Tracking Sargassum in the Tropical Atlantic, Caribbean Sea and Gulf of Mexico.

Watch

Sargassum: NOAA Data Collection Tools

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01 Pelagic *Sargassum*

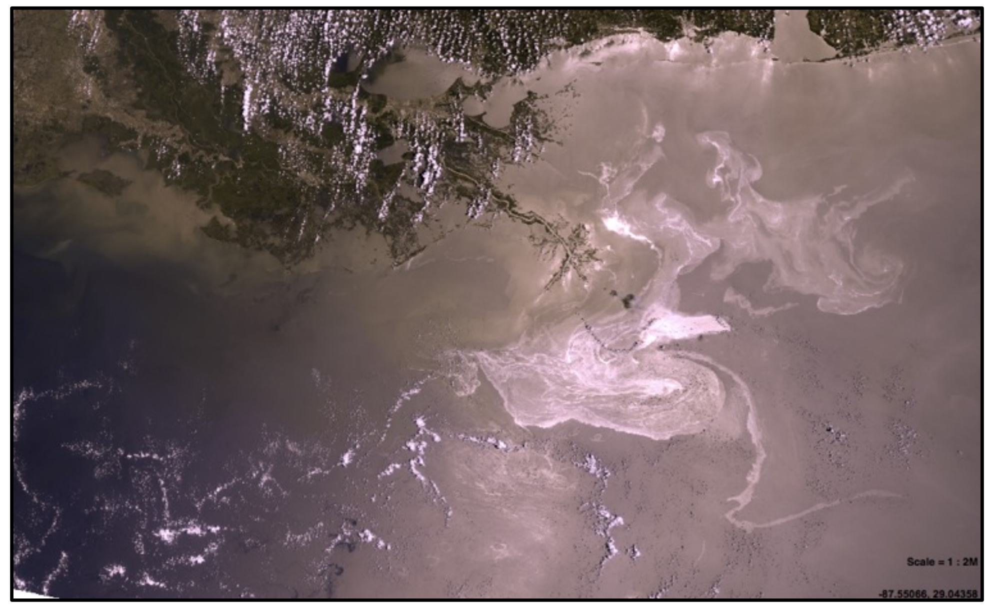
Floating macroalgae that forms large rafts that function as a drifting ecosystem, providing valuable habitat for diverse marine organisms

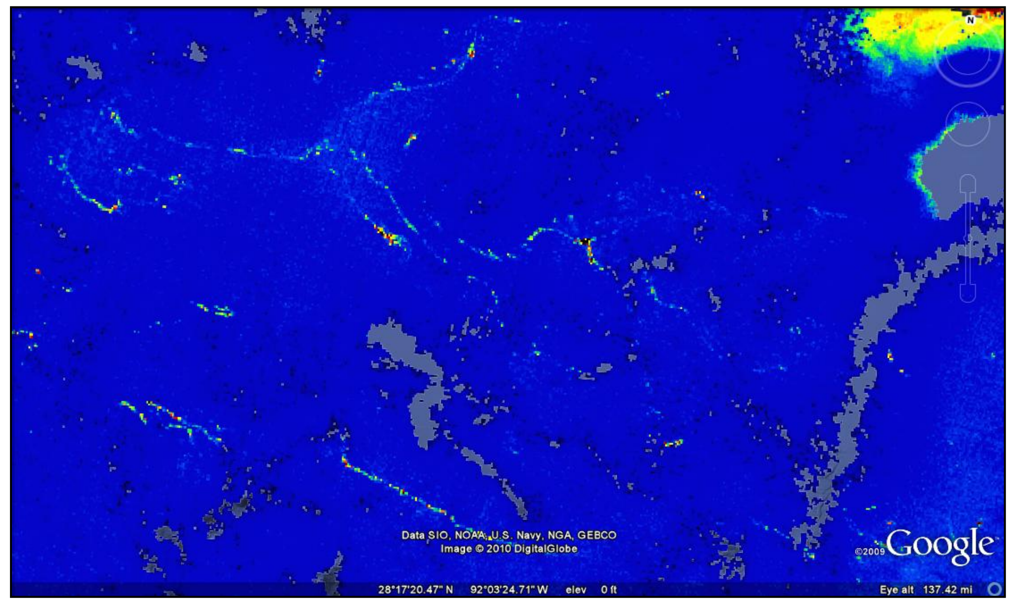
Since 2011, massive amounts of pelagic Sargassum algae began washing ashore throughout the Caribbean Sea and Gulf of Mexico

Disrupts shipping, tourism, fishing, industry, and coastal ecosystems.

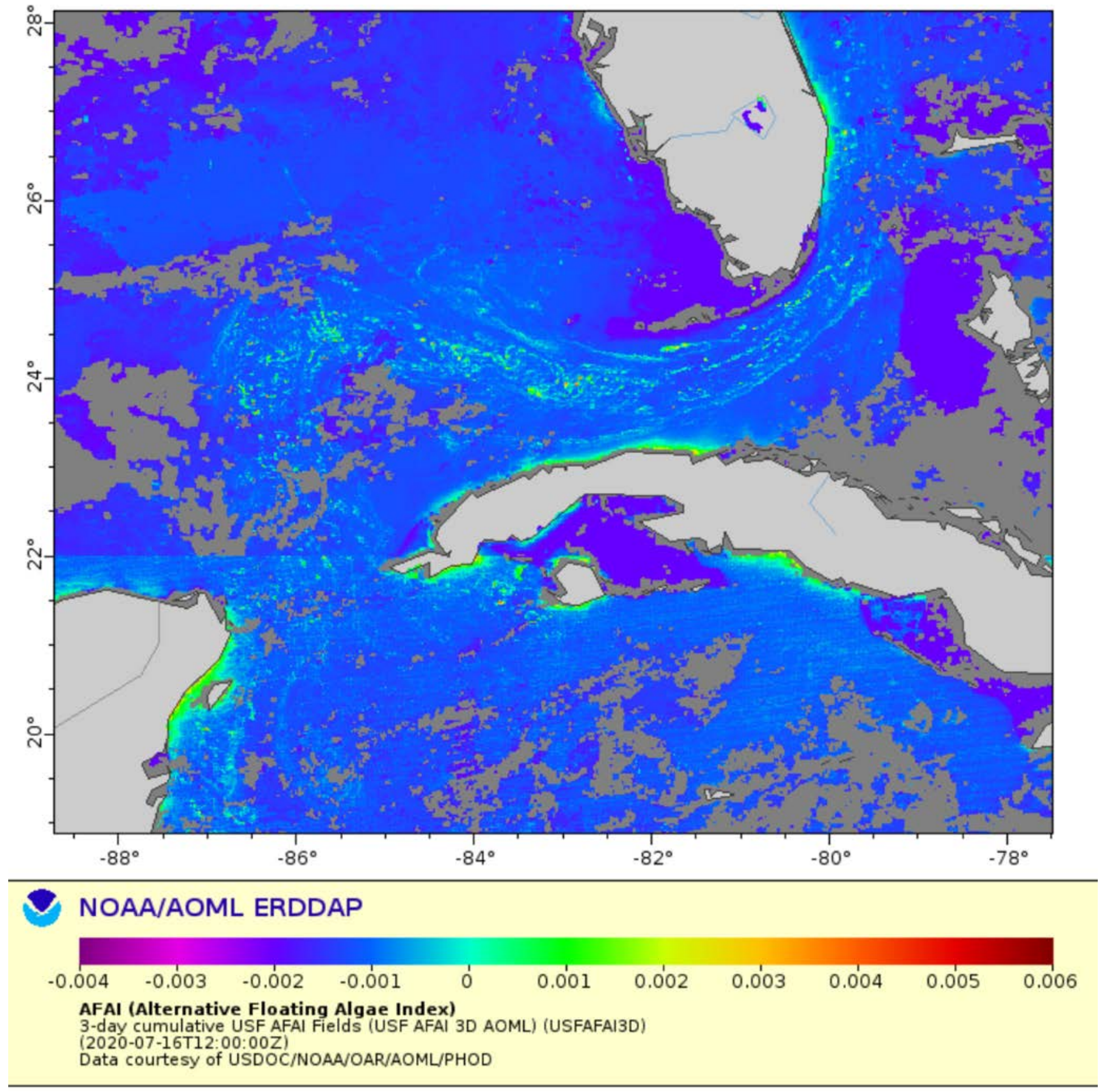
What we do? Monitor and track Sargassum. Trajectory modelling efforts. Operational.

02 Sargassum satellite products

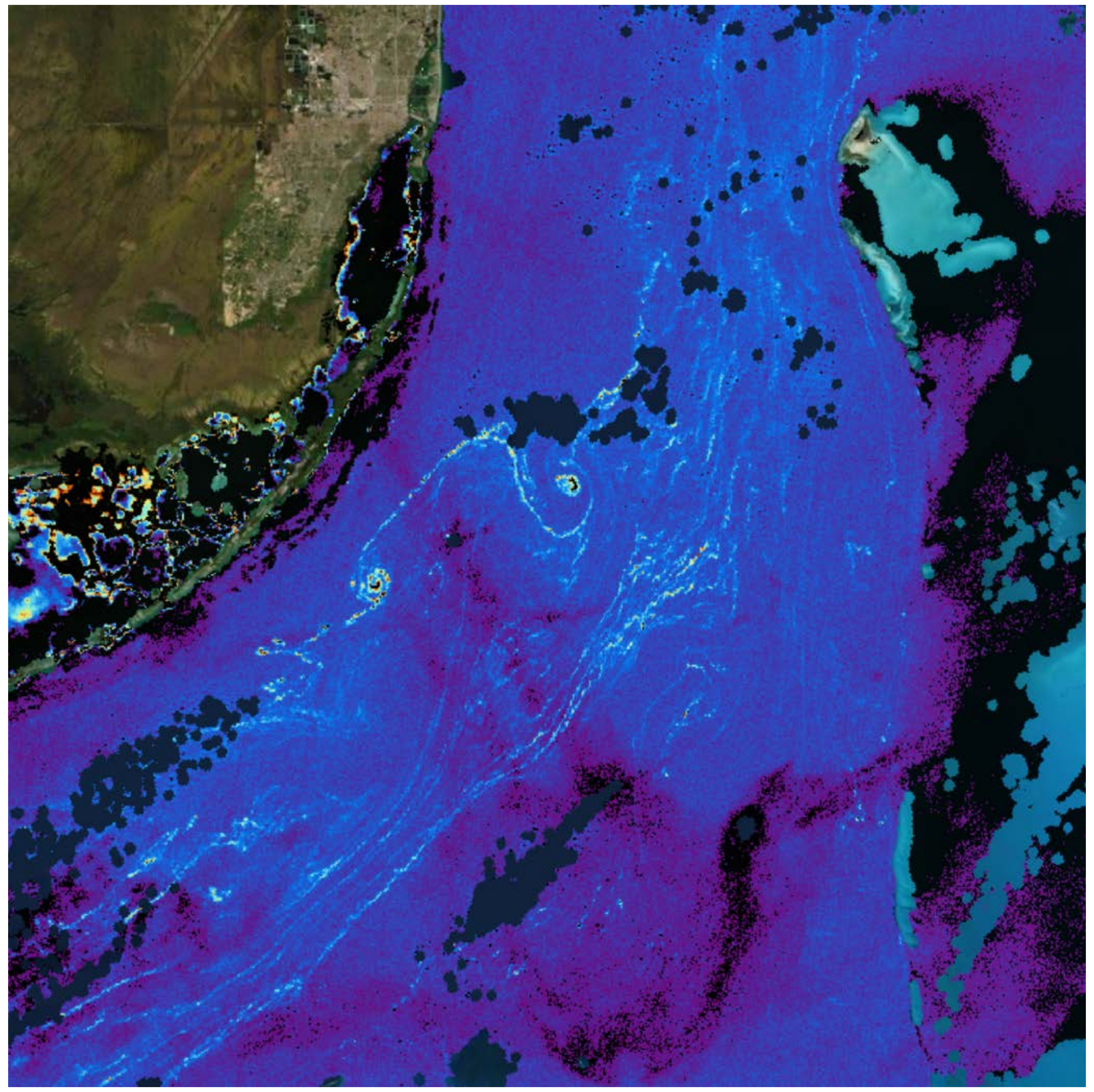




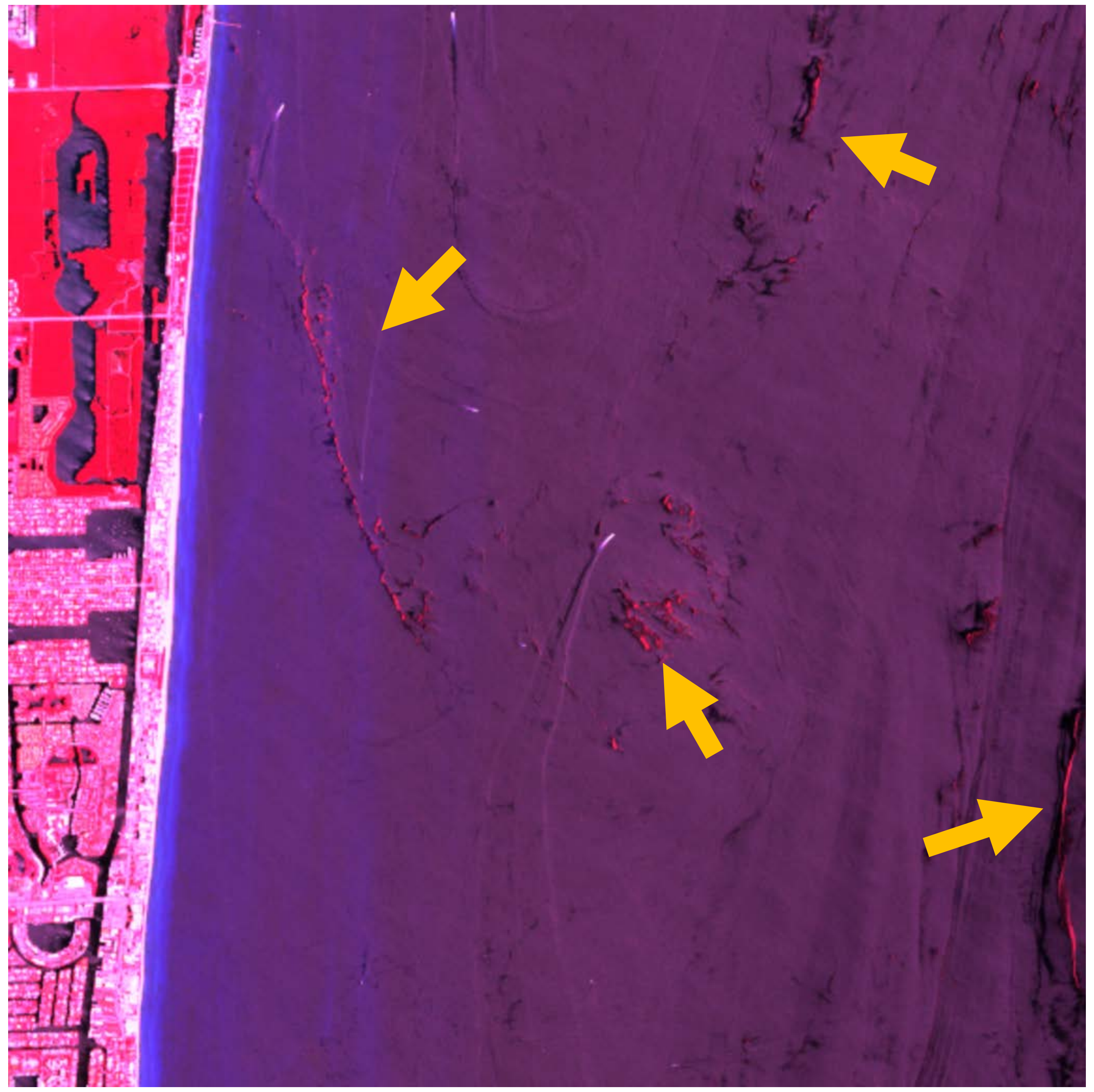
MODIS/VIIRS (source: C. Hu, USF)
Resolution: ~ 1km



OLCI (source: Copernicus)
Resolution: 300 m

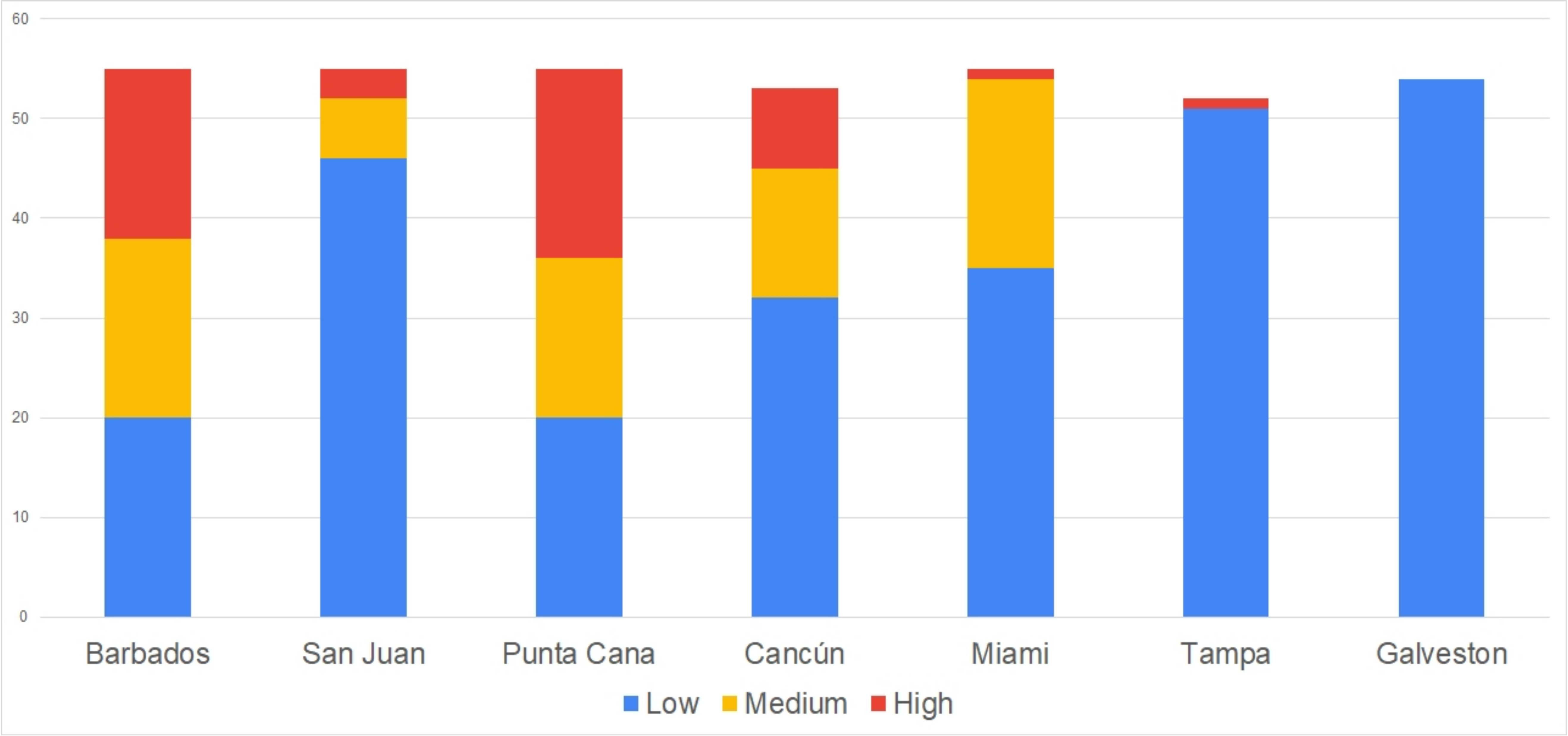


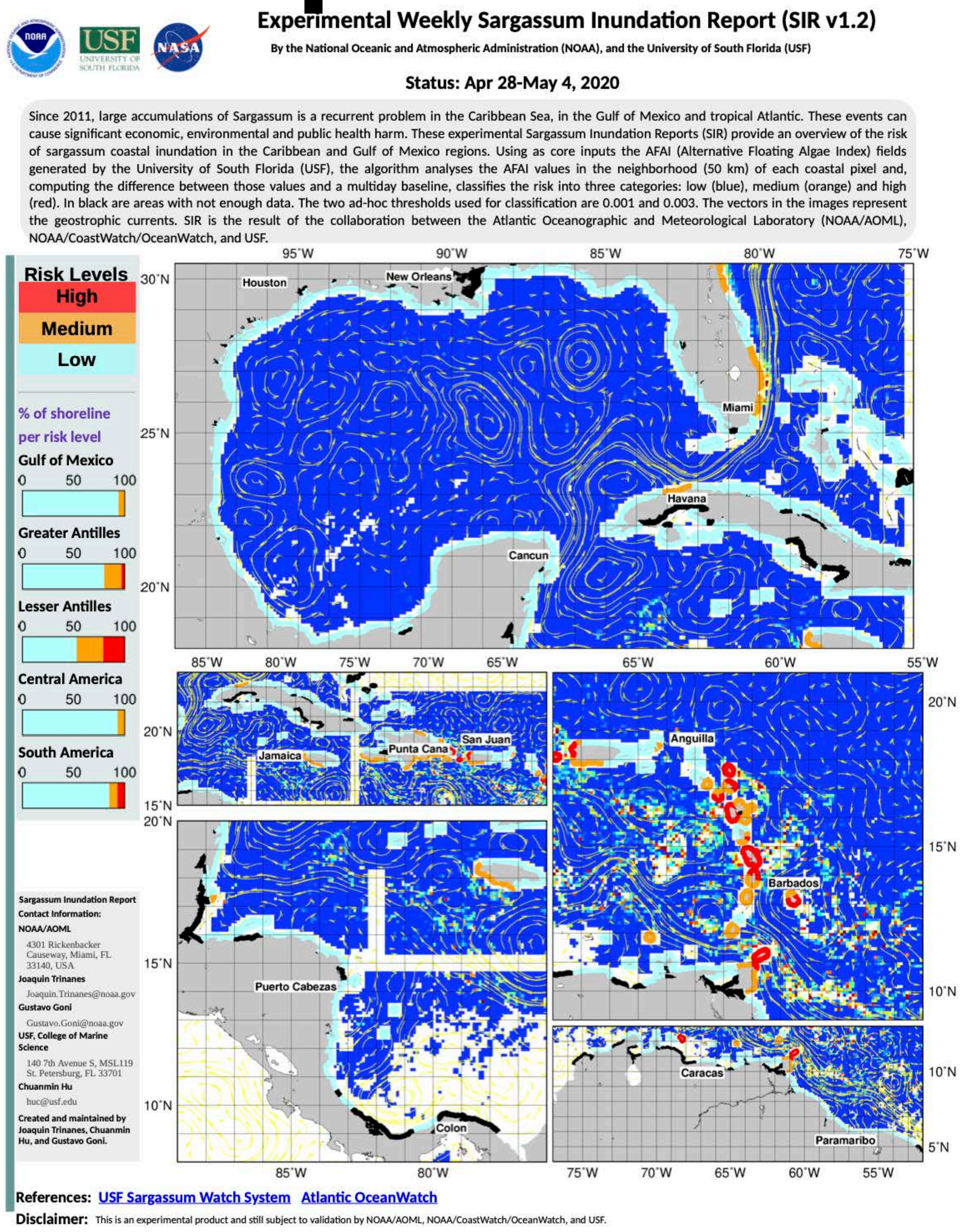
MSI (source: Copernicus)
Resolution: ~ 20m



03 Sargassum Inundation Reports

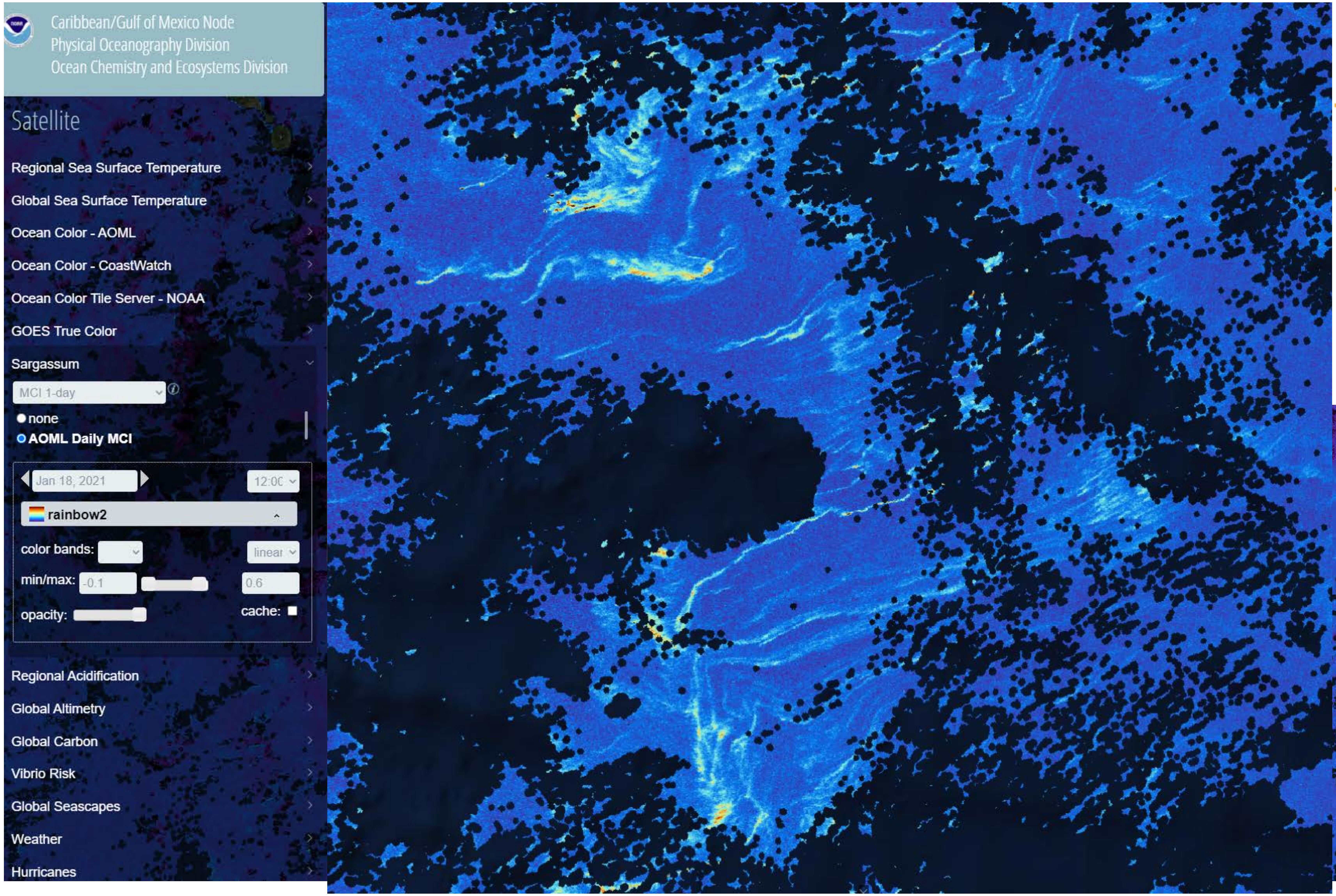
Goals: To monitor Sargassum and to provide an overview of the risk of Sargassum coastal inundation in the Caribbean and Gulf of Mexico regions.





Joaquin Trinanes, N.F. Putman, G. Goni, C. Hu, M. Wang .**Monitoring pelagic Sargassum inundation potential for coastal communities**. *Journal of Operational Oceanography* **Pub Date : 2021-03-18** , *DOI: 10.1080/1755876x.2021.1902682*

04 Interoperable Environment

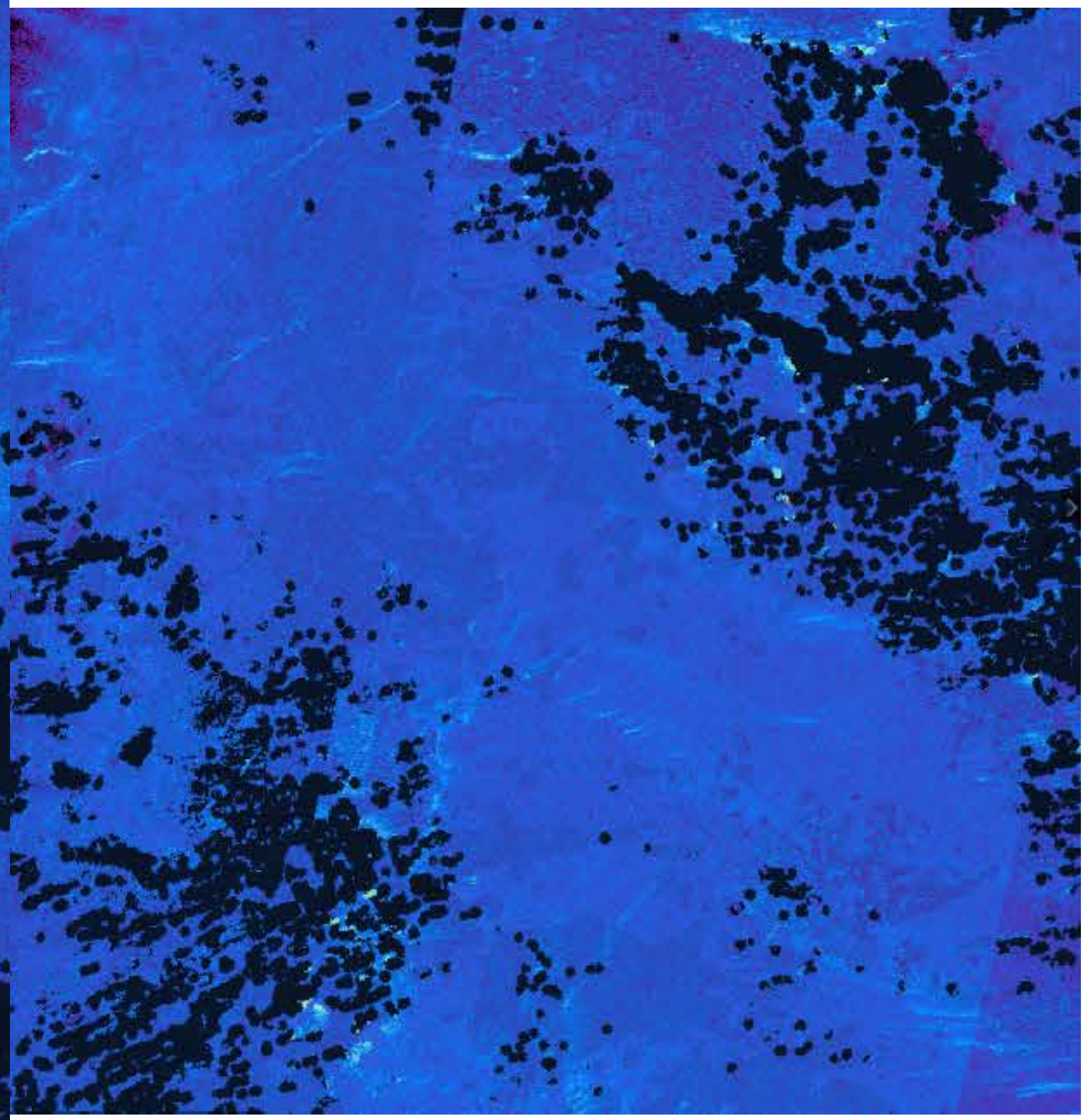


Tile Server

OCEANVIEWER

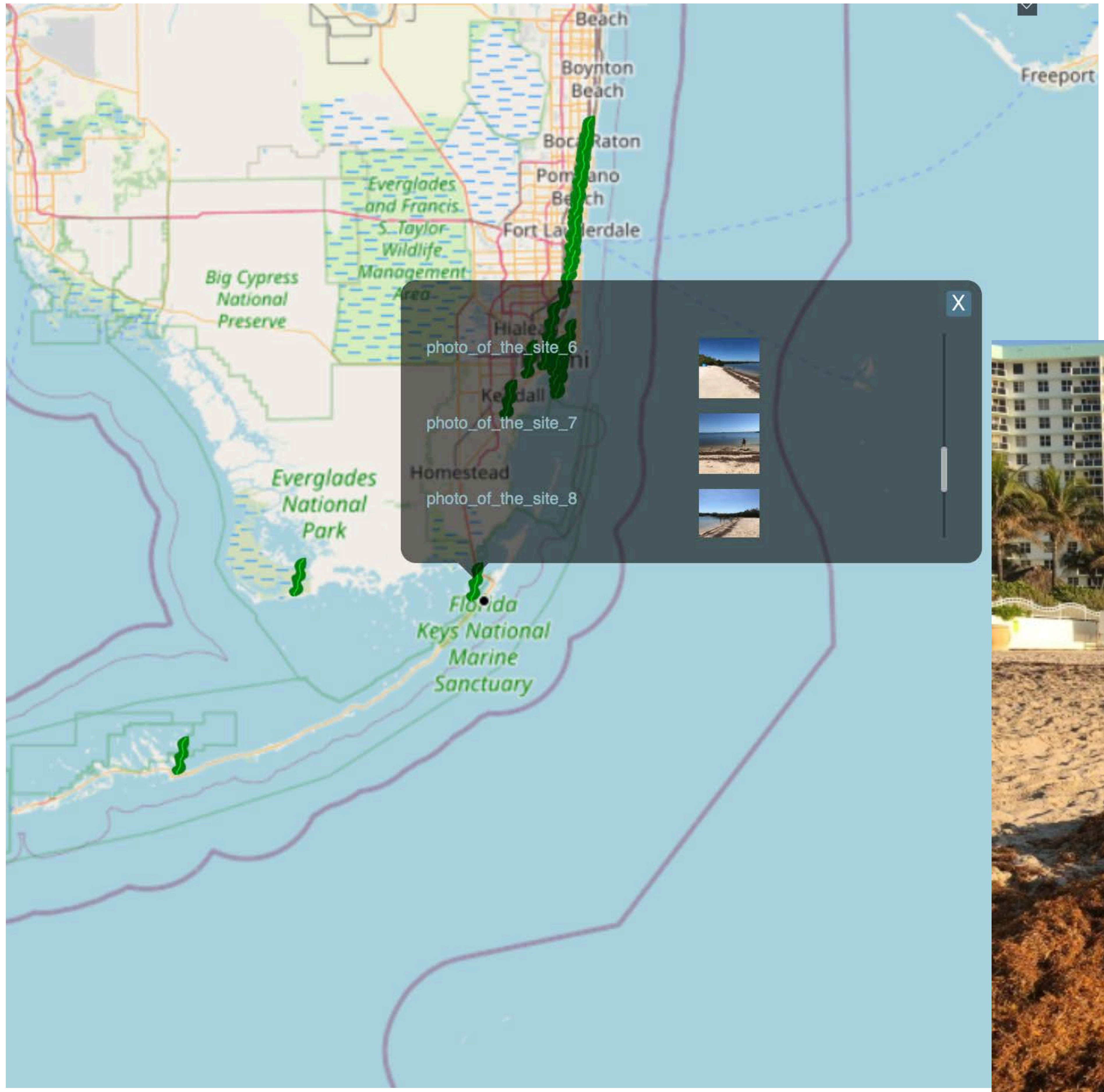
ERDDAP

TDS

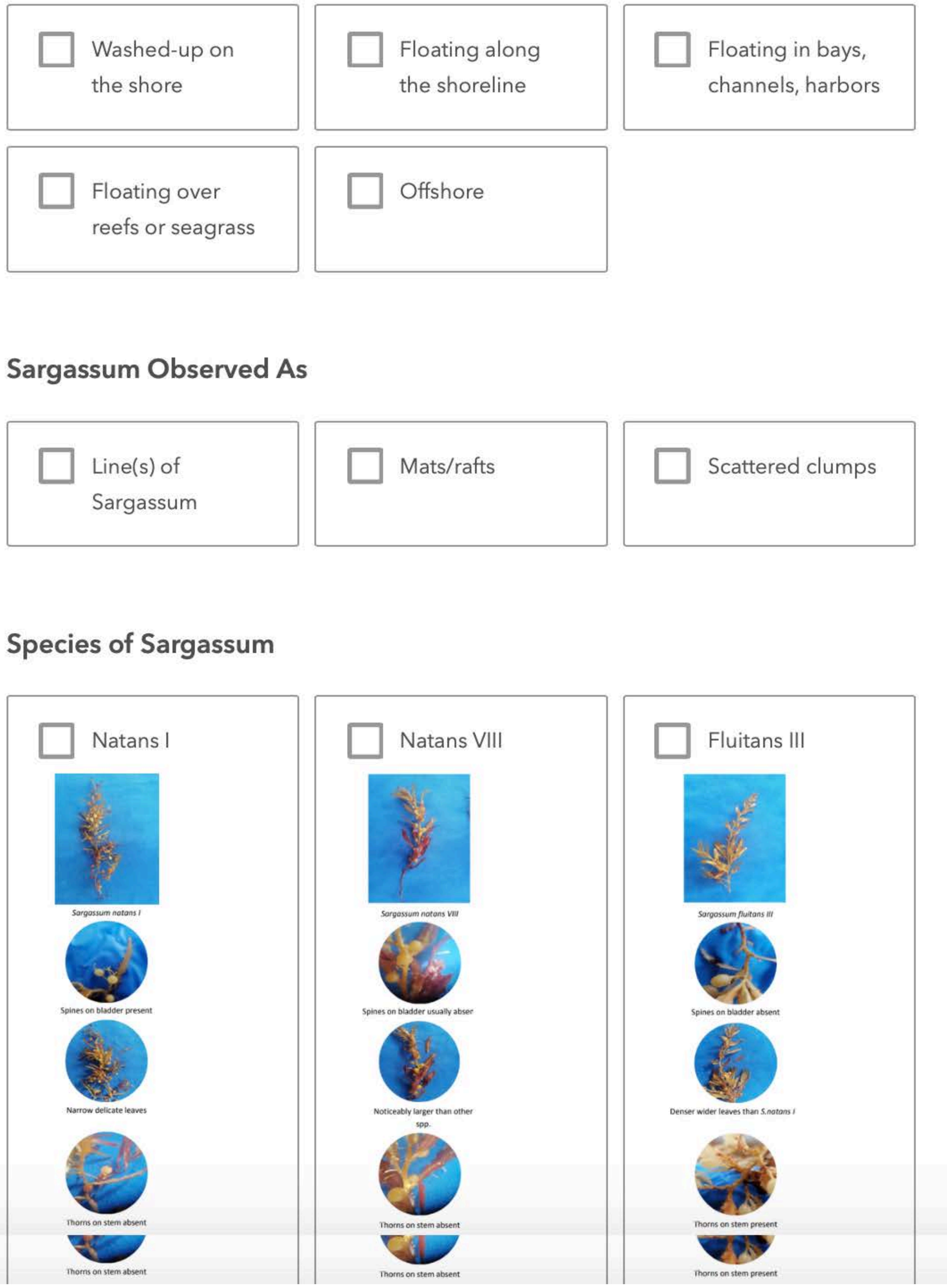


05 Citizen Science

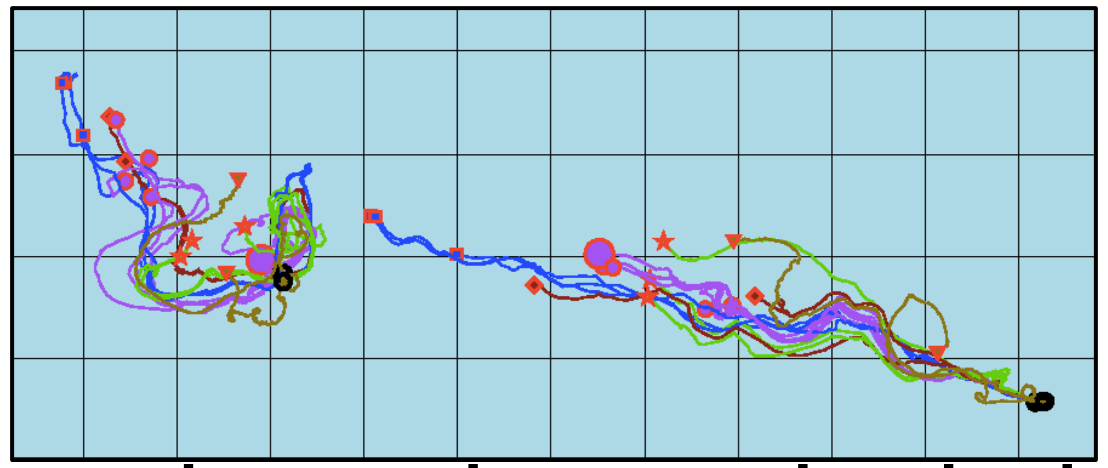
Sargassum Observations
In-situ Database



Survey123
Multidevice data collection



06 Trajectory Modelling



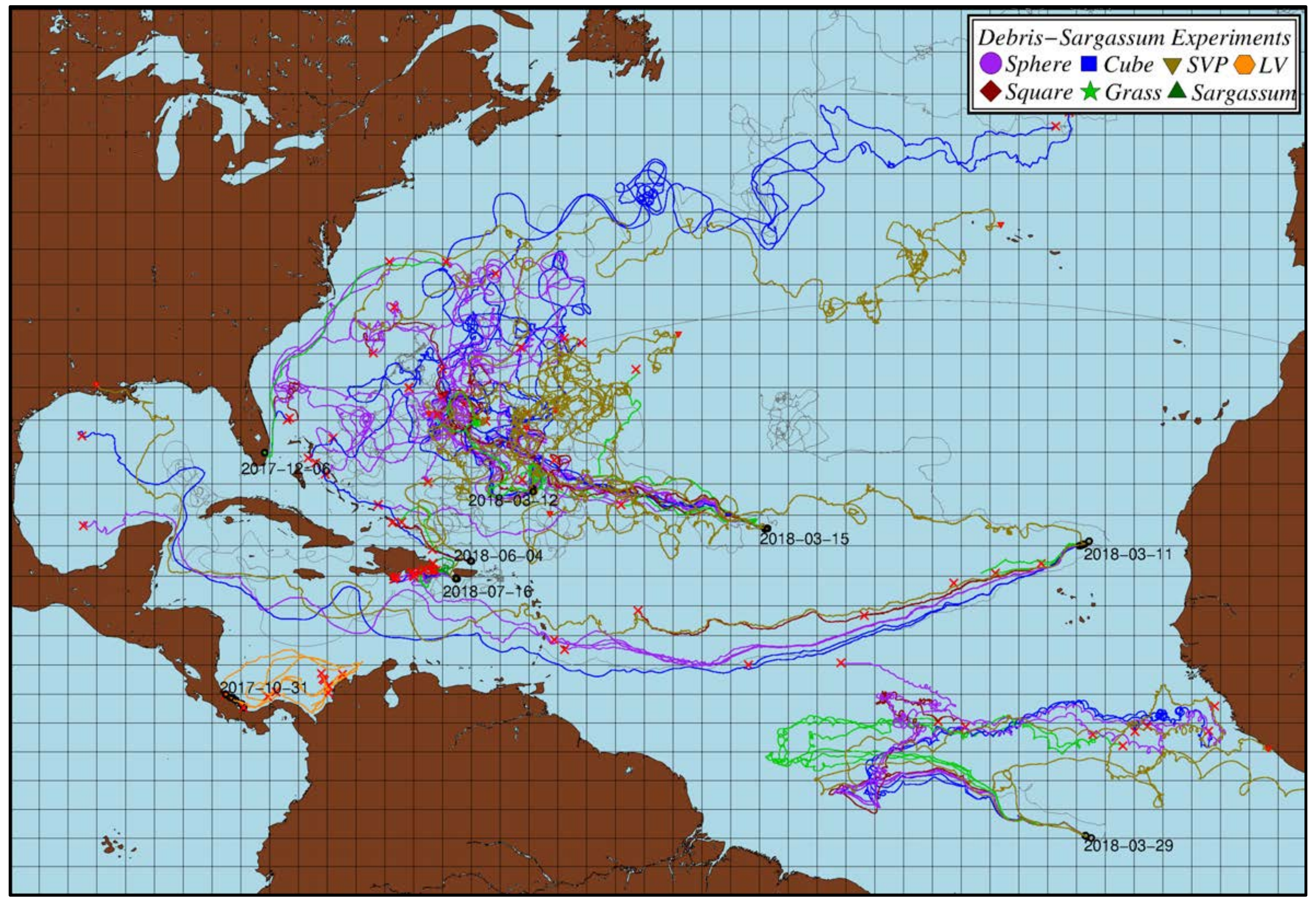
Ocean Debris Tracking

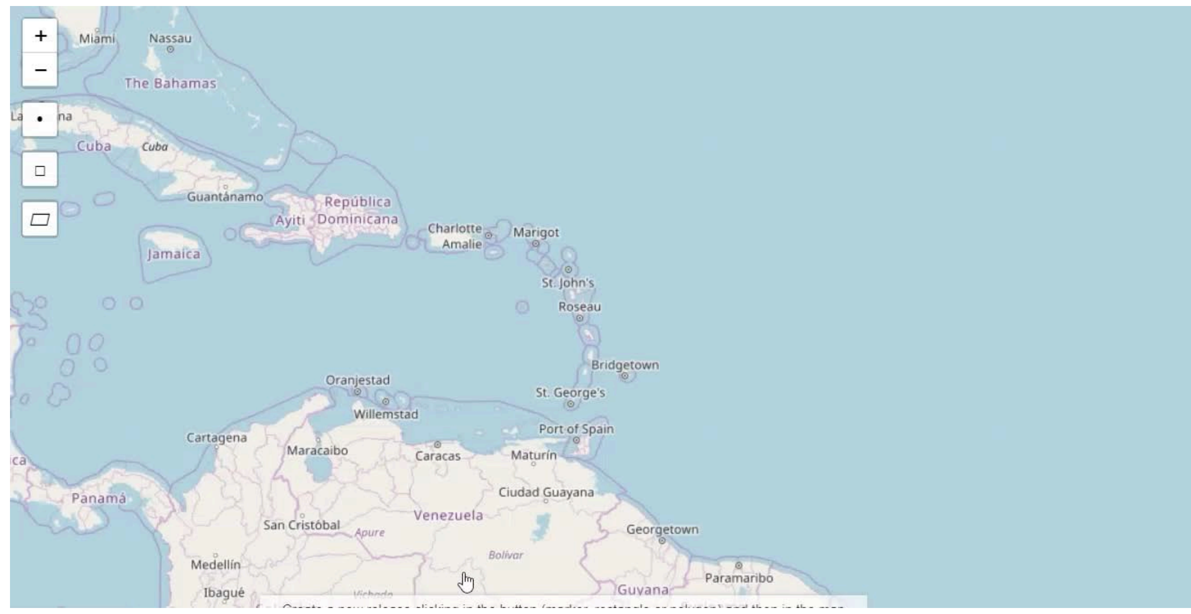
Goal: understand and assess impact of ocean dynamics and wind on sargassum (and debris in general)

Field experiments with GPS-tracked, undrogued buoys of varying shapes, simulating debris and Sargassum. This project will help us better understand the trajectories of floating debris, sargassum, and plankton including marine larva.

Putman, N.F., Lumpkin, R., Olascoaga, M.J., Trinanes, J. and Goni, G.J., 2020. Improving transport predictions of pelagic *Sargassum*. *Journal of Experimental Marine Biology and Ecology*, *529*, p.151398.

Miron, P., Olascoaga, M. J., Beron-Vera, F. J., Putman, N. F., Triñanes, J., Lumpkin, R., and Goni, G. J., 2020. Clustering of Marine-Debris- and *Sargassum*-Like Drifters Explained by Inertial Particle Dynamics. *Geophysical Research L.*, 47(19), https://doi.org/10.1029/2020GL089874





07 Current work

Improve *Sargassum* Inundation risk model

Trajectory modelling (in general, not only for *Sargassum*). Field experiments.

Better coverage in the coastal zone:

- Ground truth (e.g. citizen science projects, beach management agencies)
- Winds
- Currents (e.g. HF radars)
- Waves
- Satellites

Sargassum growth model and local and regional engagement.

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