Appendix 7-1: Summary of CERP Systemwide Assessment Performance Measures

Kimberly Jacobs

SUMMARY

A summary of the Comprehensive Everglades Restoration Plan (CERP) systemwide assessment performance measures presented in the Draft CERP Systemwide Performance Measures (RECOVER, 2004a) document released on June 18, 2004 is presented in **Table 1**. An asterisk following a title indicates that the performance measure is proposed, but not yet approved. For the natural system, performance measures are principally derived from the conceptual ecological models (CEMs) (Appendix A in RECOVER, 2004b). For urban and agricultural water supply and flood protection objectives, performance measures are based on current federal and state law and policy, or derived from performance measures used in the Central and Southern Florida (C&SF) Project Comprehensive Review Study (Restudy) [U.S. Army Corps of Engineers (USACE) and South Florida Water Management District (SFWMD or District), 1999]. All CERP systemwide assessment performance measures are associated with a monitoring component in the CERP Monitoring and Assessment Plan: Part 1, Monitoring and Supporting Research (MAP) (RECOVER 2004b).

Table 1. Draft CERP systemwide assessment performance measures.

Number	Title	Source	Map Monitoring Module and Section	Restoration Expectations
GE-A1	Greater Everglades Wetlands Hydropattern	Everglades Ridge and Slough, Southern Marl Prairies, Everglades Mangrove Estuaries, and Big Cypress Regional Ecosystem CEM stressor	South Florida Hydrology Monitoring Network 3.5.3.1 - 3.5.3.3	Restore Natural System Model (NSM) envelopes throughout the Greater Everglades Wetlands, except in areas where deviations from NSM have been deemed to be environmentally beneficial.
GE-A2	Wetland Landscape Patterns - Freshwater and Estuarine Vegetation Mosaics	Everglades Ridge and Slough, Southern Marl Prairies, Everglades Mangrove Estuaries, and Big Cypress Regional Ecosystem CEM attribute	Greater Everglades Wetlands 3.1.3.4	Cease loss of and recover pattern, location, directionality and spatial extent of the Greater Everglades Wetlands plant communities.
GE-A3	Wetland Landscape Patterns - Ridge and Slough Community Sustainability	Everglades Ridge and Slough CEM attribute	Greater Everglades Wetlands 3.1.3.6	Maintain or restore processes that sustain coexisting tree islands and sloughs in the current ridge and slough landscape.
GE-A4	Wetland Landscape Patterns - Tidal Creek Sustainability	Everglades Mangrove Estuaries CEM attribute	Greater Everglades Wetlands 3.1.3.7	Maintain and restore processes that recover and sustain tidal creeks.

Number	Title	Source	Map Monitoring Module and Section	Restoration Expectations
GE-A5	Wetland Landscape Patterns - Marl Prairie Cape Sable Sparrow Habitat	Southern Marl Prairies CEM attribute	Greater Everglades Wetlands 3.1.3.5	Increase number of stable subpopulations from 1–3, with one subpopulation west of Shark River Slough and two east of Shark River Slough. Achieve a minimum of approximately 4,000 individuals, with a final restoration target of 6,000 individuals, measured as a five-year running average.
GE-A6	Wetland Trophic Relationships - Regional Populations of Fishes, Crayfish, Grass Shrimp and Amphibians	Everglades Ridge and Slough, Southern Marl Prairies, and Big Cypress Regional Ecosystem CEMs attribute	Greater Everglades Wetlands 3.1.3.10 - 3.1.3.11	Recover distribution, densities, size distribution and seasonal concentrations of aquatic animals consistent with predrainage (NSM) hydropatterns and salinities in freshwater wetlands.
GE-A7	Wetland Trophic Relationships - Wading Bird Foraging Patterns in Overdrained Wetlands	Southern Marl Prairies CEM attribute	Greater Everglades Wetlands 3.1.3.12	Achieve foraging distributions consistent with the expectations for predrainage distributions.
GE-A8	Wetland Trophic Relationships - Wading Bird Nesting Patterns	Everglades Ridge and Slough, Southern Marl Prairies, Everglades Mangrove Estuaries, and Big Cypress Regional Ecosystem CEM attribute	Greater Everglades Wetlands 3.1.3.13 - 3.1.3.14	Recover predrainage patterns of colony locations, timing and abundance, including recovery of estuarine super colonies (locations and frequency). This includes increasing and maintaining the total number of pairs of nesting birds to a minimum of 4,000 great egrets, 10,000–20,000 combined snowy egrets and tricolored herons, 10,000–25,000 white ibis, and 1,500–3,000 wood storks.
GE-A9	Wetland Trophic Relationships - American Alligator Distribution, Size, Nesting and Condition	Everglades Ridge and Slough, Southern Marl Prairies, Everglades Mangrove Estuaries, and Big Cypress Regional Ecosystem CEMs attribute	Greater Everglades Wetlands 3.1.3.15	Recover abundance, distribution and health patterns consistent with predrainage hydrology, including return of predrainage abundance to rocky glades and mangrove estuaries.
GE-A10	Wetland Trophic Relationships - Periphyton Mat Production and Composition	Everglades Ridge and Slough, and Southern Marl Prairies CEMs attribute	Greater Everglades Wetlands 3.1.3.8	Restore periphyton mat cover, biovolume, organic content, percent noncalcareous algae and diatom composition consistent with predrainage (NSM) hydropatterns.
GE-A11	Wetland Trophic Relationships - Mangrove Forest Production/Soil Accretion	Everglades Mangrove Estuaries CEM attribute	Greater Everglades Wetlands 3.1.3.9	Increase the primary productivity and soil accretion of mangrove forests in coastal areas where natural patterns of hydrology, salinity and nutrient mixing are restored.
GE-A12	Greater Everglades Wetlands Coastal Salinity Gradients	Everglades Mangrove Estuaries CEM attribute	Greater Everglades Wetlands 3.1.3.3	Maintain broad coastal gradients of salinity in the southern Everglades, due to the restoration of predrainage freshwater flow volume, timing and distribution, given predicted rates of sea level rise during the next century.
GE-A13	American Crocodile - Juvenile Growth and Survival	Everglades Mangrove Estuaries and Biscayne Bay CEMs attribute	Greater Everglades Wetlands and Southern Estuaries 3.1.3.16	Increase yearly survival for animals age 0–3 years for animals in Florida Bay (current values 1.5%) and increase in growth rates for animals age 0–3 years from (0.10 centimeters [cm] per day) to values approaching those observed at North Key Largo and Turkey Point (0.137–0.146 cm per day).

Number	Title	Source	Map Monitoring Module and Section	Restoration Expectations
GE-A14	Greater Everglades Wetlands Nutrient (Total Phosphorus [TP] and Total Nitrogen [TN]) Concentrations in Surface Water	Everglades Ridge and Slough CEM stressor	Greater Everglades Wetlands 3.1.3.1	The long-term TP requirement is 10 parts per billion (ppb) for a location. If long-term TP is greater than 10 ppb, the annual trend must be flat or decreasing. For TN, the target is no increase in concentrations from current conditions.
GE-A15	Greater Everglades Wetlands TP Concentrations in Peat Soil	Everglades Ridge and Slough CEM stressor	Greater Everglades Wetlands 3.1.3.2	Decrease the areal extent of TP concentrations exceeding 500 milligrams per kilogram (mg/kg) and maintain or reduce long-term average concentrations to 400 mg/kg or less in the upper 10 cm of soil.
GE-A16	Greater Everglades Wetlands Sulfate Concentrations in Surface Water	South Florida Ecosystem Assessment: Phase I/II - Everglades Stressor Interactions	Greater Everglades Wetlands 3.1.3.1	Maintain or reduce sulfate concentrations to one part per million (ppm) or less (approximates marsh background concentrations) in surface water throughout the Greater Everglades.
GE-A17	Greater Everglades Wetlands Conductivity in Surface Water	CERP Monitoring and Assessment Plan: Part 1 MAP	Greater Everglades Wetlands 3.1.3.1	No more than 25% increase above background, while taking into consideration natural seasonal and annual variation.
GE-A18	Roseate Spoonbill Nesting Patterns	Everglades Mangrove Estuaries CEM attribute	Greater Everglades Wetlands 3.1.3.14	Achieve roseate spoonbill nesting success in seven out of every 10 years. Return breeding spoonbill numbers to 1,000 pairs nesting in Florida Bay annually, half of which would be located in the northeastern region of the bay. Reestablish spoonbill nesting along the southwestern Gulf Coast between Lostman's River and the Caloosahatchee River.
GE-A19	TP Loads/Flow-Weighted Mean Concentration in Inflows to the Greater Everglades Wetlands*	Everglades Ridge and Slough CEM stressor	Greater Everglades Wetlands 3.1.3.1	Specific targets will be consistent with applicable water quality standards.
GE-A20	TN Loads/Flow-Weighted Mean Concentration in Inflows to the Greater Everglades Wetlands*	Everglades Ridge and Slough CEM stressor	Greater Everglades Wetlands 3.1.3.1	Specific targets will be consistent with applicable water quality standards.
SE-A1	Surface Water Discharges to Biscayne Bay	Biscayne Bay CEM stressor	Southern Estuaries 3.2.3.2 and South Florida Hydrology Monitoring Network 3.5.3.3	Maintain total annual volumes of surface water discharge to Biscayne Bay that equal or exceed those of baseline conditions: Wet/Dry Season **Snake Creek:** 66,500/93,000 acre-feet (ac-ft) **North Bay:** 99,000/41,000 ac-ft **Miami River:** 132,000/60,000 ac-ft **Central Bay:** 161,000/83,000 ac-ft **South Bay:** 158,000/68,000 ac-ft

Number	Title	Source	Map Monitoring Module and Section	Restoration Expectations
SE-A2	Southern Estuaries Salinity Pattern	Florida Bay, Biscayne Bay and Everglades Mangrove Estuaries CEMs stressor	Southern Estuaries 3.2.3.2 and South Florida Hydrology Monitoring Network 3.5.3.3	**Florida Bay:** Provide less abrupt and less extreme decreases in salinity in the northeastern bay. Reduce the frequency, extremity and extent of hypersaline conditions in the central, southern and western bay. Increase the frequency and extent of low salinity conditions in the central bay. Increase the frequency and extent of salinities less than that of seawater in the western bay, extending westward along the Gulf of a Mexico coastal shelf to Lostman's River. **Biscayne Bay:** Provide mesohaline salinity patterns in nearshore waters. Lower salinity in the mouths of tidal creeks. **Mangrove Estuary:** Lower salinity to oligohaline conditions in coastal lakes and basins.
SE-A3	Southern Estuaries Submerged Aquatic Vegetation (SAV)	Everglades Mangrove Estuaries, Florida Bay, and Biscayne Bay CEMs attribute	Southern Estuaries 3.2.3.3 - 3.2.3.4	**Florida Bay:** Recover seagrass beds over most of bay bottom, extending west along the Gulf of Mexico coastal shelf to Lostman's River. Replace *Thalassia* monoculture with mixed *Thalassia* and *Halodule*. **Biscayne Bay:** Increase cover of seagrass beds, consisting primarily of Halodule, in nearshore areas that are presently devoid of seagrasses. **Mangrove Estuaries:** Increase cover and seasonal duration of *Ruppia*, *Chara*, *Najas,* and *Utricularia* in coastal lakes and basins.
SE-A4	Southern Estuaries Juvenile Pink Shrimp and Associated Epifauna	Florida Bay, Biscayne Bay and Everglades Mangrove Estuaries CEMs attribute	Southern Estuaries 3.2.3.5	**Florida Bay Salinity:** Threshold of 20 parts per thousand (ppt) for eastern bay and 30 ppt for western bay. **Florida Bay Algal Blooms:** Threshold of 2 ppb of chlorophyll *a* in eastern bay and 3 ppb of chlorophyll *a* in central and western bay. **Associated Epifauna:** The abundance and diversity of fish and macroinvertebrates associated with seagrass beds should increase in Biscayne Bay and Florida Bay, and along the Gulf of Mexico coastal shelf westward to Lostman's River.
SE-A5	Southern Estuaries Shoreline Fish Community	Florida Bay, Biscayne Bay, and Everglades Mangrove Estuaries CEMs attribute	Southern Estuaries 3.2.3.6	Increase diversity and density of fish assemblages along the mainland mangrove shorelines of Florida Bay and Biscayne Bay.
SE-A6	Florida Bay Juvenile Spotted Seatrout	Florida Bay CEM attribute	Southern Estuaries 3.2.3.7	Increase distribution, abundance, growth and survival of juvenile spotted seatrout in north-central and western Florida Bay.

Number	Title	Source	Map Monitoring Module and Section	Restoration Expectations
SE-A9	Southern Estuaries Nutrient Concentrations in Surface Water	Florida Bay and Biscayne Bay CEMs stressor	Southern Estuaries 3.2.3.1	**Florida Bay:** Current nutrient concentrations of surface water inputs the Everglades and from Florida Keys should not be exceeded so the oligotrophic nature of the bay is maintained. **Biscayne Bay:** Maintain or reduce surface water nutrient concentrations so as not to exceed historical background, and not to exceed a monthly average concentration of 0.005 milligrams per liter (mg/L) TP and 0.80 mg/L TN in open portions of the estuaries.
SE-A10	Southern Estuaries Nutrient Loads	Florida Bay and Biscayne Bay CEMs stressor	Southern Estuaries 3.2.3.1	**Florida Bay:** Maintain or reduce current nutrient loads from Everglades inflows and the Keys. **Biscayne Bay:** Maintain or reduce nutrient loads so as not to exceed historical background. Achieve a 47%-reduction in TN loading.
SE-A11	Southern Estuaries Algal Blooms	Florida Bay and Biscayne Bay CEMs attribute	Southern Estuaries 3.2.3.1	**Florida Bay:** Decrease or cause no net increase in the frequency, duration, intensity or spatial extent of algal blooms relative to conditions documented since 1991. **Northern Biscayne Bay:** No net increase in algal blooms and the annual mean chlorophyll *a* concentrations should be 1–4 micrograms per liter (μg/l). **Open waters of central and southern Biscayne Bay:** Frequency of algal blooms should be zero, and the annual mean chlorophyll *a* concentrations should less than 0.5 μg/l.
SE-A12	Southern Estuaries Water Clarity/Light Penetration	Florida Bay and Biscayne Bay CEMs attribute	Southern Estuaries 3.2.3.1	**Florida Bay:** Light penetration should be sufficient to support net production by seagrasses. **Biscayne Bay:** Maintain existing water transparency (clarity) in clear regions supporting healthy seagrass communities, and improve water clarity in those regions where reduced water clarity is limiting growth of seagrasses. Light attenuation coefficient (Kd) should not exceed established background conditions, nor should the absolute value for a daily average exceed 0.7 in any area.
SE-A13	Contaminants (Toxicants and Pathogens) in Biscayne Bay Tributaries and Coastal Sediments	Biscayne Bay CEM stressor	Southern Estuaries 3.2.3.1	The geographic extent and concentration of sediment toxicity and water column toxicants/pathogens in Biscayne Bay and the coastal wetlands should not increase.
NE-A1	St. Lucie Estuary Salinity Envelope	St. Lucie Estuary and Indian River Lagoon CEM[1] stressor	Northern Estuaries 3.3.3.1and and South Florida Hydrology Monitoring Network 3.5.3.3	Reestablish a salinity range most favorable to juvenile marine fish, shellfish, oysters and SAV. This is estimated at 12–20 ppt for oysters.

[1] CEM – Conceptual Ecological Model

Number	Title	Source	Map Monitoring Module and Section	Restoration Expectations
NE-A2	Lake Worth Lagoon Salinity Envelope	Lake Worth Lagoon CEM stressor	Northern Estuaries 3.3.3.1 and South Florida Hydrology Monitoring Network 3.5.3.3	The desirable salinity range is 23 ppt (at 500 cubic feet per second [cfs] of stormwater discharge) to 35 ppt (at 0 cfs of stormwater discharge). Minimum salinity of 15–18 ppt.
NE-A3	Caloosahatchee Estuary Salinity Envelope	Caloosahatchee Estuary CEM stressor	Northern Estuaries 3.3.3.1 and South Florida Hydrology Monitoring Network 3.5.3.3	Reestablish a salinity range most favorable to juvenile marine fish, shellfish, oysters and SAV. This is estimated at 12–20 ppt for oysters. To maintain this salinity range, mean monthly flow needs to range between 300–800 cfs.
NE-A4	Loxahatchee River Estuary Salinity Envelope	Loxahatchee Watershed CEM stressor	Northern Estuaries 3.3.3.2 and South Florida Hydrology Monitoring Network 3.5.3.3	Minimum inflow to achieve a bottom salinity of 2 ppt at Jonathon Dickinson State Park boat ramp. This target should correspond with the Lake Worth Lagoon salinity envelope target of 23 ppt.
NE-A5	Northern Estuaries Oysters	Caloosahatchee Estuary, St. Lucie Estuary and Indian River Lagoon, and Loxahatchee Watershed CEMs attribute	Northern Estuaries 3.3.3.6	Provide 1,400 acres of suitable oyster habitat in the St. Lucie Estuary. Improve recruitment and survivorship of the estuaries oysters by restoring oyster beds in suitable habitat, and maintaining habitat function of oyster beds for fish, crabs and birds in the Caloosahatchee Estuary.
NE-A6	Northern Estuaries Benthic Macro-invertebrates	St. Lucie Estuary and Indian River Lagoon, and Loxahatchee Watershed CEMs attribute	Northern Estuaries 3.3.3.8	Increase species richness, abundance and diversity of benthic species in St. Lucie and Loxahatchee River Estuaries to that typically found in a healthy estuarine community.
NE-A7	Northern Estuaries Fish Communities	Caloosahatchee Estuary, and St. Lucie Estuary and Indian River Lagoon CEMs attribute	Northern Estuaries 3.3.3.7	Restore estuarine fish assemblages with relative abundance and distribution, taxonomic composition, diversity and representation of life stages characteristic of targeted salinity regimes for each estuary. Maintain or enhance SAV habitat for juvenile fish.
NE-A8	Northern Estuaries SAV	Caloosahatchee Estuary, and St. Lucie Estuary and Indian River Lagoon CEMs attribute	Northern Estuaries 3.3.3.3 - 3.3.3.5	For the South Indian River Lagoon and St. Lucie Estuary, increase cover of SAV beds to areas that are less than 1.7 meters in depth. The St. Lucie Estuary has approximately 922 acres of suitable habitat (0% colonized). South Indian River Lagoon has 19,799 acres of suitable habitat, of which 7,808 (39%) is already colonized by seagrass. Maintain flows needed to achieve the proper salinity range for SAV within all northern estuaries.
NE-A10	Caloosahatchee Estuary Nutrient Load and Concentration	Caloosahatchee Estuary CEM stressor	Northern Estuaries 3.3.3.2	Improved water quality associated with lower discharge variability and establishment of CERP-recommended inflow distribution. No reduction in water quality conditions as result of CERP implementation, especially concerning chlorophyll *a* and dissolved oxygen in the upper estuary.
NE-A11	St. Lucie Estuary Nutrient Load and Concentration	St. Lucie Estuary and Indian River Lagoon CEM stressor	Northern Estuaries 3.3.3.2	The TP concentration of 81 ppb at the Roosevelt Bridge (50% reduction). Reduce current TN concentrations by 30%.
NE-A12	South Indian River Lagoon Nutrient Load and Concentration	St. Lucie Estuary and Indian River Lagoon CEM stressor	Northern Estuaries 3.3.3.2	The targets are 0.053 mg/L TP and 0.692 mg/L TN.

Number	Title	Source	Map Monitoring Module and Section	Restoration Expectations
NE-A13	Loxahatchee River Estuary Nutrient Load and Concentration	Loxahatchee Watershed CEM stressor	Northern Estuaries 3.3.3.2	Reduce or maintain TP concentrations lower than the statewide average of 0.080 mg/L. Reduce TN concentrations to 0.70 mg/L.
NE-A14	Lake Worth Lagoon Nutrient Load and Concentrations	Lake Worth Lagoon CEM stressor	Northern Estuaries 3.3.3.2	Do not increase the TP and TN concentrations in the Lake Worth Lagoon.
NE-A15	Northern Estuaries Algal Bloom Frequency	Caloosahatchee Estuary, St. Lucie Estuary and Indian River Lagoon and Loxahatchee Watershed CEMs attribute	Northern Estuaries 3.3.3.2	Restore conditions in the St. Lucie Estuary so that the frequency of algal blooms is reduced, and the severity of peak estuarine algal blooms does not exceed 15 ppb chlorophyll *a* at any time. Do not increase algal bloom frequency in the Caloosahatchee Estuary. Continued absence of algal blooms in the Loxahatchee River Estuary.
NE-A16	Northern Estuaries Contaminants (Toxicants and Pathogens)	Caloosahatchee Estuary, St. Lucie Estuary and Indian River Lagoon, Lake Worth Lagoon and Loxahatchee Watershed CEMs stressor	Northern Estuaries 3.3.3.2	Geographic extent and degree of sediment toxicity should not increase.
NE-A17	Northern Estuaries Water Clarity	Caloosahatchee Estuary, St. Lucie Estuary and Indian River Lagoon, Loxahatchee, and Lake Worth Lagoon CEMs attribute	Northern Estuaries 3.3.3.2	Improve the quality of water released to tide and reduce the quantity of water released to tide such that water clarity is sufficient to promote establishment of seagrasses and other SAV in estuaries. The specific targets for the St. Lucie Estuary are 1.44 Secchi and -1.2 photosynthetically active radiation (PAR).
LO-A1	Lake Okeechobee Extreme Low Lake Stage*	Lake Okeechobee CEM stressor	South Florida Hydrology Monitoring Network 3.5.3.1	Stage never falls below 10 feet.
LO-A3	Lake Okeechobee Extreme High Lake Stage*	Lake Okeechobee CEM stressor	South Florida Hydrology Monitoring Network 3.5.3.1	Stage never rises above 17 feet.
LO-A6	Lake Okeechobee Native Vegetation Mosaic - Littoral Plant Communities and Bulrush	Lake Okeechobee CEM attribute	Lake Okeechobee 3.4.3.2	**Littoral Plant Communities:** Recolonization of much of historic coverage areas by spikerush and beakrush. Large reduction in distribution of torpedograss and cattail. An increase of 500–1,000 acres in the distribution of continuous stands of willow and pond apple trees in areas that are surrounded by open water. **Bulrush:** A nearly continuous and thick band of bulrush located along the lakeward edge of the littoral zone from Clewiston north to the area near the mouth of the Kissimmee River (> 30 miles), and around Kings Bar and Eagle Bay Islands.
LO-A7	Lake Okeechobee Native Vegetation Mosaic – SAV	Lake Okeechobee CEM attribute	Lake Okeechobee 3.4.3.3	Maintain more than 40,000 acres of total SAV in the lake, and more than 20,000 acres of vascular plants (in particular *Vallisneria* and *Potamogeton*) in most years (excluding years of extreme regional drought).

Number	Title	Source	Map Monitoring Module and Section	Restoration Expectations
LO-A8	Lake Okeechobee Fish and Aquatic Fauna (Fish and Invertebrates)	Lake Okeechobee CEM attribute	Lake Okeechobee 3.4.3.5	Increase diversity and extent of forage fish and pollutant-sensitive taxa of invertebrates. Reduce the relative abundance of the pollution-tolerant macroinvertebrates and oligochaetes in the pelagic zone to near 20%.
LO-A9	Lake Okeechobee Apple Snails and Snail Kite Population and Nesting	Lake Okeechobee CEM attribute		**Apple Snails:** Increase average population density of apple snails, and reduce occurrence of years when population is decimated by extreme drought. **Snail Kite:** Increase average number of Snail Kite nests in the littoral zone from the 1998–2000 value of 3 to a short-term value of approximately 9 nests per year, and a long-term value of over 11 nests per year. Have at least one chick fledge from more than 15% of the nests.
LO-A10	Lake Okeechobee Wading Bird Feeding Aggregations and Nesting	Lake Okeechobee CEM attribute	Greater Everglades Wetlands 3.1.3.12 and 3.1.3.13	Increase the peak number of winter nests to 300 great blue heron, 1,000 great egret, 700 snowy egret, 600 tricolored heron, 800 little blue heron, and 1,000 white ibis.
LO-A11	Lake Okeechobee Fish Population Density, Age Structure and Condition	Lake Okeechobee CEM attribute	Lake Okeechobee 3.4.3.6	Improved density, age structure and condition of black crappie, largemouth bass and brim in the littoral and nearshore regions of the lake. Reduced relative abundance of gizzard shad, threadfin shad and blue tilapia.
LO-A12	Lake Okeechobee Alligator Population and Condition	Lake Okeechobee CEM attribute	Greater Everglades Wetlands 3.1.3.15	Maintain present population density and condition of alligators in the lake.
LO-A13	Lake Okeechobee Shoreline Organic Berm	Lake Okeechobee CEM attribute	Lake Okeechobee 3.4.3.2	Reduce the frequency of occurrence and spatial extent of a berm of dead plant material and sediments along the western lakeshore, with no continuous berm greater than 1 kilometer (km) in length.
LO-A14	Lake Okeechobee TP Concentration	Lake Okeechobee CEM stressor	Lake Okeechobee 3.4.3.1	Pelagic TP long-term average below 40 ppb.
LO-A15	Lake Okeechobee TN:TP Ratio	Lake Okeechobee CEM stressor	Lake Okeechobee 3.4.3.1	Pelagic TN:TP long-term average ratio higher than 22:1.

Number	Title	Source	Map Monitoring Module and Section	Restoration Expectations
LO-A16	Lake Okeechobee Diatom: Cyanobacteria Ratio	Lake Okeechobee CEM attribute	Lake Okeechobee 3.4.3.1	Long-term pelagic biovolume ratio above 1.5:1.
LO-A17	Lake Okeechobee Algal Bloom Frequency	Lake Okeechobee CEM attribute	Lake Okeechobee 3.4.3.1	Less than 5% of pelagic samples with > 40 ppb chlorophyll *a*.
LO-A18	Lake Okeechobee Water Clarity	Lake Okeechobee CEM attribute	Lake Okeechobee 3.4.3.1	Secchi disk visible on lake bottom in shoreline region from May –September.
LO-A19	Lake Okeechobee Phosphorus Loads	Lake Okeechobee CEM stressor	Lake Okeechobee 3.4.3.1	105 metric tons per year from surface inflows.
LO-A20	Lake Okeechobee Class I Surface Water Quality Standards	Lake Okeechobee CEM attribute	Lake Okeechobee 3.4.3.1	No increase in exceedances of Class I standards due to cumulative effects of CERP projects.
LO-A21	Lake Okeechobee Stage Envelope*	Lake Okeechobee CEM stressor	South Florida Hydrology Monitoring Network 3.5.3.1	Gradual stage recession in winter to spring, from approximately 15.5 feet (January) to approximately 12.5 feet (June), followed by a gradual rise in stage from fall to winter. Extreme declines in stage to near 11 feet are desirable approximately once per decade.
WS-A1	Frequency, Severity and Duration of Water Restrictions for Lake Okeechobee Service Area	Section 373.0361(2)(a)(1), F.S.	South Florida Hydrology Monitoring Network 3.5.3.5	Decrease seepage losses and harmful releases of excess water for the natural system, while providing at least a 1-in-10-year level of service for the Lake Okeechobee and Lower East Coast Service Areas through regional water deliveries and seepage from Lake Okeechobee, the water conservation areas and Everglades National Park.
WS-A2	Frequency of Water Restrictions for Lower East Coast Service Area	Florida Statute 373.0361(2)(a)(1)	South Florida Hydrology Monitoring Network 3.5.3.5	Meet water supply demands during droughts up to a 1-in-10 year frequency.
WS-A3	Potential for High Water Levels in South Miami-Dade Agricultural Area	C&SF Project Restudy	South Florida Hydrology Monitoring Network 3.5.3.6	Maintain existing flood protection in accordance with applicable laws.

Number	Title	Source	Map Monitoring Module and Section	Restoration Expectations
WS-A4	Prevent Saltwater Intrusion of Biscayne Bay Aquifer - Meet MFL Criteria for the Biscayne Aquifer	Chapter 40E-8, F.A.C. Section 373.044, F.S.	South Florida Hydrology Monitoring Network 3.5.3.5	**Canal at Structure - Canal Stages (feet National Geodetic Vertical Datum [NGVD])** C-51 at S155 – 7.80 C-16 at S41 – 7.80 C-15 at S40 – 7.80 Hillsboro Canal at G56 – 6.75 C-14 at S37B – 6.50 C-13 at S36 – 4.00 North New River at G54 – 3.50 C-9 at S29 – 2.00 C-6 at S26 – 2.50 C-4 at S25B – 2.50 C-2 at S22 – 2.50 Stage cannot fall below these levels for more than 180 days.
WS-A5	Prevent Saltwater Intrusion of Biscayne Bay Aquifer in South Miami-Dade County	C&SF Project Restudy	South Florida Hydrology Monitoring Network 3.5.3.5	**Canal at Structure - Canal Stage (feet NGVD)** C-100A at S123 – 2.00 C-1 at S21 – 2.00 C-102 at S21A – 2.00 C-103 at S20F – 2.00
TS-A1	Mercury Bioaccumulation	Total System CEM stressor	South Florida Mercury Bioaccumulation Module 3.6.3.1	No statistically significant (90-percent confidence level) increase in levels of mercury bioaccumulation in tissue of fish, by association fish-eating wildlife, and in accordance with CERP Guidance Memorandum (CGM) 23.01 (USACE and SFWMD, 2004), state water quality standards will be met.
TS-A2	Everglade Snail Kite Habitat and Nesting Success*	Total System CEM attribute		Reverse a recent declining trend in the number of successful snail kite nests throughout the Greater Everglades wetlands and other supporting habitats.

Note: An asterisk (*) following a title indicates that the performance measure is proposed, but not yet approved.

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