Species Status Assessment

Common Name: Piping plover **Date Updated:** April 2025

Scientific Name: *Charadrius melodus* **Updated By:** NYSDEC

Class: Aves

Family: Charadriidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

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. Breeding no longer occurs inland. 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 legal protected Status

i. **Federal:** Great Lakes: Endangered; Atlantic Coast: Threatened **Candidate:** No

ii. **New York:** Endangered

b. Natural Heritage Program

i. **Global:** G3

ii. **New York:** S3B **Tracked by NYNHP?:** Yes

Other Ranks:

-NYS 2025 SGCN Status: Species of Greatest Conservation Need
-IUCN Red List: Near Threatened
-Northeast Regional SGCN: RSGCN

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

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Increasing	Increasing	Eastern populations increased 1989-2010 Prairie Canada and N. Great Plains populations decreased 1989-2010		-
Northeastern US	Yes	Increasing	Stable	1989-2010		-
New York	Yes	Declining	Declining	2001-2010		Yes
Connecticut	Yes	Increasing	Stable	2000-2010	Threatened	Yes
Massachusetts	Yes	Increasing	Stable	1985-2010	Threatened	Yes
New Jersey	Yes	Stable	Stable	1986-2010	Endangered	Yes
Pennsylvania	No	Extirpated	Extirpated		Extirpated breeder; Endangered migrant	Yes
Vermont	No	-	-			-
Ontario	Yes	Unknown	Unknown	5 pairs in 2003	Endangered	-
Quebec	Yes	Increasing	Increasing	1991-1996	Endangered	-

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The NYSDEC conducts annual surveys on Long Island.

Trends Discussion *(insert map of North American/regional distribution and status):*

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.

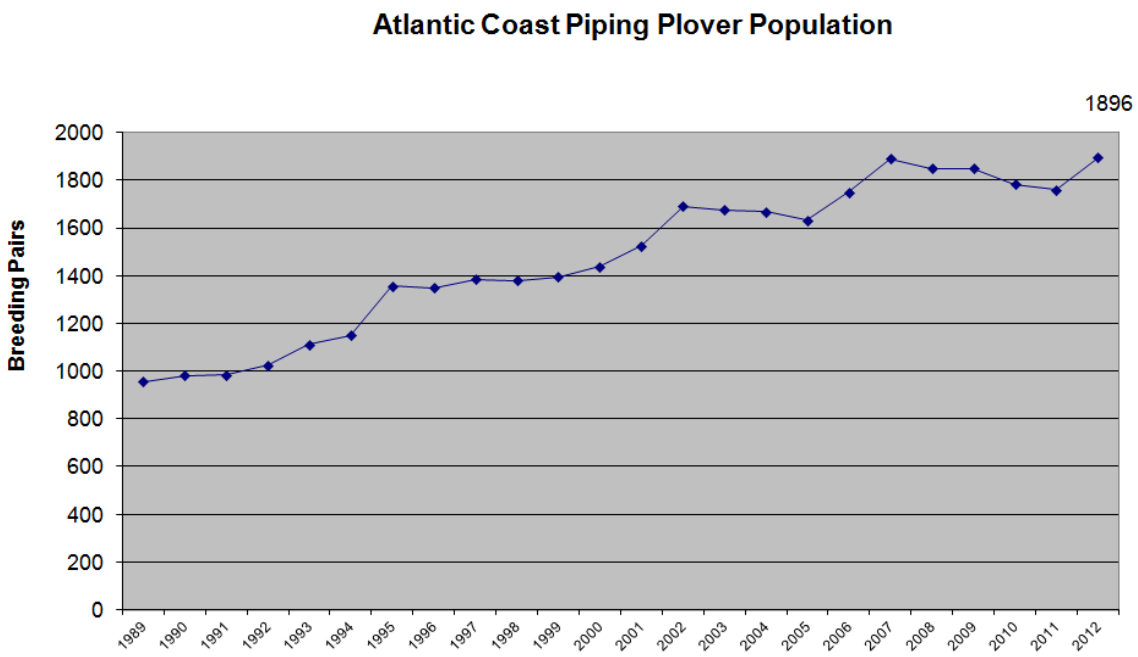

Figure 1. Number of piping plover pairs on Long Island 2000-2012 (NYSDEC).

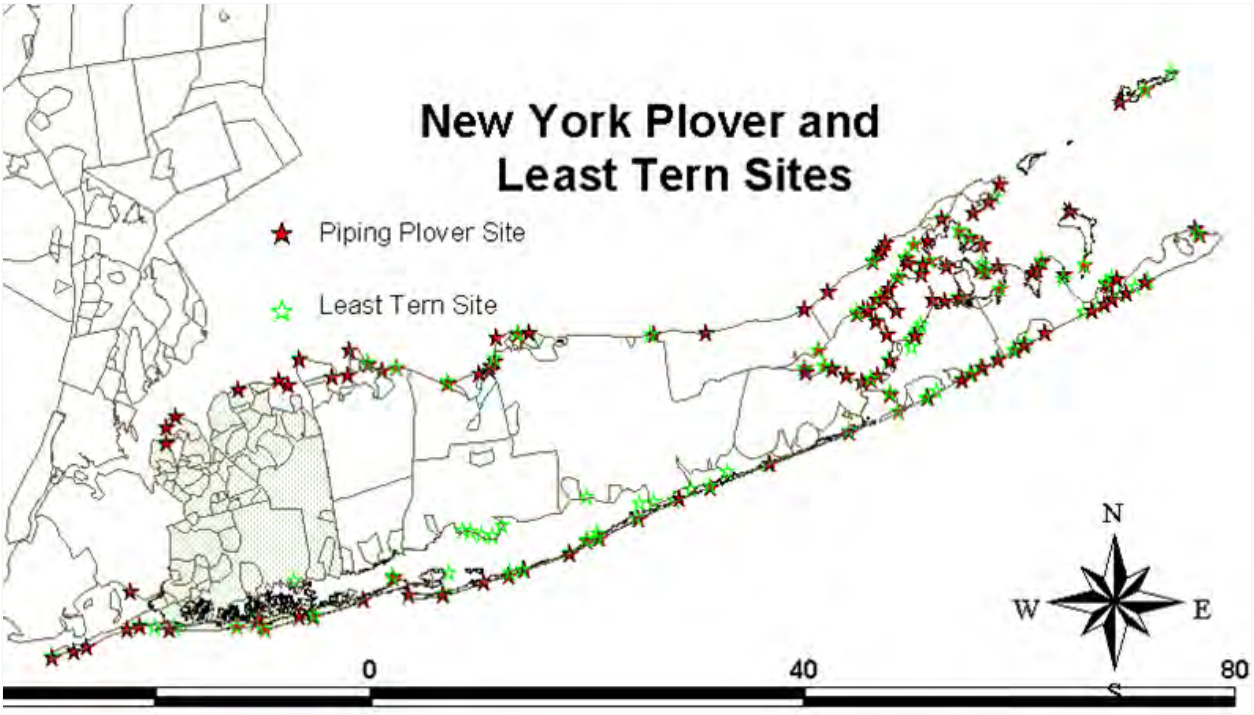

Figure 2. Current piping plover sites in New York (Chip Hamilton, personal communication)

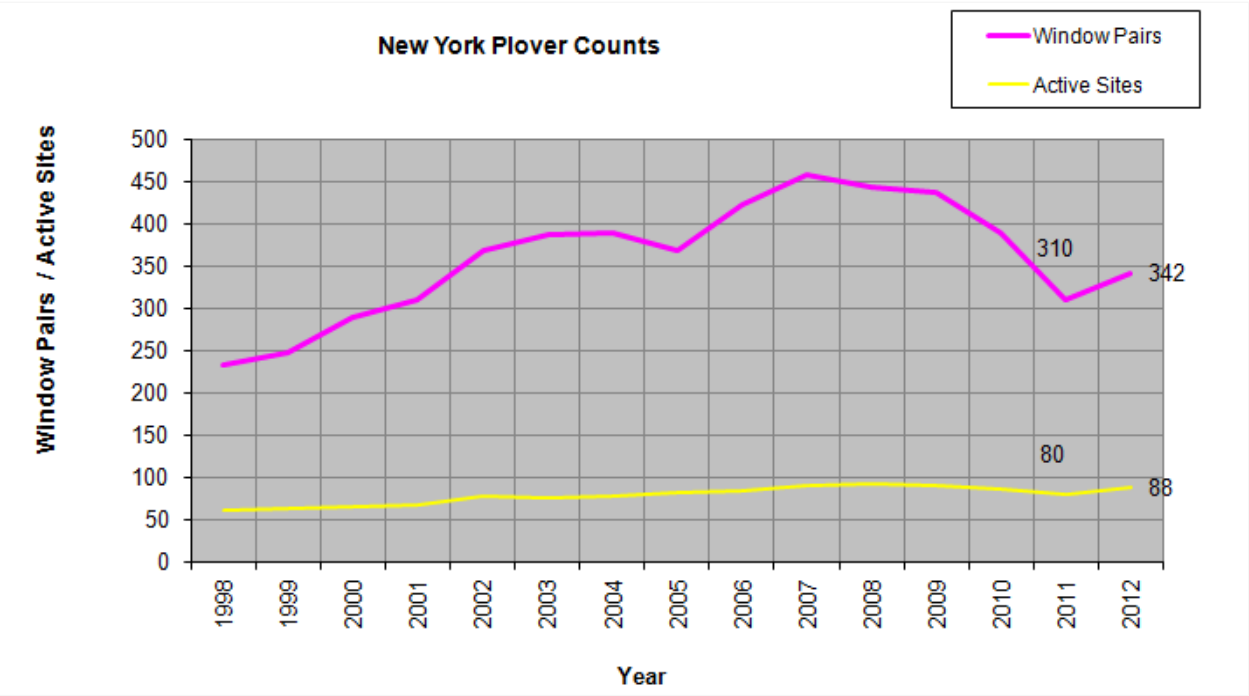

Figure 3. Counts of piping plover pairs and active sites in New York (Chip Hamilton, personal communication).

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

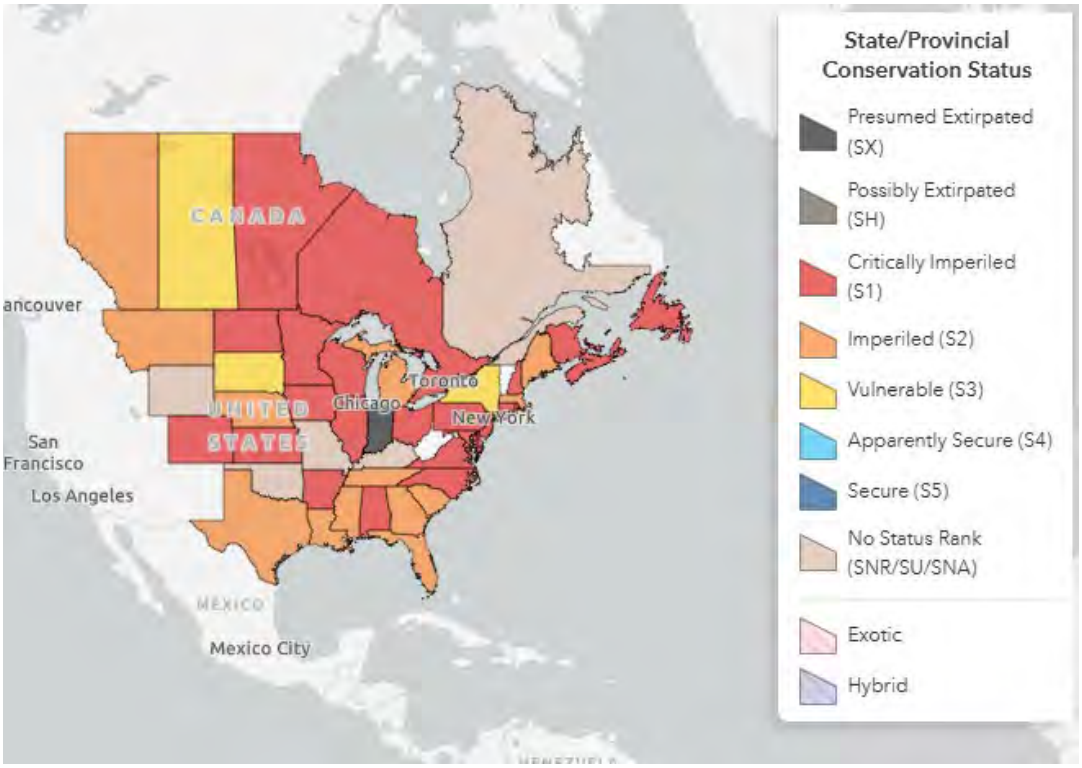

Figure 5. Conservation status of piping plover in North America (NatureServe 2024).

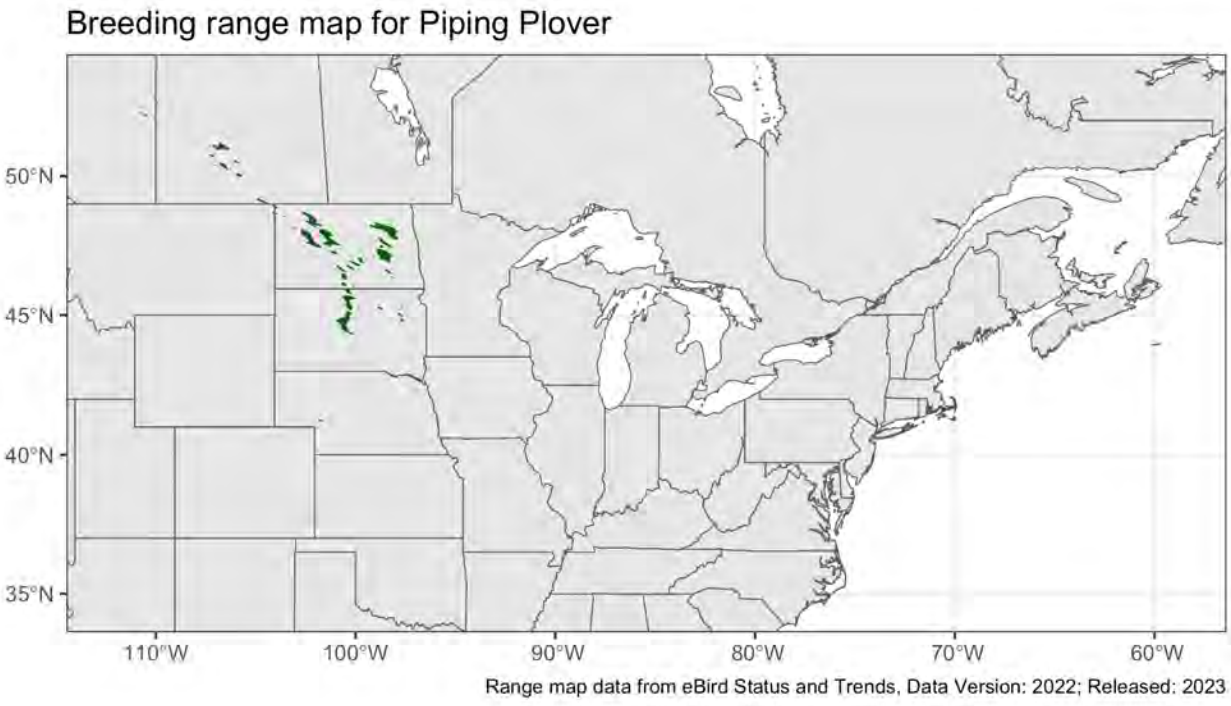

Figure 6. Breeding range of piping plover (eBird).

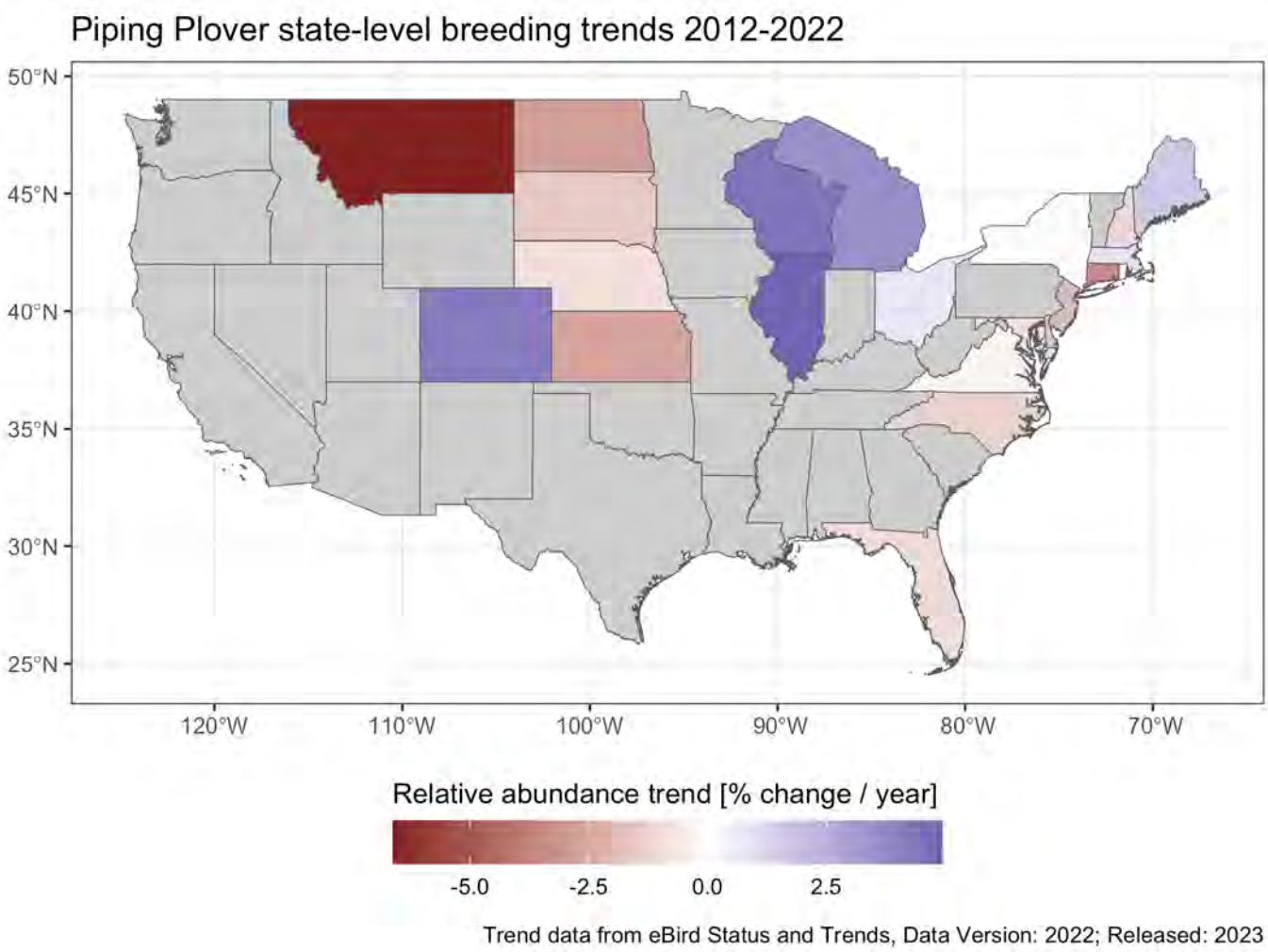

Figure 7. Breeding trends, by state, of piping plover (eBird).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

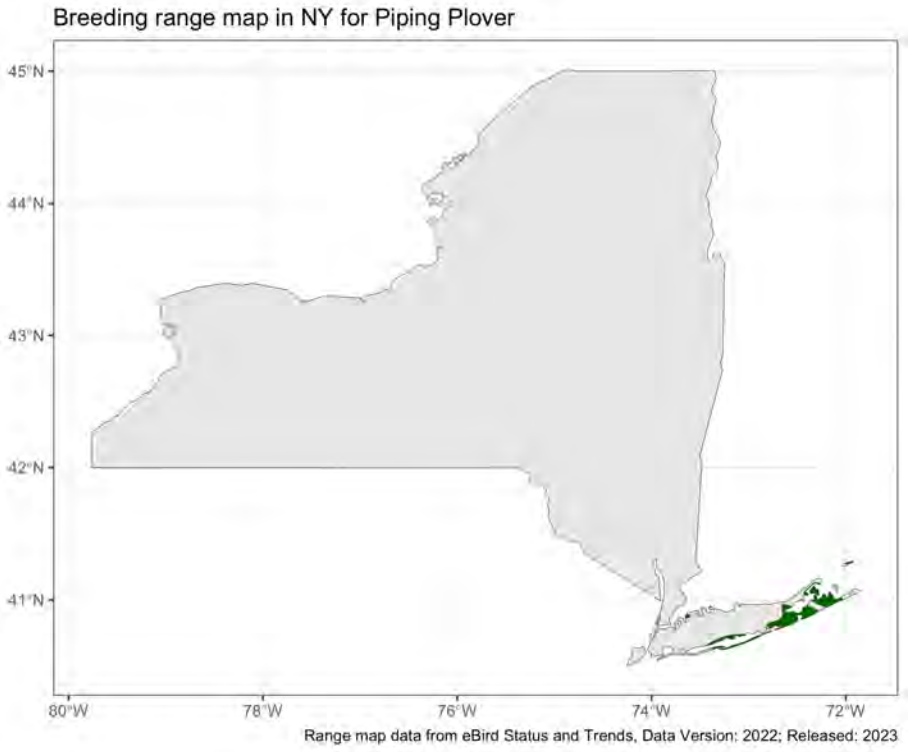

Figure 8. New York State breeding range of piping plover (eBird).

Details of historic and current occurrence:

One inland breeding record is known from Sandy Pond in Oswego County in 1984 after a 29-year hiatus (DeBenedictis 1984); no breeding has occurred inland since. 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.

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.

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 75 blocks, 1.4% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 76 blocks, 1.4% of the survey blocks statewide (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333

blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA, of which 1,815 are considered priority blocks. To date, piping plover has been documented in 67 priority blocks, 0.9% of all priority blocks statewide during the third BBA (NY BBA III Overview, 2024).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

a. Maritime Intertidal Gravel/ Sand Beach
b. Estuarine, Brackish Intertidal, Benthic Geomorphology, Tidal Flat
c. Maritime Dunes
d. Marine Dredge Spoil Shore
e. Brackish Interdunal Swales

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	Yes	Declining	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

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. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

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 *(from NY 2015 SWAP or newly described):*

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
6. Human Intrusions & Disturbance	6.1 Recreational Activities	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
7. Natural System Modifications	7.3 Other Ecosystem Modifications	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
8. Invasive & Other Problematic Species	8.1 Invasive Non-Native Plants & Animals	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
8. Invasive & Other Problematic Species	8.2 Problematic Native Plants & Animals	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.2 Industrial & Military Effluents	9.2.1 Oil spills	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
11. Climate Change	11.1 Habitat Shifting & Alteration	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
11. Climate Change	11.5 Storms & Severe Weather	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 1. Threats to piping plover.

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 exclosure, 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?

Yes: X **No: _____** **Unknown: _____**

If yes, describe mechanism and whether adequate to protect species/habitat:

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.

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

Action Category	Action	Description
A.1 Direct Habitat Management	A.1.0.0.0 Direct habitat management	Site/Area management
A.1 Direct Habitat Management	A.1.1.0.0 Manage plants, animals, fungi, or bacteria	Invasive/Problematic species control
A.2 Direct Species Management	A.2.1.1.2 Nest boxes, roosts, and other artificial maternities	Species Recovery (nesting platforms)
B.3 Outreach	B.3.1.4.0 Public outreach and information	Awareness & Communications
C.6 Design and Plan Conservation	C.6.5.0.0 Conservation planning	-Site/Area protection -Resource/Habitat Protection
C.6 Design and Plan Conservation	C.6.5.1.3 Develop a conservation, management, or restoration plan for protected private lands	Habitat/Natural process restoration
C.10 Institutional Development	C.10.2.0.0 External support and organizational development	Alliance and Partnership Development

Table 2. Recommended conservation actions for piping plover.

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