Leveraging ERDDAP to Enhance CDIP Data Access

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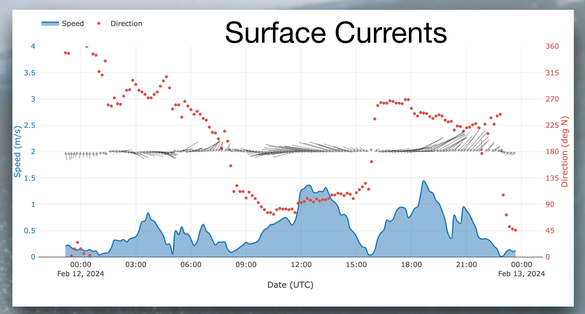
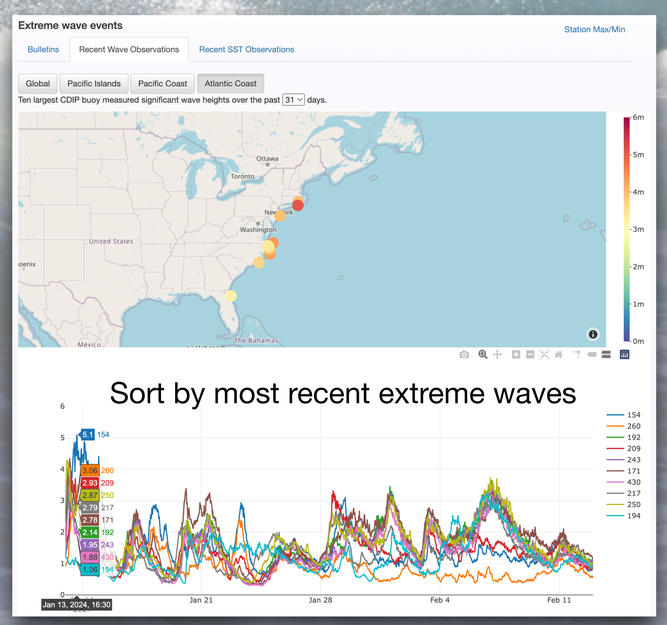
coastal data information program

Abstract

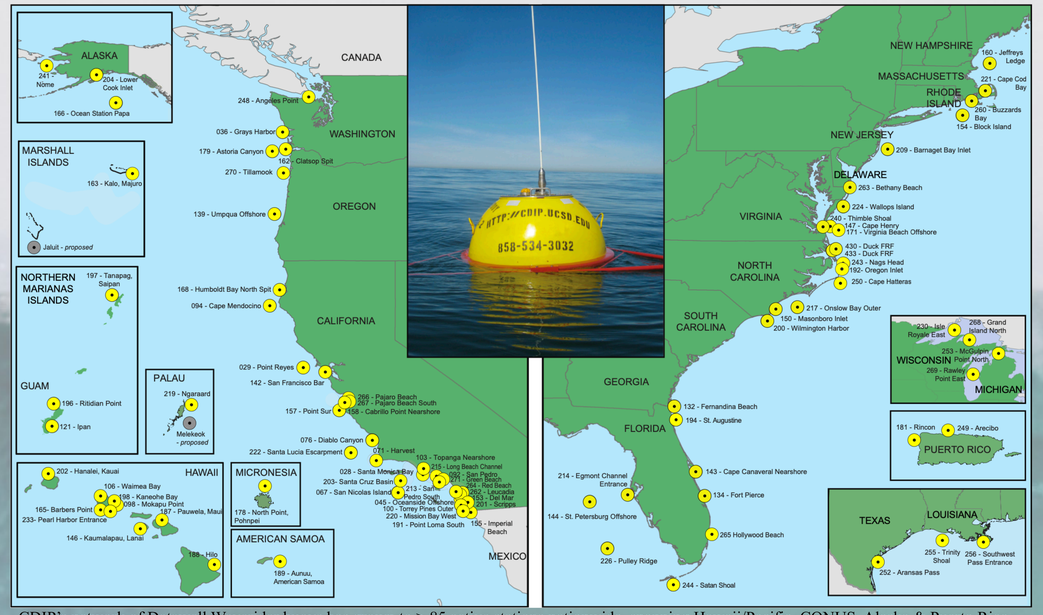
The Coastal Data Information Program (CDIP) at Scripps Institution of Oceanography operates an array of wave observing moored buoy stations along the coastlines of the US, with primary funding from the US Army Corps of Engineers. CDIP's ERDDAP servers are configured to disseminate realtime and historic wave buoy data, and are used to generate data products efficiently for both internal and external users. Additionally, they are playing a role in our new research focus that involves storing and visualizing operational models and forecasts of wave conditions. These ERDDAP servers provide access to ocean data in support of FAIR data compliance, enhancing the value of the data to both the public and the research community.



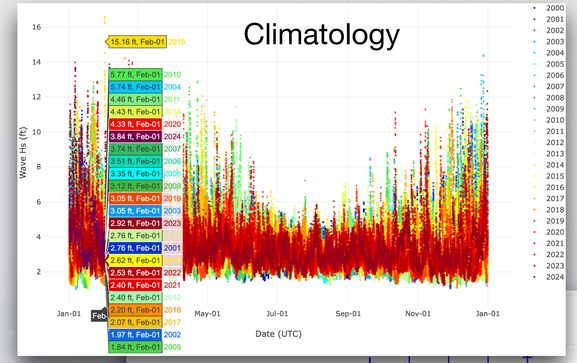
CDIP plots the latest Surface Current Speed and Direction with data served from ERDDAP.

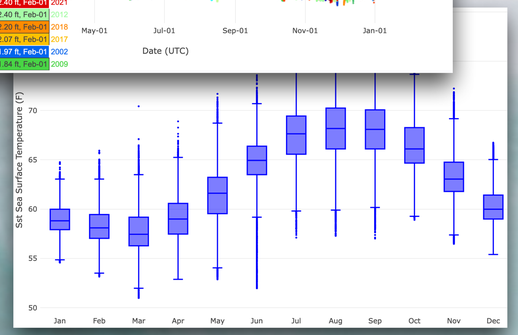


CDIP's Extreme Wave Events page uses ERDDAP's Latitude, Longitude, time filters and OrderByMax function to quickly find the latest extreme waves. ERDDAP offers handy functions for ordering by Variable, Min, Max, Mean, Sum, Closest, Count, Limit as well as other optional constraints.



CDIP's network of Datawell Waverider buoys has grown to > 85 active stations nationwide, spanning Hawaii/Pacific, CONUS, Alaska & Puerto Rico.





ERRDAP aggregates CDIP's archive and realtime NetCDF datasets. A REST API call to ERDDAP returns CSV and makes it easy to build custom interactive climatology plots showing 24 years of wave and temperature data for buoy station 028 - San Monica Bay, CA.

ERDDAP Benefits & Data Access

Data accessible in various file formats including:

CSV, JSON, HTML, PNG, KML, DAP, NetCDF & more…

KML OPeNDAP MATLAB netCDF

F.A.I.R.

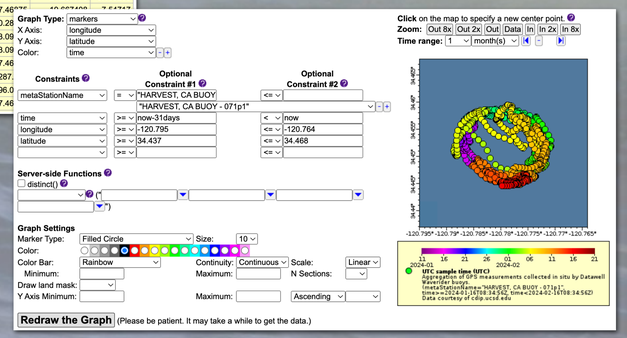
Findable

Accessible

Interoperable

Reusable

station_id	time	waveHs	waveTp	waveTa	waveDp	wavePeakPSD	waveTz
	UTC	meter	second	second	degreeT	m*m/hertz	second
071	2024-02-13T09:00:00Z	2.14	14.285714	9.370404	300.28125	11.907795	7.692308
071	2024-02-13T09:30:00Z	2.23	14.285714	9.152083	284.8125	10.882904	7.54717
071	2024-02-13T10:00:00Z	2.41	12.5	9.552476	301.6875	19.340345	7.8431373
071	2024-02-13T10:30:00Z	2.4	14.285714	9.786117	304.5	21.267778	8.163265
071	2024-02-13T11:00:00Z	2.15	13.333333	9.138998	297.46875	[illegible]	[illegible]
071	2024-02-13T11:30:00Z	2.44	13.333333	9.56733	300.28	[illegible]	[illegible]
071	2024-02-13T12:00:00Z	2.18	14.285714	9.106539	303.09	[illegible]	[illegible]
071	2024-02-13T12:30:00Z	2.01	13.333333	8.641276	303.09	[illegible]	[illegible]
071	2024-02-13T13:00:00Z	1.85	13.333333	8.577904	297.46	[illegible]	[illegible]
071	2024-02-13T13:30:00Z	2.06	13.333333	8.910247	287.	[illegible]	[illegible]
071	2024-02-13T14:00:00Z	1.97	13.333333	8.803582	296.0	[illegible]	[illegible]
071	2024-02-13T14:30:00Z	2.0	13.333333	9.081657	297.46	[illegible]	[illegible]

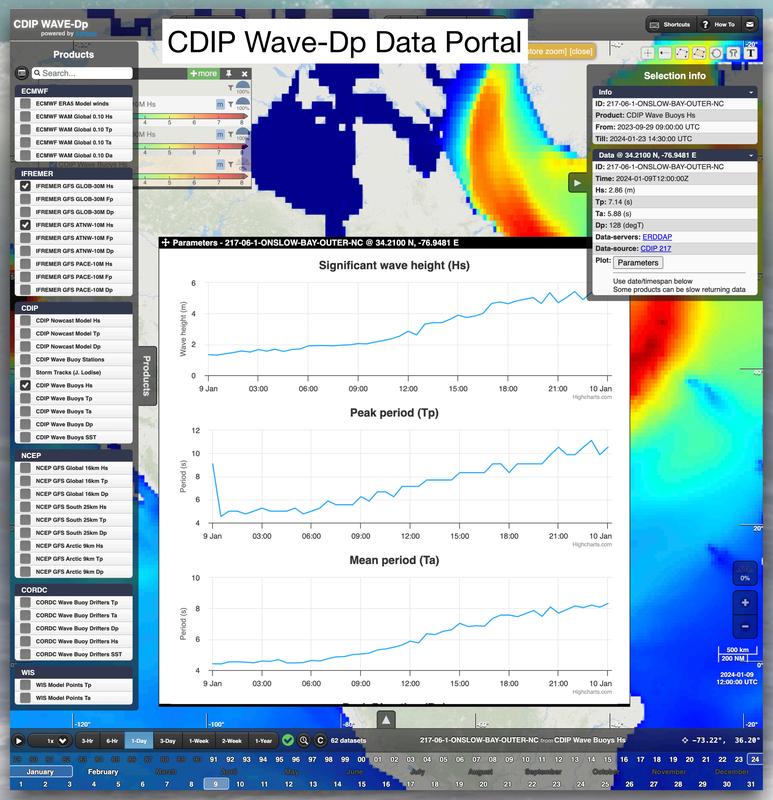


ERDDAP offers a web interface for easy out of the box tables, graphs and maps.

ERDDAP's REST API services allows CDIP and other users to build useful and interesting products.

Visit

https://cdip.ucsd.edu/



WaveDp.cdip.ucsd.edu combines models and point observations. Clicking a buoy returns Hs, Tp, Ta and Dp for the time range selected. All data was formatted in JSON by CDIP's ERDDAP server which is then plotted.

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