

1.0 Introduction

Restoration Coordination and Verification (RECOVER) has developed performance measures for evaluating modeled system-wide performance and assessing actual system-wide performance of CERP in meeting its goals and objectives. Performance measures are planning tools used to determine the degree to which proposed alternative plans are likely to meet restoration objectives, or implemented plans have met restoration objectives. Performance measures presented in this document identify system-wide hydrological, ecological and water quality indicators expected to respond to CERP implementation.

This document provides background on how system-wide performance measures are developed, revised and reviewed. It also describes performance measure application in CERP planning and some of the uncertainty associated with that application. The next steps that will be taken regarding performance measures are also discussed. Performance measures themselves are documented separately. A documentation sheet is maintained for each measure at the following RECOVER web site: www.evergladesplan.org/pm/recover/eval_team_perf_measures.aspx.

The CERP system-wide performance measures are developed with the best available science and tools; however, development and application of performance measures is a dynamic process that incorporates new scientific understandings and technical improvements. As our understanding of the ecosystem and the hypotheses that define ecologic relationships grows and new evaluation tools are developed, performance measures and this document will be refined, additional performance measures will likely be proposed, and some may be dropped. Refinement of performance measures is part of CERP's Adaptive Management Strategy (RECOVER 2006). Therefore, this is a living document that will be continually updated as other RECOVER documents and processes are updated. The approved set of CERP system-wide performance measures as of September 2007 is as follows:

Lake Okeechobee

- Lake Okeechobee Lake Stage
- Lake Okeechobee Water Quality
- Lake Okeechobee Diatom:Cyanobacteria Ratio
- Lake Okeechobee Vegetation Mosaic
- Lake Okeechobee Fish Population Density, Age Structure and Condition
- Lake Okeechobee Macroinvertebrates

Northern Estuaries

- Northern Estuaries Salinity
- Northern Estuaries Water Quality
- Northern Estuaries Oyster Habitat
- Northern Estuaries Benthic Macroinvertebrates
- Northern Estuaries Submerged Aquatic Vegetation
- Northern Estuaries Fish Communities

Greater Everglades Wetlands

- Number and Duration of Dry Events for Shark River Slough
- Inundation Pattern in Greater Everglades Wetlands
- Extreme High and Low Water Levels in Greater Everglades Wetlands
- Greater Everglades Wetlands Total Phosphorus Concentrations in Surface Water
- Greater Everglades Wetlands Basinwide Total Phosphorus Loading and Flow-Weighted Mean Concentration in Inflows.
- Greater Everglades Wetlands Nutrient Total Nitrogen Concentrations in Surface Water
- Total Nitrogen Loads/Flow-Weighted Mean Concentration in Inflows to the Greater Everglades Wetlands
- Total Phosphorus Concentrations in Soil
- Greater Everglades Tracer of Stormwater Treatment Area Bypass Flows
- Greater Everglades Wetlands Sulfate Concentrations in Surface Water
- Greater Everglades Wetlands Conductivity in Surface Water
- Greater Everglades Wetlands Coastal Salinity Gradients
- Wetland Landscape Patterns - Freshwater and Estuarine Vegetation Mosaics
- Wetland Landscape Patterns - Marl Prairie Cape Sable Sparrow Habitat
- Wetland Landscape Patterns - Ridge and Slough Community Sustainability
- Wetland Landscape Patterns - Tidal Creek Sustainability
- Wetland Trophic Relationships–Periphyton
- Wetland Trophic Relationships - Mangrove Forest Production/Soil Accretion
- Wetland Trophic Relationships - Regional Populations of Fishes, Crayfish, Grass Shrimp and Amphibians
- Wetland Trophic Relationships - Wading Bird Foraging Patterns on Overdrained Wetlands
- Wetland Trophic Relationships - Wading Bird Nesting Patterns
- Roseate Spoonbill Nesting Patterns
- Wetland Trophic Relationships - American Alligator Distribution, Size, Nesting and Condition
- American Crocodile - Juvenile Growth and Survival

Southern Estuaries

- Southern Estuaries Salinity
- Water Level at Regionally Significant Gauge Stations in Everglades National Park
- Southern Estuaries Submerged Aquatic Vegetation
- Southern Estuaries Juvenile Pink Shrimp and Associated Epifauna
- Southern Estuaries Fish Community
- Southern Estuaries Water Quality

Water Supply and Flood Protection

- Frequency of Water Restrictions for Lake Okeechobee Service Area
- Frequency of Water Restrictions for the Lower East Coast Service Area

- Potential for High Water Levels in South Miami-Dade Agricultural Area
- Prevent Saltwater Intrusion of the Biscayne Aquifer - Meet Minimum Flows and Level Criteria for Biscayne Aquifer
- Prevent Saltwater Intrusion of the Biscayne Aquifer in South Miami-Dade County
- Comparison of Stage Differences of Water Levels in South Miami-Dade Agricultural Area

Total System

- Snail Kite Foraging Conditions
- White Tail Deer Breeding Potential
- Mercury Bioaccumulation

Two Greater Everglades performance measures have recently been developed and are under review. The indicators used within the measures are sheet flow in Everglades ridge and slough landscape and hydrologic patterns in wet prairies.

1.1 References

RECOVER. 2006. Comprehensive Everglades Restoration Plan Adaptive Management Strategy. Restoration Coordination and Verification Program, c/o United States Army Corps of Engineers, Jacksonville District, Jacksonville, Florida, and South Florida Water Management District, West Palm Beach, FL. April 2006. www.evergladesplan.org/pm/recover/recover_docs/am/rec_am_strategy_brochure.pdf