

# Everglades Freshwater Synthesis

## A cooperative science initiative

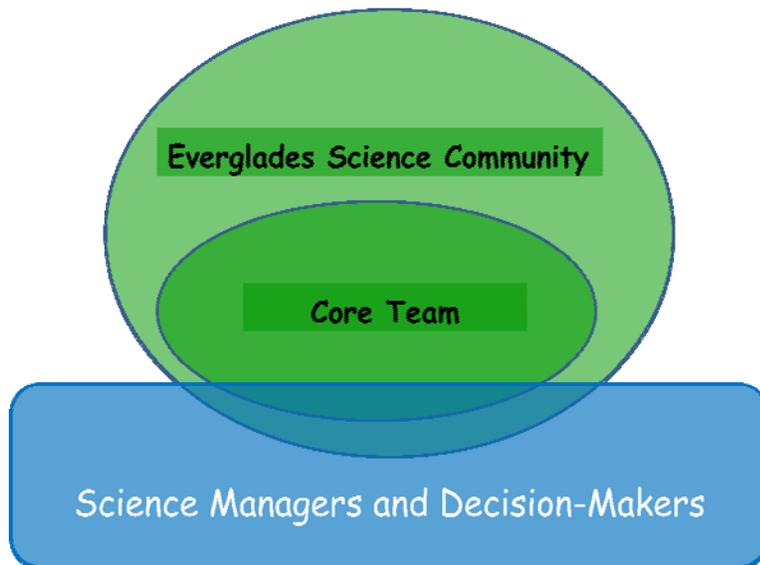
### Project Goals and Objectives

The goal of the Everglades Freshwater Synthesis project is to gather and synthesize recent scientific information on the Everglades freshwater ecosystem, and to communicate that science in a way that is relevant to restoration managers and decision makers. There are three major objectives of the project that contribute to this goal.

1. To define key science questions that have relevance to restoration managers and decision makers.
2. To review and synthesize recent science pertinent to those key questions, and pertinent to the refinement of long-term restoration goals and targets in South Florida,
3. To outline restoration options around the key questions, and describe the ecosystem consequences of various restoration actions.

### How the Project will Work

This project depends on a core, interdisciplinary team of scientists, who will interact with science managers, restoration decision-makers, and the broader Everglades science community. The Core Team is responsible for the scientific direction of the project, and the production of written



technical reports. This team is composed of about 20 members from the major research disciplines, including disciplines, including subdisciplines of the physical, biological and chemical/nutrient sciences. The members include university staff/faculty, consultants, scientific/technical staff of environmental organizations and staff from government agencies. This group will organize workshops, conduct the required analyses, and write the technical reports.

A second group is the larger Everglades Science community.

This group is a primary source for peer review of draft documents and publications generated by this project, and thus this group will contribute to the scientific vision, and scientific quality of the analyses. This group is flexible in size and composition, and represents scientists that can make valuable contributions to the synthesis effort, and who can provide insight, and experience. The larger Everglades science community will be invited to participate at workshops during this project, and their ideas and knowledge will be acquired via input at the workshops, invited comments and peer review.

A group that is a foundation for the success of this project is the community of restoration science managers, and restoration decision-makers. This group will be invited to participate early in the project through the development of the key science questions. We anticipate interaction with science and restoration managers throughout the project, via targeted consultations and briefings to individuals and management groups.

## **Project Implementation**

### **Phase 1: Key Science Management Questions and Literature Synthesis**

The project has a series of proposed draft questions around which the subsequent literature reviews, and options analyses may take place. These draft questions are:

- What are the ecological consequences of storing varying amounts of water for delivery during drought times?
- What are the ecological consequences of very wet years in the Everglades? How do these consequences change with decompartmentalization of the system? How do these consequences change with differing distributions of the water from west to east?
- For the Everglades, what are the ecosystem consequences of a range of nutrient loading scenarios associated with different flow regimes?
- How can we address specific hydrologic or ecological trade-off issues that are currently in the mix of decision-making in Everglades restoration?
  - How can the hydrologic requirements of different endangered species be addressed within one restored ecosystem?
  - How is the community ecology of Everglades tree islands at the landscape level affected by different restoration scenarios?
- How will climate change affect the Everglades ecosystem, and how might climate change interact with different scenarios of hydrologic restoration?

The second activity in the initial phase brings together the recent science that is pertinent to addressing the key science management questions. The members of the Core Team will be organized into sub-teams dedicated to synthesize recent science as it applies to a particular key question. This literature review differs from the more classic format of reviewing science on topical areas: it is envisioned that in order to address the literature on the key questions, several topical areas will be synthesized in one document.

A third activity in this phase is to develop a working framework for analyzing restoration options, and to select a small suite of restoration scenarios based on the key science management questions. This activity will form the basis for the Core Team to begin Phase 2 of the project.

### **Phase 2: Restoration options and ecological outcomes analyses**

In the second phase of the project, the Core Team will analyze the restoration options, to provide insight into the key science questions. The intent is to provide a system-wide holistic approach to examining physical and ecological outcomes based on the small suite of restoration options selected. Technical reports will be peer reviewed, finalized, and also will be summarized in shorter, graphical documents oriented for communication with managers and decision-makers. The final results of the project will be presented during the last quarter of 2011, and at the Greater Everglades Ecosystem Restoration Conference of 2012.

## **Proposed Project Schedule**

Targeted briefings and project presentation to Everglades Restoration Community  
January – February 2010

Process to develop Key Science Management Questions  
February – March 2010

Core Team works to develop literature synthesis around the Key Science Management Questions  
March – June 2010

Workshop at the Greater Everglades Ecosystem Restoration Conference, Naples, FL  
July 2010

Peer review and final drafts of literature syntheses  
July – September 2010

Workshop and process to develop evaluation framework for restoration scenarios, plus targeted briefings to science managers and restoration decision-makers  
October – December 2010

Analysis of ecosystem outcomes for the restoration scenarios  
January – June 2011

Peer review and final drafts of restoration scenario analysis  
July – September 2011

Targeted briefings and workshop to present project results  
October – December 2011

## **Responsible Organizations**

Primary funding for this project is provided by the U.S. National Park Service Critical Ecosystems Studies Initiative (CESI), via a task agreement with the Everglades Foundation. Additional contributions are made from the U.S. Geological Survey.

The U.S. National Park Service preserves unimpaired the natural and cultural resources and values of the national park system, for the enjoyment, education and inspiration of this and future generations.

The Everglades Foundation, Inc. is a 501(c)(3) not-for-profit, charitable organization dedicated to advancing an understanding of the Greater Everglades Ecosystem and its irreplaceable environmental and economic value.

For more information, contact:

Dr. Jerome Krueger, Science Coordinator, and Cooperative Agreement Representative, Everglades National Park, 305-224-4245, [Jerome.krueger@nps.gov](mailto:Jerome.krueger@nps.gov)

Dr. Thomas van Lent, Chief Scientist, The Everglades Foundation, 305-251-0304, [tvanlent@evergladesfoundation.org](mailto:tvanlent@evergladesfoundation.org)