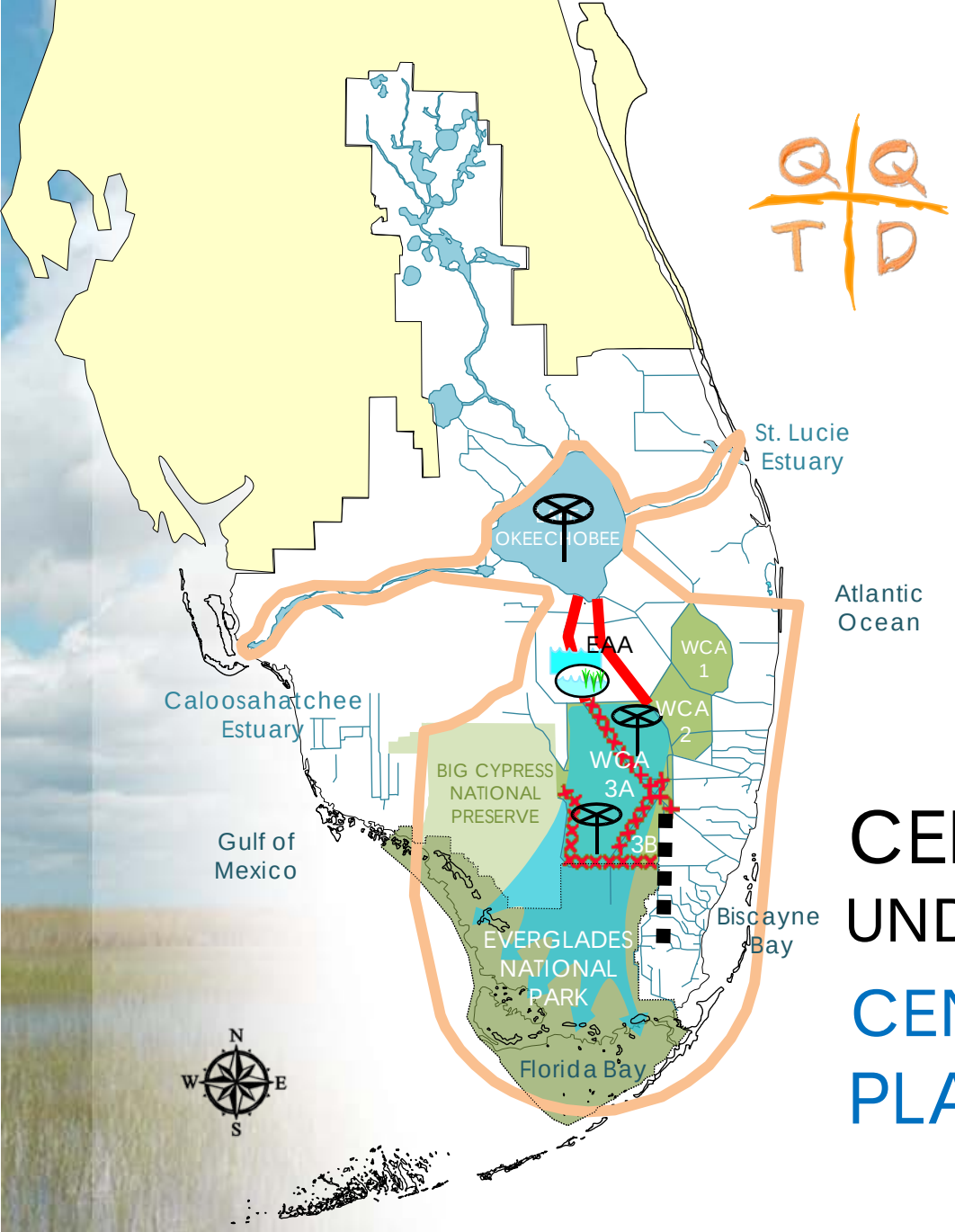
South Florida Water Management District

September 26, 2012

COMPREHENSIVE EVERGLADES RESTORATION PLAN

- 68 Components
  - Storage — Surface — ASR
  - STAs for water quality
  - Seepage management
  - Removing barriers to flow
  - Revised operations
- 30+ year implementation





Central Everglades Planning Project Study Area

Storage, Treatment, and Conveyance in the EAA

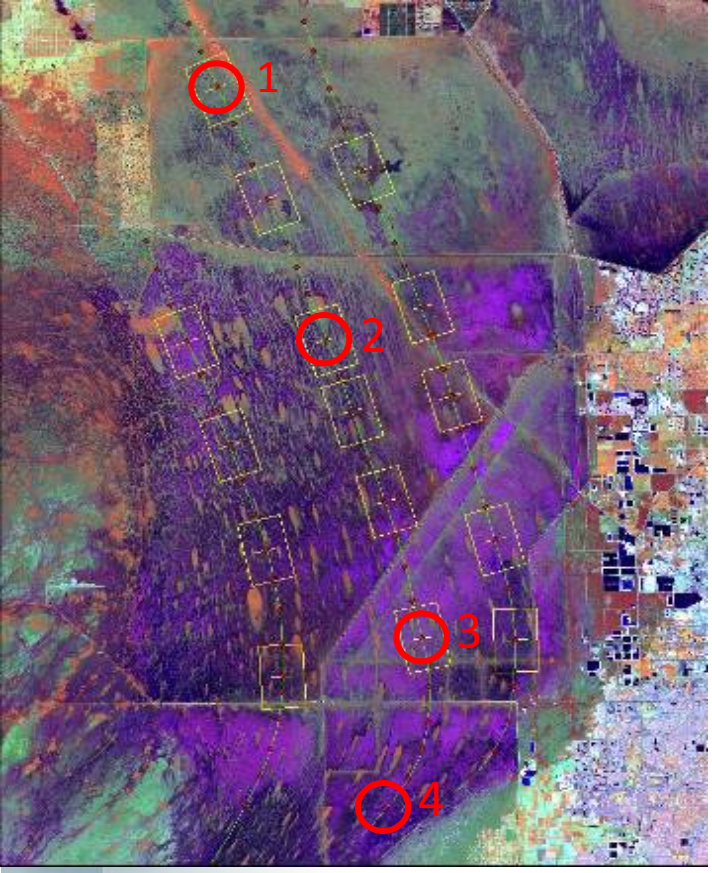
Decompartmentalization and Sheetflow Enhancement

Seepage Management

Operational Changes

CERP COMPONENTS UNDER CONSIDERATION

CENTRAL EVERGLADES PLANNING PROJECT



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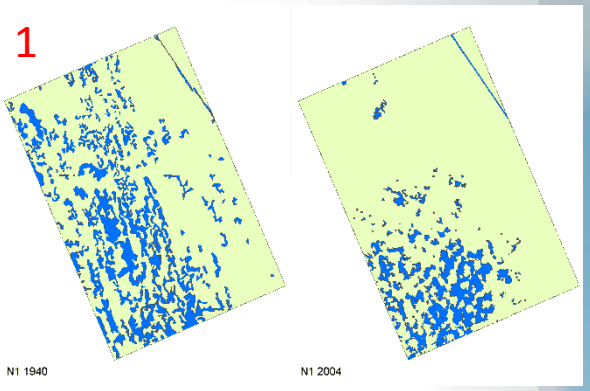
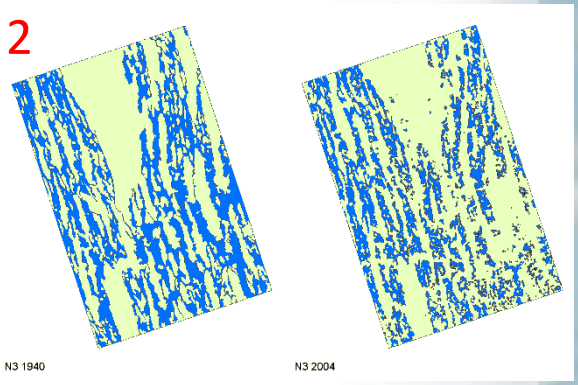
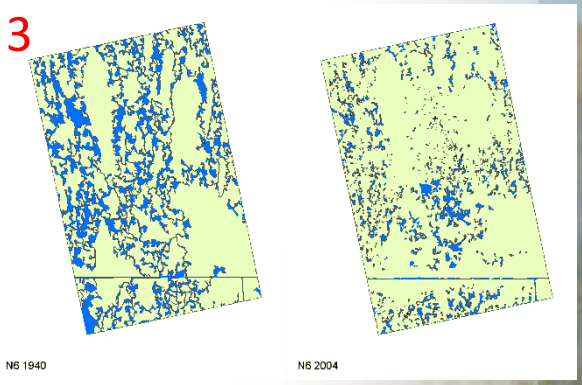


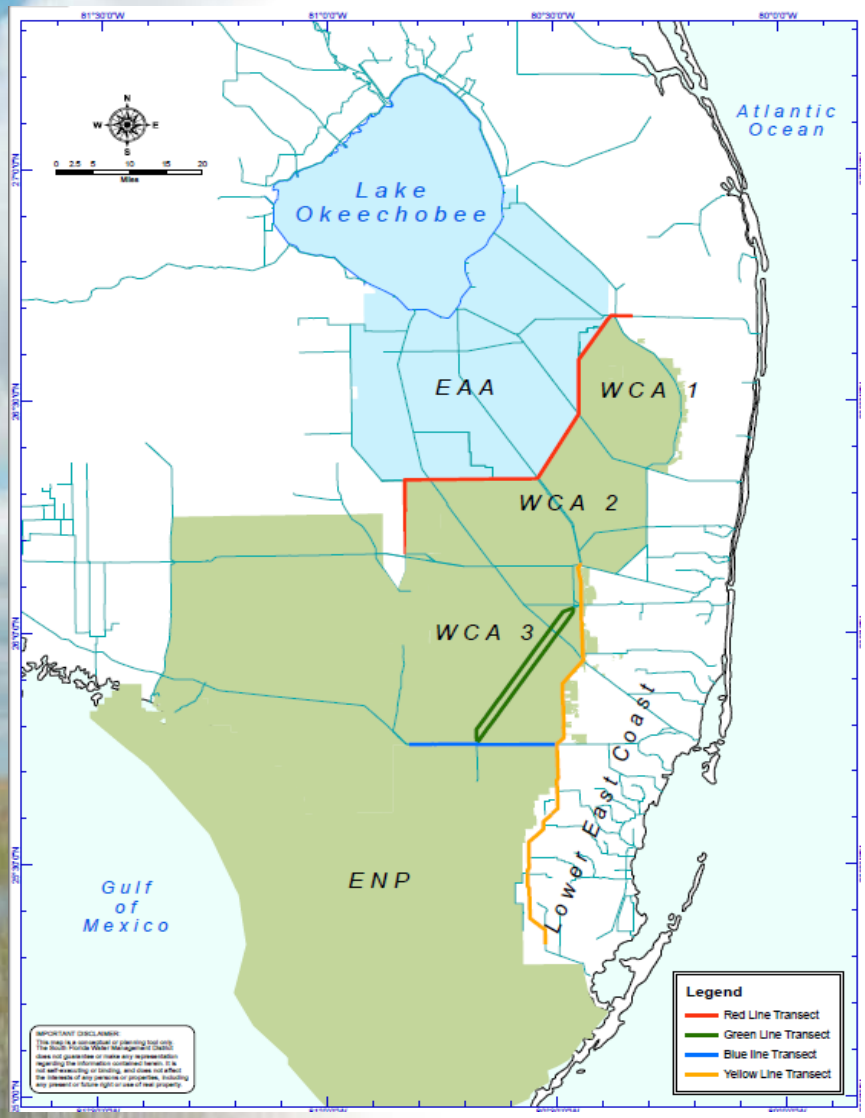




GOALS AND OBJECTIVES

- **<u>GOAL: Enhance Ecological Values</u>**
- **Increase the total spatial extent of natural areas**
- **Improve habitat and functional quality**
  - Restore seasonal hydroperiods and freshwater distribution to support a natural mosaic of wetland and upland habitat in the Everglades system
  - Improve sheetflow patterns and surface water depths and durations in the Everglades system in order to reduce soil subsidence, the frequency of damaging peat fires, the decline of tree islands, and salt water intrusion
  - Reduce high volume discharges from Lake Okeechobee to improve the quality of oyster and SAV habitat in the northern estuaries
- **Improve native plant and animal species abundance and diversity**
  - Reduce water loss out of the natural system to promote appropriate dry season recession rates for wildlife utilization
  - Restore more natural water level responses to rainfall to promote plant and animal diversity and habitat function
- **<u>GOAL: Enhance Economic Values and Social Well Being</u>**
- **Increase availability of fresh water (agriculture/municipal/industrial)**
- **Reduce flood damages (agricultural/urban)**
- **Provide recreational and navigation opportunities**
- **Protect cultural and archeological resources and values**

SPATIAL PERSPECTIVE



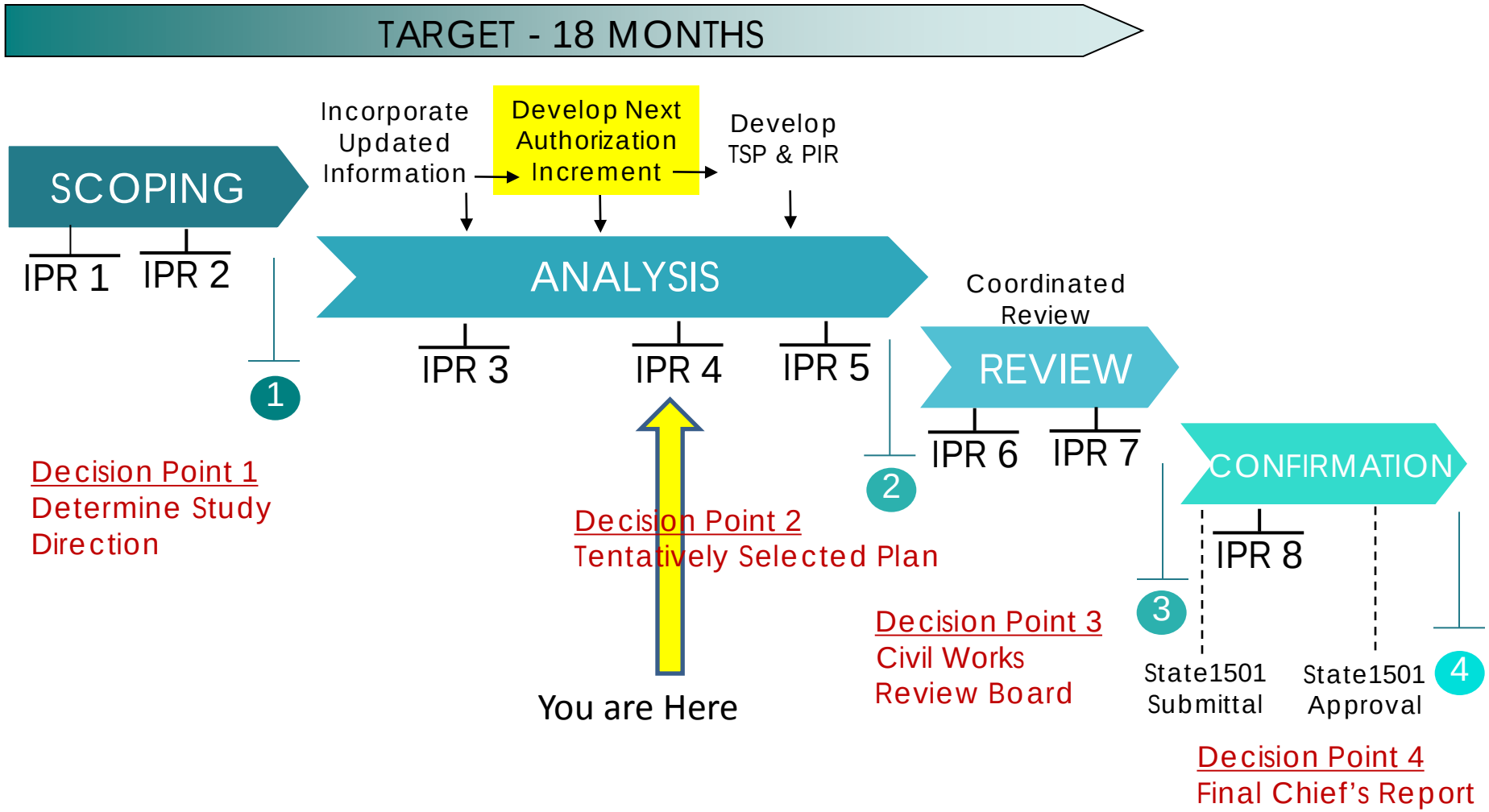
REDLINE –Flows from the Everglades Agricultural Area (EAA) into WCA 3A *(L-4, L-5 and L-6 levees and canals)*

GREENLINE – Flows through WCA 3A and WCA 3B *(L-67A and C levees and associated canals)*

BLUELINE – Flows from WCA 3A/3B into Everglades National Park (ENP) *(Tamiami Trail roadway and L-29)*

YELLOWLINE –Flows from WCA 3A/3B and ENP to the lower east coast *(east coast protective levee system, the L-30 and L-31N)*

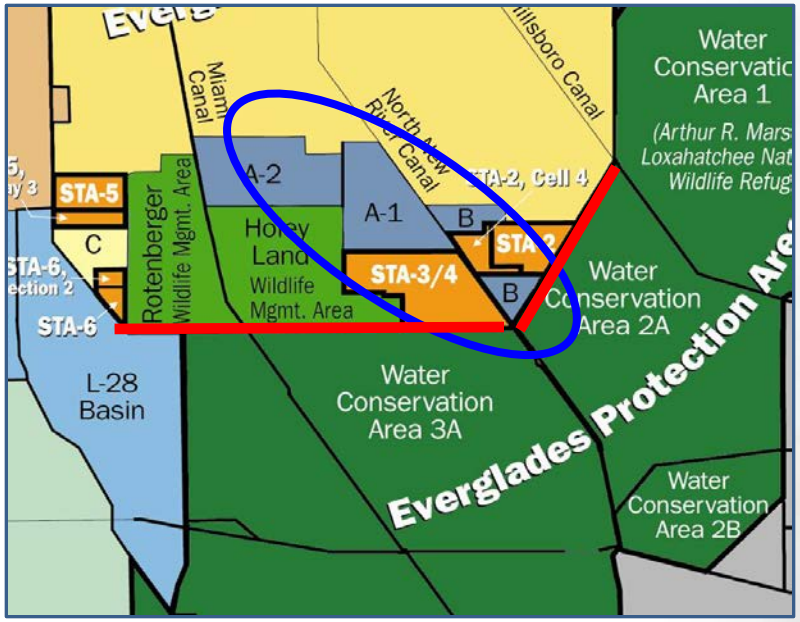
CENTRAL EVERGLADES PROCESS



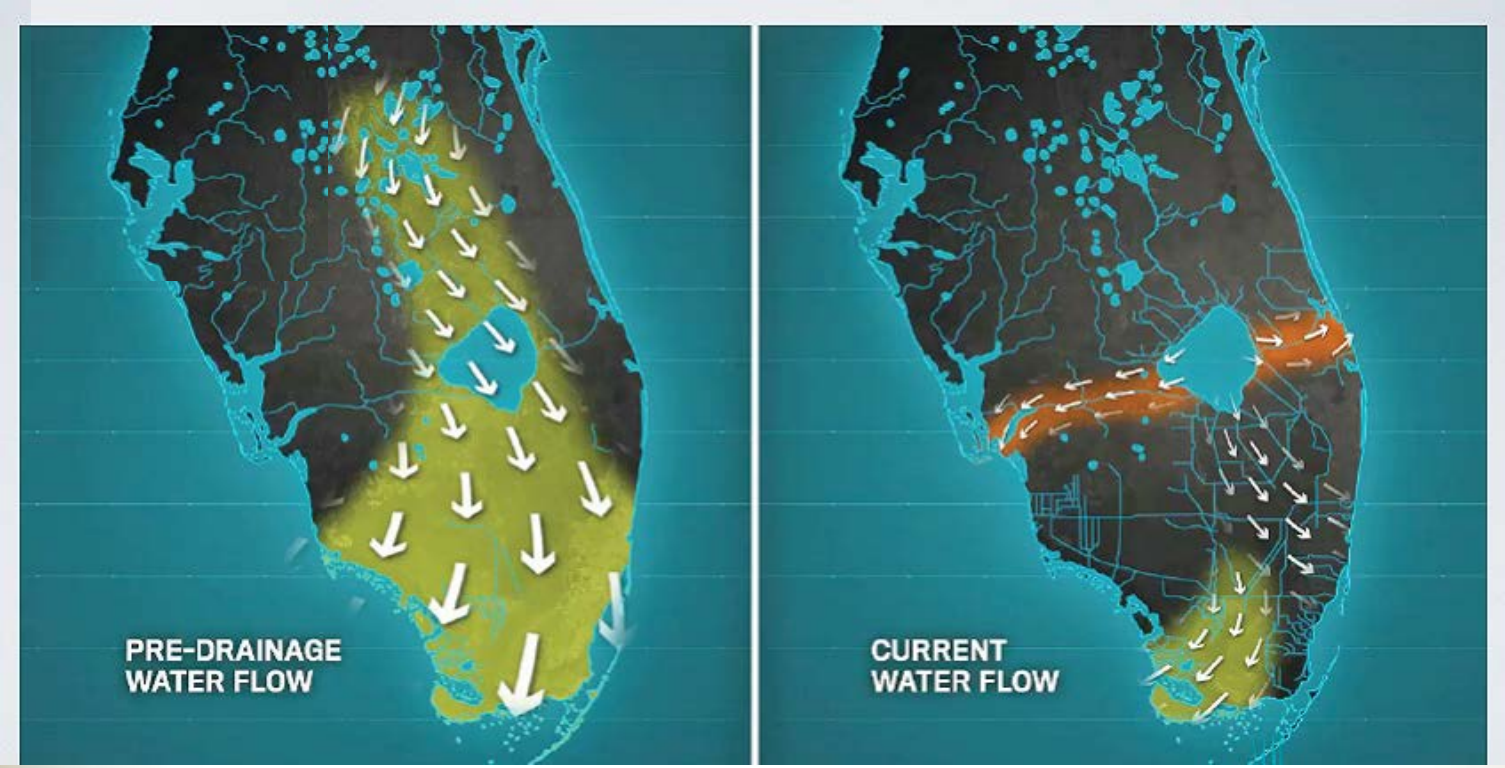
IPR: In-Progress Review with Corps Leadership

NORTH OF THE REDLINE

EAA
Storage And
Treatment
Options



STORAGE AND TREATMENT PROBLEM: ALTERED HYDROLOGY



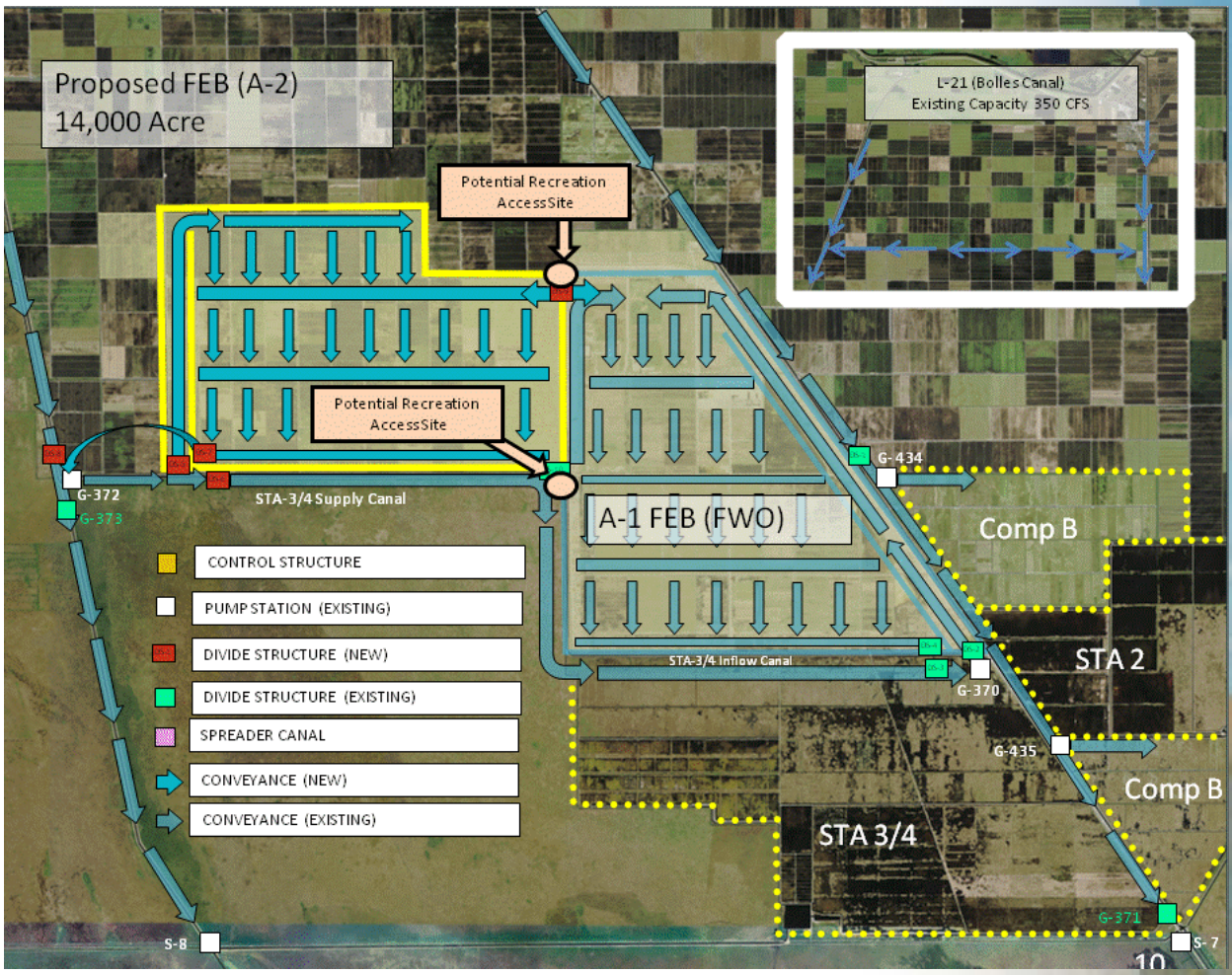
Solution:

Redirect undesirable Lake Okeechobee releases being made to the Northern Estuaries south to reestablish pre-drainage flow patterns to the natural system

NORTH OF THE REDLINE – RECOMMENDED OPTION

Flow Equalization Basins (FEB) : $165 Million (not including cost of A-1 FEB)

- ~14,500 acres FEB on A-2 that operates together with A-1 FEB, STA ¾ and Compartment B (STA2) to meet required water quality standards
- Emergent marsh operated up to 3ft
- Attenuates flows and provides water quality pre-treatment



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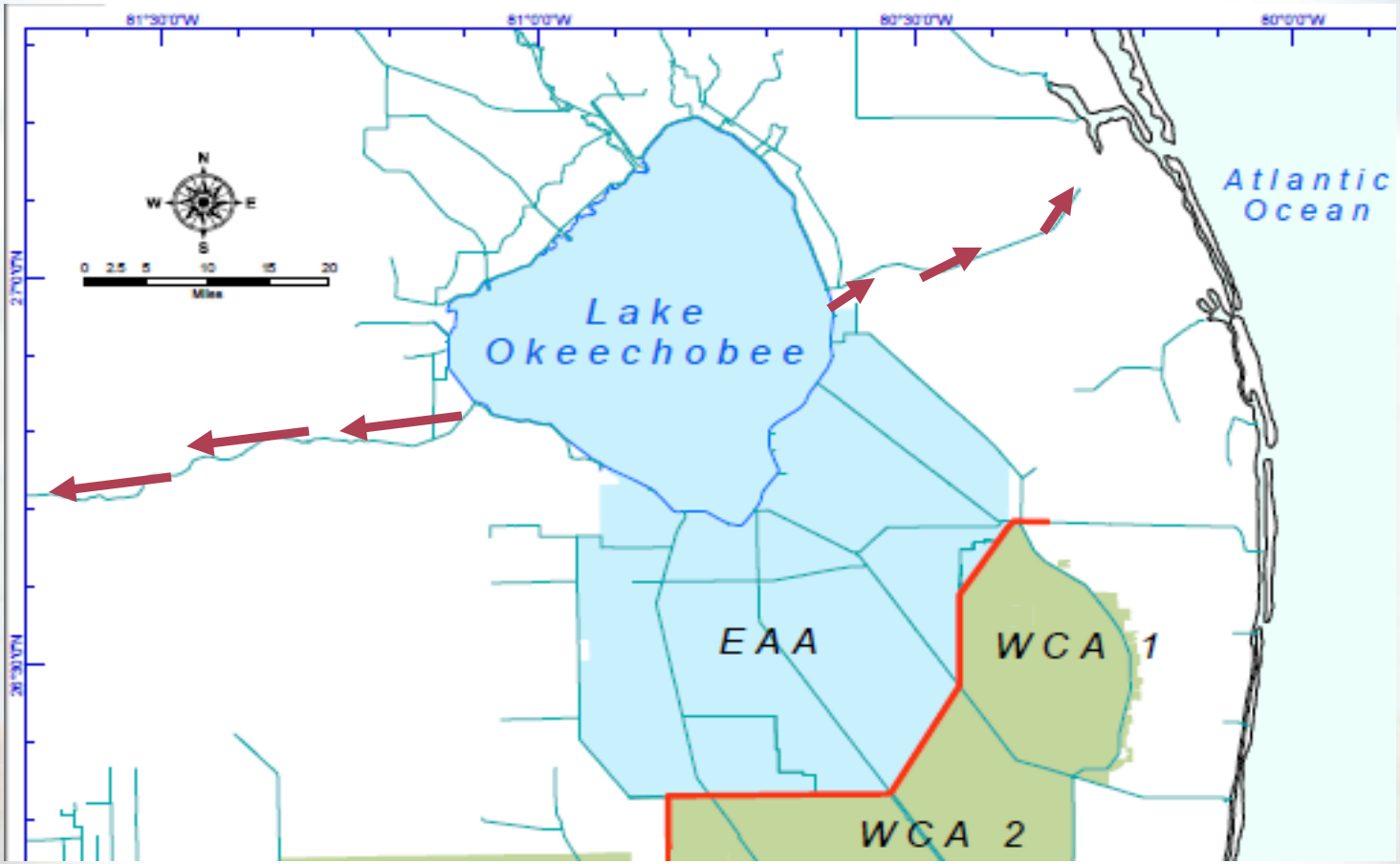

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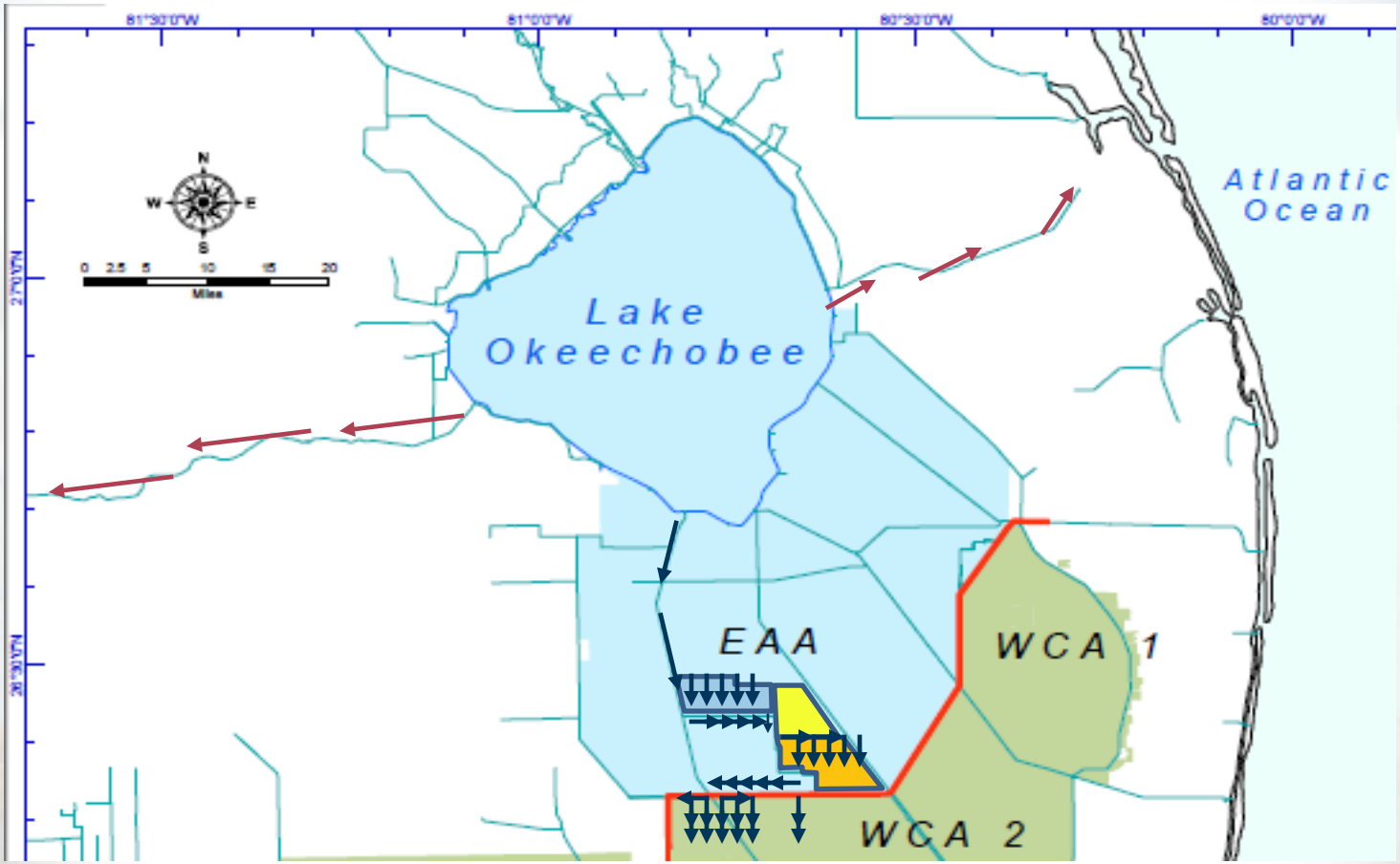
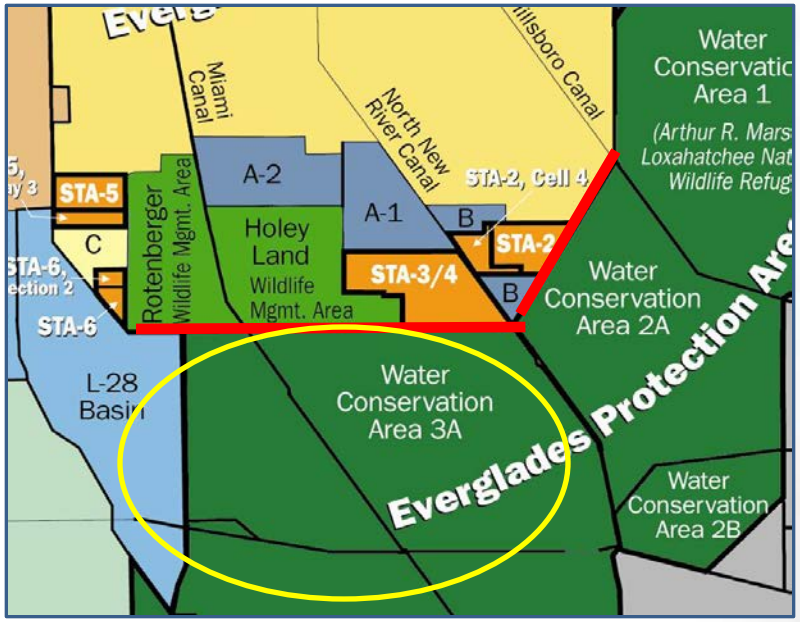


"WHAT WE'VE HEARD"

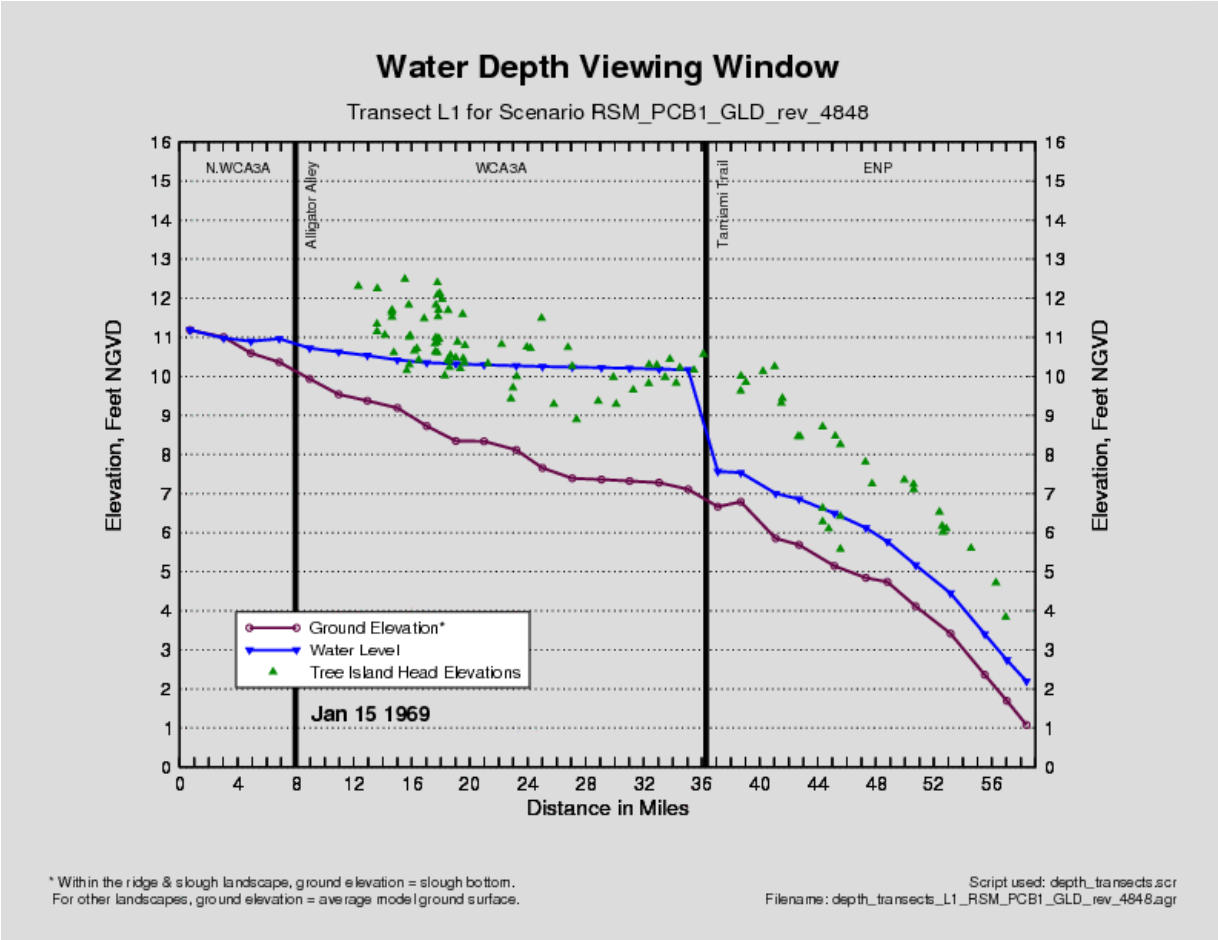
- EAA Storage and Treatment
  - Flow Equalization Basin access and recreational opportunities should be provided
  - Provide deep water refugia to support fish and wildlife during dry periods

SOUTH OF THE REDLINE

Northern WCA 3A Options



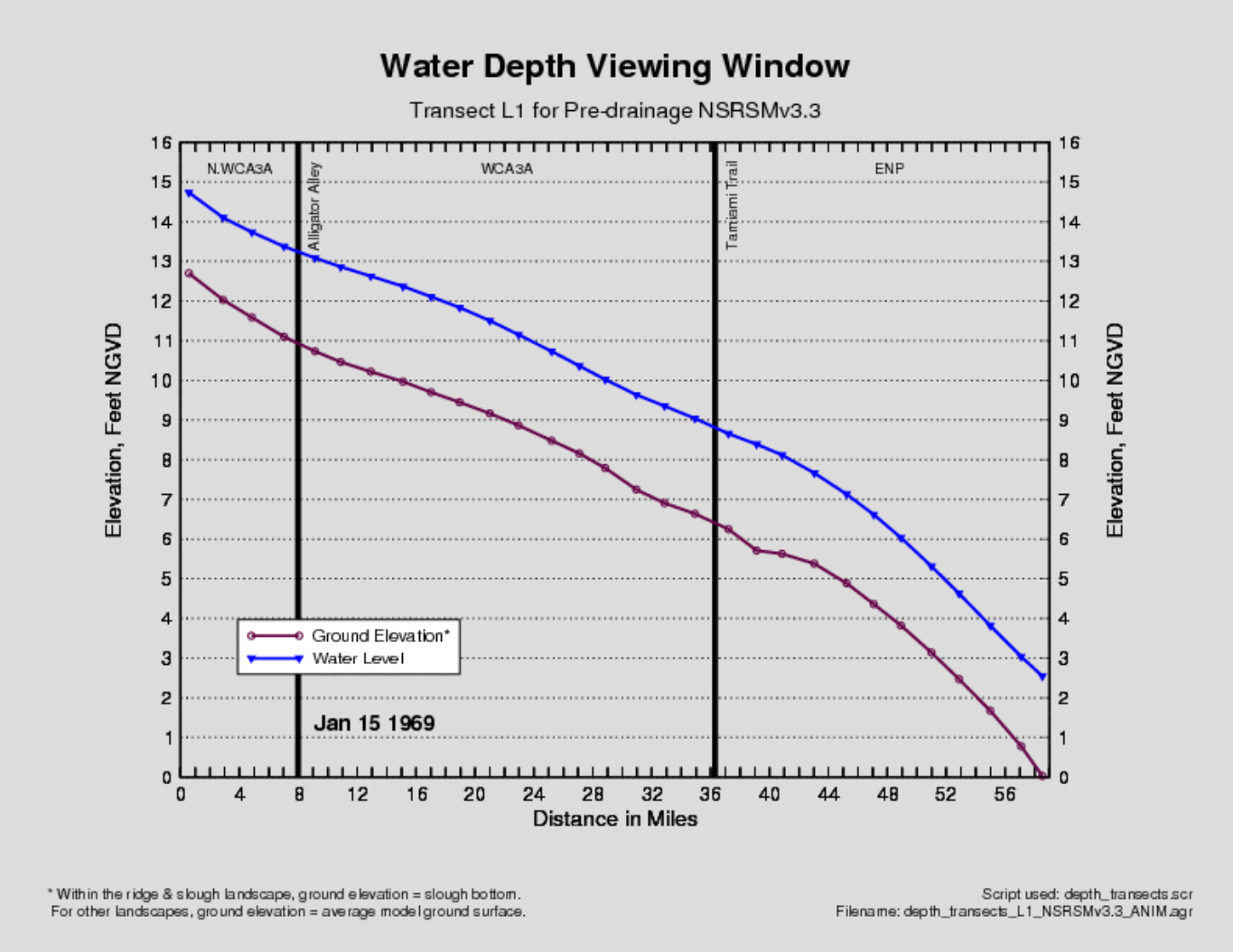
NORTHERN WCA 3A PROBLEMS: ALTERED HYDROLOGY



Solution:

Improve water flow through the system, creating natural patterns of shallow sheetflow to maintain and restore ridge and slough habitat

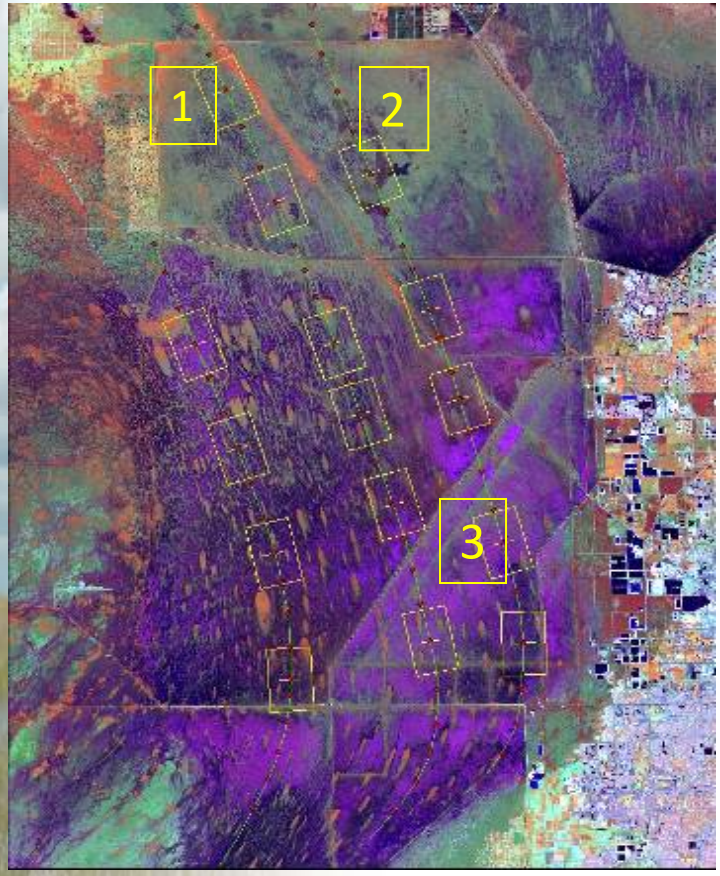
WCA 3A: PRE-DRAINAGE



Solution:

Natural patterns of shallow sheetflow parallels land surface

WCA 3A AND WCA 3B WATER DEPTHS



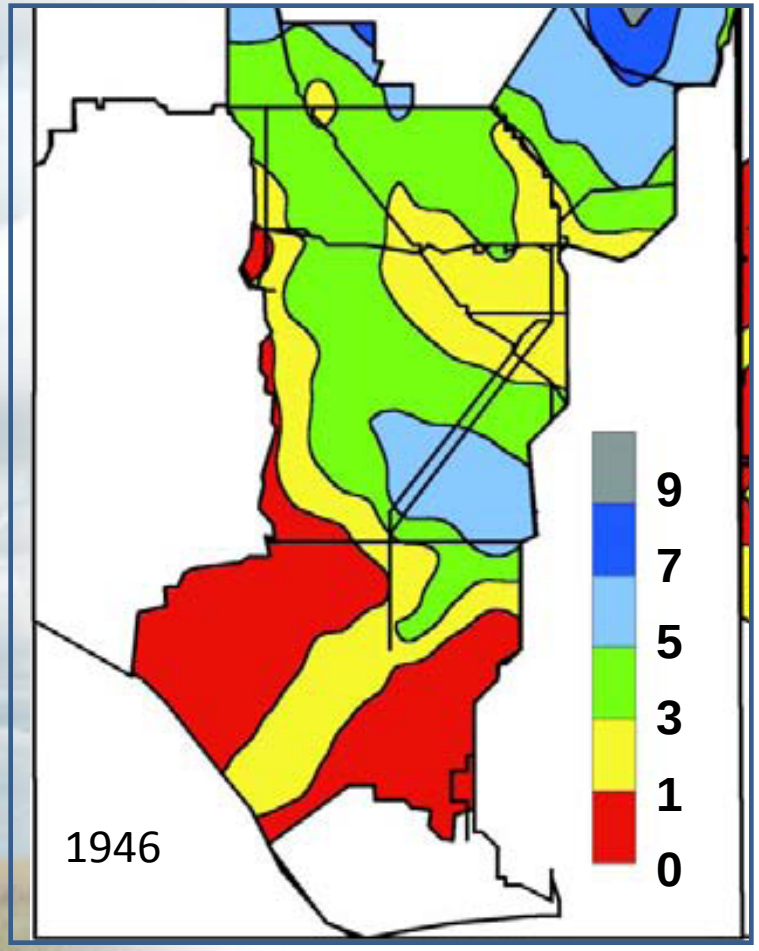
Average Water Depth in Feet			
Location	Identification	Observed	Target
1	3A NW (1972 - 2005)	-0.22	1.89
2	3A NE (1972 - 2005)	0.51	1.75
3	Site 71 (1965 -0 2005)	0.90	1.82

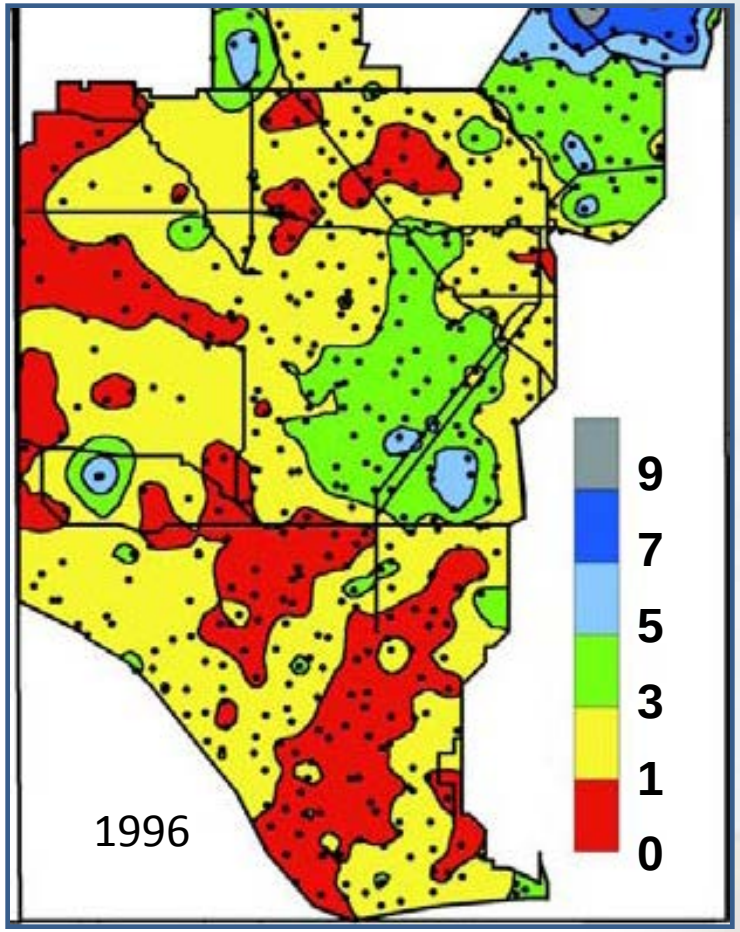
NORTHERN WCA 3A PROBLEMS: TOO DRY, TOO OFTEN

Solution:

Restore more natural hydrology by improving water depths and duration

WCA 3A PROBLEMS: PEAT LOSS

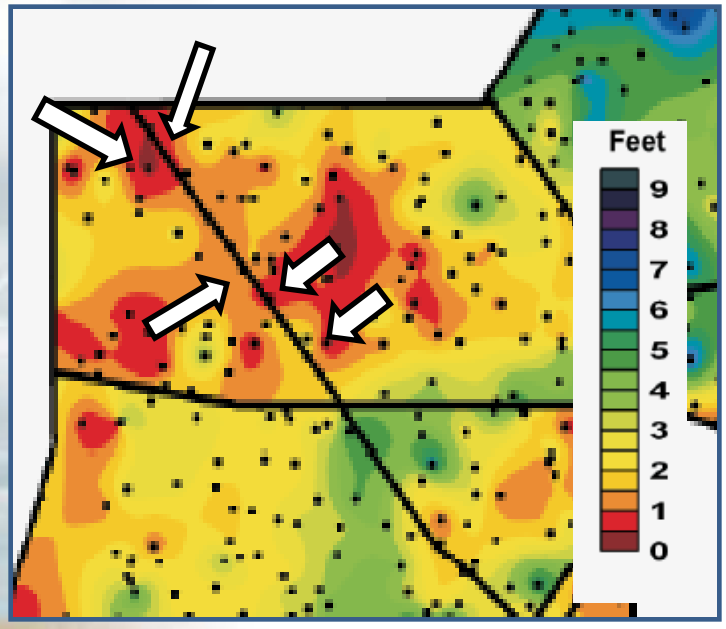


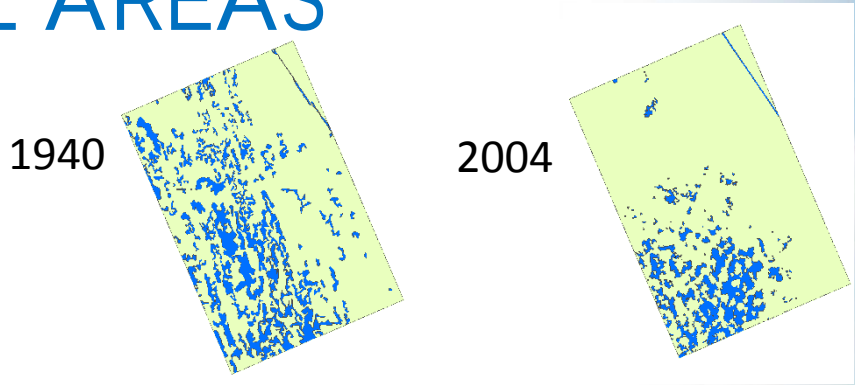


Solution:

Reduce or eliminate organic soil loss and improve dry season habitat for aquatic flora and fauna in northern WCA 3A marshes

NORTHERN WCA 3A PROBLEMS: MIAMI CANAL OVER DRAINS SURROUNDING NATURAL AREAS

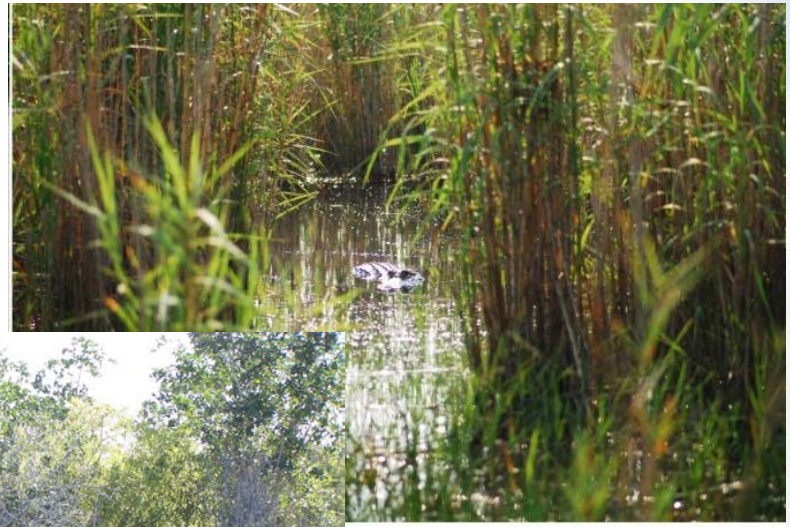




Solution:

Eliminate the harmful drainage effects that the Miami Canal has on the interior Everglades marsh that results in adverse effects on aquatic flora and fauna

WCA 3A PROBLEMS: MIAMI CANAL IS AN UNNATURAL HABITAT

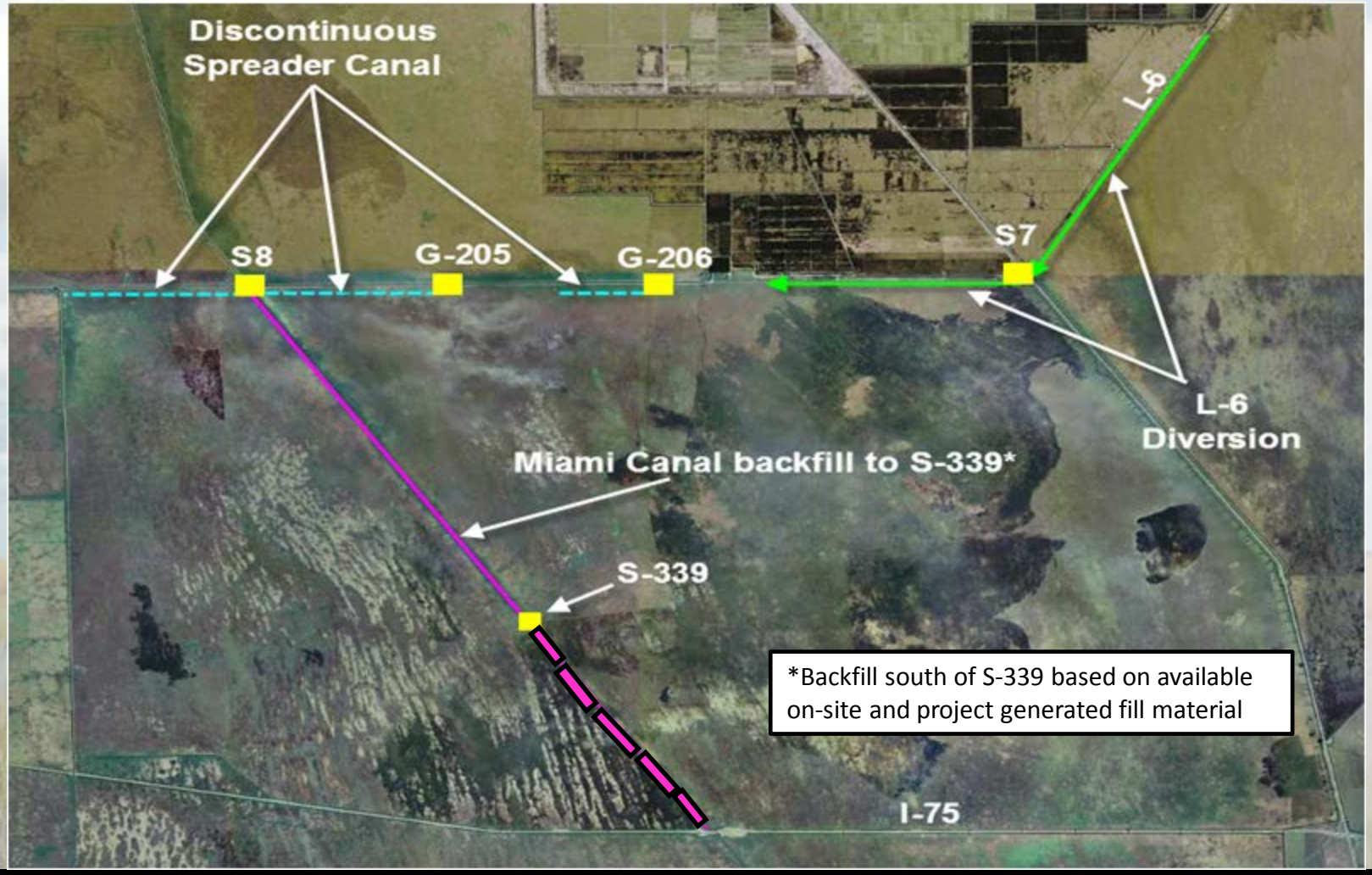


Solution:

Eliminate the harmful drainage effects that the Miami Canal has on the interior Everglades marsh that results in adverse effects on aquatic flora and fauna

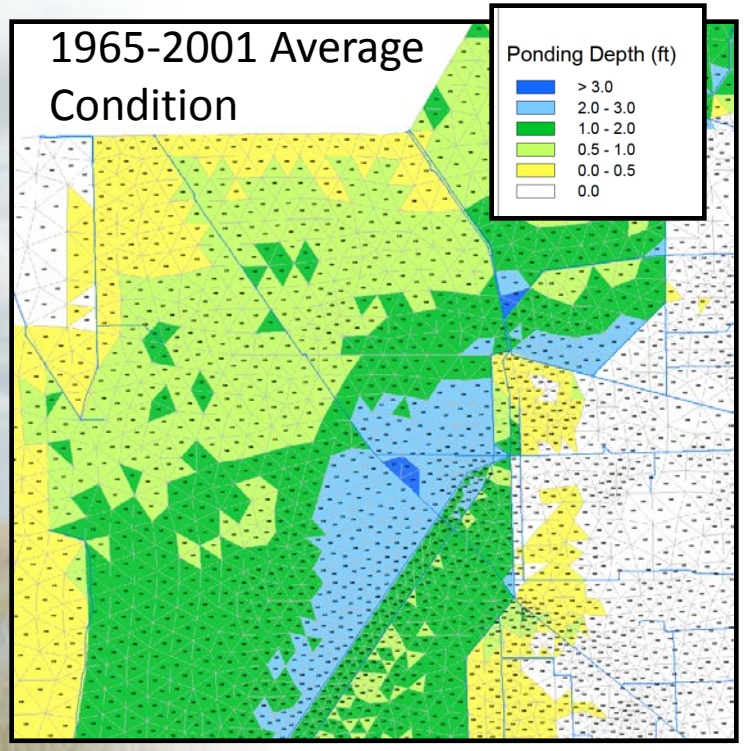
NORTHERN WCA 3A RECOMMENDED OPTION

- HRF West of G-206, Full Backfill North of I-75 Miami Canal: Construction Cost ~ $330M
- L-6 Diversion: Construction Cost TBD

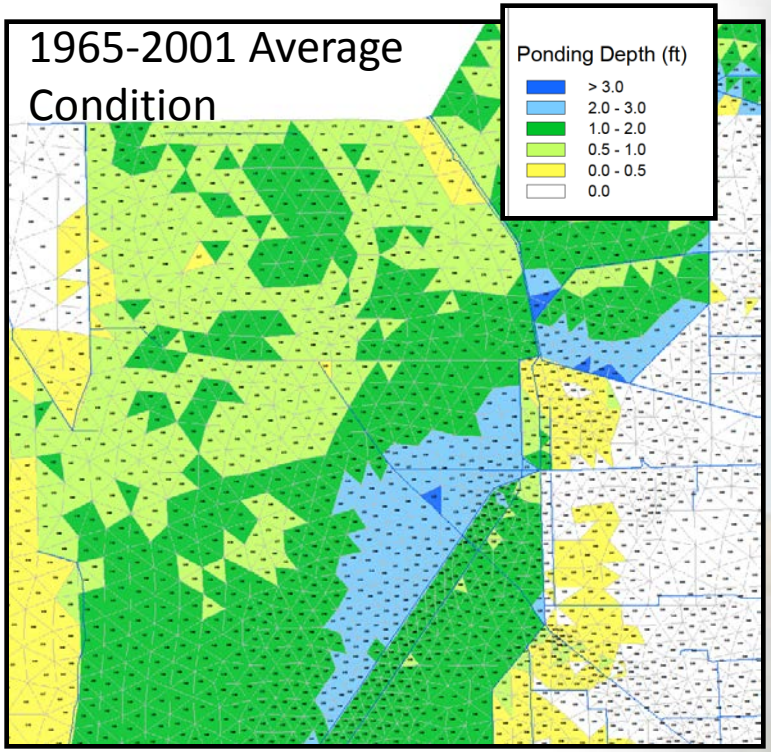


NORTHERN WCA 3A RECOMMENDED OPTION

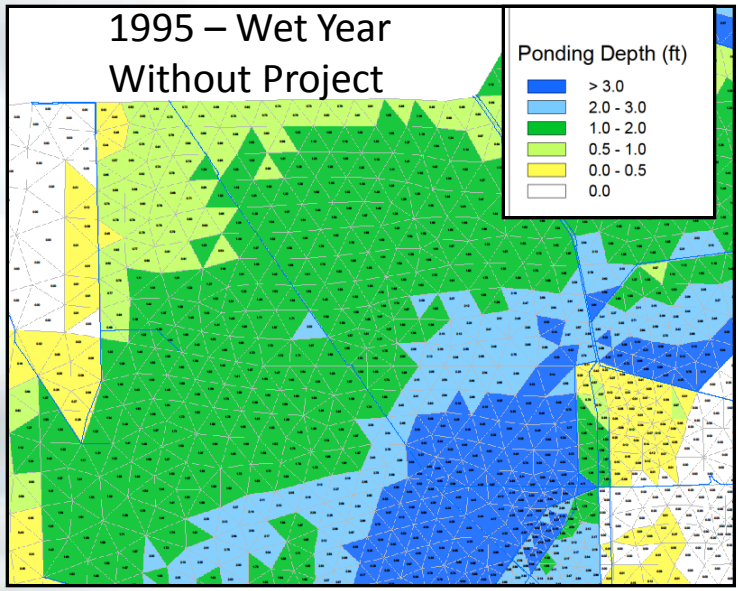
Without Project

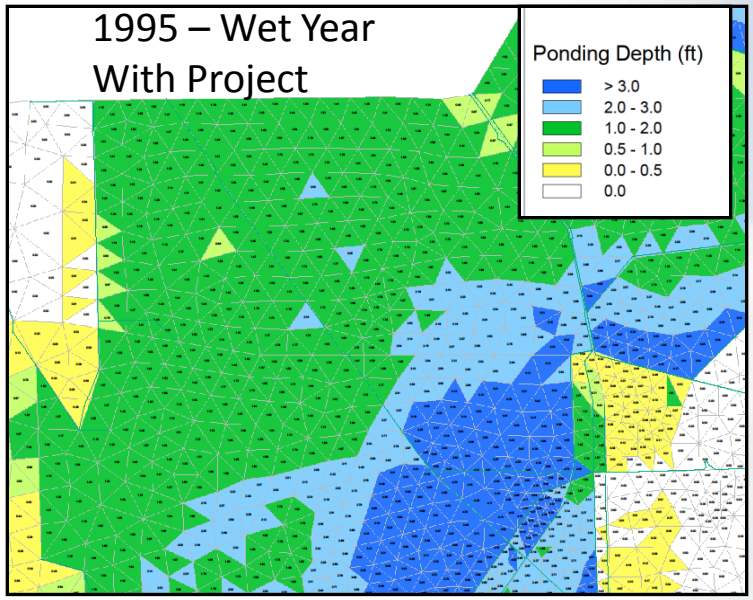


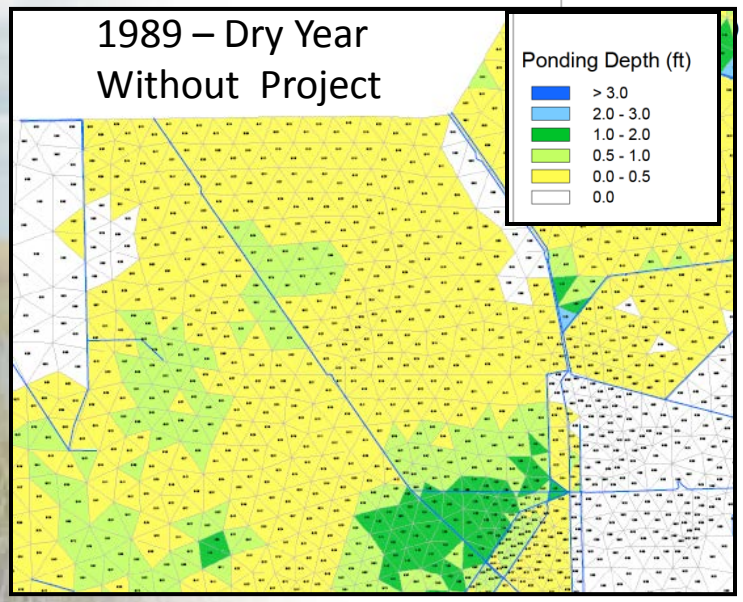
With Recommended Option

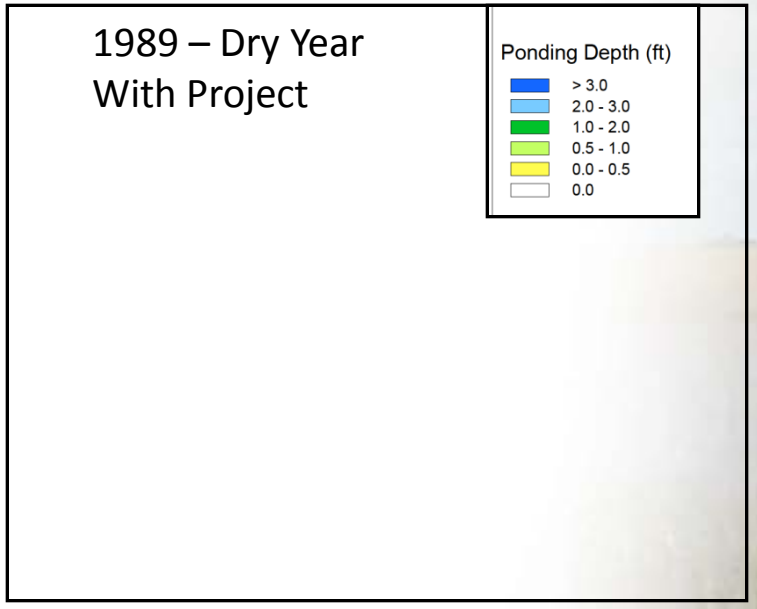


NORTHERN WCA 3A RECOMMENDED OPTION





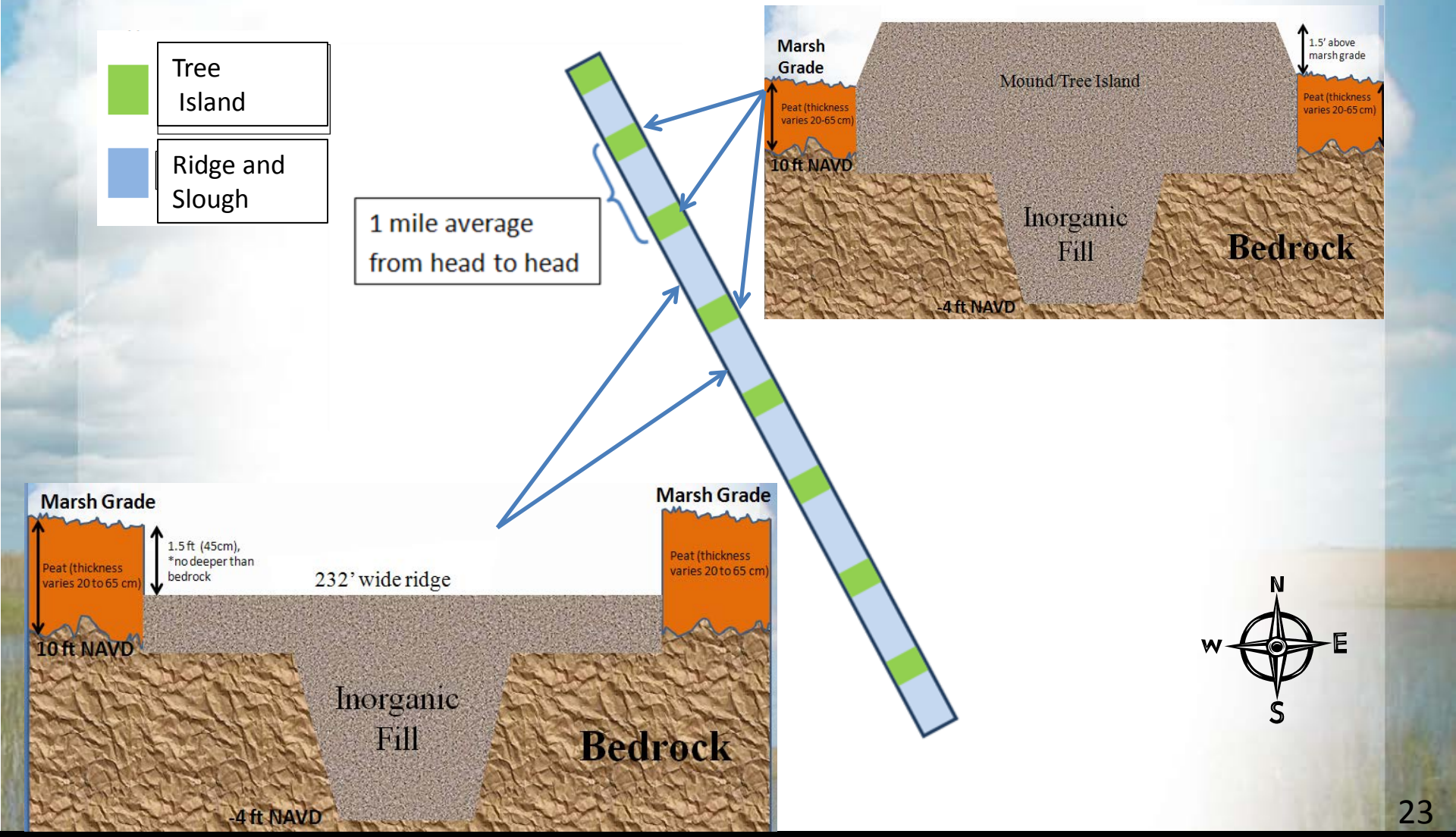




DESIGN FEATURES ELIMINATED

- Plugs with boat channels
  - Reason: Retains channelized flow and dry season drainage effects
- Miami Canal shallowing
  - Reason: Retains channelized flow and dry season drainage effects
- Use Miami Canal to spread water
  - Wing walls (levees) with canal plugs to redirect flow
    - Reason: Retains channelized flow, unnatural flow patterns and dry season drainage effects
  - Maintain existing cuts in the Miami Canal
    - Reason: Retains channelized flow and dry season drainage effects
- Use existing L5 canal with culverts through levee with multiple short spreaders
    - Reason: Cost prohibitive (not cost effective)
      - Requires 8 miles of road raising on north side of L-5
      - Significant additional pump capacity and divide structure
- Locate spreader canal further south
    - Reason: Further compartmentalizes Northern WCA 3A

MIAMI CANAL BACKFILL
(Conceptual Plan)



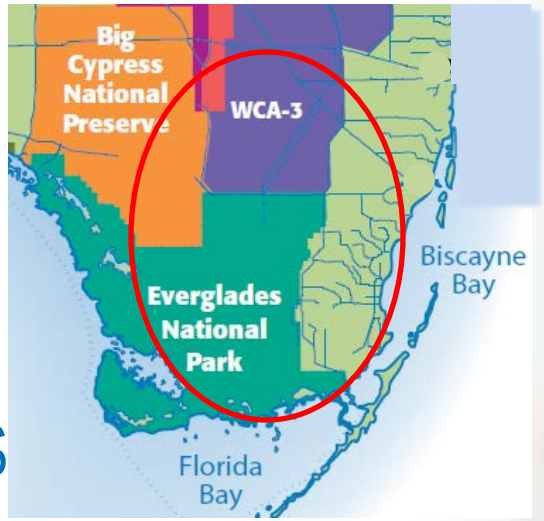
"WHAT WE'VE HEARD"

- Allow fishing in HRF to offset impacts due to Miami Canal backfilling
- Provide deep water refugia to support fish and wildlife during dry periods
- Consider recreation access from US 27 to the L-5 Canal
- Allow vehicle access across new water control structures
- Allow access to WCA3 from L5
- Include boat ramps in Recreation Plan
- Maintain refuge areas for fur bearing animals

GREENLINE AND BLUELINE

SOUTHERN WCA 3A,

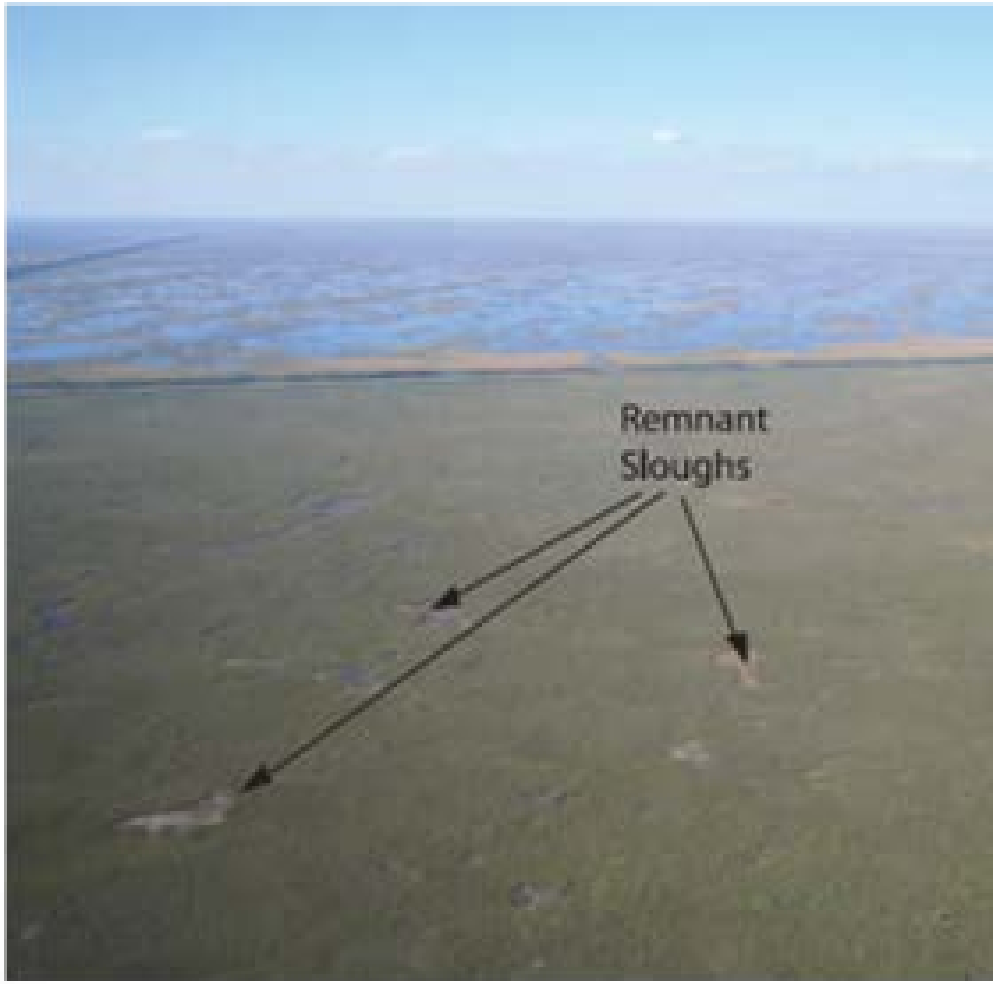
WCA 3B AND ENP OPTIONS



SOUTHERN WCA 3A AND WCA 3B PROBLEMS: ALTERED HYDROLOGY

Southern WCA 3A

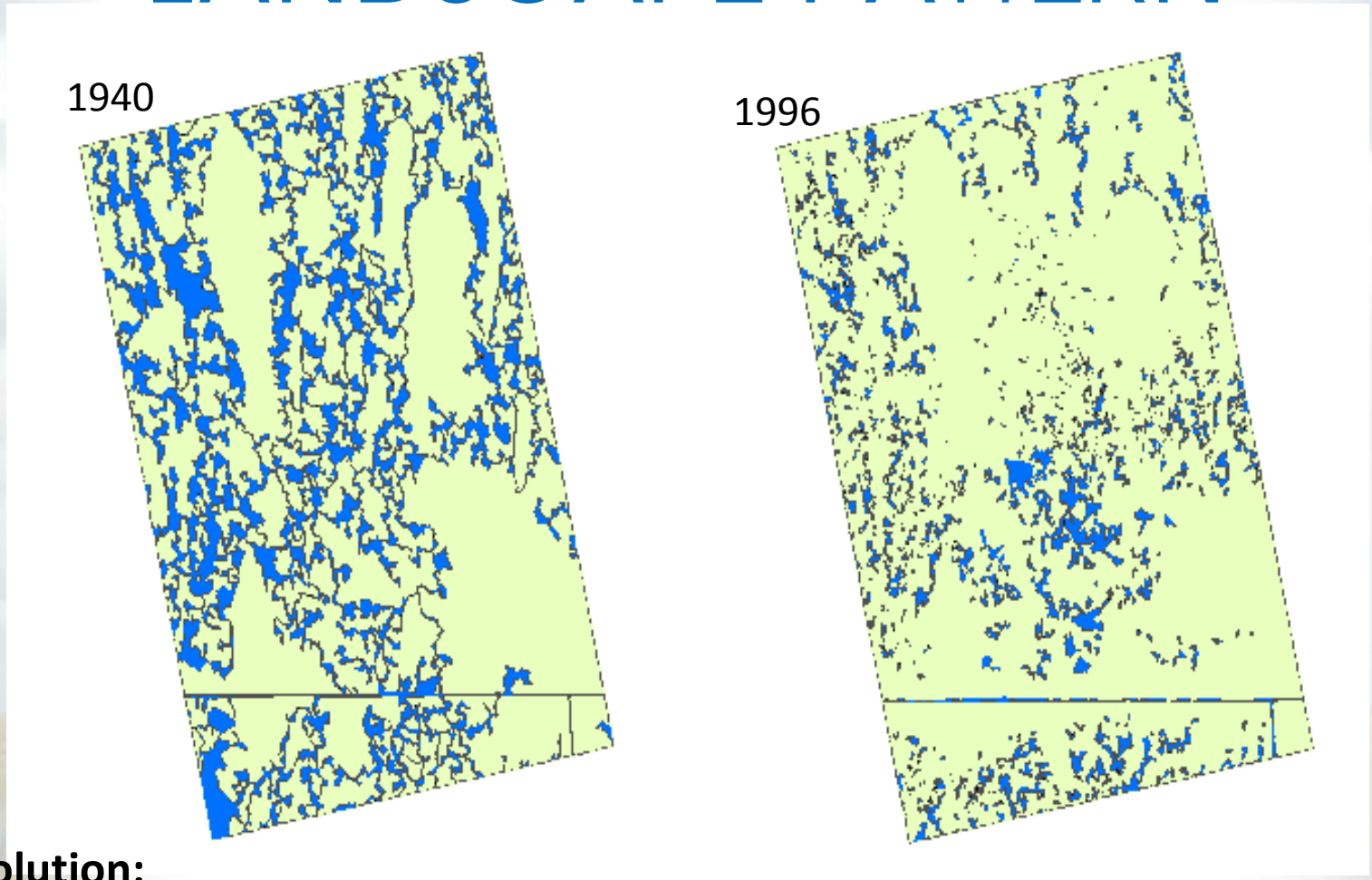
Too Wet (Ponding)



WCA 3B

Too Dry (Soil Subsidence)

WCA 3B PROBLEMS: LANDSCAPE PATTERN



Solution:
Incrementally re-introduce historic overland sheetflow to regain ridge and slough landscape pattern

SOUTHERN WCA 3A, WCA 3B AND ENP PROBLEMS: LACK OF FLOW

Solution:

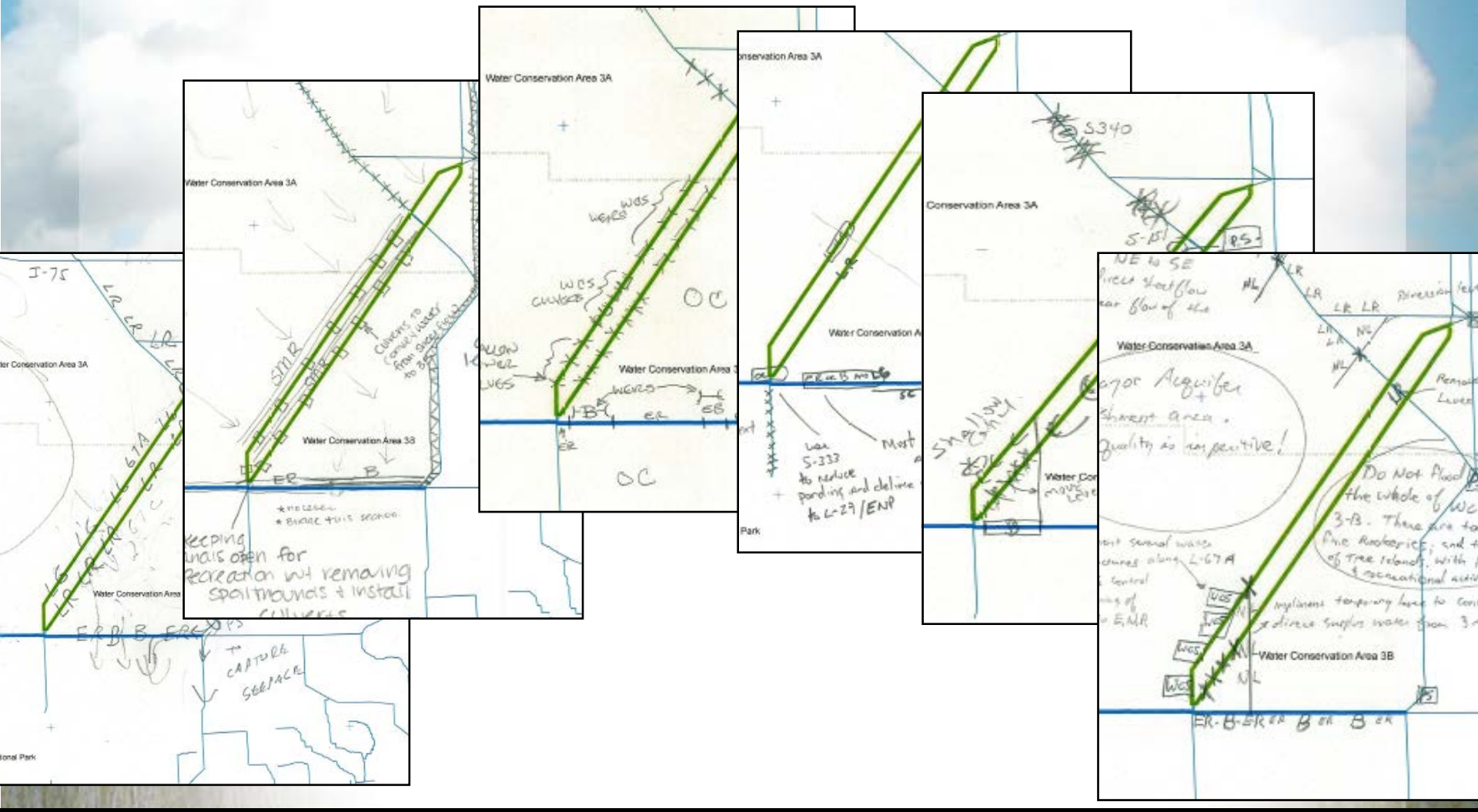
Reestablish hydrologic connectivity between southern WCA 3A, WCA 3B and Northeast Shark River Slough

ENP PROBLEMS: TOO DRY, TOO OFTEN

Solution:

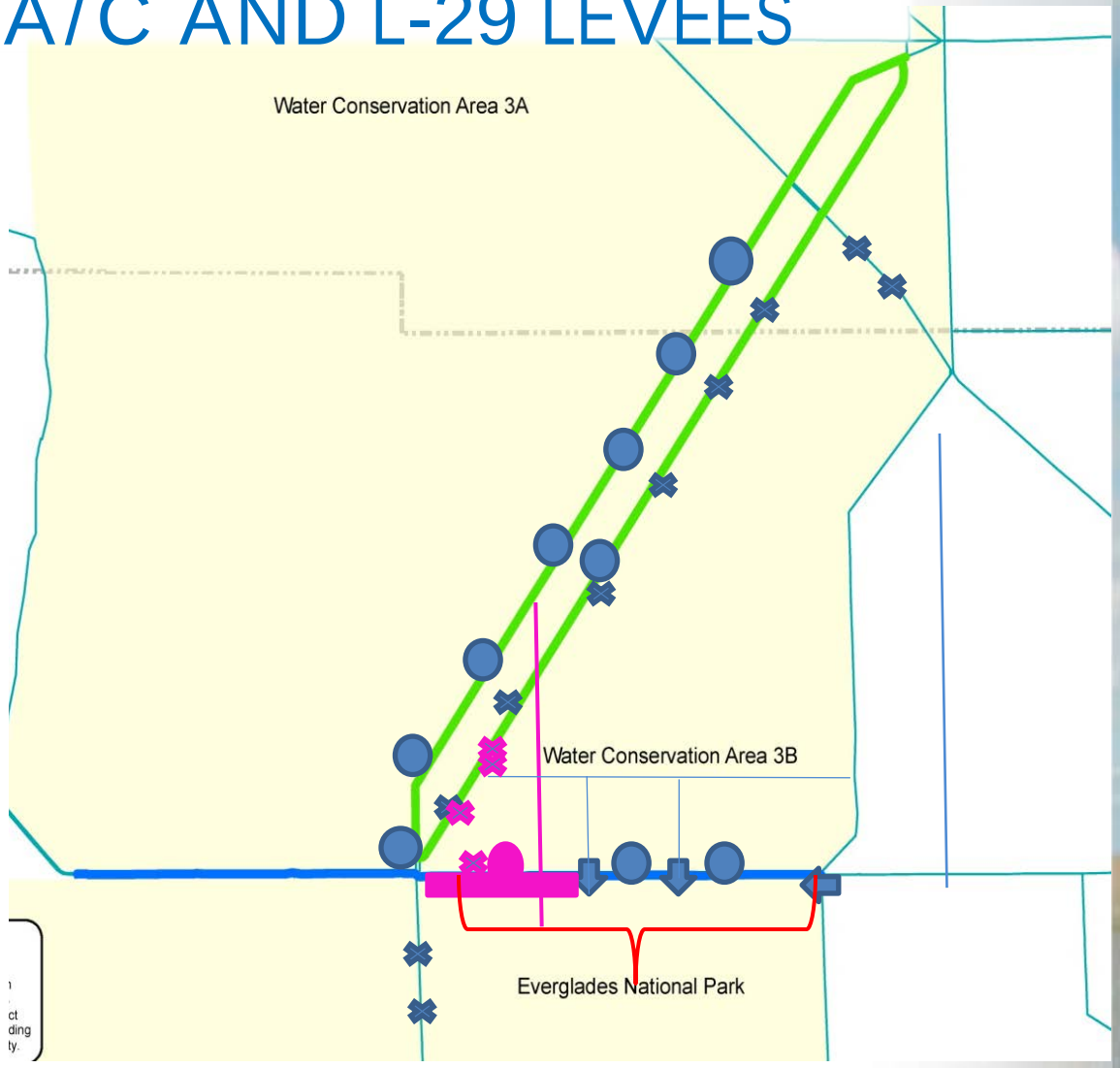
Improve water distribution and quantity, and reduce water loss out of the natural system to restore seasonal hydroperiods

CONFIGURATION DEVELOPMENT EXERCISE



FEATURES AND CONFIGURATIONS FOR L-67 A/C AND L-29 LEVEES

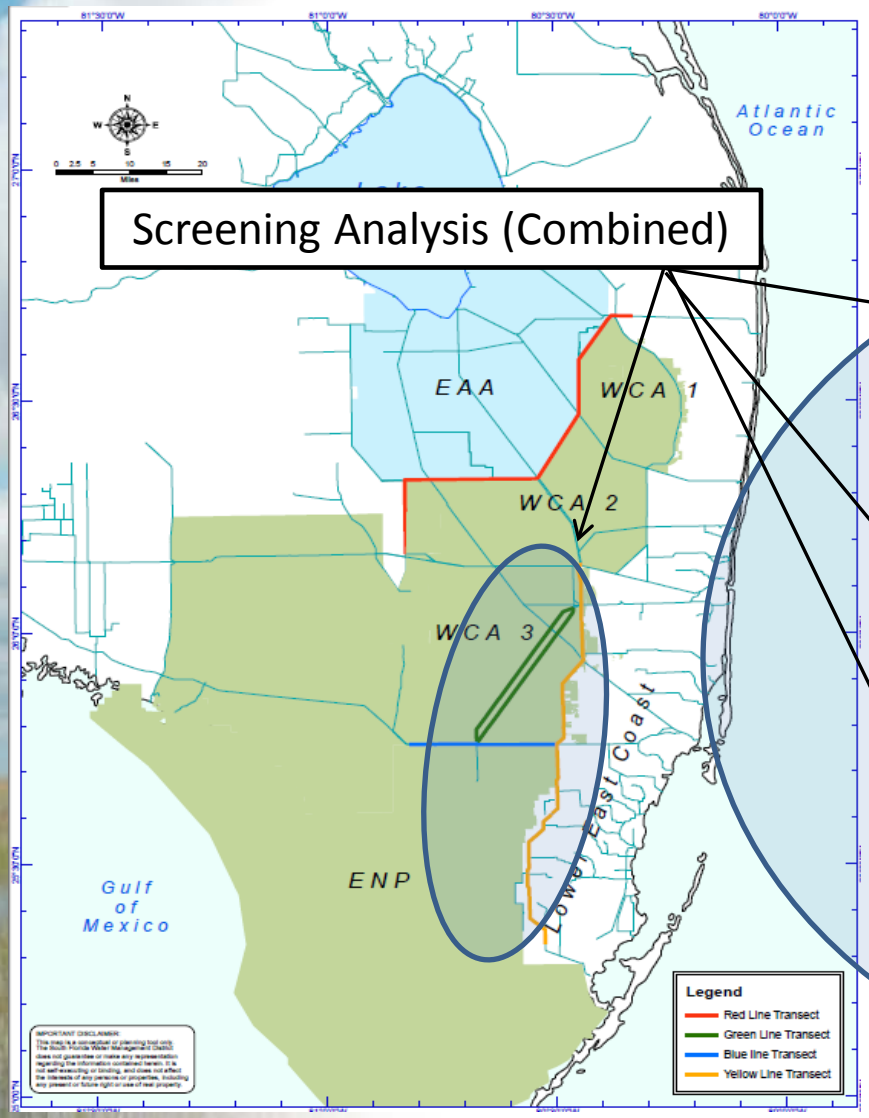
- New water control structures
- Levee degrade
- New pump stations
- New bridge
- Relocated (new) levee
- Road Raising



"WHAT WE'VE HEARD"

- L-67 Canals are important for boating and fishing – no plugs or bypass channels
- Provide additional recreational access to L-67C near S-151
- Incorporate results from Decomp Physical Model (DPM) in plan formulation and detailed design
- Open connection between L-29 and WCA 3B for fisheries
- Include "Greenway and Blueway" trails along L-29 and L-31 N Canals
- Include boat ramps in Recreation Plan

NEXT STEPS



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YELLOWLINE –Flows from WCA 3A/3B and ENP to the lower east coast *(east coast protective levee system, the L-30 and L-31N)*

UPCOMING MEETINGS

Date		Time	Meeting	Location
October	1-Oct	1pm-3pm	PDT Meeting – No. 14	Teleconference/ Webinar
	15-Oct	9am-5pm	PDT Meeting – No. 15	SFWMD, Auditorium
	24- Oct	9am-5pm	PDT Meeting – No. 16	TBD
	25-Oct	9am-5pm	Working Group Sponsored Workshop	SFWMD, Auditorium
November	14-Nov	9am-5pm	PDT Meeting – No. 17 (Day 1)	TBD
	15-Nov	9am-5pm	PDT Meeting – No. 17 (Day 2)	TBD

DISCUSSION

Visit www.evergladesplan.org for updates and current information