

WEST
COAST

OCEAN HEALTH

DASHBOARD

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Portal

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The West Coast Ocean Alliance & West Coast Ocean Data Portal Partnership



- The WCOA is the authorized Regional Ocean Partnership (ROP) for the West Coast
- The WCODP works in close coordination with the WCOA to support its goals, especially for comprehensive ocean and coastal data

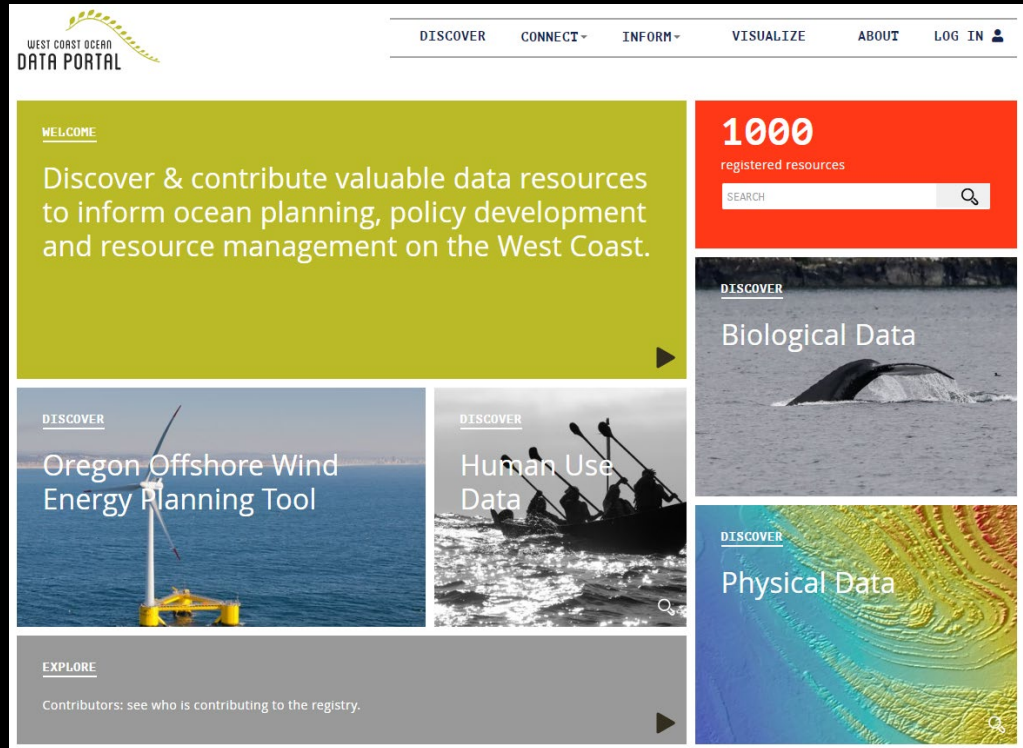
WCOA Goals:

- Compatible and sustainable ocean uses
- Effective and transparent decision-making
- **Comprehensive ocean and coastal data**
- Increased understanding of and respect for tribal rights, traditional knowledge, resources and practices

West Coast Ocean Data Portal

Mission (est. 2012)

- Increase the efficiency of data discovery to support activities that promote ocean health
- Provide a single region-wide point of access for data, tools, and human resources



The screenshot shows the homepage of the West Coast Ocean Data Portal. At the top left is the logo. A navigation bar contains links for DISCOVER, CONNECT, INFORM, VISUALIZE, ABOUT, and LOG IN. The main content area features a large green banner with the text: "WELCOME Discover & contribute valuable data resources to inform ocean planning, policy development and resource management on the West Coast." To the right of this banner is a red box displaying "1000 registered resources" and a search input field. Below the green banner are three smaller discovery tiles: "Oregon Offshore Wind Energy Planning Tool" (with a wind turbine image), "Human Use Data" (with a kayaking image), and "Physical Data" (with a bathymetry map image). At the bottom left is an "EXPLORE" section with the text "Contributors: see who is contributing to the registry." and a right-pointing arrow.

Enabling Conditions:

In 2019 – WCOA Members (e.g. California & Washington) were being asked by legislators and others to create ocean health indicator products

The WCODP also needed a direction to focus its effort and data products

It makes sense to look at ocean health on the West Coast at the regional scale, given all three states are part of the California Current Large Marine Ecosystem



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West Coast Ocean Health Dashboard



Dashboard Vision:

The West Coast Ocean Health Dashboard will communicate ocean health patterns and trends on the West Coast, in order to inspire coordinated action toward the stated goals of the West Coast Ocean Alliance (WCOA), including:

- Goal 3 - the provision of comprehensive ocean and coastal data, and
- Goal 1 - compatible and sustainable ocean uses.

- Target audiences include state, tribal, and federal ocean resource managers and policymakers, as well as the broader public.
- Dashboard results will raise awareness about regional ocean health issues; influence policy, resource management and regulatory decisions; and inform plans and actions by governments, including research priorities and resource decisions.
- The Ocean Health Dashboard will achieve these outcomes by providing a shared platform for assessing and interpreting data, harmonizing existing data streams, identifying data gaps, and telling a coherent story about ocean health on the West Coast.

Dashboard Conceptual Framework

- Goal to facilitate access to ocean health data, and to develop a common language for reporting of status and trends on the West Coast
- Uses the Pressure – State-Response conceptual model
- Goal of completing ~15-20 metrics





Ocean acidification

Pilot: Ocean acidification indicator



Coordinator: Jan Newton (NANOOS) and Steve Weisberg (Lead)



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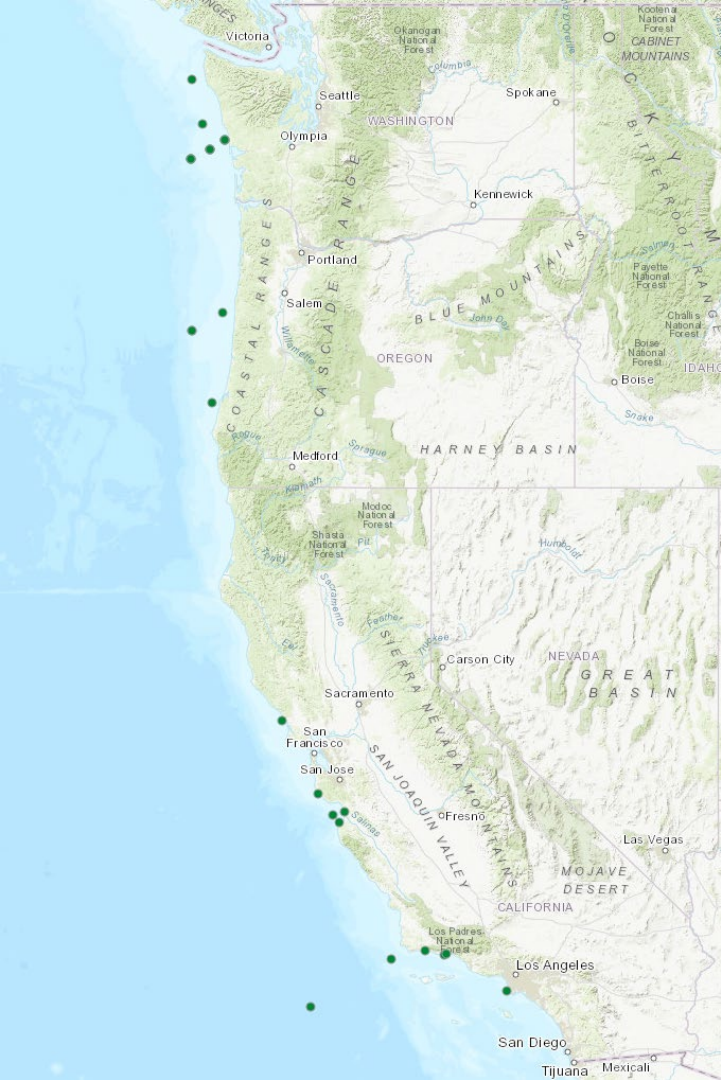
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Proposed OA Indicators

| Sources \ Indicators | Anomaly from reference level (pre-industrial) | Species-specific Chemical Threshold |
|----------------------|---|-------------------------------------|
| Observation-based | | |
| Model-based | | |

Challenge: Observational Data System

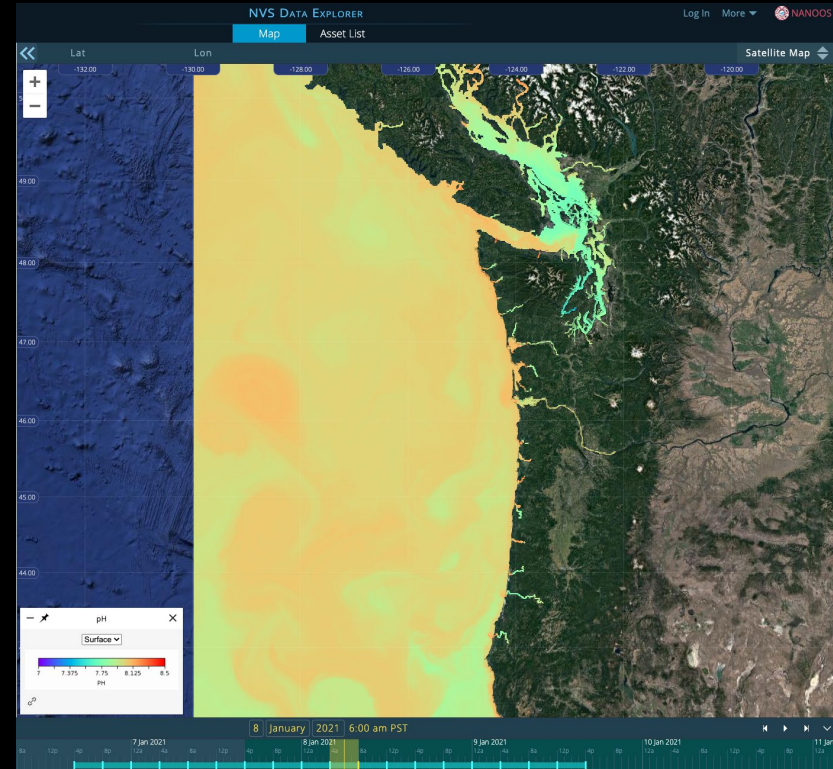
- West Coast OAH Asset Inventory was completed by the Pacific Coast Collaborative OAH Working group together with the IOOS Regional Associations (NANOOS, CENCOOS, SCOOS), states of CA, OR, WA, & Tribes.
- *Map Graphic: point assets with pCO₂ and SSS presently sampling at-least monthly in nearshore, offshore, or open ocean*



Challenge: Oceanographic Model domains

LiveOcean forecast

- Consulted with IOOS RAs, States, & Tribes to identify key ocean models
- Coastal Models:
 - LiveOcean (WA & OR)
 - *Edwards et al.* model (CA)
 - *McWilliams et al.* - SCCWRP model (Southern CA)
 - WCOFS (Coast-wide)

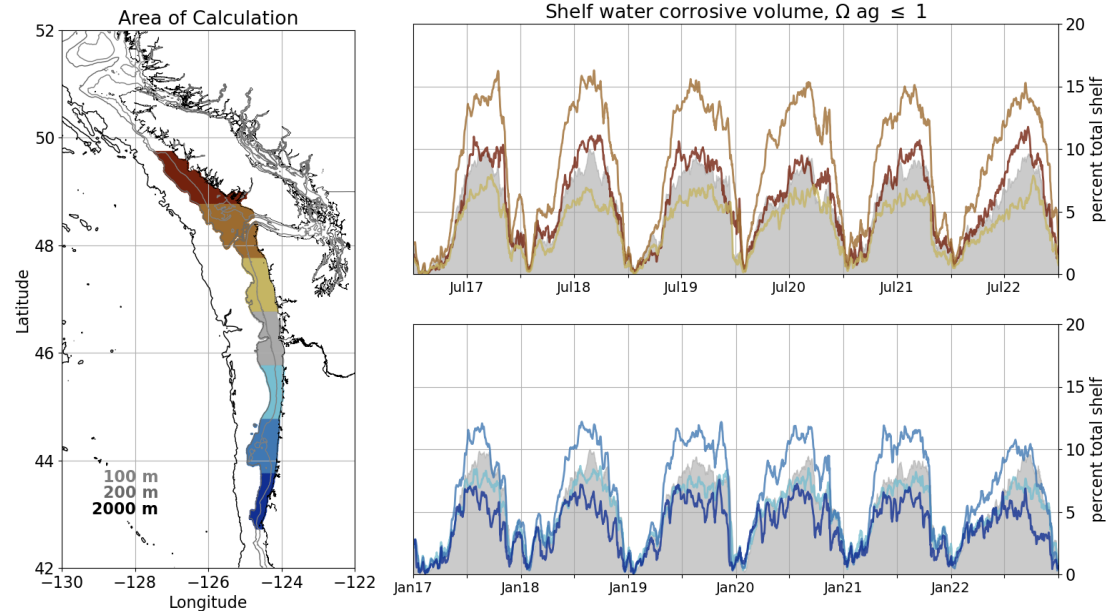


Challenge: Oceanographic Model domains

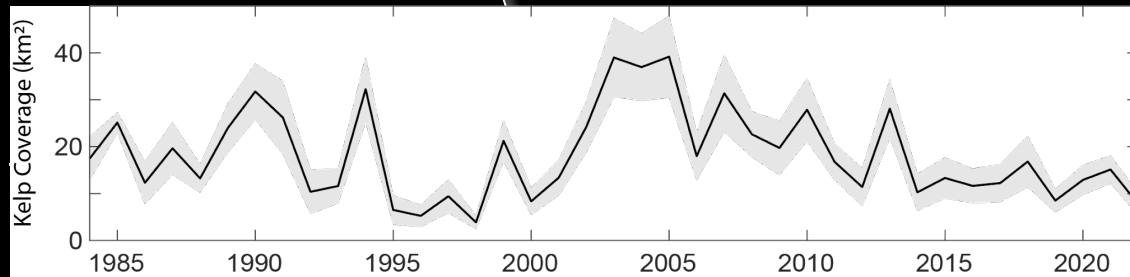
Live Ocean Model Results

Shows daily corrosive volumes from model data by region

Data presents the fractional corrosive volume, which is each region's calculated volume / total volume of shelf * 100



Kelp Indicator Development – So-Cal (Point Loma) Pilot Analysis



There is no long-term trend in southern California kelp coverage for the entire record ($p > 0.05$).

Methods:

The historical dataset of kelp coverage is derived from Landsat satellite multispectral imagery that date to 1984

We chose satellite over diver surveys because we found that local diver sites do not necessarily scale with whole-bed dynamics

We chose satellite over aerial surveys because of the higher frequency of satellite passes

We chose Landsat over other satellites because Landsat offers the greatest historical coverage

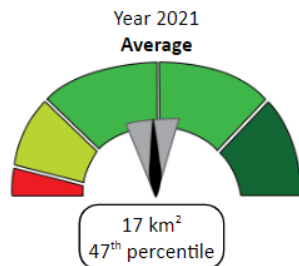
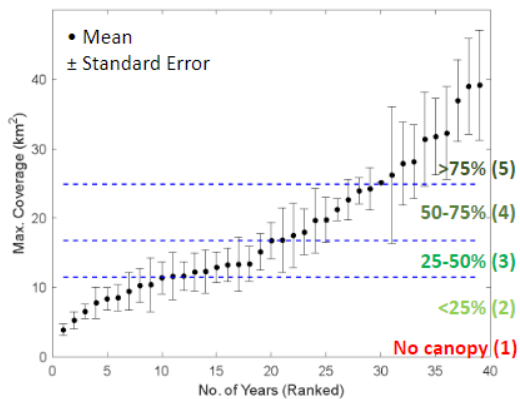
The kelp metric assessed is the annual maximum from quarterly data from any individual Landsat pixel containing kelp



Kelp Indicator Development Challenge: Grades

FUTURE OF THE KELP INDICATOR

- A gauge with categories based on historical percentiles



Benefits Realized from Dashboard Process



- Establishing baselines for ocean health serves as a mechanism for coordination across federal, state agencies, and tribes in the region.
- Indicator methods development is resulting in improved coordination among subject matter experts to develop standard approaches to data, language and thresholds for ocean health issues on the West Coast.
- Bolstered relationships with new and existing partners:
 - e.g. WCODP relationship with West Coast IOOS Regional Associations has always been important, but indicators give us a common place to focus energy.
- Greater exposure for WCODP leading to additional and updated data resources, which can then be incorporated into the catalog and promoted for data providers.
- The process is resulting in the identification (and seeking to address) of data and information gaps across the region - especially in the way data is collected and stored and disseminated.

NOAA support and involvement to-date



- Participation in WCOA and WCODP = valued guidance and feedback
 - NOAA Regional Ocean Partnership BIL Funding (FY22 – FY26?)
- Funding & support of coordination with other regional data portals
 - Regional Data Sharing Initiative (FY19 - 22)
- Coordination with Existing NOAA Indicator Efforts
 - California Current Integrated Ecosystem Assessment
 - National Marine Ecosystem Status Indicators
 - National Marine Sanctuary Condition Reports



Thank you!

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