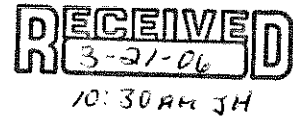


011

**HOUSATONIC RIVER  
NATURAL RESOURCE DAMAGES FUND  
ROUND 1, 2005  
Massachusetts SubCouncil**



**Project Proposal Form**

**PART A. APPLICANT AND PROJECT INFORMATION.**

Responses may be entered electronically, saved, and printed. Or, print and complete form with black ink.

**APPLICANT INFORMATION**

Massachusetts Division of Fisheries and Wildlife, Fisheries Section

**Type of Entity** Check the box that best describes the applicant.

- Private individual
- Non-profit organization
- State government
- Federal government
- Tribal government
- Municipal government
- Corporation or Business
- County government
- Academic Institution
- Other (explain)

[Empty box for other explanation]

**Authorized Representative of Applicant**

Andrew Madden

Name

Western District Manager

Title

Mass Division of Fisheries and Wildlife

Address

400 Hubbard Avenue

Address

Pittsfield MA 01201

City

State

Zip

Phone:

413 447-9789

Email:

Andrew.Madden@state.ma.us

**Contact Person (if different)**

[Empty box]

Name

[Empty box]

Title

[Empty box]

Address

[Empty box]

Address

[Empty box]

City

State

Zip

Phone:

Email:

## Request for Responses: Project Proposal Instructions

**Project Name** Provide a brief working name:

Housatonic Watershed Fisheries Assessment

### Project Location

Attach an 8.5 x 11-inch map or copy of an aerial photograph showing project location and extent. Include pertinent topographic and geographic information, a scale, and north arrow.

State(s), Municipality/ies:

Massachusetts. All communities in Housatonic Watershed

Longitude for approximate center of project area:

42.2378

Latitude for approximate center of project area:

73.2461

**Restoration Priority Category** See instructions for category descriptions.

**Primary Category.** Check one box.

- Aquatic Biological Resources and Habitat
- Wildlife Resources and Habitat
- Recreational Uses
- Environmental Education and Outreach

**Secondary Categories.** Check all relevant boxes.

- Aquatic Biological Resources and Habitat
- Wildlife Resources and Habitat
- Recreational Uses
- Environmental Education and Outreach

**List Specific Injured Natural Resources and/or Impaired Natural Resource Services to Benefit from Project** (see Section 1.2 of the Restoration Project Selection Procedure for a summary of injuries)

Fisheries resources throughout watershed  
Brown Trout Population in Housatonic River Mainstem  
Recreational Fishing throughout the watershed

**Project Type** See instructions for project type descriptions. Check all relevant boxes.

Resource-based

Access-based

Maintenance-based

**Request for Responses: Project Proposal Instructions**

**Project Budget Summary**

Complete the table below to summarize the budget information that is detailed in Part E: Project Budget. Applicants are advised to complete Part E of the proposal (Project Budget) before filling in the boxes below.

<b>Housatonic River NRD Fund – Requested</b>	<b>Other Contributions (Committed)</b>	<b>Other Contributions (Not Committed)</b>	<b>Total Project Cost (boxes 1+2+3)</b>
1. 220,000	2. 66,000	3.	4. 286,000
<b>Amount of Other Contributions to Be Considered as Cost-Share to NRD Fund Request</b>			
5. 66,000			

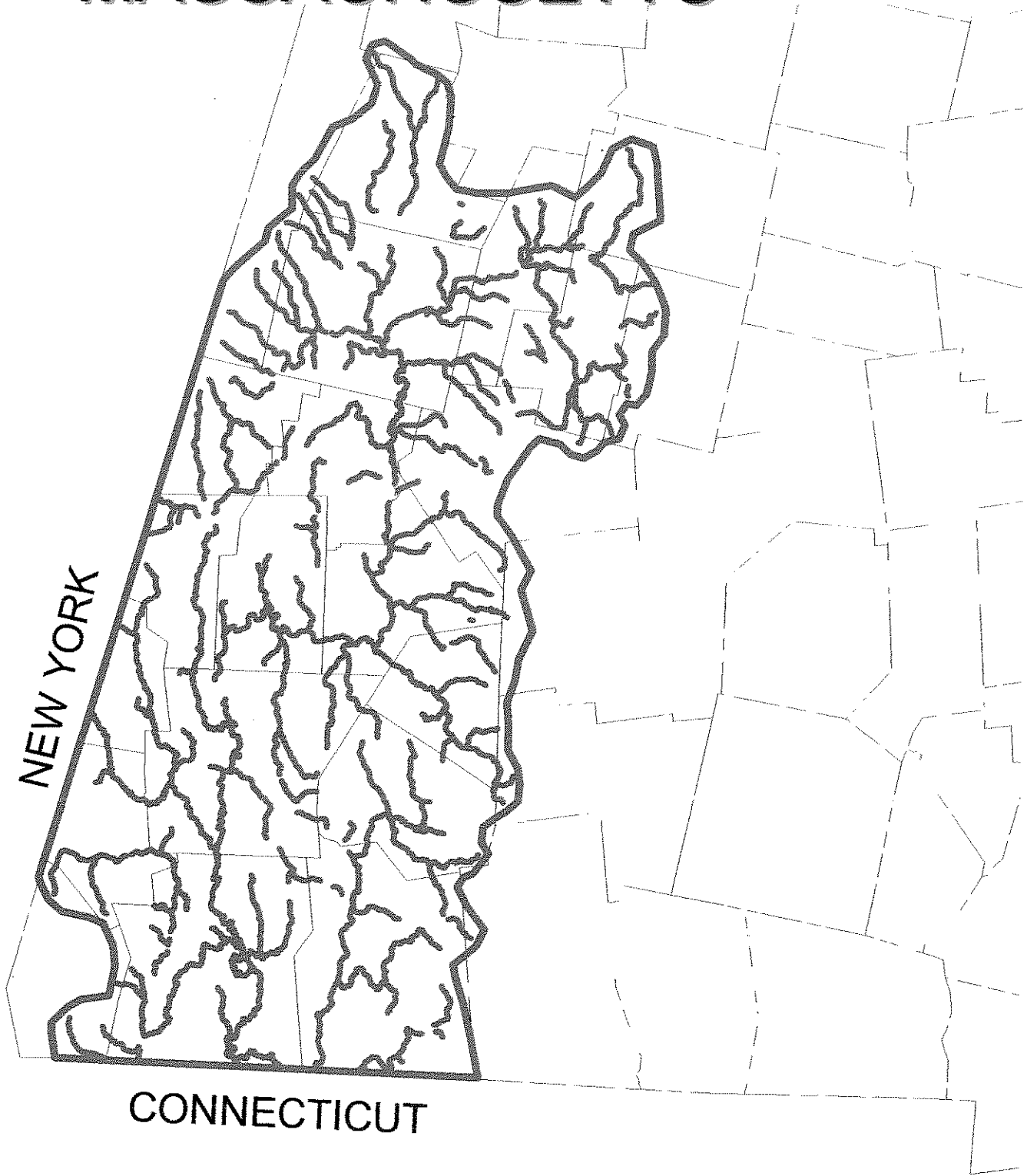
**Authorizing Statement**

I hereby declare that the information included in this project proposal and all attachments is true, complete, and accurate to the best of my knowledge, and that the proposed project complies with all applicable state, local, and federal laws and regulations.

  
 \_\_\_\_\_  
 Signature of Applicant or Applicant Representative

3/2/06  
 \_\_\_\_\_  
 Date

# HOUSATONIC WATERSHED MASSACHUSETTS



## **Request for Responses: Project Proposal Instructions**

### **PART B. PROJECT ABSTRACT**

Hazardous substances have had negative affects throughout the watershed. This has affected aquatic resources and impacted recreational opportunities. The Natural Resource Damage Fund offers a rare opportunity to mitigate these effects through science, management and outreach. We propose a project with two primary components. The first component will address the fisheries resources in the watershed. We will conduct surveys of fisheries resources and produce maps for distribution to conservation commissions, municipalities, watershed organizations, and other local level conservation groups. These maps will guide conservation, restoration and land use planning in the watershed.

The second project component will address recreational fishing. We propose to study of movement of the brown trout population in the mainstem and development and production of recreational fishing guides. The brown trout population in the river is of particular recreational importance, but is poorly understood. We intend to track movements of these fish using radio-telemetry techniques. This information will help identify the key habitat components necessary for the survival of these important recreational fish. It can also be used to identify barriers to fish movement and potential limiting factors for the population.

We also propose to use existing information, as well as newly collected fisheries data, to produce and distribute recreational fishing guides for the public. Awareness of the resource is a key component in determining recreational fishing success. No specific watershed based fishing guide currently exists.

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## Request for Responses: Project Proposal Instructions

### PART C. PROJECT NARRATIVE

The proposal has two primary components. Fortunately these components can be conducted and developed simultaneously. This effort will require a coordinator to collect and analyze data and integrate the different project components. The project coordinator will make use of existing Massachusetts Division of Fisheries and Wildlife (MDFW) office space, equipment and personnel whenever possible. Centralized management under a single coordinator will ensure that the project components are integrated, keeping costs relatively low. The influence of the products produced under this proposal will be far reaching and long lasting.

The first component of the proposal is fisheries population assessment and resource map development. Here we will seek to assess the fish populations throughout the watershed with particular focus on areas where data is lacking or outdated. This will require stream, river and pond sampling. These data will be combined with existing data and used to produce maps (see Figure 1) of fisheries resources. Along with the maps will be threat assessments and specific conservation strategies for restoring and protecting aquatic resources. These will be distributed to conservation commissions, municipalities, watershed organizations, and other local level conservation groups. The maps will provide a vital piece of information to be used in open space plans, wetland permitting, zoning plans, and conservations efforts. Much of the Housatonic watershed is composed of small high gradient headwater streams. These resources are important as a source of cold high quality water to the larger river branches. They are also important as coldwater communities containing species such as brook trout, slimy sculpin, and suckers. They are however, vulnerable to habitat degradation, particularly from development, and have no official protected status. Protection of these streams is consistent with regional and national efforts such as the National Fish Habitat Initiative (NFI) and the Eastern Brook Trout Joint Venture (EBTJV). Collection of data on unassessed streams and GIS mapping of resources in the watershed will first and foremost benefit the Housatonic Watershed. It will also have greater implications at the State level as a model for other Massachusetts watersheds, and at the Regional and National level as data is integrated with efforts such as the EBTJV.

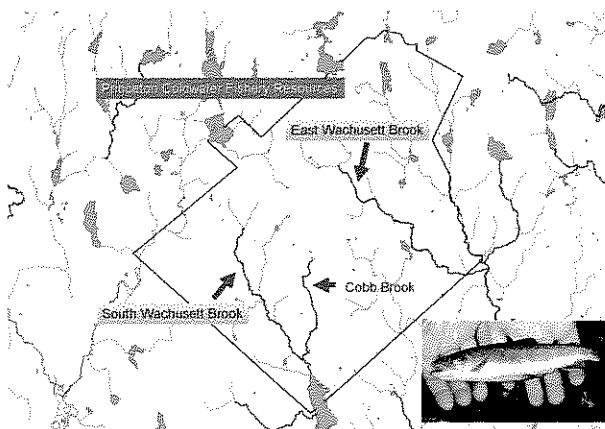


Figure 1. Example Map of Coldwater Fisheries Resources

The second component of the project will focus on recreational fishing. It will address a specific important recreational resource as well as general recreational fishing in the watershed. The

## **Request for Responses: Project Proposal Instructions**

specific resource is the brown trout fishery in the mainstem. This population of fish is of particular recreational importance and is specifically targeted by anglers throughout the region. Massachusetts Division of Fisheries and Wildlife has designated two reaches of the mainstem Housatonic as catch and release in part to protect the brown trout population. MDFW has also identified and protected suspected thermal refuge areas which are presumably vital to the survival of these fish. However, we have little real knowledge of the movement and habitat use by brown trout in the mainstem. These fish survive despite the fact that the river often approaches lethal temperatures. We suspect that thermal refuge areas are critical to these fish, however, we are unable to determine exactly how and when the fish utilize these areas. We propose to study the movement of these important fish to determine how they utilize the different habitats in the river. This will entail radio tagging a number of individuals across age classes in different reaches of the river and tracking their movement throughout the year. The data generated from this work can be applied in a number of ways. It will help us identify and protect critical habitat. It will help us identify barriers to fish movement and potential limiting factors in population distribution. It will also help us develop and implement management changes to further enhance the population and the recreational fishery. Because trout are among the most environmentally sensitive fish, the data can be used along with other work in the river to prioritize areas for restoration activities.

A final phase of the project will be development and distribution of recreational fishing guides. Information gathered through fishery survey and telemetry will be integrated with existing data and incorporated into recreational fishing guides for public distribution. Locations of recreational fishing sites and knowledge of resources is a key component in ensuring recreational fishing success. A comprehensive watershed fishing guide will likely increase recreational fishing in the watershed. Increased recreational fishing can have positive influences on local economies and overall quality of life.

These components will all result in important products for continued management and conservation of the fisheries resources in the watershed.

### Project Goals and Objectives

The proposed project will vastly increase the working knowledge of the fisheries resources in the Housatonic Watershed. The fisheries assessment component will produce clear information to conservation commissions, municipalities, watershed organizations, and other local level conservation groups. Included in this information will be identification of greatest threats and conservation strategies to protect and restore aquatic resources. The recreational component will assess current conditions and identify the life strategies and habitat utilization of the brown trout population in the mainstem. These efforts will result in better management of the brown trout populations and increased awareness of the recreational fishing resources in the watershed.

### Project Benefits

GIS mapping of fisheries resources within the watershed will be a benefit to the resource and the general public. The fisheries resources, particularly the coldwater resources which are prevalent in the watershed, will benefit from increased awareness by regulators and land managers. There

## Request for Responses: Project Proposal Instructions

are many instances in Massachusetts communities where development or environmental degradation occurs in the vicinity of small headwater streams. These small streams are of vital importance to proper watershed function. They act as suppliers of high quality water to the system and they also have an important intrinsic value as cold water communities. However, many of these waters do not have official protected status. The maps produced under this project will provide important guidance for local level officials and lead to greater conservation and protection of the small stream communities. This is a benefit to the streams, the town in which they exist, and the entire watershed. The increased awareness will focus protection efforts and reduce the impacts of development and environmental degradation.

The recreational fishing component will have real benefits to the fisheries resource through better management and conservation. However, the greatest benefit will be to the recreational fishing public. Communities in the watershed are likely to benefit from increased recreational fishing which can provide economic boosts to the area. The brown trout population is fairly unique in Massachusetts and has the potential to be a great recreational fishery. The data collected through telemetry will be applied to management of this resource and provide important insight into similar populations throughout the state.

### Project Implementation Plan

- a. The proposed project will be implemented over a 24 month period. The first three months will be spent in hiring personnel, equipment purchase and sampling design. Two field sampling seasons over the 24 month period will be conducted. Telemetry work will be conducted concurrently with fisheries sampling and include monitoring of fish movements throughout the calendar year. Fisheries sampling will be conducted by subwatershed so GIS mapping of resources for conservation and recreation can be developed on an ongoing basis. The final phase of the project will include production of maps and management recommendations for the brown trout fishery.

The following tasks will be accomplished during the project period: Fisheries survey, brown trout telemetry data collection, resource map development and distribution, recreational guide development and distribution, telemetry analysis and report.

- b. Project schedule – 24 months total project period

Hiring Coordinator	Month 1
Equipment Purchase	Month 1-3
Fisheries Survey	Field Season 1 and 2 (Field Season is June-September)
Resource Mapping	Non-field Season 1 and 2
Recreational Fishing guide	Non-field Season 1 and 2
Fish Tagging for telemetry	Field Season 1
Fish Movement Monitoring	Throughout Project Period
Telemetry results	Month 22-24
- c. The key milestone tasks in the project are the following:

Sampling program and experimental design plan	Month 3
Completion of half the subwatersheds for fisheries assessments	Month 9



## Request for Responses: Project Proposal Instructions

First round of maps for distribution	Month 12
Completion of remaining subwatersheds	Month 18
Second round of maps for distribution	Month 24
Telemetry report and recommendations	Month 24

- d. The only permits necessary for the project are granted by the Division of Fisheries and Wildlife.
- e. The information generated in the project will provide a baseline from which future management decisions will be made. The impacts of the project will be long lasting.
- f. The proposed project will help guide land management and restoration activities.
- g. The project is highly complimentary with existing plans for land management and conservation. The resource mapping aspect of the project will provide guidance for land managers and resource planning groups. Data produced under this project will compliment BIOMAP, living waters, Eastern Brook Trout Joint Venture maps and many others.

### Technical/Technological Feasibility

The proposed project will utilize well tested and established techniques. The fisheries sampling protocols will be based upon the Division of Fish and Wildlife standard procedures (see Supporting Documents). These are established methods which will ensure consistency with previous sampling efforts. The telemetry portion of the project will use equipment suitable for this application and utilize known sampling and tracking techniques. Mapping will be conducted using established GIS technologies. We anticipate very few technical problems or deviations from the proposed schedule.

### Monitoring/Evaluation and Contingency Plan

The proposed project has clear measurable goals and endpoints. The production of resource maps and recreational fishing maps are tangible products which can be used to evaluate success. At the conclusion of the project, a report including recommendations will be made based on the results of the telemetry work.

The structural parameter to be monitored is miles of waters assessed. The applicant team has a baseline of waters that have been surveyed for fisheries populations. Using this baseline we can monitor the project progress in terms of miles of waters assessed.

The functional parameter measured will be identification of barriers to movement of the brown trout. Telemetry data will identify where the limiting factors in movement and distribution of brown trout.

Progress will be monitored by the members of the applicant team throughout the course of the project. The key milestones outlined in the progress schedule section of this application will be used to evaluate progress.

## **Request for Responses: Project Proposal Instructions**

The project is specifically designed so that the components can be worked on simultaneously. If problems or delays arise in one facet of the project, the coordinator will have the flexibility to shift efforts towards another task. Because this contingency is built into the project, we anticipate that any delays or complications can be readily addressed. The applicant team which will oversee the project has the technical expertise to assist and guide the project coordinator to ensure successful completion of the project.

### Qualifications of the Applicant Team

The proposed project will be coordinated and managed by established fisheries scientists. An oversight team will ensure the completion of the project. The team will consist of project leaders and regional managers with many years combined experience. The attached resumes (see Supporting Documents) are those of the team that would be responsible for managing the project and ensuring its successful completion. All members of the team have been involved with projects similar in scope and design.

The project oversight committee will include the following personnel.

Mark S. Tisa, PhD, MBA	Chief of Inland Fisheries
Todd Richards, MS	Stream Flow Specialist
Andrew Madden, MS	Western District Manager

As a State agency we have the administrative capabilities to ensure project completion.

## **Request for Responses: Project Proposal Instructions**

### Supporting Technical Documentation

1. Massachusetts Backpack Electrofishing Standard Operating Procedures
2. Massachusetts Pond Survey Standard Operating Procedures
3. Resumes of Applicant Team



**MassWildlife**

*Commonwealth of Massachusetts*

# **Division of Fisheries & Wildlife**

Wayne F. MacCallum, *Director*

## **Standard Operating Procedures**

- 1. Boat Electrofishing**
- 2. Shoreline Seining**
- 3. Water Quality Monitoring**

*[www.masswildlife.org](http://www.masswildlife.org)*

**Division of Fisheries and Wildlife**

Field Headquarters, One Rabbit Hill Road, Westborough, MA 01581 (508) 792-7270 Fax (508) 792-7275

*An Agency of the Department of Fisheries, Wildlife & Environmental Law Enforcement*

## **1. Boat Electrofishing Procedures**

Described below are general procedures for sampling fish populations with an electrofishing boat. Contact Richard Hartley at (508) 792-7270 x 132 with any questions about this SOP.

**Task 1:** Create a sampling map.

Using a map of the waterbody to be sampled, mark sampling points every 2,000 feet along the shoreline perimeter starting at the launching point. Sequentially number the segments beginning at the launching point and proceeding counter clockwise. Randomly choose three of these segments for total species pick-up sampling. The remainder of the segments will be used, if necessary, for targeted species sampling.

**Task 2:** Confirm sampling day and weather conditions

Sampling will take place in the spring when the surface water temperatures are between 15-21°C. Daily sampling times will begin no earlier than ½ after sunset and will end no later than ½ hour after sunrise.

Common sense and good judgement will dictate when it is appropriate to sample. Under no circumstances will sampling take place during electrical storms, high winds or other conditions that will jeopardize the quality of the sample. Postponements will be made until unsafe conditions cease.

### **Element of Task 2**

1. Check the current and forecasted weather and make a decision on whether or not conditions allow for effective sampling. Reconfirm by personally inspecting the waterbody conditions before launching the boat.

**Task 3:** Go through the sampling equipment and supply checklist.

Before leaving shore, confirm that you have all the necessary sampling equipment.

### **Elements of Task 3**

1. Confirm that the following sampling equipment is on board:
  - Long handled dip nets (2)
  - Livewell net
  - Thermometer
  - Rubber lineman gloves rated at 1000 watts (2 pair)

- Measuring board with mm scaled ruler
- Platform balance scale
- Field knife
- Clipboard with appropriate datasheets, pond maps and pencils
- Q beam high powered portable spotlight
- Flashlights and batteries
- Scale collection envelopes
- Pre-labeled voucher bottle
- 10% buffered formalin
- Digital camera
- This SOP

**Task 4: Sampling fish by using an electrofishing boat**

The following procedures are based on the use of a Smith-Root Inc. 14-foot electrofishing boat (SR-14H) with a 5.0 GPP control box. For this task, an electrofishing boat similar to the above mentioned boat can be used but must be capable of producing DC pulsed current. The crew will consist of a minimum of three people, one boat operator and two netters at the bow. The entire crew will be familiar with boating safety as well as operation of the electrofisher panel. Additionally, at least one crewmember should be familiar with CPR. Each netter will wear lineman gloves and rubber boots to guard against possible electric shock. As an additional safeguard, the control box will be configured such that the boat operator and at least one netter must depress a pressure switch before the boat will create an electric field.

**Elements of Task 5**

1. After launching the boat and motoring away from the ramp, start the generator and turn on the control box. Set the mode control to 60 Pulse DC and the Range to the low (50-500) setting. Test all lighting systems, the live well pump and all safety switches. Fill the livewell and reset the timer on the control box to zero. Fill out Massachusetts Division of Fisheries and Wildlife (MDFW) Biological Survey of Waters: Fish Sampling Log (attached) taking all relevant temperature measurements

and weather observations. Note starting time on the cover sheet and starting point on the previously segmented pond map.

2. Slowly motor the boat into position as close to the shoreline as possible at the starting point of the segment chosen for the first total species pick-up run. The two bow netters should be in position and prepared to net fish. When the boat is in place, depress all safety switches and start administering current. Adjust Percentage of Range control unit until the Output Current gauge reads approximately 4 amps or at a point where the fish are being drawn from around the boat to the anodes. Record the range of amperage used throughout the survey on the Sampling Log sheet. If this amount of amperage is unreachable in low range, switch to high range only after shutting off the control panel. **Note: Do not switch the range from Low to High or the reverse under load, shut down the control panel before switching.**
3. Once the gauges have been adjusted for optimal performance and the settings have been recorded on the Sampling Log sheet, reset the timer on the control box to zero. Commence electrofishing by slowly motoring (approximately walking speed) along the shoreline of the waterbody in a counter-clockwise direction. The two bow netters collect as many fish as possible and place them into the livewell. The goal is to collect as representative a sample of species and sizes encountered as possible.
4. Once the end of the sampling segment has been reached, shut down the control box and generator and motor out at least 50 meters away from shore and anchor. Identify and measure each species to the nearest millimeter (mm) by placing the tip of the snout on zero and squeezing the tail to get the total length. The length of the first 100 specimens of each species will be measured in this fashion with anything over 100 being enumerated but not measured. **All** black bass (largemouth and smallmouth bass, herein referred to collectively as bass) are to be measured. Additionally, weigh all bass less than 250 mm to the nearest 5 grams (gm) and all bass greater than 250 mm to the nearest gm. For all bass greater than 100 mm, remove a scale sample. Scales should be taken by knife over the area of the body posterior to the pectoral fin (when the fin is folded back over the body). Remove five to ten scales. Label the scale collection envelope with the date, town, waterbody, species, length and weight and place the collected scales inside the envelope.
5. A voucher collection will be retained by placing at least one specimen of each species into a pre-labeled jar containing 10% buffered formalin. For species too large to be vouchered, a clear side view picture showing the entire fish, as well as close-up pictures showing distinguishing characteristics should be taken with a digital camera.
6. Record all species abbreviations and lengths on the MDFW Species and Length/Frequency Information sheets (attached). Record shock time for each segment sampled and indicate on the segmented pond map which segments were sampled for total species pick-up and which were sampled for bass only. Once a fish has been processed, return it to the water unless it is to be retained as a voucher specimen.

7. If a total of 100 bass over 100 mm were collected during the three total species pick-up runs, or the entire shoreline was surveyed, the sample is complete. If less than 100 bass over 100 mm were collected, continue sampling for bass only from the remaining 2,000 foot segments (randomly selected) until one of the following occurs: 100 bass over 100 mm are collected (including bass collected during the three total species pick-up segments); or over 2 miles of shoreline are sampled; or the entire shoreline is sampled.



## MDFW Backpack Electrofishing SOP

Backpack shockers are best used in narrow (average width less than 8 meters) shallow (average depth less than 0.5 meters) streams. In streams that are wider than 8 meters on average but shallow, two or more backpack units can be used to increase efficiency.

Sampling locations will be selected based on available access, water conditions and habitat type. Site visits to potential sampling locations will be conducted to confirm suitable access locations and sampling sites. Lotic habitat types (riffle, run, pool, etc.) and lentic habitat types (eutrophic, mesotrophic, oligotrophic) will be sub-sampled in proportion to their availability as determined by site visits. Data collection will take place from June 1 to October 1.

Crews of three to five people will conduct single pass electrofishing surveys through sample sites. The beginning and ending points will be marked on USGS 1:25,000 topographical maps. Sample sites will include at least 100 meters of stream length. In situations where 100 meter reaches are not practical or possible, length of stream sampled will be measured by tape and recorded on the data sheets. All portions and habitats in the stream should be sampled, including habitat features such as woody debris, submerged aquatic vegetation, undercut banks, and overhanging vegetation.

Fish will be sampled by pulsed DC current electrofishing. Backpack sampling for the purposes of this SOP will consist of a single upstream pass. The crew member wearing the backpack will use two ring probes (when average stream width exceeds 3 meters) or a ring probe anode and rattail cathode (when average stream width is less than 3 meters) to electroshock fish. The rest of the crew members will carry buckets and/or dipnets to collect fish that are influenced by the electric current.

Crews will begin at the downstream end of a sampling site and shock to the upstream ending point. Crewmembers will use dipnets to capture fish that roll off the bottom or rise to the surface. All fish will be kept alive in five-gallon buckets. In certain conditions (e.g. when coldwater fish species are to be sampled, if the reach will be considerably greater than 100 meters, or large numbers of warmwater fish are captured), livecages positioned in the water along the sample reach will reduce the potential for significant fish mortality. Crew members should place all fish from the buckets into the live cages as often as is appropriate.

### Data Collection

Data should be recorded on the attached data sheets. Instructions and standards for completing the data sheet entitled "**Biological Survey of Waters: Fish Sampling Log**" are found on page two of that data sheet. This data form records crucial sample location and effort information. The second datasheet "**Fish Species and Length Frequency Information**" records the species and lengths of all fish captured. Fish species abbreviations, to be used on the form, appear on page two of the form.

The first 100 fish of each species will be identified and measured (total length = tip of snout to tip of tail when compressed) to the nearest millimeter (except American eels and sea lampreys

that will be measured to the nearest centimeter). If more than 100 fish of one species are captured, these are tallied and recorded on the data sheet but are not measured to length. No more than two percent and no less than two individuals (or one if only a single specimen is collected) of each species captured will be preserved in 10% formalin for confirmation of identification by laboratory analysis. Live fish that are not retained for preservation will be returned to the sample site.

**TODD ALLAN RICHARDS**

103 Brian Circle  
Northbridge, MA 01534  
(Work) (508) 792-7270 x 138  
(Home) (508) 234-0905

**EXPERIENCE**

**Aquatic Biologist III** 1997 to present  
Massachusetts Division of Fisheries and Wildlife.  
Responsibilities include the design and implementation of stream survey and inventory procedures and implementation of the Fisheries Habitat Conservation and Restoration Initiative.

**Aquatic Biologist II** 1992 to 1997  
Massachusetts Division of Fisheries and Wildlife  
Assistant Warmwater Project Leader:  
-Sampled and monitored warm and coolwater fish populations in lakes, ponds, and rivers statewide.  
-Drafted and edited aquaculture regulations.  
-Prepared and conducted presentations to the fisheries staff, senior staff, Fish and Wildlife Board, and the public hearing audience.  
-Gave presentations on fisheries topics to many public audiences.  
-Designed and implemented a fish habitat enhancement experiment on Lake Massapoag, Sharon, MA.

**EDUCATION**

**M.S. Fisheries** January, 1992  
Virginia Polytechnic Institute and State University, Blacksburg, VA. GPA 3.6/4.0.  
-Thesis entitled: Public Perspectives on River Resources: A Profile of Virginia Residents.  
-Responsible for survey construction and implementation, data coding, analysis, and summarization.  
-Experience with SAS, Word Perfect, Word, Quattro software.

**B.S. Wildlife Management** (fisheries concentration) May, 1989. University of Maine, Orono, ME. GPA 3.2/4.0.

# ANDREW P. MADDEN

9 Old North Road

Worthington, Massachusetts 01098

(413) 238-4446

Email: [Andrew.Madden@state.ma.us](mailto:Andrew.Madden@state.ma.us)

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## EDUCATION

**University of Massachusetts**, Amherst, Massachusetts. Bachelor of Science degree in Wildlife and Fisheries Biology, May 1992. Concentration in marine fisheries biology.

**University of Maine**, Orono, Maine. Master of Science degree in Zoology, August 1996. Topics of study included evolutionary and community ecology, habitat evaluation, experimental design, statistics, and aquatic toxicology.

## PROFESSIONAL EXPERIENCE

***District Manager***, Massachusetts Division of Fisheries and Wildlife, Pittsfield, Massachusetts, January 2006-present. Administered district budget. Supervised biologists and technicians. Responsible for oversight of all district fish and wildlife programs. Represented district at senior staff meetings.

***Aquatic Biologist***, Massachusetts Division of Fisheries and Wildlife, Pittsfield, Massachusetts, 1999-2006. Acted as Western District fisheries manager/biologist. Managed district trout stocking programs. Served as agency representative on interagency emergency damage response team. Responded to fish kill and environmental damage incidents. Participated in public hearings and environmental review. Conducted fish population surveys in conjunction with other state agencies and advocacy groups. Analyzed fisheries data. Presented data to watershed groups, seminars and conferences, sportsmen's and fishing groups, Cable TV, and youth groups. Assisted wildlife section with programs such as goose banding, deer management, beaver surveys, wood duck enhancements, and land acquisition. Responded to inquiries by the public and press. Supervised technicians.

***Faculty Research Assistant***, Chesapeake Biological Laboratory, Solomons, Maryland, 1996-1999. Participated in collection, management and analysis of data on fish populations in Chesapeake Bay with particular emphasis on trophic interactions. Designed sampling plans and served as chief scientist on research cruises. Presented findings at numerous professional conferences. Participated in proposal writing for federal and state grants. Served as reviewer for scientific journal *Estuaries*.

***Research/Teaching Assistant***, University of Maine, Orono, Maine. 1994-1996. . Conducted thesis study to examine the effects of introduced black crappie on resident lake fish, with particular attention to interspecific competition. Instructed courses in Comparative Anatomy, Introduction to Zoology/Animal Biology, and Human Anatomy and Physiology.

***Research Associate***, Environmental Careers Organization, Seattle, Washington, 1993-1994. Worked as a contracted employee with the Bureau of Land Management, Salmon,

Idaho. Participated in riparian and aquatic habitat quality survey and assessment as related to Pacific Salmon recovery efforts.

**Industrial Hygienist**, ATEC Associates Inc., Rockland, Massachusetts, 1992-1993. Created and implemented health and safety plans for hazardous materials remediation operations. Supervised on site health and safety for hazardous waste cleanup operations.

**Biological Technician**, National Marine Fisheries Service, Woods Hole, Massachusetts, 1991. Participated in food habits and larval fish predation investigation including offshore sample collection as part of the 1992 Herring/Sand Lance Survey.

#### ADDITIONAL QUALIFICATIONS

Familiar with IBM and Macintosh hardware and peripherals. Software experience includes all major Microsoft and Correl applications, SAS, Systat, Sigmaplot, PowerPoint, Freelance and Surfer.

#### SELECTED PUBLICATIONS AND PRESENTATIONS

- Madden, A.P. and J.R. Moring 1996. *The Effects of Invading Black Crappie on the Resident White Perch Population in a Lake of Central Maine*. Paper presented at the Northeast Fish and Wildlife Conference and the Atlantic International Chapter of the American Fisheries Society 1996.
- Madden, A.P. 1997. *The Good, the Bad, and the Ugly*. Maine Fish and Wildlife, Vol. 38:4. Winter 1997. Maine Department of Inland Fisheries and Wildlife, Augusta, Maine.
- Boynton, W.R., W. Boicourt, S. Brandt, J. Hagy, L. Harding, E. Houde, D.V. Holliday, M. Jech, W.M. Kemp, C. Lascara, S.D. Leach, A.P. Madden, M. Roman, L. Sanford and E.M. Smith 1997. *Interactions Between Physics and Biology in the Estuarine Turbidity Maximum (ETM) of Chesapeake Bay, USA*. International Council for Explorations of the Sea, CM 1997/S:11, Sess. S.
- Jung, S., A.P. Madden, S.D. Leach, and E.D. Houde 1997. *Spatial and Temporal Variability of Fish Biomass in the Chesapeake Bay*. Paper presented at the Atlantic Estuarine Research Society 50<sup>th</sup> Anniversary Meeting, Beaufort, North Carolina, March 1998.
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## **Request for Responses: Project Proposal Instructions**

### **PART D. ENVIRONMENTAL AND SOCIOECONOMIC IMPACTS**

#### Impact Narrative

As indicated in the environmental and socioeconomic impact checklist, there are no negative impacts associated with the project. Conversely there are many positive impacts to be realized as a result of this work. In the environmental impact category, the project will result in beneficial impacts to instream flow, surface water quality, wetlands quality/services and diversity of aquatic organisms. These benefits will be realized as a result of the resource maps produced for conservation commissions, municipalities, watershed organizations, and other local level conservation groups. The information provided in these maps will allow regulatory bodies and land planning organizations at the local level to prevent habitat degradation in important aquatic resource areas.

In the social impacts category, the results will again be beneficial. Conserving important small streams help maintain the rural character so important to many of the towns in the watershed which will have positive impacts on sense of community and aesthetics. Providing resource maps of cold water streams will also help educate the public to the importance of the resource. Protection of headwater streams will enhance drinking water quality in some areas. The recreational fishing maps and better understanding of the brown trout population will clearly have a beneficial effect on recreational fishing.

The economic impacts will certainly be beneficial for the communities in the watershed. Increased recreational fishing will lead to significant expenditures within the communities of the Housatonic Watershed.

Overall, the environmental and socioeconomic impacts of the project will be of great benefit to the resources and people of the watershed with very few negative implications.

## Request for Responses: Project Proposal Instructions

The MA SubCouncil will review the information provided and determine whether further information is required.

### CHECKLIST: POTENTIAL ENVIRONMENTAL AND SOCIOECONOMIC IMPACTS

Project Name: Housatonic Watershed Fisheries Assessment

Applicant: Massachusetts Division of Fisheries and Wildlife

Impact Category	Impact	No Effect	Minimal Adverse Impacts*	Significant Adverse Impacts*	Beneficial Impacts*	Mitigation Required*	Permit or Approval Required**
<b>E n v i r o n m e n t a l</b>	Air quality impacts	X					
	Instream flow impacts				X		
	Surface water quality impacts				X		
	Sediment quality impacts	X					
	Soil quality impacts	X					
	Groundwater quality impacts	X					
	Wetlands quality and services				X		
	Diversity and abundance of aquatic species				X		
	Diversity and abundance of terrestrial wildlife species	X					
	Diversity of plant communities	X					
	Other:						
	Other:						

## Request for Responses: Project Proposal Instructions

The MA SubCouncil will review the information provided and determine whether further information is required.

### CHECKLIST: POTENTIAL ENVIRONMENTAL AND SOCIOECONOMIC IMPACTS

Project Name: Housatonic Watershed Fisheries Assessment

Applicant: Massachusetts Division of Fisheries and Wildlife

Impact Category	Impact	No Effect	Minimal Adverse Impacts*	Significant Adverse Impacts*	Beneficial Impacts*	Mitigation Required*	Permit or Approval Required**
<b>Social</b>	Impacts on minority or low income populations	X					
	Impacts on local sense of community and well being				X		
	Impacts on aesthetics				X		
	Impacts on public health or safety	X					
	Impacts on recreational activity				X		
	Impacts to Native American Trust Resources	X					
	Impacts on non-Tribal cultural sites	X					
	Impacts on education				X		
	Impacts on local partnerships and collaborative efforts				X		
	Impacts on availability and quality of drinking water				X		
	Impact on subsistence activity	X					
	Nuisance impacts	X					
	Other:						



## Request for Responses: Project Proposal Instructions

The MA SubCouncil will review the information provided and determine whether further information is required.

### CHECKLIST: POTENTIAL ENVIRONMENTAL AND SOCIOECONOMIC IMPACTS

Project Name: Housatonic Watershed Fisheries Assessment

Applicant: Massachusetts Division of Fisheries and Wildlife

Impact Category	Impact	No Effect	Minimal Adverse Impacts*	Significant Adverse Impacts*	Beneficial Impacts*	Mitigation Required*	Permit or Approval Required**
<b>E c o n o m i c</b>	Short-term commercial economic impact of restoration action	X					
	Impacts on property values	X					
	Impacts on recreational expenditures and related businesses				X		
	Impacts on existing resource-based industries	X					
	Impacts on commercial water users	X					
	Impacts on river-based commercial navigation	X					
	Impact on wastewater dischargers	X					
	Other:						
	Other:						

\* Requires narrative discussion; see instructions in text.

\*\* List and description of permits required; see instructions in text.

**Request for Responses: Project Proposal Instructions**

**TABLE 1. HOUSATONIC RIVER NRD FUNDING ALLOCATION BY FISCAL YEARS <sup>1</sup>**

<b>PROJECT TITLE:</b>	<b>Housatonic Watershed Fisheries Assessment</b>							
<b>APPLICANT NAME:</b>	<b>Massachusetts Division of Fisheries and Wildlife</b>							
<b>EXPENSE CATEGORY</b>	<b>FISCAL YEAR 1</b>		<b>FISCAL YEAR 2</b>		<b>FISCAL YEAR 3</b>		<b>FISCAL YEAR 4</b>	
	<b>Housatonic River NRD Funds</b>		<b>Housatonic River NRD Funds</b>		<b>Housatonic River NRD Funds</b>		<b>Housatonic River NRD Funds</b>	
A. SALARIES	50000		50000					
B. EMPLOYEE BENEFITS								
C. CONTRACTED SERVICES	10000		10000					
D. SUPPLIES, MATERIALS AND EQUIPMENT	100,000							
E. TRAVEL								
F. OTHER (LIST)								
G. OTHER (LIST)								
<b>TOTAL BY FISCAL YEAR</b>	<b>1</b>	160,000	<b>2</b>	60,000	<b>3</b>		<b>4</b>	
<b>GRAND TOTAL (sum of boxes 1+2+3+4)</b> [This sum is the total NRD fund request and should match Part A, Budget Summary, Box 1]								

<sup>1</sup> The fiscal year is July 1 – June 30. If the proposed project will be completed in one year, fill in only the column titled “Fiscal Year 1.”

**Request for Responses: Project Proposal Instructions**

**TABLE 2. PROJECT BUDGET SUMMARY BY TASK AND FUNDING SOURCE**

<b>PROJECT TITLE:</b>	<b>Housatonic Watershed Fisheries Assessment</b>						
<b>APPLICANT NAME:</b>	<b>Massachusetts Division of Fisheries and Wildlife</b>						
TASK <sup>2</sup>	HOUSATONIC RIVER NRD FUNDS		OTHER CONTRIBUTIONS			TOTAL COST BY TASK	
			COMMITTED	NOT COMMITTED			
A. Fisheries Survey - 8 months salary, shock boat, backpacks, misc. field equipment	108,300		32,000(Wildlife Technician salaries)				
B. Resource mapping – 6 months salary, GIS station, map production	30,000		20,000(Salary of Survey Project Leader and Office space)				
C. Telemetry – 5 months salary, equipment	40,800		10,000 (Vehicle use and Wildlife Technician salary)				
D. Produce resource maps – 2 Months salary, production cost	18,400		2,000 (Office space)				
E. Produce recreational fishing guides – 3 months salary, production cost	22,500		2,000 (Office space)				
F.							
G.							
<b>TOTAL BY FUNDING SOURCE</b>	<b>5</b>	220,000	<b>6</b>	66,000	<b>7</b>	<b>8</b>	<b>GRAND TOTAL</b> 286,000

**NOTES:** Box 5 should be the same as the Grand Total indicated in Part E: Table 1. Box 6 above should match Part A, Budget Summary, Box 2. Box 7 above should match Part A, Budget Summary, Box 3. Box 8 should match Part A, Budget Summary, Box 4.

<sup>2</sup> The listed tasks should correspond with information provided in the Project Implementation Plan.

## Request for Responses: Project Proposal Instructions

### **PART E. PROJECT BUDGET**

#### **Project Budget Narrative**

The proposed project requests a budget from Housatonic NRD Funds of 220,000 dollars. 100,000 of those dollars will be spent on salary for the project coordinator. This individual will be hired on contract basis and paid in lieu of benefits. The coordinator salary will be 50,000 per year for two years. The project will also require \$100,000 for equipment to complete the project. This will include the following equipment Smith-Root Shock Boat \$60,000, backpack electrofishers, batteries and accessories \$15,000, telemetry equipment \$20,000, and GIS capabilities \$5,000. The additional costs will be for production of recreational guides and resource maps.

Masswildlife will contribute 66,000 in cost share through office space, technician and project leader salaries and equipment use.

The costs of each of the budget items are based on the best estimate of expected costs. We have also included a 5-10% contingency on each item built into the cost estimate.

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