



300 Osborne Street
St. Marys, GA 31558

Visit our website:
www.stmarysriverkeeper.org

February 13, 2023

Ocean, Highway, and Port Authority of Nassau County
Port of Fernandina Beach
86130 License Road, Suite 9
Fernandina Beach, FL 32034
Submitted electronically

Re: Cruise Ship and Cement/Fertilizer Shipments Environmental Impact

Dear Ocean, Highway, and Port Authority Commissioners:

I would like to take this opportunity to comment on behalf of the St. Marys River and its tributaries as well as St. Marys Riverkeeper Members and Supporters on the recent discussions around the Ocean, Highway, and Port Authority (OHPA) Master Plan and the shipments of cement and fertilizer to the Port of Fernandina Beach (The Port).

St. Marys Riverkeeper (Riverkeeper) is a 501(c)3 private environmental advocacy organization that was formed in 2016 with the charge to protect the St. Marys River and its tributaries from harm and engage the community that calls the watershed home in that protection. Our work as an independent voice for the St. Marys River is made possible by the financial support of donations and memberships of concerned citizens within the watershed and surrounding region. The St. Marys River watershed is the focus of our work to improve water quality in areas that are designated as swimmable and/or fishable, ensure the river thrives for future generations with our work on resiliency projects and community partnerships, promote low impact development in a fast-growing area, and advocate against industrial threats in our underserved communities.

As a border river, the St. Marys River watershed comprises four counties – two in Georgia and two in Florida with roughly 60,000 residents who depend on the health of the river for tourism, recreation, commercial fishing, and safe drinking water. Arising from the Okefenokee Swamp, the St. Marys River flows 130 miles to the Atlantic Ocean at Cumberland Island National Seashore. The watershed has more than 3,000 miles of streams and tributaries, is comprised of 40% wetlands, and is home to many endangered and threatened species such as the Atlantic Sturgeon.

Riverkeeper is concerned about known contamination of the cement powder will have on the health of our waterways. Special attention should be made on the species that inhabit this area and the vital role they play in the local ecotourism industry and mitigating climate change.

1. Cement Powder

Cement powder shipped into the Port of Fernandina Beach has generated contamination issues for both air and water quality. It was observed by concerned residents of Fernandina Beach that there were "...huge white sacks spilling cement powder as they were being lifted and stacked into piles"¹ (Pictures 1 and 2) which sent clouds of dust particles into the air and eventually settling on the surface of Alligator Creek (Picture 3), the waterbody that empties into the Amelia River at The Port. Residents have reported broken bags, machinery covered in



300 Osborne Street
St. Marys, GA 31558

Visit our website:
www.stmarysriverkeeper.org

dust, uncontained piles of the powder on the ground, and trucks loading the bags for transport only being partially tarped. With each bag containing 2 tons of concrete powder, the residual dust released during transport or from a bag breakage can easily make its way down storm drains to the Amelia River or Alligator Creek, although this is not allowed by Florida Department of Environmental Protection. The procedure to stop pollutants from entering a waterway do not seem to be adequate and protecting the workers and the surrounding neighborhood seem to not be of priority. It is the obligation of The Port to educate the workers on how to properly handle any spills or disposal to ensure that both the Port employees and the local area are protected.²



Pictures 1 and 2: Pictures from February 8, 2023 of cement bags stacked 4 bags high. Photo credit: St. Marys Riverkeeper



Picture 3: February 7 image of grey sludge on surface of Alligator Creek. Photo Credit: Faith Ross, Fernandina Beach resident

Cement dust readily contains heavy metals such as chromium, nickel, cobalt, lead, and mercury and the oxides can react with water droplets forming acid rain which damages vegetation and alters soil and water pH levels.³ Lime is a major component of cement and dissolves easily in water increasing the alkalinity (pH 11 to 13) to harmful levels resulting in fish kills and impacting other aquatic life.² It has been observed by the neighbors who regularly walk along Escambia Street, that the birds that roost at the mouth of Alligator Creek have not returned begging the question of whether the cement dust is the cause. Although there is signage along Escambia Street to no fish in the water due to water quality advisories, people are still observed setting bait traps and fishing.

Cement dust can coat the surrounding habitat and vegetation which results in stunted plant growth and reduced production. In addition, the toxicity is harmful for any animal consumption.³ *Spartina alterniflora* is a native smooth cordgrass that is found growing in tidal flats, salt marshes and beaches. These grasses bloom from



300 Osborne Street
St. Marys, GA 31558

Visit our website:
www.stmarysriverkeeper.org

summer to fall and occurs only during natural conditions in wetlands⁴ with soil pH ranging from 3.7 to 7.9⁵. Inhibiting the growth of plants within a wetland system decreases the critical role they play in filtering water before it reaches the Amelia River and prevents flood protection during heavy rain events. Salt and brackish marsh grasses are estuary nurseries for many species of fishes and invertebrates and provide forage and nesting habitat for many birds and mammals. In addition to *Spartina alterniflora*, a few of the other common salt marsh flooded soil species include *Juncus roemerianus* (black needlerush), *Distichlis spicata* (salt grass), *Scirpus americanus* (three square), *Panicum virgatum* (switchgrass)⁵.

Spartina grass habitats are harsh due to the saltwater content in the water that they represent one of the few locations on the planet where a monoculture of plants naturally grows. No other plant has adapted to grow in these conditions. If these plants are killed off, it's not likely that even an invasive plant can backfill the niche. If the plants die and their roots are gone, it would not be long before extreme erosion of soil could cause the permanent destruction of the marsh. Healthy coastal habitats are carbon sinks playing an important role mitigating climate change through their ability to absorbing and storing large quantities of carbon dioxide. "Current studies suggest that mangroves and coastal wetlands annually sequester carbon at a rate ten times greater than mature tropical forests. They also store three to five times more carbon per equivalent area than tropical forests"⁶.

2. Species and Habitat

Consideration should be given to the endangered and threatened species that migrate and/or breed in the area. With a DO impaired waterbody and high levels of bacteria, sources of food may become limited for many of our critical year-round and seasonal species. US Fish and Wildlife Service (FWS) IPaC resource list has identified several threatened and endangered species that could be potentially affected by activities in the area including critical habitats for Birds of Conservation Concern. Utilizing the Endangered Species Act, Clean Water Act, and Migratory Birds Treat Act, appropriate regulations and maximum conservation efforts should be followed by any person, organization, or industry that plans to conduct activity that may negatively impact or impair habitat area and food supply.

The Amelia River is classified as a Class III waterway and the State of Florida lists the following uses for Class III waters as: Fish Consumption, Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife.

The Amelia River is a nursery for sharks and is home to many fishing industries both commercial and recreational. A healthy waterway is needed to sustain the balance of the river's ecosystem.

3. Current Water Quality Impairments

One of Riverkeeper's flagship programs is water quality monitoring. We are focused on identifying sources of nonpoint-source pollution in our watershed through a dedicated citizen science water quality monitoring effort. Using Georgia Adopt-a-Stream's monitoring protocols for chemical and bacterial sampling, our team of trained staff and volunteers monitor over 50 sites, including several public access sites in Fernandina Beach regularly to build an extensive water quality database. This tool is used to report on the overall health of the St. Marys River watershed and help communities apply for funding to remediate failing septic systems. All the data we collect is available on Riverkeeper's website⁷, Georgia Adopt-a-Stream⁸, and Swim Guide⁹ so people can quickly check the water quality of where they are boating or swimming.



300 Osborne Street
St. Marys, GA 31558

Visit our website:
www.stmarysriverkeeper.org

a. Alligator Creek (Escambia Slough)

Enterococci and *Escherichia coli*, *E. coli*, are bacteria that live in the intestinal tracts of warm-blooded animals, including humans, and are good indicators of the presence of fecal waste in a waterbody. *E. Coli* is used to identify fecal contamination in freshwater while Enterococci is used in more saline waters. “Significant amounts of [bacteria] in a water body can negatively affect the recreational and economic value of the aquatic resource. Overabundance of fecal bacteria in the water can cause beach closures, swimming and boating bans and closures of fishing and shellfishing areas”.¹⁰ U.S. Environmental Protection Agency (USEPA) recommended standard for Enterococci in marine recreational waters is a geometric mean of 35 Colony Forming Units (CFU)/100ml. This geometric mean standard is based on 19 gastrointestinal illnesses per 1,000 swimmers at marine beaches. USEPA recommended *E. coli* level standard is based on 8 people out of 1,000 might get sick and is 126 CFU/100mL.¹¹

Legend: Units are CFU/100mL **Good (0 – 235)** | **Fair (235-536)** | **Poor (>536)**

- Designated Swimming: (0-235)
- Moderate Swimming: (235-298)
- Less Swim / Contact: (298-410)
- Infrequent Contact: (410-600)
- Avoid Swimming: (>600)

Alligator Creek at 8th Street (Riverkeeper sampling results)

August 3, 2022 **1,033 CFU/100ml**

August 9, 2022 **1,233 CFU/100ml**

August 18, 2022 **800 CFU/100ml**

September 9, 2022 **600 CFU/100ml**

September 22, 2022 **400 CFU/100 ml**

October 5, 2022 **167 CFU/100ml**

November 2, 2022 **467 CFU/100ml**

November 21, 2022 **667 CFU/100ml**

December 7, 2022 **333 CFU/100ml**

January 4, 2023 **400 CFU/100ml**

February 1, 2023 **1,766 CFU/100ml**

***Sampling on Esambia Street was 1,900 CFU/100ml**

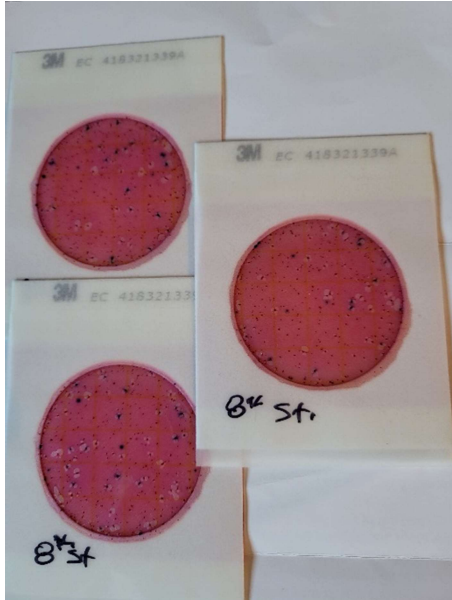
On August 12, 2022, St. Marys Riverkeeper issued a Water Quality Alert to avoid swimming and fishing on Alligator Creek (Escambia Slough) in Fernandina Beach, FL due to unsafe levels of *Escherichia coli* (*E. coli*) (Picture 4). Per protocol, Riverkeeper contacted the City of Fernandina Beach, Florida Department of Environmental Protection (FDEP), and Nassau County Department of Health (DOH) to raise public awareness about the contamination. Since then, Riverkeeper increased its sampling of the site and has coordinated additional sampling of the creek with FDEP in partnership with property owners, WestRock, to access more sampling sites. FDEP (Picture 5) collected water samples to test for chemical parameters (pH, Dissolved Oxygen, conductivity, etc) and run DNA Tracers for Human, Avian, and Dog. The hope is to get a better



300 Osborne Street
St. Marys, GA 31558

Visit our website:
www.stmarysriverkeeper.org

understanding of the source of the E. coli contamination and work collaboratively with the local community to resolve the issue. **FDEP biological markers were analyzed and found that only Avian Helicobacter GFD were detected in samples collected.** Additional sampling as occurred include a new site at Dade Street and 5th Street (Picture 6)



Picture 4: Bacterial sampling results from August 2, 2022



Picture 5: FDEP sampling on November 21, 2022



Picture 6: Alligator Creek at 5th and Dade Street. February 8 Water quality testing results: **667 CFU/100 ml**

b. Amelia River

June of 2022, The Watershed Assessment Verified and Delist Lists determined that the Amelia River (WBID 2124A) did not meet water quality standards for Aluminum, Iron, and Dissolved Oxygen and 2 of the 3 have



300 Osborne Street
St. Marys, GA 31558

Visit our website:
www.stmarysriverkeeper.org

been added to the State's Verified List of Impaired Waters and the Clean Water Act Section 303(d) list. The process will now begin to determine the TMDL to represent the maximum amount of pollutant loading that can be discharged to a waterbody and have its designated uses met. (FDEP, 2020-2022 Biennial Assessment Final Verified and Delist Lists).

FDEP comments regarding metal impairments on the Final Verified List (FDEP, 2020-2022 Biennial Assessment Final Verified and Delist Lists excel sheet):

- Iron impairment: "This waterbody is impaired for this parameter based on the number of exceedances for the sample size. After further investigation, FDEP cannot rule out the possibility of anthropogenic sources. This parameter is being added to the Verified List and the department is requesting EPA add it to the 303(d) List."
- Aluminum impairment: "This waterbody is impaired for this parameter based on the number of exceedances for the sample size. This parameter is being added to the Verified List and the department is requesting EPA add it to the 303(d) List."

Conclusion

Riverkeeper's science-based water monitoring program is a critical resource when addressing local stakeholders and when advocating on behalf of clean water to state and local enforcement agencies. Clean water is vital to the health of all living things, vibrant communities, and strong economies. With two already impaired waterways in direct connection with The Port, Riverkeeper advises against more stress being put on the local ecosystem by removing the shipments of large bulk bags of cement powder and not bringing in more.

OHPA Commissioners should address many of the complex issues in a thoughtful manner and the public has been intimately involved in the decision-making process. Riverkeeper knows that OHPA and The Port will give considerable thought to the comments provided in this letter and hope that the efforts today will develop a strong foundation for future management decisions at The Port and with the City of Fernandina residents who are very passionate about the health of their environment.

Thank you for the opportunity to comment.

See you on the river soon!

A handwritten signature in blue ink, appearing to read "Emily Floore".

Emily Floore
Executive Director
St. Marys Riverkeeper
emily@stmarysriverkeeper.org



300 Osborne Street
St. Marys, GA 31558

Visit our website:
www.stmarysriverkeeper.org

References

- ¹ Fernandina Observer article. "Huge Concrete Dust Bags Rupture at Port" [Huge Concrete Dust Bags Rupture at Port - Fernandina Observer](#)
- ² Concrete Information Sheet [PDF](#). Environment Bay of Plenty
- ³ Shah, Kamran, et al. 2020. Chronic cement dust load induce novel damages in foliage and buds of *Malus domestica*. Scientific Reports: Nature Research. [PDF](#)
- ⁴ University of Florida IFAS. Center for Aquatic and Invasive Plants: *Spartina alterniflora*. [Center for Aquatic and Invasive Plants | University of Florida, IFAS \(ufl.edu\)](#)
- ⁵ United States Department of Agriculture: Natural Resources Conservation Service. Plant Fact Sheet, *Spartina alterniflora* Loisel. [USDA Plants Database](#).
- ⁶ National Oceanic and Atmospheric Administration. Coastal Blue Carbon. [Coastal Blue Carbon \(noaa.gov\)](#)
- ⁷ St. Marys Riverkeeper, Inc. <https://www.stmarysriverkeeper.org/>
- ⁸ Georgia Adopt-A-Stream: Volunteer Water Quality Monitoring. <https://adoptastream.georgia.gov/>
- ⁹ Swim Guide. <https://www.theswimguide.org/>
- ¹⁰ United States Environmental Protection Agency: What is enterococci? <https://www.epa.gov/national-aquatic-resource-surveys/indicators-enterococci>
- ¹¹ United States Environmental Protection Agency: Recreational Water Quality Criteria and Methods. <https://www.epa.gov/wqc/recreational-water-quality-criteria-and-methods>