

## Comments Provided to the US Army Corps of Engineers at the LOSOM Scoping Meetings

February 19, 2019

Good afternoon. My name is Gary Goforth of Stuart, Florida; I hold a Ph.D. in environmental engineering and am a registered professional engineer in the State of Florida. I have been working in water resources engineering for more than 40 years, with the last 32 years focusing on South Florida. I have decades of experience evaluating the hydrology, water quality and related issues associated with the operation of the C&SF Project.

**Comment No. 1.** Over 1 million people reside in the 3 counties most affected by the devastating Lake discharges to the estuaries: St. Lucie, Martin and Lee. Of these, more than 75,000 are employed in businesses that depend on clean water, businesses that generate approximately \$3.8 billion annually. Since LORS2008 has been in effect, approximately 60% of the Lake's regulatory releases were sent to the St. Lucie and Caloosahatchee Estuaries, **none of it was treated to remove nutrients or other pollution**. By contrast, only 12% of the Lake's regulatory releases were sent to the Everglades – **virtually all of it was treated**. Contained in these releases to the estuaries were vast quantities of toxic pollution. These releases resulted in adverse public health impacts, as well as devastating economic and environmental impacts. People have gotten sick, have been exposed to potentially life-threatening toxins, jobs have been lost, businesses have suffered, and the estuarine environment and near-shore reefs have been devastated. These discharges included

- Massive quantities of toxic blue green algae
- More than 445 million pounds of suspended sediment
- More than 35 million pounds of nitrogen
- More than 3 million pounds of phosphorus

The nitrogen pollution alone is equivalent to more than 325,000 tons of human sewage sludge.

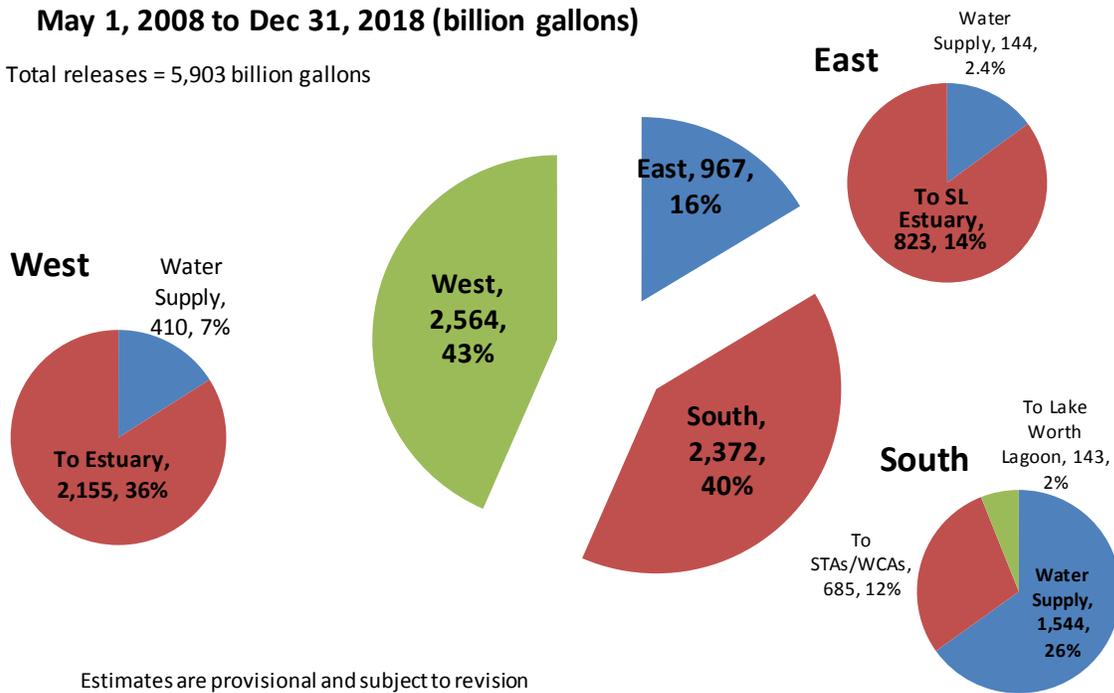
### Questions:

1. During the re-evaluation of LORS, how will the Corps calculate the costs of adverse impacts of these devastating regulatory releases to the public health, the economy and the environment in the estuaries' regions?
2. Will the US Environmental Protection Agency review the State of Florida's implementation of the Clean Water Act TMDL's for the Lake and estuaries?

# Distribution of Lake Okeechobee Releases

May 1, 2008 to Dec 31, 2018 (billion gallons)

Total releases = 5,903 billion gallons



Estimates are provisional and subject to revision

**Comment No. 2.** Since LORS2008 has been in effect, the Corps has sent almost 3 trillion gallons of freshwater to tide. That's more than 750 million gallons per day for the last 10½ years, **enough to meet 90% of the public water supply demand for the 6.2 million people that live in Palm Beach, Broward, and Miami-Dade Counties.** The economic value of generating an equivalent amount of drinking water through reverse osmosis is almost \$7 billion dollars. This water should have been sent south to help meet those needs.

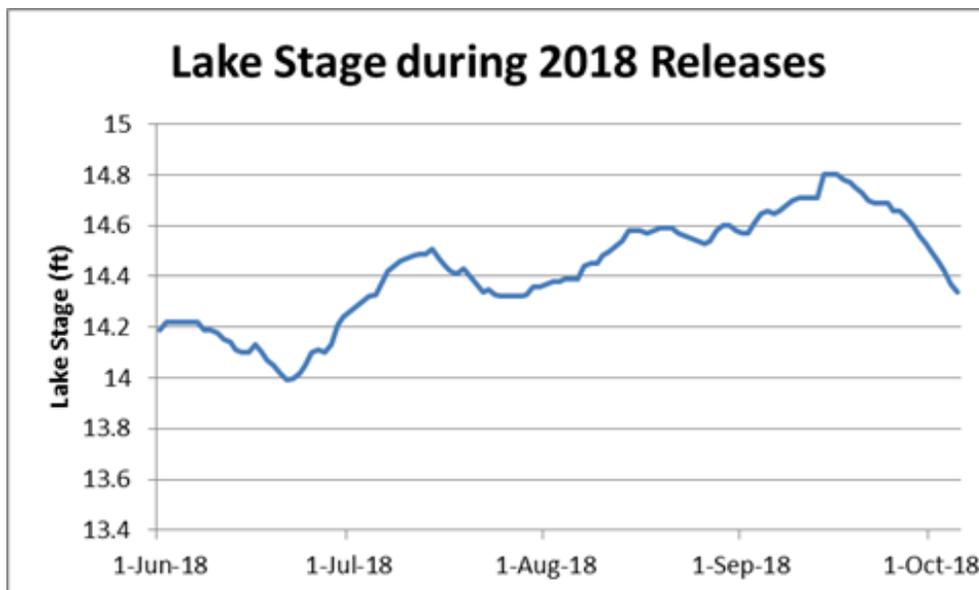
**Questions: How will the Corps calculate the economic loss of this precious resource – water discharged to tide – in the re-evaluation of LORS?**

**How will the Corps quantify the effects of sea level rise and the benefits to coastal wellfields of sending Lake water south instead of wasting it to tide?**

**Comment No. 3.** On June 1, 2018, Lake Okeechobee was at 14.2 ft. By Oct. 5, the Corps had sent more than 233 billion gallons of toxic polluted lake water to **the estuaries**. On Oct. 5, the lake was at 14.3 ft. At no time during these discharges did the lake exceed 15 ft.

**Questions:**

1. What quantifiable public health, economic and environmental benefits were provided to the area protected by the dike during the 2018 discharges to the estuaries?
2. What harm was suffered by the area protected by the dike during the 2018 discharges?
3. Before the Corps spent \$1 billion for dike repairs, the risk of dike failure at a lake stage of 15 ft was <1%. The 2018 discharge volume to the estuaries is equivalent to about 1.7 ft of lake stage. What would have been the additional risk of dike failure had the Corps not made the 2018 discharges to the estuaries?
  - What would have been the economic cost of this additional risk?
  - Would it have been greater than the economic impacts of the discharges to the estuaries?
4. How does the Corps justify harming the public health, economy and environment of the estuary regions in 2018 while providing benefits to the area protected by the dike?
5. During the upcoming re-evaluation of LORS, what specific method will the Corps use to quantify the costs of adverse impacts to the public health, economy and environment of the estuary regions resulting from lake regulatory releases?
6. During the upcoming re-evaluation of LORS, what specific method will the Corps use to balance the adverse costs to the regions around the estuaries with the benefits provided to the area protected by the dike?



**Comment No. 4.** During the operation of LORS2008, the federal government, including the Corps of Engineers, intentionally discharged toxic waters from Lake Okeechobee<sup>i</sup> to the St. Lucie Estuary and Caloosahatchee Estuary, thereby endangering the public health and safety of the communities in the estuarine regions. The State of Florida declared multiple states of emergency for the estuarine communities. The state department of health issued multiple health advisories during these discharges. By contrast, there were no health advisories issues for the STAs and WCAs south of the lake, which are alternative receiving waters for Lake regulatory releases. Hence, alternatives to discharging toxic waters to the estuaries existed that were not fully utilized by the Corps<sup>ii</sup>.

From a recent scientific report (Metcalf et al. 2018<sup>iii</sup>):

“Based on microcystin content alone reported here, it is a reasonable prediction that the cohort of Florida State citizens exposed to the 2016 Florida cyanobacteria bloom incident, including children of underprivileged families that we witnessed picnicking, fishing, and swimming in cyanobacterially contaminated waters, may experience an increased lifetime risk of liver cancer and/or hepatic dysfunction requiring hospitalization or transplantation.”

The Corps has an opportunity to correct these harmful actions by evaluating alternative Lake operations and selecting a plan that minimizes regulatory releases to the estuaries that contain toxic algae.

#### **Questions:**

- 1. In the evaluation of LOSOM, can the Corps evaluate one alternative whereby no releases of Lake Okeechobee water are sent to the St. Lucie Estuary?**
- 2. In the evaluation of LOSOM, can the Corps evaluate one alternative whereby no releases of Lake Okeechobee water are sent to the Caloosahatchee Estuary?**
- 3. In the evaluation of LOSOM, can the Corps evaluate one alternative whereby no releases of Lake Okeechobee water are sent to the St. Lucie Estuary and the Caloosahatchee Estuary?**

Additional comments will be provided in writing to the U.S. Army Corps of Engineers.

---

<sup>i</sup> On July 2, 2018, NOAA reported that 90 percent of Lake’s open water was covered by toxic blue green algae.

<sup>ii</sup> The area south of the lake is not responsible for the majority of the pollution in the lake, and shouldn’t bear the full brunt of pollution from the lake. In the same manner, the east and west coasts are responsible for even less of the pollution entering the lake – yet we receive a devastating amount of the discharges.

<sup>iii</sup> 2018, James S. Metcalf, Sandra Anne Banack, James T. Powell, Fiona J. M. Tymms, Susan J. Murch, Larry E. Brand and Paul Alan Cox. *Public health responses to toxic cyanobacterial blooms: perspectives from the 2016 Florida event.*