WASHINGTON COASTAL MARINE ADVISORY COUNCIL MEETING

Draft Summary

Wednesday, Dec 9, 2015 9:30 am – 3:30pm
Location: Port of Grays Harbor Commissioners Chambers, 111 S. Wooding St., Aberdeen, WA

Council Members Present	
Julie Horowitz, Governor's Office	Michele Culver, Dept. of Fish and Wildlife
Casey Dennehy, Recreation	Brian Sheldon, Shellfish Aquaculture
David Fluharty, Educational Institution	Penny Dalton, WA Sea Grant
Doug Kess, Pacific MRC (phone)	Randy Kline, WA State Parks (phone)
Garrett Dalan, Grays Harbor MRC	Randy Lewis, Ports
Jeff Ward, Coastal Energy	RD Grunbaum, Conservation
Mark Cedergreen, Recreational Fishing	Rich Osborne, Science
Mark Plackett, Citizen	Rod Fleck, N. Pacific MRC
Michal Rechner, DNR	Sally Toteff, Dept. of Ecology
Dale Beasley, Commercial Fishing	Larry Thevik, Commercial Fishing

Council Members Absent	
Alla Weinstein, Energy Industry	Miles Batchelder, WA Coast Sustainable Salmon Partnership
Carol Ervest, Wahkiakum MRC	Tiffany Turner, Economic Development
Charles Costanzo, Shipping	Joshua Berger, Department of Commerce

Liaisons Present	
Katie Krueger, Quileute Tribe Liaison	

Others Present (as noted on the sign-in sheet)	
Marie Novak, Cascadia Consulting, Note-taker	Jessi Doerpinghaus, WDFW
Corey Niles, WDFW	Katie Wrubel, Makah Tribe
Gus Gates, Surfrider Foundation	Katrina Lassiter, DNR
Jennifer Hennessey, Ecology (WCMAC Staff)	Kevin Decker, Washington Sea Grant
Kelsey Gianou, Ecology	Libby Whiting, DNR
Greg Mueller, WA Trollers Association	Susan Gulick, Sound Resolutions, Facilitator
Jim Long, Commercial Fishing	Al Carter, Ocean Gold Seafoods
Brian Lynn, Ecology	Rick Lovely
David Beugli, Willapa Oyster Growers	Ross Barkhurst, WA Waterfowl Association

1. Welcome & Introductions, Agenda Review

Garrett Dalan welcomed everyone to the meeting. All attendees introduced themselves and were invited to provide updates, and members of the public were invited to provide comments.

- There are four new members of the WCMAC: Randy Lewis from the Port of Grays Harbor is filling the Port seat; Joshua Berger of the Dept. of Commerce is taking over Stephen Sewell's seat; Tiffany

Turner is filling the economic development seat, and Larry Thevik is replacing Ray Toste to fill one of the commercial fishing seats.

- Miles Batchelder is stepping down as WA Coast Sustainable Salmon Partnership director; there will be a new executive director. This will create a new vacancy on WCMAC.
- Sally Toteff had several updates:
    - She thanked everyone for providing comments on the EIS drafts for proposals at the Port of Grays Harbor – Ecology received over 100,000 comments.
    - A boat sunk at West Point Marina this past weekend; most of the oil on board was absorbed and there were no reports of damaged wildlife.
    - Significant flooding is occurring throughout the state; emergency management agencies are preparing but more severe coastal erosion is possible, especially for at-risk communities.

Public Comment

- Ross Barkhurst requested that the WCMAC consider the state of Willapa Bay in their deliberations. He stated that coastal fall chinook are overharvested and coho runs have crashed, there is little eelgrass in Willapa Bay Refuge, no brant geese, observed lower numbers of other waterfowl (e.g. Northern pintail), and that there are severe flaws in the draft EISs for oil terminals in Grays Harbor. He also stated that there has been no insecticide spraying and activity will hopefully rebound there.
- Brian Sheldon responded that Ross had misrepresented figures and impacts of insecticide use. Mark Cedergreen also commented that most coastal chinook are caught in Alaskan or Canadian waters and we have no control over damage to harvests.
- Michele Culver elaborated on the chinook and coho problems mentioned by Ross, clarifying that the National Marine Fisheries Service Report to Congress on the status of fish stocks did say coastal fall chinook were overharvested in the year 2010, but they have not been designated as overfished. This fall, there have also been low coho returns and die offs, which they are studying to determine if they are related to high levels of domoic acid.
- Al Carter from Ocean Gold Seafoods commented that competing uses such as ocean energy will be problematic as these projects could potentially displace fisheries. More information on these alternative energy projects, their developers, the costs of the projects, and the projected costs of energy need to be provided and discussed openly in this group.
- Michal Rechner reminded everyone about proper conduct during these meetings. WCMAC members should not respond to public comments. Brian Sheldon replied that he thought it was important to correct misinformation.

Adoption of September Meeting Summary

- There were no amendments or edits to the September meeting notes.
    - **!** The summary was adopted as written.

2. Reflections on MSP – Penny Dalton

Penny Dalton provided a summary of the conference that she and several other WCMAC members attended in Rhode Island in the fall on marine spatial planning. Other attendees provided their takeaways and reflections.

- Washington's situation is different as we have no concrete projects yet, and there are many stakeholders. Tribal authorities, local control and authorities under the Shoreline Management Act, harbor areas, public port authorities, and other constitutional protections also add layers of complexity.
- Attending the conference reinforced the concern for protecting communities and sustainable uses and the need to lay a strong, durable foundation for future activities and developments.

- Creation of a Fishing Advisory Board, a smaller, more targeted advisory group comprised of representatives of all the various fisheries, was very important to processes elsewhere. These types of groups allow for specific involvement from fishing interests in projects and proposals. This might be something the WCMAC might want to recommend.
- Bridget Trosin from WA Sea Grant is working with partners at RI Sea Grant on a project comparing marine spatial planning case studies from around the country, due out by the end of the month. Washington was one of the case studies chosen and several participants in WCMAC were interviewed for the case study. She will be contacting WCMAC members to ensure is the report is accurately capturing and representing quotes and contributions from interviews.

Questions and Comments

- Sally Toteff requested more discussion about how the group influences and engages with federal agencies to ensure accountability. The example of a Fisherman's Advisory Board was provided, which consults on proposed projects and advises federal agencies.
- Brian Sheldon commented that public access to working waterfronts is being pursued and has come to include commercial development not just for water-dependent uses, which will undermine working waterfronts. He requested the group consider working waterfronts when developing the MSP and growth management policies.
- Rod Fleck mentioned that multiple planning requirements under different statutes have not been reconciled or reviewed in relationship to sustaining existing industries. Perhaps one recommendation should be that land use planning efforts be reviewed for how they support existing industries/uses.

3. Update on Use Analysis – Jennifer Hennessey

Jennifer Hennessey gave a presentation on the Use Analysis, available at HERE. A discussion guide on the use analysis and draft authority map for marine spatial planning was included in the packet.

- The Use Analysis is a process to: 1) summarize geographic data on current uses in two ways: by intensity and by footprint; 2) assess potential spatial interactions between existing and new potential uses (e.g. renewable energy) and 3) inform the development of spatial recommendations.
- Jennifer showed draft map outputs for shipping, recreation, aquaculture, military, and non-tribal fishing; as well as a drafts of all high intensity uses (across all existing uses) and the number of sectors present in a particular area.
- Fisheries maps were updated by WDFW with input from the fishing sectors and a workshop held in November. Crab fishery data now includes units for the high, medium and low levels of effort, which represent the number of trips. Tribal fishing efforts are currently excluded from all fishing maps.
- The maps do not yet include ecologically important areas analysis.
- The next step will be overlaying renewable energy maps, which could be done as a simple GIS overlay and comparison. However, there are several types of software models that can assist with evaluate specific scenarios, such as Marxan and InVEST. The Technical Committee can explore these options more fully.

Questions and Comments

- Someone asked about aquaculture areas shown on the map in the Strait of Juan de Fuca. Michal Rechner clarified that there are currently no aquaculture authorizations in the Strait, and Rich Osborne commented that it was probably seaweed, but would be good to confirm.

- Larry Thevik commented that tribal exclusion area on the map might be misinterpreted as an area where no fishing occurs. Also, log data goes back 3 years which might not accurately capture historical average use.
- Someone pointed out the need to explain in the narrative that intensity of use could be linked to regulatory issues which could change over time. Jennifer responded that they will have contextual information in chapters that go with maps describing uses.
- Katie Krueger commented that the legislature's decision to exclude tribal fisheries' data will misrepresent coastal activity. Michele Culver commented that DFW is working to coordinate with tribes to include whatever data they are willing to share.
- Brian Sheldon commented that estuaries don't have activity represented which could be misleading. Michele responded that they don't have log book data for within bays and estuaries, which is explained in the narratives. Additionally, DFW has treated the estuaries as having the highest level of ecological importance. When they overlay the fisheries, fishery activity will show up in these areas, although without intensity data.
- Dave Fluharty commented that map titles should be explicit so that viewers understand that it does not necessarily capture all data (e.g., Non-Tribal Commercial Fisheries), and Larry added that timeframes could also be included.
- Dale Beasley commented that clipping areas for the study area doesn't capture the full area of use (e.g. Albacore area), which might not represent footprint and potential use conflicts if there is a project that wants to locate just outside of the use area.
- RD Grunbaum asked for clarification on the timeframe represented. Michele responded that they had to rely on different data sources. Maps show where there is fishing at some point in the year, but do not distinguish between how long the particular fishing season is open.
- Sally Toteff noted that color saturation is a better data visualization tool than using different colors.
- Several commented that "zero high intensity fisheries" is confusing and wording should be changed.
- Dale commented that community dependency on a particular activity is more important than use intensity, and is not conveyed by the maps. He recommended that the maps demonstrate coastal communities' reliance on a given activity to be meaningful for the MSP. There was disagreement on how actually to determine community reliance and both Michele and Jennifer mentioned that data did not exist to produce a spatial map, but that contextual data on reliance/dependence could be provided in the plan. He also recommended reviewing Oregon's experience with Marxan.
- Some members cautioned that military use could trump anything proposed. Katie Krueger questioned how the Navy is integrated into this process. Jennifer responded that we have been updating and seeking information from and getting input from relevant federal agencies on the process.
- Casey recommended that the military layer be removed for visualization in the sector use map.
- Dave offered to send a student thesis that reviews methodologies and their application for displaying information, which he can make available to Jennifer and the group. He also suggested adding specific naval activity exercise areas to better represent military spatial use of areas, perhaps as a separate map.
- Michele requested that the group discuss at some point what tools might be useful in helping develop and assess recommendations. Rich suggested multiple models be used.

4. Viewshed Analysis

Rich Osborne gave a presentation on the Viewshed Analysis, available HERE, and asked for suggestions for improving the maps. The analysis provides approximations of how far out a renewable energy project would have to be from the coast to be invisible to someone on land at various heights. Developers would

be required to do a more in-depth analysis based on their proposed project to provide more exact information on aesthetic impacts.

Questions and Comments

- Jeff Ward mentioned that 90 m for windmill height is probably an underestimate.
- Mark Plackett suggested that the MSP study area (700 fathoms) be represented in the maps.
- Katie Krueger and Jeff Ward commented that even at the shortest distance required for invisibility (18 miles), the energy penalty across transmission lines would be very high, making the project unrealistic.
- Dale Beasley suggested reviewing Oregon's process for viewshed valuation.

5. Burrowing Shrimp in Willapa Bay – Kim Patten

Kim Patten from WSU Extension gave a presentation on burrowing shrimp and efforts to control them, available HERE.

- Burrowing shrimp destroy shellfish habitat, and treatment has previously included the insecticide Carbaryl, which was phased out. Research on alternative mechanical and cultural control methods and diverse management approaches has been done without much success.
- Another chemical control agent, Imidacloprid, has been effective at controlling shrimp with minor or temporary environmental impacts relative to Carbaryl under this type of application. There has been major public concern over its use since it is a neonicotinoid, and the growers association subsequently requested to withdraw their pesticide spraying permit in May.
- Finding another effective alternative will take several more years and millions in funding, and very few people are currently researching this issue.
- Without an acceptable alternative treatment method, predicted shellfish production losses could be 10% per year, or up to 25% per year if recruitment levels return to those seen in the 1990's.

Questions and Comments:

- Rich Osborne asked why burrowing shrimp reached critical mass in the 1950's and 60's; Kim responded that there are theories about dams and a decline in predators, but that no one knows. He also asked what impact sea level rise will have on the areas being studied; Kim responded that he did not know but that the immediacy of the issue will probably be lost in the gradual rise of sea level.
- Larry Thevik asked how the 2.8 economic multiplier used in the presentation was obtained to determine the value of the shellfish industry. Kim responded that he consulted WSU economists. Larry also asked what the market impacts were after the use of pesticides was publicized. Brian Sheldon answered that they did not see much change at all.
- Casey Dennehy asked if there was any connection with ocean acidification to population dynamics of shrimp. Kim answered that they are researching this issue.
- Sally Toteff asked about other areas like pocket estuaries and shorelines that have experienced similar spikes in shrimp populations. Kim responded that Brett Dumbauld of OSU could answer more questions.
- Mark Plackett asked if it was possible to harvest the shrimp for consumption. Kim responded that they are not very palatable and very difficult to collect so this is not a viable control approach.
- Brian Sheldon emphasized the need to manage shrimp and japonica eelgrass to protect shellfish habitat and return them to production of oyster species.

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6. WCMAC Anniversary

For the 2-year anniversary of WCMAC 2.0, Garrett Dalan read a poem he wrote to celebrate the accomplishments of the group. He received a lot of laughter and applause. A video can be found at HERE; if Garrett can be convinced to share an electronic copy we will post that as well.

7. Draft WCMAC Recommendations

Susan Gulick described the Technical Committee's process to develop problem statements about key issues and options to address them. Susan reviewed how the group will determine recommendations by consensus. A discussion guide as well as a draft of MSP recommendations was provided in the packet.

- Problem statements are in bold, options are ideas from the Technical Committee. The group did not vet options, or research relevant permitting agencies and authorities for particular options. Additional research can be done on the draft recommendations WCMAC members are interested in pursuing.
- WCMAC can also make recommendations directly to the Governor and Legislature that do not fit under existing limitations of the MSP.
- When the spatial analysis is complete, there will be more spatial recommendations.
- All are welcome to join the Technical Committee calls; the next call is Wednesday, December 16 from 2:30-4:30 pm PST. Susan sent out call information to WCMAC members earlier.

Questions and Comments

- Katie Krueger expressed concern about groups receiving adequate notice from permit-seeking parties. She mentioned a centralized west coast data portal for new permit requests.
- RD Grunbaum asked how and where expanding existing uses are included. Larry Thevik agreed with the question about what constituted a new use in this plan.
- Rod Fleck suggested adding a section for the permitting process for all new uses, including consolidating who at the state receives notice of a project and how they provide notice to any interested parties. As part of the permitting process, require an economic analysis for the project and having that apply to all new uses.
- Mark Plackett suggested focusing on the problem statements and the recommendations focus on the "what is desired/needed" as opposed to the "how" (i.e. not getting too deep into the "hows").

The group then focused its discussion on the three economic problem statements and options:

- Sally Toteff suggested that for economic impacts WCMAC could craft a recommendation there be an economic analysis for new projects. We would need to identify what specifically should be in the economic analysis, and lay out standard expectations for the process, including adequate notice, comment period (how long we believe is adequate review time), and expectation for response to comments within a specific timeframe.
- Brian Sheldon asked if there was a standard format for an economic impact analysis. Katie suggested Sally send some examples from Ecology.
- Katie asked how we regard pilots. Brian requested they be included as part of the project definition.
- Rod expressed concern about the wording of "long-term economic feasibility," as this might limit all new activity or expansion on the coast, especially if pilot projects are limited. He suggested evaluating it for "significant adverse impacts." He noted that investors take business risks all the time and it is not our job to make that determination.
- Penny Dalton suggested some wording be shifted to sound less about controlling negative impacts and more about the opportunity to develop capacity in and positive benefits for coastal communities.

- Mark Plackett expressed concern that communities where these projects will occur do not want to be stuck with unfunded obligations as a result of the project. They need to be informed about the positive impacts as well as the obligations beforehand.
- The group is interested in economic impact analysis and community engagement as part of the permit application process, although details are still underdetermined. A possible recommendation could be for agencies to exercise their authority to require applicants to do certain things.
- Larry Thevik expressed concern over the long-term economic feasibility portion, especially for projects that will be trying to test a new technology. Elements about decommissioning and physical mitigation are present but not long-term economic mitigation.
- Jeff Ward suggested making use of existing MSP work products, such as the coastal economic analysis. Developers should describe how their projects would affect the baseline established in the analysis and what the non-job-related costs of an industry would be on a community. Other members expressed support for having developers identify economic impacts to the existing condition in the area and using the information we've already produced (e.g. as a change to baseline or existing conditions).
- Katie suggested providing recommendations on how to improve the permitting process in order to affect regulatory changes, perhaps as an additional appendix.
- Based on the conversation, Garrett suggested having a few key and generalized recommendations and really focus on the problem statements and a high-level resolution statement rather than several, really detailed recommendations or checklist.
- Dave Fluharty said that we need to connect these issues to the rest of the state as well as address the costs and benefits to coastal communities.
- Penny Dalton suggested that we indicate clearly that this focuses on the coast and not Puget Sound.
- Katie offered to help synthesize bullets after January 15th.
- Staff and Susan will work on the consolidating problem statements and bullets based on the conversation and then distribute again to the group after January 1st. Please provide Susan with any additional feedback on problem statements.

8. Updates

Economic Assessment

- Cascade Economics is still working on the FAQ document.

Wok Plan

- Jennifer Hennessey went through the updated Work Plan, included in the packet. The goal is for the group to come to consensus on problem statements and draft recommendations over the next couple meetings.

MRAC (Ocean Acidification Panel)

- The group met in November. Updates are captured in emails sent out periodically through a list serve.

Nominations

- Terms are up for WCMAC chair and vice chair in January; currently the chair is Garrett Dalan and vice chair is Doug Kess. The bylaws encourage electing new leadership after two terms.
- Brian Sheldon nominated Garrett and Doug again as chair and vice chair, respectively.
- The nomination period is open until December. 31st. Send nominations to Susan or Jennifer.
- Julie Horowitz, Garrett, Michal, Rod, and Doug are currently on the Steering Committee. Let them know if you want to join this committee.
- Brian Sheldon and Rich Osborne are currently co-leads on the Technical Committee. Brian encouraged others to nominate themselves or others to lead the Technical Committee.

- Katie Krueger expressed appreciation for how welcome she has felt, especially as a non-voting member.

9. Agenda Topics for Next Meeting

Susan reviewed the current February agenda items:

- Oil transport and oil spills – how it fits into MSP, why this is not considered a new use, and what is this group's ability to make recommendations. Scott Ferguson might be a potential presenter on this topic. See Ecology website for draft EISs with information describing various proposals.
- Draft recommendations continued.

10. Public Comment

There was no afternoon public comment.

Meeting adjourned at 3:21 pm.

Summary of Decisions:

- ! The September Meeting Summary was approved as written.

Upcoming Meetings

- February 10, 2016
- April 20, 2016
- June 15, 2016

Meetings will be held in Aberdeen unless otherwise noted

DRAFT

Discussion Guide

WCMAC Meeting

Wednesday, February 10, 2016

Review and Discussion of Seafloor Mapping Funding Opportunity

Background

In the last biennium, the marine spatial planning effort supported a seafloor mapping spatial prioritization effort to identify gaps in and priorities for bathymetric and seafloor habitat data. The coastal managers and scientists who participated in this effort identified areas of priority interest (Fig. 1) for seafloor mapping and reached consensus on a seafloor mapping strategy. As a result of this effort, Washington has attracted NOAA support to conduct mapping this year off of the Washington coast.

NOAA has 24 days scheduled from April 17-30, 2016 on the NOAA hydrographic charting Ship *Rainier* to support mapping work along Washington's Pacific coast. Of those 24 days, 14 are funded by NOAA, leaving 10 unfunded sea days. The *Rainier* daily rate will be approximately $15,000; NOAA needs an additional $145,720 to fund the remaining 10 sea days. NOAA is seeking additional funding from within the agency, foundations, and universities. NOAA has asked whether marine spatial planning funds could support a number of sea days upon the recommendation of the WCMAC.

The NOAA ship *Rainier* will focus its mapping efforts on the three offshore priority areas (Fig. 1) identified in the Summary Report for Spatial Prioritization Seafloor Mapping for Washington's Pacific Coast (2015). These areas were identified as important locations needing additional seafloor mapping data based on input provided by Federal, State, Tribal, Academic and NGO groups. Of the three areas, the Central offshore priority area was identified to be of greatest importance, and NOAA has prioritized that area. Under optimum conditions, precluding weather, mechanical or other extenuating factors, NOAA anticipates that the North area will take 2.5 days, Central 13 days, and South 7 days. The South offshore priority area, which includes parts of Guide and Willapa Canyons, was identified to be of 2nd importance, followed by the North area.

This project will conduct a habitat mapping and characterization survey of the identified areas with emphasis on bathymetry, backscatter, and sidescan imagery to produce high resolution geomorphology, sediment profile, and imagery. A complete benthic survey and habitat classification can determine the balance between protecting fragile natural resources and maintaining the economic viability of coastal fishing communities. Examples of data applications include (see Appendix A for visual examples of data applications):

- Fisheries management
- Tsunami hazard mapping
- Identifying upwelling
- Identifying sensitive species and habitats

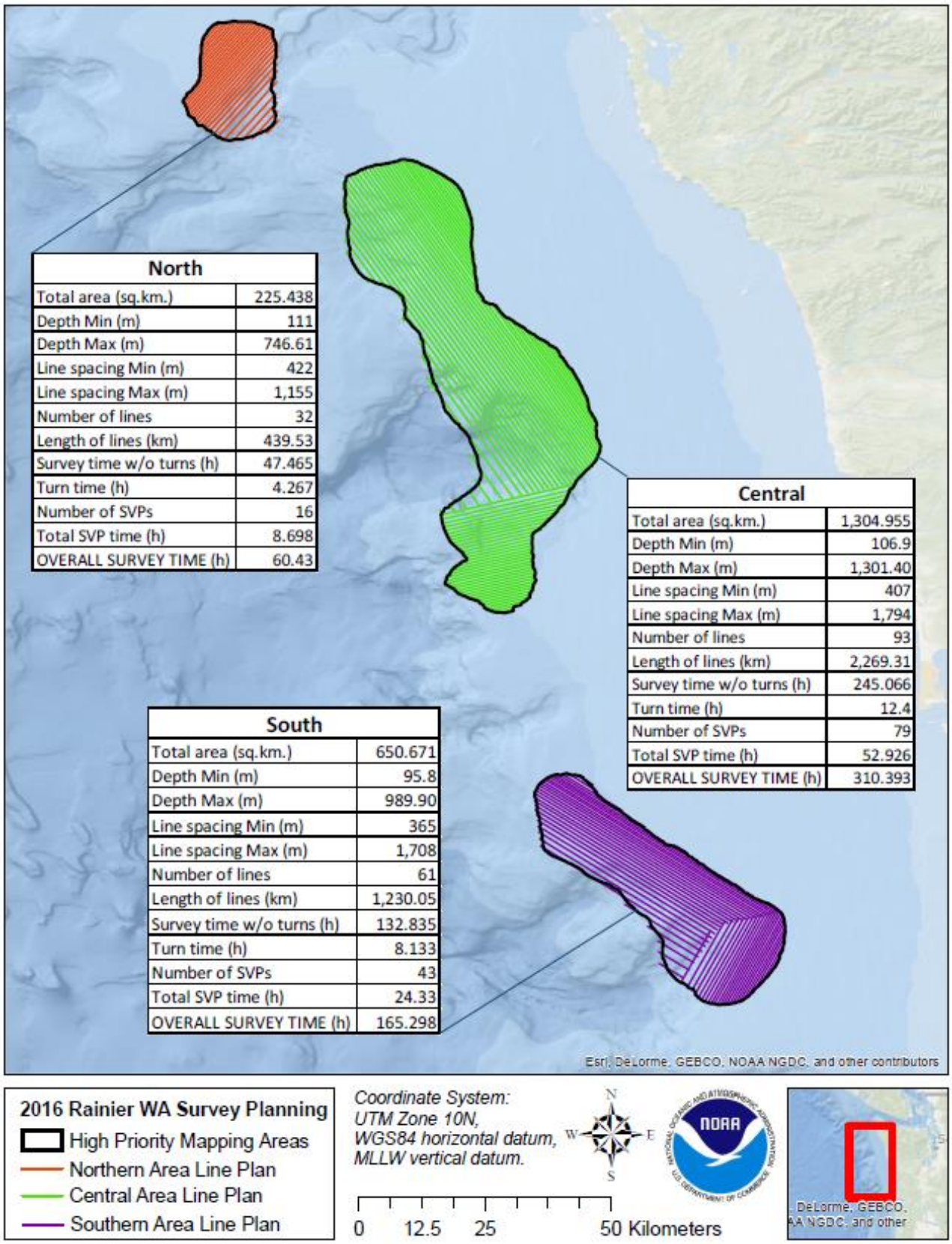


Figure 1. WA High Priority Mapping Areas

Recommendation of the State Ocean Caucus (SOC)

The State Ocean Caucus (SOC) recommends that WCMAC allocate $75,000 toward additional sea-mapping. The SOC also recommends that WCMAC request that this money be allocated for mapping the southern part of the coast, outside of the Marine Sanctuary.

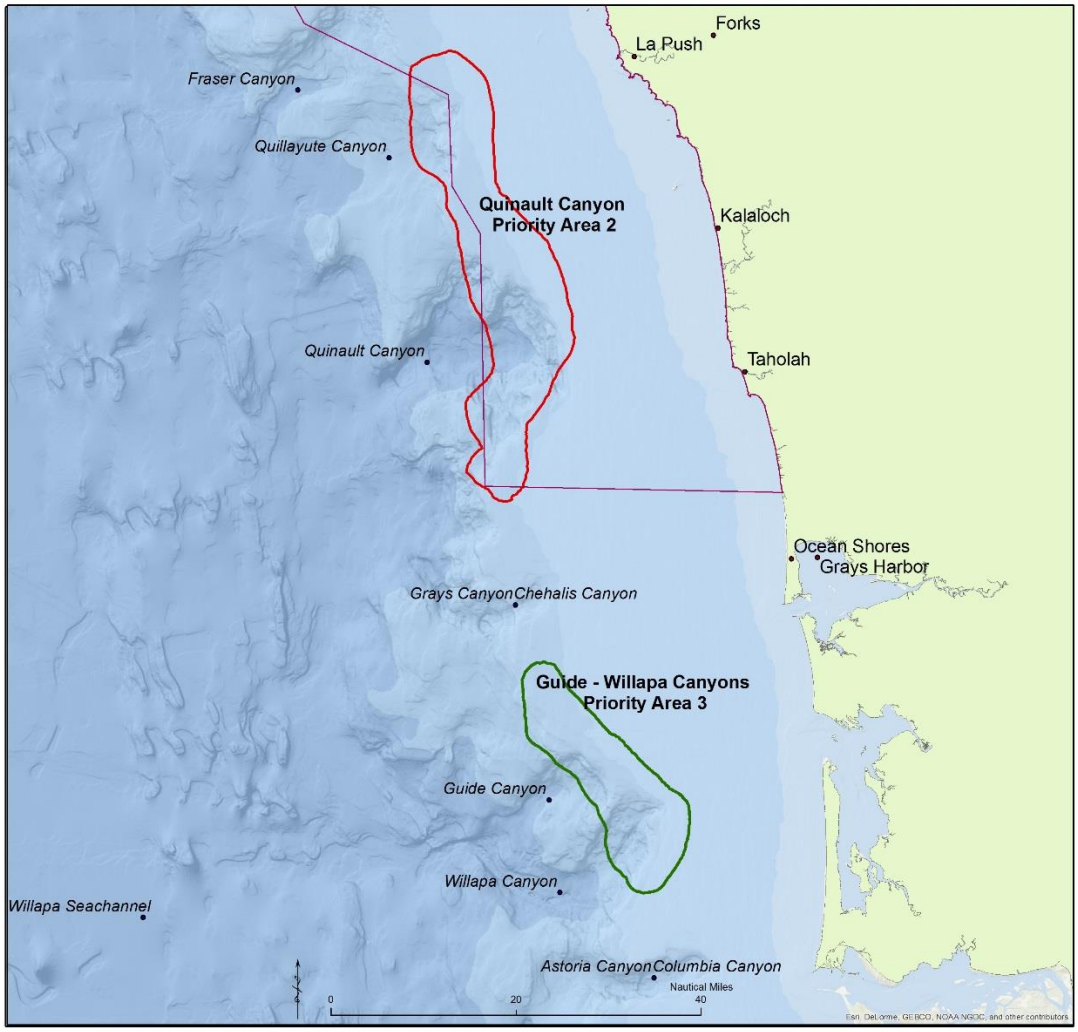
Note: $75,000 will fund approximately half of NOAA's need; it is hoped that the remainder of the funds will be provided by outside sources (foundations, universities, other agency funds, etc.). If WCMAC provides this funding, it will spend $75,000 out of the approximately $200,000 that is currently unallocated for this biennium.

Questions for WCMAC

1. Do you agree that MSP funds could be used to support this type of research?
2. Do you agree with the SOC recommendation?
    a. The funding amount of $75,000?
    b. Requesting that the money be allocated for mapping the southern part of the coast?

Appendix A
Data Applications

NOAA SHIP RAINIER SURVEY, APRIL 2016



Quinault Canyon (Area 2) Survey Priorities

1. Living Resource Management: Knowledge Gap Existing Infrastructure
2. Ecosystem-Based Management: Significant Natural Area, High Use Area
3. Multiple Use
4. Coastal Inundation
5. Safety and Navigation

Quinault Canyon Survey Details

Survey Depth: 100 - 1,300 meters
Survey Area: 1,304 sq. km.
Survey Time: 310. 4 hours
Survey Days: 13 (24/hr) days

Project Details

The Seafloor Mapping Priority Areas were delineated during the 2015 multi-agency Washington State Seafloor Mapping Prioritization Workshop.

The RAINIER Survey has two legs, from April 7 to May 13, allocated to WA Outer Coast. Complete mapping of priority areas is based on funding and weather.

Guide/Willapa Canyons (Area 3) Survey Priorities

1. Ecosystem-Based Management: Multiple Use Knowledge Gap, High Use Area, Potential Infrastructure Development
2. Coastal Inundation: Significant Natural Areas
3. Living Resource Management: Knowledge Gap
4. Safety and Navigation: Multiple Use

Guide & Willipa Canyon Survey Details

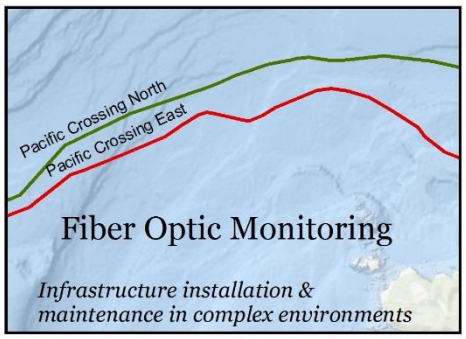
Survey Depth: 96 - 990 meters
Survey Area: 651 sq. km.
Survey Time: 165.3 hours
Survey Days: 6.9 (24/hr) days

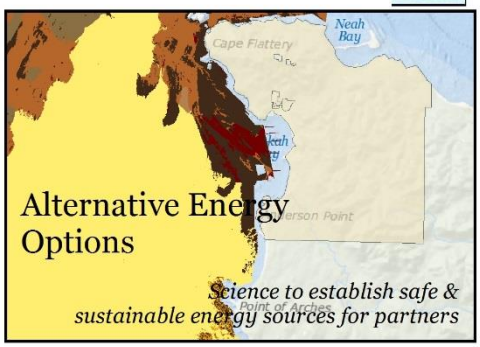
SEAFLOOR MAPPING APPLICATIONS, WASHINGTON

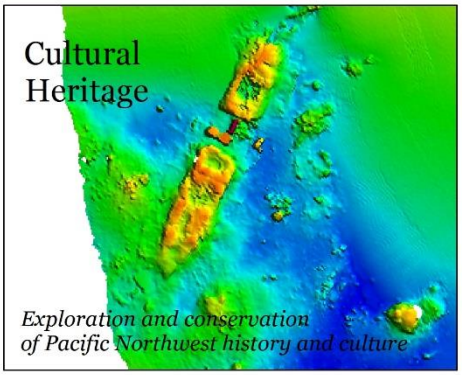
Hard Substrate with Fiber Optic Cable

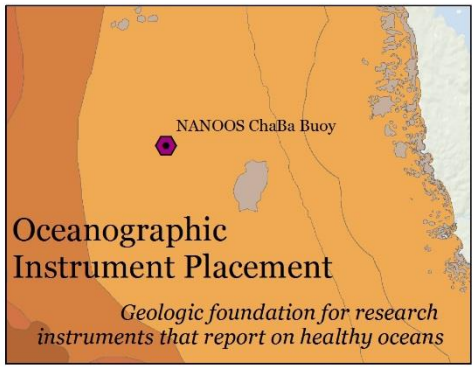
Mixed Gravel Substrate

Coarse Sand Substrate

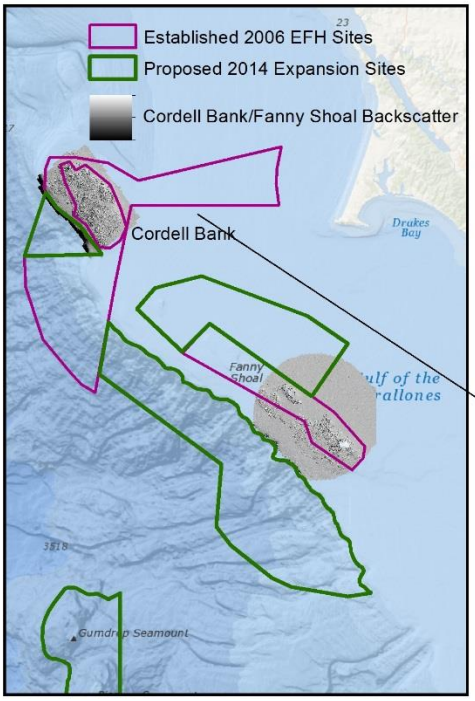






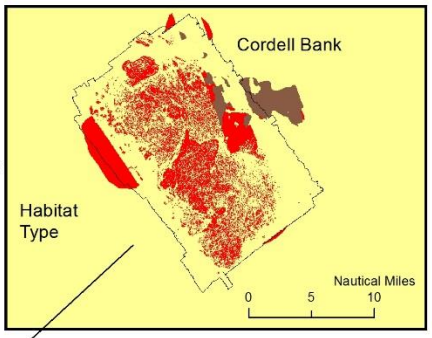


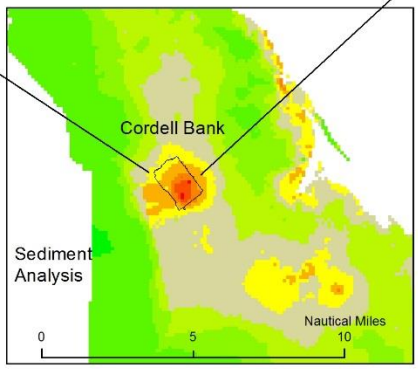
SEAFLOOR MAPPING AND ESSENTIAL FISH HABITAT DELINEATION, CALIFORNIA



The location of appropriate geography for Essential Fish Habitat is based on an understanding of the seafloor and the biological communities that depend on benthic habitats. Seafloor mapping that includes bathymetry, backscatter, ground truthing, and habitat characterization helps scientists and managers protect fragile habitats, understand changing ecosystems, and encourage healthy fisheries.

Cordell Bank and Fanny Shoal are two well-surveyed rocky areas off California's central coast.





Cordell Bank

Sediment Analysis

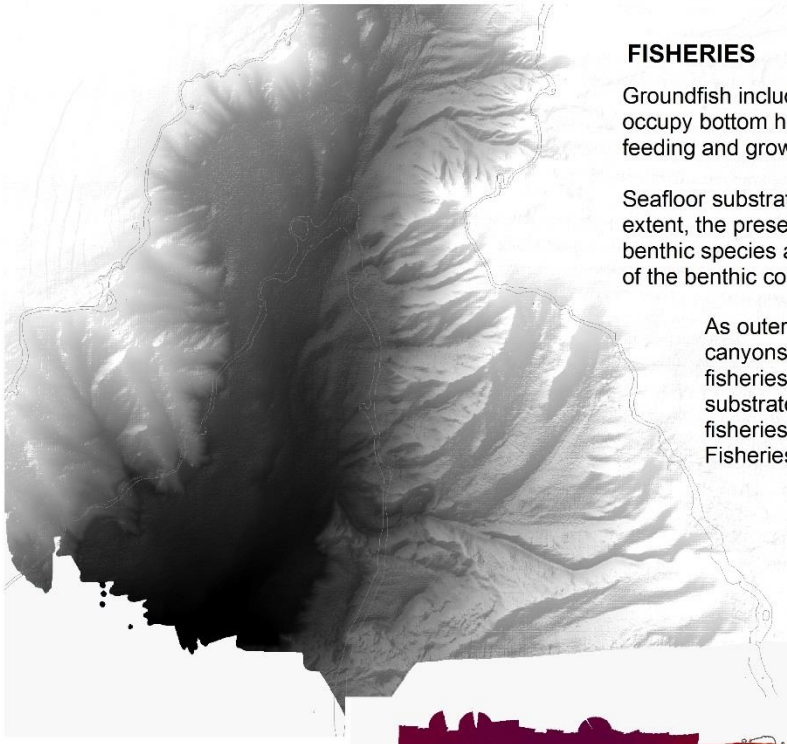
Grainsize

- Larger than Gravel
- Gravel
- V. Coarse Sand
- Coarse Sand
- Medium Sand
- Fine Sand
- V. Fine Sand
- Coarse Silt
- Fin Silt
- Clay

Habitat Type

- Hard, rocky substrate
- Mixed hard/soft substrate
- Soft substrate, sand/mud

JUAN DE FUCA CANYON, MULTIBEAM & BACKSCATTER
EXAMPLE OF VALUABLE CANYON HABITAT MAPPING



FISHERIES

Groundfish include 82 marine species that occupy bottom habitats for spawning, breeding, feeding and growth.

Seafloor substrate determines, to a large extent, the presence or absence of a particular benthic species and susceptibility to disturbance of the benthic community.

As outer continental shelf banks and canyons are targeted by commercial fisheries, bathymetry (depths) and seafloor substrate are critical information to support fisheries management by the Pacific Fisheries Management Council and others.

Depth Contours:
200 meter shelf break
650 meter approx. canyon floor

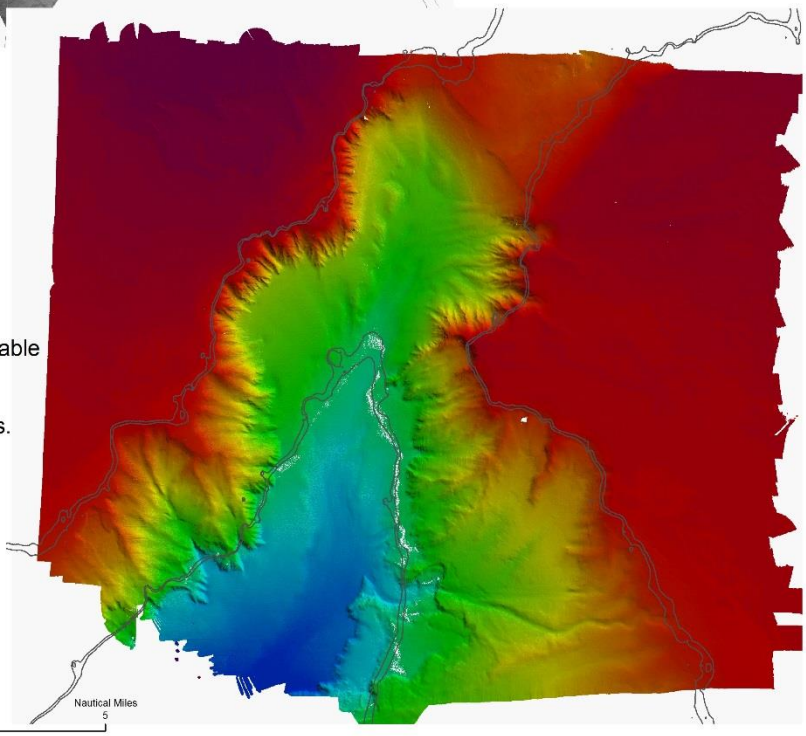
Elevation Model (depth in m)

High : -115.792
Low : -960.797

SEAFLOOR MAPPING

Seafloor mapping is the first step in characterizing an area, and it provides the foundation for ecosystem-based management.

When combined with seafloor habitat characterization and species-habitat associations, seafloor mapping supports sustainable fisheries management, monitoring for environmental change, and other economic and scientific goals.



Geomorphology

Sediment types

Shelf: gravel mix
Flank: mud rock
Bottom: mud

February 10, 2016

Washington Coastal Marine Advisory Council
Draft Work Plan: Meetings through June 2016

The WCMAC work plan is a living document. It will be continually updated and used as a guide for planning WCMAC meetings. WCMAC members are encouraged to identify agenda requests as early as possible.

Meeting	Information	Advice/Action
February 10, 2016	• Use Analysis – comparison maps and recommendations (continued) • General MSP recommendations (Technical Committee) • MSP outreach update	• Develop general MSP recommendations (continued) • Develop spatial MSP recommendations • Input on MSP outreach
April 20, 2016	• Use Analysis – comparison maps and recommendations (continued) • General and spatial recommendations (continued) • Update on draft MSP release	• MSP – WCMAC recommendations
June 15, 2016	• Update on draft MSP release	• Finalize WCMAC recommendations
September 28, 2016	• TBD	• TBD

Other information needs to fit in:

- Background on state vs. federal jurisdiction.
- Lessons-learned from other planning processes.

Other topics, issues, or recommendations may be addressed through the process set up by the Council and as time and resources allow.