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Coastal Bird Monitoring on the Islands of Boston Harbor

Background

Managed by a unique 13-member partnership, the 34 islands of Boston Harbor Islands NRA are rich in both human history and breeding bird habitat. In 2002, the park was designated as a Massachusetts Important Bird Area (IBA). The IBA program, overseen by the international nonprofit group BirdLife, includes more than 2,000 sites in over 20 countries worldwide. BirdLife partners with national and local governments and NGO's in the conservation of IBA's, which provide essential habitat to one or more species of breeding, wintering, or migrating birds and generally support high-priority species, large concentrations of birds, and have substantial research and education value.

Purpose & Scope

WHY MONITOR WATERBIRDS?

Breeding birds were identified as a high-priority vital sign for Northeast Temperate Network (NETN) parks during the network's vital signs selection process and are one component of an integrated monitoring program being developed for the Harbor Islands. While forest breeding birds are the priority at most NETN sites, the many open and sparsely forested islands of Boston Harbor make coastal, or "waterbirds", the more relevant avian community. The long-term coastal breeding bird monitoring program also helps to support the park's mission of providing reasonable access to the islands for education, enjoyment, and research; as well as enhancing community involvement by utilizing volunteers as 'citizen

scientists'. Furthermore, birds are an integral component of park ecosystems and can be particularly sensitive to changes in habitat condition (e.g. vegetation and topography) and food resources, making them important indicators of ecosystem change at both the local and regional scale.

Status & Trends

The Boston Harbor Islands provide habitat for a significant number of colonial-nesting waterbirds, including Least Terns (*Sterna antillarum*) and Common Terns (*Sterna hirundo*), which are both listed as species of special concern in the state of Massachusetts. The park also provides habitat for breeding wading birds including Snowy Egrets (*Egretta*



American Oystercatcher nest. These eggs, as with many shorebird eggs, blend in extremely well with their rocky surroundings making them harder for predators, and researchers, to locate.
Photo: Carol Trocki

thula) and Black-crowned Night-Herons (*Nycticorax nycticorax*) which are, respectively, species of high and moderate continental conservation concern. American Oystercatchers (*Haematopus palliatus*), another high priority species at the park, have expanded their range northward into Massachusetts and now have a substantial breeding population in the Boston Harbor Islands. In addition, eider, cormorants, gulls, and several other wading and shorebird species regularly nest on the islands.

Monitoring

Although not part of long-term, comprehensive monitoring programs, periodic inventories of breeding waterbird species have taken place on the islands in the past. While this periodic data is valuable, park scientists and managers only gain the ability to confidently detect trends of bird populations by coupling it with many years of consistently collected data. This is similar to the way global climate is

A dedicated group of volunteer "citizen scientists" are a key component of the park's coastal bird monitoring program.
Photo: Carol Trocki





BADJOBY 1.



PETER WALLACK 2.



CAROL TROCKI 3.



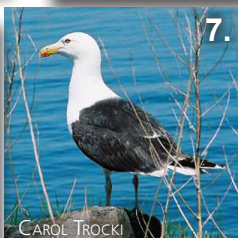
ANDREAS TREPTE 4.



MDF 5.



JIM FRAZIER 6.



CAROL TROCKI 7.



DON DeBOLD 8.



ANDREW SCHMIDT 9.

BOSTON HARBOR ISLANDS HIGH PRIORITY SPECIES

1. Common Tern
2. Least Tern
3. American Oystercatcher

PRIORITY SPECIES

4. Common Eider
5. Double-crested Cormorant
6. Herring Gull
7. Great Black-backed Gull
8. Great Egret
9. Snowy Egret
10. Black-crowned Night-Heron
11. Glossy Ibis
12. Willet
13. Spotted Sandpiper

studied. One year of data showing temperature fluctuations can only tell scientists so much. It's real value comes when it is integrated with climatic data consistently collected over much longer time spans.

To this end, and after two years of pilot testing data collection techniques and processes, the NETN coastal breeding birds protocol for Boston Harbor Islands was finalized in early 2010. The program's goal is to track changes in distribution and abundance of coastal breeding birds. Park scientists also hope it will improve understanding of breeding waterbird /habitat relationships in the park and the effects of habitat changes and management actions on waterbird species.

The monitoring program's primary objectives are:

- to determine annual changes and long-term trends in abundance and species composition of high priority and priority coastal bird species.
- to conduct an annual surveillance program to identify use by threatened/endangered bird species such as Piping Plover (*Charadrius melodus*) or Roseate Tern (*Sterna dougallii*).

Waterbird monitoring data can also be correlated with data on park management actions, rocky intertidal communities, water quality, climate, and other information to assist park managers in their efforts to protect and, in some cases, encourage the recovery of coastal breeding birds in the park.

More Information

Harbor Islands volunteering info: www.nps.gov/boha

Field summaries: <http://science.nature.nps.gov/im/units/NETN/inventory/inventory.cfm>

Coastal Breeding Bird Project Leader
Carol Lynn Trocki

Phone/Email
401-423-2633
cltrocki@verizon.net

Harbor Islands Volunteer Manager
Mary Raczko

Phone/Email
617-223-8637
Mary_Raczko@nps.gov



Northeast Temperate Network
54 Elm Street, Woodstock, Vermont 05091
802-457-3368
<http://science.nature.nps.gov/im/units/netn/>

Program Manager
Brian R. Mitchell
802-457-3368 ext. 37
Brian_Mitchell@nps.gov

Appalachian Trail Coordinator
Fred Dieffenbach
802-457-3368 ext. 36
Fred_Dieffenbach@nps.gov

Data Manager
Adam Kozlowski
802-457-3368 ext. 40
Adam_Kozlowski@nps.gov

Plant Ecologist
Kate Miller
207-288-8736
Kathryn_Miller@nps.gov

Science Communication
Ed Sharron
802-457-3368 ext. 23
Ed_Sharron@nps.gov



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