

Proceedings of the Harbor Herons Annual Subcommittee Meeting: Greater New York/New Jersey Harbor Colonial Waterbirds Working Group



Lyndhurst, New Jersey

11-12 December 2008



**Proceedings of the Greater New York/New Jersey Harbor
Colonial Waterbirds Working Group**

**December 11-12, 2008
New Jersey Meadowlands Commission
Education Building
2 DeKorte Plaza Lyndhurst, NJ 07071**

**Organized by:
New York City Audubon
New Jersey Meadowlands Commission
Harbor Herons Subcommittee of the NY-NJ Harbor Estuary Program**

**Hosted by:
New Jersey Meadowlands Commission**

**Sponsored by:
NY-NJ Harbor Estuary Program
National Park Service
New York City Audubon
New Jersey Audubon Society**

**Meeting booklet compiled by:
Kate Ruskin, New York City Audubon**

Table of Contents	
Meeting Agenda.....	1
Participant Contact and Listserv Information.....	3
About the NJ Meadowlands Commission.....	5
About Harbor Estuary Program	6
Presentation Abstracts.....	7
Presenter Biographies.....	18

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MEETING AGENDA

Thursday, December 11, 2008

9:15-9:45	SIGN-IN AND COFFEE
9:45-10:00	Welcome and Introduction Mike Newhouse, <i>Meadowlands Commission</i> , Susan Elbin, <i>NYC Audubon</i> , and Nellie Tsipoura, <i>NJ Audubon Society (Harbor Herons Subcommittee)</i>
10:00-11:05	THE HARBOR HERONS
10:00 -10:10	NYC Audubon and Partnerships: A Vision for Harbor Heron Colonies Glenn Phillips, <i>NYC Audubon</i>
10:10-10:30	NYC Audubon's Harbor Heron Survey: Wading Bird, Cormorant, and Gull Nesting Activity in 2008 Andy Bernick, <i>AKRF</i>
10:30 -10:45	Double-crested Cormorant Update Susan Elbin, <i>NYC Audubon</i>
10:45-11:05	Diet Composition of Double-crested Cormorants, <i>Phalacrocorax auritus</i>, in New York Harbor and a Possible Bias Inherent in the Use of Pellets for Diet Analysis Colin Grubel, <i>City University of New York</i>
11:05-11:45	OTHER WATERBIRDS IN THE HARBOR HERONS REGION
11:05-11:25	Shorebird Surveys in Sandy Hook Nellie Tsipoura and Laura Stern, <i>NJ Audubon Society</i>
11:25-11:45	Piping Plover Status Report and West Pond Management in Jamaica Bay Kim Tripp, <i>National Park Service</i>
11:45-1:15	WORKING LUNCH: Harbor Herons Subcommittee Business Meeting
1:15-1:30	Waterbird Surveys in the Bronx River Chrissy Word, <i>Rocking the Boat</i>
1:30-1:50	NY State Colonial Waterbirds Jason Smith, <i>New York State Department of Environmental Conservation</i>
1:50-4:40	HABITAT MANAGEMENT
1:50-2:05	Pre-restoration Wading Bird Count Done at Two Sites in the Bronx Victoria Ruzika, <i>New York City Parks: Natural Resources Group</i>
2:05-2:25	Update on the Progress of the NY/NJ Harbor Estuary History of Restoration Mapping and Database Project Carl Alderson, <i>NOAA</i>
2:25-2:40	NYC Parks Restoration Status Report for Prall's and N. Brother Islands Mike Feller, <i>New York City Parks: Natural Resources Group</i>
2:40-3:00	BREAK
3:00-3:20	Jamaica Bay Resource Issues Update Don Riepe, <i>American Littoral Society</i>
3:20-3:40	Monitoring Birds and Horseshoe Crabs at Elders Point (East Island) Saltmarsh Restoration in Jamaica Bay, NY George Frame, <i>National Park Service</i>
3:40-4:00	Bulking and Tiering Wetland Restoration Systems Paul Lerin, <i>Bionautics</i>
4:00-4:20	Waterbirds and Habitat Beyond the Harbor Steve Papa, <i>US Fish and Wildlife Service</i>
4:20-4:40	Update from the Hackensack Riverkeeper: Ecotourism and YCNHs Hugh Carola, <i>Hackensack Riverkeeper</i>
4:40-5:00	WRAP-UP



Friday, December 12, 2008

9:15 -9:45	SIGN-IN AND COFFEE
9:45-10:00	Welcome and Introduction to the Meadowlands Mike Newhouse, <i>NJ Meadowlands Commission</i> Overview from Yesterday's Harbor Herons Meeting Susan Elbin, <i>NYC Audubon</i> and Nellie Tsipoura, <i>NJ Audubon Society</i>
10:00-11:10	HABITAT MANAGEMENT, Cont'd.
10:00-10:20	Rahway River Association's Neighborhood Biodiversity Program Dennis Miranda, <i>Rahway River Association</i>
10:20-10:40	It's Not Easy Being Green: Comparative Growth Study of Native Saplings in Two Mixed-Species Colonies Liz Craig, <i>NYC Audubon</i> and Matt Palmer, <i>Columbia University</i>
10:40-10:50	Phragmites and Herons Erik Kiviat, <i>Hudsonia Ltd.</i>
10:50-11:10	BREAK
11:10-2:05	WADING BIRD RESEARCH AND GREAT EGRET SESSION
11:10-11:25	Huckleberry and Goose Islands Annual Survey Dave Kunstler, <i>New York City Parks</i>
11:25-11:45	Great Egrets of Hoffman and South Brother Islands: a Pilot Study of Foraging Ecology and Juvenile Dispersal Susan Elbin and Kate Ruskin, <i>New York City Audubon</i>
11:45-12:05	Use of Foraging Habitats by Egrets and Herons in the New Jersey Meadowlands Nellie Tsipoura, Kristin Mylecraine, and Kate Ruskin, <i>NJ Audubon Society</i>
12:05-12:25	Colony Growth, Productivity, Post-breeding Roosting and Movements of Colour-banded Great Egrets from the Great Lakes Chip Weseloh and Dave Moore, <i>Canadian Wildlife Service, Environment Canada</i>
12:25-1:25	LUNCH
1:25-1:45	Ecology and Behavior of Great Egrets on Wade Island in the Susquehanna River Brad Romano, Don Detwiler, and Terry Master, <i>East Stroudsburg University</i>
1:45-2:05	Great Egrets – An Historical Perspective Don McCrimmon, <i>Cazenovia College</i>
2:05-4:15	PROPOSED PROJECTS AND TECHNOLOGY
2:05-2:25	2008 NJ Wading Bird Aerial Survey and 2009 NJ Heron Colony Pilot Survey Christina Kisiel, <i>NJ Div. of Fish and Wildlife: Endangered and Nongame Species</i>
2:25-2:45	Movements of Urban Canada Geese in New York City Saleen Tennis, <i>US Division of Agriculture</i>
2:45-3:05	Feather Samples: A Useful Tool in Waterbird Research Brian Palestis, <i>Wagner College</i>
3:05-3:25	Technology and Proposed Research to Compare Nutritional Stress in Wading Bird Colonies of Virginia and New York Harbor Charlie Clarkson, <i>University of Virginia</i>
3:25-3:45	BREAK
3:45-4:05	Joanna Burger, <i>Rutgers University</i> - to be confirmed
4:05-4:20	Comments on the Harbor Herons Nest Survey and More... Glenn Phillips, <i>NYC Audubon</i>
4:20-4:30	WRAP-UP AND DISCUSSION



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Stay Connected.....

...via the listserv for Harbor Herons, cormorants, and other colonial waterbirds of the greater New York Harbor.

If you are not already on the Colonial Waterbirds listserv, please contact Susan Elbin at selbin@nycaudubon.org with a request to have your email address added to it.



NEW JERSEY MEADOWLANDS COMMISSION

The Meadowlands District, located a few miles west of Manhattan, covers 30.4 square miles in 14 municipalities along the Hackensack River. Once the land of unregulated landfills, the district has been making a remarkable environmental comeback since the New Jersey Meadowlands Commission was formed nearly 40 years ago. Illegal dumping has ended. Leaky landfills are getting contained and cleaned up. Neglected marshes are being restored.

The district is located along the Atlantic flyway, one of three major routes used by migratory birds in North America. More than 260 species of birds can be seen here throughout the year. Nearly two-thirds of the 57 birds on New Jersey's threatened, endangered and special-concern lists nest or migrate through here.

For more information on the Meadowlands, go to the New Jersey Meadowlands Commission's Web site, <http://www.njmeadowlands.gov>.

Directions to the New Jersey Meadowlands Commission:

By car:

From the Verrazano Narrows Bridge from Brooklyn: after toll, take the Bay Street exit to the Park entrance.

From the Staten Island Expressway (Rt. 278) east to the Bay Street exit. Turn left at the light and follow this road to Bay Street and the Park entrance.

By bus:

S51 from Staten Island Ferry Terminal to the Park entrance on Bay Street.

By train:

Take NJ Transit's Main Line from New York Penn Station to Kingsland Station. Then take the Lyndhurst Corporate Shuttle Loop to the NJMC environmental center.



NEW YORK-NEW JERSEY HARBOR ESTUARY PROGRAM

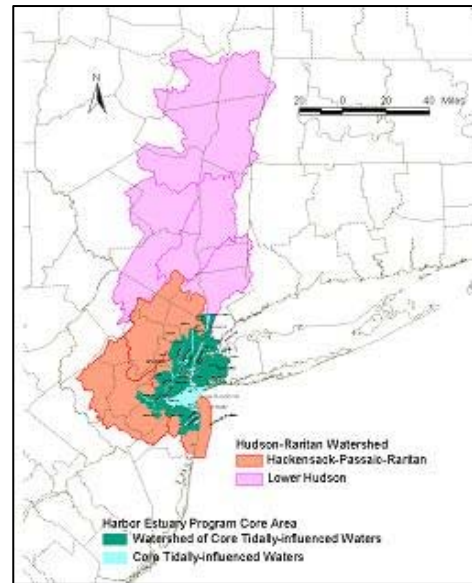
www.harborestuary.org

The New York-New Jersey Harbor Estuary Program (HEP) was established under the federal Clean Water Act and is a partnership of federal, state, and local environmental agencies, scientists, and citizens working to protect and restore the natural resources of the NY-NJ Harbor Estuary. The Harbor Estuary is both a dynamic living ecosystem and a center of human activity. The goal of the program is to establish and maintain a healthy and productive harbor ecosystem with full beneficial uses.

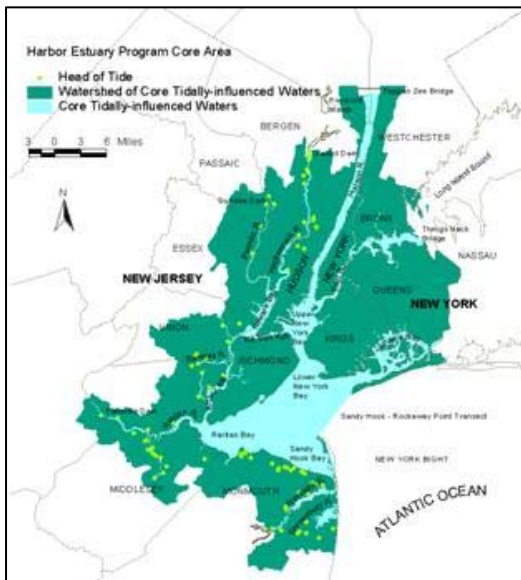
Geographic Location

The NY-NJ Harbor Estuary encompasses the waters of NY Harbor and the tidally influenced portions of all rivers and streams flowing into it. The “core area” of the Harbor Estuary Program extends from Piermont Marsh on the Hudson River to an imaginary line at the mouth of the Harbor connecting Sandy Hook, New Jersey and Rockaway Point, New York (the Sandy Hook-Rockaway Point Transect).

The core area includes the bi-state waters of the Hudson River, Upper and Lower Bays, Arthur Kill, Kill van Kull, and Raritan Bay. In New York, it includes the East and Harlem Rivers and Jamaica Bay, and in New Jersey, it includes the Hackensack, Passaic, Raritan, Shrewsbury, Navesink, and Rahway Rivers, and Newark and Sandy Hook Bays.



HEP watershed.



HEP core areas.

Planning and Activities

A Comprehensive Conservation and Management Plan (CCMP) for the Estuary was completed in 1996 and signed by the governors of NY and NJ, and the EPA Administrator in 1997. The CCMP identifies eight areas of concern: habitat and living resources; toxins; dredged material management; pathogens; floatables; nutrients and organic enrichment; rainfall-induced discharges; and public involvement and education.

The program is overseen by a Policy and Management committee structure and technical activities are undertaken by a number of work groups that focus on topics including nutrients, pathogens, toxics, habitat, regional sediment management, and public access. Major initiatives include the assessment of water quality and the development of plans to meet standards, assessment of the major needs for ecosystem restoration, and assessing regional sediment management needs.



ABSTRACTS

(Alphabetically arranged by presenter's last name)

Update on the progress of the New York/New Jersey Harbor Estuary History of Restoration Mapping and Database Project

Alderson, Carl – National Oceanic and Atmospheric Association

The NOAA Restoration Center initiated a study in 2006 that catalogs historic natural resources restoration projects in the area equivalent to the boundaries of the New York/New Jersey Harbor Estuary Program (HEP). Eighty-five projects have been identified to date. The draft product consists of a highly sortable database in spreadsheet format and mapping product available in Google Earth .kmz file format. Information is divided into major attribute categories and subcategories (habitat, species, location, funding, cost, restored acres, points of contact and fields for project update and comment). The database captures a wide range of restoration projects completed since the early 1980's including wetlands, forest, riparian edge treatments, shellfish, and fish passage. Initial analysis of the data indicates where projects are distributed; why they were undertaken (mitigation, natural resource damage compensation, state and federal grant program); for what purpose (habitat restoration, species reintroduction, environmental control); and what was accomplished (restoration vs. enhancement of existing). Assistance is being sought within the restoration community to capture additional projects and project information. A current edition of the database is being prepared for inclusion in the Comprehensive Restoration Plan (CRP)- Hudson Raritan Estuary (HRE) ecosystem restoration study, sponsored by the U.S. Army Corps of Engineers and the Port Authority of New York and New Jersey.

NYC Audubon's Harbor Herons Project Nesting Survey: Wading Bird, Cormorant, and Gull Nesting Activity in 2008

Bernick, Andrew J. - AKRF, Inc.

New York City Audubon's Harbor Herons Project Interim Nesting Survey of New York/New Jersey Harbor and surrounding waterways was conducted between 18 and 30 May 2008, with additional nesting observations in June and July. Wading birds nested on eight islands in NY/NJ Harbor; nine species of wading birds (Black-crowned Night-Heron, Great Egret, Snowy Egret, Glossy Ibis, Yellow-crowned Night-Heron, Little Blue Heron, Tricolored Heron, Cattle Egret, and Green Heron) were confirmed as nesters, with the largest species diversity noted on Canarsie Pol (eight species). South Brother Island was the largest wading bird colony observed in 2008 (462 nests). Black-crowned Night-Herons were the numerically dominant nesting species on each island surveyed in 2008; Cattle Egret and Tricolored Heron nests were limited to Canarsie Pol. No active wading bird nests were observed on islands in the Arthur Kill and Kill Van Kull. Following an eight-year decline, no Black-crowned Night-Herons were observed on North Brother Island. Wading bird nesting on Huckleberry Island has largely ceased, where only one Black-crowned Night-Heron was present. Mainland nesting of Yellow-crowned Night-Herons was observed at the Redfern Houses colony in Far Rockaway; 55 nests were present, a marked increase over the 26 nests observed in 2007. Double-crested Cormorants nested on

seven islands (1,332 total nests); nesting activity doubled at Elders Point West in Jamaica Bay. An additional 51 nesting pairs of Double-crested Cormorants were observed on aids to navigation in the Kill Van Kull, Arthur Kill and northwestern Raritan Bay. Herring and Great Black-backed gulls continued to nest throughout the harbor, although a total nest count was not conducted in 2008.

Update from the Hackensack Riverkeeper: Ecotourism and YCNHs

Carola, Hugh - Hackensack Riverkeeper

Without question, ecotourism is a growth industry; and as with every other growth industry, it presents specific challenges. This is especially true in an urban watershed region like the Hudson-Raritan Estuary. Throughout the HRE, increasing numbers of people – students, families, birders and more – are taking to the waterways and trails of the region in order to experience, enjoy, learn and reconnect with the natural world. Each year, 5,000 of them do so through the Eco-Programs offered by Hackensack Riverkeeper and the biggest draw for most of them is the opportunity to observe herons and other waterbird species in close proximity. In that light, the Harbor Herons can accurately be described as “charismatic megafauna”. As such, their conservation takes on an added dimension and greater import. Suggestions will be offered and a discussion of ethics will be most welcome. During this presentation, a short update on the Secaucus, NJ YCNH colony will also be given.

Technology and Proposed Research to Compare Nutritional Stress in Wading Bird Colonies of Virginia and New York Harbor

Clarkson, Charles - University of Virginia

The use of focal species is a growing trend in conservation and management. In coastal-marine environments, indicator species have been identified as the most ecologically relevant focal species for guiding coastal monitoring programs. Colonial waterbirds have long been used as bioindicators due to their intimate connection with the hydrologic regime and central place foraging at breeding locations. Population-level observations are frequently used for monitoring the health of near-shore habitats utilized by waterbirds, however these data are often limited to indicating that change has taken place and lend little predictive power to causality. Individual-level observations may serve a more useful tool for identifying the proximate factors leading to population-level fluctuations; however a “reductionist paradigm” in which emergent properties of aggregated small-scale observations fail to indicate ecosystem processes may occur. Attributes of the individual that can accurately represent the threat associated with change are useful bioindicator tools and, when coupled with population-level presence and abundance data, may serve useful for ecosystem monitoring. I propose the use of ptilochronology to determine the nutritional health of nestling waterbirds. When coupled with nest-site observations, ptilochronology may accurately reflect local foraging habitat health and further strengthen the use of waterbirds as bioindicators.

It's Not Easy Being Green: Comparative Growth Study of Native Saplings in Two Mixed-Species Colonies

Craig, Liz - NYC Audubon, Matt Palmer, Kevin Griffin - Columbia University, and Susan Elbin - NYC Audubon

Colonially nesting waterbirds transfer large quantities of aquatically derived nutrients into small isolated terrestrial systems, potentially altering community and ecosystem structure. There is evidence that some rapidly growing populations of Double-crested Cormorants (*Phalacrocorax auritus*) are degrading the habitats they colonize, primarily through the destruction of vegetation and the alteration of soil conditions. In May-August 2008 we conducted a pilot study to examine the effects of cormorants and other colonial waterbirds on the growth and photosynthetic stress of native Hackberry (*Celtis occidentalis*) saplings. We planted 13-15 saplings on two Harbor Heron islands (Hoffman and South Brother) and in three different test conditions: beneath cormorant nests (DCCO), heron/egret nests (Wader) and in areas of similar vegetation but without nests (Control). Height, crown spread, stem diameter, and fluorescence (Fv/Fm—a measure of photosynthetic stress) were measured for all saplings before planting them in the field and at the end of the study (August). Small sample size and high sapling mortality in cormorant colonies made statistical comparisons difficult, but several growth trends were recorded. On South Brother Island, growth in crown spread was significantly greater in Control plot versus those in DCCO or Waders. ($p < 0.0001$). On South Brother Island we observed 73% sapling mortality in the DCCO plot, 40% mortality in the Wader plot, and 21% mortality in the Control plot. On Hoffman Island we observed 100% sapling mortality in the DCCO plot, 0% mortality in the Wader plot, and 33% mortality in the Control plot. No differences in photosynthetic stress were observed among treatment groups. These preliminary data suggest that sapling survival is lower in cormorant colonies than in heron/egret colonies and non-nesting areas, but that sapling survival within each of these nesting environments varies between islands. The lack of observable differences in photosynthetic stress among treatments suggests that photosynthetic stress may not be the primary mechanism inhibiting understory plant growth in cormorant colonies. Other explanations for increased sapling mortality in cormorant colonies include high exposure to weather due to minimal canopy cover and excessive soil nutrients deposited from cormorant nests overhead.

Double-crested Cormorants: 2008 Update on the New York Harbor Population

Elbin, Susan, Liz Craig, and Kate Ruskin - New York City Audubon

Double-crested Cormorants, *Phalacrocorax auritus*, have increased in number and geographic distribution throughout the Great Lakes and eastern US coast during the past 30-35 years, becoming 'over abundant' in some regions of northern New York State and Canada. Twenty years ago, approximately 1,000 breeding pairs were documented on two islands in the New York Harbor. This year (2008), we counted 1,342 pairs nesting on seven islands. During the past three years that we have been studying this population, we have color-banded 708 nestlings and gotten band sightings or returns from Florida, North Carolina, and New Hampshire. As additional sightings are reported, we will be able to test hypotheses about the regional role of the NY Harbor population. This year we tagged 103 trees in which cormorants were nesting or that otherwise delineated the colony. On Hoffman we marked 68 trees: *Robinia pseudoacacia* (32),

Morus alba (20), *Ailanthus altissima* (9), *Paulownia tomentosa* (3), *Prunus serotina* (2), *Celtis occidentalis* (1), unknown (1); on Swinburne cormorants nested in all but 2 of the trees (n=35): *Celtis occidentalis* (21), *Morus alba* (7), unknown (3), *Ailanthus altissima* (2), *Gleditsia triacanthos* (1), and *Ligustrum* sp. (1). These semi-permanent tags will allow us to track the relative position of cormorants with respect to the wading birds on Hoffman and the use of trees, overall.

Great Egrets of Hoffman and South Brother Islands: a Pilot Study of Foraging Ecology and Juvenile Dispersal

Elbin, Susan, Kate Ruskin, and Liz Craig - New York City Audubon

In 2008 New York City Audubon expanded the scope of the Harbor Herons surveys to include aspects of foraging ecology, habitat use, and migration in the metropolitan area. We initiated a pilot study to color band and radio-tag Glossy Ibis and Great Egret young. We have been color banding Double-crested Cormorants in the Harbor on a larger scale since 2006. This talk is part of a joint study with NJ Audubon Society to enlist Citizen Scientists to observe foraging and feeding behavior of long-legged wading birds breeding on the Harbor Heron island complex and foraging in New Jersey. Here we focus on the goals of the project and methods used to catch, tag, and band the birds.

During June and July 2008, 11 nestling Glossy Ibis (*Plegadis falcinellus*) and 17 nearly-fledged Great Egret (*Ardea alba*) were color banded (Pro-touch and Haggie, respectively and USFWS aluminum bands). Great Egrets also received VHF transmitters (Sir Track), attached to their color bands. We tracked birds with both stationary (data loggers) and mobile units (ATS). From June through October 2008, Ruskin surveyed approximately 45 sites in New York and New Jersey during a total of over 82 observation hours. Three of these surveys were made at nesting colonies. Positive identifications were made for 7 individuals during 4 separate surveys. One bird was identified foraging in the NJ Meadowlands from Erie Landfill.

Challenges in using VHF telemetry in the NY metropolitan region include: radio signal transmission and reception interference, stray signals from other sources, logistical issues of getting from site to site, and limited accessibility to sites. In 2009 we will work with state partners to tag 25 egrets and color band up to 50 nestlings of each of the two target species. We will work closely with ATS and Sir Track to improve signal detection. We will use NJAS protocols to train citizen scientists on the NY side of the harbor. This project underscores the need to understand foraging as well as nesting ecology and highlights the importance of multi-state cooperation in maintaining healthy wading bird populations.

Monitoring Birds and Horseshoe Crabs at Elders Point (East Island) Saltmarsh Restoration in Jamaica Bay, NY

Frame, George - National Park Service

Recent quantification of saltmarsh island losses in Jamaica Bay, NY, led to the initiation of a restoration program that includes the National Park Service's experimental sand-slurry spraying of 2 acres of Big Egg Marsh in 2003. This was followed by multi-agency collaborations to restore saltmarshes of approximately 30 to 40 acres each at Elders Point East Island in 2006-07, Elders Point West Island and Gerritsen Creek in 2010, and Yellow Bar in 2011. These restored saltmarshes generally have protective fences and strings erected to reduce damage from geese that uproot the planted Smooth Cordgrass.

Several thousand Horseshoe Crabs nested on the fresh sands of Elders Point East Island in May-June 2007 and 2008. String-tangled deaths of Horseshoe Crabs numbered 18 in 2007 and 17 in 2008. Fence-tangled deaths were 243 in 2007 and at 36 in 2008. At least 5 times as many Horseshoe Crabs were safely untangled and set free.

Bird mortality also resulted from the strings and fences. Nesting Herring Gulls had 16 deaths in 2007 and at least 3 deaths in 2008. Nesting American Oystercatchers had 6 deaths in 2007 and at least 5 deaths in 2008. Brants foraged on site, resulting in 2 deaths in 2007 and 7 deaths in 2008. One Canada Goose died in 2007 and none in 2008. Laughing Gulls perched on the fences while feeding in 2008, resulting in 5 deaths from string entanglement. Similar numbers of individuals of these species were untangled and released alive. Great Egrets and Snowy Egrets regularly foraged along the shores and drainages of the restoration site, but none ever was found tangled or trapped. Double-crested Cormorants loafed on the shores without incident. Fewer deaths of nesting birds occurred in the second year because adaptive management led to removal of fences and strings, starting near the upland in May 2008 and ending with complete removal by the end of summer.

Daily monitoring of animals is advised whenever saltmarsh restoration uses fences and strings to protect newly-planted vegetation from goose depredations.

Diet Composition of Double-crested Cormorants, *Phalacrocorax auritus*, in New York Harbor and a Possible Bias Inherent in the Use of Pellets for Diet Analysis

Grubel, Colin - CUNY Graduate Center and John Waldman - Queens College

Research into the diet of the New York Harbor Double-crested Cormorant population began in spring 2006. A total of 434 boli and 88 pellets were collected from colonies on Hoffman, South Brother and Swinburne Islands. The samples were analyzed in the lab and identified to the lowest taxonomic level. Thirty-three fish and 2 crustacean species were identified in the bolus samples. The most common species found were black seabass, *Cetropristis striata*, and scup, *Stenotomus chrysops*. The diet composition differed from previous years, with black seabass and searobins, *Prionotus* sp., being much more common and cunner, *Tautogolabrus adspersus*, being less common. The samples were also analyzed for a possible bias in pellet production associated with the spininess of prey species. Ninety-five percent of species found in pellets

were spiny compared to 63% in the boli. This and other evidence suggests that the spininess of a prey species is a factor affecting its representation in pellets. Other morphological factors such as prey size and otolith morphology were shown to be unlikely to account for the observed differences in species makeup. Degree of boniness is one morphological factor which could not be eliminated but even so, the evidence supporting the effect of spininess remains strong. Future research, including select feeding trials, is recommended to further investigate the issue.

Results of the 2008 wading bird aerial survey in the coastal marshes of New Jersey

Kisiel, Christina - NJ Division of Fish and Wildlife: Endangered and Nongame Species Program

Aerial surveys of the Atlantic coast marshes have been conducted in NJ for long-legged waders since 1984. Focal species are the Great Egret, Snowy Egret, Little Blue Heron, Tricolored Heron, Cattle Egret, Glossy Ibis, Black-crowned Night Heron and Yellow-crowned Night Heron. Surveys took place in 1984, 1989, 1995, 2001, 2004, 2005 and 2008 and represent a long term data set for these species. Although research has shown that aerial surveys underestimate population numbers, especially for dark plumaged species, the protocol has remained the same and the data represents a useful index for monitoring populations. Great Egrets are the only species that are experiencing increases in their population, while Black- and Yellow-crowned Night Herons appear stable. All other species appear to be declining. Reasons for these declines are not well understood.

2009 Pilot Survey for Inland Heron Colonies in Northeast New Jersey

Kisiel, Christina - NJ Division of Fish and Wildlife: Endangered and Nongame Species Program

In New Jersey, the primary method to census long legged wading birds (with the exception of the Great Blue Heron) is the aerial surveys that have been conducted on a regular basis since the 1970's. The data from this survey indicates that majority of the focal species appear to be undergoing long term population declines. The aerial survey is limited to the marsh islands and beaches of the Atlantic coast and although it does capture the majority of the long legged nesting bird population in the state, biologists have noticed what appears to be an increase in the number of inland nesting sites. At present, these colonies are not formally surveyed and the primary mechanism that data is collected is through reports from the public. To better document these colonies (and to obtain reproductive data to measure the success of these colonies) and to determine if some of the declines observed in the coastal region are associated with immigration to inland colonies, a ground survey must be implemented. Since this would be the pilot year, the survey area will be limited in scope to the northeastern portion of the state. Although other parts of the state will eventually be included in this survey, the northeastern portion was selected for the initial phase because there are interested agencies and organizations in the region willing to partner together on this initiative. The survey will concentrate on all the long legged wading birds that may nest in the area, but will focus especially on the Yellow-crowned Night Heron and the Black-crowned Night Heron, both of whom have threatened status in New Jersey. Special attention will also be paid to residential areas, since these sites are more vulnerable to human disturbance than those colonies that occur on protected lands.

Phragmites and Herons

Kiviat, Erik - *Hudsonia Ltd.*

Contrary to commonly held ideas, many animals used common reed (*Phragmites australis*) stands. Long-legged waders often nest, roost, and forage in reed, depending on stand characteristics. Information on the relationship of reed to herons and other birds suggests topics for research and a different approach to managing reed.

Huckleberry and Goose Islands Annual Survey

Kunstler, Dave - New York City Parks and Recreation

This is an update on the rookeries on Goose and Huckleberry islands. The herons and egrets on Goose Is. seem to have recovered from the predation of a raccoon found on the island on last year's count. The Yellow-crowned Night Herons returned after their only absence last year. This was not an isolated incident. Four opossum had been removed from the island before the nesting season. The first Oystercatchers were seen this year and are probably nesting. On Huckleberry, the first sign of a predator, raccoon prints, were found before we arrived. An effort was made to trap it soon after the survey without success. It is presumed it was no longer there, but it likely arrived from David's Island, relatively nearby. The cormorants are still numerous and even increased while the night herons and Great Egrets have dwindled and the Snowy Egrets continue to be absent.

Bulking & Tiering Wetland System

Lerin, Paul - Bionautics, Inc.

The innovation of constructing multiple bulkheads in a tiered fashion can help recreate the unique ecosystem of a troubled waterway; especially, estuarine tidal banks that have been heavily encroached upon and dredged for commerce. The installation would be surveyed according to the fluctuation of the intertidal zone which is termed "a green belt in the littoral." Bulking & Tiering Systems provide the ideal grade that is necessary in establishing saltmarsh foundation species. In addition, the aforementioned technology provides a platform for phyto-remediation, which uses nature's aquatic filters for combined sewer overflow abatement.

The method of installing a Bulking & Tiering Wetland System would be constructed of interlocking sheet pilings that are impervious to the harsh marine environment. These sheet pilings are specially formulated of post-industrial recycled vinyl. They are attractive in appearance, durable, and more affordable than conventional retaining walls. Unaffected by sunlight, salt water, or marine borers, this sustainable design material has been specified for its ability to contain toxins.

The System would be particularly appropriate for sediments that are considerably contaminated and which may be a source of contaminants to other water ways in the area. Establishing a bulkhead and capping the existing sediments would specify significant amounts of beneficial

uses material to achieve the proper elevation. A layer of sand must be applied to establish a root zone where seeding takes place and any modifications for proper drainage can be adjusted.

Throughout much of our history salt marshes have been little regarded and often destroyed. They have been filled in as dumps and valued only when drained and developed. In the last several decades, we have only begun to understand that wetlands are a fertile and precious nursery. Besides nurturing millions of species –many endangered- wetlands replenish the Earth's water supply, blunt the ravages of nature and provide sanctuary and serenity for humans.

Great Egrets – An Historical Perspective

McCrimmon, Don - Cazenovia College

I will review the results and recommendations of the projects presented previously in the Wading Bird Research and Great Egret Session from the perspective of McCrimmon, D. A. et al. 2001 Great Egret (*Ardea alba*) in Birds of North America No. 570. I'll focus in particular on integrating the work currently underway in the region with the priorities for future research suggested in that earlier review, as well as those in the series for other wading birds.

Rahway River Association's Neighborhood Biodiversity Program

Miranda, Dennis - Rahway River Association

Rahway River Association's Neighborhood Biodiversity Program works toward improving and restoring wildlife habitat for biodiversity and local communities.

Feather Samples: A Useful Tool in Waterbird Research

Palestis, Brian - Wagner College

Feather samples taken from live birds have a variety of uses. Feathers can provide DNA for genetic studies and molecular sexing, and they can also provide material for stable isotope studies of feeding ecology and for measuring levels of heavy metals. I review the advantages and disadvantages of using feather samples. I then review work others have done with feather samples I collected from Common Terns (*Sterna hirundo*) nesting on Pettit Island in Ocean County, NJ. This work includes contaminant studies and molecular sexing and will also include population genetics research and ectoparasite surveys. In 2008, Shannon O'Neill and I recorded the responses of Common Tern chicks to feather sample removal. Chicks were more likely to run after feather sampling with increased handling and increased age. However, most chicks showed little or no reaction to feather sampling and we found no evidence that removal of feather samples increases chick mortality, confirming that this technique is relatively noninvasive.

Foraging Behavior of Great Egrets (*Ardea alba*) on the Susquehanna River in Harrisburg, Pennsylvania in Relation to Environmental Characteristics

Romano, Brad, Don Detwiler, and Terry Master – Dept. of Biological Sciences, Avian Ecology and Behavior Lab, East Stroudsburg University

The foraging behavior of Great Egrets (*Ardea alba*) was studied on the Susquehanna River in Harrisburg, Pennsylvania. Foraging observations were conducted from various vantage points within a two-mile radius of the Wade Island Heronry. Aspects of the study also consisted of an aerial survey, morning departure analysis, and a habitat survey in association with the foraging observations. Metrics used in analysis were location of foraging individuals; capture efficiency, and the number of successful attempts by an individual. Foraging individuals were found along shorelines of islands and the riverbanks, as well as among partially submerged Water Willow (*Justicia americana*) beds. Morning departure analysis did not reveal a preference to travel in one direction, however, directions taken on one day were dependent upon prior days. A principle components analysis as well as a multiple linear regression was used to form an ideal foraging model, exposing important habitat components. No single variable proved to be determinant of ideal foraging habitat, however, many components together provide a linear model of efficiency and successful attempts. The information from this project will provide useful feedback for management of this unique riparian nesting colony.

Pre-restoration Wading Bird Count Done at Two Sites in the Bronx

Ruzika, Victoria - New York City Parks, Natural Resources Group

Estuaries and salt marshes in the Bronx, NY have been impacted by anthropogenic disturbance for over 300 years. Throughout this time, the banks of rivers and tidal creeks were dammed, straightened, and hardened, marshes were filled with construction debris and developed, and waterways were polluted due to commerce, trade, and industrialization. As a result, thousands of acres of salt marsh have been lost, as have the critical ecological functions associated with these coastal wetland systems. Wading birds are one specific group of organisms greatly impacted by these changes, due to their reliance on salt marshes and estuaries for food. In order to determine wading bird use of fringe salt marsh habitat in the Bronx, point counts were conducted from May-August 2008 at two sites, Soundview Park and Pugsley Creek Park, planned for future salt marsh restoration. Pre-restoration monitoring in 2008 revealed that wading bird and overall waterbird species richness was greater at Pugsley Creek Park than at Soundview Park. These differences may be due to greater availability of food, greater tidal flow and flushing, and decreased human disturbance at Pugsley Creek.

NY State Colonial Waterbirds

Smith, Jason - New York State Department of Environmental Conservation

This discussion of the New York State Wildlife Grants program will include background information on how the grant was formed, how funding decisions are made and the types of projects eligible for funding. Details will also be provided as to how the State Wildlife Grants

program can support research on Harbor Herons to better protect and preserve essential heron habitat within the greater NY metropolitan area.

Movements of Urban Canada Geese in New York City

Tennis, Saleen - US Division of Agriculture

Non-migratory Canada goose (*Branta canadensis*) populations are increasing and pose a significant threat to civil aviation as aircraft components and engines are not built to withstand the strike of a bird weighing in excess of 4 kg. Since 1995, 10 aircraft have incurred substantial damage after striking Canada geese while landing or departing from LaGuardia (LGA) or John F. Kennedy (JFK) Airports, New York City. As part of a research program to determine the origin of geese that threaten aircraft in New York City, we neck-collared 300 Canada geese within 8 km of either the JFK or LGA in 2006. After 2 years of systematic observations, approximately 39% of the geese were still recorded in the New York City study area. Geese remaining within the study area moved an average of 5 km (range 3 – 15 km) from their original banding locations and had home ranges averaging about 20 km² (range 10 – 30 km²). JFK was within the movement patterns of the marked geese. More recently, satellite transmitters were attached to 10 of the collared study geese at 5 of the 9 original banding sites. Goose movements will be monitored by satellite for approximately one year this satellite data will be overlaid with goose movements obtained from the previous 2 years. A bird-detection radar system will be installed at JFK Airport to assist with identifying large-bodied birds in the air or on the ground in relation to aircraft. Incorporating visual observations, satellite telemetry, and a radar network together will assist with identifying bird strike hazards near JFK Airport. This will allow airport managers to apply effective, integrated management techniques to lower bird-aircraft strikes. Our study results currently indicate that a) geese within 8 km of the New York City airports do pose a threat to aircraft operating out of the airports; and b) harassment programs shift geese within an area but do not necessarily reduce the threat.

Use of Foraging Habitats by Egrets and Herons in the New Jersey Meadowlands

Tsipoura, Nellie, Kristin Mylecraine, and Kate Ruskin - NJ Audubon Society

In June 2008 we initiated a collaborative effort of New Jersey Audubon Society and New York City Audubon to advance the conservation of colonially breeding waterbirds in the NY/NJ Harbor and to instill in local citizens an appreciation for these birds and their habitats. Specific objectives of this project were to 1) mobilize and coordinate citizen scientists to conduct observations of colonial waterbirds; 2) identify areas used as foraging grounds in wetlands of northern and central New Jersey; and 3) determine the abundance and distribution of long-legged colonial waterbirds at various sites in relation to habitat type and tides. A total of over 50 citizen scientists were recruited to conduct surveys at approximately 40 potential foraging sites in the NY/NJ Harbor including the Meadowlands District, Raritan Bay and Arthur Kill. Volunteers were trained in survey methodology and heron and egret identification. They conducted two surveys per month, recording total number of waterbirds of each species at several locations within their site, as well as habitat, tide and behavioral information. Preliminary results show that Great Egrets and Snowy Egrets are the two most abundant species

observed away from the colony at New Jersey sites. Great Blue Herons (GBHE), Great Egrets (GREG) and Snowy Egrets (SNEG) were recorded in mostly open water habitats. GREG were more abundant in deeper (above the knee) water, while SNEG were more abundant in shallower (below the knee) water. There are also differences in site use by tide cycle. Great Blue Herons were more frequently recorded at high tide at Meadowlands and Raritan Bay sites. GREG and SNEG were more frequently recorded at outgoing tides in the Meadowlands and GREG was most frequently recorded at incoming tides at Raritan Bay. Not all data have been entered and these analyses are preliminary. However, they point to differences between the two survey areas and among species.

Colony Growth, Productivity, Post-breeding Roosting and Movements of Colour-banded Great Egrets from the Great Lakes

Weseloh, Chip and David Moore – Canadian Wildlife Service and Environment Canada

Great Egrets first nested in Ontario with a single nest on East Sister Island in western Lake Erie in 1953. By the 2000s, their numbers had grown to over 350 nests at 11 colonies in Lakes Erie, Ontario and Huron as well as the St. Lawrence and Niagara Rivers. Productivity ranged from 1-4 yg per nest (average = 2.76 yg, N= 234 nests). From 2001 to 2008, over 900 young flightless egrets were colour-banded at 3 sites, 86% of them at one colony in Lake Huron. Efforts from CWS staff and the public contributed 254 sightings, which show a southerly dispersal from the Lake Huron colony and an easterly dispersal from a colony in the Niagara River; northward dispersal was minimal. Of 157 known age birds observed, 3- and 2-year olds were the most frequent age class; no one-year old birds have been seen at the breeding colonies. Fifty-two of 53 egrets first re-sighted as adults (2 years+), were seen at their natal colony, confirming a high rate of natal fidelity. Very few banded adults were reported after June; only two colour-banded adults have been reported during July – September. Seven banded birds, all young of the year, were encountered during November – March; 6 of them from North Carolina to Cuba. There was one encounter from the Azores Islands. Observations at a large roost during September showed that 25% fewer egrets returned to that roost in the evening compared to the numbers which left in the morning. Also, 15% more egrets left the roost in the morning than had arrived in the previous evening. We suggest this indicates that birds leave the area on migration during the day and that other egrets (migrants?) arrive at the roost during the night, confirming nocturnal migration. Boat survey routes in the Niagara River in September-October confirmed that most egrets foraged within 5 miles of their evening roost.



PRESENTER BIOGRAPHIES

(Alphabetically arranged by presenter's last name)

Carl Alderson

Carl Alderson is a Marine Restoration Specialist for NOAA Fisheries Restoration Center, in Highlands, NJ. He oversees the restoration phase of Natural Resource Damage cases throughout NY, NJ, DEL and PA and is a POC for the NOAA Community-based Grants Program in the mid-Atlantic region. Carl is a graduate of Rutgers University, and is a Certified Landscape Architect in the State of New Jersey. Before joining NOAA, Carl worked for the City of New York and led a decade long effort to restore tidal wetlands, marine bird habitat, and fresh water wetlands as compensation for natural resources damages resulting from oil spills in NY Harbor.

Andy Bernick

Andrew Bernick received a B.S. in Wildlife Biology and Management from the University of Rhode Island in 1993 and a Ph.D. in Biology from the City University of New York-Graduate Center in 2007. His research interests include foraging ecology, population dynamics, and conservation of wading birds in urban ecosystems; the role of birds in infectious disease transmission (e.g. Lyme disease, West Nile virus); and the use of satellite telemetry in animal tracking. Dr. Bernick has lead wading bird surveys for NYC Audubon's Harbor Herons Project since 2005, and currently works as an ecologist with AKRF, Inc.

Hugh Carola

Hugh Carola is the program director at Hackensack Riverkeeper, Inc. (HRI), a position he has held since 2001 after spending six months volunteering with Captain Bill Sheehan, Riverkeeper and HRI founder. A U.S. Coast Guard-licensed Master of Inland Waterways, Hugh coordinates the organization's Eco-Programs which provide hands-on and on-water environmental education to over 5,000 people annually. Since 2002, Hugh has conducted nearly 1,000 Eco-Cruises aboard the 28-foot K/V *Robert H. Boyle* for colleagues, students and groups of all description on the Hackensack River and through the saltmarshes of the NJ Meadowlands. Hugh also serves as HRI's wordsmith, writing the majority of the organization's press releases, policy documents and official correspondence. In 2001, he helped found the New Jersey Catholic Coalition for Environmental Justice (NJCCEJ) and currently serves on its Coordinating Committee. He has been an active member of the Hackensack, NJ Environmental Commission since 2003 and currently serves as a Trustee of the Northern NJ Watershed Association as well as Land Trust Director of The Fyke Nature Association. In January 2005, Hugh was honored by the Alliance for New Jersey Environmental Education (ANJEE) and received its Outstanding Environmental Educator Award for 2004.

Charlie Clarkson

Charles Clarkson obtained his B.S. from Mary Washington College in Fredericksburg, Virginia. During his undergraduate career, Charles became interested in Ornithology and

assisted in research involving sexual selection in relation to song in the Gray Catbird (*Dumetella carolinensis*). Charles received his Master's of Biology from Virginia Commonwealth University in Richmond, Virginia, where he continued his research in the area of bird song as a sexually selected trait with the Prothonotary Warbler (*Protonotaria citrea*) as his focal species. While attending VCU, Charles performed extensive owl surveying in the commonwealth area as part of an independent research project utilizing Barred Owls (*Strix varia*) as indicators of parkland health.

Following the completion of his Master's degree, Charles worked for 2 ½ years as the supervising technician for a Red-cockaded Woodpecker (*Picoides borealis*) conservation project on Camp Lejeune Marine Corps base in Jacksonville, NC. Charles is currently working towards a Ph.D. at the University of Virginia where his dissertation research involves determining the utility of waterbirds as bioindicators through the aggregation of small-scale measurements and individual attributes to represent large-scale processes.

Liz Craig

Elizabeth Craig is a graduate student in Zoology at Cornell University's College of Veterinary Medicine. She received her undergraduate degree from Columbia University's program in Ecology, Evolution and Environmental Biology, where she conducted research on the impacts of Double-crested Cormorants (*Phalacrocorax auritus*) and other colonial waterbirds on their nesting environment and understory community. Elizabeth later worked as the Program Assistant for Wildlife Trust's New York Bioscape Initiative and as a Research Associate at New York City Audubon. She is continuing her New York Harbor cormorant research focusing on immunotoxicology, and will serve as New York City Audubon's Harbor Herons nesting survey leader this spring.

Susan Elbin

Director of Conservation and the newest member of New York City Audubon's staff, Dr. Susan Elbin is an ornithologist who has been working in the field of behavioral ecology and conservation for more than 20 years. Susan's specialty is avian ecology and conservation of colonial waterbirds. She is on the Board of Directors for the Waterbird Society and, more locally, is co-chair of the Harbor Herons Subcommittee of the Habitat Working Group for the Harbor Estuary Program. Susan is an adjunct professor at Columbia University. Before coming to NYC Audubon, Susan was the Director of Wildlife Trust's New York Bioscape Initiative, regional landscape-level approach to address issues dealing with human health, wildlife health, and ecosystem health. She has also worked in a variety of departments at the Wildlife Conservation Society, including the Bronx Zoo Education Department, Ornithology Department, and the Science Resource Center. While at WCS she led a variety of projects including studies of avian ecology and behavior in disturbed/restored grassland habitats and social behavior and use of space in bird exhibits at the Bronx Zoo. Susan holds a Ph.D. from Rutgers University, a M.S. from Pennsylvania State University, and a B.A. from Dickinson College.

Mike Feller

Mike is the Chief Naturalist for the City of NY Parks & Recreation, Natural Resources Group. He has a degree in Anthropology from SUNY, Albany and has done graduate work in Archaeology, Ethnobotany, and Cultural Ecology. This is his 26th year at Parks performing and supervising natural resources inventory, protection, management, restoration, interpretation, and policy formation throughout New York City.

George Frame

George W. Frame, Ph.D., is a biologist in the Division Natural Resources at Gateway National Recreation Area, NY & NJ. His work primarily is saltmarsh monitoring.

Colin Grubel

A native New Yorker, Colin Grubel earned his B.A. at Alfred University in 1999. Following graduation, he worked as a zookeeper for four years before returning to NYC in 2003 to attend Queens College as a Masters student. He has been studying the cormorants of New York Harbor for three years, and recently entered the Ph.D. program at the CUNY Graduate Center. Still based at Queens College, he now does all the same stuff but with more stress.

Christina Kisiel

Christina Kisiel is a Senior Environmental Specialist with the New Jersey Division of Fish and Wildlife's Endangered and Nongame Species Program, where she has been since 2002. Her responsibilities include beach nesting birds, colonial waterbirds, and secretive marsh birds. She is currently working towards her Master's degree at Rutgers University, where her research focuses on the Piping Plover.

Erik Kiviat

Erik Kiviat has studied animals and plants of the New York metropolitan area and Hudson Valley for forty years. He combines quantitative methods, natural history observations, and extensive literature review to tell the ecological "story" of common reed and other invasive plants. Erik published *The Northern Shawangunks: An Ecological Survey* (1988) and co-wrote *Biodiversity Assessment Manual for the Hudson River Estuary Corridor* (2001). He is working on a *Biodiversity Assessment Handbook for New York City*, and a book on urban biodiversity and its management in the Hackensack Meadowlands. He has a PhD in ecology and is Executive Director of Hudsonia, a nonprofit research institute.

David Kunstler

David Kunstler is the Wildlife Manager of Van Cortlandt & Pelham Bay Parks, New York City Parks and Recreation.

Terry Master

Terry Master received his B.S. in Biology at Muhlenberg College, his M.S. in Biology at East Stroudsburg University and his Ph.D. from Lehigh University. He is a Full Professor at East Stroudsburg University of Pennsylvania where he teaches ecology, animal behavior and ornithology classes. His research interests, shared with many graduate students, focus on the foraging ecology and habitat use of wading birds and headwater riparian neotropical migrants. He resides with his wife Sally, their 4 cats, 1 dog and a pet skunk named Boo in Bushkill Township outside of Nazareth, Pennsylvania.

Donald Mccrimmon

Donald A. McCrimmon, Jr. is Vice President for Academic Affairs and Dean of the Faculty at Cazenovia College, where he also teaches ecology and statistics. He has served as past-president of the Colonial Waterbird Society and editor-in-chief of *Colonial Waterbirds*. He has just completed a two-year term as president of Nature Network. He has nine wading bird species accounts in the recently released second edition of the Atlas of Breeding Birds in New York State.

Dennis Miranda

Dennis O. Miranda has served as the Executive Director of the Rahway River Association for five years. The mission of the RRA is to preserve open space, protect natural resources and improve water quality of the Rahway River Watershed through programs such as Celebrate the Rahway River, Neighborhood Biodiversity Program, Urban Parks Bioblitz, Rahway River Greenway, and revision of the 'Greenways to the Arthur Kill'. Miranda also serves as a Board Trustee for the Highlands Coalition and is affiliated with the Hanson Park Conservancy and East Coast Greenway. Miranda has previously been involved with the Watershed Watch, which he cofounded in 1985, Camden Greenways Working Group, the Arthur Kill Watershed Coalition, and an adhoc grassroots movement he founded to put successful open space questions on ballots in Passaic (1997), Bergen (1999), Camden (2000), and Union (2002) Counties.

Kristin Mylecraine

Kristin Mylecraine is currently a Research Associate for New Jersey Audubon Society. She works on a variety of Citizen Science and other research projects, with a focus on grassland birds, Harbor Herons and urban wetlands. She received a M.S. and Ph.D. in Ecology and Evolution at Rutgers University, and served as a postdoctoral researcher at Ohio State University. She has worked for the New Jersey Forest Service, Ohio Division of Wildlife and New Jersey Audubon Society.

Brian Palestis

Brian Palestis is an Associate Professor of Biology at Wagner College and Chair of the Department of Biological Sciences. He earned his Ph.D. in Ecology and Evolution from Rutgers University in 2000 and has studied the behavior and ecology of Common Terns since 1996.

Matt Palmer

Matthew Palmer is a botanist and faculty member in the department of Ecology, Evolution, and Environmental Biology (E3B) at Columbia University. His research interests are rooted in plant community ecology, with particular emphases on restoration, conservation, and ecosystem function. He holds a B.S. in Natural Resources from Cornell University and a Ph.D. in Ecology and Evolution from Rutgers University.

Glenn Phillips

The Executive Director of New York City Audubon, Glenn can point to his work in the environmental field dating back nearly 30 years when at the age of 8, Glenn had a collection of reptiles and amphibians that was a one-man traveling show he brought to kindergarten classes. Prior to joining NYC Audubon, Glenn worked to establish the Prospect Park Audubon Center as the premier site in Brooklyn for environmental education since its opening in 2002. As the Park's Vice President for Education, Glenn was also responsible for Lefferts Historic House and the Brooklyn Academy of Science and the Environment, a new small public high school operated in partnership with the Brooklyn Botanic Garden and the NYC Department of Education. Glenn has also worked at the New York Botanical Garden in the Bronx, where he helped develop the Everett Children's Adventure Garden, a hands-on outdoor museum within the Botanical Garden. Following the Garden, Glenn worked at the Columbia University Center for Environmental Research and Conservation, running adult education programs in conservation biology.

Don Riepe

Don Riepe has been the NY Chapter Director of the American Littoral Society for the past 25 years and has been designated as "Jamaica Bay Guardian" by NYSDEC. He recently retired from the National Park Service where he worked as a naturalist and manager of the Jamaica Bay Wildlife Refuge in NYC. Don has written many articles on natural history subjects and his photographs have been published in many journals including *Scientific American*, *National Wildlife*, *Audubon*, *Defenders*, *Underwater Naturalist*, *Parade* and *The New York Times*. He has an M.S. in Natural Resources Management from the University of New Hampshire and has taught a course in Wildlife Management at St. John's University. Currently, he serves as a board member for NYC Audubon and the Rockaway Waterfront Alliance.

Brad Romano

Brad Romano is an avid outdoorsman who spends ample time in the field pursuing views of nature, and enjoys whitewater kayaking, backpacking, rock climbing, photography, snowboarding, hunting, and fishing. He earned an M.S. in Biology from East Stroudsburg University, and is currently pursuing employment in wildlife management with various state, federal, and private agencies.

Kate Ruskin

Kate Ruskin graduated from Columbia University with a BA in Ecology, Evolution, and Environmental Biology this past May. For her senior thesis, she researched behavioral health monitoring methods for Double-crested Cormorants in New York Harbor, and since has continued related research working for New York City Audubon and New Jersey Audubon Society. Her future research interests include conservation medicine, coastal ecology, and of course, cormorants.

Victoria Ruzika

Victoria has been a Project Associate with the New York City Department of Parks & Recreation's Natural Resources Group since July 2007. At NRG, she is responsible for project planning, ecological monitoring, education/community outreach, and reporting for several projects in the Bronx, including salt marsh restoration, diadromous fish reintroduction, riparian zone restoration, and fish and shellfish habitat restoration projects. These projects encompass many of her research interests: coastal ecology, wildlife conservation, and ecological restoration. In addition to her work at NRG, Victoria also has experience working with threatened and endangered shorebirds on Long Island, NY and studying Diamondback Terrapins as part of her Master's thesis in the lower Chesapeake Bay in VA. Victoria holds a MS in Biology from The College of William & Mary and a BS in Biology from SUNY Geneseo.

Jason Smith

BFA Creative Writing/Photography, University of Southern Maine. AAS Fish & Wildlife Management, Paul Smiths College. BAS Environmental Science, Paul Smiths College. Upper Saranac Lake Foundation, 4 years, Dive Leader, Underwater control of aquatic invasive species. NYS DEC, 2½ years, Ecologist, State Wildlife Grants Biologist.

Saleen Tennis

Saleen Tennis is a biologist working for the USDA Wildlife Services. She earned her BS at the University of Minnesota and her MS at Southern Illinois University. Most of her work has on been research and management of Endangered and Threatened carnivore species. She has conducted research on wolves in northwestern MN and has worked as a Canada Lynx biologist for the Maine Dept of Inland Fisheries and Wildlife. Most recently she was working for the New Mexico Dept of Game and Fish as the field team leader for the Mexican Wolf Reintroduction Program in the southwest. Saleen's move to the New York area was based on her recent marriage and her husband accepting a position lewis the USFWS in the area. She is excited about her new position and is interested in learning about and becoming more involved in the wildlife research and management going on in the area.

Kim Tripp

Kim Tripp earned her BS at Cornell University and her MS at North Carolina State University. She started her career with the federal government as an endangered species biologist for the

U.S. Fish and Wildlife Service. For the past 7 years, Kim has been the Director and Research Coordinator of the Jamaica Bay Institute- a program hosted by Gateway NRA. She now also serves as lead for the natural resources program of the Jamaica Bay Unit.

Nellie Tsipoura

Department at New Jersey Audubon Society, coordinating volunteer surveys of shorebirds during spring and fall migration, and landbirds in various New Jersey habitats, including grasslands managed through state and federal landowner incentive programs. She is also the primary investigator of NJAS research on avian communities and contaminant levels in birds in the New Jersey Meadowlands District, and recently completed a report on a two-year avian point count survey and another on metal contaminant levels on marsh birds. Finally last spring she spearheaded a foraging heron and egret survey in the NJ side of the NY/NJ Harbor using citizen scientist effort.

She earned a Ph.D. from Rutgers University for work on ecophysiological and hormonal aspects of wintering and migration in shorebirds. She has over 20 years experience doing research on bird populations, including consulting work for NJ DEP with shorebirds in Delaware Bay, consulting work for the WCS with grassland birds in New York, and work for National Audubon Society on the Western Hemisphere Shorebird Reserve Network during its early stages.

Chip Weseloh

Chip Weseloh is an advisor on Wildlife Toxicology for the Canadian Wildlife Service (CWS) - Ontario Region. He has worked on colonial waterbirds for 40 years and can trace his interest to a 3rd year undergraduate Ecology project. He completed an M.Sc. at Michigan Technological University on the effects of heron droppings on plant distribution within a breeding colony. For his Ph.D., he studied the urban ecology of gulls at Calgary, Alberta, where he individually colour-marked over 2500 Ring-billed Gulls. Following graduation, he became the first Curator of Ornithology at the Provincial Museum of Alberta in Edmonton. He began work for CWS in 1978 in Toronto and has been at the same job ever since. He directs two major long-term avian monitoring projects on the Great Lakes: The Herring Gull Egg Contaminants Monitoring project - an annual surveillance project for contaminants and their effects in gulls - and the Canadian portion of the Great Lakes Binational Colonial Waterbird Census - a decadal monitoring program that censuses all waterbird colonies on the Great Lakes. Both projects have been underway since the early 1970s. The former is the longest running annual contaminants monitoring program for birds in the world and has just completed its 34th year. The latter includes a 57-year database on cormorant numbers on Lake Ontario. Chip is also an active birdwatcher, a co-founder and current co-editor of the Ontario Field Ornithologist.

Chrissy Word

Coming from Florida, Chrissy developed a passion for the environment at a young age. Several pursuits have led to her position as environmental restoration educator. As a NYC high school teacher she developed a program called Urban Green Spaces that connected high school students with opportunities in environmental programs throughout NYC; she helped children in

Harlem start a gardening program; she started an environmental high school internship on the Bronx River and has introduced hundreds of students to the natural environment and stewardship first as an educator at Clearpool Education Center and currently at Rocking the Boat where she is working with students to develop and continue to implement a wading bird survey in the estuary section of the Bronx River among other projects.

As a volunteer, Chrissy worked for two years with the NYCAS in the Project Safeflight Program and has been counting birds for the Cornell Lab's Project Feederwatch for the past seven years. Finally, Chrissy co-founded Butterfly Project in 2004, an all-volunteer organization that works with community and school gardeners to assist in the development of native plants pollinator gardens.

