

# ***Sargassum* Management & Mitigation Discussion Summary**

05/16/2024

## **Participants:**

- FAU Team: Rachel Brewton, Brian Lapointe, Megan Brewton, Greer Babbe, Ellyn Willse, Steve Lombardo
- USF: Brian Barnes
- Green Key: Jake Cahill
- John Pennekamp State Park (JPSP): Trudy Wilson
- Florida Sea Grant (FSG): Shelly Krueger
- Sustainescape: Dennis de Zeeuw
- Zone Products: Keith Montgomery
- AECOM: Dan Levy, Will Lovins
- South Atlantic Fisheries Management Council (SAFMC): Kathleen Howington,
- Indian River County Natural Resources Department - Coastal Division (IRC): Quintin Bergman
- Gulf of Mexico Fisheries Management Council (GMFMC): Verena Wang
- Florida Department of Public Health (FDOH): Emily Cooley, Michael Mitchell
- Florida Department of Environmental Protection (FDEP): Nick Parr
- NOAA Fisheries, Office of Protected Resources (NOAA): Kim Corcoran,
- NOAA FKNMS (NOAA): Andy Bruckner

## ***Sargassum* Overview:**

- Brian Lapointe and Rachel Brewton (FAU) with Brian Barnes (USF) presented the history and impacts of *Sargassum* as a harmful algae bloom (HAB). Key points included the first blooms in the Gulf of Mexico in the 1980s, the development of the Great Atlantic *Sargassum* Belt in 2011, recent inundation research (2021–2022), and water quality issues linked to excessive *Sargassum* biomass in coastal waters.
- Satellite Monitoring: Brian Barnes discussed satellite-based *Sargassum* monitoring and forecasting, highlighting the transition from coarse to higher resolution sensors for better prediction accuracy. Challenges with cloud cover and the aim for a 3.5-day forecast were noted.

## **Permitting Process:**

- Kim Corcoran (NOAA) outlined the Endangered Species Act (ESA) Section 10(a)(1)(b) permit process for take of ESA listed species incidental to *Sargassum* removal in the water. Key steps include pre-application consultation (which may include submitting a work plan early on to determine if an ITP is needed), application and conservation plan development, NEPA analysis, permit issuance, conservation plan implementation and monitoring. Section 10 Incidental Take Permits (ITPs) are needed when an otherwise lawful activity may result in the taking of ESA listed species and there is no federal nexus in place (i.e., the activity is not funded, authorized, or carried out by a federal agency). Please reach out to Kim Corcoran if you have any questions about the process and/or to discuss whether an ITP is needed for your proposed activity.
- Quintin Bergman (IRC) clarified jurisdiction of USFWS/NOAA for land/sea *Sargassum* harvesting, and Nick Parr (FDEP) mentioned the need for DEP permits for beach raking. Discussions touched on the involvement of other entities like USFWS and Army Corps in the permitting process.

**Public Health and Environmental Concerns:**

- Emily Cooley (FDOH) highlighted human health concerns and recommended personal protective equipment (PPE) for occupational contact with *Sargassum*.
- Shelly Krueger (FSG) raised concerns about the impact of sand removal during *Sargassum* collection on beach renourishment costs.
- Trudy Wilson (JPSP) noted the habitat shifts in nearshore areas may be due to *Sargassum* and the challenges of managing its removal in artificial waterways.

**Industry Presentations:**

- Jake Cahill (Green Key) discussed sustainable pulping processes for *Sargassum* and its potential applications in nanocellulose, hydrogel, and various industries. Collaboration with municipalities for mitigation efforts was suggested.
- Dennis de Zeeuw (Sustainscape) shared his experience with integrating *Sargassum* into fertilizers, storage of *Sargassum*, and his documentary film on *Sargassum*.
- Keith Montgomery (Zone Products) expressed interest in environmentally conscious farming with *Sargassum* and potential collaborative efforts for sustainable collection and repurposing.

**Open Discussion:**

- Rachel Brewton (FAU) sought input from managers on *Sargassum* harvesting impacts. Trudy Wilson (JPSP) emphasized the need to account for all species and habitats.
- Brian Lapointe (FAU) explained the effects of El Niño and La Niña on shifting *Sargassum* distribution to the northeast in 2023 and forecasted heavy inundations in specific Caribbean Sea areas in 2024.
- Shelly Krueger (FSG) and Brian Lapointe (FAU) discussed the challenges of disposing of *Sargassum* in Monroe County and potential collaborations with industry representatives like Jake Cahill (Green Key) and Keith Montgomery (Zone Products).
- Arsenic Concerns: Shelly Krueger (FSG) raised questions about arsenic levels in *Sargassum*. Brian Lapointe (FAU) explained that the nitrogen (N) content in *Sargassum* has increased over time and that arsenic (As) uptake could be increasing as phosphorus (P) becomes a stronger limiting nutrient to *Sargassum* growth, making the N:P ratio of *Sargassum* very important to study. Research on As uptake in *Sargassum* is ongoing.

**Key Points:**

- Permitting for *Sargassum* removal involves multiple agencies and is complex, but may be simplified through early and frequent communication.
- Human health and environmental impacts of *Sargassum* are significant concerns.
- Industry collaborations for sustainable *Sargassum* use show promise.
- Monitoring and forecasting improvements are crucial for effective management.
- Addressing As and other toxins in *Sargassum* requires further research.