

**Collaborative Fisheries Planning for Virginia's Offshore Wind Energy Area
Best Management Practices Workshop and Associated Outreach Meetings**

September 15-17, 2015

Hampton Roads Port visits

Tuesday, September 15, 2015

Merlin Jackson, TFA

John Nichols, TFA

Dave Beutel, Rhode Island CRMC

Todd Janeski, VCU

Paula Jasinski, CEC

Tess Mackey, CEC

Laura McKay, CZM/DEQ

Rick Robins, MAFMC

Scallop processing and packing operation, Newport News, Virginia

- The team discussed offshore scallop fishery and processing; and
- Toured plant to get a sense of the process from sea to table.

Federal scallop fishery dealer, Newport News, Virginia

- Owner promised to follow up with maps of areas adjacent to the VWEA that the array should or should not be extended into;
 - He stated that the VWEA as drawn was in the "best possible location" to avoid interaction with offshore commercial fishing;
- A dredge vessel captain requested a minimum turbine spacing of 300 feet (~91 meters) to allow for gear during transit (i.e., 100 feet (~30 meters) of gear and an additional 100 feet (~30 meters) per side).

Finfish/shellfish dealer, Hampton, Virginia

- Met with owner to discuss how offshore wind energy might impact his business and the fishermen he buys from;
- The owner expressed concerns about an exclusion zone during and after construction and cable interactions with gear;
- He wanted to know what baseline studies have been done and are accessible?
- Advocated for working with the ongoing fisheries independent study, Northeast Area Monitoring and Assessment Program (NEAMAP) through Virginia Institute of Marine Science (VIMS);
- He also asked about the potential for compensation and/or mitigation if development impacts fishing.
- A mid-water/otter trawl first mate said they need a minimum of 500 meters to operate with their gear deployed (~1640 feet), 300m for the gear with an additional 100m per side.

Wholesale seafood company, Virginia Beach, Virginia

- Met with several commercial fishermen at this wholesale seafood operation; and
- They had questions about exclusion zones, compensation, and timing of development.

- One fisherman explained that gillnetters will set their 1200-foot gillnets in the area of the WEA to soak and would like to have the ability to continue fishing once the turbines are deployed.

BMP Workshop, Day One
Virginia Beach Westin Town Center
Wednesday, September 16, 2015

Hillary Essig, ANPDC
 Connie Morrison, ANPDC
 Cheri Hunter, BSEE
 Jay Odell, TNC
 Todd Janeski, VCU
 Paula Jasinski, CEC
 Tess Mackey, CEC
 Merlin Jackson, TFA
 John Nichols, TFA
 Dave Beutel, Rhode Island CRMC
 Nick Meade, CZM/DEQ
 Laurie Naismitt, VMRC
 Jeff Deem, FMAC/MAFMC

Kate Morrison, MARCO
 Laura McKay, CZM/DEQ
 Amy Stillings, BOEM
 David O'Brien, NOAA Fisheries Service
 Chris Bonzek, VIMS
 Barbara Simcoe, DMME
 Doug Simpson, USCG
 Rick Robins MAFMC
 Brian Hooker, BOEM
 Lewis Gillingham, VMRC
 Chris Scraba, USCG
 Barbara Wilk, USCG

All presentations can be found at:

<http://www.deq.virginia.gov/Programs/CoastalZoneManagement/CZMIssuesInitiatives/OceanPlanning/FishingandVirginiaOffshoreWind.aspx>

Collaborative Planning for Fishing & Offshore Wind Energy
Laura McKay, CZM/DEQ

Laura began the workshop by providing an overview of ocean planning activities in the mid-Atlantic, including the [MARCO ocean data portal](#). She identified four major goals for the workshop:

- Vet maps with fishermen and make them fine scale;
- Learn from UK and RI experts;
- Identify BMPs to mitigate potential use conflicts between fishermen and wind energy developers; and
- Create a plan for communicating wind energy activities to fishermen

BOEM/Virginia CZM Cooperative Fisheries Engagement
Brian Hooker, BOEM

Brian reviewed Bureau of Ocean Energy Management's (BOEM's) statutory and regulatory responsibilities, including the consideration of impacts to commercial and recreational fishermen as a result of projects it authorizes. He also discussed previous BOEM-led projects that provide a foundation of information for offshore wind energy development along the Atlantic coastline. For example, BOEM funded NMFS Northeast Fisheries Science Center to analyze vessel trip reports and seafood dealer reports to create an "exposure" map of how much commercial fishing revenue is harvested from a wind energy area (WEA). Study profile available at <http://www.boem.gov/Renewable-Energy-Ongoing-Studies>.

Brian updated participants on the status of the proposed Virginia Offshore Wind Technology Advancement Project (VOWTAP), which is a two-turbine research lease next to the commercial lease. BOEM is reviewing site assessment plans for both the research and commercial lease areas. Construction in the research lease could start as early as 2017 based on discussions with the developer, Dominion. Dominion, the holder of the commercial lease, has indicated they will submit a construction and operation plan for the commercial lease in November 2018. The latest information about these projects can be found at <http://www.boem.gov/Virginia>.

Mid-Atlantic Offshore Data Analysis

Mapping Communities at Sea

Jay O'Dell, TNC

Jay presented several of the maps The Nature Conservancy (TNC) developed using the Communities at Sea (C@S) and NMFS Exposure data. The final analysis and maps were created drawing NMFS Exposure data from 2007-2012, and the C@S data from 2011-2014. The C@S database uses Vessel Trip Report data linked with permitting database from 1999-2014. This information, which is required for any trip on a federally permitted fishing vessel, consists of self-reported data, and was synthesized using methodologies developed by Kevin St. Martin at Rutgers University. NMFS exposure data links communities on land that fish specific locations at sea. Communities are defined based on gear, vessel type, and home port combinations

C@S data maps “fishermen days” representing fishing effort aboard vessels. It is important to look at the legends on all of the maps provided as the scale changes.

Draft C@S maps were reviewed by fishing community participants representing the identified ports of Newport News, Hampton, and Virginia Beach for each gear type. There was little to no negative response from those contacted. Some fishermen have contributed fishing records for the project study area, including confidential data from digital chart plotters and hand written notes. If including this data, they could be useful for micro-siting considerations as areas to avoid.

Some patterns that have emerged include consistent fishing effort throughout time in the nearshore along proposed cable route and around the Triangle wreck area within VWEA. Rick commented that it's important to acknowledge that fisheries have changed over time. Historically there have been other types of fishing, such as mackerel and herring. Water temperatures have varied over time affecting the distribution of herring. The fishing community indicated that during the mid 1990s the herring fishing was conducted in the study area. Current fishing for these species is contained to the northeast US. Flounder regulations now require the use of a turtle exclusion device (TED) south of a longitude that includes the study area. Therefore, the majority of summer flounder fishing is taking place north of our study site. The TEDs are seen as awkward, easily damaged, and expensive to repair.

Chris Bonzek (VIMS, Fisheries) discussed the Northeast Area Monitoring and Assessment Program (NEAMAP) data and provided several maps for areas adjacent to the project area. The NEAMAP study area is inshore of the VWEA but can be useful for understanding trends and species utilization within the transmission cable area.

Lessons Learned from Other Regions:

Thanet Fishermen's Association and Wind Farms John Nichols, United Kingdom Thanet Fishermen's Association

Bio: John Nichols has built a number of fishing vessels as well as fished his own 30-foot fishing vessel for a number of years. John has been the Chairman of Thanet Fishermen's Association for almost 20 years and has represented local fishermen on many fronts including a heavy on-going involvement with the wind farm developers on the Kent coast. He is also the Vice Chairman of the Kent and Essex IFCA (Inshore Fisheries & Conservation Agency) and sits on a variety of committees including FLOWW (Fisheries Liaison for Offshore Wind and Wet). John has been heavily involved in many meetings related to quota and other fishing issues with Members of Parliament and Government Ministers.

John began their presentation by screening a short proprietary film about monopole and turbine installation and construction in the UK for scale, although the US wind farm turbines will be 5-6 MW and much larger. They then explained that the Thanet Fishermen's Association (TFA) is a voluntary organization that was formed for the benefit of the local fishing community.

The Thanet fleet is 40 multi-functional vessels that work within 25 miles of their home port. The majority of vessels are 24 to 30 feet long and can reach a speed of 7 to 10 knots. The London estuary is only about 30 miles across at its widest point, so there are competing uses across the estuary- from protected areas, dredging, and wind farms. Three of the largest offshore wind farms, including the London Array, are in the estuary. The area contains important breeding grounds for Dover sole. There is also trawling for cod, skate, and bass, and dredging and potting for cockle, oyster, lobster, and whelk. It has been difficult to attract younger people to the industry due to lack of opportunity.

The Crown Estate (a quasi-equivalent to BOEM) leased the areas without consultation with the fishing community.

When the developers arrived, the fishermen were scattered, but soon realized that they needed to stand together and unite as one voice. The wind farm was the impetus that the fishermen needed, and 85% joined the Association. The Association made objections to the Crown Estate and raised concerns about the lack of consultation by developers. The objections cannot be lifted until the Crown Estates determines the developer sufficiently addressed fishermen concerns. Negotiations proved lengthy and costly. The developer ended up paying for TFA's legal costs to review contracts.

Some of the initial concerns TFA raised were:

- No input into the choice of site
- Loss of fishing ground
- The effect on fish species
- Could traditional fishing methods still be used?
- Export cable route – which ended up being more problematic than the farm itself
- Harbor and traffic congestion

- Vessel insurance

They were able to get compensation on some issues, but the Red-throated diver bird, a protected species, was the only thing that could stop phase 2 of the London Array from being constructed.

Merlin Jackson, UK Thanet Fishermen's Association

Bio: Merlin Jackson's father was a fisherman and he became a full time fisherman as soon as he left school. He has been the treasurer of the United Kingdom's (UK) Thanet Fishermen's Association for over 20 years and has been on the committee for the same period of time. In 2000, he became a director of the commercial fuel company, owned by Thanet Fishermen, in Ramsgate Harbour but remained full time fishing until around 8 years ago. He was also heavily involved with the discussions with the wind farm developers and sits on FLOWW as well as some working groups for Crown Estates. He is currently the Fisheries Liaison officer for the London Array wind farm as well as a number of other renewable projects including the NEMO interconnector for National Grid UK.

Over the last few years, he and John Nichols have both hosted fishermen from a number of other countries, including France, Scotland, Belgium and the US and tried to pass on some benefit from the experiences they have had with wind farms. These range from initial fears and concerns through multiple wind farm construction projects, and then to the on-going issues for fishermen dealing with the reality of large-scale wind farms.

Merlin went into more detail about the problems industry encountered:

- They were inconsistently given information regarding what and when wind array activities were occurring; weather often caused subcontractors to deviate from the proposed schedule; Fishermen often had no advance notice of construction traffic that impacted access to fishing grounds;
- Electronic Nautical Charts issued in in formats inconsistent with maritime navigation. In some cases they were engineering drawings, others maritime charts not commonly used. Suggested asking the fleet to confirm which type of charts they preferred and ensure all final public documents are consistent with that preference;
- Little lighting of anchors and floating obstructions, which caused a few avoidable accidents;
- There was a lack of detailed record keeping by fishermen or pre-construction monitoring, which made it hard for the industry to make claims about important fishing grounds;
- No gear claims procedure put in place by the developer (e.g., a construction vessel hit a fishing vessel); and
- Lost some vessel crew members to the maintenance crews for wind farms – it offered better hours and better pay.

The Virginia Wind Energy Area (VWEA) has tremendous data compared to what they had, as it was difficult for UK fishermen to document their historical fishing.

Some forms of mitigation in the UK wind farms have been improvements to shore/harbor facilities and vessels, assistance with shifting to alternative fishing methods, and direct/indirect employment or disruption payments. The Association also created a fuel

services company in which each fisherman was a shareholder and negotiated that the developer was required to use their fuel. This has been very successful and helped to keep the Association a cohesive group to discuss other issues related to the wind farms. There was no group consensus on mitigation and the choices are very site-specific.

In terms of lessons learned from the wind farm development in the UK, both Merlin and John agree that fighting does not achieve desired outcomes, and it is critical to establish trust between fishermen and the developer. Additionally, it is important to learn from other fishing interactions at existing wind farms. You will need regular communication, and scheduled fishermen's meetings to increase solidarity among fishermen. Communication must begin early, prior to permitting, and continue through the life of the project. They also noted the necessity of any agreements made being binding to all parties, including subcontractors and future owners. The export cable was sold and the new owner did not honor previous agreements. Scour occurred at crossovers because of multiple cable crossings in the estuary.

In terms of living with the wind farms, fishermen are still landing fish within the area. There was no fishing allowed during construction, but transit was allowed (which had been a negotiation point). There were no negative interactions between vessels in the harbor. The Association established a code of practice for fishermen operating within the wind farm based on [Fishing Liaison with Offshore Wind and Wet Renewables Group \(FLOWW\) recommendations](http://www.sff.co.uk/sites/default/files/FLOWW%20Best%20Practice%20Guidance%20for%20Offshore%20Renewables%20Developments%20Jan%202014.pdf) (<http://www.sff.co.uk/sites/default/files/FLOWW%20Best%20Practice%20Guidance%20for%20Offshore%20Renewables%20Developments%20Jan%202014.pdf>). Some fishermen still are hesitant to fish within. They have seen some improvement in certain fish species and potentially declines in others, but since there wasn't a baseline it's not documented.

Wind farms have Automatic Identification Systems (AIS) on the corner turbines and fishermen have their radar turned down. When transiting through the farm they use the lighting on the turbine during nighttime/low visibility. One problem is the non-timely replacement of non-functioning lights on decking since the wind maintenance crews don't operate at night. Fishermen are identifying the specific turbine number so repairs can be made. Most fishermen do not have AIS though it was mentioned as a mitigation measure. Additionally John and Merlin thought there would be too much AIS if every turbine was equipped.

Merlin also offered insight into his role as Fishing Industry Representative (FIR). From a fishing industry perspective, this relationship is one of the most important parts of the process. It is important to choose the right person for the job- someone respected by the majority of the industry, who can balance interests of fishermen and the developer (you need both parties to buy-in), and has good communications skills through a variety of methods (e.g., email; text; calls).

The RI Ocean SAMP Fisheries Stakeholder Process: A Case Study in Transparent Policy-making

Dave Beutel, Rhode Island Coastal Resources Management Council

Bio: David Beutel has worked with the fishing industry since the late 1970's. He has worked as a commercial fishermen and fishing gear manufacturer. He worked for Rhode Island Sea Grant at University of Rhode Island in fisheries and aquaculture outreach, and fishing gear research

for 17 years. The research work concentrated on projects that modified fishing gear to reduce by-catch.

Currently he is working with the Rhode Island Coastal Resources Management Council as the Aquaculture and Fisheries Coordinator. As aquaculture coordinator, he works to facilitate the regulation and development of aquaculture in Rhode Island. Another of his primary efforts has been helping to develop the fisheries aspects of marine spatial planning, mainly through the work on the Rhode Island Ocean Special Area Management Plan.

Dave gave an update about the Block Island wind farm (BIWF) development in Rhode Island. Most of their proposed area was marked as ecologically important or critical fishing grounds, so siting was difficult. Fisheries mitigation included direct compensation during construction, a charter and party boat marketing plan, ventless trap and bottom trawl surveys to establish baseline, construction and post construction levels, and 5 years of funding of the Director for the commercial fisheries center, which houses fishing associations.

Currently, the wind farm is under construction. All the foundations are sitting on barges in Narragansett Bay, with one base being fixed after damage. Both BIWF and VOWTAP foundations will have four piles. The difference is the VOWTAP twisted jacket has a central pile driven first, then the foundation placed over it and the other three piles driven through the three legs. BIWF is a conventional four-sided jacket with four piles driven through the four legs after the jacket is placed on the seafloor. The 6 MW turbines and export cable should be installed by end of next summer, and operations will begin by the end of 2016.

The fisheries liaison's job was to communicate daily and weekly activities and future projections for work on the wind farm, giving a daily report of what took place and the outcome of projections. The liaison answers to the Rhode Island Coastal Zone Management but is funded by the developer. The current liaison is a prior National Marine Fisheries Service (NMFS) employee with good communications skills and solid understanding of the industry. Only ¾ of the industry was accepting of this choice due to past experience with NMFS.

The fishing industry will communicate "rumors" or failures with each other and not necessarily the liaison. The liaison also faced the additional challenge that they could not share the developer's proprietary information with the fishing industry- this fact should have been more clearly established with all parties prior to the liaison position starting. The construction company has also been brought under scrutiny due to their lack of experience and demonstrated errors such as poor safety records and mishandling of equipment.

Q&A:

(Merlin) How will the direct compensation work if there are delays in the construction?

(Dave) The construction compensation was developed to be rolling since the timing was not longer on schedule.

(Dave) Whale migrations set construction periods. The monitoring plan included details on marine mammals such as, if a sighting occurs, pile driving must cease. Local captains hauled local observers and intermediary workers to survey marine mammals.

(John) Was there a guard vessel or guard on site 24 hours a day?

(Dave) No, but had staff present.

(John) UK had guard vessels patrolling to ensure that private and small vessels remained out of the closed area.

(Brian) Was Notice of Mariners (NOM) used and how well?

(Dave) Daily NOM was released informing of activities.

One of the staging areas designated by the Coast Guard did not account for fishermen usage of the area. This is one of Dave's regrets that he hadn't caught that earlier in the process.

(Jeff) What diameter are the pilings and how many hammer strikes are needed?

(Dave) isn't sure how many hammer strikes were needed.

(Brian) says all agencies have representatives there watching and documenting the process. This will be one of the best-documented projects to date. More information is available at <http://www.boem.gov/BOEM-Science-Note-September-2015>.

In UK, the diameter of the pilings was about 15-16 feet across, and it took as little as 45 minutes to drive a pile. In the UK it was a little like pushing a straw into butter.

(Todd) What means of communication were the most effective?

(Dave) Prior to construction they had a series of port meetings, engaged everyone possible at the docks for a few weekends, and sent plenty of emails as well as had direct one-on-one discussions. People who are unhappy with the fisheries liason (FL) call Dave directly. Dave hasn't used social media much, but did use the Department of Environmental Management and their listservs to send out information. (Merlin) says he uses direct texting.

BMP Discussions

Todd Janeski, Virginia Commonwealth University

Todd set up the general process and the plan for the afternoon. Each BMP team will present an overview of the BMP. As each participant represents their agency or interests, they were encouraged to think about how their questions and concerns fall into the BMPs as presented, focusing on critical questions rather than word-smithing which can occur after the workshop.

Siting, Micrositing, & Design - BMP #2

Connie Morrison, ANPDC

- Create a scale that identifies design, siting and micro-siting with appropriate/responsible parties or most affected parties.
- State should be identified along with the leasee in siting and micro-siting discussions.
- Create a master schedule document in Gantt chart format with both long-term and short-term milestones.
- Spawning season should be a consideration when planning for construction or subsurface noise.

Where are maintenance/construction vessels located in dockside facilities?
The dockside coordination needs will need to be integrated, and secure dockside storage and slips for boats and equipment

Doug Simpson mentioned that DMME was developing a [study](https://dmme.virginia.gov/DE/OffshoreWindPortEvaluation.shtml) of the readiness of Virginia ports to support offshore wind farm construction
(<https://dmme.virginia.gov/DE/OffshoreWindPortEvaluation.shtml>).

(Dave) – Port managers need to be involved in discussions.

(Amy)- Will an outcome of this project include recommendations related to micro-siting?
(Todd) - He would hope we could inform the “nano-siting” (Dave Beutel’s words) of the turbines with these BMPs. The pot/trap sector has identified areas they feel would critically impact them, if lost. He suggests that we include identifying those areas in the BMPs as areas to avoid.

Clarify the definition of micro-siting, such as what areas that will be excluded, for example cultural areas, fishing areas, and critical habitat that NGOs want to be protected?

(Dave) – Macro-siting is the identification of critical habitats to be avoided.

(Dave) – The people who need to do micrositing are the individual fishermen. There are multiple layers but fishermen are needed to point out the very specific pieces. There is a need to specify who is conducting the coordination of siting and micrositing.

(Amy) – BOEM archaeologists require a 50-meter buffer zone around shipwrecks. During surveys, BOEM archaeologists will explore any metal that comes up on scans.

(Doug Simpson, USCG): How do fishermen fish in the wind farm in the UK?
Exclusion is the biggest concern that people have heard from fishermen. Trawling does take place. Since the US turbines are bigger they will require more space due to wind catchment etc.

Some US trawlers have requested 500 meters as the minimum they need to steam while gear is deployed. VOWTAP turbine spacing is 1,050 meters. Todd indicated that he got some data from the fishing fleet during a port visit. When gear is down it’s a 300 meter spread, PLUS an additional 100 meters on either side, so they requested 500 meters.

(Amy)- Why do fishermen want to have input on the orientation of the turbines?

Due to the strong tidal flow in the estuary in the UK, rows are oriented with the tide make fishing easier. This will be less applicable to the U.S. offshore projects.

What happens when they encounter another vessel e.g., right of way and maneuverability issues?

This was discussed as an issue but not resolved. The discussion included that the spacing should accommodate both vessels with fully deployed gear. Offshore fishermen have

recommended a minimum of 1200 feet between turbines to allow two vessels with deployed gear to safely navigate around each other.

One lesson learned from the UK is that when the cable route was grabbed, the developer was allowed to leave stuff, which gear got caught in. BOEM, however, requires that any stuff raised must be removed per terms of the lease.

Navigation, Access, & Safety – BMP #3 Todd Janeski, VCU

USCG recommends making sure the navigation lights are visible from 360° angles and at 80' at night to permit surface navigation.

(Brian asked the Coast Guard) - How will the new AIS regulations for fixed structures apply to offshore wind?

(Doug) – Coast Guard headquarters is working on policy to answer that question.

How is AIS used in the UK?

Fishermen wanted developers to pay for AIS equipment for fishing vessels as part of mitigation package. Developers wanted designated exclusive transit corridors (but fishermen felt it limited access to critical fishing grounds). Fishermen don't think every turbine will need AIS because of the oversaturation.

(Merlin) - Knowing the name of the vessel approaching you and being able to communicate with them to avoid a collision enhances safety measures. Both the fishing and construction crews created charts with photos of the vessels, name of skipper, how to contact, and what they do. The construction vessels can reach 20 to 30 knots, so can come upon the fishermen fast.

There have been a few instances of near misses or incidents that have happened in the UK:

- A fishing vessel was going too fast in poor visibility (fog), there is now a restricted visibility speed limit.
- A crew transfer vessel ran across the bow of anchored ship
- A crew transfer vessel nearly missed underway ship during the daytime due to fatigue and/or poor quality of seamanship. After the incident, the required certificate for the captain was upgraded.
- A fisherman snagged a cable during a trawl. The trawl was cut loose, reported as a hazard and broadcast to the fleet. In the UK, there had been discussion about creating a transit lane for construction vessels, but given the volume it was preferred to have them spread out.

There are no anchor points on turbines in UK due to an advisory safety exclusion of 50 feet. Is there fishing in and around the turbines in Rhode Island? There are no proposed exclusion zones after construction, including for mobile gear.

USCG has been discussing search and rescue needs. For example, how long does it take to shut down a turbine in the event of an emergency?

Helicopters looking for people in the water fly at 500 feet, and drill safety exercises have been successfully done in the UK. USCG strongly encouraged the Cape Wind project to have a heli-pad. Another request is that the wind projects have a 24-hr operations center that

USCG can communicate with regarding search and rescue needs with BOEM and BSEE¹ and shutting down the wind farm in the event of an emergency.

(Cheri Hunter, BSEE) – The operator is responsible for identifying risks both on and around their facilities and mitigation of those risks for all communities, including fishermen. This should be captured in the operator's Safety Management System (SMS). We need to identify risks to the community around the wind farm and how those risks will be mitigated. The developers' s Safety Management System plan will reflect risks to fishermen – not just the health and safety of workers on the platform. BSEE will review the detailed plans for each project to determine if an Oil Spill Response Plan will be required (depends on the combined amount and composition of the liquids that will be used). She also suggested having a land-based marine operations coordination office to monitor the array during all phases, but continually operated post construction.

(Jay Odell) Suggestion for underwater “critter-cams” to permit monitoring of structure for changes in scour but could also be used to track species movement or made available to the public.

Environmental Monitoring & Research Needs- BMP #4 Todd Janeski, VCU

(Brian) – BOEM is seeking input on which species are present offshore Virginia and considered important by the fishing community. What types of surveys are appropriate?
(Chris, VIMS) - Some gear types are easier to quantify than others (ex. Pots, some gillnets), trawling tends to be less biased and nondiscriminatory.

An example of a study BOEM is funding includes extending the U.S. Navy's underwater acoustic telemetry network off Virginia to improve understanding of endangered sturgeon species migration patterns and habitat use.

(Dave Beutel)- We want to know what's there, not just black sea bass and whelk, so a trawl survey would be good. Benthic traps could also be useful. Surveying should start ASAP, taking an ecosystem-based assessment approach. Box standard surveys will miss critical species or life stages, also not consistent with fishing methods. Look at NEAMAP assessments to be conducted in the study area.

(Merlin and John) – The UK developer used box traps prior to development, which did not mimic the type of fishing conducted. The UK was later surveyed by fishing vessels that fished those specific grounds. They did not have the data early on and suffered for it, since a lot of data was anecdotal. Fishermen's anecdotal evidence indicates a change but isn't accepted as valid since there isn't data to support.

(Dave) – For RI, we required 2 years of monthly trawl pre-construction surveys to capture seasonal changes. The survey consisted of three 20-minute trawls and 3 tows outside the

¹ BSEE, a sister agency to BOEM under the Department of the Interior, will be responsible for worker safety and enforcing the terms and conditions established by BOEM in its leases and right-of-way grants.

wind energy area. Local fishermen conducted the surveys, and the nets used were the same as those used by the fishing fleet. The developer paid for the surveys with the state acquiring the data and the developer hired SeaPlan to manage and write-up the results following a set protocol. See <http://www.seaplan.org/blog/project/demersal-fish-survey-for-offshore-wind>.

Merlin suggested the group consider 2-3 years (at a minimum) of consistent, baseline monitoring to fully understand the system and fisheries impacts. This provides a basis for claims and compensation to be justified. UK fishermen wish they had a longer record of benthic conditions and fishing trends.

Discrete (one-time or temporally/geographically limited) benthic and bathymetric assessments have not been useful for tracking changes. Anecdotal evidence states a change but is not accepted as valid.

He recommended that passive acoustic receivers be used in VWEA.

Communication & Outreach- BMP #1

Todd Janeski, VCU

The process should be initiated early: pre-construction, permitting, during construction, post-construction, etc. BOEM's leasing process for offshore VA started with state task force meetings, which began in 2009.

Could fisheries management councils support the FL/FR positions?

They are willing to vet individuals. FL/FR needs to be vetted by industry and have a good relationship with them. The development of such a relationship is critical for success and acceptance.

In the UK, fishermen have the incentive to form strong fisheries associations to represent them, but there are less of those in the US. It is important that fishermen have a hand in identifying the FIR, since local knowledge is an important attribute. Sometimes fishermen's input is trumped by other concerns; you must prioritize a feedback loop to all of the stakeholders.

A master scheduling document should be created to make industry aware when their input is needed or opportunities for input and how that input would be used.

A warning from the UK experience is that the developer's consultants tend to cause problems (i.e., fishermen want to talk to businessmen). The UK government required the developer to have a fisheries liaison – but it was seen only as a checkbox at first by the developers. To rectify the situation, the Crown Estate organized Fishing Liaison with Offshore Wind and Wet Renewables Group (FLOWW) to foster better relations between fishing and the offshore renewable energy sectors. A variety of agencies are involved with the Crown Estate providing overall management. For more info:

<http://www.thecrownestate.co.uk/energy-and-infrastructure/offshore-wind-energy/working-with-us/floww/>. FLOWW is currently revising their Fisheries Liaison guidance. This document helps establish expectations.

Merlin's job as FL continues to change. Many thought that this position was only needed during pre and during constructions, but the need to communicate continues into the operational phase. There has been more maintenance during operations than expected.

One recommendation from Dave was to design outreach efforts by ports rather than gear type, however this may be only applicable to Rhode Island since their focus was on a broader SAMP development that included more uses than simply renewables.

Evening Commercial Sector Outreach Meeting

Slover Library, Norfolk, Va.

Wednesday, September 16, 2015

Merlin Jackson, TFA

John Nichols, TFA

Dave Beutel, Rhode Island CRMC

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Paula Jasinski, CEC

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Nick Meade, CZM/DEQ

Cheri Hunter, BSEE

Connie Morrison, ANPDC

Brian Hooker, BOEM

Amy Stillings, BOEM

Al Lombana, TNC

Jay Odell, TNC

Overview

Laura McKay, CZM/DEQ and Brian Hooker, BOEM

Laura and Brian presented an overview of regional ocean planning with MARCO and BOEM's statutory and regulatory responsibilities. They discussed the need to work on gaps in fisheries data by vetting maps and learning from the UK and Rhode Island experts to create recommendations for multiple uses and a communications plan.

Brian was asked if BOEM accounted for cumulative effects of the Navy's underwater listening post in the Chesapeake Harbor. He responded that DoD hasn't provided any information related to this topic.

Jay Odell, TNC

Jay presented several of the maps The Nature Conservancy (TNC) developed using the Communities at Sea (C@S) and NMFS Exposure data. The C@S database uses Vessel Trip Report data linked with permitting database from 1999-2014. C@S data links to VTR data to fishing effort.

How wide of an array of different fisheries are included in the data analyzed?

- Any activity where a federal permit (and VTR data) are required;
- Conch are not well represented in the federal database because landings are sometimes reported through the states and sometimes through the federal system;
- Black sea bass are caught through a variety of gear types (longline, pots, etc.) but are primarily reported through the federal database;
- Lobster data is well recorded in the federal system; and
- This data does not include data on fishing conducted under state permits (or fishing for non-regulated species). For example, no data on croakers for that reason.

Fisherdays are only when boats are fishing, so works fine for trawls. However, pots and traps fish 24/7 (i.e., soaking). The fisherman felt that fisherdays is not a great statistic given it was not capturing the soak time, but he did agree that the current places highlighted indicated important places for his fishery. The group felt a more effective key would be to replace fisherdays on the pots/traps and gillnets with classification terminology (low, med, high, very high).

To support the suggestion that more data and a wider date range should be considered, a comment was made to consider the 18-year lunar and solar cycles.

John Nichols and Merlin Jackson, Thanet Fishermen's Association

The fishermen repeated the presentation they had given during the workshop earlier that day. They emphasized that their experience in the UK that they have much less space than the VWEA but are attempting to co-exist with the largest wind energy development in the world. They advised U.S. fishermen to choose their FR carefully as this role is critical to ensure their concerns and recommendations are heard by industry. They also encouraged fishermen to put advance thought into what type of mitigation would be acceptable (e.g. for gear claims because gear will be lost at some point). They encouraged fishermen to consider creating or joining an industry association, or other collaborative group, as a means to provide them a unified voice. Fishermen can greatly benefit from strength in numbers when it comes to conveying recommendations and concerns. While fishing in and around the London Array has been greatly impacted, they noted that every species caught prior to construction has been caught since.

Q&A:

Will the electromagnetic fields (EMF) from the cables reduce migration of eels?

- In the UK, they have seen slight recovery of the eels and skates so there does not appear to be an effect from transatlantic cables.
- A fisherman suggested that the US eel fishery doesn't exist any longer. He is concerned that their recovery may be further slowed since eels may be affected by EMF because they use separate electroreceptors for both navigation and feeding.
- Any study on migratory species? All of them are going to have to go over that cable. If you can't conclusively say that it will not impact those species, it will be an ecological disaster. How do you address that?
 - In RI, the state required two years of baseline assessment for SAMP by trawl survey. A/C cable with smaller field is buried two meters deep. There are plenty of other cables with abundant species. May not effect certain species and the effects aren't necessarily negative but it does need to be studied
 - At the start of the project, UK fishermen were worried about losing the skate fishery but there has been a lot of skate there.
 - How deep is the water depth where the cables are in the UK?
 - They can vary from 60 ft. to only a foot deep because the tidal ranges are so large in the UK;
 - They found a need for more frequent inspections than every six months due to the strong tidal flow.
- How far away is submarine base in CT from RI wind farm?

- 15 miles. So what is that cable already doing? Has that already started impacted things like eel populations?
 - There isn't sufficient information available to answer those questions.
- Power lines are below ground, and have impacted fish catch since they are ~ 200 feet from the water. Why would the cable not effect?
 - VOWTAP will be monitored before the project proceeds
 - A fisherman expressed a concern that if you pay people to do a survey they will give you the results that you want
 - That is why UK fishermen have to become involved in preconstruction surveys, so they are designed to capture what is needed
 - Government needs to ensure surveys are funded – either by themselves or the developer.
- Is there a possibility to bury the cable deeper so that the potential impacts don't affect the fisheries? Can you engineer it so that the EM field does not impact? And transfer the costs onto people benefitting from the renewable electricity.

Will EMF and other marine changes limit fish movements upriver? What are we doing to help the species and fisheries rebuild? The Chesapeake Bay fisheries are already degraded so we shouldn't add other stressors.

- The public wants electricity but not in their backyard. Why does it have to be offshore instead of on land?
- Access?
 - No restrictions – Rhode Island
 - But the first time there's an accident will that remain true?
 - No exclusion in the UK at all.

Concerns expressed by the fishermen included:

Fishermen expressed concerns about the lack of long-term data and limited understanding of the offshore environment, including the dynamic nature of marine environments and how the composition of catches has changed drastically across decades. They are seeing species shift northward, so they are catching more warm water species now. One fishermen suggested that a change in the thermocline is driving fish to the Delaware Bay instead of the Chesapeake and that large-scale changes like that are not yet well understood.

Nighttime fishing doesn't occur currently offshore Virginia because of military activities. A fisherman expressed a concern that the Navy would use the wind farm for training. Hence, they wouldn't allow fishermen access even if the developer allowed it. Fishermen were leery of the politics surrounding fisheries management and asked how transparent the process would be. For example, one asked what would happen if a government employee or contractor "fudged" data to obtain funding, and if something like that could halt projects?

Fishermen strongly support long-term surveys and monitoring programs, and suggested that a group like VIMS could design surveys. Fishermen have confidence in the NEAMAP survey and recommended that it begin surveying in and around the VWEA. One reason NEAMAP and VIMS are trusted is because both have developed collaborative research

opportunities with fishermen. One captain mentioned that VIMS currently uses him and his vessel for surveys.

The fishing industry is interested in the potential for mitigation and compensation due to impacts from offshore wind energy development. Rumors are already beginning to circulate that no compensation would be provided. There is a provision within the statutes to set-up a compensation fund when gear is impacted from oil and gas. NOAA manages it, but the same regulation does not apply to renewable energy. However, that doesn't mean there will be no compensation. Every project will have site-specific impacts, so it's difficult to speculate on needs now.

Another concern was raised about what might happen if a hurricane knocked down a portion of the wind farm. Fishermen asked if this might cause closures because of wreckage and loose cables. The Virginia Offshore Wind Technology Advancement Project (VOWTAP) is testing a new foundation that modeling shows will survive the strong wind speeds and wave action.

Fishermen wanted to know if there was someone who could guarantee them access to the wind farm now, and discuss management of the VWEA to have the least negative impact possible on people whose livelihoods depend on the area.

A question was asked about the effect of a wind farm on porpoises and dolphins? BOEM is having extensive consultations with NMFS and environmental groups on this topic, particularly related to the endangered right whale habitat.

Several attendees indicated that they had not been directly contacted about this meeting. The Virginia team discussed how outreach had been conducted and asked for recommendations for improvement. There was mixed reaction to the question regarding whether mailing lists from the regional Fishery Councils were the most comprehensive lists of fishermen available. Most fishermen thought the Councils would maintain the most comprehensive lists but even those weren't all inclusive. Another benefit of having a central, strong Virginia association to represent offshore fishermen would be to help distribute information (e.g., outreach meeting opportunities). Chesapeake Bay and Virginia fishing associations were also suggested as a means to reach and engage fishermen on issues such as outreach and research topics (e.g., summary of what is known regarding EMF impacts on species migration from transmission cables).

BMP Workshop, Day Two
Virginia Beach Westin Town Center
Thursday, September 17, 2015

Connie Morrison, ANPDC
Cheri Hunter, BSEE
Jay Odell, TNC
Todd Janeski, VCU
Paula Jasinski, CEC
Tess Mackey, CEC
Merlin Jackson, TFA
John Nichols, TFA

Dave Beutel, Rhode Island CRMC
Nick Meade, CZM/DEQ
Laura McKay, CZ,/DEQ
Amy Stillings, BOEM
Jeff Deem, FMAC/MAFMC
Al Lombana, TNC
Brian Hooker, BOEM
Lewis Gillingham, VMRC

The agenda, links to presentations, and meeting summary will be made public on the CZM website. The UK London Array video will not be made public because the developer has not yet approved public distribution. TNC maps will be posted and marked as draft.

Lessons learned from evening public meeting

Communication

- 1) Cast a wide net using multiple lists;
- 2) Identify key influencers in the communities and work with them to help distribute the word;
- 3) Post information online and include links in outreach/communication materials so fishermen know where to go;
- 4) Make materials clear, highlight what decision points will be discussed, and highlight any disadvantages to fishermen of not participating;
- 5) Recognize that perspectives from different ends of the industry are quite different (e.g., those in federal scallop fishery are doing quite well and aren't threatened by the proposed project but the trawlers are being crushed by regulations/quotas already). Those who are happy typically won't show up;
- 6) Hold meetings in accessible locations, easy parking, close to them, times that work for them;
- 7) Need for strong fishery association(s) and point(s) of contact, such as a FL; and
- 8) FRs and FLs can translate messages between fishermen and developer, when needed, to ensure that messages are conveyed in the right tone and language.

Environmental Research and Monitoring (ties into communication)

- 1) Communicate geographically relevant science on issues related to ocean renewables (need to package the findings to make it accessible to general public). For example, BOEM has complete a lot of EMF research;
- 2) Baseline surveys before and after construction- NMFS Sandy Hook conducting baseline benthic habitat surveys in WEAs (grabs, beam trawls). See <http://www.boem.gov/Benthic-Habitat-Study-Profile/> for details. A link to this study will be added to the Virginia CZM project web page;
- 3) Involve fishermen in collaborative research. Opportunities and resources for this may exist through groups such as the Commercial Fisheries Research Foundation (CFRF) that is developing a report entitled, "Identifying Research Needs and Approaches for Assessing Potential Impacts of Offshore Wind Energy Development on Fisheries Resources in the Northeast Region" (See <http://cfrfoundation.org/offshore-wind>; report expected late 2015);
- 4) As much as possible, recognize the need for long-term data analysis (recognizing that the data has to be available) with long-term projections that consider climate change implications (species range shifts north and easterly), changing fishery cycles over time, and other large-scale dynamics;
- 5) Identify which data to include (e.g., state fishing data where VTR is not required or non-federally managed species where it's not required either):
 - a. How much effort are we missing? Identify large seafood dealers for the region and ask them where landings are coming from. Fishermen recommend working with industry and dealers to ensure that state licensed fisheries and those landed in federal/offshore areas are included;

- b. Data and maps should be clearly presented so that the audience understands what they portray. One specific example provided was that the use of “Fisher days” in data analysis does not resonate with fishermen because it doesn’t capture the full effort of the fishing gear, only of the fishermen. Fishermen encouraged the group to rethink how data is presented so that fishers don’t feel that their fishery is being represented unfairly or being undervalued. For example, in Rhode Island’s Small Area Management Plan (SAMP), the state created maps of fisheries that fishermen identified the offshore wind energy area as being important to. This process helped reduce sensitivities to fishermen’s use of the area being ignored.

Siting

- 1) Don’t disrupt natural features.
- 2) Acknowledge that the structures will create artificial reefs, which will be a benefit for certain fisheries.

Compensation

Connie ran through the BMP #5 Case Studies initially drafted by Ben Willis (A-NPDC summer legal intern). The comparative analyses included:

- 1) Alaska Permanent Fund- The Alaska Permanent Fund is possibly the most generous example presented of private-user compensation for a public resource. The Fund was created and enshrined in the Alaska state constitution after the state government leased public land for oil exploration and requires that, “At least twenty-five per cent of all mineral lease rentals, royalties, royalty sale proceeds, federal mineral revenue sharing payments and bonuses received by the State shall be placed in a permanent fund.”² The Permanent Fund Corporation holds the revenue in order to compensate the public for privatized harvesting of non-renewable public resources. This program is feasible because of the high revenues generated from oil production and was incorporated into the state constitution.
- 2) NOAA Fishermen Contingency Fund- The Fishermen's Contingency Fund (FCF) was established to compensate fishermen for economic and property losses caused by oil and gas obstructions on the U.S. Outer Continental Shelf. The fund was established in the U.S. Treasury, without fiscal year limitation, as a revolving fund comprised of assessments paid by offshore oil and gas interests. Fishermen who can prove that they suffered losses in income due to inability or reduced capacity to fish as a result of the damage sustained may be eligible for compensation for economic loss and property loss or damage. Compensation for economic loss is based on 50 percent of gross income lost, rather than loss of profits.
Fishermen who can prove their vessel was damaged by offshore oil/gas explorations can file a report to the National Marine Fisheries Service within 15 days after the date on which the vessel first returns to port after discovering the damage or loss in order to gain presumption of causation. After this initial report is filed, a claim must be submitted within 90 days of the date the loss or damage was discovered.
- 3) Louisiana Gear Compensation- The Fisherman’s Gear Compensation Program utilizes the Fisherman’s Gear Fund to compensate qualified commercial fisherman claims for losses to equipment and vessels resulting from hitting or snagging underwater obstructions in the waters of the Louisiana Coastal Zone. These claims

² AK Const. Art. 9, § 15.

- are reviewed and investigated by Office of Coastal Management staff. The Louisiana Department Secretary makes the final determination as to reimbursement.
- 4) Exxon/Valdez- In 1989, the Exxon Valdez oil tanker hit a reef within Prince William Sound, Alaska. This is an example of a compensatory settlement in response to a disaster causing damages to the marine environment and impacts to fishermen. Several courts heard this case through multiple appeal processes. Exxon ultimately paid a group of 7 seafood producers for the impact on the Alaskan seafood industry.
 - 5) Oregon- The Oregon Fishermen's Cable Committee cited in the University of Rhode Island's Ocean Special Area Management Plan³ is an example of public trust conflict because it is a private, cooperative agreement between the fishing and telecommunications industries of the US. The Oregon Accord deals with fiber-optic cables laid directly on the sea floor. Before the agreement, TyCom (AT&T) banned fishing activity in the area of an undersea cable due to concerns over damage by fishing gear. When AT&T proposed another cable project in 1998, local commercial trawlers lobbied against the project and were able to come to a mutual agreement with the telecommunications company allowing fishing to continue in the area. This agreement, the Oregon Accord, established a Fund to compensate fishermen for gear loss, released fishermen from liability for negligent cable damage, and incentivized fishermen to sacrifice snagged gear rather than risk cable damage. The Accord also formed a Committee consisting of members of both industries to manage claims, propagate safety measures around cables, and ensure survival of the compensation Fund.
 - 6) Denmark- Denmark has experience in balancing the interests of their fishing and wind energy industries. Denmark takes a different approach than the United Kingdom by providing government oversight of industry conflicts. The Committee for Future Offshore Wind Turbine Locations thoroughly reviews potential farm sites, taking into consideration fishing presence in the area.⁴ Public Hearings are required prior to project approval, and upon project approval fishermen compensation is expected and calculated on the basis of a 500 m protection line around the offshore wind farm.⁵

The group discussed prefacing this BMP with the acknowledgement that takings are likely to occur and add examples of what mitigation efforts have worked in other areas. BMP must include language with reference to working with fishermen and baseline analysis. BOEM does not have the same statutory authority for a gear compensation fund similar to the oil and gas program; projects of potential loss during closures needs to be developed. Compensation should be clear and binding to holders of project.

Fisheries activity and presence must be demonstrated prior to deployment. John Nichols noted that from port visits he noticed that structures as fish habitat are very important to our fishing industry. Mitigation may be adding more structure, in the form of well-designed reefs outside the VWEA to create habitat and attract fish species.

³ Rhode Island Ocean Special Area Management Plan: Fisheries Mitigation Options – A Review, Coastal Resource Center (August 2012),

http://seagrant.gso.uri.edu/oceansamp/pdf/fisheries_mitigation_plan.pdf.

⁴ Denmark Factsheet, SeaEnergy2020, <http://www.seaenergy2020.eu>.

⁵ Id.

Review of BMP Development and Next Steps

The team will continue to review and revise the 5 BMPs under development, assigning a lead for each BMP. The lead will be responsible for reformatting the document (to be consistent with the template Connie Morrison has proposed) and ensuring connectivity with other BMPs, as there are many areas of overlap between them.

Once revised, the BMPs will be re-circulated among fishermen for review and further comment before finalizing and including in the final report. The proposed next steps were to have a draft report due on January 15, 2016, with the final due February 15. The final report should include: what are BMPs, a description of how they were derived, appendix with meeting summaries, and copies of each of the BMPs (including relevant maps as examples). All of the materials will be compiled electronically and delivered to CZM and BOEM.