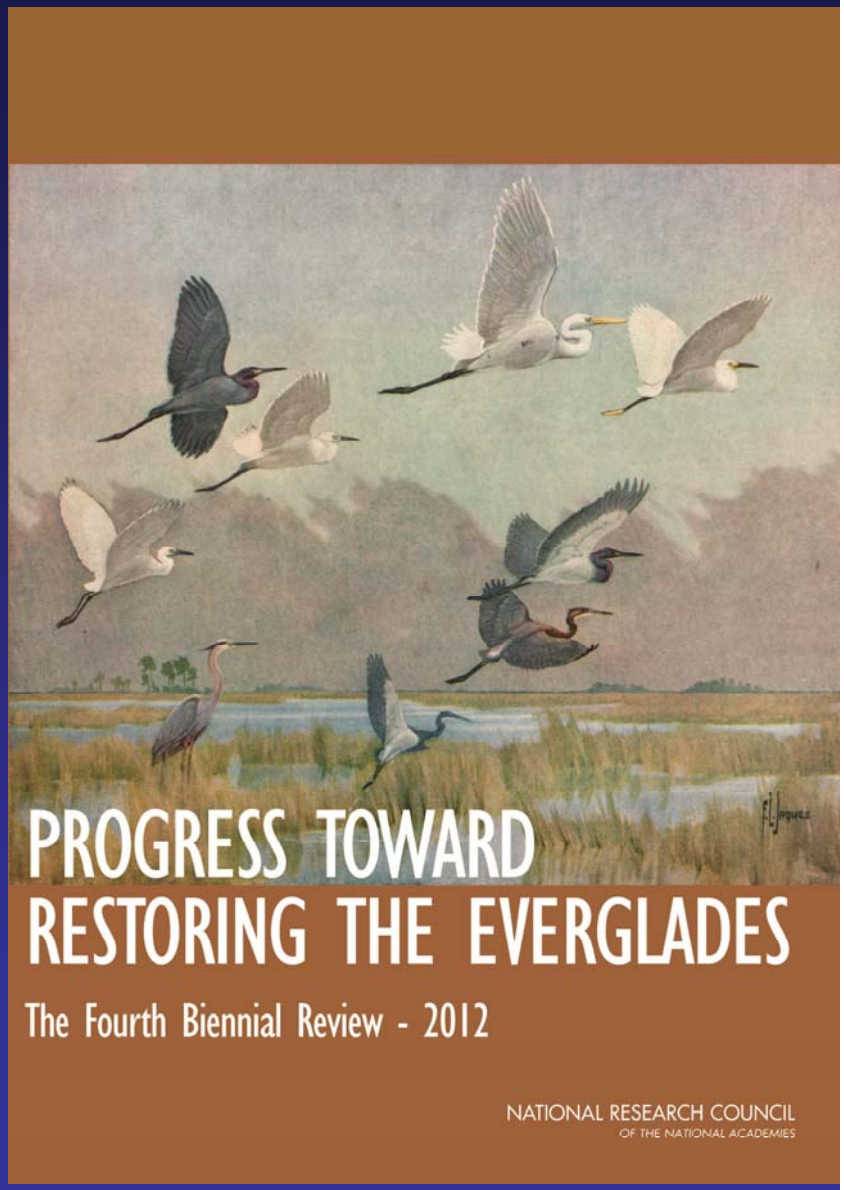
Committee on Independent Scientific Review of Everglades Restoration Progress (CISRERP)

Fourth Biennial Review - 2012

Stephanie Johnson, Study Director
Bill Boggess, Committee Chair



Study Origin

WRDA 2000:

- "*The Secretary, the Secretary of the Interior, and the Governor, in consultation with the South Florida Ecosystem Restoration Task Force, shall establish an independent scientific review panel convened by a body, such as the National Academy of Sciences, to review the Plan's progress toward achieving the natural system restoration goals of the Plan*."
- "*The panel … shall produce a biennial report to Congress…that includes an assessment of ecological indicators and other measures of progress in restoring the ecology of the natural system, based on the Plan*."

Study funded under a 5-yr contract with the USACE, with funding support from DOI and the SFWMD

Statement of Task

The committee will produce biennial reports providing:

1. An assessment of progress in restoring the natural system
2. Discussion of significant accomplishments of the restoration
3. Discussion and evaluation of specific scientific and engineering issues that may impact progress in achieving the natural system restoration goals of the plan
4. Independent review of monitoring and assessment protocols to be used for evaluation of CERP progress

Committee Membership

- **WILLIAM BOGGESS**, *Chair*, Oregon State Univ., Corvallis
- **MARY JANE ANGELO**, Univ. of Florida, Gainesville
- **DAVID ASHLEY**, Univ. of Nevada, Las Vegas
- **CHARLES DRISCOLL**, Syracuse Univ., New York
- **WILLIAM GRAF**, Univ. of South Carolina, Columbia
- **WENDY GRAHAM**, Univ. of Florida, Gainesville
- **SAMUEL LUOMA**, Univ. of California, Davis
- **DAVID MAIDMENT**, Univ. of Texas, Austin
- **DAVID MOREAU**, Univ. of North Carolina, Chapel Hill
- **SCOTT NIXON**, Univ. of Rhode Island, Kingston, *through May 2012*
- **RAMESH REDDY**, Univ. of Florida, Gainesville
- **HELEN REGAN**, Univ. of California, Riverside
- **ELISKA REJMANKOVA**, Univ. of California, Davis
- **JEFFREY WALTERS**, Virginia Tech, Blacksburg

NRC Staff:
Stephanie Johnson, David Policansky (BEST), Michael Stoever, and Sarah Brennan

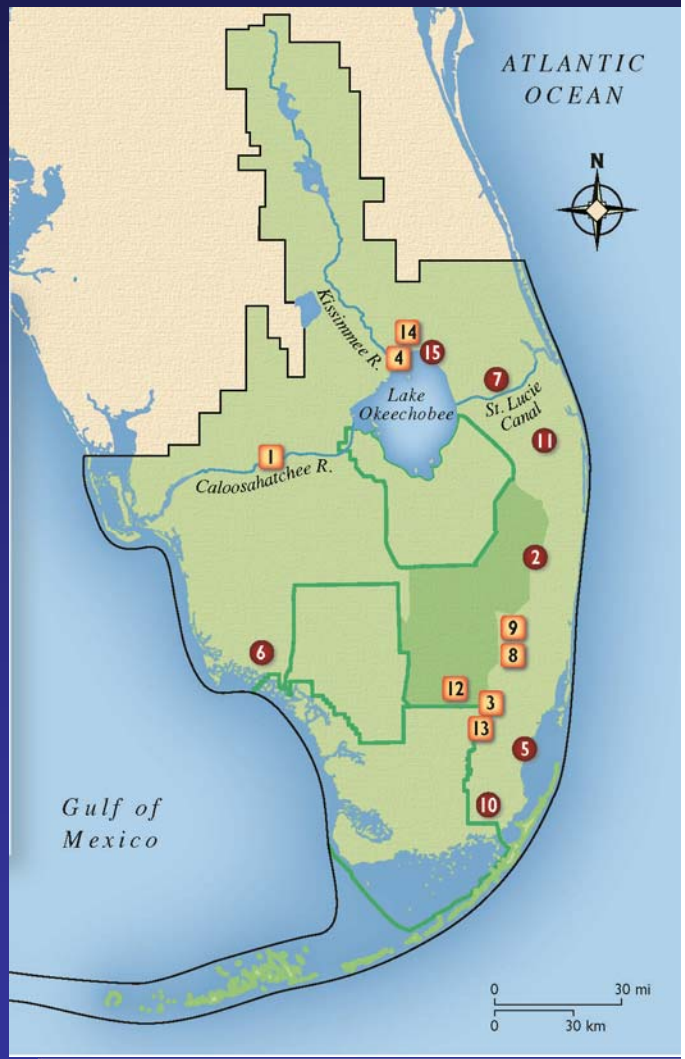
Restoration Progress

During the past two years, notable progress has been made in the construction of Everglades restoration projects

Eight CERP projects now under construction.

- Four 1st generation projects (Picayune Strand, Site 1, IRL-S, Melaleuca Eradic.);
- Two 2nd generation (C-111 SC, Biscayne Bay Coastal Wetlands).
- Two 3rd generation (Loxahatchee River and Lakeside Ranch)

Production of restoration benefits within the WCAs and Everglades National Park continues to lag behind.



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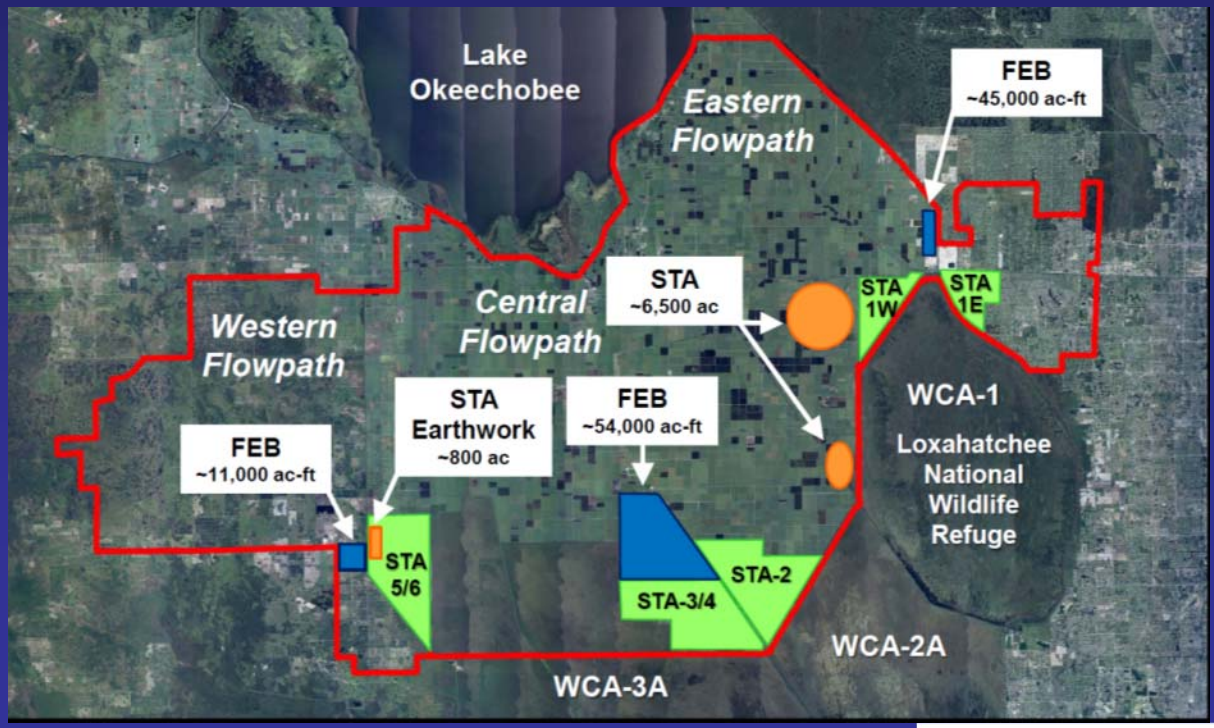
Significant Accomplishments

State-proposed projects to improve water quality represent an important step forward

- Critical implications for restoration of attributes in the central Everglades impacted by high levels of phosphorus.



Significant Accomplishments

The **Central Everglades Planning Project** provides a means to expedite restoration benefits to the remnant Everglades

- Responsive to earlier committee concerns
- Addresses impediments inherent in the USACE project planning and approval process.
- Too early to review CEPP plans

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Funding and Authorization Challenges

State funding declines have shifted responsibility for implementation progress to federal government

- State has vastly outspent federal government
- If the pace of restoration progress is to be maintained, an increased level of federal funding will be necessary

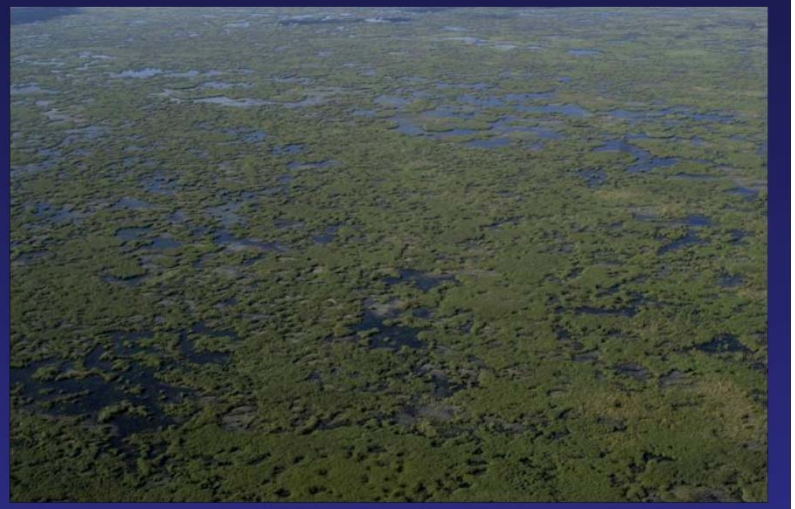
Project authorization could soon become a major impediment to restoration progress.

- Only 4 authorized projects eligible for federal construction spending
- With no additional authorization and current federal spending rates, federal credits would exceed state's in ~3 years

Scientific Foundation for Decision Making

- Science synthesis efforts are an impressive accomplishment
  - However, clearer acknowledgment of conflicts and implicit tradeoffs needed
- Recent large monitoring cuts pose a risk to system-wide assessment.
- A comprehensive assessment of monitoring efforts is needed
  - To ensure short- and long-term needs are met
  - To ensure gaps are addressed in the most cost-effective manner
  - Should consider all CERP-related monitoring programs

Trajectories Analysis



Described current status, trends, and timescales of recovery for 10 attributes

Considered impacts under 3 hypothetical scenarios:

1. Improved water quality (with no hydrologic improvement)
2. Improved hydrology (with no additional WQ treatment)
3. Improved hydrology and water quality

Trajectories

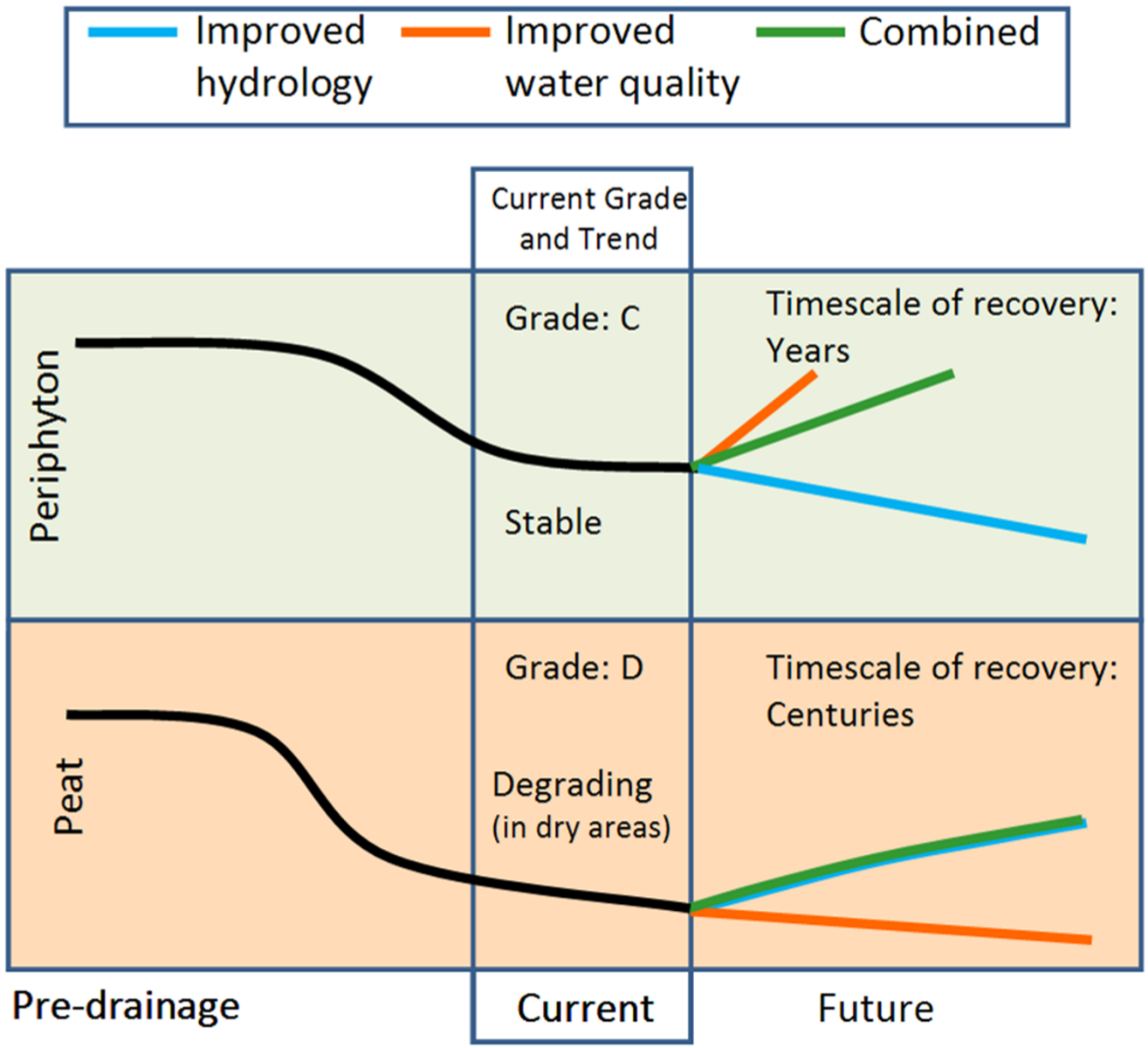


TABLE 4-1 Summary of Trajectories of Different Ecosystem Attributes in the Current System and under Three Restoration Scenarios

Attribute	Current "Grade" of System (A to F)	Current System Trend	Effects of Restoration Scenarios on Current Trends			Timescales of Recovery
			(1) Effect of Improved Water Quality	(2) Effect of Improved Hydrology	(3) Effect of Improvements in BOTH Water Quality and Hydrology	
Stressors						
TP load	C	Stable to Improving	++	--	+	Years
Interior TP conc.	B to C	Stable to Improving	++	-	+	Decades
Soil P	C	Stabilizing	+	--	+	Decades to centuries
Ecosystem condition						
Cattail	C	Degrading, but degradation slowing in some areas	+	--	+	Decades to centuries (years if actively managed)
Periphyton	C	Stable	++	--	+	Years. Recovered communities may not be the same as prior to disturbance
Peat	D	Degrading in dry areas	0	++	++	Centuries
Tree islands	D	Degrading	0	+	+	Decades to centuries; may require active restoration
Ridge and slough	D	Degrading	0	+	++	Centuries; could involve adaptive management
Snail kite	F	Degrading	0	+	+	Years to irreversible
Fish mercury	D	Stable	-	+	+	Years to decades

Overall Summary

- Pace of restoration implementation has improved, but has focused on periphery of remnant Everglades.
- Substantial progress has been made to reduce phosphorus.
- Minimal progress to restore hydrology and declines of hydrology-dependent features (tree islands, peat, ridge and slough, snail kite) continue. Most take long timeframes to recover.
- Declines will continue unless both hydrology and water quality can be addressed

Overall Summary (cont.)

New strategy needed that:

1. Focuses on the core of the historic Everglades
2. Integrates analyses of water quality and quantity to explore opportunities to accelerate restoration
3. Avoids costly and unproductive delays in planning and authorization

Central Everglades Planning Project is a step in right direction