



Massachusetts Division of Marine Fisheries Strategic Plan 2019-2023



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July 1, 2019

Commonwealth of Massachusetts

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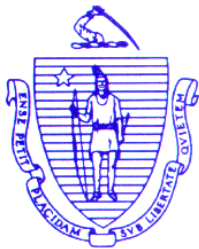
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Table of Contents

Mission and Vision	4
Challenges	5
Partnerships.....	6
Goals.....	7
Strategies.....	8



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On behalf of the Massachusetts Division of Marine Fisheries (DMF) within the Department of Fish and Game (DFG) with offices in Boston, New Bedford, Gloucester, and Newburyport, we provide our Strategic Plan for 2019-2023. This plan updates and revises previous policies and strategies and continues to be *“a living document that will be revised to address local, regional and national changes in governance, economy, and climate recognized as the forces driving and affecting natural resource management.”*

This Strategic Plan ensures the work of the Massachusetts Division of Marine Fisheries remains focused on its mission and vision. It emphasizes marine fisheries leadership that DMF brings to the region on behalf of the Commonwealth. It stresses the protection of the marine environment and habitats; preservation and enhancement of commercial and recreational fishing opportunities; improving the science on which marine fisheries policy and management decisions are based; and confronting new challenges and requirements for our increased involvement with early 21st century state and federal initiatives, such as promotion and expansion of marine aquaculture and responsible offshore energy development.

David E. Pierce, Ph.D.

A handwritten signature in dark ink, appearing to read "David E. Pierce".

Director
Division of Marine Fisheries

Ronald Amidon

A handwritten signature in dark ink, appearing to read "Ronald Amidon".

Commissioner
Department of Fish and Game

Mission

Manage the Commonwealth's living marine resources in balance with the environment resulting in sustainable fisheries and contributions to our economy, stable availability of diverse, healthy seafood and enriched opportunities that support our coastal culture.

Our mission of managing living marine resources is properly understood as regulating those who harvest or cultivate these resources for individual gain and for the benefit of the Commonwealth's seafood industry and seafood consumers relying on that industry's ability to meet consumer demands for wholesome, fresh seafood, locally caught, imported, or raised.

This mission requires DMF promotion and support of marine recreational fisheries providing enjoyment and ocean protein for hundreds of thousands of residents and nonresidents often enhanced by increased shoreline access, placement of artificial reefs, and fishing piers. We recognize fishermen are important components of marine ecosystems providing information and insights not directly experienced by most managers, regulators, and scientists.

Managing living marine resources subject to environmental influences, especially warming waters, coastal development, and industrialization, requires DMF to protect, restore, and improve habitats and water quality on which these resources rely. It also entails involvement with coastal waters and ocean-use policy decisions, including marine aquaculture and offshore energy development which are expected to ramp up dramatically over the next five years.

Vision

Achieve sustainable fisheries and healthy marine ecosystems through sound science, innovation, collaboration, effective leadership, and stewardship all serving to enrich the productivity and socioeconomic value of marine fisheries to the Commonwealth.

Our vision requires us to prioritize: (1) rebuilding fish and shellfish stocks for high, sustainable yields bounded by biological and environmental constraints; (2) fostering well-managed and profitable commercial fisheries, enjoyable recreational fisheries, and an ecologically sustainable aquaculture industry; (3) collaborating with regional science and management partners; and (4) promoting fishing industry stewardship and trust through accountability and respect.

Attaining this vision and maintaining its focus and clarity is highly dependent on the quality and devotion of current and future DMF staff to the agency's mission. This is why our Strategic Plan emphasizes strengthening DMF's core and most valuable resource, its employees.

Challenges

Over the next five years DMF will confront new challenges and requirements for our continued involvement in and support of local, state, interstate, and federal management and science priorities. These include climate change, ocean warming, and sea level rise making our coastline more vulnerable; offshore development in many areas of value to commercial and recreational fisheries; and comprehensive data collection to support ecosystem function and to increase our understanding of protected species movements and threats.

DMF will continue to confront ongoing challenges such as: (1) rebuilding fish stocks and sustaining commercial and recreational fisheries constrained by uncertain scientific information, data gaps, and environmental factors; (2) careful advancement of and planning for increasingly valuable marine aquaculture; and (3) evaluating resource allocations under changing ocean conditions and species distribution shifts.

The Strategic Plan through its goals and broad objectives will address several factors and challenges over the next five years. Of particular importance are:

- changing ocean conditions resulting in ocean acidification, viral/bacterial contamination, and threats to coastal ecosystems;
- shoreline change associated with coastal development and sea level rise and loss of fish and shellfish habitat;
- warming ocean temperatures causing changes to marine fisheries resource distributions;
- fisheries interactions with protected species, especially fixed-gear fisheries and the northern right whale;
- balancing competing ocean uses with impacts to habitat and fishery resources;
- increasingly complex interstate and federal fisheries management systems and requirements, including enhancement of public health protection; and
- achieving and maintaining sustainable fisheries that contribute to our economy and support our coastal culture.



Partnerships

Partnerships are essential as DMF increases its scientific capabilities and expertise to manage the Commonwealth's commercial and recreational fisheries in concert with other states and organizations, such as the Atlantic States Marine Fisheries Commission (ASMFC) and regional fishery management councils, notably New England and Mid-Atlantic. Other partnerships for improved scientific understanding are with the fishing industry itself, NOAA Fisheries, and non-governmental organizations (NGOs).

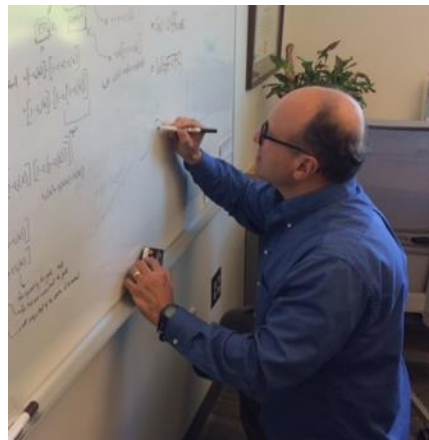
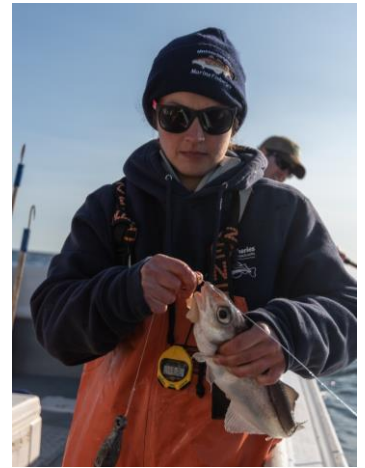
Collaborative research with fishing industry partners on cod, lobster, halibut, scallops, and several other important New England species has improved regional knowledge of fish life histories and helped to reduce discarding and mortality. Support for research and monitoring from both the fishing industry and non-government environmental organizations has assisted DMF's efforts to promote best fishing practices, commercially and recreationally. Maintaining these partnerships is critical to meeting our mission over the next five years.



Another important partnership, especially for improved science-based decisions, is the Massachusetts Marine Fisheries Institute (MFI) with the University of Massachusetts, co-chaired with the School for Marine Science and Technology (SMAST). The MFI advances science in support of improved, innovative, and practical fisheries management applications. The MFI also educates, trains, and positions graduate students for important fisheries science and management roles in Massachusetts, throughout New England, and in other regions through their research, scientific publications, and employment.

2019-2023 Goals

1. Advance understanding and stewardship of our living marine resources, including fish, habitat, and marine protected species.
2. Support sustainable commercial and recreational fisheries.
3. Protect public health through monitoring and management of shellfish resources and advance the development of a sustainable marine aquaculture industry.
4. Expand and foster regional science, management, and education partnerships.
5. Build and maintain a high level of staff professionalism and administrative leadership.



Strategies

Goal 1: Advance understanding and stewardship of our living marine resources, including fish, habitat, and marine protected species focuses on the Commonwealth's responsibility to conserve and manage coastal and fisheries resources. DMF's fishery-dependent and independent surveys examine abundance and distribution of species in coastal waters and provide information to determine spawning locations and seasons. Such information is applied to regional stock assessments to determine sustainable harvest rates. Additionally, DMF's environmental and habitat monitoring programs support decision-making for ecosystem services and protected species and can serve as a baseline to assess impacts of climate change. Over the next five years, DMF will evaluate and improve existing programs to meet current conservation and management needs, as well as new requirements arising from changing ocean conditions, shifts in resource distribution, and offshore development.

1. Assess, protect, and restore living marine resources and marine fisheries habitats.

- Resource stewardship:

- Provide support and direction to address impacts of offshore development, such as offshore wind energy development, on the living marine resources and industries of the Commonwealth, including regional scientific research and mitigation approaches.
- Provide consistent environmental review of construction projects and coastal alterations to minimize adverse effects on marine fisheries habitats and resources.
- Evaluate spawning and habitat protection measures for species with direct implications for management in the Commonwealth.
- Focus conservation engineering efforts on reducing impacts on protected species, bycatch, and discards, while optimizing catch of target species.
- Develop best practices in recreational fishing gear and handling to minimize post-release mortality.



2. Promote understanding of ecosystem health.

- Climate change impacts:

- Conduct, evaluate and improve temperature monitoring data collections to ensure activities: (1) accomplish adequate spatial and temporal coverage; (2) collect the necessary data required for management decisions; (3) are adequately funded and cost-effective relative to the value of data generated; and (4) are coordinated and publicly accessible.
- Continue to assess data on the impacts of climate change and ocean acidification on: (1) ecosystem services and resiliency, including shoreline change and sea level rise; and (2) distribution, abundance and mortality of fish, shellfish, and highly migratory species.

3. Enhance scientific and technical service investments required for state, interstate, and regional sustainable fisheries management.

- Resource monitoring:

- Conduct, evaluate and improve fisheries-dependent and independent data collection programs to ensure activities: (1) accomplish adequate spatial and temporal coverage; (2) collect the necessary data required for management decisions; and (3) are adequately funded and cost-effective relative to the value of data generated.
- Improve understanding of fish, shellfish, and marine protected species life histories, including spawning areas, times, and behaviors.
- Increase collaborative surveys and monitoring with fishing industries.

- Advancement of stock assessment techniques:

- Contribute to the development of advanced and innovative assessment techniques and models.
- Increase collaborative work with scientific partners to improve assessment methods.



Goal 2: Support sustainable commercial and recreational fisheries recognizes DMF's mission to manage the Commonwealth's fisheries resources to enhance contributions to our economy and provide healthy seafood and enriched recreational fishing opportunities. DMF is a key participant in state, interstate, and federal fisheries management and advocates for decisions to achieve the long-term benefits of conservation, while considering socio-economic interests and needs of Commonwealth communities. DMF is committed to supporting management plans that integrate ecosystem services, socio-economic impacts, habitat protection, bycatch reduction, and protected species interactions with fair, scientifically-defensible allocations of fishery resources. Over the next five years, working with the Commonwealth's Marine Fisheries Advisory Commission (MFAC), DMF will continue to improve state waters management and compliance, as well as promote healthy seafood in the Commonwealth through increased public education and support for community and fishing industry participation.



1. Improve state water fisheries management and provide leadership in policy and management.

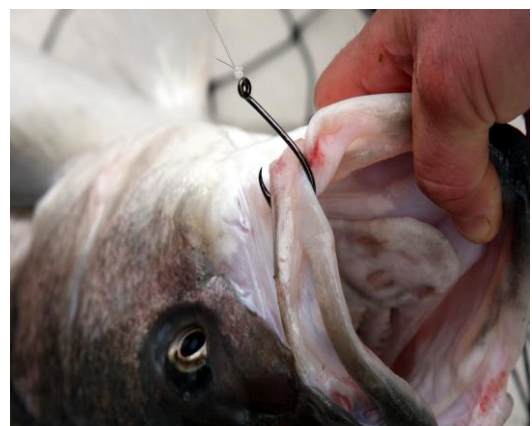
- State waters fisheries management:

- Assess and update DMF regulations (322 CMR) and statutes (Chapter 130).
- Increase compliance with DMF regulations and statutes.
- Use MFAC expertise more effectively to manage state water fisheries and develop responses to federal and interstate management and regulation.
- Enhance methods, data elements, and quality control of catch reporting from harvesters and dealers for timely and accurate accounting.
- Strengthen interaction and communication with state fisheries enforcement to: (1) improve enforceability of rules/regulations; (2) determine effectiveness of fisheries management approaches; and (3) advocate for increased enforcement resources for greater enforcement capability and effectiveness.
- Examine composition of DMF commercial permit holders to balance access to fishery resources with availability of resources.
- Modernize permitting process to better align with current technology.

- Regional and national fisheries management:
 - Provide guidance on integrated multi-use ocean management of coastal and offshore ocean waters with emphasis on natural resource protection and preservation of fishing access.
 - Assess current and future needs for participation on local, state, regional, national, and international management committees.
 - Enhance collaborations with states and federal authorities with shared boundaries to develop compatible management approaches.

2. Promote commercial and recreational fisheries.

- Commercial fishing opportunities:
 - Develop Port Profiles and a Commercial Fishing Infrastructure Assessment for Massachusetts Coastal Harbors to ensure that needs of commercial fishing communities are met and to provide a benchmark for municipalities to improve current conditions within harbors and ports.
 - Develop regulatory approaches for addressing the “greying” of the fishing fleet by allowing younger men and women to gain access to commercial fisheries with limited entry; e.g., permit transfer allowances.
- Recreational fishing opportunities:
 - Recruit and retain participants in recreational fishing.
 - Provide access to the shoreline and recreational opportunities through piers, docks, artificial reefs, and public ramps.
 - Improve understanding of recreational catch, discards, mortality, and effort to enable state, interstate and federal rules and regulations for maximizing recreational fishing opportunities.
 - Contribute to improvements to the Marine Reporting Information Program (MRIP) and communicate MRIP updates to fishermen.
 - Promote protection of prey species for recreationally-sought predators to enhance recreational opportunities.
 - Support DMF contributions to angler education.
 - Increase involvement and communication with recreational organizations.



- Seafood marketing and safety:
 - Support Massachusetts commercial fishing and seafood industries by increasing awareness and demand for seafood products through promotion and leveraging of the seafood educational brand.
 - Expand scope of Seafood Marketing Program to spearhead events, conduct consumer research, and positively message the benefits of local seafood.
 - Support seafood traceability work, including increased efforts to ensure seafood safety through cooperative work with the Departments of Public Health and Environmental Protection.
- 3. Increase public participation and understanding of the fisheries management process.**
- Public and industry outreach:
 - Amplify public outreach through website, social media, and presence at seafood/fisheries events.
 - Seek input from stakeholders to balance needs and desires of diverse range of marine resource users in the Commonwealth.

Goal 3: Protect public health through monitoring and management of shellfish resources and advance the development of a sustainable marine aquaculture industry addresses DMF's Shellfish Sanitation and Management Program focusing on public health protection, as well as the direct and indirect management of the Commonwealth's molluscan shellfish resources. Public health protection is ensured through the sanitary classification system and monitoring of marine biotoxins within state waters. DMF regulates commercial shellfish aquaculture, directly manages dredge fisheries, and indirectly manages municipal shellfish resources through a partnership with coastal communities. Over the next five years, DMF will focus on increased demands to enhance public health protections, assist communities to identify pollution sources and classify harvest areas, and respond to changing ocean condition and sea level rise impacts on shellfish abundance and disease. Additionally, DMF is committed to providing the resources and support needed to foster sustainable growth and maturation of the Commonwealth's marine aquaculture industry.

- 1. Protect public health through surveys, monitoring and managing harvest methods.**
- Sanitary surveys and classification of Shellfish Growing Areas:
 - Obtain more accurate water quality data and pollution source information to re-classify areas for harvest opportunities.
 - Conduct research to determine shellfish purging rates to establish more accurate closure durations after rain events.
 - Maximize potential of DMF laboratories to receive and process samples.
 - Improve communication methods for changes to classification status and unanticipated closures.

- Monitoring for marine biotoxins in shellfish:
 - Expand biotoxin monitoring programs for red tide and phytoplankton.
 - Encourage development of better monitoring and regulatory tools in collaboration with state and federal partners.
- Manage harvest and handling methods to reduce illness caused by *Vibrio*:
 - Continue and expand *Vibrio* monitoring to better understand distribution and occurrence.
 - Continue to conduct and support *Vibrio* research to: (1) improve efficacy of control plan and reduce regulatory burden on harvesters; (2) develop improved diagnostic methods for identification of illness-causing bacteria; and (3) identify potential hazards associated with culture practices that result in *Vibrio* risk.
- Depuration and relay:
 - Increase harvest opportunities by re-classifying clam producing areas.
 - Investigate alternative species suitable for future depuration.

2. Manage marine aquaculture in the Commonwealth.

- Permitting and review:
 - Ensure aquaculture and propagation practices are consistent with: (1) requirements for public health protection; and (2) prevention of introduction of disease, non-native species, and pests or predators that could impact natural populations and harm wild fisheries.
 - Develop regulations and guidelines for industry to promote best management practices to ensure appropriate care and use of captive and cultured organisms.
 - Ensure aquaculture development is consistent with management efforts for protected and endangered species.
 - Develop clear guidance on aquaculture permitting requirements.



- Ensure offshore aquaculture is consistent with DMF objectives:
 - Support development of technologies that expand aquaculture into offshore waters and increase sustainability and productivity of the industry.
 - Broaden public review for proposed deep-water aquaculture to include state regulated commercial and recreational fisheries.

3. Provide leadership to support management of healthy shellfish resources.

- Collaborate with municipalities:
 - Increase understanding of differing municipal needs and resources, and provide technical services to ensure consistency in data collection and regulatory standards across municipalities.
 - Enhance public communication and work with municipalities and local constables to improve classification of Shellfish Growing Areas and ensure responsible implementation of propagation programs.

Goal 4: Expand and foster regional science, management, and education partnerships highlights DMF’s commitment to cooperative partnerships in support of sound science and sustainable management of fisheries resources. DMF believes such partnerships are important to build and share ideas, consolidate resources, construct critical mass, and produce timely and informative results. Through formal partnerships with state, interstate, and federal agencies, DMF contributes technical expertise to support fisheries stock assessments, surveys, and catch advice, as well as policy expertise to improve management plans, regulations, and enforcement. Partnerships with academic and research institutions, as well as environmental and industry organizations have promoted education and employment opportunities for DMF staff and encouraged collaboration on challenging topics. Over the next five years, DMF will foster and expand partnerships to increase engagement in regional priorities, including ecosystem-based management, impacts of climate change on ocean resources, expanding ocean user groups, innovations in stock assessment methods, and protection of endangered species.

Maintain and develop partnerships with organizations in support of DMF’s mission.

- Multi-agency approach:
 - Promote multi-jurisdictional consistency in policy development and management action implementation.
 - Participate in technical and policy committees focused on regional priorities and emerging issues, such as offshore development, public safety, protected resources, and climate change.
- Academic engagement:
 - Support joint DMF-academic research and networking activities and funding proposals that will utilize DMF expertise to enhance application of fisheries science regionally and increase opportunities for students and employees.

- Increase DMF engagement in academic applications by supporting adjunct appointments, mentoring, teaching, serving on student committees, and promoting student engagement in DMF activities.
 - Strengthen the partnership under the Massachusetts Marine Fisheries Institute (MFI).
- Industry, research, and conservation organizations:
- Expand cooperative research and funding opportunities with new and existing partners.
 - Promote respect and trust for all partners.



Goal 5: Build and maintain a high level of staff professionalism and administrative leadership

emphasizes DMF's commitment to its core and most valuable resource, the staff. DMF will maintain and strengthen a productive, well-trained staff capable of meeting the evolving technical challenges of fisheries science and providing leadership in fisheries management, while also supporting timely and professional service to the public. DMF staff expertise includes administration, licensing, outreach, environmental permitting, public health protection, and seafood marketing, as well as fisheries research, management, and regulation. Over the next five years, DMF will continue to evaluate resources for staff support to maintain current and future program needs, as well as respond to priority topics. DMF will expand professional development opportunities, promote innovative approaches, and increase staff engagement in agency objectives.

1. Maintain highly regarded, well-trained individuals suited to carry out DMF's mission.

- Recruitment and retention:

- Utilize academic institutions to distribute agency job opportunities and recruit well-qualified candidates.
- Evaluate staff titles and reclassify for recruitment and retention.
- Evaluate programmatic staffing gaps.
- Increase recognition of staff performance.

2. Restructure and enhance DMF's administrative capacity to foster improved leadership and program/project oversight.

- Increased responsibilities and agency structure:

- Assess and respond to expanding agency responsibilities and focus areas including those legislatively mandated or required for compliance with regional management and science initiatives.
- Evaluate and modify agency staffing hierarchy and chain of command specific to management and union positions supervised by managers, i.e., Deputy Directors and Assistant Directors.

3. Ensure infrastructure and resources sufficient to provide efficient and effective implementation of goals.

- Infrastructure needs:

- Evaluate and prioritize the current agency inventory of offices and facilities by condition, capacity, scientific focus, location, and available funding.
- Identify funding sources to support renovations and new construction to provide adequate office and field support in highest priority locations.
- Provide funding to maintain vessels and vehicles as needed and identify new funding sources to replace aging stock as appropriate.
- Assess inventory on an annual basis and secure capital funds for replacement of major equipment and IT infrastructure.

4. Increase professional development opportunities.

- Professional development:

- Support participation in leadership and management opportunities and trainings to enhance DMF leadership regionally.
- Increase industry and public awareness of DMF staff professionalism and advocacy for stewardship of living marine resources and respect for the marine environment.
- Promote internal communications and cross-program collaborations.
- Encourage participation in peer-reviewed article publishing and reviewing.
- Increase internal and external training opportunities related to applications, techniques, and best practices in science and management.
- Support participation in conferences to promote DMF research and ideas.
- Increase opportunities for staff to pursue higher education and skill development through DMF's Education Policy.



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