

Roger Williams University

DOCS@RWU

Documentation

Gray's Mill: Fish America Application Requesting Funding for Gray's Mill Pond Habitat Improvement, 2005

Follow this and additional works at: https://docs.rwu.edu/baker_documentation



Part of the [Historic Preservation and Conservation Commons](#)

APPLICANT INFORMATION:

1. Organization:

2. Executive Director:
Ralph Guild or Anne Baker
3. Address of Organization:
29 Drift Road
Westport, MA 02790
4. Organization Web Site Address:
www.graysgristmill.com
5. Congressional District:
District 4 (Bristol County)
- 6. Employer Identification Number:**

PROJECT CONTACT

1. Lead Project Officer and Title:
Jason Ringler; Project Manager
2. Address of Contact:
Natural Resource Services, Inc.
P.O. Box 311
Harrisville, RI 02830
3. Phone:
(401) 568-7390
4. Fax:
(401) 568-7490
5. Email:
nrs@ids.net

PROJECT INFORMATION

1. Project Name:
Gray's Mill Pond Habitat Improvement
2. Project Location:
Rhode Island/ Massachusetts State Line
Little Compton (Newport County), Rhode Island
Westport (Bristol County), Massachusetts
3. Longitude/ Latitude coordinates:
Latitude: 41.5553492
Longitude: -71.127242
4. Congressional District of Project:
In Rhode Island: District 1 (Newport County)
In Massachusetts: District 4 (Bristol County)
5. Type of Ecosystem:
Stream-fed pond
6. Project Type:
Habitat Improvement

7. Names of Sport Fish that will benefit from project:
 - White Perch (*Morone americana*)
 - Largemouth Bass (*Micropterus salmoides*)
 - Striped Bass (*Morone saxatilis*)
 - Bluefish (*Pomatomus saltatrix*)
8. Is public access to the resource available?
 - Adamsville Road abuts the pond to the south and southeast.
9. Is the project site publicly or privately owned?
 - The project site is privately owned as it is associated with the mill to the east. The pond was dug in the late 17th century to aid in powering a grist/ saw mill.
10. Project Start and End Date:
 - The project will be started upon receiving all of the necessary permits from State and Federal agencies. It is anticipated that this will occur in 2005. The project should be completed within one (1) year.

VOLUNTEER INFORMATION

1. Number of Volunteers:
2. Total Volunteer Hours:
3. Details of Volunteer Activities:

AMOUNT OF FUNDS REQUESTED

\$23,500 (see table detailing costs in the "Budget" section of this application)

PERMIT STATUS

PERMIT AND PERMITTING AGENCY	STATUS OF PERMIT	AGENCY CONTACT	COMMENTS
Application to Alter Freshwater Wetlands, Rhode Island Department of Environmental Management	Anticipated Approval Date: June, 2005	Charles Horbert, Permitting Supervisor, Office of Water Resources	includes Rhode Island Water Quality Certification
Notice of Intent, Massachusetts Department of Environmental Protection/ Westport Conservation Commission	Order of Conditions issued on November 4, 2002 DEP File Number SE 80-1206		unanimously approved by the Conservation Commission
Category 2 Programmatic General Permit, Army Corps of Engineers	Anticipated Approval Date: June, 2005		Contingent on RI DEM Approval
Water Quality Certification, Massachusetts Department of Environmental Protection	Anticipated Approval Date: July, 2005		90 days after RI DEM Approval

EXECUTIVE SUMMARY OF PROJECT

Gray's Mill Pond, historically a limnetic habitat type, has been greatly altered due to excessive deposition of sediment. As a result, the former deep water habitat is estimated to

have decreased in overall size 67.7% over the last sixty-five (65) years. In turn, the River Herring and American Eel, which utilize the site for critical stages in their life history, are being displaced. The applicant proposes to increase the overall area of deep water habitat by dredging those portions of the pond where sediment has collected. By increasing the depth and area of the open water within the pond, the pond will be better suited to offer habitat to a variety of wildlife species, particularly spawning River Herring and their juveniles, and adult American Eels.

PROJECT DESCRIPTION AND NEED

1. Describe the ecosystem/ specific resource:

A pond, identified as Gray’s Mill Pond, is the central element of the proposed project. Vegetation was observed to be present within the pond and includes, but is not limited to, Swamp Loosestrife (*Decodon verticillatus*) and Common Buttonbush (*Cephalanthus occidentalis*). A fringe of wetland has also been identified around the perimeter of the pond, primarily on the southern and western pond edges. The hydrology within the swamp varies from saturated to seasonally flooded.

Vegetation within the fringe swamp is dominated by a Red Maple (*Acer rubrum*) overstory. Other wetland indicator species were identified within the swamp, as detailed by the following table. It should be noted that this is not an inclusive list, but rather a representative sampling of vegetation commonly found in the overstory, understory, and herbaceous layers.

<i>Common Name</i>	<i>Scientific Name</i>	<i>Indicator Status</i>
Black Gum	<i>Nyssa sylvatica</i>	FAC
Common Greenbrier	<i>Smilax rotundifolia</i>	FAC
Highbush Blueberry	<i>Vaccinium corymbosum</i>	FACW-
Multiflora Rose	<i>Rosa multiflora</i>	FACU
Poison Ivy	<i>Toxicodendron radicans</i>	FAC
Reed Canary Grass	<i>Phalaris arundinacea</i>	FACW
Soft Rush	<i>Juncus effusus</i>	FACW+
Speckled Alder	<i>Alnus rugosa</i>	FACW
Spotted Joe-Pye-Weed	<i>Eupatorium maculatum</i>	FACW
Spotted Touch-Me-Not	<i>Impatiens capensis</i>	FACW
Swamp Azalea	<i>Rhododendron viscosum</i>	FACW+
Weeping Willow	<i>Salix babylonica</i>	FACW-
Yellow Birch	<i>Betula alleghaniensis</i>	FAC

A flowing waterbody enters the pond along its northern edge. Identified as Adamsville Brook, this river flows in a southerly direction into the pond and is greater than ten (10) feet in overall width. This flowing waterbody is depicted on the USGS Topographic Map for this area (Tiverton Quadrangle Map) as a blue-lined perennial river. Adamsville Brook exits the pond along the northeastern pond edge. The dam and fish ladder associated with this pond and river are located in this vicinity. Adamsville Brook is the outlet for Gray’s Mill Pond and eventually flows into the West Branch of the Westport River, which flows into Westport Harbor.

2. Describe the specific educational and/ or socio-economic needs the project will address:

The enhancement of the habitat offered within the pond will aid in biological education lessons for neighboring schools. Two (2) of the neighboring schools have been contacted in an effort to get high school aged volunteers for spring fish counts. The additional habitat will also aid in attracting a variety of wildlife species to this habitat, allowing for educational experiences for bird watchers, wildlife observers, and biological researchers.

This pond is regularly stocked with trout by the RIDEM. The creation of a larger open water body area will afford more fishing opportunities for the public. In addition, the removal of excess organic material and the maintenance of sustained water within the pond will allow for both swimming and canoeing recreational activities. Finally, the pond could support additional winter recreational activities such as ice skating and ice fishing.

3. Describe the specific on-the-ground activities to be undertaken on-site to achieve the project objectives.

The applicant has proposed the dredging of the pond. This project has been designed so as to occur during the dry months (from July to September). A temporary dredging platform will be constructed and a crane using a clam shell bucket will be used to complete the dredging project. While most of the work associated with this project will be accomplished from the platform, some machinery will be located within the pond to access those portions of the intended project area that could not be reached from the platform. Approximately 1.3 acres of the pond will be affected by this project. The thick layer of organic material, which is currently present at the bottom of the pond, will be removed. As such, three (3) to four (4) feet of material will be removed; approximately 2,500 cubic yards of material will be removed as part of this project.

An area to the northwest of the pond has been designated as the dewatering area. All dredged material will be located in this area until it is ready to be removed from the site. Lined and covered dump trucks will relocate the dredge materials to an acceptable disposal area. The material will be properly disposed of at a site in Massachusetts and appropriate water quality certification is being sought from the Massachusetts Department of Environmental Protection (DEP). The temporary dredge platform will be removed at the conclusion of this project. It should be noted that this area is in Massachusetts and is subject to the conditions set forth by the Westport Conservation Commission. The area that is disturbed by the proposed platform will be replanted in accordance with the plans that were approved by the Westport Conservation Commission.

In addition, the applicant has proposed the installation of a clay liner along the western and southwestern edges of the pond, adjacent to Adamsville Road. It has been noted that the pond waters have been seeping through this wall and causing or intensifying flood events in the immediate vicinity. The incorporation of this clay liner to this bank will serve to eliminate any seepage through this bank and will aid in strengthening it. This will also improve the pond's ability to retain water during the summer months.

It should be noted that this project has been discussed with a variety of other parties. Specifically, abutting property owners, as well as state biologists, have been notified of the applicant's intent and some have submitted letters of support (Appendix 1). The applicant has designed this project with the recommendations and suggestions of the Rhode Island and Massachusetts fisheries biologists, as well as those from the U.S. Fish and Wildlife Service, in mind. As previously stated, the Westport Conservation Commission unanimously approved this project.

4. Describe the specific site for the on-the-ground activities including nearby landmarks.
The entire project will be located within the limits of Gray's Mill Pond. This feature is located on the northwest side of Adamsville Road and the historic Gray's Grist Mill, which was dependent on the pond for approximately 150 years, is located on the southeastern side. It should be noted that the Rhode Island/ Massachusetts state line extends through the pond, with approximately seventy (70) percent of the historic area of the pond located within Rhode Island.
5. Clearly identify the specific measures of success.
The goal of the project is to increase the overall available maintained open water habitat by approximately ninety (90) percent. The dredge project will serve to increase the open water habitat from approximately 0.78 acres to 1.48 acres.

It has been documented that during the summer months, the open water area within Gray's Mill Pond is significantly reduced: in 2002, the area of open water was GPS located and was approximately 9,445 square feet (0.22 acres) in overall size. As such, for the majority of the summer months, only a small, stagnant, warm pool of water is present within the confines of the pond. Characteristics of waterbodies like these include higher water temperatures and lower dissolved oxygen concentrations. These factors can greatly influence the survival of juvenile river herring within a system. Juvenile river herring typically cannot survive water temperatures exceeding 35°C (95°F)¹. Pictures taken in August of 2002² (enclosed) document the small and relatively shallow areas of open water left during the summer months, where temperatures near this threshold were possible. In addition, mortality rates of juvenile herring rise when dissolved oxygen concentrations are impaired, specifically when dissolved oxygen concentrations are below 2.0 mg/L¹. The low inflow of water during these portions of the year and the shrinking areas of sustained open water contribute to lower dissolved oxygen concentrations.

Additionally, juvenile herring within the pond are relatively easy prey under current habitat conditions. When water levels drop in the summer, the herring population within the pond is corralled into the small shallow areas of open water left in the pond. Both Double-crested Cormorants (*Phalacrocorax auritus*) and Great Egrets (*Ardea alba*) have regularly been seen within the pond and likely feed on

¹ Bozeman, E.L., Jr., and M.J. Van Den Avyle. 1989. Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (South Atlantic) – Alewife and Blueback Herring. U.S. Fish Wildlife Service Biological Report 82(11.111). U.S. Army Corps of Engineers, TR EL-82-4. 17pp.

² 2002 was a drought year.

juvenile herring during the summer. The deepening of the pond will increase the habitat for the herring and diminish the probability of their predation.

Finally, it should be noted that the applicant aims to restore available open water habitat similar to that which was historically available. In 1939, approximately 3.18 acres of open water habitat was offered within this pond (as interpreted from the 1939 aerial image). When comparing this area to the 2003 open water area (as interpreted from the 2003 Ortho Image), there has been a 69% decrease in the available open water habitat within the pond.

While the main goal of the project is to create a larger area of open water habitat, it should be noted that this would also allow for lower water temperature to be sustained throughout the summer months, particularly in the deepest portions of the pond and would afford higher dissolved oxygen concentrations to be maintained within the pond year round. These efforts will lower the mortality rates of juvenile river herring within the system and aid in boosting the population utilizing this habitat. The project will also be limited in scope to the pond itself and will not likely result in any disturbance to the surrounding habitats.

6. Describe any construction activities.

A temporary platform will be constructed to access interior portions of the pond with the dredge equipment. This platform will be located on the northeastern side of the pond and a crane with a clam shell bucket will be utilized during the dredge. It may be necessary to stage some dredge machinery within the western portion of the pond, as this area will not be able to be accessed from the proposed platform. All dredged material will be dewatered within the northeastern adjacent property; the dewatering site will be surrounded with appropriate erosion and sedimentation control measures.

7. Describe any environmental concerns that may exist.

There are no significant environmental concerns associated with this project. The sediment to be dredged has been analyzed and is composed of a variety of organic substances. The disposal of this material will be at an approved site in Massachusetts and appropriate water quality certification is being sought from the Massachusetts Department of Environmental Protection (DEP).

8. Describe any historic structures or archeological sites at or near the project site.

As mentioned, the only historic site in the vicinity of the project is Gray's Grist Mill. Originally settled in the late 17th century, a mill pond was created within Adamsville (formerly Taborville) when the stream, Adamsville Brook, which flowed through the village, was dammed. A grist/ saw mill was built and was powered by a wooden wheel. This mill was responsible for supplying ground meal for human use, fodder for animals and sawed timbers for construction. The economic hub created by the mill resulted in a number of other businesses locating their enterprises in the mill's vicinity, including a black smith, meat market, bakery, harness shop, and ice houses.

The Industrial Revolution resulted in changes to the power source of the mill. Specifically, in the mid 19th century, the mill incorporated a turbine into the rede-

signed mill. The mill, and associated turbine, was destroyed in 1938 when a hurricane swept through the area. At this time, the mill was rebuilt to be powered by a gasoline engine and, consequently, the pond was abandoned as the mill's power source. The mill is presently still powered by a gasoline engine.

The mill and associated property was acquired by the applicant in 1980. The mill was restored at this time and continued to produce Rhode Island's famous Jonnycake meal for another seventeen (17) years. However, when the mill was no longer a profitable venture, the applicant was forced to shut it down in 1999.

9. Described all planned pre- and post-project monitoring and maintenance activities.

Currently, the Fish Commissioners, specifically Russell Hart, monitors the use of the pond by migrating river herring and has been doing so for the past twelve (12) years. Natural Resource Services, Inc. personnel also monitored the use of this fish run in 2003. Additionally, Natural Resource Services, Inc. personnel have also been monitoring the available open water habitat during the summer months. Aerial photography was analyzed from 2003 and the open water habitat was GPS located in the summer of 2004.

After the completion of this project, it is anticipated that the fish populations utilizing the pond will continue to be monitored through the Town of Westport, Office of the Fish Commissioners. In addition, Natural Resource Services, Inc. plans to continue mapping and monitoring the open water habitat available within the pond during the summer months. This will be accomplished by utilizing available aerial photography for future years and by mapping the area utilizing GPS technology. Water depths will also be taken randomly within the dredged area to ensure that the depth of the pond is maintained.

10. Explain how the project is part of a larger local or regional effort and list other project partners.

The environmental agencies for both States, Rhode Island Department of Environmental Management and the Massachusetts Department of Environmental Protection, have made strides to protect the river herring populations within their respective communities. Specifically, days and daily catch limits have been imposed. Fisheries biologists for both states regularly monitor the population of these fish within specific fish runs and produce yearly reports detailing the health of the monitored runs. The data collected from the monitoring of Adamsville Brook is submitted to these biologists for their review and inclusion.

Additionally, the Westport River Watershed Alliance has been actively working to improve the waterbodies in this watershed. This non-profit organization is dedicated to improving water quality within the watershed, protecting the existing habitats offered within the area, and educating the public about the environment, specifically those habitats offered within the Westport River Watershed. Finally, the Westport Fish Commissioners have also been trying to better this habitat for river herring. Russell Hart, on behalf of the Fish Commissioners Office, applied for and was awarded a grant from Fish America Foundation in order to install a fish ladder at the dam in the eastern portion of the pond. A \$7,000.00 grant was

awarded to the Fish Commissions and an Alaskan Steep Pass fish ladder was installed. It has been documented in subsequent years that river herring have successfully navigated this pass.

TIMELINE OF PROJECT ACTIVITIES

PROJECT ACTIVITY	ANTICIPATED DATES OF IMPLEMENTATION
Project Design	5/02 – 4/04 (completed)
Permitting Process	9/02 – summer 2005 (on-going)
Pre-Project Monitoring	Russell Hart fish monitoring (12 years) Natural Resource Services, Inc. fish monitoring (Spring 2003)
On-site Construction	Once all permits are secured (August, 2005)
Riparian Revegetation	Immediately upon removal of the dredge platform (October, 2005)
Post-Project Monitoring	Immediately after project completion to document existing conditions Spring (2006) – document fish run Summer (2006) – assess vegetative composition; open water habitat available and depths; assess fish use of the open water habitat

BUDGET

1. Budget Narrative:

To date all of the expenses associated with the project have been covered by the applicant (design and permitting) which has cost approximately \$____. The applicant is requesting \$23,500 to assist in covering the direct project costs and subsequent monitoring. The entire project is being funded by the applicant with no other matching funding.

2. Budget Table

ITEM	TOTAL COST	FAF REQUESTED FUNDS	DEPARTMENT OF NATURAL RESOURCES	APPLICANT
<i>Contracted Services</i>				
Heavy Equipment		\$20,000		
Contractual Labor				
<i>Supplies/ Materials</i>				
Trees/ Vegetation				
Planting Materials				
Signage				
<i>Other Labor</i>				
Design & Permitting		-	-	
<i>Monitoring</i>				
Environmental Consultant	\$7,500	\$3,500		\$4,000
Total Costs				

3. Matching Contributions and Source

There are no other matching funds for this project

CONTACT AT STATE OR FEDERAL NATURAL RESOURCE AGENCY

1. Name	Charles Horbert		
2. Title	Wetlands Supervisor		
3. Agency	RI Department of Environmental Management	MA Department of Environmental Protection	Westport Conservation Commission
4. Address	235 Promenade Street Providence, RI 02908-5767		
5. Phone	(401) 222-4700 x7402		
6. Fax	(401) 222-6177		
7. Email Address	chorbert@dem.state.ri.us		

APPLICANT SIGNATURE AND DATE OF SUBMISSION

Signature of Authorized Representative

Date