



# Massachusetts Shellfish Initiative

## 2021-2025 STRATEGIC PLAN







# Introduction



The Massachusetts Shellfish Initiative (MSI) Strategic Plan was developed by the MSI Task Force and is the product of an iterative and collaborative public process initiated with the goal of enhancing the economic, environmental, and social benefits of shellfish resources to the Commonwealth of Massachusetts and its residents.

The MSI was modeled after the NOAA Fisheries National Shellfish Initiative (NSI) and the Task Force's objective categories are in line with the NSI's goals to: (1) improve marine planning and permitting; (2) conduct and support environmental research on shellfish populations; (3) support restoration and farming techniques; and (4) prioritize coordinated and innovative financing for conservation, commercial, and research activities. Additionally, the MSI Strategic Plan has been crafted to be reflective of the Commonwealth's unique characteristics and the dynamic nature of our near shore shellfish resources.

The goals, objectives, and recommended actions have not been prioritized and the numbering does not reflect importance.

**Vision:** Massachusetts state and municipalities manage sustainable, healthy and robust populations of shellfish accessible to a diverse group of commercial and public stakeholders who actively participate in the management process, with the widespread support of the broader public for shellfish resources, improved water quality and coastal ecosystems.

## The mission of the MSI includes:

- (1) Identify, coordinate and provide greater resources for sustainable shellfish production in the Commonwealth;
- (2) Increase access to shellfish populations and increase shellfish biomass through sustainable commercial production and restoration;
- (3) Raise the visibility and 'status' of shellfish for the broad benefits they contribute to the economy and environment;
- (4) Increase cooperation, communication and coordination among shellfish stakeholders; and
- (5) Leverage support for shellfish resources from other sectors.

The MSI Task Force identified six objective categories under which recommendations were developed to balance the growing and competing demands for the Commonwealth's



Wild harvest of shellfish with a small dredge © MA Division of Marine Fisheries

shellfish resources, to address current and emerging shellfish related challenges, and to benefit all shellfish stakeholders. The term “shellfish stakeholder” most commonly references commercial wild harvesters, aquaculture growers, recreational harvesters, and tribal harvesters, but can also include restoration advocates, scientists, shellfish supply chain (dealers, hatcheries, restaurants), and anyone in the public who cares about shellfish. The six objective categories are:

- (1) Fostering communication and coordination among local, state, and federal managers and developing improved guidance for such communication;
- (2) building public and stakeholder capacity to support shellfish resources and shellfish fisheries;
- (3) development of management, research, and industry resources;
- (4) supporting and promoting balanced and sustainable economic opportunities around shellfish;
- (5) supporting and promoting cultural and historical uses of shellfish; and

- (6) ensuring ecologically sound management and enhancement of shellfish resources and coastal ecosystems.

Public input around these objective categories was collected and synthesized into priority goals and broad recommended actions to achieve each goal. The broad recommended actions derived from public comments were refined and placed in the context of the Commonwealth’s existing local and state statutory, regulatory, and fiscal landscape. The recommended actions also reflect the diversity of the Commonwealth’s coastal communities and the many stakeholders that participated through this process.

The MSI Strategic Plan identifies recommended actions that can be taken to reach the stated goals of each objective category. The Plan provides rationale, resource needs, and suggests a non-exhaustive list of primary and supporting entities for each recommended action. To achieve the recommended actions, revised legislation, regulations, and additional funding may be required. However, some of the recommended actions may require no additional funding or legislative or regulatory change, and can be enacted through local, executive, and/or

legislative directives and policy shifts. A number of issues raised during the MSI process have been deemed to require continued deliberation and study before appropriate actions can be identified, and all action items will require some level of ongoing coordination between state and local government and stakeholders to ensure implementation.

The need for enhanced communication and coordination among local, state, and federal agencies and stakeholders is a recurring theme within the MSI strategic plan. A number of recommended actions within the MSI strategic plan build off of the recommended priority action of formalizing a Massachusetts Shellfish Advisory Panel (SAP), as outlined in Objective 1, Goal 1.1, to provide a means of tracking progress on MSI recommended actions and as a venue for the continued cooperation and communication needed to address challenges facing the Commonwealth's shellfish resources and its residents. Many current challenges have been identified for immediate action; long term the SAP will be a resource for addressing future challenges, including ocean acidification, microplastics, and impacts associated with climate change. The MSI supports the streamlining

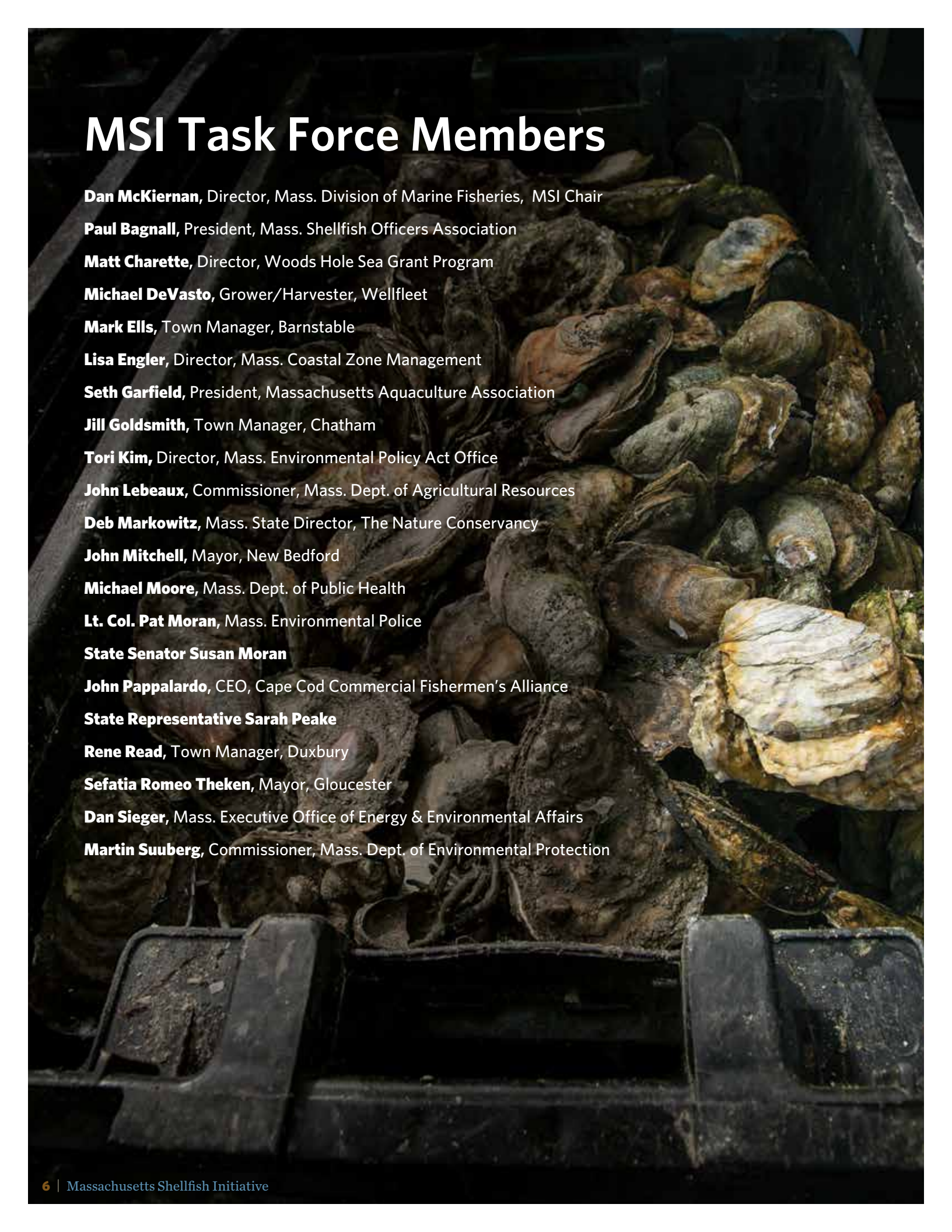
and simplifying of regulations where possible and is not proposing additional regulations or requirements without corresponding incentives and thorough shellfish stakeholder engagement.

While the formalization of the SAP provides a venue to forward a number of the recommended actions within the MSI Strategic Plan, progress on the MSI goals and objectives will require continued stakeholder engagement at all levels. The Commonwealth vests significant authority over shellfish resource management at the municipal level. The recommended actions within the MSI Strategic Plan pertaining to local matters intentionally provide for flexibility to allow implementation of these actions in a manner that is consistent with the character of individual coastal communities. In some cases, the recommended actions seek to incentivize optional consistency across municipalities when trying to achieve best management practices or robust data collection. The recommended actions within the MSI Strategic Plan pertaining to state-wide matters offer a broader, more coordinated response to challenges common to many municipalities.



Moving oyster gear onto the farm © Cape Cod Commercial Fishermen's Alliance





# MSI Task Force Members

**Dan McKiernan**, Director, Mass. Division of Marine Fisheries, MSI Chair

**Paul Bagnall**, President, Mass. Shellfish Officers Association

**Matt Charette**, Director, Woods Hole Sea Grant Program

**Michael DeVasto**, Grower/Harvester, Wellfleet

**Mark Ells**, Town Manager, Barnstable

**Lisa Engler**, Director, Mass. Coastal Zone Management

**Seth Garfield**, President, Massachusetts Aquaculture Association

**Jill Goldsmith**, Town Manager, Chatham

**Tori Kim**, Director, Mass. Environmental Policy Act Office

**John Lebeaux**, Commissioner, Mass. Dept. of Agricultural Resources

**Deb Markowitz**, Mass. State Director, The Nature Conservancy

**John Mitchell**, Mayor, New Bedford

**Michael Moore**, Mass. Dept. of Public Health

**Lt. Col. Pat Moran**, Mass. Environmental Police

**State Senator Susan Moran**

**John Pappalardo**, CEO, Cape Cod Commercial Fishermen's Alliance

**State Representative Sarah Peake**

**Rene Read**, Town Manager, Duxbury

**Sefatia Romeo Theken**, Mayor, Gloucester

**Dan Sieger**, Mass. Executive Office of Energy & Environmental Affairs

**Martin Suuberg**, Commissioner, Mass. Dept. of Environmental Protection

# Acronym Glossary



**CZM:** Massachusetts Office of Coastal Zone Management  
**DEP:** Massachusetts Department of Environmental Protection  
**DMF:** Massachusetts Division of Marine Fisheries  
**DPH:** Massachusetts Department of Public Health  
**EEA:** Massachusetts Executive Office of Energy & Environmental Affairs  
**ISA:** Interdepartmental Service Agreements  
**ISSC:** Interstate Shellfish Sanitation Conference  
**MO:** Model Ordinance  
**MSOA:** Massachusetts Shellfish Officers Association  
**NPDES:** National Pollutant Discharge Elimination System  
**NSSP:** National Shellfish Sanitation Program  
**OLE:** Office of Law Enforcement/ Massachusetts Environmental Police  
**SAP:** Shellfish Advisory Panel  
**WWTP:** Wastewater Treatment Plant  
**USFDA:** U.S. Food and Drug Administration

## **Massachusetts EEA organizations include:**

- Department of Agricultural Resources
- Department of Conservation & Recreation
- Department of Energy Resources
- Department of Fish & Game
- Department of Public Utilities
- Department of Environmental Protection
- Office of Coastal Zone Management
- Environmental Police
- Environmental Policy Act Office
- Council on Toxics Use Reduction
- Environmental Trust
- Division of Conservation Services
- Water Resources Commission
- Water Infrastructure Advisory Committee
- Office of Grants and Technical Assistance
- Drought Management Taskforce
- Office of Technical Assistance and Technology



# OBJECTIVE – ONE –

Fostering communication and coordination between community groups, local, state and federal managers and developing improved guidance.



**Table 1.** Goals, Strategies and Recommended Actions

Goals	Strategies	Recommended Actions
1.1 Developing and strengthening means of communication between managers, regulators and community groups both within and across all levels of government.	Charge a more formalized Massachusetts Shellfish Advisory Panel (SAP) to continue post-MSI work and to provide a venue for cooperation and communication to ensure follow through on MSI objectives and to address future challenges that require interagency coordination.	<ul style="list-style-type: none"><li>Formally constitute a MA Shellfish Advisory Panel that shall be inclusive of shellfish stakeholders so that it may provide a forum for all regulatory, economic and social aspects of MA nearshore shellfish resources.</li><li>Regularly assess MSI strategic plan progress and initiate recommended actions, including outreach to lead and participating offices and entities.</li><li>Constitute and support workgroups, inclusive of shellfish stakeholders, related to unresolved and/or ongoing issues affecting the shellfish industry.</li><li>Develop, promote and recommend common templates, programs and standard practices relative to the management of MA shellfish resources.</li></ul>



# Goal 1.1

## Developing and strengthening means of communication between managers, regulators and community groups both within and across all levels of government.

### Summary

It is important to continue developing means of ensuring increased communication between managers and regulators within and across levels of government. There should be an identified means of continuing communication beyond the MSI to ensure follow through on MSI objectives and to provide a venue to address future challenges that require interagency coordination. The MSI Task Force recommends the development of a post-MSI working group to provide a venue for cooperation and communication to ensure follow through on MSI objectives and to address future challenges that require interagency coordination. This should include participation by agencies such as the Department of Public Health that fall under a different Secretariat but have a significant role in shellfish management. DMF

formed an informal Shellfish Advisory Panel in 2014 that has served as a means for state agencies to communicate important information related to shellfish management; the informal SAP will be disbanded and a new formal SAP constituted. Formalization of the SAP group may serve as a means to continue discussions on current unresolved and future issues beyond the timeline of the MSI.

The new formal SAP should advise the DMF Director on matters of concern relevant to shellfish fisheries, provide a forum for Commonwealth agencies to receive and disseminate information relevant to shellfish resources and shellfish management, and allow members of the public and agency representatives to bring forth emerging issues in shellfish fisheries. All references to the SAP's responsibilities in this document refer to the new, formalized SAP.



Checking on oysters grown in french rack and bag aquaculture gear © Cape Cod Commercial Fishermen's Alliance

**Specific initial topics/activities identified through the MSI for SAP to consider include, but are not limited to:**

- ISSC delegation of Massachusetts shellfish stakeholders
- Solutions to mitigate/prevent market distress from 208 Plan nutrient mitigation strategies that involve shellfish
- Evaluate and recommend potential changes to facilitate direct to consumer sales
- Develop incentives, metrics, and outcomes for municipal shellfish management plans
- Analysis of regional hatchery oyster seed production and determine the risk to seed availability and cost in considering the impact of non-commercial shellfish propagation projects
- Address outstanding issues on consistency in licensing and permitting, including license transferability
- Review and provide recommendations on state and federal programs: improving water quality, reducing pollution, shoreline stabilization, nearshore shellfish habitat, reducing stormwater impacts
- Communicate with agencies and funding sources, requesting the prioritization of shellfish research needs
- Forum for public input on current and emerging shellfish issues of concern
- Forum for stakeholder evaluation/discussion regarding future shellfish-related legislative proposals
- Forum for educating stakeholders on engaging in management process
- Regular evaluation of MSI Strategic Plan progress; outreach to participating entities to complete actions

**SAP Composition should include:**

Eight (8) government representatives:

- the Director of the Division of Marine Fisheries or a designee;









New England butter clams ready for shucking © Zapalac Advisors

- the Commissioner of the Department of Agriculture Resources or a designee;
- the Commissioner of the Department of Environmental Protection or a designee;
- the head of Department of Public Health's Food Protection Program or a designee;
- the Director of the Office of Coastal Zone Management or a designee;
- the Executive Director of Massachusetts Commission on Indian Affairs or a designee,
- and two members of the General Court's joint committee on Environment, Natural Resources, and Agriculture or their designees,

Stakeholders appointed by the DMF director with due regard for coastal geographic distribution and diverse stakeholder representation:

- one shall be a representative of federal Sea Grant programs within the Commonwealth;
- two shall be permitted seafood dealers involved in the wholesale or retail sale of shellfish;
- one shall be permitted and involved in a state managed wild harvest shellfish fishery;
- two shall be permitted and involved with municipally managed wild harvest of shellfish (intent is that both be non-dealer);



- three shall be permitted and involved with commercial shellfish aquaculture (intent is that at least 2 be non-dealers and at least be 1 a very small business)
- one shall be permitted and involved with the recreational harvest of shellfish;
- two shall be active municipal shellfish constables nominated by MSOA;
- one shall be a member of the Marine Fisheries Advisory Commission;
- and one shall be a representative from a non-governmental organization involved with shellfish conservation.

## Resources and/or Actions Recommended

- SAP should be formalized by the Legislature and be subject to open meeting law to ensure transparency and public engagement.
- SAP should initially meet quarterly and eventually no less than twice annually through in person or electronic platforms and should advise the DMF Director to effect shifts in policy, regulation and legislative oversight related to MA near shore shellfish resources and industries.
- Working group meetings should be open to all to listen in, including virtual attendance (video and audio if possible) and should be advertised through DMF communication channels.
- SAP should include representation from the breadth of MA near shore shellfish stakeholders. The SAP should include representatives from executive branch agencies, legislators, municipal interests, commercial (aquaculture and wild), tribal and recreation harvesters.
- SAP Workgroups should include broader stakeholder participation, beyond SAP membership.
- The first goal of the SAP should be to prioritize the Recommended Actions as outlined in the strategic plan.

## Timeline

Initiate no less than 6 months from release and approval of the MSI Strategic Plan. Ongoing implementation meeting no less than twice annually.

## Lead

Division of Marine Fisheries

## Participating Entities

Massachusetts Legislature, Massachusetts Office of the Governor, Dept Public Health, Coastal Zone Management, Mass Shellfish Officers Association, Mass Environmental Policy Act Office, Dept of Agricultural Resources, Mass Environmental Police, Dept of Environmental Protection, Shellfish Stakeholders



Shellfishing at low tide © Cape Cod Commercial Fishermen's Alliance

# OBJECTIVE -TWO-

Building Public and  
Stakeholder Capacity  
to Support Shellfish  
Resources and  
Shellfish Fisheries.





**Table 2.** Goals, Strategies and Recommended Actions

Goals	Strategies	Recommended Actions
2.1 Improve how local and state shellfish managers communicate and engage with stakeholders.	Increase shellfish management capacity at state and local levels as it pertains to the dissemination of information to shellfish stakeholders.	<p><b>Relevant executive branch agencies should develop public facing communications plans.</b></p> <ul style="list-style-type: none"> <li>Plans should clearly outline current agency communication processes related to shellfish management and regulatory activities, and identify the locations and means by which opportunities for public comment and public notices shall be advertised.</li> </ul> <p><b>Relevant executive branch agencies should provide written reports evaluating opportunities to increase stakeholder engagement and the reach of agency correspondence where appropriate.</b></p> <ul style="list-style-type: none"> <li>Reports should include consideration of the increased use of methods such as social media, listservs, text, email, and phone notifications, and dedicated communications staff. Agencies should outline any challenges, and additional resources needed, to achieve identified strategies.</li> </ul> <p><b>Individual municipalities should develop public facing communications plans.</b></p> <ul style="list-style-type: none"> <li>Plans should clearly outline current communication processes related to their shellfish management and regulatory activities, and identify the locations and means by which opportunities for public comment and public notices shall be advertised.</li> </ul> <p><b>Individual municipalities should identify opportunities to increase stakeholder engagement and the reach of correspondence where appropriate.</b></p> <ul style="list-style-type: none"> <li>The increased use of methods such as social media, listservs, text, email, and phone notifications, should be considered. Municipalities should outline any challenges, and additional resources needed, to achieve identified strategies for consideration of state support.</li> </ul>
2.2 Increase public support and awareness around the economic and ecological value of shellfish resources and shellfisheries.	The development of a statewide campaign to increase public awareness surrounding shellfish resources in state waters.	<p><b>The legislature and executive branch agencies should consider developing new and bolstering existing competitive funding administered by the Commonwealth aimed at supporting and prioritizing projects focused on:</b></p> <ul style="list-style-type: none"> <li>Increasing public awareness of the benefits of healthy shellfish populations and shellfisheries (both commercial and recreational opportunities).</li> <li>Increasing public awareness of the nutritional benefits of shellfish as a high-quality protein source.</li> <li>Educating the public on how coastal pollution, pesticide use, or other activities can adversely impact shellfish resources.</li> </ul>



## Goal 2.1

### Improving how local and state managers communicate and engage with stakeholders.

#### Summary

Through the public scoping process, shellfish stakeholders and the general public stated they were often unaware of or confused by state and local shellfish management activities and opportunities for participation and input. Public comments included recommendations for increased stakeholder communication on emergency shellfish closures, *Vibrio parahaemolyticus*, related illness, shellfish growing area classification and status changes, proposed regulatory changes, and state and local planning and management efforts (Aquaculture license hearings, 208 plans, conservation commission hearings, propagation activities, etc.). These comments highlighted the need to increase the capacity for stakeholder engagement and enhance transparency in the management process. In some cases, protocols for public notices and hearings are well established or strictly mandated by state law or regulation (e.g., public hearings, shellfish growing area classification changes). In other cases, public notice may require a less formal notification process, and communication is done at the discretion of the organizing body (e.g., MSI). Some municipalities have addressed communication challenges through phone, text and/or email communications with permit holders, while others rely on written mailed notices, and phone calls. In the absence of a consistent means of communication, the dissemination of information may result in a failure to get the information to the stakeholders. In turn, communication issues may lead to confusion. The development of formal communication

plans can help address these challenges. Communication plans can clearly outline communication processes related to town shellfish management and regulatory activities, and identify the locations and means by which opportunities for public comment and public notices shall be advertised. Recognizing the diversity of the shellfish industry, a diverse suite of communications tools should be employed which allow shellfish stakeholders to opt-in to their preferred method (social media, listservs, text, email, phone notifications, mail, etc.)



Long raking for quahogs- wild harvest © Cape Cod Commercial Fishermen's Alliance



## Resources and/or Actions Recommended

- Dedicated staff time to the development of public facing communications plans at both the state and municipal level that clearly outline current communication processes related to shellfish management and regulatory activities, and identify the locations and means by which opportunities for public comment and public notices shall be advertised.
- Dedicated staff time and IT resources to support posting of real-time notices for status changes and closures.
- Shared resources for municipalities to increase modernize local communications capacity.
- Utilize GIS mapping capacity for easier and near-real-time access to growing area classification, status and emergency closure information.
- DMF and municipalities collaborate to identify ways to bolster closure notification procedures outlined in municipal contaminated area management plans, with consideration for:
  - Review of systems like Barnstable's "One-Call" for phone and text alerts
  - Expedited notifications while respecting municipal-specific closures
  - Mandatory training for municipal staff/constables to support broad implementation of shellfish closure notification.
- Shared communications staff (consider a state program modeled after the Knauss Fellowship to aid efforts).
- Leverage existing communications and outreach resources (CZM, Woods Hole Sea Grant, others as identified).



Digging for farmed steamers © MA Division of Marine Fisheries

## Timeline

Communication plans should be developed within 6 months of finalization of the strategic plan. Plans should be reviewed at least annually to identify opportunities for further refinement and adoption of new communications tools/technology.

## Lead

EEA Agencies and DPH, Municipal Shellfish Authorities/Constables

## Participating Entities

Municipal select boards/councils, shellfish advisory panels, conservation commissions



## Goal 2.2

### Increase public support and awareness around the economic and ecological value of shellfish resources and shellfisheries.

#### Summary

Efforts to engage the public on the economic and ecological value of shellfish, and how their everyday actions may impact those resources and the people who rely on them are limited. Limited state funding has been provided to groups such as the Cape Cod Cooperative Extension and the State Aquaculture Centers for the development of educational materials, but funding has not been provided in a consistent manner nor have these efforts been coordinated or communicated in a regular or consistent manner. The MSI Task Force recommends that the legislative and executive branches provide increased support for coordinated public outreach and guidance focused on the environmental and economic benefits of shellfish and the issues affecting shellfish populations and harvest opportunities. Examples include limiting landward coastal pollution, fertilizer and pesticide use; coastal acidification and ocean warming; the intrinsic value of recreational shellfishing and added-value to tourism; and outreach to teachers and students to engage the next generation of shellfishermen. Expanded public outreach should leverage and strengthen existing municipal efforts.

#### Resources and/or Actions Recommended

- Legislative support for annualized performance-based funding of the State Aquaculture Centers' educational, extension and research activities, with priority on stakeholder engagement and public awareness campaigns.
- Legislation establishing competitive funding that directly supports awareness around the economic and

ecological value of shellfish resources and shellfisheries, and how the public can prevent coastal pollution that negatively impacts water quality. (Note that state funds would be eligible to serve as matching funds in applying for federal Sea Grant funding at a 1:2 ratio).

- Legislative and agency directives toward modification of existing state grant programs to be inclusive and supportive of shellfish and shellfish resources.
- Increased legislative support for programs directed toward shellfish and/or shellfish resources, such as annualized funding for the state aquaculture centers, the municipal seed purchase program, and additional state agency staffing and resource needs.
- Incorporate shellfishing and aquaculture into training opportunities provided by Young Fishermen's Development Act funds (via Sea Grant).

#### Timeline

No later than the start of the next legislative session (winter 2023)

#### Lead

MA Legislature

#### Participating Entities

State Aquaculture Centers, Cape Cod Cooperative Extension, EEA Agencies, Woods Hole Sea Grant, MIT Sea Grant, Other interested educational institutions, Municipalities/Constables



A person wearing a green wetsuit, a tan baseball cap, and a face mask is standing in shallow, rippling water. They are using a long-handled metal rake to harvest shellfish from the seabed. A white plastic crate with a blue mesh basket inside is floating nearby. The person is placing harvested shellfish into the basket. The background is a vast expanse of water with small waves.

# OBJECTIVE -THREE-

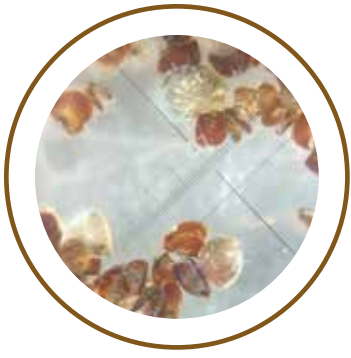
Development of  
management, research,  
and industry resources.

**Table 3.** Goals, Strategies and Recommended Actions

Goals	Strategies	Recommended Actions
3.1 Strengthening state and local capacity to effectively manage shellfish resources and shellfish fisheries in the face of increasing management challenges.	<p>Increase state and local capacity to maintain current classification of open areas and to re-classify growing areas for purposes of creating more shellfish harvest opportunities.</p> <p>Increase local capacity to support trained and experienced Shellfish Constables at a level commensurate with the scale of municipal need for compliance monitoring and shellfish resource enhancement.</p> <p>Increase the capacity of in-state laboratories for classification, biotoxin, pathogen testing, and shellfish disease monitoring to meet increased mandates, address emerging pathogens, and track shellfish disease levels and occurrence.</p>	<ul style="list-style-type: none"> <li>• Increase DMF staff capacity (FTEs) and resources (Vehicles, Boats) to meet current classification responsibilities and address new and emerging NSSP mandates for growing area classification, Vibrio, and aquaculture program elements, including: <ul style="list-style-type: none"> <li>- WWTP/NPDES evaluation and modeling capacity</li> <li>- Growing area classification and aquaculture program staff</li> <li>- IT/data management and analysis expertise/training</li> </ul> </li> <li>• Improve methods of collaboration with municipalities to identify priority-growing areas for classification upgrades.</li> <li>• Increase OLE staffing and resources – (i.e. Increase FTE cap for coastal regionals to ensure NSSP patrol requirements are met).</li> <li>• Provide legislative funding or other incentive mechanisms (trust) for local support or reimbursement for municipal shellfish program efficacy (i.e. authorize funding for allocation under MGL 130 § 20&amp; 20A) including: patrol activities, development of reporting requirements to include recreational harvest data, and shellfish resource population and habitat data/mapping.</li> <li>• Increase state capacity for the in-state testing of shellfish human health hazards: <ul style="list-style-type: none"> <li>- prioritize funding toward the utilization of existing resources with sister agencies and state universities.</li> </ul> </li> <li>• Conduct an evaluation of laboratory capacity across state agencies and state universities to determine how existing resources may be leveraged to meet both research and regulatory needs, including: <ul style="list-style-type: none"> <li>- Evaluate the need for fee-for-service or ISA agreements to utilize resources across agencies/institutions for varied needs.</li> <li>- Evaluate staffing and training needs to certify existing laboratory staff/facilities and maintain NSSP proficiencies of laboratory staff.</li> </ul> </li> <li>• Resources for training and purchasing of laboratory instruments for monitoring of biotoxins and contaminants of concern (e.g., pesticides, industrial contaminants), bacterial and viral testing.</li> <li>• Improve in-state shellfish disease monitoring capacity. <ul style="list-style-type: none"> <li>- Expand shellfish veterinary disease diagnostic capability at in-state research institutions, private laboratories, and/or DMF.</li> <li>- Fund, hire, and/or contract within DMF a position with Shellfish Pathology expertise.</li> </ul> </li> </ul>



Goals	Strategies	Recommended Actions
3.2 Support for research focused on issues impacting shellfish resource health, public health, and shellfish production at the local, state and federal level.	Increase state and local capacity to fill known data gaps (recreational harvest, stock assessment) to inform effective shellfish resources management.	<ul style="list-style-type: none"> <li>Identify, strengthen support for or establish grant programs, and prioritize projects that address pollutants prior to making it into coastal waters. Extend project timelines from 1 year to multiple years.</li> <li>Prioritize shellfish disease research/monitoring in state aquaculture center funding authorizations.</li> <li>Incentivize municipal data collection and reporting.</li> </ul>
3.3 Support for resources that promote industry development, communication, market opportunities, and resiliency.	<p>Ensure cooperation between state agencies (including DMF, DPH, DAR and others deemed necessary) and inclusion of Extension staff, Aquaculture Centers, local Boards of Health and industry representatives on issues like tagging, harvest and handling, direct sales and promote and host training opportunities for industry.</p> <p>Develop/refine NSSP required educational training of harvest and handling practices for commercial harvesters, wholesale dealers and local regulatory authorities including Natural Resources and/or Shellfish Officers, Boards of Health and Health Agents.</p>	<ul style="list-style-type: none"> <li>Increase training and professional development opportunities related to shellfish harvest, and handling practical best management practices.</li> <li>Develop incentives/regulations/ guidelines for industry to promote and implement best management practices: <ul style="list-style-type: none"> <li>Develop alternative MEPA thresholds for aquaculture and propagation projects that adopt BMPs under special review procedure regulations.</li> </ul> </li> <li>Work with stakeholders, regulatory agencies and organizations to develop clear guidance and simplification of state aquaculture licensing and permitting requirements.</li> <li>SAP evaluate and recommend potential changes to regulations/ guidelines for direct-to-consumer sales opportunities in coordination with NSSP, with expanded training and permitting. <ul style="list-style-type: none"> <li>DPH and DMF to develop guidance on opportunities and approval process for direct-to-consumer sales.</li> </ul> </li> <li>Strengthen regulation and/or enforcement in labeling shellfish sales that may allow the use of emerging technology at point of retail sale and use of emerging tagging technology at point of harvest improve traceability.</li> <li>Expand educational training requirements for permitting. <ul style="list-style-type: none"> <li>Develop online training tools such as video modules specifically targeting various species/industry practices.</li> </ul> </li> <li>Educate growers on culturing opportunities beyond oysters to enhance species diversification for the industry as a whole. <ul style="list-style-type: none"> <li>Requires state agency support on permitting and handling requirements.</li> </ul> </li> <li>Enhanced marketing of Massachusetts shellfish through the DMF Seafood Marketing Commission.</li> </ul>



## Goal 3.1

### Strengthening state and local capacity to effectively manage shellfish resources and shellfish fisheries in the face of increasing management challenges.

#### Summary

In many cases existing state and local governmental resources provide insufficient support to adequately manage the state's shellfish resources and shellfish fisheries. This is of particular concern given the increasing complexity of management challenges related to climate change, increasing population density, shellfish harvest closures, and increased challenges of veterinary disease and shellfish related human illnesses. These factors may contribute to more stringent federal management mandates that may increase the frequency and duration of shellfish harvest closures. These issues have the potential to erode the reputation and sustainability of the state's shellfish resources and shellfish fisheries. State and local capacity to effectively manage shellfish resources and shellfish fisheries in the face of increasing management challenges needs to be enhanced. This includes increases to technical support, laboratory equipment, specialized personnel, and other resources. By enhancing the resources available to managers, researchers and industry the state may be able to meet these challenges and decision makers can help communities develop sustainable shellfish management programs. A dedicated and fully funded state shellfish laboratory would address some issues limiting the expansion of harvest opportunities as well as public health protection of emerging pathogens of concern. The tightening regulatory landscape accentuates the need for additional capacity while also providing innovative laboratory capabilities. This expansion of in-state laboratory capabilities provides efficiency for routine

work and in establishing biosecurity zones for certification of in-state shellfish movement. In some cases, it may also be possible to maximize the impact of investments, through the development of Interdepartmental Service Agreements (ISA) between state agencies/universities that leverage existing expertise and resources, and the development of protocols for independent public and private testing facilities to support state/industry testing needs.

#### Resources and/or Actions Recommended

- Legislative and policy support for the establishment of an incentive program for effective municipal shellfish resource management programs.
- A study to determine if the establishment of Interdepartmental Service Agreements (ISA) between state agencies/universities is a feasible means to maximize use and impact of state resources to support shellfish management.
- State financial and technical assistance for municipal shellfish management programs that support and incentivize the option for robust management and comprehensive data collection at the local level.
- Bolster state shellfish laboratory capacity to support expanded classification efforts and provide novel laboratory capability for growing area maintenance/expansion.



- Improve shellfish disease monitoring capacity to develop data to support creating biosecurity zones for in-state movement of shellfish.
  - Expand shellfish veterinary disease diagnostic capability at an in-state research institution.
  - Create (fund and hire) or contract within the Division of Marine Fisheries the position of Shellfish Pathologist, or work with existing state animal health services to add shellfish oversight.

## Timeline

- A study to determine if the establishment of Interdepartmental Service Agreements (ISA) between state agencies/universities is a feasible means to maximize use and impact of state resources to support

shellfish management should be conducted with 18 months from strategic plan adoption by the MSI Task Force.

- No later than the start of the next legislative session (winter 2023)

## Lead

- EEA
- Legislature

## Participating Entities

DPH, Local Board of Health Agents, DMF, Local municipalities/Constables, Stakeholders



## Goal 3.2

**Support for research focused on issues impacting shellfish resource health, public health, and shellfish production at the local, state and federal level.**

## Summary

Most state agencies do not have a mandate or funding to conduct applied research and rely on academic and NGO partners for support. With increasing rates of HAB occurrence, shellfish-derived human illness and increased shellfish disease challenges, ongoing research is needed to develop management strategies and industry tools, for the benefit of growers and wild harvesters. Further, research on state shellfish market economics is critical to understanding the capacity for shellfish industry growth. The MSI Task Force recommends, where possible, incentivizing the funds for research focused on issues impacting shellfish economics, resource health, public health, and shellfish production.

## Resources and/or Actions Recommended

- The SAP should draft and send a letter to relevant agencies and funding sources, requesting that they prioritize shellfish research needs and/or dedicate funding to issues impacting shellfish resource health, public health, and shellfish production.
  - The list of prioritized shellfish research needs should be developed by the SAP in coordination with the Aquaculture Centers. At a minimum the list should include:
    - ♦ language supporting a statewide economic analysis of the shellfish industry to determine capacity for growth given new interest by municipalities

to incorporate shellfish aquaculture as a nitrogen remediation nutrient management strategy;

- ◆ Contaminants of emerging concern;
  - ◆ Intermediaries to shellfish disease transfer;
  - ◆ Impacts of ocean acidification and warming on shellfish (biology and economic); and
  - ◆ Eel grass and its ability to re-populate on shellfish farms.
- The SAP should specifically coordinate efforts with Sea Grant and NOAA Fisheries to prioritize shellfish research in NOAA Fisheries regional and state Sea Grant strategic planning and competitive funding opportunities.
  - Expand funding to existing state programs (e.g. CZM's Coastal Pollutant Remediation Program) to increase the state's capacity to reduce stormwater impacts to shellfish beds.



## Goal 3.3

**Support for resources that promote industry development, communication, market opportunities, and resiliency.**

### Summary

Given existing and emerging public health and shellfish veterinary health issues, there is a growing need for strict adherence to best practices for commercial shellfish aquaculture, propagation, harvest, and handling, and in some cases improved regulatory oversight. This will require coordination among industry, state, county and local government and NGOs; enhanced training opportunities; and the expansion of laboratory capacity. The MSI Task Force encourages efforts that ensure cooperation between state agencies (e.g. DMF, DPH, MDAR and other relevant state agencies) and

### Timeline

- Identification and articulation of state research priorities for funding agencies should be completed within 12 months of adoption of Strategic Plan.
- No later than the start of the next legislative session (winter 2023)

### Lead

- SAP
- Legislature

### Participating Entities

Aquaculture Centers, State agencies, Municipalities/Constables

participation of Extension staff, Aquaculture Centers, research institutions, local entities and industry representatives on issues like tagging, harvest and handling, and the development of training opportunities for industry. There is interest in supporting efforts to increase in-state hatchery capacity for shellfish propagation and aquaculture to enhance seed supply and genetic resiliency. Increased resources and capacity to the commercial shellfish industry, particularly enhanced industry collaboration, species diversification, branding and marketing opportunities, and financial support for recovering lost income are also needed to ensure the sustainability of the shellfish industry.





The public buy shellfish “direct from harvesters” via a licensed wholesale dealer at the Wellfleet Shellfishermen’s Farmers Market © Wellfleet Shellfish Department

## Resources and/or Actions Recommended

- Modify and expand existing funding and support programs associated with coastal infrastructure to include shellfish and shellfish resource development.
- Establish formal ongoing training programs and professional development opportunities that are integrated with regulatory and licensing requirements for public and private shellfish resource stakeholders.
- Incentivize increased training with added opportunities for harvester to consumer direct sales.
- Direct MDMF and MDAR to collaborate on promotion/marketing to prevent duplication and leverage efforts.
- The Seaport Economic Council should work to expand state grant funding to improve shore side infrastructure specifically focused on shellfish related fisheries and aquaculture.
- Increase training and professional development opportunities related to harvest and handling focused on best management practices and regulatory compliance.

- Coordinate efforts with Sea Grant and NOAA Fisheries to prioritize the development of training programs, shellfish genetics, and shellfish market development and promotion in federal strategic planning and competitive funding opportunities.
- SAP, DMF, DPH to work with shellfish stakeholders to collectively evaluate possible solutions for direct to consumer sales, with a focus on lessons learned from other states, and/or modifying the dealer definition to make it easier for shellfishermen to safely sell their product.

## Timeline

Ongoing

## Lead

EEA

## Participating Entities

DMF, DPH, DAR, Cooperative Extension, Aquaculture Centers, local Board of Health Agents, Constables, Shellfish Industry Representatives





# OBJECTIVE -FOUR-

Supporting and promoting balanced and sustainable economic opportunities around shellfish.



**Table 4.** Goals, Strategies and Recommended Actions

Goals	Strategies	Recommended Actions
4.1 Encourage economic opportunities around shellfish, but ensure they are managed in a way that is consistent with the character and interests of individual communities.	Ensure new legislation, regulation, or policy changes do not unilaterally reduce municipal control over shellfisheries or shellfish aquaculture management.	<ul style="list-style-type: none"> <li>• Evaluate and develop legislative funding or other incentive mechanisms (trust) for local support or reimbursement for outcome-defined municipal shellfish management programs.</li> <li>• SAP shall convene a working group and as necessary may craft white papers to address outstanding and unresolved issues such as those associated with consistency in licensing and permitting including but not limited to aquaculture license transferability.</li> <li>• SAP may serve as a forum for shellfish stakeholder discussion on proposed changes that may impact municipal control as part of a legislative or regulatory process.</li> </ul>
4.2 Improve and refine existing state management strategies that increase sustainable economic opportunities around shellfish resources and shellfisheries while balancing shellfish sanitation concerns.	<p>Increase the state and local patrol capacity to prevent illegal harvest and ensure NSSP mandates are achieved.</p> <p>Increased and more unified Massachusetts presence within the Inter-state Shellfish Sanitation Conference (ISSC).</p> <p>Ensure that municipal decision makers have the knowledge necessary to support use of shellfish resources.</p>	<ul style="list-style-type: none"> <li>• Provide support for regular MSOA Shellfish Constable Trainings and subsidize the cost of the class to encourage local staff cross training.</li> <li>• Increase OLE FTE cap to allow for additional staffing to address NSSP patrol program element deficiencies.</li> <li>• Formalize patrol MOUs between the state and municipalities to address NSSP patrol program element deficiencies.</li> <li>• Early coordination and engagement by state and local shellfish authorities, and stakeholders on federal regulatory issues: <ul style="list-style-type: none"> <li>- Assemble and coordinate the activities of a stakeholder delegation to the ISSC through the SAP.</li> <li>- Provide adequate support to ensure involvement and attendance at ISSC meetings.</li> </ul> </li> <li>• Prioritize data collection for insufficient datasets, including: recreational harvest number and shellfish population/stock assessments.</li> <li>• Develop shellfish training for incoming municipal decision makers (select boards, conservation commission, advisory panels/committees).</li> <li>• Update training materials regularly to reflect any regulatory changes, new guidance, and other new information.</li> </ul>



## Goal 4.1

**Encourage economic opportunities around shellfish, but ensure they are managed in a way that is consistent with the character and interests of individual communities.**

### Summary

The Massachusetts legislature has established a framework in state law that delegates important public health and resource management objectives related to shellfish and shellfisheries oversight to both state and local authorities. Through the Public Trust Doctrine, municipalities exercise “Home Rule” because they have the best knowledge and experience to properly manage the shellfish resources in their areas. Thus, individual municipalities have the authority to develop effective innovative management strategies that are best suited to the nature of the community and local trends in resource abundance and use. The MSI Task Force seeks to preserve municipal authority and individuality while also incentivizing the optional adaption of best management practices. Historically, funding was provided to municipalities by the state per MGL Chapter 130, Section 20, which requires cooperation between the state and the towns “for the purpose of increasing the supply of shellfish and exterminating the enemies thereof within their borders.” Section 20 also authorizes the expenditure of funds that, in the opinion of the Director of DMF, “effect the greatest amount of relief and assistance to the shellfish industry.” The MSI Task Force recommends that SAP and MSOA convene to determine the efficacy of reinstituting, possibly through Chapter 130, Section 20, an incentive program that would provide financial reimbursement to municipalities with outcome-driven management plans that meet pre-identified metrics. Plans should ensure the necessary public health and resource management objectives critical to safeguarding a safe and sustainable supply of shellfish for consumption are met,

access to public shellfish resources and state tidelands is maintained and negative economic impacts on markets from municipally-funded activities are avoided.

Individual communities are strongly protective of Home Rule and their municipality’s management authority. A 2019 legislative proposal designed to create state-wide consistency in aquaculture license transferability was a controversial issue throughout 2019-2020 with a diversity of opinions and no resolution. Consequently, the MSI Task Force recommends that the DMF SAP convene a working group to address emerging conflicts related to Home Rule, which will provide a transparent process that fosters dialogue among competing interests and stakeholder groups. This working group should initially focus on outstanding and unresolved issues associated with consistency in licensing and permitting including but not limited to aquaculture license transferability. State law allows citizens to submit petitions to change legislation. Given this, the MSI Task Force recommends that stakeholders or agencies interested in proposing future legislation that would change municipal authority over shellfish should notify the SAP so that the working group can be reconvened to discuss any legislative proposals and ensure stakeholder engagement.

### Resources and/or Actions Recommended

- If SAP and MSOA determine that the incentive program is worthwhile, they will then define and develop an incentive program, including desired municipal outcomes, metrics, and allocation process.



- SAP to convene a work group of diverse stakeholders, municipalities, and appropriate agencies to discuss and resolve issues associated with state-wide consistency in licensing and permitting.

## Timeline

- SAP Working group established within six months of the adoption of the MSI strategic plan by the MSI Task Force.
- SAP/MSOA recommendation on the incentive program within twelve months of the adoption of the MSI strategic plan by the MSI Task Force. If deemed

feasible, the program should be developed prior to the start of the winter 2025 legislative session to secure funding.

## Lead

DMF

## Participating Entities

MSOA, Constables, Legislature, Mass Aquaculture Association, Wellfleet Shellfishermen's Association, shellfish industry representatives



## Goal 4.2

**Improve and refine existing state management strategies that increase sustainable economic opportunities around shellfish resources and shellfisheries while balancing shellfish sanitation concerns.**

## Summary

Field and administrative challenges continue to mount due to National Shellfish Sanitation Program Model Ordinance changes, requiring increased water quality monitoring following rainfall closures, additional monitoring stations around point sources, including floating aquaculture gear that attracts birds, mandated closed safety zones and conditional classifications around WWTP discharge, and establishment of conditional classification around mooring fields. This coupled with increased public and private aquaculture activities, biotoxin and *Vibrio* related responsibilities have become a major challenge for DMF to ensure adequate capacity exists to meet NSSP requirements for maintenance of the state's shellfish growing areas with current shellfish program staffing. There are pervasive concerns that

access to shellfish growing areas will continue to be lost without increasing those resources dedicated to water quality monitoring or minimizing the negative impacts of evolving federal mandates. New, missing, and insufficient datasets prevent managers from effectively evaluating economic opportunities and impacts, which is necessary for making informed management decisions and crafting persuasive proposals and arguments for ISSC.

The recommended actions focus on activities that will increase the state and local patrol capacity to prevent illegal harvest and ensure NSSP mandates are achieved, as well as developing an increased and more unified Massachusetts presence within the Interstate Shellfish Sanitation Conference (ISSC). Enhancing state agency and stakeholder participation at the ISSC and NSSP will ensure that Massachusetts can adequately address



Offloading tagged bags of quahogs © MA Division of Marine Fisheries

emerging shellfish sanitation concerns, improve harvester access to shellfish resources, and promote sustainable economic opportunities in the state's shellfish industry.

Local shellfish management is impacted by a rotating collection of municipal decision makers who are often elected or appointed (Select Boards, Conservation Commission, Shellfish Advisory Committees); these decision makers may or may not have adequate knowledge of shellfish resources to make fully informed decisions and would benefit from standardized training.

## Resources and/or Actions Recommended

- Establish legislative appropriation to support annual MSOA Shellfish Constable Trainings and develop trainee reimbursement processes.
- Establish legislative appropriation to the Aquaculture Centers to support the ISSC stakeholder delegation and its travel/activities.

- Legislative support to increase the Environmental Police patrol budget.
- OLE and DMF to prioritize the completion and adoption of patrol MOUs with municipalities (Shellfish Constables, Harbormasters, WWTP operators, etc.).
- DMF SAP, in collaboration with the Aquaculture Centers, to establish an ISSC delegation composed of industry stakeholders, agency staff, and other interested parties, which will advance a unified, proactive agenda and defend Massachusetts' shellfish industry. The delegation will prepare for participation at ISSC meetings, serve on ISSC committees, and engage in the annual ISSC proposal process.
- DMF to work with municipalities to develop a plan for collection for insufficient datasets that are important to quantifying shellfish economic opportunities and impacts, including: recreational harvest (quantity and value) and shellfish population/stock assessment numbers.
- Authorize legislative funding to develop and implement training for municipal decision makers.

## Timeline

- Patrol MOUs finalized prior to 2022.
- The ISSC delegation should be assembled as soon as possible. The ISSC delegation should meet prior to all ISSC meetings, with additional focus in the spring prior to the May deadline for proposals.
- No later than the start of the next legislative session (winter 2023).

## Lead

DMF

## Participating Entities

DPH, Constables/MSOA, Environmental Police, stakeholder leaders, Legislature



# OBJECTIVE - FIVE -

Supporting and  
promoting cultural  
and historical uses  
of shellfish.



**Table 5.** Goals, Strategies and Recommended Actions

Goals	Strategies	Recommended Actions
5.1 Protect public access to coastal waters and habitat quality in support of cultural uses of shellfish resources.	Evaluate and strengthen the current framework for the review and permitting of proposed activities that may adversely impact important coastal resources and limit public access to those resources.	<ul style="list-style-type: none"><li>▪ DMF and municipalities should work with partner agencies to develop clear guidance on aquaculture permitting requirements with consideration of protecting public access, commercial and recreational harvest, and shellfish resources.</li><li>▪ Expand legislative support for competitive funding for social and natural science related to shellfish resources and resource uses.</li><li>▪ SAP to review and, where necessary recommend expansion, of state and federal programs that are directed at improving water quality, reducing pollution, shoreline stabilization, and nearshore shellfish habitat.<ul style="list-style-type: none"><li>- Expand funding to existing state programs (e.g. CZM's Coastal Pollutant Remediation Program) to increase the state's capacity to reduce stormwater impacts to shellfish beds.</li></ul></li><li>▪ Incentivize nature-based solutions to address stormwater and wastewater management (e.g. salt marsh and cranberry bog protection/restoration, rain gardens, nutrient mitigating septic systems, living shorelines) that limits negative impacts to shellfish resources from coastal development and shoreline management.</li><li>▪ Ensure opportunity for tribal, recreational, and wild harvest representation on SAP.</li></ul>



## Goal 5.1

### Protect public access to coastal waters and habitat quality in support of cultural uses of shellfish resources.

#### Summary

In Massachusetts there is a long history of protecting public access to marine resources (Colony Ordinances of 1640 – 1647). The protection and sustainable management of the Commonwealth’s natural shellfish resources and ensuring continued access to these historical and cultural uses of shellfish, is of great importance to the economic and environmental health of the state. Coastal development and land use practices

have led to a decline of the ecological condition of many of the state’s coastal waters therefore impacting the ability of shellfish populations and their habitats to persist and have created barriers to public access. In order to ensure public access for commercial and recreational harvest and coastal ecological health is maintained and that healthy shellfish resources remain in areas that are classified as open to harvest, land-based pollution sources need to be addressed.



## Resources and/or Actions Recommended

- Establish legislatively authorized incentives and/or grant programs that effectively reduce pollutants in coastal waters.
- Legislative support enabling competitive funding that directly supports applied shellfish research at entities that encourages field studies useful to resolving long-standing questions on impacts to shellfish habitat, shellfish resources, and public access from coastal development.
- Expand funding to existing state programs (e.g. CZM's Coastal Pollutant Remediation Program) to increase the state's capacity to reduce stormwater impacts to shellfish beds.
- DMF to formalize aquaculture site inspection/application requirements and municipal commercial and recreational propagation efforts related to the

protection of public access and existing resources, for example using the best available science to determine the threshold density of shellfish occurring within a proposed project area and distance buffers to valuable habitat such as eelgrass.

- EEA to direct the Seaport Economic Council to prioritize projects that create or maintain public access infrastructure for shellfishing, particularly parking and landing sites.

## Timeline

Next legislative session (winter 2023)

## Lead

SAP

## Participating Entities

Legislature, EEA, DMF, Constables, shellfish industry representatives



Digging for steamers at low tide © The Cape Cod Commercial Fishermen's Alliance

# OBJECTIVE – SIX –

Ensuring ecologically sound management and enhancement of shellfish resources and coastal ecosystems.





**Table 6.** Goals, Strategies and Recommended Actions

Goals	Strategies	Recommended Actions
6.1 Ensuring shellfish and coastal restoration efforts are designed to consider animal health and management implications, and do not result in adverse economic impacts to existing industry.	<p>Develop cross-agency and cross-stakeholder consensus on best management practices when using shellfish in 208 plans*, to include the shellfish industry, municipal departments, CCC, EEA and DPH.</p> <p><i>*208 plans refer to area-wide water quality management plans, developed pursuant to Section 208 of the Clean Water Act.</i></p>	<ul style="list-style-type: none"> <li>• EEA to launch a working group to develop state-wide voluntary BMPs and contribute to other recommended actions.</li> <li>• Consideration should include the establishment of requirements and/or regulations associated with propagation or restoration efforts that include metrics on efficacy, limit negative impact on existing markets from the sale of shellfish from municipal nutrient mitigation projects and strategies.</li> <li>• The Executive Branch or Legislature should require an evaluation of individual and cumulative economic impacts associated with shellfish planted to meet reduction goals in 208 plans (modify Section 208 Clean Water Act statute requirements, DEP review, and regional planning review).</li> <li>• DMF to update Shellfish Planting Guidelines specific to shellfish propagation and restoration efforts to include clear requirements for seed source approval and pathology testing.</li> <li>• Establish requirements and/or regulations associated with propagation or restoration efforts that limit negative impact on existing markets from the sale of shellfish from municipal nutrient mitigation projects and strategies.</li> <li>• Develop metrics to account for nutrient remediation provided by private shellfish aquaculture, propagation and harvest, and shellfish habitat restoration.</li> </ul>
6.2 Greater support for shellfish and coastal restoration efforts by developing minimum standards and further best practice guidance, examine and revise as needed restrictions on restoration activities in contaminated waters, and a requirement that restoration efforts demonstrate balance between shellfish fisheries interests and public health.	<p>Expand opportunities for ecosystem-based restoration efforts focused on the improvement of shellfish habitat (spat on shell, cultch, reef development) and the development of self-sustaining brood stock populations (sanctuaries), alongside put-and-take style efforts.</p>	<ul style="list-style-type: none"> <li>• DMF should evaluate current restrictions on shellfish restoration activities in contaminated waters where appropriate and assess resource needs (i.e. patrol) and/or statutory and regulatory changes that would allow for restoration of wild and native populations of shellfish in contaminated waters that could serve to support recreational and commercial shellfishing opportunities in adjacent open areas. <ul style="list-style-type: none"> <li>- Increase staff patrol capacity to allow restoration activities in all classifications.</li> <li>- Develop clear guidance on propagation and restoration requirements.</li> </ul> </li> <li>• EEA agencies to execute a review of grant programs that are related to improving coastal water quality. <ul style="list-style-type: none"> <li>- As warranted, increase funding for relevant grant programs, modify grant terms and prioritize projects that address pollutants prior to making it into coastal waters.</li> </ul> </li> </ul>





## Goal 6.1

**Ensuring shellfish and coastal restoration efforts are designed to consider animal health and management implications, and do not result in adverse economic impacts to existing industry.**

### Summary

A few communities have recently begun to increase private shellfish aquaculture opportunities and expand propagation planting specifically to help meet federal standards related to nutrient remediation in coastal waters. While most of the communities that have been approved to include shellfish planting into their nutrient mitigation plans are still in the pilot phase, the prospect of wide-scale implementation across the Commonwealth has raised concerns of municipal programs competing with private industry.

Specifically, industry members and municipalities have highlighted that increased planting of municipal-funded seed and subsequent harvest associated with nutrient mitigation efforts may have negative impacts on market prices. The scale of what is being proposed far exceeds

what is currently being harvested and sold statewide. Without new oyster markets beyond the half shell market, there is concern that this may depress wholesale prices to the point that it may not make sense economically to continue to farm. Towns will need to continue growing and harvesting to meet nitrogen removal commitments, and as supply starts to exceed demand they may have to subsidize these businesses leading to additional non-competitive practices. An exception might be if this could be done with quahogs (or other species) in place of oysters, but it is not clear if there is sufficient bottom space in these estuaries to grow enough quahogs to meet nitrogen removal needs or if the quahog market could absorb the additional supply without negative market impacts. A preferred alternative could prioritize the use of alternative shellfish species (not oysters or quahogs), or send 208 shellfish to alternative (shucked product) or non-commercial markets. In addition, concerns have been raised that such projects may result in unintended animal health, human health, and management consequences. The MSI Task Force recommends the initiation of a working group to develop guidance including requirements related to the MEPA Certification of municipal efforts directed at nutrient remediation.



Checking on oyster cages near low tide © Zapalac Advisors

### Resources and/or Actions Recommended

- DMF to consult with its legal team to determine 1) which agency has authority over any new regulations related to sale of shellfish grown for nitrogen mitigation, and 2) a pathway to allow towns to donate shellfish raised for nutrient mitigation.

- EEA to launch a Work Group composed of diverse stakeholders, appropriate federal, state, regional, and local agencies, and municipalities, and others as necessary, to develop guidance and seek consensus related to municipal nutrient remediation that includes shellfish.
- Legislature to direct and fund EEA agencies, DPH, and other agencies as necessary to oversee an objective economic market analysis of the shellfish industry in MA, to quantify the impacts of nitrogen mitigation projects on the shellfish industry, and inform the development of recommendations for regulations and/or best management practices.

## Timeline

Working group established within six months of the adoption of the MSI strategic plan by the MSI Task.

## Lead

EEA

## Participating Entities

EEA Agencies, DPH, CCC, Legislature, Municipalities/Constables, shellfish stakeholders



## Goal 6.2

**Greater support for shellfish and coastal restoration efforts by developing minimum standards and further best practice guidance, revising restrictions on restoration activities in contaminated waters, and a requirement that restoration efforts demonstrate balance between shellfish fisheries interests and public health.**

## Summary

A number of communities conduct shellfish propagation activities as a means of restoring degraded shellfish populations and enhancing their coastal ecosystems via shellfish restoration, though restrictions on this practice have led to limited implementation. Water quality and estuarine habitat are important factors in functional coastal ecosystems. Land-based restoration and management (one example, cranberry bog restoration) can have a significant impact on coastal ecosystems. To address significant environmental challenges, shellfish restoration can play a meaningful role in improving

the condition of coastal water bodies. Shellfish play an important role in coastal ecosystems and the MSI Task Force recommends that 1) relevant EEA agencies revisit restrictions on shellfish restoration activities in contaminated waters and 2) allow for the development of shellfish sanctuaries to protect broodstock through harvest management closures that could serve to support recreational and commercial shellfishing opportunities in adjacent open areas. Additionally EEA agencies should review and revise permitting requirements related to placement of cultch as a component of shellfish restoration/propagation.

## Resources and/or Actions Recommended

- Conduct national analysis of shellfish habitat restoration programs in order to inform revision of state level guidance/policy on shellfish habitat restoration and management in all classification areas. Review other states' policies related to establishment of no-harvest areas, and planting of shellfish in areas closed to harvest. Identify resource needs (such as harvest enforcement (OLE, Municipal natural resource staff)) to effectively manage such activities to ensure animal and public health. Identify areas suitable for shellfish restoration from ecological and public health perspectives.

- EEA Agencies to review state and federal grant programs designed to improve water quality and estuarine health and where appropriate request state and federal legislative increases in funding for restoration projects that improve water quality.

## Timeline

Completed 18 months from adoption of MSI strategic plan.

## Lead

EEA Agencies

## Participating Entities

DPH, NGO Partners, Constables



Measuring oyster growth on a restoration project. © The Nature Conservancy

## Links to Appendices

[MSI Scoping Committee Report](#)

[Scoping Report Appendix A: Stakeholder Comments](#)

[Scoping Report Appendix B: Recommended Actions](#)

[MSI Assessment Committee Report](#)

[Public Comments on the MSI Strategic Plan Consensus Draft Document](#)



## The Strategic Plan was unanimously approved by the MSI Task Force by a vote of the Task Force members in attendance on March 30, 2021:

Dan McKiernan, Director, Mass. Division of Marine Fisheries, MSI Chair  
Paul Bagnall, President, Mass. Shellfish Officers Association  
Matt Charette, Director, Woods Hole Sea Grant Program  
Scott Soares, proxy for Seth Garfield, President, Massachusetts Aquaculture Association  
Jill Goldsmith, Town Manager, Chatham  
Sean Bowen, proxy for John Lebeaux, Commissioner, Mass. Dept. of Agricultural Resources  
Deb Markowitz, Mass. State Director, The Nature Conservancy  
George Krikorian, proxy for John Mitchell, Mayor, New Bedford  
Michael Moore, Mass. Dept. of Public Health  
Senator Susan Moran  
Rob O'Leary, Massachusetts Maritime Academy  
Melissa Sanderson, proxy for John Pappalardo, CEO, Cape Cod Commercial Fishermen's Alliance  
Representative Sarah Peake  
Pete Seminara, proxy for Sefatia Romeo Theken, Mayor, Gloucester  
Lisa Rhodes, proxy for Martin Suuberg, Commissioner, Mass. Dept. of Environmental Protection

### Additional panelists in attendance:

Chris Schillaci, NOAA Fisheries, MSI Steering Committee	Monica Mullin
Steve Kirk, The Nature Conservancy, MSI Steering Committee	Chrissy Petitpas, DMF
Jeff Kennedy, DMF, MSI Steering Committee	Tom Shields, DMF
Josh Reitsma, Woods Hole Sea Grant	Julia Kaplan, DMF
Kaelyn Hilliard	Jared Silva, DMF
Sarah Ferrara	

### Public in attendance:

Bethany Gibbons, Dale Leavitt, Suzanne Phillips, Nancy Civetta, Renee Gagne, Gabe Lundgren,  
David Dow, Danny Badger, Brianne Shanks, 508-\*\*\*\*385

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Massachusetts Division of Marine Fisheries	University of Massachusetts Boston
The Nature Conservancy	Massachusetts Aquaculture Association
Cape Cod Commercial Fishermen's Alliance	

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TO LEARN MORE GO TO: [www.MassShellfishInitiative.org](http://www.MassShellfishInitiative.org)



A freshly harvested quahog © Cape Cod Commercial Fishermen's Alliance

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