

Northern Estuaries ecosystem health workshop

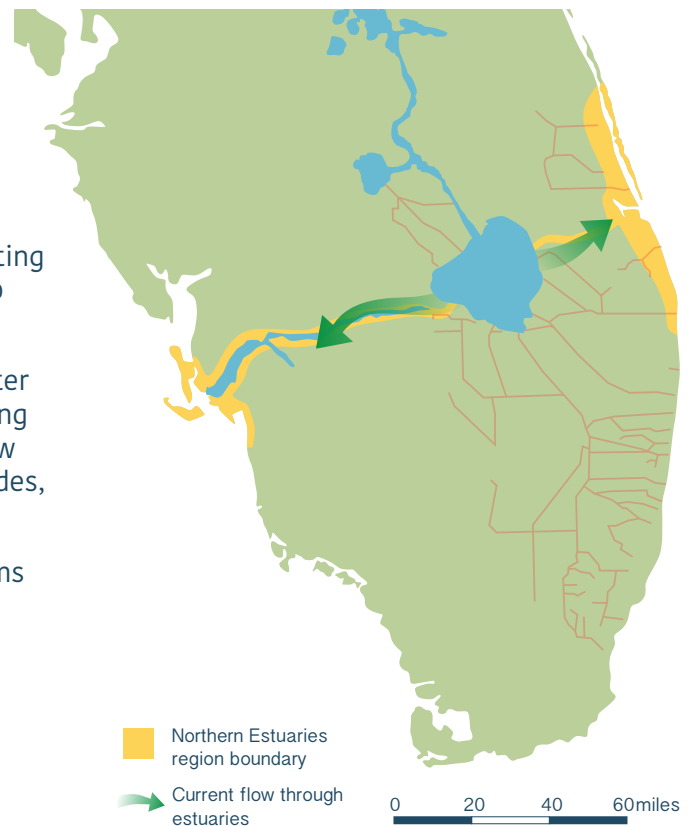
Developing a report card for the Everglades

Meeting Newsletter
SFWMD West Palm Beach Field Operations Center
West Palm Beach, Florida, August 2017

The Comprehensive Everglades Restoration Plan (CERP) focuses on restoring pre-drainage characteristics to the hydrology of south Florida's remaining undeveloped wetlands and coastal waters. The Northern Estuaries includes the Caloosahatchee Estuary, St. Lucie Estuary, and Loxahatchee River Estuary, on the east and west coasts of south Florida that receive inflows from Lake Okeechobee. For the Northern Estuaries, getting the water right means regulating these freshwater inflows better and implementing projects to avoid loss of important estuarine habitat.

Progress has been made toward better regulation of freshwater inflows from Lake Okeechobee. The Central Everglades Planning Project and construction of new water storage reservoirs allow managers to redirect water southward to the Greater Everglades, rather than directly into the Northern Estuaries.

Currently Lake Okeechobee releases continue to pose problems in the Northern Estuaries. Hurricane Irma struck the region on September 10, and lake levels have risen to the point where large, emergency releases to the Northern Estuaries are inevitable.



Map: Restoring more natural freshwater flows into Northern Estuaries is the first step to improving habitat conditions in this portion of the Everglades.

Left: S-80 St. Lucie spillway and lock control the flow of water downstream from Lake Okeechobee into the estuary.

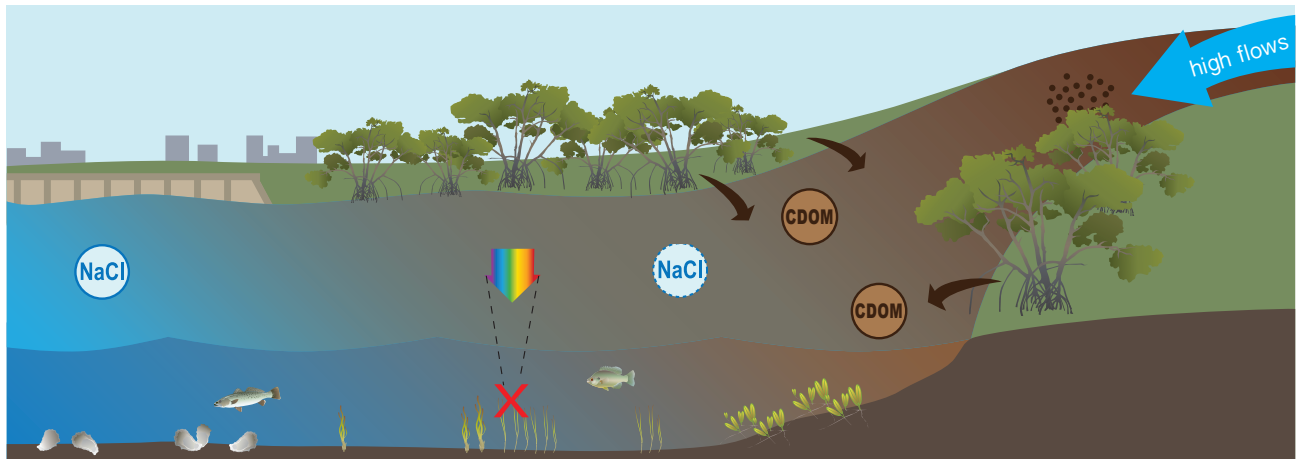
Right: Submerged aquatic vegetation in the Indian River Lagoon.

Top photo: Lagoon landscape, Leesa Souto.

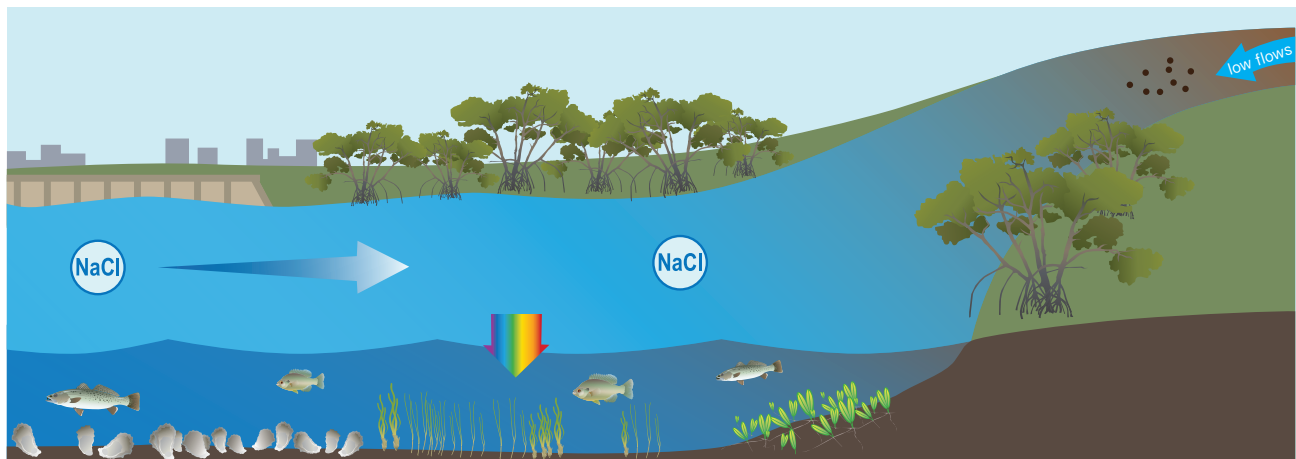
Excessive freshwater flows affect the health of the Northern Estuaries












Participants in the Northern Estuaries regional workshop on August 16-17, 2017 discussed key environmental drivers and pressures and created illustrations to describe impacts on the ecosystem. The main pressure affecting the Northern Estuaries is the practice of shunting excess freshwater from Lake Okeechobee into the Northern Estuaries. By creating illustrations, groups described how this disrupts the estuarine habitat provided by seagrasses and oysters.

High flows from Lake Okeechobee



Low flows from Lake Okeechobee



High-volume inflows  from Lake Okeechobee disrupt normal patterns of salinity  and reduce water clarity in the Northern Estuaries. This can make the estuaries uninhabitable for seagrasses , oysters , and fish species  that depend on these habitats. Freshwater is often highly colored by dissolved organic matter , and discharge from Lake Okeechobee is sometimes turbid with resuspended lake sediments . In both cases, the amount of light available to seagrasses is reduced . Restoration seeks to restore balance to the estuarine ecosystems by limiting inflows from Lake Okeechobee within acceptable inflow envelopes , thus creating a more estuarine salinity gradient  and increasing light levels .

Combining new and existing indicators of ecosystem health

During the workshop, Northern Estuaries regional coordinators and scientists identified potential indicators of ecosystem health. Some of the indicators have been used previously, while others were newly identified as being important to understanding the region. All potential indicators will be considered for use in the 2019 System Status Report (SSR) and Everglades Report Card.



Oysters



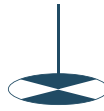
Submerged aquatic vegetation



Benthic infauna



Fish



Water parameters

Salinity, temperature, colored dissolved organic matter, chlorophyll-a, turbidity, secchi depth, nutrients (N, P), dissolved oxygen



Phytoplankton community and algal blooms



Coastal wetlands



Hydrology

Floodplain migration



Rare/listed species

Johnson's seagrass, dolphins, manatees

What does the status of Northern Estuaries tell us about the Everglades?

Restoration in the Northern Estuaries does not mean a return to historical conditions. Historically, the Northern Estuaries were isolated from Lake Okeechobee and human development, surrounded instead by wetlands that held back stormwater, cleaned and slowly released it to the coast. Restoration means providing enough new watershed storage and stormwater treatment to improve the quantity, quality, and timing of flows from Lake Okeechobee both into the coastal waters of the Northern Estuaries, which need less water, and into the Greater Everglades, which needs more water, in order to sustain healthy estuarine ecosystems.

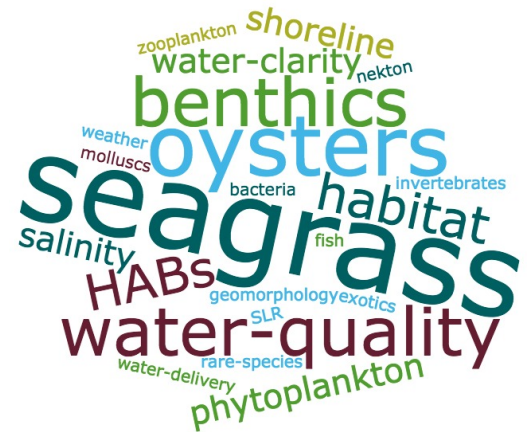


Mangrove saplings in an estuary.

Northern Estuaries scientists identify SSR themes and topics

In mid-August 2017, the scientists and regional coordinators of the Northern Estuaries region of the Everglades met with the IAN team in West Palm Beach, FL. The goal was to identify important topics for the 2019 SSR, key attributes of the ecosystem, and desired conditions for the ecology and hydrology of Northern Estuaries. Participants of the workshop used illustration techniques to create ecosystem illustrations of the region, identified potential indicators for their region, and developed a timeline for completing the first draft of the 2019 SSR. Participants discussed roles and responsibilities for creating the Northern Estuaries chapter of the 2019 SSR. Discussions focused on valued components of the Northern Estuaries ecosystems— seagrass, oysters, and clean water.

IAN will work with the Northern Estuaries team to develop and score a set of report card indicators based on data collected on the valued ecosystem components. This information will be used to help RECOVER inform government officials, regional managers, and the general public about progress toward restoring the Everglades.



This word cloud captures topics that Northern Estuaries team members identified as important to include in the 2019 SSR.

Synthesis and production

In upcoming months the Northern Estuaries and other regional teams will be planning and organizing work to compile the first draft of the 2019 System Status Report.



Participants of the August 2017 Northern Estuaries and Lake Okeechobee workshop, West Palm Beach, FL.

Acknowledgments

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