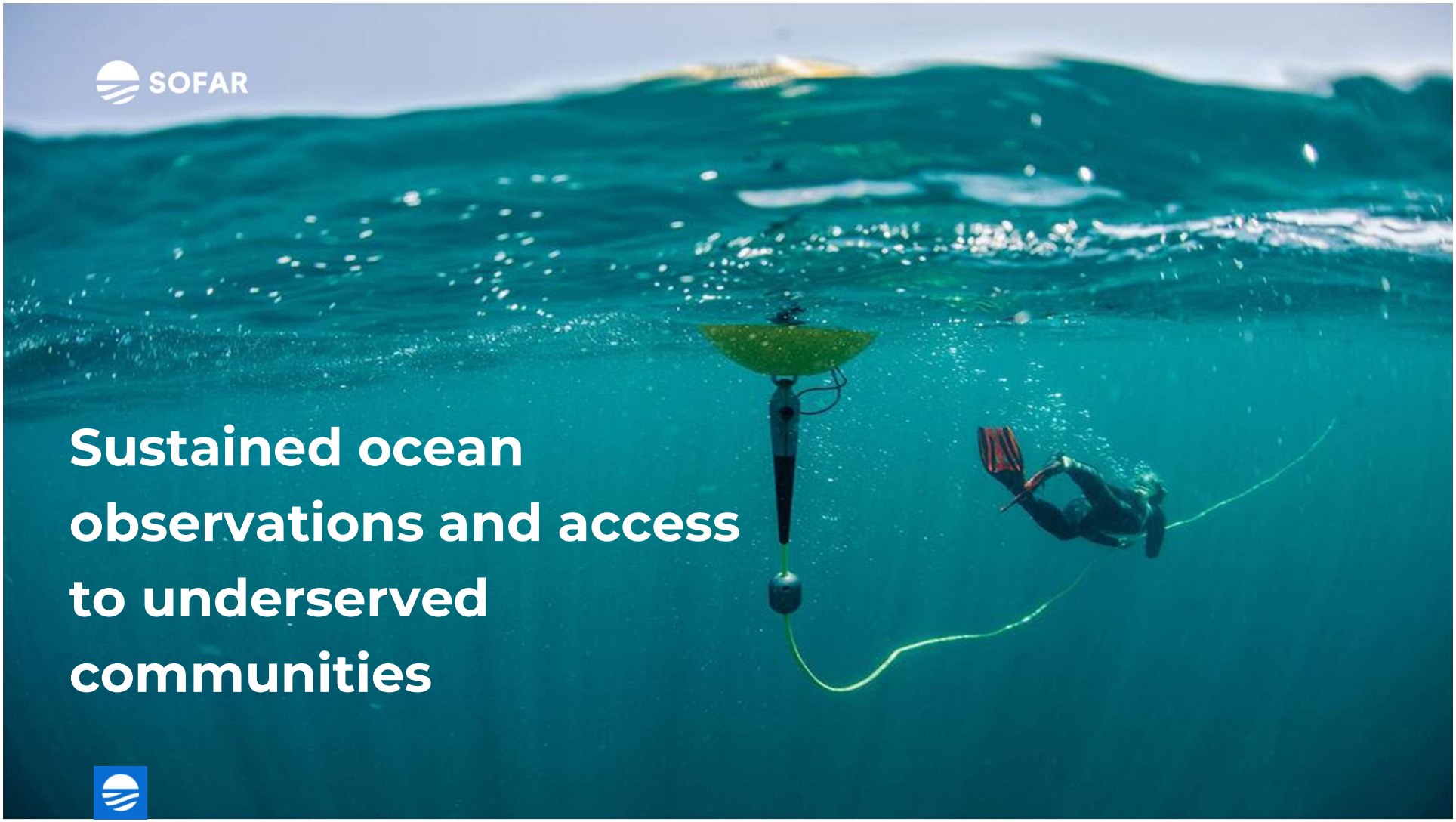
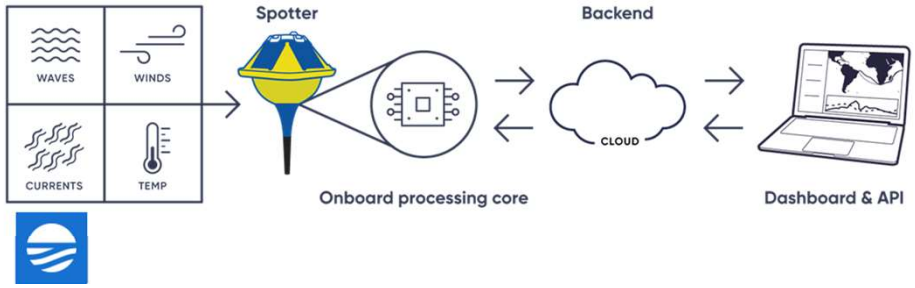

SOFAR
Sustained ocean observations and access to underserved communities

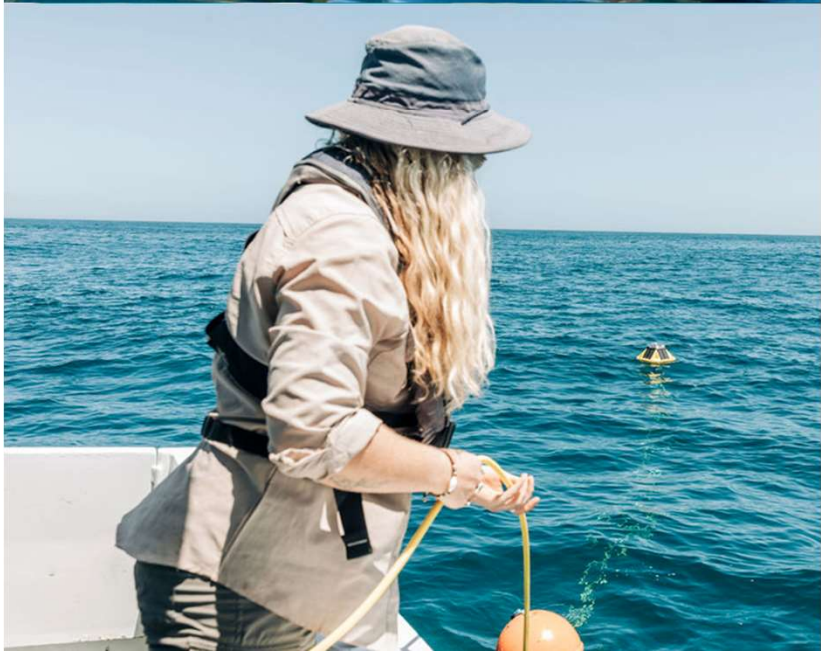
Accessible Ocean Observations

Spotter is a scientific-grade metocean buoy powered by the sun and connected through satellite. Every Spotter measures and calculates:

- Surface wave spectrum (swell, sea, period, direction)
- Wind speed and direction
- Surface current and direction
- Sea surface temperature
- Barometric pressure (next gen)
- Acoustic intensity (next gen)

USD4,900 and self contained: solar panels and rechargeable batteries, Iridium data included (1 year), dashboard and API included, no calibration required.
Do it yourself, reduce operational costs and get more data points.





Smart Mooring: connects any sensor to capture real-time data

The kevlar-coated cable with power+data wires replaces the standard mooring lines.

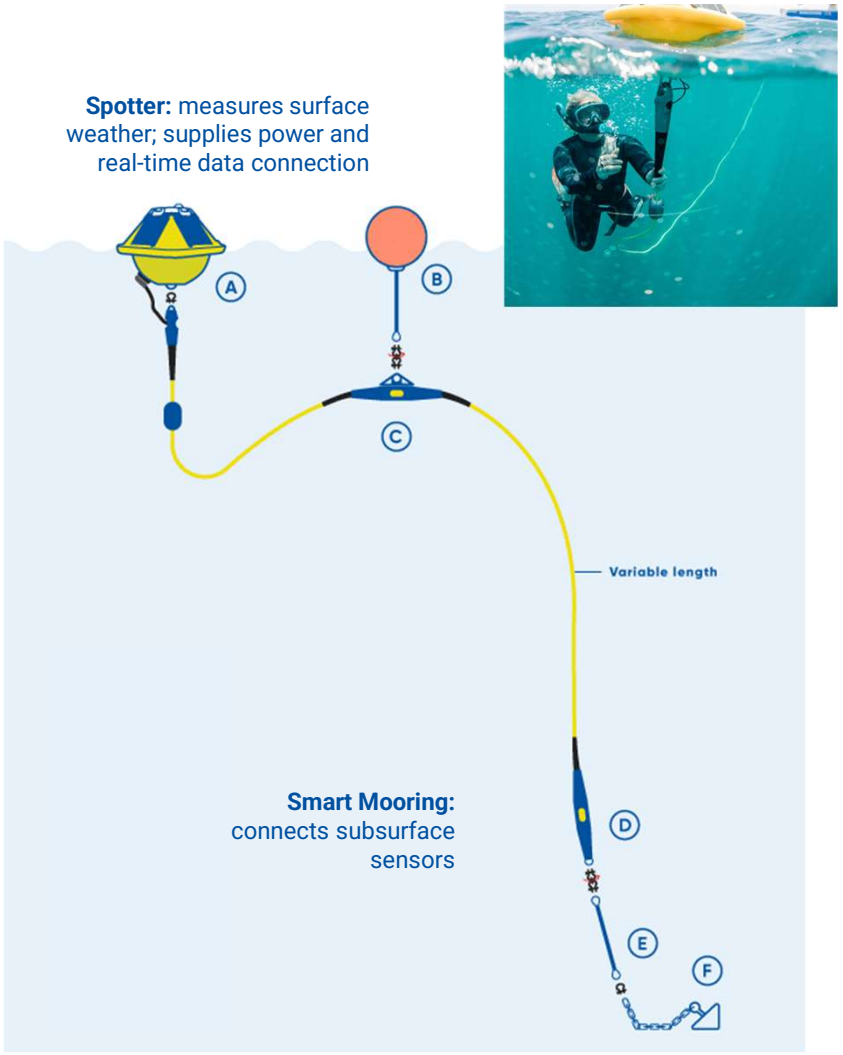
Smart Mooring turns any underwater marine sensor into a connected device.

The buoy provides power and communication to sensors installed on the mooring line.

The third-party sensor data is accessible automatically via Dashboard and API.

Continuous backup of the sensor data, real-time monitoring of the water parameters.

Applications: water level monitoring, temperature and CTD profiling, turbidity measurements…



NSF Convergence Accelerator Track E: Equipping Underserved Communities with Ocean Intelligence Platforms

Indigenous community-driven stewardship of portable, lower cost, real-time technology to provide wave data, adaptable for other ocean data needs.
https://www.nsf.gov/awardsearch/showAward?AWD_ID=2137970

- **SAFEGUARDING LIVES**
- **DECISION SUPPORT**
- **CLIMATE ADAPTATION**
- **EQUITY**
- **LOCAL STEWARDSHIP WORKS**

Indigenous Partners

Marshall Islands Conservation Society

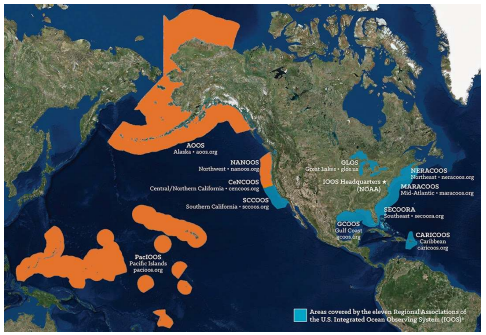
ALASKA ESKIMO WHALING COMMISSION

Ocean Observing Regional Associations

AOOS Alaska Ocean Observing System

NANOOS

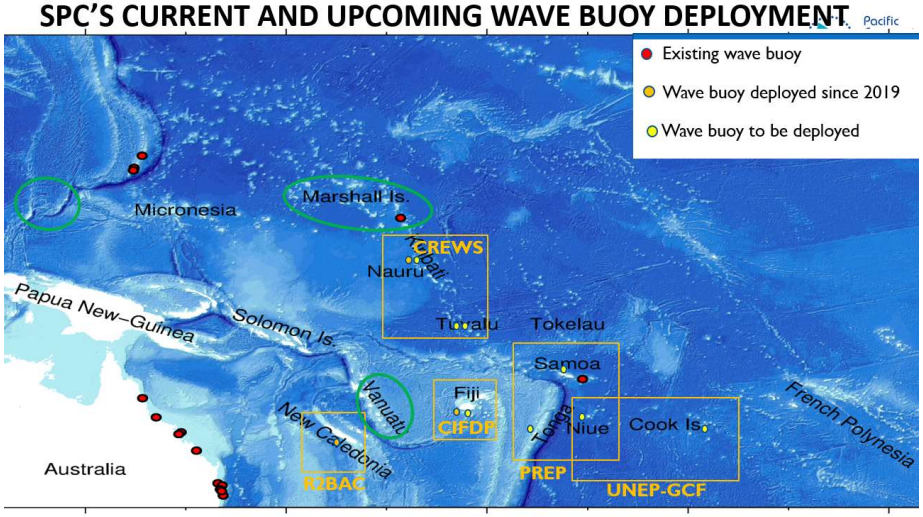
PacIOOS Pacific Islands Ocean Observing System



Technology Provider

SOFAR

SPC'S CURRENT AND UPCOMING WAVE BUOY DEPLOYMENT



Pacific Community
Communauté du Pacifique

EN FR search...

Home ››

Pacific islands call for coordinated regional approach to ocean observing

Suva | 22 June 2021

Photo credit: SPC/Adrien Lauroneau-Moineau

ESTABLISHING REAL-TIME WAVE OCEAN MONITORING SYSTEM, *Herve Damlamian, DBCP Pac. Isl. Workshop 2021*

Tropical Cyclone Harold : Real-time Ocean Data Informs Preparedness and Response

TC HAROLD REAL-TIME OCEAN DATA INFORMS PREPAREDNESS AND RESPONSE

When severe Tropical Cyclone Harold swept through four Pacific Island countries in early April, tide gauges and a wave buoys across the region recorded the event in real-time, providing critical information in support of disaster response and recovery.

When a FAD meets a wave buoy, SPC, 2021

Figure1. Left: Adrien Moineau and William Sokimi connect the wave buoy to the FAD; Right: the low-profile wave buoy is attached to the FAD and starts sending data. (images: ©SPC)

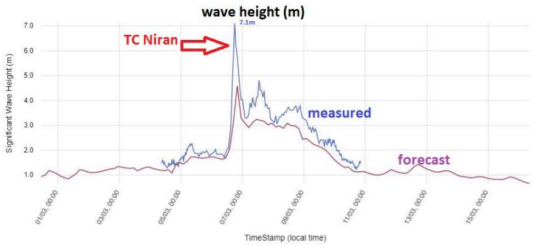
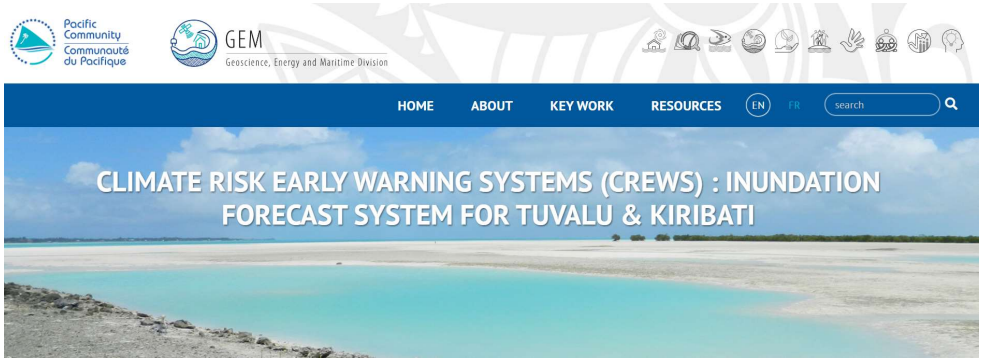


Figure 8. Difference between wave heights observed and wave heights predicted with the Météo France Wave Model during the passage of Tropical Cyclone Niran.



https://gem.spc.int/projects/climate-risk-early-warning-systems-crews-inundation-forecast-system-for-tuvalu-kiribati

https://youtu.be/Vz1EUMf-m-s

Freshwater

Spotters in Lake Winnipesaukee with NERACOOS to improve the National Weather Service forecasts

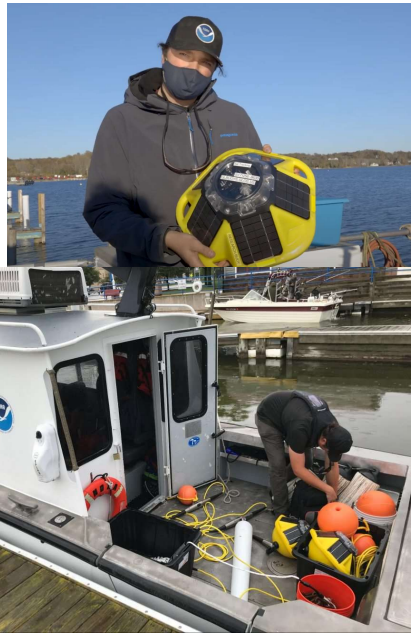
University of New Hampshire
College of Engineering and Physical Sciences

NATIONAL WEATHER SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

https://www.sofarocean.com/posts/spotters-in-lake-winnipesaukee-with-feed-neracoos-and-nws-forecasts

"A lesson from 2020 is that having multiple observing tools in our toolbox can create a more sustainable and resilient regional observing system. Effective observing systems should integrate large and small platforms, simple and complex observing systems, and redundancies as needed, to help meet basic data and information needs continuously." Ana Sirviente, GLOS Chief Technology Officer.

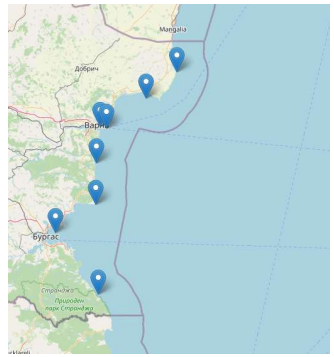
"We originally purchased and deployed a few spotter buoys as placeholders for our larger, more complex units when COVID-19 made it infeasible for us to depart on multi-day ship operations. The spotter buoys were such a success last field season that ***we couldn't just leave them on the shelf.****"*



https://glos.org/smarter-great-lakes-dozens-of-spotter-buoys-deployed-across-the-region/
https://ciglr.seas.umich.edu/summer-2021-e-newsletter/spotlight-spotter-buoys/

Bulgaria National Institute of Meteorology

MASRI
INFRASTRUCTURE FOR SUSTAINABLE DEVELOPMENT OF MARINE RESEARCH AND PARTICIPATION IN THE EUROPEAN INFRASTRUCTURE EURO-ARGO – MASRI

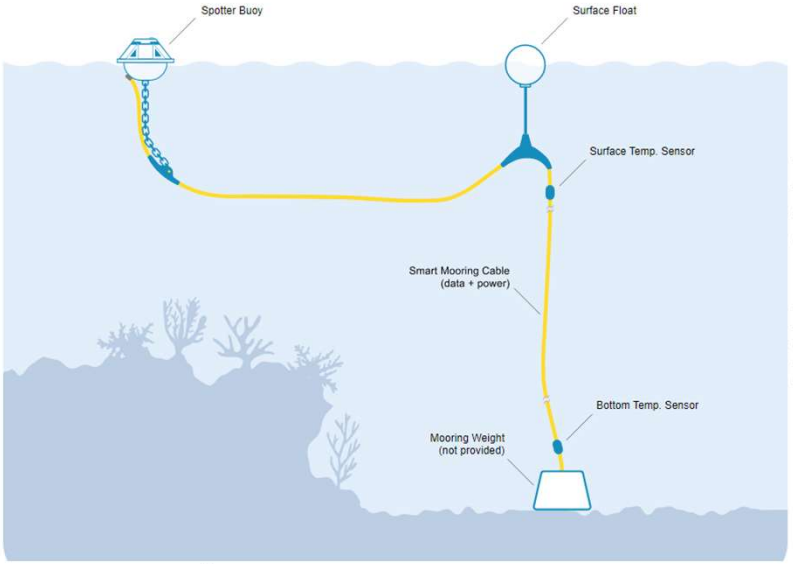


6 Spotter buoys deployed in the Black Sea

https://www.sofarocean.com/posts/6-spotter-buoys-deployed-in-the-black-sea

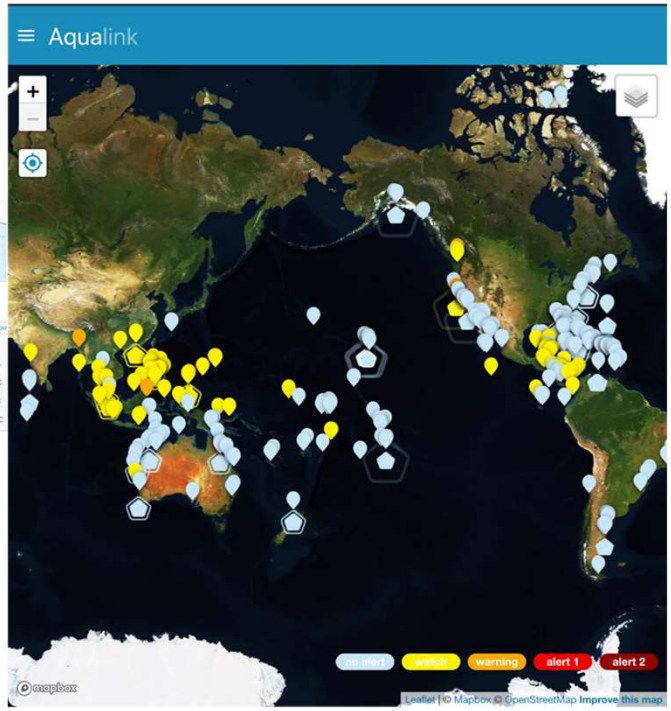
Aqualink.org - Global Coral Reef Observation System

A non-profit organization working on building ocean conservation technology to track and mitigate the impact of rising ocean temperatures



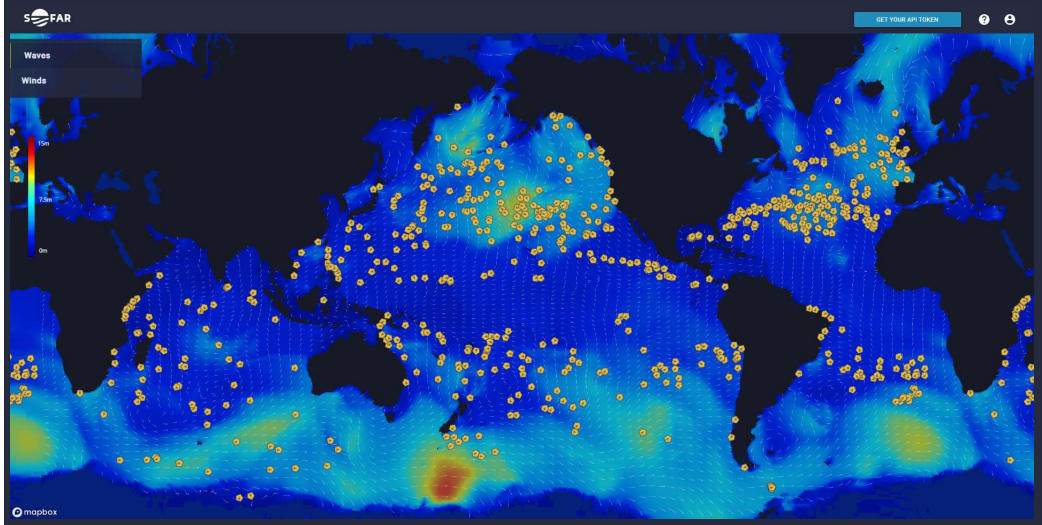
Smart mooring allows the deployment of real time sensors by citizen scientists around the world.
At scale this will allow for a greater understanding of heating and weather related events and their effects on coral reefs.

Hundreds of applicants worldwide.
Future integrations Smart Mooring system will including water quality sensors and live photos or videos from the reef.



Sofar’s fleet of drifters

Sofar Sensor Network **Today: >700 buoys**
Hourly wave spectra
Hourly SST
Hourly wind statistics



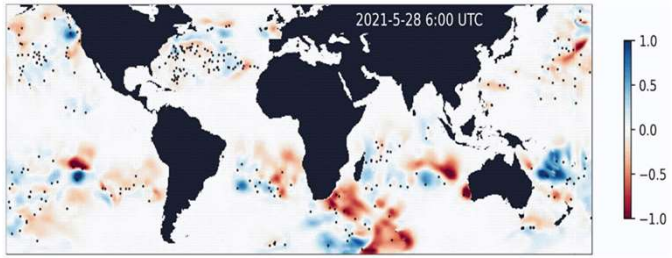
Sofar Sensor Network in **2022: 2,000+ global**
Barometric pressure
Hydrophone
Rain detection

SOFAR

www.weather.sofarocean.com

Enhanced ocean forecasts

Sofar error reductions (m) over NOAA forecasts

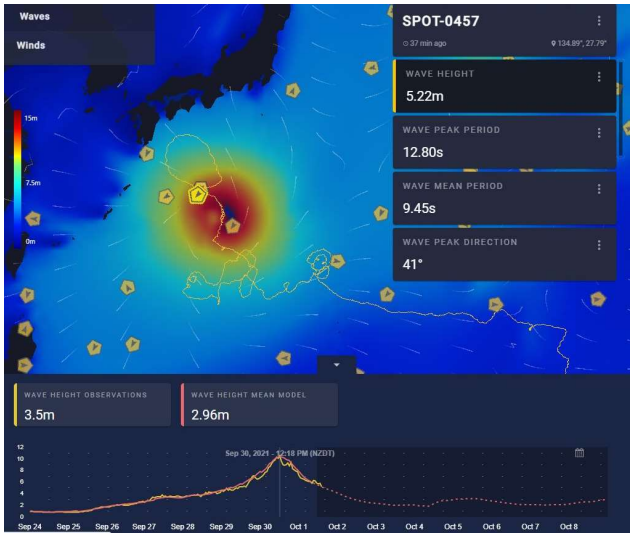


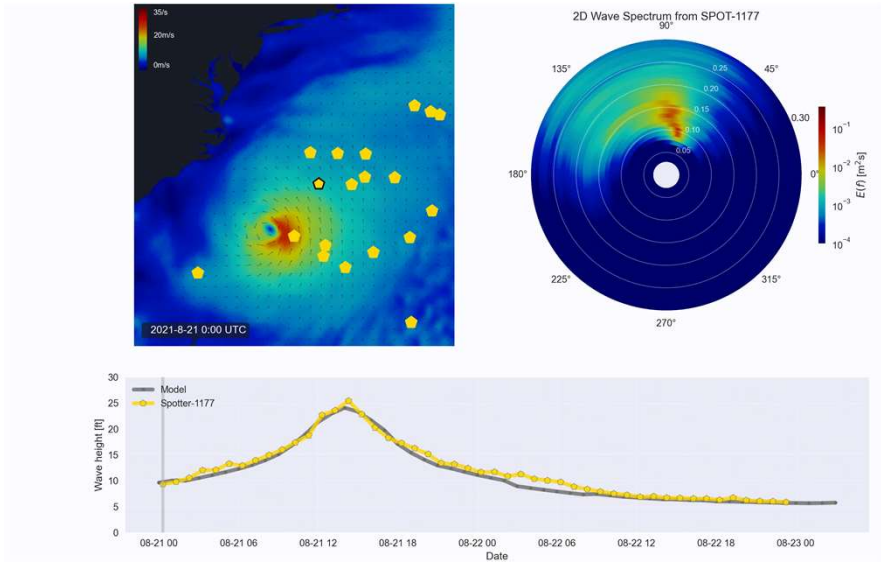
Assimilation of Spotter spectral observations to deliver weather forecasts that are up to 50% more accurate than prior best-in-class-models.

P.B. Smit, I.A. Houghton, K.Jordanova, T. Portwooda, E.Shapiro, D. Clark, M.Sosa, T.T. Janssen. "Assimilation of significant wave height from distributed ocean wave sensors." Ocean Modelling, Volume 159, March 2021. https://doi.org/10.1016/j.ocemod.2020.101738

I.A. Houghton, P.B. Smit, D. Clark, C. Dunning, A. Fisher, N. Nidzieko, P. Chamberlain, and T.T. Janssen. "Performance statistics of a real-time Pacific Ocean weather sensor network." Journal of Atmospheric and Oceanic Technology. 21 April 2021. https://doi.org/10.1175/JTECH-D-20-0187.1

J. J. Voermans, P. B. Smit, T. T. Janssen, A. V. Babanin. "Estimating Wind Speed and Direction Using Wave Spectra." *Journal of Geophysical Research: Oceans*. vol. 125, no. 2, 2020. https://doi.org/10.1029/2019JC015717





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https://www.sofarocean.com