

PacIOOS Voyager: Enhancing Decision-Making for Stakeholders in the Pacific Islands

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PacIOOS

PACIFIC ISLANDS OCEAN OBSERVING SYSTEM



SCHOOL OF OCEAN AND EARTH
SCIENCE AND TECHNOLOGY
UNIVERSITY OF HAWAII AT MANOA



Empower ocean users and stakeholders throughout the Pacific Islands by providing accurate and reliable coastal and ocean information, tools, and services that are easy to access and use





DATA MANAGEMENT
AND VISUALIZATION

Background

- ✧ Data management in PacIOOS focuses on providing data to users via “standard services”
- ✧ Visualization/access tools
- ✧ Reformatting, QA/QC, metadata inclusion, archiving (when appropriate)



Overview



THREDDS

Access data via OPeNDAP, NetCDF Subset Service, Web Map Service (WMS), Sensor Observation Service (SOS), and other web services.

[See More >](#)



ERDDAP

Access data in a wide variety of output formats including plain text, HTML, JSON, MATLAB, and NetCDF. Generate basic maps and plots. Simple to use.

[See More >](#)



LAS

Generate custom maps and plots of gridded time-series data and other rasters.

[See More >](#)



GeoServer

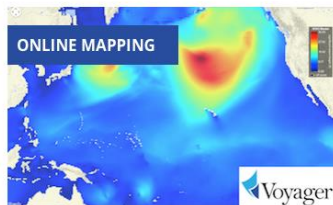
Access GIS layers via Open Geospatial Consortium (OGC) web services (WMS, WFS, WCS). Search and map layers in GeoExplorer data viewer.

[See More >](#)



by observing we learn

PacIOOS empowers ocean users and stakeholders in the Pacific Islands by providing accurate and reliable coastal and ocean information, tools, and services that are easy to access and use.



ONLINE MAPPING

PacIOOS Voyager

PacIOOS Voyager is a free, interactive, online mapping experience. Explore



SHARK TRACKING

Tiger Shark Tracking

Check out recent tracks of Hawai'i tiger sharks who were fitted with the latest



FEATURED TOOL

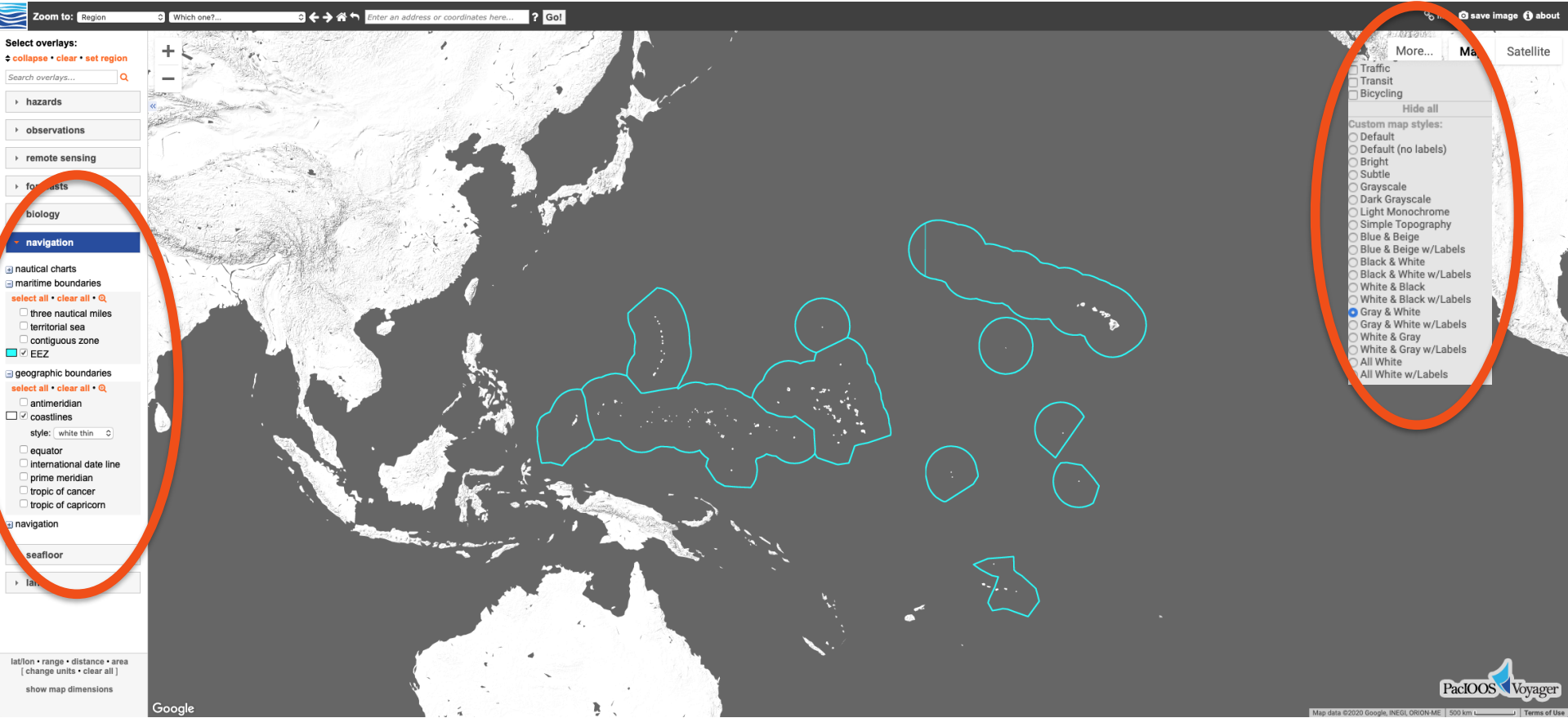
Weather Observations

Real-time weather observations from the HIMB weather station at Moku o Lo'e

Dynamic, Customizable Visualization Platform

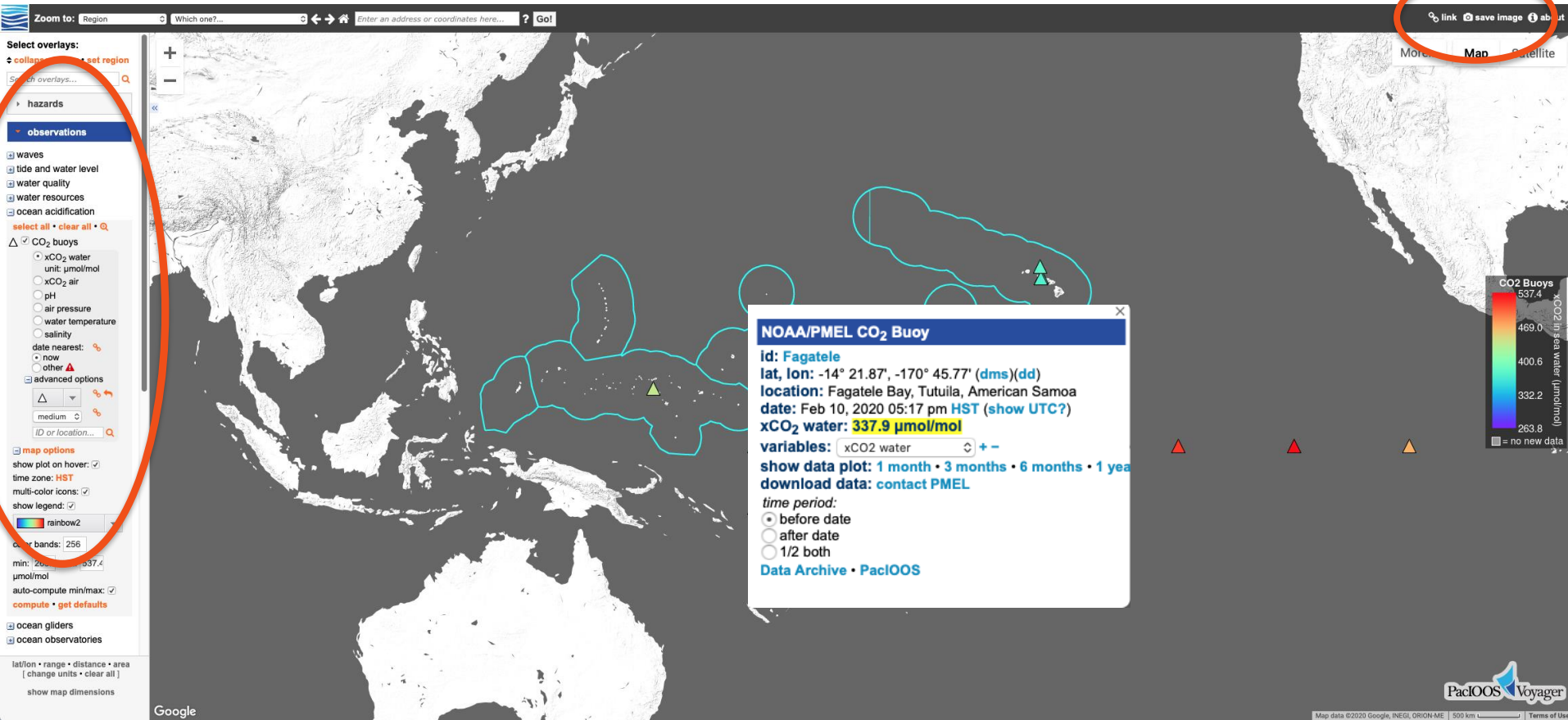
The screenshot displays the PacIOOS Voyager web application interface. At the top, there is a navigation bar with search and navigation controls. Below this is a sidebar titled "Select overlays:" containing several categories of data layers such as "hazards", "observations", "remote sensing", and "forecasts". The main area is a map of the Pacific Ocean showing wave height data from the WW3 Model, with a color scale on the right ranging from 0.00 to 32.87 feet. A popup window titled "PacIOOS Wave Buoy" is open, showing a line graph of wave height (ft) for buoy ID 197 from October 25 to 31. The graph shows a peak of approximately 8 feet on Oct 25, a dip to about 3 feet on Oct 29, and another peak of about 7 feet on Oct 30. The interface also includes a "More..." menu, "Map" and "Satellite" buttons, and a footer with the URL <http://pacioos.org/voyager> and the Google logo.

Customization



The screenshot displays the PacIOOS Voyager web application interface. At the top, there is a search bar with the text "Zoom to: Region" and "Which one?". Below the search bar, there are navigation controls (back, forward, home, search) and a "Go!" button. The main area shows a map of the Pacific Islands with several islands highlighted in cyan. On the left side, there is a "Select overlays:" panel with a search box and a list of categories: hazards, observations, remote sensing, forecasts, biology, navigation (highlighted with a red circle), nautical charts, maritime boundaries, geographic boundaries, and navigation. The "navigation" category is expanded, showing options like "three nautical miles", "territorial sea", "contiguous zone", "EEZ", "geographic boundaries", "antimeridian", "coastlines", "equator", "international date line", "prime meridian", "tropic of cancer", and "tropic of capricorn". On the right side, there is a "More..." menu (highlighted with a red circle) with options for "Traffic", "Transit", "Bicycling", "Hide all", and "Custom map styles". The "Custom map styles" list includes: Default, Default (no labels), Bright, Subtle, Grayscale, Dark Grayscale, Light Monochrome, Simple Topography, Blue & Beige, Blue & Beige w/Labels, Black & White, Black & White w/Labels, White & Black, White & Black w/Labels, Gray & White (selected), Gray & White w/Labels, White & Gray, White & Gray w/Labels, All White, and All White w/Labels. At the bottom left, there are links for "lat/lon", "range", "distance", "area", and "show map dimensions". At the bottom right, there is a "Google" logo and a "Map data ©2020 Google, INEGI, ORION-ME | 500 km" scale bar. The PacIOOS Voyager logo is in the bottom right corner.

Customization



The screenshot displays the PacIOOS Voyager web application interface. The top navigation bar includes a search bar with the text "Enter an address or coordinates here..." and a "Go!" button. On the right side of the navigation bar, there are icons for "link", "save image", and "about".

The left sidebar contains a "Select overlays:" section with a search bar and a list of categories. The "observations" category is expanded, showing sub-categories like "waves", "tide and water level", "water quality", "water resources", "ocean acidification", "CO2 buoys", "ocean gliders", and "ocean observatories". The "CO2 buoys" sub-category is selected, and a list of buoys is shown, including "Fagatele".

The main map area displays a satellite-style map of the Pacific Islands. A red circle highlights the "link" icon in the top right corner. A red circle also highlights the "observations" category in the left sidebar. A red circle highlights the "CO2 buoys" sub-category in the left sidebar. A red circle highlights the "Fagatele" buoy in the list. A red circle highlights the "link" icon in the top right corner.

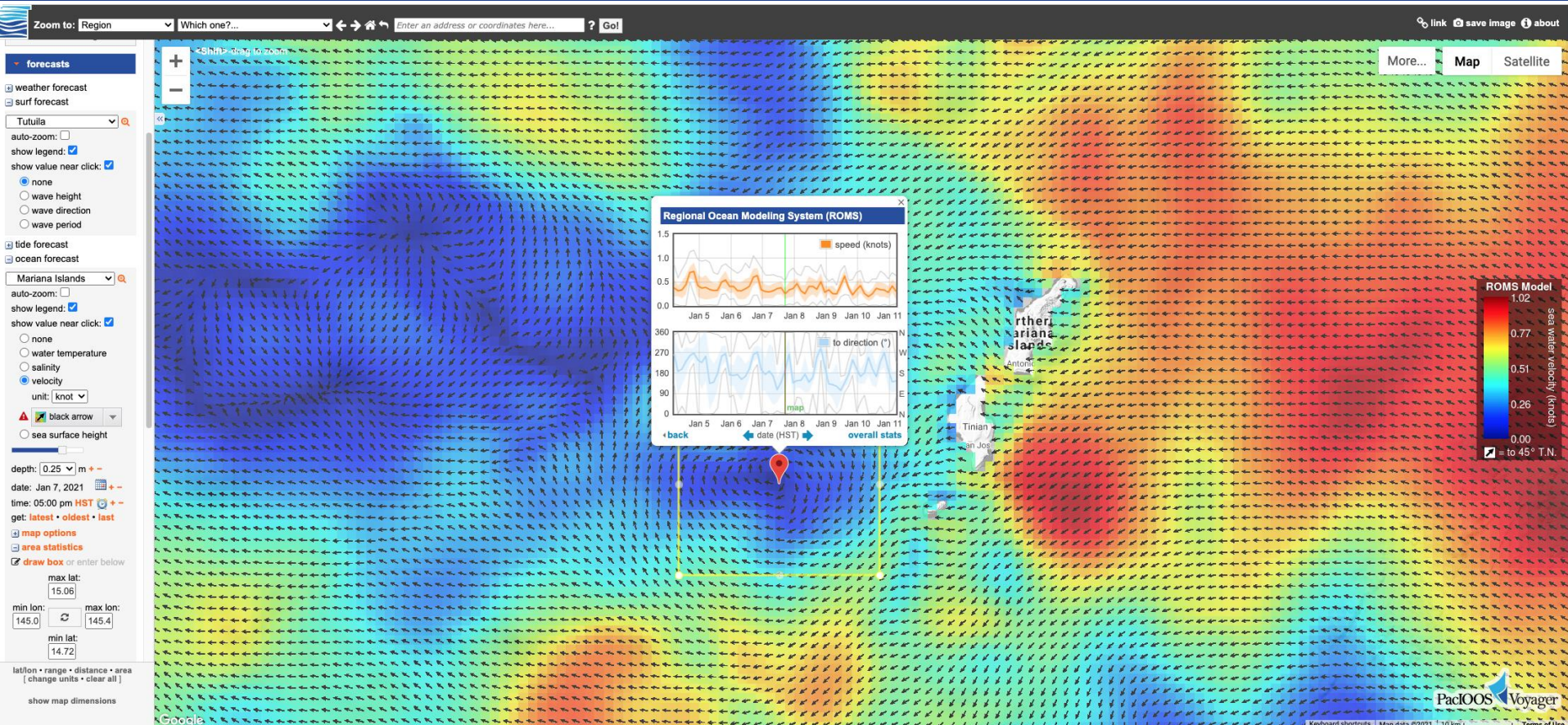
A popup window titled "NOAA/PMEL CO2 Buoy" is displayed over the map, showing the following information:

- id:** Fagatele
- lat, lon:** -14° 21.87', -170° 45.77' (dms)(dd)
- location:** Fagatele Bay, Tutuila, American Samoa
- date:** Feb 10, 2020 05:17 pm HST (show UTC?)
- xCO2 water:** 337.9 $\mu\text{mol/mol}$
- variables:** xCO2 water
- show data plot:** 1 month • 3 months • 6 months • 1 year
- download data:** contact PMEL
- time period:**
 - before date
 - after date
 - 1/2 both
- Data Archive • PacIOOS**

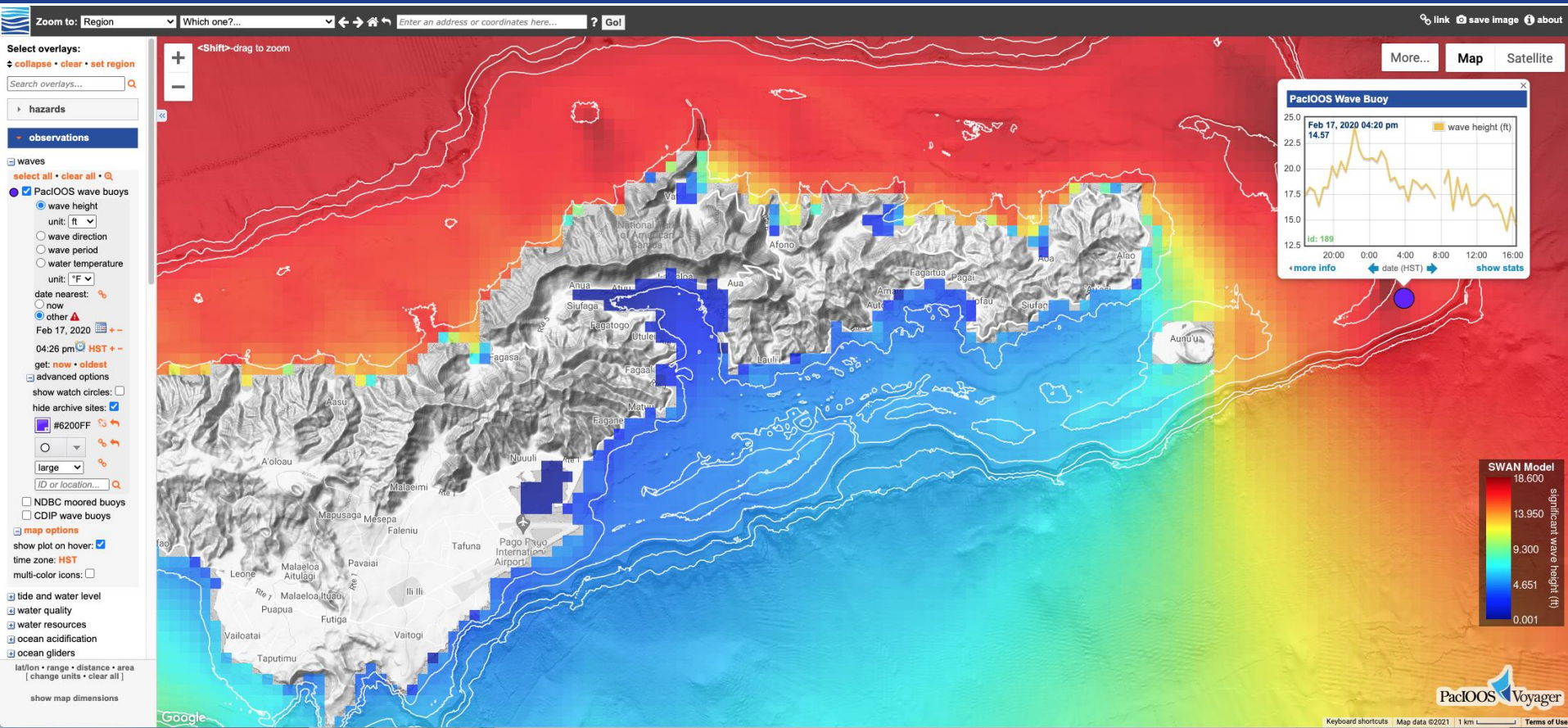
A color scale legend for "CO2 Buoys" is visible on the right side of the map, ranging from 263.8 to 537.4 $\mu\text{mol/mol}$.

At the bottom of the page, there is a Google logo and a footer with the text "Map data ©2020 Google, INEGI, ORION-ME | 500 km | Terms of Use".

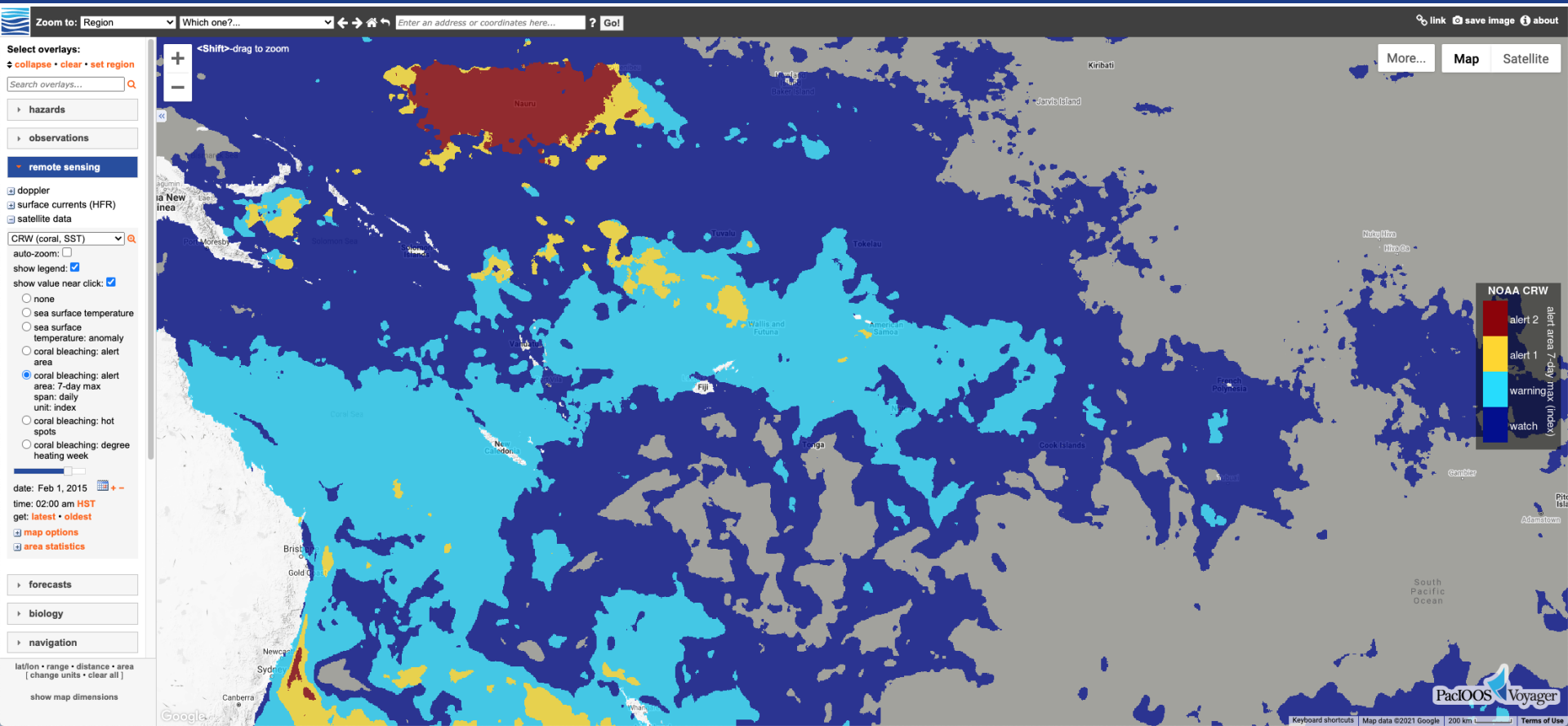
Mariana Islands, January 2021



Tropical Cyclones, Samoa, February 2020



Coral Bleaching, South Pacific, February 2015



Pacific-wide Water Level Station

Zoom to: **Region** | Which one?...

Go!
link | save image | about

hazards: observed

hazards: forecasts

hazards: basemaps

observations

waves

select all • clear all •

PacIOOS wave buoys

NDBC moored buoys

CDIP wave buoys

tide and water level

select all • clear all •

DART stations

column height

unit: **ft** ▼

date nearest:

now

other

advanced options

international stations

water level

unit: **ft** ▼

date nearest:

now

other

advanced options

NOS shore stations

sea surface height

unit: **ft** ▼

date nearest:

now

other

advanced options

map options

water quality

water resources

ocean acidification

ocean gliders

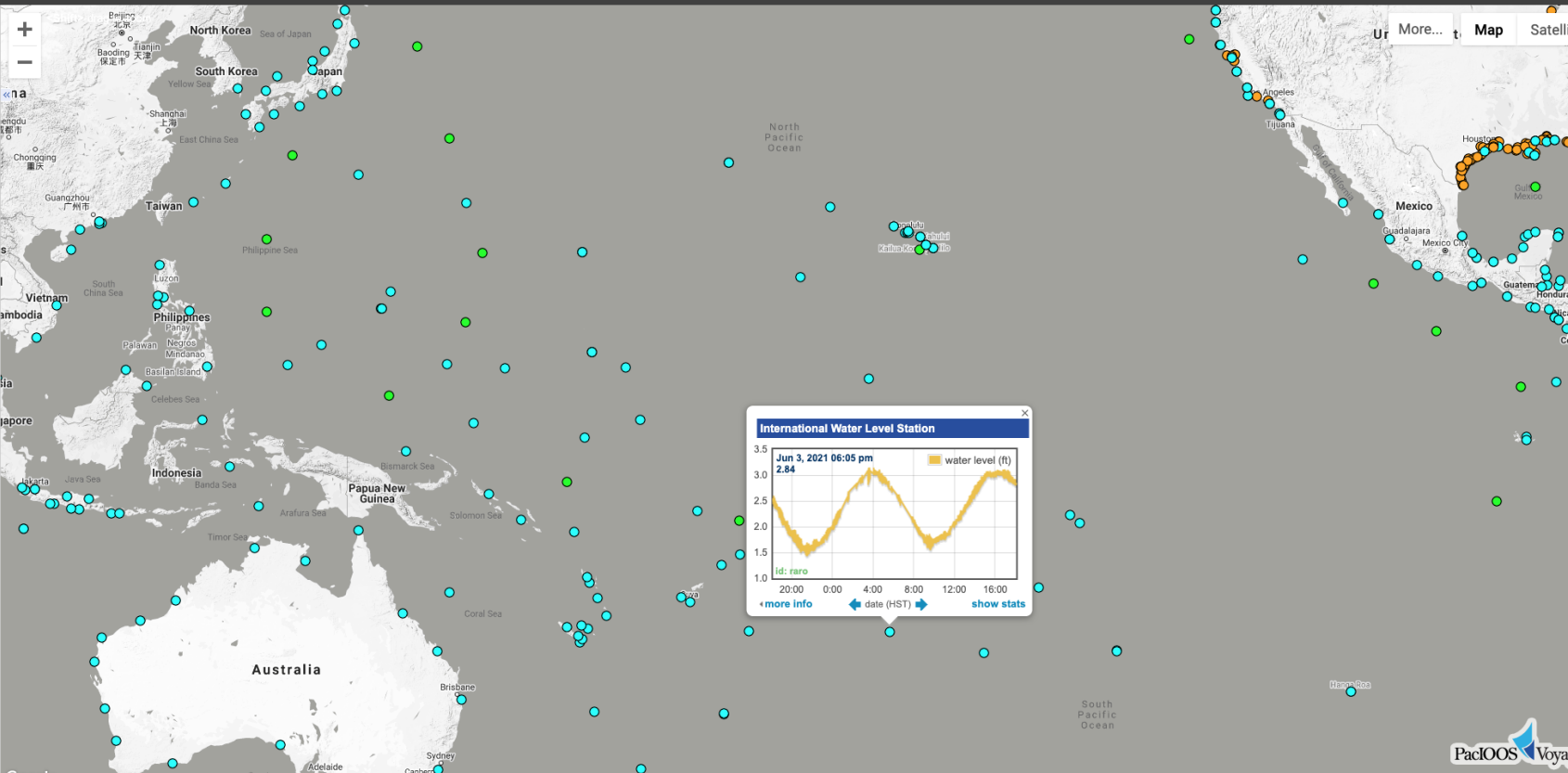
ocean observatories

remote sensing

latlon • range • distance • area

[change units • clear all]

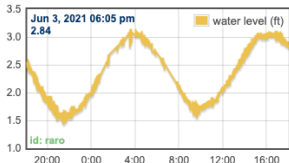
[show map dimensions](#)



International Water Level Station

Jun 3, 2021 06:05 pm

2.84



id: raro

[more info](#) | | [show stats](#)

An aerial photograph of turquoise ocean water with white foam from waves. The water is a vibrant blue-green, and the foam is bright white, creating a textured, bubbly appearance. The perspective is from directly above, looking down at the water's surface.

Questions?

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<http://pacioos.org/voyager>