

Wampanoag Tribe of Gay Head (Aquinnah)
Development of a Cooperative Resource Management Plan for the Menemsha Pond
Complex and Pilot Project, Martha's Vineyard, Massachusetts
TWG Funds Requested: \$181,590
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August 11, 2010



**Fiscal Year 2011
Tribal Wildlife Grant Proposal**

Title: Development of a Cooperative Resource Management Plan and Pilot Project for the Menemsha Pond complex, Martha's Vineyard, Massachusetts

Species: Bay scallop (*Argopecten irradians*), American oyster (*Crassostrea virginica*), winter flounder (*Pseudopleuronectes americanus*), American eel (*Anguilla rostrata*), quahog (*Mercenaria mercenaria*).

Program Summary

The Natural Resources Department of the Wampanoag Tribe has been working with great success on two Tribal Wildlife Grants for the restoration of the bay scallop in Menemsha Pond since 2004. The bay scallop is a culturally significant, recreationally important, and commercially vital resource for the Tribe and our community. During this time, the Tribe has enhanced the existing stock, improved the local economy, and continues to preserve the recreational, commercial, and cultural experience of bay scalloping. The Department staff has developed the operational and scientific capacity to protect and enhance aquatic species in the pond complex surrounding Tribal lands. The primary goal of this grant submission is to create landmark Agreements between the Tribe and the two towns that share the jurisdictional responsibility for the sustenance foods of the Wampanoag Tribal members, recreational and commercial populations for the Towns of Aquinnah and Chilmark, Massachusetts. These agreements would include specific management roles and responsibilities that will support the protection, enhancement, and preservation of the bay scallop, our unique and fragile habitat and other cultural and aquatic resources important all parties.

The proposed project is to develop a Cooperative Management Plan for the Menemsha Pond complex that would not only ensure the proper management of the bay scallop resource in Menemsha Pond, but also create a framework for management of other important resources, such as American oysters, herring species, winter flounder, American eels, and any other resource found in the connected pond system. The management plan would also be used as a platform to resolve historically difficult issues between parties, such as reciprocity between Town and Tribe field staff, uniform regulations between towns, uniform oil-spill response and creating a dredging plan for Menemsha Pond. The implemented plan will create a template for shared management that does not currently exist, and which will benefit the sustenance resources in the ponds to the benefit of both the Tribe and neighboring towns. This plan would be solidified in the form of an Agreement between the Tribe and Towns of Aquinnah and Chilmark.

A pilot project has been developed for this proposal which will demonstrate the shared interest each jurisdiction maintains, and the benefits of sharing resources. Based on the findings from the previous Bay Scallop Restoration projects, the Tribe proposes a shared sanctuary site for the Tribe and two Towns to grow bay scallops in cooperation. It is our intent to demonstrate that by using methodologies discovered in the previous studies, sharing resources will reduce cost, increase yield, and create a greater weight per bushel harvested.

This project is a priority of the Wampanoag Tribe as indicated by Resolution #2010-0031

Program Narrative

(1) Assessment of Needs

The Natural Resources Department of the Tribe shares a good working relationship with the Towns of Aquinnah and Chilmark. The Tribe has for many years worked cooperatively on environmental enhancement projects that protect and enhance natural resources beyond Tribal boundaries. The Menemsha Pond complex, comprising Menemsha, Squibnocket, Stonewall, and Nashaquitsa ponds, is divided into three separate jurisdictions between the Tribe, Town of Aquinnah, and Town of Chilmark. Each jurisdiction manages the land and water resources independently. While there is support between jurisdictions in times of emergency and times of need, the lack of a coordinated Resource Management Plan dramatically reduces the efficiency of each jurisdiction and the ability to implement habitat improvement.

Currently, the towns and Tribe are working on shellfish enhancement, environmental projects, and other issues in the pond complex independently. Each town regulates and manages resources, people, and vessels entering this shared space independently. Dredging plans, which affect the entire pond dynamic, are handled within jurisdictional lines. The Tribe, having worked with each town independently for many years with great success, is in a unique position to develop and formalize a relationship to improve the management of shared resources. The Natural Resources Department has, in fact, implemented the first Cooperative Agreement in history between both parties and the Tribe for use of a rescue vessel the Tribe owns and maintains. For the past fifteen years, the Tribe's capability in these types of cooperative ventures has grown, and the agreement on the rescue vessel is the first time in the Tribe's recent history that a plan of this nature could be successfully undertaken.

The Tribal Council has approved this proposed Cooperative Resource Management Plan by Resolution, stating firmly that the commitment of the Tribe is rooted in both field staff and government. The history between the towns and Tribe is a similar story to many others; there has been in the past, and will continue to be, issues surrounding the rights and responsibilities of each government. This Resource Management Plan will set forth an Agreement to work cooperatively on issues surrounding the resources that are important to each jurisdiction individually. The result of this Plan will be **Enhanced** resource management, protection, restoration and response; **Reduced** cost, duplicated efforts and tension between each government; **Assured** communication, planning, training and response related to the protection of our aquatic environment and the resources shared by all three jurisdictions.

The Resource Management Plan will focus on four areas of shared interest, concern, and responsibility between the Tribe and two towns. The plan will NOT be used to address jurisdictional issues, but to be held to terms of agreement between all parties and solidified in the form of an Agreement, signed by each government. The topics to be developed in the Plan include the following:

1. Regulatory Agreements
 - a. Unified regulations where applicable across jurisdictions
 - b. Cross-deputization of officials to support mutual goals
 - c. Mutual Aid for projects and tasks identified in the Agreement

- d. Navigation and access to public waterways
- 2. Species Enhancement, Protection, and Restoration Pilot Project
 - a. Bay Scallop
 - b. Other Potential Species
 - i. American Oyster
 - ii. Quahog
 - iii. Atlantic/Blue Back Herring
 - iv. Winter Flounder
 - v. American Eel
- 3. Habitat Improvement
 - a. Dredging Plan for the pond complex (also in Regulatory Agreements).
 - b. Eel grass mapping, protection, and restoration
 - c. Improving anoxic conditions within the pond complex
 - d. Invasive plant species plant removal (*Tunicates Ascidiella aspersa*, Green Fleece *Alga Codium fragile ssp. Tomentosoides*, Common Reed *Phragmites australis*.)
 - e. Invasive animal species control (Asian Shore Crab *Hemigrapsus sanguineus*, European Green Crab *Carcinus maenas*)
- 4. Training
 - a. Habitat Improvement Techniques
 - b. Aquaculture Techniques
 - c. Predator Control
 - d. Oil Spill Response
 - e. Water Quality Sampling / Evaluation
 - f. Harbor Patrol Procedures
 - g. Emergency Response
 - h. Tribal/Federal/ State permitting procedures
 - i. Marine Mammal Stranding

(2) Objectives

Overall: Develop a cooperative Resource Management Plan for the Menemsha Pond complex. The plan will be cooperatively executed between the Wampanoag Tribe, the towns of Chilmark and Aquinnah, and the Martha's Vineyard Shellfish Group (in an advisory capacity), and clearly delineate responsibilities between parties. The plan will utilize the management practices developed by the Tribe in Phase I of the Tribal Wildlife Grant coupled with scientific methods developed during Phase II, and is expected result in significant increases in shellfish harvests. Objectives for the specific goals indicated in the program narrative are the following:

Regulatory Agreements

The towns of Aquinnah and Chilmark share jurisdiction for the Menemsha Pond complex, including the navigation channel entering Menemsha Pond, as indicated on the attached map.

One objective of the Regulatory Agreements section of the Cooperative Resource Management Plan is to provide forums for discussion among the regulators and user groups. The Project Coordinator will organize public meetings and track progress with the **creation of unified regulations across boundaries**. Such topics may include maximum boat length beyond the channel entry, duration of stay, pump out regulations and safety zone standards. Once completed, the potential exists for cross-deputization of Town and Tribal officials to support the

management goals of the pond complex. Each jurisdiction has limited resources and scarce personnel. The Project Coordinator will work with a contracted mediator to focus discussions and goals towards the priority of this project, habitat improvement and long term sustainability of sustenance foods in the Menemsha Pond complex.

Throughout this process, the priorities of each jurisdiction will become obvious, and mutual goals and objectives identified. The Project Coordinator will be responsible for the inclusion of shared priorities and tasks as Mutual Aid Agreements. This Agreement, signed by the elected representatives from each jurisdiction provides the authority to support the projects and activities of another jurisdiction. Examples may include predator control, assistance with shellfish propagation, habitat restoration, emergency response, or patrol/enforcement activities.

When there is agreement relating to pond management, there will be a better opportunity to discuss the desires of each jurisdiction as it relates to dredging. The Menemsha Channel is the only navigation access from the Atlantic Ocean into the pond complex. In the 1970's, the Army Corps of Engineers dredged this channel for navigation access into Menemsha Pond. There is anecdotal evidence that this dredging was critical to the success of the Bay Scallop yield, with additional benefits to the aquatic community. Currently, the towns are responsible for dredging within town boundaries. As the map indicates, the centerline of a portion of the channel is the jurisdictional boundary between two towns. Currently, at low tide there is less than two feet of water in portions of the channel. Comparatively, the Army Corps dredged to a minimum depth of ten feet in the late 1970's.

Since the 1970's, many changes have taken place around the ponds. Increased populations, recreational use and commercial regulatory changes have altered the use patterns of the ponds. The topic of dredging is a constant background noise between both the commercial and recreational boaters in this area. Tribal members are present among both groups. Regulators are left with difficult decisions relating to the flow of water into the pond and how that will affect the boat size in the pond, erosion, flushing, safety, moorings and habitat. The topic has never been discussed openly among the Tribe and two Towns.

This discussion will be prefaced with the history of the Menemsha channel. Documents will be made available relating to the dredging timeline and shellfish history for the past 50 years. Through the grant, a contract will be created and advertised for an individual or agency with the background and experience to create a waterway management plan to submit application. A panel consisting of representatives from each jurisdiction shall review the contracts. The contractor shall work for the Tribe directly, but be responsible to each jurisdiction under the scope of services. The contractor will work with the Project Coordinator to discuss the issues surrounding dredging in the pond complex and create a 25 year plan focused on habitat improvement within the pond complex. Each jurisdiction will be asked to approve the plan and together, the Tribe and towns can begin combining resources to implement an agreed vision.

To discuss this issue, and ultimately come to agreement on an engineering plan for dredging, a contractor with adequate background and experience in this field must be used to support realistic goals identified by the user group. The contractor will be chosen by a process, which involves representatives from each jurisdictional group. Thus, equal partnership and shared support for the final project. The contractor shall be responsible for hosting public meetings, distributing materials to the work group, identifying the historical facts surrounding flow and channel adjustment in the past and creating an engineered plan that is prepared to the criteria of the Army Corps of Engineers for permitting.

Fortunately, a great deal of information and studies exist to prepare for these meetings. A bathymetric study exists of Menemsha Pond and various habitat investigations have taken place over the last thirty years. The Tribe specifically has conducted surveys in concert with the Region 1 United States Environmental Protection Agency for eelgrass health, Natural Resources Conservation Service for dune restoration and protection, and has developed plans incorporated into Federal Emergency Management Agency planning processes. This information, as well as studied initiated by the Martha's Vineyard Commission, state of Massachusetts, and the Towns will provide the background required to move forward quickly.

This final product will ensure that the Tribe and Towns are clear about the risks and rewards associated with the dredging ongoing within their jurisdiction and plan cooperatively for larger projects necessary to meet the intended goal of the plan.

Habitat Improvement

Another facet of the proposal, integral to both the cooperative Management Plan and the Pilot Project, are habitat improvement efforts. The shared nature of the Menemsha Pond complex makes the habitat goals of one jurisdiction dependent on those of the others. The two critical facets of habitat management are: dredging, invasive specie control, predation, eelgrass restoration and public use of the ponds.

Dredging was discussed in detail in the Regulatory Agreements section, because the legal and permitting complexities of the dredging process require a formalized agreement with the requisite political input. But it bears reiterating that the ecological health of the pond complex, as well as a host of other issues, hinges on the ability of the Tribe and the Towns to together formulate an appropriate and beneficial cooperative dredging strategy.

The other habitat improvement goal that will benefit from mutual cooperation is the restoration of eelgrass in the pond complex. Eelgrass is both a harbinger of water quality and critical to the survival of the bay scallop, and a pilot restoration was part of the Phase I TWG project. The long-term results of this test restoration are still pending, but the initial results are promising. The continued restoration of eelgrass in the pond is essential to the continued success of the bay scallop, and the goal is to develop a cooperative agreement to continue the planting and monitoring of eelgrass.

Other important issues with habitat are anoxic conditions within the pond, and invasive species control. The Tribe and Towns have worked together on projects involving these issues in the past. Silt conditions within the pond and on western shores creates anoxic bottom habitat, which excludes the growth of shellfish. Invasive species within all of the ponds and surrounding lands also affect water quality and the ability to manage habitat as desired. The Cooperative Resource Management Plan will identify these issues and locations specifically and identify the possible immediate and long-term measures to restore habitat to desired conditions.

Critical to the success of the entire project will be ensuring that all Tribe and Town staff are properly trained in the roles they are asked to perform. Tribal staff is almost fully trained in the majority of the disciplines below, but Town staff may need training, and all parties will need training in how to perform these duties cooperatively. The training areas will be:

- a. Habitat Improvement - basic training where needed in the fundamental concepts of conservation relevant to the ecosystems and species in question.
- b. Aquaculture Techniques- Training from local, state, federal and/or private agencies directed towards meeting the specific goals of the plan. Field techniques targeted at

- reducing cost, recycling existing materials, increasing yield and minimizing efforts while gaining a higher and heavier yield.
- c. Predator Control- typically expensive and time consuming. Training with new trap styles, understanding of species targeted, techniques for withdrawing higher numbers of invasive species with less field time.
 - d. Oil Spill Response - a recent fire and subsequent fuel spill from burned vessels in Menemsha Harbor, which led to the temporary closing of shellfish beds, highlights the need for training in oil spill response. The Tribe and Towns have oil spill response trailers in place. The Tribe has \$20k in funding budgeted to provide training upon commencement of this Agreement.
 - e. Water Quality Sampling / Evaluation - the Tribal laboratory provides analysis of surface waters in the pond complex year round under Section 106 of the Clean Water Act program utilizing EPA approved Quality Assurance Quality Control procedures. In an effort to gather the data desired from roadway runoff, the Tribe will host training in conjunction with Massachusetts Department of Environmental Protection to display the procedures for sample methodology. After training is complete, the field staff involved will be named in the Tribes' QAQC, and authorized to collect samples for analysis in the Wampanoag Environmental Laboratory.
 - f. Marine Mammal Stranding - tribal staff is trained by the New England Aquarium to assist in the event of marine mammal stranding. The Tribe will host a training to encourage those parties to the Agreement to become equally trained. Specific emphasis will be placed on the animals most often found in the pond system such as cetaceans, pinnipeds and marine turtles that often get cold weather shock in the fall surrounding the Cape and Island.

Species Enhancement, Protection, and Restoration Pilot Project

The Tribe has depended on the sustenance resources of the Menemsha Pond complex for thousands of years. It is the inherent responsibility of the Tribe to take measures to assure sustenance foods are available to future generations. Menemsha, Squibnocket, Nashaquitsa and Stonewall ponds have wonderful potential for increased populations of existing species of great concern and value to each jurisdiction. The goal of the Species Enhancement, Protection, and Restoration Pilot Project is to put the management and scientific techniques developed in Phase I and Phase II of the TWG into practice through agreed upon in the Management Plan. The goals of this project are to;

1. Reduce labor hours and costs for the protection, restoration, and enhancement of desired species.
2. Share equipment when possible in an effort to reduce the duplication of purchases for similar equipment. Consider cost-sharing expensive items.
3. Identify ways to increase value of local harvest on the commercial market.
4. Restore important cultural, commercial, and recreational species.

Bay Scallop: Target species for this Pilot Project is the bay scallop, which was also the target species for the Wampanoag Tribe's Phase I and II grant. The bay scallop is important culturally and commercially to both the Tribe and the Island as a whole. Found naturally in Menemsha, Nashaquitsa, and Stonewall Ponds, the scallop population had fallen dramatically. Actions undertaken by the Tribe is Phase I of the TWG between 2005 and 2008 resulted in large increases in the commercial harvest, from 600 bushels to over 4,000. Central to this effort will be developing a Management Plan for the Bay Scallop, a living document that will outline the best management practices for the pond complex. The Management Plan for the Bay Scallop and the associated Pilot Project will be the culmination of Phases I and II of the TWG grant,

encompassing all we have learned in the process, and putting it into use. One exceptionally useful aspect of the Management Plan will be its applicability and transferability to other coastal areas with the potential to host the bay scallop. The envisioned aspects of the Management Plan/Pilot Project are detailed in the Methodology section.

Other Species of Concern: The last fifteen years of experience working with the towns on projects in the pond complex during all four seasons makes it easy to predict the larger concerns, such as the bay scallop harvest, dredging, water flow and access. Equally important are the other species of concern we hope to improve by managing habitat, removing invasive species and taking direct measures through restoration or regulatory processes to increase productivity. The Agreement will consider other species that are important to the local ecology and economy can be considered.

The American oyster: The Tribe built a shellfish hatchery to commercially grow oysters in 2005, but the hatchery was closed in 2008. Oysters are found wild in Squibnocket Pond, and are raised commercially in Menemsha Pond. The cooperative management of oysters could be a culturally, ecologically, and economically viable resource. Currently, little is done to enhance oyster stock outside of seeding and privately owned propagator licenses. The management of oyster will assure its continued presence in the pond complex for the benefit of the Wampanoag Tribal members.

The *quahog* is the most common shellfish in the pond complex. While populations remain healthy, a management plan is necessary to assure the continued existence of the quahog, frequently used for commercial harvest and sustenance by both Tribal members and Island residents and visitors. The quahog produces wampum, the purple inside of the quahog shell. Wampum is culturally and historically important to the Tribe and United States, dating back 4,500 years, beads being produced for jewelry, gift, trade, and currency. Unique to the Wampanoag and Narragansett Tribes of the northeast, the preservation of the quahog is both economically and culturally significant. Many Tribal members continue to utilize wampum for art and jewelry. Management issues include, but are not limited to, habitat management, seeding, genetic alteration by population diversity. The Tribe believes this to be a topic of mutual concern for all parties and intends to utilize this forum for agreement to terms of management for the future.

Atlantic/Blueback Herring: Herring have been a topic of increasing concern over the past 10 years. With herring populations in dramatic decline, the Tribe continues to manage a viable herring run on trust lands. The Tribal herring run has historically provided sustenance food to the Membership with the harvest taking place in the herring run itself. Herring are taken for roe, food, and for planting gardens. The Tribal Council voted to cease the commercial taking of herring for the first time in history in 2006. The Natural Resources Department manages the water flow for herring by emergency dredging and protects the population while crossing Tribal lands by lines, netting, and electronic bird dissuaders. While we assure safe passage through Tribal lands, this too is a cross-jurisdictional issue. The herring run from the Atlantic Ocean into Menemsha Pond, through the Herring Creek then to Squibnocket Pond. All three jurisdictions are involved with the migration, but no precautions for safety are taken outside of the Tribe.

The herring is crucially important to the fish species found on the western end of the Island, as well as to the avian species such as osprey and aquatic mammals like the river otter. The herring is an essential element in the success of the pond complex and the fulcrum for the survival of other species in and around the pond.

The Tribe is working with several federal agencies to support the protection and enhanced understanding of population dynamics of the herring. The decline in numbers likely has more to do with offshore harvest than habitat within the pond. However, proper and enhanced measures to protect the herring are necessary to provide a returning spawning population. The Agreement will provide the background, discussions and governmental guidance necessary to create a plan, which includes each the resources from each jurisdiction. Working cooperatively towards the protection of the herring may make the difference between a rebounded population and continued decline.

Winter flounder is a commercially important species that uses in the Menemsha Pond complex as habitat during the winter months. Once so prevalent that the commercial quotas were caught within three miles of shore, the available stock is currently so low that a harvest moratorium was proposed in state waters in 2009. The potential exists to raise stock and replenish juvenile fish into our local waters. Only one year ago, the Tribe and Towns of Aquinnah and Chilmark supported a habitat feasibility study for this purpose. The grant funding was not successful, but the establishment of goals and objectives for this concept are crucial for success. The Agreement will be used to create language which can be shared by each agency to provide the support necessary for projects of mutual concern in the future.

American eel: The American eel was recently considered for listing under the Endangered Species Act. Used historically as a rich source of calories, eels were harvested in the spring, summer and fall by eel traps and with pointed spears. There is no plan by any jurisdiction at this time to determine the population of spawning females within the fresh water streams or the amount harvested through recreational taking, primarily for bait. This resource currently exists, but has no protection or management overlaid upon its range within the four ponds.

Implementation of the Species Enhancement, Protection, and Restoration Pilot Project for the Bay Scallop

With the knowledge gained from the Bay Scallop Restoration Project, this proposal will call for all efforts of scallop management to adhere to the principles previously deemed successful. Over the past two phases of the Tribe's bay scallop restoration efforts, certain effective management techniques have been determined to increase the bay scallop population. For example, growing scallop seed to larger sizes effectively improves survival. Credit for further increase of survival rates of seed to adulthood has come from their release into protected sanctuaries free of anthropogenic disturbance.

Along with purchase of hatchery-reared seed, the use of spat bags has proven an effective means to increase scallop numbers. By deploying spat bags at chosen locations around Mememsha Pond wild caught juvenile scallops can be protectively raised and monitored until release. By tallying the scallops released from these bags and comparing this data with that taken from the LIHDAT system, which identifies larval shellfish within a given volume of water, a model of scallop population dynamic can be created. With this collective data, spat collection efficiency will be maximized, further driving down cost and effort needed to maintain a healthy population.

Predation is a great detriment to scallop numbers but with removal of crabs during the summer and fall months we have made progress. Since the project's initiation, over 52,000 crabs have been removed from Mememsha Pond. The issue of predation by avians during the winter had not been addressed but with the purchase of an Avian Dissuader laser, the towns and Tribe will be able to actively manage this to treat scallops through a combination of shared effort and communication.

The proposed development of a cooperative resource management plan for the Menemsha Pond complex is a direct effort to maintain and enhance environmental health and declining populations of resources significant to the Tribe and towns of Aquinnah and Chilmark. The anticipated participants of this grant are part of a larger network of shellfish growers, local government, and law enforcement that communicate at meetings, conferences and by direct communication. Information and findings will be disseminated regularly to the Island watershed groups that routinely work cooperatively with the Tribe and towns.

In the implementation phase of the Pilot Project, Tribe and Town personnel will work over two seasons (2011 and 2012) to implement the schedule of best management practices for the bay scallop. These best practices will include:

- Monitoring bay scallop seed with LIHDAT: Laval Identification Hydrographic Data Telemetry. LIHDAT provides immediate real time identification of larvae. This capability allows us to immediately identify scallop-spawning events, and predict when the larvae will set or metamorphose to the juvenile stage. This knowledge is useful for understanding the population dynamics, maximizing collection and survey of natural scallop spat, and determining optimum timing of cultured-seed release.
- Monitoring for other marine species larvae. Larval monitoring will also be conducted for the soft-shelled clam (*Mya arenaria*), American oyster (*Crassostrea virginica*), quahog or hard-shelled clam (*Mercenaria mercenaria*), sea scallop (*Plactopecten magellanicus*), and surf clam (*Spisula solidissima*).
- Grow-out of juvenile scallops. It has been discovered that raising juvenile scallops to size between 10 and 20mm for release greatly increase survival rate while minimizing cost of labor.
- Larvae monitoring with use of spat bags to collect, grow, and release juvenile scallops in addition to hatchery-raised seed.
- Expand temperature monitoring to provide additional data valuable to understanding the scallop spawning cycle and contribute to the ecosystem model.
- Controlling bay scallop predators, such as the invasive spider crab, with proven methods.
- Creating of Bay Scallop sanctuaries that have proven effective over Phase I and Phase II of the TWG, to ensure an intact breeding population and reduce disturbance to released seed.
- An upweller will be installed in Menemsha Pond for the purpose of growing shellfish for the two Towns. The upweller houses small seed in an area with a high flow of water, forcing the seed to take in nutrients, dramatically increases growth during late spring and summer months, allowing the seed to be released into sanctuary sites for the winter.
- Education and Training, which has been the key to community support through Phases I and II of the TWG. Articles, video documentary, in-person education to community groups, conferences and local, state, and federal agencies will all be used.
- Climate Change Study. Any change in sea level or temperature can have a dramatic effect on habitat and aquatic animal survival. The Natural Resources Department will create the highest form of Agreement between jurisdictions in an effort to plan for the current conditions and future changes in our aquatic environment.

The details about each of these practices will be discussed in the Methodology section of this proposal.

(3) Proposed Timeline

2011

Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Develop Tribe-Town Agreements	x	x	x	x	x	x	x					
Develop Management Plan			x	x	x	x	x	x	x	x		
Implement Pilot Cooperative Management Project				x	x	x	x	x	x	x	x	
Habitat Improvement Efforts							x	x	x	x	x	
Training Activities								x	x	x	x	x

2012

Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Implement Pilot Cooperative Management Project			x	x	x	x	x	x	x	x		
Habitat Improvement Efforts					x	x	x	x	x	x	x	
Training Activities	x	x	x	x	x	x	x					

(4) Methodology

Meet with Towns to Execute Memoranda of Understanding (MOUs)

Tribal staff will meet with Town representatives to negotiate the terms of the memoranda, and to agree on important goals and strategies. Draft MOUs will then be presented to Tribal Council and Town Selectmen for revision and Approval.

Development of the Management Plan for the Bay Scallop

Consultation with Tribal staff and Town staff, with assistance from the Martha's Vineyard Shellfish Group, will lead to the development of a schedule of best management practices. Many of these practices are the result of Phase I and Phase II of the Tribe's TWG; the critical lessons learned in those studies will inform the process here. The staff from the Towns and the shellfish group are also experienced in aquacultural techniques, and the sharing of information and techniques will be both beneficial and critical.

Implementation of the Species Enhancement, Protection, and Restoration Pilot Project for the Bay Scallop

- **Monitor Bay Scallop Seed with LIHDAT: Laval Identification Hydrographic Data Telemetry**

The Tribe purchased the Larval Identification Hydrographic Data Telemetry device during Phase II of the TWG. The LIHDAT was developed by Dr. Scott Gallagher of the Woods Hole Oceanographic Institute (WHOI), and is designed to run water samples

under a microscope, where a digital camera sends the images through image-recognition software that identifies shellfish larvae through the unique reflections of each species' shell. The benefit of this information is a greater understanding of the conditions under which shellfish larvae thrive in the wild.

Training on the LIHDAT, conducted at WHOI, enables short- and long-term use and maintenance of the instrument for scallop population restoration and aquatic habitat improvement. A larval monitoring program has been developed in which samples are taken several times a week from May until October. As we become more familiar with the amount of data generated from each monitoring event and the effort required to record and analyze the data, we will adjust the monitoring protocol as needed.

LIHDAT provides immediate real time identification of larvae. This capability allows us to immediately identify scallop-spawning events, and predict when the larvae will set or metamorphose to the juvenile stage. This knowledge is useful for understanding the population dynamics, maximizing collection and survey of natural scallop spat, and determining optimum timing of cultured-seed release.

Sampling Menemsha Pond for scallop larvae with use of LIHDAT technology will help maximize collection of larval scallop spat to be grown out in spat bags, providing greater survival rates and a subsequent increase in harvestable scallops. Collection of wild spat will also reduce the cost of purchasing hatchery-raised spat. When spawning events are identified, spat bags can be immediately deployed to capitalize in locations in the pond where the LIHDAT has found spat to be in greatest density.

Data generated by LIHDAT will also be used to create an ecosystem model focused on bay scallop population dynamics. By correlating LIHDAT data with water quality and other environmental factors, spawning events will ultimately be forecasted. Coordinating sampling efforts with harbor masters and shellfish constables of Aquinnah and Chilmark, monitoring efficiency will increase and lead to a greater yield of harvestable scallops.

Sampling for shellfish larvae will be conducted by way of running plankton tows along transects within Menemsha Pond. Five transects will be monitored; three traveling north to south at the west middle and east of the pond, and two traveling east to west at the north and south of the pond (see Figure 1). A plankton net with a mesh size of 80μ will be used for larvae collection. Two samples will be taken along each transect; one at surface and one at depth. All monitoring will be correlated with GPS data to draw a parallel to

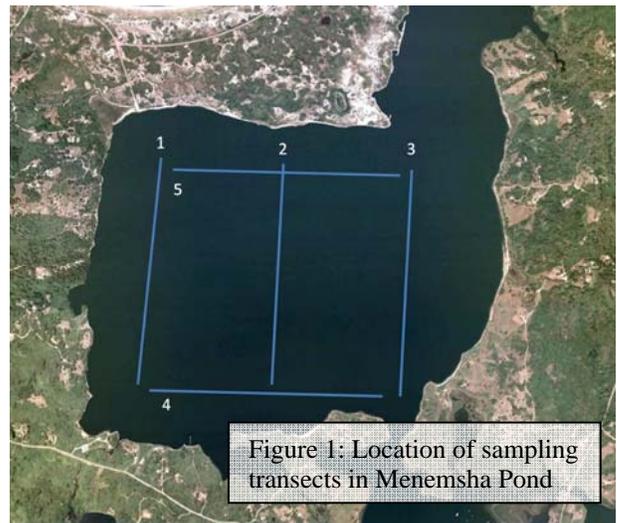


Figure 1: Location of sampling transects in Menemsha Pond

quantities of larvae with spatial location. Temperature and volume of water sampled will be recorded with every tow taken. Sampling will take place regularly from May to October. Protocol may be adjusted to increase or decrease the monitoring events.

Upon completion of a plankton tow, the sample will be brought back to the Wampanoag Environmental Lab for refinement before they can run through the LIHDAT system. Shellfish larvae are isolated and collected by filtering the sample through different sized

meshed screens. This will process removes large particles that may interfere with the LIHDAT's identification, that would either clog the system or block the view of shellfish from the LIHDAT's camera. Refinement also removes any small organic particles, such as copepod fecal matter, that may cause the sample to decay.

The LIHDAT instrument will be utilized to identify the quantity of spat found within each sample. Quantities indentified will correlate with where spat can be found within the pond, within the water column, and when and where it's in its greatest concentration. The resulting data will significantly improve our understanding of bay scallop population dynamics, and contribute to the bay scallop population ecosystem model. Ultimately, future spawning events will be able to be forecasted maximizing seed capture efforts.

- **Monitor for other marine species larvae.**

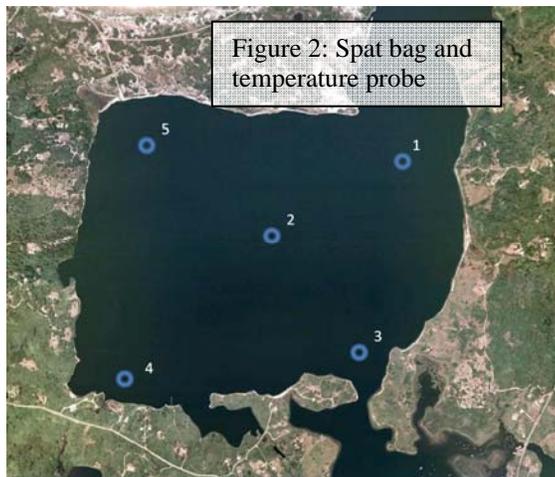
Larval monitoring will also be conducted for other bivalve species. In addition to bay scallops, the LIHDAT system can also identify soft-shelled clam (*Mya arenaria*), American oyster (*Crassostrea virginica*), quahog or hard-shelled clam (*Mercenaria mercenaria*), sea scallop (*Plactopecten magellanicus*), and surf clam (*Spisula solidissima*). The monitoring protocol for this activity will initially be the same as for bay scallop larvae monitoring. Protocol may be adjusted to increase or decrease the monitoring events.

- **Juvenile Scallop Grow-Out**

It has been discovered that raising juvenile scallops to size between 10 and 20mm for release greatly increase survival rate while minimizing cost of labor. Since 2005 total 283,000 bay scallop seed have been raised and released into the pond, with each year's batch experiencing higher percentages of survival attributed to the improved methodologies outlined within the grants.

- **Larvae monitoring with use of spat bags**

Ten spat bags in five locations will be set out to assess spat densities within Menemsha Pond. The locations of the spat collectors will be as follows (see Figure 2): (1) near



Menemsha Channel in Menemsha Bight, (2) at the middle of the pond, (3) at the entrance to Quitsa Pond, (4) at the mouth of Herring Creek, and (5) in the northwest quadrant of the pond. Each location will contain two bags; one spat bag will be attached near surface and one at depth. Bags will be set out in May. When larvae reaches a size of 5mm, they will be counted and released into protected sanctuaries coinciding with town in which they were collected. This data will be compiled with data taken with LIHDAT to create an accurate model of scallop population dynamics.

- **Expand temperature monitoring**

In conjunction with the larval monitoring activity the Tribe has expanded temperature monitoring by adding more sample sites and real-time constant monitoring with on-site temperature recorders. This provides additional data valuable to understanding the scallop spawning cycle and contributes to the ecosystem model. The study has and will

continue to use the Tribal weather station located at the Wampanoag Environmental Lab for air temperature, wind direction, barometric pressure, and rainfall information.

To expand and standardize this data capture further, six data loggers will be deployed in various locations in Menemsha Pond and adjacent waters to collect daily water temperatures over three-month seasonal intervals (i.e., spring, summer, fall, winter). The locations of the temperature loggers will be as follows (see Figure 2): (1) near Menemsha Channel in Menemsha Bight, (2) at the middle of the pond, (3) at the entrance to Nashaquitsa Pond, (4) at the mouth of Herring Creek, and (5) in the northwest quadrant of the pond. The loggers will be programmed to collect the water temperature every fifteen minutes thereby providing 96 data points per day for each sampling location. Each logger will be attached directly to an anchor and placed in position on the ocean floor by boat. Attachment of lobster buoys to the anchor will allow logger locations to be visible at the surface as well as permit retrieval every 3 months for downloading data.

- **Control of Bay Scallop Predators**

Removal of scallop predators has shown to be an effective measure in enhancing bay scallop populations. Crab traps were deployed from 2005 to 2007 and fished weekly throughout the scallop breeding season. Traps were systematically set in lines and moved each week to cover the maximum pond area. As a result, over 52,000 scallop predators such as common spider crabs (*Libinia emarginata*), Atlantic rock crabs (*Cancer irroratus*), and the invasive green crab (*Carcinus maenus*) were removed from Menemsha Pond. The predator control initiative included mark-and-recapture studies, which provided more accurate population estimates, confirmed the effectiveness of our predator control program, and provided information regarding crab movement. Reduction in the number of bay scallop predators has allowed for greater numbers of seed to reach adulthood. A decline in crabs harvested from year 1 to year 3 has proved this method an effective form of predator control.

The lack of effective predator control in 2008-2010 has resulted in a return of large crab populations, and a reduction in scallop harvest (though the exact correlation between the two is difficult to prove). To resume predator control, 50 crab traps will be deployed in Menemsha Pond; 25 traps, running parallel to the west shore on the Aquinnah side, and 25 traps, running parallel to the east shore on the Chilmark side will be fished weekly. Weekly records of crab take will be kept to determine efficacy of the trapping program. Results will be determined by comparing the catch per trap over the 2-year period.

During the winter months, Menemsha Pond is visited by migratory water fowl, such as common eider (*Somateria mollissima*), that feed on scallop seed. Use of a handheld **Avian Dissuader** laser will discourage diving ducks from feeding on scallop seed during the winter season. The laser allows the user to scare off avian predators with minimal effort without harming wildlife. Use of this laser is expected to dramatically reduce the eider's and other avian predator's choice of Menemsha Pond as a roosting and hunting locale. The laser operator will tally the number of diving ducks scared off each time the laser is used. Effectiveness of this program will be determined by comparing results over a 2-year period.

- **Creation of Bay Scallop sanctuaries**

Over the life of Phase I and Phase II of the TWG, one acre of Menemsha Pond in Aquinnah has been closed off as a protected sanctuary to ensure an intact breeding population and reduce disturbance to released seed. This area is closed to shellfish harvest as well as boating to discourage anthropogenic disturbance to the area. The area

is policed by the harbormaster/shellfish constable. Each year the sanctuary is moved to another location on the pond corresponding to the location of seed-release efforts. Upon selecting a new locale, the old sanctuary is opened to shellfishing and travel.

In the Pilot Program, two 1-acre sanctuaries will be set up within Menemsha Pond for Bay Scallops; one in Aquinnah and one in Chilmark will be designated each year to ensure an intact breeding population and reduce disturbance to released seed. Each sanctuary will be marked off by buoys and will be policed by the each town's shellfish constable. Each year the sanctuaries will be moved to another location on the pond corresponding to the location of seed-release efforts.

- **Upweller**

An upweller system will be installed in Menemsha Pond for the purpose of growing shellfish for the two Towns. The upweller is used to house small seed in an area with a high flow of water, forcing the seed to take in nutrients. This practice dramatically increases growth during late spring and summer months, allowing the seed to be released into sanctuary sites for the winter. This process allows the spat to grow more quickly and have a higher survival rate than those in the wild. Joint responsibility will be taken for the upweller, with division of its management shared by each town's shellfish constable. Shellfish grown within the upweller will be distributed evenly between the towns to be released in their respective sanctuaries.

- **Education and Training**

Public education has been the key to community support through Phases I and II of the TWG. Through the informal Island shellfish network, the Natural Resources Department has continued to submit articles and educational materials for regional publication. Articles have been published in the local papers, which have a strong interest in the program. A video documentary has been created by the Tribe, and has been presented on local public access television, as well at all public outreach events that the Department attends. This multi-media approach has kept the public aware and interested in the progress of the restoration efforts.

To continue the public education effort, the Tribe will provide in-person education to community groups, conferences and local, state, and federal agencies regarding study results. The Tribe will also present to Tribes at the Native American Fish and Wildlife Society regional and national conferences. Department staff will also train local and regional shellfish constables and agencies about specific techniques and technology applied to the bay scallop restoration program. Specific outreach will take place at local planning and conservation meetings here on Martha's Vineyard. In addition, speaking engagements at Woods Hole Oceanographic Institute, national aquaculture meetings, USET, and federal partner meetings will be organized as dates are presented.

- **Climate Change Study**

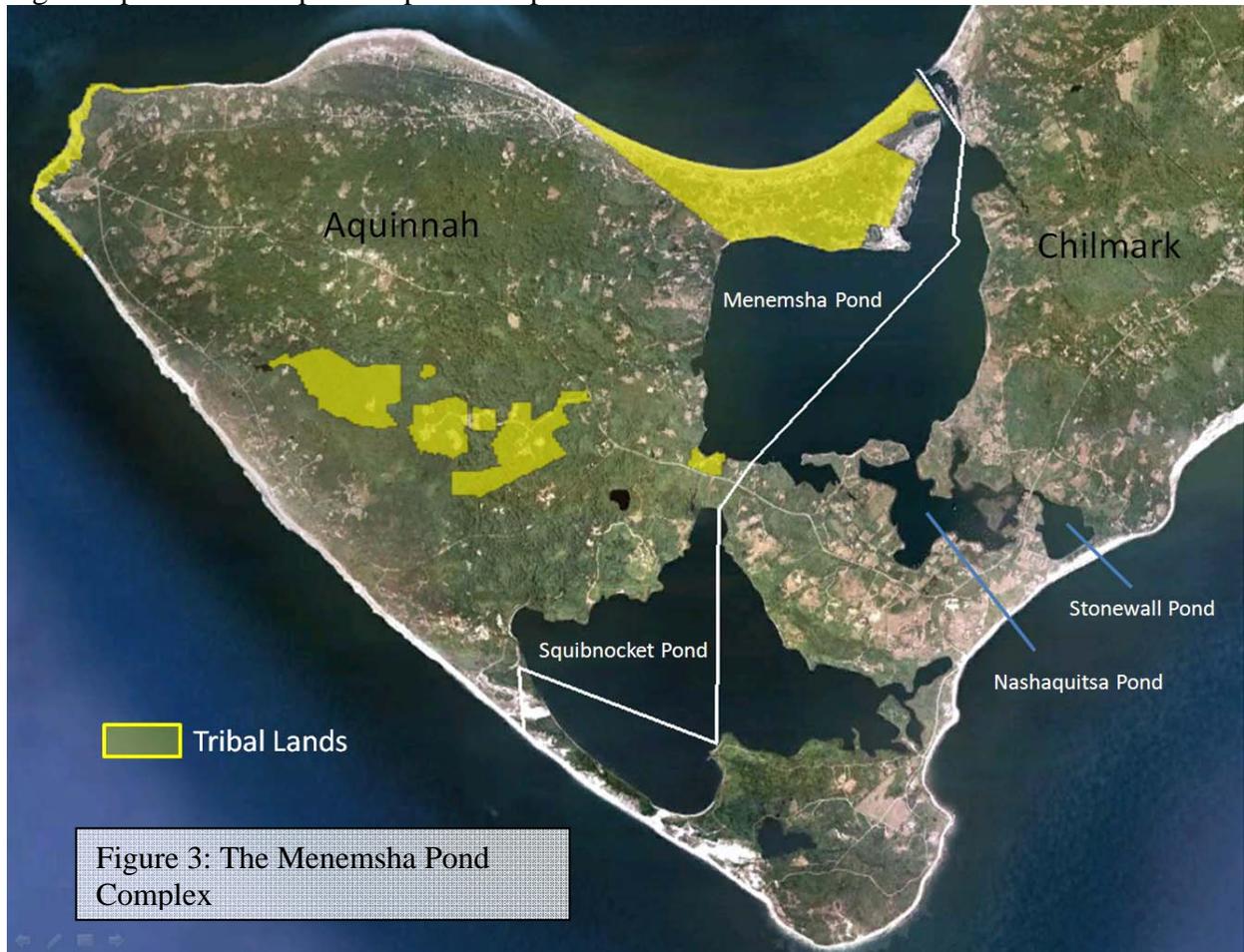
Tribal lands are primarily located on the western end of Martha's Vineyard Island. These lands range from sea level to one hundred thirty four feet at the peak of the Gay Head Cliffs. Any change in sea level or temperature can easily disrupt the way of life and existence of the Wampanoag Tribe.

The effect of temperature change has a dramatic effect on habitat and aquatic animal survival. The Natural Resources Department has purchased and maintained a unique larval identification unit and worked in concert with the Wampanoag Environmental Laboratory in an effort to pinpoint the time, temperature and climate the bay scallop

survives. The laboratory also gathers water quality, air quality and ozone data while monitoring the basic elements present such as wind direction, rainfall, humidity and barometric pressure from a weather monitoring station. The laboratory is located centrally to this pond complex, all the data gathered is relevant and real time. This project serves to create the highest form of Agreement between jurisdictions in an effort to plan for the current conditions and future changes in our aquatic environment.

(5) Geographic Location

The project will take place in the Menemsha Pond complex on Martha's Vineyard, Massachusetts, which includes Menemsha, Nashaquitsa, Stonewall, and Squibnocket Ponds. Figure 3 provides a map of the pond complex.



Menemsha Pond is a salt-water pond fed directly by the moving tides of the Atlantic Ocean. Menemsha is also fed by Squibnocket Pond located to the south, and attached by the Herring Creek, located on Tribal trust lands. Squibnocket Pond is brackish, fed primarily by wetland drainage stemming from the Black Brook stream, again primarily located on Tribal trust property.

Attached to Menemsha are two additional salt-water ponds, Nashaquitsa and Stonewall. These ponds are fed directly by Menemsha waters with small contributions from groundwater recharge. Combined, the above-described matrix of ponds collectively provide the nutrients and habitat for out sustenance resources.

(6) Approximate Number of Impacted Acres

An invaluable resource to the Tribe and community, Menemsha Pond is approximately 700 acres, which is about 1.34 billion gallons of water at mid-tide. The tidal range is 2.9 – 3.0 feet. There are strong currents in the channel when the tide is flowing, up to 6 knots. This tide and current allows the pond to flush at a 95% rate each 3.2 days. This flushing rate is important to note because all ponds attached drain into Menemsha. Thus, the nitrogen load from each associated pond runs eventually through Menemsha Pond. This issue poses less of a threat for the long-term success of the pond with a high flushing rate.

Squibnocket pond is roughly 630 acres. Nashaquitsa and Stonewall Ponds are roughly 120 acres combined. The Border between Chilmark and Aquinnah splits Menemsha and Squibnocket Ponds, while Nashaquitsa and Stonewall lie entirely within Chilmark.

(7) Monitoring Plan

The Project Manager, Bret Stearns, will oversee all program activities and monitoring components of the proposed project. The Project Technician will carry out the majority of the daily tasks under the supervision of the Project Manager. The Wampanoag Environmental Laboratory will process water quality and weather data provided to the study under EPA approved Quality Assurance guidelines and State of Massachusetts microbiology and chemistry certification where applicable. The laboratory maintains both state and national accreditation. Annual Reports will be written detailing program progress and results. Methodology will be monitored by the Program Manager and modified as necessary. The Tribe and news media will be updated several times a year. The Program Manager and Project Technician will make presentations at shellfish restoration and aquaculture conferences. All projects are ultimately approved and overseen by the Tribal Council, and Natural Resources Department projects are also overseen by the Land Use Committee.

(8) Identification of Goals and Performance Measures

The overall goal of the project is to work together with the Towns of Aquinnah and Chilmark to cooperatively manage the natural resources of the Mememsha Pond complex, with a special emphasis on Pilot Project focusing on the bay scallop.

Goals:

Memoranda of Agreement between the two towns (Aquinnah and Chilmark) and the Wampanoag Tribe. These will clearly delineate the responsibilities of each entity, and ensure the cooperation and efficient use of resources.

Management Plan/Pilot Project for Bay Scallop to guide the Species Enhancement, Protection, and Restoration Pilot Project. This management plan will be the blueprint for efforts on other species. Subgoals of the Management Plan will include:

Expansion of LIHDAT Use and Capabilities. The LIHDAT has proven itself a powerful tool for shellfish management, but early usage was dogged by technical difficulties. The Tribe's involvement in the development and refining of this tool has been invaluable. The use of the LIHDAT specifically to improve collection of wild spat is a primary goal of Phase III, while the continued expansion of LIHDAT capabilities through testing and cooperative software development is a secondary goal.

Improved and Expanded Predator Control. In addition to a detailed schedule of crab trapping, the use of the handheld Avian Dissuader will reduce the impact of the common eider on bay scallop populations without harming the waterfowl.

Creation of Bay Scallop Sanctuaries. To protect breeding populations, 1-acre areas closed to shellfish harvesting will be set up in Menemsha Pond.

Dredging Plan for Menemsha Pond. Since the 1970's, there has been much debate related to the dredging of Menemsha Pond inlet. The discussion and debate revolves around flow rates to enhance shellfish growth and the increased depth, which will support larger vessels. An agreed upon dredging plan identifying the location, depth, maintenance, waterway regulations and enforcement capabilities of each entity involved will provide a strong foundation for cooperative capacity building. In this case, it is important to note that a third party contractor will be hired through consensus to develop the plan. This assures each jurisdiction, and those representing the Agreement are comfortable and willing to participate.

Eelgrass Restoration is a critical component of the habitat restoration. Developing plans and process to reclaim and restore eelgrass and eelgrass habitat is the key to the success of the bay scallop population.

Relevant Fish & Wildlife Service Goals Met

Goal 1.2 Sustainability of Fish and Wildlife Populations – Imperiled Species

- The program addresses the sustainability of two tribally recognized cultural and imperiled species, the bay scallop and eelgrass.

Goal 1.6 Invasive Species

- One task of this project specifically targets the removal of the European green crab, an invasive species contributing to the decline of culturally recognized species.

Goal 2.3 Habitat Conservation off Service Lands

- Activities in this proposal aid the conservation of bay scallop habitat, water quality, and coastal resources.

Goal 4.0 Partnership in Natural Resources

- This project is centered upon a historic agreement between the Wampanoag Tribe and the Towns of Aquinnah and Chilmark, Massachusetts. The developed plan will include partnerships with local, state, and federal agencies already in existence. Agencies include, the United States Fish and Wildlife Service, United States Environmental Protection Agency, United States Department of Agriculture, Federal Emergency Management Agency, United States Army Corps of Engineers, Massachusetts Emergency Management Agency, Massachusetts Department of Environmental Protection, local Conservation Commissions, and the Martha's Vineyard Commission.

Goal 4.1 Tribal Governments

- The tribe will freely share experiences, advances and results with any interested groups, governments or individuals. Specific emphasis will be placed on preparing presentations to Tribal governments at meetings with the United South Eastern Tribes, Native American Fish & Wildlife Society and regional meetings sponsored by the U.S

Environmental protection Agency. The Plan will be a publicly available document of particular benefit to Tribes with resources in locations with multiple jurisdictions.

CRITERIA USED TO SCORE PROPOSALS

Resource Benefit: *What are the expected benefits to Tribal fish and wildlife and their habitat, including species that are of cultural or traditional importance and species that are not hunted or fished if this program is successfully completed?* The Agreement installs the assurance that measures are taken to assure the protection, enhancement and restoration of culturally, recreationally and commercially significant species as well as their habitat in the pond complex. The goal of the Agreement is to identify on the ground measures, resources and plans to implement enhancement strategies. The habitat improvements and removal of invasive species has tremendous benefits to non-target species such as smaller baitfish, bird and wildlife populations dependant on the pond complex for food, water and shelter.

Extent to which the project will reduce or restore losses to fish, wildlife, and plant species or their habitats.

This project specifically targets the restoration of a tribally significant cultural and sustenance species, primarily the bay scallop, by managing the resource for long-term success. Expanded larval monitoring, predator assessment and temperature monitoring will increase the effectiveness of the bay scallop enhancement program.

Extent to which the project will carry out research or monitoring needed to restore or manage fish, wildlife and plant species or their habitats.

Natural habitat is being restored and monitored during this study, primarily through use of the LIHDAT. Expanded larval monitoring, predator assessment and temperature monitoring will increase the effectiveness of our efforts to protect and restore bay scallop habitat, and habitat of other species.

Extent to which the project addresses a fish and wildlife resources priority identified by a Tribe or other entity in a management plan or recovery plan.

The Wampanoag Tribe of Gay head (Aquinnah) has prioritized the restoration efforts of the bay scallop by both words and actions. The Natural Resources Department has been actively monitoring water quality under EPA approved Quality Assurance Plans, providing bathymetric studies funded by the Bureau of Indian Affairs, and protecting roadway runoff into the watershed to isolate any further processes which may have effect on the bay scallop. The Tribe has built a shellfish hatchery specifically to promote the cultural connection to the shellfish, and restore the bay scallop to historic numbers to provide for the Tribal members and the community, which has remained dependant for 10,000 years. These efforts are pieces of a master planning effort realized by the Tribe, Natural Resources Department and our community. Restoration efforts of the Tribe are specifically mentioned in the Tribe's Quality Assurance Plan under Section 106 of the Clean Water Act, Best Management Plans for Section 319 Non-Point Source Pollution Prevention, Bureau of Indian Affairs annual Hatchery Maintenance request and the Tribe's Master Plan.

Duration for which the project protects or manages a fish and wildlife resource priority.

The existing and funded project has continued since 2005. The Phase III addition will carry the project for two additional years. However, the staff of the Natural Resources Department will continue efforts to protect and enhance bay scallop populations as a directive of Tribal Council in perpetuity. The Towns of Aquinnah and Chilmark also currently employ shellfish programs, and will likely do so for the foreseeable future.

Performance Measures: The project will survey the Menemsha Pond complex for bay scallop spawning events as well as bay scallop spat hydrographic distribution with use of LIHDAT and spat capture. Data generated from this study will be used to develop an ecosystem model based around scallop population dynamics. Identification of spawning events and shellfish larval distribution will increase spat collection efficiency, allowing greater numbers of scallops to be raised and released. This effort will allow for greater numbers of harvestable scallops. This data and cooperation between the Tribe and town will ultimately make scallops a sustainable resource.

Extent to which the project identifies a baseline and provides measurable post-project accomplishments.

The project provides statistical analysis and measurable growth. This information will have direct applicability to a variety of watersheds. The larval monitoring study will determine actual spawning events of the bay scallop and other important marine species. This information will improve our ability to effectively enhance the target species population. The crab study will quantify current crab populations and improve our ability to effectively protect the target species population. Expanded water temperature monitoring will provide data enabling us to accurately identify the most favorable times for release of cultured bay scallop seed. Scallop harvest numbers are readily available.

The extent to which the project will produce measurable results for habitat and/or species.

The larval monitoring data will allow us to accurately predict the most favorable conditions for survival of bay scallop seed. The study will also maintain total catch and removal numbers of undesired invasive predators such as the green crab. Removal of this species will aid in the survival of many other shellfish species.

The extent to which the project implements high priority items and is part of a comprehensive management approach.

The overall goal of the proposal is a comprehensive management approach. Restoration of the bay scallop and native habitat are the final stages of a long-term management program implemented by the Tribe in 1994. The program began with basic water quality sampling to assure safe growing conditions, and in 2003 the Wampanoag Environmental Laboratory was certified by the state of Massachusetts. In 1977, a small 6' X 12' hatchery stood on the Herring Creek Property, open for three seasons. In 2001 the Tribe completed the Wampanoag Aquinnah Shellfish Hatchery and began production and growth on the Herring Creek property. These were calculated steps with full intent and strength of Tribal Council. These were also investments of Tribal funds into the success and benefit of future generations. The Tribal programs in air quality, wetlands, water quality, non point source pollution and health all focus on the future survival of cultural species, most important of which is the bay scallop.

Work Plan: *Are the program activities and objectives well-designed and achievable?* The program activities have been developed by the Tribe's Director of Natural Resources Department. Mr. Stearns has fifteen years experience working for the Tribe and administering two previous successful TWG grants. The department maintains a staff of five and operates programs in various media programs in partnership with a variety of local, state and federal agencies. The Tribal Council has approved the goals and objectives of this grant submission by Resolution, stating that the project has deliverables, which are both achievable and expected. The design of the activities is based on both experience and success in the past. The relationship between the Tribe and the community is unique, which is true for all Tribes. We believe the design submitted in this grant is a strategy that will produce positive results.

Extent to which project tasks and deliverables (work products) are clearly established and support Tribal goals/objectives.

The project tasks and deliverables were created by consensus of the Director of Natural Resources and cooperating agencies and organizations. In effect, more than 100 years of experience with shellfish in this region were expressed in the work products. The products, tasks and events described not only support Tribal goals and objectives, but were prescribed by the Tribe onto the Departments and hatchery, which serve the Tribal government.

Extent to which the project schedule is achievable.

Natural Resources Director Bret Stearns has a great deal of experience monitoring work plans and overseeing programs concentrated in resource management. The Natural Resources Department and the Wampanoag Aquinnah Shellfish Hatchery will provide the supplies, support and equipment necessary to maintain a reasonable timeline.

Extent to which the proposal clearly defines and establishes accountability to the applicant.

Due to the fact that this project is part of an existing effort of the Wampanoag Tribe, assigned by Tribal Council and reflected in the performance of existing staff, the accountability is clear. The Department employs a Bay Scallop Coordinator tasked specifically with this project. Other items, such as water quality data are part of the Tribe's EPA approved Quality Management Plan and Quality Assurance Project Plan for the year. Data will be taken in-field, validated and presented to both the project and through an on-line program by EPA which provides public access to local data.

Budget: *Are all major budget items justified in relation to the program objectives and clearly explained in the narrative description?* The budget has been vetted by the Director and Tribal Council for approval. A narrative has been submitted to describe the budget request.

The extent to which all parts of the budget narrative are clear, concise, and complete.

The budgets have been completed by the Natural Resources Department Director and approved by the Tribal Council of the Wampanoag Tribe.

The extent to which the budget narrative and associated budget table(s) accurately reflect all costs, including indirect costs.

All costs have been estimated using the Department's extensive experience with costs such as these, and based on the costs incurred for Phases I and II. The Tribe has negotiated an 88.02% indirect cost rate for federal-fund-supported employees, and these costs are included. The budget has also been evaluated in light of extensive experience with existing Fish and Wildlife, BIA, and EPA programs.

The extent to which all in-kind matches are clearly defined, allowable, and adequately described.

In-Kind cost contributions have been based on audit approved match group categories by the Tribe's audit firm. The Natural Resources Department has attended numerous federal trainings related to the use of federal funds including match contributions. The department grants receive a formal audit each fiscal year under the Self Governance of the Wampanoag Tribe of Gay Head (Aquinnah). Employee hours will be maintained on a electronic time sheet, match is recognized in the Tribal Accufund accounting system.

Capacity Building: The proposed Agreement increases the capacity building of the Tribe and the two town jurisdictions. The Tribe does not have jurisdiction over the waters of Chilmark or Aquinnah. The same formula is applicable to each jurisdiction involved. By developing consensus and formalizing management plans and policies in the form of an Agreement, each

jurisdiction may influence a desired condition or outcome outside the direct jurisdictional boundary. For the Tribe, this is an important step towards the protection of sustenance resources off Reservation.

Extent to which the project contributes to tribal self-sufficiency in fish and wildlife resource management.

This project is possible for the Tribe only because of the fact that it utilized existing infrastructure, equipment, and facilities built, maintained and overseen by the Tribe. The Tribe is a leader in the efforts of restoration, and has created a virtual research center, open and available to other Tribal Nations, local, state, and federal agencies. This endeavor provides the opportunity to work on a project within the Tribal priorities, partner close with the surrounding Towns, reach out to local, state, and federal agencies, gain partnerships and educate others on the importance of the restoration efforts. Travel and speaking engagements will provide the opportunity for participants and Tribal members to be exposed to new forums outside of the normal scope of work.

Extent to which the project results in identifiable benefits toward development or updating of management plan.

This project will not only result in the creation of a management plan, but is integrated into other management plans for the Wampanoag Tribe. It will determine the most effective strategy for management of the pond complex. Results from this project will be incorporated into a transferable and comprehensive bay scallop management and restoration plan. Other aspects of this study have already been included in the Tribe's EPA certified programs for the Clean Water Act, specifically Section 106 CWA, Section 104(b)(3) Wetlands Protection, and Section 319 Non-Point Source Pollution Prevention.

Extent to which the project results in the creation or improvement of tribal wildlife ordinances and/or enforcement.

The bay scallop and other pond species are utilized by individual tribal members as a sustenance right. The Tribe does not apply regulation, nor can it apply regulation outside of the time of harvest, but the creation of uniform and cooperative ordinances in the Towns, with possible reciprocal enforcement rights, will be an important step to effective cooperative management of the shared resources. The Tribe also maintains and manages hunting seasons and ordinances pertaining to migratory waterfowl, upland game and stocked game species.

Extent to which the project improves the fish and wildlife management capabilities through infrastructure development and training.

This study will build Tribal capacity by allowing the Tribe to implement the lessons learned from Phases I and II of the TWG regarding bay scallop restoration efforts. The creation of a government-to-government Agreement is the highest form of partnership utilized by the Tribe. Capabilities will expand from all three jurisdictions with the ability to cross train, assist with approved projects and cooperatively implement management strategies, which ultimately benefit all parties as well as the marine habitat. The improved ability to manage the visitors and vessels entering the harbor also has tremendous benefit to the community. The towns of Aquinnah and Chilmark, as well as many Tribal members are dependant on summer visitors to support seasonal businesses. Cooperative trainings will better prepare staff and ultimately better serve our community.

Contributions and Partnerships: The Tribe will be contributing matching funds to the project through salary support, vehicles, vessels, equipment and supplies currently owned by the Tribe. Personnel salaries matched for this grant are compensated through the Tribes Self-Governance

funding or funds derived through the Wampanoag Environmental Laboratory. In-kind will also derive from town employees and volunteers serving on review boards and taking part in the decision making processes. Town vessels and vehicles will also be used in the pilot project.

Extent to which the project clearly builds partnership alliances with other Tribes, organizations, or agencies.

The Wampanoag Tribe will work with several groups on the local, state, and federal level through the course of this study, with a primary emphasis on the Towns of Aquinnah and Chilmark, and the Martha's Vineyard Shellfish Group. These relationships already exist, as the Tribe maintains a close working relationship with over 20 agencies that share similar goals and objectives relating to the protection of sustenance species and natural conditions in our environment. The Tribe discusses activities of the Department regularly with Region 1 Tribes through EPA conference calls and meetings. Environmental protection and resource conservation techniques, successes, and failures are discussed freely among Tribal Nations. In addition Natural Resources Department is a member of the Martha's Vineyard Water Alliance group, which is an Island group dedicated to protecting water quality through cooperative action and education.

Extent to which the project leverages technical support and/or financial resources provided through a partnership.

The budget reflects in-kind support as well as the technical support of cooperating groups and agencies. The town of Aquinnah and Chilmark Shellfish Constables have pledged "on the ground" support, Rick Karney from the Martha's Vineyard Shellfish Group will provide technical assistance, the Wampanoag Environmental Laboratory will assist in every way possible to assure the success of this program. Dr. Scott Gallagher of the Woods Hole Oceanographic Institute will provide technical expertise for the LIHDAT instrument. The EPA will use all data generated from this study in the development of a bay scallop ecosystem model. Many of the shellfish constables from the Island and beyond have shown interest in the program and desire to participate as well. Projects, which center on restoration, are always viewed cooperatively. We are one group living on an Island; our community shares our concerns and meaningful participation often gained with little effort.