



Why is Water Management  
in South Dade such a  
challenge?

What is the problem?

How did it get this way?

Can it be fixed?



# The Three Phases of Federal Water Projects Affecting South Dade

## Phase 1: Plan, Authorize, Build and Operate

- Flood Control Acts of 1948, 1954, 1962

## Phase 2: Plan, Authorize, Don't Build (except South Dade)

- Flood Control Acts of 1965 and 1968

## Phase 3: Plan, Authorize, Change Plan, Build Something Else

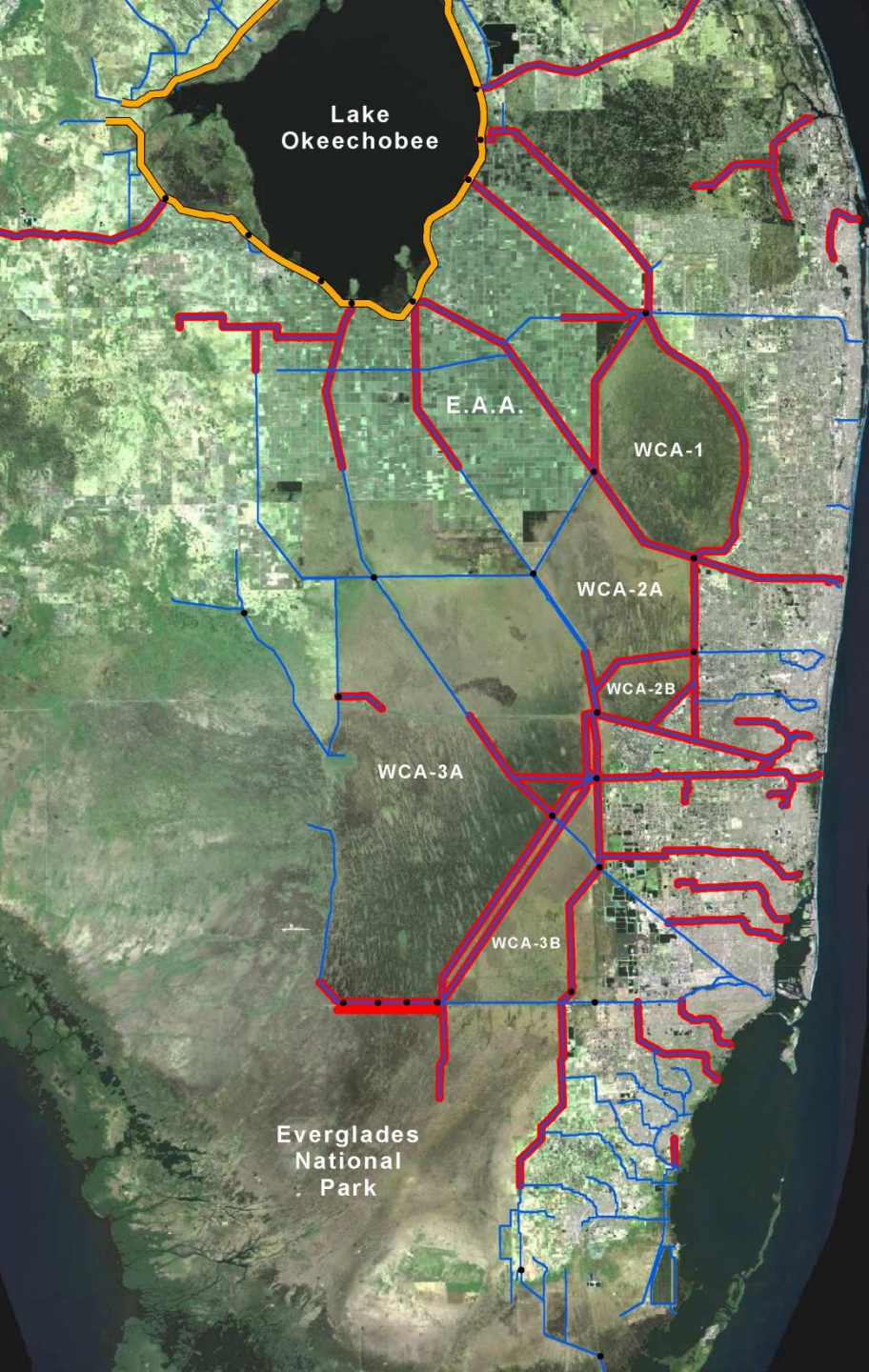
- ENP Expansion Act (Modified Water Deliveries)
- WRDA 1996 (C-111 General Re-evaluation)
- WRDA 2000 (CERP)



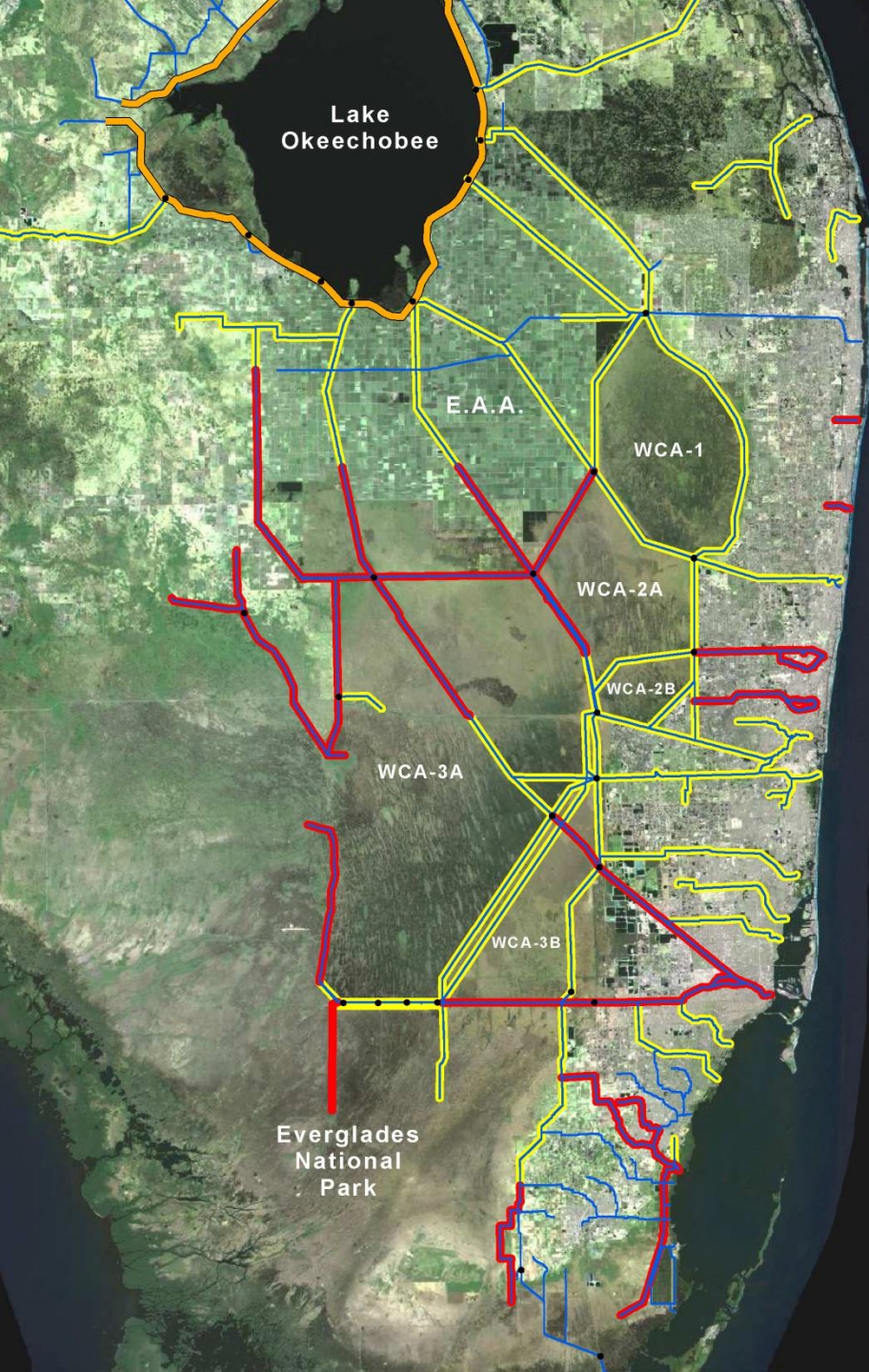
## Flood Control Act of 1948

Authorized the Central and Southern Florida Project Comprehensive Plan and Initial Features

- East Coast Protective Levee
- Coastal Canals
- WCA Outlet Structures
- EAA Pumps







## *Phase 1: Plan, Authorize, Build and Operate*

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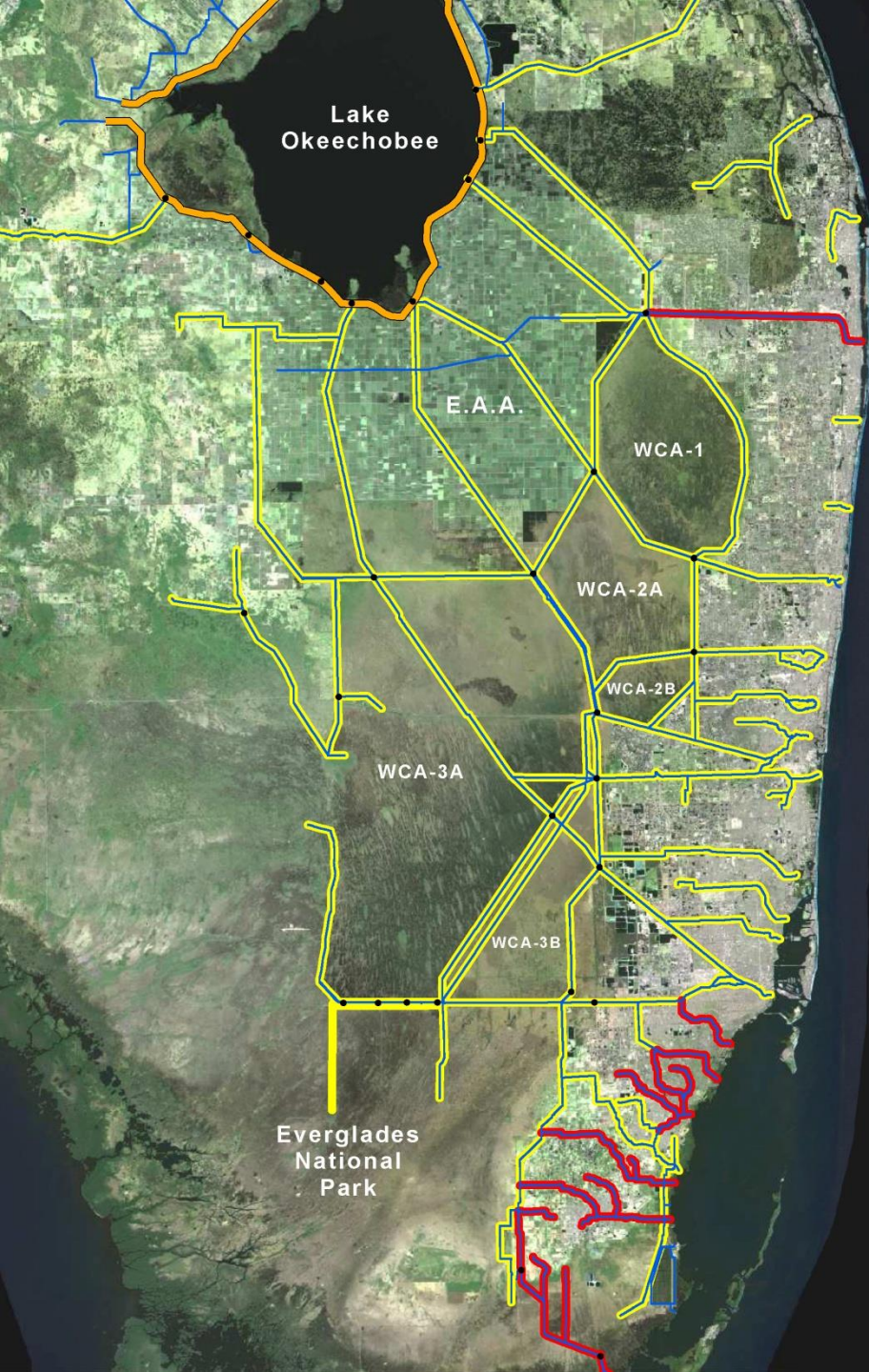
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### Flood Control Act of 1954

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- Added East Coast Canals





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### Flood Control Act of 1962

- South Dade Canal System
- Cutler Drain
- West Palm Beach Canal (C-51)



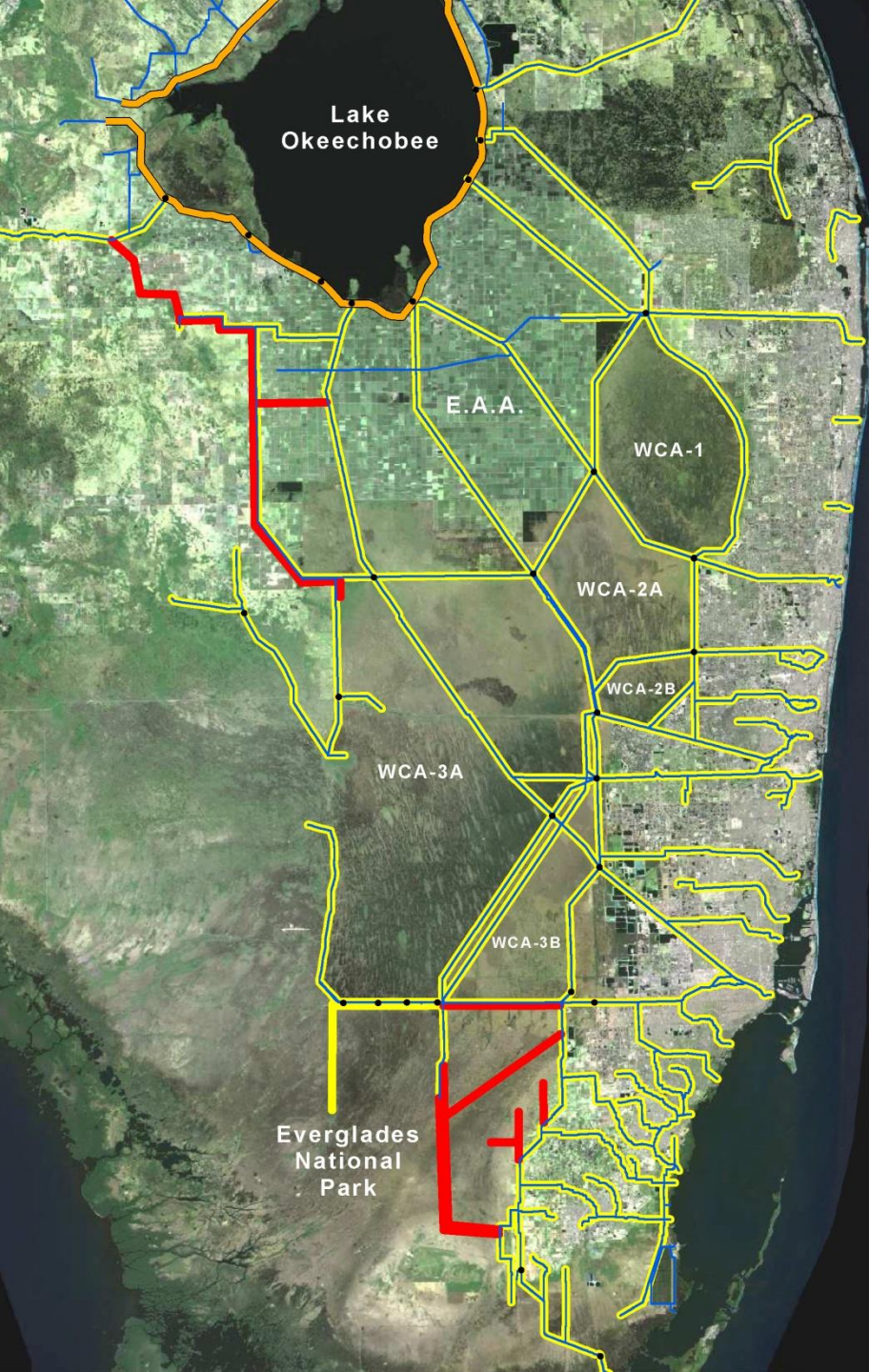
## Flood Control Act of 1965

Authorized the:

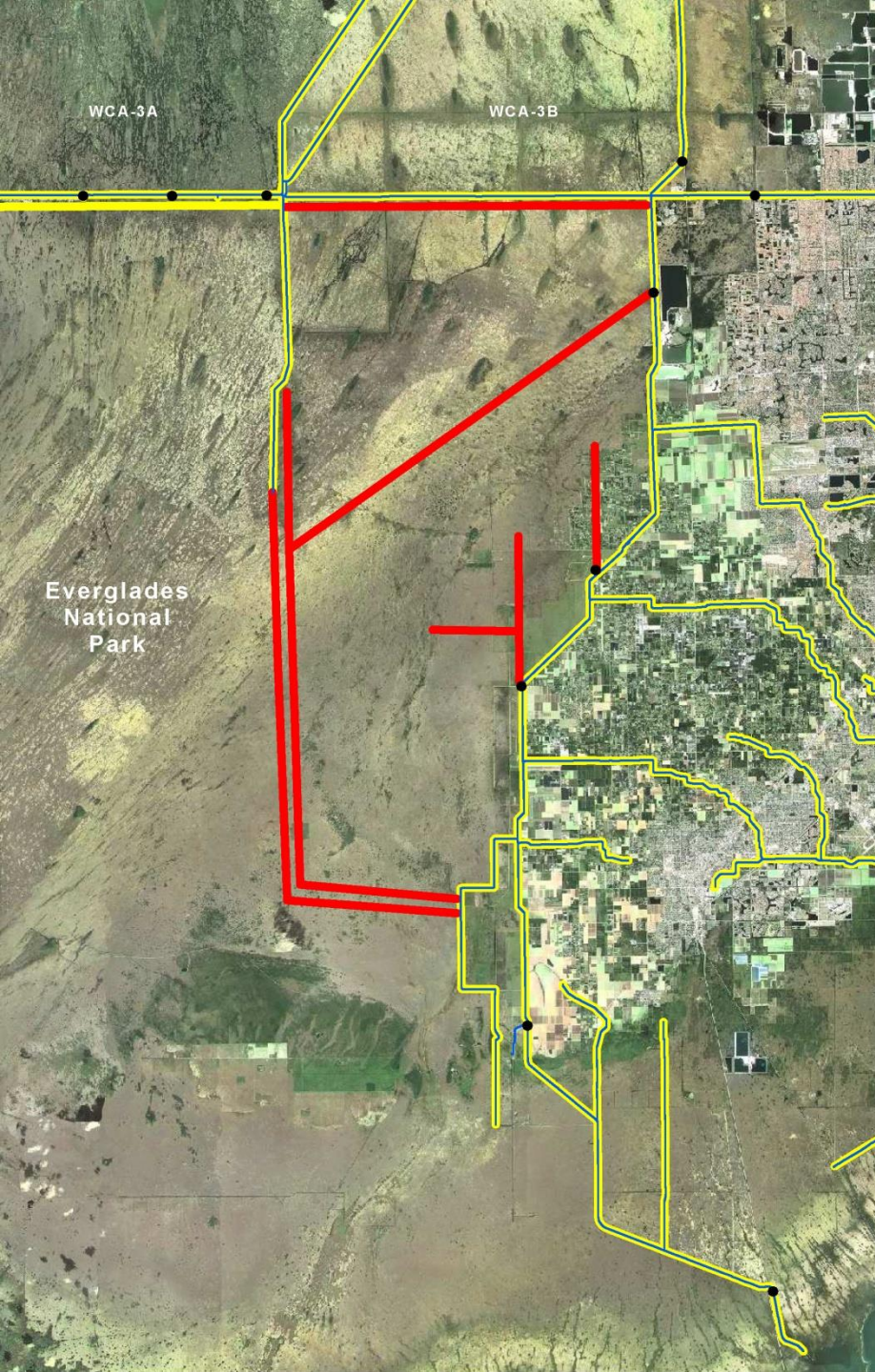
- Hendry County Plan
- Southwest Dade Plan

Neither project was built

The District built the Modified  
Hendry County Plan in 1983







## *Phase 2: Plan, Authorize, Don't Build*

### The Southwest Dade Plan

Convert Northeast Shark River Slough to seasonal agriculture.

Canals, levees, pumps and gates.

Never got close to construction

Unfortunately, it affected future designs:



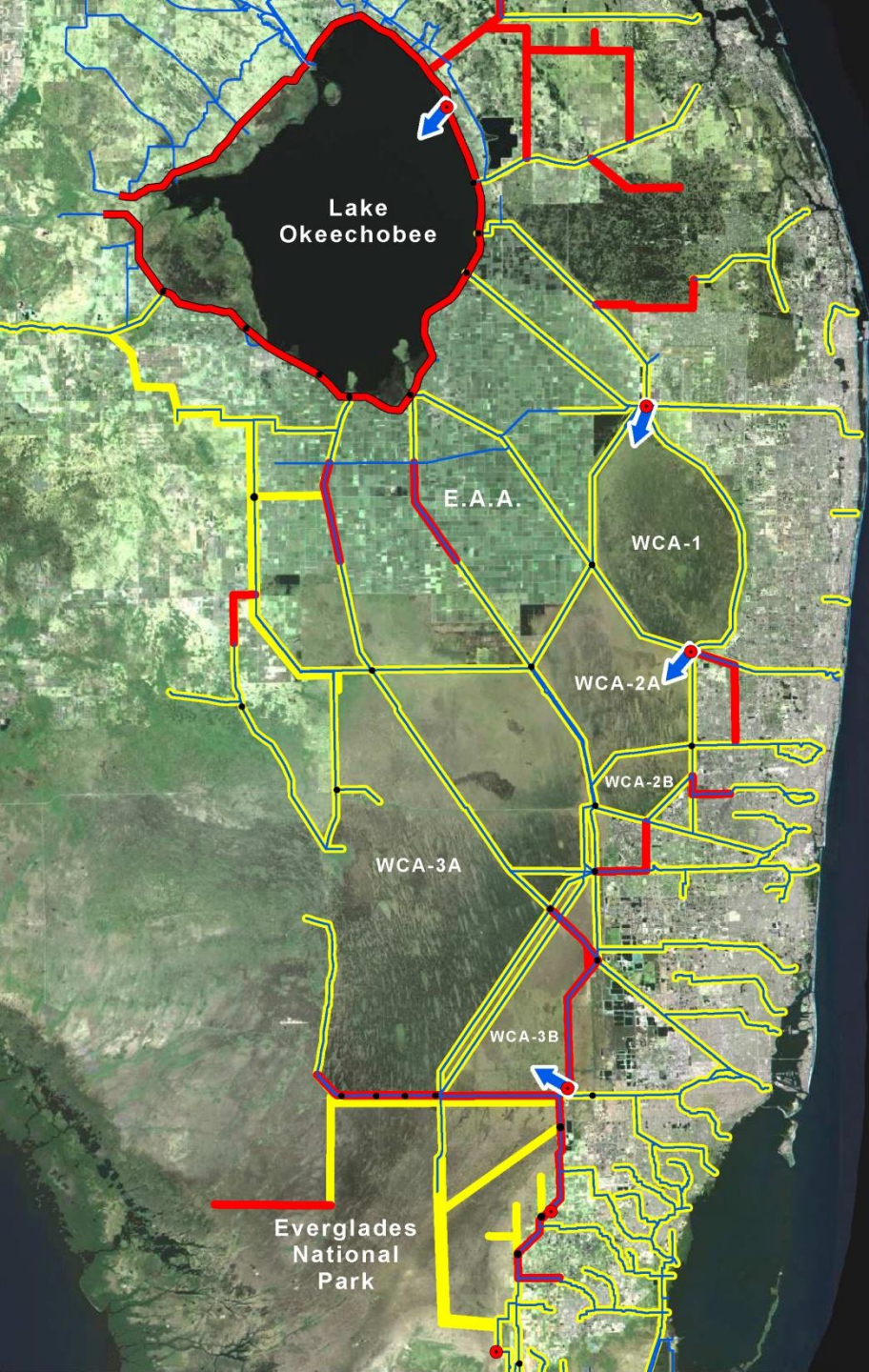
*Phase 2: Plan, Authorize, Don't Build  
(except South Dade)*

## Flood Control Act of 1968

***“Improve the conservation and conveyance of water supplies to meet the long-term needs of urban and agricultural users and the ENP”***

Project Features: None was built

- Raise Lake Schedule 4 feet to 21
- Pump St Lucie County runoff to Lake O
- Pump C-18 and C-51 runoff to WCA-1
- Pump Broward runoff to WCA-2A
- Increase use of S-9
- Pump Tamiami runoff to WCA-3B
- South Dade Conveyance System





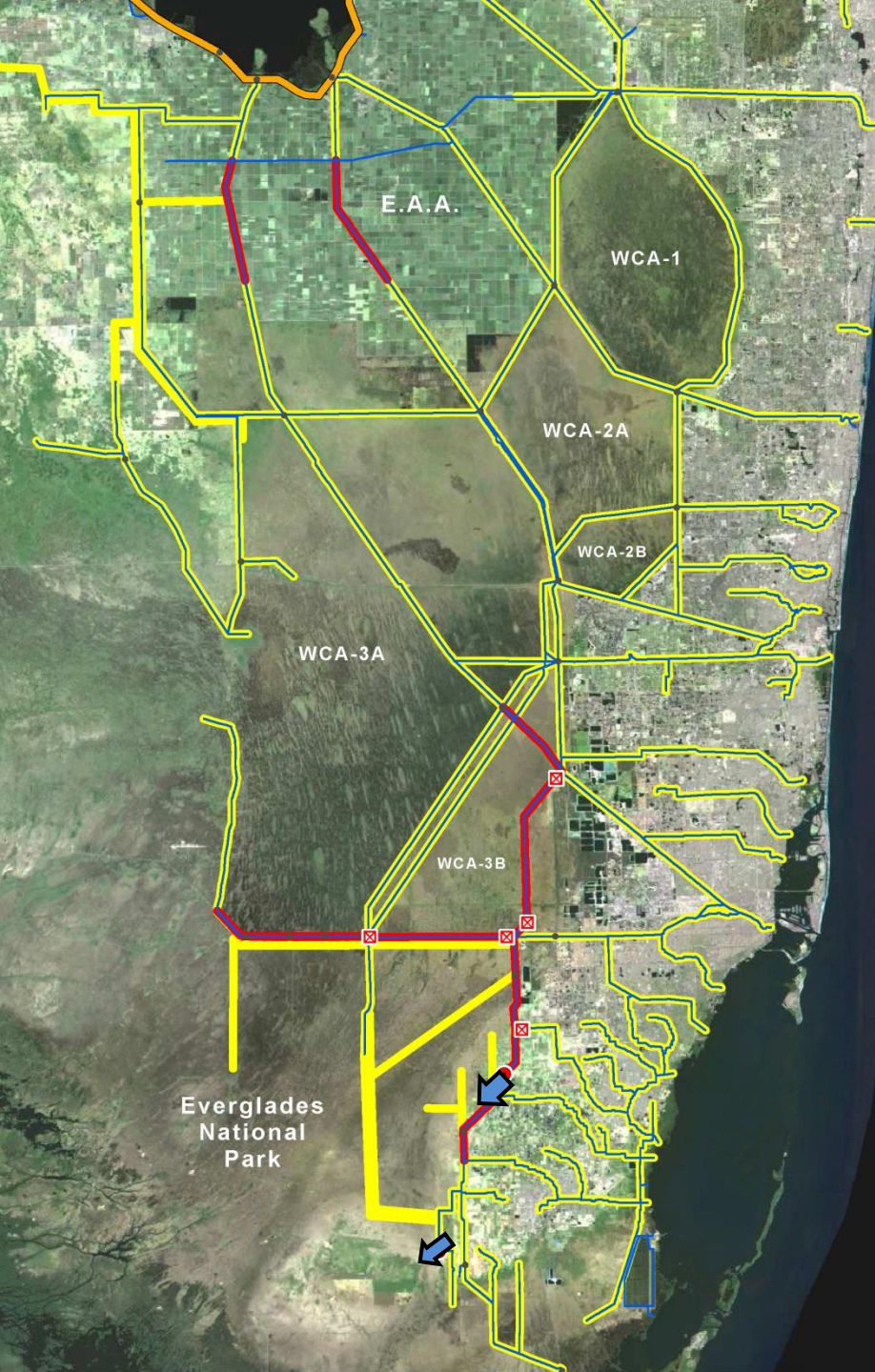
*Phase 2: Plan, Authorize, Don't Build  
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## South Dade Conveyance System

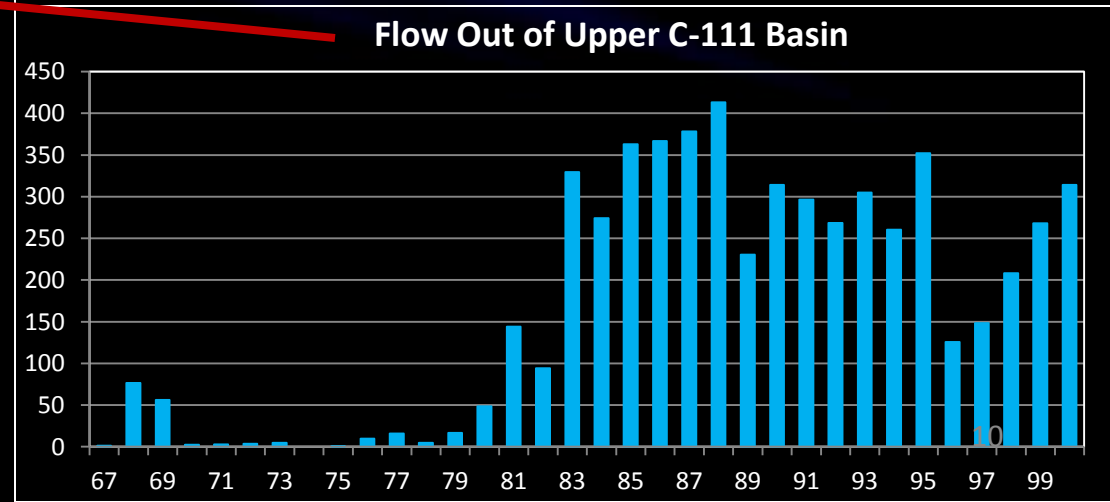
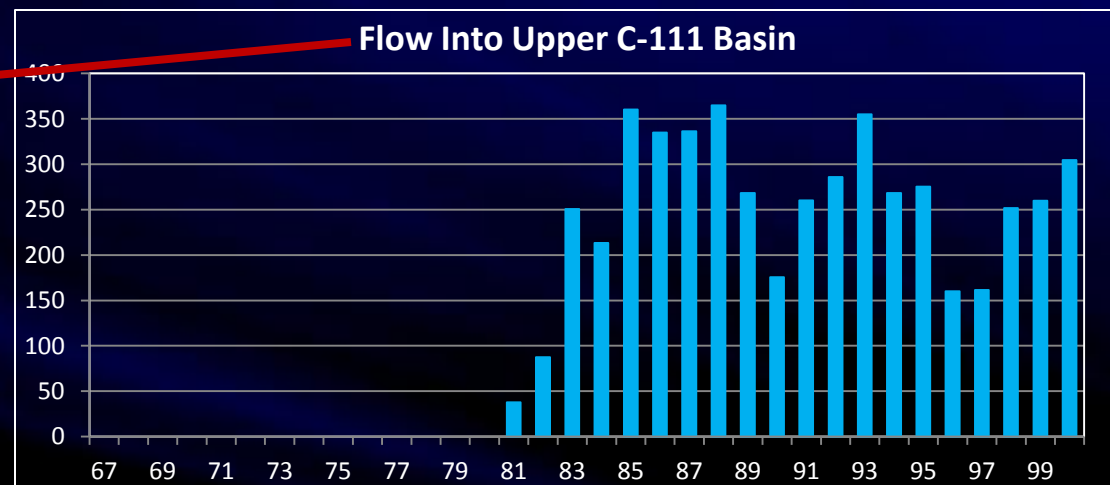
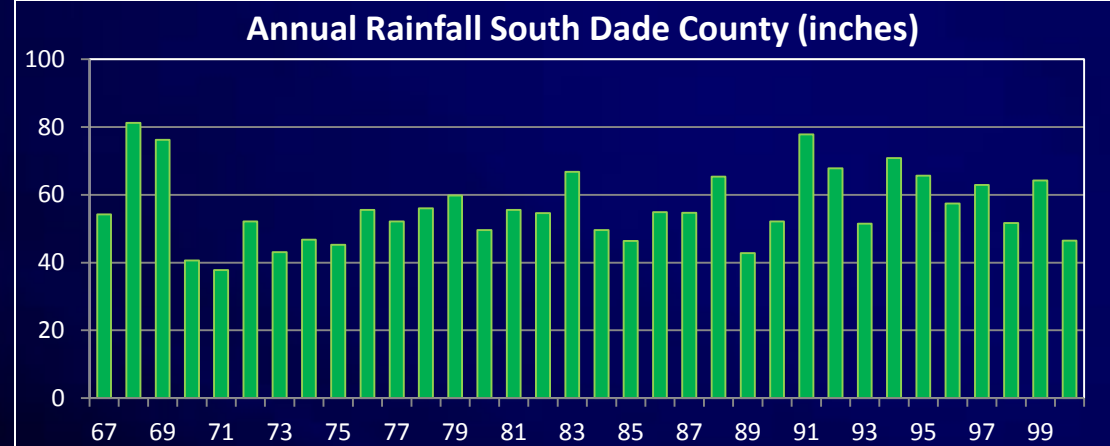
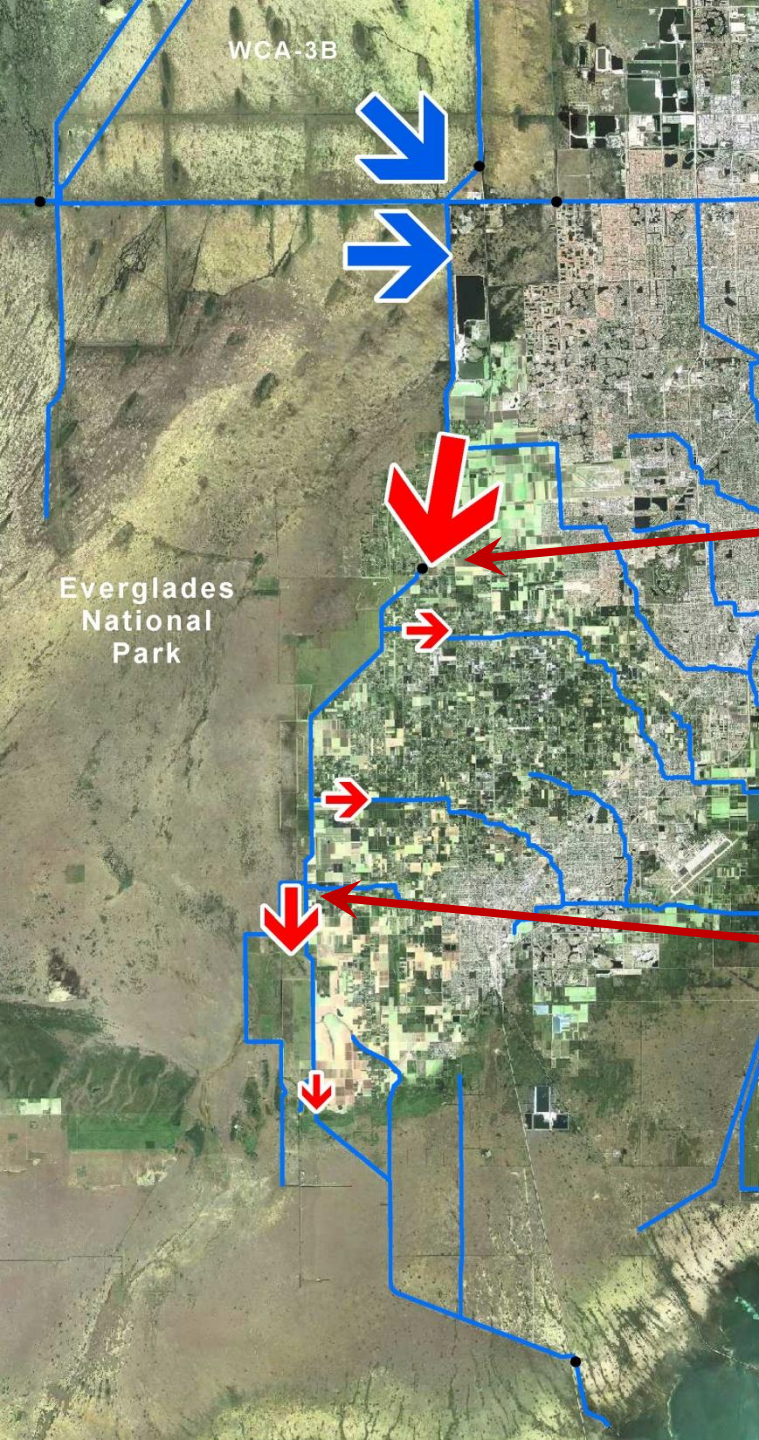
1968 Project Features constructed:

- Enlarge EAA canals for conveyance
- Enlarge canals to south Dade
- New pumps and control structures in L-29, L-30, L-31 and L-31W

Ignored groundwater flow into  
the L-31N Canal







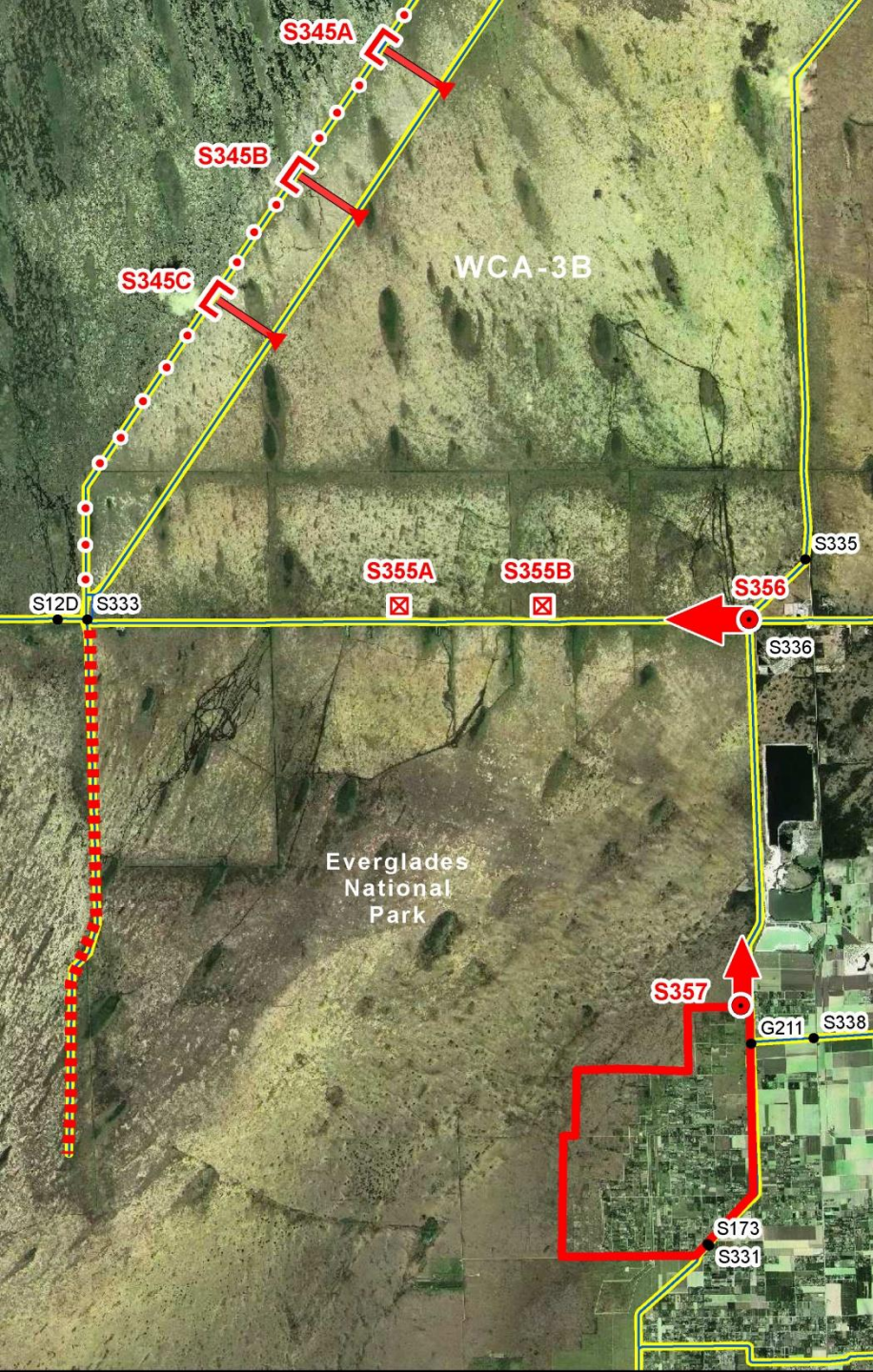


*Phase 3: Plan, Approve, Change Plan,  
Build Something Else*

## Modified Water Deliveries

### Authorized Project Features:

- Re-establish sheetflow through WCA-3B to ENP
- Reunite Shark River Slough
- Flood Protection for 8.5 Square Mile Area
- Stop flow into South Dade

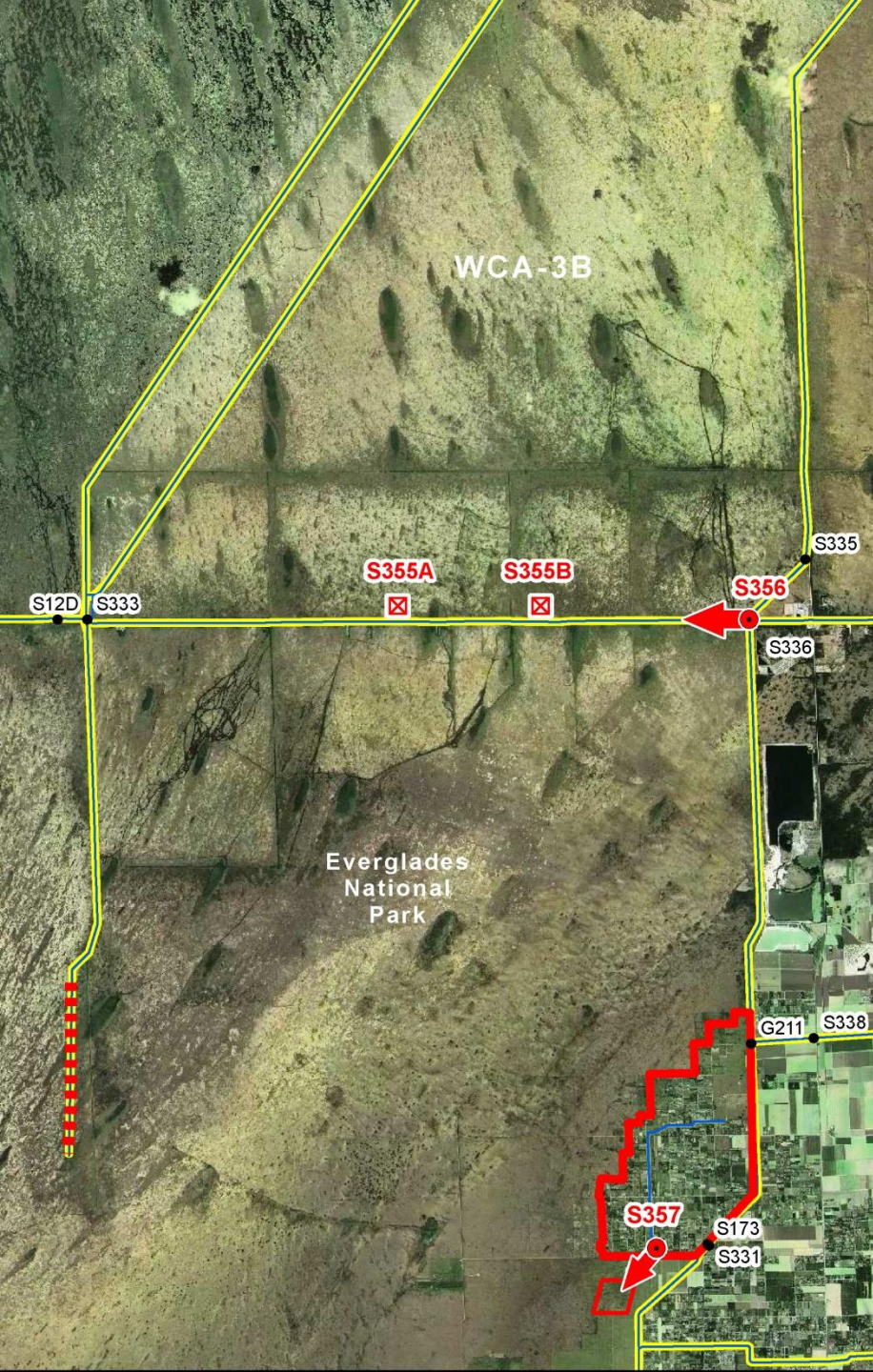




## Modified Water Deliveries

### Constructed Project Features:

- No sheetflow from WCA-3B into NESRS
- Shark River Slough still divided
- Flood Mitigation for a portion of the 8.5 Square Mile Area
- Perpetual flow into South Dade
- A Major Plus – Tamiami Trail improvements and a 1-mile bridge



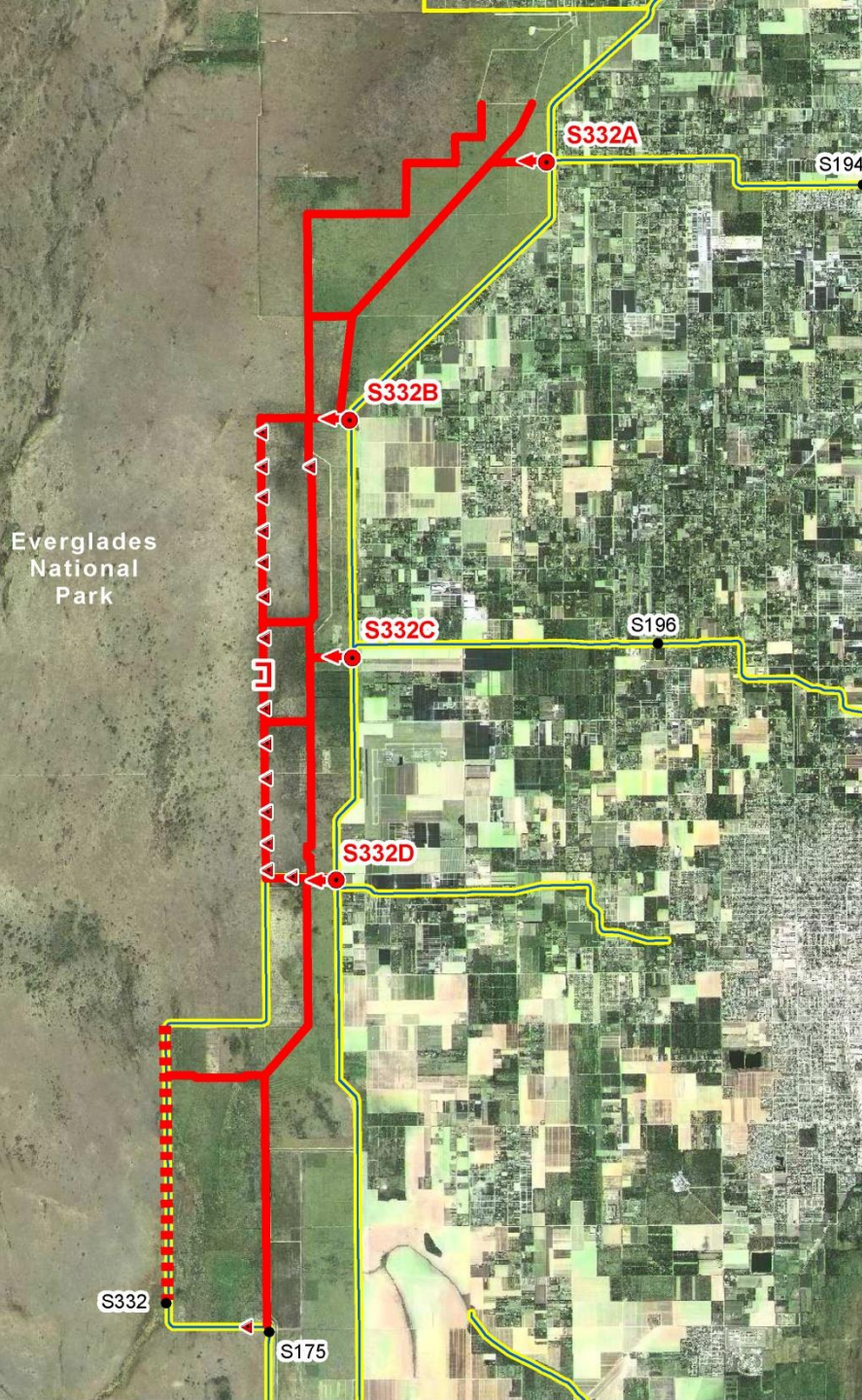


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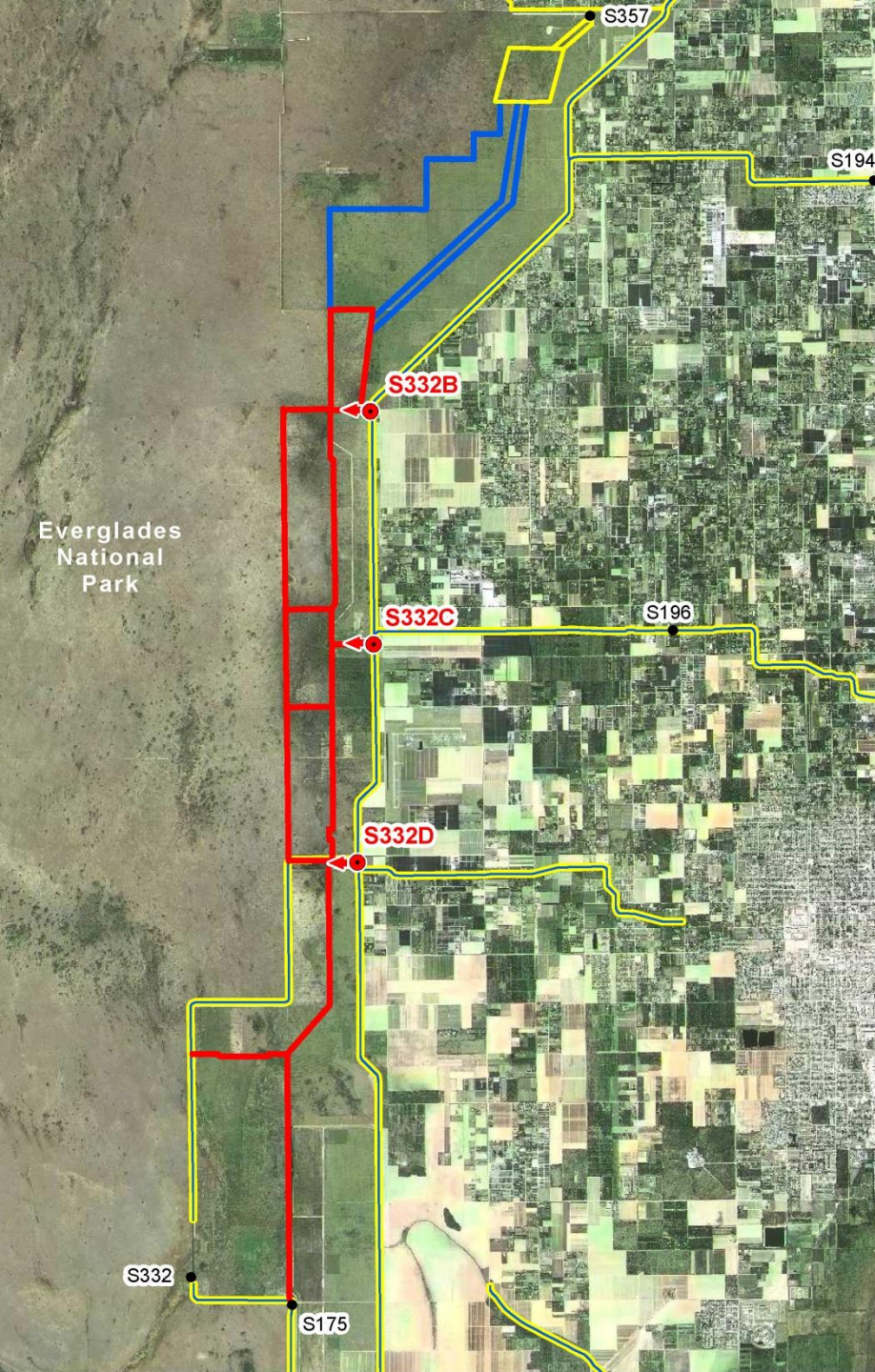
## C-111 GRR Project

### Authorized Project Features:

- Acquisition of Frog Pond and Rocky Glades
- Buffer Cells west of canal
- Pump runoff into buffer cells
- Flow from buffer cells to ENP
- Lower of canal levels







*Phase 3: Plan, Approve, Change Plan,  
Build Something Else*

## C-111 South Dade Project

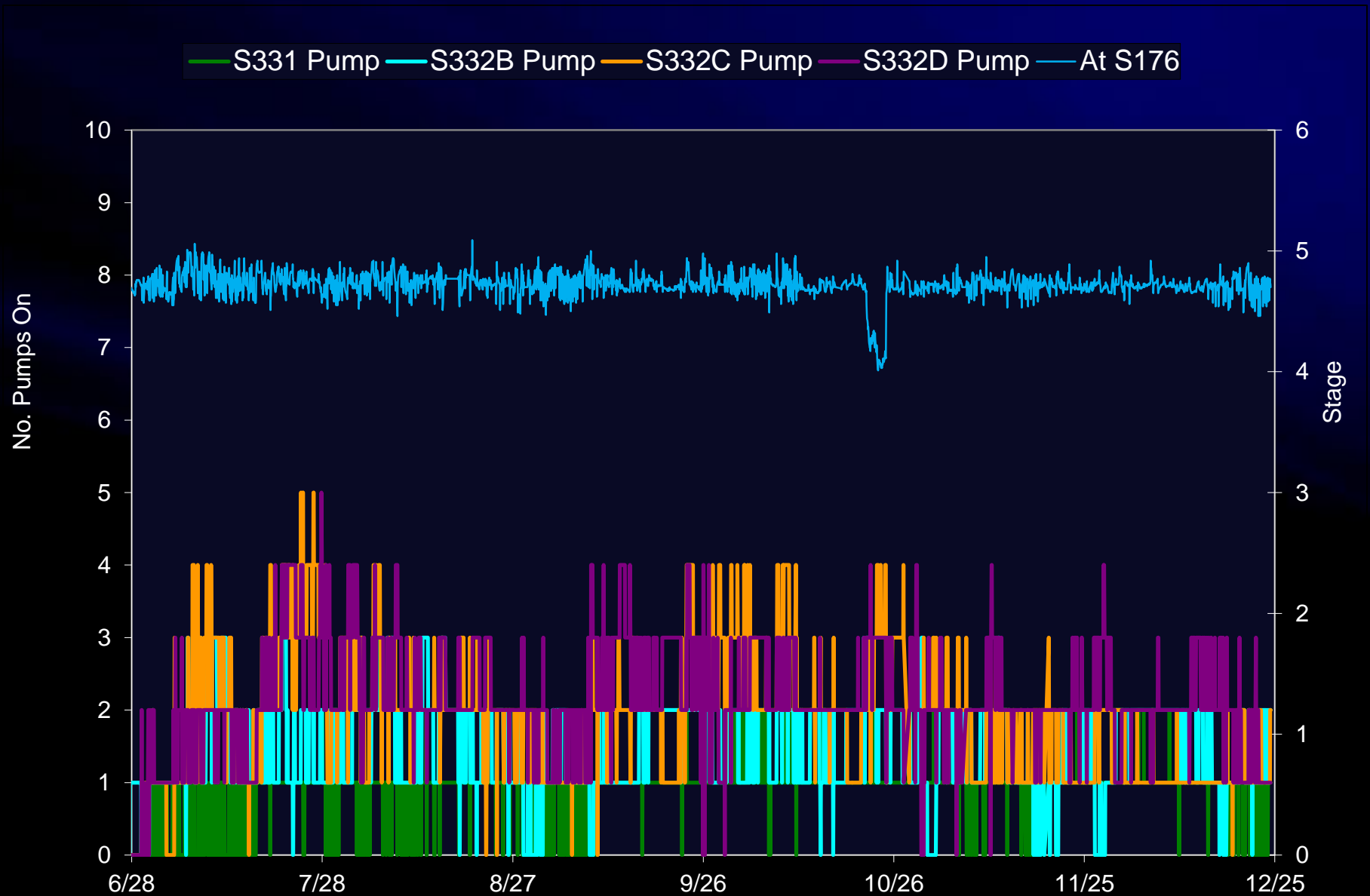
### Constructed Project Features:

- Buffer cells almost complete
- No Flow from buffer to ENP
- No lowering of canal levels

Not Working as Planned

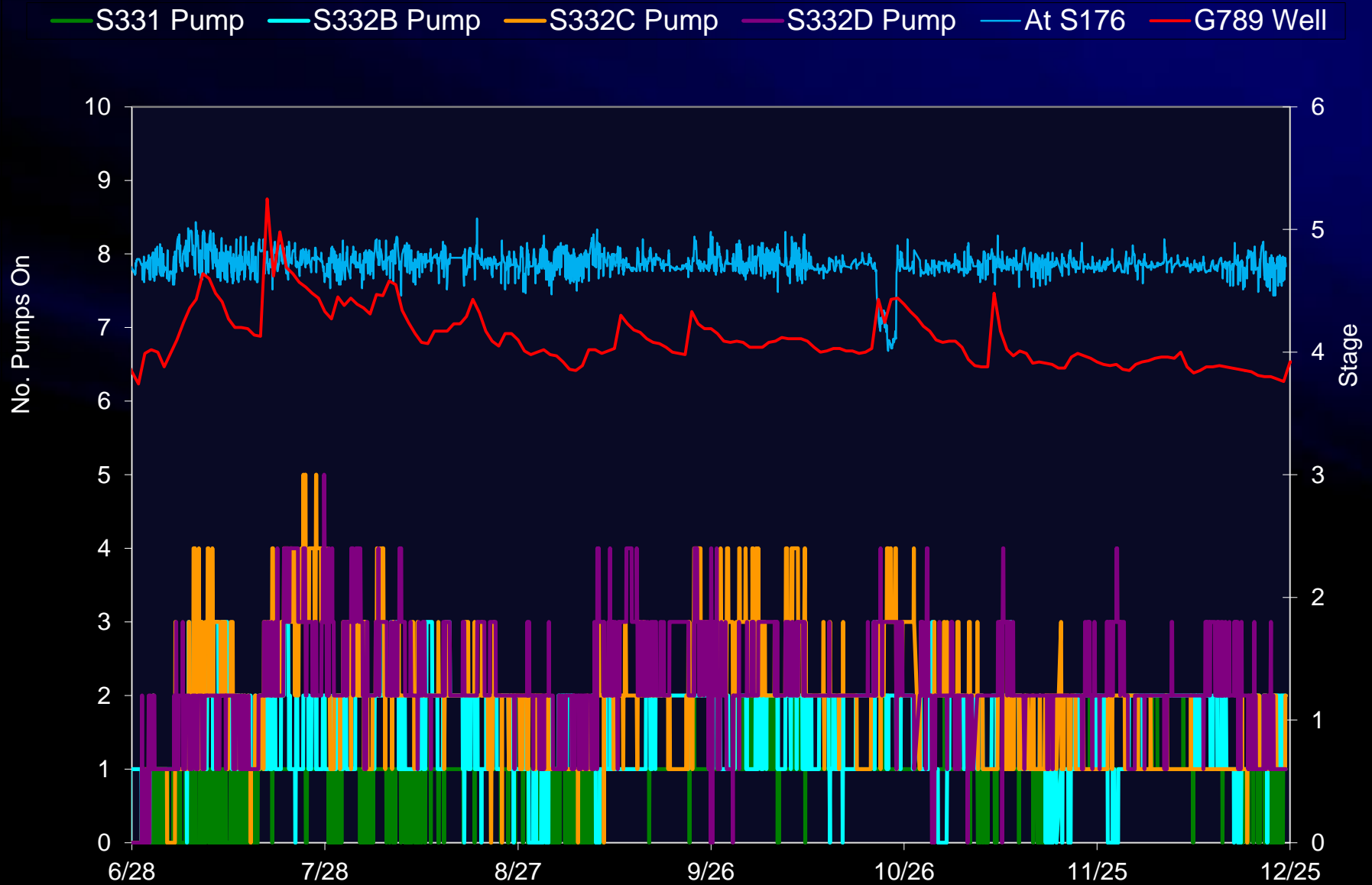


# Canal Stage Upstream of S-176 and Pump Operations from S-331 to S-332D





# Canal Stage Upstream of S-176 and Pump Operations from S-331 to S-332D





# It's Not Working for Florida Bay

“Florida Bay continues to need much higher inflow to reduce salinities and to help prevent a 2015 MFL violation. “

“With an exceedance in 2014 and consecutive exceedances in 2008-2009, a second exceedance next year would cause the first Florida Bay MFL Violation.”

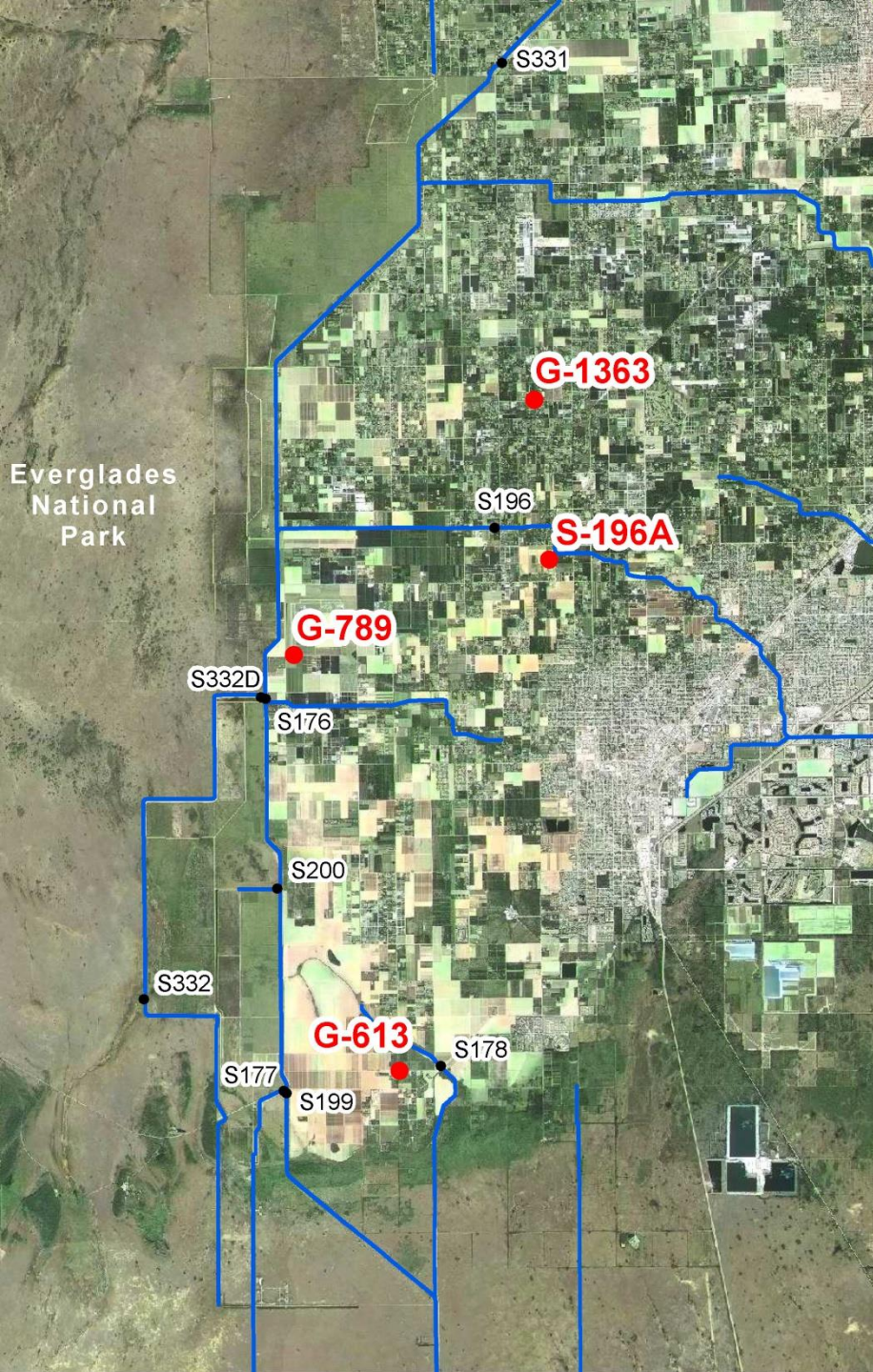
*WCA-3A Periodic Scientist Call Input, December 11, 2014*



# It's Not Working for Agriculture Either

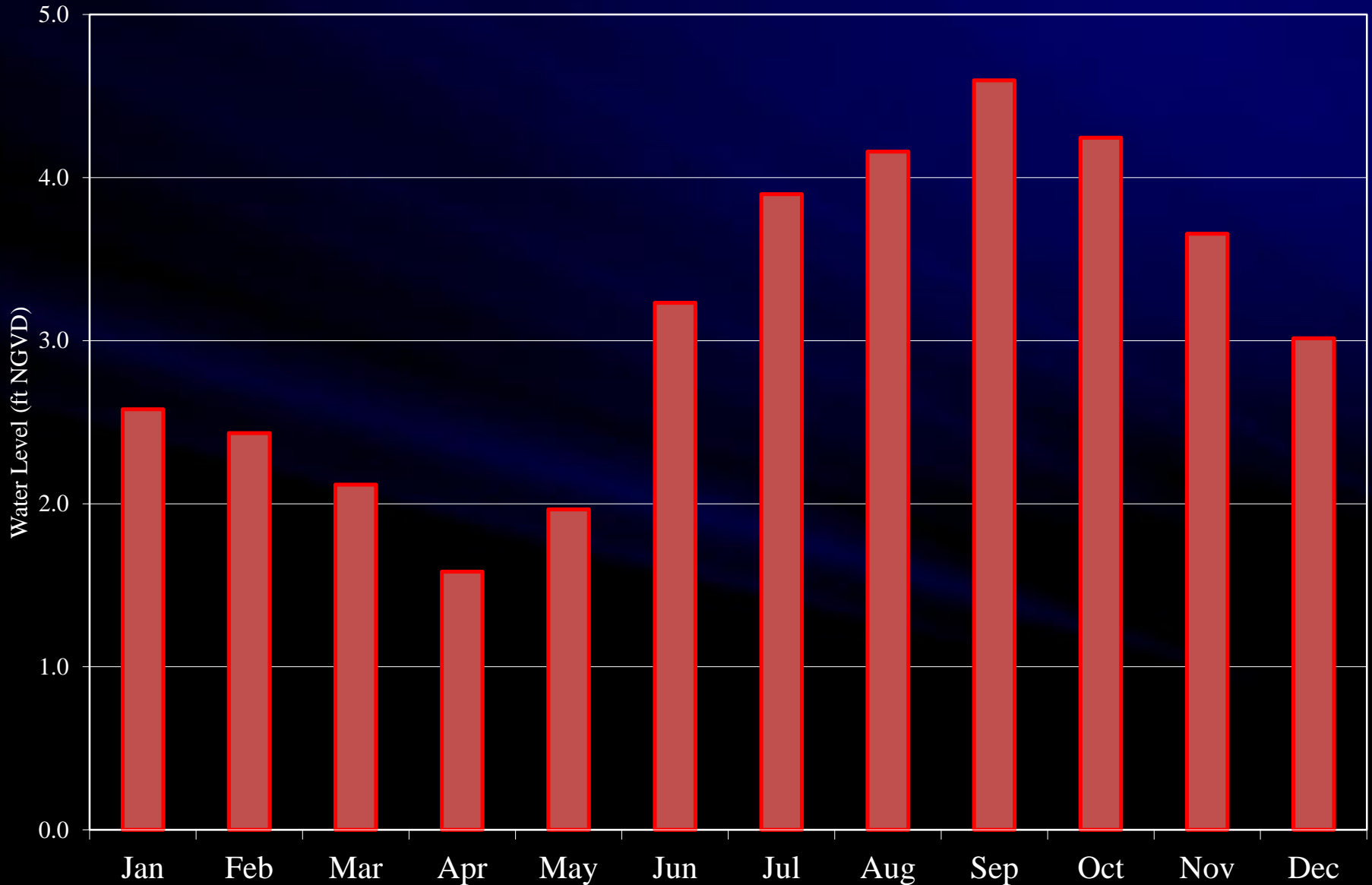
Thousands of acres of agricultural land have experienced significant, and persistent increases in the water table elevation.

These 4 gages have continuous daily record for at least 45 years, well before the South Dade Conveyance System was built.

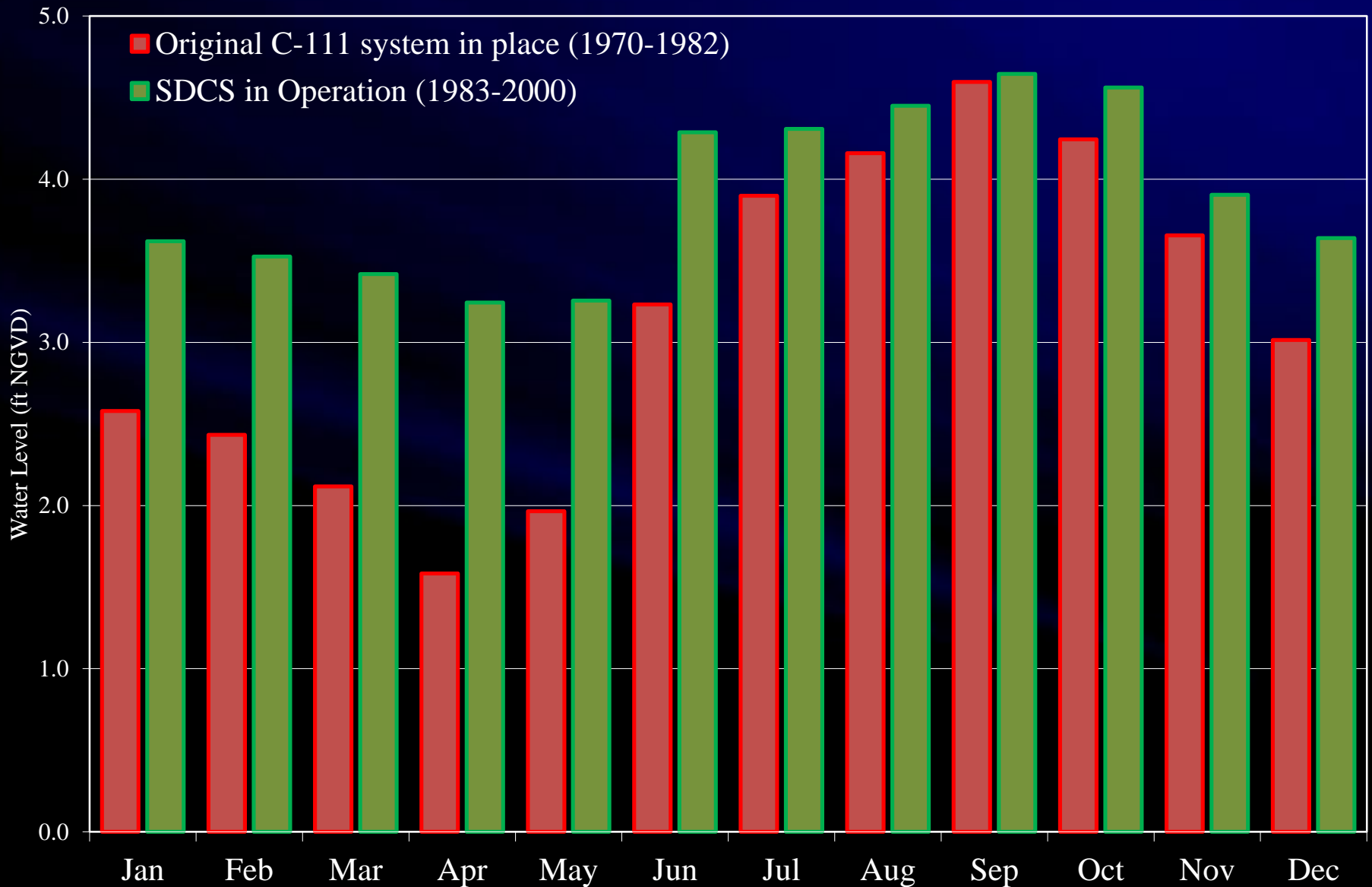




# Monthly Average Stage East of the C-111 Project at Well G-1363

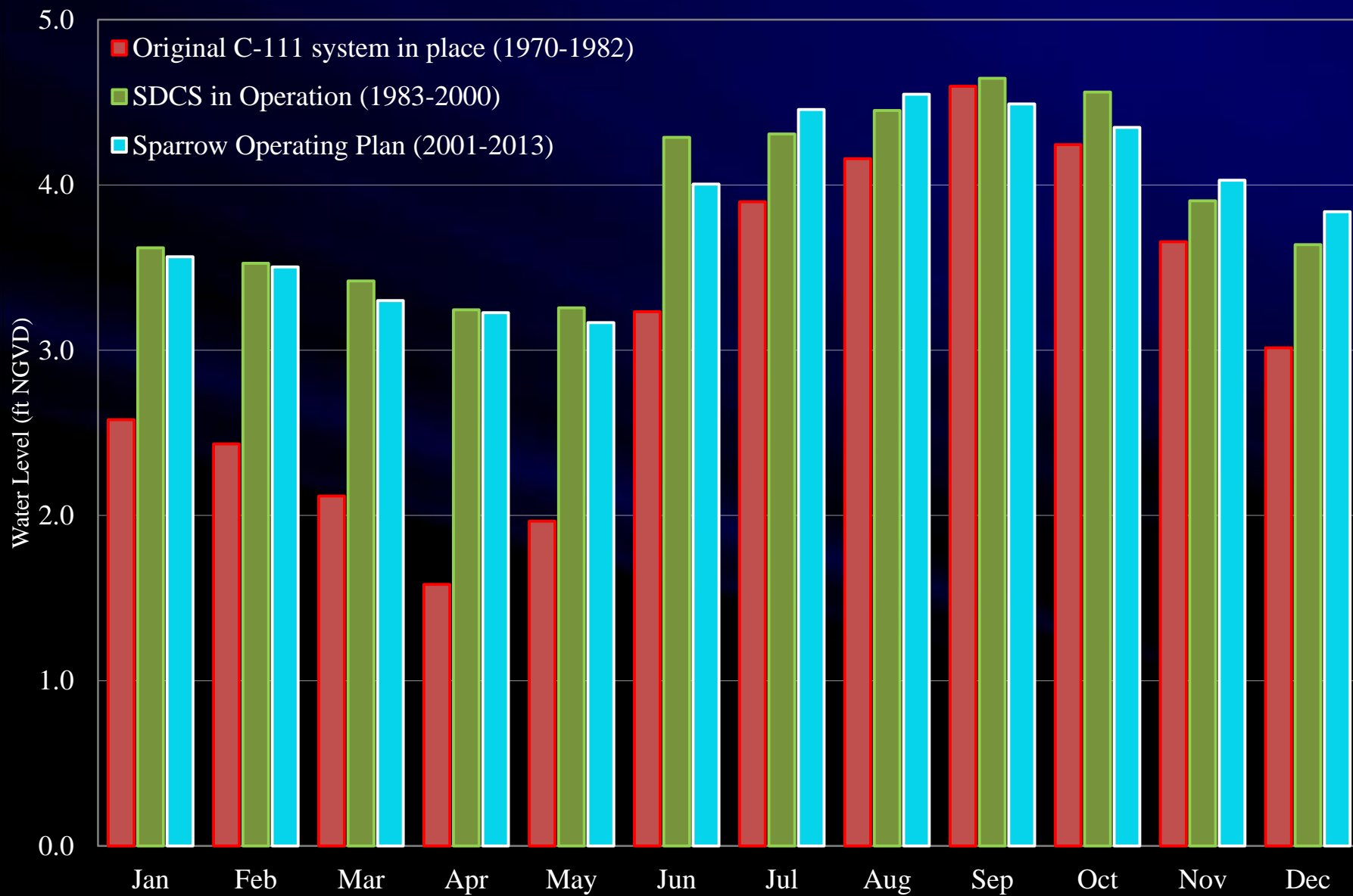


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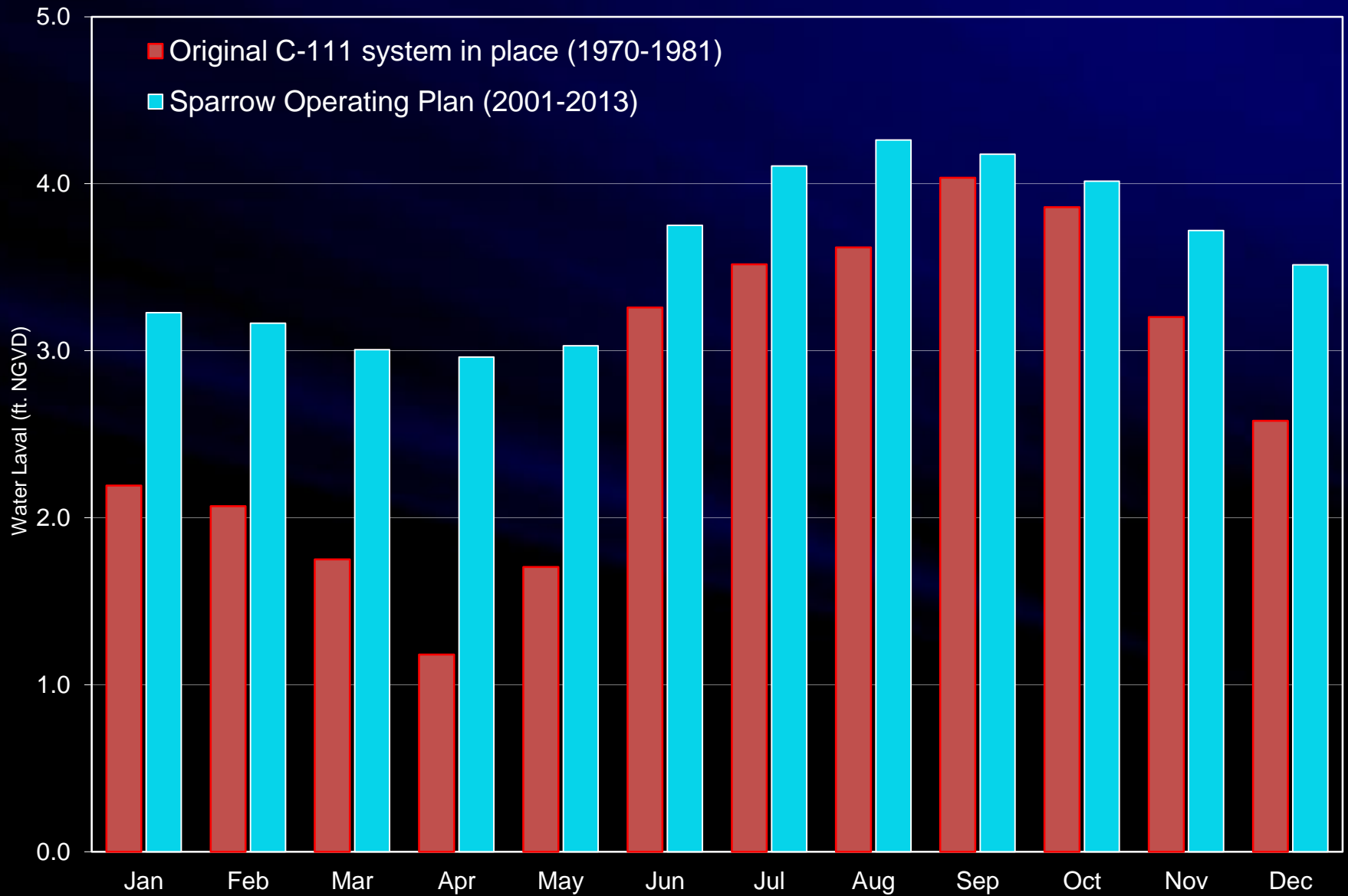




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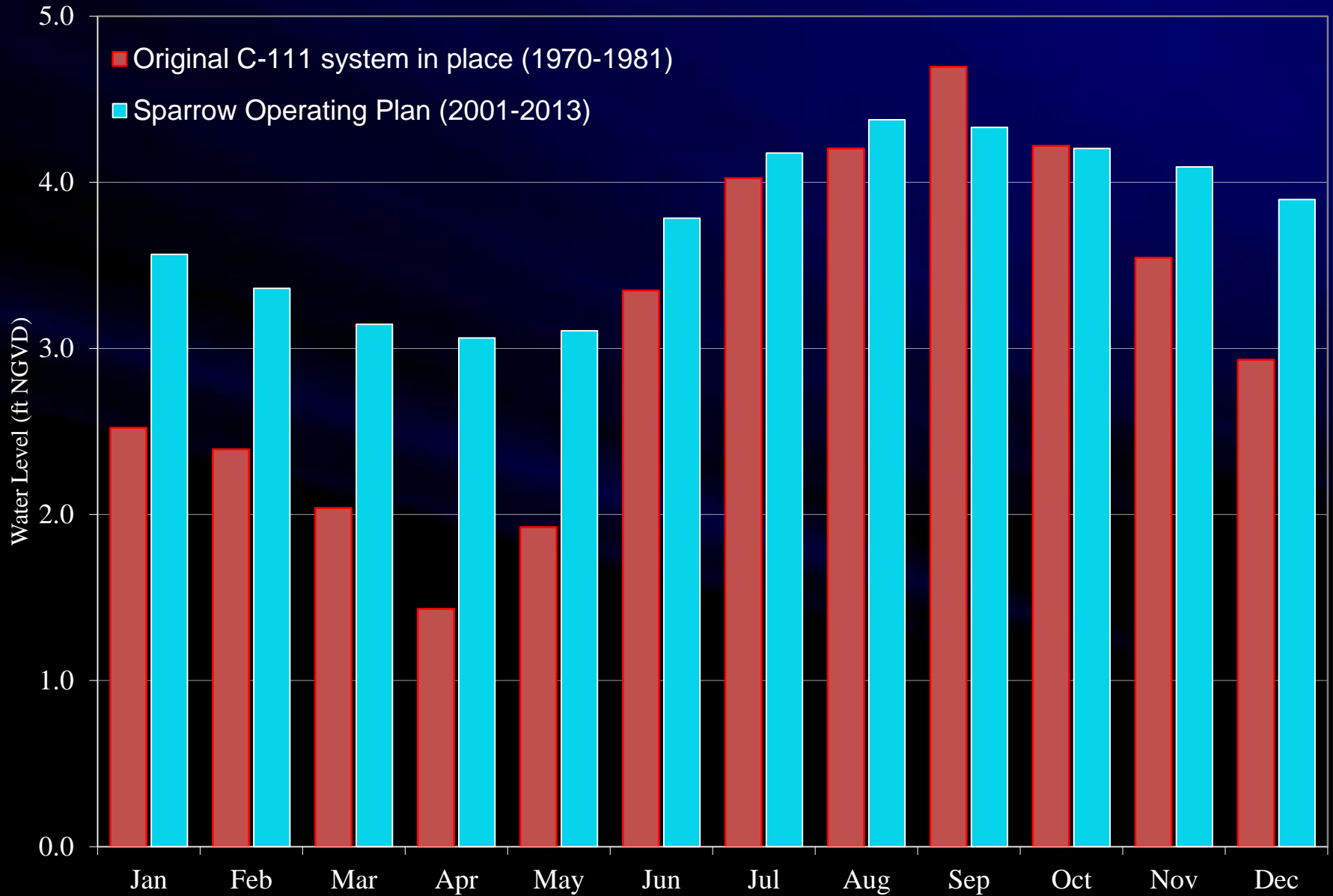


## Monthly Average Groundwater Level at Well S-196A

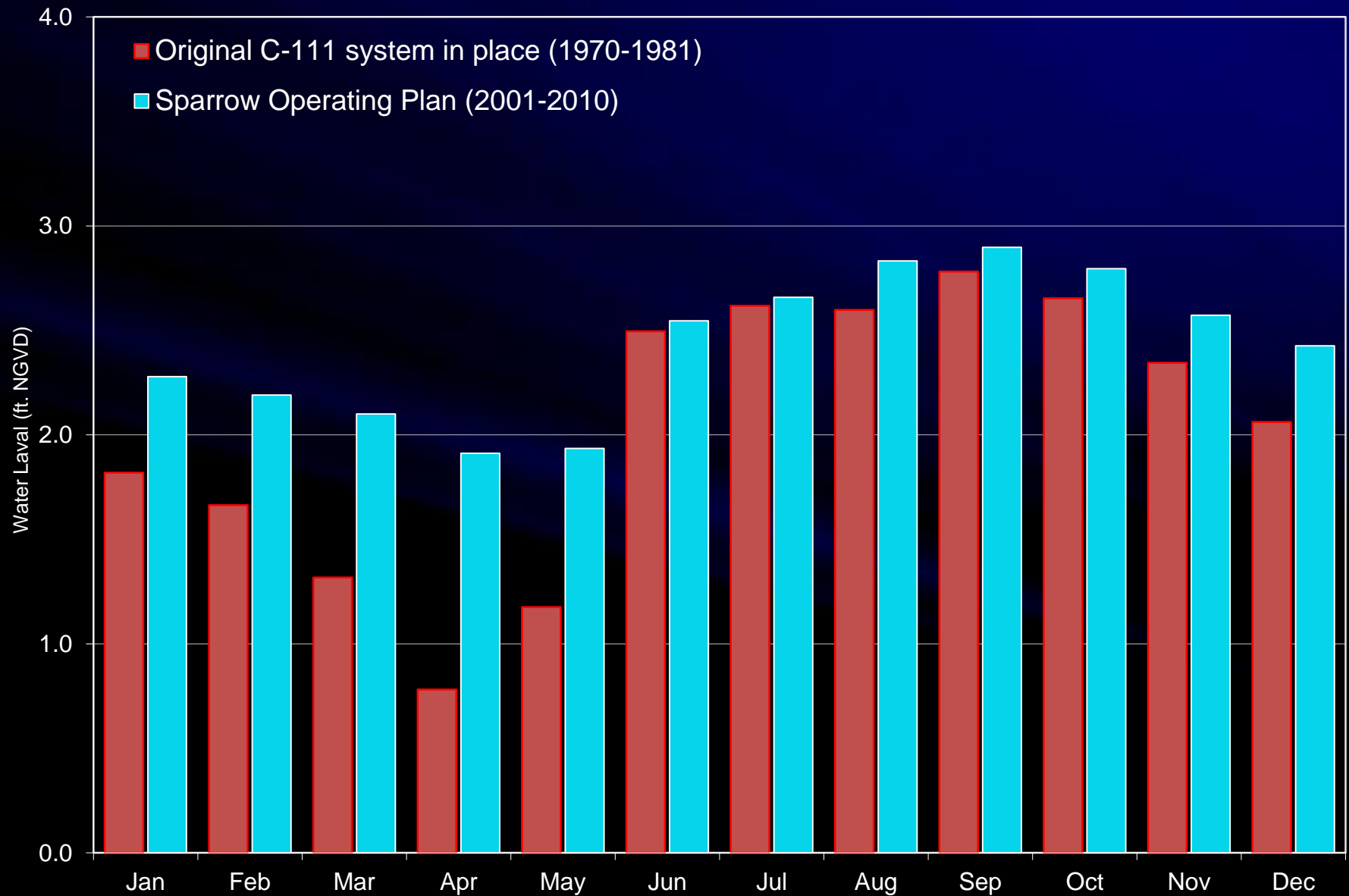




## Monthly Average Stage East of C-111 at Well G-789

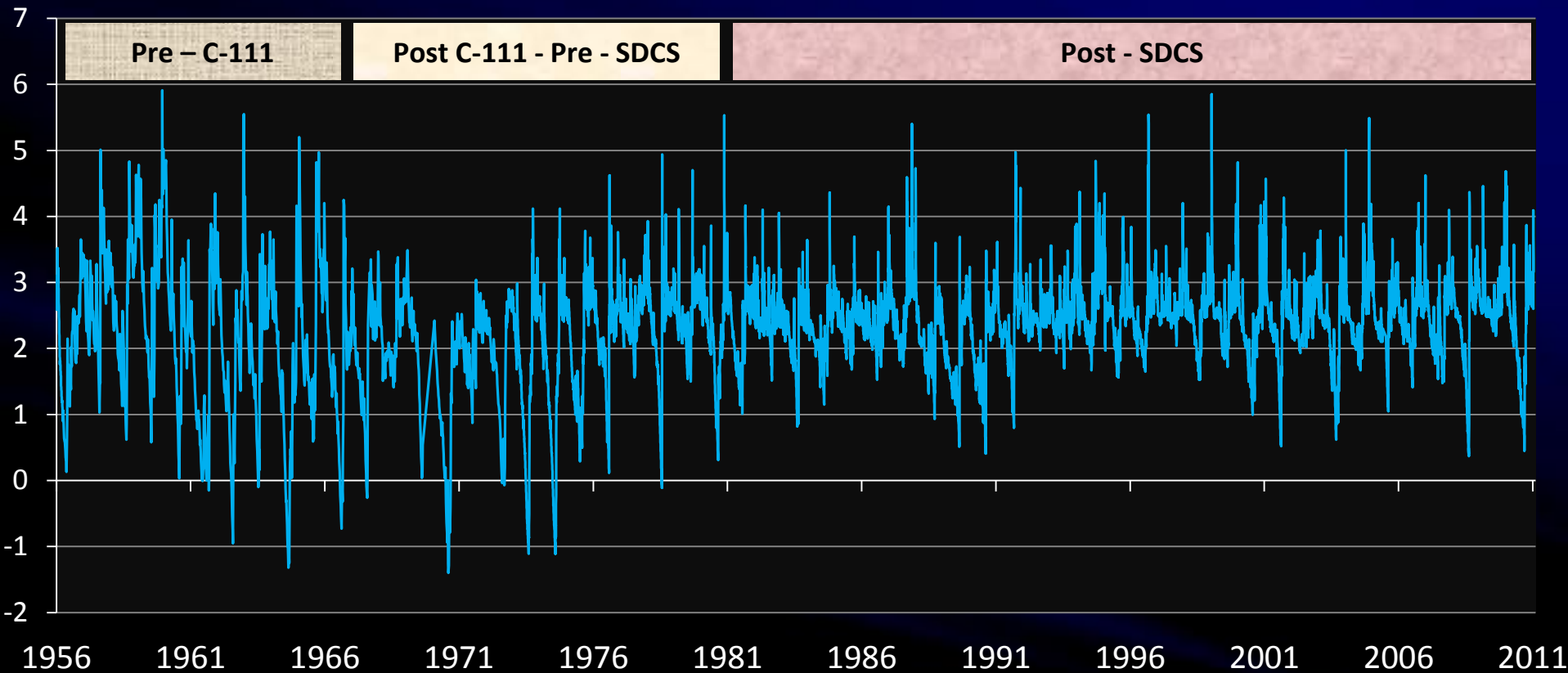


## Monthly Average Groundwater Level Near C-111E at Well G-613





Daily Water Level at the G-613 Monitoring Well Near C-111E and Ingraham Highway



# Conclusions

The C & SF Project in Western Dade County is plagued by structural and operational problems

- Too much water is being pushed into south Dade
- The Modified Water Delivery Project will only meet a portion of its original objectives
- The C-111 GRR is not achieving its objectives for Taylor Slough
- Groves and row crops continue to be harmed by an artificially high water table
- CEPP will not fix these problems



# What Needs to Be Done

- Increment 1 will be a good start
- Re-think the C-111 Buffer System
  - Surface water outflow to the west is needed
  - Portions the C-111 and L-31N canals should be operated at lower levels by additional pumping into the buffer cells to discourage seepage to the east and encourage flow to ENP (this was recommended in CERP)
- Develop a plan for the south end

Thank You