

# Using Real-Time Ocean Data in the Classroom

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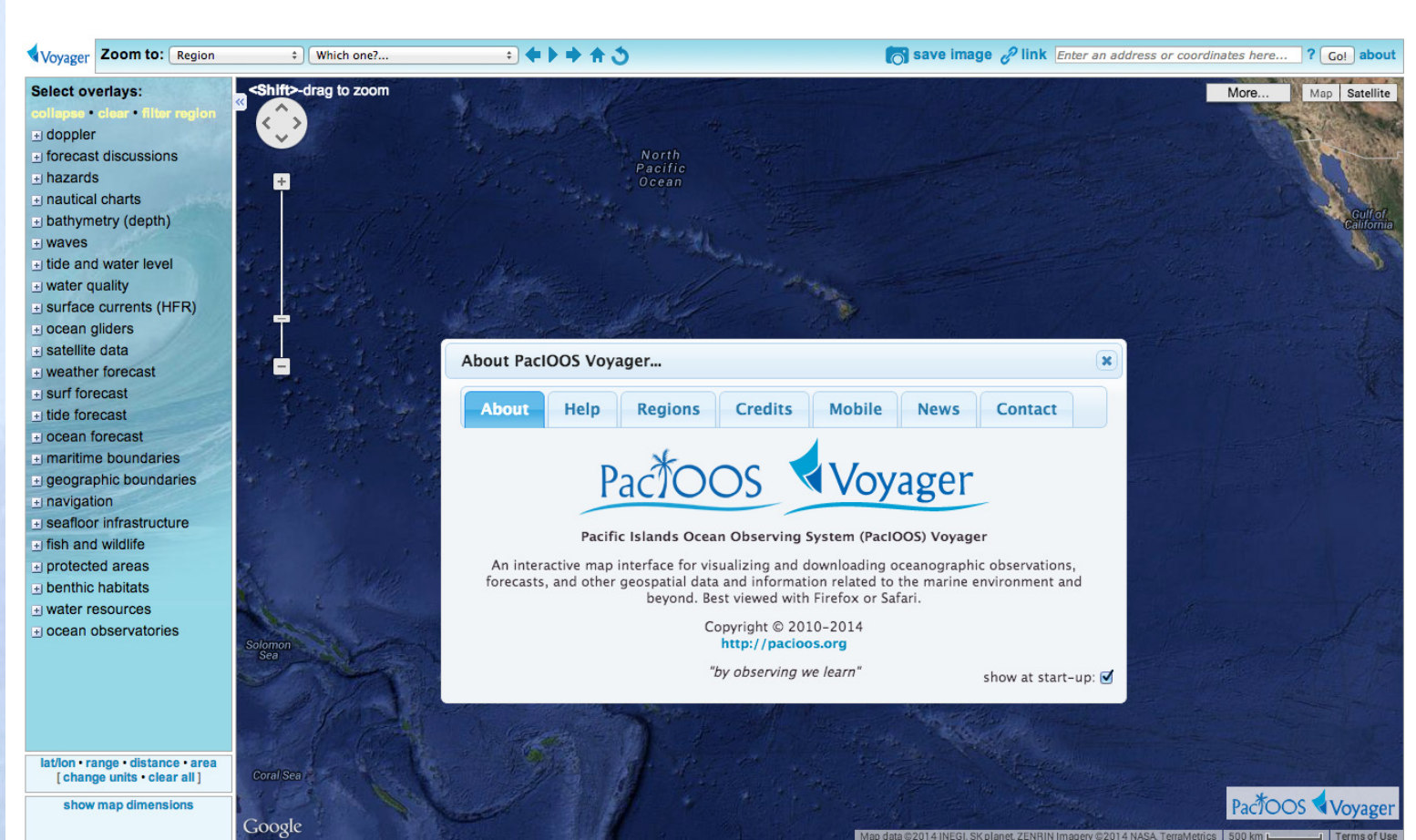
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## Introduction and Objectives



Real-time, forecast, and historical data on winds, waves, currents, ocean temperature, and more are easy to access on PacIOOS Voyager, making it a powerful decision-making tool. Because large amounts of data can overwhelm students and seem irrelevant, PacIOOS and UH Maui College collaborated to develop and implement classroom

activities using Voyager. In this lesson plan, students make decisions for ocean recreational activities with which they are familiar. This novel approach to education and outreach motivates students to delve deeper into the data generated and served by their local ocean observing system through decision-making that is relevant to students' lives.

## Objectives

- Increase student comfort with real-time and forecast data sets.
- Expose students to a free data explorer: PacIOOS Voyager.
- Improve student decision-making related to ocean uses in the real-world.

## Materials



or



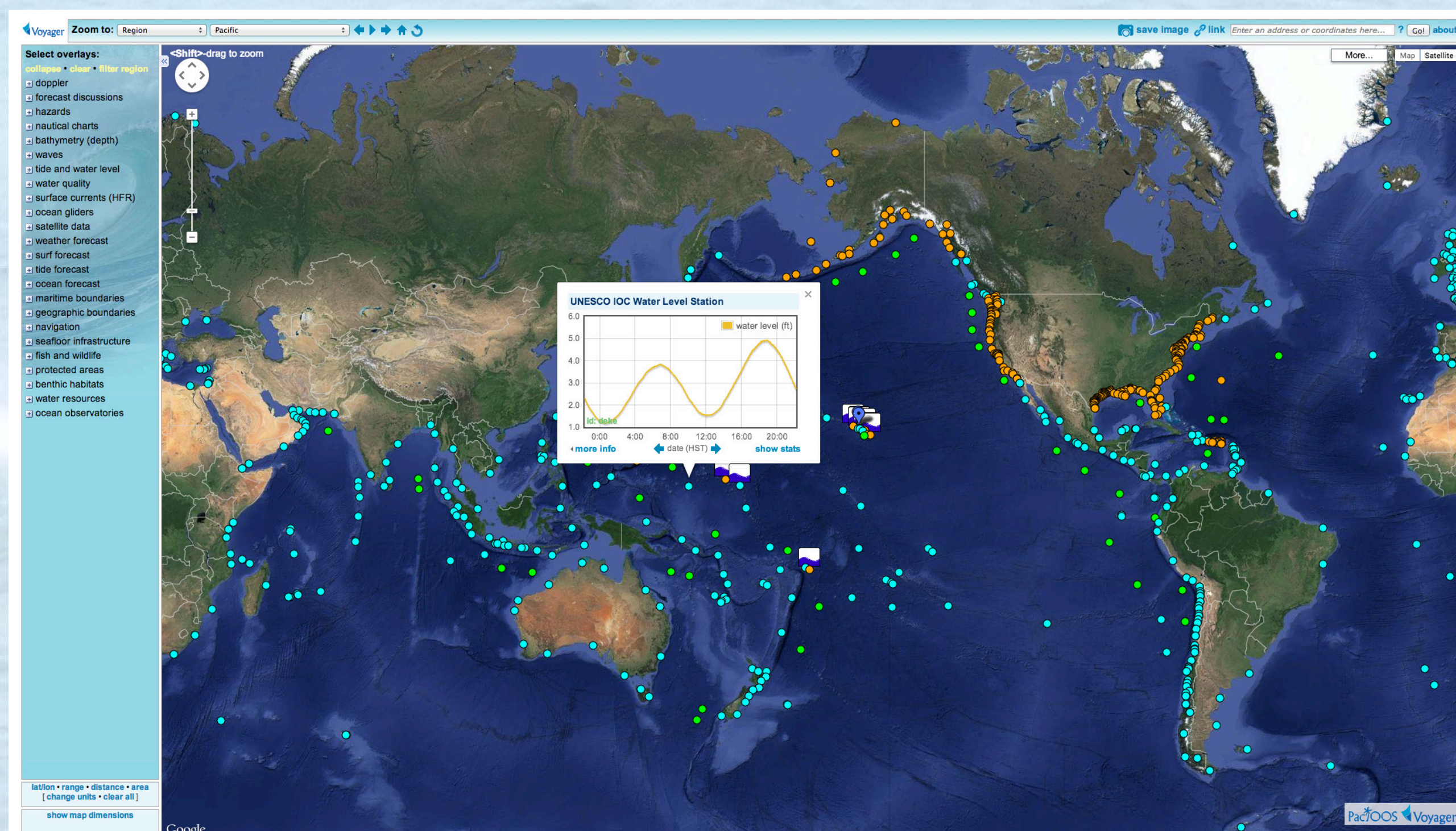
Scan to open PacIOOS Voyager Mobile.



2-3 hours

Go to: [www.pacioos.org/outreach/voyager](http://www.pacioos.org/outreach/voyager) for Voyager tutorials, handouts, and sample questions that you can customize for your own classrooms.

## Method: Lesson Plan Using PacIOOS Voyager

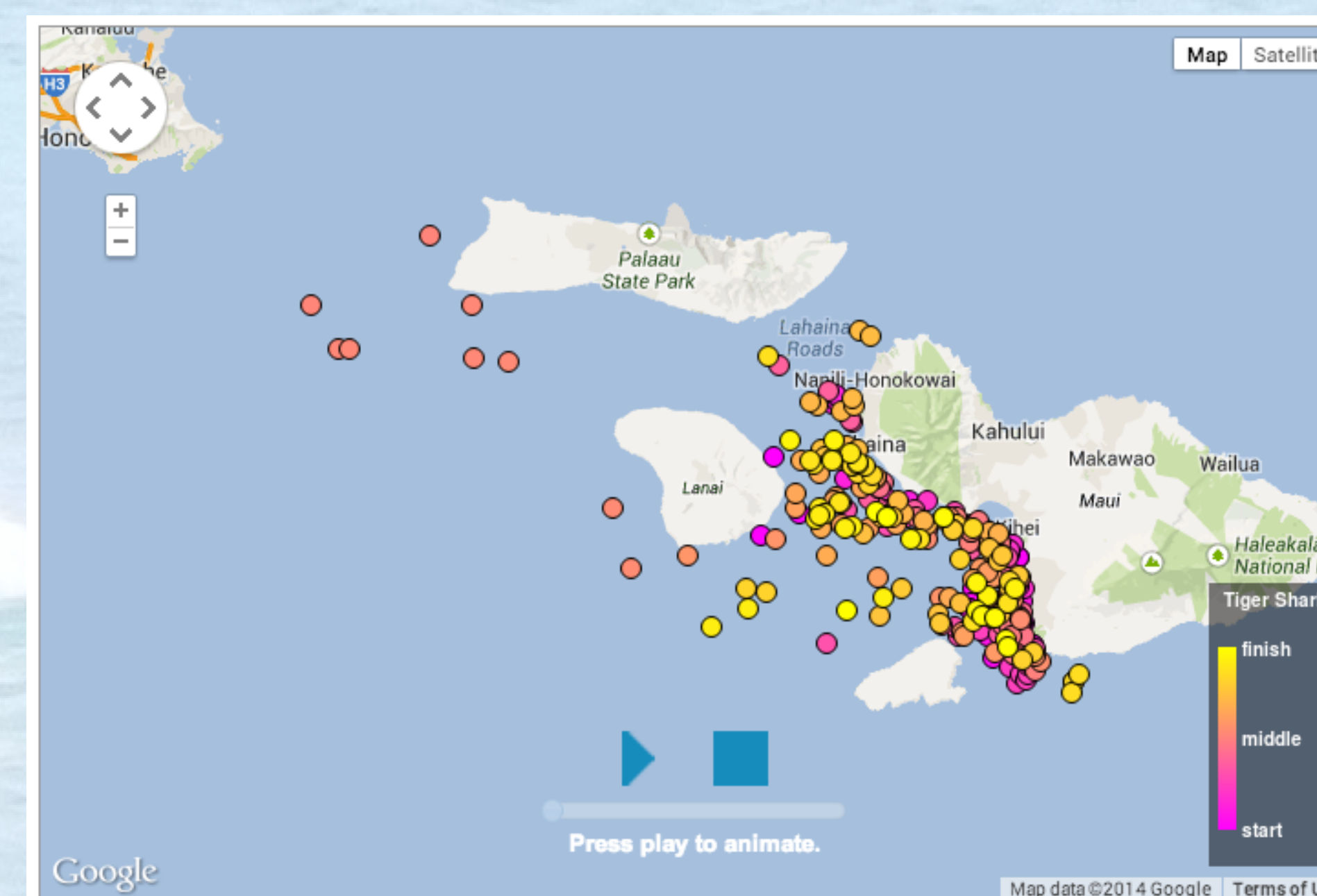


### Voyager Highlights:

- real-time, forecast, and historical data;
- activate multiple spatial and/or point data layers at once;
- save map of active layers with short URL;
- view time series plots;
- direct data download in multiple formats.

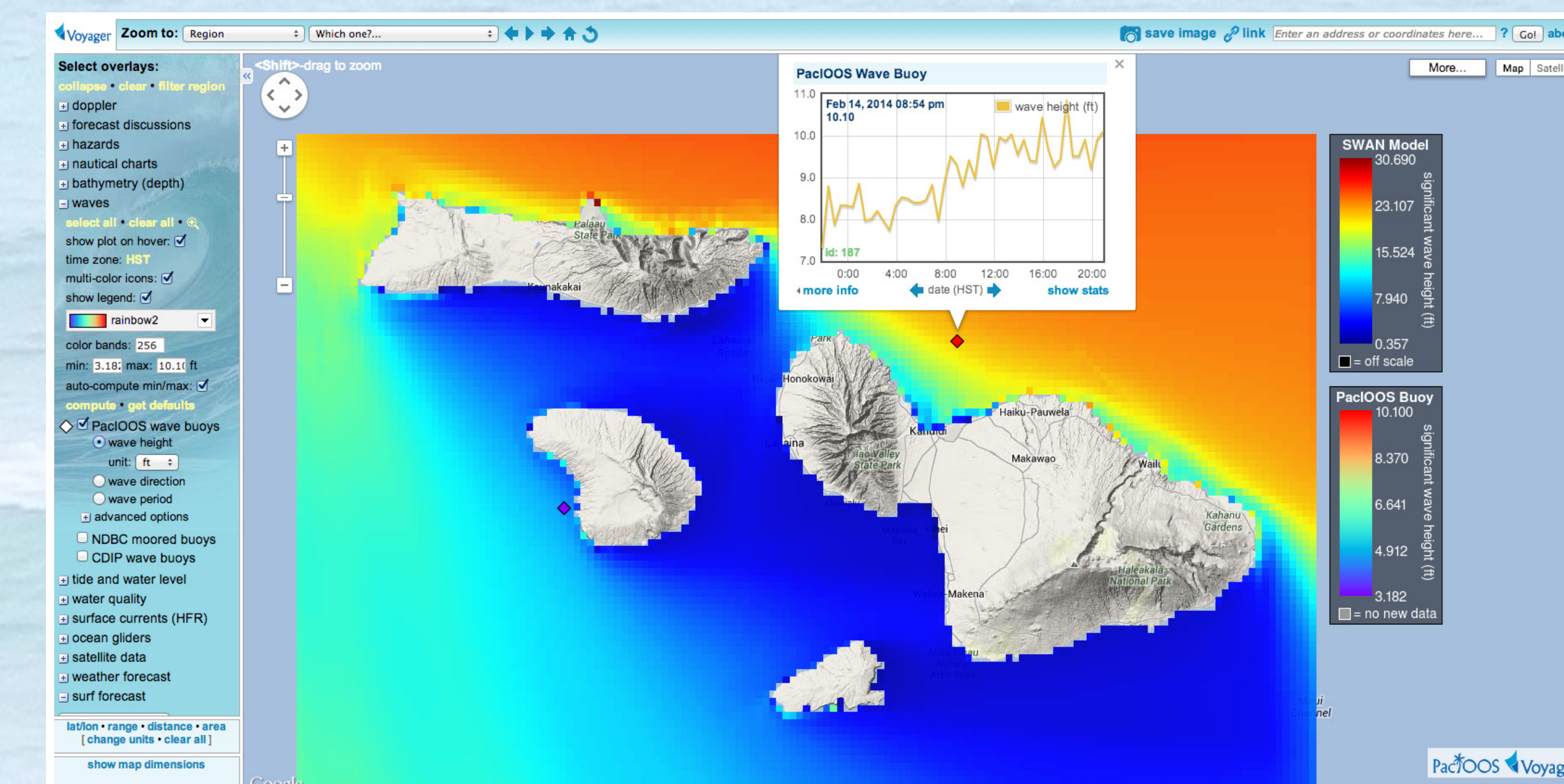
### 1. Join the Voyage

Watch online video tutorials to learn what data sets are in PacIOOS Voyager, how to access and download data, and what features and functions are available. The map above illustrates global water level stations and PacIOOS high sea level and wave run-up forecasts.



### 2. Explore the Data

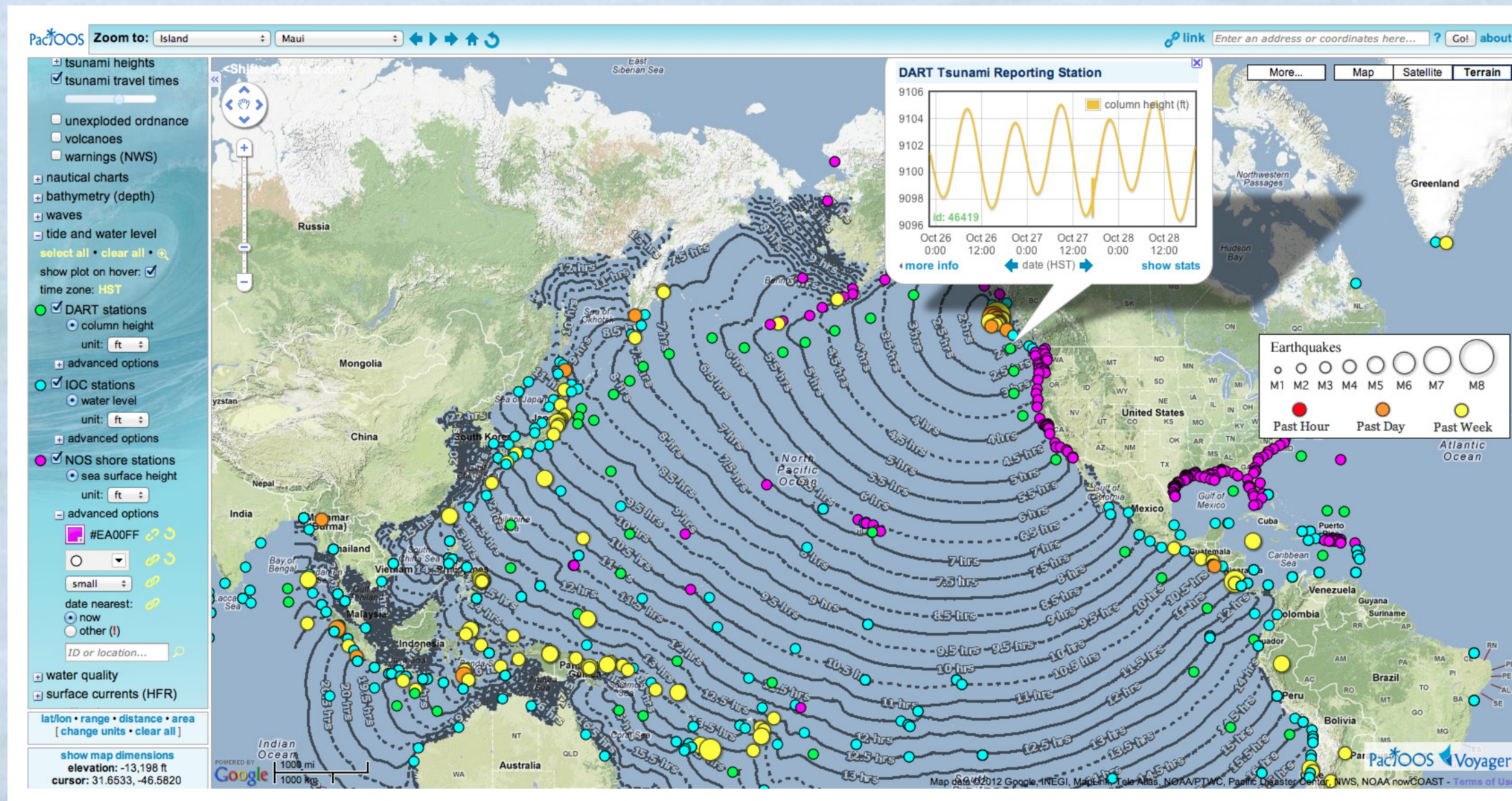
Get excited about the data in Voyager. See animations of near-real-time tiger shark tracks in Hawai'i! This map is the track of one tiger shark.



### 3. Make Hypothetical (but Realistic) Decisions with Voyager

Example: "Based on wave buoy data and surf, wind, and ocean forecasts, what is the best location for the ocean activity of your choice today?"

## Results: Real World -- Real-Time



### Improved Decision-Making

With PacIOOS Voyager at their fingertips, students can access ocean data and information for classes, projects, and real-world decision-making. For example, the map to the left was created soon after the earthquake near the Queen Charlotte Islands, Canada in October 2012. It shows data for global tide and water levels, earthquakes over the past seven days, and tsunami travel times across the Pacific Ocean.

**Pacific Islands Ocean Observing System (PacIOOS)** is the Pacific Islands regional component of the U.S. Integrated Ocean Observing System (IOOS®). Based within the School of Ocean and Earth Science and Technology (SOEST) at the University of Hawai'i at Mānoa, PacIOOS is a partnership of data providers and users working together to enhance ocean observations and develop, disseminate, evaluate, and apply ocean data and information products designed to address the environmental, economic, and public safety needs of stakeholders who call the Pacific Islands home.