# Exploring Everglades ecosystem health

Working together to develop a report card

Meeting Newsletter West Palm Beach, March 2017

The System Status Report assesses progress of the Comprehensive Everglades Restoration Plan (CERP). This report is the work of RECOVER (REstoration COordination and VERification), an interagency team that directs the extensive program of ecosystem research and monitoring that supports implementation of the CERP. The System Status Report provides a comprehensive assessment of the impact of a myriad of projects being implemented throughout south Florida under the CERP. However, a mechanism is needed to communicate key findings on the conditions in the ecosystem to upper level managers, policy makers, and the public. Therefore, an ecosystem health report card is being developed in parallel with the 2019 System Status Report.



# RECOVER teams tell the Everglades' story

Regional coordinators and scientists from each of four regions within the Everglades convened in West Palm Beach, Florida on March 13<sup>th</sup> and 14<sup>th</sup> to participate in a meeting to kick-off the 2019 System Status Report and Everglades Report Card. Participants summarized the main story of their region. Bringing together individual region stories paints a picture of the entire system.

### Lake Okeechobee

The regulation of the heart of the Everglades, Lake Okeechobee, directly affects all other regions, but the lack of additional storage, water quality, and connection with the southern Everglades prevents management options that balance the ecology of the whole system. Therefore, by implementing CERP components that build back into the system the lost natural storage, water quality, and connection features, we have the ability to manage the water resources in a way that will benefit both the natural and man-made attributes of south Florida.





Southern Florida and Lake Okeechobee.

# Southern Coastal Systems

Historically, freshwater entering the Greater Everglades' southern estuaries maintained ideal conditions for submerged aquatic vegetation and associated estuarine species. But reduced flows significantly increase salinity, thereby degrading habitat and reducing fish and other fauna. Therefore, reestablishment of freshwater flow is a priority to restore estuarine ecology in the southern Everglades, providing clear water, great fishing opportunities, and other recreation for residents and visitors.



Seagrass die-off in the Everglades.

# Northern Estuaries

The Northern Estuaries provide ecosystem services that support regional economies and communities. But they are directly impacted by water management alterations that have drained their watersheds for agricultural and urban development and connected them to Lake Okeechobee. These wide-spread hydrologic changes have disrupted conditions in the estuaries and reduced the development of healthy estuarine ecosystems. Therefore, CERP projects designed to restore historic hydrology of the Greater Everglades system will improve flows, salinity, and water quality in the Northern Estuaries. Long-term monitoring of indicators of estuarine health will be used to assess progress toward restoration success.



Northern Estuaries flow and example indicators.



### **Greater Everglades**

The Greater Everglades ridge, slough, tree island, and marl prairie mosaic is a unique suite of habitat that exists due to a sensitive relationship between soil elevation and hydrology. But the system has flattened out, habitats are disappearing, and native wildlife have been negatively impacted. Therefore, we are illuminating the status of the watershed with the conviction that its restoration will nurture us and the countless organisms who also call it home.

Marl prairie habitat in the Everglades.

# Indicators address common themes

Participants identified five themes: Hydrology, Water quality, Key species, Habitat, and Food web. Future meetings will determine which indicators will be the most useful for assessing the health of the entire Everglades system. While different indicators will be required to characterize conditions in each region, the indicators will be representative of each theme. The themes and some possible indicator examples are listed below.



# Hydrology

Water level/depth Lake stage Salinity Recession Reversals Soil Oxidation Submerged aquatic vegetation



#### Water quality

Algae/algal blooms Cyanobacteria Cattails Nutrients Suspended solids



#### Key species

Oysters Wading birds Fish American Crocodile Alligator Exotic fauna



# Habitat

Ridge and slough Tree-islands Marl prairies Exotic vegetation Submerged aquatic vegetation Emergent aquatic vegetation Mangroves



### Food web

Periphyton Apple snail Zooplankton Aquatic prey base PanFish Chara Crayfish

# Moving forward with the Everglades Report Card and 2019 System Status Report

Members of the RECOVER team met with the University of Maryland Center for Environmental Science (UMCES), Integration and Application Network to begin work on the Everglades Report Card. This meeting, in West Palm Beach, Florida, took a system-wide view and is the first of four meetings to lay the groundwork for these two documents. The remaining meetings, to be held in summer 2017, will look more closely at each of the four regions included in the CERP. Beginning in fall 2017 RECOVER teams will compile and synthesize data needed to score indicators for the report card. This work will occur concurrently with the design and layout of the 2019 System Status Report and the Everglades Report Card. After review, the System Status Report and the Report Card will be completed in January 2019.





# Communication products designed to reach multiple audiences

The System Status Report, the Everglades Report Card, and the Report to Congress are a set of interrelated reports. Each relies on the same data and technical analyses produced by RECOVER's Monitoring and Assessment Plan, but each is targeted for a different audience. The pyramid to the left depicts the flow of information from the most technical documents (bottom) to the most summarized and synthesized document (top). Due to a long history of synthesizing and communicating data, UMCES's role in this project is to design and produce the Everglades Report Card and to help the regional coordinators create the 2019 System Status Report.



Participants of the Everglades Report Card system-wide meeting in March 2017.

### Acknowledgments

A special thanks to all of the participants of the RECOVER Everglades system-wide meeting for their support and continued contributions to create the 2019 System Status Report and Everglades Report Card.

From left: Caroline Donovan, Dave Rudnick, Bill Nuttle, April Patterson, Mike Simmons, Jed Redwine, Jenna May, Fred Sklar, Phyllis Klarmann, Tom Dreschel, Patti Gorman, Gretchen Ehlinger, Miles Meyer, Emily Nastase, Patrick Pitts, Agnes McLean, Alexandra Fries, and Andy Rodusky. Not pictured: Therese East.

Cover image: Everglades National Park Service.

