

**NERRS WATCH (WATERSHED ACTIONS TO CLIMATE HEALTH)
“A New England Climate Change Internship Program
from the National Estuarine Research Reserve System”**

2010 Application Guidelines

Internship Rationale:

Climate change issues are complex and include the potentially serious coastal impacts of rising sea level, rapidly warming nearshore waters, increasing storm frequency and intensity, and ocean acidification. With a long history and heritage of coastal commerce and maritime innovation, the ability of New England’s coastal communities to adapt, mitigate and prosper in light of climate change impacts on our coasts and estuaries will require pioneering problem solvers. The next generation of leaders will need to address emerging climate change impacts on estuaries by drawing upon a broad range of disciplines and technologies.

The NERRS WATCH internship will help to bridge the gap that exists between the realm of academic study and the application of practical problem solving skills. NERRS WATCH interns will have the opportunity to work side-by-side with researchers, educators, and land managers involved in the innovative and cutting edge application of science and technology to the challenge of improving New England’s environmental and human health in the face of climate change. Interns will also apply the knowledge and skills they are learning in the classroom to complete an interdisciplinary independent intern project.

National Estuarine Research Reserve System Description:

The National Estuarine Research Reserve System (NERRS) is a network of protected areas established for long-term research, education and stewardship. This partnership program between NOAA and the coastal states protects more than one million acres of estuarine land and water that provides essential wildlife habitat; offers educational opportunities for students, teachers and the public; and serves as a living laboratory for scientists.

Each reserve supports a wide range of beneficial uses of ecological, economic, recreational, and aesthetic values which are dependent upon the maintenance of a healthy ecosystem. The sites provide habitats for a wide range of ecological, commercial and recreationally important species of fish, shellfish, birds, and other aquatic and terrestrial wildlife. Each reserve has been designed to ensure its effectiveness as a conservation unit and, as part of a national system the reserves collectively provide an excellent opportunity to address estuarine and coastal management issues of national significance relating to the consequences of global climate change.

Program participants will have an opportunity to work in a variety of coastal and estuarine settings at one or more of New England’s National Estuarine Research Reserves as appropriate for their project design. Participating reserves for the 2010 pilot program year are located in Rhode Island (Narragansett Bay), Massachusetts (Waquoit Bay) and Maine (Wells).

I. Internship Opportunity Description

A. Internship Program Objective

The objective of the NERRS WATCH (**W**atershed **A**ctions **T**o **C**limate **H**ealth) Program is to provide a framework through which undergraduate students from diverse academic backgrounds may enhance their educational experience through practical assignments related to climate change and its impacts on estuarine and coastal environments.

All intern projects should be designed to assist the NERRS in our efforts to meet one or more climate change strategic plan goals. The complete NERRS climate change strategy document is available on-line at <http://www.nerrs.noaa.gov/DOC/PDF/Background/NERRSClimateChange.pdf>.

B. Program Priorities

The NERRS WATCH Program is designed to address the National Estuarine Research Reserve System climate change strategic plan goals. These goals, which reflect the three themes of the Intergovernmental Panel on Climate Change (IPCC), are:

- 1) Contribute to scientific understanding of climate change and monitor ecosystem changes;
- 2) Assess climate change impacts on human and estuarine ecosystem communities, vulnerability of these communities, and their capacity for adaptation and mitigation;
- 3) Provide educational opportunities and training related to effects of climate change on human and estuarine systems to increase public awareness and foster behavior change.

Proposals must:

- address one or more of the NERRS climate change strategic plan goals, identified above;
- be conducted in association with one or more participating New England reserves; and
- include a science translation product appropriate for distribution to a broad audience (e.g., podcasts, posters, interpretive publications, interpretive signage, multimedia tools, models of climate processes, press releases, website/newsletter contents, brochures, etc.)

Note: One aim of this internship is to address regional and local issues unique to the environments of the individual reserves. It is strongly suggested that prior to submitting an application, applicants contact the intended host reserve(s) (see Section VI) for specific information about the reserve(s) and their accompanying research needs and priorities as they relate to this announcement.

II. Internship Support

A. Funding Availability

Although the intern position is unpaid, a modest stipend and housing may be available on a reserve-to-reserve basis. Students may wish to conduct this project within the framework of an independent study program to earn college credit. This is the responsibility of the applicant.

B. Project Period

This program announcement is for projects to be conducted by undergraduate students through a single summer season based at the reserve(s), and a fall semester spent back at school independently synthesizing results and creating the required translation product. The anticipated start date for the reserve-based summer season is June 1, 2010. Students may submit a multi-year project proposal (to include required program elements annually); however, even if selected in year one, students must re-submit their project in subsequent years to the NERRS WATCH Program and participate in the same competitive process for continuation of their project.

C. Reserve Personnel Support

Appropriate host reserve staff will be available to serve as project mentors. As each reserve has a complement of staff addressing specific focus areas (research, education, stewardship, coastal decision-maker training), applicants will need to contact the NERRS WATCH contact person (see Section VI) at their proposed primary reserve site to discuss which focus area and staff member would be best suited to mentor their specific project.

Additional on-site reserve personnel may be available to provide limited logistical support for projects in the form of manpower, equipment, supplies, etc. If applicable, requests for reserve support services should be discussed with the proposed project mentor and approved by the reserve manager prior to application submission and intern project selection.

Prior to initiating the project, the intern will also be required to contact their project mentor to coordinate all other on-site aspects of the project, including where applicable, the location and establishment of sampling sites, projected sampling dates, accommodation reservations, etc.

D. Equipment and Supplies

To the extent possible, participating reserves will supply the necessary equipment and supplies for project completion. Applicants requiring equipment that does not exist at the participating reserve sites and which is essential for the successful completion of the project may need to identify alternative means for equipment purchase and/or loan prior to their project start date.

III. Eligibility Information

A. Eligible Applicants

Climate change investigations and outreach products are typically multi-disciplinary. For this reason, internship applicants are encouraged to submit proposals for individual or collaborative projects that bridge disciplines. Appropriate fields of study may include (but are not limited to): climate science, marine science, wildlife ecology, forestry, botany, conservation biology, environmental engineering, hydrology, geology, science education, environmental education, planning, natural resource science, journalism, public health, political science, environmental policy, economics, communications, marketing, and atmospheric science.

Students must be admitted, enrolled, or recent graduates of a full-time undergraduate degree program at an accredited university in order to be eligible to apply. Students should have completed a majority of their undergraduate course work at the beginning of their fellowship. Minority students are encouraged to apply.

Interns accepted to the NERRS WATCH Program will be required to:

- 1) As a component of their full-time internship responsibilities, interns will work with their mentor at the host reserve to develop a plan (relevant to the student's project or otherwise) to participate in the reserve's research and/or monitoring, stewardship, education, or coastal training programs for a minimum of 10 hours per week. (Interns conducting multi-site projects may fulfill this requirement at one or a combination of sites.)
- 2) Submit a final report (see Appendix 1) to the host reserve and to their undergraduate advisor.
- 3) Acknowledge NERRS support in all relevant presentations and publications. In addition, interns are strongly encouraged to share final project reports/products within the NERRS community and among NERRS program partners via conference presentations, posters, and/or other communication tools such as interactive web seminars.

The participating reserves in the 2010 NERRS WATCH Program maintain the right to immediately halt activity under the internship if it becomes obvious that individual project activities are not fulfilling the mission of the National Estuarine Research Reserve System and the NERRS WATCH Program.

IV. Application and Submission Information

A. Content and Form of Application

Receipt of all applications will be acknowledged via email. Please note that it may take several days to confirm receipt of a complete application or reject an incomplete application. Please allow seven to ten days ahead of the application due date for these notifications. Subsequently, applications will be merit reviewed and students will be notified via email as to whether or not

their project proposal has been selected. Outlined below are the required elements for a complete application.

It is highly encouraged that all pieces of the application be submitted as a single document (in MS Word [.doc] or Adobe [.pdf] format).

PLEASE USE THE ORDER SPECIFIED BELOW – ELEMENTS 1-3 – WHEN CONSTRUCTING YOUR PROPOSAL.

1. Cover letter

The cover letter should be no longer than 2-pages, single-spaced in 12-point Times New Roman font with one-inch margins. The letter should indicate internship project interests, how the proposed internship project fits into the applicant's degree program, current academic status, and career goals and objectives. Additionally, cover letter should address the following:

- How do you expect your NERRS WATCH internship project will enhance your ability to problem-solve for challenges created by coastal climate change impacts?
- How will your NERRS WATCH internship project contribute to your familiarity with the approaches of other disciplines in solving climate change issues?
- Describe an experience when you were a member of a team, or on an assigned project, or at a worksite, with responsibilities, tasks, and deadlines that has helped to prepare you for the responsibility of this internship.
- Describe how you expect your internship project will be useful to you in your major field of study and how it will prepare you for your intended career path
- What were the results of the discussions you had (if any) with your intended host reserve regarding your internship project's contributions to the reserve's programs?

2. Internship project proposal

The internship project proposal must be double-spaced in 12-point Times New Roman font with one-inch margins. The proposal must include the following sections labeled A-F:

A. ***Title page*** which must include the items below in the following order:

- Project Title;
- Name, Address, Telephone/Fax number, Email Address
- Requested Time Frame (project start/end dates)
- Name of Educational Institution
- Degree being sought and field of study
- Advisor Name, Address, Telephone/Fax number, Email Address
- Reserve(s) where the internship project is to be conducted (if the project is being performed at multiple reserves please indicate which reserve is the primary/host reserve and which are secondary sites);
- Focus area that project proposal is addressing (see Section I. B)

B. Abstract. The abstract must state the objectives, methods to be used, and the significance of the project to the regional and local issues of a particular reserve(s). The abstract must be limited to one double-spaced page.

C. Project Description. The project description must be limited to 6 double-spaced pages excluding any figures. The main body of the proposal must include a detailed statement of the work to be undertaken and the following components:

- *Introduction.* This section should introduce the project setting and local environment. It should include a brief review of pertinent literature and a description of the climate change related problems and NERRS system climate change priorities (See NERRS Climate Change White Paper available on-line at <http://www.nerrs.noaa.gov/DOC/PDF/Background/NERRSClimateChange.pdf>). This section should identify the primary hypotheses and/or the purpose statement of the internship project.
- *Methods.* This section should state the method(s) to be used to accomplish the specific internship project objectives, including a systematic discussion of what, when, where, and how the project is to be implemented. If applicable, any field and laboratory methods should be justified and compared with other methods employed for similar work. Methods should be described concisely and any research techniques should be reliable enough to allow comparison with those employed at different sites and times by different investigators.
- *Project Significance.* This section should provide a clear discussion of how the proposed project addresses coastal or estuarine impacts of climate change and will enhance or contribute to improving the state of knowledge of the impacts of climate change on estuaries. Applicability of project findings to other Research Reserves and coastal areas in New England should also be mentioned.
- *Science Translation Product.* This section should provide a clear outline of how you intend to translate and interpret the outcomes of your project to reach a broad audience.

D. Project Schedule. This schedule should show, in table form, anticipated dates for completing critical milestones of the project. Use “Week 1, Week 2, etc” rather than specific dates when preparing these charts.

E. Personnel and Project Management. The proposal must include the names and pertinent expertise of relevant faculty advisors and how they will participate in the management of this project.

F. Specialized Equipment / Supplies. If applicable, the proposal must list any specialized lab or field equipment/supplies necessary for project completion and whether these materials are available at the participating reserves. If equipment is not available at the reserve(s), please include an explanation of how it will be obtained.

3. Letter of support and recommendation from the student's undergraduate advisor

Letter of support and recommendation e-mailed directly from the student's advisor to Donna Bains at Dbains@beld.net that includes a) a description of the advisor's contribution (financial and otherwise) to the student's studies, b) an assurance that the student is in good academic standing, and c) any other recommendations the advisor offers for the applicant.

B. Application Submission

Completed applications should be submitted electronically as an e-mail attachment to Donna Bains at Dbains@beld.net.

Application materials will be reviewed for completeness and applicants will be notified of receipt within seven to ten days.

All materials must be received no later than 12:00 pm (EST) February 12, 2010.

V. Application Review Information

A. Evaluation Criteria

Proposals will be evaluated on the basis of the following criteria at the indicated weights:

1. Quality of project and applicability to NERRS WATCH Program priorities (70 percent)
2. Statement of personal goals, objectives and purpose in the cover letter (10 percent)
3. Creative and innovative nature of science translation piece (10 percent)
4. Recommendation and endorsement from undergraduate advisor to include academic record and standing (10 percent)

B. Review and Selection Process

Once applications have been received, an initial administrative review will be conducted to determine compliance with requirements and completeness of the application. Subsequently, a review team from the reserves will evaluate the proposals for project merit. The merit reviewers' ratings will be used to produce a rank order of the proposals. Interns and internship project proposals will be accepted as reserve resources allow.

C. Anticipated Announcement Date

Applicants will be notified of acceptance decisions via email by April 16, 2010.

VI. NERRS WATCH Program Contacts

For general questions regarding the program and application process, please contact Donna Bains via email at Dbains@beld.net.

For further information on specific NERRS WATCH internship project opportunities at the New England National Estuarine Research Reserves, applicants are encouraged to visit individual reserve websites and speak with the NERRS WATCH contact person listed below.

2010 NERRS WATCH Internships are expected to be available at the following sites:

NERR Site	Website	Lead NERRS WATCH Program Staff	Contact Person
Waquoit Bay, MA	www.waquoitbayreserve.org	Pat Harcourt, K-12 Education Specialist	Pat.Harcourt@state.ma.us ; (508) 457-0495 x 106
Wells, ME	www.wellsreserve.org	Suzanne Eder, Education Dir.	Suzanne@wellsnerr.org ; (207) 646-1555 x 116
Narragansett Bay, RI	www.nbnerr.org	Kenny Raposa, Research Coordinator	Kenny@nbnerr.org ; (401) 683-7849

APPENDIX 1.

GUIDELINES FOR PREPARING NERRS WATCH FINAL REPORTS

In addition to the science translation product, interns will be required to submit a final report to both their reserve mentor and their educational institution advisor. The purpose of the final report is to describe the activities undertaken throughout the project period and summarize the results. Final reports must be submitted as an electronic version via email in MS word (.doc) or Adobe (.pdf) format, or CD.

The final report is due by the end of the 2010 fall semester and should include the following:

- ***Title page:*** The title of the project should be followed by the name(s) and address(es) of the investigator(s)/author(s), the date (month and year) of submission, and the name of the National Estuarine Research Reserve where the work was conducted. The title may be other than what was given to the project upon application, as long as it accurately describes the project.
- ***Abstract and key words:*** A one-paragraph abstract, of no more than 200 words, should be included on a separate page in MS word (.doc) or Adobe (.pdf) format. The abstract should summarize the project, including the problem, the methods, the results, and any conclusions, particularly as they apply to coastal management. The author(s) should bear in mind that the abstract may be printed or appear in Estuarine Reserves Division or National Estuarine Research Reserve documents, databases or websites. At the bottom of the abstract page a list of three to ten key words should be given. These key words will be used in the index of the appropriate synthesis document.
- ***Text:*** The text should be divided into Introduction, Materials and Methods, Results, Discussion, Literature Cited, and Acknowledgment sections, etc. as appropriate. Sub-sections may be used as needed. The report should give a complete and thorough presentation of the work. Specifically, a full description of methods, in-depth literature review, and a greater elaboration of the significance of the results and their importance to the management of coastal resources should be included. All text should be double spaced.
- ***Appendices:*** Appendices should be used to present actual data and measurements made during the study. Only summaries of the data should be presented in the text. In addition, any other materials not appropriate for inclusion in the main text, such as computer programs or models generated, should be appended to the report.