

South Dade Investigation Kickoff

South Florida Water Management District (SFWMD)
September 3, 2015

Summary Up Front

If you are interested in the water management of the South Dade area and want to contribute perspective and ideas, you are in the right place!

This SFWMD sponsored forum will promote open information sharing and idea gathering to identify actionable steps to improve water management in the South Dade area.



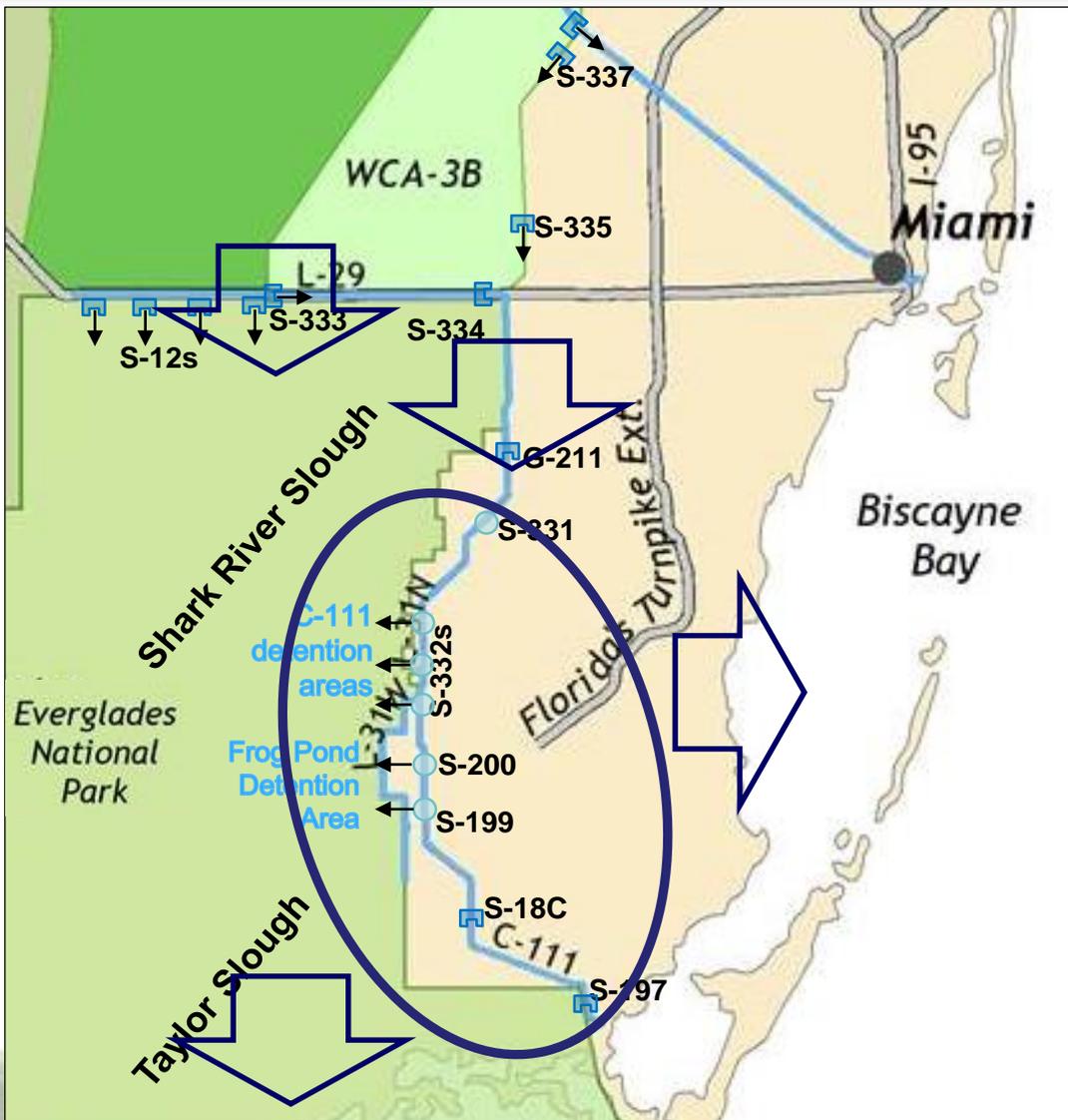
INTRODUCTION: THE SOUTH DADE SYSTEM



South Dade System Background

Multi-Objective System

- Urban Areas
 - Flood Control
 - Water Supply
- Everglades National Park
- Biscayne National Park
- Agriculture
 - Flood Control
 - Water Supply
- Evolving Infrastructure
 - MacVicar Presentation at Jan 2015 WRAC
- Not everything has changed



South Dade Water Resource Management: A Unique Challenge

So Many Objectives...



So Small an Operating Range...

Many Perspectives are Also Evident...

It Used to be Better in the Past..

- Less flood risk?
- Species performance?
- Less competition for water?
- Simpler evaluation / objectives?

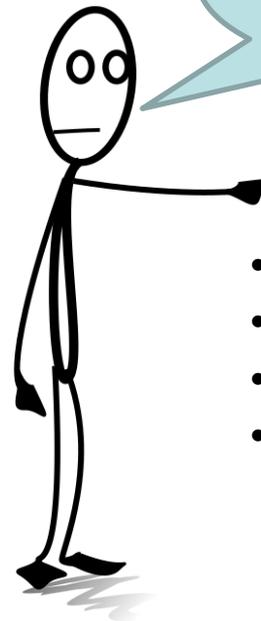
Where?
When?



It Could be Better in the Future..

- Ecosystem restoration?
- Flood protection?
- Ample water supply?
- Robust options for changing objectives or conditions?

Why?
How?



WHAT OPPORTUNITIES EXIST OR CAN BE INITIATED?



Potential Opportunities

Many robust planning efforts have / are / will continue to work to improve the South Dade area.

This is GREAT news!

Attention is already focused on identifying opportunities or addressing shortfalls in performance.

Resources / projects to improve the system can be identified.



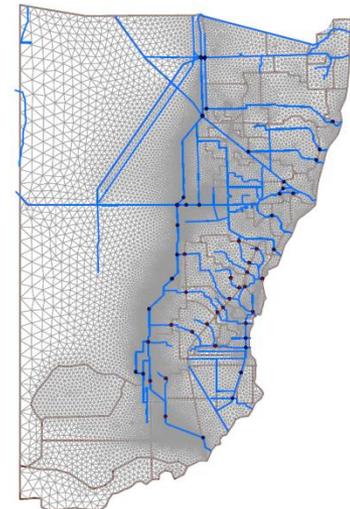
Recent SFWMD Actions

- South Dade Operations and Regional Management of Water for Agriculture (Jan. 2015 WRAC)
- Governing Board tasked staff to evaluate the agricultural flooding issue in Southwest Dade County (Jan. 2015 Governing Board)
- SFWMD initiated a series of actions
 - Summary presented at WRAC (May 2015)



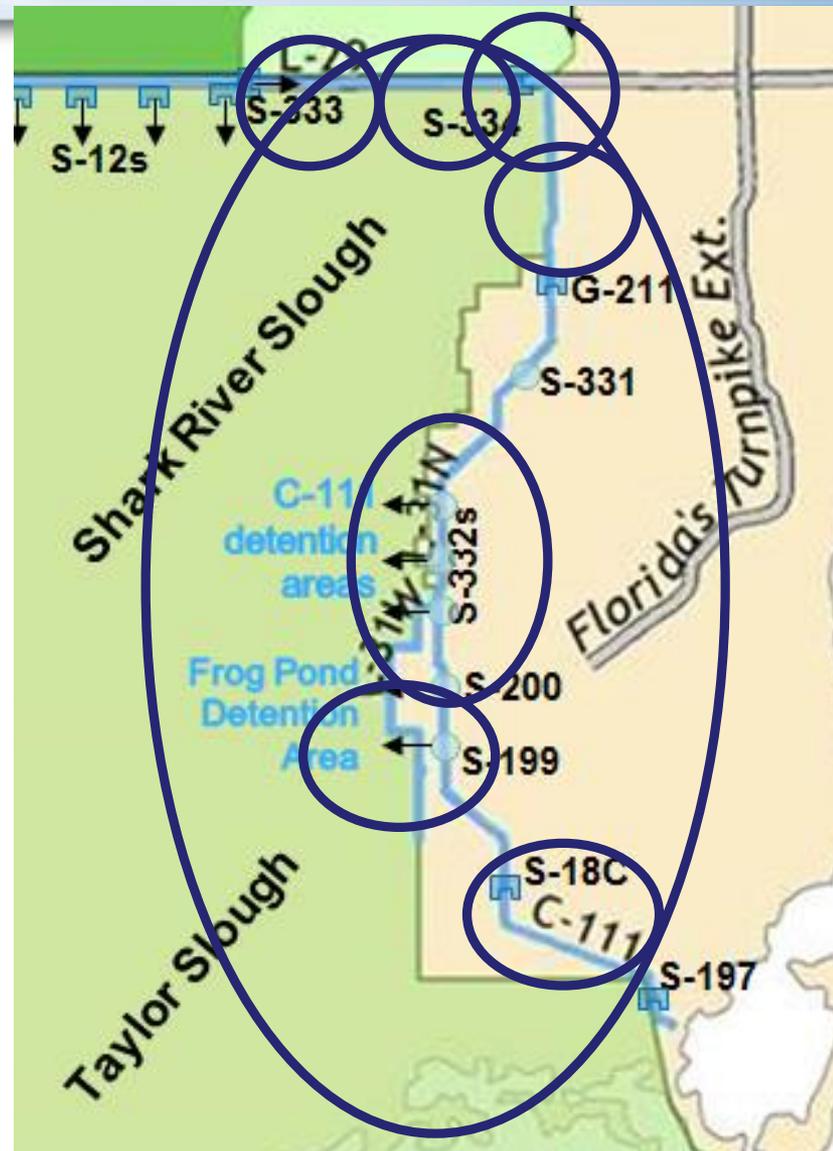
Recent SFWMD Actions (Continued)

- Vegetation management
- Improving C111 Spreader Canal project features
- IFAS investigations
- Enhanced data collection
- Modeling tool development



Others are Active Too!

- USACE
 - C111 South Dade, Increment 1 Field Test, ERTF
- Dept of Interior
 - Tamiami Trail Next Steps, Modified Water Deliveries
- CERP
 - C111 Spreader Canal Western
- Rock Miners
 - L31N Seepage Wall
- FDEP – permit review and issuance



THE PURPOSE AND GOALS OF THIS EFFORT



Why are we here?

- Provide a forum to integrate all perspectives
- Create common understanding
- Consider the big picture and how individual system elements interact and complement each other
- Identify options that can be considered in upcoming projects and plans
- Expedite implementation by providing conceptual analysis for future projects



Intentionally Broad Scope

- All objectives are on the table
- Structural and operational options – no restrictions on ideas
- Range of options: small to big, traditional to non-traditional ideas
- Provide high-level evaluation of concepts
 - Effectiveness of proposed options
 - System view with the Regional Simulation Model (RSMGL)
 - Use of other tools as needed (e.g., detailed evaluation of local effects)



What's Happening Today

Take a “step back” to help facilitate moving forward

Lay the groundwork to create a common understanding of the hydrology in the South Dade and identify the investigation's scope

- Describe elements of investigation
- Water management in South Dade – past, present, future
- Start to identify desired outcomes
- Brainstorm ideas

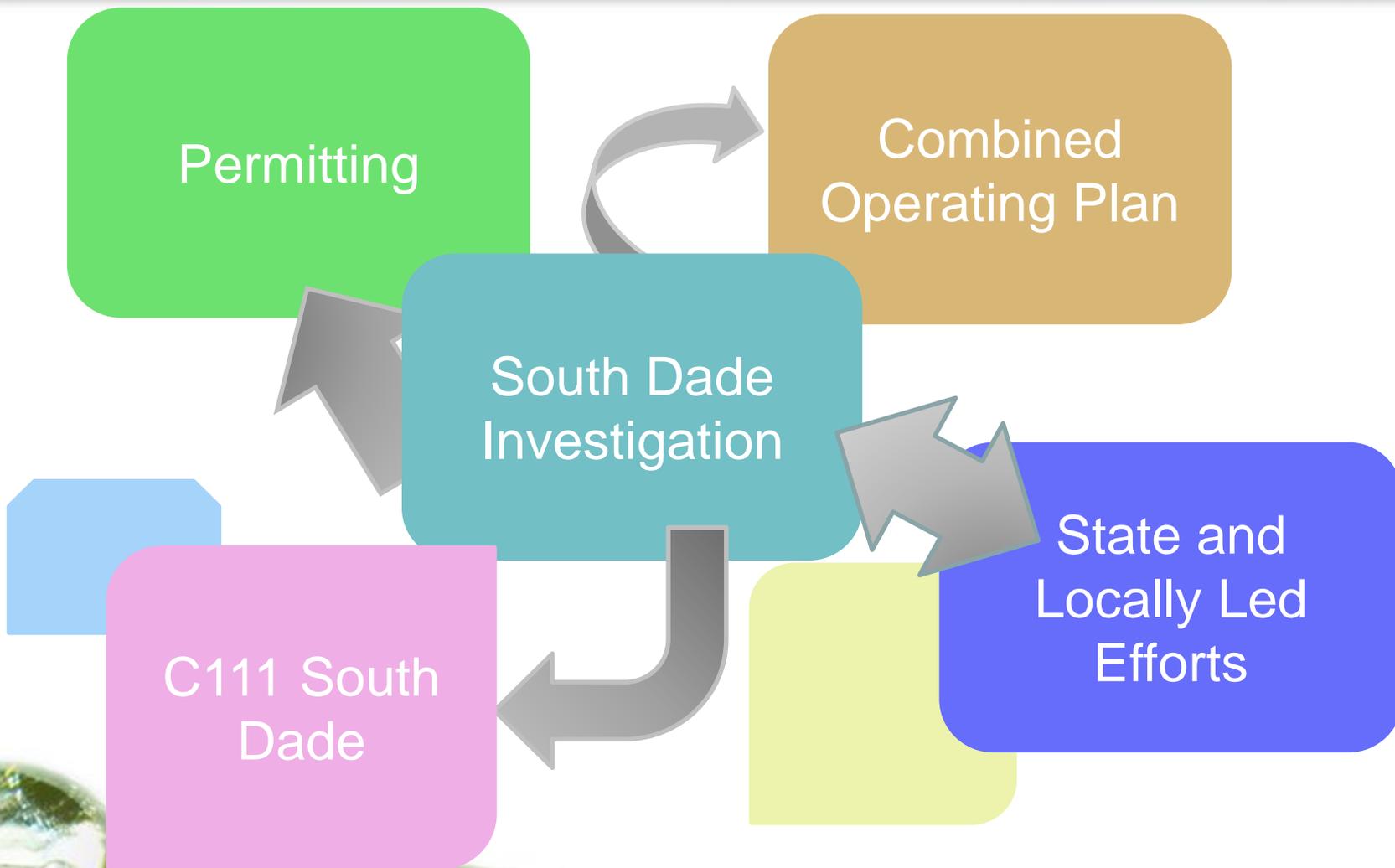


South Dade Investigation Elements

- Initial information sharing
 - Today's kickoff and brainstorm
 - In-depth meetings as requested (through early October)
- Workshops: October, November, December and January (if needed)
 - Describe scope and desired outcomes
 - Identify options that may change system performance
 - Evaluate results to assess option feasibility
 - Identify trends in system performance and observations
 - List options that move toward desired outcomes
- WRAC and Governing Board Updates:
October, December and February (if needed)



Future Opportunities



LET'S START THE DIALOGUE: REVIEW OF THE SOUTH DADE SYSTEM HYDROLOGY

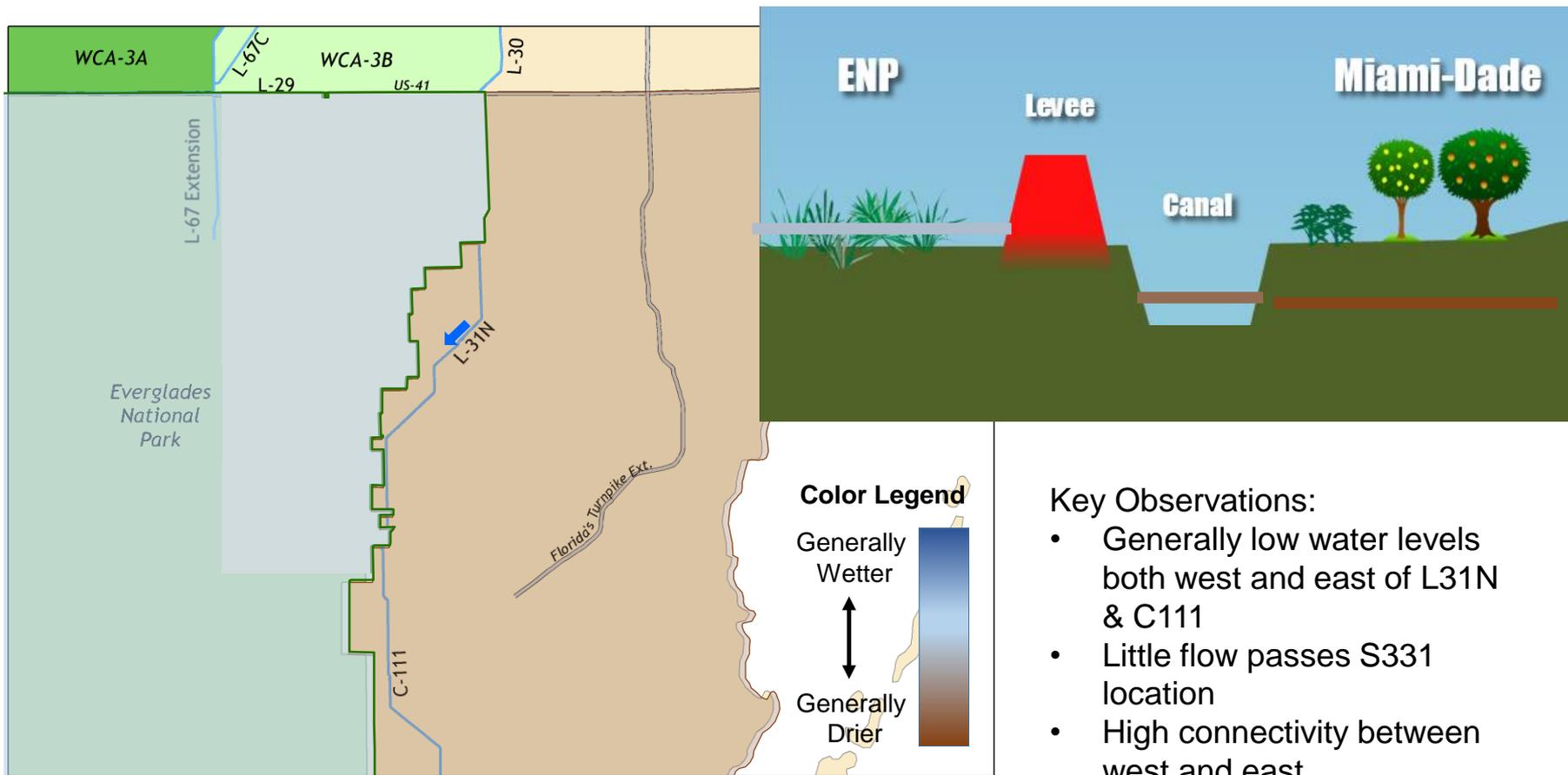


Operational Milestones in South Dade

- 1970 – Minimum Delivery Schedule
- 1983 – Experimental Water Deliveries
- 2000 – Interim Structural and Operational Plan/Interim Operational Plan
- 2012 – Everglades Restoration Transition Plan



1970-1982: Minimum Delivery Schedule



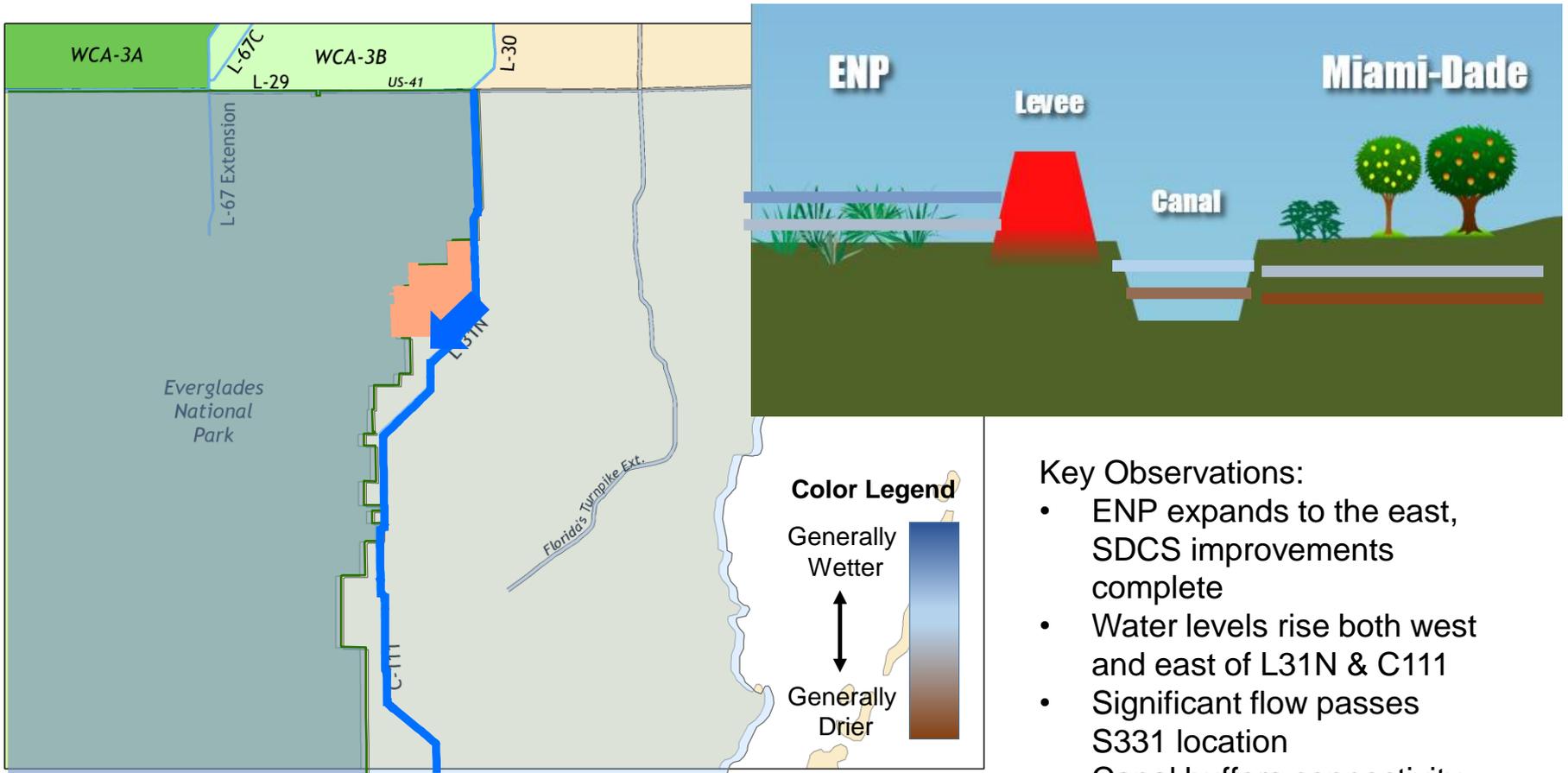
Key Observations:

- Generally low water levels both west and east of L31N & C111
- Little flow passes S331 location
- High connectivity between west and east

Note: Graphic are conceptual and intended to show general performance during the identified period, not all of the system details or changes during the timeframe or variations in spatial performance.



1983-2000: Experimental Water Deliveries

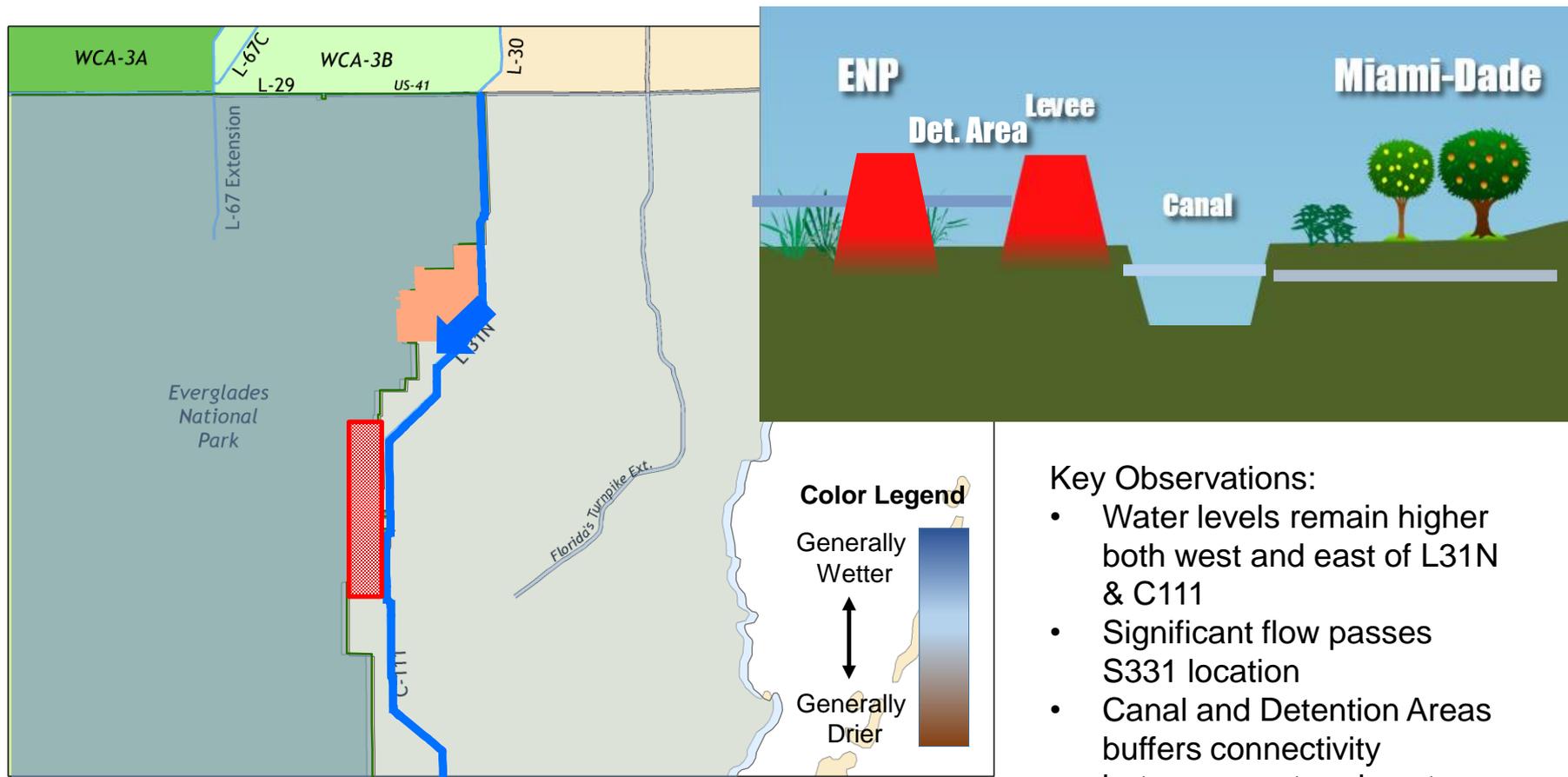


- Key Observations:**
- ENP expands to the east, SDCS improvements complete
 - Water levels rise both west and east of L31N & C111
 - Significant flow passes S331 location
 - Canal buffers connectivity between west and east

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2000-2012: ISOP/IOP + C111 Project



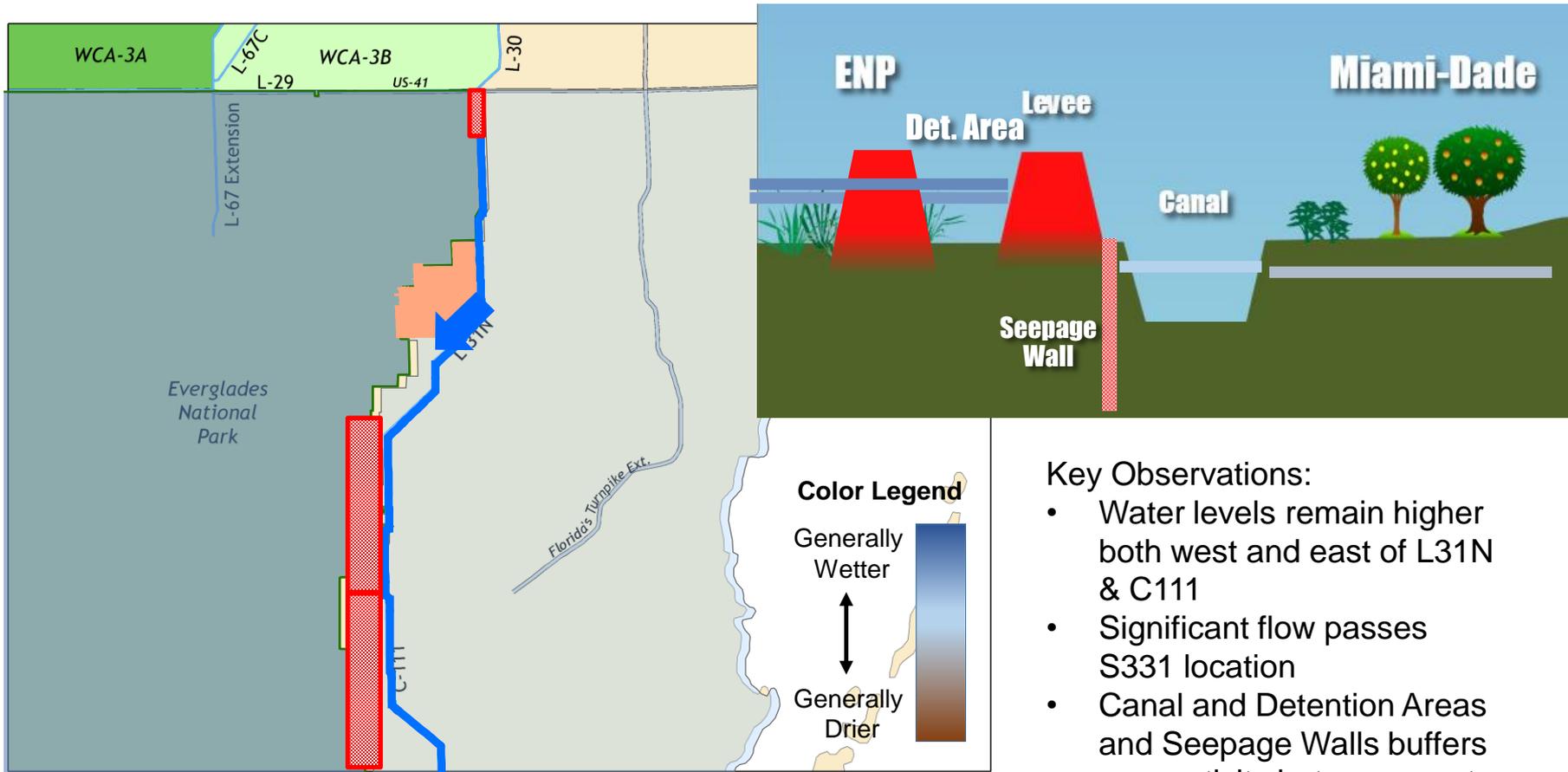
Key Observations:

- Water levels remain higher both west and east of L31N & C111
- Significant flow passes S331 location
- Canal and Detention Areas buffers connectivity between west and east

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2012 – Current: ERTP + C111 Spreader



Key Observations:

- Water levels remain higher both west and east of L31N & C111
- Significant flow passes S331 location
- Canal and Detention Areas and Seepage Walls buffers connectivity between west and east

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Causality is Not Straightforward: An Example at S-176

	Minimum Deliveries	Experimental Deliveries
Generalized Operations	5.5/5.0	4.5/4.1
Average Water Level (ft)	3.43	4.26
Wet 90th Percentile Water Level (ft)	5.13	4.83
	ISOP/IOP	ERTP
Generalized Operations	5.0/4.75 Col 1; 4.9/4.7 Col 2	5.0/4.75 Col 1; 4.9/4.7 Col 2
Average Water Level (ft)	4.33	4.48
Wet 90th Percentile Water Level (ft)	4.78	4.77



Add Some Technical Complexities...

Varying Rainfall

Regulations

Evolving Agricultural Practices

Changing Infrastructure

What is Causing that Change?

Everglades Restoration

Changing Objectives

Automation of Structures

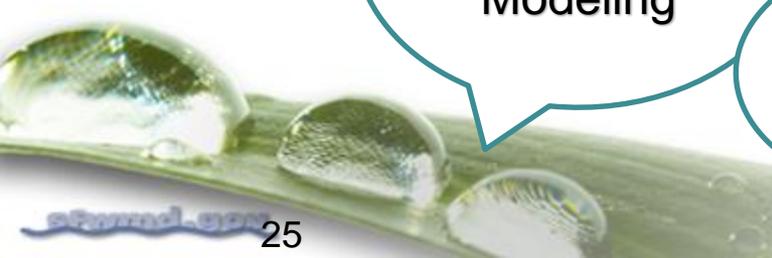
Monitoring And Modeling

Project Construction

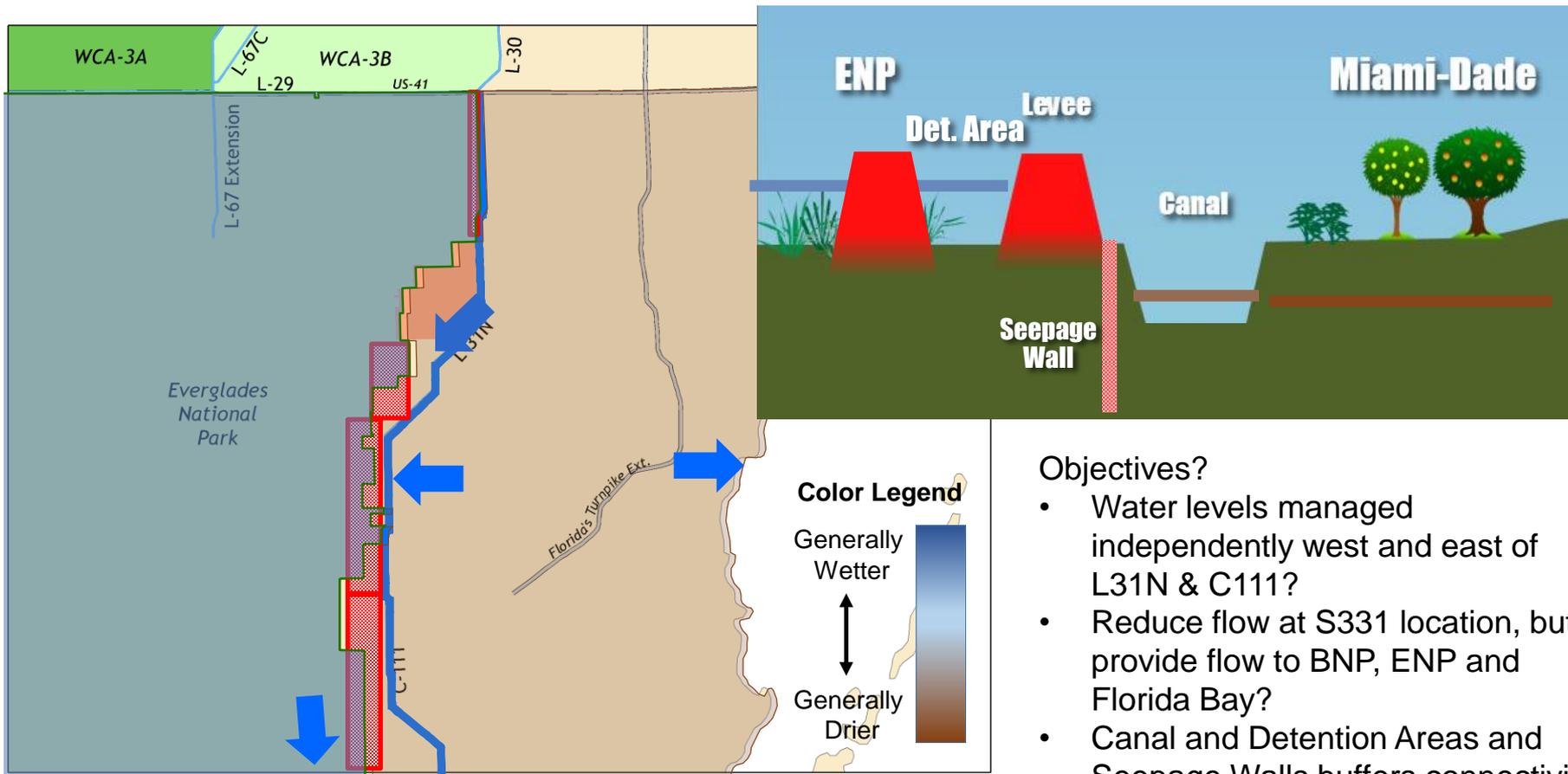
Sea Level Rise



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Moving Forward – A Possible Future?



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Let's Hear Some More...

Expert Perspectives to Initiate the Dialogue

- **Bob Johnson**, Director SFNR Center, Everglades National Park
- **Tom MacVicar**, consultant to Florida Department of Agriculture and Consumer Services
- **Miles Meyer**, Supervisory Biologist, U.S. Fish and Wildlife Service
- **Charles LaPradd**, Agriculture Manager, Miami-Dade County
- **Donna George**, Senior Project Manager, U.S. Army Corps of Engineers

Followed by an opportunity for all to brainstorm ideas and observations



Questions



S331 and
S173

