Detailed FY12 CERP Monitoring and Assesment Plan (MAP) Prioritization

CERP MAP Prioritization with ~59% Reduction from FY11

Contract Name	Description of Monitoring	Priority	MAP Region	Proposed % Reduction	What is Lost - Impact of Reduced Funding on Monitoring	Value/Use of Remaining Monitoring Data
West Coast Oyster Monitoring (Caloosahatchee Estuary)	Oysters serve as an excellent indicator species because salinity conditions suitable for oysters produce optimal conditions for a suite of other desirable estuarine organisms; and given their sedentary nature, it is easy to determine cause-and-effect relationships between the water quality and health of these organisms. Five aspects of oyster ecology are being monitored in the Caloosahatchee River Estuary: 1) density of adult oysters, 2) reproduction and recruitment, 3) juvenile oyster growth and survival, 4) physiological condition as measured by condition index, and 5) distribution and frequency patterns of the oyster diseases (dermo).	1	Northern Estuaries	25.8%	• Reduction in the number of sampling stations will decrease statistical ability to detect change as CERP projects are implemented. • Reduction in the number of parameters monitored per station may decrease the ability to understand changes in oyster reefs over time and link these changes to implementation of CERP projects. Doing a detailed analysis of the existing 10-year data set will allow us to make reductions to the program that will minimize detrimental effects.	• The remaining data will be critical for use in evaluating restoration success, discerning project effects, informing operations of the C&SF project, and for adaptive management. Data will also help with stoplight indicator development.
East Coast Oyster Monitoring (St. Lucie Estuary, Lake Worth Lagoon and Loxahatchee River Estuary)	Oysters serve as an excellent indicator species because salinity conditions suitable for oysters produce optimal conditions for a suite of other desirable estuarine organisms; and given their sedentary nature, it is easy to determine cause-and-effect relationships between the water quality and health of these organisms. Five aspects of oyster ecology are being monitored in the St. Lucie Estuary, Loxahatchee River Estuary, and Lake Worth Lagoon: 1) density of adult oysters, 2) reproduction and recruitment, 3) juvenile oyster growth and survival, 4) physiological condition as measured by condition index, and 5) distribution and frequency patterns of the oyster diseases Perkinsus marinus (dermo) and Haplosporidium nelsoni (MSX).	1	Northern Estuaries	20.0%	• Reduction in the number of sampling stations will decrease statistical ability to detect change as CERP projects are implemented. • Reduction in the number of parameters monitored per station may decrease the ability to understand changes in oyster reefs over time and link these changes to implementation of CERP projects. Doing a detailed analysis of the existing 10-year data set will allow us to make reductions to the program that will minimize detrimental effects.	• The remaining data will be critical for use in evaluating restoration success, discerning project effects, informing operations of the C&SF project, and for adaptive management. Data will also help with stoplight indicator development.
Wading Birds & Aquatic Fauna Monitoring (includes Biscayne Bay)	Assessing the demersal prey base fish community in reference to salinity and water levels allows for the inference of the relative value of the wetlands to higher trophic levels (e.g., wading birds) . This project studies aquatic fauna in the mangrove zone of Florida Bay and Biscayne Bay, as well as wading bird colony location, size, and timing in Florida Bay and roseate spoonbill nesting success in Florida Bay.	1	Southern Coastal Systems	36.0%	• Loss of 60% of prey fish monitoring sites to include all control sites in Cape Sable - significantly reduces the ability to detect cause-and-effect changes in the roseate spoonbill population resulting from C-111SC Project, DECOMP, non-CERP projects such as Tamiami Trail Bridge Project and ModWaters, and changes to operations (Combined Operations Plan). • Loss of the ability to make upstream to downstream comparisons in the area most likely to be affected by C-111SC Project. • Loss of ability to tie hydrology to prey fish distribution and abundance in response to CERP projects (e.g., C-111SC Project).	• Spoonbill nest surveys and focal colony success (how many chicks actually fledge) will continue to be monitored. Six hydrology and prey fish stations with be retained, along with several long term stations (data has been collected 1990). The focus will be on the C-111SC and ModWaters areas of influence.
Coastal Gradients - Monitoring of Flow, Salinity, and Nutrients in the Greater Everglade and Southern Coastal Systems	RECOVER MAP funds 10 monitoring stations that, together with the existing coastal monitoring network, creates a network of 40 sites that can be analyzed for coastal gradients of flow, salinity, and nutrients. The purpose of this network is to collect real-time data in the coastal zone of ENP and report on the interactions between the Everglades mangrove transition zone and the freshwater wetlands. This network supplies critical hydrologic information where none previously existed and establishes a baseline data set of hydrologic conditions prior to any CERP watershed modifications.	1	Southern Coastal Systems	56.9%	• Significantly reduced ability to detect salinity, flow, water level, and nutrient changes from the C-111SC Project, CERP/non-CERP projects that affect lower Shark River Slough (e.g., Tamiami Trail Bridge) and the effects of operations to ENP. • Loss of 40% of hydrologic stations in Florida Bay and the SW Florida Coast significantly impairs regional hydrology assessment, including detection of salt water intrusion. • Loss of hydrologic data that is critical for existing hydrologic, water quality, and ecological model development.	• Monitoring stations (stage, flow, salinity) focused on the C-111 SC Project and ModWaters areas of influence along the coastal mangrove fringe in Florida Bay and SW Florida Coast will be retained. Will be able to detect changes in stage and flow and subsequently salinity resulting from C-111SC Project and ModWaters with less certainty.
Florida Bay Juvenile Sportfish Monitoring	The spotted seatrout spends its entire life history within Florida Bay, and distributions vary in response to salinity. Thus data collected on their population dynamics will help to delineate changes due to water management versus natural variability. Relationships to salinity can be used in the evaluation process to predict the impact of a CERP project(s) on sportfish populations in Florida Bay.	1	Southern Coastal Systems	0.0%	• Shift of monitoring to eastern Florida Bay (to capture change from C-111SC Project) may eliminate sampling in western Florida Bay (most productive basin for juvenile sportfish). • Inability to estimate the regional effects of CERP/non-CERP projects and operations to economic benefits for the region.	• Ability to detect change to sportfish populations in Central and Eastern Florida Bay resulting from C-111SC Project and ModWaters effects on the estuaries.

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South Florida Fish Habitat Assessment Program (FHAP)	FHAP provides data on SAV in Florida Bay and Lostman's River to southern Biscayne Bay. This program documents the status and trends of seagrass distribution, abundance and reproduction, and epiphyte loads. It also provides process-oriented data such as photosynthetic efficiency. Resource managers can use these data to address ecosystem response issues on a near real-time basis and to weigh alternative restoration options.	1	Southern Coastal Systems	35.8%	• Loss of early indicator of water quality changes and nutrient availability; without these indicators, may not be able to detect impending algal blooms, which results in a decline in seagrass health.	• Ability to detect change to submerged aquatic vegetation communities in Central and Eastern Florida Bay resulting from C-111SC Project and ModWaters effects on the estuaries.
Biscayne Bay Salinity Monitoring	The Biscayne Bay Salinity Monitoring Network's primary purpose is to provide the quality and quantity of data sufficient for determining the effects of CERP on salinity regimes in Biscayne Bay and for other investigators to use in their analysis of effects on organisms. This project provides descriptive, spatial, and temporal analysis of salinity patterns in Biscayne Bay, and data from this project has been used to develop freshwater inflow needs for Biscayne National Park.	1	Southern Coastal Systems	42.6%	• Loss of 21 salinity monitoring sites throughout Biscayne Bay, Card Sound, and Manatee Bay resulting in less of certainty in determining salinity (distribution and patterns) both in the immediate vicinity of the BBCW Project and at the larger, regional scale. • Loss of sites impairs ability to assess RECOVER's Biscayne Bay salinity performance measure. • Loss of salinity monitoring in central and northern Biscayne Bay inhibits the ability to detect regional changes.	• Monitoring stations (hi-resolution salinity) focused on the BBCW and C-111SC Project areas of influence will be retained. Will be able to detect changes in salinity resulting from C-111SC Project and BBCW.
Hydrology & Salinity Monitoring in Ten Thousand Islands	There is little information regarding the present-day quantity, timing and quality of freshwater flow to the TTI. This study complements an ongoing USGS effort designed to measure the discharge and salinity of rivers flowing from Tamiami Trail towards the TTI in order to help with identifying desirable surface water flow rates and assessing restoration success. Specifically, this project operates and maintains 4 flow monitoring stations and 1 boundary conditions monitoring station in the TTI and describes the hydrodynamic characteristics and the temporal and spatial salinity variability of creeks and estuaries within the TTI area in relation to prominent physical boundaries, which are generally composed of mud flats, ridges, and oyster beds.	1	Southern Coastal Systems	18.4%	• Loss of flow data at East River control site. Stage and flow are not closely correlated here. Cannot secondarily calculate flow and will not be able to compare flow from remaining sites against a control. • No flow at a newly established station in Palm River; this station captures additional flows to the western estuaries from PSRP, which were not originally anticipated.	• 5 monitoring stations to include the 3 basins referenced in the Project Implementation Report (Pumpkin Bay, Faka Union Bay, Fakahatchee Bay). 3 of the 5 stations in the area anticipated to reflect the greatest changes in flow from the project will retain flow, stage, and salinity measurements. One new station in Palm River will re-establish a station where USGS collected 8 months (Oct03-Apr04) of stage and salinity measurements.
Everglades Depth Estimation Network (EDEN)	EDEN is an integrated network of roughly 260 gauging stations (25 of which are maintained by RECOVER) that assist with real-time water level monitoring, ground-elevation modeling, and water-surface modeling that provides scientists and managers with current (1999-present), on-line water depth information for the greater Everglades. This enables the assessment of biotic responses to hydrologic change.	1	Greater Everglades	30.0%	• If staff time is cut, the EDEN Network may no longer be "real time." Real-time data (depended on by CERP and SFWMD operations) will be entirely lost or delayed by ~ 12 months (*i.e* ., data is no longer real-time). • If EDEN network gages are lost, there will be a corresponding loss of accuracy in determining water surfaces and depths in the Everglades, especially if particular SFWMD hydro stations are eliminated.	• The following monitoring component use real-time EDEN data before going out into the field for scientific analyses - wet and dry season aquatic fauna sampling, wading bird monitoring, SFWMD water quality sampling, and operations for tree islands.
Wet Season Trophic Sampling	An overarching hypothesis for Everglades restoration is that hydrology controls the production and concentration of aquatic prey organisms, which in turn determine the magnitude and success of wading bird nesting during any given year. A set of hypothesized mechanistic relationships between hydrology, productivity of the prey base, and the behavioral patterns of several representative wading bird species are being tested in order to determine how large populations of wading birds that were one of the defining characteristics of the pre-drainage Everglades ecosystem can most effectively be restored. The wet season is the period of production of aquatic prey populations, which is directly related to hydroperiod.	1	Greater Everglades	43.0%	• Reduced ability to use prey fishes to make system-wide inferences resulting from CERP projects and C&SF Project operational changes (*e.g* ., Lake Okeechobee Regulation Schedule Study [LORSS]) • Complete loss of periphyton and fish sampling/information in Lake Okeechobee and Pal Mar/Corbett that describes the water quality and prey-based fishes affected by Lake Okeechobee operations and within the Indian River Lagoon watershed. • No species identification of periphyton (an indicator of water quality and depth), which provides a linkage between hydrologic and water quality impacts of operations on wading bird production in the Everglades. Periphyton is both a food source and habitat for wading bird prey (*e.g* ., fish). • Loss of information that contributes to Interim Goals, Stoplight Report and Five Year Report to Congress.	• In order to nest successfully, wading birds rely on having enough prey (high densities) and thus we need to know the status and the trends of prey fish densities. • This project will continue to deliver population data on key aquatic fauna and periphyton as an index patterns of production in time and space. The goal is to help understand with repect to ecosystem restoration.
Dry Season Aquatic Fauna Sampling	An overarching hypothesis for Everglades restoration is that hydrology controls the production and concentration of aquatic prey organisms, which in turn determine the magnitude and success of wading bird nesting during any given year. A set of hypothesized mechanistic relationships between hydrology, productivity of the prey base, and the behavioral patterns of several representative wading bird species are being tested in order to determine how large populations of wading birds that were one of the defining characteristics of the pre-drainage Everglades ecosystem can most effectively be restored. The dry season is a period of concentration of aquatic prey populations, which is controlled by rates of water level recession.	1	Greater Everglades	40.0%	• Loss of information as to how operations and climatic variation affect wading bird prey and wading bird nesting success • No MAP contribution to annual South Florida Wading Bird Report • Loss of information that contributes to Interim Goals, Stoplight Report and Five Year Report to Congress	• Ability to analyze dry-season wading bird prey density and nesting success.

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Wading Birds Monitoring	This project continues to build on an existing database of wading bird reproductive success and productivity information extending back to the 1960's for Wood Storks and to the 1930's for Roseate Spoonbills. The area of study covers Water Conservation Areas (WCAs) 1, 2, 3, Everglades National Park (ENP), and Big Cypress National Preserve (BCNP). This dataset has already served as an early warning of the collapse of ecosystem function, the widespread contamination of the wetland biota with mercury, and the critical functions provided by droughts.	1	Greater Everglades	10.0%	• Loss of information as to how operations and climatic variation affect wading birds; situation exacerbated by potential loss of ModWaters funding for wading bird monitoring (*i.e* ., would no longer be system-wide wading bird survey) • Loss of information that contributes to Interim Goals, Stoplight Report and Five Year Report to Congress • Loss of permit-required mercury monitoring by SFWMD (MAP pays for transportation) – if necessary to continue mercury monitoring, SFWMD would need to pick up transportation costs.	• Wading birds are key species in determining the health of the Everglades as a whole. Provided Mod Waters funding is continued, this study helps to retain system-wide information on the distribution and nesting success of wading birds.
Monitoring Tree Island Condition in Southern Everglades	Tree islands are important centers of biodiversity embedded within the marsh mosaic. Changes in water management associated with hydrologic restoration will result in changes in the internal water economy of tree islands, as well as in the risk of fire, which in turn will lead to changes in plant function and species composition. Data collected by this project will enable the linkage of marsh hydrology predicted by models or attained in the real world with ecological responses of tree islands to determine the success of restoration activities. The areas of focus are ENP and Shark Slough.	1	Greater Everglades	40.0%	• Loss of ability to assess tree island productivity (tree island canopy structure), which is an indication of Everglades "health." • Loss of information that contributes to Interim Goals	• Ability to assess water stress on the species composition of tree islands and contribute information to real-time operations.
Landscape Pattern - Ridge, Slough and Tree Island Monitoring	This project focuses on three components: (1) mapping vegetation features from aerial photographs, (2) aerial surveys for classification of tree island type, and (3) ground surveys of water depth and plant community structure. Data on these components will be used to quantify aspects of the hydrologic regime, determine relationships between vegetation and water depth, quantify the distribution and spatial structure of peat elevations, and ground-truth broader-scale maps based on remote sensing and aerial surveys. This will maximize the likelihood of change detection during CERP implementation.	1	Greater Everglades	56.0%	• Complete loss of sampling in Loxahatchee National Wildlife Refuge and the marl prairies in Everglades National Park, which supports understanding of ModWaters and C-111 SC Project restoration performance • Loss of mapping the "health" of ridge and slough patterning (one of the defining characteristics of the Everglades) • Loss of information that contributes to Interim Goals	• Continued ability to characterize ridge and slough landscape, including elevation and vegetation patterns, albeit within a reduced spatial extent
Tree Island Monitoring	This project expands upon an existing network on monitoring wells and has installed new wells on tree islands in order to quantify groundwater discharge and tree island-marsh hydrologic connectivity across a disturbance gradient. The areas of focus are WCA 3A and 3B. Monitoring well, isotopic, and transpiration data can then be used as a diagnostic tool to assess tree island functioning and health to inform CERP implementation.	1	Greater Everglades	10.0%	• Loss of information used to better develop tree island performance measures and hydrologic connectivity between tree islands and the marsh. This information is used for system operations. • Loss of information that contributes to Interim Goals	• Only work being performed on tree islands that compares below-ground processes (productivity) on islands that range from "pristine" to almost wholly degraded. This information will allow us to understand why some of the tree islands are dying.
Monitoring of Marl Prairie Slough Gradients	In the Southern Everglades, marl prairie habitats are present on either side of Shark River Slough. Vegetation structure and composition gradually change along an elevation and depth gradient, thus transects have been established to monitor changes in vegetation along that gradient. Changes in vegetation can then be related to changes in hydrology resulting from restoration activities.	1	Greater Everglades	20.0%	• Loss of plant community monitoring in western marl prairies, which provides information about system-wide hydrology and is an indicator of hydrologic change and the effects of restoration. • Loss of understanding about gradients from marl prairie to slough that cause changes in vegetation, in response to changes in hydrology • Loss of information that contributes to Interim Goals	• Can inform system operations for timing and distribution of water releases to Northeast Shark River Slough in support of ridge/slough habitat.
Lake Okeechobee Wading Bird Monitoring	This study focuses on populations of white wading birds in Lake Okeechobee, and collaborates with other studies in Florida Bay, the Everglades, and the Big Cypress region. It builds on an existing database of nesting effort, reproductive success, and productivity information extending back to the 1960's, or further in case of the Wood Stork. This data is critical in that it addresses the hypothesis that restored hydrology will generate more dense populations of fish and macroinvertebrates, enhance foraging opportunities for wading birds, and increase breeding and nesting in the coastal areas.	1	Lake Okeechobee	14.0%	• Loss ability to correctly identify the start, peak, and/or end of wading bird nesting season. • Reduced sampling may lead to underestimates of nest failure rates (*i.e* ., if they initiated and then failed between sampling visits). • Next year's data may not be directly comparable to previous years if our sample times/size has changed.	• Retains some ability to assess nesting success of wading birds in Lake Okeechobee.
Monitoring of Oysters in the Ten Thousand Islands	Freshwater diversion from natural flow-ways in the TTI by basin development and road construction has adversely impacted downstream estuaries by changing their salinity regimes and water quality. The Picayune Strand Hydrologic Restoration Project located in southwest Florida will alter the existing salinity regime; however, the timing and quality of freshwater flow to the TTI and its effects on the nearshore benthic community is not yet well defined. This project will provide a comprehensive baseline of oyster population and health in the estuaries downstream of the PSRP. Make sure you put "(PSRP)" in the second sentence of the description.	1	Southern Coastal Systems	N/A	• This oysters monitoring was added to fill a gap in monitoring for Picayune Strand Restoration Project on the downstream estuaries of the Ten Thousand Islands. No consistent and continuous ecological monitoring under the MAP exists to detect the effects of hydrologic changes to the Ten Thousand Island estuaries.	• Addition of only ecological parameter being monitored by CERP to measure the effects of the PSRP on the downstream estuarine health.

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Submerged Aquatic Vegetation - (Indian River Lagoon, St. Lucie Estuary, Lake Worth Lagoon, and Caloosahatchee River Estuary)	Historically, natural freshwater discharges facilitated the presence of healthy floral and faunal communities, including SAV. As development increased, however, management practices resulted in coastal areas with frequent high and low salinity extremes and degraded ecology. This monitoring aims to collect baseline data, quantify relationships between freshwater discharges and subsequent salinity and water quality patterns, and quantify how salinity and water quality patterns in turn impact SAV distribution, community structure, and variability. SAV is a key indicator of restoration success.	2	Northern Estuaries	83.0%	• A reduction in monitoring will focus only on specific areas of the estuary (upstream in the Caloosahatchee River Estuary and closest to the St. Lucie Estuary in the Indian River Lagoon) and therefore won't provide the larger picture of other "non-CERP" induced changes.	• By using in-house SFWMD resources, a program, although limited in scope, will be kept in place in key areas of the Northern Estuaries (St Lucie Estuary and Caloosahatchee River Estuary) where we would expect to see the first effects of CERP projects being implemented. These would include C-44, C-43 and any changes to Lake Okeechobee operations.
Monitoring of Ridge and Slough Maintenance and Degradation	The core mechanism for the maintenance of the ridge and slough landscape is peat accretion: high productioon ridges creates a stable vegetative configuration at higher soil elevations, and low production in sloughs creates another at lower soil elevations. Loss of the patterning would be catastrophic. This project aims to better understand how the ridge and slough landscape is maintained and identify the critical thresholds above and/or below which those mechanisms are altered and landscape change ensues. The area of focus is the hydrologic gradient between Water Conservation Area (WCA) 3A north through the best conserved areas of WCA 3A south, the stabilized areas of WCA 3B, and the impounded areas at the southern end of WCA 3A.	3	Greater Everglades	61.4%	• Partial loss of ability to detect elevation and nutrient/phosphorus changes in ridges and sloughs; diminishes ability to detect phosphorus (P) patterns in soils (e.g., ridges generally have higher soil P concentrations than sloughs). • Partial loss of understanding of mechanism necessary to restore ridge and slough. • Loss of related modeling. • Loss of information supporting Interim Goals.	• Maintain reduced ability to detect change in ridge and slough pattern. The ridge and slough pattern is a defining characteristic of the Everglades.
Biscayne Bay Mangrove Fish Monitoring	It is hypothesized that within mainland mangrove habitats CERP-related impacts will likely be the strongest and most easily discerned from other effects. This study is the longest-running fish monitoring study ever conducted in Biscayne Bay and adjacent waters. Data is collected on seasonal and spatial variation in fish composition and diversity, as well as frequency of occurrence, density and size structure . Emphasis is placed on evaluating relationships between the shoreline fish community and variation in salinity/freshwater flow to evaluate restoration success.	4	Southern Coastal Systems	24.1%	• Loss of sampling sites in northern Biscayne Bay. This decreases the ability to detect operational changes on the central and northern portions of Biscayne Bay. •Inability to assess seasonal variability of fish abundance and distribution and compromises performance measure development. • Limited ability to document changes to nearshore SAV habitat and associated fauna.	• Ability to detect change to mangrove fish populations in Manatee Bay, Card Sound, and Biscayne Bay resulting from C-111SC and BBCW effects on the estuaries. This project comprises the only remaining ecological indicator for Biscayne Bay.
Benthic Infaunal Monitoring in the St Lucie Estuary and Indian River Lagoon	Benthic infaunal communities (worms and mollusks that live in the soft sediment on the estuary bottom) are primarily stationary, and are therefore continuously exposed to changes in the environment. This is one of the main reasons why benthic infaunal monitoring is commonly regarded as one of the best tools for evaluating the health and long-term changes within the marine environment. The main objectives of this project are to evaluate the present health status of the St. Lucie Estuary and Indian River Lagoon, determine the cause of long-term chagnes, pinpoint and evaluate anthropogenic disturbances, and calculate a health index for each monitored site in order to monitor change over time.	5	Northern Estuaries	41.3%	• Reduction in the number of stations monitored from 15 to 9 will decrease our ability to detect changes as CERP projects are implemented and will give us a less complete coverage of all of the areas of the estuary that may be impacted. • The reduction will decrease our ability to distinguish between natural changes and those brought about by the implementation of CERP	• Stations in key areas will allow us to continue on a limited basis to assess the current and future health of the benthic community in the St. Lucie Estuary.
Monitoring of Marsh Mangrove Fishes	This project was developed to improve understanding of the role of the marsh-mangrove ecotone in the southern Everglades as habitat for freshwater fishes. Historically, nesting (and likely foraging) by wading birds occurred in the highest numbers in this area, yet very little is known about what drives prey abundance, distributions, and concentrations in this part of the ecosystem. The goal is to understand how the fish community will respond to restoration conditions, which are expected to increase the pooling of freshwater at the ecotone, resulting in a wider and seasonally-extended oligohaline zone.	6	Greater Everglades	100.0%	• Loss of ability to detect change between saltwater (estuarine) and freshwater (marsh) habitat for fishes. Changes at this interface are an early indicator of CERP effects as projects are constructed. • Loss of information that contributes to Interim Goals and Stoplight Report	No monitoring remains
Vegetation Mapping in Everglades National Park	In order to assess restoration of the Everglades and document changes in species composition and distribution, production of a spatially and thematically accurate vegetation map for ENP and BCNP is necessary. This mapping project involves field collection, remote sensing procedures, and vegetation map interpretation.	7	Greater Everglades	100.0%	• Loss of pre-CERP baseline mapping for Everglades National Park to discern change from ModWaters and C-111 Spreader Canal. • Delay or loss of photo-interpretation of aerial imagery flown in 2009 (delay = undesirable lapse in time between aerial imagery and interpretation; loss = loss of funds expended to acquire the imagery)	No monitoring remains

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Biscayne Bay Nearshore Submerged Aquatic Vegetation (SAV) Monitoring	This study focuses on nearshore benthic habitats (< 500 m from shore) of Southern Biscayne Bay to evaluate spatial patterns of abundance of SAV in relationship to (a) distance to shore and (b) water management canals that discharge freshwater from upland sources. The initial findings of this effort have already indicated distinct seasonal and species-specific patterns of abundance and spatial distribution of seagrasses and macroalgae that are directly influenced by the inflow of freshwater into nearshore Biscayne Bay. These areas are critical nursery habitats for pink shrimp and economically-valuable fishes such as gray snapper, hogfish, spotted seatrout and pinfish.	8	Southern Coastal Systems	100.0%	• Loss of nearshore habitat indicator for Biscayne Bay, Card Sound, and Barnes Sound. No habitat information will be collected to connect the changes in hydrology via the BBCW Project to fauna. Several of these indicators provide economic valuation to restoration benefits. • No salinity monitoring at Deering Estates (expedited component of BBCW); cannot determine effects of BBCW Project on salinity. • Cannot develop performance measure for SAV in Biscayne Bay, Card Sound and Barnes Sound. Performance measures are a primary tool that the RECOVER program uses to assess CERP effects and evaluate CERP alternatives.	No monitoring remains
Monitoring of Biscayne Bay Epifaunal Communities	The epifaunal community is the principal source of prey for recreationally and commercially important fish that inhabit the SCS during all or a part of their lifetime. This project emphasizes community-based performance, directly addressing the restoration objective of reestablishing an estuarine fish and invertebrate community in nearshore South Biscayne Bay. It is a critical element in an integrated sampling regime that is examining the ecology of the seagrass systems and mangrove systems in relation to each other and spatial and temporal salinity patterns.	9	Southern Coastal Systems	100.0%	• No estimate of effects of the BBCW Project and regional operations on epifaunal communities (pink shrimp and other invertebrates) and their ties to economic benefits for Biscayne Bay, Card Sound, and Barnes Sound. • No monitoring of pink shrimp, which is an indicator species and used as a Stoplight Indicator and Interim Goal. •No development of predictive models and habitat suitability indices to be used in performance measures. Performance measures are a primary tool that the RECOVER program uses to assess CERP effects and evaluate CERP alternatives.	No monitoring remains
Alligator and Crocodile Monitoring	Responses of crocodilians are directly related to suitability of environmental conditions, including hydropattern. CERP hypotheses related to alligators and crocodiles state that restoration success or failure can be evaluated by comparing recent and future trends and status of crocodilian populations with historical population data and model predictions. Importantly, these data can be used in an analysis designed to distinguish between effects of CERP and those of non-CERP events such as hurricanes or droughts.	10	Greater Everglades	100.0%	• Loss of information for keystone (alligator) and endangered species (crocodile). • Loss of crocodile information in support of C-111 SC Project and BBCW. • Loss of information that contributes to Interim Goals and Stoplight Report.	No monitoring remains
Monitoring Aquatic Fauna in Big Cypress	Previous quantitative data on aquatic fauna communities is nearly non-existent for the BCR; however, these forested wetlands formerly functioned as critical feeding and nesting sites for wading birds. This project aims to collect quantitative baseline data on the constituent aquatic communities and their ecology in order to detect changes in natural and artificial habitats resulting from restoration activities.	11	Greater Everglades	100.0%	• Loss of fish and invertebrate information in eastern Big Cypress. This was the only monitoring ongoing in Big Cypress National Preserve.	No monitoring remains
Sediment Elevation Tables	In 1998, the USGS began establishing Surface Elevation Tables (SETs) at the hydrology stations on the Lostman's and Shark Rivers. Monitoring is focused on examining impacts of altered freshwater inflow regimes on coastal wetland hydrology and salinity regimes, effects on primary productivity, and on the dynamics of sediment elevation.	12	Greater Everglades	100.0%	• Loss of measurement of sediment accumulation in mangrove zone. • Loss of long-term study to measure sea level rise; related to sea level rise (should be funded through climate change program)	No monitoring remains
Fish and Invertebrate Network (FIAN) - USGS Component	Studies quantifying seagrass-associated fish and invertebrate community composition and abundance using the 1-m^2 throw-trap have been ongoing in South Florida since 1983. FIAN aims to quantify seagrass-associated fish and invertebrate (i.e. shrimp and crabs) populations and communities and their associations with prevailing environmental conditions (e.g. salinity and temperature) and seagrass/algae habitat (SAV). FIAN samples pink shrimp and concurrent habitat and environmental conditions in all three major southern coastal ecosystems--Florida Bay, Biscayne Bay, and the southwest coast mangrove systems, including Whitewater Bay.	13	Southern Coastal Systems	100.0%	• Lose ability to estimate effects of CERP (C-111SC Spreader, BBCW), non-CERP (ModWaters), and regional operations **on** pink shrimp populations and invertebrates**,** the connectivity between changes in hydrology to associated estuarine habitat and sportfish, and the tie to economic benefits. • No monitoring of pink shrimp, which is an indicator species and used as a Stoplight Indicator and Interim Goal. • Lose development of predictive models and habitat suitability indices for potential indicator species, which could be used in performance measures. Performance measures are a primary tool that the RECOVER program uses to assess CERP effects and evaluate CERP alternatives.	No monitoring remains

Detailed FY12 CERP Monitoring and Assesment Plan (MAP) Prioritization

Contract Name	Description of Monitoring	Priority	MAP Region	Proposed % Reduction	What is Lost - Impact of Reduced Funding on Monitoring	Value/Use of Remaining Monitoring Data
Fish and Invertebrate Network (FIAN) - NOAA Component	Studies quantifying seagrass-associated fish and invertebrate community composition and abundance using the 1-m^2 throw-trap have been ongoing in South Florida since 1983. FIAN aims to quantify seagrass-associated fish and invertebrate (i.e. shrimp and crabs) populations and communities and their associations with prevailing environmental conditions (e.g. salinity and temperature) and seagrass/algae habitat (SAV). FIAN samples pink shrimp and concurrent habitat and environmental conditions in all three major southern coastal ecosystems--Florida Bay, Biscayne Bay, and the southwest coast mangrove systems, including Whitewater Bay.	14	Southern Coastal Systems	100.0%	• Lose ability to estimate effects of CERP (C-111SC Project, BBCW), non-CERP (ModWaters), and regional operations on pink shrimp and invertebrates the connectivity between changes in hydrology to associated estuarine habitat and sportfish, and the tie to economic benefits (pink shrimp). • No monitoring of pink shrimp, which is an indicator species and used as a Stoplight Indicator and Interim Goal. • Lose development of predictive models and habitat suitability indices for potential indicator species, which could be used in performance measures. Performance measures are a primary tool that the RECOVER program uses to assess CERP effects and evaluate CERP alternatives.	No monitoring remains
Water Quality, Salinity & Circulation Monitoring	The goals of this project are to monitor and understand water quality variability and circulation and transport variability in the South Florida coastal region surrounding and including Florida Bay and the Florida Keys National Marine Sanctuary (FKNMS) on tidal to interannual time scales; to monitor and understand the role of the Loop Current and Florida Current in influencing water quality along the southwest Florida shelf and Florida Keys including the Dry Tortugas; and to monitor and understand the advection and dispersion of nutrient loads discharging on the southwest Florida shelf and directly into Florida Bay.	15	Southern Coastal Systems	0% Not funded in FY11 - see note in next column	*This project was not funded in FY11 nor FY12 *Lose ability to see salinity and other water quality conditions across the entire estuary (Florida Bay) over time. *Loss of supplemental data to augment the continuous salinity monitoring information generated by the National Park Service and SFWMD.	No monitoring remains

KEY
gray contracts = unfunded monitoring in FY12
BBCW - Biscayne Bay Coastal Wetlands Project
PSRP - Picayune Strand Restoration Project
C111 SC - C-111 Spreader Canal Project
ModWaters - Modified Water Deliveries to Everglades National Park Project
DECOMP - Decompartmentalization and Sheetflow Project