

South Florida Natural
Resources Center

Everglades National Park

National Park Service
U.S. Department of the Interior



Everglades Freshwater Synthesis
Critical Ecosystems Studies Initiative

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Large-Scale Science Review Efforts Currently Underway

Four ongoing studies involve a review of more recent (post WRDA 2000) scientific studies and how this information can be better integrated to improve restoration decision making.

- ***Shared Definition of Everglades Restoration (Recover)***
- ***River of Grass Initiative phase I&II planning (SFWMD/FDEP)***
- ***Marine and Estuarine Goal Setting (MARES/NOAA)***
- ***Everglades Freshwater Synthesis (DOI/CESI)***

These efforts have somewhat different purposes, scopes, geographic areas, and schedules.

The Critical Ecosystem Studies Initiative (CESI)

Foundation – SFERTF /Science Subgroup, 1996

*“The overall objective of the Science Subgroup is to develop an interagency, interdisciplinary science program that will **guide restoration actions by determining relationships between ecosystem function and hydrologic regime...**”*

DOI's Contribution to Ecosystem Science CESI and PES

CESI Purposes and Objectives:

- understand how the natural system originally functioned
- identify the ways in which it is now impaired
- Define/evaluate viable options for ecosystem restoration.

Formal Peer review by the National Research Council in 2003

- the fundamental purposes and objectives of the CESI research program are sound and should remain intact.
- the commitment to ecosystem research in addition to model development and environmental assessments, needs to be continued.
- CESI should create a more open process to engage a broader range of scientists in Everglades research and monitoring (Broad Agency Announcement).

CESI Science Projects: FY2009 –2015

Basic Research, Monitoring, Modeling, Assessments

- Hydrologic and Ecological Modeling: Tool Development
- Water Management Operations and Climatic Variability: Applications
- Climate Change and Sea Level Rise in Everglades Restoration
- Invasive Exotic Organisms (both Plant and Animal)
- Avian Ecology and Multi-species Management
- A Synthesis of Freshwater Everglades Research
- Expanded Water Quality Studies in the Everglades
- Examination of the Legal and Policy Framework within DOI and its adequacy for support of landscape scale ecological restoration

Need for a Freshwater Synthesis

- \$80 million in overall CESI funding to support roughly 300 projects, spanning 14 years
- Previous examples of CESI supported synthesis projects:
 - Hydrology/Nutrients and Ecosystem Function, Hydrobiologia, 2006 (FCE/LTER)
 - Synthesis of Research on Florida Bay, FWRI Tech. Rept., 2007 (FB/PMC)
 - Indicators for Everglades Restoration, Ecological Indicators, 2009 (SFERTF/SCG)

Freshwater Synthesis Project Pathway

- January 2009 NPS Broad Agency Announcement (RFP equivalent).
- Everglades Foundation proposal was selected, Task Agreement signed in Dec 2009.
- 2-year Project Duration
 - Phase 1 Literature review/synthesis of Everglades science based on key science/management questions.
 - Phase 2 Analysis of restoration options (end states of a restored ecosystem).