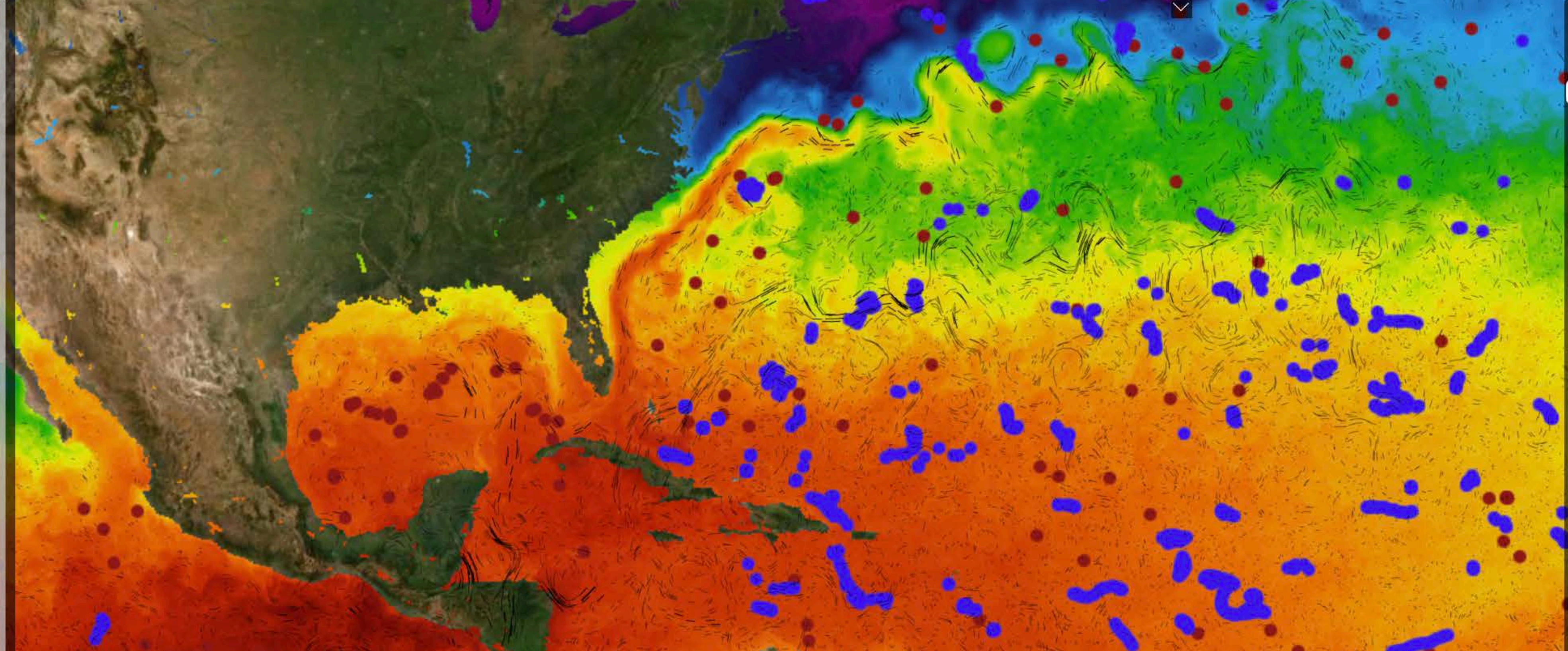




Caribbean/Gulf of Mexico Node
Physical Oceanography Division
Ocean Chemistry and Ecosystems Division

- Satellite
- Regional Sea Surface Temperature >
 - Global Sea Surface Temperature >
 - Ocean Color - AOML >
 - Ocean Color - CoastWatch >
 - Ocean Color Tile Server - NOAA >
 - GOES True Color >
 - USF Sargassum >



Seguimiento del sargazo en el Atlántico tropical, el Caribe y el Golfo de México.

Herramientas de recopilación de datos de NOAA

Watch

Joaquin Trinanes, CoastWatch CGoM & Atlantic OceanWatch. Responsable Operaciones.

NOAA/AOML

01 *Sargazo Pelágico*

Macroalga flotante que forma estructuras de tamaño diverso que funcionan como ecosistemas a la deriva, actuando como un hábitat para diversos organismos marinos.

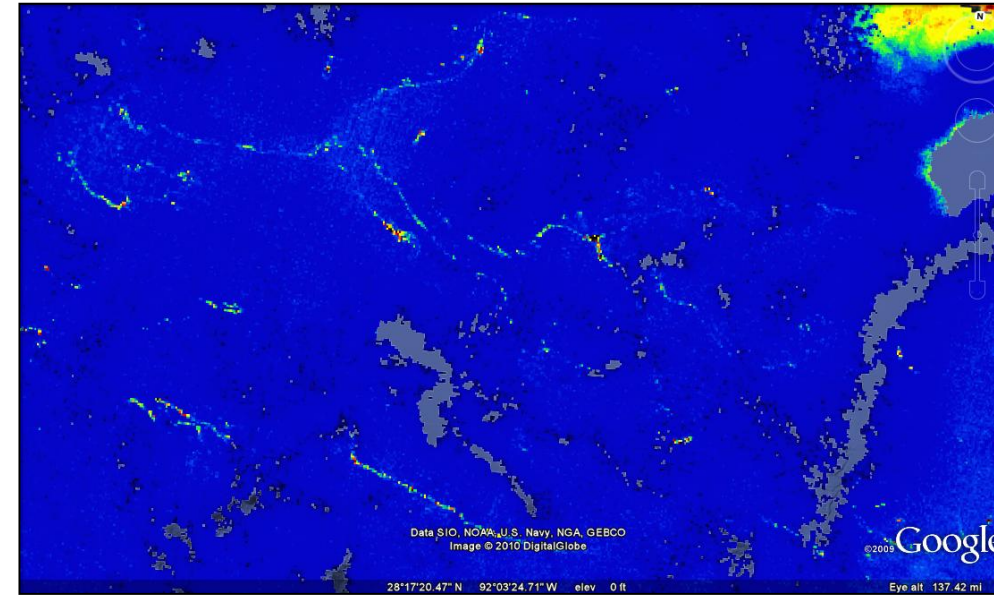
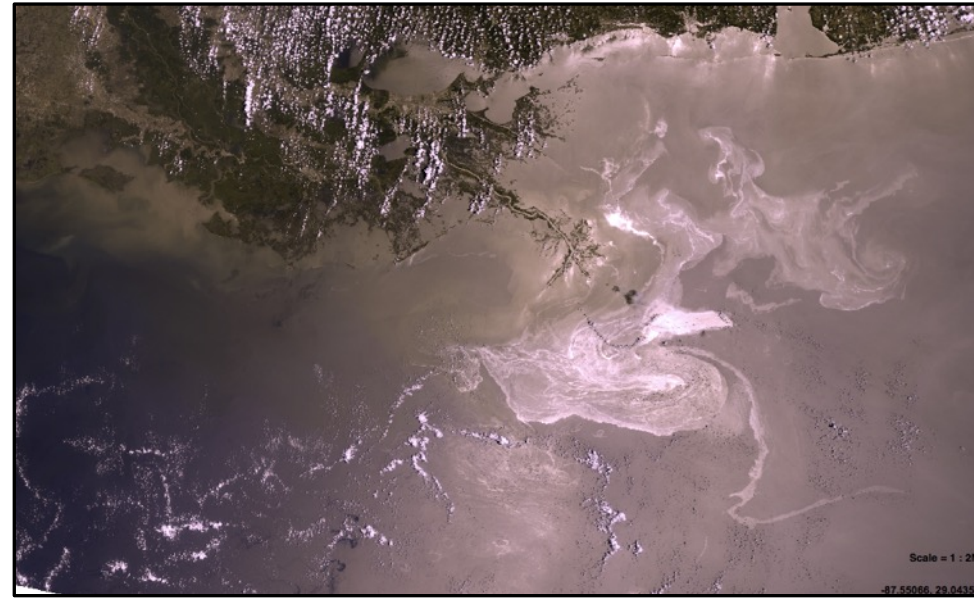
Desde el año 2011, volúmenes masivos de sargazo han llegado a las costas del Caribe y Golfo de México.

Efectos en el turismo, pesca, industria, transporte marítimo y ecosistemas costeros.

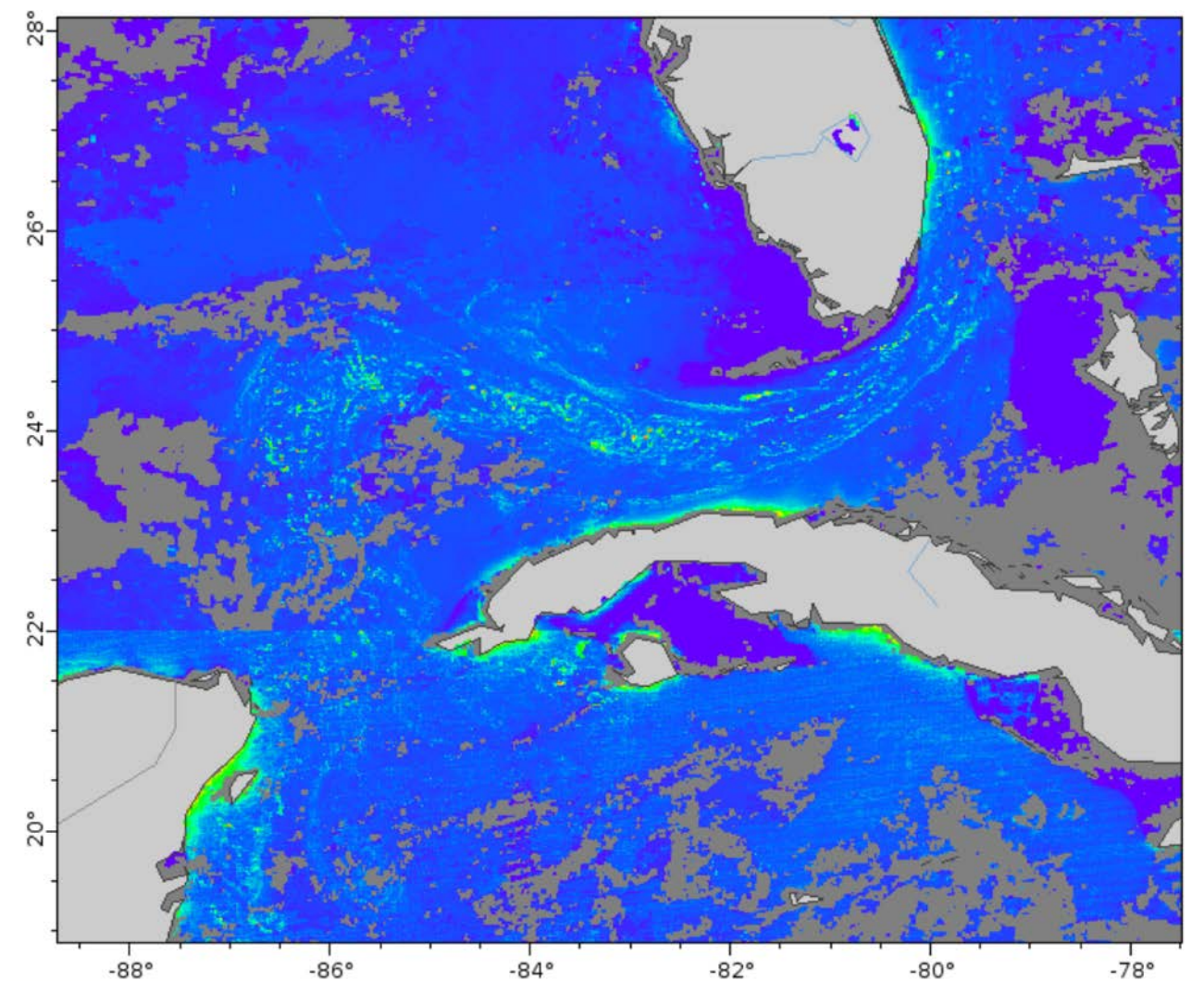
¿Qué hacemos? Monitorizar y seguir el sargazo Modelado de trayectorias. Operational.



02 Sargazo: Productos satelitales

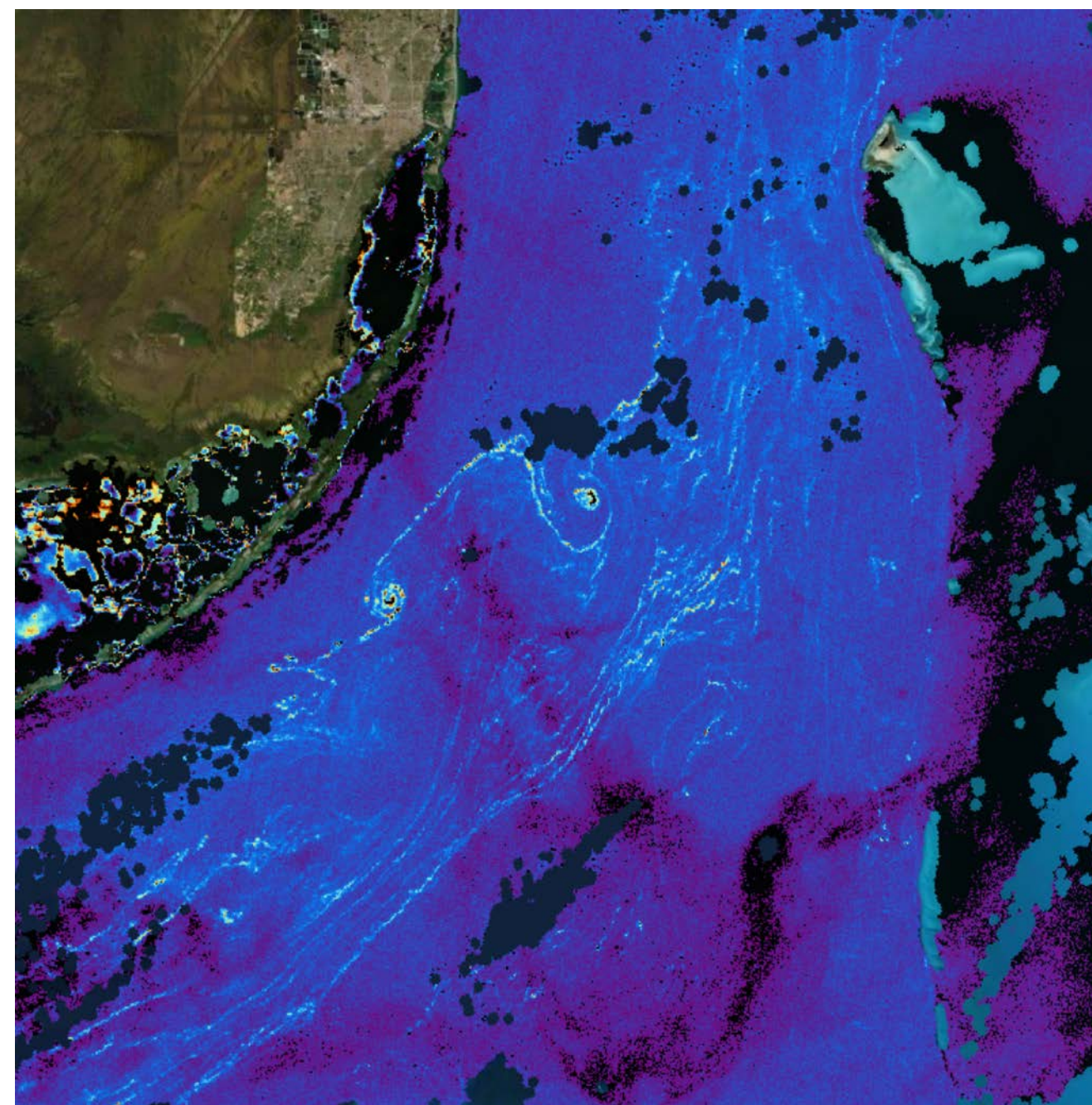


MODIS/VIIRS (Fuente: C. Hu, USF)
Resolución: ~ 1km

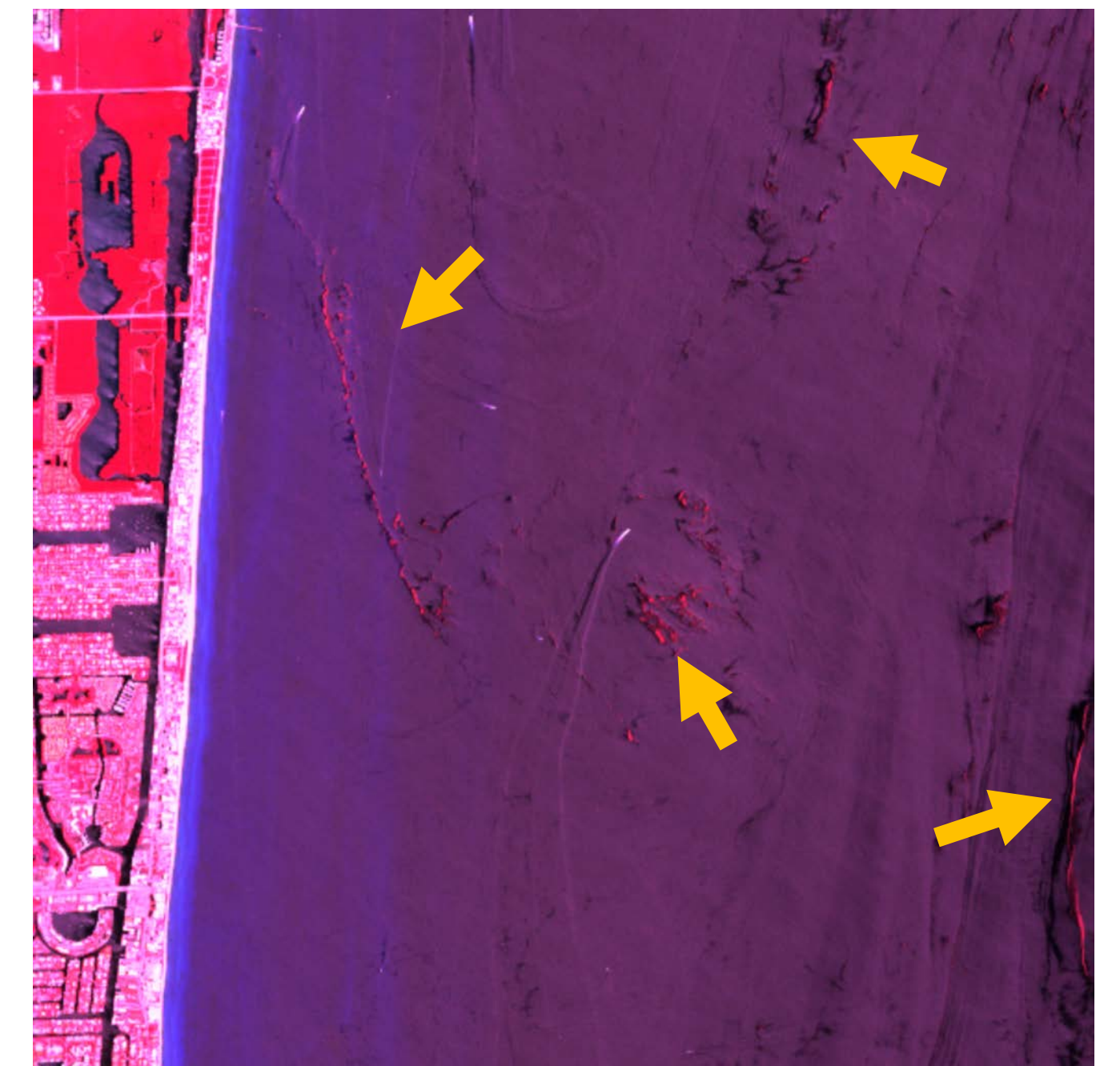


NOAA/AOML ERDDAP
AFAI (Alternative Floating Algae Index)
3-day cumulative USF AFAI Fields (USF AFAI 3D AOML) (USFAFI3D)
(2020-07-16T12:00:00Z)
Data courtesy of USDOC/NOAA/OAR/AOML/PHOD

OLCI (Fuente: Copernicus)
Resolución: 300 m

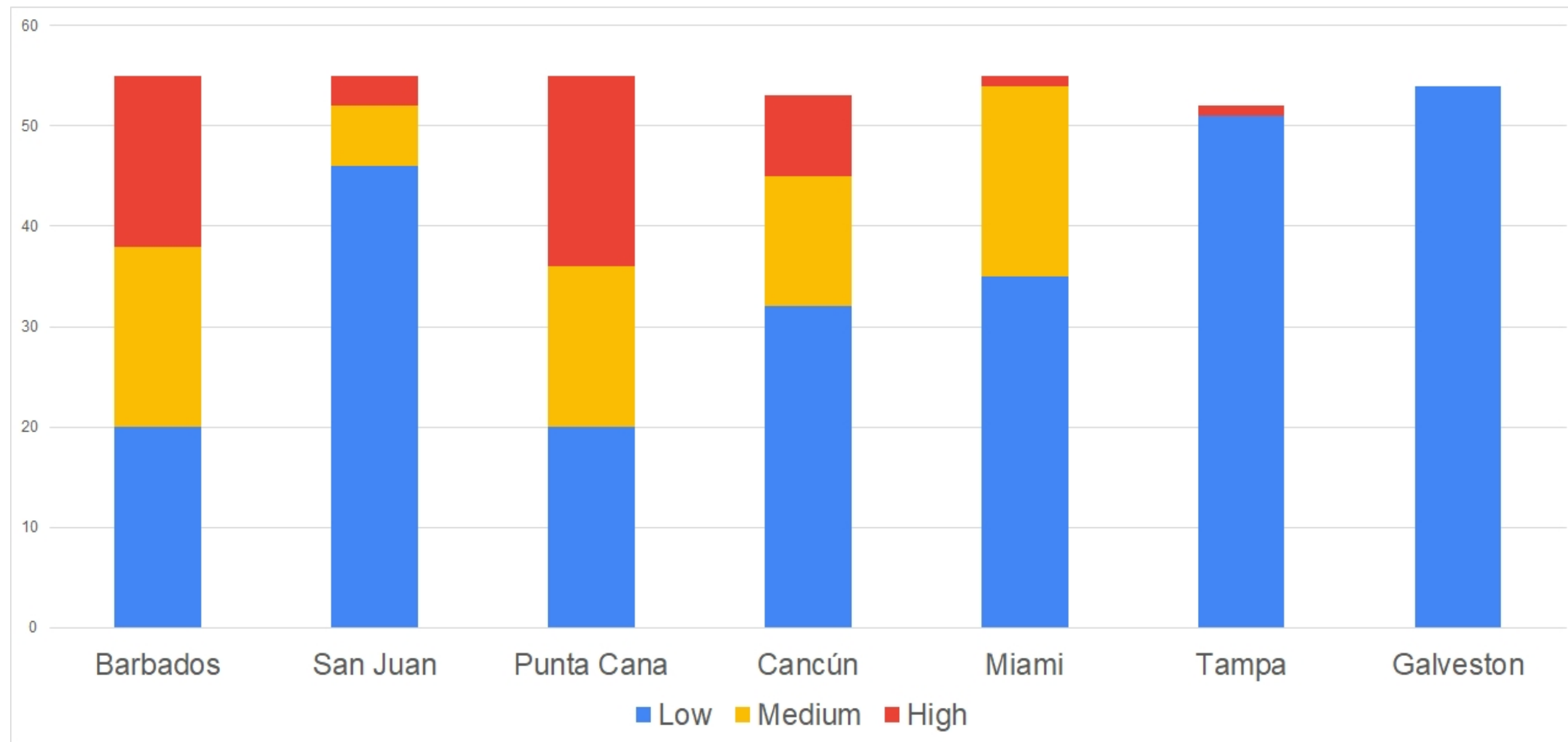


MSI (Fuente: Copernicus)
Resolución: ~ 20m



03 Reportes de Inundación de Sargazo

Meta: Monitorizar el sargazo y proporcionar una medida del riesgo de inundación costera de sargazo en las regiones del Caribe y Golfo de México.



Joaquín Trínanes, 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](https://doi.org/10.1080/1755876x.2021.1902682)

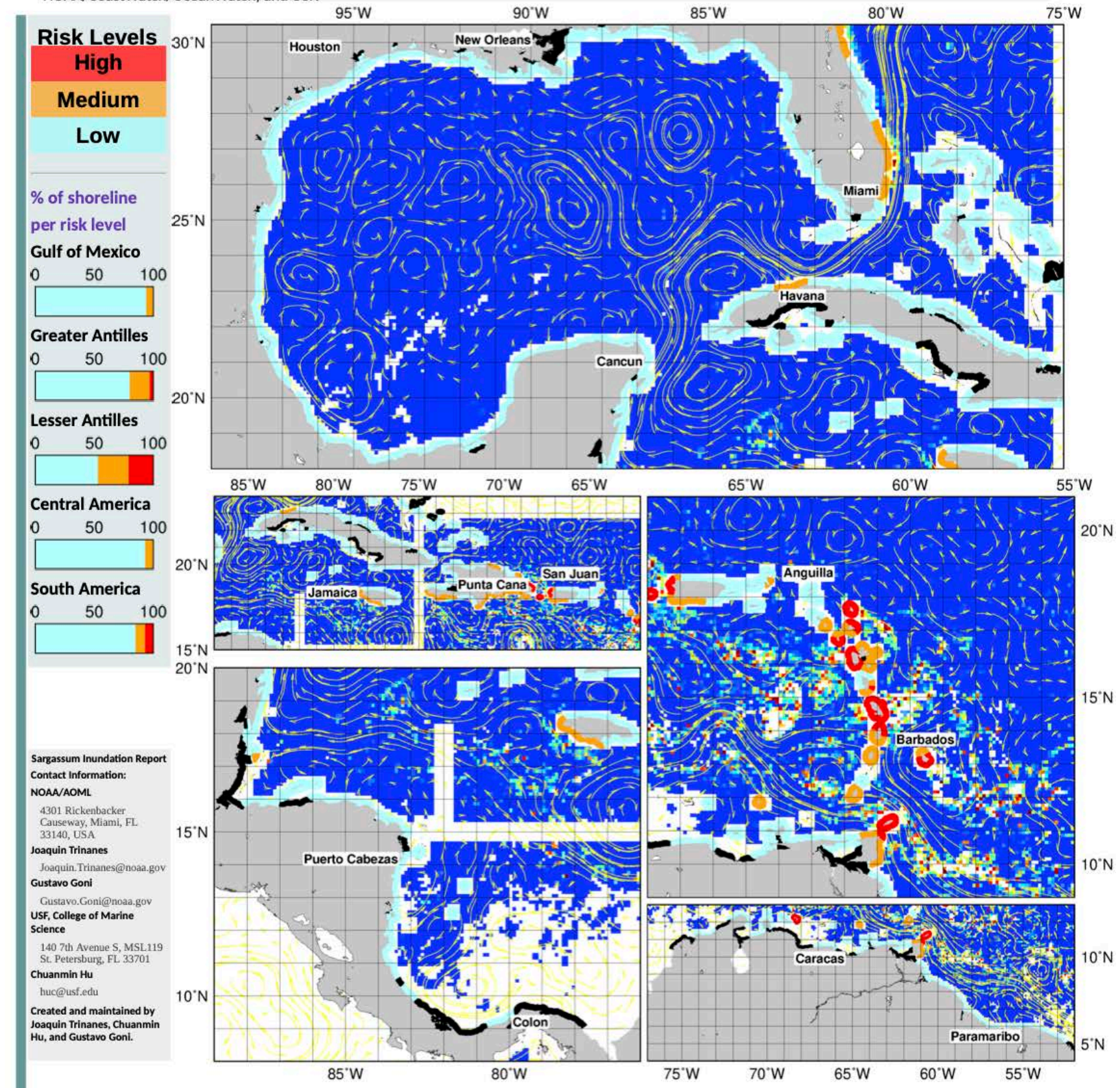


Experimental Weekly Sargassum Inundation Report (SIR v1.2)

By the National Oceanic and Atmospheric Administration (NOAA), and the University of South Florida (USF)

Status: Apr 28-May 4, 2020

Since 2011, large accumulations of Sargassum is a recurrent problem in the Caribbean Sea, in the Gulf of Mexico and tropical Atlantic. These events can cause significant economic, environmental and public health harm. These experimental Sargassum Inundation Reports (SIR) provide an overview of the risk of sargassum coastal inundation in the Caribbean and Gulf of Mexico regions. Using as core inputs the AFAI (Alternative Floating Algae Index) fields generated by the University of South Florida (USF), the algorithm analyses the AFAI values in the neighborhood (50 km) of each coastal pixel and, computing the difference between those values and a multiday baseline, classifies the risk into three categories: low (blue), medium (orange) and high (red). In black are areas with not enough data. The two ad-hoc thresholds used for classification are 0.001 and 0.003. The vectors in the images represent the geostrophic currents. SIR is the result of the collaboration between the Atlantic Oceanographic and Meteorological Laboratory (NOAA/AOML), NOAA/CoastWatch/OceanWatch, and USF.



References: [USF Sargassum Watch System](#) [Atlantic OceanWatch](#)

Disclaimer: This is an experimental product and still subject to validation by NOAA/AOML, NOAA/CoastWatch/OceanWatch, and USF.

04 Interoperabilidad

Caribbean/Gulf of Mexico Node
Physical Oceanography Division
Ocean Chemistry and Ecosystems Division

Satellite

- Regional Sea Surface Temperature
- Global Sea Surface Temperature
- Ocean Color - AOML
- Ocean Color - CoastWatch
- Ocean Color Tile Server - NOAA
- GOES True Color
- Sargassum
 - MCI 1-day
 - none
 - AOML Daily MCI**

Jan 18, 2021 12:00

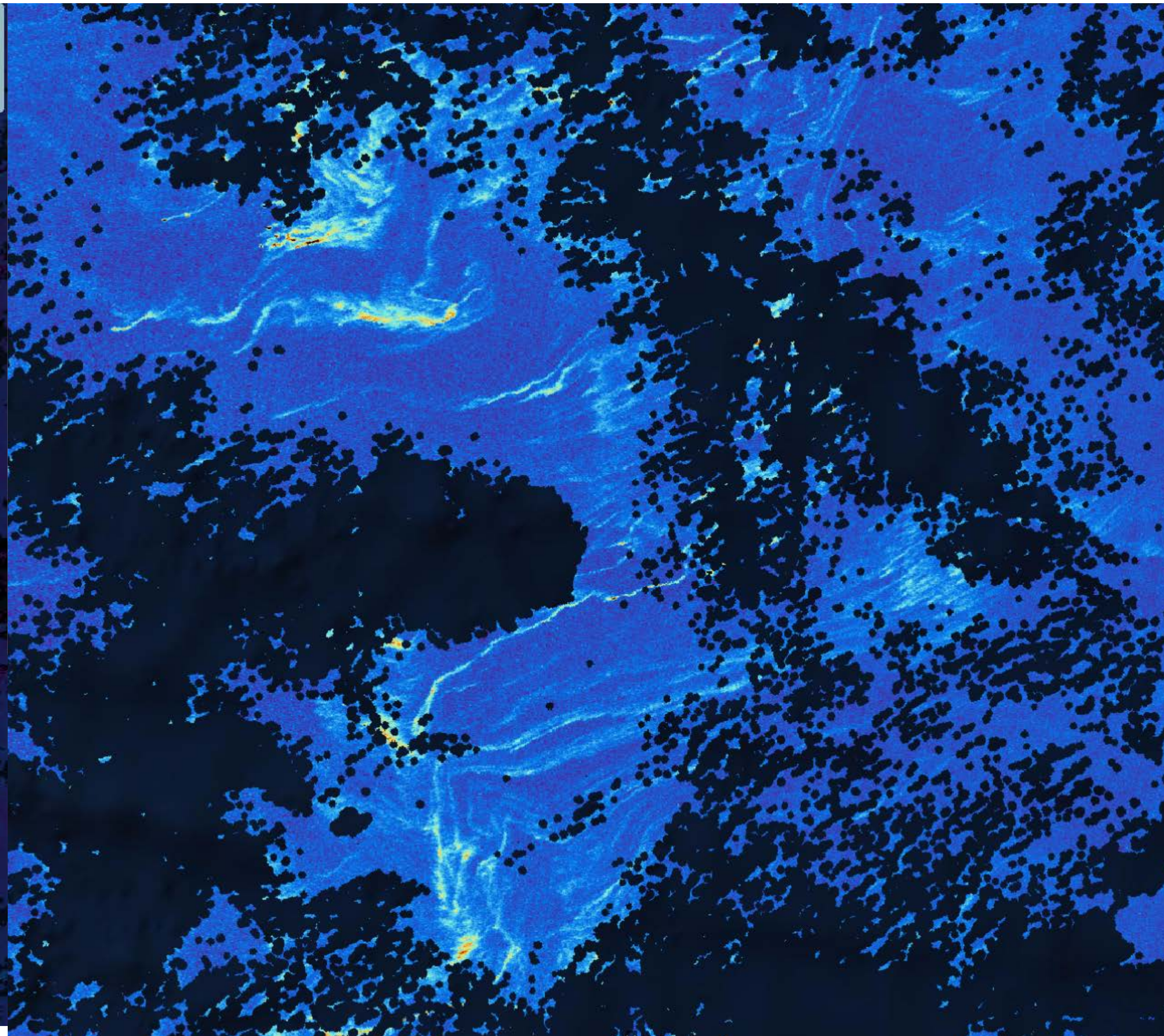
rainbow2

color bands: linear

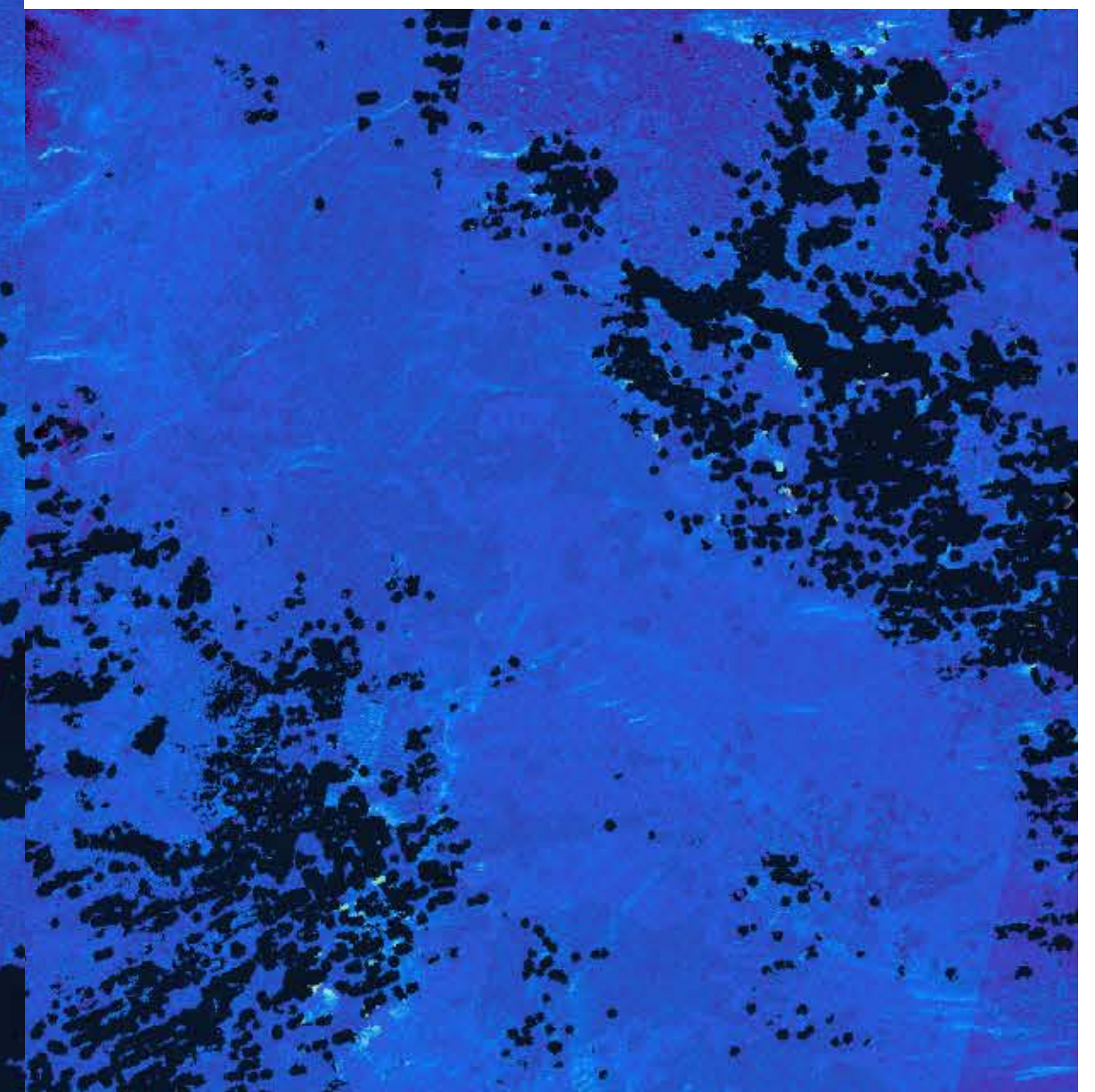
min/max: -0.1 0.6

opacity: cache:

- Regional Acidification
- Global Altimetry
- Global Carbon
- Vibrio Risk
- Global Seascapes
- Weather
- Hurricanes

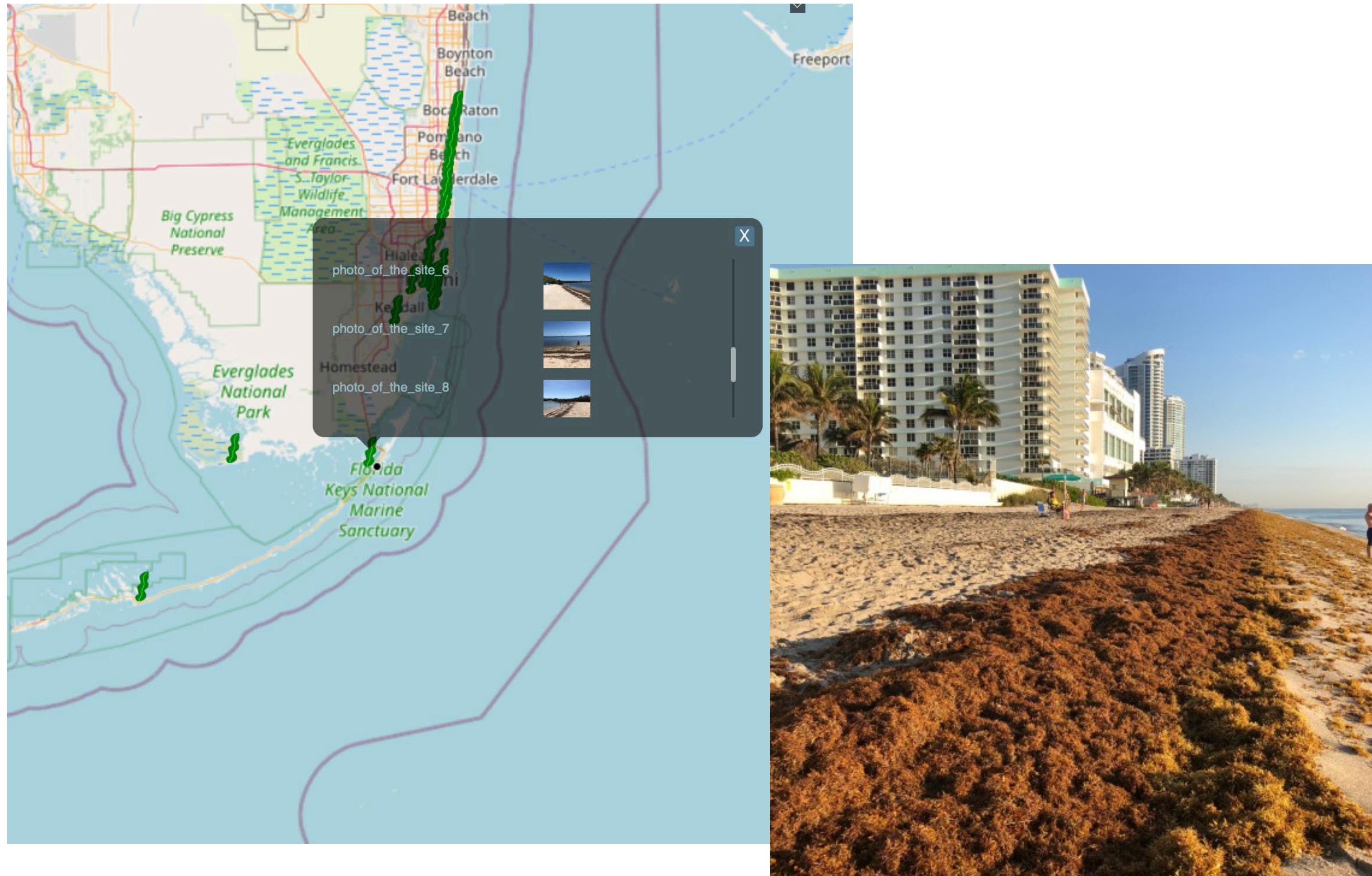


Tile Server
OCEANVIEWER
ERDDAP
TDS



05 Ciencia Ciudadana

Observaciones de sargazo Base de datos



Survey123 Sistema multidispositivo

<input type="checkbox"/> Washed-up on the shore	<input type="checkbox"/> Floating along the shoreline	<input type="checkbox"/> Floating in bays, channels, harbors
---	---	--

<input type="checkbox"/> Floating over reefs or seagrass	<input type="checkbox"/> Offshore
--	-----------------------------------

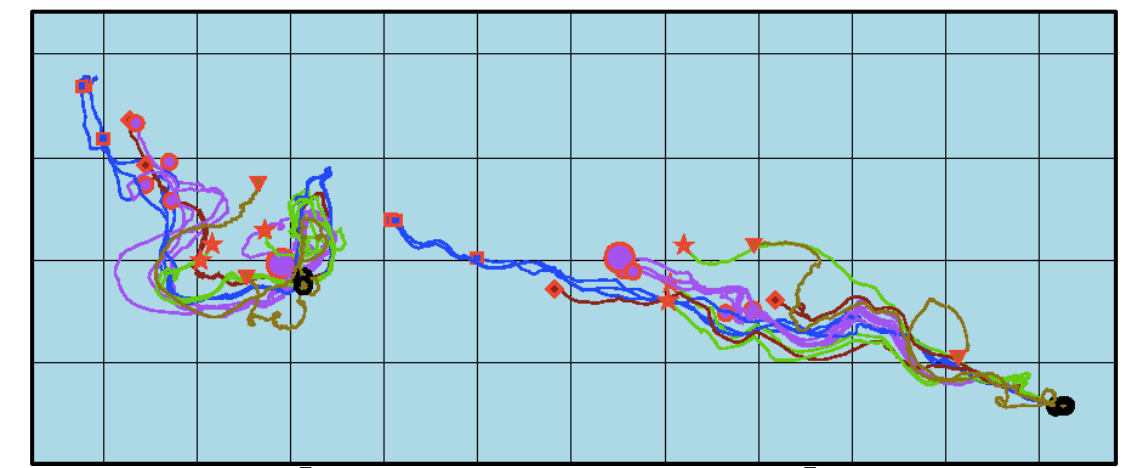
Sargassum Observed As

<input type="checkbox"/> Line(s) of Sargassum	<input type="checkbox"/> Mats/rafts	<input type="checkbox"/> Scattered clumps
---	-------------------------------------	---

Species of Sargassum

<input type="checkbox"/> Natans I <i>Sargassum natans I</i> <input type="checkbox"/> Spines on bladder present <input type="checkbox"/> Narrow delicate leaves <input type="checkbox"/> Thorns on stem absent <input type="checkbox"/> Thorns on stem absent	<input type="checkbox"/> Natans VIII <i>Sargassum natans VIII</i> <input type="checkbox"/> Spines on bladder usually absent <input type="checkbox"/> Noticeably larger than other spp. <input type="checkbox"/> Thorns on stem absent <input type="checkbox"/> Thorns on stem absent	<input type="checkbox"/> Fluitans III <i>Sargassum fluitans III</i> <input type="checkbox"/> Spines on bladder absent <input type="checkbox"/> Denser wider leaves than <i>S. natans I</i> <input type="checkbox"/> Thorns on stem present <input type="checkbox"/> Thorns on stem present
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06 Modelado de Trayectorias



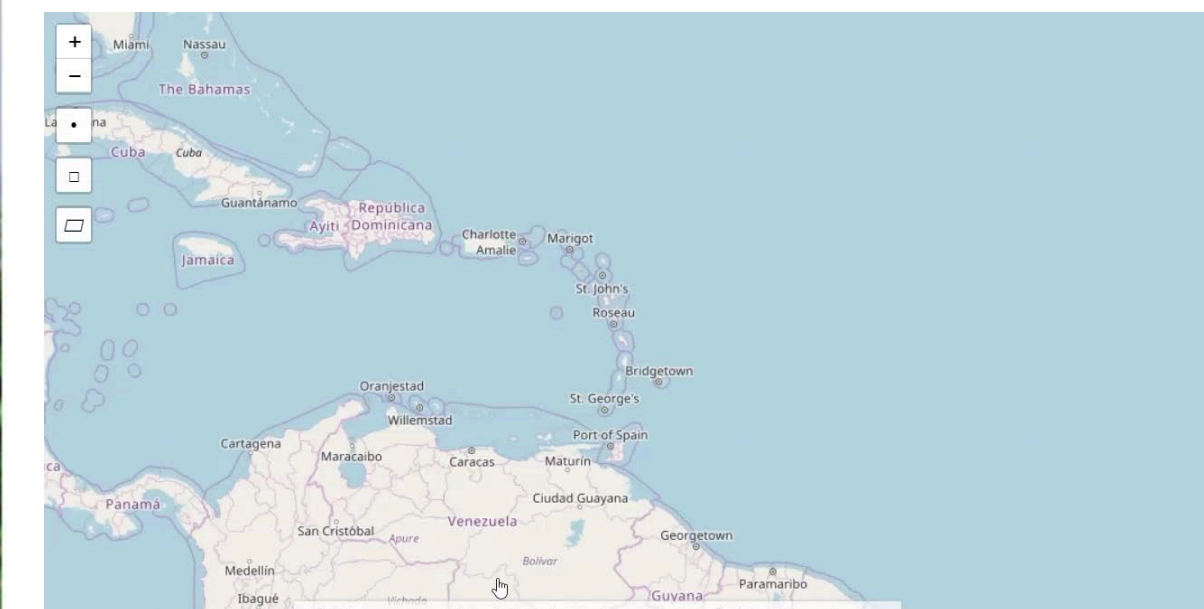
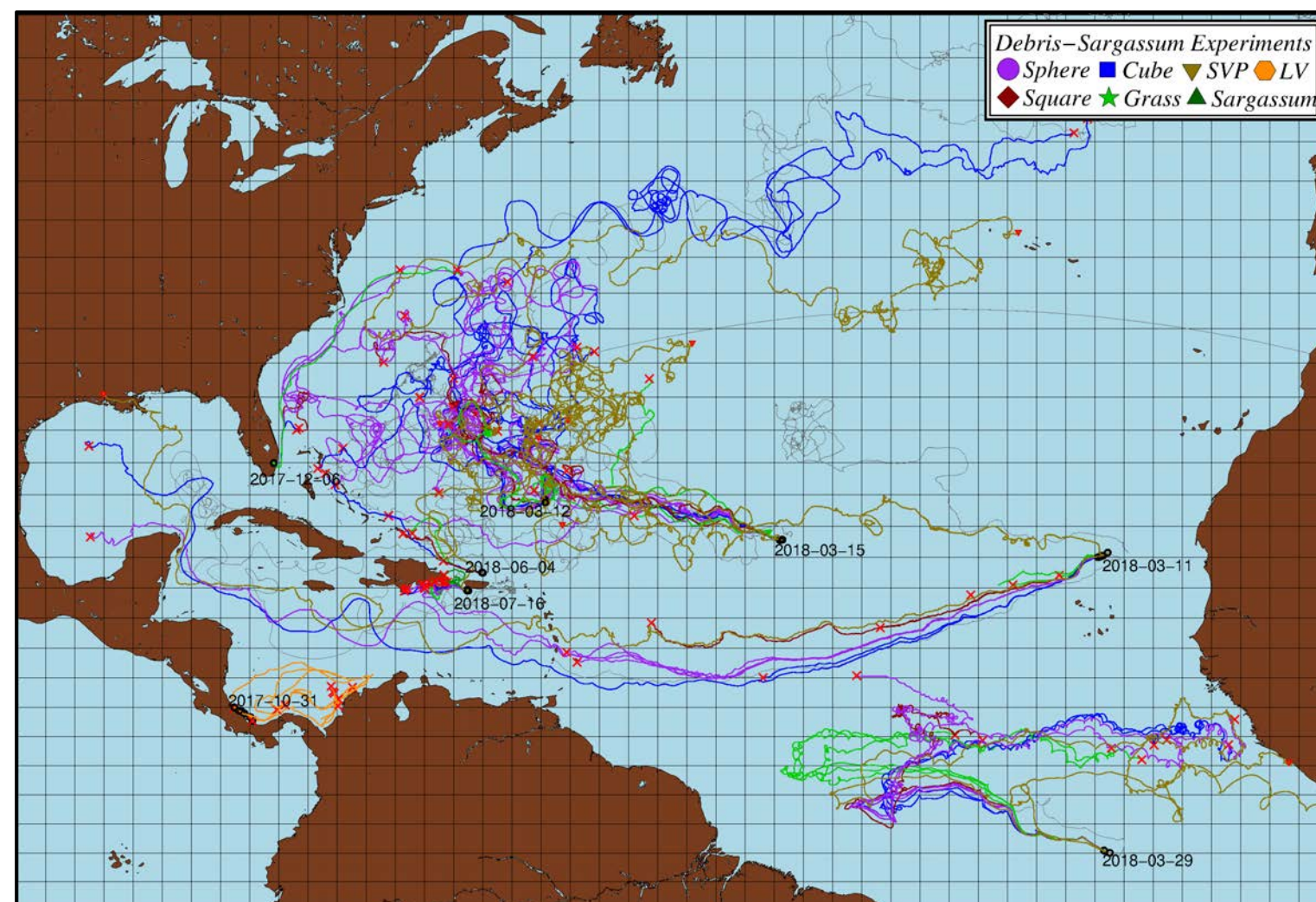
Seguimiento de restos marinos

Meta: comprender y evaluar el impacto de la dinámica oceánica y el viento en el sargazo (y restos marinos, en general)

Experimentos de campo con boyas derivantes de diferentes tamaños y formas equipadas con GPS. Este proyecto no ayuda a mejorar nuestro conocimiento sobre las trayectorias de los restos flotantes, sargazo, y plancton, incluyendo larvas marinas.

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 Trabajo actual

Mejorar el modelo de inundación de sargazo

Modelado de trayectorias (en general, no sólo para sargazo). Experimentos de campo.

Mejorar la cobertura en la zona costera:

Datos de campo (ej. proyectos de ciencia ciudadana, agencias de limpieza de playas)

Vientos

Corrientes (ej. Radares HF)

Olas

Satélites

Modelo de crecimiento de sargazo. Colaboraciones a nivel local y regional.

Contacto: Joaquin.Trinanes@noaa.gov