

## **POSITION ANNOUNCEMENT:**

### **FUTURE PARK LEADERS of EMERGING CHANGE**

The National Park Service (NPS) is pleased to support the *Future Park Leaders of Emerging Change* (FPL) program as a pathway for exemplary students in higher education (advanced undergraduate students, graduate students, and recent graduates) to apply their skills and ideas to park-based challenges and solutions. The Initiative offers 12-week paid internships which allow students to gain valuable work experience, explore career options, and develop leadership skills through mentorship and guidance while helping to advance NPS efforts on emerging management issues. Successful students may be eligible for non-competitive hire into federal positions for which they qualify following completion of all academic requirements.

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### **DEVELOP STANDARD METRICS FOR MONITORING ARTIFICIAL REEFS AND OTHER COASTAL ADAPTATIONS IN BOSTON HARBOR**

Boston Harbor Islands National Recreation Area  
Boston, MA

#### **INTERNSHIP BLURB**

Develop a common sense scientific approach and specific metrics and methods for measuring and monitoring physical and biological aspects of in-water coastal adaptation projects in the Boston Harbor area. The project involves collaborating with university researchers, park managers, and environmental advocates who are engaged in coastal adaptation planning for the Boston Harbor & Islands.

#### **INTERNSHIP PROJECT BACKGROUND**

The intern will participate in a burgeoning collaboration to develop nature-based solutions to coastal adaptation in the Boston Harbor area. Working within the context of coastal adaptation planning for the Boston Harbor Islands National and State Park and the surrounding Boston Harbor and metropolitan Boston Mainland, a NOAA Living Shorelines grant to The Nature Conservancy, and the City of Boston's Climate Ready Boston program, the FPL intern will

In Boston Harbor, there has been an active and increasing effort by multiple partners to understand and plan for coastal change. Managing urban harbors for the long term benefit of multiple constituencies is becoming ever more important as coastal change stressors pile up. Accelerating sea level rise and increased variability in storm intensity and surges are drivers, and put pressure on urban areas to respond with protective approaches. Residential and commercial uses drive most adaptation planning. The islands of the Boston Harbor Islands National and State Park are at the nexus of efforts to protect

Boston, as the islands are geologic barriers to storm waves and surges. At the same time, the islands contain irreplaceable historic and natural features as well as substantial visitor recreational and educational facilities.

Numerous efforts are underway to guide long term planning and management of Boston Harbor and island resources. The City of Boston is implementing the recently - completed Climate Ready Boston plan. The NPS has been funded from 2018-2020 to work with coastal geologists and a science communicator to model likely geologic changes to several of the most significant islands over the next thirty years. A team at UMass Boston is assessing the possible effects of a gigantic barrier and gate storm barrier for Boston Harbor. Finally, The Nature Conservancy (TNC) has received a NOAA Living Shorelines grant to assess the state of the practice of living shorelines and to provide considerations for New England.

Most directly pertinent to this internship, an ad hoc working group of federal, state, and non-profit partners is considering how the hard rock portion of spoils from impending Boston Harbor shipping channel dredging could be beneficially used to create artificial reefs offshore of Gallops Island within the park. The proposed offshore reefs could enhance habitat for eelgrass and/or provide a protective buffer to onshore storm energy.

The FPL intern would provide a key linkage among these efforts by researching and developing a standard set of metrics that would be used to inventory, and then monitor, physical and biological changes to near-shore environments before, during, and after the installation of pilot structures such as the proposed reef(s) off of Gallops Island.

### **INTERNSHIP PROJECT DESCRIPTION**

The FPL intern will work with local researchers and planners to understand the range of possible physical and biological metrics that could be used to study the effects of artificial in-water projects, will develop a set of specific recommended sampling designs, and will present these recommendations to key stakeholder groups. The focal pilot project for the recommendations will be the proposed reef(s) off of Gallops Island, but the metrics and designs are intended to be useful for a range of projects and locations in Boston Harbor and beyond. Specifically, the intern will:

- Meet with TNC Coastal Management Specialist to understand the living shorelines grant, the range of pilot projects that are being developed, and the Gallops Island artificial reef project planning.
- Meet with Boston Harbor Islands management partners from the National Park Service, Boston Harbor Now, the Massachusetts Department of Conservation and Recreation, and the City of Boston regarding long term Boston Harbor and coastal mainland planning.
- Meet with local researchers from Northeastern University, UMass Boston, and Boston University to learn about baseline data collected off of Gallops Island, the Boston Harbor Islands geologic studies, the Boston Harbor barrier and gate assessment, and the logistical and financial costs, benefits, and limitations of various methodologies for assessing physical and biological changes to near-shore underwater projects.

- Develop tables and work flow diagrams that outline the range of possible physical and biological metrics to be monitored, and their feasibility and costs.
- Co-host a meeting among project partners and affiliated local researchers.
- Develop a draft and then a final report with clear presentation of recommended physical and biological metrics to be monitored before, during, and after installation of near-shore projects, and associated feasibility and cost/benefit analyses.
- Present recommendations to Boston Harbor Islands Partnership, and to stakeholders from Climate Ready Boston, and the TNC Living Shorelines grant.

In addition to the focused project work, the intern will be part of the NPS team , and will participate in a range of natural resource stewardship and science efforts that are ongoing on the Boston Harbor Islands.

## **QUALIFICATIONS**

- Advanced coursework in marine science, including physical oceanography, coastal geology, ecology of the intertidal and near-shore subtidal zones, and biotic communities of intertidal and subtidal zones.
- Demonstrated ability to carry out independent research and complete reporting on time.
- Ability to organize and present high quality scientific survey reports that are intended for a broad audience, including tables, charts, graphics, and common language narratives.
- Experience working and/or studying in marine environments.
- Experience scuba diving a plus.
- Strong GIS skill and experience a plus.
- Experience working with public agencies and non-profit environmental organizations on collaborative projects a plus.

## **LEADERSHIP DEVELOPMENT**

The intern will work with a team including her/his NPS supervisor, the The Nature Conservancy's Coastal Management Specialist, and researchers from UMass Boston and Northeastern University. This project is directly connected to a real proposal for use of dredge materials in the park, with dredging expected to begin in 2018. Many local and regional partners are already engaged in this collaboration, and the intern will be able to step into a diverse network of policy, planning, park management, and scientific partners and play a specific important role. The intern will be expected to be the leader for her/his project, to establish and maintain communications with the project team and other experts, and to present interim and final recommendations in various settings.

Stakeholder partners include the MA state park agency, the City of Boston Environment Department, the MA Division of Marine Fisheries, Northeastern University, Boston University, UMass Boston, and others.

## **DATES OF POSITION**

The position (and housing availability) is for 12 weeks between May and September, with the target start date of 5/21/18 and 8/10/18. There is some flexibility of start and end dates between 5/7/18 and 9/28/18.

## **COMPENSATION**

This initiative supports one student at \$16/hour for 12 weeks, or 480 hours.

## **HOUSING**

Housing at the National Parks of Boston Seasonal Staff Quarters will be available in the Charlestown Navy Yard for the 12-week internship at a rate of \$105.45 per every 2 weeks. A housing subsidy may be available to the intern to defray the cost of this housing.

The Navy Yard is a short walk to the North Station subway and train station, which provides access to the broader metro Boston area. There are many restaurants and other amenities within the local area, though most are a minimum 10 minute walk from the quarters. There is also a public ferry shuttle between the Navy Yard and the Downtown Boston waterfront. The office is located at 15 State St. in downtown Boston, about a 30 minute walk from the housing, or a 5 minute walk from the waterfront ferry pier.

Travel within New England expected, with most via public transportation. A monthly pass for MBTA subways and buses is \$84 for each calendar month.

## **WORK ENVIRONMENT**

Work will include site visits to islands, research trips to study sites with local research partners, meetings with local project partners, and a home base at the NPS offices at 15 State St., Boston. The office is a busy and lively place in the Summer with park rangers and resource management staff coming and going on varying schedules, with core hours generally within the 8:00 – 6:00 range. The physical work space at the office will likely be in a larger room with shared tables and desks. Getting to the Harbor and Islands requires walking or taking public transit, or occasionally a government vehicle, to various dock locations, including Long Wharf, the UMass Boston Campus, the Hingham Shipyard, and the Charlestown Navy Yard.

## **CONTACT INFORMATION**

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