

# Workshop Summary

## The Oregon Coastal and Marine Data Network Workshop

6-7 June 2011  
Eola Viticulture Center  
Salem, Oregon



31 July 2011

# The Oregon Coastal and Marine Data Network Workshop

31 July 2011

*Prepared by*

## **The Institute for Natural Resources**

Created by the Oregon Legislature through the 2001 Oregon Sustainability Act, the Institute for Natural Resources' mission is to provide Oregonians with ready access to current, relevant, science-based information, methods, and tools for better understanding natural resource management challenges and developing solutions.

The Institute for Natural Resources is an Oregon University System institute.

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*for*

The Bureau of Ocean Energy Management, Regulation and Enforcement

The Oregon Department of Land Conservation and Development

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## Acknowledgements

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The Oregon Department of Land Conservation and Development  
Bureau of Ocean Energy Management, Regulation and Enforcement  
Oregon Sea Grant

## Disclaimer

The contents of this report reflect the view of the authors who are solely responsible for the facts and accuracy of the material presented. The contents do not necessarily reflect the official views of the sponsors of the workshop.

This report does not constitute a standard, specification, or regulation.



# Oregon

John A. Kitzhaber, MD, Governor

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Dear Colleagues,

Coastal and marine spatial planning is the new buzz word of marine policy makers and resource managers. But the practice of planning to reduce human use conflicts and minimize ecosystem impacts in the coastal and marine environment has been happening for many decades. And we have learned that successful planning and management of coastal and marine resources relies heavily on acquiring and using the "best available science."

While we have seen a proliferation of spatially explicit data derived from innovative science in the coastal and marine environment, we have not had accompanying advances in making sure that these data are available to support planning and management. Indeed, data are being collected for a wide spectrum of parameters in many locations around the clock but the abundance of data types, sources and modes of sharing has sometimes made it harder to identify and access authoritative data in a timely fashion.

We think that a critical step toward solving the problem of data access and management is the networking together of the people who collect and use data and who contribute information to decision-making processes. Creating such a network...a community, really...was the aim of the Oregon Coastal and Marine Data Network Workshop. We wanted to foster and support a community of producers and users of coastal and marine data to address emerging data needs in a concerted and intentional way.

The Workshop was only the start of a community conversation that we hope will continue into the foreseeable future. But because it was neither possible for this single workshop to cover all bases nor that all potential community members could attend, we offer this report as a record of the efforts to date and as an invitation to join in future efforts to further the aims and efficacy of the network concept.

We welcome your participation and invite you to join us!

Bob Bailey

Robert J. Bailey, Program Manager  
Oregon Coastal Management Program

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# Introduction

Comprehensive coastal and marine spatial planning and on-going management of ocean and coastal resources and uses among agencies and institutions will be greatly improved by establishing a human network to resolve common issues in data development, documentation, analysis, sharing, and applicability to management decision-making. Further, establishing a formal network may enhance the eligibility of coastal and marine data projects for certain state and federal funding opportunities directed at open data initiatives and other data sharing efforts. The need for such a network was [recommended by the Oregon Nearshore Research Task Force \(NRTF\) in its report to the Oregon legislature in 2010](#). The NRTF recommended the creation of a program to ensure that data and information from a variety of sources are widely available, and that the program be sufficiently flexible to account for the constant addition of new data and scientific information, the evolving needs among potential users, and the continuing advances in data technologies.

In March 2011, the Department of Land Conservation and Development 's Oregon Coastal Management Program approached the Institute for Natural Resources at Oregon State University to work with them to organize and facilitate a two-day workshop, the *Oregon Coastal and Marine Data Network Workshop*.

There are many reasons a coordinated and distributed data network is needed. On one hand there are “large network” needs to nest Oregon coastal marine spatial planning data into regional ocean plans, and ultimately the national ocean plan. Oregon has many entities working on data and information products that are of use to participants in coastal marine spatial planning efforts, but access to these products is ad hoc and uncoordinated outside of specific projects and integration efforts. Data availability and consistency could be improved if the community of data providers and consumers could periodically check in with each other on authoritative product specifications, sources and output formats.

On the other hand, there are “small network” technical details that address more fine-scale issues. For example: how many shoreline layers do we have in circulation?; which ones do we use for clipping?; what projections, scales, resolutions, or publication schedules are available/supported for various products?; etc. The ad hoc nature of current coastal marine spatial planning-related data generation projects is such that technical details related to coastal/marine framework data are rarely coordinated beyond the project level. That is, the project partners consult with each other for the purposes of a specific project's output and do not generally focus on cross-project integration of data. The lack of cross-project collaboration becomes problematic for the state as it attempts to assimilate the products of the various projects into a series of cohesive spatial overlays that it can use for its territorial sea planning efforts.

## Workshop Purpose

The purpose of the *Oregon Coastal and Marine Data Network Workshop* was to begin to set the stage for fostering a network of people and data. The workshop was designed to enable individuals in agencies and other organizations who are directly engaged in coastal marine spatial planning to discuss

and resolve issues related to creating a collaborative Oregon coastal and marine data network. This network would serve the needs of the broad community of agencies, institutions, and the wider coastal and marine data user community.

The objectives of the workshop were threefold:

- Provide existing examples and models for user community interaction and discussion on coastal and marine institutional data collection, sharing, and integration;
- Identify and prioritize issues, solutions, and action items that would enable coastal and marine data producers and users to be long-term data stewards; and,
- Draft a framework for an Oregon user community network to address coastal and marine data stewardship and technical concerns.

Thirty-six people from Oregon, California, and Washington represented state and federal agencies, non-governmental organizations, environmental consulting firms, universities, and data collaboratives (Appendix A) at the workshop. The workshop was sponsored by the Department of Land Conservation and Development; the Bureau of Ocean Energy Management, Regulation and Enforcement; and Oregon Sea Grant.

## Workshop Structure

Prior to this invitation-only workshop (Appendix B), invited guest were asked to answer a few questions as they registered for the workshop. The intent was to gather some initial information about participant interest in the intent of the workshop, their data access needs, and their data accessibility challenges.

The workshop registrants were specifically asked to:

- Briefly describe any specific interest they or their institution may have in the stated objectives of this workshop;
- List any particular data access needs that they or their institution may have related to their particular interests; and
- List any data accessibility challenges they or their institution may have relating to their particular interests that might be appropriate for an Oregon Coastal and Marine Data Network to address.

Day 1 of the workshop began with an overview of goals, objectives, and outcomes. Bob Bailey and Paul Klarin, of the Department of Land Conservation and Development Oregon Coastal Management Program, provided the national and state level context for the workshop and described their intent to build and foster a human data network – emphasizing the workshop goal of fostering individual and organizational relationships and creating a framework to solve data-related problems. Tanya Haddad, of the Department of Land Conservation and Development Oregon Coastal Management Program, then provided further context for the workshop when she presented the results of the registrant survey.

Three workshop participants presented examples of existing data networks (Appendix C) that could serve as a framework for establishing a more focused Oregon coastal and marine data network. Milt Hill presented the Framework Implementation Team (FIT) community in Oregon. Framework data forms the



backbone of GIS, and Oregon's Framework Team is focused on development and stewardship of seven national GIS framework themes and seven commonly needed Oregon data themes. Emilio Mayorga presented on the Northwest Association of Networked Ocean Observing Systems (NANOOS) experience with developing the NANOOS Visualization System (NVS) – a tool that aggregates, displays, and serves meteorological and oceanographic data. Christina Cairns presented on the National Ocean Council (NOC) National Information Management System (NIMS) effort and the related emerging Coastal and Marine Spatial Planning Technical Practitioners Network.

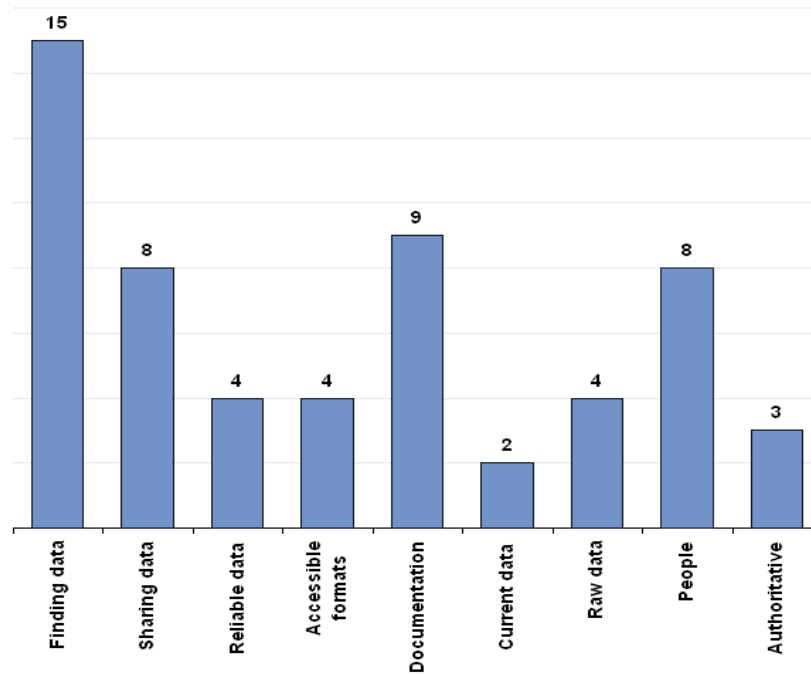
On the afternoon of the first day, we began a series of guided large and small group discussions that developed background information to identify a framework to shape an Oregon coastal and marine data network. The first large group discussion elicited examples of other data and information sharing networks and web portals (Appendix D); the second identified the advantages, disadvantages, opportunities and stumbling blocks of forming an Oregon coastal and marine data network. Later in the afternoon, four breakout groups independently discussed their views of the scope of an Oregon coastal and marine data network, the potential topics/issues the network could address, how the network could be helpful in addressing the topics/issues, and the existing resources that could be used within the network to address the topics/issues.

Day 2 was a mix of large and small group discussions aimed at developing a framework for an Oregon coastal and marine data network. The day began with a guided large group discussion intended to consolidate the small group work that was done on afternoon of Day 1. This was followed by a small group visioning exercise of writing succinct “what we are about” or “what we do” statements. Themes within and across the small groups were highlighted, discussed, and modified. In the afternoon, participants broke into two groups “roles and responsibilities” and “products and users” to begin to work through some of the issues that an Oregon coastal and marine data network would need to consider. The day ended with a brainstorm of naming the network and next steps.

## Workshop Outputs and Outcomes

### Issues and Challenges

When registering for the workshop, participants were asked to briefly describe any specific interest they or their institution may have in the stated objectives of this workshop; to list any particular data access needs that they or their institution may have related to their particular interests; and to list any data accessibility challenges they or their institution may have relating to their particular interests that might be appropriate for an Oregon coastal and marine data network to address. Responses were collated and several common themes emerged in terms of data access needs and challenges, including but not limited to finding and accessing [relevant] data; having consistent / reliable availability; having accessible formats; providing well-documented data; providing timely, current, up-to-date data; having legacy or historic data; having un-adulterated data; and providing contact information for people and authoritative sources. Figure 1 shows the frequency that participants mentioned particular themes/topics raised by respondents.



**Figure 1. Frequency of data needs and challenges raised by respondents in the registration survey.**

Responses were also illustrated in a word cloud (Figure 2). Words more frequently used by participants are in larger font, while words less frequently used are in smaller fonts. This word cloud developed a great deal of discussion amongst the participants, and was often referred to throughout the course of the workshop.



Table 1. Challenges and advantages of establishing a data network	
<b>Challenges:</b> <ul style="list-style-type: none"> <li>• Having patience in the beginning</li> <li>• Showing something of value up front</li> <li>• Communicating values (internal, external, and long-term) and perceptions of those values</li> <li>• Being time-consuming in the short-term for potential long-term benefits</li> <li>• Being flexible in the long term</li> <li>• Gaining trust</li> <li>• Raising funds</li> <li>• Having consensus</li> <li>• Having an ongoing system of communication</li> <li>• Keeping the effort going</li> <li>• Managing expectations</li> <li>• Determining incentives for participation and sustainability</li> <li>• Determining the scope of the network</li> <li>• Watching out for federal requirements for data</li> <li>• Pre-empting innovation and work that is happening along the fringes</li> </ul>	<b>Advantages:</b> <ul style="list-style-type: none"> <li>• Identifying opportunities</li> <li>• Having structured outreach and communication in one place</li> <li>• Having legitimacy for planning efforts</li> <li>• Attracting funding</li> <li>• Saving money</li> <li>• Increasing credibility through peer review</li> <li>• Hosting discussion forum</li> <li>• Improving the quality and availability of data</li> <li>• Potentially developing new decision support tools</li> <li>• Finding out what exists (gap analysis)</li> <li>• Everything listed on the Human Network list</li> </ul>

### What we are not

As a group of individuals and/or organizations come together to discuss different forms of engagement, it is sometimes easier to describe “what we aren’t” before defining “what we are”. That is precisely the path that the workshop participants chose to pursue in the beginning stages of thinking through what an Oregon coastal and marine data network might be. When asked to respond to the phrase “What we aren’t”, participants generated an initial list; however, the discussion resulted in participants wanting to further delineate the “what we aren’t” list (Table 2) into three categories – “what we’ll never be”, “what we currently are not but could be sometime in the future”, and “what we are and don’t see the advantage of being”.

Table 2. List of “What we are not”	
<b><i>What we’ll never be:</i></b>	<ul style="list-style-type: none"> <li>• Single agency driven</li> <li>• A clearing house</li> <li>• A centralized data repository</li> <li>• Regional data managers</li> <li>• Solely terrestrial focused</li> <li>• makers</li> <li>• Operating alone</li> <li>• Making decision support tools</li> <li>• A list of broken links</li> <li>• A partnership (project-focused and limited in membership)</li> <li>• A network that determines data time schedules</li> <li>• A network of resource management policy</li> </ul>
<b><i>What we currently are not but could be sometime in the future:</i></b>	<ul style="list-style-type: none"> <li>• Data Match Makers</li> <li>• Funded</li> <li>• Staffed</li> <li>• Monitors of data time stamps</li> </ul>
<b><i>What we are and don’t see the advantage of being:</i></b>	<ul style="list-style-type: none"> <li>• Project -focused</li> </ul>

### What we are: A human network

Early in the workshop it was clear that the organizers and participants alike were aligned on the concept of the Network being about people. As one participant wrote, “[there is a] human element to the group, rather than it just being a data exchange”. By emphasizing the people behind the data, an Oregon coastal and marine data network could better work on *solvable* issues by adding value to existing data through engaged conversation and better data interpretation.

Benefits of emphasizing the human element of the Network included, but were not limited to:

- creating the opportunity to communicate the bigger picture of the natural resource issues and the use of data across organizations (i.e., the how, why, and benefits of the bigger picture);
- having a clear point of contact;
- building trust to share information and data;
- fostering enduring relationships;
- understanding of the roles, responsibilities, and strength and weakness of the coastal data community (data producers and users);
- identifying redundancy and opportunities; and,
- providing opportunities to improve products.

### **What we are: A data exchange**

People need to find the data they need quickly and there are the generic problems of addressing specific data needs (tailored products). What we are is a data exchange or better yet a “data matching network” – a forum to match specific needs with potential data providers so that we expand the use of data, and begin to address emerging data needs and known data gaps in a concerted and intentional way.

Participants recognize that a great deal of data exists and that it would take resources to convert or connect to any network. In the short term the Network would need to work with existing repositories / inventories and begin to connect them with wider networks like NIMS.

### **Scope/Scale of the Network**

Participants also had a rich discussion of the scope/scale of the Network, noting that however the scope/scale is defined, it would have consequences that determine participation: Should the Network be Oregon-only, regional, or nested? Should the scope/scale be defined by the participants in the Network? Should it be defined by the initial data, and/or the data created and collected?

By the end of the discussion there seemed to be general agreement that the scope/scale of the Network should consider an administration/management scale (Oregon) and a geographic/ecosystem scale (broader than Oregon). In short, the Network should be nested – aiming toward regional participation and data, but initially focused on Oregon, with the desire for other western coastal states to become part of the Network. The nested approach went beyond the West by participants noting the importance of communicating the work of the Network with other coastal regions and nationally.

### **Potential topics and issues to be addressed by the Network**

The initial impetus of the workshop was to consider data sharing in the context of coastal marine spatial planning. Other topics and issues that participants thought could be addressed by the Network included: aquaculture, climate change, renewable energy, emergency response, interdisciplinary issues in general, and changing baselines for long term issues (e.g. RSLR, climate change, OCS monitoring, fishing effort, significant wave heights).

Recognizing the potential for the importance of topics and issues to rise and fall, or terminology to change, there was broad agreement that the Network to be “topic agnostic”. Thus, having the ability to be nimble enough to adjust to the needs of the participants, and not get “pigeon holed” into any one topic.

## Envisioning an Oregon Coastal and Marine Data Network

Participants broke out into four small groups where they were asked to draft vision and mission statements about the proposed Network and report back to the larger group. After reading each small group's statements, the statements were sorted into three categories: "who we are", "what we do" (actions and products), and outcomes (See Appendix E; names of the Network were also discussed,

### **First draft statement describing what the Network is**

#### **WHO ARE WE?**

A recognized trusted and relied upon network of coastal, marine and estuarine data producers and natural resource managers who serves the citizens of Oregon and the West Coast

#### **WHAT DO WE DO? (Actions and products)**

- Connect faces to data, and producers to users (connect people to the data they need)
- Facilitate collaboration with local, state, regional and federal entities
- Maintain a network of people who work towards outcomes
- Develop standards when/where helpful
- Coordinate delivery of data / provide functional access
- Manage a mechanism for data users to provide feedback to data producers
- Identify authoritative/quality data sources

#### **OUTCOMES (How will the world change?)**

- Improved accessibility to data and awareness of which data is available to the public and all types of governments and practitioners
- Improved quality and usability of datasets
- Identified standards
- Improved efficiency of government agencies, those producing data, and those accessing data
- A thorough knowledge system to support thoughtful decision making, planning and research
- An informed community of people who use data
- Sustainable stewardship of the coastal, marine and estuarine environments

Appendix F). From these statements, we produced an initial draft of what the Network is.



Participants also liked the statement drafted by Breakout Group C.

**Breakout Group C: Draft statements of who we are and what we do**

We strive to develop a thorough knowledge system for the purpose of thoughtful coastal and marine planning and research to benefit the people of Oregon and the west coast.

- Enable human network to facilitate communication, coordination, and collaboration of data managers and practitioners
- Identify authoritative data sources.
- Increase accessibility of data to researchers, policy makers, and the general public.
- Facilitate the contribution and collaboration with regional and national partners.

Through e-mail communication on the a third set of statements describing what the Network was proposed.

**Draft by Mary Elaine Helix via the Coastal Marine Network listserve on 10 June 2011**

**Vision Statement**

*"To be able to access and use authoritative datasets for coastal and marine decision making processes."*

**Mission**

Provide open community networking to enable data discovery and discussion

**Goals**

- 1) Identify redundancies and opportunities
  - OBJECTIVE 1: Identify redundant shorelines for Oregon and recommend a preferred shoreline to the State.
- 2) Build trust to share information
- 3) Provide incentives to improve products
- 4) Provide structured outreach and communication for data.
  - OBJECTIVE 1: Develop a shared website to connect producers and users of the data.



What the three statements generally have in common is that the proposed coastal and marine data network is about connecting the people involved in coastal and marine data in Oregon (both producers and consumers of data) and connecting them to each other and to the wider world. When questions arise about what data exists or is appropriate to use for answering specific questions in the Oregon coastal and marine realm, the network can help connect the folks who need a question answered with the folks who have the data that can help them answer it, or the ability to produce the data / information products that meet the specified need. The workshop organizers and participants will take these statements and craft a final description of the Network.

During the workshop participants also grappled with the organizational aspects of the proposed Network: roles and responsibilities, and products and users. As most of the information discussed in these two breakout groups was exploratory, referring to the raw notes taken by each group is the best way to display their thoughts (see Appendix G for “roles and responsibilities” and Appendix H for “products and users”).

## Shoreline Data: Proof of Concept

While the Network works to specifically define its vision and mission statements, as well as its outcomes, the workshop participants thought it vital that they proceed with a proof of concept – choosing an issue around which to test the Network. The issue that met the criteria of being relevant and solvable was shoreline data.

**Problem Statement:** The shoreline is one of the places within Oregon’s coastal environment where a lot of attention is directed for various reasons, and yet the state does not have a geospatial representation of that feature which is accepted as an authoritative data set. Seen below (Figures 3 and 4), there are many different tidal shoreline elevations and jurisdictional boundaries which depend upon accurate representation in a geospatial context for decision making.

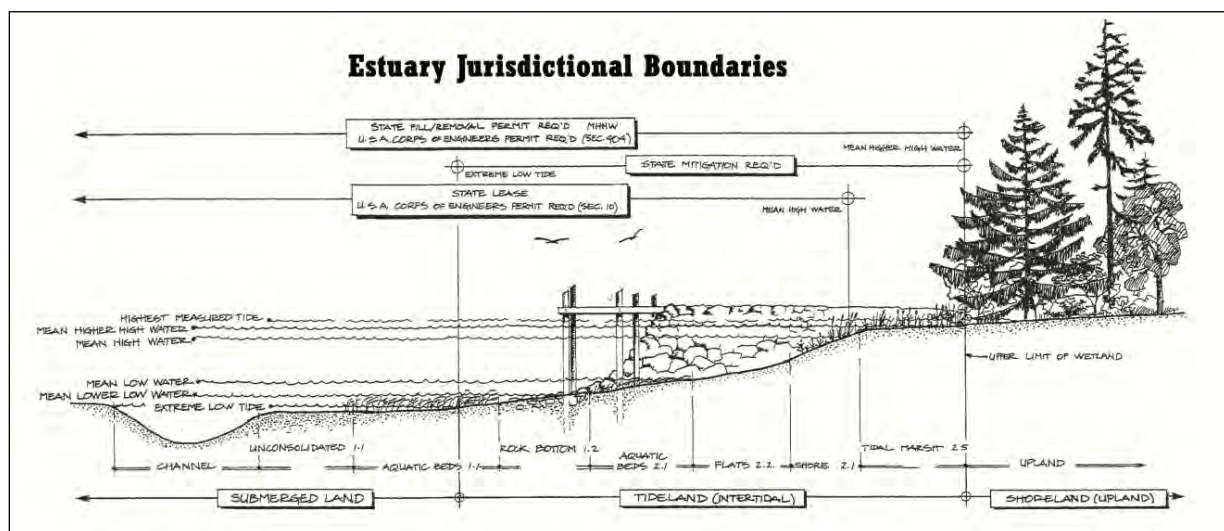


Figure 3. Estuary shoreline diagram (Estuary Plan Book).

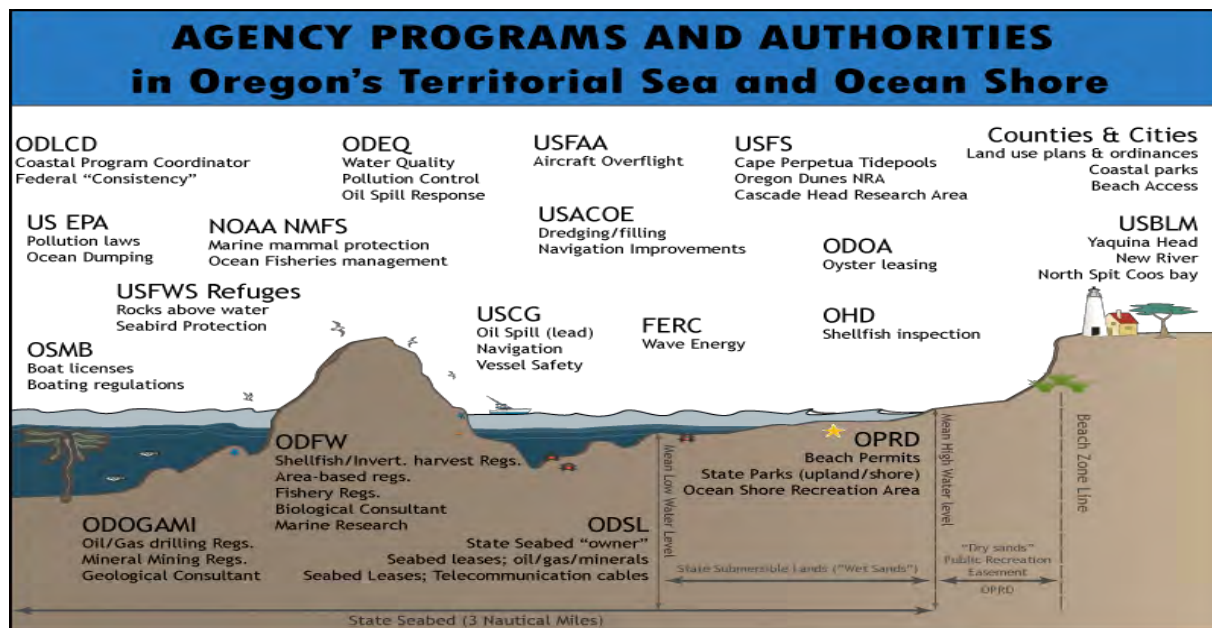


Figure 4. Ocean shoreline diagram (Territorial Sea Plan)

**Proposed Action:** The goal of the shoreline working group will be to identify and consider the needs for an authoritative state shoreline(s), depending upon use case examples. The group will review existing shorelines, compile the results in order to generate a summary report and a set of recommendations on the development of an authoritative shoreline framework data set that will be approved for future use, through the Framework Implementation Team process provided by the State of Oregon Geospatial Enterprise Office.

The Shoreline example will help to test how an Oregon data network will communicate with the broader public about the need for our network, and provide a test case for supporting and documenting the process required for solving some of Oregon's long term Marine and Coastal data problems.

## Early Outcomes

Workshop participants have an established way of communicating via a listserv, which was put into place three days after the workshop. This listserv will initially be used by the workshop participants as we bring closure the workshop deliverables and the initial establishment of the Network.

By way of our listserv, our Network quickly and successfully matched an OSU student looking for marine spatial planning data with the right person in the Navy. The student was specifically looking for a shapefile of the Navy's *Northwest Training Range Complex* per a signed ROD dated October 2010.

According to the student , “the complex covers [much of Washington and some of Oregon and Northern CA waters](#). The [EIS page](#) contains no GIS data and the source of that link from [navy.mil](#), “[Navy At-Sea Environmental Impact Statements](#)”, also contains no hints for me.” Thanks to Kuuipo Walsh for posing the question to the Network and to Kathy Taylor and Bob Bailey for their leads, the OSU student was able to obtain the shapefile showing the boundary of the complex.

## Next Steps and Timeline

Next steps are identified in the below timeline. As the Network proceeds, it will be necessary for those involved to answer some key questions, including but not limited to: How do we enable leadership within this group? What are our goals? What are our communication mechanisms? What is the structure and how are we funded? How do we remain nimble and involved?

Task	Jun 2011	Jul-Sep 2011	Oct-Dec 2011	Jan-Mar 2012	Apr-June 2012
<b>Communication</b>					
Identify communication mechanism for workshop participants: Listserv	(done)				
Develop one-pager describing the Network		Aug*			
Identify a web url and presence		Sep*			
<b>People</b>					
Identify a Network champion			Oct*		
Contact list of potential Network users			Dec*		
Draft user needs/skills/offers survey (Survey Monkey)			Oct*		
Have a follow-up meeting with the workshop participants				Mar *	
<b>Proof of concept issue</b>					
Identify proof of concept issue: Shoreline data	(done)				
Identify champion for the Shoreline Data Workgroup: Andy Lanier	(done)				
Identify potential Shoreline Workgroup participants		Jul*			
Contact list of potential Shoreline Data Workgroup		Aug*			
Draft process of Shoreline Data Workgroup, including authoritative data set agreement (FIT)		Sep*			
Draft invitation for the Shoreline Data Workgroup		Aug-Sep			
Have the Shoreline Working Group up and going					

# Appendix A: List of participants

Eli Adam	Lincoln County
Bob Bailey	Oregon Coastal Management Program
Jon Bonkoski	Ecotrust
Jenna Borberg	Oregon Sea Grant
Jon Bowers	Oregon Department of Fish and Wildlife
Scott Butner	Pacific Northwest National Lab
Christina Cairns	NOAA Coastal Services Center
Chris Caldow	NOAA Biogeography Branch
Dan Crowther	WA Dept. of Ecology
Randy Dana	Oregon Coastal Marine Program
Mike Donnellan	Oregon Department of Fish and Wildlife
Dave Fox	Oregon Department of Fish and Wildlife
Mike Frenock	Partnership for Interdisciplinary Studies of Coastal Oceans
Lisa Gaines	Institute for Natural Resources
Tanya Haddad	Oregon Coastal Management Program
Todd Hallenbeck	Sea Grant fellow
Mary Elaine Helix	Bureau of Ocean Energy Management, Regulation and Enforcement
Milt Hill	State of Oregon
Paul Klarin	Oregon Coastal Management Program
Mike Kosro	Oregon State University
Andy Lanier	Oregon Coastal Management Program
Teddy Leland	Oregon Department of Land Conservation and Development
Paul Manson	Parametrix

Emilio Mayorga	University of Washington Applied Physics Lab
Charlie Menza	NOAA - Biogeography Branch
Arlene Merems	Oregon Dept. of Fish and Wildlife
Jeremiah Osborne-Gowey	Conservation Biology Institute
Craig Risien	Oregon State University
Julie Risien	Institute for Natural Resources
Stephanie Rozek	Bureau of Ocean Energy Management, Regulation and Enforcement
Michael Schindel	The Nature Conservancy
Barb Seekins	NOAA Fisheries
Maggie Sommer	ODFW Marine Resources Program
Randy Sounhein	Department of State Lands
Kathy Taylor	Washington Department of Ecology
Kuuipo Walsh	Institute for Natural Resources

# Appendix B: Workshop agenda

Comprehensive coastal and marine spatial planning and on-going management of ocean and coastal resources and uses among agencies and institutions will be greatly improved by establishing a human network to resolve common issues in data development, documentation, analysis, sharing, and applicability to management decision-making. Further, establishing a formal network may enhance the eligibility of coastal and marine data projects for certain state and federal funding opportunities directed at open data initiatives and other data sharing efforts. The need for such a network was [recommended by the Oregon Nearshore Research Task Force \(NRTF\) in its report to the Oregon legislature in 2010](#). The NRTF recommended the creation of a program to ensure that data and information from a variety of sources are widely available, and that the program be sufficiently flexible to account for the constant addition of new data and scientific information, the evolving needs among potential users, and the continuing advances in data technologies.

## Workshop Purpose

This workshop is designed to enable individuals in the agencies and institutions who are directly engaged in CMSP, to discuss and resolve issues related to creating a collaborative Oregon Coastal and Marine Data Network to serve the needs of the broad community of agencies, institutions, and the wider coastal and marine data user community.

## Objectives

### Day 1 (June 6<sup>th</sup>)

- Provide existing examples and models for user community interaction and discussions on coastal and marine institutional data collection, sharing and integration;
- Identify and prioritize issues, solutions, and action items that would enable coastal and marine data producers and users to be long-term data stewards.

### Day 2 (June 7<sup>th</sup>)

- Draft a framework for an Oregon user community network to address coastal and marine data stewardship and technical concerns.

## Outputs and Outcome

Based on results of the working groups, the organizers will develop and distribute a summary document describing:

- Common community issues in data development, documentation, analysis, sharing, and applicability to management decision-making;
- An overview of the goals of an Oregon coastal data management network;
- A framework for an Oregon user community network to address coastal and management data stewardship and technical concerns.

**Agenda: Monday, 6 June 2011 9 am - 4 pm**

<b>Time*</b>	<b>Agenda Item</b>
9:00 am	Welcome and introductions – <i>Lisa Gaines (INR)</i>
9:20 am	Need for the workshop – <i>Paul Klarin (DLCD) and Bob Bailey (DLCD)</i>
9:40 am	Presentation: Community Issues – <i>Tanya Haddad (DLCD)</i>
10: 00 am	<b><i>BREAK</i></b>
10:15 am	Presentation (local network example): Framework Implementation Team model – <i>Milt Hill (DAS Geospatial Enterprise Office)</i>
10:45 am	Presentation (regional network example): Northwest Association of Networked Ocean Observing Systems (NANOOS)/OOS Case Study – <i>Emilio Mayorga (University of Washington)</i>
11:15 am	Presentation (national network example): “Coastal and Marine Spatial Planning Technical Practitioners Network” – <i>Christina Cairns (NOAA)</i>
Noon	<b><i>LUNCH</i></b>
12:45 pm	<i>Guided Discussion: Discussion of other human data networks that might have relevance – e.g. Data Basin, PISCO network, others</i>
1:30 pm	<i>Guided Discussion: Discussion of Pros/Cons around forming an Oregon Coastal &amp; Marine data network</i>
2:30 pm	<b><i>BREAK</i></b>
2:40 pm	Breakout sessions/workgroups
3:40 pm	Q & A and Open Discussion, Recap, Next Day overview  – <i>Lisa Gaines (facilitator)</i>
4:00 pm	Adjourn

**Agenda: Tuesday, 7 June 2011 9am - 4pm**

<b>Time*</b>	<b>Agenda Item</b>
9:00 am	Recap of day one – <i>Lisa Gaines(INR)</i>
9:30 am	Workgroup descriptions and assignments
10:00 am	<b><i>BREAK</i></b>
10:15 am	<p>Multiple workgroup sessions to draft (detail) what the data network would look like and how it would operate. Based on results of the working groups, the organizers will develop and distribute a summary document describing:</p> <ul style="list-style-type: none"><li>• Common community issues in data development, documentation, analysis, sharing, and applicability to management decision-making;</li><li>• An overview of the goals of an Oregon coastal data management network;</li><li>• A framework for an Oregon user community network to address coastal and management data stewardship and technical concerns.</li></ul>
Noon	<b><i>LUNCH</i></b>
12:45 pm	Present results of workgroup sessions to the group and agreement of next steps
2:30 pm	<b><i>BREAK</i></b>
3:00 pm	Moving forward with next steps
4:00 pm	Adjourn



# Appendix C: Day 1 presentations

## **Framework Implementation Team model**

Milt Hill presented an example of the Framework Implementation Team (FIT) community in Oregon. Framework forms the data backbone of GIS, and Oregon's Framework Team is focused on development and stewardship of the seven national GIS framework themes and seven commonly needed Oregon data themes.

Oregon's FIT is closely aligned with the National Spatial Data Infrastructure initiative, led by the Federal Geographic Data Committee (FGDC), and is a program of The Oregon Geographic Information Council (OGIC). OGIC is the statewide coordinating body for geospatial activities and is mandated by Governor's Executive Order to provide statewide coordination of all geographic information development, management, use, access, etc. Executive Order mandates participation by 14 state agencies and provides seats for two local government representatives and one federal agency. The membership has been expanded beyond the mandate to accommodate further interest and provide better community representation.

The FIT process works to assemble statewide datasets and share them. Government, organizations, and private companies see this effort as a way to share resources, improve communications, increase efficiency, reduce costs and improve service and decision making. OGIC, with assistance from its Technical and Policy Advisory Committees, as well as the Geospatial Enterprise Office (GEO), administers the FIT. This community is comprised of 14 separate but interrelated work groups that are each coordinating the development of a theme of Framework data. There are over 400 people from all levels of government and the private sector involved in some aspect of this effort.

*Milt Hill is the Oregon GIS Framework Coordinator with the State's Geospatial Enterprise Office (GEO).*

## **NANOOS/OOS Case Study**

Emilio Mayorga presented on the Northwest Association of Networked Ocean Observing Systems (NANOOS) experience with developing the NANOOS Visualization System (NVS) a tool that aggregates, displays and serves meteorological and oceanographic data derived from buoys, gliders, tide gages, HF Radar, meteorological stations, river gages, research cruises, seabed cabled platforms and satellites. NVS integrates data from a wide diversity of providers across the region, ranging from county agencies, private industry and regional partnerships, to core IOOS federal programs, and state agencies and academic groups that are principal partners in NANOOS' Data Management and Communication (DMAC) efforts.

The NANOOS NVS experience offers a case study in facilitating access to NVS by local and state providers (groups with limited resources and no mandate or funding to share this kind of data), and in fostering participation and inclusion of those data streams into NVS. Also discussed will be barriers, motivations,

and remaining challenges and opportunities to local participation in NVS, and a presentation of the NANOOS context of national IOOS data interoperability goals and efforts.

The mission of NANOOS is to coordinate and support the development, implementation, and operations of a regional coastal ocean observing system (RCOOS) for the Pacific Northwest region, as part of the U.S. Integrated Ocean Observing System (IOOS). NANOOS maintains strong cross-boundary ties with observing programs in northern California and British Columbia, through our common purpose and because of the overlap of data and products. A key objective for NANOOS is to provide data and user-defined products to a diverse group of stakeholders in a timely fashion, and at spatial and temporal scales appropriate for their needs.

*Emilio Mayorga is Data Management and Communications co-lead for NANOOS (the Northwest Association of Networked Ocean Observing Systems) and the data manager for the NANOOS Visualization System (NVS).*

### **Community of Practice**

Christina Cairns presented on the National Ocean Council (NOC) National Information Management System (NIMS) effort, and the related emerging Coastal and Marine Spatial Planning Technical Practitioners Network.

The NOC NIMS Portal Working Group is charged with the development of a national system dedicated to coastal and marine scientific data and information products to meet the diverse needs of CMSP.

NIMS Working Definition:

*The NIMS will consist of a single point of entry, national framework data sets, a registry of regional portals, common search and discovery functionality, a map viewer for data screening, an initial list of tools, and documentation that includes guidelines containing minimum data standards and information quality standards for all data to be provided through the NIMS. The NIMS will encompass all of the principal components of an effective information management system (hardware, software, data/metadata, services, governance, resources, etc.). The NIMS will use existing infrastructure wherever practicable.*

CMSP Technical Practitioners Network Goals:

- Establish a formal network of practitioners composed of federal and regional planning body representatives responsible for developing regional information products
- Provide a central location for regional CMSP practitioners to access NIMS guidance and learn from other regional efforts
- Build capacity in the development of systems architecture, spatial data, data standards, mapping products, data sharing, and decision-support tools

*Christina Cairns is a Coastal Management Specialist at the NOAA Coastal Services Center Regional Coastal Services Division in Oakland, CA*

# Appendix D: Other data sharing examples

**DataBasin.** Data Basin is a free, online system that connects users with spatial datasets, tools, and expertise. Individuals and organization can explore and download a vast library of datasets, upload their own data, create and publish analysis, utilize working groups, and produce customized maps that can be easily shared. <http://www.databasin.org/>

**Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO).** The Partnership for Interdisciplinary Studies of Coastal Oceans is a long-term ecosystem research and monitoring program established with the goals of: understanding dynamics of the coastal ocean ecosystem along the U.S. west coast; sharing that knowledge so ocean managers and policy makers can take science-based decisions regarding coastal and marine stewardship; producing a new generation of scientists trained in interdisciplinary collaborative approaches <http://www.piscoweb.org/>

**Oregon Explorer.** Oregon Explorer provides a web-based **natural resources digital library** by integrating data from state and federal agencies, local governments, university scientists, and citizens. A collaboration between Oregon State University Libraries and the Institute for Natural Resources, Oregon Explorer helps inform decisions and actions affecting Oregon's natural environment. As a permanent part of OSU Libraries, Oregon Explorer will be continuously maintained and updated. It includes data portals, geographic portals, and topic portals. <http://oregonexplorer.info/>

**Northeast Coastal and Ocean Data Partnership.** The goals of the Northeast Coastal and Ocean Data Partnership are to promote and coordinate the sharing, linking, electronic dissemination, and use of data on the Northeast region. The participants have decided that a coordinated effort is needed to enable users throughout the Northeast to discover and put to use the vast and growing quantities of data in their respective databases. Through the coordinated access to the respective databases, the participants wish to advance a truly integrated ocean observing system in the Northeast, promote an understanding of the diversity and distribution of life in the Gulf of Maine, and contribute to integrated oceans management. <http://www.necodp.org/partnership>

**Ecosystem Commons.** The Ecosystem Commons is a networking tool and collaborative workspace where the broad-based community of practice on ecosystem services (scientists, practitioners, decision makers, and other stakeholders) can exchange information and pool resources to advance the rapidly evolving arena of ecosystem services, including research, markets, policy, monitoring, valuing, quantifying, and developing tools to aid decision making. Individuals interested in linking ecosystem services science, practice, and policy to improve decision making and foster investment in conservation are encouraged to join and participate in this interactive community. [http://oregonstate.edu/inr/sites/default/files/documents\\_general/EcoCom\\_Flyer.pdf](http://oregonstate.edu/inr/sites/default/files/documents_general/EcoCom_Flyer.pdf)

**StreamNet.** StreamNet is a cooperative information management and data dissemination project focused on fisheries and aquatic related data and data related services in the Columbia River basin and the Pacific Northwest. We are funded through the Northwest Power and Conservation Council's Fish and Wildlife Program by the Bonneville Power administration and are administered by the Pacific States Marine Fisheries Commission. The project supports staff inside the management agencies to obtain, georeference and standardize data. The data are maintained and disseminated through the Pacific States Marine Fisheries Commission (PSMFC). A variety of data are provided in tabular format and as maps and GIS layers. Information is available through the online database query, interactive maps, the Data Store, or by custom request. <http://www.streamnet.org/>

**Multiagency rocky intertidal network (MARINE ).** MARINE is a partnership of agencies, universities and private groups committed to determining the health of the rocky intertidal habitat and providing this information to the public. MARINE, a model partnership in existence for over a decade, is funded entirely by the independent contributions of its members who jointly publish data in peer-reviewed literature. <http://www.marine.gov/index.htm>

**International Coastal Atlas Network (ICAN)** is a newly-founded, informal group of organizations who have been meeting over the past two years to scope and implement data interoperability approaches to coastal web atlases (CWAs). The **mission/strategic aim** of ICAN is to share experiences and to find common solutions to CWA development (e.g., user and developer guides, handbooks and articles on best practices, information on standards and web services, expertise and technical support directories, education, outreach, and funding opportunities, etc.), while ensuring maximum relevance and added value for the end users. The long-term view is for global-level operational interoperability which will evolve as the ICAN community strives to increase awareness of the opportunities that exist for increased coastal and marine data sharing among policy makers and resource managers as strategic users of a CWA. ICAN participants seek to play a leadership role in forging international collaborations of value to the participating nations, thereby optimizing regional governance in coastal zone management. A major goal is to help build a functioning digital atlas of the worldwide coast based on the principle of shared distributed information. We will go about this by organizing a cooperative interoperability network for the integration of locally-maintained CWAs as the premier source of spatial information about coastal zones throughout the world. We will do this by developing community-held constraints on mapping and data distribution conventions to maximize the comparability and reliability of information about our coasts. This is done to provide a basis for rationally-informed discussion, debate and negotiation of sustainable management policies for our societies, nations and people throughout the world. This has tremendous potential to be relevant not only on both sides of the Atlantic for the North American and European partners involved, but also has implications for **global spatial data infrastructures, marine spatial planning** and related projects. <http://ican.science.oregonstate.edu/en/home>

**Pacific Coastal Ocean Observing System (PACOOS).** As part of this nationwide effort, NOAA, academic partners, foundations, state fisheries agencies, and other organizations are developing an integrated Pacific Coast Ocean Observing System, (PaCOOS) for the California Current Large Marine Ecosystem. The system shall provide the information needed for management of fishery resources, protected marine mammals, marine birds, and turtles, and to forecast the ecosystem consequences of fisheries removals, environmental variability and climate change. It is the ecosystem observing backbone of IOOS for the California Current Large Marine Ecosystem. The geographic focus is the U.S. Exclusive Economic Zone off the coasts of California, Oregon and Washington with international links to the portion of the California Current Ecosystem occurring in Canadian and Mexican waters. PaCOOS is administered by a Board of Governors and two coordinators. PaCOOS is administered by a Board of Governors and staffed by a program manager and coordinator. <http://www.pacoos.org/>

**Pacific Ocean Shelf Tracking Network (POST).** The Pacific Ocean Shelf Tracking (POST) Project's mission is to further understanding of the behavior of marine animals through the operation of a large-scale ocean telemetry and data management system. POST serves as an accessible research tool for academe, resource agencies and the public. Long-term monitoring of marine animals will contribute to the conservation and stewardship of marine resources. <http://www.postprogram.org/>

**PTAGIS.** The source for information about PIT-tagged fish in the Columbia River Basin. <http://www.ptagis.org/>

**Mid-Atlantic Regional Council on the Ocean (MARCO).** To successfully address these challenges, and to ensure that future generations can enjoy healthy and productive ocean ecosystems, the Governors of New York, New Jersey, Delaware, Maryland and Virginia have committed to a new comprehensive, regional approach, creating the Mid-Atlantic Regional Council on the Ocean. Our five states will work to maintain and improve the health of our ocean and coastal resources, and ensure that they continue to contribute to the high quality of life and economic vitality of our region's communities well into the future. <http://www.midatlanticocean.org/>

**MarineMap** is a web-based decision support tool for open and participatory spatial planning in the marine environment. MarineMap offers a simple, flexible and powerful means of gathering expertise from resource managers, scientists, stakeholders and public in a process of collaborative decision making. The MarineMap Consortium brings together personnel and skills from UC Santa Barbara, Ecotrust, and The Nature Conservancy. We create open-source spatial tools that integrate and illuminate the human dimensions of marine science and policy. <http://marinemap.org/>

**Marine atlas and data library.** The British Columbia Marine Conservation Analysis (BCMCA) is a collaborative project designed to provide resource managers, scientists, decision-makers, and those

with a vested interest in the marine environment with resources that will help to inform coast-wide integrated marine planning and management initiatives. <http://www.bcmca.ca/data/>

**Sanctuary Integrated Monitoring Network (SIMoN).** <http://sanctuarysimon.org/index.php> **Monterey Sanctuary Inventories** <http://sanctuarysimon.org/monterey/index.php> Integrating monitoring information is key to the Sanctuary program, because these summaries are needed for decision making on a wide variety of resource management issues. Through an array of database and display systems, and information provided from close to 100 research institutes, they have the best available comprehensive view of the sanctuary. Because much of the sanctuary has yet to be explored, their information is still incomplete. They are also working on ways of integrating information across habitats into ecosystems models, to detect large-scale events.

**Regional Ecosystem Office (ROC) – *a cautionary tale*.** The Regional Ecosystem Office (REO) provides staff work and support to the Regional Interagency Executive Committee (RIEC). The goal of this staff work and support is to facilitate decision making and prompt interagency issue resolution during the implementation of the Northwest Forest Plan. <http://www.reo.gov/>

# Appendix E: Statements about the Network

## **“Who we are”**

- recognized group that puts faces to data (coastal/marine/estuarine)
- trusted and relied upon to provide informed access to data and information

## **“What we do” (actions and products)**

- serve coastal marine resource managers
- coordinate delivery and access (from producers to users) with mechanisms for feedback from users
- provide a network to establish standards useful to data producers
- connecting people with data and information (coastal and marine environment)
- develop a thorough knowledge system for
- enable a human network to facilitate communication, coordination, collaboration of data managers and practitioners
- identify authoritative data sources
- increase accessibility of data to researchers policy makers, and general public
- facilitate contribution and collaboration with regional and national partners
- connect data to producers
- connect human and data network through coordination
- help to share data for partnerships
- build a human and data network
- enhance access to data for practitioners
- facilitate information flow

## **Outcomes (how will the world change)**

- improve accessibility to coastal and marine data
- increase awareness of what data is available for decision making
- improve overall quality of data (standards/usability)
- increase efficiency of decision making (government)
- Increase efficiency of data producers (making their information available)
- thoughtful C+M planning and research to
- benefit citizens of Oregon and the west coast
- increase accessibility of data to researchers, policy makers, and general public
- create informed community
- improve sustainable stewardship of marine environment
- enhance access to data for practitioners

# Appendix F: Draft names for the Network

Offered by many participants via the Coastal Marine Network listserve on 10 June 2011

## Network Name Discussion

I'm curious what others think we mean by the words "Coastal" and "Marine"? I think of coastal as a jurisdiction and Marine in the biological/physical context (i.e., salt water) rather than jurisdictional. I think "Marine" sufficiently represents our region of interest (i.e., all ocean and estuary environments) and so it seems redundant or unnecessary to include "coastal".

## List of Potential Network Names

Oregon Coastal Marine Data Facilitators Network  
Oregon Coastal Marine Data Facilitation Network  
Oregon Coastal Marine Data Facilitators Group  
Oregon Coastal Marine Data Facilitation Group  
Oregon Coastal Marine Community of Interest (OCM CoIn)  
Coastal Oregon Information Network (COIN)  
Coastal Oregon Information Community of Interest (COI-COI)  
Network for Oregon's Marine Data Community (NOMDC)  
Oregon Marine Data Network and Community (OMDNC)



# Appendix G: Network roles and responsibilities breakout group notes

## Roles and Responsibilities Group

### Flipchart notes (presented by Mary Elaine Helix)

#### Goals of the Network

- To connect people to data and data to people
- To identify data development needs for users and helping to resolve those needs

Key point: We want the data and users to drive the process so that this is not a top down management/policy issue

Beta test #2 → Shoreline problem

- Test a process to address this goal
- Test a communication mechanism
- Test to see if it meets the needs
- Does a structure emerge?

### Flipchart notes (taken)

#### Organization structure

- Could be a forum which activates around topics and solves problems
- With website that displays products and connects people to data
- Mechanism is: any member identifies need, we bring the right people together to work the problem
- Communication: identifying other things that we will look at next or suggest topics “shoreline is what we are doing first → here is what the network is about”
- How are decisions made
  - Ad hoc formation of teams to answer questions/solve problems
  - Make recommendation
- Membership is inclusive
- Process
  - We identify needs and forward them
  - Member user identifies needs
  - Discuss approach
  - Communicate recommendation or idea to the appropriate body of who could work on this

- Data drives the process not management
- Steering committee -- data, msp, outreach, standards, web, shore
- Leadership
  - Steering committee – what would this look like (front end group?, have a stated business need?, resources enabling/providing?)
  - Coordination shepherd (champion)
- Expectations of members –
  - being willing to provide information of who you are
  - individuals or organization?
  - Principle -- transparency
- Open source software may be a good analogy
- Beta test
  - Form a group around a situation (shoreline)
    - Invoke network (communicate structure and goals of the network and reach out)
    - See how communication mechanism worked
    - Test document
    - Did it meet the needs of the workgroup
    - Hot wash at end
  - Organize and display what Oregon has (within the Shoreline theme)
    - Gap analysis
    - Website
    - Identify personal contact with each dataset
    - Pull in links (low hanging fruit)

## **Typed notes (submitted by Todd Hallenback)**

### **“Governance/ Rules and Responsibilities” Break out Group – OR Data Management Workshop Day 2**

#### **Key questions moving forward**

What kind of decisions are made by this group?

How is membership determined?

Do all members have equal weight?

How is this funded?

How do we enable leadership within this group?

What is the structure?

What are our goals?

Principles and goals?

Communication mechanisms?

#### *Which DECISIONS are MADE?*

Products that can connect people to data.

Standards and practices  
Not decisions, recommendations

*Do members have same weight?*

*How determine membership?*

Should be an agreement to be good partners to share data and fulfill mandate of network.  
Members will also be users.  
Inclusive

*How funded?*

*Leadership?*

Agency representatives form leadership, includes those that have business need  
DLCD, ODFW, DSL, etc...?

*Structure/roles /process*

- Executive Committee, Steering Committee – some opposition to a “top down” structure, reasons included workloads, communication issues (i.e. an executive committee precludes a network)
- Advisory sub committees comprised of people that are interested in topics, organize around need for data standard/authoritative source, etc., meet and decide on solution, then recommend to Oregon Geographic Council authoritative sources and/or standards, best practices, etc.
- Needs to be ad hoc to address emerging issues, and acknowledge voluntary nature of network
- Member of community identifies needs, communicates with network
  - Data development
  - Standards
- Communicating the need to appropriate entities \*Leader (Andy)
- Steering Committee (Agency reps)
  - Each member from the steering committee form a subcommittee?
  - Facilitator
  - Multiple people divvy up responsibilities
- Technical sub-committee (small) – organized according to data theme

*Principles, Goals, objectives*

Data drives the network  
Transparency  
Use a trial need to form a pilot process.

## *Communication*

### *Website*

Links to data

Forum (open source model)

## *Next steps*

1. Implement pilot project to invoke network to solve shoreline data standard. “Beta Test”

Invoke network (i.e. send out invites, initially participants in workshop)

Create sub committees to decide mechanisms for:

Communication -

Website, wiki – group assemblies to discuss these ideas

Perhaps augment the coastal atlas cite to include POC

for each data set. More clearly link Coastal atlas to

OregonOcean, other websites

Display gap analysis, and link to POC for data sets

Technical Standards – committee to set standards for shoreline, this group will be in charge of creating the process by which these decisions are made. Suggestion was made to adopt the FIT process.

Andy volunteered to be the “catalyst.” Todd volunteered to help assist in getting website up, help get a contact list going for data providers to Coastal Atlas.

Assessment – see how communication mechanism worked/ didn’t work

Test documentation

Did it meet needs of the group?

Did the process solve the “shoreline problem”?

2. Goals and Objectives

1. Connecting/networking of people and data
2. Identifying data development need for the core to solve

3. Display theme of shoreline that Oregon has to offer

Gap analysis

Website

Id personal contact with each other

Pull in data links

## *Possible Names:*

- Oregon Coastal and Marine Data Management Network (OCMDMN)
- Oregon Network of Data Managers (ONDM)
- Network of Oregon Data Managers (NODM)
- Pacific Northwest Network of Data Managers (PNNDM)

- West Coast Data Network (WCDN)
- Coastal and Marine Data Network (CMDN)

Examples:

PISCO- strong steering committee

- Process, someone says it's time to put data in and then form workshop to include data. If you don't show up you don't get a vote.
- If key players cannot be there then emails go out and decisions don't get made or get made by a very small number of people.

Marine-

- Core group of agencies (park serves, BOEMRE, Santa Barbara, Navy) small group. Some resources, and a business needs. Technical group formed and began the start. Meetings each year look at data

# Appendix H: Network products and users breakout group notes

## Products and Users Group

### Flipchart notes (presented by Eli Adams)

#### Products

- Near-term product delivery
  - Immediate communication within the workshop participant group via listserve, wiki, e-mail, face-to-face
  - List of users/participants and what they have to offer (i.e., hosting data), skills, needs (i.e., data)
- Longer term product delivery
  - Data exchange standard or recommended practice
  - Data rating system
  - Connect for remote query

#### Users

- Internal Users
  - Providers and consumers
  - Those attending this meeting
  - Characteristics of an internal users are:
    - Those who register through filling out a template of information ( template information TBD)
    - Those who generally contribute in some way to the Network (i.e., conversation, data, wiki, etc.)
    - Others?
- External Users
  - General contacts
  - Technical
  - Metadata
    - Temporal
    - Spatial content
    - Thematic content
    - Name, #, download link

### Typed notes (submitted by Tanya Haddad)

Communications – technical aspects to communication (listservs, webinars, wikis, Googlegroup, mailman) how do we keep the conversation going? After today how will this conversation continue?

First choice is face to face meetings, beyond that there need to be various electronic notification methods (opt-in levels of bombardment)

We should probably direct effort to communication mechanism that becomes part of the resource that people can access online (so that conversations hit a wider audience and create content that people will continue to reference into the future → knowledge shared = a type of product)

## Products

- Part of our directory is resources that network members bring (e.g. who can host a webinar, listserv, wiki etc.) We could design a template that captures network expertise, area of work (thematic and geographic), and resources that could be shared with the network to help advance network activities. The first two might be viewable by external users, while the latter might only be viewable internal to the network.
- One of our first products is some sort of selection of communication method (requires low amount of resources)
- If we identify that network members have “feeds” already, perhaps we can create a “planet” product (like a blog aggregator)
- A system for connecting catalogs is probably a product that is further down the road, but ultimately would be great
- Data exchange standards are technical communication specifications that could be an example of a product the network could be involved in (this could be a only at the level of recommended practices, or a more involved process of determining how to interconnect systems)
- Rating system for appropriateness of data for specific uses (resource heavy requirement – assumes a system exists to house) help data users match magnitude of decisions with quality of data (metadata plus)

## Users

- Internal Users
  - Data Providers
  - Data Consumers
- External Users
- Contacts, roles, thematic areas
- Technical details, loose metadata, metadata lite (is this manual, or in a CMS, how sustainable is this)

## Mapping of products of network to original “Top 4” theme that attendees identified in pre-workshop survey

- Finding and accessing data
  - User needs
  - Products

- Search
- Sharing Data
  - Documentation (original “Top 4” item but got rolled into Sharing)
  - Catalogs
  - Practitioner help
  - Technical specs
- Connecting People
  - Internal to the network / external to the network
  - Communications / outreach
  - Directory
- Problem Solving Group (not an original “Top 4” – but raised by governing group)
  - Shoreline problem beta test (solve this problem, but also potentially evolve a governance)
  - Address authoritativeness when necessary