

Table 1.1: Summary of Recommended Stakeholder Actions for MSI Priority Goal 1.1
Improve how local and state shellfish managers communicate and engage with stakeholders.

Recommended Stakeholder Action	Specific Areas of Interest
<p>Formalize a process for state and local officials to consistently communicate with stakeholders regarding shellfish related issues.</p>	<ul style="list-style-type: none"> • Emergency growing area closures. • Changes in growing area classification. • Changes in growing area status. • <i>Vp</i> related illnesses and closures. • Proposed statutory and regulatory amendments. • Changes in policy. • Planning and management efforts that warrant public consideration.
<p>Make decision making process more transparent and inclusive to accommodate greater stakeholder input and coordinated stakeholder responses.</p>	<ul style="list-style-type: none"> • Extend public comment periods. • Improve use of e-mail to announce public meetings, hearings and comment periods (“notices”). • Establish repository for notices, as well as proposed aquaculture and restoration activities. • Better use social media as outreach tool. • Develop a text alert system for growing area closures and openings. • Post hard copies of notices and growing area closures and openings in prominent public places. • Increase communication between state managers and local shellfish constables. • Establish a position within DMF to serve as a liaison to harvesters and municipalities.
<p>Develop formal protocols related to the communication of changes to growing area classification, changes to growing area status, and emergency growing area closures. Increase the resources dedicated to announcing these changes to stakeholders in near real-time.</p>	<ul style="list-style-type: none"> • Increase dedicated staff and IT resources. • Post information in real time. • Develop a phone/text alert system. • Enhance GIS mapping capacity to include up-to-date growing area classification and status information. • Publish water quality sampling results.
<p>Enhance means of communication between state government and stakeholders regarding shellfish policy and management.</p>	<ul style="list-style-type: none"> • Hold annual meetings to discuss the status of ongoing state management actions and emerging issues.

	<ul style="list-style-type: none">• Increase participation in DMF's Shellfish Advisory Panel and increase meeting frequency.• Formalize a state-wide public notice distribution process.• Work to ensure all state and local public notices are announced through numerous mediums and post all notices in municipal buildings and other pertinent public locations.• State and local public notices should be cross published on their perspective websites.
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Table 1.2: Summary of Recommended Stakeholder Action for MSI Priority Goal 1.2
Increase public support and awareness for shellfish resources, shellfish fishing, aquaculture, and the ecosystem services and economic opportunities shellfish provide to the Commonwealth

Recommended Stakeholder Action	Specific Areas of Interest
<p>Increase public outreach and education regarding shellfish resources, shellfish fishing and the ecological benefits of shellfish.</p>	<ul style="list-style-type: none"> • A state-wide campaign regarding how pollution from fertilizers, pesticides, effluent, and other common forms of residential and agricultural run-off impact coastal ecology and shellfish populations. • Underscore importance of addressing this as a shared responsibility of Commonwealth residents. • Demonstrate how shellfish can help restore coastal ecology and mitigate nutrient pollution. • Develop general education materials regarding shellfish resources and shellfish fisheries geared towards the general public. • Display all informational and education materials at local festivals, schools, and prominent locations (e.g., New England Aquarium).
<p>Increase public funding for regional bodies (e.g., Barnstable County Cooperative, State Aquaculture Centers) dedicated to providing cooperative services and technical support.</p>	<ul style="list-style-type: none"> • Funding can be used to develop informational and education materials. • Grant administration to increase public awareness and support for shellfish.

Table 2.1: Summary of Recommended Stakeholder Action for MSI Priority Goal 2.1
Strengthen state and local governmental capacity to effectively manage shellfish resources and shellfish fisheries in the face of increasing and evolving management challenges.

Recommended Stakeholder Action	Specific Areas of Interest
<p>Increase DMF’s capacity for water quality testing in order to both maintain current approved area classifications and work to re-classify contaminated area classifications to create more shellfish harvest opportunities.</p>	<ul style="list-style-type: none"> • Increase DMF’s FTE staff dedicated to shellfish growing area classification. • Increase the vehicles, vessels and other resources available to DMF’s shellfish classification staff • Strengthen support for the CPR grant program through the prioritization of projects that address the control of pollutants before they run-off into the watershed and the extension of project timelines from 1-year to multiple years.
<p>Increase in-state laboratory capacity for water quality, bio-toxin, and pathogen testing and monitoring to meet NSSP mandates and address emerging issues.</p>	<ul style="list-style-type: none"> • Increase DMF’s FTE shellfish laboratory staff to allow the lab to function at least 6-days per week and receive samples 5-days per week • Cross-train other DMF staff to help support laboratory productivity. • Develop state laboratory diagnostics for new and emerging pathogens (e.g., <i>Vp</i>, MSC, HABS). • Provide funding for training and equipment to increase bio-toxin monitoring, as well as virus and bacteriological testing. • Directly fund and support the development of ISAs to expand the in-state testing of shellfish related public health issues. • Dedicate resources to monitoring and analyzing environmental conditions and other trends that can impact shellfish resource health (e.g, water temperature, ocean acidification, nutrient pollution, HABS).

<p>Increase state and local enforcement capacity to patrol shellfish growing areas to prevent the illegal harvest and sale of contaminated shellfish and meet NSSP mandates.</p>	<ul style="list-style-type: none">• Provide regulator MSOA shellfish constable training and subsidize training costs.• Increase MEP FTE staff and resources.• Formalize patrol MOUs between the MEP and municipal shellfish constables.
<p>Increase support and funding available to municipal shellfish management programs.</p>	<ul style="list-style-type: none">• Provide a substantive, consistent funding source for municipal propagation activities (e.g., earmark in state budget).• Annualize finding for state aquaculture centers and county and local cooperative extensions.• Increase DMF FTE staff dedicated to technical assistance.• Provide direct funding or establish trusts to reimburse municipal shellfish programs.

Table 2.2: Summary of Recommended Stakeholder Action for MSI Priority Goal 2.2

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

Recommended Stakeholder Action	Specific Areas of Interest
Support research affecting shellfish resource health, shellfish production, habitat and public health to improve management.	<ul style="list-style-type: none">• Disease monitoring.• New and emerging pathogens (e.g., MSC, Vp, HABs).• Development of reliable, inexpensive, quantitative testing for pathogens in water column and shellfish.• Shellfish genetics, breeding, and animal health.• Predator management.• Aquaculture alternatives to reduce reliance on oyster monoculture.• Funding for applied shellfish research at state universities.• Impacts of dredge fisheries on habitat and benthic ecosystems.

Table 2.3: Summary of Recommended Stakeholder Action for MSI Priority Goal 2.3
Support for resources that promote shellfish industry development, communication, market opportunities, and economic and environmental resiliency.

Recommended Stakeholder Action	Specific Areas of Interest
Increase opportunity for shellfish industry collaboration and training.	<ul style="list-style-type: none"> • Shellfish handling training for harvesters, dealers, and food service workers.
Cooperation between state agencies, county cooperative extensions, and aquaculture centers to promote best management practices.	<ul style="list-style-type: none"> • Develop best management practices for shellfish harvest and handling. • Recommend regulatory and policy changes based on best management practices. • Enhance aquaculture permitting guidance.
Improve financial support for industry.	<ul style="list-style-type: none"> • Bolster shore-side infrastructure available to support shellfish industry (e.g., ice machines, boat and vehicle access to landing sites). • Expand support for Seaport Economic Council grants and other grant opportunities. • Develop gear loss recovery programs.
Support marketing and branding opportunities for Massachusetts shellfish.	<ul style="list-style-type: none"> • Expand markets for added-value products (e.g., shucked oysters). • New shellfish market development (e.g., butter clams). • Create consumer-friendly outreach, branding, and marketing materials.

Table 3.1: Summary of Recommended Stakeholder Action for MSI Priority Goal 3.1
Encourage economic opportunities around shellfish in a manner that is consistent with the character and interest of individual communities.

Recommended Stakeholder Action	Specific Areas of Interest
<p>Convene working group to address emerging conflicts and issues related to home rule.</p>	<ul style="list-style-type: none"> • Have forum for home rule and cross-community issues to be debated and discussed. • Address the transferability of municipally managed aquaculture licenses. • Provide guidance on regulatory and permitting issues.
<p>Continued support for home rule.</p>	<ul style="list-style-type: none"> • Ensure changes to shellfish legislation, regulation, and policy do not inappropriately diminish home rule.

Table 3.2: Summary of Recommended Stakeholder Action for MSI Priority Goal 3.2
Improve and refine existing state management strategies that increase sustainable economic opportunities around shellfish resources and shellfish fisheries while balancing shellfish sanitation concerns.

Recommended Stakeholder Action	Specific Areas of Interest
<p>Regulatory adjustments to lower capital investment and compliance costs and increase production.</p>	<ul style="list-style-type: none"> • Pursue further allowances for the bulk tagging of shellfish by harvesters. • Ease restrictions on seed transport by aquaculturists. • Relax commercial fisherman time restrictions on holding and transporting shellfish to market. • Allow for more opportunities for commercial fishermen to direct market shellfish to consumers. • Reduce requirements to become a shellfish dealer.
<p>Identify strategies and programs to incentivize sustainable growth in the shellfish industry.</p>	<ul style="list-style-type: none"> • Increase maximum seed size allowed for shellfish nursery grow out in contaminated waters. • Prioritize nursery grow out in locations with the least impact on other user groups and highest ecological benefit (e.g., areas subject to seasonal water quality closures). • Amend state law and regulation to ensure up-to-date and consistent terminology is used in the management and regulation of shellfish. • Increase municipal aquaculture license fees to cover costs associated with local oversight and to incentivize expansion of aquaculture.
<p>Enhance state involvement in the setting of federal mandates through the NSSP and ISSC.</p>	<ul style="list-style-type: none"> • Ensure state agencies are sufficiently staffed to participate at NSSP and ISSC meetings. • Pursue changes to the NSSP's MO to increase commercial shellfish fishing opportunities. • Push back on federal mandates viewed as limiting harvest opportunities, increasing production costs, and favoring large-scale commercial shellfish operations.

Table 4.1: Summary of Recommended Stakeholder Action for MSI Priority Goal 4.1
Protect public access to coastal waters and habitat quality in support of cultural uses of shellfish resources.

Recommended Stakeholder Action	Specific Areas of Interest
<p>Greater focus on addressing shore-side and coastal development projects that may adversely impact shellfish resources, shellfish habitat, and public access to these resources and habitat.</p>	<ul style="list-style-type: none"> • Residential development. • Ocean energy development. • Impervious surfaces and piers. • Marinas and mooring fields. • Toxic bottom paints, petroleum fuel, and other common marine industry chemicals. • More stringent local wetlands bylaws that seek to prioritize water quality and shellfish resource protection.
<p>Evaluate and strengthen the aquaculture review and permitting framework to consider the impacts of further development on commercial and recreational wild shellfish fisheries, public access, and other fisheries and fishery resources.</p>	<ul style="list-style-type: none"> • Increase state agency staff capacity to work with coastal communities on the development of local aquaculture regulations that prioritize public access and resource protection. • Increased partnership and cooperation among state agencies to develop clear guidance on aquaculture permitting requirements. • Expand the public review process for proposed aquaculture projects to allow for additional stakeholder input.
<p>Balance commercial and recreational wild shellfish fishery interests with aquaculture interests.</p>	<ul style="list-style-type: none"> • Ensure interests of stakeholders are represented in a balanced manner at MSI. • Management decisions should seek to balance interests. • DMF’s shellfish regulations should better differentiate between commercial wild harvest shellfish fishermen and aquaculturists. • Secure increased funding for municipal propagation to secure seed and gear purchases.

Table 5.1: Summary of Recommended Stakeholder Action for MSI Priority Goal 5.1
Ensure restoration projects are designed to consider animal health and management implications, and do not result in adverse economic impacts to existing commercial shellfish fishing activities.

Recommended Stakeholder Action	Specific Areas of Interest
<p>Develop a working group to address restoration projects, particularly those that are designed to mitigate nutrient pollution and meet 208 Plans requirements.</p>	<ul style="list-style-type: none"> • Best management practices for restoration projects, particularly those designed to meet 208 Plan requirements. • Develop new permitting and programmatic guidelines to ensure restoration projects are scientifically based and consider commercial shellfish industry economics, public health and resource health impacts, public access, and management implications. • Restoration projects should support recreational shellfish fishing opportunities. • Increases in commercial shellfish supply related to restoration projects produces market volatility and instability. Commercial sale should be prohibited or restricted to sale markets (e.g., shucked product, other than raw consumption bait). • Priority should be given to restoration projects that use shellfish species other than oysters due to habitat suitability and market concerns.
<p>Enhance state involvement with local municipalities regarding their restoration projects.</p>	<ul style="list-style-type: none"> • Develop clear guidelines on municipal restoration project requirements. • Ensure responsible implementation of restoration projects.. • Evaluate and update DMF’s Shellfish Planting Guidelines, particularly as it results to seed approval and pathology testing criteria.

Table 5.2: Summary of Recommended Stakeholder Action for MSI Priority Goal 5.2
Provide greater support for restoration projects by developing further guidance on best practices, revise restrictions on restoration in contaminated growing areas, and ensure restoration is considered equally with shellfish fishery interests and public health.

Recommended Stakeholder Action	Specific Areas of Interest
<p>Prioritize restoration projects equally with aquaculture and wild shellfish fishery interests.</p>	<ul style="list-style-type: none"> • Develop of synergistic project review metrics that consider wide range of impacts, including long-term positive impacts efforts may have on habitat and ecosystem function. • Incentivize ecosystem-based restoration projects focused on the improvement of shellfish habitat (spat on shell, cultch, reef development) and the development of self-sustaining brood stock populations (sanctuaries), over put-and-take style efforts. • Lift restrictions on restoration in contaminated growing areas. • Allow for the development of restoration leases and shellfish sanctuaries in these contaminated growing areas. • Recognize the benefits of sanctuaries on brood stock and shellfish populations in adjacent waters.
<p>Develop innovative strategies in-line with current regulations.</p>	<ul style="list-style-type: none"> • Increase growing area patrol capacity to allow restoration contaminated growing areas. • Consider expanding nursery culture in contaminated growing areas to take advantage of the nutrient removal efficiency of juvenile shellfish. • Increase the maximum seed size allowed for nursery culture in contaminated growing areas. • Best management practices restoration projects.

Table 6.1: Summary of Recommended Stakeholder Action for MSI Priority Goal 6.1
Develop and strengthen the means of communication between managers, regulators, and community groups both within and across all levels of government.

Recommended Stakeholder Action	Specific Areas of Interest
<p>Develop post-MSI venue for cooperative communication on shellfish related challenges.</p>	<ul style="list-style-type: none"> • Increase state agency representation on DMF’s Shellfish Advisory Panel. • Include participation by agencies such as DPH that are not within EEA but have significant role in shellfish management. • Focus on future challenges and pursuing objectives set forth in the MSI Strategic Plan. • Encourage information sharing on management strategies.
<p>Resolve jurisdiction issues.</p>	<ul style="list-style-type: none"> • Applicability of Wetlands Protection Act on the operation of certain commercial fishing gears (e.g, hydraulic dredges) in town waters. • Develop consistent and improved guidelines and standards for shellfish activities. This address. • Best management practices for shellfish resource and coastal restoration projects. • Best management practices for shellfish harvest and handling. • Guidelines for the siting, planning, permitting, and implementing of aquaculture, shellfish propagation, shellfish planting and shellfish resource and coastal restoration projects.