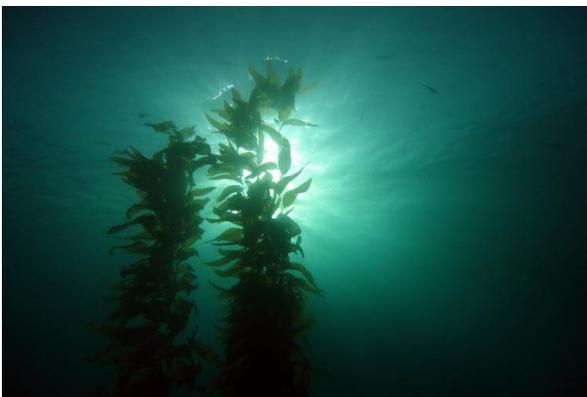




WEST COAST OCEAN DATA WCODN MEETING



November 3-4, 2014
Southern California Coastal Water Research Project Building
Costa Mesa, CA



WCODN Meeting Proceedings

December 2014

Prepared for the West Coast Governors Alliance on Ocean Health

On September 18, 2006 the Governors of California, Oregon and Washington announced the [West Coast Governors' Agreement on Ocean Health](#). The Agreement, now called an Alliance, launched a new, proactive regional collaboration to protect and manage the ocean and coastal resources along the entire West Coast.

www.westcoastoceans.org

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Front cover images—

Top left: Arcadia Beach, OR, (Andy Lanier)

Top right: Sea Lions at Anacapa Island, CA, (Dana Murray)

Bottom left: Giant Kelp at Catalina Island, CA, (Dana Murray)

Bottom right: Sentinel Rocks, WA, (Andy Lanier)

Design and production: Todd Hallenbeck and Kaity Goldsmith



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WEST COAST GOVERNORS ALLIANCE on OCEAN HEALTH

CALIFORNIA OREGON WASHINGTON

EXECUTIVE SUMMARY

The West Coast Governors Alliance on Ocean Health (WCGA) and the West Coast Ocean Data Network (WCODN) held a successful and productive meeting Nov. 3-4, 2014 in Costa Mesa, CA. The meeting brought together over 60 ocean and coastal data managers and data users from state and federal agencies, tribal governments, research universities, and NGOs to highlight accomplishments of the WCODN over the last three years, increase data sharing capacity through trainings and demos, solicit feedback on the West Coast Ocean Data Portal (WCODP¹), chart the long term strategy for the WCODN, and build a data sharing community for the West Coast.

Registered Participants

- 64 participants
- 15 State Agency Representatives (CA, OR, WA)
- 16 Federal Agency Representatives (NOAA, USGS, BOEM, USFWS)
- 6 Tribal Representatives (Makah, Quinault, Trinidad, Smith River, Yurok)
- 12 University Representatives (UCSD, CSUMB, CSULA, OSU, U. of WA)
- 15 NGO Representatives

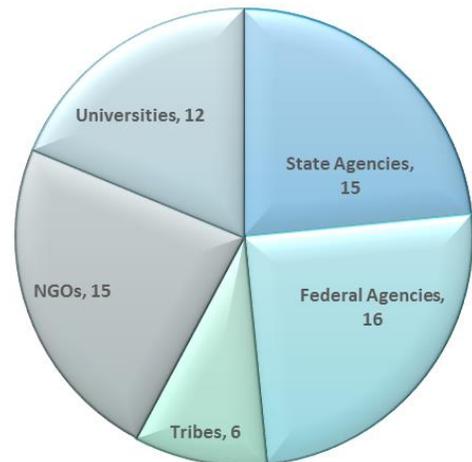


Figure 1. Participant entity representations

Day 1 – Highlighting Accomplishments and Building Capacity

The first day was focused on highlighting accomplishments of the WCODN, both in terms of developing and launching much needed WCODP functionality as well as supporting and contributing to increased data sharing capacity throughout the region. This included a discussion of the oceanographic data fellowship, technical assistance grants, and two relevant training sessions focused on metadata and web mapping services.

WCODP Demonstration and User Feedback

New features of the WCODP were demonstrated and discussed to highlight accomplishments and seek user feedback. The demonstrations included the newly launched [Data Viewer](http://maps.westcoastoceans.org)², which allows users to

¹ <http://WCODP.westcoastoceans.org/>

² maps.westcoastoceans.org

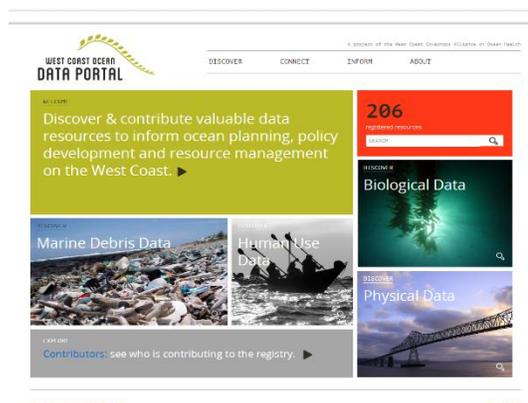
explore, understand, and inform ocean issues like marine debris. Additionally, [Networking tools](#)³ were highlighted as a communication platform for the WCODN to increase communication and outreach, discuss data sharing best practices, and highlight upcoming events and meetings. Initial feedback about this tool included the need to QAQC data, build attribute identification functionality in the Viewer, and qualify language around marine debris database uncertainty. WCODN members were encouraged to explore the tools and provide further feedback on the functionality and performance through several User Feedback Surveys that will be used to improve the WCODP over the next year. [See the full presentation here.](#)

User Feedback Surveys

1. [Catalog Survey](#)⁴
2. [Viewer Survey](#)⁵
3. [Network Survey](#)⁶

WCODN Technical Assistance

Our Technical Assistance contractor highlighted and discussed the partners, projects, and tasks that the WCODN will be working with to connect partner data resources to the WCODP. These partners include state and federal agencies, tribal governments, and NGOs seeking support and help to connect diverse datasets representing seafloor habitats, water quality, tribal ocean uses, oceanographic data, and estuary habitats to the WCODP. In order to increase data sharing capacity for the entire WCODN, participants discussed the best ways to distill and share the lessons learned from this planned technical assistance. [See the full presentation here.](#)



Oceanographic Data Fellowship

Our Sea Grant Fellow, Laura Lilly, highlighted the data products she created through our collaboration and partnership with the West Coast IOOS Regional Associations. Working with data managers at SCCOOS, CeNCOOS, and NANOOS, she developed and integrated oceanographic data related to ocean currents, wind, and ocean acidification monitoring assets to better connect our two communities. [See the full presentation here.](#)

Successful Data Sharing: Publishing Great Metadata

WCODN member Tanya Haddad, Oregon Coastal Management Program, led a highly informative training dedicated to developing and publishing discovery metadata. Topics included metadata standards, metadata editing tools, and metadata catalogs. The training highlighted steps individuals could take at their organizations to develop and share metadata with the WCODP Catalog. [You can view the technical training here.](#)

³ WCODN.westcoastoceans.org

⁴ <http://goo.gl/ZfrCaS>

⁵ <http://goo.gl/7MUNAe>

⁶ <http://goo.gl/WhlQdc>



Successful Data Sharing: Publishing Great Web Services

WCODN Member Anna Verrill, NOAA Office for Coastal Management, built from Tanya's training to discuss and demonstrate best practices for publishing web services. This topic is incredibly relevant as many organizations are expanding their capacity to publish and consume web mapping services and online map creation. Training topics included types of web mapping services for different purposes, publishing software, and tips for optimizing service performance. [You can view the technical training here.](#)

Day 2 – WCODN Coordination and Charting a Path Forward

The second day was focused on hearing from WCODN partners about data and WCODP activities. This helped inform a discussion about the role the WCODN can play in coordinating these efforts. The group also had a robust discussion about the role of the WCODP, future issue areas of regional importance, data needs, and funding strategies to sustain the WCODN and WCODP over the coming years.

WCODN Partner Updates

WCODN partners had an opportunity to share updates about their recent data and WCODP development efforts. We heard from state and federal agency, tribal, university, IOOS, and NGO data managers. Partners also discussed the value they find in the WCODP and participating in the WCODN, both for data discovery, training and capacity building, and connecting with colleagues.

Regional Planning Body Status and Updates

John Hansen, West Coast RPB Coordinator, provided updates related to the function and status of the West Coast Regional Planning Body and discussed opportunities to support and coordinate with this new regional effort. [See the full presentation here.](#)

West Coast Governors Alliance Priorities and Goals

Kim McIntyre, WCGA coordinator, provided an overview of the WCGA's mission and goals related to regional ocean governance, highlighting the Marine Debris, Ocean Acidification, and Sea Level rise issues as priorities for the West Coast. Kim also provided an update about the upcoming Ocean Summit and how it will inform future regional priorities. [See the full presentation here.](#)



Charting a Path Forward

The WCODN meeting culminating in participants outlining a strategic plan for focusing efforts over the next two years. The WCODN discussed its future role in helping inform regional ocean issues, increasing data sharing capacity, and developing data coordination mechanisms for the West Coast. Also included in the discussion were data needs, value and role of the WCODP, future issue areas to inform and support, outreach strategies and mechanisms, and funding strategies. These strategies and recommendations will be used to inform funding proposals over the next two years.



MEETING PROCEEDINGS

Attendee Summary

The West Coast Governors Alliance on Ocean Health (WCGA) and the West Coast Ocean Data Portal Action Coordination Team (WCODP ACT) held a successful and productive meeting of the West Coast Ocean Data Network Nov. 3-4, 2014 in Costa Mesa, CA. The meeting brought together over 60 ocean and coastal data managers and users from state and federal agencies, tribal governments, research universities, and NGOs to discuss strategies for better data sharing along the West Coast. Attendees participated in-person and remotely from across the West Coast and US (Fig. 2).

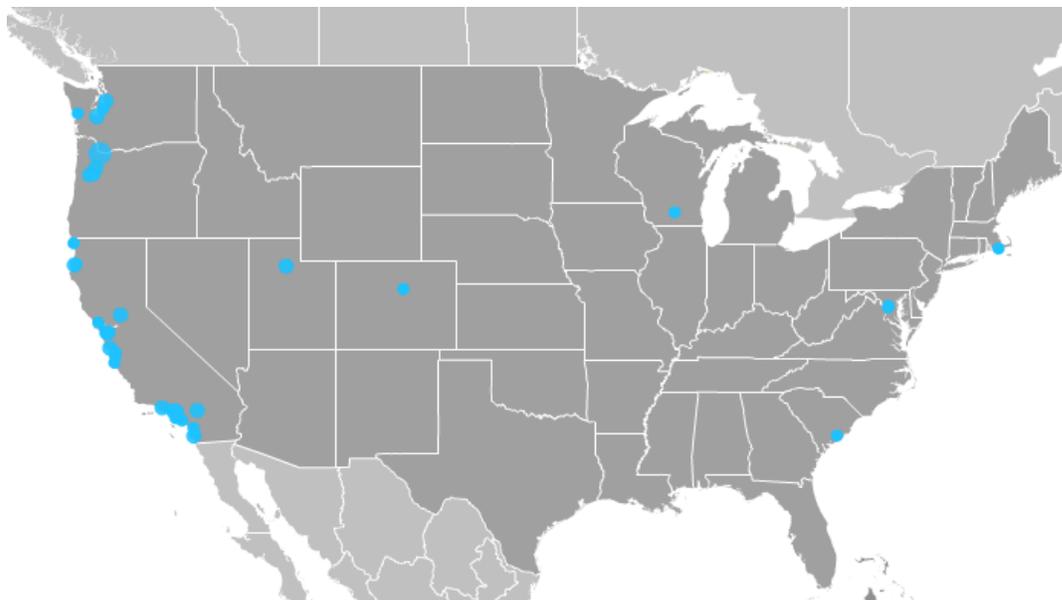


Figure 2. Geographic distribution of meeting attendees.

Participants spanned a variety of roles in coastal and marine data management and use (Fig. 3). Meeting participants connected with colleagues, provided insight into critical ocean and coastal data issues, offered input for a future strategy, and develop methods to more effectively share ocean and coastal data on the West Coast.

- 66 participants over 2 days
- 15 State Agency Representatives (CA, OR, WA)
- 16 Federal Agency Representatives (NOAA, USGS, BOEM, USFWS)
- 6 Tribal Representatives (Yurok, Trinidad, Quileute, Smith River, Quinault, Makah)
- 15 NGO Representatives (university, ocean conservation, industry)

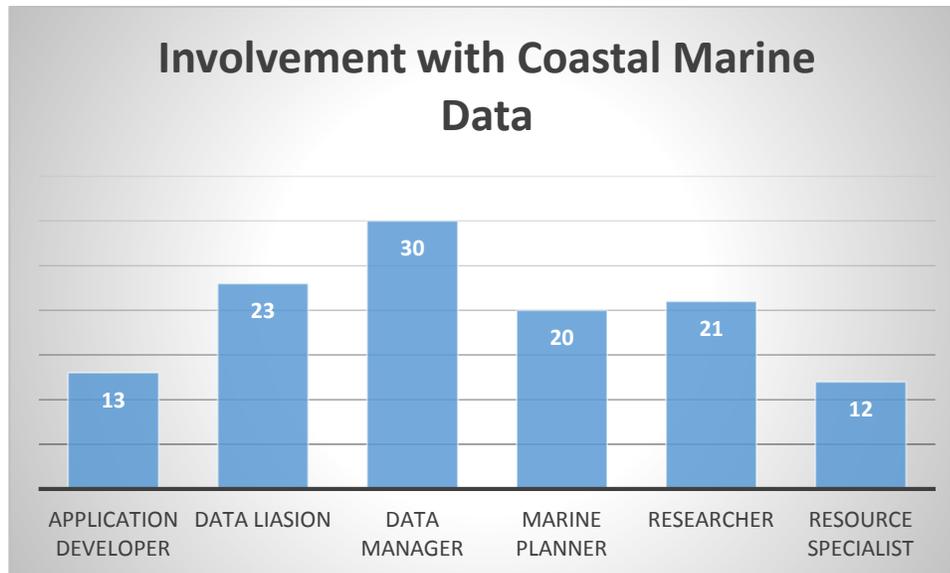


Figure 3. Participants self-identified role in coastal and marine data. Participants were allowed to select all appropriate identifiers.

Meeting Opening Remarks

Joan Barminski, BOEM, WCGA Executive Committees

Joan opened the WCODN meeting by emphasizing the meaningful work done by the WCODN and the WCODP ACT in supporting West Coast Governors Alliance on Ocean Health priorities and goals and raising the capacity of the WCODN members to share and use data. Thanks were given to the Southern California Coastal Water Research Program for hosting the event and providing a fantastic venue.

This group has moved from initial concepts and ideas, to the formation and growth of the WCODN community, to the development and launch of the WCODP in just three short years. The impressive work and accomplishments of the past three years are due to the region wide recognition of the importance of data sharing and the collaboration across institutions, agencies, and tribes. This meeting continues the momentum that has been growing within state, tribal and federal governments to do a better job of opening up and sharing the geospatial data that is so critical to decision making. Joan emphasized that the WCGA Executive Committee thinks the work of the WCODP team and this WCODN is fundamental to helping our region meet these goals. She noted that this group is uniquely poised to help ensure that as we face current regional issues like marine debris impacts on our coast, sea level rise, and ocean acidification we have the data and tools necessary to understand the science, educate stakeholders, and inform decisions.



The WCODN is poised to play a significant role to ensure that the most current and authoritative data from across all disciplines will be used in the upcoming marine planning process.

Joan applauded the WCODP and the great strides made in setting the foundation for this work with the launch of the Data Viewer and marine debris tools; however, she cautioned that the group needs to look ahead to anticipate the issues and needs that will shape the next set of policy questions to be addressed. She noted the current progression of marine planning on the West Coast, and the role the WCODN can play to ensure that the most current and

authoritative data from across all disciplines will be used in that process.

On behalf of the WCGA Executive Committee, Joan thanked the WCODN for the important work they contribute, and emphasized that despite the technical nature of the discussions our work has real on the ground impacts to make West Coast waters safer, healthier, and more productive. She ended her remarks by thanking NOAA's Regional Ocean Partnership Funding Opportunity in promoting the good work of Regional Ocean Partnerships to match ocean governance to the scale of the ecosystems.

WCODP Demonstration and User Feedback

Todd Hallenbeck, WCODP Coordinator ([Presentation](#))

The [WCODP](#)⁷ is a project of the [West Coast Governors Alliance on Ocean Health \(WCGA\)](#)⁸ to increase discovery and connectivity of ocean and coastal data and people to better inform regional resource management, policy development, and ocean planning (Fig. 4). The WCODP addresses these goals through the development of technical infrastructure and a human WCODN of data managers and users. The WCODP will now include a Data Viewer to help will inform priority West Coast Ocean issues, including tracking marine debris sources and patterns, adapting to sea-level rise, understanding impacts of ocean acidification on our coasts, and marine planning.

The WCODN is dedicated to increasing communication between state and federal agencies, tribes, universities, NGOs, and industry to leverage resources for new data collection, develop data best management practices, conduct trainings, and ensure compatibility of regional datasets. The WCODN boasts a variety of members including data collectors, data managers, resource managers, policymakers, ecologists, GIS specialists, computer scientists, researchers, and more. The WCODN guides the development of the WCODP.

This WCODN has proven to be beneficial in sharing data, communicating best practices, and supporting coordinated efforts for identifying and addressing data priorities. Having the WCODN in place

To increase **DISCOVERY** and **CONNECTIVITY** of ocean and coastal data and people to better **INFORM** resource management, policy development, and planning on the West Coast.

Figure 4. Goals of the WCODN

7 <http://www.WCODP.westcoastoceans.org>

8 <Http://westcoastoceans.org>

saves time and money and reduces duplicative efforts. This cooperation helps ensure that best available science and tools can help inform decision making for healthier oceans.



Participants of the WCODN Meeting 2014 (remote participants not pictured).

The [WCODP](http://WCODP.westcoastoceans.org/)⁹ (Fig. 5) demonstration of new features highlighted the development of the [Data Viewer](http://maps.westcoastoceans.org/visualize/#x=-124.56&y=40.46&z=5&logo=true&basemap=ESRI+Ocean&tab=data&legends=false&layers=true)¹⁰. The Viewer provides visualization tools to view and explore data layers that are being published through web mapping services. It was developed in conjunction with the Marine Debris ACT who helped articulate their needs to visualize beach cleanup, derelict gear, and environmental data to understand impacts along our coast. This new feature provides coastal decision makers with a tool to track marine debris and help prioritize clean ups and advocate for policies to reduce the impact of trash on our beaches. There was an open request for feedback on the feature to be submitted through a series of surveys (including a [Catalog Survey](http://goo.gl/ZfrCaS)¹¹, [Viewer Survey](http://goo.gl/7MUNAe)¹², and [Network Survey](http://goo.gl/WhlQdc)¹³) or directly to the coordinator.

⁹ <http://WCODP.westcoastoceans.org/>

¹⁰ [http://maps.westcoastoceans.org/visualize/#x=-](http://maps.westcoastoceans.org/visualize/#x=-124.56&y=40.46&z=5&logo=true&basemap=ESRI+Ocean&tab=data&legends=false&layers=true)

[124.56&y=40.46&z=5&logo=true&basemap=ESRI+Ocean&tab=data&legends=false&layers=true](http://maps.westcoastoceans.org/visualize/#x=-124.56&y=40.46&z=5&logo=true&basemap=ESRI+Ocean&tab=data&legends=false&layers=true)

¹¹ <http://goo.gl/ZfrCaS>

¹² <http://goo.gl/7MUNAe>

¹³ <http://goo.gl/WhlQdc>

Another new feature highlighted was the [Networking tools](#)¹⁴, which allows WCODN members to communicate internally and share with outside stakeholders WCODP activities and events. The blog provides a venue to inform potential members about the WCODP, showcase data contributors, and highlight new data additions. Additionally, the Networking tools include a training resources module that helps to connect partners within the WCODN around specific questions or issues and develop best practices. Feedback was also welcomed on this new tool within the WCODP.

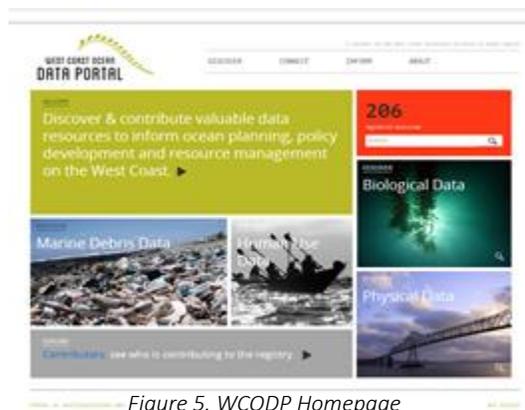


Figure 5. WCODP Homepage

WCODN Technical Assistance Allison Bailey, SoundGIS, ([Presentation](#))

In the summer of 2014, the WCODP conducted a technical needs survey to solicit WCODN partner technical assistance needs to connect data resources to the WCODP. Preliminary requests and interest from the surveys revealed the need for assistance primarily with metadata, web services, and data development. In order to help WCODN partners overcome these technical barriers to connecting with the WCODP, the WCODP has followed up with 10 partners to provide one-on-one assistance. The 10 partners and their general needs are indicated in the Table 1. The next steps in this project are to continue to work one-on-one with selected partners between the winter of 2014 through the summer of 2015, to connect their data resources. From these efforts, the WCODP intends to develop and/or update best practices and training materials to be made available on the winter WCODN. There is also potential to conduct training webinars on major technical assistance issues and common solutions that can be implemented at a variety of organizations. The WCODP remains committed to getting more partners involved in the WCODN by assisting them in [overcoming technical barriers](#)¹⁵.

Data Partner	Type of Assistance			
	Metadata	Web Services	Data Develop	Other
Surfrider	X			
OPC	X			
OR DOGAMI	X	?		
Point 97/ECOTRUST	X	X		X
OCNMS	X		?	
PSMFC		X		X
Quinault	X		X	
NMFS/OSU	X			
USGS		X		
SCCOOS	X	?		X

Table 1. Partner technical needs.

¹⁴ <http://WCODN.westcoastoceans.org/blog/>

¹⁵ <http://WCODN.westcoastoceans.org/training-resources/>



Oceanographic Data Fellowship

Laura Lilly, California Sea Grant Fellow, WCODP and IOOS, ([Presentation](#))

Laura Lilly summarized her fellowship goals and products from the past year. Laura was tasked with identifying priority ocean management questions particularly around ocean acidification and marine debris, identifying the accessibility of ocean data products to inform these questions, and creating a suite of data products that can be incorporated into the IOOS and WCODP¹⁶.

The initial stage of the Fellowship consisted of an information gaining phase, in which Laura surveyed policy experts and obtained datasets related to oceanographic needs of marine debris experts (including river runoff, surface currents, winds, and waves), as well as ocean acidification needs (including real time CO₂ monitoring, long term CO₂ trends, and predictions of pH/pCO₂).

Laura used this information and data sources to develop surface currents products to be included in the WCODP. The surface currents data was registered in the Data Catalog to the Marine Viewer for geospatial representation. The products are also available through the Data Catalog in several other formats (including GeoTiff downloads, 2D static, and Python codes).

Laura addressed some of the priority needs of the Ocean Acidification community by developing an ocean acidification monitoring assets inventory consisting of a data layer showing the locations of monitoring infrastructure so that researchers, policymakers, and interested stakeholders can see where the data exists and who is managing the monitoring assets (Fig. 6). This data is available in the WCODP Data Catalog, Data Viewer, and in the IOOS OA forum.

Another product developed during the Fellowship were graphic plots of long term sea surface temperature and wave height data from six stations along the West Coast (Fig. 7). These graphs can be used to analyze the long term relationship between sea surface temperatures and wave heights especially important with our changing climate. These plots are in IOOS, WCODP, and will likely be housed in a climatology app being produced by NANOOS.

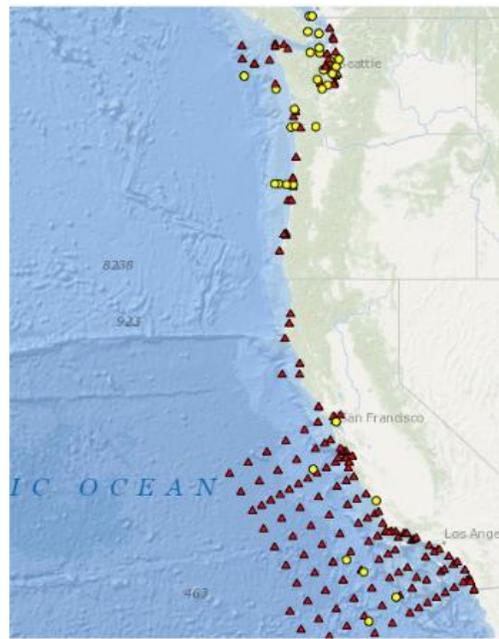


Figure 6. Ocean acidification assets.

¹⁶ <http://WCODN.westcoastoceans.org/data-update/data-update-new-data-sources-from-ioos-and-data-gov/>

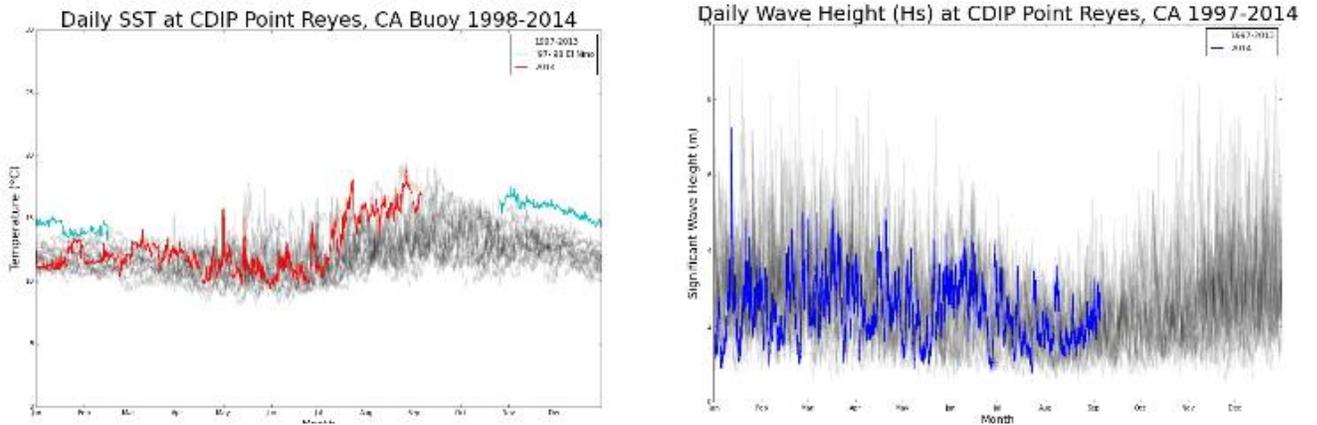


Figure 7. SST and Wave Height for Point Reyes, CA

While Laura’s fellowship has come to an end, there are certainly more projects that can evolve from the work that she has begun. One such example is a comparative product looking at modeled surface currents and real time surface currents. Another potential product to create and incorporate into the WCODP is future predictions of pH and Aragonite saturation along the California Current System to inform ocean acidification efforts. Other plots that should be produced would compare wind and surface current data. Finally, Laura emphasized the importance in comparing and correlating social stories and policy issues with these data sets. The Data Viewer has begun to take this goal on and will continue to do so as it engages other domain and policy experts. Overall, the Fellowship was an effective method of promoting a connection between the IOOS and WCGA and the two entities will work towards continuing this partnership through new funding.

Training Sessions

One of the most important roles that WCODN partners identified as being valuable to increasing access to data, is the ability of the Network to share and develop best practices. By discussing specific technology or techniques, documenting those discussions, and sharing them widely among data managers the WCODN has the potential to raise the technical capacity of the region. The WCODN continued this role by hosting two training sessions during the meeting to discuss publishing metadata and web services.

Technical Training: Publishing Great Metadata

Tanya Haddad, Oregon Coastal Management Program, IT Working Group Lead, ([Presentation](#))

This technical training built a common understanding of metadata best practices including developing discoverable metadata and increasing understanding of the Catalog Service for the Web (CSW). Tanya explained the various metadata standards, metadata management tools, workflows, and publishing methods. This presentation also provided WCODN partners the opportunity to discuss best practices and ask questions about metadata (Fig. 9).

MetaData Best Practices: Critical items for discoverable data		
Identification Information: <ol style="list-style-type: none">1. Title2. Abstract (Description)3. Publication date4. Point of Contact Info5. Resource URL (If data is downloadable or available as a service)6. Website URL7. Constraints	Location Information: <ol style="list-style-type: none">1. West Bounding Longitude2. East Bounding Longitude3. North Bounding Latitude4. South Bounding Latitude5. Browse Graphic URL	Descriptor Information: <ol style="list-style-type: none">1. Theme Keywords2. Resource Description

Figure 9: Best practices for metadata discovery.

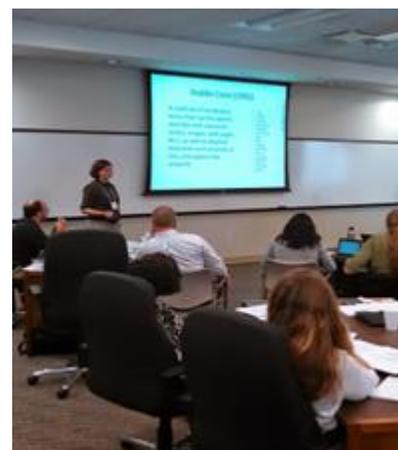


Figure 8. Tanya Haddad presenting on Publishing Great Metadata

Successful Data Sharing: Publishing Great Web Services

Anna Verrill, NOAA Office for Coastal Management, ([Presentation](#))

The Publishing Great Web Services training session increased partners understanding of web mapping services, their uses, and tips for publishing. Anna described the different types of data and web services formats. She provided an overview of various web services (including cartographic portrayal services, data delivery services, and data processing services), their functionality, and the pros and cons of these services. This training session also discussed web services optimizations (including service best practices, interoperability, and increasing efficiency and performance). Finally, Anna reviewed best practices for sharing and publishing data that emphasized testing products with the perspective of the



end user in mind (Fig. 10). This session again provided partners the opportunity to ask questions and share valuable experiences and tips.

Pro-Tips			
Tips for MapServer: 1. Fill out your server (and service) metadata 2. Speed up services by: -providing explicit extents -spatial indexes -providing appropriate caches	Tips for GeoServer: 1. Fill out your server (and service) metadata 2. Disable any services not being used 3. Serve from formats with spatial indexes	Tips for ArcServer: 1. Compress database 2. Enable WMS capabilities 3. Set min/max instances to # of servers	Tips for ArcGIS Online: 1. Feature Services 2. Tile Services -create tiles within desktop to save credits

Figure 10. Pro-tips for data sharing.

Training Session Recap and Discussion

Danielle Molnar, NOAA Office for Coastal Management

During this session, WCODN partners recommended other technologies, trainings, and resources to highlight and make available through the WCODP. A priority for the WCODN over the next year will be to build technical training resources to expand data sharing along the West Coast. The WCODP has already developed a training resources module within the Networking tools that partners can access and will continue to develop this resource based on suggestions at the meeting as well as best practices that are developed through the technical assistance. Recommendations for an initial series of technologies and techniques provided during this discussion are summarized below:

Recommendation for group trainings and resources:

Trainings

- Server maintenance and Java application.
- Thread server connections.
- EML
- ArcGIS Online
- Non-technical trainings for data life cycle, focusing on the basics, i.e. guidance for how to take data from the WCODP and transform it for specific use.

Resources

- Incorporating the Metadata and Web Mapping trainings from the WCODN meeting onto the WCODP.
- Sharing solutions to cartography related issues on the WCODP, and when appropriate including layer files solutions. It was discussed that this could be shared in a separate module within the WCODP user forum.

WCODN Partner Updates

The objective of this session was to understand the status and progress of WCODN partners in developing data catalogs, WCODPs, and products, and to explore synergies with the WCODP. WCODN partners provided updates on their data and WCODP developments, and discussed how they can contribute to the WCODP and WCODN, and how the WCODP and WCODN can help their work. Partners also presented on the value that the WCODP provides to their organization (Fig. 11). Common observations were that the Portal and Network provide a great forum to share technical knowledge, coordinate on data priorities, and advertise their data to new audiences.

WCODN Partner Update presentations are available in Appendix C.

Value of the WCODP to WCODN Partners

- Informational resource for best practices guide
- Knowledge transfer between practitioners
- Promotes regional to local interaction
- Validates work required for achieving interoperability across domains
- Technical assistance

Figure 11. Value of the WCODP as expressed by WCODN partners.



Regional Planning Body Status and Updates

John Hansen, West Coastal Marine Planning Coordinator, ([Presentation](#))

John Hansen provided an update on the formation, structure, timeline, and goals of the Regional Planning Body (RPB) at this time. The creation of the West Coast RPB is in response to the implementation of the National Ocean Policy, established under executive order 13547, to encourage marine spatial planning throughout the nation. The RPB is currently bringing together partners at different levels of governance (state, federal, and tribal) to talk about what the RPB is and will look like on the West Coast.

The RPB is tasked with regional marine planning based on a scientific and information infused approach, with an intended result of predictability, reducing conflict, and preserving critical ecosystem functions. The West Coast RPB is using the Marine Planning Handbook voluntary guidelines established in the NOP as a template structure for how to operationalize the RPB, however there is much flexibility among the partners to determine exactly what the West Coast RPB will look like and how it will function. Thus, while the NOP establishes 1 large region for the entire West Coast, partners are exploring the possibility of a coast-wide or a sub-regional approach or some combination of the two. Some base elements of an RPB include co-leads (consisting of oversight secretariat from each of the 3 sovereigns), membership (from state, federal, and tribal representation), and ex-officio members that provide additional expertise to close informational gaps. Outside of these base elements, the West Coast RPB is currently determining what approach is the best for our particular situation. Some questions that remain in designing this approach are: 1) What issues and priorities will be the focus? 2) What leverage points exist with existing efforts and constraints? 3) What will the outreach and engagement approach be? 4) How will the large geographic area be addressed? 5) What structure is most appropriate?

This approach to regional marine planning will require significant data. The RPB is thus committed to building on existing data coordination and to enhancing these efforts.

Thus, there is a clear link to be made between the needs of the RPB and the WCODP resources and WCODN interactions. As the group continues to form (see timeline in Figure 12), the RPB plans to utilize the WCODP and WCODN to help provide information and tools to inform priority issues and the WCODP will continue to engage the RPB to understand data needs.

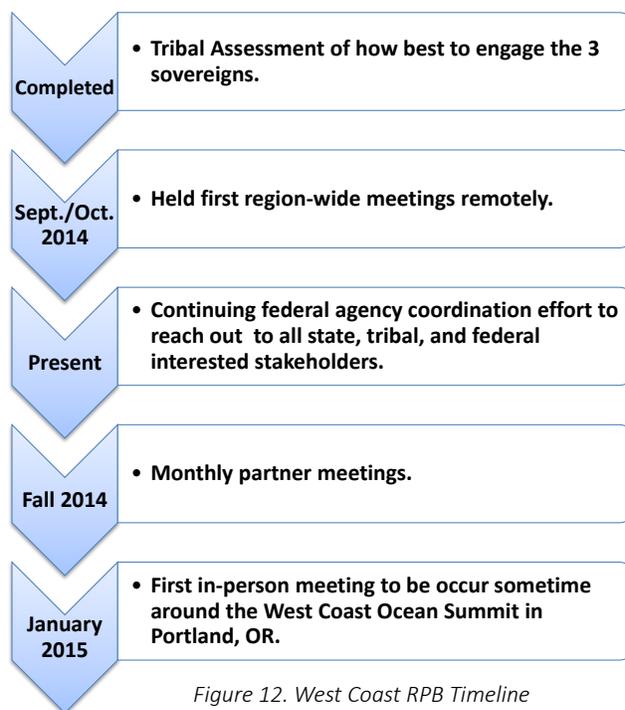


Figure 12. West Coast RPB Timeline

West Coast Governors Alliance Priorities and Goals

Kim McIntyre, WCGA Coordinator, ([Presentation](#))

This session provided some background and context for the West Coast Governors Alliance (WCGA) goals and priorities, including climate change and sea level rise, marine debris, and ocean acidification. The WCGA is structured around an Executive Committee that sets policy direction and Action Coordination Teams (ACTs) that carry out workplans to address ocean health issues. The Climate Change ACT work plan included the development of an NSF funded West Coast sea-level rise study (completed in June 2012), and an assessment of shoreline change in West Coast states. In 2013, the ACT conducted a strategic planning workshop that brought together expertise from NGOs, governments, and academia to discuss regional climate priorities and determined that resiliency and adaptation to climate change would be the focus moving forward. Priority projects for this ACT include West Coast sea level and storm hazard mapping and decision support tools and the development of a local adaptation Funding Catalog. The ACT is drafting a report on the creation of a West Coast sea level and storm hazard mapping tools that can provide an authoritative foundation for local adaptation, consistency and continuity of tools at different scales, long-term cost saving for local jurisdictions, and lead to a consensus approach to mapping hazards. The Funding Catalog is an effort to identify possible sources of funding for adaptation projects and to make this information available to users and local planners. This effort is intended to reduce the time it takes to get projects funded and to leverage work that is already happening. Both of these projects could make use of existing infrastructure, expertise, and technology of the WCODP and Network, and the group will remain closely engaged with the Climate Change ACT.

The Marine Debris ACT is currently focusing on the development of a West Coast Marine Debris Alliance that will be an open, collaborative effort to eliminate marine debris. This Alliance will work to implement the West Coast Marine Debris Strategy to address emergent marine debris problems to achieve their vision of zero debris entering the marine environment from land and vessels, and minimal effort required for existing debris. The Alliance will consist of state, federal, and tribal individuals that make up a steering committee, working groups, and general ACT members. Sector representatives will have 3 year term rotating seats. The Alliance is currently establishing the first year steering committee, and general membership will open in early 2015. The Marine Debris ACT is also considering the long term maintenance and administration of the Marine Debris Database¹⁷.



Ocean acidification has recently emerged as a priority issue on the West Coast, and the WCGA is working to develop a coordination framework for and resources for the various entities engaged in OA work, including the IOOS, C-CAN, and the OA&H Science Panel. The Science Panel is a collaborative effort between California, Oregon, Washington, and British Columbia to understand the science behind ocean acidification and engage policy makers and resource managers to incorporate this knowledge in

¹⁷ debris.westcoastoceans.org

their decision making. The WCODP has also developed an information hub for data related to Ocean Acidification to inform the Panels work and it is currently available through the Data Catalog.

The WCGA is currently working to understand shared ocean health priorities between local, state, federal, and tribal governments. Local government workshops, webinars, and surveys are being conducted in all three West Coast states over the coming months to ask for input on regional ocean



health issues impacting local governments. In January, the West Coast Ocean Summit will bring state, federal, and tribal sovereigns together to discuss shared priorities and to establish a long-term coordination for regional ocean governance. The Summit is intended to enhance dialogue between the three sovereigns and to establish strategies to identify opportunities and barriers for cooperation. A collaborative planning team consisting of the three sovereigns is drafting an agenda for the event that addresses coastal resilience and climate change adaptation, ocean acidification, offshore energy development fisheries, marine protected areas, regional data sharing, marine planning, and education. Ultimately, the WCGA will seek consensus on five or so priority issues, The West Coast Ocean Summit is an invitation only event to take place January 12-14, 2015.

Data and WCODP Coordination

Todd Hallenbeck, WCODP Coordinator, ([Presentation](#))

This discussion built on the updates from Network partners, the RPB, and the WCGA and prepared the group to chart a strategy for data development coordination and WCODP connections (Fig. 13). Given the various entities working to identify regional priorities and develop data to address those priorities, coordination among the entities is critical to efficient use of resources. By encouraging this coordinated approach the Network hopes to reduce duplication and leverage existing efforts, coordinate on identifying priorities, save money and time, and meet stakeholder goals and expectations for efficient and coordinated government. However, these benefits do not come without challenges. In the case of the WCODP the large West Coast geography results in a large diversity of partners, different priorities and mandates, and no formal mechanism for coordination. None-the-less, these regional needs exist, and the WCODP and WCODN can serve as the forum to have these discussions and coordinate around data development, collection, and priority setting.

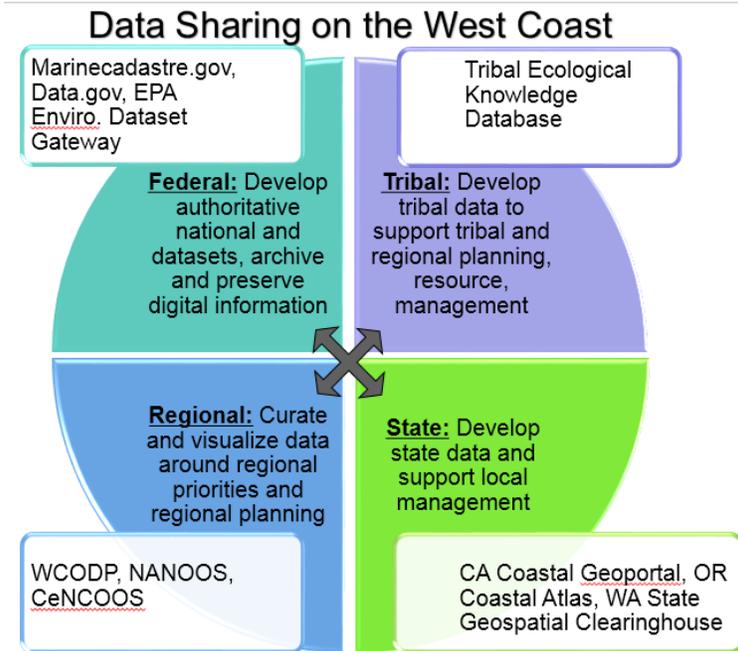


Figure 13. Diagram of Interconnections in West Coast data sharing.

During this discussion, the WCODN articulated a role of the group to collectively identify data needs and priorities. However, the WCODN members cautioned against reinventing the wheel and addressing data needs and priorities already being addressed in the region. Partners also discussed outreach mechanisms, strategic partnerships, methods for increasing WCODN membership, and opportunities for increasing resources into the WCODP. WCODN members expressed concern about future funding and infrastructure issues that may threaten the advances made by the WCODN. These issues discussed informed the following session on charting a path forward, and will ultimately feed into the strategic plan for the upcoming two years.

CHARTING A PATH FORWARD

Small Group Brainstorming Sessions

This session divided attendees into four groups that rotated through stations to discuss various strategic planning issues brought up during the previous large group discussion. Each group provided insight into each of the four stations: 1) Value and role of the WCODP and WCODN, 2) Outreach strategy, 3) Data needs, and 4) Issue priorities.

The “Value and Role of the Network” station focused on defining the niche value and role of the WCODP and WCODN and identifying benefits provided to WCODN Partners through the WCODP and WCODN. Many agreed that the WCODN helps to build technical capacity in the region through the sharing of knowledge between members, exchanging best practices, and clarifying where expertise lies within the WCODN. Furthermore, having a forum to agree upon data and metadata standards, data priorities, and functional WCODP needs helps to streamline communication between the variety of data collecting agencies, institutions, and tribes. Everyone agreed the WCODP plays an important role in making data accessible without fees. Furthermore, by grouping data under priorities and themes, the WCODP provides ease of access to data needs. Ultimately, the WCODP is advantageous in its ability to bring together a diverse group of data users and producers, from tribal entities, and state and federal agencies, to NGOS, universities, and the private sector.



Strategies for continuing to reach out to potential new users and providers of data was discussed at the “Outreach” station. A variety of suggestions spawned from the discussions at this station all aimed at identifying and communicating the value of the WCODP to current WCODN partners and potential new partners. Some key suggestions included:

Recommendations for Outreach
<ul style="list-style-type: none"> • Use social media and YouTube to tell the value story of the WCODP • Explore public-private partnerships and academic partnerships to expand the WCODN • Identify clear, complementary relationships with other WCODPs for strategic connections • Work to standardize and operationalize procedures for sharing data into the WCODP • Communicate the data registration process to increase information being entered • Strategically tell pertinent success stories and lessons learned of the WCODP that are relevant to the target audiences and potential user communities we feel could benefit • Use a short survey on the WCODP to determine if users are getting out of the WCODP what they wanted and to identify concrete success stories • Continue outreach for the marine debris use case • Prepare to respond to rapidly emergent issues • Outreach efforts should ultimately focus on the main goal of gaining critical momentum

The “Data Needs” discussion station sought partner input on data priorities in three data themes, human use, physical, and biological, to identify possible WCODP work to develop regional datasets. It was important to have this conversation during the WCODN meeting as it helped not only identify priorities, but to also identify data and themes that other WCODPs and agencies are actively involved, so as to avoid duplicative efforts. Important data priorities that were identified as lacking current attention from other entities include the following:

Data Needs		
Human Use	Physical	Biological
<ul style="list-style-type: none"> • Tribal cultural areas • Sea level rise & wave surge • Recreational activities • Commercial fishing • Coastal access • Military activities • Shorelines 	<ul style="list-style-type: none"> • Coastal hypoxic zones • Littoral Cells 	<ul style="list-style-type: none"> • Kelp distribution • Invertebrates/shellfish/ corals distribution • Marine mammal hotspots

The final station discussion on “Ocean Health Issues” that the WCODP could inform through its technical infrastructure and WCODN expertise. Overall, it was discussed that when evaluating priorities the WCODP should consider policy needs of other regional bodies like the WCGA and RPB as well as funding opportunities. Although the discussion identified issues around resiliency as being



a good match for the WCGA, the Ocean Summit and RPB meetings in January will also help inform this strategic direction. With this in mind, the possible priority issues discussed were as follows:

WCODP Issue Priorities
<ul style="list-style-type: none">• Ocean acidification• Climate change/Resilience (which can include a subset of issues including sea level rise and data management at multiple scales)• Marine planning• Invasive species/Ballast water• Marine debris• Emergency response for emergency management

WCODN Structure

Todd Hallenbeck, WCODP Coordinator, ([Presentation](#))

This large group discussion was intended to reflect on the current WCODP structure and on mechanisms for input and feedback on WCODP development and data coordination. The West Coast Ocean Data Portal ACT and Network are organized to work in three primary but overlapping functional areas (Fig. 14) and established three working groups dedicated to regional coordination and support for Data, Information Technology (IT), and Outreach activities.

The Data Working Group supports the Network to help address and prioritize substantive data needs. It determines which data sets and information products to make available, recommends data and metadata standards, provides technical expertise to integrate data from disparate sources into regionally relevant products, and works with the IT Working Group to establish Best Data Sharing Practices.

The IT Working Group works with regional partners to address infrastructure and interoperability needs. It provides technical advice for ensuring that data can be shared among users with disparate software and hardware requirements, leads the development of technological infrastructure such as a data portal and map Viewer, and works with the Data working group to Best Data Sharing Practices.

The Outreach Working Group serves as the communication branch of the Network. It works with the Data and IT Working Groups to ensure that data products and applications meet user needs and to establish partnerships with data managers. The Outreach working group also works to educate decision-makers and supporters about the Network's mission, actions, and accomplishments. You can find out more and engage with the working groups at <http://network.westcoastoceans.org/>.



The ACT itself serves as a point of coordination and accountability. It coordinates the activities of the Outreach, Data, and IT working groups and fosters communication throughout the Network. It also incorporates input from the WCGA Executive Committee and the other ACTs to ensure that it meets the needs of the West Coast coastal and marine environments.

The WCODN decided to maintain the current structure (Fig. 14), as it has been serving the WCODP well and there are emerging work tasks that fit well in the existing structure. However, meeting participants suggested greater utilization of the newly developed Networking told to highlight topics and meetings to engage others to get involved. The WCODN page will be used as the primary communication tool to inform members of calls and agenda topics on working group calls. The work tasks and action items from the Network meeting will be shared with the working groups and will form the basis for their work plans over the next year.

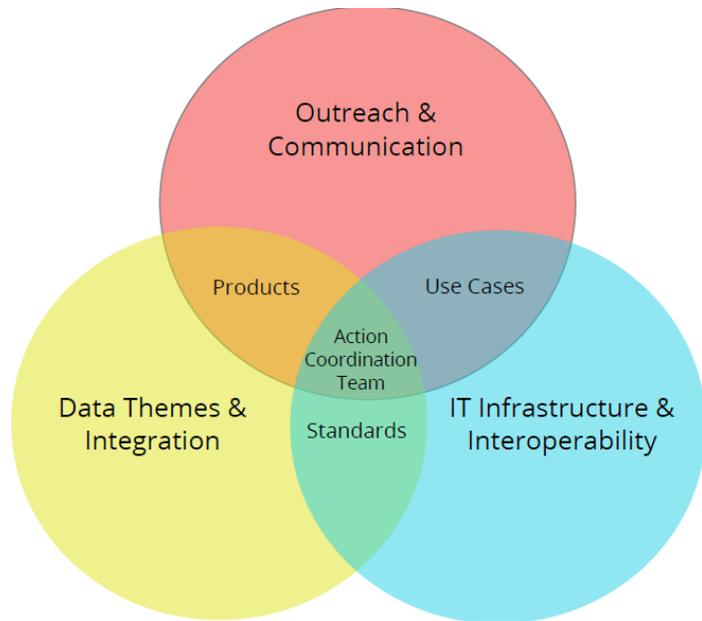


Figure 14. WCODN Structure

CONCLUSION

The West Coast continues to face challenges like marine debris, ocean acidification, and sea level rise that threaten the health of our ocean and coastal ecosystems. These complex issues cross geographic borders and scientific disciplines and require data that similarly cross these boundaries. The WCODN provides the connective tissue between these issues and geographies and helps inform some of the most important ocean health issues of our day.

Now with the foundation laid, in the formation of the WCODN and the launching of the WCODP, we are faced with a question of direction. While we continue to strengthen our community and develop the tools to fulfill our mission to increase discovery and connectivity of ocean and coastal data and people to better inform West Coast ocean management, policy, and planning, this meeting provided an opportunity to reexamine our role and take stock of our future. It was clear that the WCODN and the WCODP are being used to build capacity



and help users discover data they need in their everyday work, and we should continue to work in these areas. In particular, refocusing our role in developing best practices and training materials for use by the



WCODN, was an important and valuable role we can expand. But it was also clear that there is room to expand the outreach and engagement outside the known pool of stakeholders to new partnerships and avenues for cooperation. Additionally, we should be highlighting the great work that has been accomplished already through our Sea Grant Fellowship and the Marine Debris Use Case.

As new ocean health priorities emerge through the West Coast Regional Planning Body formation and the upcoming West Coast Ocean Summit, the WCODP may emphasize new data and tools to best meet those needs. The strength of the WCODN is that it remains flexible and adaptive and poised to act in any of the new and emerging priorities. As these take shape, the WCODN will engage the relevant communities in Use Cases and seek funding to continue to provide a foundation for the West Coast data community to build capacity, work together, and ensure that our ocean health priorities are met with the best available data and science.



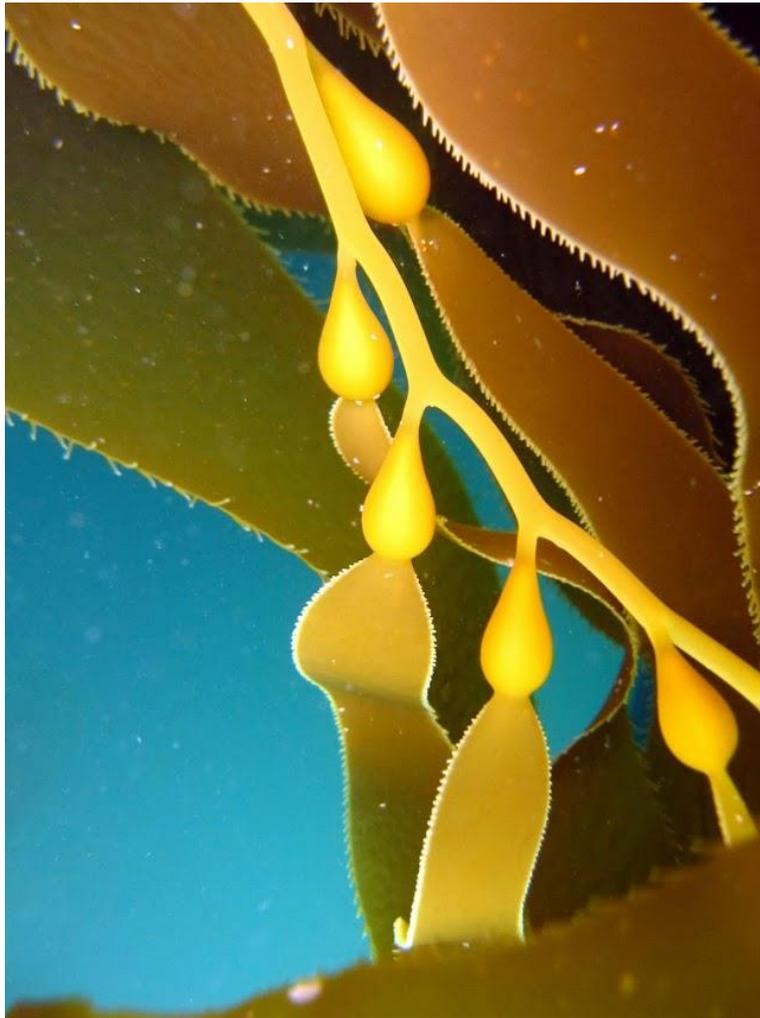
APPENDICES

A: List of Meeting Attendees

B: Meeting Agenda

C: Presentation Links

D: WCODP Two-Page Summary



Giant Kelp floats in Palos Verdes, (Dana Roeber Murray)

Appendix A: List of Meeting Attendees

FIRST NAME	LAST NAME	EMAIL	ENTITY
Aaron	McGregor	aaron.mcgregor@calost.org	California Ocean Science Trust
Alan	Allwardt	aallwardt@usgs.gov	USGS Coastal & Marine Geology Program
Allison	Bailey	allison@soundgis.com	Sound GIS
Amy	Trice	atrice@oceanconservancy.org	Ocean Conservancy
Andy	Lanier	Andy.Lanier@state.or.us	Oregon Coastal Management Program
Anna	Verrill	anna.verrill@noaa.gov	NOAA, Office for Coastal Management
Brett	Holycross	bholycross@psmfc.org	Pacific States Marine Fisheries Commission
Carol	Ostergren	costergren@usgs.gov	US Geological Survey
Carolyn	Rosevelt	crosevelt@csumb.edu	NASA-Ames/CSU Monterey Bay
Carrie	Bretz	cbretz@csumb.edu	Seafloor Mapping Lab at CSU Monterey Bay
Chris	Romsos	cromsos@coas.oregonstate.edu	Oregon State University
Craig	Risien	crisien@coas.oregonstate.edu	Oregon State University, NANOOS
Dana	Murray	dmurray@healthebay.org	Heal the Bay
Daniel	Santillano	daniel.santillano@resources.ca.gov	California Ocean Protection Council
Darren	Wright	darren@cdip.ucsd.edu	Southern California Coastal Ocean Observing System
David	Hart	dhart@aqua.wisc.edu	University of Wisconsin Sea Grant Institute
Dawn	Wright	dwright@esri.com	Environmental Systems Research Institute
Drew	Decker	ddecker@usgs.gov	US Geological Survey
Fran	Lightson	flightson@usgs.gov	US Geological Survey
Frank	Pendleton	frank.pendleton@BOEM.gov	Bureau of Ocean Energy Management
Greg	Benoit	greg.benoit@coastal.ca.gov	California Coastal Commission
Jamie	Robertson	jrobertson@tnc.org	The Nature Conservancy
Jennifer	Hagen	jennifer.hagen@quileutenation.org	Quileute Indian Tribe
Jennifer	McWhorter	jkmcwhorter@ucsd.edu	CDIP/SCCOOS
Jennifer	Patterson	jpatterson@mbari.org	CeNCOOS
Jenny	Walsh	jenny@pointnineseven.com	Point 97
Jerry	Hornof	Jerry.Hornof@noaa.gov	NOAA
Jessica	Watson	watsonj2@science.oregonstate.edu	PISCO
Jim	Wicker	jim.wicker@calost.org	California Ocean Science Trust
Joan	Barminski	joan.barminski@boem.gov	Bureau of Ocean Energy Management
Joe	Schumacker	jschumacker@quinault.org	Quinault Indian Nation
Joel Shinn	Shinn	joel_shinn@fws.gov	US Fish & Wildlife Service

John	Bechtol	jfbechtol@gmail.com	Bechtol Enterprises
John	Hansen	john@westcoastmarineplanning.org	West Coast Marine Planning (RPB)
Kaity	Goldsmith	kaity.goldsmith@oregon.gov	Oregon Governor's Natural Resources Office
Kate	Sullivan	sullivankate@aim.com	California State University Los Angeles
Katie	Wrubel	katiewrubel@gmail.com	Makah Tribal Council Office of Marine Affairs
Kiira	Siitari	ksiitari@psmfc.org	Pacific States Marine Fisheries Commission
Laura	Lilly	lauralilly4@gmail.com	WCGA/SCCOOS/CeNCOOS/NANOOS
Libby	Whiting	Libby.Whiting@dnr.wa.gov	Washington Department of Natural Resources
Lisa	DeBruyckere	lisad@createstrat.com	Consortium of nonprofits working on marine reserves
Lisa	Gilbane	lisa.gilbane@boem.gov	Bureau of Ocean Energy Management
Mara	Noelle	mara.noelle@slc.ca.gov	California State Lands Commission
Megan	Rocha	megan.m.rocha@gmail.com	Smith River Rancheria
Meredith	Payne	meredith.payne@dnr.wa.gov	Washington State Department of Natural Resources
Nadine	Golden	ngolden@usgs.gov	US Geological Survey
Ned	Bader	nbader@us.ibm.com	IBM
Raymond	Hiemstra	ray@coastkeeper.org	Orange County Coastkeeper
Robby	Wilson	robert.wilson@noaa.gov	NOAA
Robert	Bochenek	rob@axiomalaska.com	Central and Northern California Ocean Observing System
Sabra	Comet	SComet@trinidadrancheria.com	Trinidad Rancheria
Sara	Guiltinan	sara.guiltinan@boem.gov	Bureau of Ocean Energy Management
Shane	StClair	shane@axiomalaska.com	Axiom Data Science
Shaonna	Chase	schase@yuroktribe.nsn.us	Yurok Tribe
Shelly	Moore	shellym@sccwrp.org	Southern California Coastal Water Research Project
Steven	Steinberg	steves@sccwrp.org	Southern California Coastal Water Research Project
Tanya	Haddad	tanya.haddad@state.or.us	Oregon Coastal Management Program
Thomas	Whitenack	twhitenack@sdsc.edu	San Diego Supercomputer Center, UC San Diego
Tim	Doherty	tim.doherty@noaa.gov	NOAA
Tim	Welch	tim.j.welch@gmail.com	Freelance Developer
Todd	Hallenbeck	todd.r.hallenbeck@gmail.com	West Coast Governors Alliance
Tom	Zambrano	zambrano@oceanlab.com	Ocean Lab
Van	Hare	vhare@psmfc.org	Pacific States Marine Fisheries Commission



Appendix B: Meeting Agenda

Day 1: Highlighting Accomplishments and Increasing Capacity

Time	Topic
8:30 – 9:00	Coffee and Mingling
9:00 – 9:15	<p>Welcome and Introductions</p> <p>Objective: Kick off the meeting and introduce meeting participants.</p>
9:15 – 9:30	<p>West Coast Ocean Data Portal Background</p> <p>Objective: Provide context and goals for WCODP and highlight major accomplishments.</p> <p>WCODP Info: http://goo.gl/XE7UoW</p> <p>Notes: http://goo.gl/0w2RLH</p>
9:30 – 10:00	<p>West Coast Ocean Data Portal Demo</p> <p>Objective: Demonstrate new features and functions of the West Coast Ocean Data Portal (Portal.westcoastoceans.org) to increase partner understanding.</p> <p>Notes: http://goo.gl/N3zlW2</p>
10:00 – 10:15	<p>WCODP Feedback</p> <p>Objective: Provide overview on the planned process for submitting and incorporating feedback on the WCODP.</p> <p>Catalog Survey: http://goo.gl/ZfrCaS</p> <p>Viewer Survey: http://goo.gl/7MUNAe</p> <p>Network Survey: http://goo.gl/WhlQdc</p> <p>Notes: http://goo.gl/j99S08</p>
10:15 – 10:30	Break
10:30 – 11:15	<p>Network Technical Assistance</p> <p>Objective: Highlight and discuss the partners and projects that the WCODP Technical Assistance contractor will be working with</p>



	<p>to connect resources to the WCODP.</p> <p>Notes: http://goo.gl/XVeMQv</p>
11:15 – 12:00	<p style="text-align: center;">Oceanographic Data Products</p> <p>Objective: Learn about WCODP funded work to develop and publish IOOS data products.</p> <p>Notes: http://goo.gl/Lt51Bq</p>
12:00 – 1:00	LUNCH
1:00 – 2:15	<p style="text-align: center;">Successful Data Sharing: Publishing Great Metadata</p> <p>Objective: Build common understanding of metadata best practices including developing discovery metadata and increasing partners understanding of the Catalog Service for the Web.</p> <p>Best Practices Guide: http://goo.gl/Ae6ABx</p> <p>Notes: http://goo.gl/KtU5um</p>
2:15 – 2:30	Break
2:30 – 3:30	<p style="text-align: center;">Successful Data Sharing: Publishing Great Web Services</p> <p>Objective: Increase partners understanding of web mapping services and share best management practices.</p> <p>Resource URLs: http://goo.gl/GIDXba</p> <p>Best Practices Guide: http://goo.gl/Ae6ABx</p> <p>Notes: http://goo.gl/Nzolw</p>
3:30 – 4:00	<p style="text-align: center;">Training Session Recap and Discussion</p> <p>Objective: Discuss information about the training materials and resources available to the Network.</p> <p>Notes: http://goo.gl/qZtrpg</p>
4:00 – 4:30	<p style="text-align: center;">Day 1 Wrap-Up</p> <p>Notes: http://goo.gl/zl7Rh0</p>



6:30 – 8:30	Evening Social
	Costa Mesa 55 Tavern+Bowl, 1875 Newport Boulevard, Costa Mesa, CA (<i>Hotel Shuttle will depart at 6pm</i>)

Day 2: Coordination and Charting a Path Forward

Time	Topic
8:30 – 9:00	Coffee and Mingling
9:00 – 9:15	Context for Day 2
	Notes: http://goo.gl/hZ4VuJ
9:15 – 11:05	Network Partner Updates
	Objective: Understand the status and progress of West Coast Ocean Data Network partners in developing data catalogs, portals, and data products.
	Notes: http://goo.gl/3Z5z2L
11:05 – 12:00	Regional Planning Body
	Objective: Hear from RPB Coordinator about updates related to RPB formation, structure, timeline, and goals.
	Notes: http://goo.gl/YDOOO3
12:00 – 1:00	LUNCH – GeoJeopardy
1:00 – 1:15	Network Member Recognition
1:15 – 2:05	WCGA Priorities and Goals
	Objective: Provide background and context for current WCGA priorities and data needs.
	Notes: http://goo.gl/uEUx5b
2:05 – 2:35	Data and Portal Coordination
	Objective: Chart strategy for incorporating and encouraging data development coordination and portal connections.

	<p>Data Priorities: http://goo.gl/cZDXHi</p> <p>Notes: http://goo.gl/B19cPy</p>
2:35 – 2:45	Break
2:45 – 3:45	<p>Charting a Path Forward</p> <p>Objective: Discuss role of Portal and develop strategic plan.</p> <p>Notes: http://goo.gl/RUQsql</p> <p>Remote Participants: http://goo.gl/26R403</p>
3:45 – 4:15	<p>West Coast Ocean Data Network Structure</p> <p>Objective: Discussion about network structure and mechanisms for input and feedback on Portal development and data coordination.</p> <p>Network Structure: http://goo.gl/IttVHa</p> <p>Notes: http://goo.gl/MjGkcN</p>
4:15 – 4:30	<p>Summary and Action Items</p> <p>Notes: http://goo.gl/XHtybd</p>
4:30 – 4:45	Closing Remarks
5:00 – 7:00	<p>Happy Hour and Dinner <i>TBD</i></p>
7:30 – 8:30	Carpooling to Esri Ocean Forum (Redlands)

Appendix C: Presentation Links

STATE

- Libby Whiting, Washington Department of Natural Resources, [Marine Spatial Planning in Washington](#)
- Andy Lanier, Oregon Coastal Management Program , [Oregon Update](#)
- Daniel Santillano, California Ocean Protection Council, [California Seafloor and Coast](#)
- Greg Benoit, California Coastal Commission, [California Coastal Commission Update](#)
- Jim Wicker, OceanSpaced, California Ocean Science Trust

FEDERAL

- Frank Pendleton, Bureau of Ocean Energy Management, [BOEM Update](#)
- Tim Doherty, NOAA Office for Coastal Management
- Nadine Golden, USGS, [California Seafloor Mapping Program](#)
- Fran Lightsom, USGS Data Ambassador

NGOs and Universities

- Chris Rosmos, Oregon State University, [2014 WCODN Partner Update: OSU Active Tectonics Lab](#)
- Grace Goldberg, SeaSketch, UC Santa Barbara
- Tom Whitnack, UC San Diego Super Computer, US NSF National Program , [Critical Zone Observatories](#)

TRIBAL

- Quinault Tribe and Marine Planning – Joe Shumacker, Quinault Tribal Nation (No presentation)
- Sabra Comet, Cher-Ae Heights Indian Community of the Trinidad Rancheria, [Marine Resources Department](#)

IOOS and West Coast PMEP

- West Coast IOOS Data and WCODPs - Darren Wright, SCCOOS, Jennifer Patterson, CeNCOOS, Craig Risien, NANOOS; [West Coast IOOS Partner Update](#),
- Shane StClair, Axion, [West Coast Activities Update 2014](#)
- Van Hare, Pacific States Marine Fisheries Commission, [Pacific States Marine Fisheries Commission Update](#)





WEST COAST OCEAN DATA PORTAL

Discover Connect Inform

The West Coast Ocean Data Portal is a project of the West Coast Governors Alliance on Ocean Health (WCGA) to increase *discovery* and *connectivity* of ocean and coastal data and people to better *inform* resource management, policy development, and planning. The Portal informs priority West Coast ocean issues such as adaptation to sea-level rise, understanding impacts of ocean acidification, tracking sources and patterns of marine debris, and planning for new ocean uses.



DISCOVER ocean and coastal data

The West Coast Ocean Data Catalog links existing state, federal, and university data catalogs and provides an easy to use gateway to discover ocean and coastal data. Coastal decision-makers, researchers, and stakeholders use the Catalog to access the data and decision-support tools they need to understand and address high-priority regional issues. The Catalog increases access to physical, biological, oceanographic, and socioeconomic datasets.

CONNECT ocean data users and producers

The West Coast Ocean Data Network is dedicated to increasing communication between state and federal agencies, tribes, universities, NGOs, and industry to leverage resources for new data collection, develop data best management practices, conduct trainings, and ensure compatibility of regional datasets. Please visit Network.westcoastoceans.org to read our blog, connect with our community, and find out about upcoming events.

WEST COAST OCEAN DATA NETWORK



Photo Credits: NOAA

<http://portal.westcoastoceans.org>





INFORM ocean health decisions

Threats including marine debris, sea-level rise, and ocean acidification will continue to affect ocean and coastal areas across state boundaries throughout the West Coast region. By tapping into the Data Catalog, the expertise of the Data Network, and providing tools to map spatial information, the **West Coast Ocean Data Viewer** (maps.westcoastoceans.org) ensures that issues of regional importance are informed by the best available science and technology. The Portal provides information to allow ocean and coastal managers to make informed decisions to keep beaches clean of debris, promote coastal economies, prepare communities for rising seas, and improve ocean health.

Learn more!

To learn more about the West Coast Ocean Data Portal, join the community, provide feedback and receive updates, and contribute data, visit network.westcoastoceans.org and register in the Network, sign up for email updates or contact the project coordinator directly.



Helping communities adapt to sea-level rise



Keeping our beaches clean of marine debris



Monitoring impacts of Ocean Acidification

West Coast Governors' Alliance on Ocean Health

Created in 2006, the WCGA is a regional ocean partnership established by the governors of Washington, Oregon, and California to protect and manage ocean and coastal resources and the economies they support on the West Coast. High priority regional ocean issues include adaptation to sea-level rise, ocean acidification, marine debris, and regional ocean data sharing. To learn more, visit westcoastoceans.org.

A project of
WEST COAST GOVERNORS ALLIANCE on OCEAN HEALTH
CALIFORNIA OREGON WASHINGTON

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