

# **How We Use Our Marine Waters**

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**A data workshop to support coastal and marine spatial  
planning (CMSP) in Washington**

**Summary Report**

**October 2011**

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## Executive Summary

In July 2011, the Washington State Ocean Caucus<sup>1</sup> hosted two workshops to engage stakeholders and partners in a discussion on human use data relative to coastal and marine spatial planning (CMSP) in the state. The workshops were supported by the West Coast Governors' Agreement on Ocean Health, the Moore Foundation, the Bureau of Ocean Energy Management and Regulatory Enforcement and the Port of Grays Harbor.

People engage in diverse activities and uses of the ocean that Washington has broadly categorized as human uses and human infrastructure. Human uses include both consumptive and non-consumptive uses of ocean resources such as fishing, recreation, scientific research, and viewscape. Human infrastructure includes scientific equipment, cables, and overwater structures. Knowing where and to what degree humans use coastal and ocean resources is paramount to a successful CMSP process.

Participants were given a briefing on CMSP at state, regional and national levels, and how data about human uses of the marine environment has supported other CMSP efforts. Next, staff from the Washington Department of Ecology presented a preliminary data inventory and gap analysis for discussion. Finally, several presentations were given on methods other states have used to address specific human use data gaps. Participants were asked to supply project ideas and general comments for Washington based on their reactions to the data inventory, gap analysis and different methods for filling specific gaps.

The most common theme that emerged in these meetings was the importance of stakeholder engagement in the data inventory process, new data collection, and CMSP in general. Participants were adamant that the CMSP process should be a collaborative process with emphasis on outreach and every step of the way. Many participants also underlined the need for a wider inventory of datasets. This was especially true for county-level data sets, specific to the ownership and aquaculture data categories. Other key regional data holders were identified, such as the Olympic Natural Resources Center of the University of Washington. Finally, participants were very helpful in identifying leads on additional data sources, especially in data categories that were ranked "fair" and "poor" in the human uses data gap analysis.

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<sup>1</sup> The Washington State Ocean Caucus (SOC) acts on the recommendations in the state's Ocean Action Plan, works to prioritize activities and solve problems related to the ocean environment, and emerging issues such as CMSP. The membership includes various state agencies with an ocean or coastal purview and liaisons from coastal Marine Resource Committees (MRCs).

## Participants

Workshop participants came from local, state, tribal and federal governments, academic institutions, non-profit organizations, and commercial and industrial marine user groups. A full list of attendees and contact information can be found in Appendix B.

## Purpose

### Goals

Recognizing the important role human use data will play in Coastal and Marine Spatial Planning (CMSP), the main goals of this workshop were: 1) to gather input and recommendations on the preliminary human use data inventory and gap analysis, and 2) to identify preferred methodologies, potential projects, and next steps for filling or fixing gaps in the human use datasets of Washington's marine waters.

### Objectives

The workshop attendees helped achieve the above goals through the following meeting objectives:

1. Engage a broad suite of partners and stakeholders.
2. Understand the ways human use data can inform the CMSP process.
  - a. What constitutes authoritative versus anecdotal data? Qualitative vs. quantitative?
  - b. Should relative importance be spatially determined or not?
  - c. What timescales/time series/time periods are important for planning?
  - d. What scale or resolution is appropriate?
  - e. Others?
3. Evaluate the status of and understand gaps in human use data that can support CMSP.
4. Develop common understanding of basic methods for human use data collection.
5. Through a facilitated discussion, develop recommendations for how human use data should be assembled and identify specific human use data projects.
  - a. Identify three to five human use datasets that are critical to the MSP process for the region
  - b. Identify and, as able, preferred methods for new data collection
  - c. Identify a list specific projects that are appropriate
  - d. Identify other next steps

## Background on CMSP

Jennifer Hennessey (WA Department of Ecology) presented (Appendix D) a background on CMSP and why it is being pursued in Washington. She also discussed examples of human use data, how that data has been used to inform CMSP in other coastal states, and the considerations of its use in the CMSP process.

At both workshops, general questions were asked about how the CMSP process will unfold at the state and regional level. Specifically, attendees were interested to know how a plan would be enforced and to what geographic extent, i.e. state and federal waters or just state waters. The plan would not include new regulation, but would be developed in collaboration with governments with marine jurisdiction and therefore would compel agencies with marine purview to adhere to plan objectives. According to the state law, a state- developed plan will be folded in as an enforceable policy of the state's federally- approved Coastal Zone Management Program. This provides a mechanism through federal consistency for the state to have a say in federal actions- including those activities in federal waters that affect Washington's coastal zone. Additionally, attendees at both workshops were interested to know how a Washington state plan would integrate with the National Ocean Policy (NOP) and the regional plans that it calls for. Specific federal guidance about how regional planning should take place has not been finalized, but tying together sub-regional plans has been suggested; this is one way Washington's plan could be integrated with a regional plan.

## Data Inventory and Gap Analysis

Dan Crowther (WA Department of Ecology) presented (Appendix D) his work compiling a preliminary data inventory. He reviewed the methods for the inventory, the method for analyzing gaps, and discussed each of the data categories in which he found gaps that needed discussion at the workshop.

## Methods

The data inventory began the summer of 2010 and outreach to data holders continues today. To date, 307 datasets were identified that are categorized as human use datasets. The inventory worksheet was sent out with a list of data needs, and a spreadsheet of data criteria, or metadata, that are listed below. The responses varied widely; some respondents filled out spreadsheets completely, others were missing data, and still others returned wholly different spreadsheets maintained by their organization. The following criteria were used to assess, in a preliminary and qualitative way, what human use data exists for Washington and its status for supporting CMSP in the state:

- Title
- Format
- Scale
- Date collected
- Geographic coverage
- Temporal or seasonal?
- Who owns the data?
- Publicly available?
- Category?
- Contact information
- Other

Once the data were organized into the human use data categories that are listed in Table 5 of the WA CMSP Legislative Report from January 2011, a qualitative rank was assigned to each category based on the strength of data representing that category. The specific definitions of each of these rankings are defined in Appendix D, and are a useful guide to identifying where gaps exist as well as areas where there are opportunities for improvement. Data sets ranked 'good' and 'excellent' were not discussed in the workshop, as the gaps in these datasets are minimal. Instead, the workshop focused on the data categories that were ranked 'fair' and 'poor'. In these categories, large gaps were discovered because data does not exist, the data that does exist is not useful to CMSP in its current format, or the appropriate data were not discovered in the preliminary inventory effort.

## **Inventory, Gaps, & Comments**

### **Aquaculture – Fair**

Several datasets were returned in the inventory for the aquaculture data category such as the Washington Department of Fish and Wildlife (DFW) Aquatic Farm Registration Database, the Washington Department of Health (DOH) Shellfish Certification database, Washington Department of Natural Resources (DNR) Authorized Uses (ENC11 Interim) shapefile, and the National Oceanic and Atmospheric Administration (NOAA) Electronic Navigational Charts. However, this category is ranked fair as there is no statewide or centralized database to access information for aquaculture areas. Additionally, information for aquaculture activities on privately held lands is not well documented. Participants at both workshops gave leads for finding additional datasets, and also suggested corollary studies that could be done to document economic impacts or biological needs of aquaculture activities (see Appendix C).

### **Commercial Fishing – Fair**

DFW maintains several logbooks with high resolution spatial data, i.e. latitude and longitude information. These include groundfish trawl, Dungeness crab, spot prawn, sardine, and sablefish logbooks. However, only the sardine logbook has been entered into a GIS, while the others are maintained in Microsoft Excel spreadsheets or Access databases. The DOH maintains information about commercial shellfish harvest sites, but this dataset does not have an effort or level of catch component. The gaps in datasets describing commercial fishing are missing datasets (i.e. halibut, International Pacific Halibut Commission not yet contacted), non-existent spatial data (fisheries without official logbooks such as salmon, groundfish longline, forage fish, and pink shrimp), and all the logbooks still not in a geographic information system (GIS), such as Dungeness crab. Attendees of both workshops asked questions clarifying the expectations of logbook information on the issues of scale, resolution and confidentiality.

### **Recreational Fishing – Fair**

Again, logbooks are kept by DFW for some recreational fisheries but not others. Albacore tuna, canary/yelloweye rockfish, and observer data are all kept in Microsoft Excel, but spatial resolution and participation by recreational fishermen is not clear and is probably variable. DFW also maintains a GIS shapefile of all pier fishing locations in the state, however that data does not give effort or catch

information. Several fisheries do not collect logbook data, i.e. charter halibut, groundfish, and salmon. The recreational fishing data category is ranked fair as some data does not exist and most others are not useful to CMSP in their current state. Participants agreed that the spatial component of recreational fishing is weak. One participant noted that understanding how fish move is just as important as understanding where humans go to catch them, especially once infrastructure is put in the water.

### **Recreational Use Areas – Fair**

Several resources exist online for recreational boaters in the state of Washington. DFW and the Washington Recreation and Conservation Office (RCO) and both have online databases and GIS that document the mooring sites, boat ramps, docks, marine parks, and boating facilities in the state. Washington Department of Ecology (Ecology) has recently added a Public Access GIS database online that describes where people can access the shoreline in Washington. Finally, the DOH maintains information on recreational shellfish beaches in a GIS. Unfortunately, all of these resources describe where folks can go to access the water or shore, but do not describe where they go after embarking or the intensity/pattern of use on the water. Additionally, not all recreational uses are described in these datasets.

### **Military Use Areas – Fair**

In this preliminary data inventory, very few datasets were returned with complete metadata. Based on these returns, it was not possible to determine the quality of data regarding military use areas, specifically training and danger areas. After presenting this category at the workshops, several attendees suggested contacting the Navy. Since then, representatives of the Navy have been contacted and supplied with the inventory worksheet and instructions.

### **Ownership Data – Fair**

In the state of Washington, data on ownership of tidelands and sub-tidelands is somewhat confusing. DNR is updating a GIS that describes authorized uses on state owned aquatic lands, which includes the areas owned by the state. In addition, DNR has GIS data on which land was sold as Bush and Callow Act lands. However, DNR does not have data on which of these lands have come back under state control. Generally, there were many comments made about ownership data. At the Aberdeen workshop, participants noted that county parcel data would be the best source of information on ownership, and would contain high resolution information. This would have to be stitched together for a statewide dataset, and could be difficult along borders. At the Seattle workshop, a representative of DNR indicated that ownership data is largely well documented, but in some cases ownership is not well defined or known and must be adjudicated. Due to this issue, it may be a slow process to produce a definitive and authoritative statewide ownership dataset.

### **Other Management Plans – Fair**

For the purposes of the data inventory, the Coastal Zone Management areas, the Shoreline Management Act areas, and the Puget Sound Action Areas were all lumped into the 'Other Management Plans' data category. Each has a GIS dataset associated with it. However, this is only boundary information. The data category was ranked fair because the definition of the word 'other' is vague and can include many more datasets. In fact, someone commented that all of the data categories needed

more clarification or tighter definitions. At the Seattle workshop, several ideas for “other management plans” were suggested for inclusion in this category.

### **Economic and Demographic Data – Fair**

The Bureau of Labor Statistics Quarterly Census of Employment and Wages database has very powerful data that describes the economy in coastal areas. The NOAA Coastal Services Center integrated that data into an interactive time series map that summarizes several economic indicators of six economic sectors by coastal counties. The data may not accurately reflect economic condition of self-employed individuals, i.e. fishermen, and the scale is set at the county level. In addition, this data is not released publicly when only a few businesses are responsible for that sector in the county. Demographic data is available from the US Census Bureau; however, this information is not in a GIS and can be summarized many different ways. At both workshops, participants were quick to point out the Office of Financial Management (OFM) should have datasets regarding both economic and demographic data. In addition, leads were provided for high quality demographic studies from Washington State University characterize some Washington coastal counties and communities based on US Census data.

### **Research Activities – Fair**

Several datasets were identified in the inventory that describe research activities in marine areas, such as the NOAA trawl surveys, the Ecology Environmental Information Management database, and the DOH Water Quality Sampling stations, all of which are in a GIS. However, this is not an exhaustive list of research activities that occur in marine areas off the coast of Washington. Participants at both workshops were quick to cite several research projects and contacts at research institutions. Additionally, a study conducted in Oregon was cited that followed specific methodology for identifying known research activities and sites in the Oregon Territorial Sea, to help identify those important areas in their CMSP efforts.

### **Power – Fair**

The only dataset describing transmission lines and power substations was issued by FEMA in 1993, which is considered outdated.

### **Overwater Structures and Shoreline Alterations – Fair**

Some spatial information on shoreline armoring, dams, waterfront industrial facilities, bridges in tidal areas, and railways was identified in the inventory from various sources like The Nature Conservancy, Ecology, and Washington Department of Transportation (DOT). However, information on dikes, groins, jetties, and tide gates was not identified and is considered a gap. A participant from Seattle noted that DNRs Shore Zone dataset has information on man-made structures. Additionally, some counties may maintain data in their Shoreline Master Programs (SMPs) on shoreline alterations such as dikes, groins, and jetties, but there is most likely variation in data quality, including spatial coverage.

### **Mitigation Areas – Poor**

No information on mitigation areas was found in the data inventory. However, participants in both workshops identified several sources at the county and state level for mitigation projects.

### **Emerging Marine Uses – Poor**

No information regarding emerging marine uses, and specifically preliminary permits for proposed energy projects were identified in the data inventory. Several suggestions were made that energy companies, federal entities, or state permitting databases may be a good source for siting information for emerging uses.

### **Viewscape – Poor**

The viewshed or viewscape data category was not populated in the preliminary data inventory. Based on discussions at the workshops and comments received it seems that individual county SMPs might deal with the concept of viewscape, but spatial data may or may not exist. Additionally, one public opinion survey was suggested as a lead for information on viewscape for the West Coast. Generally, questions were heard at each workshop about whether viewshed is a protected use or something that should already be planned for.

### **Marine Debris – Poor**

Again, no datasets were identified during the inventory that described marine debris in marine areas of Washington State. However, several attendees suggested that individual counties or the Northwest Straits Commission may keep records on beach clean-up activities and also suggested federal government leads such as the US Army Corps of Engineers and NOAA.

### **Culturally & Historically Significant Sites – Poor**

The only datasets that were identified in this data inventory were related to shipwrecks and obstructions to navigation. More spatial information is available, but was not obtained at this early stage. Many comments and project ideas were heard at the workshops regarding culturally and historically significant sites. The Department of Archeology and Historic Preservation, Tribal entities, and a forthcoming study for Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) were all listed as contacts for more information. Some commented that confidentiality of these datasets, where they exist, may pose a challenge.

## **Methodologies for Collecting Human Use Data**

The following four presentations illustrated different methods of filling gaps in human uses of the ocean for specific marine planning purposes. Copies of the presentations are included as Appendix D.

### **Non-Consumptive Ocean Recreation in Oregon**

Pete Stauffer of the Surfrider Foundation gave a summary of the recreation survey conducted last year in Oregon. The survey aimed to assess what recreational activities occur, where they occur spatially, and their potential economic contribution to coastal communities. This research was designed to support CMSP in Oregon, as the state is updating their Territorial Sea Plan (TSP) to include renewable ocean energy. Even though the data is being used to support the Oregon planning process, several changes would be made if it could be done again. Specifically, making the survey shorter, increasing outreach efforts to recreationalists, and additional data analysis would strengthen the project as a whole.

## Mapping Commercial and Recreational Fishing Grounds: Examples from California and Oregon

Charles Steinback of Ecotrust provided an overview of the methods and tools (Open OceanMap) developed and used by Ecotrust to conduct interviews with commercial and recreational fishermen to inform California's Marine Life Protection Act process and Oregon's Territorial Sea Plan (TSP) amendment process. Using Open OceanMap, for each fishery and individual fishermen participates in, they are asked to provide the extent of their fishing grounds, weight the relative importance of the areas within the grounds based on their cumulative fishing experience, and to characterize the operating costs of each fishery (expenditures for recreational fishing). For each port within a study area, individual information is aggregated by fishery and/or gear type to produce a comprehensive representation of the commercial and recreational spatial use patterns, values, and economic importance. The spatial depiction of the fishing grounds is not a snapshot of the fishery at any given time, but rather represents the cumulative experience of those that participated in the study. Since the methodology relies entirely on fishermen's knowledge, the resulting products provide a very accurate spatial depiction of the fishing grounds. The products of these studies have been used to inform the potential economic impact of Marine Protected Area proposals in California, and to identify areas of importance to fishing, that will be protected under Goal 19 of Oregon's TSP process. In summary, the methodology; a) brings fishermen's knowledge directly to bear on marine planning processes, b) is a published peer-reviewed set of standardized survey procedures, methods, and tools for collecting and analyzing user generated data<sup>2</sup>, and c) is an opportunity to engage and educate stakeholders about the marine planning process in which their data will be used to inform.

## Mapping Human Uses of the Ocean in California

Mimi D'lorio presented a method developed by the National Marine Protected Area Center of NOAA. This method was developed to support the California Marine Life Protection Act but has also been applied in New Hampshire, Southern Maine, and Hawaii. This approach captures spatial information on a broad range of uses, using expert local knowledge in a participatory mapping exercise. Over several days, this inexpensive method can produce maps of the general footprint, dominant use and future use of individual uses of the ocean. However, the scale and resolution of the data is coarse, and the data collected is restricted to the knowledge of the experts in the room. For these reasons, the intended applications of the data need to be identified before data collection. Additionally, this approach requires developing a specific list of uses to be mapped and identifying appropriate knowledgeable experts. This method is flexible and adaptable to localized needs.

## Outer Continental Shelf Space Use Conflict Avoidance Study

Flaxen Conway of Oregon State University presented her work on the BOEMRE study of space-use conflicts on the outer continental shelf (OCS). The three deliverables of this grant were a literature review, a geospatial database of uses on the OCS, and a contextual summary of uses and their relative

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<sup>2</sup> Full methodology described in: SCHOLZ, A. J., STEINBACK, C., KRUSE, S. A., MERTENS, M. and SILVERMAN, H. (2011), Incorporation of Spatial and Economic Analyses of Human-Use Data in the Design of Marine Protected Areas. *Conservation Biology*, 25: 485–492. doi: 10.1111/j.1523-1739.2010.01626.x

importance on the OCS. The geospatial database was essentially a mirrored effort of the data inventory undertaken by Washington. However, the researchers collected actual datasets, rather than merely identifying the data that exists. In their effort to collect and display confidential fisheries data, logbook data was digitized and aggregated to produce polygons of the footprint of their activity. In addition to the geospatial database, Flaxen conducted ethnographic interviews that assessed the social and cultural value of the OCS where activities occur. In other words, users were able to describe the importance of the spaces used and give their perspective on their sense of place in the ocean place. This study was limited to the OCS and did not specifically target uses in Washington State waters.

## Discussion of Methodologies

To guide the discussion surrounding these methods, workshop participants were asked to respond to several questions.

1. What are the preferred methods to address each data gap?
2. Are there any concerns about particular methods? If so, why? How can concerns be addressed?
3. Are some methodologies more appropriate than others for filling gaps in particular categories of uses?

## Aberdeen

The participants in Aberdeen made clear that stakeholder engagement in the process of collecting new data would be paramount as the state moves forward with CMSP. It was clear from the comments made that attendees like a pyramid scheme of contacting stakeholders at the outset, a regional approach for collecting new data (Columbia River, Outer Coast, Inner Coast), and continued engagement such as having access to the data collected and involvement in the planning process.

A question was asked regarding the number of respondents in the Surfrider opt-in survey: about 300 people. The outreach effort could have been broader; however the online presence is important as a modern day mechanism for getting folks to participate. One agency representative noted their public processes have public meetings as well as online presence that seems to be essential for their process.

The conversation also focused on the NOAA MPA approach for collecting new data, specifically, participants wanted to know the time and resource investment that would be needed for the workshops and mapping uses in Washington State waters. MPA Center staff stated that NOAA is prepared to bring their method to Washington State, and is looking for partners to assist with travel and workshop costs.

Concerns surfaced regarding who would be considered a stakeholder in the process or prioritizing some uses over others. Along the same vein, the perceived danger of using labels such as 'consumptive' versus 'non-consumptive' was also discussed as consumptive has negative connotations to some. Not only that, but any one stakeholder could probably fit into both consumptive and non-consumptive categories given their activity of the day. Another concern was whether and how the NOAA MPA process could discourage the experts from lying or skewing results in that process. NOAA MPA staff responded that a majority ground-truthing process was applied to the maps during the workshops.

Finally, there was a concern with how the Ecotrust '100 penny' method weights some fishery grounds higher than others thereby marginalizing some parts of the overall fishery footprint. The method was perceived as requiring interviewees to essentially give-up areas that they did not mark with a penny, because they would not be identified as valuable in the resulting map.

## Seattle

At the Seattle workshop, participants were especially concerned about the lack of specific planning goals and objectives tied to CMSP broadly that can guide the data inventory and gap analysis. One participant noted that this concern would preclude identifying or filling gaps because the relevant gaps could not be assessed without specific planning goals to measure against. This problem was likened to the 'chicken and egg' problem; at this stage of pre-planning we know the broad topics we would like to see planned and begin approaching them; however, without the specific goals we can't narrow the scope of the gap analysis. This prevents us from really understanding the nuanced problems that would rise with each dataset for a specific goal. Some folks agreed that a preliminary data inventory made sense, but the next step of identifying planning goals is necessary.

Another concern was how 'authoritative dataset' was defined for the purposes of the gap analysis. Some felt that the scale of planning could dictate what was authoritative or not. In other words, at a small scale, even local data could be authoritative. Additionally, the term "authoritative" is subjective and could mean different things to the federal government versus the state versus counties and cities. For example, two different agencies could each have a different dataset covering the same issue, but both may be considered authoritative by their respective agency. The use of the term 'authoritative' could vary by data category as well. Finally, some data has no authoritative source, so participants noted that it is most important to define what constitutes credible information when using data and involve others in deciding which datasets to use.

Finally, throughout the day participants were mindful of stakeholder engagement at all levels of the CMSP process, including during the data inventory and new data collection efforts. The failed marine reserves effort in Washington was given as a good example of how the state tried a top-down approach but had to reverse the process to pull in stakeholders to create buy-in and prevent the appearance of the state dictating to constituents. Additionally, attendees agreed that using a one-size-fits-all approach is not appropriate and that sub-regional planning and outreach had to be done for the Puget Sound, Outer Coast, and lower Columbia River.

## Discussion of Leads, Projects & Next Steps

In the final part of the workshop, participants were asked to fill out Post-It Notes with specific projects that would address a gap and post it on a corresponding poster. Generally, the discussion following this activity was focused on leads for additional existing data. However, several projects were suggested to fill discrete data gaps.

Note: At the Aberdeen workshop, remaining time limited this discussion; instead, participants were asked to write their ideas on post-it notes and post them on the data gap posters. We also received

many comment cards in addition to the post-it notes. There was more time for discussion of this activity in Seattle.

## Leads

Both workshops produced a prodigious number of leads for potential data sources to be added to the inventory in all categories, with a focus on the categories ranked fair and poor. These leads reference specific reports and studies, individual researchers, county governments, non-governmental organizations, and federal, state and tribal entities. Additionally, several comments and recommendations highlighted the need for more rigorous stakeholder engagement and outreach as this process unfolds.

## Projects

In Aberdeen, several projects were suggested that approached the gaps in aquaculture and ownership data gaps. For ownership, participants suggested requesting data from counties and stitching these datasets together to produce broader regional datasets. Suggested aquaculture projects included new research on the economic basis for aquaculture and biological needs for those activities. Other projects were proposed that focused on digitizing fisheries logbook data and using satellite photos to assess recreational boating activities.

In Seattle, several projects were suggested for both the ownership and aquaculture data categories including using the Surfrider approach with an online survey to produce maps of growing areas, and assembling county level aquaculture data to get a regional picture of ownership. Several projects were suggested for filling fisheries data gaps, such as habitat modeling to predict where fish (and ultimately fishermen) will be on the coast, and an online survey for shellfish catch and effort data. Recreational fisheries projects were also suggested such as enlisting recreational divers in fish observation and a tracking study of a random sample of recreational fishermen and their use areas.

## Next Steps

The resounding next step that was heard throughout the two workshops is to engage stakeholders, both as the data inventory progresses and if/when new data collection begins. Along the lines of engaging more stakeholders in this process, participants agreed that counties, academic institutions and other appropriate non-governmental organizations that collect or maintain data should be contacted.

With respect to applying methods of collecting new data, the consensus is that Washington is unique due to the distinct character of its inner and outer coast, and that many more recreational users and treaty tribes that will have to be involved in choosing and applying any particular method. Careful attention must be paid to these differences, if methods for human use data collection are applied in Washington.

## Appendix A – Meeting Materials

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10:00 AM – 4:00 PM

July 27, 2011 - [Port of Grays Harbor](#), Commission Room, Aberdeen, WA

OR

July 28, 2011 – [The Mountaineers](#), Seattle, WA

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### Meeting Objectives

- *Engage a broad suite of partners, stakeholders, and co-managers*
  - *Understand the ways human use data can inform the CMSP process*
  - *Review status and understand gaps in human use data specific to CMSP, discuss with attendees*
  - *Develop a common understanding of basic methods for human use data collection, appropriate uses of data collection methodologies, and their strengths and weaknesses, and discuss with attendees*
  - *Discuss potential data projects*
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9:45-10:00 am	Convene with coffee
10:00-10:15 am	Introductions and Review Agenda
0:15–10:45 am	Coastal and Marine Spatial Planning (CMSP) and Human Use Data <ul style="list-style-type: none"><li>• Overview of CMSP</li><li>• How human use data is used in the CMSP process</li></ul>
10:45–11:30 am	Human Use Data Inventory and Gap Analysis <ul style="list-style-type: none"><li>• Summary of inventory and gaps</li><li>• Overview of methods and criteria for analysis</li></ul>
11:30-noon	Discussion on Inventory and Gap Analysis
Noon-12:35 pm	Lunch – provided
12:35-12:40 pm	Reconvene and quick overview of rest of the day
12:40 – 2:00 pm	Presentations on Human Use Data Collection Methods <ul style="list-style-type: none"><li>• <i>Non-consumptive Ocean Recreation in Oregon</i> – Surfrider Foundation, Pete Stauffer</li><li>• <i>Recreational and Commercial Fisheries Surveys in Oregon and California</i> – Ecotrust, Charles Steinback</li><li>• <i>Mapping Human Uses of the Ocean in CA</i> – NOAA, Mimi D’lorio</li><li>• <i>Outer Continental Shelf Space Use Avoidance Study</i> – OSU Sea Grant, Flaxen Conway</li></ul>

<b>2:00-2:10 pm</b>	<b>Break</b>
<b>2:10-2:45 pm</b>	<b>Discussion of Human Use Data Collection Methods</b>
<b>2:45-3:45 pm</b>	<b>Discussion of potential projects, overall recommendations, and next steps</b> <ul style="list-style-type: none"><li>• Facilitated discussion on data gaps and identifying potential projects</li><li>• Identify Next Steps</li></ul>
<b>3:45-4:00 pm</b>	<b>Wrap up and Summarize</b>
<b>4:00 pm</b>	<b>Adjourn</b>

**Table 5 - Preliminary List of Human Use Data Needed to Support Marine Spatial Planning**

<i>Human Uses &amp; Managed Areas</i>	<i>Human Infrastructure</i>
<ul style="list-style-type: none"> <li>○ <u>Aquaculture areas</u>: Bush and Callow Act privately owned tidelands, commercial leases, etc.</li> <li>○ <u>Fisheries</u>: commercial &amp; recreational, level of use/importance, fish consumption advisory areas</li> <li>○ <u>Recreational use areas</u>: surfing/diving/swimming, boating (water trails, mooring areas, launches, and pump-out sites), public access sites, wildlife watching, and other major uses.</li> <li>○ <u>Navigation routes</u>: Federal and commercial shipping lanes, ferry routes, tow boat and barge lanes, self defined routes, traffic, places of refuge, anchorages, Area To Be Avoided</li> <li>○ <u>Tribal use areas</u></li> <li>○ <u>Culturally and historically significant sites</u></li> <li>○ <u>Conservation &amp; regulated areas</u>: Essential Fish Habitat, reserves, sanctuaries, wildlife refuges, parks, restoration sites (current/potential), conservation priority areas and other marine protected areas</li> <li>○ <u>Mitigation areas</u></li> <li>○ <u>Military boundaries &amp; training areas</u></li> <li>○ <u>Ownership</u>: shoreline, tidelands and submerged lands, leases</li> <li>○ <u>Emerging marine uses</u>: preliminary permits for proposed energy projects</li> <li>○ <u>Emergency management areas</u> (e.g. oil spill response &amp; prevention plans)</li> </ul>	<ul style="list-style-type: none"> <li>○ <u>Navigation infrastructure</u>: buoys, other buoys, aids and markers</li> <li>○ <u>Ports and marinas</u> and related infrastructure; port-by-port analyses: social economic analysis, port growth &amp; sustainability</li> <li>○ <u>Cables</u>: telecommunication, fiber-optic and power (underwater and coastal landings)</li> <li>○ <u>Disposal sites</u>: Dredge material and military disposal</li> <li>○ <u>Outfalls</u>: Waste water and other utility outfalls (e.g. storm water)</li> <li>○ <u>Scientific research</u> equipment and cables</li> <li>○ <u>Power</u>: Transmission lines and power substations</li> <li>○ <u>Over-water structures and shoreline alterations</u>: hardening, jetties, groins, dikes, tide gates, and other shoreline developments</li> </ul>

- Other management plans and measures: Use authorizations for extractive resources, shoreline designations under Shoreline Master Programs and other existing spatial plans in Washington (e.g. Willapa)
- Jurisdictions: including state and federal waters (3-200 nautical miles)
- Economic data: benefits/income areas from human uses (NOAA data)
- Research activities
- Viewscape
- Demographic Data: population & socio-economic characterization
- Marine Debris locations

### Qualitative Ranking of Data Gaps

		Excellent	Good	Fair	Poor
Human Uses	Aquaculture			X	
	Fisheries			X	
	Recreational Use Areas			X	
	Navigation Routes	X			
	Tribal Use Areas		X		
	Culturally & Historically Significant Sites				X
	Conservation and Regulated Areas		X		
	Mitigation Areas				X
	Military Areas			X	
	Ownership Data			X	
	Emerging Marine Uses				X
	Emergency Management Areas	X			
	Other Management Plans			X	
	Jurisdictions	X			
	Economic Data			X	
	Research Activities			X	
	Viewscape				X
	Demographic Data			X	
Marine Debris				X	
Human Infrastructure	Navigation Infrastructure	X			
	Ports and Marinas	X			
	Cables		X		
	Disposal Sites		X		
	Outfalls	X			
	Scientific Equipment	X			
	Power			X	
	Over-water Structures & Shoreline Alterations			X	

Excellent – Many complimentary datasets, covers entire category of data and in useable format

Good – Data in useable format, needs update or identification of authoritative dataset

Fair – Several datasets in useable format some not, some data missing

Poor – No data in inventory, not enough information to judge quality

## Appendix B - Workshop Attendees

Name	Affiliation	Email address
<b>ABERDEEN</b>		
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## Appendix C – General Comments/Questions/Data Leads

### Aberdeen

Comment	Type
The Washington state SEPA (or NEPA) process requires public notice and encouragement of all interested parties. They may not be "traditional" stakeholders, they might just go to the ocean and sit on a log twice a year, or they may be a retired oceanographer.	Comment
The interested parties are self-selected and do provide valuable input to your planning process.	Comment
The law/rule around MSP must not only "recognize" existing uses, but protect these as sustainable uses that have historic and cultural/economic importance.	Comment
Data gathering that divided extractive or consumptive versus non-extractive or non-consumptive needs to add another category of additive or beneficial uses such as shellfish aquaculture that sequesters carbon, cleans water, provides 3D habitat, etc.	Comment
A public engagement process that integrates workshops and web-based interface seems critical from my perspective.	Comment
Seems that there is a data gap in recreational fish and waterfowl hunting, salmon, etc.	Comment
The oyster and shellfish data for Pacific and Grays Harbor counties need to be incorporated.	Comment
Use of county assessor maps was suggested: In Grays Harbor County, it does exist, but has weaknesses for this application. Land is identified by ownership and zoning, not actual use, I don't believe any "marine use" would be identified on these maps.	Comment
Could it better to develop an initial product/program, maybe using the excellent [sic], prior to complete data collection? This product/program could clearly guide people on the scope, need, format and use of the data.	Comment
Outfalls: hard to believe all are identified. County roads departments/GIS	Comment
Probably need to think through data management/ownership/access/incompatibility issues as you are collecting the laundry list of data out there.	Comment
Central repository of data doesn't make sense to us. When we considered building one. We built a regional metadata archive instead. Data Owners need to retain control.	Comment
Outreach to coastal data holders has been weak it seems. We have a lot and no one called us.	Comment
Keep in mind that shellfish bed quality depends on current flow, bottom stability, etc. To assure the characteristics are not interrupted, there are large buffer requirements so quality is maintained for a bed. Thoughts about placing or locating other uses in areas around shellfish beds that alter tide or currents are critical to assure no impacts.	Comment
Pacific County GIS department, All the counties GIS data, Inventory data sheets should have been sent out to the counties and MRCs	Comment
Biological data needs to be gathered	Comment

Groundfish trawl logbooks are managed by the states, not NMFS. This is a minor point except for the fact that we would need Oregon's permission to use their logbook data. A lot of Oregon vessels fish off WA.	Comment
Each category needs an accompanying definition. What you handed out in table 5 includes tiny blurbs; needs a clear definition.	Comment
Flaxen Conway made a valid point - knowledge is often better than specific data sets for historical use which can be changed by regulation.	Comment
I'd separate out recreational uses from commercial uses. There are different motivators for each.	Comment
While data inventories are a useful exercise, they inevitably reveal the disparities, inconsistencies and often inaccuracies of existing data. Just because a dataset exists, does not mean it is accurate, been peer-reviewed or is complete. Just something to consider before data are used to make planning decisions.	Comment
Economic Datasets - look for specific fishery or activity studies, e.g. Razor Clam fishery value to coastal communities.	Comment
Misc ppt note - red on dark background is hard to see. Projectors show colors differently, always worse than your monitor. Check your slides through the projector in a room that's too light - real world conditions!	Comment
For emergency management areas, in addition to GRPs, you may want to include (depending on detail you want): WRRRL - <a href="http://www.wrrl.us">www.wrrl.us</a> , Western response resource list, this includes equipment for oil spill response in a database, Ecology spills program 'owns'. Spill response equipment caches located at various marinas for use in a spill, Dale Byers, Ecology Spills has this info. Look at Coast Pilot 7, information on voluntary traffic routes too, for example, BC/States did a study on West Coast traffic and developed voluntary traffic routes, tankers 50NM off coast, cargo ships 25 NM off coast. POC for this, Diane Ecology, Spills (data shows excellent compliance with this).	Lead
Recreational Use Areas: Washington State Parks (parking area and beach approach counters). Area surf shops (general feedback??). City/County chambers of commerce (tourism data). Areas most utilized for surfing, kayaking use (non-boating). Areas most utilized for land near water use (beach combing, kite flying, etc.)	Lead
Research Activity Data Gap Sources: US Army Corps of Engineers (permits). NOAA (permits). Regional Universities (UW, WSU, OSU, UO, WWU, Huxley, TESC, Canada - UBE, UVic, SFU). Tribes. Olympic National Park (permits). Olympic Coast National Marine Sanctuary (permits).	Lead
Fishing: GPS records from small commercial fishers	Project
Recreational Use Areas: Counties - Permit applications/types. PSNRP - shoreline change tied to rec use.	Lead
Restoration Prioritization: studies by counties, include public participation numbers.	Lead
Olympic Natural Resources Center of University of Washington has been compiling metadata for over 10 years on datasets and GIS information relevant to the coast. We've got a range of data on the coast, large array on Willapa Bay, and west side of Clallam county, and salmon restoration data throughout coast.	Lead

Research - WDOH, shellfish tissue collection sites for marine biotoxin	Lead
Fisheries - WDOH Harvest site (you have), Growing area classification (based on water quality).	Lead
Contact DFW for shellfish production figures, but expect these to be wrong quantitatively.	Lead
Willapa Alliance Data - GIS dikes, aquaculture. ONRC Data - has all the old Willapa Alliance Data	Lead
County culvert assessments includes tide gates	Lead
International Pacific Halibut Commission - Survey data, Logbook data	Lead
University of Washington Olympic Natural Resource Center (in Forks)	Lead
Aquaculture areas: contact the commercial Shellfish Growers Association for their sites, "Pacific" or "Washington" SGA.	Lead
Recreational Use Areas: Local/state SMPs for the county or city	Lead
Culturally & Historically significant sites: Local SMPs, comprehensive plans, WA Dept of Parks, County or City Depts of Parks and Rec, Dept of Archeology	Lead
Mitigation Areas: Ecology - Lauren Driscoll (contact) she may know network of sites and data locations.	Lead
Ownership Data: (including tidelands) - County Assessors - they keep pretty good records of this because of the higher tax revenue. Deeds say whether tidelands are owned or not.	Lead
Relevant Management Plans - Local/state SMPs, they have lots of data and maps showing natural and human made conditions and resources. Also, local GMA comprehensive plans and CAOs	Lead
Viewscape - views of water protected by state SMA - so SMPs generally list areas.	Lead
Specific and General Historic Info - may be in the Ecology Library (3rd floor) particularly in the old, hard copy of the state's coastal atlas (NOAA). It has many large portfolios of all saltwater areas - depictions many topics like soils, slopes, nearshore baitfish, forage fish, habitat, etc. Worth a look.	Lead
WA DNR has an aquatic lands HCP we're pursuing but not complete for awhile yet. The HCP will contain locations of high priority to conserve/protect to achieve HCP objectives. Still in draft.	Lead
Quinault Indian nation and TNC and WDNR are conducting a comprehensive survey of pilings/creosote pilings in Grays Harbor in 2011 and maybe continuing in 2012. this will be a spatially explicit product as well as written report. Also this project will assess and map marine derelict gear (fishing nets, pots, etc).	Lead
Kate Sherman (OSU) has some WA related research activity data.	Lead
National Antiquities Act should include some historic sites.	Lead
Passenger for hire vessels have extensive data points that correspond to specific fishing areas. It would be near impossible to gather and plot these (for various reasons). However - a "reverse process" of presenting the specific geography of a proposed "use "site could then be filtered through the fleet and be accepted or modified to allow for minimal impacts. (example: OOS research project)	Lead

Other Mgmt Plans - Olympic Coast NMS Mgmt Plan. OCNMS Condition Report. Vessel Traffic Data (actual transects). Permitting Data. Hazards Data - Oil Spills, contemporary abandoned shipwrecks, munitions, dump sites. Tribal U&As. Olympic National Park visitor usage. Cable Routes. Dive Sites. Canoe and Kayak Sites. USCG Local Notice to Mariners.	Lead
Additional Data Resources - University of Washington (ask Dave Fluharty or SMA) Terrie Klinger, Ecotrust (Charles Steinback may have some WA data)	Lead
Bonneville Power or NMFS Montlake GIS Team - Dams, River infrastructure data	Lead
US Navy - George Hart CIV USN, operating info for coast and Puget Sound, intensity of use information not likely.	Lead
Quinault Nation (Human infrastructure) - with TNC and DNR, piling surveys of Grays Harbor, marine debris location and removal in Chehalis River.	Lead
Culturally & Historically Sig. Sites - BOEMRE survey. State Historic Preservation Office. Tribes.	Lead
State Parks - Main GIS contact is Kathryn Scott. Current state park upland and aquatic ownership or mgmt. Special note - state parks has 8 or 9 underwater parks in Puget Sound, where we manage bedlands which are typically DNR.	Lead
State Parks - We have good attendance data for all parks on Excel. Kathryn or I could refer to those folks. Most of those who visit parks wind up at the shoreline sometime in their stay.	Lead
State Parks - Can fall into recreational, culture/history, and/or conservation categories. For many (eventually all) parks, there are detailed management plans available at <a href="http://www.parks.wa.gov">www.parks.wa.gov</a> , click planning on the home page.	Lead
Culturally & Historically significant Sites - 2012-2013 BOEMRE inventory on the West Coast OCS	Lead
Military Use Areas - Feds for Navy training ranges	Lead
Research Activity - Kate Sherman, grad student OSU	Lead
Aquaculture - Contact county and ask for GIS data for shoreline and tidelands, obtain Pacific county oyster maps	Lead
Ownership - Get digital data for Willapa Oyster Reserves. Available from USDA Ag Research service in Newport OR - Brett Dumbauld	Lead
Ownership - Pacific shellfish Institute has projects pending for gathering spatial data from existing sources that define commercial shellfish growing areas, contact Kristin Rasmussen	Lead
For Dan's replacement, recommend they plan to attend a regional management team (RMT) meeting for SWRO & NWRO early on and say what they're working on and what they may need. 5 minutes to let key regional players know and improve awareness (internal Ecology information flow).	Lead-Comment
Send out data requests to local governments and NGO's to see if there are other data layers.	Project
Contact ONRCS and potentially partner or provide funding to address data and potential or assumed data gaps.	Project

WDFW crab logbooks need to be placed on GIS format - Data is not confidential if aggregated for display like the sardine slide. Oregon fleet needs integration into Washington crab grounds, may need N. Oregon logbook data.	Project
Mimi's comment about hot to "slice the pie" is important. I'd suggest looking at the categories that RI and Mass used (since they were ahead of the Feds). Then look at what the Feds are doing/using. Then build yours around that in order for them to respect your state work later.	Project
Recreational Fishing - Satellite photos of recreational vessels on major holidays and openings	Project
Aquaculture - Research data that's existing on direct and indirect economic impacts of use activities. Goal is to document direct and trickle down economic contribution	Project
Aquaculture - Acquire information on buffer areas required for existing uses to sustain that use	Project
Ownership - Survey various coastal counties for availability of GIS data for tideland ownership - in particular Bush and Callow Act lands	Project
Ownership - Digitize maps of Puget Sound oyster reserves. Tribes might assist (Squaxin) since they use them for shellfish harvest	Project
Who approves the final plan? What is the timeline for this process? Where will this information be housed? Who will control it? Who will administer and implement the plan? <maybe this should be done as part of a regional (Pacific, Grays Harbor, Clallam, and Jefferson counties) SMP, use that process. NOAA approves CZM plan (and funds) and components, like this plan, Ecology is responsible party.	Question
State Funding Context? Would've liked an "update" on where state and federal funding may be headed (as of today). Is MSP "dying on the state vine" or is it likely to stay vibrant?	Question
Would like to know what the layers were/are that NOAA used for the national level. How would our initial categories fit into these?	Question
How will future management plans get incorporated into MSP? (e.g. components of DNR's HCP?)	Question
Boundaries of state owned aquatic lands (publically owned) will always be subject to adjudication by private entities etc. Ownership will always be fluid. How will MSP work with inherent uncertainty (no matter how good the data) of datasets?	Question
How much of this data is housed in the coastal atlas (i.e. centrally managed?)	Question
Is there a group in Washington to establish what are considered "authoritative" sources?	Question

## Seattle

Comment	Type
Feedback - Words matter...calling data "non-existent or missing" is too strong and it tends to offend people who know that good information is out there. Call it "limited resolution, limited geographic scope...limited etc..." not non-existent.	Comment

Gap Analysis - Next Steps? Fill in picture of gaps at Regional level for key datasets? E.g. aquaculture is county-level data, region-level data (Rafeedie requires). Harbor entrances and dynamics.	Comment
Puget Sound Action Areas - NOT People for Puget Sound, Puget Sound Partnership	Comment
Military Data - DNR Ownership data tracks to its ability aquatic lands that have been granted or condemned by US government. Some of these lands have reversionary rights to the state.	Comment
Jurisdictions - the agency formally known as mineral management service is looking into a "fixed" three mile limit that appears to be different from NOAA.	Comment
Overall comment - reach out to county level GIS departments.	Comment
Concerns about piecing together data from different sources (i.e. county data - statewide data layer) not likely to match up and may cause problems.	Comment
Not important to be authoritative data but rather RELIABLE, SUPPORTABLE, DEPENDABLE data that some agency will stand behind.	Comment
Create a transparent process that is focused on relationship building and map building.	Comment
Use whatever validated data you can get your hands on. If people worked together to get it down, listen/learn from it.	Comment
Scale/resolution issues = authoritative "progressing thru gates"	Comment
If you could use a process like Mimi's - start first with groundtruthing or ranking (E,G,F,P) existing data.	Comment
Viewshed - viewscape is SMP issue	Comment
Military Areas: Contact information was provided by a representative of the Navy. (see card)	Lead
Recreational Fisheries - boat ramps/marina/license sales	Lead
Recreation/Research - Scuba Divers - citizen science sites (can't remember project name)	Lead
Economic Data - "Assessing social change on the Olympic Peninsula" - Annabelle Cooke WSU, coastal counties - wide range of data 1990 & 2000 census.	Lead
Culturally sensitive areas - we use this data all the time, there is a specific process to get at this. I will set you up with DNR contact so you can find out what it is and how to get access.	Lead
Research - Long term monitoring (DNR HCP, Cinde Donoghue). DNR Nearshore Science, huge amount of research on Eel grass.	Lead
WDFW Contact (see card) Shellfish production data in excel by DFW areas (20-rec, 40-com), species, weight, value, month * Not a great dataset (voluntary) but, unfortunately, the best there is.	Lead
PSNERP - SNAR database	Lead
Cultural and Historic - DAHP has a limited access online portal where they have mapped points.	Lead
Economic - National Ocean Economic Program	Lead
Research - reference how Oregon pulled this information together (Kate Sherman's study)	Lead
Fisheries - not a logbook - but landing receipts/fish tickets, location on where catch is landed (ports)	Lead
WDFW Recreational Crabbing, human use, contact info (see card)	Lead
Forage fish study in NW straits, contact info (see card)	Lead
USGS has info on Dive sites/areas, military areas, bathymetry, nearshore/subtidal, LIDAR	Lead

Culturally & Historically Significant sites: Department of Archaeology & Historic Preservation (DAHP), they have GIS(able) data, but generally only share with state agencies through a memorandum of understanding.	Lead
Research Activities: NVS near real time monitoring platforms (NANOOS), PRISM cruises (Puget Sound and SUF) 1998-2010, HCDOP cruises and monitoring. Kathleen Herrmann made the good point about the huge amount of research done at the UW; need to identify contact people.	Lead
Northwest Fisheries Science Center Report (available on Web) Human Well-Being Indicators: Background and application for Puget Sound Partnership, regarding economic indicators.	Lead
Commercial Fishing - Contact Don Velasquez w/ WDFW for recreational crabbing	Lead
Commercial Fishing - NOAA studies on impacts of fisheries management decisions on coastal communities	Lead
Commercial Fishing - NOAA Fishing community profiles	Lead
Economic Data - Northwest Fisheries Science Center - Human Well Being Indicators and Applications for Puget Sound Partnership - Report - Good for economic data sources (and others)	Lead
Economic data - OFM	Lead
Economic Data - ACS (for 2010 census and forward, this is where income data to be kept)	Lead
Economic Data - Pacific Shellfish Institute currently collecting revenue/expenditure data to develop state and regional models of economic contribution of shellfish industry, complete 9/2012	Lead
Demographic - Assessing social Change on the Olympic Peninsula - WSU School of Rural Sociology	Lead
Recreational Fisheries - OR has social science data (descriptions) on marine rec community and OSG has a publication on this	Lead
Recreational Use - Rec. mooring buoys	Lead
Ownership - We have records/deeds on what was sold into private land	Lead
Overwater Structures - SMP data, county data, dikes (NAIP visible), tidegates (DFW culverts case requires knowledge of this)	Lead
Overwater Structures - Shorezone DNR overwater structures	Lead
Overwater Structures - SMP data	Lead
Research - ONRC - data on coastal research	Lead
Research - Engage NANOOS	Lead
Research - PSNERP, PFPS	Lead
Military Use - Engage with Navy Region NW	Lead
Other Management - DNR withdrawls aquatic reserves, Puget Sound Mapper (central washington univ.)	Lead
Tribal - Tribal input, SHPO aggregate/higher scale data in lower resolution	Lead
Tribal - Could look into state database on archaeological sites of importance, Tribal U&A areas	Lead
Marine debris - Beach cleanups (# of events, # weight of trash collected, derelict fishing gear removal priority area.)	Lead

Marine debris - contact Army Corps of Engineers Seattle District, marine debris removal program.	Lead
Marine debris - county's have volunteer organizations	Lead
Mitigation - Depends on scale - State permits for coastal uses with mandated mitigation (e.g. wetland restorations) - Local use permits could be sources of information.	Lead
Mitigation - Documented existing mitigation strategies used for other conflicts	Lead
Viewshed - Ocean-related public opinion surveys are available for entire West coast.	Lead
Emerging Uses - get criteria (their) from marine renewable energy companies on best locations for siting	Lead
Emerging Uses - Examine state and local permit databases for "other" types of permits issued	Lead
Marine Debris - NOAA has a research program on Marine Debris, there is probably reports/data from this.	Lead
Commercial Fishing - Coastal bathymetric mapping can be used for habitat modeling which in turn suggest where fishing should be concentrated	project
Commercial Fishing - Catch/Effort in Shellfish - Develop online survey/database for annual production data. Anonymous/county level?	project
Recreational Fisheries - Engage divers in fish observation and sampling	project
Recreational Fisheries - GPS transmitter based study of a random sample of rec fishermen - voluntary	project
Ownership - Surfrider approach - have growers participate in online survey to ground truth current GIS maps of farming areas	project
Ownership - Assemble county level aquaculture data	project
Emerging uses/Culturally/Historically Significant Sites - Design a survey on traditional & new uses of marine environment	project
Outfalls - what datasets? Is it general outfall locations? Does it show type of outfall? Effluent of outfall?	Question
Commercial Fishing - BC implemented an automated observer system. Can WA do the same?	Question
Demographic - Does this integrate issues of environmental justice?	Question
Recreational Fisheries - How is it that we can quantify utilization of habitat by elephant scales but not people?	Question
Recreational Use - Can creel survey data be used to explore utilization of recreational shellfish beds?	Question
Viewshed - viewshed protection, e.g. should be some types of renewable energy projects be excluded because of view impact from and/or toward the ocean?	Question
Viewshed - isn't there a standard viewshed distance that other states or counties use?	Question

**Appendix D – Presentations**