



# REstoration, COordination, VERification (RECOVER)

**Gina Paduano Ralph, Ph.D.**  
**U.S. Army Corps of Engineers**  
**RECOVER Program Manager**

**January 24, 2023**  
**Working Group/Science**  
**Coordination Group Planning**  
**Meeting**



# PRESENTATION OUTLINE:

- Who are RECOVER?
- What are the functions and roles of RECOVER?
- How is RECOVER organized?
- What is Adaptive Assessment & Monitoring (AA&M)?
- How does RECOVER Support CERP?



# WHO ARE RECOVER?

- Multi-agency team of scientists, modelers, planners, and resource specialists
- Conducts **scientific and technical evaluations**
- Applies a **system-wide perspective** to the planning and implementation of CERP
- **Communicates** and **coordinates science** to ensure that CERP goals and purposes are achieved



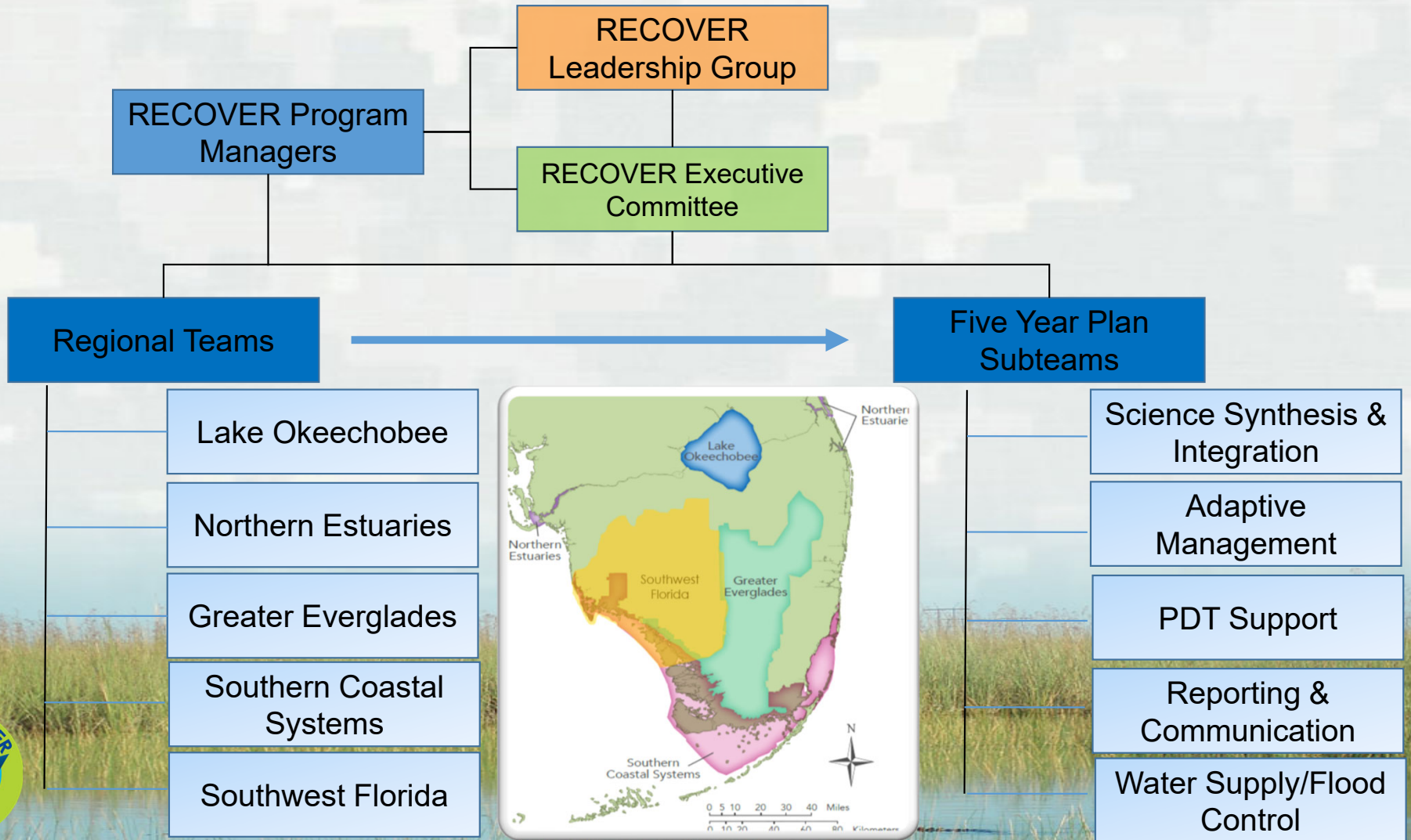
# WHAT ARE THE FUNCTIONS AND ROLES OF RECOVER?



- Ensures CERP implementation is guided by the best available science
- Three Major Missions:
  - **Assessment**: measuring performance of projects through research and monitoring
  - **Evaluation**: forecasting project performance through predictive modeling and performance measures
  - **Planning**: integrating RECOVER with planning and operation of the system

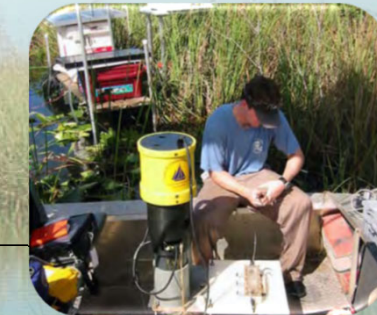


# HOW IS RECOVER ORGANIZED?



# WHAT IS ADAPTIVE ASSESSMENT AND MONITORING (AA&M)?

- Authorized in Water Resources Development Act of 2000
- CERP Programmatic Regulations instruct that RECOVER:
  - 1) Develop an adaptive assessment program to **assess system responses** to CERP implementation
  - 2) Design and implement a monitoring program to **measure status and trends** towards achieving CERP goals and purposes
  - 3) Use monitoring information as a basis for **conducting assessment** tasks

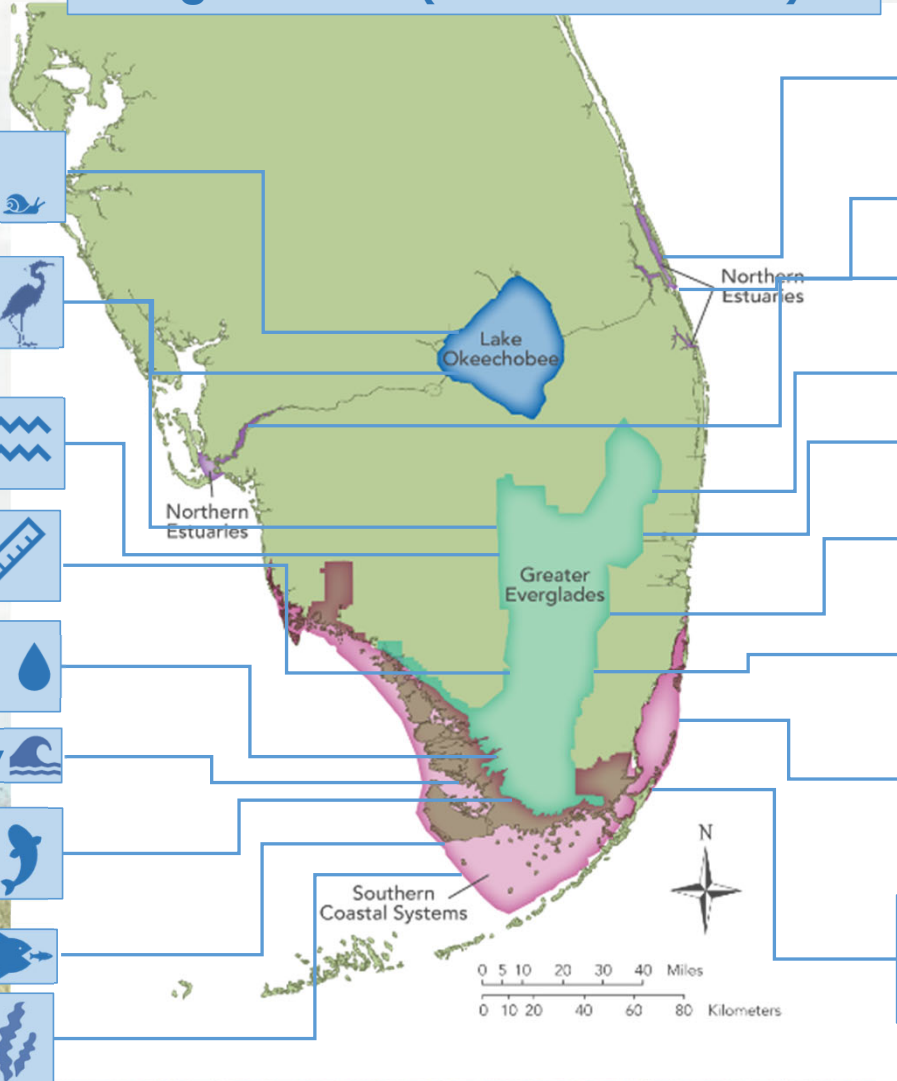


**RECOVER DEVELOPED THE MONITORING AND ASSESSMENT PLAN (MAP) TO ADDRESS THE PRIMARY AAM TASKS**



# CURRENT MAP SCOPE

## Agreements (USACE & SFWMD)



Lake Okeechobee **benthic invertebrates**



**Wading Bird** Colony Size, Location, & Timing



**Landscape Pattern** Ridge, Slough & Tree Island Mosaics



**Everglades Depth Estimator Network (EDEN)**



**Hydrodynamic & Salinity Characteristics** of Rivers & Estuaries



**Coastal Gradients of Flow & Salinity**



Marsh-Mangrove as Aquatic Refuges for **Wetland Fishes**



**Juvenile Sport Fish**



Fish Habitat Assessment Program (**SAV** monitoring)



**Benthic Infauna** Monitoring & DNA barcoding SLE, IRL



**SAV** monitoring & mapping CRE & SLE & Southern IRL



**Adult and Larval Oyster** Monitoring CRE, SLE, LRE



**Aquatic Fauna & Primary Production**



**Dry Season Prey Trophic Concentrations**



**Tree Island** Condition WCA 3A & Southern Everglades



**Alligator** Status as a System-Wide Ecological Indicator



**Integrated Biscayne Bay Ecological Assessment & Monitoring (IBBEAM)**



Ecological Parameters in the Forested Wetlands (**Roseate Spoonbills, prey, and vegetation**)



# MAP PRODUCTS SUPPORT:

## CERP Programmatic Support

- Predictive Evaluation Tools (**RECOVER Performance Measures, Habitat Suitability Index Models, USGS Joint Ecological Modeling**)
  - Interim Goals and Interim Targets (IG/IT)
- Evaluation and Assessment Reports (**IG/IT, Periodic CERP Update, System Status Report, Report to Congress**)

## Project-Specific Support

- Inform Project Justification during Planning Phase
  - Regulatory Support
- Leverage & Supplement Project-Level Monitoring
  - Adaptive Management Guidance
- RECOVER Recommendations to Improve Project Performance Measures,
  - Evaluate Alternatives, Monitoring & Adaptive Management Plans
- RECOVER support during Design & Implementation (Project Operations, Monitoring and Adaptive Management)

## South FL Ecosystem Restoration Support (CERP & non CERP)

- SFWMD annual South Florida Environmental Report
- South Florida Ecosystem Task Force (**System-wide Stoplight Indicator Report & Biennial Report**)
  - South Florida Wading Bird Report
  - Inform Water Control Plan Development
  - Inform Weekly Water Management Decisions







# THANK YOU

