



# SEANET

Seabird Ecological Assessment Network



Cummings School of Veterinary Medicine



## SEANET Background

The Seabird Ecological Assessment Network (SEANET) is a collaborative effort to monitor seabird mortality along the Atlantic coast of the U.S. The overarching goals of SEANET are to:

- Identify the main threats to seabird populations
- Target conservation measures to alleviate threats
- Educate the public about marine conservation

Volunteer "citizen scientists" walk beaches once or twice a month and record a variety of data on variables such as beach debris, weather, and seabird carcasses. Patterns of carcass deposition create a "normal" baseline against which many different mortality events can be assessed, for example - oil spills and disease outbreaks. Necropsies of beached birds help identify specific causes of mortality.

In 2005, we created a web-based reporting system that enables the volunteers to enter their beached bird survey data directly online ([wildlifedisease.nbii.gov/seanet](http://wildlifedisease.nbii.gov/seanet)).

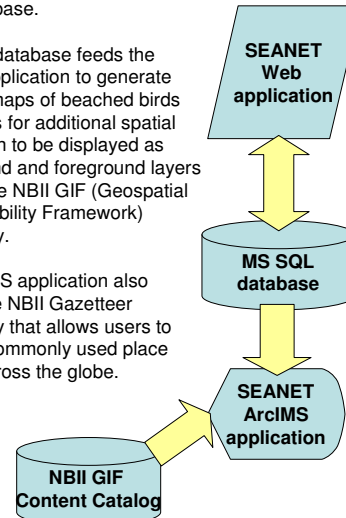
As of June 2007, 70 volunteers were entering their data online and had reported approximately 500 unique beach walks and nearly 450 carcasses.

## Data Flow Chart

Volunteers enter their data through the online web application, which is saved in the SQL database.

The SQL database feeds the ArcIMS application to generate dynamic maps of beached birds and allows for additional spatial information to be displayed as background and foreground layers utilizing the NBII GIF (Geospatial Interoperability Framework) technology.

The ArcIMS application also utilizes the NBII Gazetteer technology that allows users to zoom to commonly used place names across the globe.



## Simplified Database Architecture

### Beach Data

Length, Name, Affiliation, State, Town, County  
Start/end point descriptions, Start/end point latitude/longitude

### Conditions Data

Start/End time, Date, Temperature, Wind Direction, Fog, Rain, Cloud cover, Sea state, Tide, Wrack info, Debris Info, Ice/Snow, Post Storm, Oil presence

### Beached Bird Data

Species, Confidence level Latitude/Longitude, Degree emaciation, Gross Observations, Disposition, Markings, Band Info, Age class, Sex, Scavenge evidence, Measurements

### Live Bird Data

Species, Confidence Level, High count, Location

## Web-Based Data Entry

Through established vocabulary lists and easy to use drop-down menus, the SEANET application makes entry of data collected in the field simple. The web application also enforces the use of standardized vocabularies ensuring that the data are entered in a compatible format, facilitating analysis.

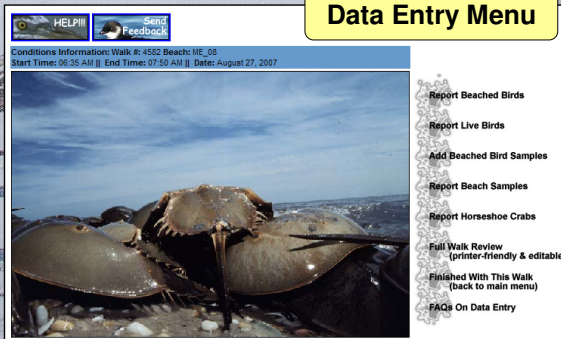
Volunteer photos uploaded help to document and identify beached birds.



## Administrative Tools

A number of administrative tools are built right into the web application that allow for administrative access to data, usage, modification and edits, etc. These include viewing user feedback submitted through the interface, adding new beaches for monitoring, creating/modifying users, exporting data in Excel format from the database, verifying data, and more. These tools limit the amount of maintenance that needs to be done behind the scenes and give more access to those who need it.

## Data Entry Menu



## Online Help

Every field in the application has a supporting help icon where the users can find out more information about the field data required. There is also an extensive help document that guides users through the application and its numerous functions. Further, a feedback mechanism is available throughout the application for users to report any problems they encounter.

## Conclusions/Future Directions

We are currently developing and implementing a mass mortality reporting function to allow members of the general public to report and review mass mortality events as a separate module for SEANET.

Collaborating with a broad group of stakeholders throughout the Atlantic coast, we will continue to acquire data on mortality factors in seabirds, develop educational initiatives that focus on coastal environmental health, and use these efforts to help improve animal welfare and promote positive environmental change.

## Acknowledgements

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