

Sustainable Oyster Restoration and Management Plan for Eastern Bay, Maryland



Submitted by the **Eastern Bay Oyster Coalition Workgroup** and
Oyster Recovery Partnership to the leadership of the Maryland
Department of Natural Resources

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Executive Summary

The State of Maryland aims to engage all stakeholders for their input to support ongoing Chesapeake Bay restoration efforts and is committed to restoring Maryland's oyster resources for ecological and economic benefits. Collaborative efforts led by the Maryland Department of Natural Resources (DNR) and the Maryland Oyster Advisory Commission resulted in the commitment of funding to restore oysters in Eastern Bay, Maryland. However, continued challenges related to overlapping resources, conflicting user interests, and outdated spatial data on oyster habitat necessitated further planning and agreement on how to use these funds most effectively.

The Oyster Recovery Partnership (ORP) convened the Eastern Bay Oyster Coalition with funding from the National Fish and Wildlife Foundation to assist and enhance the previous efforts led by Maryland DNR and address these challenges. The Coalition was comprised of local business owners, oyster managers, environmental groups, watermen, and public representatives with local expertise. All members have a shared interest in the future of the Eastern Bay oyster resource and its long-term health. The Coalition met six times over the course of 2024 to develop consensus recommendations for the long-term sustainable restoration and management of the oyster resource and ecosystem in Eastern Bay.

Through this effort, the Eastern Bay Oyster Coalition developed a Sustainable Oyster Restoration and Management Plan (the Plan) that outlines a set of recommendations to optimize oyster production in Eastern Bay over the long term. A total of 13 strategies and 42 actions were developed to address goals to restore, sustainably manage, and establish public support for oysters in Eastern Bay. As part of this process, the Coalition also led an iterative, stakeholder-driven habitat survey integrating Coalition input and feedback to assess existing oyster habitat in Eastern Bay. The results from the habitat survey were used by the Coalition to create a draft spatial plan, submitted as part of the package of recommendations, which identifies locations to implement oyster activities outlined in the Plan.

The Eastern Bay Oyster Coalition process successfully created synergy among oyster stakeholders and industry members in Eastern Bay to create a unified plan that incorporated the diverse interests and needs of all end-users represented on the Coalition. This process created a valuable framework for engaging and integrating stakeholders in the co-production of knowledge and recommendations of coastal resources, specifically oysters. This framework can be translated and adapted to restore and manage shallow water habitat in other Chesapeake Bay tributaries facing similar or unique challenges.

1.0 Introduction

1.1 History of Oysters in Eastern Bay

Eastern Bay, located between Queen Anne and Talbot Counties on Maryland’s Eastern Shore, supports a thriving commercial and recreational fishing community including seafood processing facilities, restaurants, and tourism. The estuary is a mesohaline system with expansive oyster, SAV, and sandy bottom habitats. Eastern Bay and its tributaries contain vast oyster resources, with an estimated 20,086 acres of historic oyster habitat, 22,645 active acres of public shellfish fishery areas, seven oyster sanctuaries, and twelve active aquaculture leases (MDNR 2024). Of this historic oyster habitat, 15,358 acres are managed within the public shellfish fishery and 4,728 acres are managed within the region’s oyster sanctuary network (Figure 1).

Historically, Eastern Bay (EB) was an extremely productive area for oysters. EB experienced relatively high natural recruitment compared to other areas in the Upper Chesapeake Bay and supported significant harvest effort. During the 1980s and early 2000s, in addition to the harvest of market oysters, spat or seed oysters were removed from EB and deployed in less naturally productive areas to enhance harvest in other regions of the Chesapeake (Figure 2). Concurrent with these activities, Maryland DNR conducted an extensive replenishment program that deployed shell dredged from buried, historic oyster reefs back onto oyster habitat in Eastern Bay (Figure 3). The EB oyster population was devastated by disease following a 4-year drought in 1997-2002 (MDNR 2024), which resulted in significant reductions in harvest and replenishment activities (Figures 2 & 3).

A decline in the seafood economy and infrastructure in EB followed the decline in oyster production. Through the 1980s, Kent Narrows was a booming hub for seafood processing and distribution, hosting as many as 29 processors and shucking houses in the late 1960s. Today, only two seafood processors remain in the region. A concurrent increase in development in the watershed resulted in an economic shift – from predominantly centered around the seafood industry to recreation and tourism (Queen Anne’s County 2022, Talbot County 2016). Land use changes in the rural EB watershed that continue today have overwhelmed the existing wastewater management systems and degraded water quality through increased nutrient loading into the system. Increased shoreline development and shoreline hardening also increased sediment input. Combined, these multiple stressors reduced the ability of oysters to recover to their former densities and extent.

The creation of oyster sanctuaries in EB began in 2000 to protect broodstock, enhance natural recruitment, provide ecological services, and provide areas to test experimental restoration approaches (MDNR 2019, 2024). The region’s larger sanctuary network was established in 2010 as part of a management action to expand Maryland’s existing sanctuary network (MDNR 2019). Restoration plantings have been ongoing in EB sanctuaries and harvest areas to enhance habitat and oyster broodstock through MDNR programs and using locally sourced funds (Figure 3). New funding for EB sanctuary and harvest restoration was allocated during the 2022 state legislative session to re-invest in oyster habitat enhancement within the EB region.

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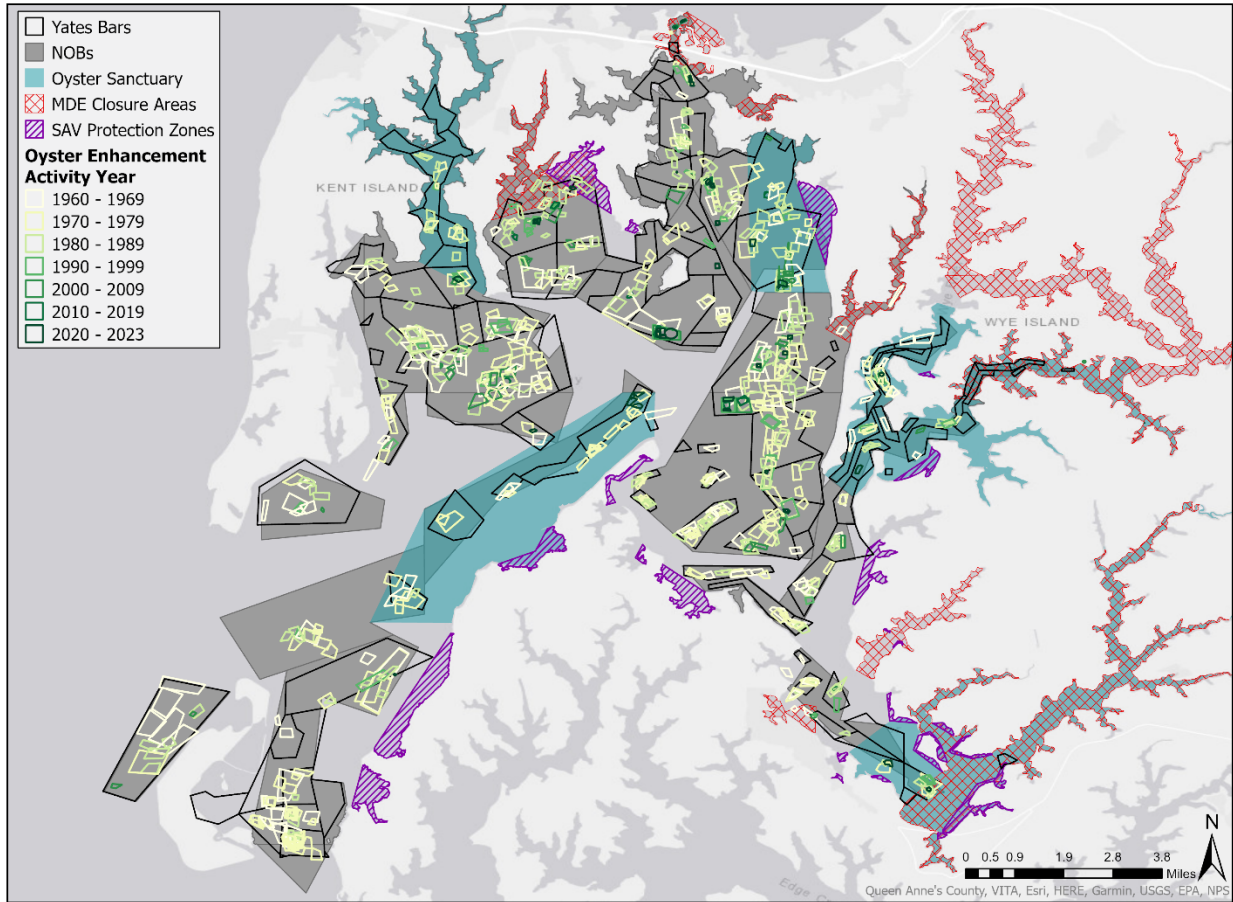


Figure 1. Eastern Bay historic oyster habitat, current management zones, and history of restoration and replenishment. Data from MDNR. Areas shown are for informational use only. For legal boundaries, please consult Maryland statute and the Annotated Code of Maryland (COMAR 08.02).

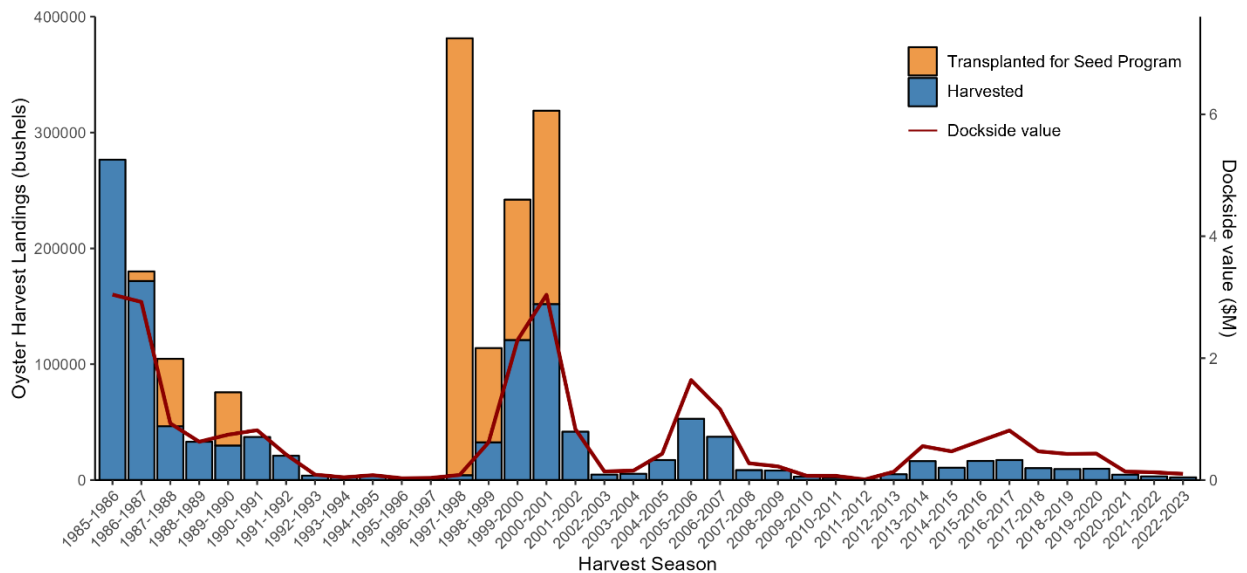


Figure 2. Eastern Bay oyster harvest landings and corresponding dockside value. Spat and sub-legal oysters (<75 mm shell height) removed from Eastern Bay through the seed program were transplanted to grow out areas. Data from MDNR.

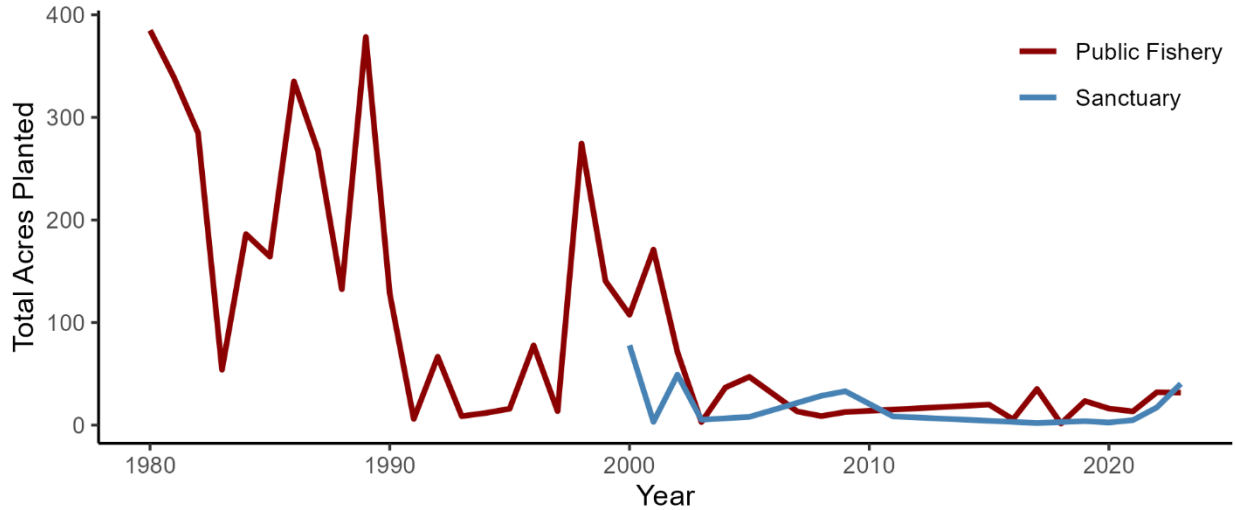


Figure 3. Shell, spat-on-shell, and substrate plantings conducted in Eastern Bay from 1980-2023. Data from MDNR and ORP.

1.2 Current Management Framework and Challenges

The Eastern Bay Oyster Coalition evolved as a result of previous stakeholder processes that were coordinated by Maryland DNR, the Maryland Oyster Advisory Commission, and the University of Maryland Center for Environmental Sciences (North et al. 2024). These initiatives were convened to engage oyster stakeholders to reach a consensus on management needs and actions for oyster restoration or production in Maryland’s Chesapeake Bay tributaries.

The current focus on EB began in 2019 when MDNR developed the Eastern Bay Project, an integrated and inclusive approach to restore oysters to the region and to define a new working relationship that equally included representation from oyster aquaculture, sanctuaries, and the fishery. Certain preceding efforts in other regions generated tensions among stakeholders and the Eastern Bay Project aimed to define a new approach to oyster restoration and management. MDNR convened a small group of local oyster stakeholders to discuss and develop management goals, plan enhancement activities, and develop metrics for tracking progress. The Oyster Advisory Commission (OAC) was briefed on MDNR’s integrated approach in EB and endorsed the project. In 2022, the state legislature provided funding to support restoration and replenishment activities outlined in the project – plantings began in 2023 and are still underway. The Eastern Bay Coalition’s work expands upon the collaborative approach and enhancement actions initiated through the Eastern Bay Project.

Regarding the Oyster Advisory Commission’s (OAC) role in EB restoration, this occurred during the OAC’s extensive 2-year consensus process where, working with the University of Maryland

Center for Environmental Science, over 100 management scenarios for oysters in the Chesapeake Bay were modeled and evaluated. The only management consensus outcome formalized by the OAC was for continuing the Eastern Bay Project – recommending that the state collectively plan and undertake a combination of replenishment, restoration, and aquaculture activities in EB over 25 years, with an equal amount of funding (\$1M annually) allocated for planting spat in sanctuaries and spat and shell on fishery reefs in addition to current restoration activities (MDNR et al. 2021). The OAC also identified several business practice recommendations that built on MDNR’s approach – including improving organization and cooperation among groups and integrating projects across oyster production sectors (fishery, aquaculture, restoration). The state legislature endorsed the recommendations, which allocated funding towards EB through Senate Bill 830/House Bill 1228 during the 2022 legislative session.

While these efforts collectively improved the approach and secured funding to support EB oyster production, challenges related to overlapping resources, conflicting user interest, and outdated spatial data on oyster habitat necessitated further planning and agreement on how to use these funds most effectively, and how to integrate the new funding into existing activities. The Oyster Recovery Partnership solicited funding from the National Fish and Wildlife Foundation’s Chesapeake Small Watershed Grants program to establish the Eastern Bay Oyster Coalition Workgroup (OCW) to assist and enhance the previous efforts led by MDNR and the OAC and address these challenges.

The overarching goal in convening the OCW was to develop a strategic plan for optimizing oyster production in EB over the long term using a process that supports and creates synergy among all EB oyster stakeholders. This was accomplished through (1) a stakeholder-driven, consensus-based process, (2) an updated habitat survey of EB that was used to help identify areas suitable for future oyster production, (3) improving stakeholder relationships in the OCW setting, and (4) improving public education of oyster production in EB.

1.3 Purpose of the Sustainable Oyster Restoration and Management Plan

This Plan provides a framework for the long-term sustainable restoration and management of the oyster resource and ecosystem in Eastern Bay, Maryland. The Plan outlines a set of recommendations intended to be implemented by state and federal agencies, local government, and NGOs working in this region. The Plan also provides guidance for tracking progress to meet the goals and objectives set by the OCW.

The Plan will be submitted to MDNR for consideration for implementation following final approval by the OCW. Changes to state regulation may be required to fully and effectively implement some recommendations. The OCW encourages MDNR to regularly update the stakeholders and continue to incorporate stakeholder input throughout the implementation process.

2.0 Eastern Bay Oyster Coalition Workgroup

The Oyster Coalition Workgroup (OCW) was convened to develop consensus recommendations for oyster policies, management, and restoration/replenishment activities that improve oyster production and the ecological and ecosystem services from oyster habitat restoration and meet the needs of industry, citizens, NGOs, and government stakeholders in EB and its tributaries. This includes (1) defining annual and long-term goals for each individual stakeholder group and collectively across all groups, (2) identifying resources required to meet these goals, and (3) defining performance metrics to track progress.

The Workgroup process was informed by the best available science and shared stakeholder values, and the aim was to establish the economically and ecologically sustainable long-term maintenance and growth of oyster restoration and production in EB and its tributaries.

The OCW consisted of 17 members representing 11 interest groups, all of which operate businesses, manage resources, work with the public, or conduct other work in EB (Appendix C). Many OCW members represent multiple perspectives. All members have a shared interest in the future of the Eastern Bay oyster resource and its long-term health.

Candidate OCW members were selected from ORP and MDNR's local network of partners operating in EB and screened through an informal discussion conducted by the project team, where appropriate. OCW members were selected to ensure that they represented the collective interest of their respective organizations and/or constituents.

Oyster Coalition Workgroup Member Perspectives and Affiliations (#)

- Oyster fishery (11)
- Seafood processors (3)
- Aquaculture (6)
- Non-profit/NGO environmental organizations (5)
- Oyster restoration (10)
- Recreational fishing interests (4)
- Biologist/scientist (3)
- Fishery managers (2)
- Federal, state, or local government (4)
- Citizen interested in Chesapeake Bay health (4)
- Other (1 – clam fishery)

The OCW members attended six Coalition meetings between February and December 2024, as well as a community open house in December 2024 (Appendix D). OCW members were also asked to complete a questionnaire during the fall of 2023, prior to the first OCW meeting (Appendix F). The results of the questionnaire were compiled and synthesized to build a foundation for discussion at the first OCW meeting in February. During the OCW meetings, members participated in the development, evaluation, and ranking of recommendations outlined in the following sections. Some OCW members provided additional context, clarity, input, and vision during follow-up discussions when requested by the Project Team. The OCW members also participated in discussions related to the implementation of the Plan, including providing input on the design, interpretation of results, and action items resulting from the supporting EB habitat survey, which should be leveraged as a starting point for MDNR's implementation of the Plan (Section 6).

All OCW meeting materials are posted on the project webpage (<https://www.oysterrecovery.org/our-work/oyster-restoration/easternbaycoalition>).

2.1 Consensus-Building Process

The OCW developed the framework, strategies, and actions described in this Plan using a consensus-building process designed and implemented by Facilitated Solutions, LLC (Figure 4, Appendix G). Consensus is a participatory process whereby the members strive for an agreement that all members can accept, support, or agree not to oppose. OCW members evaluated all components of this Plan using the best available science, data, stakeholder knowledge, and decision-support tools for oyster production in EB. All components in the Plan were ranked and refined to reach consensus through three iterations using the options evaluation process and worksheets (Appendix G, H). Two additional opportunities for discussion and refinements were provided with the Workgroup's approval of the Draft Plan and adoption of the Final Plan. In cases where the OCW found that 100% acceptance or support was not achievable, final consensus recommendations required at least 75% favorable vote to be included in this package of recommendations.

The OCW developed its recommendations using consensus-building techniques with the assistance of the facilitator. Techniques such as brainstorming, ranking, and prioritizing approaches were used. OCW members, the project leadership team, and the facilitator were the only participants seated at the table, and primarily only OCW members contributed to discussions. Only OCW members voted on proposals and recommendations. The facilitator or project leadership team provided clarification when needed.

CONSENSUS SOLUTIONS OPTIONS EVALUATION PROCESS FLOWCHART

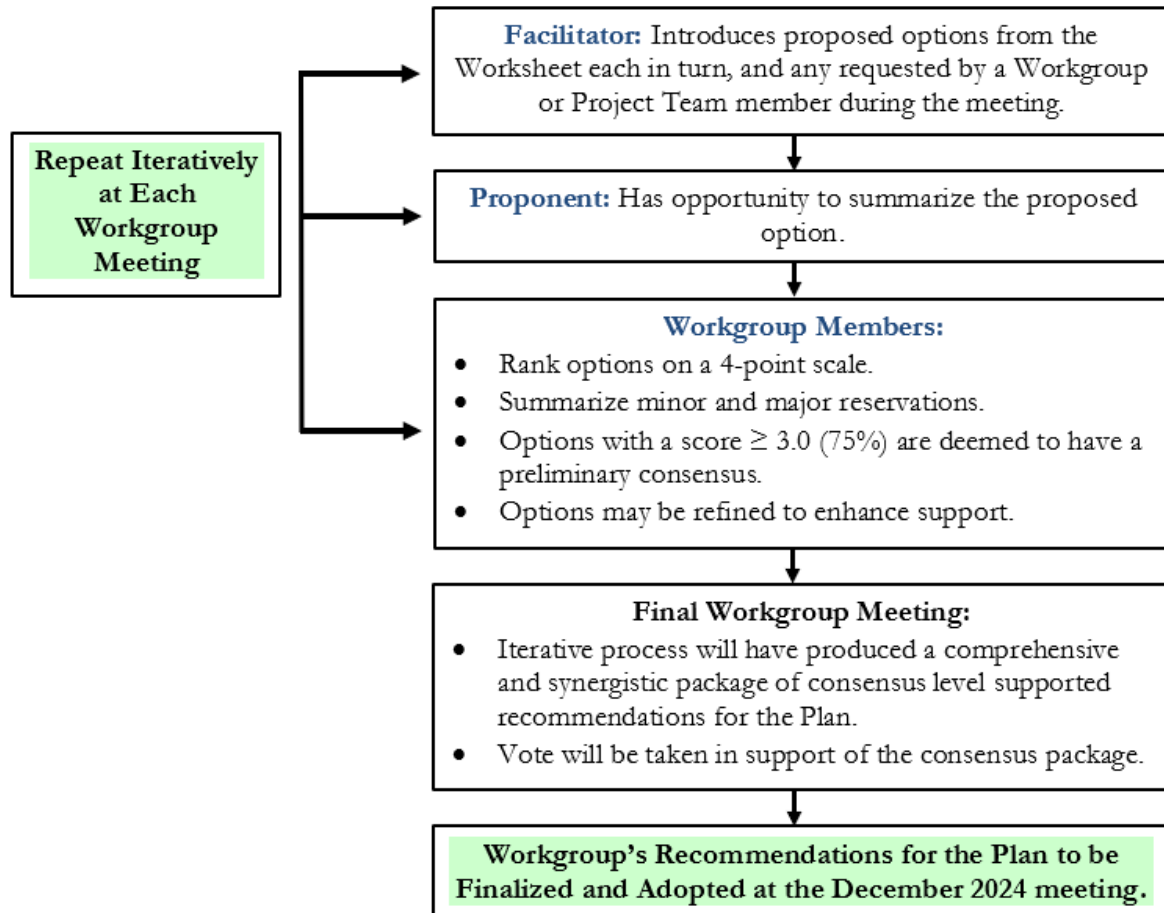


Figure 4. OCW consensus process, developed by and adapted from Facilitated Solutions, LLC.

3.0 Goal Framework and Structure of the Plan

The OCW agreed that to optimize oyster production in EB over the long term, oysters must be (1) enhanced, (2) managed sustainably, and (3) there must be support for these two components from stakeholders and the public. These three themes form the foundation of the OCW’s goal framework and structure of the Plan, which outlines the components required to achieve the overarching vision for EB.

- Goal A:** Enhance the oyster resource in Eastern Bay.
- Goal B:** Manage the oyster fishery and aquaculture to increase and sustain harvest and a thriving economy.
- Goal C:** An engaged stakeholder community that supports sustainable oyster restoration and management.

In the following sections, each goal has an accompanying vision theme, defined outcome, and set of objectives. To achieve these objectives, each goal has a series of strategies with associated actions to implement the strategies. Performance measures to track progress toward the objectives for each goal are listed in Section 5.

Success will require implementing strategies and actions towards objectives under all three goals within the framework collectively – success cannot be achieved by only implementing recommendations from one or a subset of the three goals. The goals were developed to work cohesively, not in isolation.

The framework was adopted unanimously at the first OCW meeting on February 2, 2024 and was revised at the third meeting on May 30, 2024 to ensure that objectives were measurable and concise.

4.0 Recommendations for Sustainable Oyster Restoration and Management

The OCW generated consensus recommendations through a total of three iterations of ranking and revisions. The initial recommendations were derived from the initial list of options identified by OCW members at the first meeting in February. The OCW recommendations address key issues related to the three goal areas outlined in Section 3. The OCW recommends that 13 strategies and 42 actions be considered and implemented by MDNR or other appropriate agencies to achieve these goals.

Summary of OCW Recommendations

- Improved communication
- Continued need for stakeholder involvement
- Proper siting of enhancement activities
- Substrate needs
- Aquaculture expansion
- Monitoring
- Permitting and regulatory gaps/needs
- Funding
- Adaptive management and accepting new management practices
- Increased enforcement

Several recommendations were identified for EB that are also relevant to other tributaries and/or the entire state. These include management, regulatory, and permitting recommendations, as well as recommendations intended to increase participation and sustain the livelihood of the oyster industry.

Another major theme is the need to improve communication throughout the oyster production process. Several discussions centered around the need to increase transparency in the regulatory and permitting processes managed by the state, including for oyster aquaculture. The OCW also recommends improving inter-department and inter-agency communication to streamline these processes. Improved communication with the public and local officials will be key for securing political and financial support for EB oyster activities. In addition, several recommendations underscore the continued need for engaging stakeholders in the entire restoration process –

including planning, monitoring, and adaptive management – well beyond the timeframe of the OCW itself.

4.1 Goal A. Enhance the Oyster Resource in Eastern Bay

Vision Theme: A healthy, self-sustained Eastern Bay oyster population.

Outcome: By 2034 oyster resources that include natural habitat, public oyster grounds, and privately operated aquaculture leases will be thriving and contributing toward a sustainable population and improvements to the Eastern Bay System.

Objectives

1. To achieve a healthy and sustainable oyster population in Eastern Bay.
2. To enhance ecosystem services through the restoration of oysters in Eastern Bay.
3. To expand oyster aquaculture in Eastern Bay.

Strategies and Actions

The OCW recommends that six strategies and 18 actions be considered and implemented to enhance the oyster resource in EB (Table 1). These strategies and actions address the following challenges or themes to achieve the objectives for Goal A:

- Proper siting for enhancement – including the importance of involving stakeholders in the planning and siting process
- Substrate needs – including retaining and reclaiming shell, using alternate substrates, and other sources of shell
- Aquaculture expansion – removing regulatory and stakeholder roadblocks
- Monitoring to understand progress
- Permitting and regulatory gaps/needs
- Securing funding to conduct enhancement activities

Table 1. Goal A strategies and actions. The score is listed in parentheses for options not receiving 100% consensus.

Strategy	Actions
1. Improve oyster habitat and broodstock in Eastern Bay by relying on scientific and industry expertise and integrating stakeholder input into a restoration plan that covers sanctuaries, harvest areas, and aquaculture.	1A. Conduct regular habitat mapping to understand the extent and condition of existing oyster habitat and identify priority areas that need enhancement or could be re-delineated for other activities. Funding should not come from existing restoration funds. 1B. Integrate the use of alternate substrates into Eastern Bay oyster restoration by relying on existing data on the suitability, availability, and effectiveness of different types of substrates that have been approved by DNR and seek any changes to law needed to allow and/or provide for funding.

	<p>1C. Identify suitable locations for deploying alternate substrates to improve existing habitat, reduce sedimentation, and improve spat recruitment.</p> <p>1D. Evaluate restoration practices that will improve oyster broodstock, including moving adult oysters from one location in Eastern Bay to another to improve survival and reproduction.</p> <p>1E. Evaluate opportunities to involve industry in restoration siting and monitoring and outline how contributions will be integrated.</p>
<p>2. Evaluate existing practices to increase the availability of oyster shell for habitat enhancement.</p>	<p>2A. Evaluate and implement the existing shell reclamation practices of bar cleaning and dredging from existing fishery areas in Eastern Bay to move shells from unproductive to productive locations.</p> <p>2B. Evaluate the feasibility and sustainability of using shells produced through aquaculture as a potential new source of shell for restoration.</p> <p>2C. Evaluate existing practices and implement programs to increase the amount of shell retained in Maryland from oyster harvest and aquaculture in Eastern Bay.</p> <p>2D. Evaluate and acquire other sources of shell within the state of Maryland and from other locations.</p>
<p>3. Identify opportunities for aquaculture expansion in Eastern Bay that complement existing restoration and fishery practices and consider logistical limitations and habitat requirements, with a focus on areas where shells have been recently removed for bottom enhancement.</p>	<p>3A. Connect oyster harvesters, aquaculture leaseholders, and representatives from other fisheries that depend on a healthy oyster habitat to improve cohesion among ongoing and emerging activities in Eastern Bay.</p> <p>3B. Collectively generate a list of areas acceptable to fishery and aquaculture stakeholders for new aquaculture leases to avoid future conflict.</p>
<p>4. Develop a long-term monitoring plan to demonstrate whether strategies and actions are working and to allow for adaptive management of the Eastern Bay oyster resource.</p>	<p>[No specific actions identified]</p>

<p>5. Identify specific roadblocks in the regulatory process or existing regulations at the state, county, and local levels that create challenges for oyster restoration/production. Propose options to overcome these or improve transparency in the process.</p>	<p>5A. Recommend that DNR improve transparency in shell import and alternate substrate approval permitting process for restoration practices.</p> <p>5B. Recommend that DNR evaluate and enhance interagency coordination groups to improve coordination and communication between agencies and stakeholders.</p> <p>5C. DNR should review and update regulations that restrict the expansion of aquaculture on Yates Bars in sanctuaries and near SAV beds. At the very minimum, improve transparency in the existing aquaculture permitting process and regulations. <i>(97.5% consensus)</i></p> <p>5D. DNR should review and update regulations that restrict the expansion of aquaculture on Yates Bars in public fishery areas. At the very minimum, improve transparency in the existing aquaculture permitting process and regulations.</p>
<p>6. Evaluate the cost of existing and proposed enhancement practices that are recommended by the OCW and identify funding for short- and long-term efforts. Include any available resources/references as an Appendix to the OCW’s Report (Appendix I).</p>	<p>6A. Allocate money from recreational oyster license purchases to replenish public fishery oyster bars.</p> <p>6B. The OCW supports and recommends finalizing the development of a viable implementation framework or plan for nutrient credits which can be used to support oyster enhancement activities that remain within the Eastern Bay System.</p> <p>6C. Prioritize providing or increasing funding for restoration in sanctuaries that have not yet, or not recently, received restoration.</p>

4.2 Goal B. Manage the Oyster Fishery and Aquaculture to Increase and Sustain Harvest and a Thriving Economy

Vision Theme: A productive oyster population that sustains a vibrant commercial oyster fishery, a thriving aquaculture industry, and recreational and tourism related activities.

Outcome: By 2034 both private and public oyster resources will sustain a vibrant commercial oyster fishery, a thriving aquaculture industry, and recreational and tourism related activities in Eastern Bay.

Objectives

1. To achieve an increased level of sustainable oyster harvest from Eastern Bay.
2. To improve recreational and other commercial fisheries and tourism activities in Eastern Bay.

Strategies and Actions

The OCW recommends that four strategies supported by 12 actions be considered and implemented to sustainably manage the oyster fishery and aquaculture in EB (Table 2). These strategies and actions address the following challenges or themes to achieve the objectives for Goal B:

- Adaptive management and implementing new management and harvest practices
- Increased enforcement
- Facilitating industry operations

Table 2. Goal B strategies and actions. The score is listed in parentheses for options not receiving 100% consensus.

Strategy	Actions
<p>1. Evaluate and enhance the current strategy for sustainable management of Eastern Bay oyster resources.</p>	<p>1A. DNR should define and monitor progress towards targets and thresholds for sustainable harvest levels in Eastern Bay</p> <p>1B. DNR should implement, or enhance as needed, a process to collaborate with stakeholders to develop consensus recommendations for the management of oyster harvest bars based on these thresholds, and should implement appropriate changes in a timely manner.</p> <p>1C. In the event of adverse impacts from climate change and/or environmental conditions, the appropriate state agencies should adaptively make changes to oyster harvesting regulations as required to maintain public health (e.g., adjustments to season, closures, etc.).</p> <p>1D. Evaluate the feasibility of establishing a pilot project to test a rotational harvest framework within specified sanctuaries by allowing watermen to use their funds to restore and harvest bars in specified sanctuaries where no restoration has been done. Based on the results, consider recategorizing areas in sanctuaries that have not received restoration to serve as the locations selected for potential rotational harvest areas. (85% consensus)</p>

	<p>1E. Consider and establish a rotational harvest framework in non-productive bottom in fishery areas, incorporating practices such as rotational investment and management of entire oyster bars.</p> <p>1F. Evaluate existing harvest gear regulations and locations in Eastern Bay and consider changes that will promote sustainable oyster harvest (e.g., expanding patent tong or dredge areas) along with a proportional increase in enforcement to ensure compliance.</p> <p>1G. Evaluate management practices that are implemented successfully in other areas and consider whether they would be appropriate to apply in Eastern Bay.</p>
<p>2. DNR should enhance enforcement and reporting mechanisms that ensure accurate information on oyster harvesting in Eastern Bay.</p>	<p>2A. Engage with NRP and industry stakeholders to discuss and implement effective solutions to quantify and limit poaching and illegal harvest, with a focus on available technology (e.g., GPS, drones).</p> <p>2B. Develop methods to account for illegal and unreported harvest when assessing the effectiveness of restoration and replenishment.</p> <p>2C. In collaboration with seafood processors, evaluate enhancements to and/or eliminate problems with existing harvest reporting standards.</p>
<p>3. DNR should support leaseholders to develop and implement experimental aquaculture harvest practices and processes.</p>	<p>[No specific actions identified]</p>
<p>4. Forward any OCW recommendations that have state-wide oyster management impacts to the appropriate advisory groups (e.g., OAC, TFAC) for evaluation.</p>	<p>4A. The OCW recommends that OAC and/or TFAC, in collaboration with stakeholder interests, evaluate and establish a comprehensive limited entry program for full-time seafood industry workers, ensuring accessibility for full-time seafood industry workers and their family members.</p> <p>4B. The OCW recommends the establishment of a state law requiring that all local jurisdictions establish right-to-work laws to protect seafood industry workers and facilitate industry operations. <i>(OCW members representing state agencies abstained)</i></p>

4.3 Goal C. An Engaged Stakeholder Community That Supports Sustainable Oyster Restoration and Management

Vision Theme: Stakeholders in Eastern Bay are committed to working together to advocate for a sustainably managed oyster habitat and a healthy Eastern Bay ecosystem.

Outcome: By 2034 stakeholders and the public are informed of the importance of sustaining the health of oysters in Eastern Bay, and are engaged and working actively together along with elected and appointed leaders and managers to invest in and implement the Plan.

Objectives

1. To achieve a broader awareness and understanding of the natural and cultural value of healthy oyster habitat in Eastern Bay.
2. To secure funds for oyster enhancement in Eastern Bay over the long term.

Strategies and Actions

The OCW recommends that three strategies supported by 12 actions be considered and implemented to engage the broader stakeholder community in EB (Table 3). These strategies and actions address the following challenges or themes to achieve the objectives for Goal C:

- Education strategies to improve public awareness and perception
- Securing future of oyster industry

Table 3. Goal C strategies and actions. The score is listed in parentheses for options not receiving 100% consensus.

Strategy	Actions
1. Establish a coordinated public relations and marketing effort among stakeholders (including Dept of Ag./MD’s Best Seafood) to enhance public perception and support for commercial fisheries and aquaculture occurring in Eastern Bay.	1A. Identify strategies to monitor and respond to the spread of misinformation about Chesapeake Bay/Eastern Bay oysters. 1B. Market ecosystem services provided by oysters. 1C. Develop a process to communicate monitoring results to secure future funding for oyster production in Eastern Bay.
2. Establish educational opportunities to improve public awareness of Eastern Bay oyster culture.	2A. Create opportunities to engage with local waterman and aquaculture leaseholders to learn about the investment and process for harvesting oysters, with the goal to ensure that industry maintains access to oyster resources and commercial infrastructure. 2B. Educate elected officials on challenges and opportunities for the expansion of oyster production in Eastern Bay, including zoning restrictions, right-to-work laws, access to working waterfronts, and

	<p>opportunities with the oyster BMP. <i>(OCW members representing state agencies abstained)</i></p> <p>2C. Maintain community restoration programs such as Marylander’s Grow Oysters that are primarily designed to be educational for the public.</p> <p>2D. Improve the market for local oysters by identifying opportunities to engage stakeholders in the preparation and eating of locally caught oysters.</p> <p>2E. Establish educational programs that are hosted locally (e.g., at CBEC) that focus on watermen, aquaculture, and the history of commercial seafood activity in Eastern Bay.</p> <p>2F. Increase recreational oyster dive charters/hand tong charters to educate the public about oyster reef ecology and the commercial oyster industry.</p> <p>2G. Identify technologies that can be used to educate a broader audience about Eastern Bay oyster habitat and culture.</p>
<p>3. Evaluate strategies and incentives to retain people in the commercial oyster industry and remove barriers to young entrants.</p>	<p>3A. Develop an apprentice program to train people entering the oyster fishery or aquaculture, including education on the required investment, training using various gear types, connecting them to the community, etc.</p> <p>3B. Establish education programs that introduce young people to aspects of the oyster fishery and inspire them to consider a career on the water.</p>

5.0 Performance Metrics

A series of performance metrics were proposed by the project leadership team in collaboration with UMCES and MDNR and were evaluated, revised, and ranked by the OCW. The recommended metrics are intended to regularly quantify outcomes and results of the implemented Plan. This is essential to track progress towards the OCW goals and objectives and to ensure that OCW recommendations are implemented successfully.

The exact targets and thresholds for each metric will need to be defined by MDNR or the appropriate agency (see *Goal A, Strategy 1, Action 1A* and *Goal B, Strategy 1, Action 1.A*), as

well as the timeframe for evaluation. For example, for Goal A, Objective 1, the definition of a “healthy” and “sustainable” oyster population in EB will need to be specified. The OCW proposed that MDNR use historic oyster densities as a benchmark when evaluating what would be reasonable given the current performance of the system. The targets/thresholds and timeline for evaluation should be defined in collaboration with stakeholders. Moreover, progress should be tracked with sufficient frequency to establish a trend from the baseline, or status quo. At a minimum, MDNR should evaluate performance at a short- and long-term interval to determine the immediate impact of actions and a longer-term trend – for example, 2 and 10 years after an action has been implemented. The OCW cautions MDNR not to be too restrictive and declare success too early in the process – the recommendations provided here are intended to be implemented over the long term.

The OCW recognizes that data types may not currently exist for some of the proposed performance metrics, or there may not be existing capacity to collect some of these data. However, the OCW requests that MDNR or the most appropriate agency critically assess opportunities and options to develop methods and capacity to track all proposed metrics. Missing information may unintentionally overestimate success and jeopardize progress.

Lastly, the OCW recognizes that some metrics may not solely be driven by increases in the oyster population. Like the goals outlined in this Plan, the performance metrics are intended to be assessed collectively and to understand the performance of the EB system as a whole.

Goal A. Enhance the Oyster Resource in Eastern Bay

Objectives	Recommended Metrics
A1. To achieve a healthy and sustainable oyster population in Eastern Bay.	<ul style="list-style-type: none"> • Oyster density (m2) – adults, spat, sub-legal • Oyster biomass (m2) • Annual recruitment rate • Annual volume of cultch (bushels)
A2. To enhance ecosystem services through the restoration of oysters in Eastern Bay.	<ul style="list-style-type: none"> • Area (acres) restored annually • Pounds of nitrogen & phosphorus removed annually from reefs • Water clarity – percent increase in light reaching 2m depth • Area (acres) of SAV in Eastern Bay, assessed annually
A3. To expand oyster aquaculture in Eastern Bay.	<ul style="list-style-type: none"> • Number of aquaculture leases operating in Eastern Bay annually • Acres of active oyster leases in Eastern Bay • Number and volume (bushels) of oysters planted/deployed in leases annually • Annual harvest from leases (bushels)

Goal B. Manage the Oyster Fishery and Aquaculture to Increase and Sustain Harvest and a Thriving Economy

Objectives	Recommended Metrics
<p>B1. To achieve an increased level of sustainable oyster harvest from Eastern Bay.</p>	<ul style="list-style-type: none"> • Annual oyster harvest from Eastern Bay through wild harvest and aquaculture (bushels) • Harvest/fishing rate/CPUE • Number of commercial oyster licenses in Queen Anne and Talbot Counties • Number of oyster trips reported in Eastern Bay • Proportion of dealer buy tickets purchasing seafood from Eastern Bay, annually
<p>B2. To improve recreational and other commercial fisheries and tourism activities in Eastern Bay.</p>	<ul style="list-style-type: none"> • Annual recreational oyster harvest from Eastern Bay • Number of recreational oyster licenses in Queen Anne and Talbot Counties • Number charter trips reported in Eastern Bay annually • Number of harvest trips and harvest (bushels/lbs.) reported for other fisheries in Eastern Bay (clam, finfish, blue crab) annually • Number recreational boating trips in Eastern Bay annually (e.g., # Queen Anne & Talbot County landing permits, annual boater surveys, recreational fishing surveys or CCA data, economic benefit analysis of increased eco-tourism and recreational activities, and other new data collection approaches) • Water clarity – percent increase in light reaching 2m depth • Pounds of nitrogen & phosphorus removed annually through harvest • Pounds of nitrogen & phosphorus removed annually through aquaculture

Goal C. An Engaged Stakeholder Community That Supports Sustainable Oyster Restoration and Management

Objectives	Recommended Metrics
C1. To achieve a broader awareness and understanding of the natural and cultural value of healthy oyster habitat in Eastern Bay.	<ul style="list-style-type: none"> • Number people engaged – K-12, adults • Number of Eastern Bay oyster educational materials developed (e.g., signage at local environmental centers, lesson plans, etc.) • Number of businesses participating in outreach • Number of restaurants in Queen Anne’s and Talbot Counties serving local oysters
C2. To secure funds for oyster enhancement in Eastern Bay over the long term.	<ul style="list-style-type: none"> • Funds allocated by Queen Anne’s and Talbot Counties for oyster restoration, annually • Funds allocated by the state for oyster restoration in Eastern Bay, annually • Community funds raised for oyster restoration, annually (e.g., through QA & Talbot Co crab pot Christmas trees, ORP & ShoreRivers Build-A-Reef partnership, etc.)

6.0 Additional Information and Considerations for Implementing the Plan

As part of the OCW process, ORP conducted a stakeholder-driven habitat survey to assess existing oyster habitat quality in EB (Appendix J). The OCW used the results of the habitat survey to: (1) identify potential locations for evaluation for future investment in oyster restoration and enhancement, (2) identify potentially marginal habitat that could be evaluated for other uses, and (3) identify potential locations that could support other activities outlined in the OCW recommendations. The discussions and resulting potential use areas focused primarily on habitat enhancement (planting shell, spat-on-shell, alternate substrate), shell reclamation, and aquaculture activities within existing NOBs and adjacent areas (Figure 5). Areas were also identified that currently support clam harvest and that may require further evaluation by the OCW, MDNR, and additional stakeholders to minimize conflicts with existing activities occurring in EB (Figure 5).

The outcome of the OCW’s iterative habitat survey and mapping exercise is a draft spatial plan, submitted to MDNR as part of this package of recommendations, which is ready for immediate evaluation and should be used to support the implementation of the OCW’s recommendations (Figure 5). Some fishery spat-on-shell plantings, which were authorized by MDNR, already occurred in certain areas prioritized by the OCW during the 2024 restoration season. This action

underscores the value and relevance of the OCW process and Plan for effectively implementing oyster enhancement activities in EB.

The habitat survey revealed that ~2,700 acres within existing NOBs in EB and its tributaries are likely unproductive oyster habitat (<25% habitat score, Figure 5, Appendix J). The OCW endorses evaluating these areas for other uses. The OCW also supports focusing investments in productive areas with a habitat score > 50% over the short term, and those with a habitat score > 25% over the long term or if/when larger funding and sources and more resources (e.g., substrate, shell) become available (Figure 5, Appendix J).

The OCW recognizes that all proposed areas and activities require further evaluation by MDNR and the appropriate entities, and that current regulation may limit the implementation of these activities. Potential areas identified by the OCW for expanding aquaculture will require MDNR to evaluate and modify Yates Bars, Natural Oyster Bars, and PSFA regulatory boundaries. In addition, these areas should be evaluated with a broader group of stakeholders, including additional representation from the crab, clam, and other commercial industries, to ensure conflicts with existing habitat uses are minimized. Changes to regulations and permitting processes will be required to implement some of the OCW recommendations, and MDNR should embrace and prioritize this to achieve the most effective outcomes for Eastern Bay with stakeholder support.

7.0 References

Maryland Department of Natural Resources (MDNR) (2024) Eastern Bay Regional Restoration.

<https://dnr.maryland.gov/fisheries/Pages/oysters/eastern-bay.aspx>

Maryland Department of Natural Resources (MDNR) Fishing and Boating Services and the Oyster Advisory Commission in consultation with The University of Maryland Center for Environmental Science (2021) Final Report: Oyster Advisory Commission Consensus Recommendations on Oyster Management. A report to the Governor and the Maryland General Assembly, as required by Natural Resources Article §4-215 and §4-204.

https://dnr.maryland.gov/fisheries/Documents/Final_Report_OAC_SB0808_HB0911.pdf

Maryland Department of Natural Resources (MDNR) Fishing and Boating Services (2019) Final Draft Maryland Oyster Management Plan.

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North EW, Wilberg MJ, Blair J, Wainger L, Cornwell JC, Jones R, Hayes C, Gawde R, Hood RR, Goelz T, Hartley T, Mace MM III, Diriker M, Fowler N and Polkinghorn B (2024) Two applications of the Consensus Solutions process with collaborative modeling for management of a contentious oyster fishery. *Front. Mar. Sci.* 11:1423534. doi: 10.3389/fmars.2024.1423534

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Queen Anne's County (2022) Queen Anne's County Comprehensive Plan.

<https://www.qac.org/1575/2022-Comprehensive-Plan>

Talbot County (2016) Talbot County Comprehensive Plan. <https://talbotcountymd.gov/About-Us/departments/planning-and-zoning/planning/comprehensive-plan>

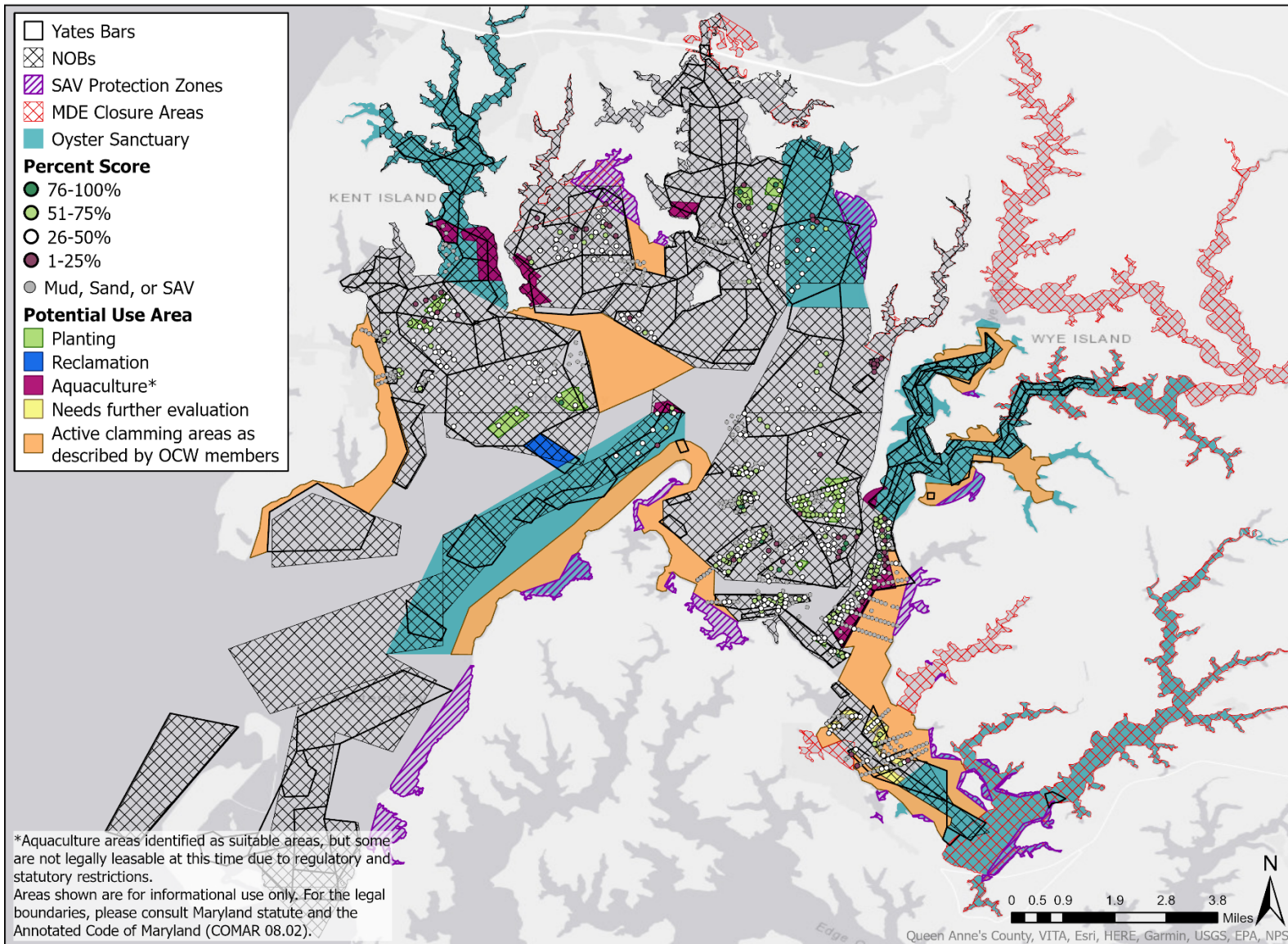


Figure 5. Draft Eastern Bay spatial plan outlining current oyster boundaries, oyster habitat quality results from ORP surveys (Appendix J), and proposed locations for implementing OCW recommendations.

8.0 Appendices

Appendix A. Key to Common Abbreviations

CBEC – Chesapeake Bay Environmental Center
CBF – Chesapeake Bay Foundation
EB – Eastern Bay, Maryland
EPA – US Environmental Protection Agency
HPL – UMCES Horn Point Laboratory
MDE – Maryland Department of the Environment
MDNR – Maryland Department of Natural Resources
NGO – Non-governmental organization
NOAA – National Oceanic and Atmospheric Administration
NOB – Natural Oyster Bar
NRCS – Natural Resource Conservation Service
OAC – Oyster Advisory Commission
OCW – Eastern Bay Oyster Coalition Workgroup
ORP – Oyster Recovery Partnership
Plan – Sustainable Oyster Restoration and Management Plan for Eastern Bay, Maryland
PSFA – Public Shellfish Fishery Area
QAC – Queen Anne’s County
SAV – Submerged aquatic vegetation
SR – ShoreRivers
TC – Talbot County
TNC – The Nature Conservancy
UMD – University of Maryland
UMCES – University of Maryland Center for Environmental Science
USACE – United States Army Corps of Engineers
YB – Yates Bar

Appendix B. Glossary of Oyster Coalition Workgroup Project Terms and Definitions

Action – The specific steps and activities taken to implement a strategy.

Adaptive management – A process that includes making decisions, evaluating the results, comparing the results to predetermined performance measures, and modifying future decisions to incorporate lessons learned.

Eastern Bay system – Eastern Bay is a tributary of the Chesapeake Bay located between Queen Anne and Talbot Counties on Maryland’s Eastern Shore. Its main tributaries include the Miles and Wye Rivers. Eastern Bay is connected to the Chester River to the north via Kent Narrows, a working waterfront that supports a thriving commercial and recreational fishing community and includes seafood processing facilities, restaurants, and tourism. The estuary is a mesohaline system with expansive oyster, SAV, and sandy bottom habitats. The project will focus on existing oyster habitats and those areas suitable for oyster aquaculture and oyster restoration activities in Eastern Bay.

Ecosystem health – A “healthy” ecosystem is one that conserves diversity, supports fully functional ecological processes, and sustains a range of ecological and ecosystem services.

Ecosystem services – The contributions of ecosystems to human wellbeing. These include provisioning services (food, raw materials, fresh water, medicinal resources), regulating services (climate, air and water quality, moderation of extreme events, and erosion prevention), habitat services (habitat for species that support ecosystem services), and cultural services (recreation for mental & and physical health; tourism; aesthetic appreciation spiritual experience).

Goal – A statement of the project’s purpose to move towards the vision expressed in broad language.

Guiding principles – The Oyster Coalition Workgroup’s Guiding Principles reflect the broad values and philosophy that guides the operation of the Workgroup and the behavior of its members throughout its process.

Natural Oyster Bar – Any submerged oyster bar, reef, rock, or area represented as an oyster bar on the charts of the Oyster Survey of 1906 to 1912, and its amendments, or any area declared by any circuit court to be a natural oyster bar, or any area on which the Department plants oysters or shells. DNR maintains NOB charts for management and enforcement of oyster fishery regulations that show the current legal NOBs, first derived in 1983 as an update to the prior Yates Bar charts. Natural Oyster Bar charts designate the bars by number, such as NOB 6-4 (MDNR Shellfish Division).

Objective – How, in concrete terms, to accomplish the goal to achieve the vision within a specific timeframe and with available resources. (E.g., by 2033, the State of Maryland will have approved a stakeholder developed Ecosystem-Based Adaptive Management and Restoration Plan for the Eastern Bay System.”).

Outcome – The expected results at the end of the project period. What is hoped to be achieved when the goal is accomplished. (*E.g., an ecologically and economically viable, healthy, and sustainable Eastern Bay System oyster fishery and ecosystem*).

Oyster repletion program – A state-managed program to replenish oyster populations and bottom substrate on natural oyster bars that are regularly harvested by the commercial industry. The program is funded by the Maryland Department of Transportation Port Authority, revenue from commercial oyster license renewal surcharges, and bushel tax revenue from commercial harvest. The Oyster Recovery Partnership (ORP) implements the coordination and oversight of the production and deployment of wild seed, shell, alternate substrate, and spat-on-shell (SOS) to achieve bottom enhancement per requests from the county oyster committees.

Oyster resource – Sources of oysters that provide natural and cultural benefits to humans. These sources can come from the wild or from aquaculture. The responsible management of oyster resources requires integrated approaches that incorporate the social, economic, and environmental considerations of sustainability.

Performance metrics/measures – The regular, quantitative assessment of outcomes and results, which generates reliable data on the effectiveness, efficiency, and sustainability of programs and plans.

Restoration – The process of repairing, through human intervention, sites whose biological communities and ecosystems have been degraded or destroyed. Restoration goals are site-specific and would include restoration of the health and ecological functions that are self-sustaining over time. For the OCW, restoration refers to practices conducted to enhance oysters in sanctuaries, harvest areas, and through aquaculture.

Stakeholders – All groups, whether public, private or non-governmental organizations who have an interest or concern in the success of a project and can affect or be affected by the outcome of decisions or activities of the project. The Eastern Bay Oyster Coalition Workgroup stakeholders include but are not limited to aquaculture, business, economic development, tourism, environmental, citizen groups, recreational fishing, commercial seafood industry, regional groups, local, state, and federal government.

Strategy – A method, action, plan of action, or policy that can be tested to determine whether it solves a problem and helps to achieve objectives and goals in the context of bringing about a desired future for the Eastern Bay System.

Vision – An idealized view of where or what the stakeholders would like the oyster resource and ecosystem to be in the future.

Vision themes – The key issues that characterize the desirable future for the oyster resource and ecosystem. The Vision Themes establish a framework for goals and objectives. They are not ordered by priority.

Yates Bar – Also referred to as historic oyster bars. Any submerged oyster bar, reef, rock, or area represented as an oyster bar on the charts of the oyster survey of 1906 to 1912. Yates Bars do not include any amendments to the historic oyster bars past 1912. DNR maintains charts depicting Maryland’s historic oyster bars. Yates Bar charts designate the bars by name, such as Hackett Point (MDNR Shellfish Division).

Appendix C. Oyster Coalition Workgroup Membership and Leadership Team

OYSTER COALITION WORKGROUP MEMBERSHIP AND REPRESENTATION	
MEMBERS (#17)	AFFILIATION
NON-GOVERNMENTAL ORGANIZATIONS (NGO): ENVIRONMENTAL AND CITIZEN GROUPS	
1) Ben Ford	ShoreRivers (Miles-Wye Riverkeeper)
2) Vicki Paulas	Chesapeake Bay Environmental Center
3) Ward Slacum	Oyster Recovery Partnership
4) Dan Sweeney	The Nature Conservancy
RECREATIONAL FISHING	
5) Mark Galasso	Tuna the Tide Charter Service
SEAFOOD INDUSTRY	
6) Scott Budden	Orchard Point Oyster Company, Aquaculture
7) Moochie Gilmer	Queen Anne County Waterman, Clam Harvester
8) Nick Hargrove	Wittman Wharf Seafood, Talbot County Waterman and Aquaculture
9) Jeff Harrison	Talbot County Waterman
10) Richard Jones	Queen Anne County Waterman
11) Matt Latham	Queen Anne County Waterman
12) Jason Ruth	Harris Seafood Company, Queen Anne County Waterman and Aquaculture
13) Troy Wilkins	Queen Anne County Waterman
14) Mike Eber	Queen Anne County Waterman
LOCAL AND STATE GOVERNMENT	
15) Kathy Brohawn	Maryland Department of Environment (Designated Alternate: John (Rusty) McKay)
16) Brian Callam	Maryland DNR – Aquaculture & Industry Enhancement Division
17) Chris Judy	Maryland DNR – Shellfish Division (Designated Alternate: Jodi Baxter)
18) Jim Moran	Queen Anne County
OYSTER COALITION WORKGROUP LEADERSHIP TEAM	
OYSTER RECOVERY PARTNERSHIP	
Olivia Caretti	Coastal Restoration Program Manager
Jennica Moffat	Monitoring Coordinator
Beth Franks	Senior Manager
Ward Slacum	Executive Director
FACILITATED SOLUTIONS, LLC	
Jeff Blair	Workgroup Facilitator, Consensus Building, and Process Design

Appendix D. Oyster Coalition Workgroup Meeting Schedule and Workplan

OYSTER COALITION WORKGROUP MEETINGS SCHEDULE AND WORKPLAN		
MEETING	DATES	OBJECTIVES
Meeting #1	Feb. 2-3, 2024	<p>Organizational Meeting</p> <ul style="list-style-type: none"> • Adoption of Oyster Coalition Workgroup’s Operational and Procedural Policies and Guidelines: <ul style="list-style-type: none"> ○ Assumptions, Principles, and Participation Guidelines; ○ Consensus Building Procedures; ○ Consensus Solutions Process Procedures; ○ Options Acceptability Ranking Process; and ○ Guiding Principles, and Goal Statement. • Presentations on the Eastern Bay Region of Maryland. • Review of Questionnaire responses. • Discussion and adoption of draft Framework for the Plan: Vision Themes, Goals, Outcomes, and Objectives. • Identification of initial list of strategies for evaluation.
Meeting #2	March 29-30, 2024	<ul style="list-style-type: none"> • Presentations on decision support tools: spatial tools for oyster siting, and OysterFutures simulation model. Overview of DNR regulatory processes related to oysters. • Discussion of the application of spatial tools for oyster production in Eastern Bay. • Discussion of ORP’s Eastern Bay Habitat Survey Plan. • Mapping Exercise on Oyster Habitat: Current harvest locations, and proposed locations for expanding wild-harvest and aquaculture. • Identification, discussion, and acceptability ranking of options (strategies and actions), and resource needs to achieve Project Goals and Objectives. • Identification of revised, hybrid, and new options for evaluation. • Discussion and acceptability ranking of performance measures to track progress towards Objectives and Goals.
Meeting #3	May 29-30, 2024	<ul style="list-style-type: none"> • Presentations and discussions about oyster substrate. • Update and preliminary results from ORP’s Eastern Bay Habitat Survey. • Overview of local stakeholders and resources in Eastern Bay. • Identification, discussion, and acceptability ranking of revised options (strategies and actions), and resource needs to achieve Project Goals and Objectives.

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		<ul style="list-style-type: none"> • Identification of revised, hybrid, and new options for evaluation. • Discussion and acceptability ranking of revised performance measures to track progress towards Objectives and Goals.
Meeting #4	July 31-Aug. 1, 2024	<ul style="list-style-type: none"> • Presentation on results of ORP’s Eastern Bay habitat survey. • Discussion regarding how results of Eastern Bay Habitat Surveys will inform recommendations and inclusion in the Plan. • Discussion of OCW stakeholders resources available to support the goals of the OCW Project. • Discussion regarding whether to form an OCW Successor Group, and review of an associated Draft Framework for ensuring implementation of OCW recommendations. • Acceptability ranking of proposed revisions to consensus ranked objectives, strategies, actions, and performance measures (options) for inclusion in the <i>Draft Sustainable Oyster Restoration and Management Plan for Eastern Bay, Maryland</i> using the Strategies Evaluation Worksheet Process. • Adoption of the final package of Performance Measures to track progress towards objectives and Project goals. • Discussion and approval of Draft Outline for the OCW <i>Report and Recommendations for the Sustainable Oyster Restoration and Management Plan for Eastern Bay, Maryland</i>. • Interactive habitat survey results group GIS mapping exercise.
Meeting #5	Sept. 25, 2024	<ul style="list-style-type: none"> • Presentation on CBEC education plan and OCW feedback. • Spatial tools for oyster siting update and OCW feedback. • Interactive habitat survey results group mapping exercise continued with revised maps. • Summary, discussion, refinement, and approval of the OCW <i>Draft Report and Recommendations for the Sustainable Oyster Restoration and Management Plan for Eastern Bay, Maryland</i>. • Discussion of objectives and approach for December 4, 2024 Community Open House Forum and OCW feedback.
Community Open House Forum	Dec. 4, 2024 6:00pm – 8:00pm	<ul style="list-style-type: none"> • Community education on the OCW goals and process. • Community input on the OCW outcomes and recommendations for a <i>Sustainable Oyster Restoration and Management Plan for Eastern Bay, Maryland</i>.
Meeting #6	Dec. 4-5, 2024	<ul style="list-style-type: none"> • Evaluation of Community Open House Forum input. • Interactive Habitat Survey Results Group Mapping Exercise Continued with Revised Maps.

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		<ul style="list-style-type: none">• Summary, discussion, refinement, and adoption of the Oyster Coalition Workgroup’s <i>Report and Recommendations for a Sustainable Oyster Restoration and Management Plan for Eastern Bay, Maryland</i>, and submittal to the Oyster Recovery Partnership.• Overview and Approval of the ORP’s Communication, Marketing, and Distribution Plan for Full and Short Summary Versions of the OCW’s Report and Recommendations for the Plan.• Oyster Recovery Partnership will finalize the Report and distribute to relevant agencies, entities, and organizations as appropriate.• Workgroup Appreciation and Celebration.
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Appendix E. Oyster Coalition Workgroup Operational and Procedural Guidelines

The Operational and Procedural Policies and Guidelines were unanimously adopted by the first OCW meeting on February 2, 2024. The adopted policies and guidelines can be accessed on the project webpage: https://www.oysterrecovery.org/wp-content/uploads/2024/02/Oyster-Coalition-Workgroup-Operational-and-Procedural-Policies-and-Guidelines-Adopted_2-February-2024.pdf.

Appendix F. Oyster Coalition Workgroup Pre-Meeting Questionnaire Summary Report

A questionnaire was administered to the OCW members in advance of the Organizational Meeting scheduled for February 2-3, 2024. The questionnaire was designed to solicit an initial set of key issues and questions from stakeholders. The OCW members responses were summarized in the summary report on the project webpage and incorporated into the organizational meeting packet. Themes from the responses formed the foundation of the initial draft goals, vision themes, outcomes, and objectives that were evaluated through the consensus-building process.

Summary report: <https://www.oysterrecovery.org/wp-content/uploads/2024/02/Eastern-Bay-OCW-Questionnaire-Summary-Report-1.pdf>.

Appendix G. Oyster Coalition Workgroup Options Evaluation and Consensus Process

Acceptability Ranking Exercise Overview and Ranking Scale

During the meetings, OCW members were asked to develop and rank options (strategies and actions) using a 4-Point acceptability ranking scale. This is consistent with the Consensus Building Procedures unanimously adopted by the OCW on 2 February 2024. Once ranked for acceptability, options with a ≥ 3.0 average ranking (75%) were considered preliminary consensus recommendations for inclusion in the package of recommendations for the *Sustainable Oyster Restoration and Management Plan for Eastern Bay, Maryland (Plan)*.

This was an iterative process (the options agreed to at each meeting served as the starting point for the next, and no recommendation was final until the last meeting), and at any point during the process any option could be re-evaluated and re-ranked at the request of any OCW or ORP Project Team member. The status of a ranked option was not final until the final OCW meeting, when a vote was taken on the entire package of consensus-ranked recommendations for submittal to the Oyster Recovery Partnership. The OCW finalized their recommendations for the *Sustainable Oyster Restoration and Management Plan for Eastern Bay, Maryland* at the December 5, 2024 meeting.

OCW members were requested to be prepared to state their minor and major reservations when asked, and to offer proposed refinements to the option to address their concerns. If an OCW member was not able to offer refinements to make the option acceptable (4) or acceptable with minor reservations (3) they were requested to consider ranking the option with a 1 (not acceptable). The following scale was utilized for the ranking exercises:

ACCEPTABILITY RANKING SCALE	4 = Acceptable, I agree	3 = Acceptable, I agree with <i>minor reservations</i>	2 = Not Acceptable, I don't agree unless <i>major reservations</i> addressed	1 = Not Acceptable
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CRITERIA TO CONSIDER FOR PROPOSING AND EVALUATING OPTIONS AND RECOMMENDATIONS	
CRITERIA	EXPLANATION
IMPORTANCE	Is this proposed option critically important to achieving the goals of the <i>Restoration and Management Plan</i> ?
TIMELY	Will things get worse if the proposed option is not implemented?
FEASIBLE/ PRACTICAL	Is it likely that the proposed option will be successful in achieving the relevant goals of the <i>Restoration and Management Plan</i> ?
RESOURCES	Are there resources available, or likely to become available for implementing the proposed option? Is implementation cost effective?
COMMITMENT	Is there commitment from the stakeholders and regulators regarding implementation of the proposed option?

The *Options Acceptability Ranking Exercise Process* and the *Consensus Solutions Process* was designed by Jeff Blair of Facilitated Solutions, LLC. Information at:

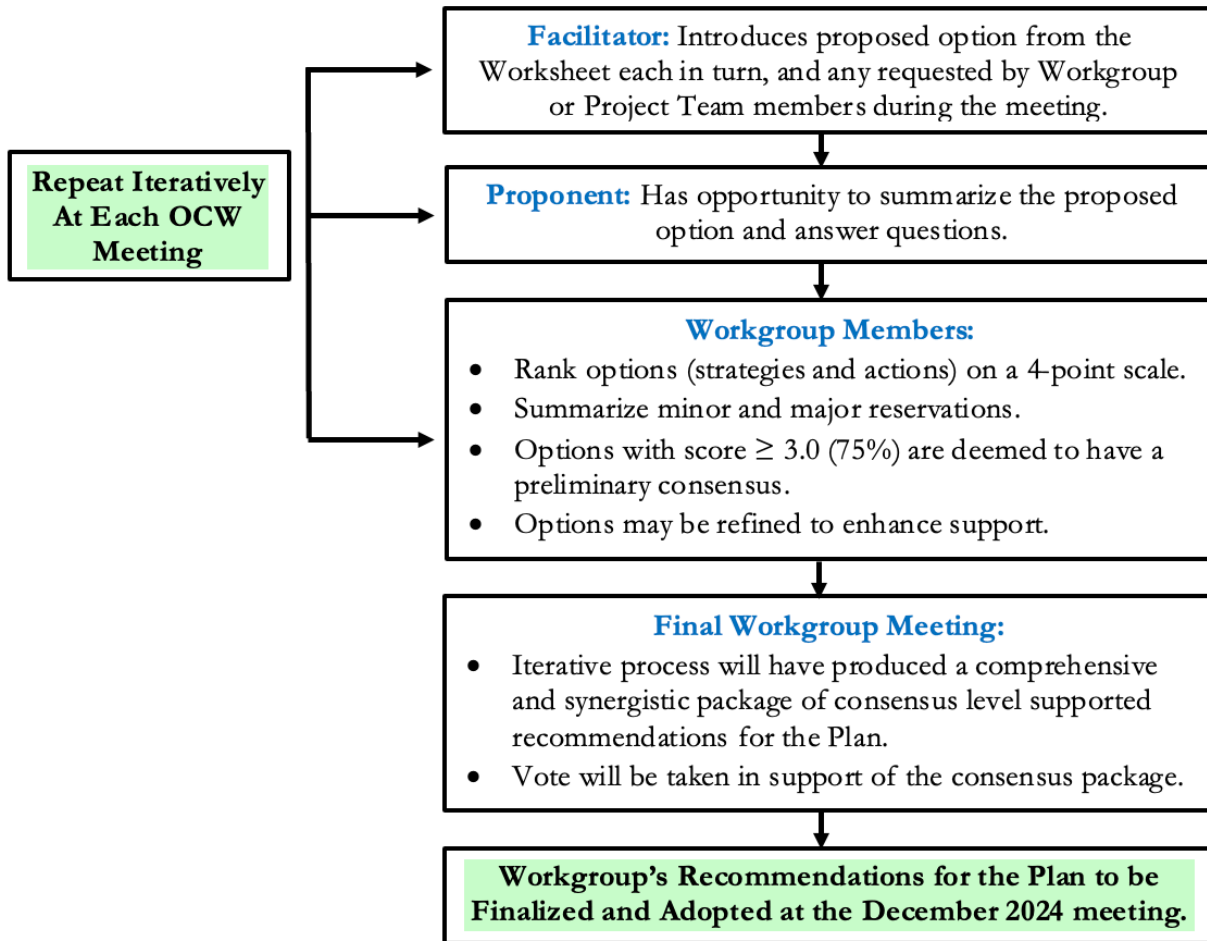
<http://facilitatedsolutions.org>.



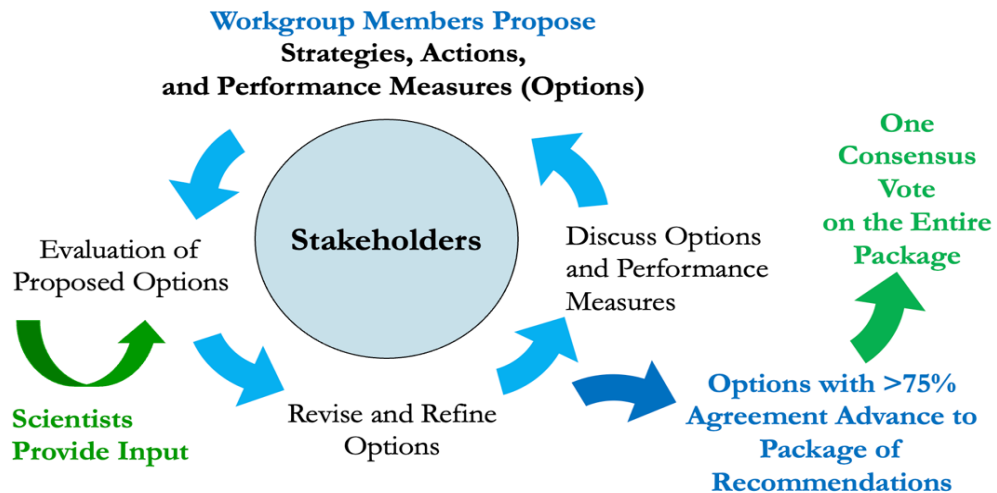
Consensus Solutions Options Evaluation Process

- Facilitator will introduce each option (strategy and action) from the *Plan Framework* in turn.
- Proponent and/or ORP Project Team Member as appropriate, will have an opportunity to provide their rationale for proposing the option.
- OCW members may ask clarifying questions.
- The options will be ranked, each in turn using the 4-Point Acceptability Ranking Scale.
- OCW members may briefly summarize their minor and major reservations.
- Options that achieve a ranking score of ≥ 3.0 (75%) will be deemed to have a preliminary consensus level of support and will be further evaluated as appropriate.
- Options may be refined to enhance support across stakeholder interests.
- This process will be repeated iteratively during each OCW meeting until a comprehensive and synergistic package of recommendations has achieved a consensus level of support.
- The only vote will be taken at the end of the last meeting in support of the consensus package of recommendations. A 75% or greater level of support is required for consensus.
- All ranking results are preliminary until the vote is taken during the final meeting.

CONSENSUS SOLUTIONS OPTIONS EVALUATION PROCESS



STAKEHOLDER ARE AT THE CENTER OF THE CONSENSUS SOLUTIONS APPROACH



Appendix H. Options Evaluation Worksheet from the July 31-August 1, 2024, Meeting with Complete Rankings

OPTIONS ACCEPTABILITY RANKING RESULTS

TOTAL NUMBER OF STRATEGIES AND ACTIONS ACHIEVING A CONSENSUS LEVEL OF SUPPORT: ≥75% SUPPORT
13 STRATEGIES AND 42 ACTIONS

I. GOAL A – ENHANCE THE OYSTER RESOURCE IN EASTERN BAY
STRATEGIES AND ACTIONS ACHIEVING A CONSENSUS LEVEL OF SUPPORT: ≥75% SUPPORT
6 STRATEGIES AND 18 ACTIONS

Strategy A-1. Improve oyster habitat and broodstock in Eastern Bay by relying on scientific and industry expertise and integrating stakeholder input into a restoration plan that covers sanctuaries, harvest areas, and aquaculture.

AVERAGE	<i>4= Acceptable</i>	<i>3= Minor Reservations</i>	<i>2= Major Reservations</i>	<i>1= Not Acceptable</i>
4.0	14	0	0	0

Ranked 4.0 – August 1, 2024

Action 1.A. Conduct regular habitat mapping to understand the extent and condition of existing oyster habitat and identify priority areas that need enhancement or could be re-delineated for other activities. Funding should not come from existing restoration funds.

Ranked 4.0 – May 29, 2024

Comments:

- Note that habitat mapping and monitoring cost money. Recommend in Plan that cost of this should not come from money already allocated to restoration (i.e., separate funding needs to be secured)

Action 1.B. Integrate the use of alternate substrates into Eastern Bay oyster restoration by relying on existing data on the suitability, availability, and effectiveness of different types of substrates that have been approved by DNR and seek any changes to law needed to allow and/or provide for funding.

AVERAGE	<i>4= Acceptable</i>	<i>3= Minor Reservations</i>	<i>2= Major Reservations</i>	<i>1= Not Acceptable</i>
4.0	14	0	0	0

Ranked 4.0 – August 1, 2024

Action 1.C. Identify suitable locations for deploying alternate substrates to improve existing habitat, reduce sedimentation, and improve spat recruitment. **Ranked 4.0 – May 29, 2024**

Action 1.D. Evaluate restoration practices that will improve oyster broodstock, including moving adult oysters from one location in Eastern Bay to another to improve survival and reproduction.

AVERAGE	4= <i>Acceptable</i>	3= <i>Minor Reservations</i>	2= <i>Major Reservations</i>	1= <i>Not Acceptable</i>
4.0	14	0	0	0

Ranked 4.0 – August 1, 2024

Action 1.E Evaluate opportunities to involve industry in restoration siting and monitoring and outline how contributions will be integrated. **Ranked 4.0 – May 29, 2024**

Strategy A-2. Evaluate existing practices to increase the availability of oyster shell for habitat enhancement. Ranked 4.0 – May 29, 2024

Action 2.A. Evaluate and implement the existing shell reclamation practices of bar cleaning and dredging from existing fishery areas in Eastern Bay to move shells from unproductive to productive locations. **Ranked 4.0 – May 29, 2024**

Action 2.B. Evaluate the feasibility and sustainability of using shells produced through aquaculture as a potential new source of shell for restoration. **Ranked 4.0 – May 29, 2024**

Action 2.C. Evaluate existing practices and implement programs to increase the amount of shell retained in Maryland from oyster harvest and aquaculture in Eastern Bay.

AVERAGE	4= <i>Acceptable</i>	3= <i>Minor Reservations</i>	2= <i>Major Reservations</i>	1= <i>Not Acceptable</i>
4.0	14	0	0	0

Ranked 4.0 – August 1, 2024

Action 2.D. Evaluate and acquire other sources of shell within the state of Maryland and from other locations. **Ranked 4.0 – May 29, 2024**

Strategy A-3. Identify opportunities for aquaculture expansion in Eastern Bay that complement existing restoration and fishery practices and consider logistical limitations and habitat requirements, with a focus on areas where shells have been recently removed for bottom enhancement. Ranked 4.0 – May 29, 2024

Action 3.A. Connect oyster harvesters, aquaculture leaseholders, and representatives from other fisheries that depend on a healthy oyster habitat to improve cohesion among ongoing and emerging activities in Eastern Bay. **Ranked 4.0 – May 29, 2024**

Action 3.B. Collectively generate a list of areas acceptable to fishery and aquaculture stakeholders for new aquaculture leases to avoid future conflict.

AVERAGE	4= <i>Acceptable</i>	3= <i>Minor Reservations</i>	2= <i>Major Reservations</i>	1= <i>Not Acceptable</i>
4.0	14	0	0	0

Ranked 4.0 – August 1, 2024

Comments:

- Is this something the OCW should be discussing that goes in the recommendations, or do we want the action itself to be the recommendation?
- PSFAs/regulatory boundaries will need to change before areas can be opened. Also need input from other industry members (crabbers, clammers, other fisheries). Some people in the room from these stakeholder groups so can discuss some options based on habitat maps (see Sections VI and XI).

Strategy A-4. Develop a long-term monitoring plan to demonstrate whether strategies and actions are working and to allow for adaptive management of the Eastern Bay oyster resource.

Ranked 4.0 – May 29, 2024

Strategy A-5. Identify specific roadblocks in the regulatory process or existing regulations at the state, county, and local levels that create challenges for oyster restoration/production. Propose options to overcome these or improve transparency in the process. Ranked 4.0 – May 29, 2024

Action 5.A. Recommend that DNR improve transparency in shell import and alternate substrate approval permitting process for restoration practices. **Ranked 4.0 – May 29, 2024**

Action 5.B. Recommend that DNR evaluate and enhance interagency coordination groups to improve coordination and communication between agencies and stakeholders.

AVERAGE	4= <i>Acceptable</i>	3= <i>Minor Reservations</i>	2= <i>Major Reservations</i>	1= <i>Not Acceptable</i>
4.0	14	0	0	0

Ranked 4.0 – August 1, 2024

Action 5.C. DNR should review and update regulations that restrict the expansion of aquaculture on Yates Bars in sanctuaries and near SAV beds. At the very minimum, improve transparency in the existing aquaculture permitting process and regulations.

Ranked 3.9 As Revised – May 29, 2024

Action 5.D. DNR should review and update regulations that restrict the expansion of aquaculture on Yates Bars in public fishery areas. At the very minimum, improve transparency in the existing aquaculture permitting process and regulations.

AVERAGE	4= <i>Acceptable</i>	3= <i>Minor Reservations</i>	2= <i>Major Reservations</i>	1= <i>Not Acceptable</i>
4.0	14	0	0	0

Ranked 4.0 – August 1, 2024

Strategy A-6. Evaluate the cost of existing and proposed enhancement practices that are recommended by the OCW and identify funding for short- and long-term efforts. Include any available resources/references as an Appendix to the OCW’s Report. Ranked 4.0 – May 29, 2024

Action 6.A. Allocate money from recreational oyster license purchases to replenish public fishery oyster bars.

AVERAGE	4= <i>Acceptable</i>	3= <i>Minor Reservations</i>	2= <i>Major Reservations</i>	1= <i>Not Acceptable</i>
4.0	14	0	0	0

Ranked 4.0 – August 1, 2024

Action 6.B. The OCW supports and recommends finalizing the development of a viable implementation framework or plan for nutrient credits which can be used to support oyster enhancement activities that remain within the Eastern Bay System. ~~the same watershed.~~

AVERAGE	4= <i>Acceptable</i>	3= <i>Minor Reservations</i>	2= <i>Major Reservations</i>	1= <i>Not Acceptable</i>
4.0	14	0	0	0

Ranked 4.0 – August 1, 2024

Comments:

- Watershed needs to be defined – what is the appropriate spatial scale/watershed classification?
- Suggestion to specify to the nearest oyster bar
- Recommend to change “in Eastern Bay” since that would provide a boundary to the region, which is the focus of this recommendation anyway

Action 6.C. Prioritize providing or increasing funding for restoration in sanctuaries that have not yet, or not recently, received restoration.

AVERAGE	4= <i>Acceptable</i>	3= <i>Minor Reservations</i>	2= <i>Major Reservations</i>	1= <i>Not Acceptable</i>
4.0	14	0	0	0

Ranked 4.0 – August 1, 2024

II. GOAL B – MANAGE THE OYSTER FISHERY AND AQUACULTURE TO INCREASE AND SUSTAIN HARVEST AND A THRIVING ECONOMY
**STRATEGIES AND ACTIONS ACHIEVING A CONSENSUS LEVEL OF SUPPORT:
 ≥75% SUPPORT**
4 STRATEGIES AND 12 ACTIONS

Strategy B-1. Evaluate and enhance the current strategy for sustainable management of Eastern Bay oyster resources. Ranked 4.0 – May 29, 2024

Action 1.A. DNR should define and monitor progress towards targets and thresholds for sustainable harvest levels in Eastern Bay. **Ranked 4.0 – May 29, 2024**

Action 1.B. DNR should implement, or enhance as needed, a process to work collaboratively with stakeholders to develop consensus recommendations for the management of oyster harvest bars based on these thresholds and should implement appropriate changes in a timely manner.

AVERAGE	4= <i>Acceptable</i>	3= <i>Minor Reservations</i>	2= <i>Major Reservations</i>	1= <i>Not Acceptable</i>
4.0	14	0	0	0

Ranked 4.0 – August 1, 2024

Action 1.C. In the event of adverse impacts from climate change and/or environmental conditions, the appropriate state agencies should adaptively make changes to oyster harvesting regulations as required to maintain public health (e.g., adjustments to season, closures, etc.).

AVERAGE	4= <i>Acceptable</i>	3= <i>Minor Reservations</i>	2= <i>Major Reservations</i>	1= <i>Not Acceptable</i>
4.0	14	0	0	0

Ranked 4.0 – August 1, 2024

Action 1.D. Evaluate the feasibility of establishing a pilot project to test a rotational harvest framework within specified sanctuaries by allowing watermen to use their funds to restore and harvest bars in specified sanctuaries where no restoration has been done. Based on the results, consider recategorizing areas in sanctuaries that have not received restoration to serve as the locations selected for potential rotational harvest areas.

AVERAGE	4= <i>Acceptable</i>	3= <i>Minor Reservations</i>	2= <i>Major Reservations</i>	1= <i>Not Acceptable</i>
3.4	9	2	3	0

Ranked 3.4 – August 1, 2024

Comments:

Sustainable Oyster Restoration and Management Plan for Eastern Bay, Maryland

- The change is an improvement, but still concerns about doing this (1) in a sanctuary at all and (2) in sanctuaries where no restoration was done. Does not mean that those sanctuaries are not productive or that restoration will not be successful. Taking these off the table feels irresponsible. Should instead evaluate areas where there was an investment and where it is not working.
- Establishing a pilot project would hopefully make the intent more clear – suggestion to move this up in the recommendation.

Action 1.E. Consider and establish a rotational harvest framework in non-productive bottom in fishery areas, incorporating practices such as rotational investment and management of entire oyster bars. **Ranked 4.0 – May 29, 2024**

Action 1.F. Evaluate existing harvest gear regulations and locations in Eastern Bay and consider changes that will promote sustainable oyster harvest (e.g., expanding patent tong or dredge areas) along with a proportional increase in enforcement to ensure compliance.

AVERAGE	4= <i>Acceptable</i>	3= <i>Minor Reservations</i>	2= <i>Major Reservations</i>	1= <i>Not Acceptable</i>
4.0	14	0	0	0

Ranked 4.0 – August 1, 2024

Action 1.G. Evaluate management practices that are implemented successfully in other areas and consider whether they would be appropriate to apply in Eastern Bay. **Ranked 4.0 – May 29, 2024**

Strategy B-2. DNR should enhance enforcement and reporting mechanisms that ensure accurate information on oyster harvesting in Eastern Bay. **Ranked 4.0 – May 29, 2024**

Action 2.A. Engage with NRP and industry stakeholders to discuss and implement effective solutions to quantify and limit poaching and illegal harvest, with a focus on available technology (e.g., GPS, drones). **Ranked 4.0 – May 29, 2024**

Action 2.B. Develop methods to account for illegal and unreported harvest when assessing the effectiveness of restoration and replenishment. **Ranked 4.0 – May 29, 2024**

Action 2.C. In collaboration with seafood processors, evaluate enhancements to and/or eliminate problems with existing harvest reporting standards.

AVERAGE	4= <i>Acceptable</i>	3= <i>Minor Reservations</i>	2= <i>Major Reservations</i>	1= <i>Not Acceptable</i>
4.0	14	0	0	0

Ranked 4.0 – August 1, 2024

Strategy B-3. DNR should support leaseholders to develop and implement experimental aquaculture harvest practices and processes. Ranked 4.0 – May 29, 2024

Strategy B-4. Forward any OCW recommendations that have state-wide oyster management impacts to the appropriate advisory groups (e.g., OAC, TFAC) for evaluation.

AVERAGE	4= <i>Acceptable</i>	3= <i>Minor Reservations</i>	2= <i>Major Reservations</i>	1= <i>Not Acceptable</i>
4.0	14	0	0	0

Ranked 4.0 – August 1, 2024

Action 4.A. The OCW recommends that OAC and/or TFAC, in collaboration with stakeholder interests, evaluate and establish a comprehensive limited entry program for full-time seafood industry workers, ensuring accessibility for full-time seafood industry workers and their family members.

AVERAGE	4= <i>Acceptable</i>	3= <i>Minor Reservations</i>	2= <i>Major Reservations</i>	1= <i>Not Acceptable</i>
4.0	14	0	0	0

Ranked 4.0 – August 1, 2024

Action 4.B. The OCW recommends the establishment of a state law requiring that all local jurisdictions establish right-to-work laws to protect seafood industry workers and facilitate industry operations. **Ranked 4.0 – May 29, 2024 with the state agencies abstaining.**

III. GOAL C – AN ENGAGED STAKEHOLDER COMMUNITY THAT SUPPORTS SUSTAINABLE OYSTER RESTORATION AND MANAGEMENT
STRATEGIES AND ACTIONS ACHIEVING A CONSENSUS LEVEL OF SUPPORT:
≥75% SUPPORT
3 STRATEGIES AND 12 ACTIONS

Strategy C-1. Establish a coordinated public relations and marketing effort among stakeholders (including Dept of Ag./MD’s Best Seafood) to enhance public perception and support for commercial fisheries and aquaculture occurring in Eastern Bay. Ranked 4.0 – May 29, 2024

Action 1.A. Identify strategies to monitor and respond to the spread of misinformation about Chesapeake Bay/Eastern Bay oysters. **Ranked 4.0 – May 29, 2024**

Action 1.B. Market ecosystem services provided by oysters. **Ranked 4.0 – May 29, 2024**

Action 1.C. Develop a process to communicate monitoring results to secure future funding for oyster production in Eastern Bay. **Ranked 4.0 – May 29, 2024**

Strategy C-2. Establish educational opportunities to improve public awareness of Eastern Bay oyster culture. Ranked 4.0 – May 29, 2024

Action 2.A. Create opportunities to engage with local waterman and aquaculture leaseholders to learn about the investment and process for harvesting oysters, with the goal to ensure that industry maintains access to oyster resources and commercial infrastructure. **Ranked 4.0 – May 29, 2024**

Action 2.B. Educate elected officials on challenges and opportunities for the expansion of oyster production in Eastern Bay, including zoning restrictions, right-to-work laws, access to working waterfronts, and opportunities with the oyster BMP. **Ranked 4.0 – May 29, 2024 with DNR abstaining.**

Action 2.C. Maintain community restoration programs such as Marylander’s Grow Oysters that are primarily designed to be educational for the public. **Ranked 4.0 – May 29, 2024**

Action 2.D. Improve the market for local oysters by identifying opportunities to engage stakeholders in the preparation and eating of locally caught oysters. **Ranked 4.0 – May 29, 2024**

Action 2.E. Establish educational programs that are hosted locally (e.g., at CBEC) that focus on watermen, aquaculture, and the history of commercial seafood activity in Eastern Bay.

Ranked 4.0 – May 29, 2024

Action 2.F. Increase recreational oyster dive charters/hand tong charters to educate the public about oyster reef ecology and the commercial oyster industry. **Ranked 4.0 – May 29, 2024**

Action 2.G. Identify technologies that can be used to educate a broader audience about Eastern Bay oyster habitat and culture. **Ranked 4.0 – May 29, 2024**

Strategy C-3. Evaluate strategies and incentives to retain people in the commercial oyster industry and remove barriers to young entrants. Ranked 4.0 – May 29, 2024

Action 3.A. Develop an apprentice program to train people entering the oyster fishery or aquaculture, including education on the required investment, training using various gear types, connecting them to the community, etc. **Ranked 4.0 – May 29, 2024**

Action 3.B. Establish education programs that introduce young people to aspects of the oyster fishery and inspire them to consider a career on the water. **Ranked 4.0 – May 29, 2024**

RANKED OPTIONS NOT ACHIEVING A CONSENSUS LEVEL OF SUPPORT AND OPTIONS NOT RANKED (< 75 SUPPORT)

I. GOAL A – ENHANCE THE OYSTER RESOURCE IN EASTERN BAY

OPTIONS NOT ACHIEVING A CONSENSUS LEVEL OF SUPPORT: < 75% SUPPORT

Initial Action 2.C. Identify sources of substrate that have been approved by DNR for use in Eastern Bay over the long-term, including as a base for planting oysters.

Workgroup Action

- The Workgroup did not rank original action 2-C.
- The Workgroup asked that this be incorporated into one of other existing actions to eliminate duplication.
- Similar actions should be revised and combined as appropriate to eliminate redundancy and reduce the number of actions.
- **This action has been clarified and incorporated into the revised strategies and actions under Goal A**

Initial Action 3.D. Review and evaluate regulatory boundaries that restrict uses of shellfish management area/oyster bars for multiple oyster practices.

Workgroup Action

- The Workgroup did not rank original action 3-D.
- The Workgroup stated it needs clarification regarding what is intended (e.g., gear types, and aquaculture is not allowed in public fishery areas)
- **This action has been clarified and incorporated into the revised strategies and actions under Goal A**

Initial Action 4.E. Evaluate existing shell reclamation practices that may be suitable for enhancing habitat, including bar cleaning and shell relay.

Workgroup Action

- The Workgroup did not rank Initial Action 4-E.
- The Workgroup stated it is redundant, not needed, and part of existing BMPs.

Initial Strategy 6. Evaluate research needs to effectively enhance the oyster resource in Eastern Bay.

- **This strategy was redundant with other strategies/actions in Goal A so has been removed.**

Initial Action 6.B. Evaluate effectiveness of existing or new shell reclamation practices that can be implemented to enhance oyster habitat.

- **This action was redundant with other strategies/actions in Goal A so has been removed.**

Initial Action 6.C. Evaluate effectiveness and cost of other suggested practices/strategies proposed by the OCW.

- **This action was redundant with other strategies/actions in Goal A so has been removed.**

Meeting #3 Action 2.E. (previous Action 2.D) Evaluate and acquire shells from existing oyster sanctuaries and/or reserve areas that can be used for seed areas and/or public fishery replenishment.

Workgroup Action
<ul style="list-style-type: none"> • Ranked 1.7 – Failed to achieve consensus level of support. • Habitat should remain in sanctuaries

Meeting #3 Action 6.C. (previous Goal B, Action 6.A.) Invest public funds equitably (not necessarily equally) between sanctuaries and public fishery areas.

Workgroup Action
<ul style="list-style-type: none"> • Ranked 2.8 – Failed to achieve consensus level of support. • Major concern with using public funds to support private industry (i.e., fishery is a business). Multiple similar comments. • The requirements of the legislation already provide for this.

<p>II. GOAL B – MANAGE THE OYSTER FISHERY AND AQUACULTURE TO INCREASE AND SUSTAIN HARVEST AND A THRIVING ECONOMY</p> <p>OPTIONS NOT ACHIEVING A CONSENSUS LEVEL OF SUPPORT: < 75% SUPPORT</p>
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Initial Action 1-C. Consider and establish a rotational harvest framework for oyster harvest (in sanctuaries and existing harvest areas), incorporating practices such as rotational investment and management of entire oyster bars.

Workgroup Action
<ul style="list-style-type: none"> • Ranked 1.3 (March 29-30, 2024) – Failed to achieve consensus level of support • Watermen don't want to discuss rotational harvest. They are concerned that once an area is closed it won't be reopened. • We don't have enough bars to work as it is. If a bar(s) is closed that puts more pressure on the remaining open bars. • We could support this if was in areas in sanctuaries where no restoration has been done, watermen could use their funds to do restoration and then harvest, replant, harvest, etc. • Planting shell in mudholes (bad bottom) not worthwhile. • DNR is opposed to harvesting in sanctuaries. • Oysters need to stay in sanctuaries. • Consider a system to pay watermen to plant but not harvest oysters in sanctuaries, • This action has been broken into two more suitable actions which are listed in the rankings above.

Initial Action 1.F. Evaluate the feasibility of and establish an oyster relay program, incorporating market-sized oysters from closed areas managed by MDE.

Workgroup Action
<ul style="list-style-type: none"> • The Workgroup did not rank Initial Action 1-F. • Polluted waters area are natural sanctuaries and should remain so. • This option already exists and a recommendation from the OCW is not needed.

Initial Action 4.E. Evaluate, propose, and enforce best reporting practices (e.g., e-reporting) that should be implemented for tracking and quantifying commercial and recreational oyster harvest from Eastern Bay.

Workgroup Action
<ul style="list-style-type: none"> • Original Action 4-E is a duplicate of 4-C. Combine this as needed with Action 4-C. This was not ranked as written • This action has been incorporated into the revised strategies and actions under Goal B

Initial Action 8.A. Implement an annual review of the commercial oyster fishery season relative to water temperatures and adjust the season appropriately.

Workgroup Action
<ul style="list-style-type: none"> • The Workgroup did not rank Initial Action 8-A. • The OCW drafted a revised Action 8-A. <p>Comments</p> <ul style="list-style-type: none"> • Health risks. • Adjust to account for early closure. • State-wide issue.

- TFAC issue.
- Discuss with packers.
- Spawning season is an issue.

Initial Action 8.B. Establish an oyster relay program that will move oysters from temporary or expanded MDE shellfish closure areas to open harvest areas in Eastern Bay to maintain harvest levels.

Workgroup Action

- The Workgroup did not rank Initial Action 8-B.
- Not needed – in place already.

Initial Action 8.C. Expand water quality and disease monitoring to help identify potential human health risks and inform appropriate management/mitigation actions or area closures (e.g., vibrio, wastewater treatment plant spills, septic discharge, lawncare, etc.).

Workgroup Action

- The Workgroup did not rank Initial Action 8-C.
- Action is not needed, this is already being done.

III. GOAL C – AN ENGAGED STAKEHOLDER COMMUNITY THAT SUPPORTS SUSTAINABLE OYSTER RESTORATION AND MANAGEMENT

OPTIONS NOT ACHIEVING A CONSENSUS LEVEL OF SUPPORT: < 75% SUPPORT

Initial Action 1.B. Identify strategies for education surrounding sewage spills.

Workgroup Action

- The Workgroup did not rank Initial Action 1-B.
- Eliminate, this is covered in other actions.

Meeting #3 Action 2.G. Improve education and accountability of recreational harvesters by establishing and enforcing a recreational oyster license.

Workgroup Action

- This has already been implemented and is not needed.

PERFORMANCE MEASURES ACCEPTABILITY RANKING RESULTS
ADOPTED UNANIMOUSLY 1 AUGUST 2024

GOAL A – ENHANCE THE OYSTER RESOURCE IN EASTERN BAY	
OBJECTIVES	RECOMMENDED METRICS
A1) To achieve a healthy and sustainable oyster population in Eastern Bay.	<ul style="list-style-type: none"> • Oyster density (m2) – adults, spat, sub-legal • Oyster biomass (m2) • Annual recruitment rate • Annual volume of cultch (bushels)
A2) To enhance ecosystem services through the restoration of oysters in Eastern Bay.	<ul style="list-style-type: none"> • Area (acres) restored annually • Pounds of nitrogen & phosphorus removed annually from reefs • Water clarity – percent increase in light reaching 2m depth • Area (acres) of SAV in Eastern Bay, assessed annually
A3) To expand oyster aquaculture in Eastern Bay.	<ul style="list-style-type: none"> • Number of aquaculture leases operating in Eastern Bay annually • Acres of active oyster leases in Eastern Bay • Number and volume (bushels) of oysters planted/deployed in leases annually • Annual harvest from leases (bushels)

Goal A Performance Measures Ranked 4.0 – August 1, 2024

GOAL B – MANAGE THE OYSTER FISHERY AND AQUACULTURE TO INCREASE AND SUSTAIN HARVEST AND A THRIVING ECONOMY	
OBJECTIVES	RECOMMENDED METRICS
B1) To achieve an increased level of sustainable oyster harvest from Eastern Bay.	<ul style="list-style-type: none"> • Annual oyster harvest from Eastern Bay through wild harvest and aquaculture (bushels) • Harvest/fishing rate/CPUE • Number of commercial oyster licenses in Queen Anne and Talbot Counties • Number of oyster trips reported in Eastern Bay • Proportion of dealer buy tickets purchasing seafood from Eastern Bay, annually
B2) To improve recreational and other commercial fisheries and tourism activities in Eastern Bay.	<ul style="list-style-type: none"> • Annual recreational oyster harvest from Eastern Bay • Number of recreational oyster licenses in Queen Anne and Talbot Counties • Number charter trips reported in Eastern Bay annually • Number of harvest trips and harvest (bushels/lbs.) reported for other fisheries in Eastern Bay (clam, finfish, blue crab) annually • Number recreational boating trips in Eastern Bay annually (e.g., # Queen Anne & Talbot County landing permits, annual boater surveys, recreational fishing surveys or CCA data, economic benefit analysis of increased eco-tourism and recreational activities, and other new data collection approaches) • Water clarity – percent increase in light reaching 2m depth • Pounds of nitrogen & phosphorus removed annually through harvest • Pounds of nitrogen & phosphorus removed annually through aquaculture

Goal B Performance Measures Ranked 4.0 – May 30, 2024

GOAL C – AN ENGAGED STAKEHOLDER COMMUNITY THAT SUPPORTS SUSTAINABLE OYSTER RESTORATION AND MANAGEMENT	
OBJECTIVES	RECOMMENDED METRICS
C1) To achieve a broader awareness and understanding of the natural and cultural value of healthy oyster habitat in Eastern Bay.	<ul style="list-style-type: none"> • Number people engaged – K-12, adults • Number of Eastern Bay oyster educational materials developed (e.g., signage at local environmental centers, lesson plans, etc.) • Number of businesses participating in outreach • Number of restaurants in Queen Anne’s and Talbot Counties serving local oysters
C2) To secure funds for oyster enhancement in Eastern Bay over the long term.	<ul style="list-style-type: none"> • Funds allocated by Queen Anne’s and Talbot Counties for oyster restoration, annually • Funds allocated by the state for oyster restoration in Eastern Bay, annually • Community funds raised for oyster restoration, annually (e.g., through QA & Talbot Co crab pot Christmas trees, ORP & ShoreRivers Build-A-Reef partnership, etc.)

Goal C Performance Measures Ranked 4.0 – May 30, 2024

Appendix I. Resources for Implementation of the Plan

The OCW generated a list of resources that can be leveraged to create an engaged and supportive stakeholder community and help implement some of the strategies and actions outlined in this Plan. The resources are intended to support oyster production beyond the conclusion of the OCW in December 2024. These resources include grant opportunities, local businesses, companies, local experts, nonprofits, and other organizations that can be called upon to build a sense of community and support around the sustainable restoration, harvest, and management of oysters in Eastern Bay.

Organization	Role
Wye Research and Education Center/MD Aquaculture Extension, Wye Mills, MD	Education and outreach support
NOAA Oxford Laboratory, located in Talbot County, MD	Research and monitoring support
Talbot County Council	\$50k to Eastern Bay oyster enhancement, ongoing for 5 years
ShoreRivers	Marylanders Grow Oysters – 70 growers, waterfront property owners participating
Oyster Recovery Partnership	MGO (in partnership with ShoreRivers), public engagement Resources to engage public officials in restoration
Queen Anne County Watermen Association	Funds raised through Christmas Tree basket sales pledged to supplement fishery enhancement (~\$30k/year)
Queen Anne County	County budgets \$10k/year for oyster restoration (in fishery) Queen Anne County has installed solar arrays generating property tax revenues for conservation purposes and matching funds up to \$12M are available. When the details are finalized Queen Anne County will decide how much additional money willing to invest in oyster planting.
Talbot Watermen Association (non-profit)	Building fundraising capabilities – public donations towards restoration
The Nature Conservancy	Commitment to support aquaculture and fisheries enhancement Commitment to participate in advisory committees/stakeholder groups

Sustainable Oyster Restoration and Management Plan for Eastern Bay, Maryland

Chesapeake Bay Maritime Museum	Education, cultural history of fishery, ecosystem services of oysters. Would likely be interested in providing education and outreach about EB OCW Plan
Chesapeake Bay Environmental Center	Enhance curriculum to integrate historic focus on fishery in EB (this is an objective of ORP's funding from NFWF for the Coalition)
Maryland Agricultural and Resource-Based Industry Development Corporation (MARBIDCO)	Mission to serve the State's commercial farming, forestry, and seafood industries. Should be contacted to determine how they might provide resources, including the possibility of grant or loan funding for aquaculture and/or shucking houses
Carteret County Community College Aquaculture Technology Program, Morehead City, NC	Existing and well-developed program to train individuals seeking to enter the aquaculture industry. Could be used as a model for a pilot program aimed at reducing barriers to entry in Eastern Bay/MD (https://catalog.carteret.edu/aquaculture-technology)
USDA NRCS program	Programs that invest money in aquaculture expansion and best practices – for private lease holders
Ratliff Foundation	Have historically provided support for oyster industry, including funding to build and maintain facilities, training programs, and industry research

Appendix J. Habitat Survey Methods and Oyster Habitat Maps

Stakeholder-Driven Sample Design

The Eastern Bay (EB) habitat survey was developed by ORP and the OCW to inform the OCW process, specifically to help the OCW identify locations within EB and its tributaries that could support activities outlined in the OCW recommendations. Site selection was performed through an iterative process with the OCW to incorporate knowledge and priorities from all workgroup members. The proposed sample sites and survey design were presented to the OCW for feedback and refinement at the March 2024 meeting. Field sampling occurred between May-July 2024. Preliminary results and a further refinement of the survey locations were discussed at the May 2024 OCW meeting. Results were discussed in detail at the July 2024 OCW meeting, with additional discussions occurring at each subsequent meeting.

The initial sample sites were proposed by the ORP leadership team and were selected to sample areas across the suite of return signals from the MGS sidescan sonar data, as well as consider various harvest efforts and historic/recent oyster enhancement activities within NOBs. EB oyster sanctuaries were not prioritized since MDNR conducted recent habitat surveys in these management areas starting in 2023. Using harvest data and oyster enhancement activities data provided by MDNR, oyster bars in NOBs were filtered to identify regions that have not been harvested since 2020 and have not received oyster enhancement since 2022.

At the March 2024 meeting, the OCW selected priority locations out of the areas proposed by ORP and identified additional locations with information gaps. These included oyster bars with insufficient information and additional features of interest within the MGS sidescan sonar maps. The final sample locations were selected approximately 100 meters apart in various orientations to shore and bathymetric features to capture transitions between bottom types, the edges of oyster bars, and returns from the MGS sidescan map. Additional samples were added later based on continued OCW input (Figure J.1).

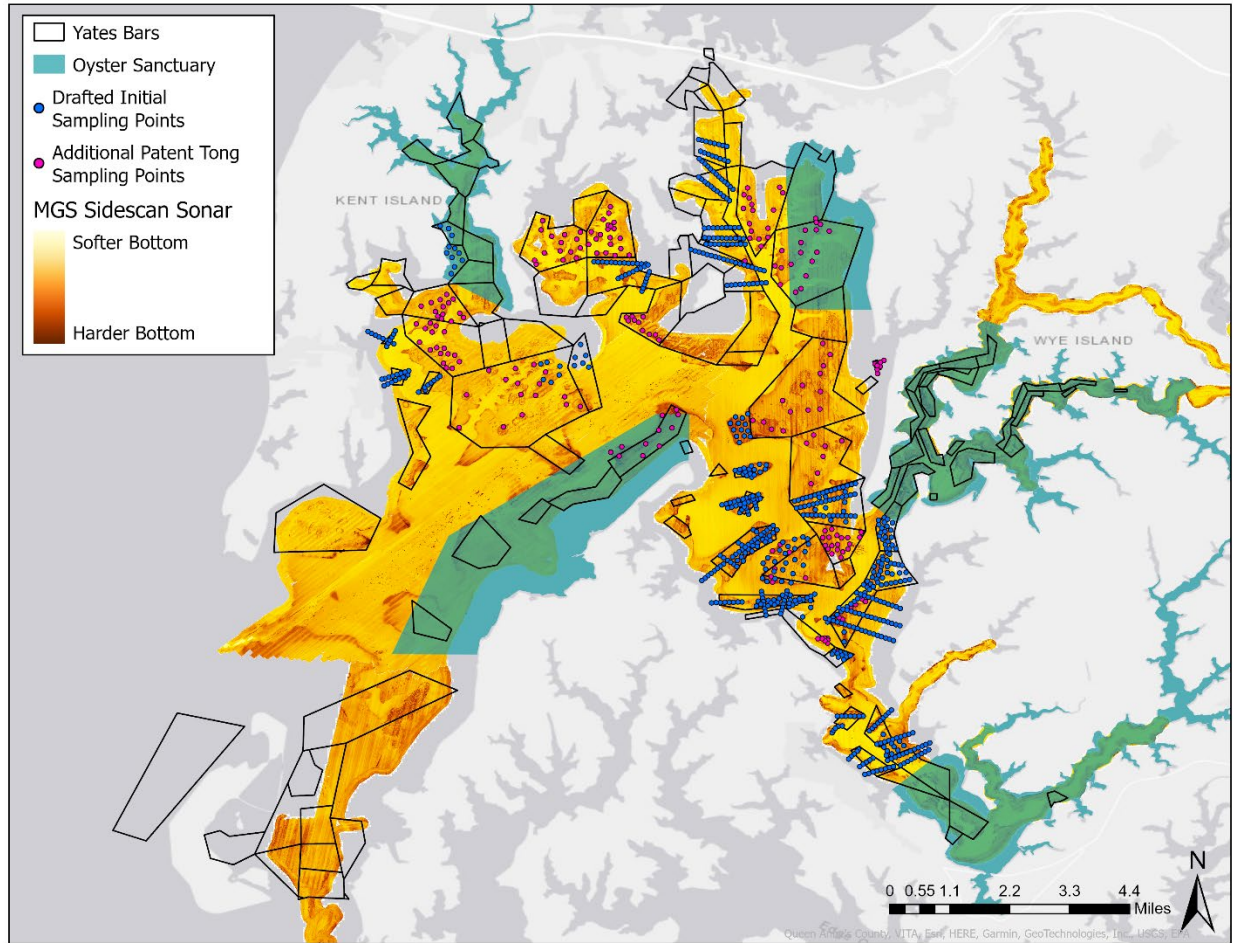


Figure J.1. Draft initial sampling points and additional patent tong only sampling points displayed on top of MGS sidescan map. Locations were selected to capture interesting features in the sidescan data and sample oyster bars with information gaps.

Data Collection and Analysis

The habitat survey occurred in two phases. First, rapid assessment sampling techniques, including ponar benthic grabs (Figure J.2), sounding pole, and underwater video samples (Figure J.3), were employed to assess substrate type and general habitat features of the seabed. The primary and secondary substrate type and percent cover of hard substrate (e.g., rock, oyster shell) were determined from the video images (Table J.1). The primary substrate type was determined for each sounding pole and ponar sample. Each sampling point was classified into a final habitat category (listed in Figure J.4 & J.5) based on the data collected from these three sampling approaches. The majority was selected if the results from all three did not agree.

Locations with samples containing oysters and/or oyster shell (i.e., sand and shell hash; sand and loose shell; shell/oysters) (Figure J.5) received additional sampling using hydraulic patent tongs to quantify the surface shell volume and oyster density on the existing oyster habitat (detailed

methods in MORIW 2024). Additional areas were sampled using patent tongs based on OCW feedback and interest at the May 2024 meeting.



Figure J.2. A Wildco® Petit Ponar® (6'' x 6'', 24 lbs, sample volume = 2,400 mL) was deployed at each location to sample benthic habitat. Example of a ponar grab of loose shells, shell hash, and sand.

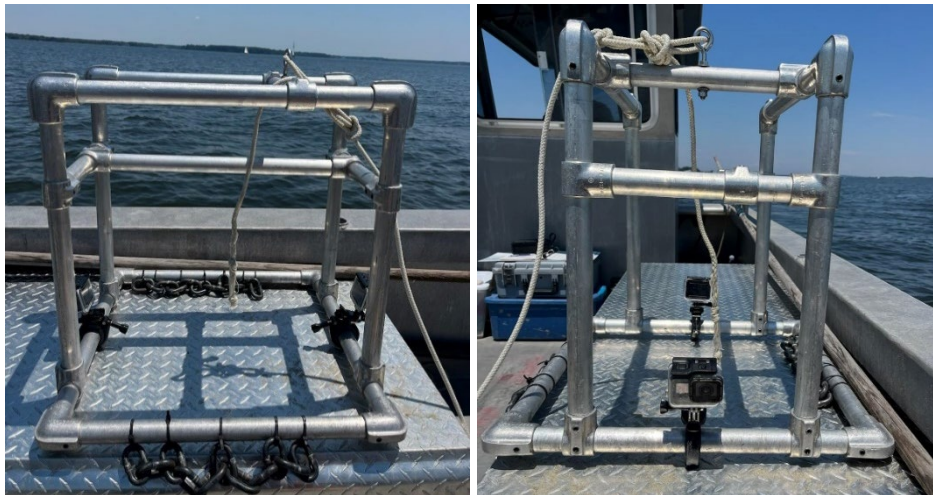


Figure J.3. Camera rig with two outward-facing GoPro Hero cameras deployed at each sample location to assess habitat type.

Table J.1. Variables assessed in habitat images

Photo Number	Percent Cover	Primary Substrate	Secondary Substrate
e.g. EB_2024_001	<ul style="list-style-type: none"> • 0% • 1-5% • 6-25% • 26-50% • 51-75% • 76-100% 	<ul style="list-style-type: none"> • Sediment • Shell fragments/hash • Mix of whole shells and hash • Horizontal whole shells (loose shell and/or horizontal oysters) • Vertical shells and shell clusters • Rock • Unidentifiable hard substrate • Submerged Aquatic Vegetation 	<ul style="list-style-type: none"> • Sediment • Shell fragments/hash • Mix of whole shells and hash • Horizontal whole shells (loose shell and/or horizontal oysters) • Vertical shells and shell clusters • Rock • Unidentifiable hard substrate • Submerged Aquatic Vegetation

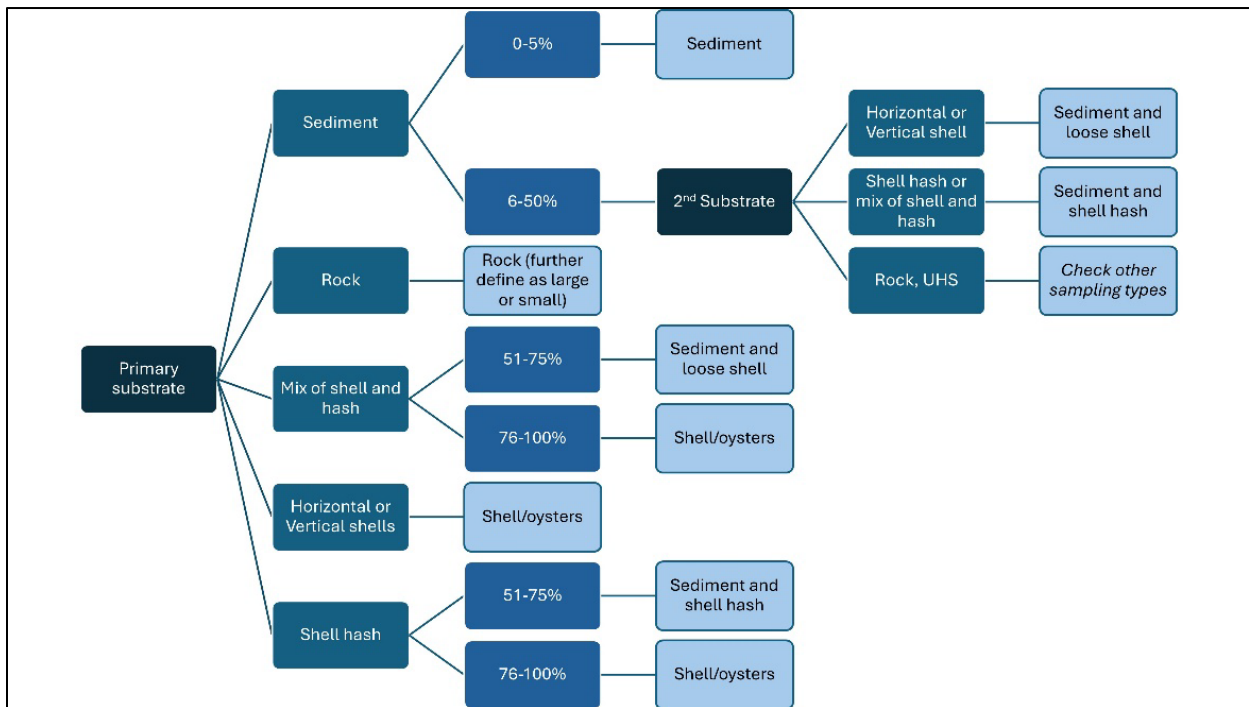


Figure J.4. Decision tree for categorizing substrate type using Go Pro images. UHS = unidentifiable hard substrate.

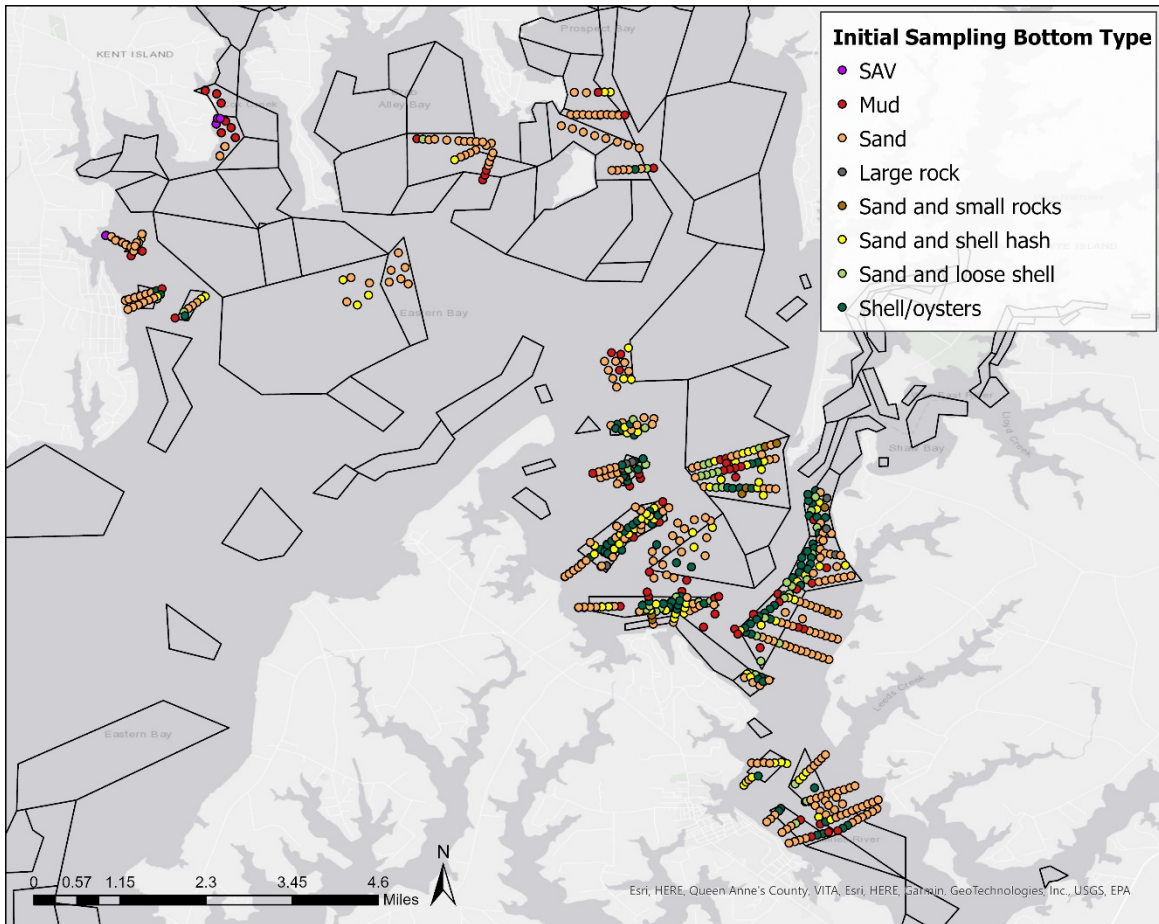


Figure J.5. Habitat classifications based on video, sounding pole, and ponar data.

Composite Score Generation and Results

The data collected from initial samples and patent tong samples were used to generate a single composite score quantifying the relative quality of surveyed oyster habitat (Table J.2). Locations receiving no patent tong sampling (primary substrate type of SAV; mud; sand; large rocks; or sand with small rocks) were not assigned a composite score since these areas contained no oyster habitat (Figure J.6). Locations receiving only patent tong sampling (which were added by the OCW at the May 2024 meeting after the initial sampling was complete) were scored based on three out of four of the composite variables (Table J.2). The composite scores were presented as a percentage, with the scores for locations receiving both initial and patent tong samples scaled out of a maximum of 16 points, and the scores for locations receiving patent tong samples only scaled out of a maximum of 12 points (Figure J.6). The results from the habitat survey suggest that ~32% (2,700 acres) of the surveyed area within existing NOBs in EB and its tributaries are likely not productive oyster habitat (<25% score).

Table J.2. Composite variables and scores. Scores calculated from both initial and patent tong data were scaled out of a maximum of 16 points. Scores calculated from patent tong data only were scaled out of a maximum of 12 points (first row is N/A). IS = initial sampling. PT = patent tong.

Composite Variable	Score				
	0	1	2	3	4
Primary substrate from IS	Mud	Sand	Sand and shell hash	Sand and loose shell; sand and small rocks; large rock	Shell/oysters
Primary substrate from PT	Mud/clay	Sand	Shell hash	Loose shell; Rock	Oysters
Surface Shell Volume (L/m ²)	0	0.1-2	2-5	5-8	8+
Oyster Density (m ⁻²)	0	0.1-5	5-15	15-30	30+

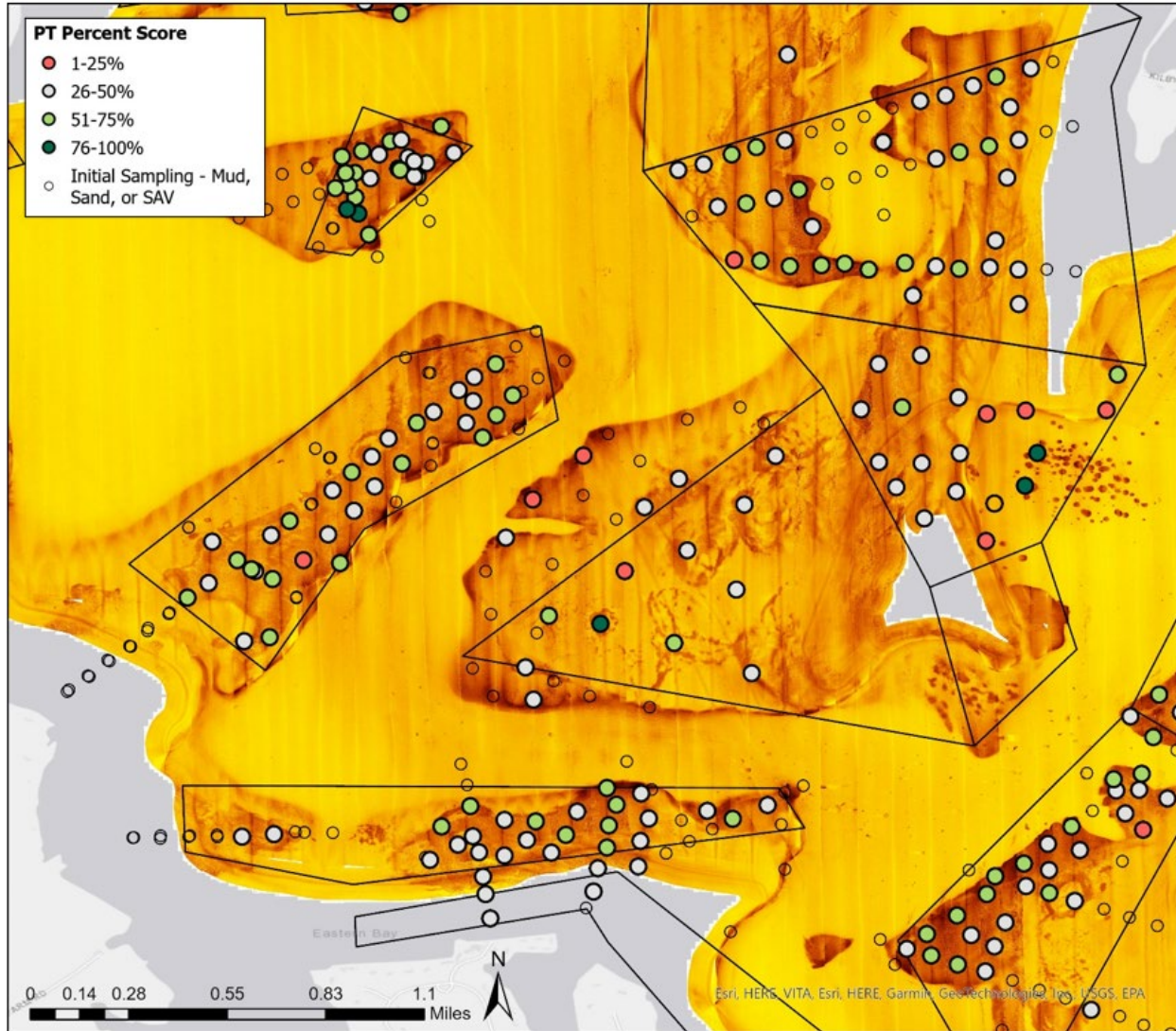


Figure J.6. A portion of the composite score results mapped on top of the MGS sidescan mosaic.

Integration into OCW Recommendations

The OCW used the results of the habitat survey to: (1) identify potential locations for evaluation for future investment in oyster restoration and enhancement, (2) identify potentially marginal habitat that could be evaluated for other uses, and (3) identify locations that could support other activities outlined in the OCW recommendations. The discussions and resulting potential use areas focused primarily on activities within existing NOBs and adjacent areas. The OCW identified the areas highlighted in Figure J.7 as suitable for:

- Planting spat-on-shell, shell, and alternate substrate – These areas were sited in locations that have not recently been planted and have habitat scores > 25%

- Expanding oyster aquaculture – These areas were sited in locations that have not recently been harvested, support aquaculture logistics (e.g., protected from predominant winds, close to land operations), and have habitat scores between 0-50%.
- Reclaiming buried oyster shell – There were some areas that have received bar cleaning and previous plantings that have not been productive. These areas may be better suited for areas where shell can be reclaimed and moved to other productive bars.

Areas were also identified that currently support clam harvest and that may require further evaluation by the OCW, stakeholders, and MDNR to minimize conflicts with existing activities occurring in EB.

The outcome of the OCW's iterative habitat survey and mapping exercise is a draft spatial plan for implementing the OCW's recommendations for improving oyster production in EB (Figure J.7). The OCW recognizes that all proposed areas and activities require further evaluation by MDNR and the appropriate entities, and that current regulation may limit the placement of these activities unless regulation is updated to reflect the true extent of existing oyster habitat.

References

Maryland Oyster Restoration Interagency Workgroup (MORIW) under the Chesapeake Bay Program's Sustainable Fisheries Goal Implementation Team. (2024) 2022 and 2023 Oyster Reef Monitoring Report: Analysis of Data from the 'Ten Tributaries' Sanctuary Oyster Restoration Initiative in Maryland. <https://dnr.maryland.gov/fisheries/Documents/2022-2023-MD-oyster-monitoring-report-final-Sept-2024.pdf>.

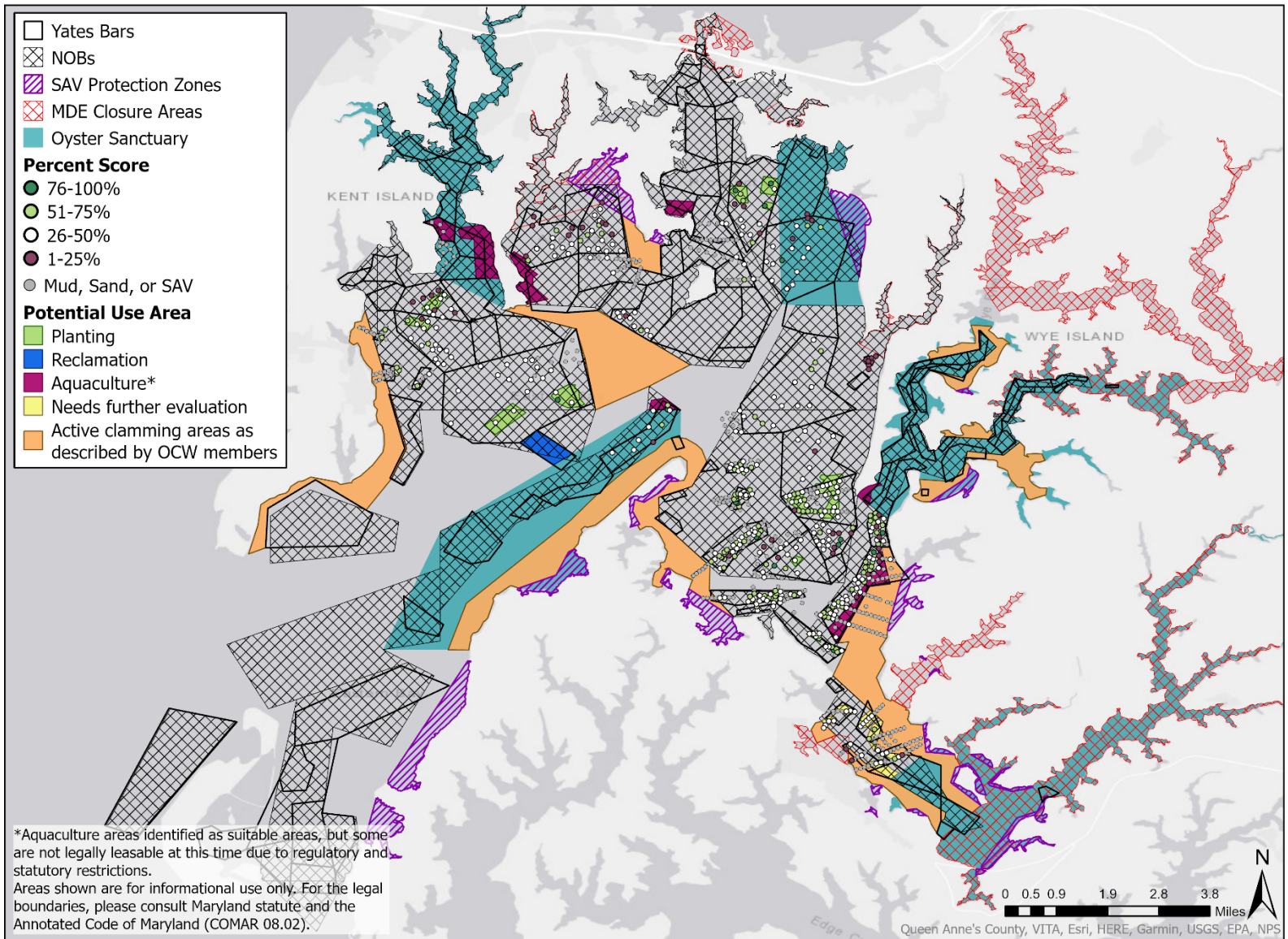


Figure J.7. Final map of sampling points displayed by their composite score (percent score) and use areas drafted by the OCW

Appendix K. Community Open House Forum Results

A community open house forum was held on December 4, 2024 at the Hyatt Place Kent Narrows to welcome the public to review the OCW process and recommendations. Attendees were invited to provide written and/or verbal feedback to the OCW leadership team. The Open House was divided into four stations to provide an overview of the goal framework, strategies, and actions for each OCW goal and the accompanying habitat survey. The agenda for the open house can be viewed on the project webpage: https://www.oysterrecovery.org/wp-content/uploads/2024/10/OCW-Community-Open-House-Forum-Agenda_4-December-2024.pdf. A designated note-taker recorded key discussion points and questions at each station.

This appendix summarizes the written and verbal feedback from the Community Open House Forum, as well as a summary of the discussions at each station. The suggestions related to the OCW recommendations were reviewed by the OCW at the final meeting on December 5, 2024. The OCW agreed that the questions and concerns be included in this report for review and evaluation by MDNR to accompany the package of recommendations put forth in this Plan.

Written Feedback from Attendees

General Comments

Positive Feedback	Comments/Concerns
<p>Thank you for hosting this and all the work over the past few years!</p> <p>Overall a very impressive set of recommendations and establishment of an oyster bottom survey and health assessment.</p> <p>Kudos to the EB OCW for their hard work and meaningful progress.</p>	<p>The difficulty is to prioritize the recommendations to get the best “bang for the buck”. Spreading the funding too thin will likely be ineffective. If investments are spread too thin, the results will be/may be disappointing.</p>

Goal A. Enhance the Oyster Resource

Comments/Concerns	Questions
<p><i>(Strategy 5C)</i> Aquaculture on YB in sanctuaries – needs to remain restricted or capped (%) to allow area to remain open for restoration (long-term, public) vs. short-term aquaculture</p> <p><i>(Strategy 3)</i> Expand recommendation on aquaculture – refer to bushels, acres, employment, other metrics</p> <p><i>(Strategy 3)</i> Consider AEZs to facilitate aquaculture expansion</p>	<p><i>(Vision Theme)</i> How is “self-sustained” defined? Is it possible or realistic especially with climate change?</p>

<p><i>(Strategy 6A)</i> Very little money will be made from recreational oyster licenses</p> <p>General comment <i>(also related to Strategy 1D)</i> – Considering the wide distribution of natural spat by tides and winds, the area of the Kent Narrows should be thought to be used as nursery/broodstock area. If unharvested, both Eastern Bay and Chester River would benefit</p> <p><i>(Strategy 6B)</i> Nutrient credit program – Concerns about the potential social justice issues. If pollution can be traded/bought, certain communities and waterways will be disproportionately impacted. If nutrient credits are adopted, location needs to be considered. For instance, credits traded in the Upper Miles should remain in that area.</p> <p>The map that shows the EB OCW recommendations for locations for fishery enhancement, aquaculture, clamming, and shell reclamation is impressive. It’s great to see people come together to map out shared uses while enhancing oysters.</p> <p><i>(Strategy 3)</i> Consider expanding aquaculture (bottom leasing) in PSFAs in places that aren’t being commercially worked and/or in areas where public investment is not viable or likely.</p> <p><i>(Strategy 6B)</i> Consider placing tighter geographic restrictions (vs. current MDE regions) on nutrient credit trading for MDE-approved practices. This will help achieve goal of net reductions and meeting TMDL goals without taking away the economic incentives that credit trading could provide. Consider tying non-point agricultural pollution to credit trading to make tighter geographics more possible/viable.</p>	
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Goal B. Manage the Oyster Fishery and Aquaculture to Increase and Sustain Harvest and a Thriving Economy

Sustainable Oyster Restoration and Management Plan for Eastern Bay, Maryland

Comments/Concerns	Questions
<p><i>(Strategy 2A)</i> Require mitigation for replanting after poaching in addition to criminal penalties</p> <p><i>(Strategy 1D)</i> Rotational harvest in sanctuaries – non-starter without swapping out harvest areas. Otherwise will erode overall % of sanctuary network</p> <p><i>(Strategy 1D, Goal A Strategy 6C)</i> “Unrestored” sanctuary language conflicts with objectives in Goal A</p> <p><i>(Strategy 1D)</i> Against opening oyster sanctuary reefs to rotational harvest. These areas will no longer be sanctuaries</p> <p>Management recommendations seem solid</p> <p><i>(Strategy 2)</i> I’d like to see improvements in enforcement.</p>	<p><i>(Objective 1, Strategy 1A, Strategy 1F)</i> How do you define “sustainable”? Based on a reference point or perception or level of production?</p>

Goal C. An Engaged Stakeholder Community that Supports Sustainable Oyster Restoration and Management

Comments/Concerns	Questions
<p>General comment <i>(also related to Strategy 3)</i> – Should consider recommendations related to preserving working waterfronts</p> <p><i>(Strategy 3A)</i> Apprenticeships – need to mitigate liability/risk to mentors</p> <p>General comment <i>(also related to Strategy 3)</i> – Create opportunities for general watermen</p> <p>General comment <i>(also related to Strategy 2D)</i> – Improve awareness and education of the general community through posters placed at local restaurants for one month (Oct or Nov) which highlight the value of local oysters to the community. Alternatively, small cards could be placed at tables or a “bullet” of information placed on a menu</p>	<p><i>(Objective 2, Strategy 1C)</i> Secure funds – is this beyond the annual \$2M already allocated?</p> <p><i>(Strategy 1A)</i> Who defines “misinformation”?</p>

<p>General comment – Hold oyster event at CBEC, includes oyster shucking and open bar</p> <p><i>(Strategy 2E)</i> Really like expanding school programs to include fishermen as an important part of the EB natural system.</p>	
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Summary of Verbal Feedback and Discussions During Open House

Station 1 – Restoration Recommendations

Summary of discussion:

- Discussion of results of habitat survey and map developed by OCW – Interest in the idea of agreeing on a location to reclaim shell
- Alternate substrates – discussion on West coast shell, limestone, dredged shell
- Modeling larval transport to help with restoration siting – Broodstock in Wye River and upper EB will improve larvae retention in EB system
- Request for more aquaculture areas
- Observed relationship between high scoring oyster habitat and recreational fishing success

Summary of suggestions for improvements/clarification:

- *(Strategy 2B)* Elaborate on how shells from aquaculture could be used as a source of shell
- *(Goal B Strategy 1D)* Should establish a threshold and timeline for opening sanctuaries to harvest. General discomfort with this idea.
- *(Strategy 6B)* Request for more specifics on BMP implementation

Station 2 – Management Recommendations

Summary of discussion:

- Recognition of complications of management tasks and time required to make changes. What works in EB may not work other places and vice versa.
- Eastern Bay is unique in that multiple gear types within same region
- Justification for proximity of clam harvest and oyster restoration (science behind the regulatory decision)
- Habitat survey design and whether this process was effective
- New technologies DNR is considering for enforcement
- Rotational restoration/harvest – how likely?
- Translating OCW process to other areas

Summary of suggestions for improvements/clarification:

- Define a target for increasing aquaculture (e.g., 10% increase from baseline)
- *(Strategy 1C)* Provide example of adaptive management for climate change
- *(Strategy 1G)* When evaluating management practices that are successful in other areas – how are you defining success?

- *(Strategy 1F)* Provide example of considerations for updating gear regulations – already in report
- *(Strategy 1E)* Define “rotational restoration”
- *(Strategy 4B)* Define “right-to-work” laws

Station 3 – Stewardship Recommendations

Summary of discussion:

- How allocate funding to be most effective?
- Discussion on how to engage people – oyster feature dinners, outreach at restaurants, marketing by CBEC, advertising oyster shell recycling locations, events at CBEC, art installations at CBEC to showcase oysters

Summary of suggestions for improvements/clarification:

- *(Strategy 1A)* Explain or define “misinformation”
- Should include recommendations on maintaining infrastructure – shucking houses, cold storage, working waterfronts, zoning policy prioritization, integrating into comprehensive planning *(related to Strategy 2A, 2B, 3)*
- *(Strategy 3A)* Apprenticeship should consider risk to the mentor (e.g., insurance requirements)
- *(Strategy 3)* Clarify role of and need to support generational watermen

Station 4 – Habitat Surveys

Summary of discussion:

- Where harvest is and is not allowed in relation to SAV, MDE closure areas
- Health of EB oyster habitat in general, where plantings have occurred
- Diversity of options the OCW developed using the map

Summary of suggestions for improvements/clarification:

- Clarify the % score in legend/figure caption
- OCW should identify more areas for (1) planting and (2) expanding aquaculture based on habitat survey data
- Some recommendations are too broad
- *(Goal B Strategy 1F)* Gear regulations – Where are changes proposed by OCW and what are the changes?
- A part of the Wye River is clam bottom but was not classified in the map