

Progress Toward Restoring the Everglades:

A Challenge Being Addressed by the National Academies

Stephanie Johnson
Study Director

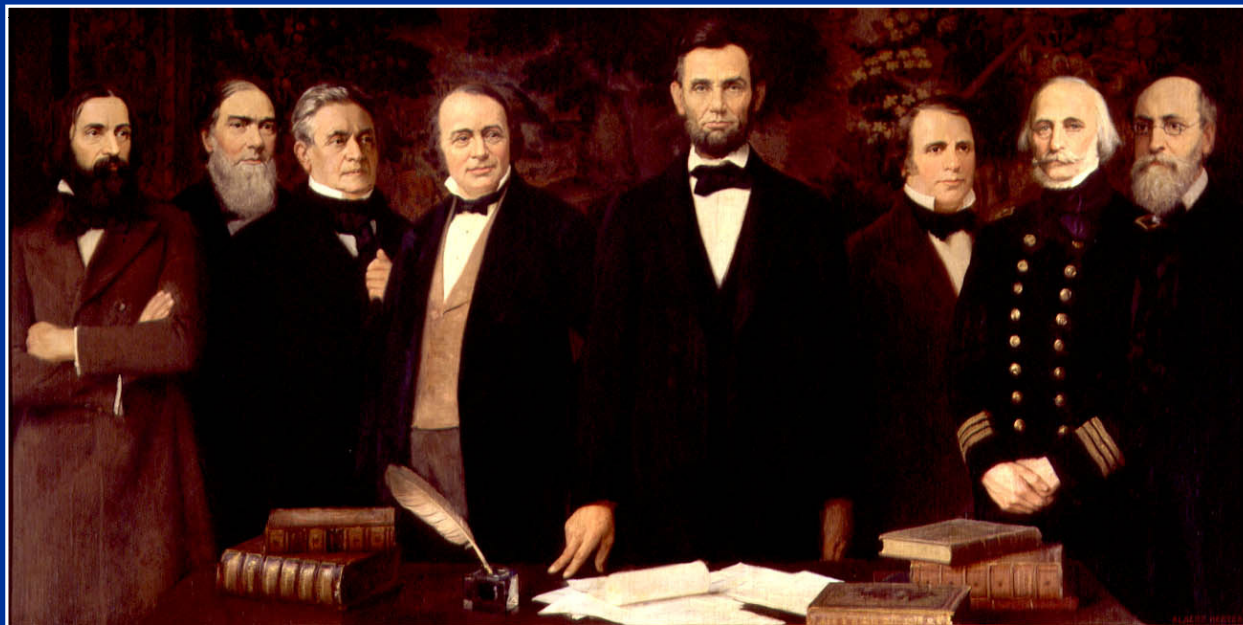
GEER 2008

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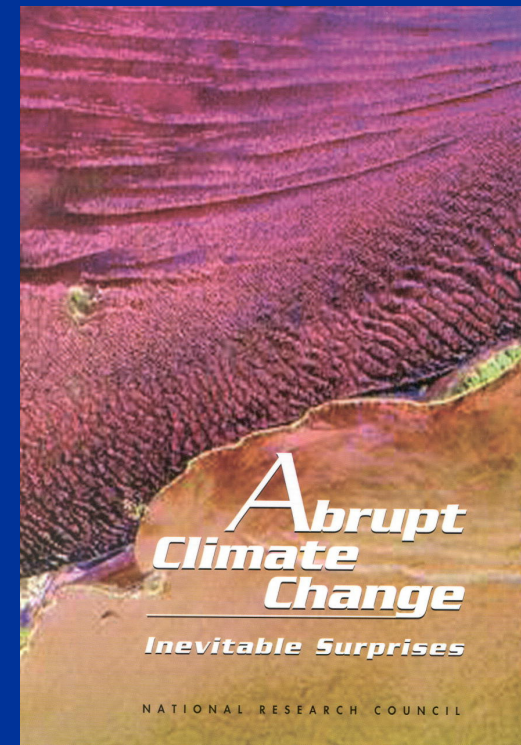
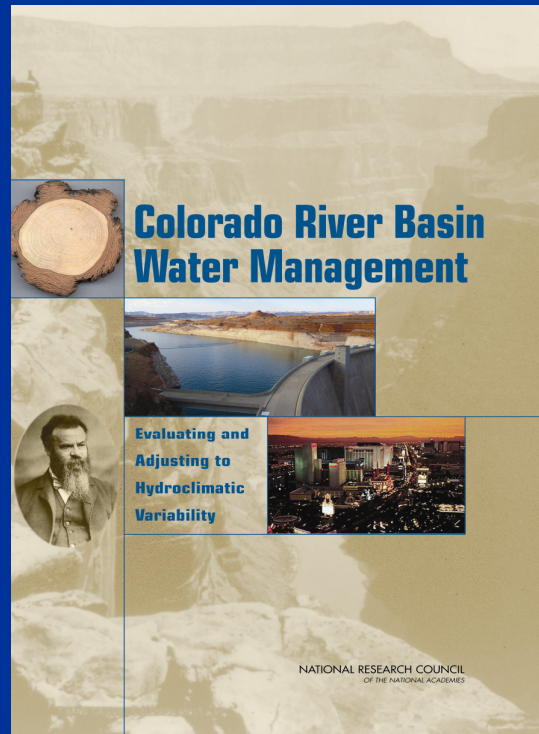
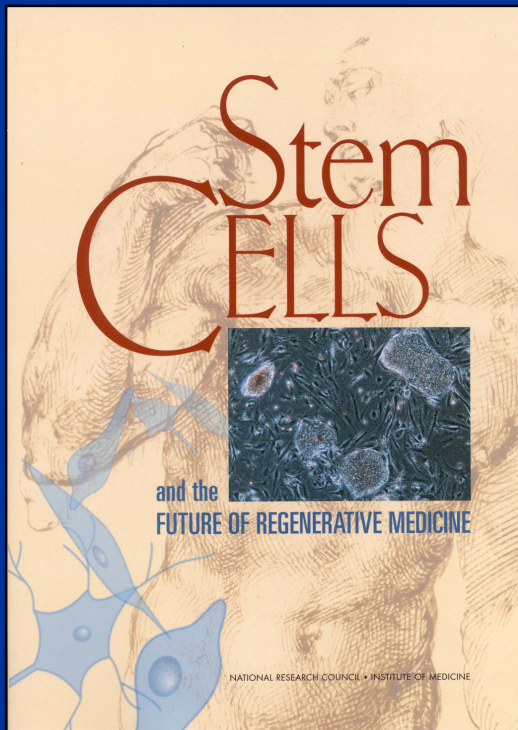
National Research Council

- >500 Committees
- ~6,000 Volunteers
- Non-governmental organization
- \$250 Million annual budget
 - no direct appropriations to support operations
 - ~70% from the federal government



National Research Council Reports

- NRC creates about a report a day on issues in science, technology, medicine, social science, and education.



NRC Everglades Studies 1999-2008

CROGEE

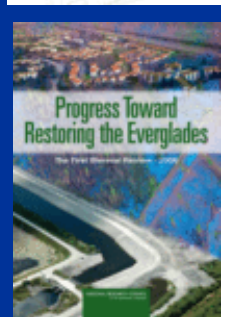
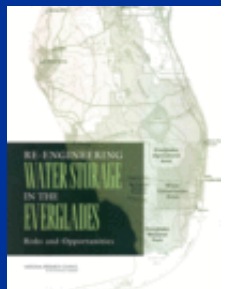
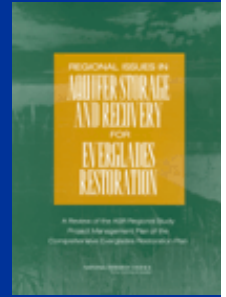
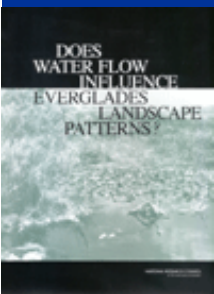
- Aquifer Storage and Recovery (2001)
- Regional Issues in ASR (2002)
- Florida Bay Research Programs (2002)
- Adaptive Monitoring and Assessment (2003)
- Does Flow Influence Everglades Landscape? (2003)
- Re-Engineering Water Storage (2005)

CESI panel

- Assessment of the Critical Ecosystem Studies Initiative (2003)

CISRERP

- Progress Toward Restoring the Everglades: The First Biennial Review, 2006
- The Second Biennial Review, anticipated Sept. 2008



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

- **Congressionally mandated study of the CERP under WRDA 2000:**

“The Secretary... 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 Corps, with funding support from DOI and SFWMD**



Committee Charge

Produce reports every two years that:

- 1) Assess progress in restoring the natural system
- 2) Discuss significant accomplishments of the restoration;
- 3) Discuss and evaluate scientific and engineering issues that may impact natural system restoration progress; and
- 4) Review monitoring and assessment protocols for evaluation of CERP progress

Committee Membership

CISRERP I (2004-2006)

Barbara Bedford
Dominic Dottavio
Jack Liu
Gordon Orians
Suresh Rao
Leonard Shabman
Jeff Walters

Wayne Huber*
Will Graf**
Linda Blum
Don Boesch
Chris Hendrickson

CISRERP II (2006-2008)

Steve Beissinger
Frank Davis
Charles Driscoll
Joan Ehrenfeld
William Horn
David Moreau
Jean-Yves Parlange
Ramesh Reddy

* Chair, CISRERP I

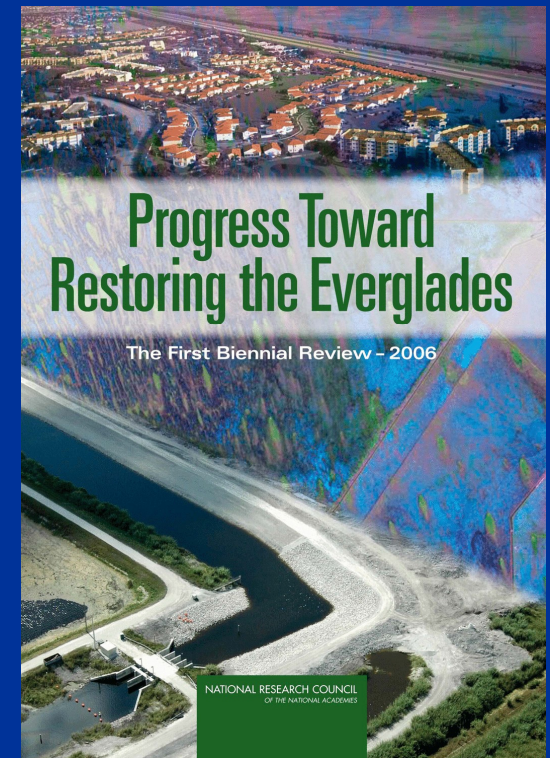
* Chair, CISRERP II

Study Process

- 7 meetings (5 information gathering) including public comment sessions and field trips
- Briefings/presentations from ~50 individuals and ~15 agencies/organizations
- Peer-reviewed consensus report
- Report intended to be useful to Congress
- Other audiences: CERP agencies, stakeholders, general public

1st Biennial Review: Context for Committee Findings

- Restoration will be best served by moving as quickly as possible toward the conditions that molded and maintained the historical Everglades.
- Until greater restoration progress is made, the Everglades landscape will move away from conditions that support the defining ecosystem processes.



Assessment of Natural System Restoration Progress

Too early to evaluate, because no
CERP projects constructed

Promising non-CERP examples include:

- Kissimmee River restoration
- Stormwater treatment areas (STAs) and best management practices have proven remarkably effective
- Major Mod Waters hurdles overcome?

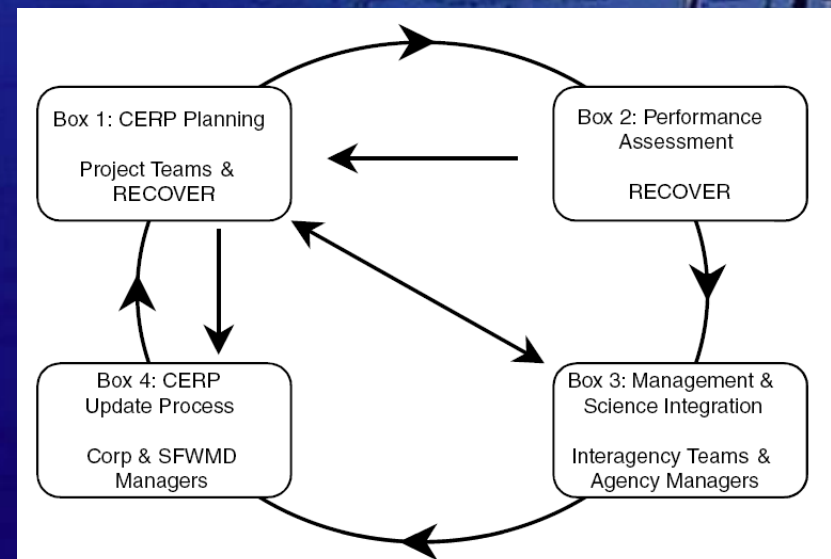


Accomplishments in the Use of Science in Decision Making

- **Monitoring and Assessment Plan (MAP) is a well-designed, statistically defensible plan and an ambitious assessment strategy.**
 - Implementation slow, additional staff needed
 - Continue to reduce the number of performance measures and develop some whole-system performance measures.
- **Models critical to CERP and adaptive mgmt**
 - Impressive array of hydrologic models.
 - Ecological model development lagging.
 - Improved model linkages needed.

Accomplishments in the Use of Science in Decision Making: The AM Strategy

- Adaptive Management (AM) Strategy provides sound model for a passive AM program.
 - Multi-level decision-making linkages in AM Strategy require further development.
 - AM Strategy should be implemented soon to test and refine approach.
- Committee encourages active adaptive mgmt
- Willingness of agencies to make major changes unknown

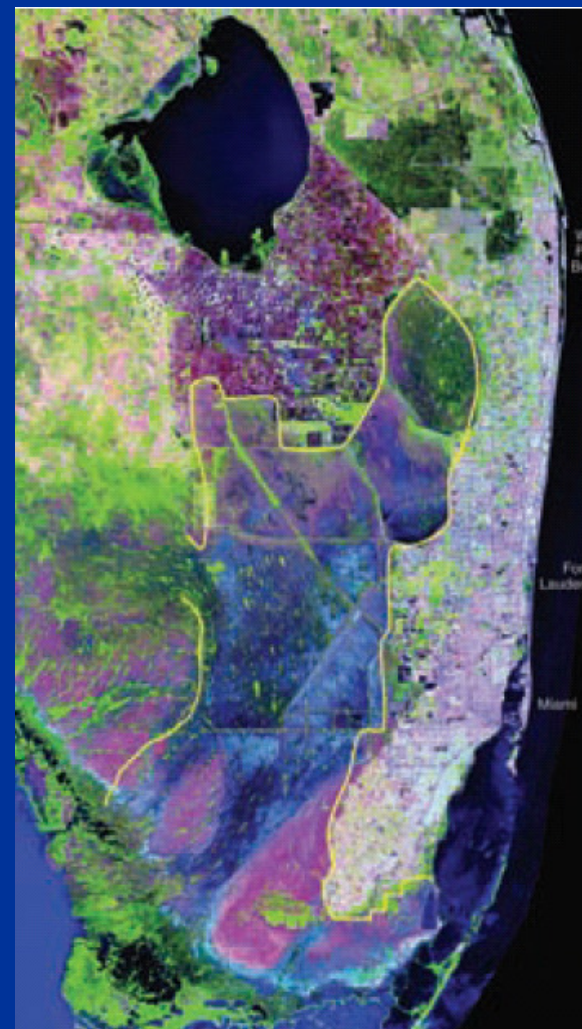


Progress in CERP Implementation: Land Acquisition

- Commendable effort: 51% of land acquired (2006).
- Cost for remainder rising rapidly.

Active land acquisition efforts should be continued

Recommended monitoring and regular reporting on land-conversion patterns within the S. Florida ecosystem.



Progress in CERP Implementation: Schedule

- Progress made on planning, coordination, and program management in CERP.
- Significant delays in project implementation:
 - Lengthy review and comment process,
 - The need to resolve stakeholder and agency disagreements,
 - Budgetary and personnel restrictions,
 - A budgetary and planning process that can be stalled by major scientific uncertainties.

No significant scientific uncertainties should stand in the way of restoration progress.

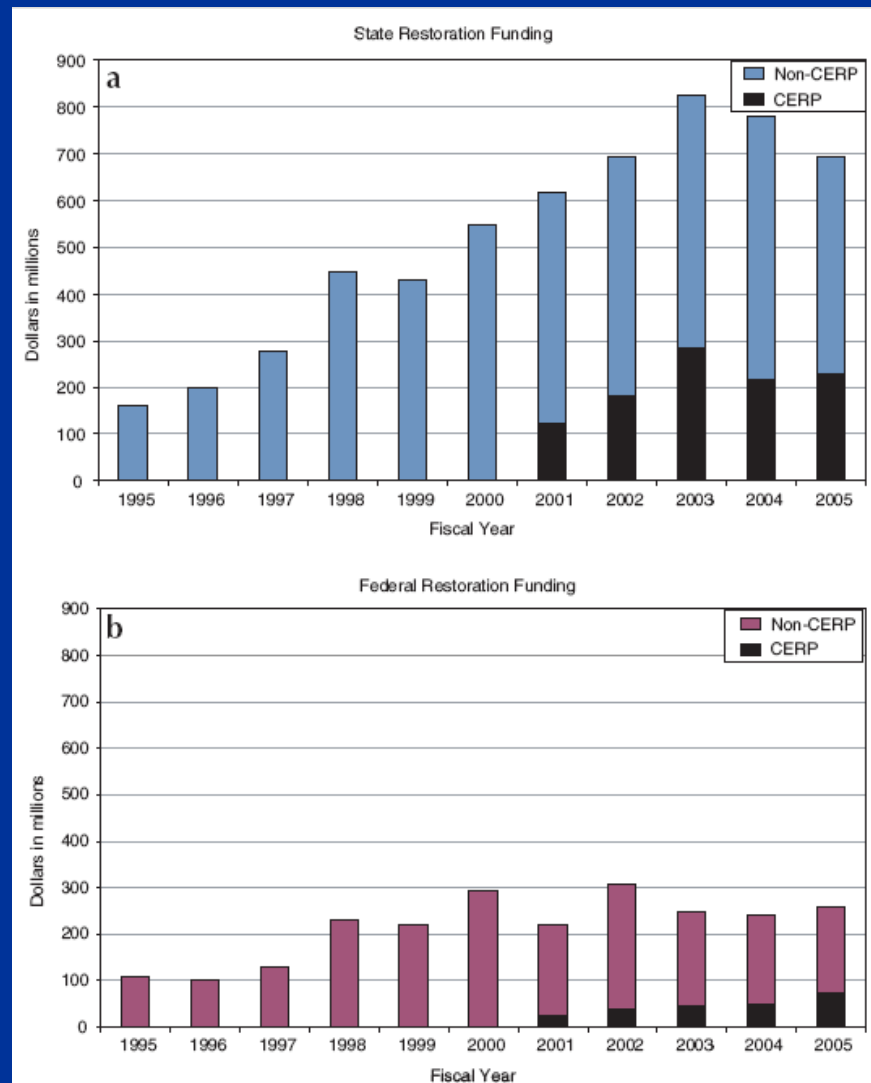
Progress in CERP Implementation

Production of natural system benefits within the remnant Everglades ecosystem is lagging behind other areas (Lake Okeechobee, estuaries)

- Benefits to central/southern Everglades from water storage projects uncertain because determinations on water allocations have not been finalized.

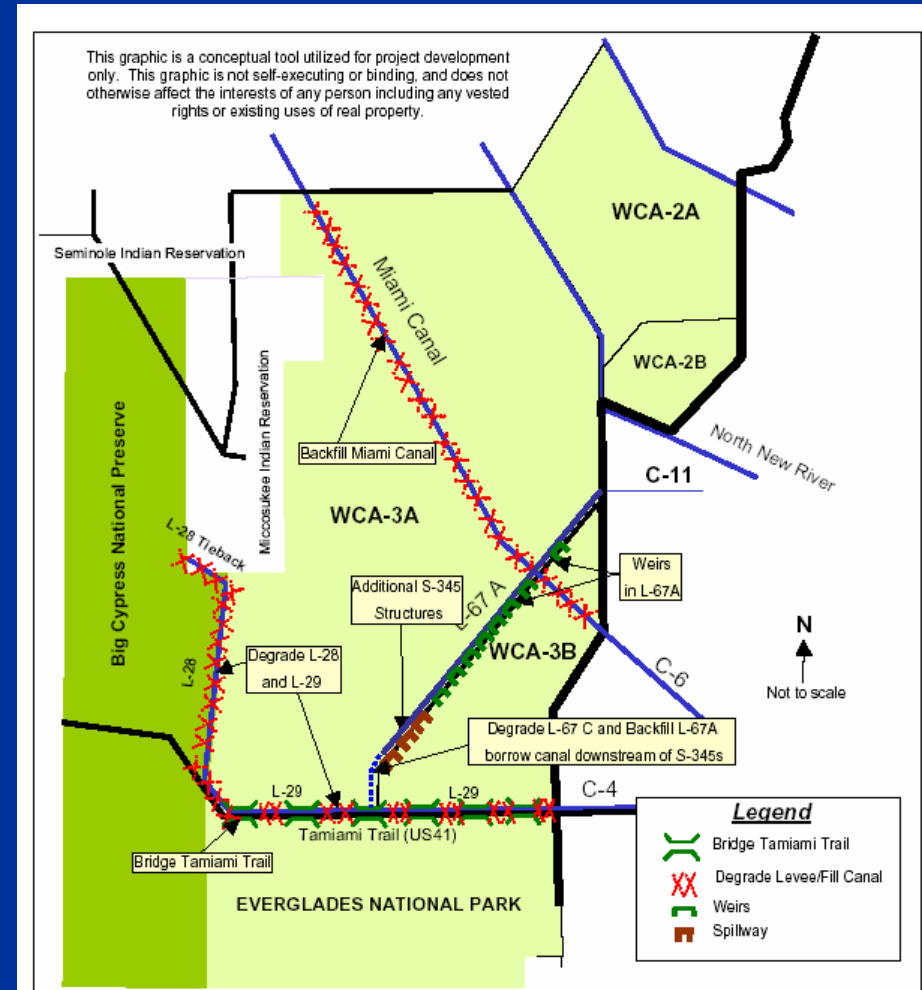
Progress in CERP Implementation: State-Federal Partnership

- Significant challenge to maintaining federal-state partnership and stakeholders coalition
- If federal funding is not increased, restoration focused on federal interests may not be completed in a timely way.



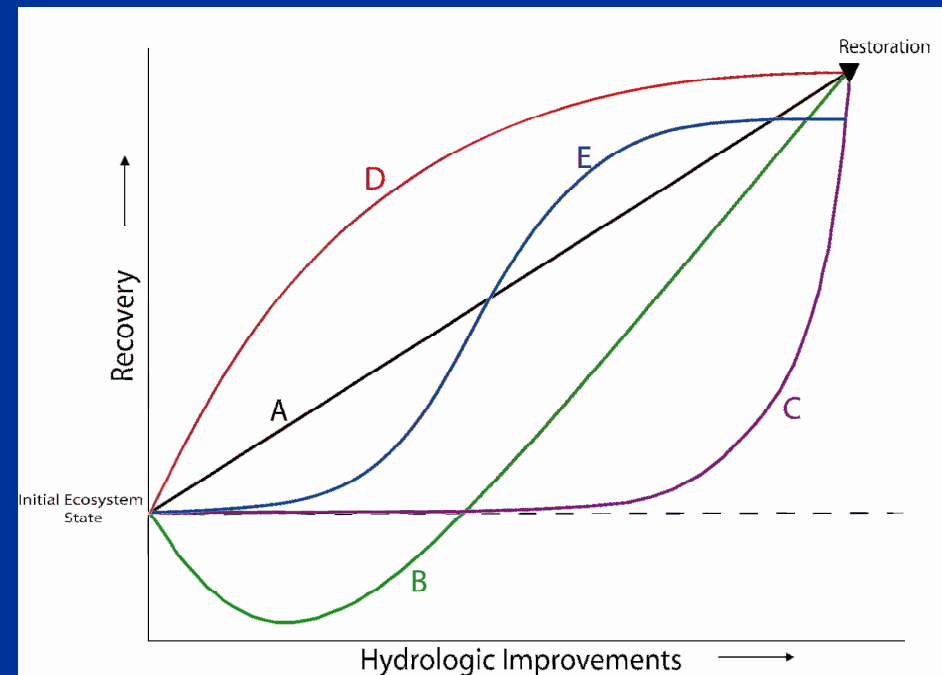
Status of CERP Implementation: WCA 3 Decompartmentalization

- Notable delays
- Conflicts over uncertainties as to costs/benefits
- Sequential nature of CERP creates inherent delays
- Decomp Physical Model may help move project forward



Incremental Adaptive Restoration (IAR)

- IAR makes incremental restoration investments
 - Large enough to secure environmental benefits, while resolving scientific uncertainties
 - Learning as a benefit
 - Guides remainder of project design
 - Helps resolve conflicts
 - May reduce costs



1st Biennial Review: Overall Summary

- Groundwork (scientific, legislative, administrative) laid for Everglades restoration.
- No CERP projects yet constructed and project implementation uneven.
- Benefits from early water storage projects uncertain.
- Delays impact delivery of environmental benefits and potentially compromise public support.
- Incremental Adaptive Restoration provides a means to overcome some sources of delay.



What's Next?

- 2nd biennial report anticipated in late September, 2008
- Email distribution (contact dweir@nas.edu)
- 3rd CISRERP to convene, Winter '08/09
- Project updates at www.nationalacademies.org
(*see current projects*)
- For PDF of report, see www.nap.edu



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