

Building the Foundation for Shellfish Restoration in the Commonwealth of Massachusetts



Final Report to the MA Bays Program

Prepared by The Nature Conservancy

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Contract # ENV 11 CZM 02

January 2012

Introduction

The Nature Conservancy's (TNC) mission is to preserve the lands and waters in which all life depends. We have been a leader in coastal restoration and resiliency efforts including partnering with NOAA on shellfish restoration projects in the Gulf of Mexico and elsewhere in the U.S. The world's shellfish resources have been depleted by more than 80% and natural shellfish reefs are the most imperiled marine habitat. Shellfish provide critical ecosystem services such as: nutrient cycling; filtration of water; erosion control; storm surge protection; and fin fish nursery habitat.

In our efforts to work on shellfish restoration in the Commonwealth of Massachusetts, it became evident that the policies and statutes regarding restoration of shellfish were complex. Our experience with a shellfish restoration project in the town of Wellfleet proved that the current permitting structure did not adequately address restoration projects. Proposals for restoration projects are on the increase and clarity of the process and procedures for moving shellfish restoration projects forward was needed. With the assistance of the Massachusetts Bays Program (MBP) we partnered with the Massachusetts Division of Marine Fisheries (DMF) to address these and other questions related to shellfish planting in the Commonwealth.

The project goals included:

- To facilitate public stakeholder input process for Massachusetts Division of Marine Fisheries (DMF) official agency guidelines on shellfish propagation.
- To identify geographies and towns most interested in pursuing shellfish restoration opportunities
- To help DMF establish the policy framework necessary before site selection work can begin to identify locations of suitable restoration sites
- To assist municipalities with guidelines and steps required for shellfish restoration site selection

Task 1. Conduct a project kickoff meeting: MBP and representatives from TNC will meet to agree upon the scope of work and deliverables. During the meeting, the role of MBP, TNC, and project partners will be clearly identified.

On March 16, 2011 Staff from MBP, DMF and TNC met at the DMF New Bedford offices to finalize the scope of work and required project schedule. Roles and responsibilities were addressed at that time. MBP as granting authority served to clarify expectations going forth. Jay Baker, Executive Director of the MBP was present and assisted in creating the necessary timeline. Dr. Kathryn Ford, Environmental Analyst with the Habitat Project at the Division of Marine Fisheries and Casey Shetterly, Project Manager with The Nature Conservancy represented the individual organizations and agreed on a timeline which served as the scope of work going forth.

Task 2. Organize five facilitated listening sessions to present the Shellfish Propagation Guidelines and gather feedback: TNC will organize a minimum of five listening sessions where an overview of the Draft Shellfish Propagation Guidelines will be presented. Through a facilitated question and answer period and discussion, participants will be provided the opportunity to comment on the guidelines. TNC will solicit feedback to determine what stakeholders are interested in pursuing restoration projects. Sessions will be held in the following regions: Buzzards Bay, Cape and the Islands, South Shore, Metropolitan Boston, and North Shore.

TNC produced a request for proposals and submitted it to six consulting groups for facilitation services. Proposals were received from ESS Group, Lighthouse Consulting Group, Logue Group and Urban Harbors Institute. Through an open dialogue between DMF and TNC staff, the Logue Group was chosen.

Attachment A Facilitation RFP

Attachment B Logue Proposal

Draft Guidelines were released from DMF and distributed to stakeholders via first class mail on August 23, 2011. Included in the mailing was an announcement and schedule of listening sessions. Stakeholders consisted of approximately 3100 recipients including individual permittees, wholesale dealers, aquaculturists, shellfish constables/harbor masters, and conservation commissions as well as other non-governmental organizations.

Attachment C Draft Shellfish Planting Guidelines

Attachment D Listening Session Announcement

An organizational meeting was held in the DMF offices with Bill Logue, the facilitator, on Wednesday, August 31, 2011.

The Listening Session schedule was established and Frequently asked Questions answered for inquiry regarding the purpose of these sessions, written guidelines and the DMF/TNC partnership relationship. Please see The Logue Report, Appendix A (page A-3) - *attachment G*.

Of particular interest to both DMF and TNC was the proposed key pad polling in which the facilitator could anonymously gather information from meeting participants. This proved useful in determining who was most interested in what aspects of the shellfish planting guidelines. The agenda for the listening sessions was agreed upon and staff from both organizations met each other and agreed to the roles and responsibilities going forward.

The primary purpose of the meeting was to discuss our partnership on this project but this meeting afforded TNC the opportunity to clearly communicate our interests in pursuing shellfish restoration in the Commonwealth and inform DMF staff of our science driven projects in other states.

A Press release was issued through cooperation by both TNC and state communication experts.

Attachment E Press Release

Task 3. [Submit a summary Stakeholder comment Report to DMF: Based on the results of the listening sessions, TNC will submit a single summary report to DMF. The report will include an objective summary of comments as well as recommendations for changes to the guidelines based on common threads of listening sessions.](#)

A complete report addressing all communicated concerns with the Draft Shellfish Planting Guidelines is provided by The Logue Group. TNC worked diligently to provide an objective forum for the stakeholders. Our interests in restoration for ecological services were clearly stated at the beginning of each listening session but the sessions themselves were DMF's opportunity to present, answer questions and hear feedback from their constituents. The need for objectivity throughout this process was essential to TNC in order to learn real or perceived conflicts to future restoration interests. We appreciate the competing usage needs and the diverse welfares the stakeholders represented from enforcement to the vibrant commercial shellfishing industry in the Commonwealth. General themes derived from the comment process are presented in the full Logue report. TNC addressed its specific concerns with the draft guidelines independently with DMF. Those concerns are incorporated into the conclusions and next steps of this document.

Attachment F Logue Listening Process – Summary Report

Task 4. [Distribute Final Guidelines: TNC will work with DMF to distribute final Shellfish Restoration Guidelines to stakeholders identified under Task 2.](#)

The Final Shellfish Planting Guidelines released in December by the MA DMF was distributed to the same recipient list as those that received the draft guidelines. A small group of non-governmental organizations and interested parties that were not on DMF's original list of shellfish license permit holders will receive the final guidelines along with maps and shellfish restoration criteria information in the coming months (see Task 5). These groups include the North South Watershed Association, The Coalition for Buzzards Bay, consultants and academics interested in shellfish restoration in Massachusetts waters and municipal staff and/or governing entities from municipalities which may be interested or impacted by shellfish restoration activities. A complete list will be coordinated with MA Bays and DMF.

DMF's Shellfish Planting Guidelines do allow for and address restoration as a purpose for propagation. The exact steps required to permit a project remain complex but there is an acknowledged regulatory path now which did not exist before. TNC will continue to advance shellfish restoration within the confines of the current guidelines by working directly with municipalities.

There are some policy recommendations which would more readily advance shellfish restoration in MA: We hope to continue to partner with DMF to address the water quality issues and potential for siting shellfish in closed waters by working with municipalities on their shellfish management plans (TNC has developed guidance to the Interstate Shellfish Sanitation Commission for this); Discussions are continuing on the state level to address permitting questions for restoration in general but to include shellfish specifically (efforts are underway to clarify DEP policy); Working with DMF and other NGO's we need to determine the research required for enhancing shellfish restoration in MA waters; the three year statute (M.G.L. 130 sec 54) that requires consideration of opening closed shellfish areas is the single largest impediment to real restoration, and although there are means of limiting harvest, TNC is considering seeking a change to this legislation as it relates to restoration efforts.

The guidelines are geared more for planting for commercial purposes. DMF has said they will work with us but through the municipalities who are their primary constituents. They have made it quite clear that they are not interested in state sponsored shellfish restoration work, although there has been some interest expressed by DMF in establishing spawner areas for enhanced harvest. We have different definitions of restoration; DMF is seeking to restore fisheries for public harvest and less so for habitat or the ecological services provided. Moreover, DMF has indicated that their mandate does not include seeking policy changes but they will not object to restoration projects if others choose to do so. They do not support marine sanctuaries or marine protected areas per se, but again have expressed interest in spawner areas to increase public harvest opportunities. The guidelines quite clearly tell us to work within each municipal shellfish propagation permit. The enforcement of closures and harvest will then be the town's challenge and DMF will oversee the town's permits. This makes it difficult to attempt any restoration projects in anything other than open waters, which the towns will have pressure to open for public harvest or aquaculture rather than restoration. We

know that some shellfish constables and harbor masters that understand the ecological arguments, want to test the waters literally, and will work with us. That being said, the past discouraging tenor of DMF towards restoration does put the municipalities in a difficult position since their permits and so much of their coastal resources are processed through DMF. These guidelines have not changed much in regards to restoration other than acknowledging the trend and enabling conditions which is why the "next steps" has a list of policy recommendations. However, we do know that future shellfish restoration projects should be obtaining a Special Projects Permit through a municipality.

Task 5. Identify next steps for shellfish restoration in the Mass Bays Planning Area (Massachusetts Bay and Cape Cod Bay): TNC will work with MBP and select stakeholders to identify next steps for shellfish restoration in Massachusetts. This task may include an effort to map suitable shellfish restoration areas at the state or regional scale, identification of discrete locations suitable for shellfish restoration, and/or identification of data collection protocols and data gaps for identifying suitable sites.

The regulations put restoration under the municipalities' shellfish propagation permit. This allows the town final say with regard to the restoration site selection, management, process, and potential enforcement oversight; however, like all shellfish permits, MA DMF has the final approval particularly if the site requires a contaminated area management plan for either prohibited or restricted waters. This also allows DMF to continue to serve their constituents, the municipalities, towards enhancing the public fishery, without having to divert resources towards assisting NGO's with restoration planning and permitting.

To that end, TNC began mapping criteria which any municipality would need to look at closely for restoration site selection. Each municipality will have different socio-political considerations to add to their criteria but the maps begin the process of looking carefully at habitat suitability. We chose to focus on two species due to their three dimensional shellfish bed-forming capability, which has ample scientific evidence for providing the greatest ecological services benefits beyond nutrient cycling and water quality improvements. In our New England waters these "beds" do not generally grow horizontally more than twelve inches but still provide adequate habitat in their structure to support other species.

These maps which are a snapshot in time serve only to guide the initial process. They include: shellfish suitability; sediment types; shellfish growing areas; and potential conflicting uses. We are interested in continuing to work closely with DMF to further clarify DMF's prerequisite siting information in order to supplement current guidelines and future efforts towards the restoration of shellfish in the Commonwealth waters. We will continue to investigate restoration capacities with individual organizations and municipalities, and consult with DMF once certain thresholds indicating viable restoration opportunities have been met.

Those municipalities that are interested in pursuing a shellfish restoration project with us will receive guidance first through the site suitability maps developed by TNC and finding the right location while identifying constraints that DMF's guidelines might impose. We will also walk the municipality through the "testing" of locales with spat collection and habitat surveys to "ground truth" the viability of site selection. Lastly, we will assist with providing the case statement and strategy while assisting in getting the substantial funding required to implement the project.

Due to the difficulty and multiple steps required to scope a shellfish restoration project in MA, we are not yet in a position to identify specific municipalities to work with until which time a project has moved far enough along to seek support from the community and DMF. Once these projects become more commonplace in MA (and TNC plans to advocate for this), a more transparent process is likely to develop. Until that time we plan to approach projects with sensitivity to stakeholders and funders, similar to other nascent restoration projects.

Similarly, we intend to reach out to NGO's with our site suitability maps, the guidelines and in person discussions to determine the viability of projects and to encourage seeking their own restoration projects. More proposals will hopefully assist us in getting the policy changes and needed DMF resources to respond to shellfish restoration more readily. Despite our gratitude to MA Bays for this grant, it is likely that the enabling conditions (physical, political and social) may prevail along the south coast. We need to get projects going in order to move this slowly in the direction of large scale restoration in MA. This is a multi-pronged approach toward creating the political will to increase the importance of shellfish restoration in MA. It will require many small scale projects and incremental steps to advance both the cultural acceptance and the regulations to support larger scale restoration.

The maps are a first step in determining the viability of a project in local waters. Much of the near coast, estuaries and riverine areas in MA are in contaminated, closed waters. This makes restoration far more complex and although we are not ruling that out, we need to work first in open waters until the concern for public health issues is more uniformly addressed.

Nonetheless, the maps provide the spatially explicit information in which to speak to interested parties and discuss next steps. Publicly available information has been displayed in the maps in addition to the inclusion of analysis that TNC has added such as looking at hard bottom areas in conjunction with water quality and historic shellfish presence.

Conclusions

The Nature Conservancy is very thankful for the opportunity this funding provided for better understanding of shellfish planting. The cooperative partnership between the MA Division of Marine Fisheries shellfish staff and The Nature Conservancy succeeded in addressing the complex balancing act of protecting the public health and economic industry for which the state has responsibility while also committing to the environmental health of the Commonwealth's coastal resources.

Through the comments of attendees at the five Public Listening Sessions, appreciation for the creation of these written guidelines and the opportunity to provide input was universally expressed. DMF's commitment with working with NGO's like The Nature Conservancy and others to advance and encourage research designed to improve our understanding of shellfish and shellfish habitat should be commended.

A strong and healthy shellfish industry is good for the Commonwealth and DMF is essential in protecting its integrity, the public safety and sustainability of this fishery. Restoration is another component necessary to providing for the long term sustainability and enhancement of our public fisheries and commercial enterprises while addressing the serious consequences of our increasing population pressures culminating in land and water environmental degradation.

Species diversity is highest in coastal and estuarine habitats which are simultaneously most heavily impacted by human use. Restoration of three dimensional bed-forming habitats serves to reverse impacts of overfishing and habitat degradation, while addressing ocean acidification, and embayment eutrophication from nutrient loading.

Innumerable studies have proven the effectiveness of shellfish restoration on water quality and subsequent important keystone species including eelgrass. The State of Massachusetts has proven its dedication to its natural resources and continues to invest heavily in their protection. Like healthy functioning ecosystems, no single species can advance without the consideration of others, and shellfish beds are no exception. TNC encourages MA DMF to partner with colleagues and NGOs, including but not limited to: MA Coastal Zone Management; MA Department of Environmental Protection; MA Division of Ecological Restoration; and other habitat specific specialists to define desired research needs in this area and develop protocols for encouraging large scale coastal restoration achievable in the Commonwealth. It is through this process that impediments to coastal restoration activities will be most adequately identified and addressed.

The Public Listening Sessions on the draft guidelines were a terrific first step in this process. DMF addressed a number of important issues including the three year limitation on research projects. This is obviously important as restoration research requires long term monitoring and commitment to determine long range results. It may prove beneficial in financing these research projects to allow for them to establish new and permanent shellfish populations in contaminated waters in order to serve long term coastal resiliency strategies. Future joint efforts at coordinating research and restoration partnerships could leverage significant resources for sustainable shellfish management in the Commonwealth.

There remains complexity in the statutes and policies governing shellfish, most especially the three-year shellfish harvest consideration reflected in MA state statute (M.G.L. 130 sec 54). Balancing the needs of a public fishery while protecting the sustainability of that fishery, and all coastal resources, may require reassessing the intent of this statute. This provision remains a difficult hurdle for restoration activities in the Commonwealth's waters. Options may include designating shellfish spawner areas to address the effectiveness of shellfish bed habitat, which restoration promotes as a condition of sustainability.

These remain very complex issues that will assure ample opportunity to partner in the coming years. TNC is committed to working with DMF and others towards solving these issues and other challenges to our healthy and functioning coastal systems.

Next Steps

The following recommendations are suggested in order to further clarify shellfish planting in Massachusetts waters:

1. DEP and DMF, with some input from the scientific community, should better address the water quality issues affecting Massachusetts embayments and the possible contribution of shellfish as an option for remediation.
2. There is a need for continued discussion and clarification of the process for consulting with DMF staff on potential restoration activities. What thresholds do they need in order to process requests towards a completed and approved permit for restoration or scientific research?
3. Further consideration of the need for state (non-municipal) waters shellfish planting permits from DMF as it pertains to restoration activity is needed.
4. The three-year shellfish harvest consideration statute (MGL Chapter 130, section 54) states: "The purpose of the restriction on the length of closure is to ensure public access to shellfish harvest areas." While this statute is commonly understood to mean that a municipal shellfish warden must open a closed area after three years, TNC interprets this language as a requirement for the warden to assess the status of a closed area rather than necessarily re-open the area to harvest. Continued discussion on this topic is warranted.
5. DMF has indicated that shellfish planted for restoration purposes must be located in approved waters. We suggest continuing to work with DMF and municipalities to develop contaminated area management plans that encourage the planting of shellfish sites to assist in the remediation of poor water quality. TNC has developed guidance to

the Interstate Shellfish Sanitation Commission (ISSC) for this and will closely follow its advance and acceptance.

6. Another issue addressed in the final guidelines concerns the use of shell as a foundation (cultch) for restoration areas. DMF clarified the requirements for aging cultch on land depending upon the species and disease concerns but indicates that ...“approved shell cultch must be addressed by DMF prior to placement into coastal waters”. We assume placement plans would be part of the permit process and otherwise rules should be set forth for the purposes of recycling and setting aside cultch specifically for restoration efforts. This is a significant component of the restoration equation which could be clarified for the purposes of planning and preparation.

It is through the momentum delivered by this shellfish planting guidelines development process that TNC, municipalities and other organizations hope to work cooperatively, with DMF leadership and guidance, toward advancing the Commonwealth’s protocols and acceptance of shellfish restoration activities. This process has established some regulatory means for permitting shellfish restoration. It is only through project development that the details of permitting parameters will be established.