

To: The Senate Committee on Agriculture, Nutrition and Forestry

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Full Committee Hearing to review the Federal Sugar Program

Testimony of: Mark D. Perry, Executive Director  
Florida Oceanographic Society  
890 NE Ocean Blvd  
Stuart, FL 34996  
(561)-225-0505

### **Everglades Natural System Description**

Historically, rainwater falling on the Kissimmee River Valley would flow south to Lake Okeechobee. The Lake would periodically overflow the southern rim and the water would sheetflow slowly through the sawgrass marshes and around tree islands making its way through the 40 to 60 mile wide shallow flat grasslands of the Everglades and eventually into Florida Bay. This ecological system was described by Florida author and conservationist Marjory Stoneman Douglas in 1947 as "The River of Grass" and was known as the Everglades. Along the south shore of the Lake was a swamp forest of pond apple and coastal willow. From the forest south was a vast shallow plain of sawgrass and to tree islands with deeper sloughs became increasingly numerous.

Water levels and flows in the Everglades fluctuated seasonally in response to rainfall and runoff. Most of the land was inundated with water during the year, and during heavy rains and floods, the exposed tree islands were shaped to align with the surface flow. During dry season, water levels were at or near the surface. Muck and peat formed the subsoils and were 10-12 feet thick in regions near the Lake with less further south. Water would be absorbed into the sawgrass and evapotranspire into the air, then condense and be driven back north by southeasterly winds to rain again on the Kissimmee Valley.

Animal populations in the Everglades were diverse and abundant compared to today. Thousands of nesting wading birds, large populations of fish, alligators and other species filled the Everglades.

### **The Everglades Agricultural Area (EAA)**

In 1850, Congress gave over to Florida nearly 20 million acres of land to help in the "reclamation" of the Everglades lands by drains and levees. In the Senate Document of 1911, plans were laid out for reclamation of approximately 3 million acres. In June of 1910 an act of Congress made appropriations for rivers and harbors, which was to help Florida drain the Everglades.

The drainage era between 1906 and 1927 made great strides, and the Miami River Canal was one of the first cuts through the Atlantic Coastal ridge. Drainage was also provided for the agricultural area south of the Lake, and approximately 50,000 acres of the fertile soils were farmed. Two hurricanes in the late 1920's overflowed the Lake to the south and many lives were lost. In response, the U.S. Army Corps of Engineers built the Hoover Dyke, 32-45 feet high entirely around the Lake in 1930.

In 1948, Congress authorized the Central and Southern Florida Flood Control Project to provide flood protection and water supply for agriculture. Completed over the next 20 years, the project included over 1,000 miles of canals, levees, gates and pump stations. The dramatic alterations to the hydrology made available 700,000 acres south of Lake Okeechobee, which became the Everglades Agricultural Area (EAA). Sugarcane grew to dominate 88% of the total crop coverage, 575,000 acres, with other farms growing winter vegetables, rice and sod. Three major growers, Sugar Cane Growers Cooperative, Florida Crystals Corp. and U.S. Sugar Corp. had a total crop for 1999 season of 1,913,579 tons.

### **Effects of the EAA on the Natural System**

Drainage and irrigation is provided to the EAA through a series of 25 canals, levees and large pump stations. The EAA can drain water south to the Water Conservation Areas (WCA's) and backpump water into Lake Okeechobee, which provides their ability to keep the groundwater table at an ideal 2 feet below the surface. The flow of water is held to "maximum practicable releases" from the Lake, about 4,000 cubic feet per second (cfs) total. The major release outlets for Lake Okeechobee are east through the St. Lucie canal at 16,900 cfs and west through the Caloosahatchee canal at 9,300 cfs.

The EAA has effectively blocked the "river of grass" and the flows to the WCA's and the Everglades are now artificially managed by the U.S. Army Corps and the South Florida Water Management District (SFWMD). Water in the Lake is discharged into the St. Lucie River Estuary and the Caloosahatchee River Estuary with devastating effects. Fish disease outbreaks have been directly correlated with discharges and effects on oysters and other biota have been documented. Tons of silt and sediment have also been transported into these estuaries where 6 feet of muck has accumulated on the bottoms covering submerged aquatic vegetation, oyster and clam beds. At times of heavy discharge, freshwater plumes have extended out 6 miles into the Atlantic and over nearshore reefs, including the State Park Reef at St. Lucie Inlet.

Manipulation of water within the EAA has also held water in Lake Okeechobee artificially. Over the last 10 years. The Lake has been managed as a reservoir for water not as a natural lake. Lake levels became critical this year and in April and May discharges were made to lower the Lake from 15 feet down to 13 feet. "Shared Adversity" was the call of water managers but on two occasions water did not flow south through the EAA and the adversity went to the estuaries. Water from the EAA also causes flooding of tree islands in the WCA's and in the Everglades. Water quality problems have also been documented with total phosphorus levels in the EAA between 107 and 200 parts per billion. A recent report from SFWMD states that in 1999, 128 tons of phosphorous flowed out of the EAA. There is also concern regarding runoff that would

contain major pesticides, herbicides and other toxic compounds. The intensive drainage associated with agriculture in the EAA has also caused a loss of organic soils. The compaction and oxidation of soils south of the Lake has resulted in 5 feet or more loss by 1984.

The largest impacts of the EAA have been the hydrological alterations, land cover changes and chemical outflows to the immediate land area. More importantly, however, it is how the agricultural practices in the EAA have impacted the surrounding natural environments including Lake Okeechobee, the St. Lucie and Caloosahatchee estuaries, the Everglades and even Florida Bay.

### **What is being done ?**

The Restudy, authorized in 1996 and submitted to Congress in 1999, has great claim to fix the entire system and "restore" the Everglades. It has even been renamed the Comprehensive Everglades Restoration Plan (S-2797). Some components will help to remove levees, fill canals and elevate roads to reestablish sheetflow in the water conservation areas. Only one component, however has involved water storage in the EAA. The 51,000 acre Talisman property was purchased in 1999 with federal funds for \$133 million and is slated for restoration as marsh, however, much of this land has been leased back to farmers to continue sugarcane production for the next 3-5 years. Projected efforts under the Everglades Restoration Plan are slated to occur over the next 20 years at an expense of \$ 7.8 billion with \$172 million annual operation and maintenance.

There will continue to be water management under the purview of a working relationship between the U.S. Army Corps of Engineers and the South Florida Water Management District for the Lake and the entire flood control project. Separate control seems to be apparent however in the EAA where agriculture dictates water supply and drainage needs to the agencies.

### **What are we going to do?**

We have the power to truly restore the Everglades as well as the Lake and estuaries. We have this ability, but do we have the political will? To achieve a sustainable Florida, the key will be how we manage water and how we allow nature to manage the water. What is in the best interest for America? Change must happen and it must happen soon. It will take time, but I would much rather pass along a positive change to my children. How about you?