WASHINGTON COASTAL MARINE ADVISORY COUNCIL MEETING
Draft Meeting Summary

October 22, 2014 - 9:30 am – 3:30pm

Council Members Present	
Brian Sheldon, Shellfish Aquaculture	Michele Culver, Dept. of Fish and Wildlife
Casey Dennehy, Recreation	Penny Dalton, WA SeaGrant
Dale Beasley, Commercial Fishing	Randy Kline, WA State Parks
Doug Kess, Pacific MRC	Ray Toste, Commercial Fishing
Garrett Dalan, Grays Harbor MRC	RD Grunbaum, Conservation
Marc Horton, Ports	Rich Osborne, Science
Mark Cedergreen, Recreational Fishing	Rod Fleck, N. Pacific MRC
Mark Plackett, Citizen	Sally Toteff, Dept. of Ecology
Michal Rechner, DNR	

Council Members Absent	
Alla Weinstein, Energy Industry	JT Austin, Governor's Office
Carol Ervest, Wahkiakum MRC	Miles Batchelder, WA Coast Sustainable Salmon Partnership
Charles Costanzo, Shipping	Steve Sewall, Dept. of Commerce
David Fluharty, Educational Institution	Jeff Ward, Coastal Energy

Liaisons Present	
Katie Krueger, Quileute Tribe	

Others Present	
Bridget Trosin, WA Sea Grant	Larry Thevik, WOCFA
Doug Fricke, Coalition of Coastal Fisheries	Laura Wilson, Makah Office of Marine Affairs/ TNC
Greg Mueller, citizen	Libby Whiting, DNR
Jennifer Hennessey, Ecology (WCMAC Staff)	Mike Nordin, PCMRC, PCD
Katie Wrubel, Makah Office of Marine Affairs	Molly Bogeberg, TNC
Katrina Lassiter, DNR	Shannon Davies, The Research Group, LLC
Kelsey Gianou, Ecology	Stefan Moedritzer, Cascadia Consulting, Note-taker
Kevin Decker, WA SeaGrant	Susan Gulick, Sound Resolutions, Facilitator
Key McMurry, PCMRC	Simon Geerlofs, PNNL

1. Welcome and Agenda Review

Garrett welcomed the Council to the meeting and reviewed the agenda. There was a quorum of 13 council members present. All Council members introduced themselves. The Council reviewed the meeting summaries from 7-19 and 9-18.

- Mislabeling of the tribal liaisons was corrected.
- Alla Weinstein was not present at the council 9/18 meeting, Sally Toteff was present at the 9-18 meeting.

! The 7-19 and 9-18 meeting summaries approved, with attendance changes made.

2. Update on Data Viewer/ Status of Data List

Libby Whiting presented on the current data being utilized in the data viewer, and the data that still needs to be analyzed and incorporated.

Questions and Comments:

- Brian Sheldon: I'd like to see more data with fish and shellfish land ownership. GIBS maps are available with spatial data for oyster beds and more shellfish land ownership.
    - Mark Plackett: Dynamic data is available from flyovers.
- Mark Cedergreen: I would like it to be noted that all of the data is from existing systems except for the energy data, which is a potential use, not an existing one.
    - Libby Whiting: In the viewer, the current title is energy suitability to reflect that idea.
- Dale Beasley: The terminology in the viewer is not public/user friendly; the terms should be less technical (e.g. benthic, pelagic, meters vs. feet).
    - Libby Whiting: The descriptions are continually edited. When the data is updated it comes with default language and we work to make it more usable.
- Dale Beasley: I would like to see albacore and troll salmon data added. Also, the latitude and longitude pointer doesn't work well.
    - Libby Whiting: These data sets were added this morning, but the data is very low resolution (40 sq. mile data level). There was a search feature added for specific latitudes and longitudes, as well as finder for specific cities, townships, counties, and ranges.
- Dale Beasley: What are the WDFW lines on the viewer? These lines have economic impacts, would like to see them explained better and backed up with more data.
    - Michele Culver: These are the lines we use for reporting catch areas within fisheries. There is also a link on the viewer to view the regulations online.
- Dale Beasley: What are commercial fishing lease blocks in the viewer?
    - Michele Culver: The map was generated by USGS in 2008. These are what they are proposing for lease blocks.
        - Dale: I would like these to come out of the viewer.
- Brian Sheldon: I would like to see more data on invasive species, right now there is only one type (mud snails).
    - Rich Osborne: It would be great if these existed, but right now invasive species spatial data is collected on a very small scale and is largely anecdotal.
- Brian Sheldon: I would like to see the technical committee look at invasive species data.
    - Susan: Invasive species data will be discussed further at a technical committee meeting.
        - Brian: We could also include the science team.

Michele Culver presented on the spatial fishery data that is available for use in the MSP including what can be publicly disclosed and what is exempt. The presentation is available on the WCMAC SharePoint site.

Questions and Comments:

- Mark Plackett: If the state legislature needs information on a renewable project, would they have enough authority to trigger analysis, or does it have to be a federal agency?

    - Michele Culver: That is one of the things that would be put into the plan, what levels of analysis we would want and who we would like to pay for it.
- Katie Krueger: Do these data include the impact from Oregon fishers that come up into these zones?
    - Michele Culver: Yes that is included.
- Dale: What are 5 new uses in the MSP and where might they be addressed?
    - Michele: Renewable energy, aquaculture, dredge disposal, bioextraction (for pharmaceuticals or cosmetic purposes), and mining are five potential new uses from WCMAC workshops.
- Rich Osborne: We [the state] don't have the current authority to comment on any of those 5 new uses in federal waters, correct?
    - Jennifer Hennessey: No, under the coastal zone management act, the state current can apply to evaluate a proposal in federal waters. We can ask, but we have to build a case of what those coastal effects are and ask NOAA individually for permission every time a proposal comes through. The benefit of a plan is being able to have that case made ahead of time and automatically requiring federal agencies to notify the state when a project is proposed in that area and the state being approved to review according to the enforceable policies in the state's approved coastal program.
    - Michele Culver: The other component of benefit of the plan is that we can specify what we want in terms of standards so all proposals would be aware of that upfront.
- Rich Osborne: How will you assess the impacts of fisheries (salmon in particular) without quantitative data?
    - Michele Culver: we don't have catch data with latitude and longitude, but we have a good idea of the overall picture. We have enough data to still look at the impacts (for groundfish there are 200-300 spots which were enough to draw a boundary, and the overall catch amounts are there) so we are already 90-95% of the way there without the in depth technical data.
- Penny Dalton: In the past we have had an issue with Ecology regulation, is WDFWs regulatory process all included?
    - Jennifer Hennessey: That would be a separate request. The plan allows us to use the existing enforceable policies (e.g. Clean Water Act and Shoreline Management Act).
- Brian Sheldon: We need to get the fisheries mapped. Why are tribal fisheries not being spatially mapped out?
    - Katie Krueger: The Quileute Tribe intends to provide catch data for the economic analysis, but can't speak for other tribes.
- Susan Gulick: This conversation can be continued at the next Technical Committee Meeting.

3. Use Analysis Process Overview

Jennifer Hennessey reviewed the Use Analysis Process. The process includes assessing use data, performing use analysis to identify alternatives and recommendations, and analyzing potential new use data. The presentation is available on the WCMAC SharePoint site.

Questions and Comments:

- Brian Sheldon: Will the MSP boundary expand when we receive additional fishing data?

    - Jennifer: We have not cut off any of the data in the data viewer. This is the boundary we identified through the scoping process and is the one that we think will best address the things we need to cover in our application to NOAA, which requires consideration of criteria such as areas where we expect potential new uses to be proposed, areas that are ecologically significant, places that have ocean resources and uses connected to Washington's coastal zone, etc.
- Rod: We have repeatedly said we are not doing a zoning code with the MSP, but there may be an application for an activity that would generate a permit process. Do you see a more detailed explanation in your proposed matrix?
    - Jennifer: That is correct; the MSP is not a zoning code. Permitting processes will occur on a case by case basis.
- Sally: Will we compile potential solutions from the WCMAC as part of the recommendation process?
    - Susan Gulick: First we will identify the issues, then develop potential options to resolve the issues, and finally recommendations.
- Rod Fleck: Why are the Columbia River and the Strait not included?
    - Jennifer: There are different policies that apply to those water bodies.
- Dale Beasley: There is a strong chance that new uses will conflict with existing uses. We can minimize conflict by developing recommendations and standards, and we should invite some other individuals outside the WCMAC group.

! WCMAC agreed to the recommended use analysis process without revision.

4. Marine Protected Reserves

Dale Beasley presented on Marine Protected Reserves. He requested a series of workshops to address fishing issues. The presentation is available on the WCMAC SharePoint site.

Questions and Comments:

- Rod Fleck: I agree that the MSP won't be a fixed time frame. The MSP is not a regulatory document or zoning code, which should be repeated throughout the final document.
- Mark: I agree that the people in the fishing industry are affected more than anyone else in the process. Treaty fishermen have every right to fish off our coasts. Tribes are on the same side as the fishermen in terms of ocean use.
- Ray: I went to Washington DC at Senator Cantwell's request as part of a 25-person group testifying to the US Senate. The big question was why aren't young people getting into fishing? One of the biggest fears is marine spatial planning, and the combined challenge of sanctuaries, tribal obligations, protected mammal predation, global warming, ocean acidification, USCG regulations, permit fees and transfers, disputes to sport fishing, and sport non-compliance.
- Michal Rechner: Nobody is opposed to seeking greater input from the fishing industry, but we don't want to create an expectation that we are going to pull people together from outside the council to solve the same issues we are trying to solve within the WCMAC.

5. Public Comments

- Larry Thevik: A fear of displacement covers any conversation with ocean groups, there are plenty of groups that think there is a lot of space to go around, when in reality there is not. I endorse Dale's concerns, but not establishing fishing preserves. Washington is unique in that it has a short

coast with a marine sanctuary and other sovereigns controlling a lot of ocean spaces. I support Michele and Ecology in creating a unique plan to address these issues.

- Key McMurry: Great to hear that there is a potential in the CMSP for us to make the case for going out to the federal CZMA boundary line, I'm glad it got discussed. I agree that the fishermen will be impacted most by the plan.
- Doug Fricke: We need to bring in the fishermen to these coastal workshops to get it right. They have qualitative knowledge about the fisheries that can fill in holes in the spatial data. I have filed economic reports for Grays Harbor for 30 years, and now the Port has released a report that is excellent and might be helpful to us. However, they didn't go to the next step on the commercial side, which they did do in Bristol Bay (the executive summary of this report is recommended reading). We should go to the next level and include the economic contributions: trucking, distributions, and restaurants. Let's make sure we get credit for this work nationwide.

6. Economic Analysis Scope of Work

Mike Taylor presented his Economic Analysis Scope of Work on behalf of Cascade Economics. The presentation is available on the WCMAC SharePoint site.

Questions and Comments:

- Mark Cedergreen: Recreational fishing should be included, it accounts for a lot of revenue. You could change commercial fishing to "fishing industry" to cover commercial, recreational, and tribal.
    - Mike Taylor: We will see what we can do to include that.
- Katie Krueger: What are you classifying as a catastrophic event? Also, BOEM has written all of these lines that really just are a snapshot of the current situation, fishing habits will change with changing climate.
    - Mike: We aren't equipped to address climate change in the study; the intent is to look at immediate events (more tsunami-like).
- Rod Fleck: Will the analysis take into account direct and indirect values and impacts and put a dollar amount on them?
    - Mike: This risk assessment will not cover that, this is qualitative rather than quantitative. For example, do they have alternatives, are there other ways to bridge a short period of loss. Further up in the assessment, they will be incorporated.

Mike Taylor discussed the Economic Impact Modeling tool to evaluate the direct impacts and their community effects. There will be a coast-wide model which is broken down by counties as well as a state-wide model.

- Garrett: If you run the coast through the model, will you still get more accurate county numbers than running the counties individually?
    - Mike: Yes, there is an element of post-processing that attributes certain economic factors to counties to divide the final numbers up on the county level. The Science Panel has agreed that these will be more accurate.
- The WCMAC discussed marine and rail oil transportation and potential economic impacts. Garrett Dalan noted that while it's a very important topic, the economic analysis isn't scoped to run impact scenarios for a variety of environmental impacts. He proposed discussing oil spills and coal at a later meeting.

- Bridget provided an update on the economic analysis from the Science Panel. They were given the scope on October 15th, and provided the consultants with feedback. More formal written comments will be provided to the Science panel and WCMAC

7. Presentation: Ecological Effects of Marine Renewable Energy

Simon Geerlofs of the Pacific Northwest National Labs presented on the Ecological Effects of Marine Renewable Energy. The presentation is available on the WCMAC SharePoint site.

Questions and Comments:

- Dale Beasley: What happens if one of the devices has an internal short and releases electricity in the water?
    - Simon: The electricity that can come off of the cables or devices is minimal. I don't have a lot of information about this.
- Katie Krueger: All research was done on vertebrates, are invertebrates being examined as well?
    - Simon: Oregon State is researching benthic issues with invertebrates. We typically examine species with strong regulatory guidelines. Most projects are driven by regulations from BOEM and NOAA.
    - Jennifer: There were a series of workshops on the ecological effects of tidal energy as well as wave energy discussing risks that were most concerning to scientists.
- Mark Plackett: Would you say you are figuring out what we can do, not so much what we should do?
    - Simon: From the environmental angle, the question is can we do it sustainably, and from the energy policy side it is different.
- Public comment: By putting man-made structures in the water, those structures will attract growth which will attract bait fish and predators. There are studies in Germany and the UK documenting seals and sea lion increases. We have ESA salmon runs feeding directly into these which will be a problem.

8. Updates

- Work Plan
    - Jen Hennessey updated the work plan with the use analysis process.
    - The ecologically important areas analysis timing has been shifted.
- Science Panel Update
    - Bridget Trosin provided an update and written summary from the Science Advisory Panel meeting on September 16.
    - Subcommittees have been assigned to each scientific review request based on individual areas of expertise.
    - The Science Panel comments will be publicly available on the MSP website. Rich will also have access to their documents and can share information.
- Technical Committee Update
    - There is a written document in the folder with updates. Contact Rich Osborne or Brian Sheldon with questions
- MRAC Update

- MRAC requested legislative appropriations to keep the group running, plus $3.5 million related to ocean acidification efforts.

9. Announcements
    - Casey Dennehy announced the new survey response counts for recreation uses.
    - Suggestions for future WCMAC meeting agendas:
        - Mark Cedergreen: We should follow up on Dale's request for additional working groups.
        - Sally Toteff: Ecology could send someone to give a presentation on the marine rail and oil transportation study.
        - Brian Sheldon: We should address the lack of attendance.

10. Public Comment
    - Key McMurry: I agree with the comments about attendance. The governor's liaison has missed three or four meetings.
    - Larry Thevik: The argument that the crude oil by rail project is nothing new is false. There is a difference between a tank holding water, and one holding nuclear waste and one holding 16 million gallons of crude oil. Shipping crude oil into Grays Harbor is definitely a new use. I would request that the Council define this as a new use. Also, when you list your goals you should acknowledge up front that there may be no "appropriate" renewable energy locations.

Upcoming Meetings

- January 7, 2015
- February 25, 2015
- April 22, 2015
- June 24, 2015

Meetings will be held in Aberdeen unless otherwise noted

MSP Potential New Use Literature Summary:
Marine Product Extraction

What is Marine Product Extraction?

Marine product extraction (also sometimes called bioextraction) is the practice of harvesting marine plants and animals to develop non-food related goods. Examples include anti-viral, anti-cancer, and anti-tumor agents used in medical treatments, anti-inflammatories in cosmetics, chemicals used in biomedical and cell biology research, and fatty amino acids in nutritional supplements. New genome sequences have also been discovered within marine organisms.

Researchers, universities, government agencies, and private companies use **marine bioprospecting** to search for novel chemicals for human health products. SCUBA diving, manned submersible vehicles, and remotely operated vehicles are current methods for marine bioprospecting.

Several phases occur between initial discovery and commercial sales of a developed product. Initial chemical discovery and genome sequencing often require small amounts of the target organism. Testing, clinical trials, and commercial sales will require greater amounts of availability.

NOAA

The required quantities of the marine organism and target chemical can be obtained by a few different methods:

- **Wild harvest** has been used to collect the required amounts of chemical for product development and sales. Harvest sustainability is dependent upon the organism, method of harvest, and desired quantities.
- **Aquaculture** of marine organisms to produce desired chemicals can be land-based or in-the-sea. The success of aquaculture for product supply depends on the husbandry needs for the organism, as well as specific environmental controls that stimulate the organism to produce the desired chemical.
- **Biotechnology** is used within laboratories to synthetically replicate chemicals. There are examples of this, but the methods are often too complex and costly to be effective at creating the desired quantities.

Why Marine Product Extraction?

Marine organisms represent a vast pool of potential new discoveries that can advance human health products. For example, anti-viral compounds to treat HIV were discovered in marine sponges. The potential for discovery is also quite large, and is predicted to be about 300 to 500 times larger than terrestrial sources. Marine biotechnology is currently a multi-billion dollar industry.

Potential Benefits and Use Compatibilities

- **Marine protected areas** may be a way to protect marine genetic reserves and be sources of future discoveries.
- No information was found related to other existing use compatibilities.

Environmental Concerns

- **Over-harvest and habitat degradation** remain a key concern for marine product extraction. Impacts strongly depend upon the intensity and frequency of harvest, organism life history, and quantities required.
- **Sustainable harvest may be achieved** through conservation measures such as harvest feasibility studies, sustainable collection methods, and harvest limitations.

Potential Use Conflicts

- No information was found on conflicting uses.
- Spatial conflicts are difficult to forecast because they are dependent upon the organism harvested, the method, intensity, and frequency of harvest, and other factors.

Future Trends and Factors in Washington

Based on the literature, it does not seem likely that the Washington coast is a primary target for marine bioprospecting and marine product extraction. However, the Plan's study area has some high biodiversity and extreme environments including seamounts, deep sea corals, and hydrothermal vents. Organisms within these habitats are predicted have the greatest potential to contain undiscovered genome sequences and chemicals. Therefore, as technology continues to expand the depths of the ocean to be explored, it is possible that novel chemicals and DNA sequences could be discovered within Plan waters.

MSP Potential New Use Literature Summary:
Offshore Aquaculture

What is Offshore Aquaculture?

Aquaculture, the culture or growing of fish, shellfish, or other aquatic plants and animals, is an active industry in Washington. All of Washington's marine aquaculture currently occurs close to shore, within bays, estuaries, and Puget Sound-there is no offshore aquaculture in the state.

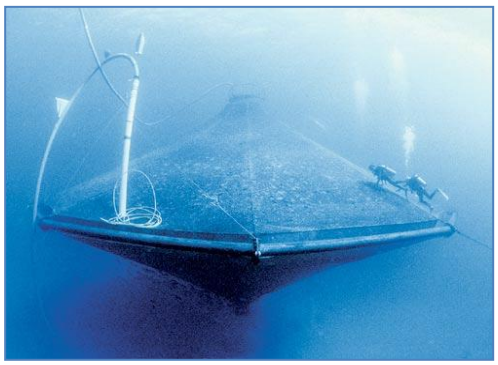
There is no standard definition for offshore aquaculture. Offshore aquaculture typically occurs in deep water and is generally exposed to one or several of the following: strong waves, storms, swells, and currents. Given the physical exposure of Washington's Pacific coast, offshore aquaculture is currently defined within the Marine Spatial Plan as **any new aquaculture operation outside of the coastal estuaries**.

Current and Emerging Offshore Technologies

Finfish aquaculture uses two general types of cage designs:

- Surface cages: This type sits at the surface of the water. Surface cages are often referred to as net pens, which are currently used in offshore aquaculture in Norway and Chile.
- Submersible cages: This type can partially or fully submerge underwater to avoid rough seas. Some have nets, while other designs have a rigid outer cage.

NOAA



Shellfish aquaculture uses longlines moored to the seafloor. The shellfish are either directly attached to the lines or grown in net bags attached to the lines. Mussels and scallops are currently cultured offshore in many countries using this technique. Challenges for this technique include detachment of the shellfish from the lines in rough seas.

Marine plant aquaculture methods are similar to shellfish. Growing plants requires more sunlight and surface space compared to shellfish and finfish.

Why Offshore Aquaculture?

International food organizations have identified seafood as a promising option to provide a growing world population with high-quality protein. Coastal aquaculture is limited in space and site suitability, and wild capture fisheries will not be able to meet future seafood demand. Currently, all U.S. domestic aquaculture supplies only about 1.5% of American seafood demand. Several countries, including the U.S., are interested in increasing supplies of seafood protein to keep up with rising demand, and offshore aquaculture has been identified as a promising alternative.

Potential Benefits and Use Compatibilities

- Offshore aquaculture can minimize environmental impacts, improve seafood health, and reduce risk of disease when sited in **clean, well-flushed ocean waters** versus contaminated nearshore waters.
- Domestic aquaculture expansion can **increase seafood security** and decrease reliance on aquaculture products from other counties.
- Offshore aquaculture can **build off of existing aquaculture knowledge** and infrastructure and increase **jobs** in husbandry, cage supply, transportation, seafood processing, etc.
- Offshore sites can **decrease visual impacts** compared to coastal aquaculture.
- Shellfish culture could potentially be co-located with **marine renewable energy**.

Environmental Concerns

- **Food particles and feces accumulating on the seafloor** can change benthic chemistry and community composition. Well-flushed sites and avoidance of sensitive habitats is expected to minimize this impact.
- **Interactions between cages and wild fish, sharks, and mammals** have been discussed in the literature as a concern. Cages act as fish aggregation devices. Management practices are used to prevent injury and avoid interactions with mammals.
- **Chemical contaminants** such as antibiotics and anti-foulants are a concern, although their use has declined.
- **Water quality** is a low concern in deep, well-flushed sites.
- Several state and federal regulations are in place to prevent and minimize **disease transmission**.

Potential Use Conflicts

- Use conflicts listed in the literature include **commercial and recreational fisheries**, **recreational activities**, **shipping**, **military uses**, **cable installation**, **mining**, and **dredge disposal**. In particular, cages, longlines, and moorings create space and safety conflicts with navigation, fishing equipment, and SCUBA diving.

Other Concerns

- **Competition with commercial fisheries** may cause seafood prices to decline. The literature predicts that market competition between commercial fisheries and aquaculture will be a global phenomenon as aquaculture expands.

Future Trends and Factors in Washington

Washington has a strong foundation in aquaculture for offshore operations to build upon, and some have indicated offshore potential in the Pacific Northwest. The growing demand for seafood and the limited number of suitable nearshore sites are key drivers for exploring offshore aquaculture. However, the physical conditions off the Washington coast restrict the technology and cost feasibility of offshore aquaculture. Safe and consistent access to offshore sites and space conflicts are also currently key limitations.

MSP Potential Expanded Use Literature Summary: Dredge Disposal in New Locations

What is Dredge Disposal?

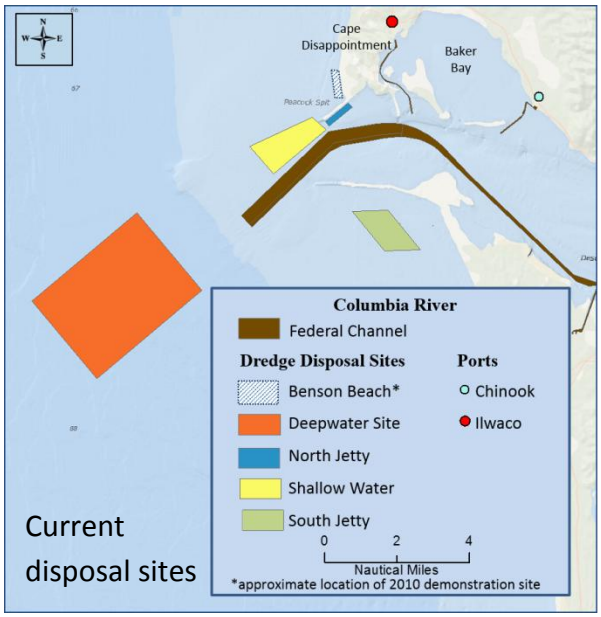
Navigation channels in Grays Harbor, the Mouth of the Columbia River, and other locations within the Plan area require frequent dredging to maintain vessel access to critical port infrastructure and services. In some locations, millions of cubic yards are dredged annually to keep navigation channels safe and accessible.

The majority of the dredged material is disposed of in-water at specific disposal sites. Current disposal types include:

- **Nearshore and on-shore beneficial use** sites keep sediment within the nearshore system, which can minimize erosion. These sites have boundaries, and sediment can accumulate on the seafloor. These sites are designed for the sediment to disperse over time.
- **Flow lane** sites are generally used for relatively small volumes of material. The material is placed in scour channels, and does not accumulate on the seafloor.
- **Deep water** sites are located offshore in federal waters. Sediment disposed at deep water sites is effectively removed from the nearshore system.

Current Dredge Disposal in Washington

- Grays Harbor: 5 active disposal locations (nearshore and onshore use)
- Mouth of the Columbia River (MCR): 4 active disposal locations (nearshore use and deepwater)
- Willapa Bay: Flow lanes
- La Push: 2 beneficial use sites



Current disposal sites

Why New Disposal Locations?

There are a few different reasons why new disposal sites may be created. At the MCR, current nearshore sites have limited capacity and accessibility, so the MCR regional sediment management team has recommended expanding the network of nearshore disposal sites to limit the use of existing disposal sites and increase beneficial use of sediment in the nearshore. In Willapa Bay, some ports are considering new flow lanes in locations where small dredges and volumes of material make the use of flow lanes more cost effective than established disposal sites. In other areas, agencies are recommending shifting some disposal locations in order to accommodate natural changes within scour channels.

Potential Benefits and Use Compatibilities

- Maximizing beneficial use of sediment can minimize erosion and provide benefits for:
  - Recreation and tourism
  - Coastal hazard protection

Environmental Concerns

- **Dungeness crab** are at risk of direct burial from dredge disposal. Current research is studying the mortality and behavior of crab at disposal sites to assess the extent of the risk. Mitigation measures may include thin-layer dispersal to minimize mortality.
- **Razor clams and other benthic invertebrates** are also at risk for direct burial. Studies suggest 100% razor clam survival in 12 cm or less of dredge disposal. Studies have indicated that benthic invertebrates such as polycheates and echinoderms will be impacted, but are expected to recover rapidly.
- **Marine fish, birds and mammals** are anticipated to have low impacts from dredge disposal. Not much information is known about these impacts.

Potential Use Conflicts

- The **Dungeness crab fishery** has concerns about disposal in shallow areas used heavily by fishermen. Conflicts include possible reductions of Dungeness crab catch, as well as loss of crab pots. Current mitigation measures include monitoring for crab "hot spots" and crab pots, and communicating with crab fishermen before disposal.
- **Navigational safety** can be put at risk if mounding of the disposal material is significant enough to amplify waves at the surface. The Mouth of the Columbia River Regional Sediment Management Plan recommends no more than 10% wave amplification above baseline conditions. The Army Corps of Engineers regularly monitors their sites for wave amplification from mounding.

Future Trends and Factors in Washington

- The **Mouth of the Columbia River** Regional Sediment Management Plan identified two potential new locations for dredge disposal. An onshore site at Benson Beach has been a demonstration project, but there are concerns about the safety and cost effectiveness of this site. A proposed North Head nearshore site is currently under consideration.
- Two sites at **Grays Harbor** may undergo small shifts in locations. The South Jetty site may be shifted slightly northward to accommodate the shifting scour channel. The Point Chehalis open water site may undergo a one-time northwestern shift in order to accommodate the additional material from the Grays Harbor channel deepening.
- Additional flow lanes in **Willapa Bay** may be established in the future for small port dredging.

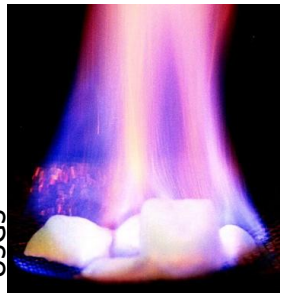
MSP Potential New Use Literature Summary:
Mining Gas Hydrates

What are Gas Hydrates?

Gas hydrates are a mixture of gas and water which, under low temperature and high pressures, forms a solid ice-like structure in marine sediments. Methane is the main type of gas in hydrates. When methane hydrates are exposed to warmer temperatures or lower pressures, the hydrates "dissociate" and release methane gas. Preliminary research suggests traditional oil and gas equipment and infrastructure can be successfully adapted to mine gas hydrates. Globally, no commercial methane mining activities currently exist, and no projects are proposed for offshore Washington.

Why Mine for Gas Hydrates?

Methane is a natural gas that can be used for energy production. Methane hydrates are estimated to be the world's largest source of organic carbon. The United States Congress identifed the potential for methane hydrates to help alleviate the projected shortfall of natural gas supplies, and has contributed substantial funding for researching gas hydrates.



USGS

Potential Benefits and Use Compatibilities

Recreational fisheries could benefit from fish aggregations around platforms.

Environmental Concerns

We expect many of the main environmental concerns to be similar to offshore oil and gas activities including: **noise** from seismic surveys, platform construction, and vessel operations; **water quality** impacts from hydrocarbons and chemicals; **air quality** impacts; **benthic habitat** disturbance; impacts to **marine mammals, birds, fish, and sea turtles**; and **hazards** from leaks, spills, and loss of well control.

Potential Use Conflicts

Commercial and recreational fisheries could be impacted through displacement, changes in fish location and behavior, and loss of fishing gear. **Tourism and recreation** could be affected by visual impacts to boating and sightseeing. **Shipwrecks and other archaeological** sites could also be impacted.

Future Trends and Factors in Washington

The Washington coastal margin has significant amounts of methane hydrates. However, the hydrates are generally widely dispersed and therefore not a high target for resource extraction. Current research efforts are focused on highly concentrated hydrate sites in the Gulf of Mexico and the Atlantic coastal margin.

MSP Potential New Use Literature Summary:
Mining Marine Sand and Gravel

What is Marine Sand and Gravel Mining?

Sand and gravel mining is the dredging of sand or gravel from the seafloor for use in beach nourishment, coastal hazard defense, and other uses such as upland construction. Suction dredges are used to extract the material, which is stored and transported by ship, barge, or pipeline to a beach or re-handling area.

Why Mine for Marine Sand and Gravel?

Sand and gravel are mined more than any other resource in the world, yet they are limited resources. Land development, decreasing land-based supplies, and climate change are shifting sand and gravel mining to marine waters. The U.S. East Coast has a high demand for offshore sand to renourish beaches and provide coastal defense against storms and climate change. Worldwide demand for sand and gravel is expected to increase.

Potential Benefits and Use Compatibilities

Mining used for beach nourishment and coastal protection projects may benefit **coastal communities and infrastructure** as well as beach **recreation and tourism** and **coastal habitats**.

Environmental Concerns

- **Benthic species and habitats** will be directly impacted by the dredge. Seafloor community recovery can take over 3-5 years, and community composition in dredge "pits" may change.
- **Bottom fish** could be affected if dredging occurs in their habitat.
- **Noise, vessels strikes, water quality,** and **ecosystem effects** are also concerns.

Potential Use Conflicts

Commercial and recreational fisheries could be impacted by: increased vessel traffic, restricted access to fishing grounds, gear loss, and changes to fish ecology. **Archaeological sites**, **marine renewable energy**, and **methane hydrate mining** are also not compatible with sand/gravel mining.

Future Trends and Factors in Washington

Washington's seafloor contains significant amounts of sand and gravel. Current local demand for sand and gravel is low, but decreasing land supplies, coastal population growth, increased storms, and sea level rise may increase future demand. Cost and logistics may limit the sand available from navigation dredging for beach projects, which may influence demand for offshore sand. To date, BOEM has not assessed Washington offshore lease blocks for sand and gravel mining for beach nourishment.

Use Analysis Process Update
January 7, 2015

Background:
At the October 22, 2014 meeting WCMAC agreed to participate in the Use Analysis Process. The attached table outlines these tasks in more detail and the role for agencies and WCMAC in this process. WCMAC can play an important role in advising on the criteria for the process and recommended actions for the outputs of the Use Analysis.

Creating a Marine Spatial Plan requires compiling and evaluating spatial, or mapped, data including existing uses and potential new uses. The state has outlined its approach to this process called a "Use Analysis". The Use Analysis involves three main activities:

- Assessing spatial data
- Performing the spatial analysis
- Identifying recommendations and alternatives

Because the state has access to more detailed, confidential data, the state proposes to produce the Use Analysis using this data, where available and appropriate. The resulting maps would be able to be shared as aggregated outputs when completed.

Use Analysis Process & Draft Schedule

The draft schedule below shows major proposed tasks in the Use Analysis Process by agencies and WCMAC. It does not indicate additional consultation and coordination with tribes, which the state will pursue throughout the process.

Timeframe	Entity	Process step	Task
Fall 2014	State agencies	Assess Use Data	• Develop list of data for each use category; identify source of data • For uses with little to no data, contact appropriate source/expert and verify sector data. If needed refine use data or adjust display of data.
January 7, 2014? February 25, 2015 April 22, 2015	WCMAC	Spatial Analysis	• Review and provide feedback on use assessment matrix (high/medium/low) and process for spatial analysis.
Winter – Spring 2015	State agencies	Identify Alternatives and Recommendations	• Characterize, for each category of existing uses, the level of activity (high, med, low, unknown). • Identify, for each category & level, the recommended general actions to take, if a project were proposed for that type of area (e.g. do not permit, get more data, or permit the activity).
April 22, 2015 June 24, 2015	WCMAC	Identify Alternatives and Recommendations	• WCMAC members review & provide their recommended actions for each of the 5 potential new uses (matrix); these actions become alternatives.
Fall 2015	State agencies	Identify Alternatives and Recommendations	• Identify pros/cons for each alternative and steps needed to accomplish WCMAC recommendations under existing authorities vs. those that require revisions to current laws and/or authorities.
Sept/Oct (TBD)	WCMAC	Identify Alternatives and Recommendations	• Feedback from WCMAC on alternatives analysis.
Spring 2015 – Dec 2015 **Note: Some data is being generated by current projects & will be available after June 2015 & some data is already available.*	DNR	Spatial Analysis	Perform GIS Analysis: • Overlay a standardized grid on top of use data. • Categorize existing use data (unknown; low, medium, or high use). • Evaluate existing use GIS data in each cell with data on potential new uses. • Outputs provide areas: most existing uses/fewer uses, for which conflict is unknown, with no conflicts, have fixed infrastructure, etc.
Winter 2015-16	State agencies	Identify Alternatives and Recommendations	• Revise alternatives analysis and include WCMAC recommendations and relationship to current laws &/or authorities as part of the draft plan.
Winter 2015-16	State agencies	Identify Alternatives and Recommendations	• Based on above steps, develop draft spatial options for marine spatial plan.

WCMAC ATTENDANCE

	Jan	Apr	July	Sept*	Oct.
Vacancies	1	1	1	1	1
Total Members Attending	25	22	21	18	17
Total Members Absent	0	3	4	7	8
% Attending	100.00%	88.00%	84.00%	72.00%	68.00%

* Special Meeting to Develop Funding Request

	Attendance Rate			
	100%	80%	60%	<40%
Number of Members	13	7	3	3

Bylaws

F. Removal: Members may be removed from the Council by the Governor for just cause. Just cause includes, but is not limited to, inability of Council members to regularly attend Council meetings.

WACD

WASHINGTON ASSOCIATION OF CONSERVATION DISTRICTS

Resolution No. 2014-06

Title: Washington Coast Marine Advisory Council to include representative from WACD and WSCC Staff, adding two new seats.

Problem:

In the creation of the Washington Coast Marine Advisory Council natural resource agencies were included in the formation of the council, however WACD and WSCC were excluded in seating. When dealing with natural resource issues, WACD and WSCC are leaders in solving problems and need to be at the table that represents ¼ of Washington State.

Other agencies that already have seating on the council also are on the Conservation Commission and should not be double up, therefor the WSCC seat should be represented by WSCC staff.

When a similar resource group was created by the office of the Governor, the Marine Resource Advisory Council (MRAC), this problem did not occur.

Recommendation:

WACD and the Washington State Conservation Commission to work with the Washington State Legislature and the Governor's office to add two seats, one WACD and one WSCC Staff, on the WCMAC.

Presented by: Pacific Conservation District

Approved as amended by the Southwest Area Association 10/8/2014

Assigned To: Legislative Committee

Larry Helm, Whatcom
2nd Dave Guenther, Central Klickitat
Passed

RECOMMEND DO PASS.

January 7, 2015

Washington Coastal Marine Advisory Council
Draft Work Plan: Meetings for July 2014 – June 2015

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.

Governor's charge to the Washington Coastal Marine Advisory Council is to focus on providing advice for marine spatial planning process through June 2015, particularly:

- Funding priorities for key data gaps and information.
- Information for and expert team review of draft sector analyses.
- Data quality of existing data (by expert teams).
- Issues and concerns for impacts of proposed activities to aid development of scenarios and draft Environmental Impact Statement and Marine Spatial Plan.

Meeting	Information	Advice/Action
Jan 7	• Presentation on other new uses in the plan • Discuss issues/concerns about new uses • Use Analysis Process - introduce Uses matrix • Budget recommendation update	• Chair/Vice Chair selection
Feb 25	• <u>Work session:</u> Ecologically Important Areas Analysis (WDFW) • Renewable energy issues/concerns discussion • Use Analysis Process – review & discuss uses matrix • Report on status/trends ecological indicators (NWFSC)	• WDFW Ecologically Important Areas analysis • Review & feedback on Uses matrix
April 22	• Use Analysis Process – complete use matrix and begin discussion of recommended actions • Coast-wide Economic Analysis (consultants) • Report on social science indicators? (WSG/NWFSC)	• Feedback on Uses matrix & process for spatial analysis
June 24	• Use Analysis Process – continue to discuss alternatives and recommended actions • Ecological modeling and seafloor mapping results (NCCOS)? • Discuss framework for research agenda?	• Recommended actions for potential new uses (matrix) – Use Analysis • Process and timeline for research agenda
September 23?	• Use Analysis Process feedback	• Feedback on alternatives analysis (Use Analysis)

Technical workshops – WCMAC members invited and encouraged to participate

- Mid-late March: Ecologically important areas analysis - (WDFW)

Other information needs to fit in:

- Background on spills program and state vs. federal jurisdiction.
- Background on BOEM/FERC roles in planning, licensing/leasing for marine renewable energy.
- 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.

WCMAC Technical Committee Update

January 7, 2015

The Technical Committee met 1 time (via phone) since the October WCMAC meeting. Technical Committee meetings focus on providing input on desired outcomes and deliverables on projects.

The December Technical Committee meeting focused on the desired deliverables and outcomes for the Visual Assessment, a review of information needs on renewable energy, and a discussion of the data viewer, including invasive species data. Details are included in the Technical Committee meeting summary. Highlights include:

Visual Assessment

- A visual assessment was on the list of projects supported for MSP development.
- Oregon has completed a visual assessment which serves as a potential model. The Technical Committee reviewed the details of the Oregon program.
- The Technical Committee discussed the value of this project in a non-regulatory structure.
    - The baseline information collected will inform regulatory/permitting decisions in the future.
    - The MSP can include recommendations, which while not regulatory do influence permitting decisions.
    - The baseline information will be very useful to many other processes, including planning.
- Staff will gather more information on the Oregon study and begin moving forward on this project.

Renewable Energy Information Needs

- The Technical Committee reviewed the results of the survey of WCMAC members that identified information needs regarding renewable energy.
- One information item requested was a written overview of permitting requirements. The Technical Committee agreed that this information would be helpful and asked staff to go forward.
- Technical Committee members felt the presentations on energy technologies and ecological effects were useful. They did not feel there was a need to proactively provide more information at this time. If new requests for information arise, we can work to address them.
- The one issue that was identified in the survey that has not been addressed in detail is the known impacts of renewable energy to human uses. It could be useful to have a presentation on this, particularly in regards to shipping practices, aquaculture, and fishing. Staff will try to identify persons with expertise on this and ask them to provide a presentation to WCMAC; it may need to be different people addressing different uses.

Data Viewer/Invasive Species Data

- The Technical Committee was briefed on the status of the data viewer and discussed whether to integrate invasive species data.
- There is limited data on invasive species. Some data are out of date.
- One concern with invasive species data is that it is hard to keep it current.

- DNR noted that there are capacity limitations to the data viewer, and noted the need to move from data gathering to data analysis for the Marine Spatial Plan.
- The Technical Committee agreed that there is a need for access to current invasive species data. Is there a better way to do this than the data viewer? Technical Committee members suggested other organizations to contact to ask this question.
- Staff will follow up on the suggestions from the Technical Committee.

Other Projects

The Technical Committee receives regular updates on the status of ongoing technical studies, including:

- Coast-Wide Economic Assessment
- Sector analyses
- Ecosystem Assessment and Indicators
- Seabird and Marine Mammal Ecosystem Modeling
- Seafloor Mapping

MSP Mapping Application Active Data (12/22/2014)	Data owner	Status of change
Data Being Formatted		
Crabber and Towboat Lanes	Washington Sea Grant	
3 Nautical Mile Boundary Line	BOEM	To be removed
Area to be Avoided	NOAA Olympic Coast National Marine	
State Parks Areas	Wa Parks Commission	
Energy		
Tidal Energy Devices	PNNL and Parametrix	
Wave Energy: Deepwater Energy Devices	PNNL and Parametrix	
Wave Energy: Mid-depth Energy Devices	PNNL and Parametrix	
Wave Energy: Nearshore, M3 Energy Devices	PNNL and Parametrix	
Wave Energy: Deepwater Energy Devices	PNNL and Parametrix	
Wave Energy: Mid-depth Energy Devices	PNNL and Parametrix	
Wave Energy: Nearshore, M3 Energy Devices	PNNL and Parametrix	
Wind Energy: Turbines Mounted on Jacket/Tri Founds	PNNL and Parametrix	
Human Uses: Empirical Evidence		
Aquaculture Districts	Wa Department of Fish and Wildlife	Metadata in development
Commercial Albacore Fishing	Wa Department of Fish and Wildlife	
Commercial Dungeness Fishery	Wa Department of Fish and Wildlife	Metadata in development
Commercial Groundfish Fishery	Wa Department of Fish and Wildlife	
Commercial Pacific Whiting (Hake) Fishery	Wa Department of Fish and Wildlife	Metadata in development
Commercial Pink Shrimp Fishery	Wa Department of Fish and Wildlife	
Commercial Salmon Fishery	Wa Department of Fish and Wildlife	
Commercial Sardine Fishery	Wa Department of Fish and Wildlife	
Commercial Shellfish Growing Areas	Wa Department of Health	Metadata added
Commercial Waterways (Deep Draft)	Bureau of Transportation Statistics	Metadata added
Fishing Ports	US Geological Survey, National Atlas	
Marinas	Wa Department of Ecology	Metadata added
Marine Supply	Wa Department of Ecology	Metadata added
Military Practice Areas	NOAA Nautical Charts	
Ocean Disposal Sites	NOAA Office of Coast Survey	
Population Demographics	US Census Bureau	
Port Facilities	US Army Corps of Engineers	
Public Access	Wa Department of Ecology	Metadata added
Recreational Albacore Fishery	Wa Department of Fish and Wildlife	
Recreational Bottomfish and Lingcod Fisheries	Wa Department of Fish and Wildlife	
Recreational Halibut Fishery	Wa Department of Fish and Wildlife	
Recreational Salmon Fishery	Wa Department of Fish and Wildlife	Metadata in development
Recreational Shellfish Beaches	Wa Department of Health	
Recreational Sardine Fishery	Wa Department of Fish and Wildlife	
Seafood Processors	Wa Department of Ecology	Metadata added
Shipping Density	US Coast Guard/The Nature	Metadata added
Wrecks	NOAA Office of Coast Survey	Metadata added

Infrastructure		
Beacons	NOAA Office of Coast Survey	
Buoys	NOAA Office of Coast Survey	
Confirmed Outfall Locations	Environmental Protection Agency	
Marine Structures	Wa Department of Natural Resources	Metadata added
Point Source Discharge: Dairy	Wa Department of Ecology	Metadata added
Submarine Cables	NOAA Office of Coast Survey	
Transmission lines and substations	Bonneville Power Administration Transmission Assets	Does not load
Marine Boundaries		
Catch Reporting Area	Wa Department of Fish and Wildlife	
Cities	Office of Financial Management	
Coastal National Wildlife Refuges	US Department of Fish and Wildlife	
Commercial ~~Fishing~~ Lease Blocks	US Geological Survey	To be removed
County Boundaries	Wa Department of Ecology	
Essential Fish Habitats	NOAA NMFS	
Exclusive Economic Zone	NOAA National Ocean Service	
Federal Lease Blocks	Bureau of Ocean and Energy Mgmt.	
Fishing Management Area	Wa Department of Fish and Wildlife	
Marine Protected Area Fish Inventory	NOAA NMFS	
MSP Study Area	Wa Department of Natural Resources	Metadata in development
Natural Resources Conservation Areas	Wa Department of Natural Resources	
Northwest National Marine Fisheries Service Region	Bureau of Ocean and Energy Mgmt.	
Olympic Coast National Marine Sanctuary	National Marine Sanctuaries Program	
Oyster Reserves	Wa Department of Fish and Wildlife	Does not load
Oyster Tracts	Wa Department of Natural Resources	Does not load
Pacific Fishery Management Council Region	US Bureau of Ocean & Energy Mgmt.	
Seashore Conservation Area	Wa Parks Commission	Does not load
Shoreline (Ownership Boundaries)	Wa Department of Natural Resources	
Shorezone	Wa Department of Natural Resources	
State Owned Aquatic Lands	Wa Department of Natural Resources	Does not load
Territorial Sea	NOAA National Ocean Service	
Marine Life and Habitat		
Benthic Habitat	The Nature Conservancy	
Estuaries of Concern	The Nature Conservancy	
Green Sturgeon Critical Habitat	NOAA	
Invasive New Zealand Mud Snails	Wa Department of Ecology	
Kelp	Wa Department of Natural Resources	Slow to load
Large Marine Ecosystems	NOAA, Northwest Marine Fisheries Sservice	
Marbled Murrelet Critical Habitat	US Fish and Wildlife Services	
Rocky Reefs	The Nature Conservancy	
Salmon and Steelhead Critical Habitat	NOAA	Metadata
Summer Chlorophyll	The Nature Conservancy	
Summer Whale Density	Duke University/NOAA Southwest Fisheries Science Center	Metadata

Physical Oceanography		
Bathymetry (25m contours)	Oregon State University/The Nature Conservancy	
Rivers	Wa Department of Ecology	
Upwelling	The Nature Conservancy	
Water Quality Monitoring	Wa Department of Health	
Human Uses: Participatory Mapping	NOAA and Bureau of Ocean and Energy Management	
Extractive/Fishing Uses		
Commercial Dive Fishing		
Commercial Fishing with Benthic Fixed Gear		
Commercial Fishing with Benthic Mobile Gear		
Commercial Intertidal Harvest		
Commercial Pelagic Fishing		
Kayak Fishing		
Recreational Dive Fishing		
Recreational Fishing From Boats (Benthic Species)		
Recreational Fishing From Boats (Pelagic Species)		
Recreational Fishing From Shore		
Recreational Intertidal Harvest		
Recreational Subsistence Fishing and Harvest		
Industrial Uses		
Commercial Shipping		
Mariculture		
Marine Debris		
Military Operations		
Mining and Mineral Extraction		
Ocean Dumping		
Renewable Energy Past Projects		
Underwater Pipelines		
Underwater Transmission Cables		
Non-Extractive Uses		
Beach Uses		
Cruise Ships		
Cultural Uses		
Motorized Boating		
Paddling		
Permanent Research Areas		
Sailing		
SCUBA/Snorkeling		
Surface Board Sports		
Swimming		
Tide Pooling		
Wildlife Viewing at Sea		
	Yellow = Broken Data	

MSP Projects Status Report
2012-2015

Mapping projects
Ecosystem assessment projects
Data and technical projects
Stakeholder engagement projects

***Projects updated since the October 2014 meeting**

	Project	Contractor	Project Description	Deliverables	Contract cost	Progress as of January 1, 2015	Status
1	**Nearshore multibeam survey**	DNR and ECY	High resolution multibeam bathymetric and sediment characterization survey of nearshore subtidal, intertidal, and coastal areas around river mouths to assess sediment stability and natural resource limitations to laying power cables	*Summary report on all new data collected including multibeam backscatter, and lidar; *Processed data and data products including maps and images	$ 386,000.00	Ecology and DNR completed multibeam surveys of the northern outercoast rivermouths and surrounding areas (Quillayute and Elwha) and submitted a final report that is available on the project page of the website.	Completed June 2013
2	**Intertidal wave runner survey**	DNR and ECY	Single beam cross-shore transects (wave runner) of intertidal nearshore areas around river mouths and priority nearshore regions. There will be survey transects set up to get a general sense of the bottom types.	*New nearshore bathymetry and beach topography profiles; *A report on data collection and recommendations for future work; *Provision of exisitng bathymetry and beach topography data		Ecology and DNR completed nearshore waverunner bathymetry data collectionin the tributaries in Wahkiakum County, and they surveyed the mouth of the Columbia with the multibeam and waverunners. They and submitted a final report that is available on the project page of the website.	Completed June 2013
3	**Data evaluation and seafloor mapping strategy**	NCCOS Biogeography Branch	Scientific and technical assistance to the state to standardize and evaluate spatial data in support of marine spatial planning. Development of a seafloor mapping strategy for Washington's offshore waters.	*Identification and sharing of useful datasets; *A technical report to evaluate no more than 10 key physical and biological datasets based on how the datasets have been used by other marine spatial planners, potential alternatives, and advantages and disadvantages of using the particular dataset to meet state goals. *Geospatial data viewer for existing bathymetric geospatial data layers; *Strategic planning roadmap for prioritization of bathymetric data colelction.	$ 75,000.00	The Biogeography team provided DNR with a final report that evaluated 10 key physical and biological datasets. They also created a geospatial data viewer for bathymetric data and a blueprint for future phases of spatial prioritization.	Completed June 2013
4	**Seafloor mapping prioritization and marine mammal and seabird modeling**	NCCOS Biogeography Branch	Seafloor mapping and Marine mammal/seabird modeling	*Development of seabird and marine mammal species distribution models; *Evaluation of marine mammal datasets; *Spatial prioritization of outer coast for future seafloor mapping needs	$ 207,000.00	*NCCOS held a seafloor mapping prioritization workshop with scientists and coastal managers on October 27th, 2014 to share the seafloor mapping inventory and discuss the seafloor prioritization process. From January through March 2015, NCCOS will be conducting a web-based excercise for scientists and coastal managers to identify their seafloor mapping priorities. NCCOS is planning a final workshop in May 2015 to finalize the participatory GIS mapping and discuss the results of the prioritization excercise. *NCCOS will be funding the marine mammal species distribution component of the modeling project. The deliverables of this project will be completed in September 2015.	Will be completed June and September 2015
5	**Human use mapping**	NOAA	Mapping human uses through the BOEM/NOAA Pacific Regional Ocean Uses Atlas program	*Two participatory human use mapping workshops in April 2013 held in Aberdeen and Pt. Angeles and *Final maps (funded by NOAA)	$ 6,500.00	Workshops were held in Port Angeles and Aberdeen in April 2013. Data and maps were delivered to DNR during the summer and autumn of 2013.	Completed October 2013
6	**Tribal catch mapping**	Northwest Indian Fisheries Commission	Mapping Tribal Commercial Marine Catch Data	*GIS data layers and shape files of the four Coastal Tribes' tribal commercial catch for the years 1980-2011	$ 65,000.00	The NWIFC collected, analyzed, and reconciled tribal data. NWIFC staff developed GIS layers by management area, species, gear, catch, month and year.	Completed June 2013
7	**Tribal cultural use mapping**	Northwest Indian Fisheries Commission	Mapping tribal traditional and cultural areas: a) Marine fishing areas, b) Intertidal fishing and gathering locations, c) Culturally significant areas/locations	*GIS data layers and shape files of the four Coastal Tribes' traditional fishing and cultural areas along the outer coast		The NWIFC compiled data on utilized and significant species, including species of finfish, shellfish, plants, birds and mammals. Project staff developed a GIS layer of utilized species and sensitive species sites. Staff from the four coastal tribes were consulted to verify and expand upon these GIS layers.	Completed June 2013

MSP Projects Status Report
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Mapping projects
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***Projects updated since the October 2014 meeting**

	Project	*Contractor*	*Project Description*	*Deliverables*	*Contract cost*	*Progress as of January 1, 2015*	*Status*
8	**Sanctuary Seafloor Atlas**	Oregon State University	Synthesis and stitching together of benthic habitat data from the northern portion of the Olympic Coast National Marine Sanctuary	*GIS data layers of benthic habitat data in the northern part of the National Marine Sanctuary and a scalable online Seafloor Atlas	$ 50,000.00	The Santuary delivered the data to OSU in October 2014. The OSU team has completed a review of the data in December 2014 to determine how much the data would need to be processed and they have begun processing and analyzing the Sanctuary data. The team will add bathymetry data from the NOAA ships Rainier and Okeanos Explorer to the analysis to ensure the most current data is incorporated. The Sanctuary and OSU will have a conference call in January 2015 to review the data assessment, the initial processing steps, and the plans for the map product.	Will be completed by June 2015
9	**Marine renewable energy suitability study**	Pacific Northwest National Laboratories	Develop marine renewable energy suitability data layer that compiles information on energy resource potential (wave, tidal), energy industry needs, various technology types, and suitability factors such as economic, physical, and infrastructure preferences and requirements.	*Suitability data for wave, tidal, and offshore wind devices; conceptual models for energy device suitability; *8 final concept models (4 wave, 2 tidal, 2 offshore wind) with scoring models for each attribute; database, GIS dataset, and maps showing suitability for up to 8 energy device types; *Presentation to WCMAC and each of the MRCs	$ 100,000.00	PNNL developed suitability models for wave, tidal, and offshore wind energy technologies - these are available on the projects page of the website and the data can be viewed on the mapping application.	Completed June 2013
10	**Oceanographic modelling**	UW Oceanography	Mapping and modeling of coastal oceanographic conditions and trends	*Spatial data on plankton productivity and bottom oxygen levels (hypoxia); *Seasonal maps of speed over the coast; *Map of bottom bathymetry gridded to 1km; *Presentation of relevant data to WCMAC as needed	$ 211,000.00	The UW team finalized models using the oceanographic data and formatted the data into GIS layers. These models and data were provided to DNR and the summary report can be found on the projects page of the website.	Completed June 2013
11	**Pacific County mapping**	UW Olympic Natural Resources Center	Pacific County projects - mapping shellfish growing areas, mapping beneficial use areas, mapping invasive species, mapping shoreline designations, integrating seafloor mapping and shellfish areas	*GIS data on commercial, private, tribal, and public shellfish growing areas; *GIS layers of beneficial use areas; *GIS data of invasive species (spartina, knotweed, japanese eelgrass, burrowing shrimp); *shapefile of shoreline designations; integration of existing seafloor mapping data	$ 76,000.00	The ONRC digitized the Shoreline Environmental Designation maps from Pacific County; generated a spreadsheet of all relevant datasets currently in our archives and have contacted local collaborators to compile as wide a list of readily available datasets as possible; and are assisted the UW Coastal Study Group in converting their model output into ARC GIS format.	Completed June 2013
12	**Student economic baseline project**	UW Program on the Environment	Marine economic baseline for the coast - basic update and assessment of current status of coastal marine based economy	*Final report that provides a high level look at the marine based economy of the outer coast; *webinar of the study findings available to the public; *project website with webinar presentation and downloadable copies of reports generated by the project	$ 150,000.00	The student team completed their project, which included interviewing coastal stakeholders, compiling economic data from the coastal counties, developing a project website, and writing a report with recommendations. The report can be found on the project website at http://wa-working-coast.wix.com/wa-workingcoast.	Completed April 2013
13	**Commercial fishing mapping**	WDFW	Mapping Commercial Fishing and Fish and Wildlife Resources	*Comprehensive GIS maps of coastal commercial fishing activities	$260,000.00 *includes year 1 forage fish survey	Data collected and incorporated into the MSP mapping tool.	Completed June 2013
14	**Recreational fishing mapping**	WDFW	Mapping recreational fishing data	*GIS data layers and maps of fishing locations and areas of importance (for specific trip types) for recreational fisheries		Data collected and incorporated into the MSP mapping tool.	Completed June 2013

MSP Projects Status Report
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Mapping projects
Ecosystem assessment projects
Data and technical projects
Stakeholder engagement projects

***Projects updated since the October 2014 meeting**

	Project	Contractor	Project Description	Deliverables	Contract cost	Progress as of January 1, 2015	Status
15	**Forage fish mapping**	WDFW	Mapping forage fish distribution	*GIS map of forage fish distribution based on approximately 500 spawning beach surveys; *2012-2014 Forage fish survey GIS layers; *first year survey report; *final report	$ 350,000.00	WDFW has completed the forage fish survey and drafted a preliminary report on their findings; they are still analyzing the data. They received data from the Quileute Tribe, which had been missing at the time of the last update. However, now they are missing the last two months of survey data from the Makah Tribe, which are needed to finalize the report; WDFW staff are working with Makah field biologists in an effort to track it down. Based on year 1 and year 2 results to date, smelt spawning occurs from January to October. WDFW will provide as complete a report as possible, which may need to be amended pending receipt of the missing Makah tribal data, that will include spawning site locations, single-egg sites, and conclusions.	Completed December 2014
16	**Seabird and marine mammal database**	WDFW	Create seabird and marine mammal geodatabase	*Seabird colony and haul out geodatabase data layers; *species density GIS layers; *coastal winter bird abundance GIS layers	$ 74,000.00	WDFW staff obtained, verified, and integrated data into the WDFW seabird catalog from various sources and provided the data to the NOAA Biogeography Team in September. Additionally, staff have delineated marine mammal haulout sites using data from 1998 through 2014 for the Columbia River, outer coast, and Puget Sound. WDFW is using these seabird and mammal data in developing the EIA, and they are in the process of completing the final report for this project.	Will be completed by June 2015
17	**Marine mammal aerial surveys**	WDFW	Conduct marine mammal aerial surveys	*Pinniped haul out and sea otter concentration areas GIS layers and *final report	$ 77,000.00	WDFW staff conducted several surveys throughout the coastal area during the summer and fall of 2014. They completed the process of reviewing video and counting digital images, which was time-intensive, and they are error-checking the data to finalize maps for the portal.	Will be completed by June 2015
18	**Ecologically important areas**	WDFW	Identify Ecologically Important Areas	*Map and analysis of Ecologically Important Areas off the Washington coast	$ 149,000.00	WDFW staff met with the Tribal Technical Group and led a discussion with the WCMAC Science Panel in November 2014 to describe data they have and are lacking for fish, wildlife, habitat, connections/relationships, and ecological effects and to solicit input on how to develop criteria to use the existing data to identify these areas. The WDFW team is categorizing the data for various fish and wildlife, some of which is more robust and/or at a refined scale than others. From this, they will develop a suite of preliminary maps, which will be shared with the Tribal Technical Group and the State/Tribal policy level group in early February 2015 before presenting preliminary maps at a WCMAC work session on February 25th.	Will be completed by June 2015
19	**Shipping sector analysis**	BST Associates	Sector analysis	*Sector analysis report for shipping	$ 15,000.00	Contractor presented draft findings at July 2014 WCMAC meeting. Project is now completed.	Completed August 2014
20	**Recreation/tourism, fishing, renewable energy, and aquaculture sector analysis**	Industrial Economics	Sector analyses	*Sector analysis reports for recreation/tourism, fishing (commercial/recreational), marine renewable energy, and aquaculture	$ 60,000.00	Contractor presented draft findings at July 2014 WCMAC meeting. With the exception of the aquaculture sector report, the project was completed in August 2014. The contract was amended to allow the contractor to conduct interviews with 4-5 additional members of the aquaculture industry, and the aquaculture sector analysis was completed in October 2014.	Completed October 2014
21	**Ecosystem indicators: phase I**	NOAA Northwest Fisheries Science Center	Ecosystem indicator and conceptual models; ecosystem indicator workshop	*Ecosystem indicator workshopto result in a broad understanding of ecosystem indicators; *a draft conceptual model; *a process for establishing indicators; *identification of information gaps	$ 50,000.00	This workshop was held for scientists and managers on May 13th, 2013. The Northwest Fisheries Science Center developed draft conceptual models of the marine waters of the Washington coast, a list of potential ecosystem indicators, and a process for evaluating candidate indicators.	Completed June 2013
22	**Ecosystem indicators: phase II**	NOAA Northwest Fisheries Science Center (NWFSC)	Ecosystem Indicators and Modeling	*Conceptual models for Washington coastal and estuarine habitats; *candidate indicators for the coast and estuaries; *maps linking habitat attributes and indicators on the seascape; *presentations to SOC and WCMAC; *report on status and trends of ecological indicators; *PDFs of each model and map	$ 250,000.00	The scientists at the NWFSC are searching for datasets for each of the potential indicators and evaluating the data considerations for each indicator. They completed a survey of scientists and managers in Washington in which evaluation crieteria for the indicators were ranked. The NWFSC used the survey results to calculate weightings to determine the score for each indicator. They plan to complete evaluations by April 2015 and then they will develop a status and trends report for each indicator across six different habitat types. The team is also working on improving the graphics for the conceptual models.	Will be completed by June 2015

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***Projects updated since the October 2014 meeting**

WASHINGTON STATE DEPARTMENT OF Natural Resources

	Project	Contractor	Project Description	Deliverables	Contract cost	Progress as of January 1, 2015	Status
23	**Social science indicators**	Washington Sea Grant	Social science indicators and conceptual model development	*Document analysis of local human values and activities; *candidate social science indicators and draft conceptual model; *ecosystem assessment outreach materials	$ 93,000.00	Social Indicators lead, Melissa Poe, met with the science panel expert with the plan for selecting and evaluating indicators. In January, the social indicator team will begin the indicator evaluation phase for each of the 4 coastal counties. A comprehensive set of quantitative social indicators will be assessed from existing data (on aspects such as basic conditions, health, education, infrastructure, safety, government, housing, access to social services, social cohesion, use of natural resources) for each of the counties. Draft summaries of indicator performance will be presented to communities in each county in early Spring with opportunities to provide input and feedback. After panel review, final reports will be written and submitted in June 2015.	Will be completed by June 2015
24	**Economic analysis**	Cascade Economics	Economic analysis of the Washington coast	*Scoping process and *economic analysis with details TBD	$30,000 plus TBD	DNR finalized the contract with Cascade Economics in November 2014, and the scope of work is available on the projects page of the website. The contractor has gathered economic base information, national and regional trend information, recreation studies, and publicly availalbe tribal information to support the economic profile. They have begun to reach out to the tribes, set up meetings with the aquaculture industry, and plan to attend a meeting of the social indicators group in January 2015. Cascade Economics will be conducting focus groups and individual interviews in January and February 2015.	Will be completed by June 2015
25	**Recreational use study**	Surfrider	Recreational Use Study	*A baseline characterization of coastal recreation participation rates and trip expenditures and *a spatial baseline of coastal and ocean recreation use patterns on the outer Pacific coast of Washington	$ 170,000.00	The opt-in survey that was launched in May 2014 closed October 31, 2014. Surfrider and Point 97 gathered 403 survey responses and mapped 2,230 recreational activity points and they have begun data analysis of the results. Surfrider and Point 97 launched wave 2 of the panel survey to 3,000 respondents (wave 1 was completed in June 2014 and received 3,000 respondents), and added a choice experiment to the survey to gather information about the value of ecosystem services. Surfrider and Point 97 also continue to conduct focused outreach and to distribute information widely about their project.	Will be completed by June 2015
26	**MSP mapping tool**	DNR	MSP mapping tool - provide a decision support tool to access data.Viewable in a map format and accessible without GIS expertise.	*An interactive map system, accessible through the website to view and manipulate GIS data layers; *subscription to ArcGIS Online to allow for secure users	$ 130,000.00	The state completed its first wave in the development of the mapping application in June 2013 and is now working on functionality. In April 2014, the state hosted a webinar on how to use the mapping tool.	Phase I complete. Further development Will be completed by June 2015.
27	**Data catalog**	DNR	GIS data catalog for Marine Spatial Planning to provide access to raw datasets and complete metadata for data that are in the mapping tool	*A data catalog for accessing MSP datasets	$ 150,000.00	The data catalog allows users to access and download the datasets that populate the mapping application. New data becomes available on the data catalog when it is added to the mapping application. The data catalog is available on the Explore page of the website.	Phase I complete. Further development Will be completed by June 2015.
28	**MSP website**	DNR	Public website for Washington marine spatial planning (with TNC)	*A public website with all relevant information about MSP in Washington - including news, projects, background documents, and upcoming events		The website was launched and demonstrated to the WCMAC in April 2013. Updates and edits to the website content are ongoing.	Completed June 2013
29	**Website management and planning support - project position**	DNR	Coastal and marine planner position	*Website management; *mapping tool outreach; *planning support	$ 177,000.00	Position in place since January 2014. Planner has made updates and improvements to the website, conducted contextual research, developed draft outreach materials, and participated in the state planning team. Planner has tracked down datasets to fill data gaps including the crabber tow boat lanes, state and federal boundaries, oceanography data, albacore tuna data, and others.	Will be completed by June 2015

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30	**Plan research and development - project position**	ECY	Plan research and writing position	*Research for plan development (ie. providing socioeconomic use and environmental contexual information) and *draft chapters of the plan	$ 100,000.00	Position began in mid-June 2014.	Will be completed by June 2015
31	**Identification of data standards and gaps**	Washington Sea Grant	Facilitation of scientific input from issue based groups to provide technical input on development of data tools	*Identification of area-specific experts; *formation of technical committee to provide scientific feedback; *teaching of a course on MSP that utilizes expertise of UW experts and graduate students to provide feedback on data standards and data gaps	See WA Sea Grant items in yellow	Washington Sea Grant organized a graduate course for the Spring 2013 quarter in which the students looked at existing and new data, and contacted issue area experts to review the data and identify data gaps. Students reported to the state agencies and the WCMAC in June 2013. The report is available on the projects page of the website.	Completed June 2013
32	**Scientific input coordination**	Washington Sea Grant	Science coordination through a Science Advisory Panel	*2 - 4 Science Advisory Panel meetings per year and *ongoing feedback from the Science Advisory Panel	$ 60,000.00	On November 25, 2015, Washington Sea Grant convened the science panel via webinar to solicit feedback on WDFW's methods and approach to identifying ecologically important areas off Washington's coast. On January 20, 2015, Sea Grant will hold a second meeting with WDFW to review the ecologically important areas project . Sea Grant also convened the secience panel on December 19, 2014 to discuss the approach to developing the social indicators.	Will be completed by June 2015
33	**Website and data catalog development and data tool outreach**	The Nature Conservancy	Data tool outreach and training to stakeholders and tribes; assitance with website and data catalog development; participation in technical and planning committees	*TNC participation on GIS tool development committees; *design and launch of public website; *integration of data catalog into the website; *outreach on the GIS tool; *data from TNC's Pacific Northwest Coast ecoregional assessment	See Nature Conservancy item in green	TNC worked with DNR, Ecology, and the rest of the State Ocean Caucus on planning tool development, the website, and outreach throughout 2013. TNC and Ecotrust designed and launched the website, and collaborated with the state to help develop the mapping application.	Completed June 2013
34	**MRC workshops on goals and objectives**	The Surfrider Foundation	Coastal marine resource committees (MRCs) workshops to gather community input on the MSP goals and objectives, with staff support from Surfrider and The Nature Conservancy.	*Summary report that captures input from the public that can inform the MSP goals and objectives setting process, and will be available as a public record.	$ 19,000.00	The MRCs conducted outreach in April 2013 and Surfrider produced a summary report that is available on the project page of the website.	Completed June 2013
35	**MSP 101**	Washington Sea Grant	Coordination of MSP short course (MSP 101)	*MSP outreach materials and standard curriculum and *outreach activities on the coast	$ 125,000.00	In 2013, Washington Sea Grant produced outreach materials and conducted a series of MSP 101 outreach events in coastal communities.	Completed June 2013
36	**Goals and objectives workshops**	Washington Sea Grant	Coordination and faciliation of work sessions to draft marine spatial planning objectives	*Coordination and planning of a series of three workshops to engage stakeholders in the development of objectives for the MSP process		Washington Sea Grant held three objective setting workshops in the spring of 2013. The final workshop report is available on the projects page of the website.	Completed June 2013
37	**General MSP outreach**	Washington Sea Grant	Coordination and facilitation of marine spatial planning outreach	*Summary of 2012-2013 outreach activities; *10 public outreach meetings; *10-15 MSP short courses; *outreach materials; *summaries of outreach meetings	$ 149,000.00	Over the last several months, Washington Sea Grant conducted outreach at events and for organizations including: Come Play on Labor day, the Chehalis Watershed Festival, Fish and Brew in Forks, Grays Harbor Inc., the Salmon Festival in Chimacum, and the Pacific County EDC. Sea Grant is planning future outreach meetings with the Westport/Grayland Champber, the WIllapa Harbor Chamber, Puget Sound Anglers, Gary Grahn and the recreational anglers, and the Long Beach Visitor's Bureau for early 2015. At these meetings, Sea Grant is distributing MSP brochures and FAQs. Sea Grant staff are coordinating separate research presentations with scientists and MRCs on topics including social science indicators, ecological indicators, and ecologically important areas.	Will be completed by June 2015

WCMAC Decisions and Recommendations

This list provides a summary of key recommendations by the Washington Coastal Marine Advisory Council (WCMAC). The statute requires WCMAC to use a consensus approach to decision making and the Council may put issues to a vote, when it cannot reach consensus [RCW 43.143.050(6)]. Meeting summaries provide details of consensus or majority votes for each recommendation.

WCMAC Policy Recommendations

Date	*Recommendation*
10/23/13	The WCMAC agreed that staff should move forward with the required elements and high priority needs as noted in the staff recommendation: **1. Recommend funding the required elements in the marine spatial planning law** The following MSP elements are remaining gaps that are required by law: • Developing the Ecosystem Assessment and Indicators • Supporting the planning process (e.g. outreach, technical tools, plan development) • Identifying Important Ecological Areas - sensitive/unique species or biological communities. Funding for these essential activities will reduce the remainder of funds available for data gaps and other important analyses. **2. Identify and recommend funding high priority information needs** Information that is essential to identify and analyze conflicts and compatibilities with resources or existing uses. Staff recommends including: • Sector analyses • Coastal economic analysis • Seabirds and marine mammals • Habitat: seafloor maps DNR will work with the WCMAC committee to identify desired deliverables/ outcomes for each item funded. The coastal and economic analysis should be given additional funding as necessary to do a thorough economic assessment.
10/23/13	The WCMAC recommended funding the forage fish study by WDFW.
1/29/14	The Washington Coastal Marine Advisory Council recommends that a Recreational Use Study be completed and used as appropriate in developing the Marine Spatial Plan.
7/9/14	The MSP Draft Actions list was adopted unanimously.
9/18/14	Funding Recommendation 1. The WCMAC recommends that the Governor include $925,000 in the proposed 2016-17 biennial budget to fund the following activities: a. The continued operation of the Washington Coastal Marine Advisory Council ($225,000). b. The completion of the Marine Spatial Plan: ($700,000) i. Incorporate MSP project information updates and data limitations into the draft plan and mapping tool.

	ii. Complete projects underway before June 2015, but which may require additional analysis or work. iii. Conduct additional outreach, public engagement, and scientific review in the planning and mapping process iv. Coordinate and consult on the plan with governments. v. Revise and finalize the plan, including research and writing. 2. WCMAC recommends that the Chair of the WCMAC transmit the WCMAC recommendation to the Governor and the chairs of the legislative finance committees via letter, including the required budget form. Staff will prepare the budget form to meet the Office of Financial Management's requirements. The Steering Committee will review the budget form prior to final submittal to ensure it matches WCMAC's recommendation.

WCMAC Operations Decisions

This list provides a summary of key operational recommendations by WCMAC. It does not attempt to capture all operational recommendations. Meeting summaries provide information on the more detailed operational recommendations.

Date	*Decision*
10/23/13	The four coastal treaty tribes will be invited to serve as liaisons to the WCMAC as sovereign governments.
1/29/14	The Bylaws were adopted
1/29/14	Garrett Dalan was elected Chair, and Doug Kess was elected Vice Chair
1/29/14	Rob Fleck and Michael Rechner were selected as the at large members of the Steering Committee
1/29/14	Rich Osborne and Brian Sheldon were elected co-leads of the Technical Committee
1/29/14	The October Meeting Summary was adopted with amendments.
4/23/14	The January Meeting Summary was adopted with amendments.
4/23/14	The WCMAC affirmed the recommended approach to MSP Development.
4/23/14	The WCMAC agreed to a process for adopting the MSP Actions List at the July meeting.
7/9/14	The April Meeting Summary was adopted as amended.
7/9/14	The Operating Procedure for Formal WCMAC recommendations was approved as amended
7/9/14	WCMAC recommends DNR extend the contract for facilitation services through the end of the biennium and amend it to include potential additional meetings.
10/22/14	The July and Sept. meeting summaries adopted with amendments.
10/22/14	WCMAC agreed to the recommended use analysis process without revision.