Applying Global Remote Sensing in a Local Context

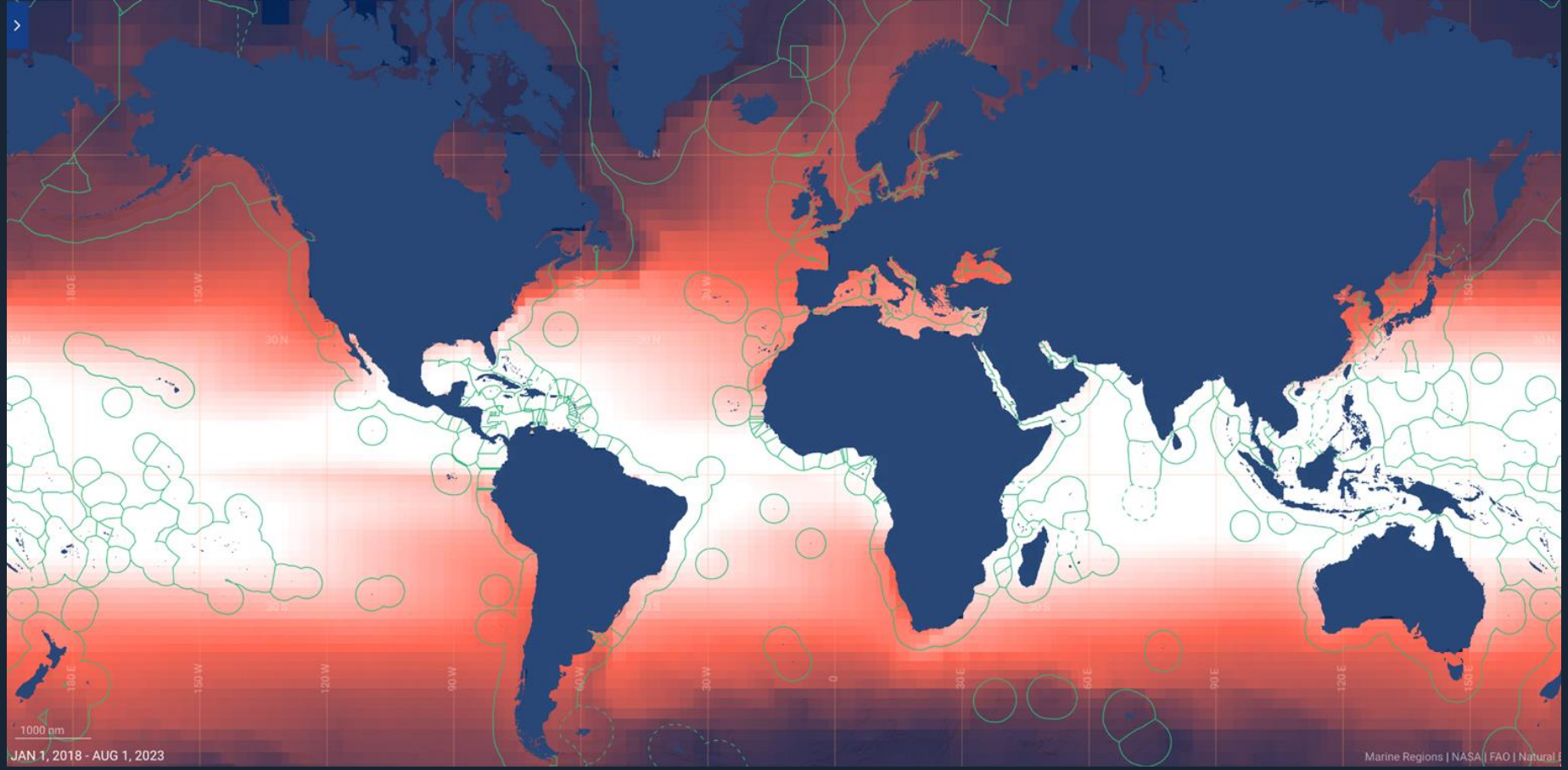
Dr. Nate Miller

Head of Applied Research
Global Fishing Watch

Global Fishing Watch

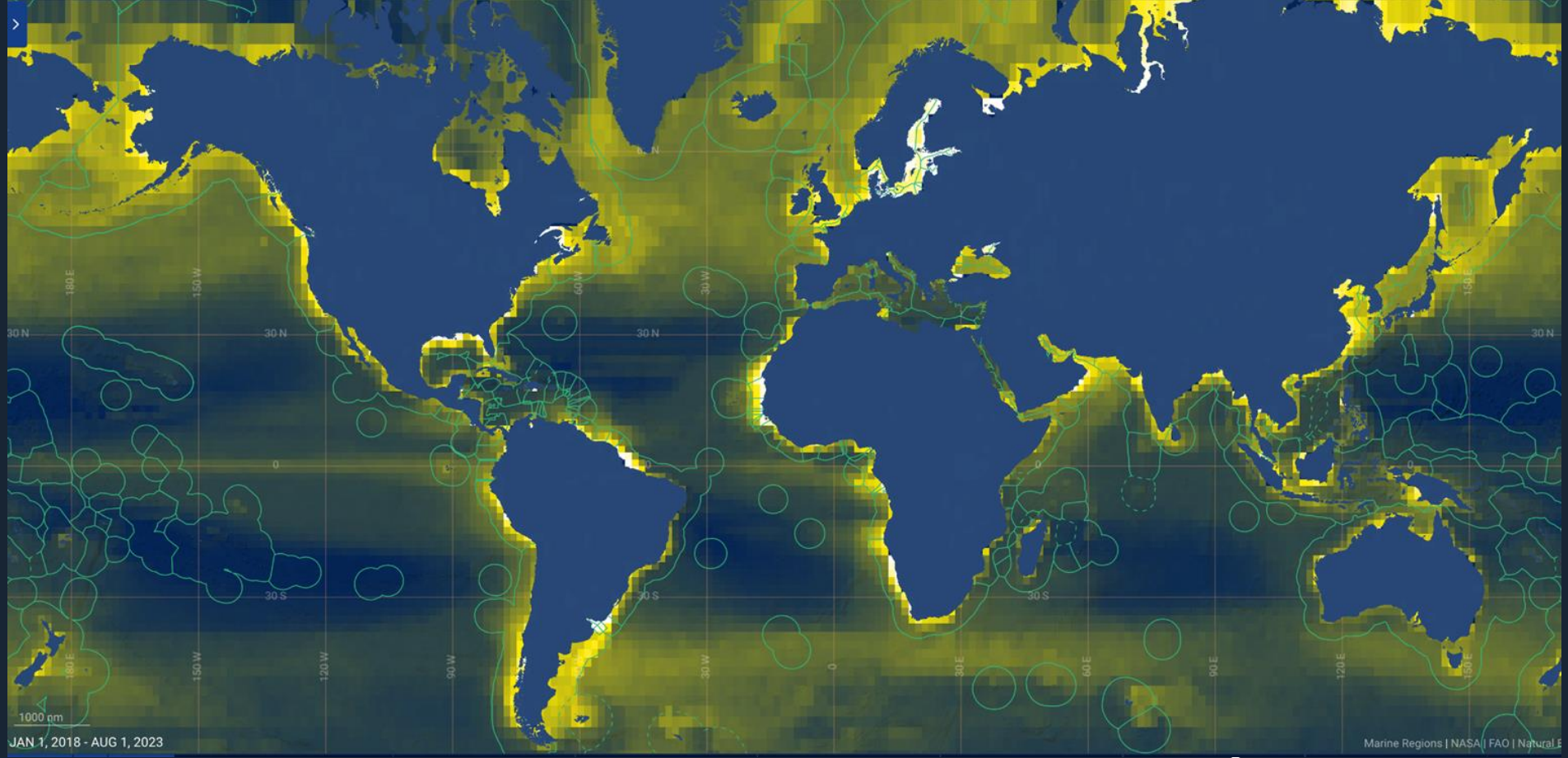
Global Datasets

Global Fishing Watch



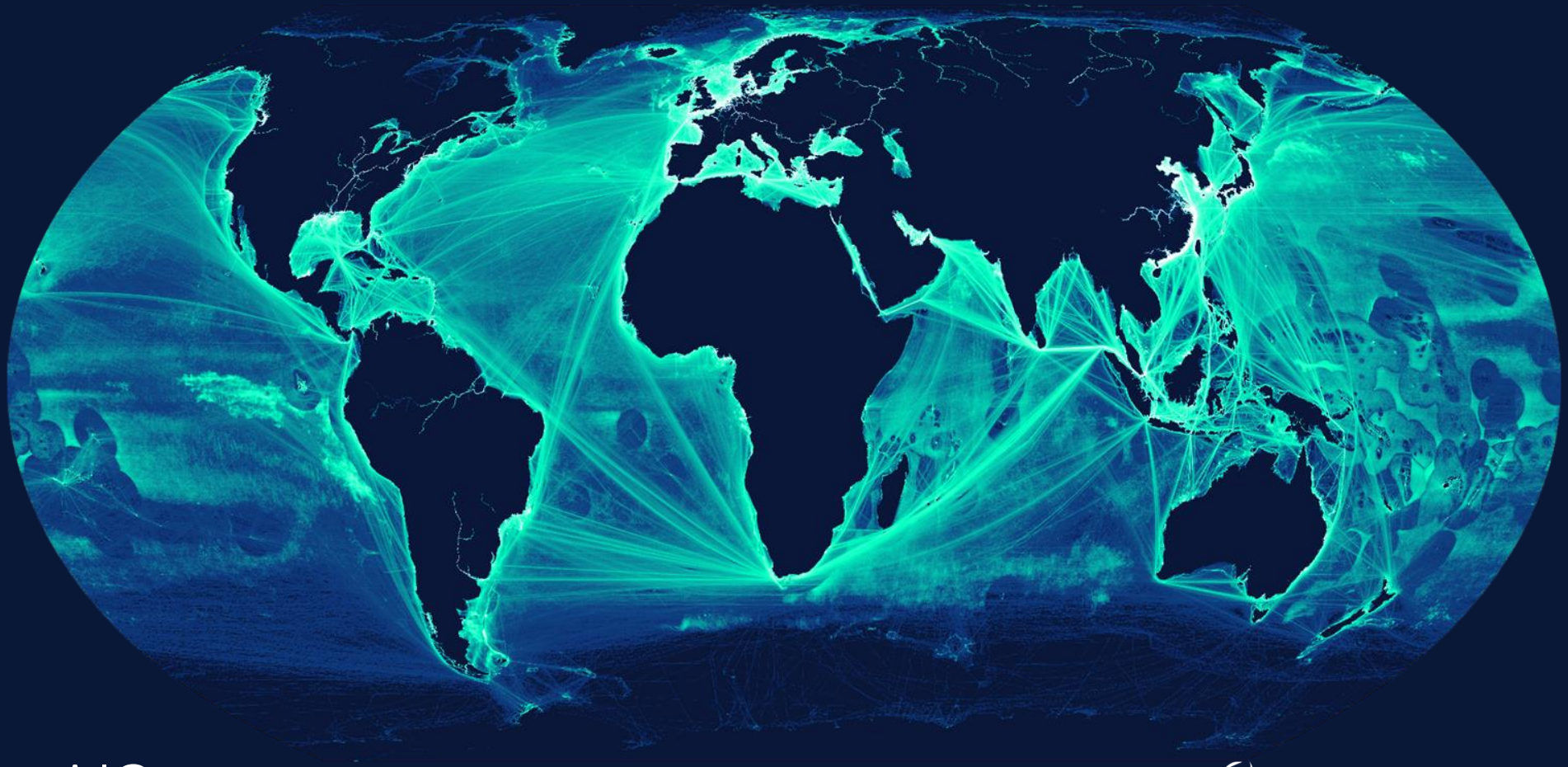
Sea Surface Temperature

Global Fishing Watch

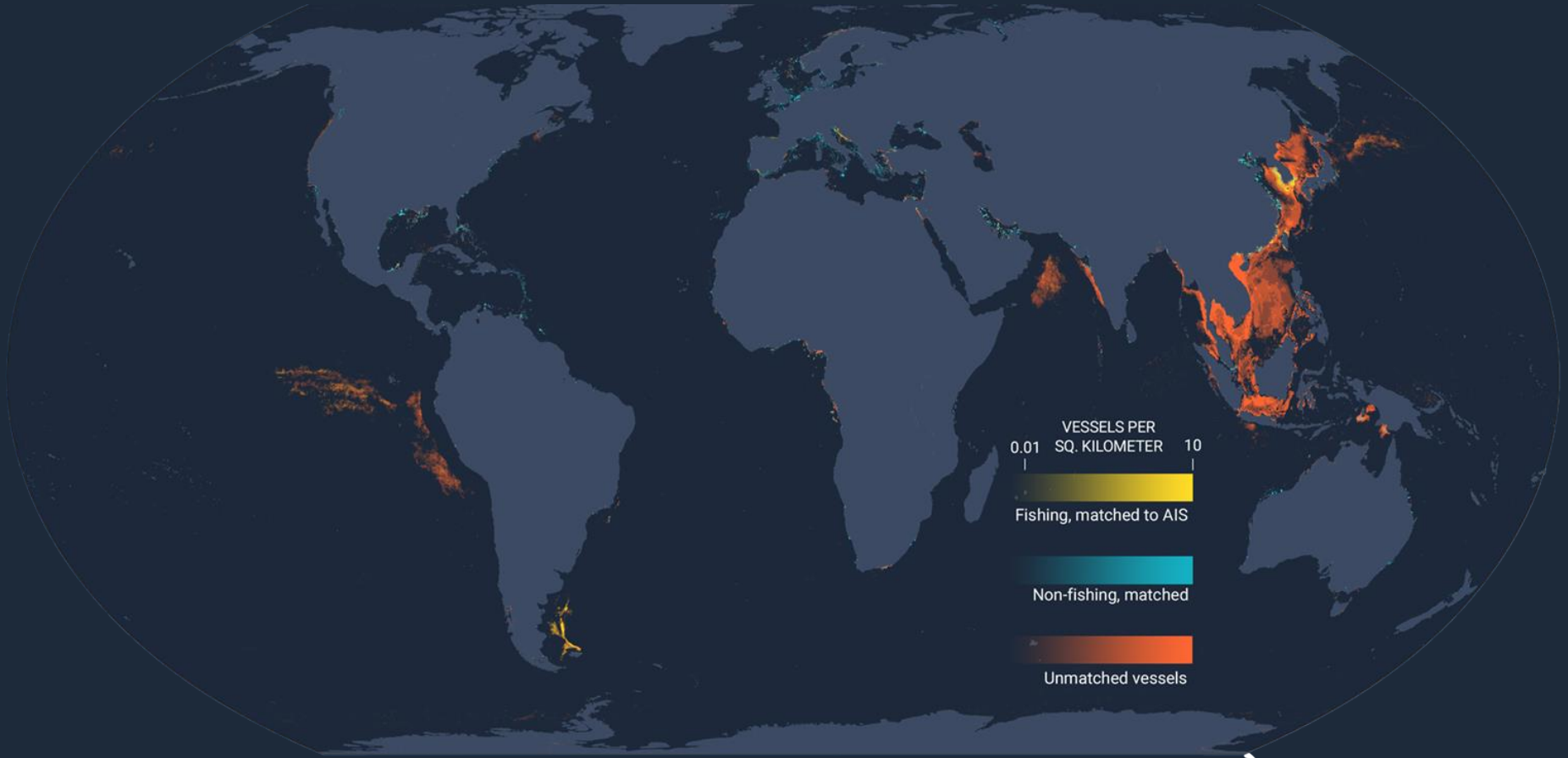


Chlorophyll Concentration

Global Fishing Watch

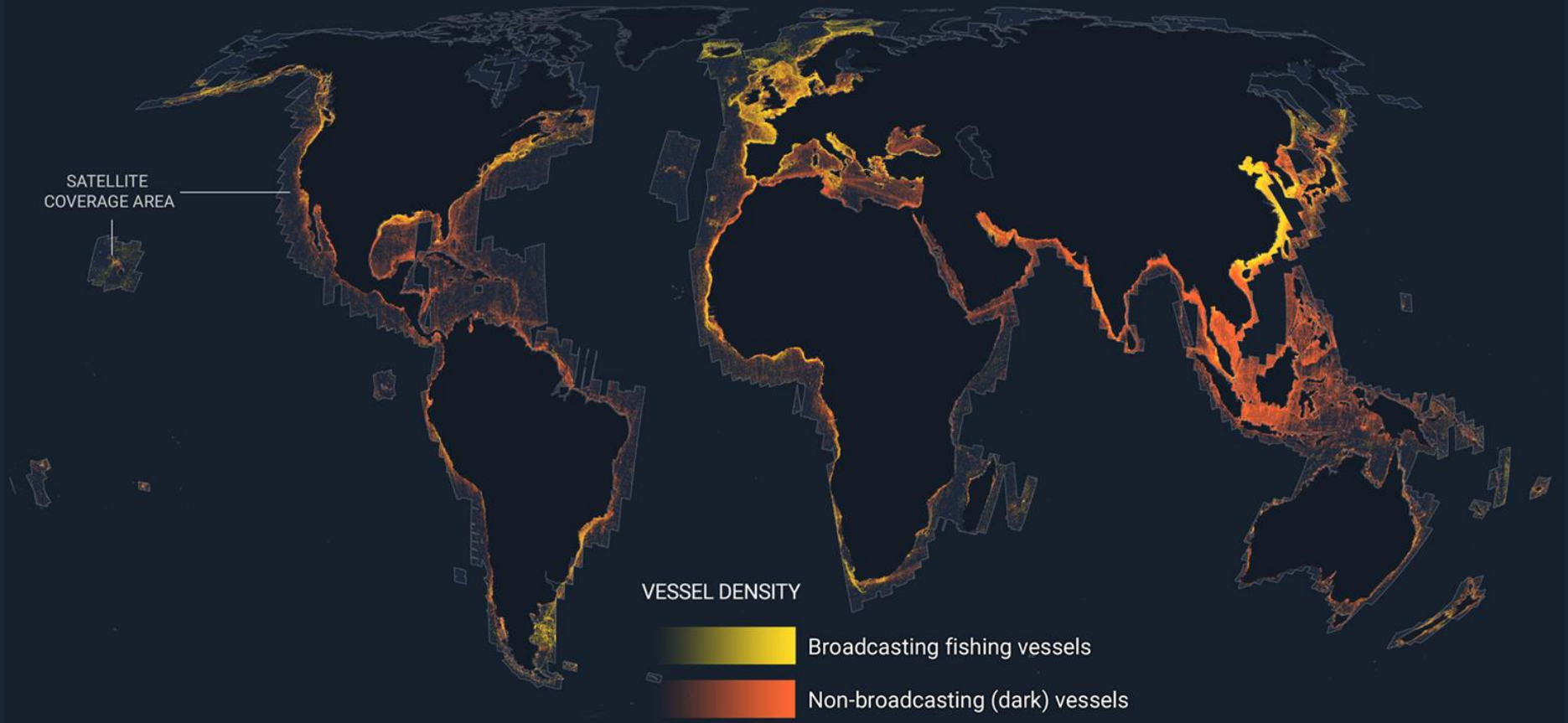


Global Fishing Watch



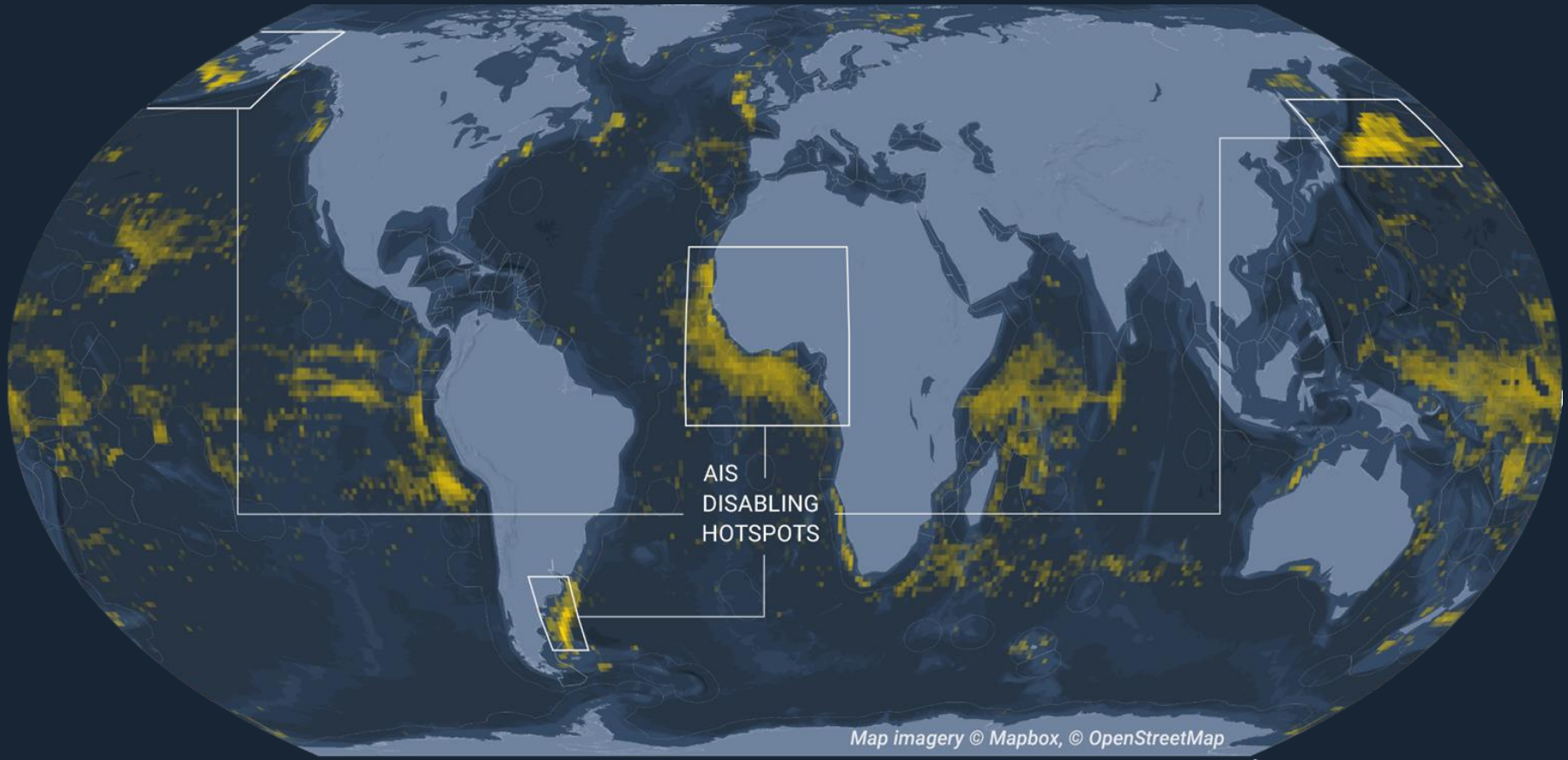
VIIRS

Global Fishing Watch



Sentinel-1

Global Fishing Watch



AIS Gaps

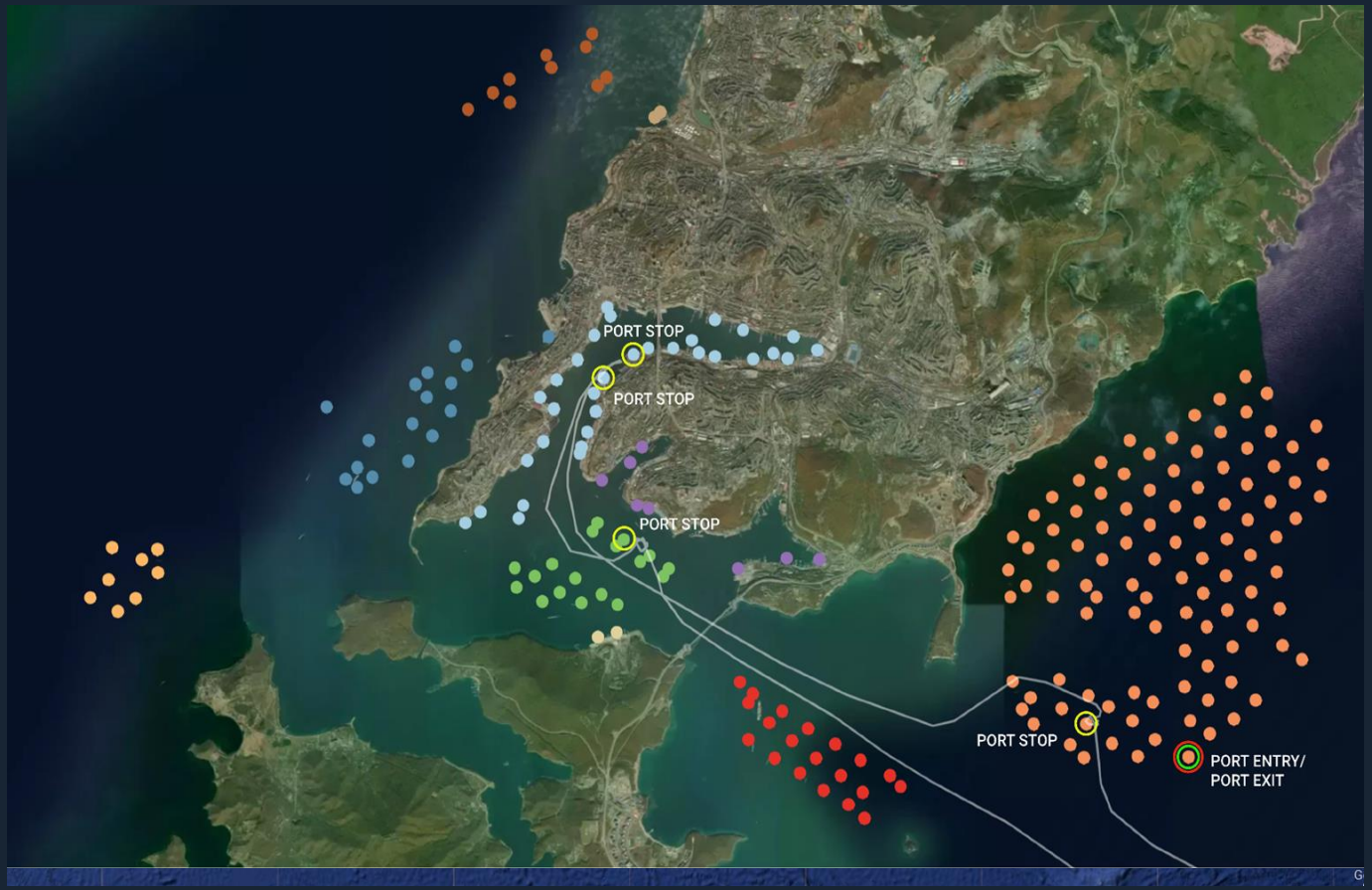
Global Fishing Watch

Challenges:

- Resolution
- Generalization
- Priorities
- Knowledge modes

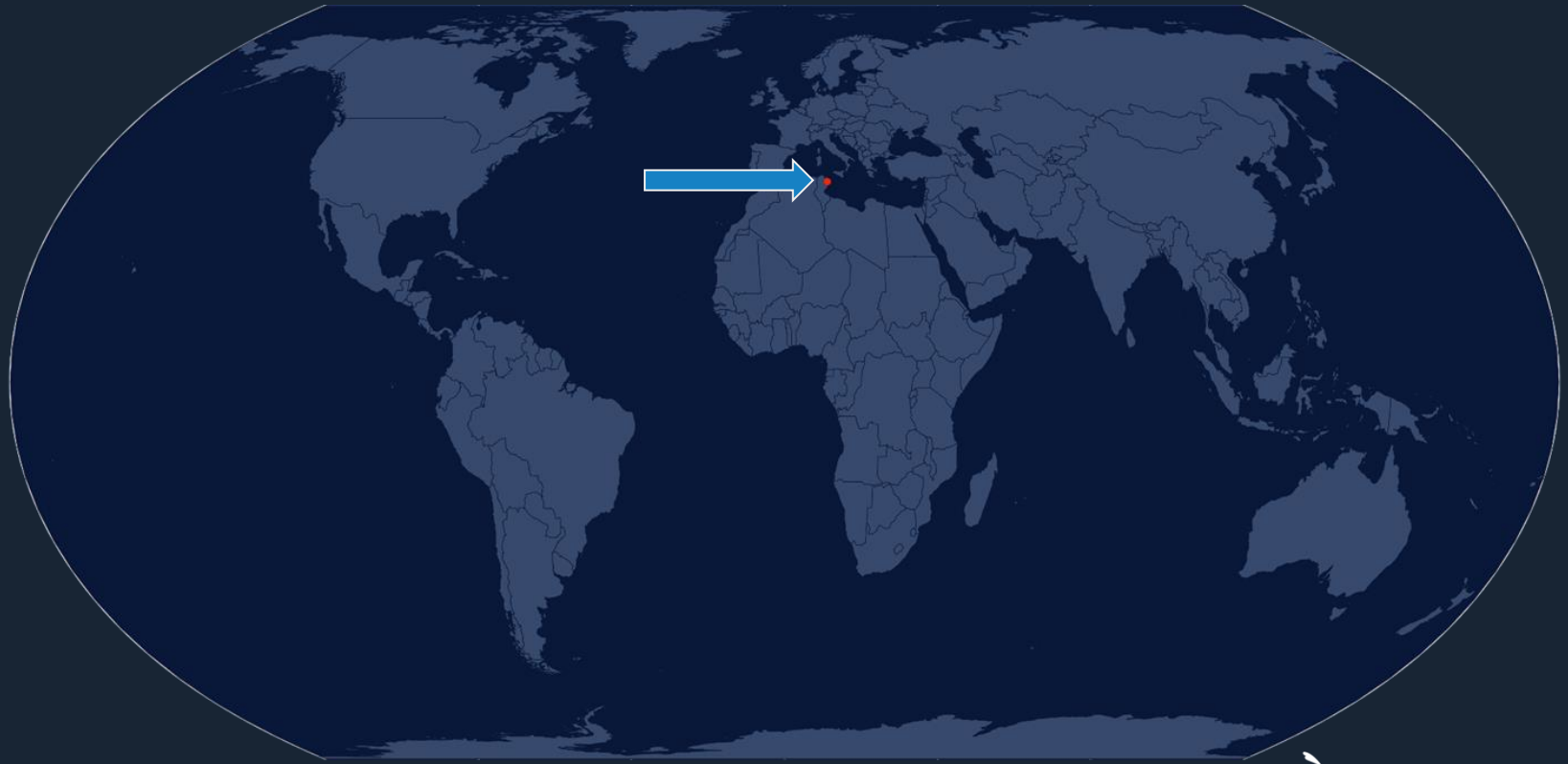
Trygg Mat Tracking and IMCS Network (2021) MCS PRACTIONERS INTRODUCTORY GUIDE TO: POLE AND LINE FISHING. Oslo. Norway.

Global Fishing Watch



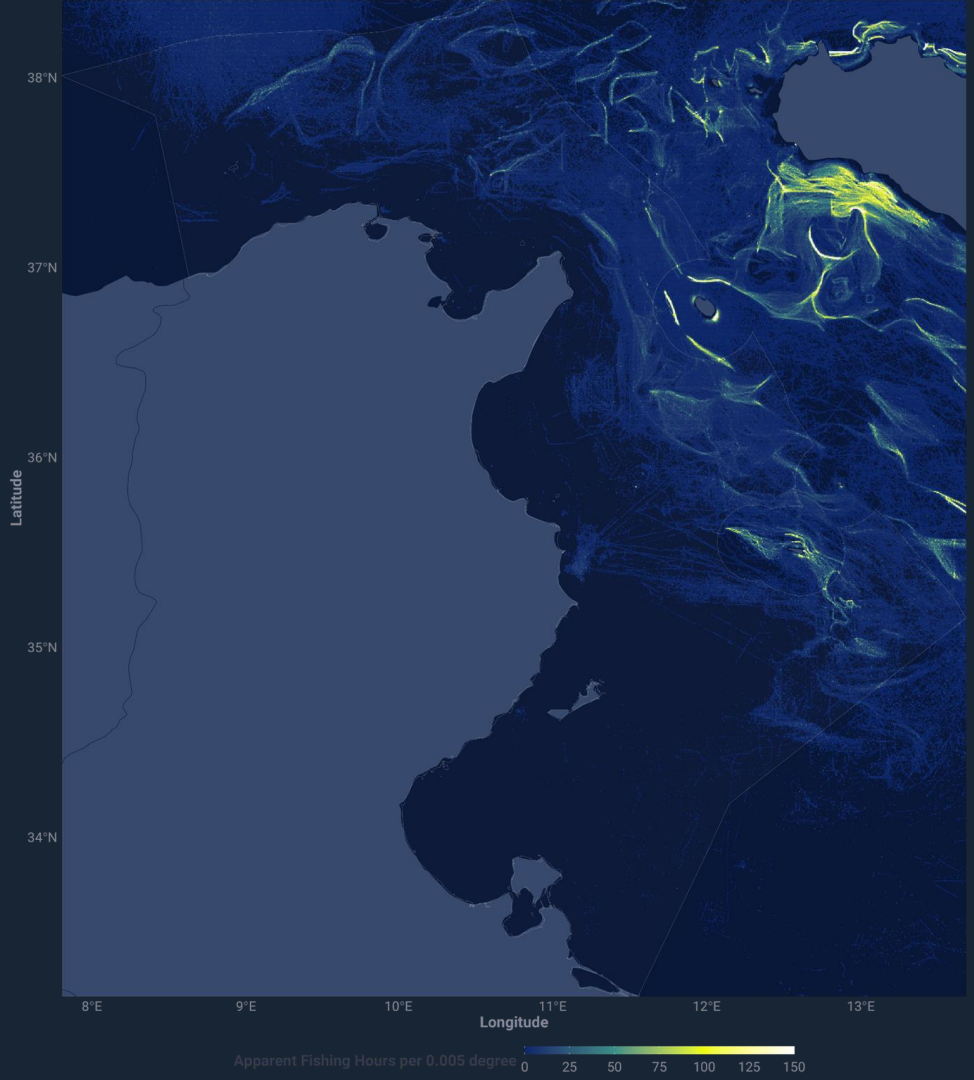
Global Fishing Watch

Regional Example



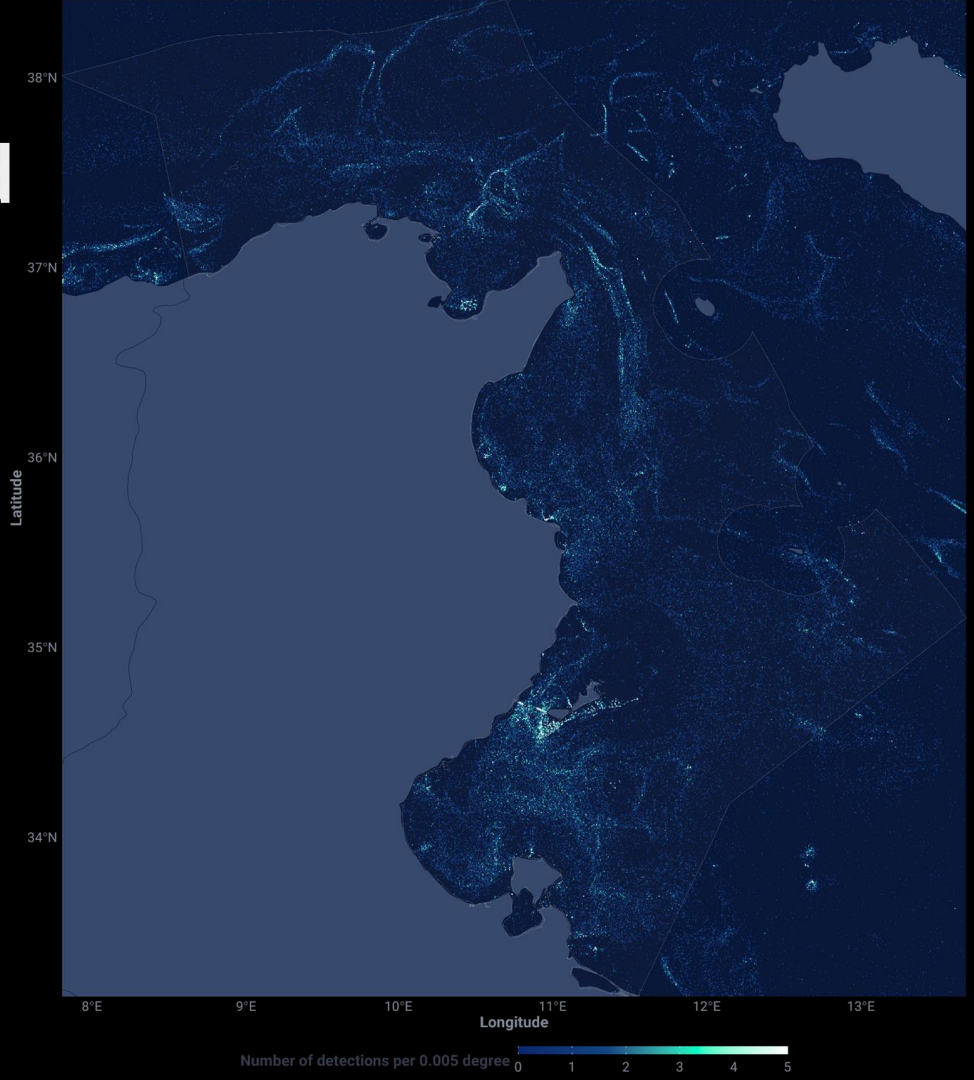
Global Fishing Watch

AIS Apparent Fishing Effort



Global Fishing Watch

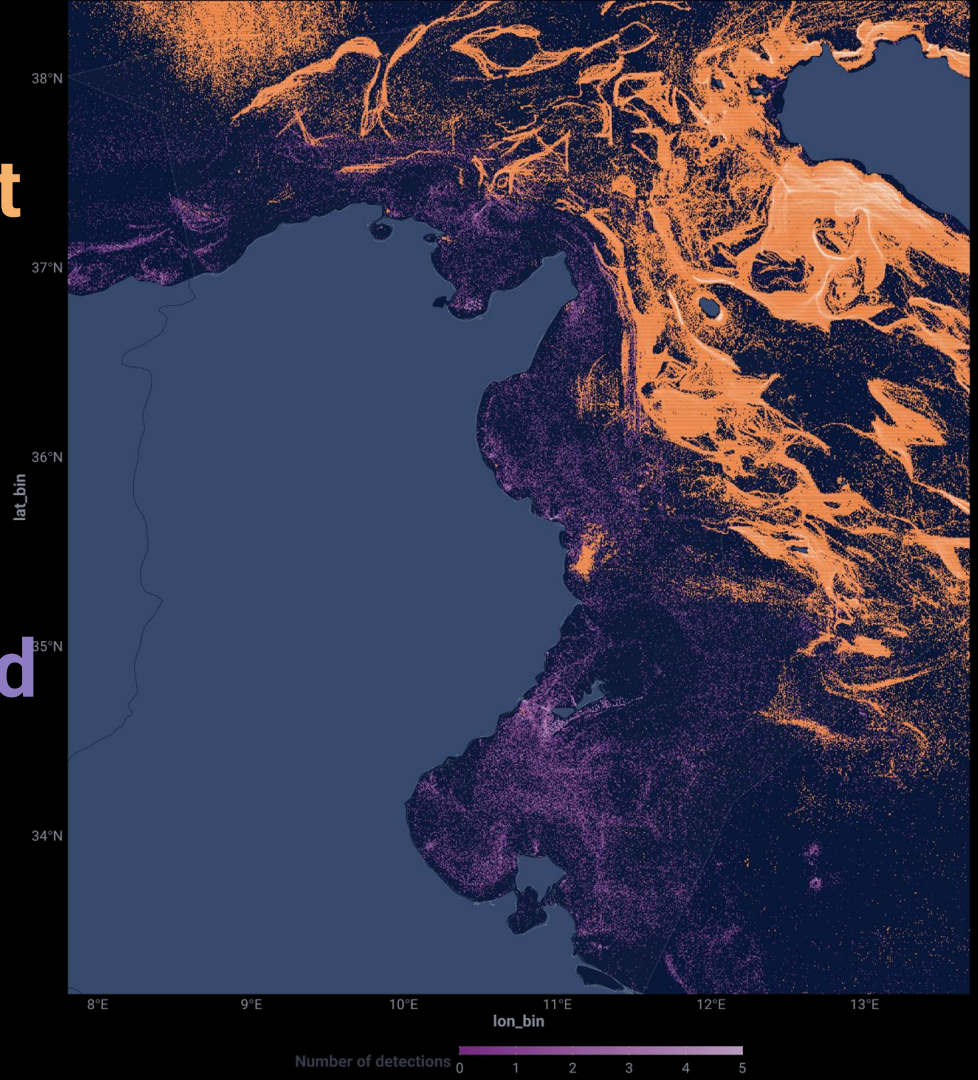
SAR Predicted Fishing Vessels



Global Fishing Watch

AIS: Apparent Fishing Effort

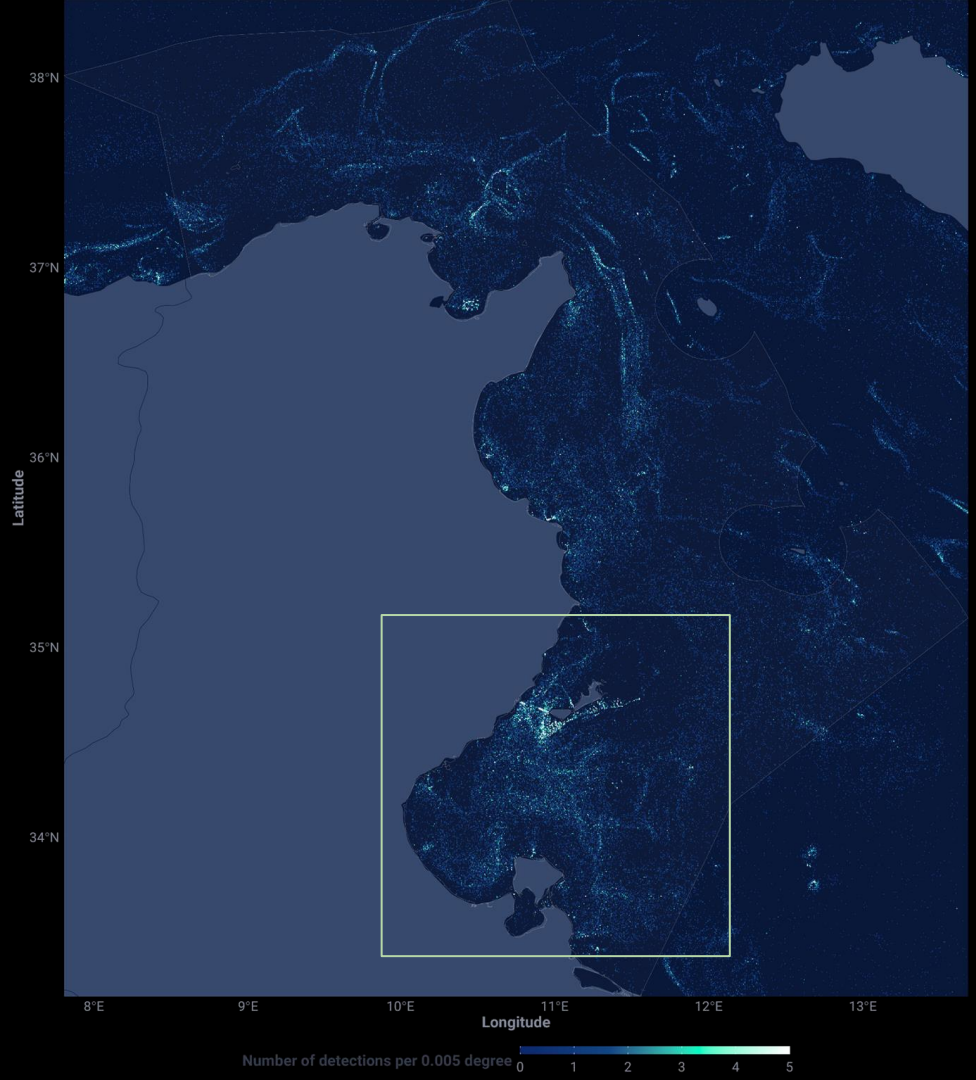
SAR: Predicted Fishing Vessels



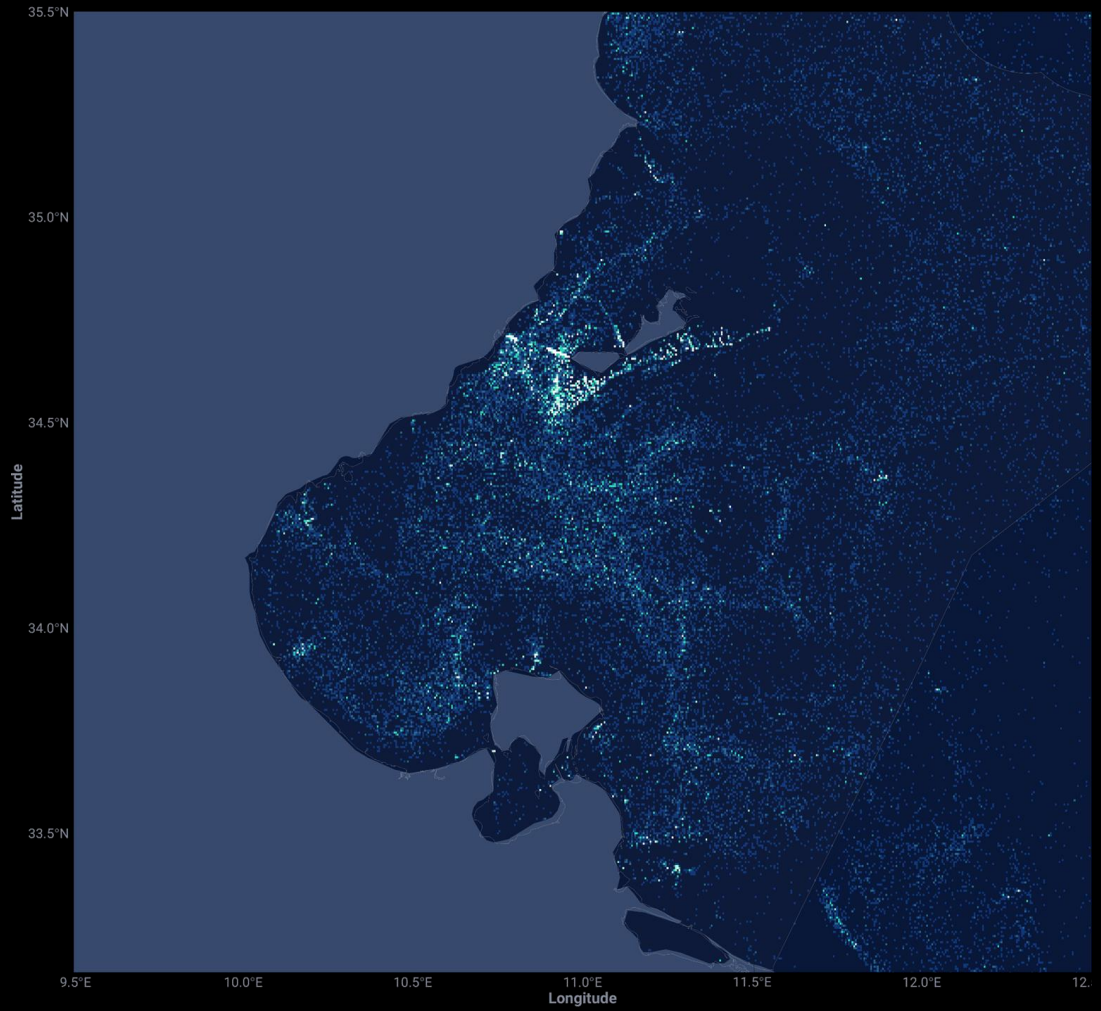
Global Fishing Watch

- Complementary use… overlap several datasets to get a more complete picture.
- Understand the data limitations so you can interpret the results accurately

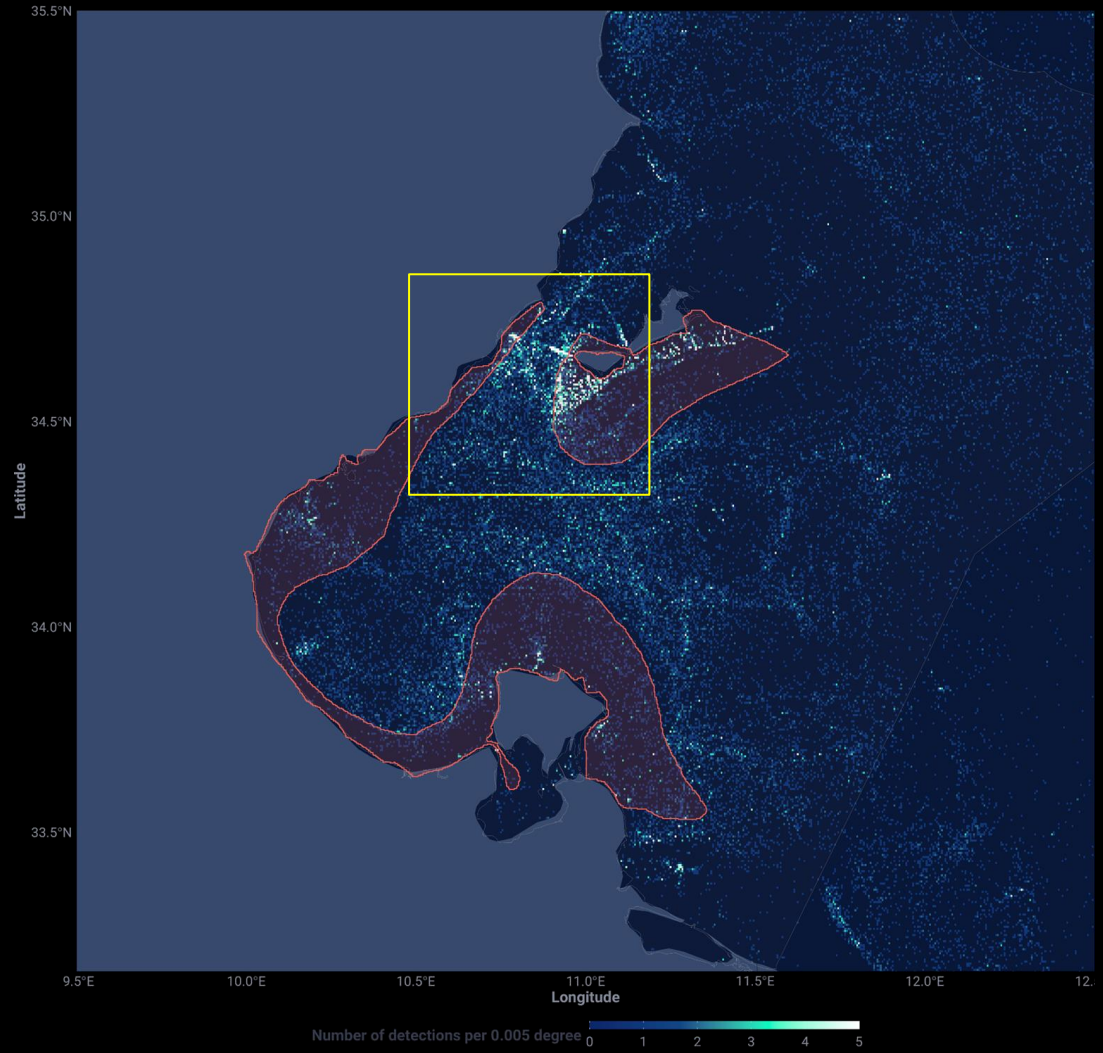
Global Fishing Watch



Global Fishing Watch

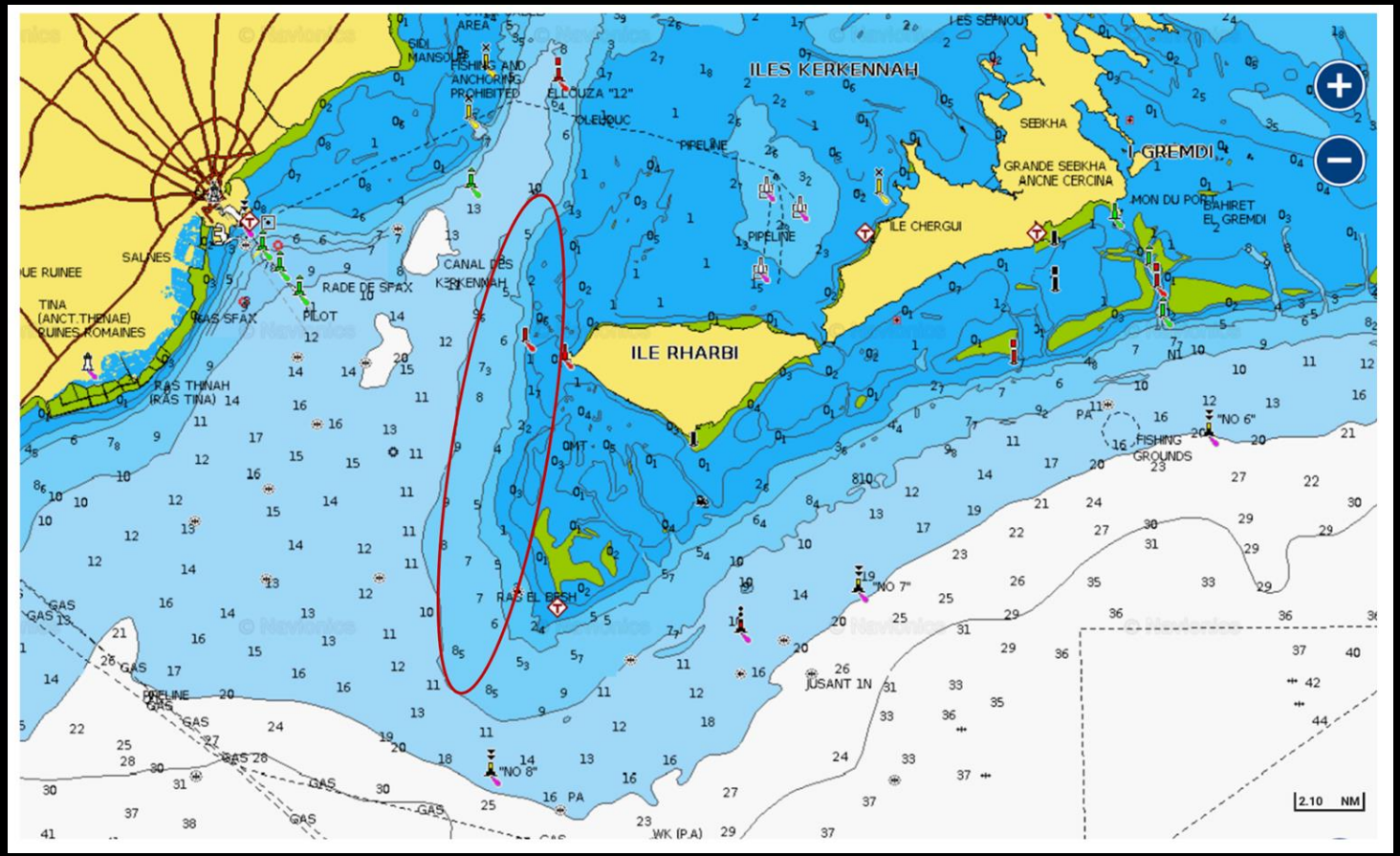


Global Fishing Watch



Seagrass meadows
(*Posidonia oceanica*)

Global Fishing Watch

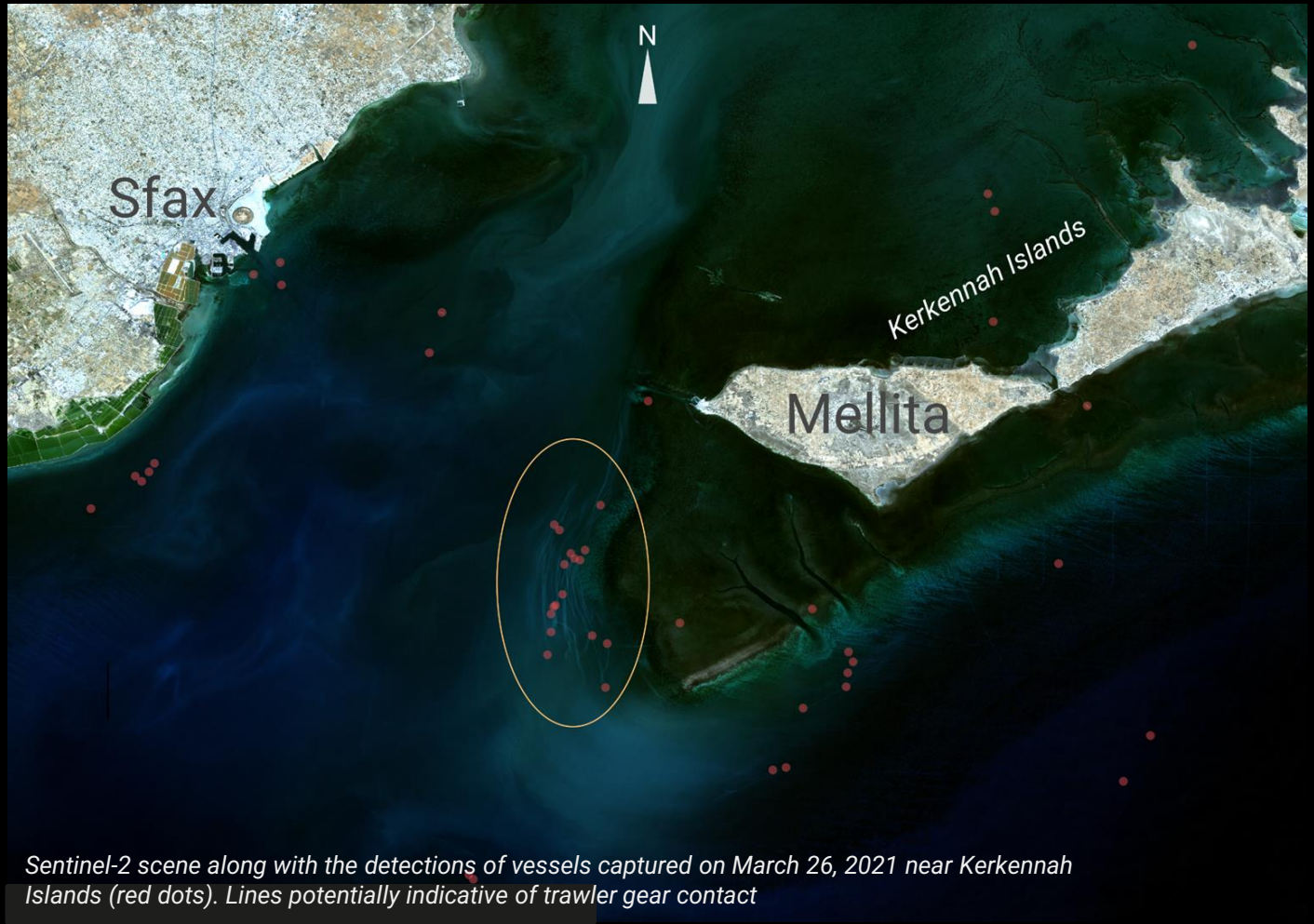


Adding bathymetry

Global Fishing Watch

- Interpret the global results in context using regional and local knowledge.

Global Fishing Watch

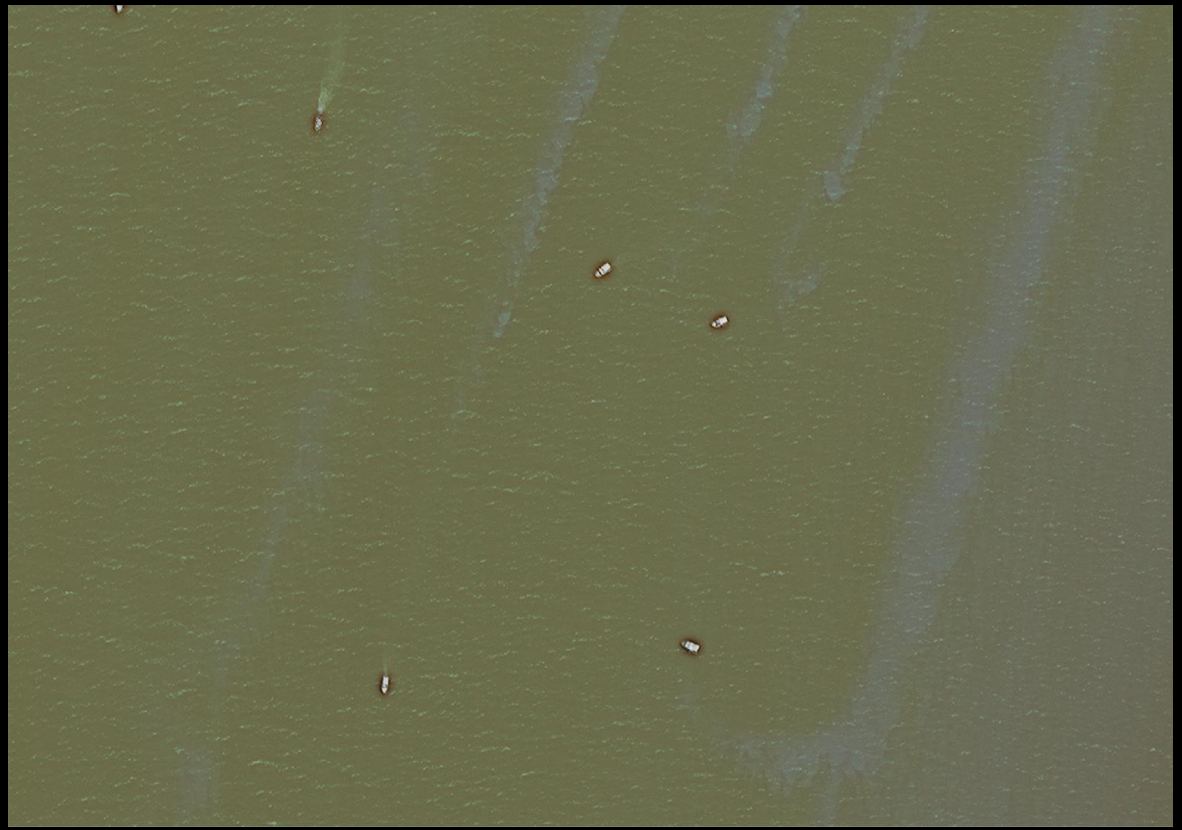


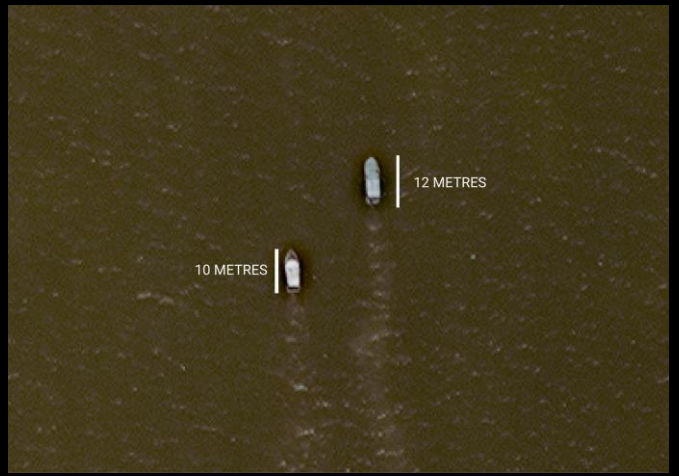
Sentinel-2 scene along with the detections of vessels captured on March 26, 2021 near Kerkennah Islands (red dots). Lines potentially indicative of trawler gear contact

Global Fishing Watch

Sentinel - 2 scene captured on March 26, 2021 near Kerkennah Islands. Lines potentially indicative of trawler gear contact

Global Fishing Watch





Maxar archive: April 22 2019, Kerkennah Islands confirming vessels presence and size

Global Fishing Watch

- Share information, reach out to partners and identify collaborations

Global Fishing Watch

- Complementary use… overlap several datasets to get a more complete picture.
- Understand the limitations so you can interpret the results accurately
- Interpret the global results in context using regional and local knowledge.
- Share information, reach out to partners and identify collaborations

Global Fishing Watch

What should you ask regarding a global remote sensing toolset for regional MCS?

- How well does it highlight/convey limitations or assumptions, highlight missing or poor quality data?
- How easily can you incorporate regional or local knowledge and data to add context?
- How does it fit, or how could it fit, within your existing procedures?
- How well can you use it to collaborate and share insights with others?

Global Fishing Watch

Thank you

Global Fishing Watch is an international nonprofit organization dedicated to advancing ocean governance through increased transparency of human activity at sea. By creating and publicly sharing map visualizations, data and analysis tools, we aim to enable scientific research and transform the way our ocean is managed. We believe human activity at sea should be public knowledge in order to safeguard the global ocean for the common good of all.

Discover more at globalfishingwatch.org

Global Fishing Watch