



RECOVER

Ten Years Later

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What is RECOVER?

- ❖ Restoration **C**oordination and **V**erification
- ❖ An interagency, interdisciplinary team of scientists, modelers, planners, and resource specialists
- ❖ Organizes and applies scientific and technical information on a system-wide scale to support the objectives of CERP

***Rescuing an Endangered Ecosystem:
The Plan to Restore America's
Everglades***



***The Central and Southern Florida Project
Comprehensive Review Study
(The Restudy)***

July 1999

On December 11, 2000, the President signed the Water Resources Development Act of 2000, approving:

Comprehensive Everglades Restoration Plan (CERP)

A series of environmental and other improvements over 30+ years with an estimated cost of \$7.8 billion





What is CERP?

A program providing for the restoration, preservation and protection of the south Florida ecosystem while providing for other water-related needs of the region.

A series of separate projects tied together with a programmatic umbrella:

- Surface Storage
- Aquifer Storage and Recovery
- Stormwater Treatment Areas
- Wastewater Reuse
- Seepage Management
- Decompartmentalization
- Operational Modifications





“The Committee does not expect rigid adherence to the Plan as it was submitted to Congress. This result would be inconsistent with the adaptive assessment principles in the Plan....Instead the Committee expects that the agencies....**will seek continuous improvements of the Plan** based on new information, improved modeling, new technology and changed circumstances.”

***Adaptive Management
- the key to CERP
implementation***

**Senate Committee on
Environment and Public
Works
July 27, 2000**



Why Adaptive Management?

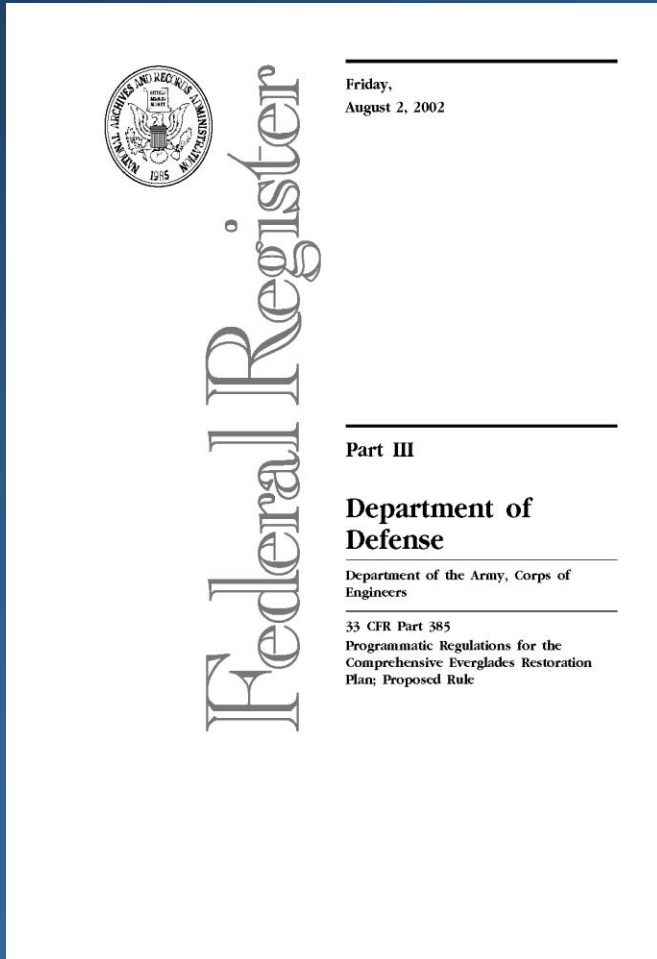
- ❖ Conceptual nature of Comprehensive Plan
- ❖ Technology uncertainties
- ❖ Modeling uncertainties
- ❖ Ecologic response uncertainties



Integrated Processes – Programmatic Regulations

Establish Processes :

- To ensure that the goals and purposes of the Plan are achieved
- To ensure that new information, including information developed through the principles of adaptive management, is integrated into the implementation of the Plan
- To ensure protection of the natural system, including establishment of interim goals by which restoration success of the Plan may be evaluated throughout implementation process





Why *RECOVER*?

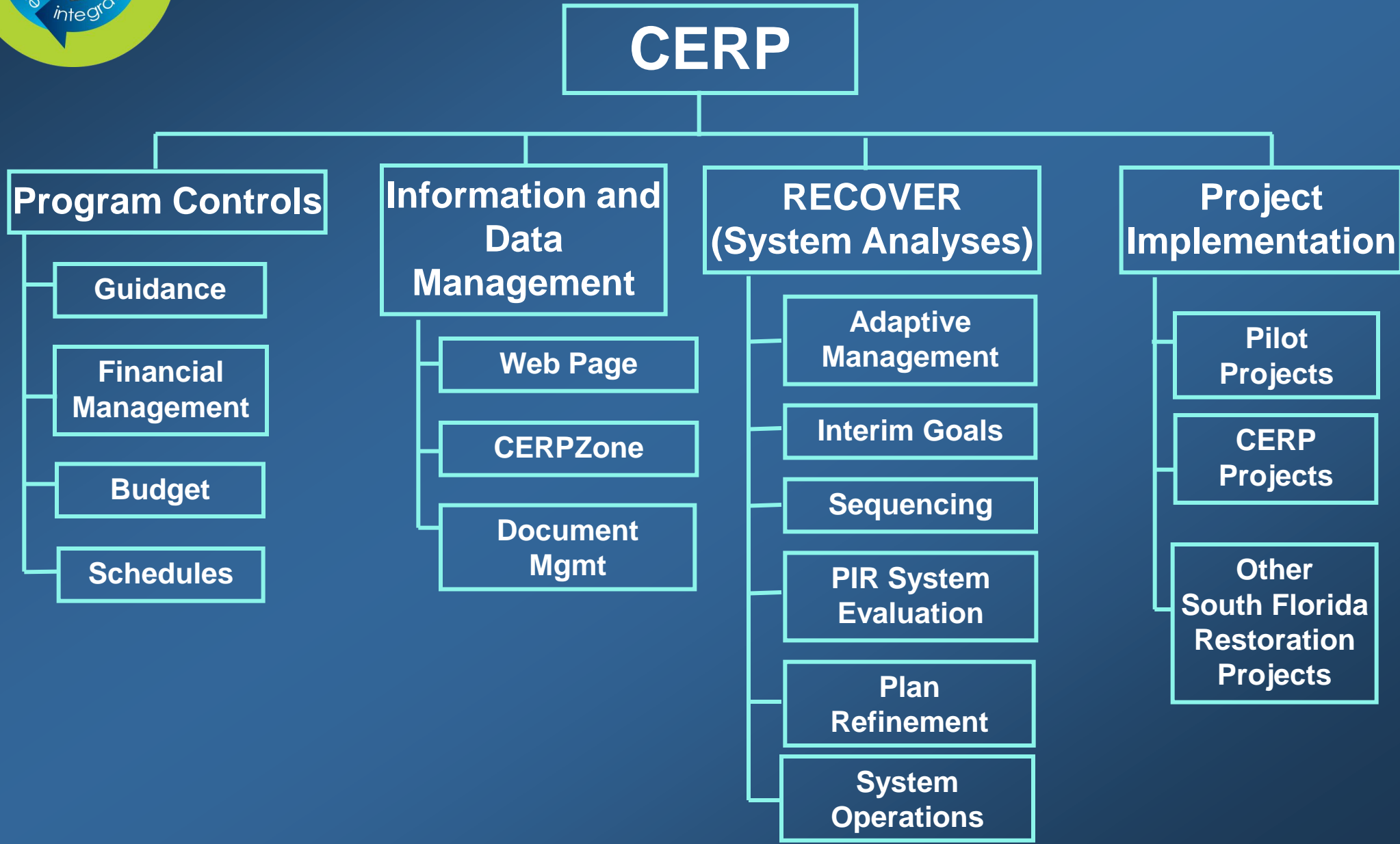
RECOVER provides CERP:

- ✦ Sound science on which to base management decisions
- ✦ A collaborative interagency, intergovernmental effort
- ✦ Best available science critical to project and program level plan formulation and evaluation
- ✦ Assurance that CERP projects work together
- ✦ New information to improve CERP performance
- ✦ Verification of restoration progress

NOTE: Products have been well received by The National Academies (NRC, 2006)



Program Implementation





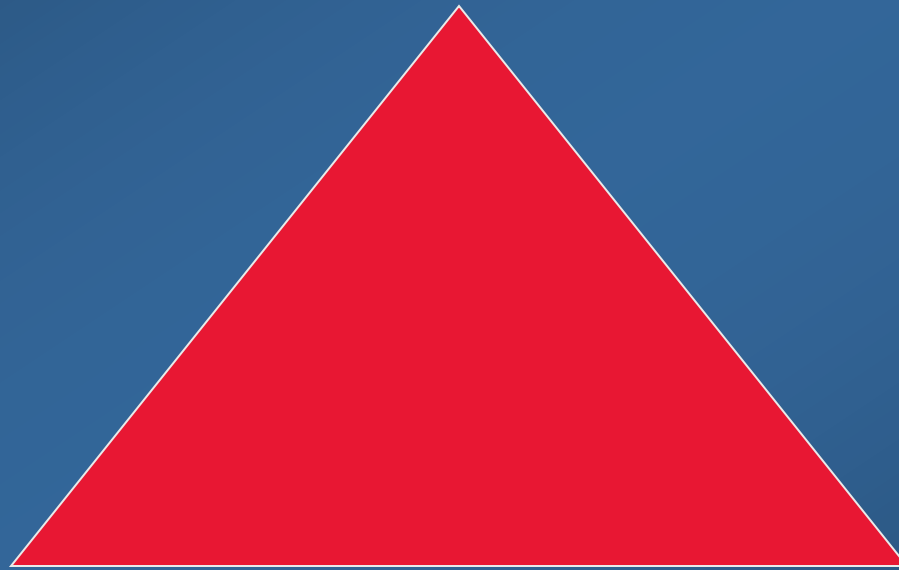
Three RECOVER Missions

- ❖ **Evaluation (pre-construction)** - To work with Project Delivery Teams to evaluate (through modeling) and maximize the contribution made by each project to the system-wide performance of CERP
- ❖ **Assessment (post-construction)** - To measure (through monitoring) and interpret actual responses in the natural and human systems as CERP projects are brought on line
- ❖ **Planning and Integration** - To identify potential improvements in the Plan, consistent with the goals and purposes of the Plan, and to ensure that the components of the Plan are integrated



RECOVER Values Triangle

Science



Products/Schedule

Fair Process



RECOVER Membership

- ❖ US Army Corps of Engineers
- ❖ South Florida Water Management District
- ❖ National Park Service
- ❖ U.S. Fish & Wildlife Service
- ❖ U.S. Environmental Protection Agency
- ❖ National Oceanic and Atmospheric Administration
- ❖ Florida Department of Environmental Protection
- ❖ Florida Department of Agriculture & Consumer Services
- ❖ Seminole Tribe of Florida
- ❖ Miccosukee Tribe of Indians of Florida
- ❖ U.S. Geological Survey
- ❖ Florida Fish & Wildlife Conservation Commission



RECOVER Leadership Group

- **“Board of Directors” for RECOVER**
- **Approves RECOVER annual work plan**
- **Coordinates agency resources**
- **Ensures quality of RECOVER products (document approval; independent scientific review)**
- **Forum for agency perspectives and elevation of issues to management**
- **Membership established in CERP Programmatic Regulations (33 CFR 385.20(d)(2))**
- **Decision-making by consensus**

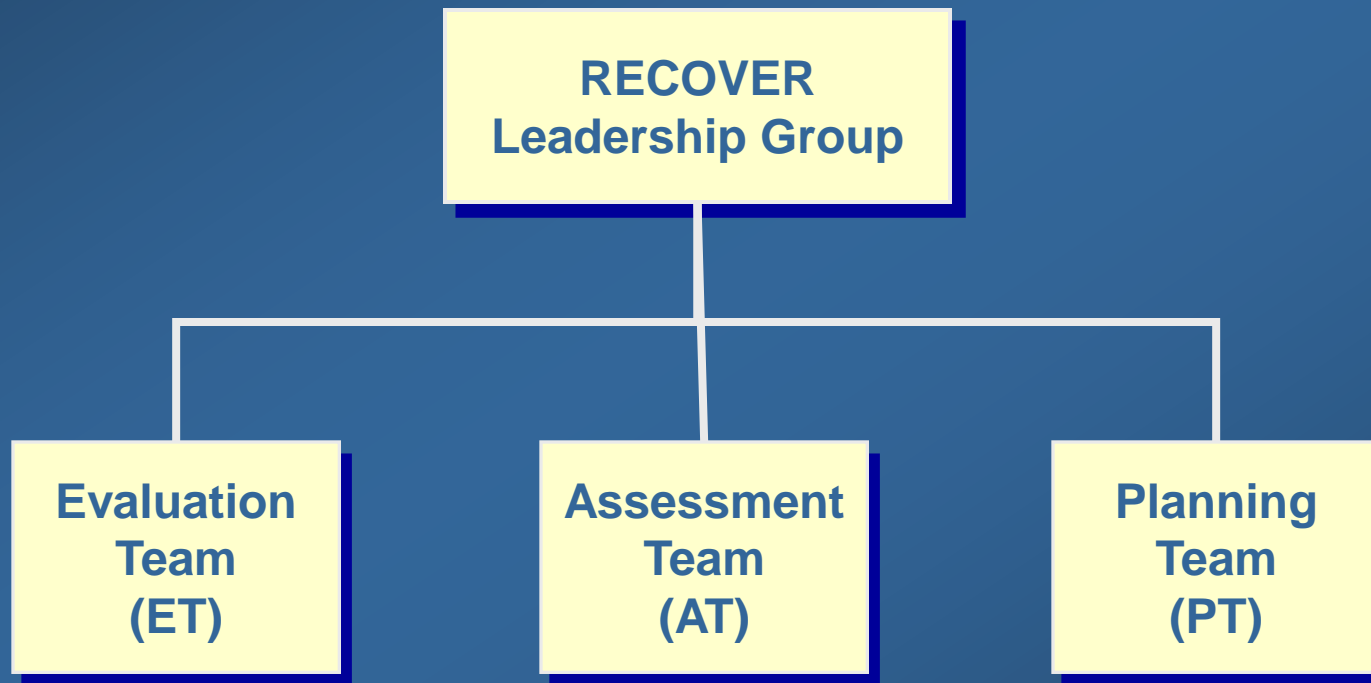


RECOVER Structure - 2002



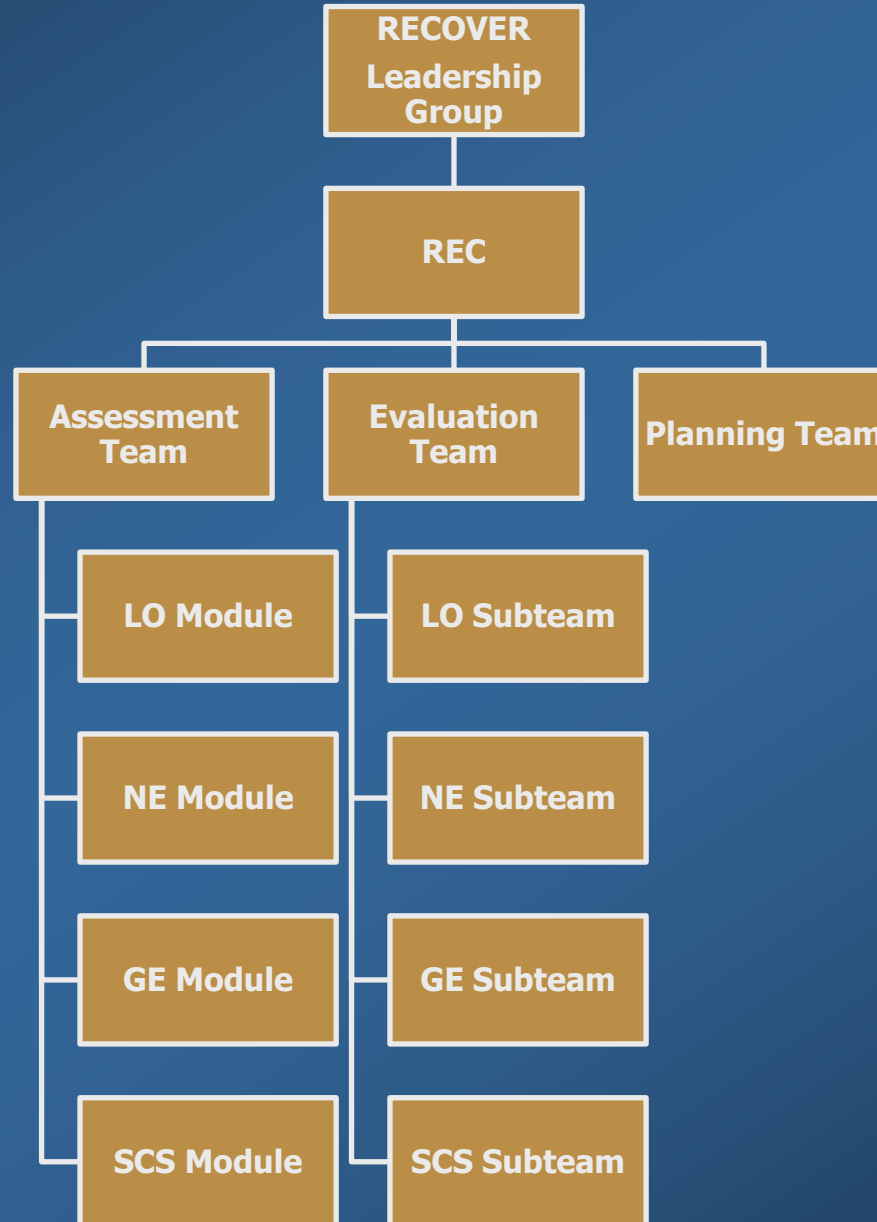


RECOVER Structure - 2004





RECOVER Structure : 2007-2010



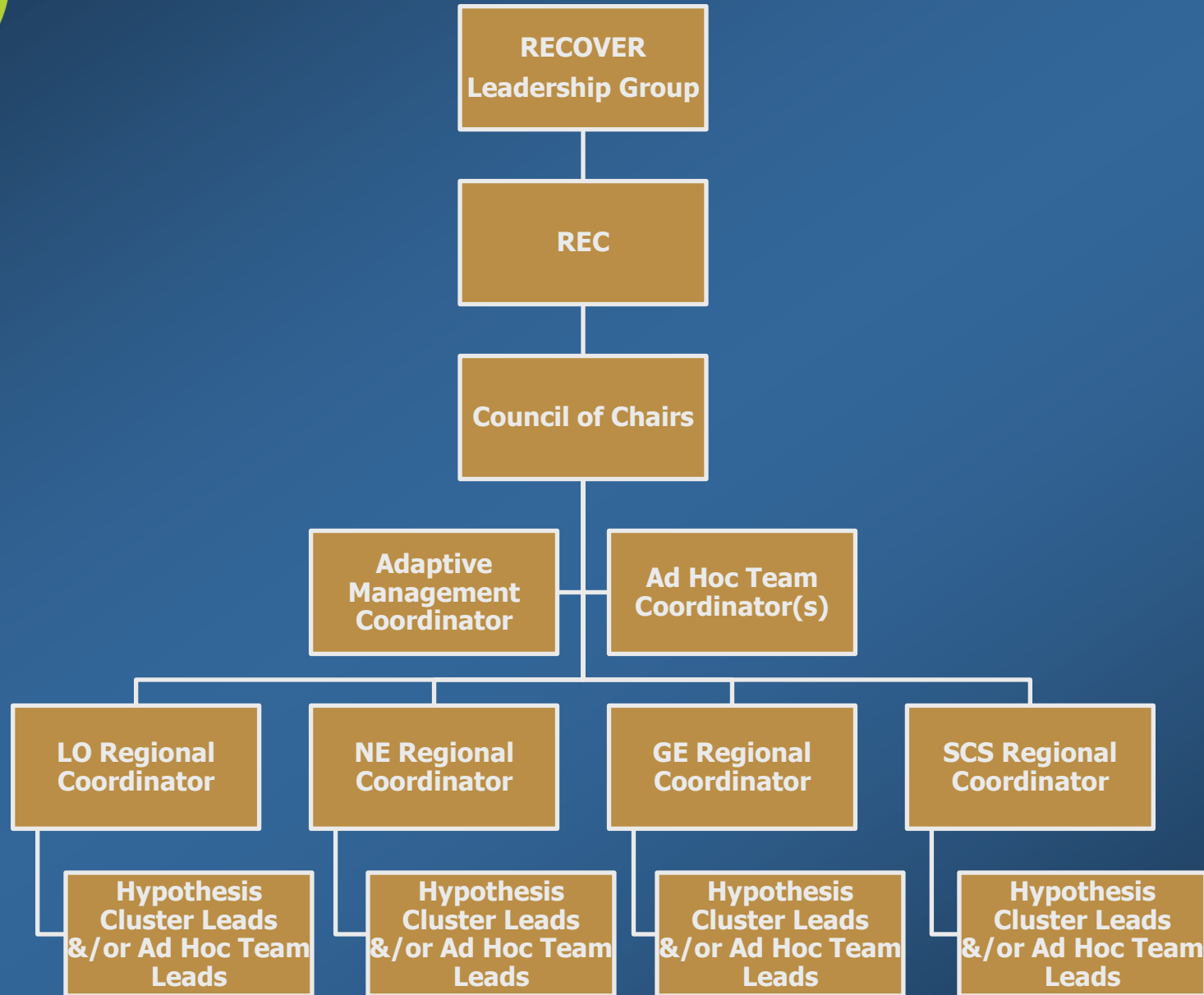


RECOVER Executive Committee

- Coordinates RLG activities, communication and meetings
- Provides day-to-day coordination and direction to technical teams and ad hoc committees
- Resolves routine technical team and ad hoc committee issues
- Serve as a conduit between RECOVER and senior management
- Composed of RLG members from USACE, SFWMD, NPS, and FWS



RECOVER Structure - 2010



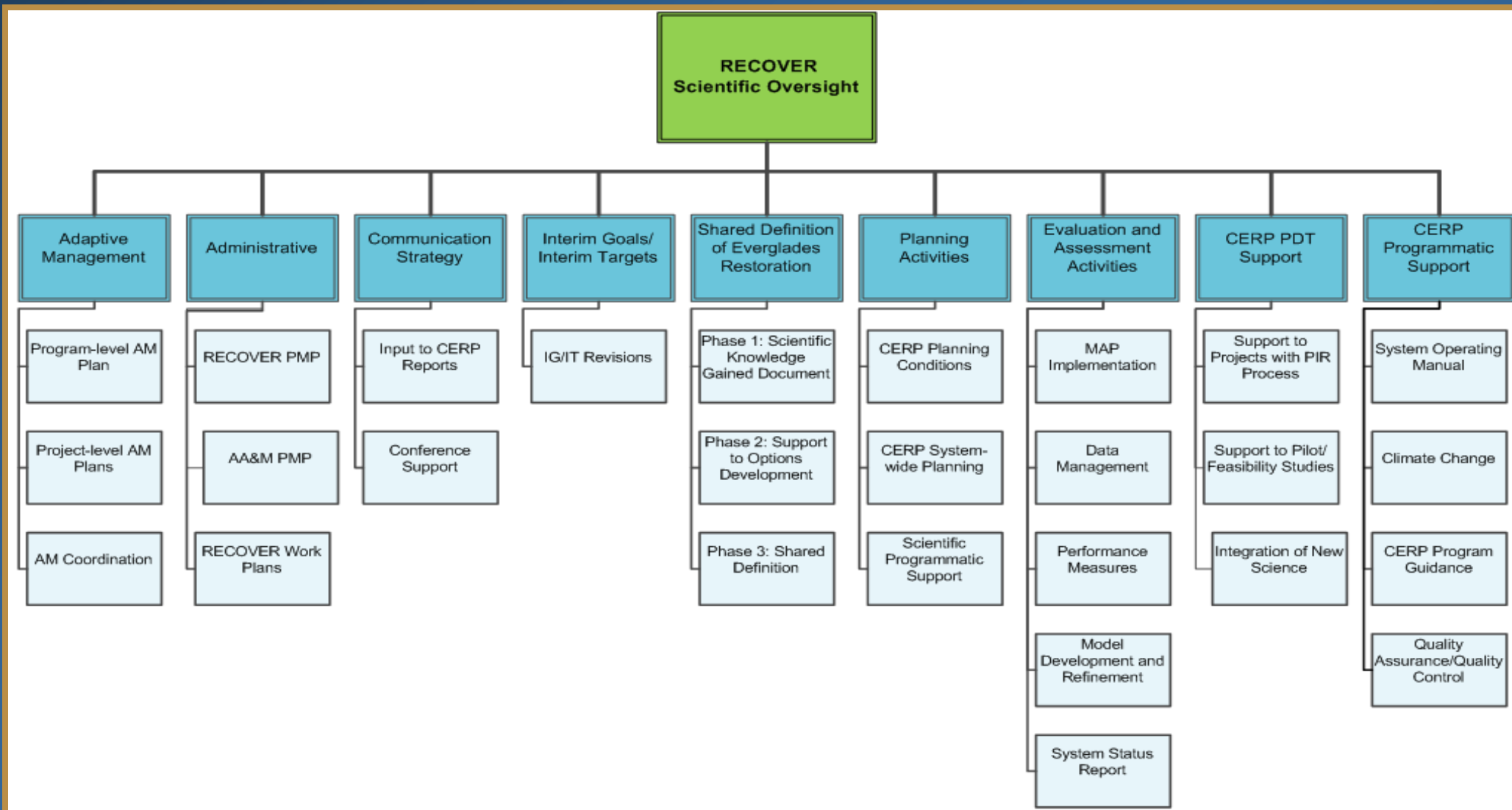


New Roles Structure

- ❖ **Council of Chairs** – Manage day-to-day activities of RECOVER teams and work plans
 - ❖ “Coordinator” – Serve as liaison to the REC and RLG & coordinate the Council of Chairs on a 6-month basis
- ❖ **Adaptive Management Coordinator** - Lead implementation of AM Program for RECOVER
- ❖ **Ad Hoc Team Coordinator(s)** - Assemble ad hoc teams based upon system-wide tasks and/or products
- ❖ **Regional Coordinator(s)** - Assemble ad hoc teams based upon efforts within geographic regions (e.g., hypothesis clusters)



Work Breakdown Structure





RECOVER and PROJECTS

- ❖ Performance measures evaluate project performance and regional contributions
- ❖ Regional evaluations link projects to system performance, evaluate cumulative impacts and provide information to optimize project contributions
- ❖ System-level monitoring provides baseline data for projects and assessment of project performance
- ❖ Models and methodologies enable evaluation, assessment and monitoring of individual and group of projects



RECOVER and the PDTs

- ❖ Assist Project Delivery Teams in understanding how project goals and objectives relate to overall CERP goals and objectives
- ❖ Assist PDTs in implementing adaptive management strategies in project planning
- ❖ Provide information on the latest modeling assumptions for project planning



RECOVER and the PDTs

- ➊ Provide the scientific basis for project activities like PM development, monitoring plan development, and determining project benefits
- ➋ Work with the PDTs to determine which project alternative plan represents the best system-wide performance



RECOVER and the System

- ❖ **Monitoring and Assessments** - Designed to measure ecosystem response to CERP implementation and determine if CERP goals and objectives are being achieved
- ❖ **Adaptive Management** - Designed to increase scientific understanding and optimize CERP
- ❖ **Evaluation Methodologies and Tools** - Necessary to assist project and system-wide planning initiatives
- ❖ **CERP Updates** – Evaluates the performance of D13R/CERP integrating new information and models
- ❖ **System Operating Manual** - Combines operations of CERP projects with other C&SF project features



Lessons & Challenges: RECOVER Organization and Process

- 1. Need for an executive function in RLG (REC established)**
- 2. Broad agency representation and engagement is key**
- 3. Need to streamline process and prioritize tasks where possible**
- 4. Communication: publicize RECOVER's successes**
- 5. Communication: improve RLG interaction with management & decision-makers**
- 6. Communication: ongoing coordination with Project Delivery Teams**



RECOVER and the SCG

❖ Science Coordination Group (SCG)

- ❖ Advisory to South Florida Ecosystem Restoration Task Force
- ❖ Scope larger than CERP
- ❖ Primarily coordinates agency science in S FL
- ❖ Products are produced for the Task Force (Science Coordination Plan, Indicator Report)

❖ RECOVER

- ❖ Formal program within the CERP
- ❖ Dedicated staff and resources to support many tasks and products to support CERP implementation
- ❖ RECOVER and SCG coordinate activities where needed
- ❖ Science /Management /Decision-Maker Interface



Recent RECOVER/CERP Documents

Updated in 2009

Scientific and Technical Knowledge Gained in Everglades Restoration (May 2011)

January 2004

CERP MONITORING AND ASSESSMENT PLAN:
PART 1
MONITORING AND SUPPORTING RESEARCH



Restoration Coordination and Verification (RECOVER)



COMPREHENSIVE EVERGLADES RESTORATION PLAN
CENTRAL AND SOUTHERN FLORIDA PROJECT

Adaptive Management Integration Guide

The Comprehensive Everglades Restoration Plan

March 2011

the journey to restore America's Everglades

RECOVER 2009

System Status Report
KEY FINDINGS

RECOVER assessment science integration



For More Information...

Comprehensive Everglades Restoration Plan: www.EvergladesPlan.org

RECOVER: www.EvergladesPlan.org/pm/RECOVER

