Title:

N-69: Support initiatives and provide financial incentives to restore and preserve wetlands north of Lake Okeechobee to stop discharges to coastal estuaries to protect estuaries and reefs.

Background:

- This recommended management action relates to Southeast Florida Coral Reef Initiative (SEFCRI) counties, as well as counties contributing to the Kissimmee River and St. Lucie River watersheds.
- This recommended management action is being put forth because water flows into Lake Okeechobee six times faster from its sources, the Kissimmee River and other tributaries, than it leaves. In wet years, this results in long-duration discharges to the St. Lucie and Caloosahatchee Rivers. Storage and treatment north of Lake Okeechobee is essential to improving the estuarine conditions in southeast Florida. This recommended management action will address discharges from the Lake Okeechobee watershed to tide, e.g. the estuaries and ocean within the SEFCRI region.

Objective:

- The intended outcomes of this action are to provide incentives for municipalities, agriculture, and government agencies to implement creative new ways to restore wetlands for better storage and filtration within the Lake Okeechobee and St. Lucie River watersheds. The ultimate result of this recommended management action is to reduce eutrophication of Lake Okeechobee and reduce discharge of its water to tide in the SEFCRI region. The outcome of this actions will also encourage partnerships between local, state and federal governments and private land owners to develop new surface water management and water quality improvement techniques that will continue to provide flood protection and environmental services while reducing peak flows and pollution loads to Lake Okeechobee and southeast Florida estuaries.
- There is a need to increase the understanding that the hydrology of the Lake Okeechobee and St. Lucie River watersheds are connected with water quality on our nearshore coral reefs. Too few people understand that there is a connection.

Intended Benefits and/or Potential Adverse Effects:

- Benefits of implementation of this recommended management action include: increased retention of water upstream is expected to improve ecological conditions north of the lake and water storage capacity in Lake Okeechobee and, subsequently, improved water quality for southeast Florida coral reef ecosystem including estuaries, nearshore habitats, and coral reef tract.
- A possible issue that may arise with implementation of this recommended management action is the cost and administration of the program e.g., providing sufficient funding for agricultural users to commit to the program for the long term. If the new system of water management does not have flexibility, then in dry years, or successive dry years, agricultural interests south of the lake may want more water. This may result in less than optimal water quality and quantity within the watersheds and estuaries of southeast Florida.
- The duration of the benefits of this recommended management action are the following: (1) the discrete action of creating the program and (2) the recurring management and support of the program with incentives. The program would be implemented via a phased approach. This action will be on-going until the large freshwater discharges that adversely affect the estuary and nearshore reefs in the SEFCRI area are reduced in magnitude and pollutant load.
    - If this recommended management action is not implemented the following will continue: (1) adverse impacts to water quality and quantity, (2) a continued degradation of coral reef ecosystem resources, and (3) a continued degradation of wetland resources in southeast Florida.

Agencies/ Organizations:

- This recommended management action supports on-going initiatives that are in various stages of implementation by federal and state agencies, including the United States Army Corps of Engineers (USACE) (Lake Okeechobee), the United States Fish and Wildlife Service (USFWS) (Everglades Headwaters National Wildlife Refuge), Florida Department of Environmental Protection (FDEP) (Total Maximum Daily Load (TMDL)/Basin Management Action Plan (BMAP)), the Florida Fish and Wildlife Conservation Commission (FWC) (Management of lake levels in the Kissimmee Chain of Lakes), South Florida Water Management District (SFWMD) and likely many others.
- Support by SEFCRI for these initiatives would enhance their collective abilities to acquire funds to further their programs. Additional entities could include: all Florida water management districts overseeing this area, The Nature Conservancy and other appropriate non-governmental organizations that oversee this region, all counties and local municipalities within the watersheds, agricultural consortiums (owners of agricultural lands are going through difficult times), ranchers, and conservation organizations.
- The key stakeholders for this recommended management action include the Florida Cattleman's Association and conservation groups in both the SEFCRI area and throughout the state. This recommended management action is consistent with existing local, state and federal regulations and actively supports on-going initiatives.

Permitting/ Enforcement Requirements of RMA:

- Permitting requirements for this recommended management action include approvals that will need to be obtained from federal (USACE) and state (e.g., FDEP, SFWMD) agencies prior to implementing some hydrologic restoration projects.
- There are no enforcement requirements with this recommended management action.
- Measurable Outcomes/Success Criteria/Milestones to show success with this recommended management action include increased water storage north of Lake Okeechobee.
    - Metrics are fairly straightforward: measurements of discharge volumes and pollutant quantities (e.g., nitrogen, phosphorous) that are discharged from the St. Lucie Locks are already calculated. Economic and ecological metrics already have been published for the FRESP project – See Hilary M. Swain, Patrick J. Bohlen, Kenneth L. Campbell, Laurent O. Lollis, and Alan D. Steinman. Integrated Ecological and Economic Analysis of Ranch Management Systems: An Example From South Central Florida. Rangeland Ecology & Management: January 2007, Vol. 60, No. 1, pp. 1-11. As more water storage projects come online, discharges should be reduced and the quantities of pollutants should simultaneously decline.
    - Additional suitable metrics for this recommended management action may be available from the Central Everglades Planning Project (CERP) on the USACE website.
- Success will be attained when discharges from the Lake Okeechobee and St. Lucie River watersheds into the coastal estuaries and nearshore reefs no longer have detrimental impacts on these ecosystems. However, solving the issues surrounding Lake Okeechobee and its watershed, as well as the quality, quantity, timing, and distribution of hydrologic flow, will not, on their own, result in fully rehabilitated estuaries.

Cost:

- The estimated direct cost of implementing this recommended management action is subject to legislation at the state and federal levels.
- Potential funding may be acquired through: North American Wetlands Conservation Act, Wetland Reserve Program, Landowners Incentive Program and Florida State Legislature. The possibility exists to obtain protected species funding from USFWS &/or FWC if individual projects will benefit flora and fauna that are designated as threatened or endangered.

Time Frame & Extent:

- Expanding existing payment-for-environmental services programs can be implemented very quickly. These programs are very popular with ranchers, who are very conservation-minded, but their continued existence (funding) remains uncertain and is being debated in Tallahassee.

Miscellaneous Info:

- This recommended management action complements and is linked with N-71 and S-28. It need not be done in isolation or as a necessary step toward implementing other recommended actions. All recognize that the health of our reef ecosystems (biodiversity, fish abundance, etc.) is affected by conditions in the contributing watersheds. Improving water quality in the Kissimmee River, Everglades and Inlet Contributing Areas will improve conditions in our estuaries and have a positive effect on the Florida Reef Tract ecosystem.
- Little data are available on adverse impacts of water from the Lake Okeechobee and its watershed on reefs in the SEFCRI region, especially when water is being discharged to tide for flood control.
- Supporting and relevant data includes the following: St Lucie River Watershed Protection Plan/updates SFWMD 2009/2012, modeling and evaluation of water storage north of Lake Okeechobee have been conducted by SEFCRI partners, including SFWMD, USFWS, FWC and the USACE. (Reference: CERP at http://www.evergladesrestoration.gov/).
    - See: Options to Reduce High Volume Freshwater Flows to the St. Lucie and Caloosahatchee Estuaries and Move More Water from Lake Okeechobee to the Southern Everglades, An Independent Technical Review by the University of Florida Water Institute. (2015)
- The following are currently underway:
    - SFWMD Northern Everglades and Estuaries Protection Program, Lake Okeechobee Restoration plan and BMAP.
    - FRESP and Dispersed Water Management Northern Everglades, Payment for Environmental Services (NE-PES) program.
    - The federal government and state are already developing these programs. The Everglades Headwaters National Wildlife Refuge, the Dispersed Water Management Program, improvements to the structural integrity of the Herbert Hoover Dike (USACE), the Lake Okeechobee Basin Action Management Plan, the Florida Ranchlands Environmental Services Project (now incorporated into the Dispersed Water Management Northern Everglades--Payment for Environmental Services (NE-PES) program), and others are all examples of initiatives that have begun to address this issue.
- The goal of this recommended management action is not to duplicate, replicate or in any form take away from these on-going initiatives. The goal is to support these initiatives because they will improve conditions in the northern SEFCRI estuaries (e.g., St. Lucie Estuary, Lake Worth Lagoon) and on coral reefs near canals and inlets that receive water from the Lake Okeechobee watershed.

Goals/ Objectives to be achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- FL Priorities Goal A1 / FL Priorities GOAL A4 / FL Priorities GOAL C1 / FL Priorities Goal C1, Obj. 1 / FL Priorities Goal C1, Obj. 7 / FL Priorities GOAL C2 / FL Priorities GOAL C2, Obj. 1 / FL Priorities GOAL C2, Obj. 2 / FL Priorities GOAL C3.
- SEFCRI LAS LBSP Issue 4, Goal Obj. 3.