

## Species Status Assessment

**Class:** Birds  
**Family:** Charadriidae  
**Scientific Name:** *Charadrius melodus melodus*  
**Common Name:** Piping plover

### Species synopsis:

Two subspecies of piping plover breed in three populations in the United States: *C. m. melodus* along the Atlantic Coast, and *C. m. circumcinctus* in the Northern Great Plains and Great Lakes. The Atlantic Coast population is listed as federally threatened and the Great Lakes population is listed as federally endangered.

In New York, piping plovers winter and breed on the north and south shores of Long Island. In 2015 a successful nest on the east shore of Lake Ontario was the first New York inland breeding in more than 30 years. The Long Island population has increased from 166 birds (likely 88 breeding pairs) at 41 sites since the subspecies was first listed as threatened in 1983. The Long Island Colonial Waterbird and Piping Plover survey documented 309 pairs in 2000. In 2010, 390 breeding pairs were documented at 87 active sites.

### I. Status

#### a. Current and Legal Protected Status

- i. **Federal** Great Lakes: Endangered; Atlantic Coast: Threatened  
**Candidate?** No
- ii. **New York** Endangered; SGCN

#### b. Natural Heritage Program Rank

- i. **Global** G3
- ii. **New York** S3B **Tracked by NYNHP?** Yes

### Other Rank:

International Union for Conservation of Nature (IUCN): Vulnerable  
U.S. Shorebird Conservation Plan: Highly Imperiled  
Northern Atlantic Regional Shorebird Plan: Highly Imperiled

**Status Discussion:**

The piping plover is a regular but uncommon breeder and migrant on the sandy beaches and spoil banks of coastal Long Island, especially along the Atlantic Coast and barrier islands. Eastern populations have been increasing since the early 1990s.

**II. Abundance and Distribution Trends**

**a. North America**

**i. Abundance**

declining  increasing  stable  unknown

**ii. Distribution:**

declining  increasing  stable  unknown

**Time frame considered:** Eastern populations increased 1989-2010

Prairie Canada and N. Great Plains populations decreased 1989-2010

**b. Regional**

**i. Abundance**

declining  increasing  stable  unknown

**ii. Distribution:**

declining  increasing  stable  unknown

**Regional Unit Considered:** Atlantic Coast

**Time Frame Considered:** 1989-2010

**c. Adjacent States and Provinces**

**CONNECTICUT**                      **Not Present** \_\_\_\_\_                      **No data** \_\_\_\_\_

**i. Abundance**

\_\_\_ declining    **X** increasing                      \_\_\_ stable                      \_\_\_ unknown

**ii. Distribution:**

\_\_\_ declining    \_\_\_ increasing                      **X** stable                      \_\_\_ unknown

Time frame considered: 2000-2010

Listing Status: \_\_\_\_\_ Threatened \_\_\_\_\_                      SGCN? Yes

**MASSACHUSETTS**                      **Not Present** \_\_\_\_\_                      **No data** \_\_\_\_\_

**i. Abundance**

\_\_\_ declining    **X** increasing                      \_\_\_ stable                      \_\_\_ unknown

**ii. Distribution:**

\_\_\_ declining    \_\_\_ increasing                      **X** stable                      \_\_\_ unknown

Time frame considered: 1985-2010

Listing Status: \_\_\_\_\_ Threatened \_\_\_\_\_                      SGCN? Yes

**NEW JERSEY**                      **Not Present** \_\_\_\_\_                      **No data** \_\_\_\_\_

**i. Abundance**

\_\_\_ declining    \_\_\_ increasing                      **X** stable                      \_\_\_ unknown

**ii. Distribution:**

\_\_\_ declining    \_\_\_ increasing                      **X** stable                      \_\_\_ unknown

Time frame considered: 1986-2010

Listing Status: \_\_\_\_\_ Endangered \_\_\_\_\_                      SGCN? Yes





## **Trends Discussion:**

Piping plovers were common along the Atlantic Coast during much of the 19th century, but nearly disappeared due to excessive hunting for the millinery trade. Following passage of the Migratory Bird Treaty Act in 1918, numbers recovered to a 20th century peak which occurred during the 1940s. The population decline over the last 60 years is attributed to increased development and recreational use of beaches.

The 2010 Atlantic Coast piping plover population estimate was 1,782 pairs, more than double the 1986 estimate of 790 pairs. Discounting apparent increases in New York, New Jersey, and North Carolina between 1986 and 1989, which likely were due in part to increased census effort (USFWS 1996), the population posted a net increase of 86% between 1989 and 2010. The largest net population increase between 1989 and 2010 occurred in New England (266%), followed by New York-New Jersey (56%) (USFWS 2011).

Most recently, the total Atlantic Coast population estimate attained 1,890 pairs in 2007 before declining 6% to 1,782 pairs in 2010; the 2011 preliminary population estimate is 1,759 pairs. Abundance in the New York-New Jersey recovery unit declined by 15% over this short term period from 2007 to 2010 (USFWS 2011)

The Long Island Colonial Waterbird and Piping Plover survey documented 390 breeding pairs in 2010. The population increased steadily from 309 pairs in 2001 to a high of 457 in 2007.

The increase in piping plover pairs over the past twelve years (2000-2012) should be interpreted with some caution. Concomitantly with a decrease in NYSDEC staff time available, local beach clubs, non-governmental organizations, and towns have taken over a significant level of yearly monitoring. Estimating productivity is especially difficult since it requires the near-constant presence of trained monitors on the beach from the arrival of the birds in April until their departure in August. Monitoring for pairs or fledglings in late July or August, as is done on some sites, does not provide sufficient information. In addition, monitoring by some entities may present a conflict of interest. Abundance information from some sources may not have a high-enough level of accuracy and credibility.

The apparent increase in piping plover abundance over the past twelve years has very likely been the result of an intensive protection effort which may not be sustainable in the future. Should this intensive protection cease, a rapid and precipitous decline in productivity, followed by abundance, should be expected for New York.

### Atlantic Coast Piping Plover Population

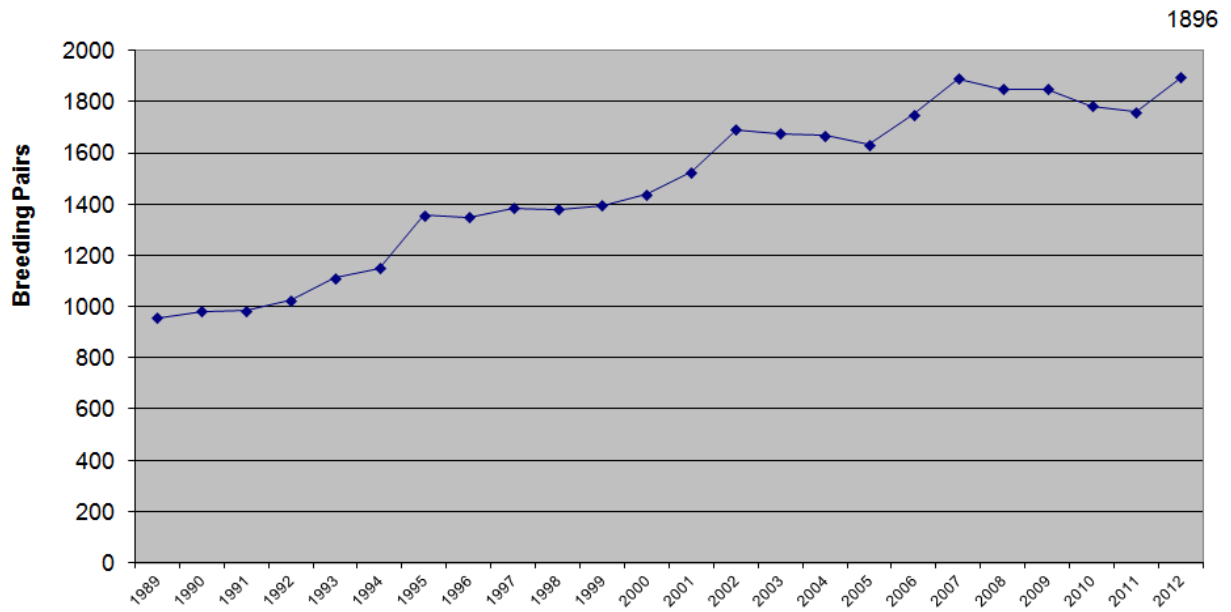


Figure 1: Number of piping plover pairs on Long Island 2000-2012 (NYSDEC)

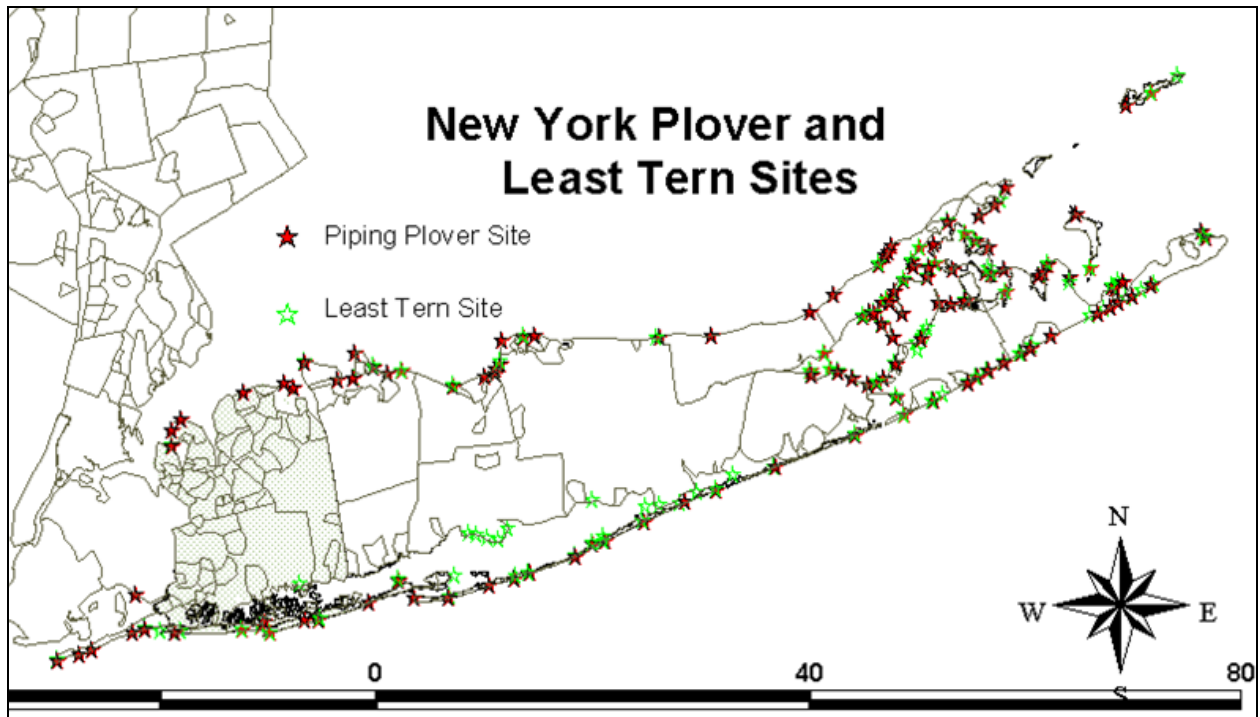
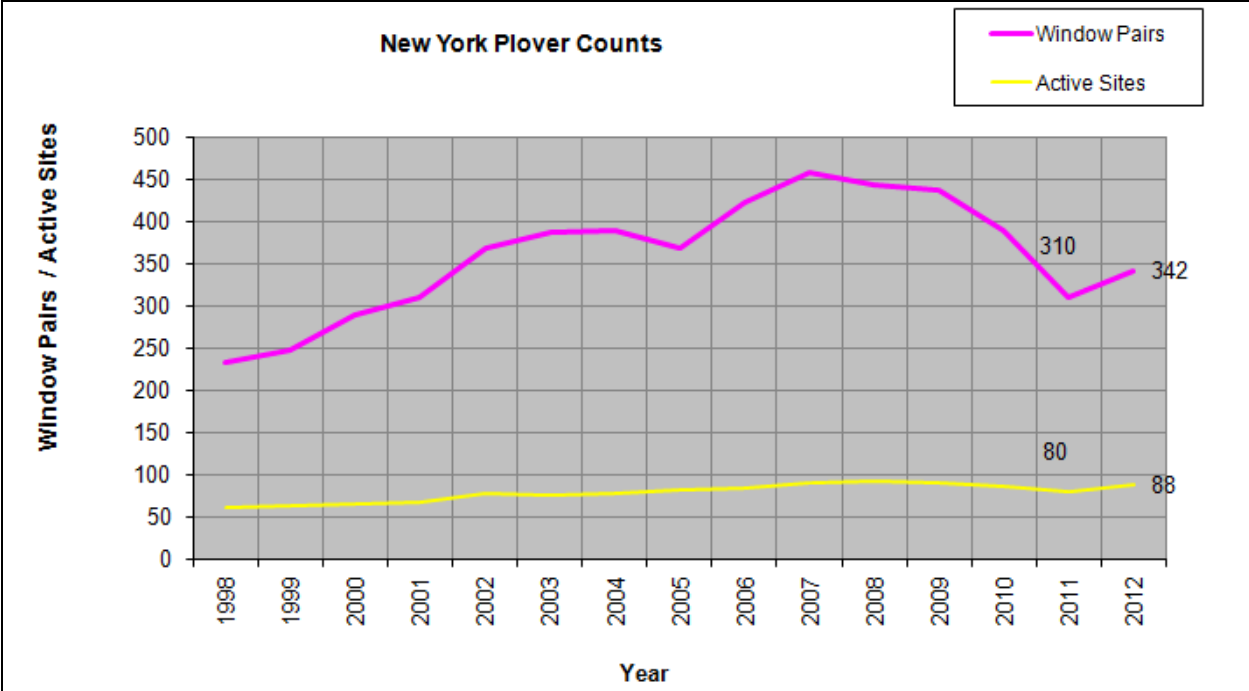


Figure 2. Current piping plover sites in New York (Chip Hamilton, personal communication).



**Figure 3.** Counts of piping plover pairs and active sites in New York (Chip Hamilton, personal communication).





**Figure 4:** Range of piping plover in North America (Birds of North America Online)

**III. New York Rarity, if known:**

<b>Historic</b>	<b><u># of Animals</u></b>	<b><u># of Locations</u></b>	<b><u>% of State</u></b>
<b>prior to 1970</b>	_____	_____	_____
<b>prior to 1980</b>	_____	_____	_____
<b>prior to 1990</b>	<b><u>114 pairs</u></b>	_____	<u>1</u>

**Details of historic occurrence:**

One inland breeding record is known from Sandy Pond in Oswego County in 1984 after a 29-year hiatus (DeBenedictis 1984); no inland breeding occurred again until 2015. A 17-mile stretch between Salmon River and Stony Point in Oswego and Jefferson counties remains designated as Piping Plover Critical Habitat.

There were 114 breeding pairs on Long Island in 1985. The first Breeding Bird Atlas (1980-85) documented occupancy in a total of 75 survey blocks, 60 of which had Confirmed breeding.

<b>Current</b>	<b><u># of Animals</u></b>	<b><u># of Locations</u></b>	<b><u>% of State</u></b>
	<b><u>390 pairs</u></b>	_____	<u>1</u>

**Details of current occurrence:**

The Long Island Colonial Waterbird Survey documented 390 pairs at 87 active sites in 2010; 337 young were fledged. The second Breeding Bird Atlas (2000-05) documented occupancy in a total of 76 survey blocks, 72 of which had Confirmed breeding. There was no change in the percent of blocks occupied between the two Atlas periods.

**New York’s Contribution to Species North American Range:**

**Distribution** (percent of NY where species occurs)

- X 0-5%
- \_\_\_\_\_ 6-10%
- \_\_\_\_\_ 11-25%
- \_\_\_\_\_ 26-50%
- \_\_\_\_\_ >50%

**Abundance** (within NY distribution)

- \_\_\_ abundant
- \_\_\_ common
- \_\_\_ fairly common
- X uncommon
- \_\_\_ rare

**NY's Contribution to North American range**

- 0-5%
- 6-10%
- 11-25%
- 26-50%
- >50%

**Classification of New York Range**

- Core
- Peripheral
- Disjunct

**Distance to core population:**

\_\_\_\_\_

**Rarity Discussion:**

**IV. Primary Habitat or Community Type:**

1. Maritime Intertidal Gravel/Sand Beach
2. Estuarine, Brackish Intertidal, Benthic Geomorphology, Tidal Flat
3. Maritime Dunes
4. Marine Dredge Spoil Shore
5. Brackish Interdunal Swales

**Habitat or Community Type Trend in New York:**

Declining      \_\_\_ Stable      \_\_\_ Increasing      \_\_\_ Unknown

Time frame of decline/increase: \_\_\_\_\_

Habitat Specialist?       Yes      \_\_\_ No

Indicator Species?       Yes      \_\_\_ No

**Habitat Discussion:**

Along the Atlantic Coast piping plovers breed on sparsely vegetated beaches composed of sand, gravel, or cobble, frequently adjacent to sand dunes (Haig 1986, Brown 1987, Burger 1987). Garber (1999) reported on piping plovers breeding at JFK Airport on newly deposited dredge spoils near a busy taxiway and directly under the flight path of hundreds of planes per day. The area was newly-created, highly disturbed, and not immediately adjacent to the shore.

**V. New York Species Demographics and Life History**

Breeder in New York

Summer Resident

Winter Resident

\_\_\_ Anadromous

\_\_\_ Non-breeder in New York

\_\_\_ Summer Resident

\_\_\_ Winter Resident

\_\_\_ Catadromous

\_\_\_ Migratory only

\_\_\_ Unknown

**Species Demographics and Life History Discussion:**

From Ellicott-Smith and Haig (2004): Piping plovers may breed in the first spring after hatching. Although some birds do not obtain a mate each year, most birds breed each year. There are no

estimates of lifetime reproductive success. In New York, 13% of 159 females lived to be five years or older, while 28% of 139 males exceeded five years of age (Wilcox 1959). Twelve of these birds reached 8-11 years of age. Natal philopatry varies from 1.6% in Nova Scotia (Cairns 1982) to 70% at Lake of the Woods, MN (Haig and Oring 1987). First-year birds may return more frequently to the local area than to a specific natal site. No sex bias in return rates to natal sites or areas in New York (Wilcox 1959) and Manitoba (Haig and Oring 1988), or in distances dispersed from natal sites. Fidelity ranges from 24.6% in New York (Wilcox 1959) to 84% at Lake of the Woods, MN (Wiens and Cuthbert 1988). Birds not only return to specific former sites but also use nearby sites if available. Fidelity may be low in areas where breeding habitat is ephemeral (Knetter et al. 2002). Where few local options exist, may disperse 300-600 km to the next breeding site (Haig and Oring 1988). Males return to former breeding sites only slightly more often than females in Manitoba and no sex bias was detected in dispersal distance (Haig and Oring 1988). However, females dispersed from former breeding sites in Michigan more frequently than males, and traveled greater distances (Wemmer 2000).

Productivity (chicks fledged/pair) of the Long Island population was 0.9 in 1987, peaked at 1.55 in 2006, and fell to 0.79 in 2010.

## **VI. Threats:**

Commercial, residential, and recreational development have decreased the amount of coastal habitat available for piping plovers to nest and feed.

Predation by introduced predators such as cats and native predators attracted by ample edible garbage and exacerbated by human landscaping and activities, such as gulls, crows, and red fox is an important and pervasive factor limiting productivity. Feral and pet cats, raccoons, and red foxes roam the dunes and nearby areas, causing nest abandonment, predation of eggs and chicks, and even in some cases, the death of parents trying to defend the nest. Even when a nest is protected with an enclosure, disturbance from predators circling the nest often leads to nest abandonment by the adults. The practice of planting trees, especially pines, near the beach attracts crows, an effective predator which would normally not be as close to piping plover nests. These factors combined raise predation significantly over natural levels and overwhelm the plovers' capacity and adaptations for predation avoidance.

Beach nourishment projects undertaken by the Army Corps of Engineers and local municipalities that provide storm protection to developed areas have the potential to provide nesting habitat by increasing the amount of beach area above the high tide line. However, these projects also effectively prevent the natural process of beach overwash and inlet formation, which has historically produced the best foraging habitat for plovers, in addition to creating un-natural systems with large sand dunes and habitats easily colonized by red foxes.

Human disturbance often curtails breeding success. Foot and vehicular traffic may crush nests or young. Pets, especially dogs, may harass the birds. Excessive disturbance may cause the parents to desert the nest, exposing eggs or chicks to the summer sun and predators. Interruption of feeding may stress juvenile birds during critical periods in their development. Fireworks are known to cause nest abandonment.

Rising sea levels are expected to inundate the coastal beaches, barrier islands, and mud flats that provide habitat for shorebirds; storm tides may inundate nests (North American Bird Conservation Initiative 2010). Piping plover was classified as “moderately vulnerable” to predicted climate change in an assessment of vulnerability conducted by the New York Natural Heritage Program (Schlesinger et al. 2011).

West Nile virus and avian influenza are a minor threat to piping plovers (USFWS 2011).

**Are there regulatory mechanisms that protect the species or its habitat in New York?**

No       Unknown

Yes

The piping plover is listed as an endangered species in New York and is protected by Environmental Conservation Law (ECL) section 11-0535 and the New York Code of Rules and Regulations (6 NYCRR Part 182). A permit is required for any proposed project that may result in a take of a species listed as Threatened or Endangered, including, but not limited to, actions that may kill or harm individual animals or result in the adverse modification, degradation or destruction of habitat occupied by the listed species. It is also protected as a federally-listed endangered (Great Lakes population) species and threatened (Atlantic coast) species.

Piping plover is protected under the Migratory Bird Treaty Act of 1918. The Tidal Wetlands Act provides protection for all tidal wetlands under Article 25 of the NYS Conservation Law.

**Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:**

Local conservation efforts on breeding sites include closing portions of beaches where birds are nesting, construction of predator exclosures around nests, avian and mammalian predator control, mitigation of water level regulation policies, vegetation control, and, in some cases, creation of artificial habitat (Haig et al. 1988, Mayer and Ryan 1991a, 1991b, Melvin et al. 1991). Piping plovers are dependent upon the continued protection and management of their sandy beach habitats, which are subject to high levels of recreational activities. Conservation actions following IUCN taxonomy are categorized in the table below.

<b>Conservation Actions</b>	
<b>Action Category</b>	<b>Action</b>
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource & Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Invasive/Problematic Species Control
Land/Water Management	Habitat & Natural Process Restoration
Education & Awareness	Awareness & Communications
Species Management	Species Recovery (nesting platforms)
External Capacity Building	Alliance & Partnership Development

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for beach and island ground-nesting birds, and for piping plover specifically.

**Easement acquisition:**

- \_\_\_ Protect nesting and foraging habitat and associated upland buffers through acquisition, easement and through regulatory constraints on development.

**Educational signs:**

- \_\_\_ Post interpretive signage at all public nesting locations.

**Fact sheet:**

- \_\_\_ Update Endangered Species fact sheets to reflect current status of species in New York.

**Habitat management:**

- \_\_\_ Encourage the establishment of nesting and foraging populations by protecting newly created suitable habitat produced as a result of overwash and/or breaches with symbolic fencing and posting.
- \_\_\_ Encourage and support a "no net increase" in shoreline armoring along Long Island bays and harbors.
- \_\_\_ Encourage compliance with the recommendations for habitat and recreation management contained within Federal and State Recovery Plans for beach-nesting species.
- \_\_\_ Encourage landowners to control predators that represent significant threats to the viability of species. Options to be considered include control of predators through contact with a licensed nuisance wildlife control person, allowing hunting and/or trapping during legally specified seasons and habitat modification to remove roosting or denning sites of nest predators. It is recommended that the mechanism for predator control by landowners be done in consultation with DEC.

- Where possible, protect nesting areas from human disturbance by posting, electric fencing and symbolic fencing. Also, control density and composition of vegetation at breeding sites to maintain suitability for nesting. Accomplish through planting of fresh spoil sites with desired species and grading and/or spoil deposition at sites where vegetation has become too dense.

**Habitat research:**

- Support and encourage habitat research projects that would help define preferred habitat in order to guide restoration efforts and focus habitat protection efforts.
- Assess beach driving activities, locations and impacts.

**Habitat restoration:**

- Encourage and support policies that purchase storm-damaged homes within the coastal erosion hazard area for the purposes of beach and dune habitat restoration.
- Where possible, reestablish high quality foraging habitats by either manufacturing sand flats, mudflats or overwash fans or allowing such formations to build naturally. Also, ephemeral pool creation adjacent to beach nesting habitat will be pursued.
- Where possible, nesting habitat will be expanded to create new nesting opportunities for species. This will be accomplished through dredge spoil management, input into beach re-nourishment projects and de-vegetation of formally suitable sites.

**Life history research:**

- Support research that addresses priorities established in the Piping Plover Recovery Plan and similar planning documents that have been prepared through interstate and interagency working groups.

**Other action:**

- Minimize and mitigate habitat impacts from development and public works projects by pursuing a goal of no net loss of habitat at a project location.
- Establish and/or maintain enforcement of no-work windows within breeding habitats during the breeding season (April 1 - September 1 on Long Island).
- Educate the public on the impacts of domestic cats on birds and encourage landowners to keep their cats indoors.
- Secure funding to initiate new beach-dependent species programs.

**Population monitoring:**

- Annual surveys will track population status at known breeding locations.

**Regional management plan:**

- Develop a long term management plan that establishes population objectives for all beach-dependent breeding birds and management recommendations to achieve them.

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