U.S. Department of the Interior
South Florida Ecosystem Office

Mitigating Historic Water Management Changes in the Greater Everglades Ecosystem

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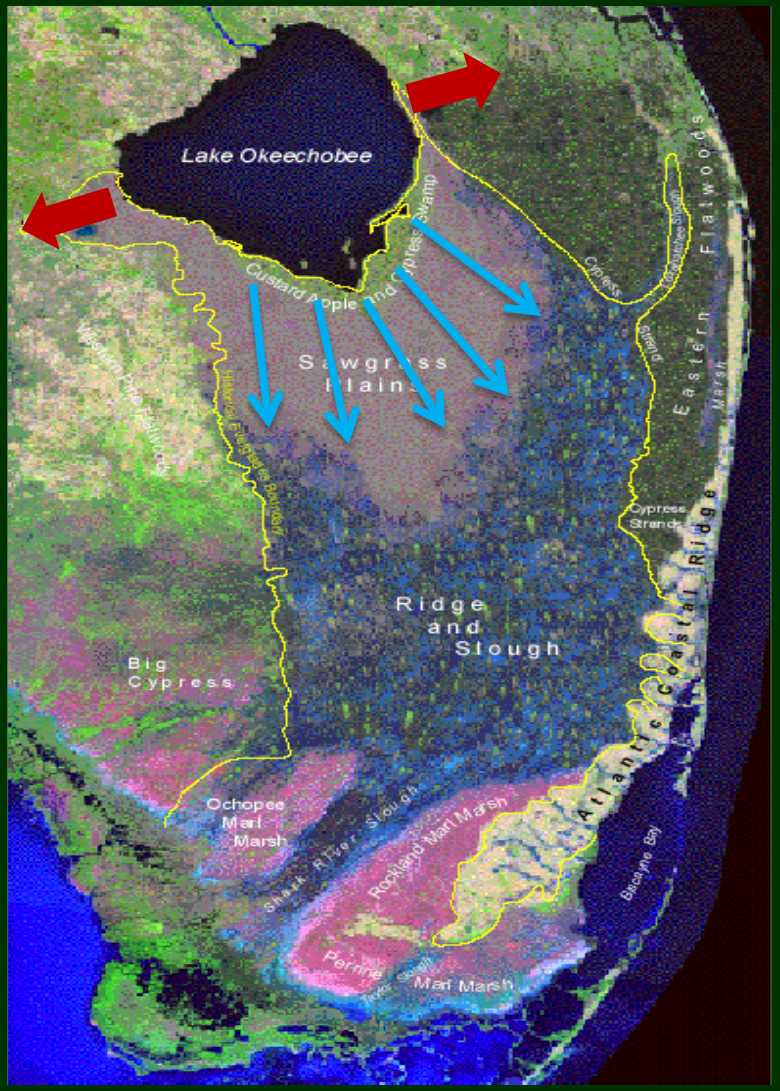
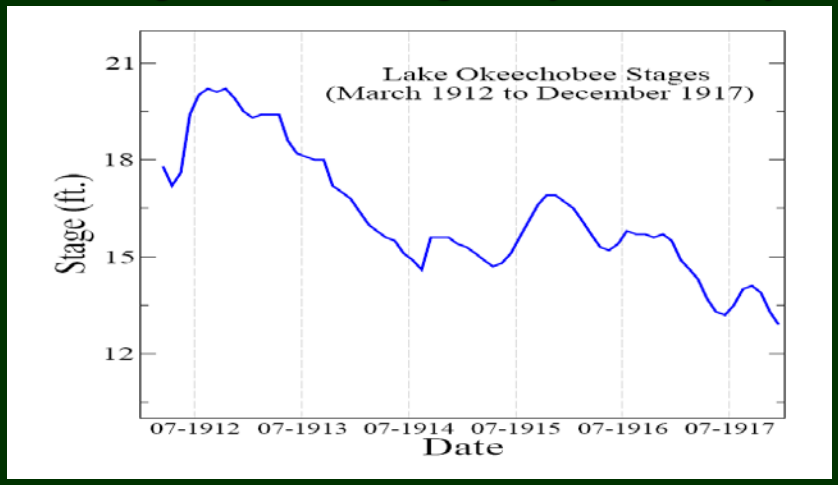
Historic Changes in Everglades Water Flows

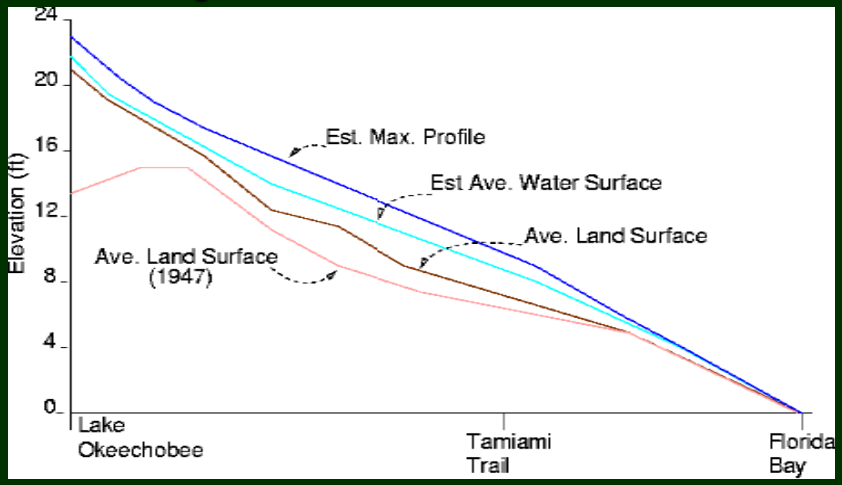


Historically, water flowed from Lake Okeechobee into the Everglades. In the 1920's these flows were redirected to tide to promote agricultural development.

Loss of Regional Water Storage & Dry Season Carryover



Loss of Everglades Water Flow & Land Subsidence



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Alterations in Water Flows through the Everglades

- **Everglades Protection Area Inflows**
  - For Pre-drainage models - estimates of overland flows from the northern Everglades southward.
  - For Post-Drainage models - estimates of structure flows (S-5A, S-6, S-7, S-150, S-8, and S-140) plus future CERP overland flows.
- **Shark River Slough Flows**
  - Estimates for overland flows across the Shark River and its floodplains (Rocky Glades on the east and the Ochopee Rise on the west).

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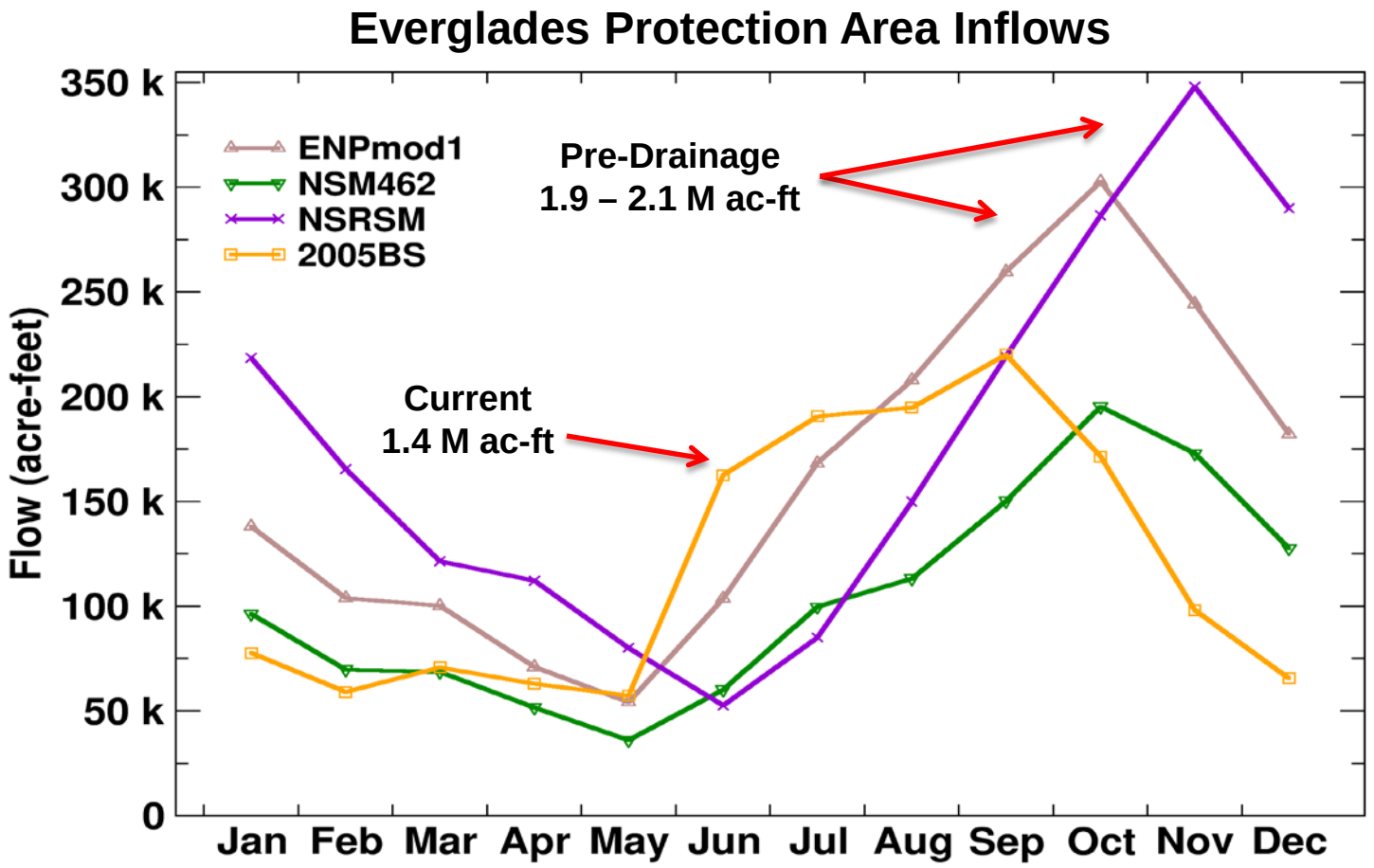
Alterations in Water Flows through the Everglades



Reduced flows from Lake Okeechobee and a seasonal timing shift, produce much lower dry season flows to the Everglades and downstream estuaries.

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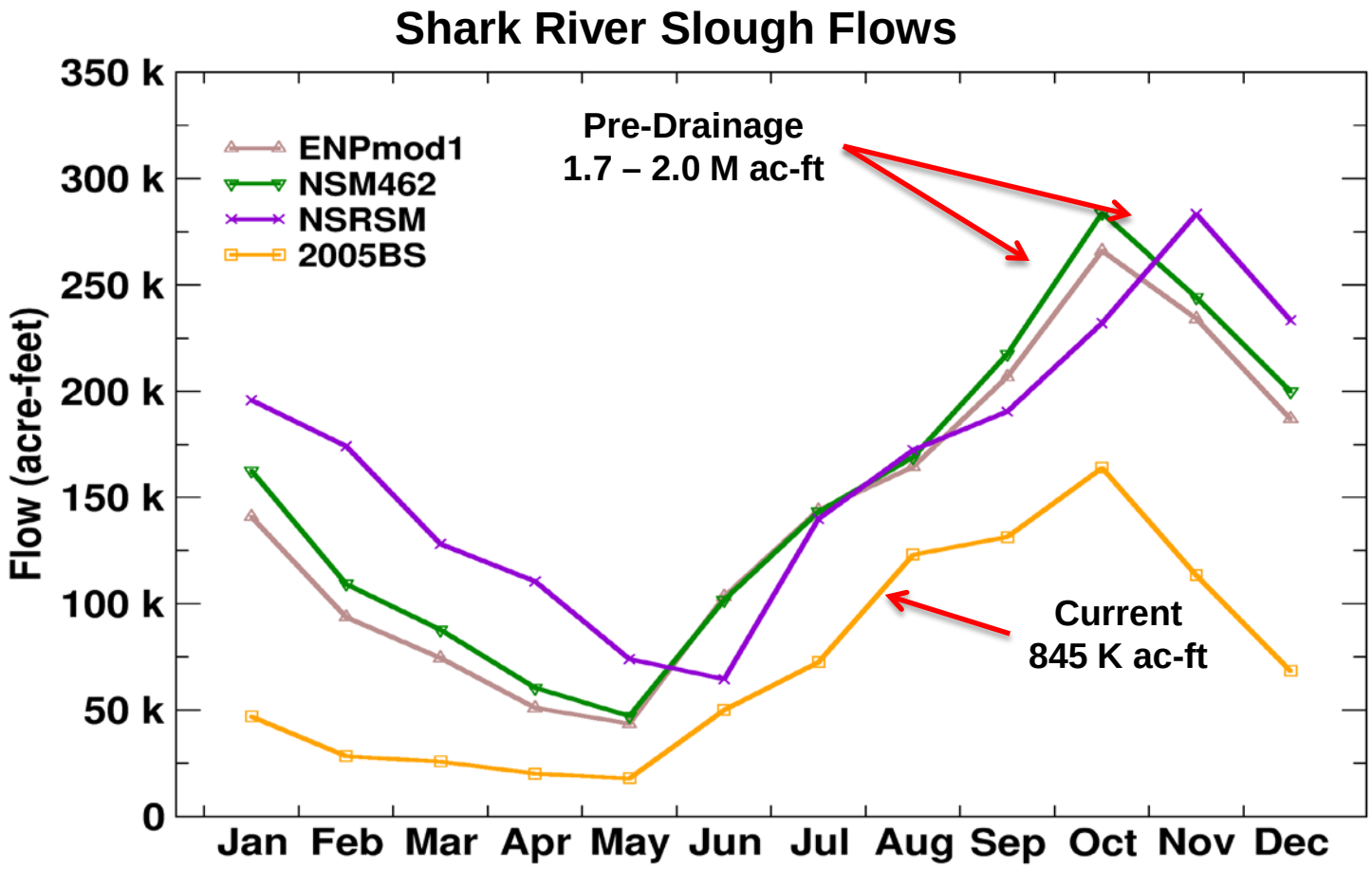
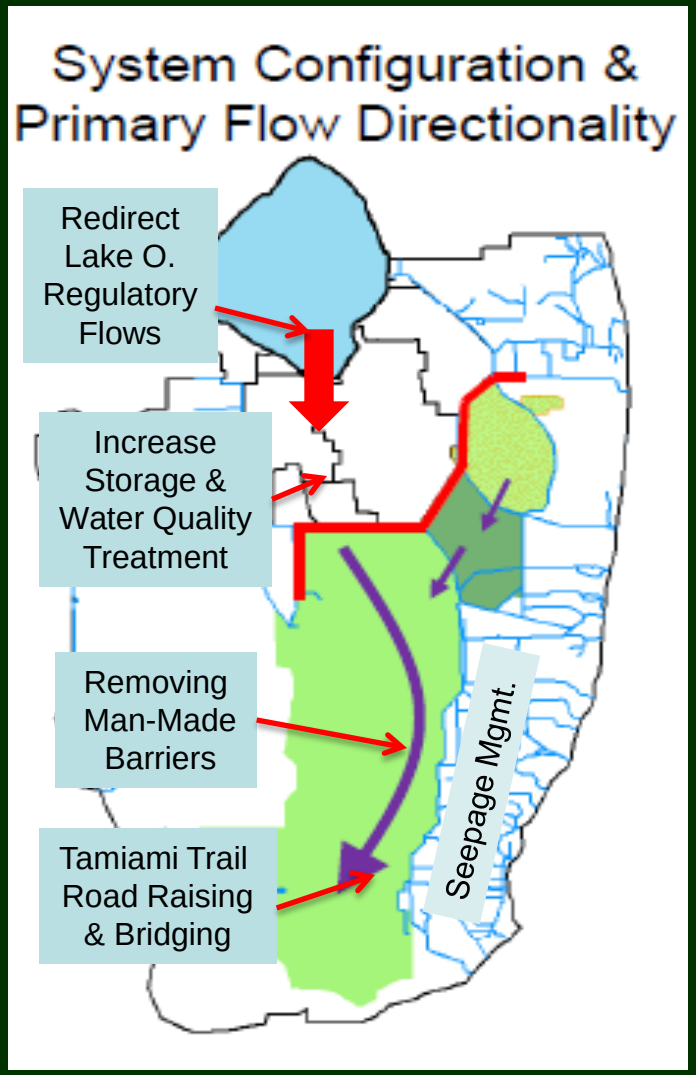
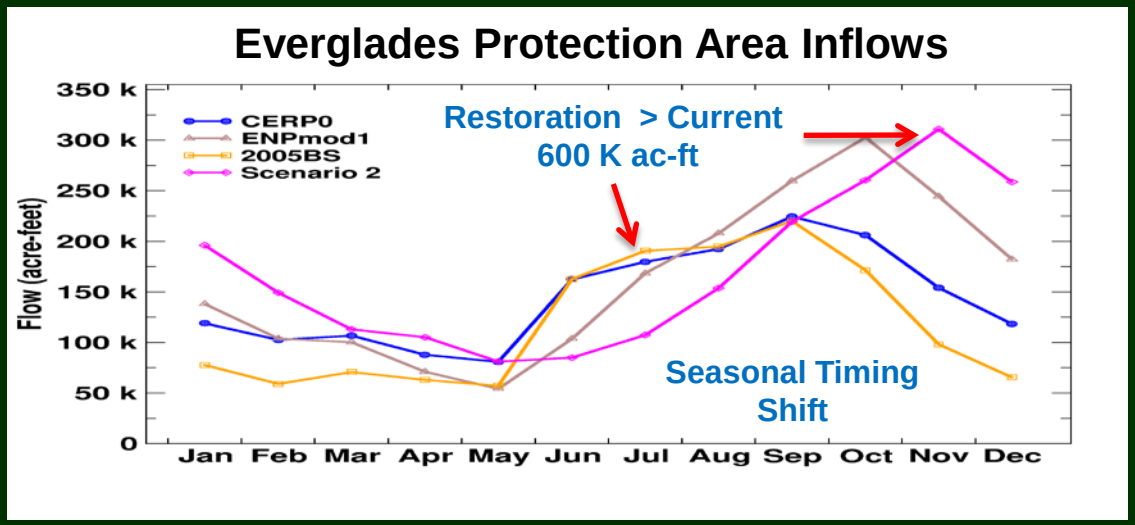
Alterations in Water Flows through the Everglades

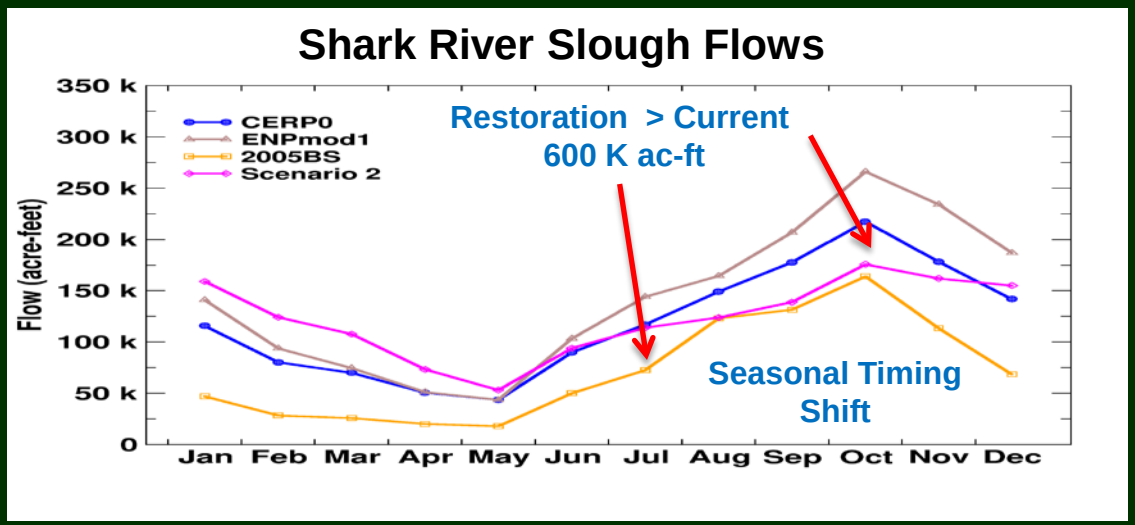


Overall flow reduction of 50-60 percent, produce very low dry season flows.

Requisites for Restoring Flows to the Everglades







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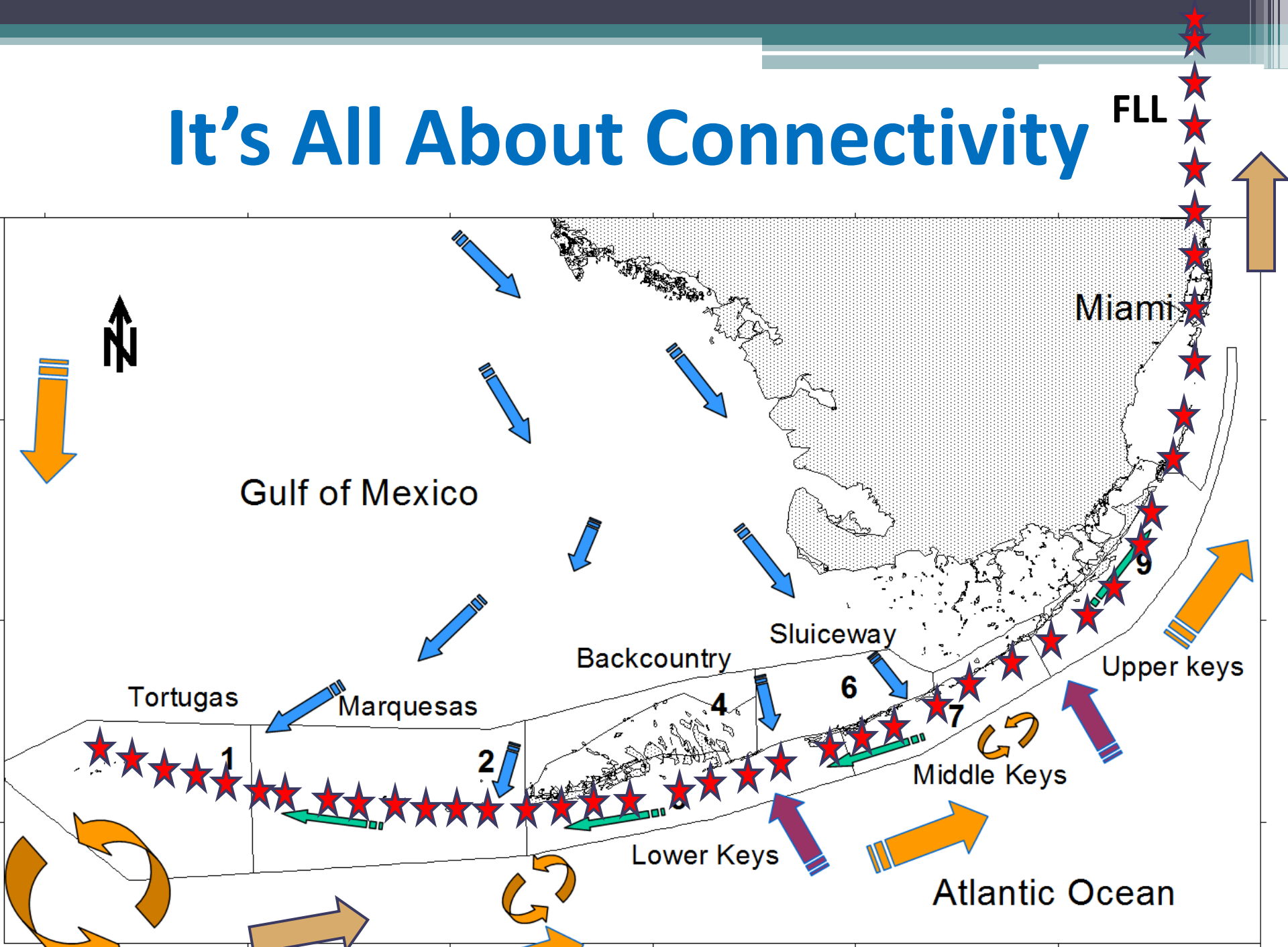
Preliminary restoration scenarios indicate that existing regulatory flows from Lake Okeechobee approach the Everglades restoration targets.

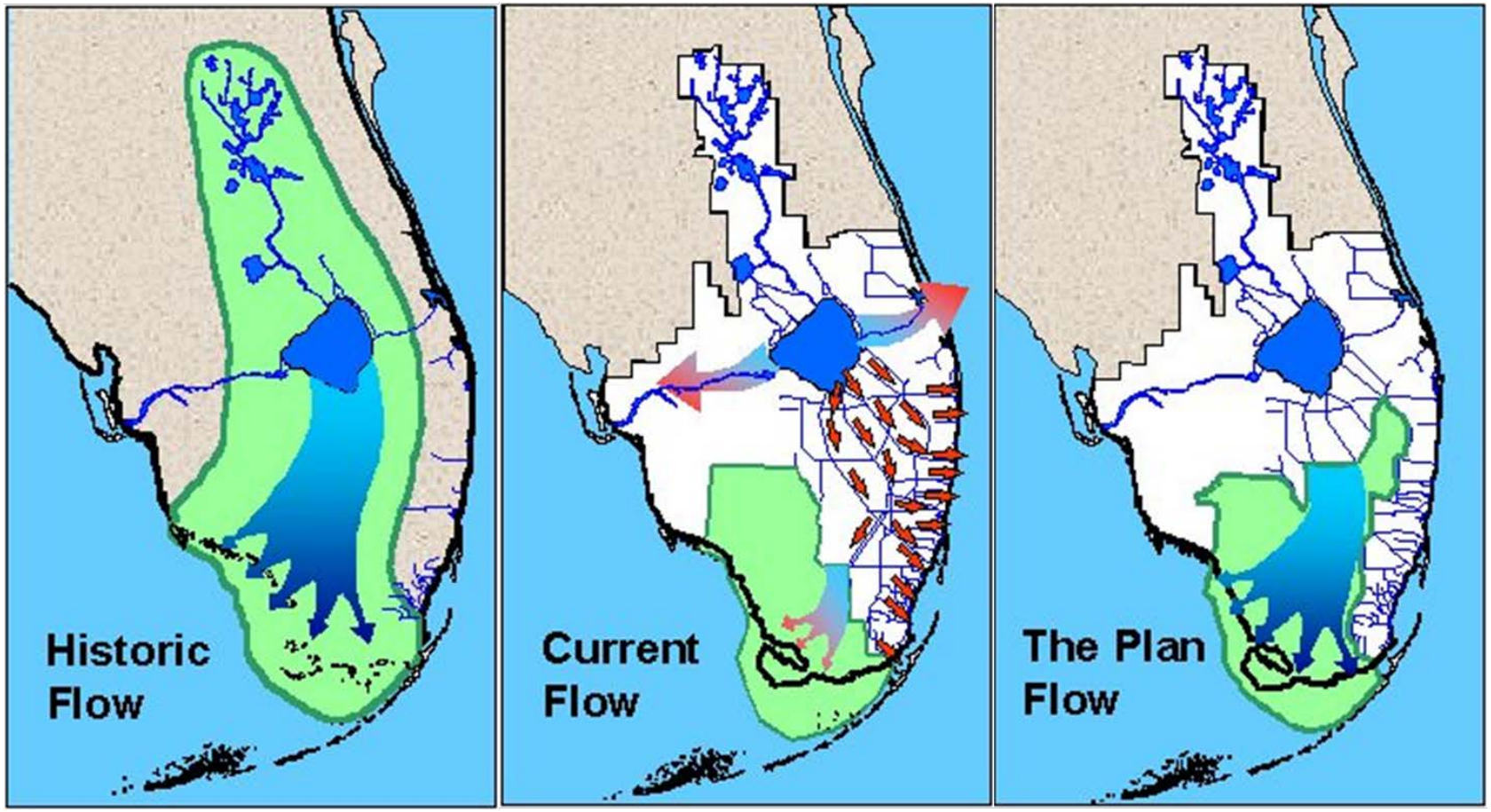
Summary Recommendations from the *Water Quality Management Priorities Panel*

For the Florida Reef Tract

It's All About Connectivity



Water that happens in the Everglades - does NOT stay in the Everglades.



Water moves from land to the Reefs.
How to best manage impacts?

Need for enhancing Support for Water Management in South Florida; why….?

- Economy and jobs depend upon healthy environmental resources.
- Resource health requires informed management.
- Informed management requires sound science.
- **Sound science requires dedicated/continued support.**

Water Management Challenges

- Entire Reef Tract is yet to be 'Holistically' managed, **Inclusive of the Gulf and Southeast US Reef**
- Regional "Restoration" initiatives (So Fla, Gulf, Everglades,) do not emphasize coral reef ecosystems
- Gaps in Cause-Effect relationships between water discharges and coral reef health (EPOCs, disease epidemiology, resilience)
- (Don't give up!) Local stressors can be managed while recognizing global changes
- Funding for monitoring, research & management

Recommendations:

Restore and Expand US Continental Reef Track WQ Protection Program… How…?

- Reverse funding decline
- Address requirements of the Clean Water Act
- Determine Cause & Effect for science based management
- Storm/Wastewater Control and Management
  - **Minimize sources and loads from Land-based sources of pollution**

Recommendations Continued:

Restore and Expand US Continental Reef Track WQ Protection Program… How…?

- Partner with local, state, regional, & national entities (e.g., CERP, WQPP, USCRTF) to minimize water management impacts
- Optimize QQTD: quantity, quality, timing and distribution of freshwater.
- Protect ALL components of the Continental US Reef ecosystem – Keys, Florida Bay, SE Fla reefs
- Include Coral Reefs within Restoration Initiatives

Employ An Integrated Strategy, e.g.
MARine Ecosystem Goal Setting (MARES):
Connecting Science, Management, and Policy

- Engage and communicate
- Science-based consensus on
  - Ecosystem Services and Processes
  - Indicators of environmental patterns
  - Human activities that affect or are affected by the environment
  - Connectivity between different parts of the system
- Integrated Ecosystem Assessment (IEA)

THANK YOU FROM the *Water Quality Management Priorities Panel*

For the Florida Reef Tract