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Arguments Against Purchasing Land in the Everglades Agricultural Area (EAA) for a Reservoir, and Rebuttals to Arguments

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Introduction

Florida sugar industry spokespersons have identified five main arguments against a proposal offered in August 2016 by Senator Joe Negron of Stuart—and reaffirmed by him as President of the Senate in a memo to his Senate colleagues (see Negron 2017)—for the State of Florida to purchase 60,000 acres of land in the Everglades Agricultural Area (EAA) to store water and reduce harmful discharges of excess water from Lake Okeechobee (Lake O) that are sent east and west of the Lake and wasted to tide. Historically excess Lake O water flowed south to the Everglades and Florida Bay, and some of it recharged the Biscayne Aquifer that 6 million people in the greater Miami area depend on. These discharges have created a serious public health problem as well as economic and ecological damage. Blooms of algae fed by excessive nutrients drained from Lake O have plagued coastal communities by turning toxic and closing beaches, reducing property values, and diminishing recreation and tourism activities and the jobs and income such activities provide.

The sugar industry's primary arguments against the land acquisition proposal are: 1) loss of jobs in 'Glades communities; 2) the state has already acquired too much sugarcane acreage, and the loss of more land will create ghost towns; 3) the reservoir proposal lacks a science-based plan; 4) the proposed reservoir would be inadequate to reduce Lake O discharges; and 5) water storage efforts should now be focused north of Lake O, not south. Arguments as put forward in the words of sugar industry spokespersons and rebuttals to those arguments follow, including source references on pages 10-11.

Background

In 2014 the Florida Senate commissioned a study by the University of Florida's Water Institute to identify options for reducing the Lake O discharges. Study findings were published in 2015 and based on them, on August 8, 2016 Sen. Negron proposed constructing a 60,000 acre reservoir in the Everglades Agricultural Area (EAA) south of Lake O with a capacity to store 120 billion gallons (360 million acre-feet) of water. Consistent with study findings, Sen. Negron recognized the necessity of the state acquiring enough land for the reservoir. On January 26, 2017, after his appropriations subcommittee had listened to four hours of hearings on the proposal, Sen. Rob Bradley filed Senate Bill 10, a water resource bill that

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if passed would authorize and fund state acquisition of land on which to build one or two reservoirs in the EAA that would hold 360 million acre-feet of water. On that same day, Sen. Negron delivered a memo to his Senate colleagues explaining the proposal and asking for their help:

> These algal blooms have occurred before and will occur again unless high volume discharges from Lake Okeechobee are stopped and pollution in the Lake Okeechobee basin is abated. … Despite the sincere efforts of our state and federal government to plan and fund long-term solutions to address rising water levels and pollution in Lake Okeechobee, year after year as the Lake levels rise, the solution is to flood my community and many others across our state with billions of gallons of polluted water. … I have a personal mission to work with the agricultural community, to work with Florida's best scientists, and to work with every member of the Legislature, to protect our estuaries, to protect our lagoons, and to put the harmful discharges from Lake Okeechobee that destroy our environment and harm our economy into the past pages of history instead of the daily front pages of newspapers (Negron 2017).

Chief among the opponents of Sen. Negron's proposal, and now SB 10, is the sugar industry that owns and farms most of the EAA. On February 6, 2017, fourteen of the largest landowners and sugarcane farmers in the EAA signed a letter to legislators stating that "We are not willing sellers of our property to the government" (EAA landowners 2017, as emphasized in original document).

Sugar Industry's Five Arguments and Rebuttals

1) Loss of jobs in 'Glades communities

● July 16, 2016: "Taking another 60,000 acres of productive and sustainable farmland out of the EAA will without a doubt close down our sugar mill and put us out of business," said Barbara Miedema, vice president of Sugar Cane Growers Cooperative of Florida. "Sen. Negron's plan means losing a thousand or more jobs in the 'Glades communities, not to mention the impact to businesses in the community that provide services to us." (Stapleton 2016)

● August 24, 2016: "Sugar giant Florida Crystals and the Sugar Cane Growers Cooperative of Florida own most of the land Negron wants to buy. In a joint news statement, they said selling active farmland 'means losing (1,000) or more jobs in the 'Glades communities, not to mention the impact to businesses.' They said they will review details of the proposal. Negron said he's open to looking at other properties. Residents of communities south of the lake protested outside Negron's Palm City office, saying his plan will result in job losses." (Rangel 2016)

● January 25, 2017: Representing people who live and work in western Palm Beach County in a landscape dominated by sugarcane fields, Tammy Jackson-Moore (2017) commented to the Florida Senate Appropriations Subcommittee on the Environment and Natural Resources that the proposal for the state to acquire more farmland for Everglades restoration will close yet another sugar mill that employs 600 people and be detrimental to economy of 'Glades area.

Rebuttal: The following points to rebut this argument are based on (a) analysis of employment impacts from EAA land acquisition, (b) language in the Everglades Forever Act of 1994, (c) Florida agency programs to assist people who are unemployed, (d) adverse employment effects outside the EAA resulting from Lake O discharges, and (e) sugarcane agriculture expansion outside the EAA.

(a) Summary points from analysis of the employment impact of the reservoir proposal (for details see **EXHIBIT A**, pages 8-9):

- For every job lost in Florida's sugarcane industry sector, there would be more than 8 jobs (8.2 jobs) created as a result of reservoir construction, but these are temporary jobs.
- For every direct field and factory job lost in the sugarcane industry, there would be more than two permanent jobs (2.2 jobs) created from reservoir operations & maintenance as well as new recreation & tourism opportunities that would attract visitors and create jobs in the region being analyzed.
- For every job lost that is related to the sugar industry (direct, indirect, and induced), there would be almost one permanent job (0.85 jobs) created in reservoir operations & maintenance and recreation & tourism sectors.

(b) Following the precedent of Everglades Forever Act (EFA) of 1994 that authorized the Stormwater Treatment Areas (STAs), state legislation can include hiring provisions to ensure preference is given to jobs displaced by EAA reservoir project (Goforth 2017a). Language from the EFA states that:

- The Legislature further recognizes that the EAA and adjacent areas provide a base for an agricultural industry, which in turn provides important products, jobs, and income regionally and nationally.
- It is the intent of the Legislature to preserve natural values in the Everglades while also maintaining the quality of life for all residents of South Florida, including those in agriculture, and to minimize the impact on South Florida jobs, including agricultural, tourism, and natural resource-related jobs, all of which contribute to a robust regional economy.
- The District shall give preferential consideration to the hiring of agricultural workers displaced as a result of the Everglades Construction Project, consistent with their qualifications and abilities, for the construction and operation of these STAs.

(c) The State of Florida operates a Reemployment Assistance Program to help displaced workers find new employment and job training opportunities (see Florida Department of Economic Opportunity (2017)). Each county does their programs imdependently.

(d) Outside the EAA jobs are lost, businesses are closed, and public health issues plague coastal communities because of polluted Lake O discharges to the estuaries on both the east and west

coasts (Goforth 2017a). Due to heavy rainfall and anticipated Lake O discharges, in February 2016 Governor Rick Scott issued an executive order declaring a state of emergency in four counties outside of the EAA (Martin, Palm Beach, and St. Lucie to the east and Lee to the west). Due to algal blooms from the continued onslaught of the discharges, in June 2016 Governor Rick Scott issued an executive order declaring a state of emergency in Martin and St. Lucie counties, which included a directive to the South Florida Water Management District to "Work with state and community partners to explore every opportunity to increase water flowing south from Lake Okeechobee." (Scott 2016).

(e) Sugarcane production has already expanded outside the EAA. In 2000, there were an estimated 13,000 to 17,000 acres of sugarcane growing in Martin County, much of it on lands formerly grazed by cattle (McCue 2000). Also in Martin County, more than 10,000 acres of former citrus groves have been converted into sugarcane production, creating local sources of air pollution, water pollution and increased truck traffic on Martin County roads, particularly State Road 76 (Kanner Highway), as cane is transported to mills in the EAA (Goforth 2017a).

2) The state has already acquired too much sugarcane land, and the loss of more land will create ghost towns

● July 16, 2016: Barbara Miedema, vice president of public affairs and communications at the Sugar Cane Growers Cooperative of Florida, told the *Palm Beach Post* that the region already has lost more than 100,000 acres of farmland to Everglades restoration. The cooperative, whose members are small growers of sugar cane and vegetables, can't afford to lose more land. "It will turn our area into ghost towns," Miedema said (Stapleton 2016).

Rebuttal: Two issues addressed are (a) acreage lost, and (b) creation of ghost towns:

(a) How much productive sugarcane acreage has been lost? The best estimate, based on land actually in sugarcane production, is 40,000 acres, determined as follows. At maximum, the amount of productive sugarcane lands lost since 1980 is 49,000 farmed acres, and using 5-year running total averages, it would be 40,000 acres. (In addition to planted sugarcane, farmed acreage includes about20,000 acres for seed production.) The largest amount of Florida land in sugarcane production was 465,000 acres during the 2001/02 growing season. In the highest 5-year period (1998/89–2002/03) the annual average was 456,000 acres. In the past five years (2012/13–2016/17) sugarcane has been farmed on an annual average of 416,000 acres (USDA ERS 2017). Taking the difference between the most recent 5-year period and the highest year, the actual loss cannot be more than 49,000 acres of productive sugarcane lands, and the 5-year annual average difference would be lower than that, at 40,000 acres.

In summary, less than 10 percent of the sugar industry's land base has gone out of production. No doubt most of that loss is from land purchase for Everglades restoration.

(b) Ghost towns? If the state purchased 60,000 acres of EAA sugarcane land it would be a loss of approximately 15 percent of the land in sugarcane production and, as determined in the source

reference for 1(a) above, a corresponding loss of 15 percent of the sugarcane field and factory jobs and inter-related jobs in other economic sectors. But because the lost jobs will be more than replaced by other employment opportunities, as described in 1(a) above, it is difficult to see how even one community in the EAA would disappear as a result of the land purchase.

3) The storage proposal lacks a science-based plan

● July 16, 2016: "Everyone is looking for solutions for the system," Florida Crystals said in a statement. "Our companies strongly support science-based plans that will provide measurable benefits to Lake Okeechobee and the coastal estuaries. Unfortunately, Sen. Negron's land buy does neither." (Stapleton 2016).

● February 6, 2017: "It's up to all of us to do our part to finish restoring the Everglades and fixing Lake Okeechobee. Plans to buy land with little to no benefit to environmental restoration only serve as a distraction. By staying focused on the science, we can ensure reaching the goal we started more than two decades ago can become a reality." (EAA landowners 2017).

Rebuttal: The science-based plan is the University of Florida Water Institute study report conducted for the Florida State Senate (see Graham et. al 2015). It evaluated all existing plans and concluded that even if all planned projects were completed, water storage and treatment capability around Lake O would not be sufficient to provide relief by reducing discharges to the St. Lucie and Caloosahatchee estuaries east and west of the lake and moving more water south to Everglades National Park and Florida Bay.

The UF Water Institute study report stated that "The solution [for providing] relief to the estuaries and the ability to move more water south of Lake Okeechobee is enormous increases in storage and treatment of water both north and south of the lake." The report called for a total of 1.6 million acre-feet of new storage, identifying needs east and west of the lake (≈ 200,000 and 400,000 acre-feet, respectively) as well as north and south (≈ 1,000,000 acre-feet total north and south). The report also stated that "[the solution] will require additional land between the lake and the EPA" (Graham et al. 2015). The EPA is the Everglades Protective Area south of the EAA that includes Water Conservation Areas that treat polluted water and Everglades National Park. In other words additional water storage on land in the EAA is necessary to meet the objectives of reducing Lake O discharges to the estuaries east and west, and moving water south to the Everglades.

4) The storage proposal is inadequate to reduce Lake O discharges

● July 16, 2016: Judy Sanchez, a spokesperson for U.S. Sugar Corp., criticized the environmentalists' approach. "If activists had their way, billions of dollars would be diverted from existing approved and engineered projects … and instead be used to buy surplus land that would not yield enough storage capacity to handle more than 'a drop in the bucket' of Lake Okeechobee discharges." (Stapleton 2016).

● February 6, 2017: A letter to the legislature signed by 14 EAA landowners, including U.S. Sugar Corp. and Florida Crystals Corp., stated that "We are not willing sellers of our land to the government"; one of

the given reasons was that "Water reservoirs south of Lake Okeechobee simply cannot store enough water to stop the dlscharges from lake Okeechobee when our region is inundated from heavy rains." (EAA landowners 2017).

Facts: In 2016 discharges east and west of Lake O totaled 737.3 billion gallons, or 2.263 million acre-feet. El Niño weather events in 2016 triggered unusually excessive rainfall. In 2013, another year of excessive rainfall , discharges totaled 582.3 billion gallons, or 1.787 million acre feet (Goforth 2017b). The Lake O discharges in these two years were 3.0 and 2.4 times the annual average over the past 36 years (1980-2016) of 244 billion gallons per year (Goforth 2017a) or 749 million acre-feet per year.

Rebuttal: If all 1.6 million acre-feet of additional storage around the lake that were called for in the UF report (Graham et al. 2015) were in place, then storing the average annual discharge over the past 36 years of 749,000 acre-feet (Goforth 2017a) would not be a problem.

But what about discharges in years that are well above the 36-year average, such as 2013 and 2016? According to a journalistic report by Tyler Treadway (2017), "[P]roponents of the Negron proposal stress that the project would provide 'dynamic' rather than 'static' storage: The reservoir would not just hold water, it would continuously send water south toward the Everglades. Over the course of a year, the reservoir would 'turn over' three to four times, sending 360 billion to 480 billion gallons of water to the Everglades, said Mark Perry, executive director of the Florida Oceanographic Society in Stuart. That gets a lot closer to the 2016 discharge total and in the range of the Lake O discharges during the 'Lost Summer' of 2013" (Treadway 2017).

As noted in the **Facts** section above, discharges during 2016 and 2013 were 737.3 billion gallons and 572.3 billion gallons, respectively (Goforth 2017b). Yes, there would need to be some discharges east and west during years with extraordinarily high rainfall. How much? Assuming dynamic storage of 360 billion gallons per year, the discharges would have been reduced by almost half in 2016 and almost two-thirds in 2013. Even though discharges would still be necessary, the EAA reservoir would provide beneficial effects by withholding huge amounts of polluted water.

The issue of discharges is not just about the volume of water released from Lake O, but the pollutants in the water that feed algal blooms and modify salinity in estuaries, with adverse effects on humans and aquatic ecosystems. Had the proposed reservoir been in place in 2016, at least 120 billion gallons of Lake O water would have been kept out of the estuaries, preventing an estimated 1.4 million pounds of nitrogen, 110,000 pounds of phosphorus, and 12 million pounds of sediment from contaminating these critical coastal environments. With enhanced operation of Lake O and completion of other CERP projects, the benefits would have been even greater (Goforth 2017a).

5) Storage efforts should focus north of Lake O rather than south

● July 16, 2016: James Moran, a South Florida Water Management District board member, suggested that instead of continuing to focus on storage south of the lake, the district should consider water storage and treatment options north of Lake Okeechobee. This was among the recommendations made in the UF study report (Graham et al. 2015, as described above) that was commissioned because of algal

blooms in 2013. Water north of the lake contains nutrients from dairy and cattle ranching along with runoff from lands south of Orlando. Storing and cleaning that water before it gets into the lake and then flushed into the estuaries make sense, Moran said. "If you want to clean up the lake, you've got to clean up the water going into the lake," Moran said. "Then you won't have algae blooms in the future." (Stapleton 2016).

● February 3, 2017: Matt Morrison, policy bureau chief for the South Florida Water Management District, was reported to have said that "Storage north of the lake would be more 'flexible' than a reservoir to the south. Stored water could be moved to Lake O when drought dries out the western marshes, to the Caloosahatchee when saltwater is moving up from the Gulf of Mexico, and to the Everglades and Florida Bay when they need freshwater." (Treadway 2017).

Rebuttal: As stated in the UF Water Institute study report: "The solution [for providing] relief to the estuaries and the ability to move more water south of Lake O is enormous increases in storage and treatment of water both north and south of the lake." Furthermore, the solution "will require additional land between the lake and the EPA" (Graham et al. 2015)—i.e., land in the EAA is required to accomplish the objectives of providing relief to the estuaries and moving water south to the Everglades.

On the flexibility issue, Mark Perry, executive director of the Florida Oceanographic Society, said Mr. Morrison is correct, "but once the northern reservoir and wells that the district is considering as an option fill up, the only place to send excess water is to Lake O; and once the lake fills up, the only place to send the water is to the estuaries." (Treadway 2017).

Modeling has shown that the EAA storage reservoir is more effective in reducing harmful discharges to the estuaries than the contemplated storage reservoir north of the Lake, with approximately 50 percent reduction in discharges for the EAA reservoir compared to approximately 6 percent reduction in discharges for the northern reservoir (Van Lent 2017).

While opponents to Sen. Negron's proposal contest the above point on north/south modeling, there has been no dispute regarding statements that only storage south of the Lake is capable of providing additional water to the Everglades (Goforth 2017a).

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EXHIBIT A

Employment Impacts Associated with Proposed EAA Reservoir Construction [a/]

Economic Sector	Employment Impacts [b/]			
	Direct	Indirect	Induced	Total
Sugarcane industry [c/]	(323)	(740)	(482)	(1,545)
Reservoir construction [d/]	7,304	1,502	3,894	12,700
Reservoir operations & maintenance [e/]	511	105	272	888
Recreation & tourism [f/]	215	108	107	430
Total net impact on jobs [g/]	7,269	975	3,791	12,473
Net permanent jobs [h/]	403	(527)	(103)	(227)

Summary points:

- For every job lost in Florida's sugarcane industry sector, there would be 8.2 jobs created as a result of reservoir construction, but these are temporary jobs.
- For every direct field and factory job lost in the sugarcane industry, there would be more than two permanent jobs (2.2 jobs) created from reservoir operations & maintenance as well as new recreation & tourism opportunities that would attract visitors and create jobs in the region being analyzed.
- For every job lost that is related to the sugar industry (direct, indirect, and induced), there would be almost one permanent job (0.85 jobs) created in reservoir operations & maintenance and recreation & tourism sectors.

Notes:

[a/] Analysis by Jay O'Laughlin, Ph.D., Professor Emeritus and Director Emeritus, Policy Analysis Group, University of Idaho. Sources are primarily impact analysis by public agencies (USACOE & SFWMD 2006) of a proposed EAA reservoir that was to be part of the Comprehensive Everglades Restoration Plan's suite of projects, but due to actions by the State of Florida was started but not completed; and published economic impact studies using input-output models. These models produce information described in note b/ below, which also identifies **Source References** for these specific publications.

[b/] Ideally employment impacts from an EAA reservoir would be estimated by a targeted study, such as the University of Florida did for the C-43 reservoir in Hendry County (see Mulkey et al. 2005). Lacking a targeted study to summarize, inferences about the potential employment impacts of an EAA reservoir are estimated by using construction costs and recreation visits estimated in an impact statement of an earlier EAA reservoir proposal (USACOE & SFWMD 2006). Employment and multiplier effects are derived from information in existing economic impact studies of Florida's sugarcane industry (LMC International 2011), construction of the C-43 reservoir in Hendry County (Mulkey et al. 2005), and Florida's tourism industry (Parrish et al. 2013). These studies use constructed models of inter-industry relationships. This approach is called input-output analysis, and input-output models estimate direct impacts (employment and spending), indirect impacts (secondary effects of spending through jobs and incomes generated by

relevant industries), and induced impacts (indirect spending and jobs supported by expenditures of wages by direct employees). For example, a sugarcane field or factory worker is compensated via income (direct impact), either owns housing or rents it (indirect impact) and may spend money dining out, which generates economic activity through income paid to cooks and servers in restaurants (induced impacts). Input-output models use a series of algorithms to calculate direct, indirect, and induced impacts that are said to "ripple" through the economy, creating a multiplier effect on jobs and income. Jobs are somewhat easier to communicate, so income is not estimated herein.

c/ According to state-by-state economic impact analysis of the U.S. sugar industry conducted by LMC International (2011, Table 3.6) for the American Sugar Alliance, in the 2009/10 growing season there were 2,152 people in Florida employed in sugarcane field work (1,130 jobs) and sugarcane factory work (1,022 jobs). Income earned in these jobs "ripples" through the economy, creating indirect (4,927 jobs) and induced (3,213 jobs) effects in other industries. The acquisition of 60,000 acres of sugarcane farmlands for a reservoir would reduce the average of 416,000 acres farmed in recent years by approximately 15 percent. Reducing the total number of sugarcane industry jobs in Florida (10,292) by the same percentage, there would be a loss of 323 direct, 740 indirect, and 482 induced jobs, for a total of 1,545 jobs lost.

d/ Reservoir construction is estimated over a 3-year period; obviously these are not permanent jobs. Data for this estimate is derived from results of economic impact analysis conducted by the University of Florida for the C-43 Reservoir project in Hendry County (Mulkey et al. 2005). Because that project acreage (10,700) and storage capacity (170,000 acre-feet) (Hazen and Sawyer 2011) are less than half that proposed for an EAA reservoir (60,000 acres and 360,000 acre-feet) and the C-43 project does not involve water treatment areas in addition to water storage, the 6,350 job impacts from C-43 reservoir construction (Mulkey et al., Table 14, p. 25) are doubled.

e/ Impact analysis by public agencies of a proposed EAA reservoir pegged construction costs at $379 million, and annual operations & maintenance costs at $28 million, which is roughly 7 percent of construction costs (USACOE & SFWMD 2006, p. 7-20). Their analysis did not include job impacts, so this analysis assumed that the job impacts would be proportionate with costs, and used 7 percent of the construction jobs as estimated in note d/ above to estimate annual O&M employment.

f/ Impact analysis by public agencies estimated a total of 36,500 visitor days per year to a proposed EAA reservoir (USACOE & SFWMD 2006, p. 6-14). According to an economic impact analysis of Florida's tourism industry, each 85 visitors to Florida results in one direct job in recreation & tourism industries, and the indirect and induced effects taken together would create one more job (data from Parrish et al. 2013). Using these data and assuming that half of the recreation visits to the EAA reservoir would be from outside the county or multi-county region being analyzed, there would be 215 direct, and another 215 indirect and induced jobs, for a total of 430 jobs.

g/ Sum of all job impacts, whether temporary or permanent.

h/ Sum of sugar industry jobs lost and jobs created from reservoir operations & maintenance and recreation & tourism opportunities; does not include temporary jobs in reservoir construction.

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(All URLs were accessed in January or February 2017)

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