

The Florida Senate
BILL ANALYSIS AND FISCAL IMPACT STATEMENT

(This document is based on the provisions contained in the legislation as of the latest date listed below.)

Prepared By: The Professional Staff of the Committee on Environment and Natural Resources

BILL: SB 648

INTRODUCER: Senator Berman

SUBJECT: Sargassum Seaweed Matching Grant Program

DATE: December 6, 2019

REVISED: _____

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Schreiber	Rogers	EN	Favorable
2.			AEG	
3.			AP	

I. Summary:

SB 648 requires the Department of Environmental Protection (DEP) to create a *Sargassum* Seaweed Matching Grant Program. The annual grants are subject to legislative appropriation. Each grant must require at least a 50 percent local match. DEP must adopt by rule procedures to govern the program. DEP must submit an annual report on the projects funded by the program.

II. Present Situation:

Sargassum

Sargassum is a genus of large brown seaweed (a type of algae) that floats freely in the ocean and does not attach to the seafloor.¹ This seaweed has round “berries,” gas-filled structures that provide buoyancy allowing it to float on the surface.² *Sargassum* is common in the Sargasso Sea (in the North Atlantic Ocean), the Northwestern Gulf of Mexico, and throughout the Caribbean region and beyond, moving with currents, waves, and tides.³ When nutrients are available and temperatures are high, it can grow into large floating mats.⁴ *Sargassum* supports tremendous biodiversity, providing habitat and food for sea turtles, marine birds, crabs, shrimp, many types of fish, and more.⁵ These mats naturally wash up on beaches, where they help stabilize the shoreline and provide nourishment for coastal ecosystems.⁶

¹ NOAA, *What is Sargassum?*, <https://oceanexplorer.noaa.gov/facts/sargassum.html> (last visited Nov. 27, 2019); DOH, *Sargassum Frequently Asked Questions Factsheet, 2* (2019)[hereinafter *Sargassum FAQs*], available at <https://www.documentcloud.org/documents/6181491-Sargassum-Fact-Sheet.html>.

² NOAA, *What is Sargassum?*, <https://oceanexplorer.noaa.gov/facts/sargassum.html> (last visited Nov. 27, 2019).

³ *Sargassum FAQs* at 2; NOAA, *What is the Sargasso Sea?*, <https://oceanservice.noaa.gov/facts/sargassosea.html> (last visited Nov. 27, 2019).

⁴ *Sargassum FAQs* at 2.

⁵ *Id.*; NOAA, *What is Sargassum?*, <https://oceanexplorer.noaa.gov/facts/sargassum.html> (last visited Nov. 27, 2019).

⁶ *Sargassum FAQs* at 2.

Since 2011, an enormous and recurring bloom of *Sargassum*, known as the “Great Atlantic *Sargassum* Belt,” has often stretched from West Africa to the Gulf of Mexico.⁷ A recent study suggests that the bloom events show connections to large-scale nutrient enrichment, particularly from the Amazon River, due in part to deforestation and fertilizer runoff, and from upwelling in areas around the west coast of Africa.⁸ The blooms have caused two common species of *Sargassum* (*Sargassum natans* and *Sargassum fluitans*) to begin washing up along Florida’s coastline in massive quantities.⁹



(left) *Sargassum natans* and (right) *Sargassum fluitans*. Each square represents 1 square centimeter. Credit: A. N. S. Siudo

After a beaching event, *Sargassum* decomposes and produces an unpleasant, rotten egg smell from the natural production of hydrogen sulfide gas.¹⁰ Hydrogen sulfide is an irritant to the respiratory system, especially for those with respiratory illnesses, and it can cause irritation to the eyes, nose, and throat.¹¹ However, wind on beaches helps hydrogen sulfide gas mix into the air and become diluted, and high constant levels of hydrogen sulfide are not expected in open environments.¹² *Sargassum* can accumulate relatively large amounts of heavy metals such as arsenic and cadmium, posing health issues if the seaweed is consumed.¹³ *Sargassum* itself does not sting or cause rashes or blisters, but it provides habitat for organisms that do.¹⁴

Abnormally high concentrations of *Sargassum* can cause numerous environmental problems. As the seaweed decays, it consumes oxygen, creating low-oxygen conditions harmful to marine

⁷ Mengqiu Wang, et al., *The Great Atlantic Sargassum Belt*, 365 SCIENCE 6448, pp. 83-87 (2019), available at <https://science.sciencemag.org/content/365/6448/83>. In 2018, the belt stretched 8,850 kilometers (5,500 miles) and contained over 20 million metric tons of *Sargassum* biomass; see Florida Atlantic University, *Scientists Discover World’s Largest Seaweed Bloom*, <https://www.fau.edu/newsdesk/articles/great-atlantic-sargassum-belt.php> (last visited Nov. 27, 2019).

⁸ Mengqiu Wang, et al., at 85-87. The study also suggests that higher sea surface temperatures suppress *Sargassum* growth.
⁹ *Sargassum FAQs* at 2, available at <https://www.documentcloud.org/documents/6181491-Sargassum-Fact-Sheet.html>; see University of South Florida, *Satellite-based Sargassum Watch System (SaWS)*, <https://optics.marine.usf.edu/projects/SaWS.html> (last visited Dec. 3, 2019).

¹⁰ *Sargassum FAQs* at 2-3.

¹¹ *Id.* at 3.

¹² *Id.*

¹³ *Id.*

¹⁴ *Id.* at 2.

life.¹⁵ Major influxes of *Sargassum* can block sunlight for bottom marine ecosystems such as seagrasses and corals.¹⁶ The seaweed can also entangle or trap wildlife.¹⁷

Sargassum beaching events in Florida can pose significant economic issues. Tourism may be threatened when areas of beach are covered in the foul-smelling, decomposing seaweed.¹⁸ Removing *Sargassum* from the beach can pose a significant cost to local governments. For example, Miami-Dade County estimates that complete daily removal of the seaweed could cost the county as much as \$45 million per year.¹⁹ Local governments are using a variety of methods and machinery to remove the seaweed from beaches, including pushing it back into the water with a tractor, scooping it with a front loader and piling it above the high tide line, using tractors with blades to mix it with the sand and bury it, hauling it away in trucks and composting it into soil, and more.²⁰

Chapter 161, Parts I and II, F.S., are known as the “Dennis L. Jones Beach and Shore Preservation Act (Act).” In order to protect, preserve, and manage Florida’s beaches and coastal systems, the Act provides for three interrelated programs administered by the Department of Environmental Protection (DEP): the Coastal Construction Control Line Program; the Beach Management Funding Assistance Program; and the Beaches, Inlets, and Ports Program.²¹ Under the Act, DEP regulates work and activities likely to affect the physical condition of the beach or shore. Generally, in addition to local government permits, DEP requires a permit for mechanical beach cleaning or seaweed removal.²² During sea turtle nesting season, further restrictions on beach cleaning or seaweed removal activities may apply in certain areas of the state.²³ Federal law may also apply to *Sargassum* management. For instance, in 2003, *Sargassum* in certain areas was designated “essential fish habitat” under federal law, establishing certain requirements and

¹⁵ Grant Currin, Live Science, *A Massive Seaweed Bloom Is Smothering Life from the Caribbean to West Africa* (July 5, 2019), <https://www.livescience.com/65873-record-breaking-sargassum-bloom.html> (last visited Dec. 3, 2019).

¹⁶ Ana Zangroniz, UF/IFAS, *Sargassum Seaweed in South Florida*, <http://blogs.ifas.ufl.edu/miamidadeco/2018/08/31/sargassum-seaweed-in-south-florida/> (last visited Dec. 3, 2019).

¹⁷ Ed Yong, The Atlantic, *Why Waves of Seaweed Have Been Smothering Caribbean Beaches*, <https://www.theatlantic.com/science/archive/2019/07/great-atlantic-sargassum-belt-here-stay/593290/> (last visited Dec. 3, 2019).

¹⁸ Elina Shirazi, Fox News, *South Florida, In Effort to Save Tourism Industry, May Spend Millions to Remove Seaweed Invading Beaches*, <https://www.foxnews.com/travel/slimy-stinky-seaweed-invades-south-florida-beaches> (last visited Dec. 2, 2019); Mexico News Daily, *Tourism Down 30-35% Due to Sargassum: Playa del Carmen Mayor-Elect*, <https://mexiconewsdaily.com/news/tourism-down-30-35-due-to-sargassum/> (last visited Dec. 3, 2019).

¹⁹ Jai-Leen James, Miami Beach Times, *Miami Beach Holds Committee Meeting to Address Seaweed Takeover June 19th* (June 21, 2019), <https://miamibeachtimes.com/politics/miami-beach-holds-committee-meeting-to-address-seaweed-takeover-june-19th/> (last visited Dec. 3, 2019).

²⁰ Ana Zangroniz, UF/IFAS, *Sargassum Seaweed in South Florida*, <http://blogs.ifas.ufl.edu/miamidadeco/2018/08/31/sargassum-seaweed-in-south-florida/> (last visited Dec. 3, 2019).

²¹ DEP, *Beaches*, <https://floridadep.gov/rcp/beaches> (last visited Dec. 4, 2019).

²² FWC, *Mechanical Beach Cleaning Guidelines*, <https://myfwc.com/wildlifehabitats/wildlife/sea-turtle/beach-activities/beach-cleaning-guidelines/> (last visited Dec. 3, 2019); Volusia County, *Beach Cleanup and Repair Information*, https://www.volusia.org/services/growth-and-resource-management/environmental-management/irma_beach_cleanup.stml (last visited Dec. 5, 2019).

²³ See Fla. Admin. Code Ch. 62B-55.

limitations for harvesting.²⁴ In 2014, *Sargassum* in certain areas was designated “critical habitat” of the loggerhead sea turtle, providing further protection for the seaweed under federal law.²⁵

III. Effect of Proposed Changes:

Section 1 creates s. 403.926, F.S.

The bill requires the Department of Environmental Protection (DEP) to develop a *Sargassum* Seaweed Matching Grant Program. Subject to legislative appropriation, the program will provide annual grants to qualified local government entities to fund projects related to the buildup of *Sargassum* in their coastal communities.

The bill requires DEP to adopt by rule procedures to govern the program. At a minimum, the procedures must do all of the following:

- Provide a selection process designed to maximize the benefit to the public.
- Require that each grant include a minimum of a 50 percent local match of funds.
- Require that each grant recipient comply with the Dennis L. Jones Beach and Shore Preservation Act and any other rules established by DEP regarding beach cleanup.

The bill requires DEP to produce an annual report regarding the projects funded through the program. DEP must submit the report to the Governor, the President of the Senate, and the Speaker of the House of Representatives by January 1, 2021, and each January 1 thereafter.

Section 2 states that the act shall take effect July 1, 2020.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

None.

B. Public Records/Open Meetings Issues:

None.

C. Trust Funds Restrictions:

None.

²⁴ *Fisheries of the Caribbean, Gulf of Mexico, and South Atlantic; Pelagic Sargassum Habitat of the South Atlantic Region*, 68 Fed. Reg. 57375–57379 (Oct. 3, 2003), available at <https://www.govinfo.gov/content/pkg/FR-2003-10-03/pdf/FR-2003-10-03.pdf>.

²⁵ *Endangered and Threatened Species: Critical Habitat for the Northwest Atlantic Ocean Loggerhead Sea Turtle Distinct Population Segment (DPS) and Determination Regarding Critical Habitat for the North Pacific Ocean Loggerhead DPS*, 79, Fed. Reg. 39855–39912 (Jul. 10, 2014), available at <https://www.govinfo.gov/content/pkg/FR-2014-07-10/pdf/2014-15748.pdf>; 50 C.F.R. s. 226.223.

D. State Tax or Fee Increases:

None.

E. Other Constitutional Issues:

None.

V. Fiscal Impact Statement:

A. Tax/Fee Issues:

None.

B. Private Sector Impact:

None.

C. Government Sector Impact:

The bill requires DEP to administer a new grant program and produce additional annual reports, which may cause DEP to incur additional costs.

The bill would provide grant funding opportunities to local governments for projects related to *Sargassum*. This funding may pay up to 50 percent of the project costs, where local governments may otherwise be paying the entire cost of such projects. Therefore, this bill may have an indeterminate, positive fiscal impact on local governments.

VI. Technical Deficiencies:

None.

VII. Related Issues:

None.

VIII. Statutes Affected:

This bill creates section 403.926 of the Florida Statutes.

IX. Additional Information:

A. Committee Substitute – Statement of Changes:

(Summarizing differences between the Committee Substitute and the prior version of the bill.)

None.

B. Amendments:

None.

This Senate Bill Analysis does not reflect the intent or official position of the bill's introducer or the Florida Senate.
