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August 15, 2002

Mr. James C. Duck
Chief, Planning Division
Environmental Branch, South Florida Section
U.S. Army Corps of Engineers
P.O. Box 4790
Jacksonville, Florida 32232-0019

Re: Scoping Notice for Everglades
Agricultural Area Storage Reservoirs – Phase
1 Project

Dear Mr. Duck:

The Office of Environmental Services of the Florida Fish and Wildlife Conservation Commission has received the scoping notice for the referenced project, and offers this Planning Aid Letter in response. We have coordinated with the U.S. Fish & Wildlife Service in developing our list of concerns.

The Everglades Agricultural Area (EAA) Storage Reservoirs Phase 1 project is located in the EAA in western Palm Beach and Hendry counties. The area presently consists of land that is mostly under sugar cane cultivation. This project will improve timing of water deliveries from the EAA to the Water Conservation Areas (WCAs), reduce Lake Okeechobee regulatory releases to the estuaries, meet supplemental agricultural irrigation demands, and increase flood protection within the EAA.

This project is the first phase of the EAA Storage Reservoirs (EAASR) component of the Comprehensive Everglades Restoration Plan (CERP). Phase 1 involves the construction of reservoirs that will release water to the EAA and Everglades Protection Area (EPA) via pump stations along the Miami and North New River canals. Increases in conveyance capacities for the Miami, North New River, Bolles, and Cross canals within the EAA vicinity are also included in the design of this project. Phase 2 will include construction of another above-ground reservoir for additional water storage and treatment.

The Project Implementation Report (PIR) for this project will address the specific location and sizing of the reservoirs, as well as more site-specific design of levees and pump stations. In addition, the extent of conveyance improvements for the North New River, Miami, and Bolles and Cross canals will be identified.

- d. Seepage of ground-water contaminants into STAs, Holey Land WMA, and surficial aquifer. Groundwater models are necessary to monitor seepage from reservoirs into adjacent areas. Seepage of untreated water into Holey Land WMA could have detrimental effects on fish, wildlife, and vegetative assemblages; seepage into STA3/4 could reduce the effectiveness of the STA; and seepage into the surficial aquifer may degrade the public drinking water supply.
 - e. Sufficiency of reservoirs, in terms of eliminating Lake Okeechobee backpumping and flood releases to the WCAs, and St. Lucie and Caloosahatchee estuaries. A watershed assessment is needed to determine whether the widened canals and reservoirs will be sufficient to eliminate backpumping into Lake Okeechobee as well as flood releases into the WCAs and St. Lucie and Caloosahatchee estuaries.
 - f. Sufficiency of reservoirs, in terms of storing water for delivery to the Everglades. One of the functions of the reservoirs, as described in the PMP (p. 18), is to improve dry season environmental releases to the Everglades. The Watershed Assessment model runs should optimize reservoir size to provide sufficient storage capacity for environmental water deliveries to the Everglades, including the WCAs, Everglades National Park, and Arthur R. Marshall Loxahatchee National Wildlife Refuge.
5. Contaminant mobilization following re-wetting of agricultural land. The re-flooding of farmland can re-mobilize persistent bioaccumulative toxins, resulting in severe impacts to wildlife. To prevent such effects, preliminary assessment of proposed reservoir and canal-expansion areas must be conducted early in the project design phase. The best approach would be to avoid areas of environmental hazardous, toxic, and radioactive waste (E-HTRW) to the maximum extent possible, as suggested in the PMP (p.40). Contaminant testing may also be required subsequent to lease termination, to ensure that interim leased land use has not resulted in significantly increased contaminant loads. Following the initial flooding and subsequent re-wetting events, the "first flush" of water should be tested for organochlorines, metals, nutrients, dissolved organic carbon, and other contaminants. Future monitoring should be conducted to assess the input, resident, and discharge water quality of reservoirs and STAs.
6. Accumulation of persistent contaminants. At this time, it is unknown whether toxins accumulated in the sediment of reservoirs and STAs will have a deleterious impact on fish, wildlife, and/or human health. A plan should be developed to monitor persistent bioaccumulative toxins in the sediment, water column, and fish tissues of the reservoirs and STAs.
7. Treatment of water discharged from reservoir compartment 1. The PMP (p. 11) suggests that because compartment 1 will be used solely as an agricultural water supply, there is no need for treatment prior to release into the EAA. More research is needed to determine whether accumulation of contaminants in the untreated water will pose a threat to fish and wildlife utilizing the EAA, associated canals, and reservoirs.
8. Mercury methylation and transport within the zone of influence for the project. Mercury methylation is closely linked to nutrient availability, especially sulfate/sulfide levels. The concentration of high nutrient water within the STAs and reservoirs may promote the methylation of mercury. Research is needed to determine exactly what impact the STAs and

Our concerns and recommendations regarding project development are detailed below.

Concerns and Recommendations:

1. **Impacts of construction activities on fish and wildlife resources, including state and federally listed species.** The EAA provides foraging habitat for various wading birds, migrating shorebirds, and waterfowl (Lodge 1996). Two species of ducks are well established in the EAA – the fulvous-whistling duck (*Dendrocygna bicolor*) and the Florida mottled duck (*Anas fulvigula*) (Lodge 1996). State and federally listed species utilizing the EAA include the wood stork (*Mycteria americana*), great egret (*Casmerodius albus*), little blue heron (*Egretta caerulea*), snowy egret (*Egretta thula*), tricolored heron (*Egretta tricolor*), black-crowned night heron (*Nycticorax nycticorax*), glossy ibis (*Plegadis falcinellus*), white ibis (*Eudocimus albus*), limpkin (*Aramus guarauna*), and Florida snail kite (*Rostrhamus sociabilis plumbeus*). The timing and methods of construction should be adjusted to minimize negative impacts to wildlife, especially state and federally listed species.
2. **Incorporation of aesthetics and recreation into the final operating plan.** The reservoirs and canals should offer new opportunities for hunting and/or fishing. The final plan should not impact existing recreational access points to the wildlife management areas (WMAs), EPA, and canals. Additionally, the team should consider designing the reservoirs to include littoral shelves and fish refugia.
3. **Impingement or entrainment of vertebrates in water control structures.** Project design and operation should minimize impingement or entrainment of manatees (*Trichechus manatus*) and fish. A monitoring program should be implemented to assess potential fishery losses and manatee mortalities due to operation of water management structures.
4. **Need for models to evaluate the operation of proposed features and impacts on surrounding areas.** The Watershed Assessment models described in the Project Management Plan (PMP) (p. 19) are necessary to formulate/evaluate alternatives. The models should address the following issues:
 - a. **Function of the STAs in wet years.** One of the goals in designing alternatives should be to minimize STA by-pass. Model runs should evaluate STA performance in wet years, when the volume of water passing through the STAs would be at a maximum.
 - b. **Function of the STAs in dry years.** Dry-down of treatment wetlands, followed by re-wetting, may result in mobilization of contaminants. Therefore, model runs are necessary to determine the appropriate design such that the frequency and duration of reservoir and STA dry-down events are minimized.
 - c. **Performance of reservoirs under the Aquifer Storage and Recovery (ASR) contingency plan.** If the ASR pilot projects do not perform as well as expected, there may be additional water demand from the EAA reservoirs during the dry season and water flow to the reservoirs during the wet season. Model runs should be utilized to evaluate the performance of the STAs and reservoirs under several scenarios, such as 100%, 50%, and 0% ASR implementation. In developing alternatives, the team should include one or more alternatives that assume the ASR wells are either scaled-back or eliminated.

reservoirs would have on mercury methylation and transport. A methylmercury monitoring plan should be included in the PIR.

9. Alternative technologies may be required to meet the Everglades Forever Act (EFA) Phase II phosphorus criteria. Under the terms of the EFA, water released to the EPA must meet the EFA Phase II phosphorus criteria by 2006. Existing STAs and Best Management Practices (BMPs), implemented during Phase I of the EFA, may not be sufficient to reach the Phase II requirements. Addition of alternative technologies to complement reservoirs and STAs should be considered in PIR development.
10. Quality of water released into the EPA. Although the Everglades Forever Act focuses on phosphorus loads, there are many other water quality parameters that affect ecosystem health, including, but not limited to the following: dissolved organic carbon, dissolved oxygen, methylmercury, organochlorines, and sulfate. A suite of water quality parameters should be monitored within the zone of influence for the project (beyond the project footprint) to facilitate adaptive management.
11. Need for characterization of water quality restoration objectives. The PIR should characterize the EAASR water quality objectives, and may require water of a significantly better quality than that required by state water quality standards. For example, the FDEP Class III water quality standard for mercury is not sufficient, because waters may meet the Class III mercury standard yet still require fish consumption advisories (South Florida Water Management District 2000). The EAA Storage Reservoirs project should clearly define water quality objectives, and should also determine the appropriate contaminant-specific numeric criteria necessary to meet those objectives.
12. Other. WCA-2B should be included as part of the EPA (p.8 of PMP).

Sincerely,



Bradley J. Hartman, Director
Office of Environmental Services

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cc: Mr. Mark Robson, FWC
Mr. Jay Slack, USFWS, Vero Beach
Ms. Cindy Brashear, USFWS, Vero Beach
Mr. Henry Dean, SFWMD

Literature Cited

Lodge, T. E. 1996. Wildlife of the Everglades Agricultural Area. Prepared for FLO-SUN Inc. by Law Engineering and Environmental Services Inc. Miami Lakes, FL.

South Florida Water Management District. 2000. Everglades Consolidated Report. West Palm Beach, FL.