

# COMPREHENSIVE EVERGLADES RESTORATION PLAN (CERP) PROJECT GENERATIONS

## WHAT IS CERP?

The Comprehensive Everglades Restoration Plan (CERP) contains a bold outline for returning the lifeblood of the Everglades – water – to its historic quantity, quality, timing and distribution. The Water Resources Development Act (WRDA) of 2000, the Congressional legislation that approved CERP, states that the “overarching objective of the Plan is the restoration, preservation, and protection of the south Florida ecosystem while providing for other water-related needs of the region, including water supply and flood protection.”

The restored Everglades will not be exactly the same as the original. It will be, however, vastly superior to the current system. Although smaller than the pre-drainage system, it will be a successfully restored Everglades having recovered those hydrological and biological patterns that defined the original Everglades and that made it unique among the world’s wetlands systems.

The Comprehensive Everglades Restoration Plan, comprised of more than 50 projects, includes an array of project features to achieve a restored Everglades ecosystem such as:

- Above-ground Storage Reservoirs
- Stormwater Treatment Areas
- Decompartmentalization
- Operational changes
- Seepage management
- Aquifer, Storage and Recovery

## INDICATORS OF A RESTORED EVERGLADES ECOSYSTEM

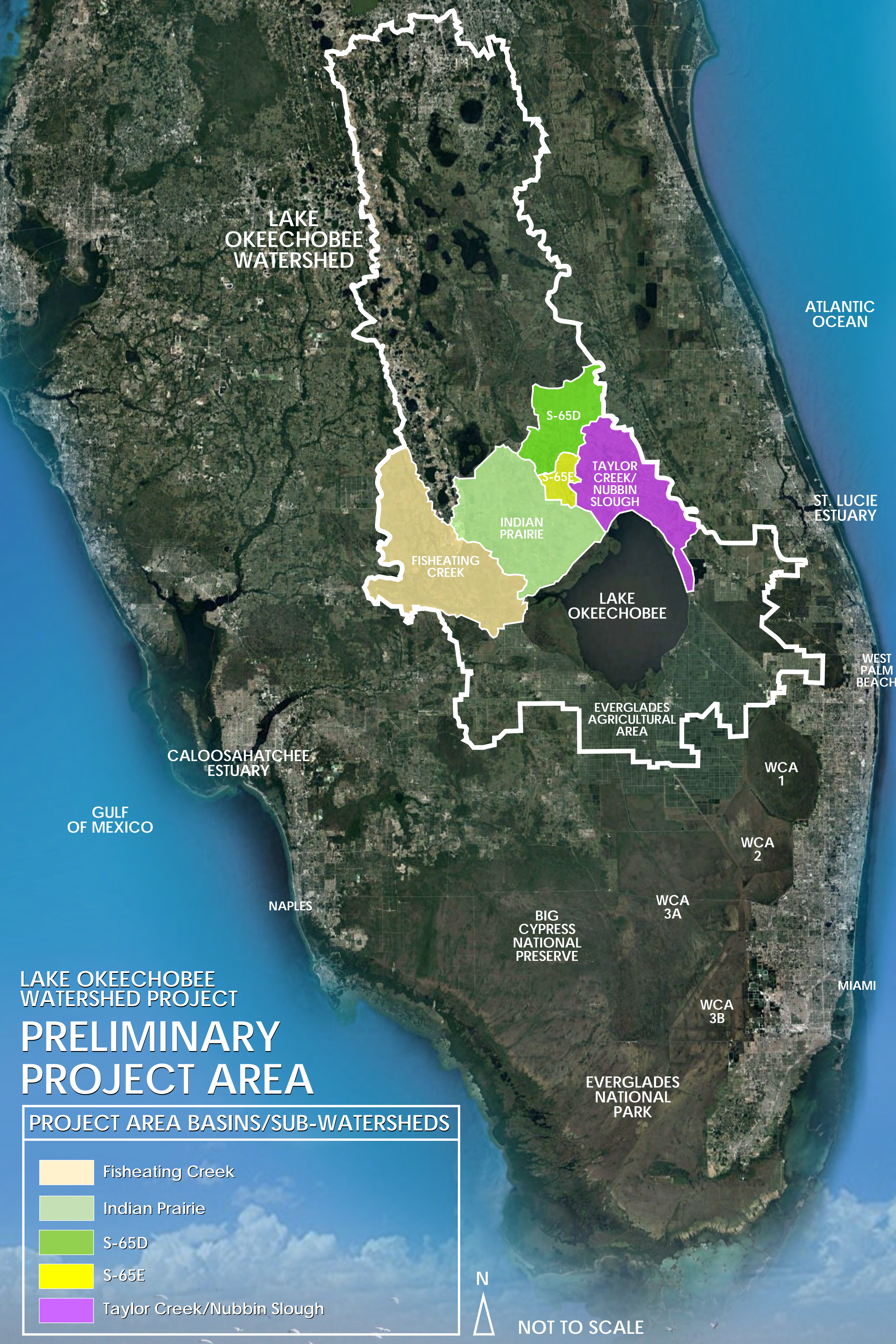
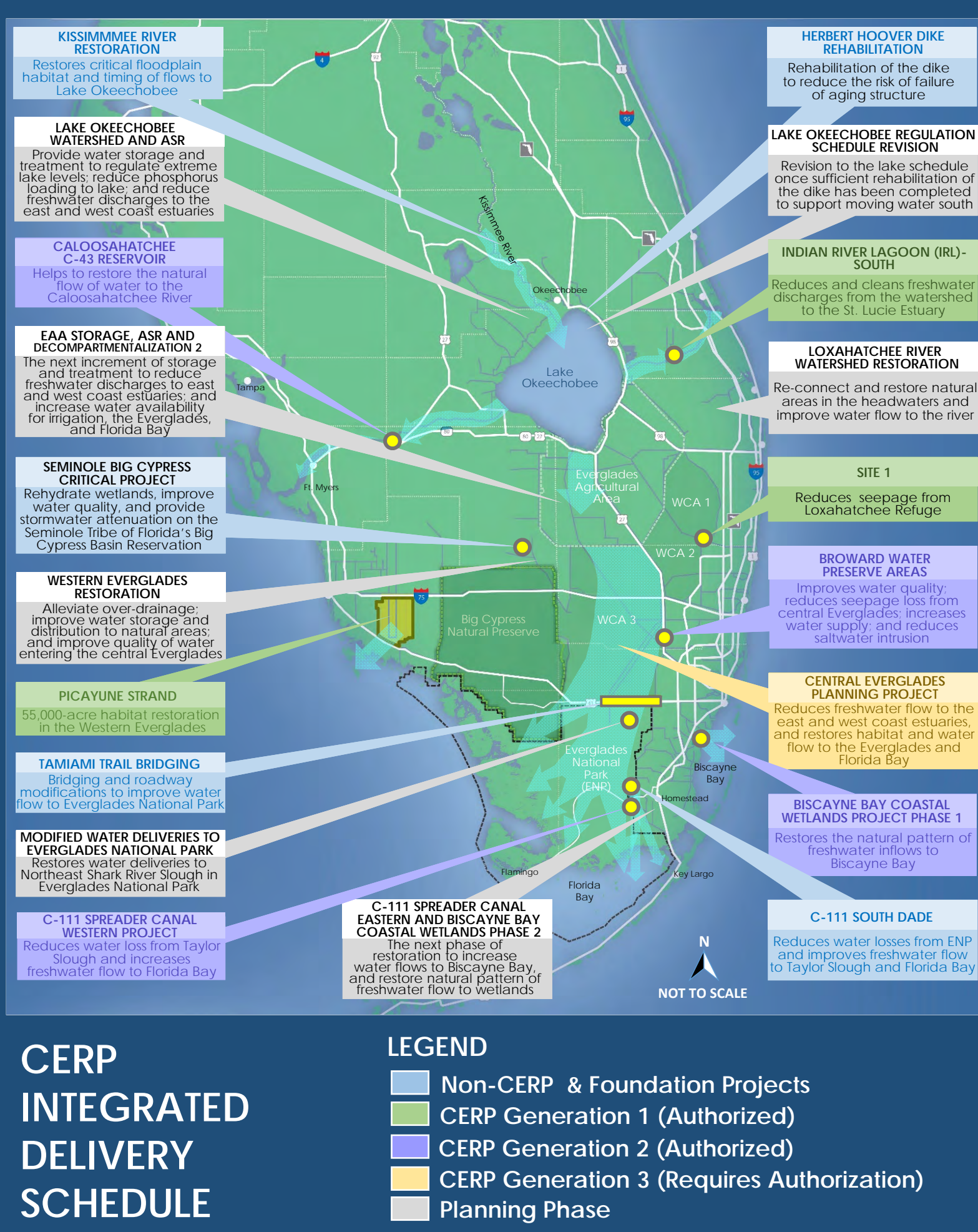
- Wetland functions that mimic pre-drainage conditions
- Significant increase in animal populations at all levels in the aquatic food chain
- Return of large nesting “rookeries” of wading birds
- Quality of water
- Improved health of Lake Okeechobee fishery
- Improved freshwater flows to bays and estuaries
- Improved health of seagrasses and other submerged aquatic vegetation
- Reduced frequency of water restrictions



## LAKE OKEECHOBEE WATERSHED (LOW) PROJECT AND CERP

Since 2000, considerable progress has been made implementing CERP. First and second generation CERP projects are authorized by Congress and are either operational, under construction, or being designed. The Central Everglades Planning Project is currently awaiting congressional authorization. All of these CERP projects contribute significant ecological benefits to the system and the specific regional habitats in which they are located.

One of the next steps for implementation is to identify opportunities to restore the quantity, quality, timing and distribution of flows into Lake Okeechobee. Lake Okeechobee is the heart of the South Florida ecosystem. It provides life-giving waters to the natural system, as well as provides water to support the urban and agricultural development of south Florida.



# LAKE OKEECHOBEE WATERSHED PROJECT

# LAKE OKEECHOBEE WATERSHED (LOW) PROJECT BACKGROUND

Over time, the spatial extent of wetlands and other natural areas around Lake Okeechobee and throughout the watershed have been greatly reduced due to the conversion of natural lands to urban and agricultural uses, dike construction, and channelization for drainage. In addition to reduced habitat acreage, both natural water storage and treatment capabilities have been reduced setting off a cascade of other problems, including:

### Extreme High and Low Lake Water Levels and Undesirable Water Recession and Ascension Rates

- Invasive species
- Undesirable lake releases impacting salinity levels and habitat in the Caloosahatchee and St. Lucie estuaries
- Wind and wave (turbulent) resuspension of sediments made worse by extreme high lake levels
- Substantial reduction in the spatial extent and functionality of wetlands and other wildlife habitat



### Degraded Water Quality and Ecology

- High nutrient levels and algal blooms
- Habitat loss
- Invasive species overtaking natural habitat
- High nutrient levels in soil and sediment
- High nutrient water from drainage basins to the lake

## LAKE OKEECHOBEE WATERSHED COMPONENTS IN CERP

Components outlined in the Comprehensive Everglades Restoration Plan (CERP) that may be considered for the Lake Okeechobee Watershed Project include water storage and water quality features in the sub-watershed basins located directly north of Lake Okeechobee. Essentially, the CERP plan for the Lake Okeechobee Project provided a broad, overall look at the issues and problems in the project area and recommended solutions at a conceptual level. The Lake Okeechobee Watershed Project is charged with a detailed consideration of the issues and problems affecting Lake Okeechobee and conducting in-depth planning prior to developing a recommended plan. Initial features identified which may be evaluated to improve the quality, quantity, timing and duration of water entering Lake Okeechobee include:

- Shallow and deep reservoirs
- Aquifer, Storage and Recovery (ASRs)
- Stormwater Treatment Areas
- Wetland restoration
- Flow Equalization Basins

## LAKE OKEECHOBEE WATERSHED PROJECT OBJECTIVES

- Improve the quality, quantity, timing and distribution of water entering Lake Okeechobee
- Reduce undesirable discharges to the Caloosahatchee and St. Lucie estuaries downstream of the lake
- Improve system-wide operational flexibility
- Restore isolated wetlands in the watershed



# ENVIRONMENTAL CONSIDERATIONS

## NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

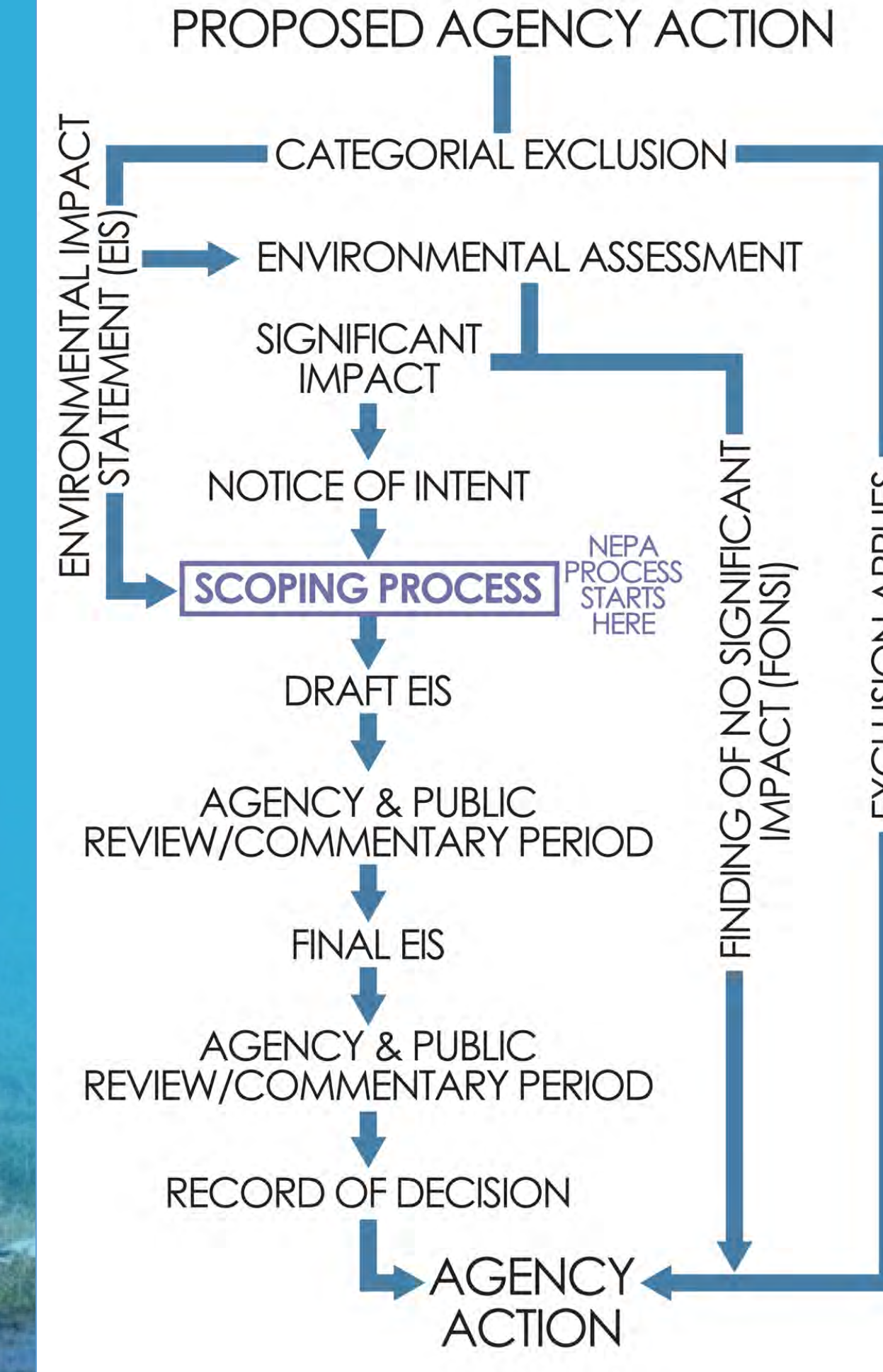
### WHAT IS NEPA?

NEPA is a Federal law enacted in 1969. Under NEPA, Federal agencies are required to evaluate the potential environmental impacts that a future project or action may cause. These findings are captured in a detailed statement and are available for public review and comment before any decisions or actions are taken. Not all Federal actions require a full Environmental Impact Statement (EIS). Due to the size and scope of the Lake Okeechobee Watershed project, environmental documentation will be in the form of an EIS.

### ENVIRONMENTAL FRAMEWORK FOR PROJECT DEVELOPMENT AND IMPLEMENTATION

- COORDINATION with applicable environmental regulatory agencies
- AVOIDANCE AND MINIMIZATION of environmental impacts to the maximum extent practicable
- MITIGATION AND MONITORING where unavoidable impacts occur

### NEPA PROCESS



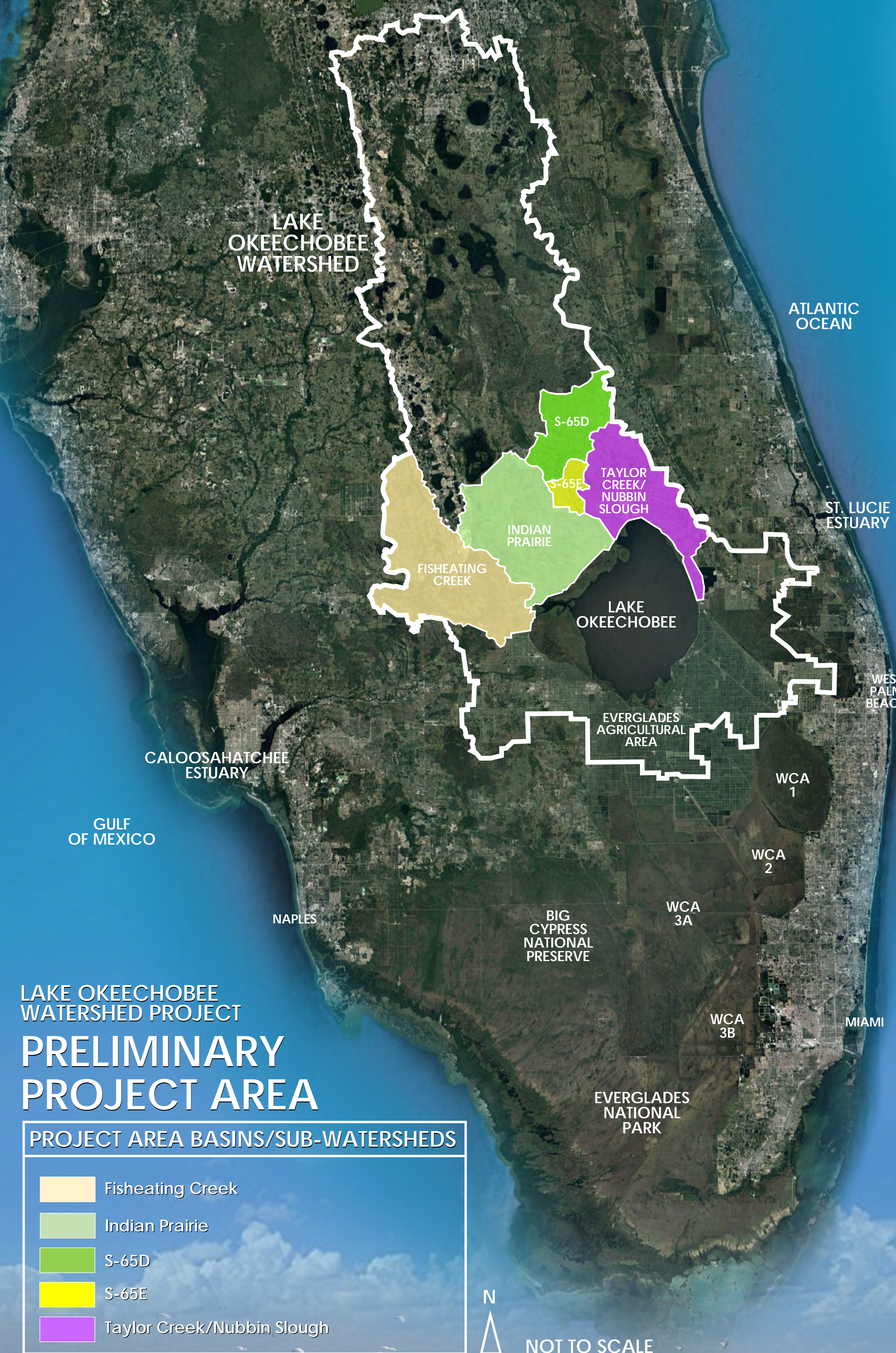
### PUBLIC INVOLVEMENT IS KEY

Public input is vital to the success of a project. Inherent to NEPA, as well as the USACE planning process, are established opportunities for public input during project development.



Examples include public workshops and meetings related to the scoping portion of the NEPA process, development of project alternatives, and releases of draft reports (such as the EIS and the project implementation report).

Project information and dates of related public forums for the Lake Okeechobee Watershed Project, will be accessible via the project's website.



# LAKE OKEECHOBEE WATERSHED PROJECT



# HUMAN & NATURAL ENVIRONMENT

## EVALUATING POTENTIAL BENEFICIAL & ADVERSE IMPACTS

Some of the human and natural environmental considerations that will be evaluated as part of the Lake Okeechobee Watershed Project and included in the Environmental Impact Statement (EIS) include:

### NATIVE AMERICANS

Both the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida have historically utilized the Lake Okeechobee Watershed and continue to use and maintain a strong connection to the area. The Seminole Tribe's Brighton Reservation and the Miccosukee Tribe's Cherry Ranch Reservation are located central to the watershed. Traditional activities such as hunting, fishing, subsistence agriculture, and related customs and practices of living are exercised on these reservations and other leased and owned Tribal lands. Modern activities such as ranching, entrepreneurship, and various tourism related businesses are also undertaken throughout the region.



CLOSE-UP OF SHELL MIDDEN SITE

### CULTURAL RESOURCES

Evidence of human occupation in central Florida and the Okeechobee region extends back 14,000 years before present. This is evident in the hundreds of prehistoric and historic archaeological sites that dot the landscape, which includes historic properties listed and eligible for listing in the National Register of Historic Places. Archaeological sites in the region range from prehistoric earthworks and shell middens to post-European contact sites associated with the Seminole Wars and the First Spanish Period.



EXCAVATING SHELL MIDDEN SITE

### WILDLIFE AND THEIR HABITAT

The watershed, Lake Okeechobee, as well as the estuaries to the east and west, include a varied mix of habitat providing food, cover, nesting, and roosting for a variety of fish and wildlife species – some are rich in wildlife diversity, whereas others have been fragmented and functionally degraded to varying degrees. Upland communities in the watershed include Florida scrub, hammocks, pine, dry prairie, and cutthroat grass. Watershed wetland communities include freshwater marshes, wet prairie, flowing water swamps, pond swamps, seepage swamps, and aquatic/open water habitats. Examples of estuarine habitat include seagrass beds and mangroves providing valuable habitat for species of fish, oysters and sea turtles.

### ENDANGERED SPECIES



The watershed includes more than 26 species of wildlife and 41 species of plants listed by federal and state agencies as threatened, endangered or of special concern. Examples include the Florida panther, wood stork, Florida grasshopper sparrow, Everglades snail kite and Audubon's Crested Caracara.

### WETLANDS

Historically, isolated wetlands covered a significant portion of the Lake Okeechobee Watershed, capturing storm water runoff and helping to retain nutrients in the watershed. These wetlands were drained and converted to agricultural and urban uses, resulting in substantial reduction in the spatial extent of the wetlands in the watershed and in wetland functionality.

### WATER QUALITY

Over the last 50 years, excessive nutrient enrichment of Lake Okeechobee and loss of wetlands that typically captured stormwater runoff and retained nutrients has periodically generated large surface blooms of blue-green algae that can be harmful to fish, wildlife, and humans who use the water for drinking.

### INVASIVE SPECIES

Many non-native and invasive species are flourishing in a variety of habitats and are negatively affecting the ecology throughout the watershed. Non-native and invasive plant species are most frequently encountered in disturbed area and areas where water quality has been impacted by increased nutrient loads. Examples of invasive species throughout the watershed includes brazilian pepper, melaleuca, Australian pine, old world climbing fern, water hyacinth, water lettuce, torpedo grass, cogon grass



WATER LETTUCE & WATER HYACINTH

