

# SARGASSUM: FROM SEA TO SHORE

What is *Sargassum*, where does it come from, and what happens when it washes ashore?

1

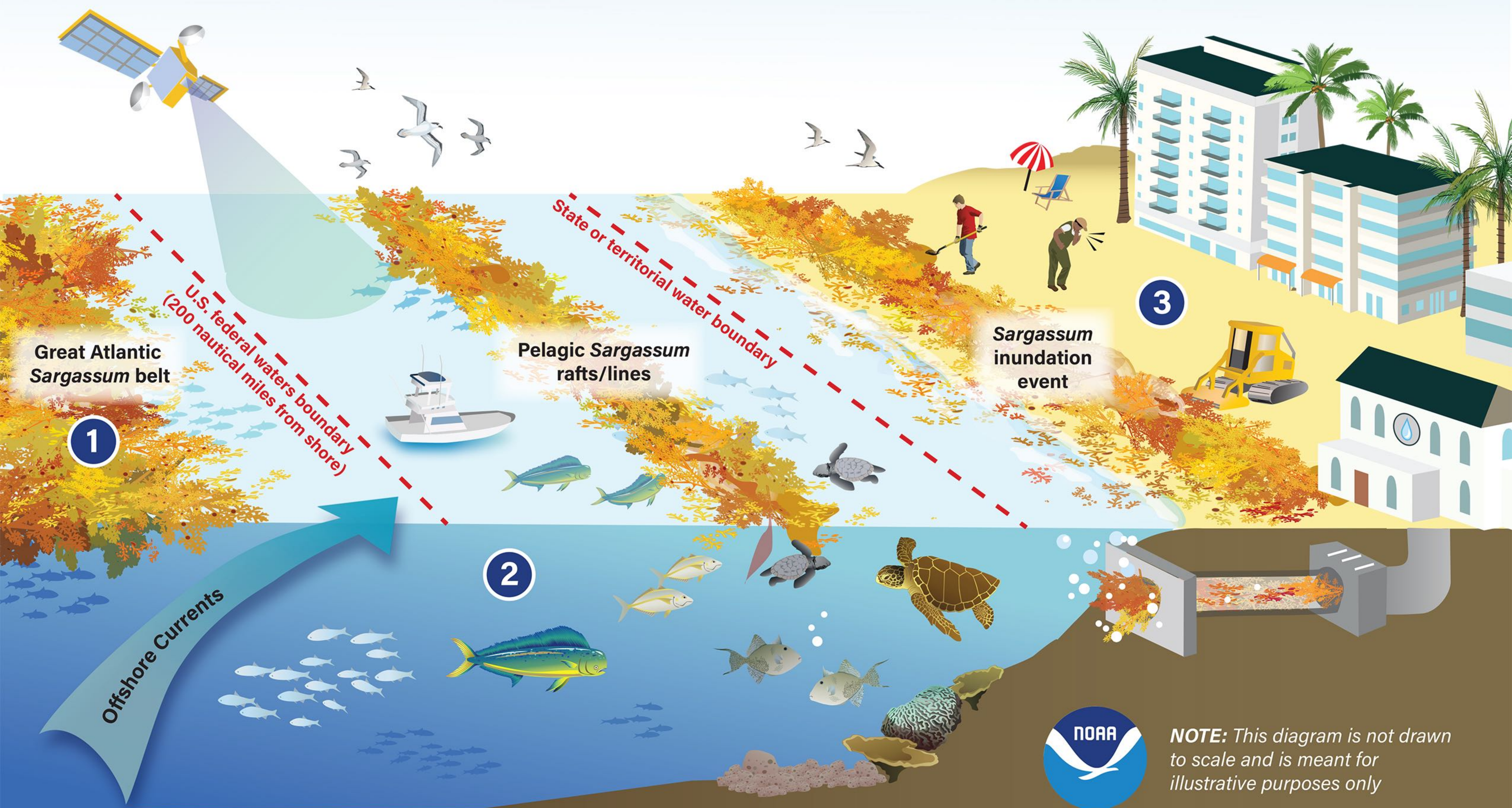
*Sargassum* is a type of floating brown algae. Historically, the majority of *Sargassum* aggregated in the Sargasso Sea in the western North Atlantic. In 2011, the geographic range expanded and a new source region emerged. Shifting wind patterns has led to a newly established population, the “Great Atlantic *Sargassum* Belt.” Massive amounts of *Sargassum* from this area are transported west into the Caribbean Sea, Gulf of Mexico, and tropical South Atlantic via ocean current systems.

2

Pelagic *Sargassum* provides habitat, food resources, protection, and breeding grounds for hundreds of diverse marine species. This includes commercially important fisheries species such as gray triggerfish, amberjack, and mahi mahi that feed on the smaller marine life present in *Sargassum* mats. In the South Atlantic, Gulf of Mexico, and the Caribbean, areas of *Sargassum* are designated as Essential Fish Habitat. Juvenile sea turtles and sea birds also use *Sargassum* for feeding and shelter. In the South Atlantic and portions of the Gulf of Mexico, *Sargassum* is designated as Critical Habitat for threatened loggerhead sea turtles under the Endangered Species Act.

3

*Sargassum* inundation events (SIEs) occur when rafts are carried to shore by winds and currents. These events are a type of harmful algal bloom that can adversely impact coastal ecosystems, tourism, and public health. SIEs can form brown tides nearshore, smothering fauna and flora including coral reefs. Fresh *Sargassum* mats can clog water intake pipes at critical infrastructure like desalination plants for drinking water. *Sargassum* contains high levels of arsenic and other heavy metals, organic contaminants, and marine debris. *Sargassum* decomposing on the beach also produces hydrogen sulfide, which can cause respiratory irritation. Cleanup options are limited and costly.



NOTE: This diagram is not drawn to scale and is meant for illustrative purposes only

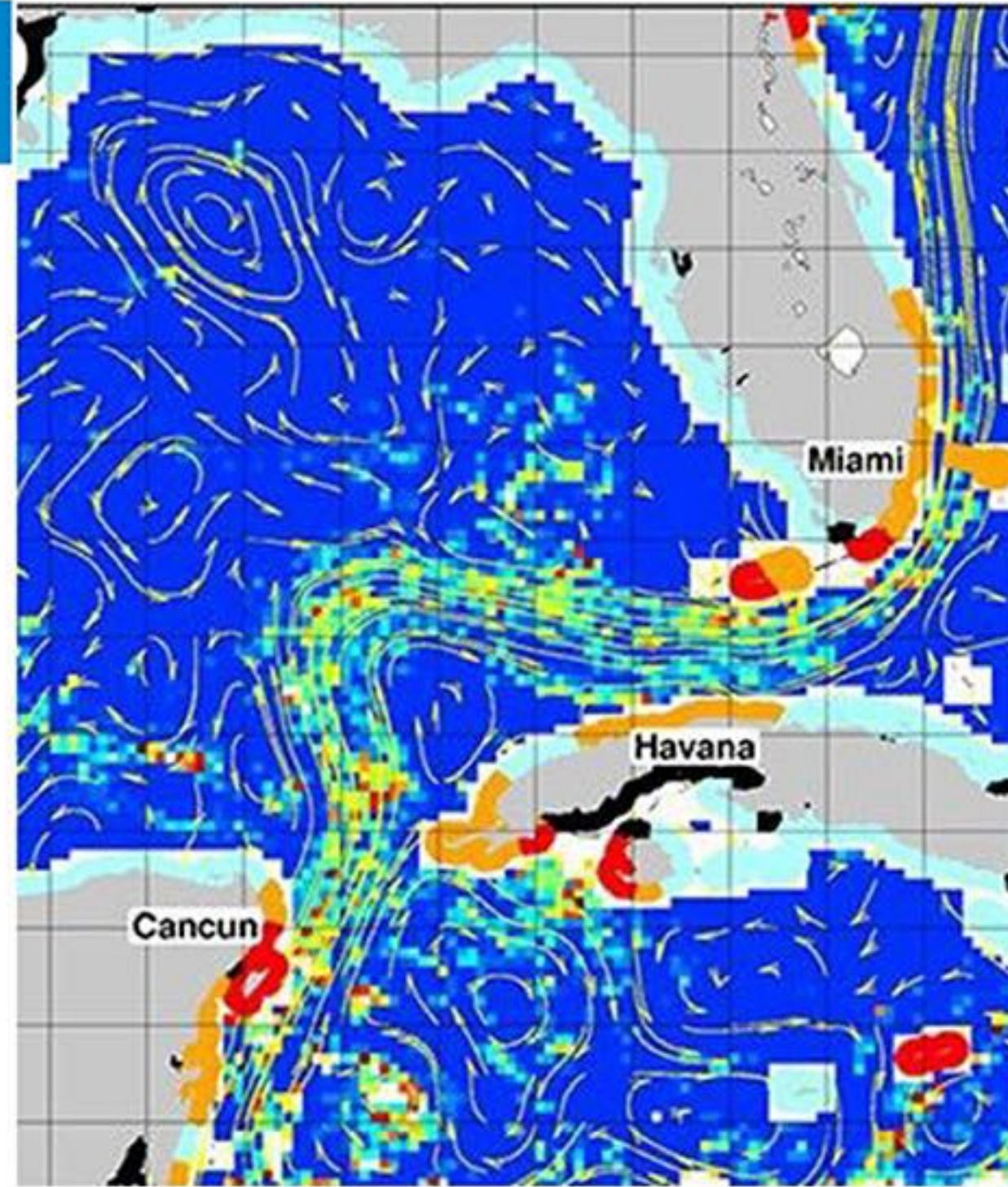


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## TRACK AND FORECAST

NOAA's Atlantic Oceanographic and Meteorological Lab (AOML) and National Environmental Satellite, Data, and Information Service (NESDIS), and the U.S. Integrated Ocean Observing System (IOOS) and regional Caribbean CariCOOS monitor and track *Sargassum*, producing weekly *Sargassum* Inundation Risk Maps. Ongoing research leverages citizen science reports to improve this product.



## HABITAT MANAGEMENT

*Sargassum* is designated as Essential Fish Habitat (EFH) for several species managed by fisheries management councils in the South Atlantic, Gulf of Mexico, and the Caribbean, including: gray triggerfish, amberjacks, and mahi mahi. EFH status does not restrict harvest, but NOAA Fisheries consultation is required for activities in EFH areas. In a separate management plan, NOAA Fisheries further prohibits harvest of *Sargassum* in all U.S. federal waters south of the NC/SC state boundary.



## RESEARCH ON IMPACTS

NOAA's National Centers for Coastal Ocean Science (NCCOS) is investigating the presence of heavy metals and contaminants in *Sargassum* mats. NCCOS funded partners are improving technologies to detect and forecast *Sargassum* and associated impacts during inundation events, engaging with stakeholders to design more accurate and timely warnings, and studying the socioeconomic impacts of *Sargassum* beaching.



## RESPONSE AND MITIGATION

NOAA's Office of Response and Restoration (OR&R) engages in declared disasters for inundation events. The Office of Coastal Management (OCM) provides on-the-ground expertise to affected communities. NCCOS coordinates cross-agency actions through the Interagency Working Group for the Harmful Algal Bloom and Hypoxia Research and Control Act (HABHRCA) and funds research to understand and manage harmful algal blooms.



## ADDITIONAL LINKS AND RESOURCES

- NOAA Fisheries Southeast Regional Office, [Frequently Asked Questions Regarding Annual Inundations of \*Sargassum\* in the Southeastern United States](#)
- NOAA AOML, [Sargassum Frequently Asked Questions](#)
- NOAA CoastWatch, [Sargassum General Information and FAQs](#)
- NOAA AOML and University of South Florida, [Experimental Weekly \*Sargassum\* Inundation Report](#)
- NOAA OR&R, [On Sea Turtles, Seaweed, and Oil Spills](#)
- NOAA OR&R, [Oil Spills and Pelagic \*Sargassum\* Planning and Response Considerations](#)
- Puerto Rico Sea Grant, [Sargassum Impacts at Palmas del Mar](#)

## PHOTO CREDITS

- **Track and Forecast:** Marine Macroalgae Research Lab - Florida International University (MMRL - FIU)
- **Research on Impacts:** Life on the Edge 2004, <https://photolib.noaa.gov/Collections/Voyage/Other/emodule/1340/eitem/77225>
- **Habitat Management:** Florida Fish and Wildlife, <https://creativecommons.org/licenses/by-nd/2.0/>
- **Response and Mitigation:** NOAA OR&R