

The Boston city skyline looms behind Graves Island of the Boston Harbor Islands National Park Area. Carol Trocki photo

Coastal Bird Monitoring

Northeast Temperate Network Program Brief

Boston Harbor Islands National Recreation Area, established in 1996, includes 34 islands and peninsulas situated within the greater Boston shoreline. One of the reasons the park was founded was to provide access to the islands and surrounding waters for education, enjoyment, and scientific and scholarly research for this and future generations.

Why monitor coastal birds?

Birds are an important component of park ecosystems and sensitive to changes within them.

Birds operate close to the limit of their ecological tolerance, and their high body temperature, rapid metabolism, and high ecological position in most food webs makes birds an important indicator of ecosystem change at local and regional levels. In 2002, the Boston Harbor Islands NRA was designated as a Massachusetts Important Bird Area (IBA). IBA sites provide essential habitat to one or more species of breeding, wintering, or migrating birds and generally support high-priority species, large concentrations of birds, exceptional bird habitat, and/or have substantial research or educational value. The Boston Harbor Islands provide habitat for a significant number of colonial-nesting waterbirds, including Least Terns and Common Terns, both listed as species of special concern in Massachusetts. The Islands also provide habitat for breeding wading birds including Snowy Egrets and Black-crowned Night-Herons which are, respectively, species of high and moderate continental conservation concern. American Oystercatchers have expanded their range northward into Massachusetts and now have a substantial breeding population in the Islands. The North American population of American Oystercatchers is listed as a high priority shorebird species with high conservation concern in the U.S. Shorebird Conservation Plan. In addition, eider, cormorants, several other wading and shorebird species, and gulls regularly nest on the Islands.

How is the monitoring done?

Volunteers help monitor coastal breeding birds, enhancing community involvement with park islands and providing an opportunity for people to participate in long-term monitoring.

Volunteers interested in participating in the long-term monitoring of coastal breeding birds in the park are recruited by park staff each year. Monitoring methods include estimating nesting pairs and/or counting nests of a variety of species using both boat-based and ground-based survey methods. Ground-based methods involve volunteers looking for nesting birds while walking side-by-side in a spaced-out line through suitable vegetation on selected islands. Boat-based surveys use a small boat to circle the perimeter of an island where gulls or cormorants are present. Two observers record the number of active nests determined by the presence of an incubating adult, an adult standing on or in a recognizable stick nest, or the presence of visible chicks within a stick nest.

Right: Common Terns are a priority species for the Boston Harbor Islands. NPS photo.



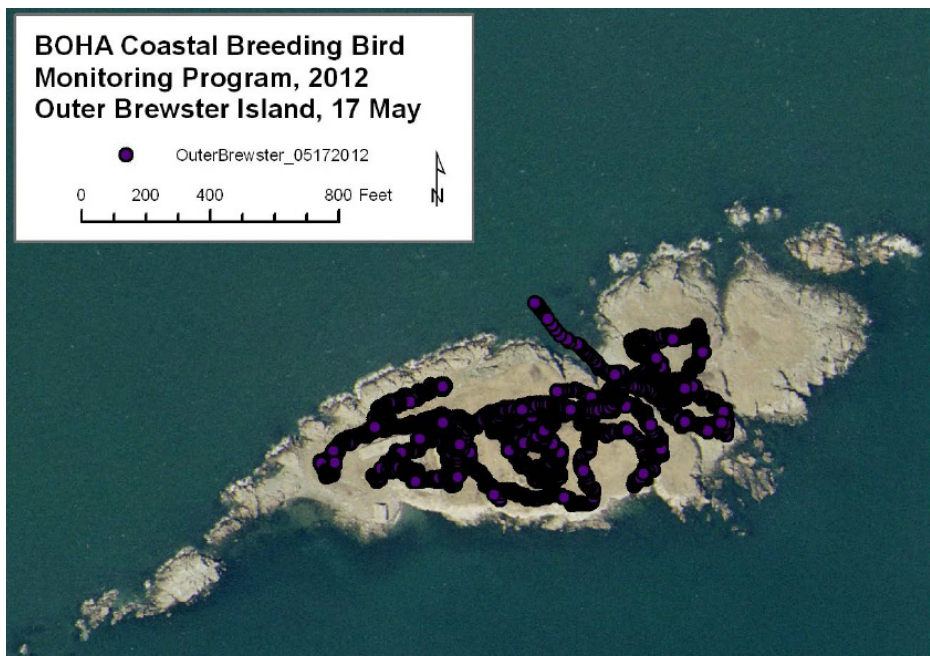
Below: Volunteers and park staff count birds during a boat-based survey of the islands using binoculars. Carol Trocki Photo.





Above: A sample of a panoramic photo of Calf Island that is used to help count bird species nesting on the islands.

Below: An example of a ground-based Common Eider and wading bird colony walking survey track on Outer Brewster Island.



Photographic software is used to create panoramic photos of nesting sites on islands as an additional tool for counting nesting birds more accurately. For a more detailed description of coastal bird monitoring, including background information, field methods, and sample design, download the protocol from NETN’s website.

How is the information delivered to parks?

Reports and frequent social media updates help to share information quickly.

Two kinds of reports are created for coastal birds: an Annual Report (yearly) and an Analysis and Synthesis Report (completed every 3 years beginning in

2015). Annual Reports provide a general overview of activities and a summary of results from each year’s field season. Analysis and Synthesis Reports provide a more detailed analyses of population trends. Results are interpreted to provide specific information related to the measurable monitoring objectives. In general these reports estimate patterns and trends in abundance and community composition and evaluate the efficacy of the current monitoring protocol to achieve objectives. These reports also recommend changes to monitoring and management practices within the park.

In addition to the reports, weekly updates during the field season are shared by the lead scientist online (NETN’s Facebook page posts updates when available) with participating community volunteers and other interested stakeholders. This effort adds value for the park community and helps island managers keep track of the timing of nesting activities.

More information:

For access to the full monitoring protocol, resource briefs, and more - visit NETN’s website and click on the Monitoring / Coastal Birds links. You can also “like” NETN on Facebook where you can view pictures of volunteer monitoring crews in the field and stay informed about all network monitoring activities.



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