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This fact sheet is provided as a reference to encourage a greater understanding of the various issues related to managing water in South Florida.



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sfwmd.gov
South Florida Water Management District
3301 Gun Club Road
West Palm Beach, Florida 33406
561-686-8800 or 1-800-432-2045 in Florida
www.sfwmd.gov

MAILING ADDRESS: P.O. Box 24680
West Palm Beach, FL 33416-4680

Strategies for Improving the Caloosahatchee River & Estuary

Extensive modifications to the Caloosahatchee River and its watershed, dating back as far as the 1880s, have drastically altered the hydrology of the region. Today, the Caloosahatchee is part of one of the world's largest interconnected public works systems. Freshwater flows to the river and its estuary are managed by the U.S. Army Corps of Engineers in cooperation with the South Florida Water Management District (SFWMD), according to a federal regulation schedule for Lake Okeechobee.

At its August 2012 meeting, the SFWMD Governing Board directed District staff to conduct a detailed analysis of how a concept known as environmental water supply augmentation could be implemented to provide fresh water to the Caloosahatchee during dry periods on an interim basis.

2011-2012 Analysis of Lake Okeechobee Operations

- As a result of historical changes to the natural system and operational constraints associated with Lake Okeechobee management, the Caloosahatchee River and Estuary currently lack available fresh water to maintain appropriate salinity levels during dry periods.
- Long-term solutions to provide the necessary water storage – construction of the C-43 West Basin Storage Reservoir as part of the Comprehensive Everglades Restoration Plan and rehabilitation of the Herbert Hoover Dike around the lake – remain years away from completion.
- District scientists and engineers worked collaboratively for close to a year on an in-depth screening analysis to evaluate hundreds of potential modifications to Lake Okeechobee management that might offer improvements for the Caloosahatchee Estuary.
- Based on the results of the screening analysis, environmental water supply augmentation showed the most potential for providing additional fresh water to the Caloosahatchee during dry times while still meeting the multiple goals for lake management.

Environmental Water Supply Augmentation

- Under this concept, stormwater runoff from the Everglades Agricultural Area would flow back into Lake Okeechobee under specific seasonal and operational conditions to increase water storage. The additional water could then be used to increase environmental water supplies, primarily to benefit the Caloosahatchee.
- Based on computer modeling, environmental water supply augmentation has the potential to significantly reduce the number of high-salinity months in the Caloosahatchee Estuary without adversely affecting other users and natural systems dependent on Lake Okeechobee.
- Since May 2012, District staff have held public discussions and met with stakeholders to solicit input on environmental water supply augmentation as well as other strategies for refining Lake Okeechobee operations.
 - Incorporating this public input, additional constraints were added to modeling for environmental water supply augmentation to better protect water for the Everglades while still providing substantial benefits to the Caloosahatchee.

Effects on Water Quality

- Based on the preliminary screening analysis, environmental water supply augmentation would have a minimal effect on water quality in Lake Okeechobee or the Caloosahatchee Estuary.
- Over the last 17 years, an extensive program of agricultural best management practices required by state law has considerably improved the quality of water leaving farms in the Everglades Agricultural Area.
- Additional volumes of lake water released to the Caloosahatchee Estuary would carry additional loads of phosphorus and nitrogen. However, concentrations of these nutrients in lake water flowing into the estuary would experience little to no change as a result of environmental water supply augmentation.

“Backpumping”

- Environmental water supply augmentation is not the same as historical backpumping into Lake Okeechobee for either flood control or agricultural water supply purposes.
 - To protect the health and safety of residents living in low-lying communities south of Lake Okeechobee, the District has authority to backpump water into the lake for flood control in emergency situations. Over the last 15 years, backpumping for this purpose has been minimal.
 - The District last utilized backpumping into the lake for agricultural water supply during a drought in 2001. Environmental water supply augmentation would primarily benefit the environment, particularly the Caloosahatchee Estuary.

Refinements to the Environmental Water Supply Augmentation Concept

- The refined environmental water supply augmentation concept could deliver water to the lake for environmental purposes that otherwise might be lost to tide either as part of regional flood control operations or to protect endangered species such as the Cape Sable seaside sparrow from high water levels in the Everglades.
 - Over a 41-year simulation period, environmental water supply augmentation would only be feasible 6 percent of the time, indicating that the water management concept would be a beneficial but infrequently used tool.
 - Analysis shows the refined environmental water supply augmentation concept would likely have a minimal effect on flows to the Everglades. Environmental water supply augmentation would divert less than 1 percent (~50,000 acre-feet) of water flows to the Everglades to provide environmental benefits to Lake Okeechobee and the Caloosahatchee Estuary. The Everglades Water Conservation Areas receive an average of 5.6 million acre-feet of water per year.
- Environmental water supply augmentation would only be an interim risk-reduction measure for the Caloosahatchee Estuary until long-term solutions are in place.
 - The District is continuing to work with its partners to expedite construction of basin projects that will provide the necessary storage for the Caloosahatchee.
- District staff will now be conducting additional modeling and data analysis and evaluating how the environmental water supply augmentation concept would be implemented, including operational criteria and necessary regulatory authorizations.

For more information on environmental water supply augmentation and other strategies for improving the Caloosahatchee River and Estuary, please visit www.sfwmd.gov/caloosahatchee.