

**Special Request for Proposals**  
**by the Hudson River Foundation**  
**for Research in Connection with the Recovery**  
**of American Shad in the Hudson River**  
*Proposals Due Tuesday, December 9, 2008*

The Hudson River stock of American shad is in serious decline. This year New York State issued emergency regulations to reduce mortality from commercial and recreational fishing in the river. In addition, on May 29, 2008, Governor David Patterson announced a shad recovery plan that relies heavily on the acquisition of new scientific information about shad and other aspects of the Hudson River ecosystem. In partnership with the New York State Department of Environmental Conservation, (DEC), the Hudson River Foundation (Foundation) has been reviewing and refining the recovery plan. A copy of the recovery plan can be found on the Foundation's website ([www.hudsonriver.org](http://www.hudsonriver.org)).

A workshop, sponsored by the Foundation, was held this past summer to solicit comments and ideas from scientists with shad research experience and scientists with experience in ecosystem research in the Hudson River Estuary. Workshop participants generally endorsed the recovery plan formulated by DEC. The central theme of the plan is to identify the important sources of mortality to both juvenile and adult shad, and then determine whether and how those sources can be eliminated or mitigated. The plan goes well beyond the traditional fisheries management approach of regulating fishing pressure and seeks to develop new insights about shad and the ecosystem processes that are important to its survival and recovery. The plan has a goal of restoring the Hudson's shad population by 2020.

Workshop participants generally agreed that the most likely source of significant mortality to the shad population is the offshore commercial bycatch of adult shad. However, the magnitude of bycatch and other sources of mortality, e.g., predation and habitat loss, cannot be determined without further research. An important outcome of future research is quantifying the relative importance of all significant sources of both juvenile and adult shad mortality.

DEC is planning to commit substantial resources to several elements of the recovery plan, including assessing the magnitude of the ocean bycatch, characterizing spawning and nursery habitats, and conducting preliminary work to assess the influence of striped bass predators on shad. However, several other important components of the plan are critical to the success of the recovery plan as well and require further investigation. The Foundation is interested in pursuing some of these research questions and is therefore requesting proposals from potential investigators in the following areas:

- *Ocean Harvest Stock Identification:* The bycatch of American shad in ocean fisheries include fish from many stocks along the Atlantic coast. It is not known what proportion of Hudson River shad are part of mixed stock ocean fisheries; however, tagging studies suggest that mature Hudson shad are harvested as part of a shad fishery in Delaware Bay. Immature American shad from the Hudson may be taken as bycatch in ocean fisheries of

the New York Bight. The Foundation therefore solicits research to identify Hudson River American shad in mixed stock ocean bycatch, potentially using chemical and/or genetic techniques.

- *Shad Predators:* It is likely that certain estuarine fishes, like striped bass, prey on juvenile American shad as these juveniles migrate through the lower estuary in the fall. In addition, it is likely that resident freshwater fishes, such as largemouth bass, smallmouth bass and channel catfish, prey on juvenile shad in the middle and upper estuary in spring and summer. The magnitude and significance of these interactions are unknown at present. Therefore, the Foundation seeks proposals to evaluate predation on juvenile shad through diet studies or other means.
- *Shad Diets:* It is possible that growth and development of juvenile shad may be limited by food availability and competition. In particular, with the explosive spread of zebra mussels in the Hudson River, it has been estimated that one-half of the food supply for fish in the Hudson has been reduced because of the mussels. It is not known whether shifts in the quality and quantity of food may be affecting juvenile shad. The Foundation therefore seeks proposals for investigations, using existing or new data, to describe the potential interactions between age-zero American shad and other organisms that may be competing for the same food source within the estuary, and to determine whether these interactions may be changing over time.
- *Other Ecosystem Interactions:* There is a vast amount of data that have been collected in the Hudson River over the past thirty years, particularly in connection with the electric utilities' biological monitoring program. In addition, many fish samples collected in connection with that program have been archived and may be available for further analysis. It may be possible to mine these data, and other data as well, gaining insights about interactions between shad and other species. The data may also provide further understandings of temporal changes in shad abundance and distribution that could be related to ecosystem changes, water quality improvements, changes in fishing pressure, etc. **The Foundation therefore encourages proposals for studies that use existing data to test hypotheses related to changes in conditions in the Hudson River that may have a bearing on the abundance of shad.**

## APPLICATION PROCEDURES

Investigators interested in submitting proposals in connection with the above should prepare a **full proposal** and submit it to the **Foundation by December 9, 2008**. **Please note that full proposals—not *preproposals*--are being requested in connection with this shad RFP.** Proposals are to be submitted electronically to [Proposal09@hudsonriver.org](mailto:Proposal09@hudsonriver.org). **Necessary forms and full filing instructions can be obtained from the Foundation's website, [www.hudsonriver.org](http://www.hudsonriver.org).**

Proposals seeking funding for more than two years will not be accepted. **It is anticipated that a maximum of three to five grants will be awarded in connection with this RFP.**

Potential investigators **must contact** the Foundation's Science Director, Dr. Dennis Suszkowski ([dennis@hudsonriver.org](mailto:dennis@hudsonriver.org) or 212-483-7667), to discuss their research plans **prior to submitting a proposal.**

Proposals are sought from researchers at colleges and universities; other non-profit institutions; profit-making institutions; government (local, state, and federal) agencies; and unaffiliated researchers. The Foundation prefers, but does not require, that unaffiliated researchers seek some institutional affiliation for the purpose of conducting the proposed research. There are no geographic restrictions on the location of either the investigator or the institution.

## **Proposal Design**

Proposals should be combined into one pdf document and include the sections described below insofar as they are applicable. Standardized forms, which should be used for each application, can be found on the Foundation's website, [www.hudsonriver.org](http://www.hudsonriver.org).

The main body of the proposal should be as succinct as possible and no longer than 15 typewritten, single-spaced pages. However, no limits are set on appendices that support the main body of the text, as long as these materials relate substantively to ideas in the proposal. The contents should be assembled as follows:

The first section of the proposal should contain, in the order indicated:

1. *Proposal Cover Page* - The Proposal Cover Page form is provided on the Foundation's website, [www.hudsonriver.org](http://www.hudsonriver.org).
2. *Proposal Abstract* - A brief, topical abstract (200 words or less) must be typed on the Proposal Abstract form provided on the Foundation's website.
3. *Proposal Budget Summary* - The required Proposal Budget Summary form and instructions for completing this form can also be found on the Foundation's website. Written justifications of expenditures should be provided when special equipment items, extensive personnel, or use of facilities is involved. In the case of multi-year projects, the principal investigator must submit a separate budget for each year along with a combined budget and a proposed calendar of research activities. \*Please note: It is the policy of the Foundation to disallow the charging of student tuition and profits or fees on research grants, and to encourage cost-sharing by the applicant's institution. In general, the Foundation will reimburse indirect costs up to 15 percent of the modified total direct costs (modified to exclude certain large equipment purchases and subcontractor services).
4. *Table of Contents*.

5. The remainder of the proposal should contain the sections described below, as appropriate.
6. *Statement of research goals and objectives.*
7. *Statement discussing the relevance of the project to the specific objectives of this RFP.*
8. *Description of the approach* to meeting objectives, based on current knowledge in the field of study, showing the relationship between proposed accomplishments and existing information, and describing specifically how data are to be analyzed. Proposers should consider the relationship of their intended research to other ongoing research and monitoring in the River, and should strive to interpret their research results through appropriate models and other synthesis frameworks that link relevant efforts together.
9. *Significance of the research* in its field of knowledge, its relationship to other ongoing research in the Hudson River, and its implications for any public policy issues. The critical information or building blocks of knowledge to be provided by the proposed work should be clear. If this research has been previously supported by the Foundation, this section should present an up-to-date progress report. It should also describe how the proposed study will complement any ongoing research at the proposer's institution or any other institution.
10. *Description of related research* being conducted by the proposer(s) and specific past experience.
11. *List of specific tasks* to be performed (as an itemized list, separate from the description of the approach). If field work is proposed, maps depicting the sampling locations must be submitted. The Foundation has base maps of the entire Hudson Estuary that can be supplied to investigators upon request to the Science Director.
12. Timetable for completion of research activities in the project.
13. *List of current and pending research grants or contract support.* Include the project title, agency or foundation sponsoring the research, period of support, time commitment, and amount of award. Mention areas of overlap with the current proposal, if any, and describe time commitments for the principal investigator(s). If the proposed project is a continuation of previously HRF-funded research, a full discussion of the progress of that project, along with a report of any significant results, including publications, must be incorporated into the new proposal.
14. *Bibliography* for proposal (please include article titles).
15. *Resumes* (five-page maximum) of investigator(s) and key support personnel.

*The proposal with signatures on the Cover Page must be submitted electronically in one pdf document. Any reprints, appendices, or other materials to be considered with the proposal must be electronically attached to the individual proposal. To avoid delay in the review process, the proposal should be complete at the time of submission. In addition, one hard copy of the proposal must be sent to the Science Director, Hudson River Foundation, 17 Battery Place, Suite 915, New York, New York 10004.*

### **Special Conditions**

Confidentiality, to the extent possible, will be maintained in the review process, and proposals shall not be used for any purpose other than evaluation of merit for funding. Applicants are encouraged to draw the Foundation's attention to confidential or proprietary information contained in the proposal.

### **Criteria for Evaluation of Proposals**

Hudson River Research Grants are awarded after a rigorous review process, including peer review. Decisions are made on the basis of the following factors: 1) technical merit; 2) the appropriateness of the proposed study to aid in the recovery of Hudson River shad and, specifically, the relevance of the project to the research priorities described above; 3) qualifications of the investigators and adequacy of facilities for carrying out the proposed research; 4) costs; and 5) likelihood of success. In the case of continuing projects, consideration will also be given to the level of progress achieved to date.

### **The Grant Award**

Notification of Hudson River Research Grant awards will be made by April 2009. After initial approval, the Foundation will arrange specific grant terms with successful applicants.