



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
GREATER ATLANTIC REGIONAL FISHERIES OFFICE  
55 Great Republic Drive  
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FEB -9 2016

William Seib, Chief  
Regulatory Branch  
U.S. Army Corps of Engineers  
Baltimore District  
P.O. Box 1715  
Baltimore, Maryland 21203-1715

RE: CENAB-OP-RMN 2009-61802-M04; MDNR/Fisheries Service/Man O' War  
Shoal Shell Dredging

Dear Mr. Seib:

We have reviewed Public Notice 15-89 dated December 22, 2015, and the associated essential fish habitat (EFH) assessment, received on December 29, 2015, for Maryland Department of Natural Resources' (MDNR) proposal to dredge oyster (*Crassostrea virginica*) shell from Man O' War Shoal in the Chesapeake Bay near the mouth of the Patapsco River, Baltimore County, Maryland, to obtain oyster shell that is to be used to restore oyster populations and oyster fisheries in the Bay. According to the Public Notice, the "shell will be used to make improvements to existing oyster bars to enhance natural recruitment; to provide a foundation for hatchery-spawned seed oysters which encourages reestablishment of an abundant, self-sustaining oyster population; to provide substrate for leased bottom in support of aquaculture (oyster farming); and to provide substrate necessary to sustain oyster fisheries." MDNR is requesting a five-year permit to hydraulically dredge two to five million bushels (120,000 to 300,000 cubic yards) of oyster shell from the shoal. The public notice describes the proposed work as "part of a comprehensive research and development effort to monitor and assess the ecological consequences of removing shell from the shoal."

MDNR states in their application that this "comprehensive monitoring program" will be designed as a before-after-control-impact study. They will collect data on water quality, oyster populations, and fish and benthic communities seasonally at one to three of the proposed dredging sites and at two reference locations at the shoal in the first year of the permit. Dredging of up to two million bushels of shell would occur in year 2 of the permit. During years 2 and 3 of the permit, water quality, oyster populations, and fish and benthic communities would be monitored seasonally in the dredge cut locations and in two undisturbed reference locations at the shoal. Results of the monitoring would be analyzed in year 4 of the permit, and if this "test dredging" shows no significant adverse effects, three million more bushels of shell would be dredged in year 5 of the permit. If monitoring results of the five-year test dredging show no adverse effects, MDNR will submit a joint permit application no sooner than year 5 of the permit to continue the dredging of the shoal until approximately 30% of the available shell totaling a maximum of 30 million bushels (1.8 million cubic yards) of shell has been removed.



The proposed activities would result in an estimated nine dredge cuts up to 500 feet wide and that extend up to 1/3 of the distance through the shoal, which equates to an average length of 200 feet each. This will impact approximately 20.7 acres of the 214-acre shoal. The cut depth depends on the thickness of shell at the cut's location but it is expected to be approximately 30 feet deep, with a minimum shell layer thickness of two feet left intact at the bottom of each dredge cut. However, as part of the shell processing, wash water with sediment and small bits of shells not retained as fines would be discharged through a pipe at the stern of the dredge which an underwater apparatus directs downward into the cut. The sediment and shell bits would backfill the cut with about 10 to 15 feet of fill, negating any habitat benefits of leaving two feet of shell at the bottom of each dredge cut.

The dredged oyster shell will be placed to provide substrate at sanctuary bars or other non-harvest bars, aquaculture sites, harvest reserves, and open harvest areas. The sites where the dredged shell is to be potentially planted are all charted natural and historic oyster bars, as authorized by current permits #2008-00512 and #2012-61332 and mapped on the legal oyster bar charts maintained by MDNR, and possibly used at aquaculture sites in the Chesapeake Bay and its tributaries. However, MDNR has not specified which of these sites will receive the material dredged from Man O'War Shoal in this application.

We have a number of concerns about the proposed project and the lack of sufficient information to evaluate the project purpose, alternatives, and the direct, indirect, individual and cumulative effects on aquatic resources at the dredging sites, as well as at the placement sites. The missing information includes: how MDNR would determine dredge cut locations; an evaluation of the direct impacts of dredging, including specific monitoring plan information, potential impacts to live oysters on Man O'War oyster bar, and potential impacts to anadromous fish migrating past the area during dredging; the impacts of backfilling the dredge cuts with sediment and shell and the resulting change in bottom type; how dredging shell was determined to be the preferred alternative; site specific information on the locations of proposed shell use; and the State's soon-to-be updated oyster restoration and management plan for the Chesapeake Bay.

We recommend that you hold processing of the permit in abeyance until MDNR provides this information, as well as the additional information discussed below so that we may work collaboratively with you and MDNR to help facilitate the restoration of oysters in Chesapeake Bay and to enhance opportunities for oyster aquaculture and harvesting.

#### **Magnuson Stevens Fishery Conservation and Management Act (MSA)**

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires federal agencies such as the Corps to consult with us on projects such as this that may adversely affect EFH. This process is guided by the requirements of our EFH regulation at 50 CFR 600.905, which mandates the preparation of EFH assessments and generally outlines each agency's obligations in the consultation process.

As discussed in your EFH assessment, the upper Chesapeake Bay has been designated as EFH for several federally managed species of finfish, including juvenile and adult windowpane flounder (*Scophthalmus aquosus*), summer flounder (*Paralichthys dentatus*), and bluefish (*Pomatomus saltatrix*); and egg, larva, juvenile and adult life stages of king mackerel

(*Scomberomorus cavalla*), Spanish mackerel (*Scomberomorus maculatus*), and cobia (*Rachycentron canadum*). Summer flounder and bluefish have been found in the vicinity of Man-O-War shoal during MDNR fisheries surveys.

The EFH final rule published in the Federal Register on January 17, 2002, defines an adverse effect as “any impact that reduces the quality and/or quantity of EFH”. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. The EFH worksheet provided refers to permit application Attachment 1 for the description of impacts of the proposed project. Because of the information lacking in the permit application, particularly in determining dredge cut locations and changes in bottom type at the dredge cut locations, the EFH assessment cannot be considered complete. Additional information is required in order for us to fully assess the impacts to EFH, as described in detail below.

### **Fish and Wildlife Coordination Act**

Documented spawning areas for alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), white perch (*Morone americana*), and striped bass (*Morone saxatilis*) are upstream of Man-O-War shoal in the upper Chesapeake Bay and in the Patapsco River, making the area around Man O' War shoal a migratory corridor for anadromous species. The immediate area around Man O' War shoal is mapped by MDNR as juvenile habitat for alewife and blueback herring and white perch. In the Mid-Atlantic, landings of alewife and blueback herring, collectively known as river herring, have declined dramatically since the mid-1960s and have remained very low in recent years (ASMFC 2007). Because landing statistics and the number of fish observed on annual spawning runs indicate a drastic decline in alewife and blueback herring populations throughout much of their range since the mid-1960's, they have been designated as Species of Concern by NOAA. “Species of concern” are those species about which NOAA has some concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the Endangered Species Act.

MDNR's analysis of the impacts to these species indicates that shell removal would create irregular topography in the shoal that may contribute to increases in epibenthic organisms and other organisms that occupy shell habitat and serve as forage species; they also indicate that “the additional structure created by the dredge cuts as well as any enhancement of the live oyster bottom that may result from subsequent management actions may attract fish and result in increased densities.” This analysis conflicts with information provided elsewhere in the application where MDNR describes the dredge cut being backfilled by sediment and fines washed from shell on board dredge. This backfilling of the cuts negates MDNR's statements that they would not be changing the type of habitat and that they would be increasing the surface area of shell and therefore may increase the total available habitat for certain species. The application materials do not provide an analysis of the effects of backfilling the dredge cut, which would bury the shell at the bottom of the cut and potentially alter the area's existing habitat values, and lead to sedimentation of surrounding shell and adverse effects to the existing oyster populations, nor is there an analysis of the impacts of the dredge plume on anadromous fish migrating past the

area to spawn. Without complete and accurate information, we cannot adequately assess the impacts of the proposed project. In addition, any future enhancement of the oyster bottom at Man O'War shoal is not part of the proposed action and should not be assumed in the analysis of impacts.

## **General Comments**

### ***Project Purpose***

MDNR's stated project purpose is to obtain oyster shell to be used to restore oyster populations and oyster fisheries in the Bay. By specifying the use of oyster shell, the project purpose has been too narrowly defined and the range of options that could be considered to meet MDNR's restoration goals has been limited unnecessarily. Alternate substrates have been used successfully in oyster restoration efforts, and are described briefly in Section 3.0 (Alternate Analysis). In the application, there is no discussion of why dredging oyster shell is the preferred alternative, and what other less environmentally damaging alternatives could be used to restore oyster populations and oyster fisheries. For example, MDNR describes the use of fossil shell from Florida to restore oyster bars in Harris Creek and the Little Choptank River, and states that the 2014 annual fall oyster survey showed natural spat settlement on both the fossil and existing shell on oyster beds. They also describe the planting of approximately 71 acres using alternative habitat materials and their demonstration in tanks and in the field that oyster spat will set on a variety of brick and stone materials which can be used to replace natural oyster shell as cultch. With these apparent successes, why is MDNR now limiting their restoration efforts to dredged oyster shell?

### ***Determining Dredge Locations***

MDNR has not yet determined the dredge cut locations, nor have they described how they will determine the dredge cut locations or what measures they would use to avoid and minimize impacts to existing resources in making these determinations. We are particularly concerned that MDNR has not described any methods to minimize impacts to the live oysters at Man O'War oyster bar; instead they have described use of patent tong surveys in years one through three to "provide a more detailed assessment of impacts to the oysters residing at Man O'War and the three nearby oyster bars from the dredge cuts and the sediment plume." It appears from the application that the most recent patent tong survey conducted on Man O'War oyster bar was in 1995. MDNR should conduct a pre-construction survey prior to the issuance of any permit to dredge material from the shoal to determine current density of oysters. This survey should be used in analyses of the impacts to existing oysters and to avoid high-density areas during dredging, should a permit be issued. Results of the pre-construction survey should be provided to us for review as part of our evaluation of the effects of the proposed project.

### ***Direct Impacts of Dredging***

MDNR is requesting authorization to dredge at any time of year. They estimate that the dredge plume would be 300-600 feet wide by 1,000-1,800 feet long, based on previous dredging in the area. While the application states that water quality would be monitored during the dredging operation, and provides a general list of what water quality characteristics would be measured and when, there are no protective measures described in the application for shutting down dredging based on characteristics of the plume resulting from dredging and wash water. MDNR should determine thresholds for levels of total suspended solids (TSS) or dissolved oxygen that

would result in a shutdown until levels return to ambient. In addition, MDNR states in their application that past monitoring studies "showed that the maximum levels of TSS measured in the plume were well below levels that may adversely affect biota" but they only consider exposure to lethal turbidity levels (beginning at 4,000 mg/l) and not levels that may lead to behavioral changes, such as for anadromous fish migrating past the area.

Anadromous fish such as alewife, blueback herring, and American shad (*Alosa sapidissima*) use the Patapsco River and the Chesapeake Bay and its tributaries as spawning, nursery and forage habitat. These fish are a food source for several federally managed species. Buckel and Conover (1997) in Fahey et al. (1999) reports that diet items of juvenile bluefish include *Alosa* species such as these. Juvenile *Alosa* species have all been identified as prey species for windowpane and summer flounder in Steimle et al. (2000). The EFH final rule states that the loss of prey may be an adverse effect on EFH and managed species because the presence of prey makes waters and substrate function as feeding habitat, and the definition of EFH includes waters and substrate necessary to fish for feeding. Therefore, actions that reduce the availability of prey species, either through direct harm or capture, or through adverse impacts to the prey species' habitat may also be considered adverse effects on EFH. As a result, activities that adversely affect the spawning success and the quality for the nursery habitat of these anadromous fish can adversely affect the EFH for juvenile bluefish, windowpane and summer flounder by reducing the availability of prey items.

Anadromous fishes such as alewife and blueback herring spend most of their adult life at sea, but return to freshwater areas to spawn in the spring. Both species are believed to be repeat spawners, generally returning to their natal rivers (Collette and Klein-MacPhee 2002). Increases in turbidity due to the resuspension of sediments into the water column during construction can degrade water quality, lower dissolved oxygen levels, and potentially release chemical contaminants bound to the fine-grained estuarine/marine sediments. Suspended sediment can also mask pheromones used by migratory fishes to reach their spawning grounds and impede their migration and can smother immobile benthic organisms and demersal newly-settle juvenile fish (Auld and Schubel 1978; Breitburg 1988; Newcombe and MacDonald 1991; Burton 1993; Nelson and Wheeler 1997).

Noise from the construction activities may also result in adverse effects. Our concern about noise effects comes from an increased awareness that high-intensity sounds have the potential to harm both terrestrial and aquatic vertebrates (Fletcher and Busnel 1978; Kryter 1984; Richardson et al. 1995; Popper 2003; Popper et al. 2004). Effects may include (a) non-life threatening damage to body tissues, (b) physiological effects including changes in stress hormones or hearing capabilities, or (c) changes in behavior (Popper et al. 2004). MDNR should consider the potential for noise and turbidity from the dredging to impede access for anadromous fish to the Patapsco River and upper portions of the Chesapeake Bay.

MDNR states in their application that they would leave two feet of shell at the bottom of the dredge cuts and "thus would not change the kind of habitat in the dredged area" and that the "increased surface area will provide opportunities for colonization by epibenthic organisms." However, in their description of the dredging, they describe the dredge cut being backfilled by sediment and fines washed from shell on board dredge which would bury the shell at the bottom of the cut. The back filling of the cuts and the burial of the shell remaining on the bottom of the

cut with sediment and fines negates MDNR's statements that they would not be changing the type of habitat in the dredge cuts, and that they would be increasing the surface area of shell and therefore may increase the total available habitat for certain species. Nowhere in the application or in the EFH assessment is there an analysis of the effects of backfilling the dredge cut. In backfilling, the value of the habitat in the dredge cut would be diminished; however MDNR's analysis of habitat impacts does not adequately consider effects of this habitat alteration. MDNR should evaluate the impact of the conversion of bottom type from shell to the sediment and shell bits it would be filled with, and the impact of the change in bottom depth. MDNR should describe the steps they would take to ensure that wash water and sediment will be directed into/remain in the cut and not leave sediment on adjacent portions of the oyster bar.

Significant spat set on oyster bars in low-salinity waters such as Man O'War shoal is infrequent; however MDNR indicates in their application that impacts to Man O'War oyster bar could be further minimized if shell reclamation dredging does not occur concurrently with oyster spawning (May to September). MDNR should be making all efforts to minimize impacts to existing resources during the proposed project.

#### ***Evaluating Adverse Impacts***

MDNR has the following plans to monitor Man O'War shoal during the proposed five-year permit:

- Year 1 – Data is to be collected seasonally on water quality, oyster populations, and fish and benthic communities at one to three proposed dredging sites and two reference shoal locations.
- Year 2 – Approximately 2 million bushels of shell will be removed by hydraulically dredging one to three locations along the shoal's perimeter. Water quality will be monitored during the dredging operation. In addition, monitoring of water quality, oyster populations, and fish and benthic communities will be performed seasonally in the dredged cut(s) and in two undisturbed reference sites at the shoal.
- Year 3 - Monitoring of water quality, oyster populations, and fish and benthic communities will continue seasonally in the dredge cut(s) and in two undisturbed reference sites at the shoal.
- Year 4 – Results of the monitoring program will be analyzed and a report will be prepared by the end of Year 4.
- Year 5 – If the report's findings indicate that Year 2's "test dredge" has produced no adverse effects, an additional 3 million bushels of shell will be dredged using peripheral cuts.

Data should be collected on water quality, oyster populations, and fish and benthic communities at the proposed dredging sites and reference shoal locations prior to permit issuance, as this information is needed for a complete evaluation of the potential impacts of the proposed project. Details on the proposed monitoring program should be provided for review prior to permit issuance. MDNR should also describe how they will determine what "undisturbed reference sites" they would use and how they would determine that these areas are not affected by the project.

The Army Corps of Engineers should re-coordinate with resource agencies and allow them the opportunity to review the monitoring report before dredging is authorized for year 5 of the permit. MDNR should not be the sole entity determining if their project has adverse impacts; input should be solicited from other agencies to determine if future dredging is acceptable. Furthermore, two million bushels of shell is a large dredging project to be considered a "test". If MDNR's intent is for this project to be "part of a comprehensive research and development effort to monitor and assess the ecological consequences of removing shell from the shoal," as stated in the public notice, then a more modest project should be undertaken first with a single dredging event that includes sufficient pre and post construction monitoring to fully assess the ecological effects of the dredging and shell placement.

MDNR states in their application that "the fish community will be monitored for two years after initial dredging to detect any changes in use of the shoal by important recreational fish species" and that if "significant changes in fish usage of the shoal are observed in response to the initial experimental cuts, alternative dredging approaches will be implemented." There is no description of what MDNR would consider significant changes in fish usage, or what alternative dredging approaches might be used. There is also no description of what MDNR would consider "adverse effects" that would prevent them from dredging an additional three million bushels of shell in year 5 or applying for a new permit to continue dredging in future years. While MDNR provides information on past fisheries surveys in the vicinity of Man O'War Shoal, it appears they have not yet surveyed current fish usage of the shoal. This should be done before a permit is issued to adequately describe the anticipated impacts and to help determine the actual impacts of dredging.

### *Alternatives Analysis*

MDNR provides an alternatives analysis in Section 3.0 that discusses the use of surface dredging, reclaiming previously planted shell, purchasing out of state oyster shell, and the use of alternative substrates such as recycled concrete, quarry rock, and clam shell. MDNR explains in this section that surface dredging and reclaiming previously planted shell would not support their restoration initiatives because they would not provide the amount of substrate needed. However, because the restoration goals of this project are only vaguely defined and MDNR has not identified the specific locations where the shell will be placed, or the amounts needed in each location, there is no way to determine exactly how much material is needed. In addition, they describe successful projects using fossil shell from Florida in the Little Choptank, concrete in the lower Rappahannock River, and clam shell in Delaware Bay, so the need to use oyster shell rather than an alternate substrate has not been demonstrated. Cost estimates are provided as part of the alternatives analysis and appear to be used to support shell dredging as the least expensive option, but those estimates don't appear to match between Tables 5 and 6 and p 51. MDNR also states that pursuing alternate materials as a replacement for natural oyster shell may be feasible if shell prices continue to rise and prices of alternate materials remain the same or decrease.

MDNR has an existing permit (CENAB-OP-RMN 2007-03659-M24) to plant alternate materials to provide substrate for oysters, including clamshell, limestone, crushed concrete, stone, and steel slag. Under this permit, MDNR may plant up to 1.5 million cubic yards (equivalent in volume to 25 million bushels of shell) on chartered oyster bars in Maryland. MDNR states in their application that the amount of non-shell substrate that can be deployed under this permit, which expires in 2018, is nearly equal to the amount of shell that could be removed from Man O'War

Shoal. MDNR does not explain why a new permit is needed to dredge shell from Man O' War Shoal when a valid permit exists that would allow the desired restoration activities to proceed without the need to impact additional aquatic habitat through the dredging of shell from Man O' War Shoal.

There is no summary as to why or how MDNR determined that dredging shell was the preferred alternative, although they appear to be basing it on monetary cost. If other viable alternatives exist, MDNR should explain why shell dredging is necessary and what makes it the least environmentally damaging practicable alternative, especially given the existing permit for non-shell substrate.

### ***Locations of Shell Use***

The sites where the dredged shell would potentially be planted are all charted natural and historic oyster bars, as authorized by current permits #2008-00512 and #2012-61332, and mapped on the legal oyster bar charts maintained by MDNR. Shell would be placed on sanctuary bars for restoration (identified in conjunction with MD Interagency Workgroup), aquaculture sites and harvest reserves, and be planted on open harvest areas. Some shell may be stockpiled for short periods if specific locations for planting have not been established before dredging begins.

We have concerns about MDNR dredging for shell without having determined specifically where that shell is intended to go. Knowing the planned locations for use of the shell would help determine how much shell is needed and minimize the potential for dredging more than is necessary. Dredging should not occur before placement locations and the amount of material needed at each location are established. In addition, it is not possible to conclude that there will be no adverse effects to the bottom at the placement sites until those placement sites are identified and the effects of placement of shell at those sites are evaluated.

MDNR describes three possible options for shell allocation:

- 90% planted on sanctuary areas, 10% on managed public harvest or aquaculture areas.
- 50% planted on sanctuary areas, 50% on managed public harvest or aquaculture areas.
- 25% planted on sanctuary areas, 65% on managed public harvest or aquaculture areas.

Of these, we prefer the first option, which minimizes use in harvest areas. The shell proposed to be dredged is a public resource, and should be used for the benefit of the public by maximizing the amount of shell used for restoration in sanctuary areas. MDNR states in their application that "[p]roposed uses of shell emphasize efforts that will result in growth and development of oyster reefs that can sustain themselves into the future, without need for continual addition of new substrate." The emphasis on self-sustaining reefs is inconsistent with the proposed use of dredged shell for aquaculture purposes, for which the shell would ultimately be removed from the system after harvest. How will MDNR ensure that the shell proposed for aquaculture use remains in the system? Will they develop a shell recycling program to place that shell after it is removed from the planted locations?

Of the three options described, MDNR does not indicate how they will determine which option to use beyond the use of public comments to determine the final shell allocation, nor do they describe in their application how much shell they anticipate to be necessary for use in managed public harvest or aquaculture areas. In addition, MDNR does not consider what would be needed



to provide for aquaculture start-up operations or alternate methods of aquaculture that minimize the need for shell. How much shell is needed and where it would be going are necessary details in determining how much shell to dredge. MDNR should also consider if the potential sites for aquaculture use are already permitted or if new permits would be needed, and if this may result in an increase in aquaculture permit applications and leases. If so, the cumulative effects of this must be considered.

### ***Long-term Planning***

MDNR states in their application that they are currently working on updating the State's oyster restoration and management plan and are in the process of identifying the next two tributaries for intensive oyster restoration. It seems premature to move forward with this application until this effort is completed so it can be incorporated into any decisions made on placement sites for the dredged shell. In addition, we should have the opportunity to review the new oyster restoration and management plan before making final comments on shell dredging proposal.

### **EFH Conservation Recommendations**

The EFH assessment cannot be considered complete without the additional information discussed above. As such, we are unable to provide conservation recommendations at this time. Once MDNR has provided the required information for us to adequately assess the impacts to EFH, we will continue our EFH consultation with you and provide any necessary conservation recommendations at that time. Until then, we recommend that you hold the processing of this permit application in abeyance.

### **Endangered Species Act**

Four species of sea turtles, Atlantic sturgeon (*Acipenser oxyrinchus*) originating from five listed Distinct Population Segments (DPS), and shortnose sturgeon (*Acipenser brevirostrum*) are known to occur in the Chesapeake Bay. Depending on the amount and duration of work that takes place in the water, listed species of sea turtles and sturgeon may occur within the vicinity of your proposed project. If you determine that any proposed in-water work has the potential to impact these species, then a consultation pursuant to section 7 of the ESA may be necessary. As project plans develop, we recommend you consider adopting best management practices and avoidance / minimization measures for all of the proposed project's activities that might affect sea turtles and sturgeon. If you are able to determine that there will be no exposure to listed species from any project activities and that there are no effects to listed species then consultation will not be necessary.

You will be responsible for determining whether the proposed action may affect listed species. If you determine that the proposed action may affect a listed species, you should submit your determination of effects, along with justification and a request for concurrence to the attention of the Section 7 Coordinator, NMFS, Greater Atlantic Regional Fisheries Office, Protected Resources Division, 55 Great Republic Drive, Gloucester, MA 01930. After reviewing this information, we would then be able to conduct a consultation under section 7 of the ESA.

For additional technical guidance on the section 7 consultation process, please visit our website - <http://www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/consultation/index.htm>

1. If you have any questions regarding these comments, please contact Brian Hopper (410-573-4592 or [brian.d.hopper@noaa.gov](mailto:brian.d.hopper@noaa.gov)).

We continue to support oyster restoration and the enhancement of aquaculture and harvest opportunities in the Chesapeake Bay, and are an active partner with MDNR and the Army Corps of Engineers in oyster restoration in the Bay. However, the information provided by MDNR on this project is not sufficient to allow an adequate evaluation of the project's impacts, including the direct, indirect, individual, and cumulative effects, and there does not appear to be adequate evaluation and consideration of less environmentally damaging alternatives. Until MDNR provides the requested additional information and a full and complete EFH assessment is provided for our review, we recommend that you withhold making a decision on permit issuance. We look forward to working through this process with you and MDNR and would be happy to meet to discuss this matter further.

If you have questions or would like to discuss this further, please contact Kristy Beard at (410) 573-4542 or [kristy.beard@noaa.gov](mailto:kristy.beard@noaa.gov) or Karen Greene at (732) 872-3023 or [karen.greene@noaa.gov](mailto:karen.greene@noaa.gov).

Sincerely,



**Louis A. Chiarella**  
Assistant Regional Administrator  
For Habitat Conservation Division

cc: Abbie Hopkins (ACOE)  
Genevieve LaRouche (USFWS)  
Mike Mansolino (EPA)  
Justin Berezna (MDE)  
Brian Hopper (GARFO PRD)  
Peyton Robertson (NOAA)  
Kevin Chu (NOAA)  
Christopher M. Moore (MAFMC)

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FEB 18 2016

Re: NAB-2009-61802; Maryland Department of Natural Resources; Man O' War Shoal Dredging

Dear Mr. Seib,

The U.S. Environmental Protection Agency (EPA) has reviewed the Public Notice (15-89) and associated application materials for Maryland Department of Natural Resources' (MDDNR) proposal to dredge oyster (*Crassostrea virginica*) shell from the Man O' War Shoal to be used to restore oyster populations and oyster fisheries throughout the Chesapeake Bay. The Man O' War Shoal is located in the Chesapeake Bay near the mouth of the Patapsco River, Baltimore County, Maryland. The shell will be used to make improvements to existing oyster bars to enhance natural recruitment; to provide a foundation for hatchery-spawned seed oysters which encourages reestablishment of an abundant, self-sustaining oyster population; to provide substrate for leased bottom in support of aquaculture (oyster farming); and to provide substrate necessary to sustain oyster fisheries. MDDNR is requesting a five year permit to hydraulically dredge 2 to 5 million bushels (120,000 to 300,000 cubic yards) of oyster shell from the shoal. The public notices describes the project as part of a comprehensive research and development effort to monitor and assess the ecological consequences to removing shell from the shoal.

EPA is in receipt of the comment letter provided by the United States Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Marine Fishery Service (NMFS) in response to the Public Notice. EPA recognizes and relies on the expertise of NMFS on proposed projects that may have impacts to fishery resources and habitats. EPA's review is generally intended to help ensure that the proposed project is consistent with requirements of the Clean Water Act (CWA) and its implementing regulations, including the CWA Section 404(b)(1) Guidelines (Guidelines). In addition to the comments and concerns raised by NMFS, EPA offers the following comments.

The PN states that the purpose of the proposed project is to obtain oyster shell to be used to restore oyster populations and oyster fisheries in the Bay. When determining the project purpose, it should not be so restrictive as to constrain the range of alternatives to be considered. If the overall purpose of the project is to restore oyster populations and oyster fisheries in the Bay, then other less damaging practicable alternatives may be available that do not involve dredging oyster shells and avoid potential adverse impacts to and around the Man O' War Shoal. The applicant discussed a variety of alternative substrate instead of dredged shell, including fossilized shells, clam shells, imported shell, construction debris, quarry rock, etc. within the



documentation provided. While the cost estimates provided for each of the alternatives supports that dredging shell is the most cost effective alternative, the documentation did not discuss the impracticability of those alternatives. An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology and logistics, in light of overall project purposes (40 C.F.R. § 230.3(q)). The applicant should be aware that neither increased costs of an alternative nor an unwillingness to pursue an alternative necessarily renders that alternative impracticable. Based on the information provided, it is not clear that the LEDPA has been identified, and further documentation and analysis should be provided to document the preferred alternative as the LEDPA.

A thorough alternatives analysis should also include a detailed evaluation of practicable project design and implementation alternatives to assure that all opportunities to avoid and minimize impacts, including water quality and habitat impacts, have been fully considered. For example, the information provided discusses the volume of shell to be dredged but does not discuss how the locations for the dredge cuts were selected. EPA recommends MDDNR minimize the proposed dredge cuts to the maximum extent possible while still accomplishing the project's research objectives. MDDNR should also discuss if Man O' War Shoal is a living oyster bar, and if so, how highly dense areas of living oyster will be avoided. Additionally, EPA recommends completing an updated survey of the shoal's living oyster population prior to any dredging to better determine the pre-construction conditions.

EPA has concerns regarding the placement of shells dredged from the Man O' War Shoal. Based on the application materials provided for review, it is unclear where the shells will be placed, or what criteria will be used to determine placement. The alternatives analysis should discuss the options, or criteria, to determine the preferred alternative for distribution of the dredged shell. In addition, EPA questions how the distribution allocations will be made. MDDNR describes three possible options for shell allocation with two options proposing a significant portion of the shells (50% +) to be allocated to public harvest and/or aquaculture areas. While one of the project's goals is to provide substrate for leased bottom in support of aquaculture, it is unclear why such a significant portion of the shells harvested would be used for this purpose when the goal of the project is to also encourage reestablishment of an abundant, self-sustaining oyster population. Additional information that explains and clarifies this aspect of the project should be provided.

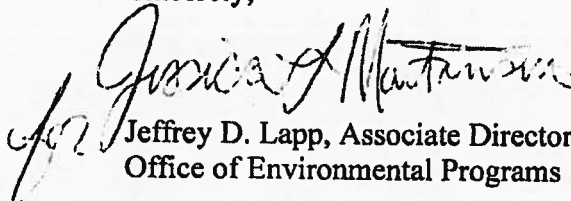
Consideration of likely secondary impacts on habitat for existing oyster populations, other benthic communities, as well as other species which depend on the shoal also should be evaluated. The application materials discuss how the proposed dredging will leave a minimum of two feet of shell material to be utilized as new substrate for future oyster growth; however the information also states that the discharge of 10-15 feet of sediments washed from the dredged shell will be discharged into the cut areas. EPA is concerned that the sediment and fill material being discharged back into the cuts would cover the remaining oyster shell, negating any benefits of leaving shell in the bottom of the cut areas for future oyster growth. The application materials also acknowledge that the redepositing of the materials will lead to a sediment plume in the surrounding areas of the Bay. This plume will lead to additional secondary impacts to other species that utilize the shoal and the surrounding area. Measures that reduce these secondary impacts should be evaluated in and included in any final design and implementation plan for the harvesting of oyster shell from the shoal.



Thank you for the opportunity to provide comments regarding this proposal. EPA supports the goal to restore oyster populations and oyster fisheries throughout the Chesapeake Bay, however, based on our review of the provided information, there are a number of concerns that should be addressed in the review process.

Should you have any questions please feel free to contact Mr. Michael Mansolino at 215-814-2794 or by email at [mansolino.michael@epa.gov](mailto:mansolino.michael@epa.gov).

Sincerely,

  
Jeffrey D. Lapp, Associate Director  
Office of Environmental Programs



To: Abbie Hopkins  
ATTN: CENR13-OPR-M  
Baltimore District  
 Corps of Engineers  
P.O. Box 1745  
Baltimore, Md. 21203-1745

2/05/2016

From: John C. Day

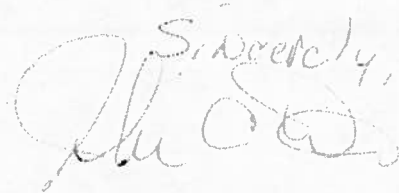


Dear Ms. Hopkins,

I am writing you to state I am opposed to the dredging of Man-O-War shoal.

I attended the meeting at Sparrows Point H.S. on 1/2/2016, but did not speak.

Please register me with those who spoke in opposition to the proposed dredging.

Sincerely,  
  
John C. Day

FEB 17 2016

**From:** [Joseph Everhart](#)  
**To:** [Hopkins, Abigail A \(Abbie\) NAB](#)  
**Subject:** [EXTERNAL] Dredging Oysters  
**Date:** Wednesday, December 23, 2015 7:49:50 PM

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Dear Ms. Hopkins,

I was just emailing you to voice my concern at the possible permitting of dredging oyster shell from the upper Chesapeake, specifically at Man of War shoal. As someone who has fished the area I can attest to their importance as habitat for fish species even if the oysters are dead. Hard bottoms like this are hard to come by in our region and are very important for fish, plus you can get shells from plenty of other places (think oyster shucking houses and maybe even starting an oyster roast shell recycling program). There is no need to disrupt this bottom structure and I really hope the permits do not go through.

Thank you for your time and consideration,

Joe Everhart



FEB 02 2016

Thomas Fantom

January 17, 2016

Ms. Abbie Hopkins  
ATTN: CENAB-OPR-M  
Baltimore District, Corps of Engineers  
P.O. Box 1715  
Baltimore, MD 21203-1715

Ms. Hopkins

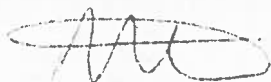
I am a vehement protestor against the destruction of the oyster reef known as Man-O-War.

As you know the upper bay has been decimated by the removal of shells and dumping of silt for many years. The decision in 2006 to cease shell removal has been proven to improve water quality and increase fish habitat. The ultra-high striped bass hatch of 2015 reflects the improved conditions of the upper bay.

If The State of Maryland and the DNR want to truly save the bay for future generations they must change their mindset to preserve all living reef structures (which they commonly call shoals).

Please reject this permit request and continue to strive for the protection of all shell structures in the waters of the Chesapeake.

Sincerely,



Tom Fantom

Chemical Engineer

**From:** Gill, James  
**To:** Hopkins, Abigail A (Abbie) NAB  
**Subject:** [EXTERNAL] man of war shoal - leave it alone!  
**Date:** Tuesday, January 05, 2016 4:23:32 PM

---

Man of War needs to be left intact. There is very little hard shell bottom left in the Bay. Hard bottoms are important for creatures in the Bay. There are other other options; Pass a law to reclaim ALL shells from restaurants. A little more trouble, but doable. Place a bounty/lb. and the people of the state will solve the problem for you AND deliver the shell to reclamation sites. Or bring shells in from other states.

I'm a recreational fisherman I haven't fished north of the bridge for years. There's a reason for that. And your office wants to make it worse??

Please DO NOT approve this permit.

Jim Gill

To whom it may concern - DNR

I'm writing to ask that you do not dredge the oyster shells from or around MAN-O-WAR shoal. I'm 52 years old man and have been fishing there since I were a kid. I still like fishing there regularly with family members. I have enjoyed many days there catching white perch + rock fish. I understand the need for oyster shells and save all my shells I eat thru-out the fall + winter and turn them into the restoration program. Please find your shells from other places, such as try to have all restaurants save all shells that are shucked + have them picked-up weekly instead of being thrown away in the trash. The Upper bay is in enough trouble from Mother Nature washing down her silt in the bay after big storms to pollution + disease. We don't have many good shoals (bars) to fish as we did years ago. We need more oyster bars created (not only down the bay), so don't ruin our ONLY LIVE OYSTER BAR we have left in the Upper bay.

Save the fish + crab + oyster bar  
MAN-O-WAR Shoal

John Grauer  
Sport Fishermen



JAN 14 2016

**MARYLAND SALTWATER SPORTFISHERMEN'S ASSOCIATION, INC.**

8461-C Fort Smallwood Road, Pasadena, Maryland 21122  
(410) 255-5535, Fax: (410) 255-1552

DEAR MS HOPKINS

I BELIEVE THE MSSA HAS ALREADY FILED AN APPLICATION  
OPPOSED TO ANY DREDGING ON MANO-WAR SHOALS.

I WILL PERSONALLY APPEAR ON THE FACT THAT THE MARYLAND D.P.R.,  
NOAA, THE CORPS OF ENGINEERS, THE COAST GUARD & PROBABLY  
OTHERS HAVE NOT MADE A STUDY TO DETERMINE WHAT THE RESULT  
OF A CUT TO GAIN 34 MILLION BUSHERS OF GIN OYSTER SHELL WILL  
HAVE ON THE REEF.

THIS WILL BE MY PERSONAL AGENDA & I WOULD LIKE TO SPEAK  
AT THE HEARING ON JANUARY 26.

Wm. I. Hoffert

MEMBER OF MAR. MARYLAND ARTIFICIAL REEF INITIATIVE  
& RESPONDING TO THE FACT THAT 2000 REEF BALLS  
HAVE BEEN ADDED TO THE MEMORIAL STADIUM SITE IN THE  
UPPER BAY AT NO COST TO TAXPAYERS.

YOU CAN CALL ME AT [REDACTED] BECAUSE I DO NOT  
WORK IN THE MSSA OFFICE.

**From:** Ruth Hettling  
**To:** Hopkins, Abigail A (Abbie) NAB  
**Subject:** [EXTERNAL] dredging oyster sheels  
**Date:** Friday, January 08, 2016 7:13:44 PM

---

Please don't dredge the oyster shells in the upper bay. The fishing on these bars is good and disturbing the bottom is have going to bad effects.

Thank you  
Fred Hettling

**From:** Jezek, Bruce W  
**To:** Hopkins, Abigail A (Abbie) NAB  
**Subject:** [EXTERNAL] Dredging Man O War Shoals  
**Date:** Wednesday, January 06, 2016 10:19:20 AM

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I am writing to request you NOT conduct dredging the War-of-War shoals. We all want the bay to be a better place to fish, swim, and allow eating its seafood. Oysters are critical to the improved water quality of the bay but we don't want to damage the few oyster beds that remain. Why is it necessary to destroy old oyster beds that offer habitat for our existing bay creatures? These old beds also provide a few remaining fishing grounds to our upper bay Rockfish also. It just make no sense to destroy what already exist to create new oyster beds. I cannot believe that there are not oyster shells from other places like sucking houses, restaurants and the like to provide the needed shells for spat. All the millions of dollars being spend in the lower bay should have funds to acquire these needed shells or other material to create new oyster beds. It is time to stop destroying the existing resources we have.

Very concerned citizen,

Bruce w Jezek

**From:** William Johnson  
**To:** Hopkins, Abigail A (Abbie) NAB  
**Subject:** [EXTERNAL] Proposed dredging of Man o' War Shoal  
**Date:** Friday, December 25, 2015 11:42:49 AM

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I would like to voice my continued opposition to any dredging of Man o' War Shoals or any other natural structures in the Chesapeake Bay for the purpose of obtaining shell. Here are some reasons:

1. Man o' War Shoal has living oysters on it. Does it make sense to destroy a natural oyster reef to build an artificial one?
2. Man o' War Shoal provides critical structure that attracts congregations of commercial and sport fishes like white perch and striped bass.
3. The dredging process produces large quantities of sediment. When the reefs east of Pooles Island were dredged for shell years ago I saw a plume of sediment spreading miles down stream. Since we think that water clarity is a key to restoring bay grasses, it is hard to justify this increased sediment load.
4. Shells for this oyster "restoration" are available elsewhere without causing such environmental destruction. Check out the way shell from other sources and species has been used in Delaware Bay.
5. This oyster 'restoration' program has been a boondoggle for over 30 years. If it were successful, it would have produced productive, viable, and sustainable oyster reefs. It has not. It seems to require repeated deposits of more shell and seed oysters, which amounts to a "put-and-take" approach that benefits only a few watermen AND, especially, the dredging operation.
6. Once these essential structures like Man o' War are gone, they are gone forever. It would be a shame to sacrifice one of the last large reefs in the upper Chesapeake for a one-time extraction to support a dubious project.
7. The huge success of oyster aquaculture show that there are other more commercially feasible approaches to producing oysters. To destroy even part of this magnificent reef for a project that should be abandoned is indefensible.

Thank you for your attention.

William S. Johnson  
Parkton, MD

**From:** [Kevin Josenhans](#)  
**To:** [Hopkins, Abigail A \(Abbie\) NAB](#)  
**Subject:** Re: [EXTERNAL] Oyster dredging Man O War Shoals  
**Date:** Monday, December 28, 2015 4:30:38 PM

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Thank you

Capt. Kevin Josenhans  
Josenhans Fly Fishing

Blocked[www.josenhansflyfishing.com](http://www.josenhansflyfishing.com)  
josenhansflyfishingblog.com  
Blocked<https://twitter.com/TangierFly>  
Blocked<http://instagram.com/kevinjosenhans/>

Sent from my iPhone

> On Dec 28, 2015, at 4:24 PM, Hopkins, Abigail A (Abbie) NAB <[ABBIE.HOPKINS@usace.army.mil](mailto:ABBIE.HOPKINS@usace.army.mil)> wrote:  
>  
> Thanks for your comments Mr. Josenhans. I'm copying MDE with this e-mail to be sure they too are aware of your concerns. We will be taking them into consideration in our evaluation of the project. Abbie Hopkins  
>  
> -----Original Message-----  
> From: Kevin Josenhans [<mailto:>]  
> Sent: Wednesday, December 23, 2015 6:50 PM  
> To: Hopkins, Abigail A (Abbie) NAB <[ABBIE.HOPKINS@usace.army.mil](mailto:ABBIE.HOPKINS@usace.army.mil)>  
> Subject: [EXTERNAL] Oyster dredging Man O War Shoals  
>  
> Ms. Hopkins,  
>  
> As a long time fishing guide of 22 years - currently fishing from the Susquehanna Flats to the CBBT, but specializing in Tangier Sound - I couldn't be more against the proposed dredging project. As a former resident of the upper bay I've fished extensively around Hart Miller Island, Pooles Island, Man O War Shoals, Six Foot Knoll, and the surrounding shell bottoms (or I should say, former shell bottom). The dredging projects of the past 25+ years have made a desert of the upper bay. Where there once were hills and ridges on the bottom, which provided habitat for white perch, rockfish and other gamefish, that is all gone. Paved flat by the Langenfelder dredging project. Sure, it provided shells for oyster spat in Tangier Sound and a few other areas, but DNR raped the bottom of the upper bay to do so. I am 58 years old and have witnessed this flawed exercise for the better part of 30 years. Please tell the powers that be to cease and desist. Tangier Sound and the Choptank will be fine on their own. Don't ruin the upper bay any further that you have!!  
>  
> I would appreciate a reply.  
>  
> Kevin Josenhans.  
>  
> Capt. Kevin Josenhans  
> Josenhans Fly Fishing



**From:** Philip Krausz  
**To:** Hopkins, Abigail A (Abbie) NAB  
**Subject:** [EXTERNAL] Man O War Shoal  
**Date:** Tuesday, January 05, 2016 1:46:13 PM

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Dear Ms. Hopkins,

I am in strong opposition to removing any shell from Man O War shoal.

It is one of the last living oyster bar in the upper bay so not only is it a go to place to take children to go fishing for perch, it helps clean the water in the upper bay.

The upper bay already had some poor water quality and for some reason some people want to destroy it and let the upper bay become a cesspool for industrial usage.

Makes absolutely no sense to me and I hope you believe like I do

Please turn down any application to remove any shell from Man O War Shoal.

Sincerely

Philip Krausz



**From:** Gilbert Lookingland jr  
**To:** Hopkins, Abigail A (Abbie) NAB  
**Cc:** Gilbert Lookingland Jr  
**Subject:** [EXTERNAL] Man O War shoals  
**Date:** Tuesday, January 12, 2016 8:54:05 PM

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Ms. Hopkins,

I am sending this letter in protest of the dredging of the Man O War shoals permit. Man O War is one of the last remaining natural Oyster Bars in the Upper Bay. We need to protect Man O War shoals from failed Oyster and rehabilitation projects. The Maryland Historical Trust was consulted and determined that there are no archeological/ cultural concerns within the proposed dredging area. They also said that there will be no impact to submerged aquatic vegetation as there are no SAV beds delineated in or adjacent to the proposed permit area. The topic that needs to be addressed is the destruction of a pristine fishing area. What is the relationship of archeological and cultural concerns have to do with the desire to destroy fishing grounds? You can't convince me that there is no vegetation in the area. They want to dredge 30 million bushel and there's no vegetation. Really?

There are comparable substrates that can be used for the successful settlement of Oyster larvae. MD DNR and those who have a commercial vested interest have to work harder to develop alternative strategies for rehabilitating Oyster Bar habitat. There are alternative materials. As far as the previously planted shell that are covered with sediment if they can't be rejuvenated place the alternate material over them.

The fastest way to fix your problem is to rape successful sites and nourish others. A typical Governmental approach. I tell you there are other ways. I worked with and support the Maryland Artificial Reef Initiative. It would take to long to explain how productive these man made sites are but you need to take their lead.

I took my 4 year old grandson to Man O War shoal this past summer. He caught his first fish that day. What a memorable moment. You start messing around with these well establish fishing sites and you are going to regret it.

I won't be at Sparrows Point High School on Tuesday January 26th but if any of this makes sense I sure wish this would be read and taken into consideration.

Thank you for your consideration,  
Mr. Gilbert Wm. Lookingland Jr.  
United States Coast Guard Veteran  
Retired Contracting Officer Department Of Army  
Volunteer with the MDE  
Grandfather of 5  
GOD fearing avid fisherman

**From:** Rob Hardy  
**To:** Hopkins, Abigail A (Abbie) NAB  
**Subject:** [EXTERNAL] Man O War Dredge Project, Chesapeake Bay  
**Date:** Monday, January 18, 2016 11:20:39 AM

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Good Morning,

I am reaching out today to oppose the approval of the Dredge Project of Man O War Shoals, in the Upper Chesapeake Bay.

Although the Maryland Department of Natural Resources makes a compelling argument for approval, the potential effects, both short and long term, remain to be confirmed.

For example, recent impact surveys of prior northern Bay dredge sites are not available.

Scientific studies were conducted immediately following the prior projects, and suggest that the bars should be fine, however those studies were conducted in the weeks following the projects, and do not hold into consideration what effect the dredging has 5 or 10 years down the road.

Also, the final use of the shell has yet to be determined. The Oyster Recovery Project has provided mixed results, so it's critical Maryland tax payers be ensured that the destructive reclamation of the shell will in fact be as beneficial as possible.

I am in support of the concept of the Man O War dredge project, but simply have not been guaranteed the "juice will be worth the squeeze", if you will.

I appreciate your time and consideration, and if you have any questions or if there's anything I can do, please don't hesitate to contact me.

Respectfully,  
Capt. Rob Hardy  
Maryland Sport Fish Advisory Commission

**From:** Jerry Norris  
**To:** Hopkins, Abigail A (Abbie) NAB  
**Subject:** [EXTERNAL] Man O' War Shoal Dredging  
**Date:** Wednesday, December 23, 2015 7:21:59 PM

---

I adamantly oppose the dredging of oyster shells from the Man O' War shoals. It is an unsupportable degradation of the area habitat.

Jerry L. Norris

**From:** Paul Poz  
**To:** Hopkins, Abigail A (Abbie) NAB  
**Subject:** [EXTERNAL] Man O War Shoals  
**Date:** Sunday, January 17, 2016 10:42:26 AM


---

Dear Abbie,

Please deny the Man O Shoals dredging permit. I have fished these shoals for 40 years. I can never understand how we could ever let the bay be exploited even more for industry's sake.

Thank you,

Paul Poswiatowski

 Reduce, reuse, recycle.

**From:** [gale.schreiber](#)  
**To:** [Hopkins, Abigail A \(Abbie\) NAB](#)  
**Subject:** [EXTERNAL] Man o War Shoals Dredging  
**Date:** Wednesday, December 23, 2015 8:33:37 PM

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Please do not allow this to go through.. The upper bay has suffered enough damage from septic pollution and channel dredging. I have hand tonged that area with mixed success in the past but it is still a great area for other marine life. Rick Schreiber  
Sent from my iPad

**From:** [Houck, Ronald L CIV](#)  
**To:** [Hopkins, Abigail A \(Abbie\) NAB](#)  
**Cc:** [Simpson, Douglas C CIV](#)  
**Subject:** [EXTERNAL] RE: AGENCY COORDINATION (IP), Man O War Shoal, #2009-61802  
**Date:** Wednesday, December 30, 2015 12:39:05 PM

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Good afternoon,

Coast Guard Captain of the Port (COTP) Baltimore has received and reviewed the notice on subject project in Man O'War Shoal, located in the Chesapeake Bay near the mouth of the Patapsco River, in Baltimore County, MD. Based on the information provided, COTP Baltimore has the following comments regarding the proposal to dredge oyster shell from the shoal; this reply is given so the district engineer may provide a timely response to the applicant.

1. If approved, the applicant's equipment shall not obscure or interfere with any aids to navigation (33 CFR 70); specifically, the Craighill Channel Range Front Light (LLNR 8040) depicted on the applicant's Figure 1, which has an advertised height of 22 ft.
2. If approved, any mooring or other aids to navigation established to support the dredging will need to be approved through the 5th Coast Guard District. Their POC is:

Mr. Doug Simpson  
Marine Information Specialist  
USCG 5th District Waterways Management Branch  
Phone: (757) 398-6346  
Email: [Douglas.C.Simpson@uscg.mil](mailto:Douglas.C.Simpson@uscg.mil)

V/r,  
Ron Houck  
U.S. Coast Guard Sector Baltimore  
Waterways Management Division  
410.576.2674 (o)  
410.365.8125 (m)  
410.576.2553 (f)

-----Original Message-----

**From:** Hopkins, Abigail A (Abbie) NAB [<mailto:ABBIE.HOPKINS@usace.army.mil>]  
**Sent:** Tuesday, December 29, 2015 11:58 AM  
**To:** Mansolino, Michael; [chris\\_guy@fws.gov](mailto:chris_guy@fws.gov); [kristy.beard@noaa.gov](mailto:kristy.beard@noaa.gov); [brian.d.hopper@noaa.gov](mailto:brian.d.hopper@noaa.gov); Beth Cole (MHT); Simpson, Douglas C CIV; Houck, Ronald L CIV; Justin Berezna -MDE-; [Environmentalreview.dnr@maryland.gov](mailto:Environmentalreview.dnr@maryland.gov)  
**Subject:** AGENCY COORDINATION (IP), Man O War Shoal, #2009-61802

This project is being reviewed under the Corps' Individual Permit process. I'm providing a comment form and a copy of the joint public notice with plans. FYI...we have scheduled 2 public hearings on this project. Details are provided in the notice. If you have any questions, please feel free to contact me. Thanks!

Kristy - Could you give me a call please...I need to talk to you about EFH.

Abbie Hopkins

Project Manager

**From:** Monty Hawkins  
**To:** Hopkins, Abigail A (Abbie) NAB; Schwarm, Rodney NAB  
**Cc:** Dave Blazer CIC MD Fisheries; Mike Luisi; Erik Zlokovitz; Michael Malpezzi -DNR-; Dave Sikorski; Ed Liccione; Dorotheann Sadusky  
**Subject:** [EXTERNAL] Chesapeake Artificial Reefs  
**Date:** Tuesday, January 12, 2016 2:56:11 PM

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Greetings at ACE,

Concerning: PN15-88 (MD DNR Chesapeake Bay Artificial Reefs) - 2015-60904

Maryland has made wonderful progress in reef building over the last decade.

Accuracy is now so extreme that I believe the single most pin-point Chesapeake reef deployment ever occurred just in the past year as load after load of rubble was piled atop a sunken barge.

We also built a reef of huge boulder & hope to build many more.

Biological success is becoming more & more obvious. In the not-too-distant future the MD Artificial Reef Initiative (MARI) hopes to show how we might maximize an artificial reef's biofiltering capability while minimizing its footprint. Judging by Army Corps' more & more successful oyster restoration efforts, ACE well-grasps the importance of restoring biofiltration to the Chesapeake.

On Maryland's coast the Ocean City Reef Foundation is perfecting concrete pipe units that are cabled together to more fully utilize authorized vertical clearances. I hope to bring that strategy to the Chesapeake. Robust units standing well-clear of the bottom with small 'spat sacks' made-fast inside several pipes ought to accelerate successful oyster colonization.

Indeed, when an un-pre-spat reef ball was recently examined at Tangier Reef, it was thought to resemble Chesapeake bay-floor habitat in pre-contact condition..

We see staunch support of reef balls by those who consider Chesapeake restoration a sacred duty ..and diligent opposition to anything but



harvestable pre-spat by those who have profited most from decades of 'put & take' largess.

Not only has the Chesapeake's water quality declined to where biological function *fully ceases* in annually occurring anoxic regions, but I strongly believe the multi-decadal decline of Mid-Atlantic nearshore marine water quality has also fallen to now-dangerous levels.

Even our last bastion of bluewater, the canyons so distant in time & space from the crystal-clear blue ocean waters once taken for granted just a couple miles offshore of Ocean City: yes, the canyons too have become green at times in recent years.

Blue seas now turned green; we're losing. We must learn how to engineer biofiltration.

I believe artificial reef will, in the end, either allow greater ecosystem service restoration in a smaller area, or fantastically better result over a broader area.

Because success may depend on innovation, we'll need those artificial reef permits reissued if we're to discover our best method of successfully combating green water.

My Regards,  
Monty

Capt. Monty Hawkins

President, O.C. Reef Foundation  
Chair, MD Artificial Reef Committee  
PO Box 1072,  
Ocean City, MD 21842