

Species Status Assessment

Class: Birds
Family: Sternidae
Scientific Name: *Sternula antillarum*
Common Name: Least tern

Species synopsis:

The least tern was reclassified from the paraphyletic genus *Sterna* to the genus *Sternula* (Banks et al. 2006). Least terns nest along the Atlantic Coast from southern Maine to Florida and along the Gulf of Mexico to Texas. In New York, least terns are present from May through September, breeding on the north and south shores of Long Island.

The second Breeding Bird Atlas (2000-05) showed a shift in distribution since the first Atlas (1980-85) that resulted in a gap along the south shore of Long Island and re-population of areas on the north shore. This shift coincides with expansion of the federally endangered piping plover population and accompanying management and protection efforts, which also benefit least terns. Despite annual variability, the number of breeding pairs of least tern has remained stable from 2001 to 2010 according to the Long Island Colonial Waterbird Survey. Breeding Bird Survey data for the United States show a non-significant decline of -2.8% per year from 1999-2009; the data are problematic because BBS methods are not conducive to surveying beach-nesting species.

I. Status

a. Current and Legal Protected Status

- i. **Federal** Endangered (interior pop.) **Candidate?** N/A
- ii. **New York** Threatened; SGCN

b. Natural Heritage Program Rank

- i. **Global** G4
- ii. **New York** S3B **Tracked by NYNHP?** Yes

Other Rank:

The interior population (central U.S.) has been listed as endangered since 1985.
USFWS Bird of Conservation Concern
Species of Northeast Regional Conservation Concern (Therres 1999)
IUCN – Least Concern

Status Discussion:

Least tern is a common local breeder and a common to abundant migrant on Long Island. It is a rare visitant elsewhere in New York. Populations are increasing in New Jersey and Massachusetts but declining in Connecticut. Least tern is ranked as Vulnerable in New York and as Imperiled in Massachusetts and Connecticut. It is ranked as Critically Imperiled in New Jersey.

II. Abundance and Distribution Trends

a. North America

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Time frame considered: 1999-2009

b. Regional

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Regional Unit Considered: Northeast

Time Frame Considered: 1999-2009

c. Adjacent States and Provinces

CONNECTICUT Not Present _____ No data _____

i. Abundance

declining ___ increasing ___ stable ___ unknown

ii. Distribution:

declining ___ increasing ___ stable ___ unknown

Time frame considered: 1998-2004

Listing Status: _____ Threatened _____ SGCN? Yes

MASSACHUSETTS Not Present _____ No data _____

i. Abundance

___ declining increasing ___ stable ___ unknown

ii. Distribution:

___ declining increasing ___ stable ___ unknown

Time frame considered: 1990-2004

Listing Status: _____ Special Concern _____ SGCN? Yes

NEW JERSEY Not Present _____ No data _____

i. Abundance

___ declining increasing ___ stable ___ unknown

ii. Distribution:

___ declining increasing ___ stable ___ unknown

Time frame considered: 1976-2006

Listing Status: _____ Endangered _____ SGCN? Yes

ONTARIO	Not Present <u> X </u>	No data _____
PENNSYLVANIA	Not Present <u> X </u>	No data _____
QUEBEC	Not Present <u> X </u>	No data _____
VERMONT	Not Present <u> X </u>	No data _____

d. NEW YORK No data _____

i. Abundance

 declining increasing X stable unknown

ii. Distribution:

 declining increasing X stable unknown

Time frame considered: 2000-2010 (distribution shifted; see below) _____

Monitoring in New York.

Surveys are conducted annually for the Long Island Colonial Waterbird Survey.

Trends Discussion:

Least terns were extirpated from New York from 1882 until 1926 (Cruikshank 1942). By the mid-1970s, colonies had been established around much of coastal New York with as many as 2,600 pairs nesting at 29 to 47 colonies (Peterson 1988).

The species was listed as endangered in New York in 1983. During the mid-1980s, there were as many as 3,000 pairs at 39 to 59 sites. Through the 1990s, the population averaged 2,500 to 3,500 pairs at 40 to 60 sites each year. Because populations appeared to be stable, least tern was reclassified as a threatened species in New York in 1999.

Wasilco (2008) noted changes in the distribution of least tern that became apparent during the second Breeding Bird Atlas survey. Areas on the north shore that appeared as gaps during the first Atlas have been filled with breeding records while areas on the south shore have been abandoned. This shift coincides with expansion of piping plover nesting and accompanying management and protection efforts, which also benefit least terns.

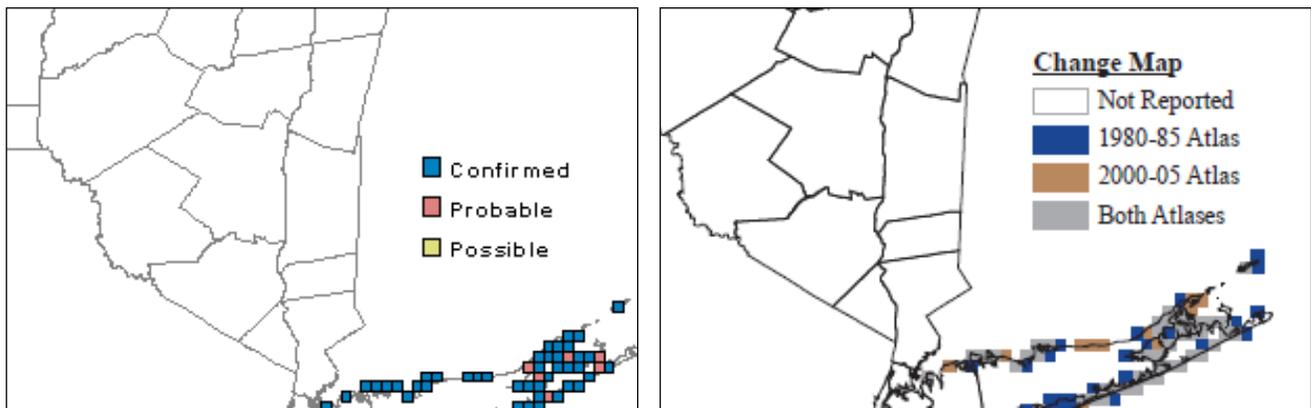


Figure 1: Distribution of least tern in New York during the first Atlas (left), and change in distribution of least tern since the first Atlas (McGowan and Corwin 2008).

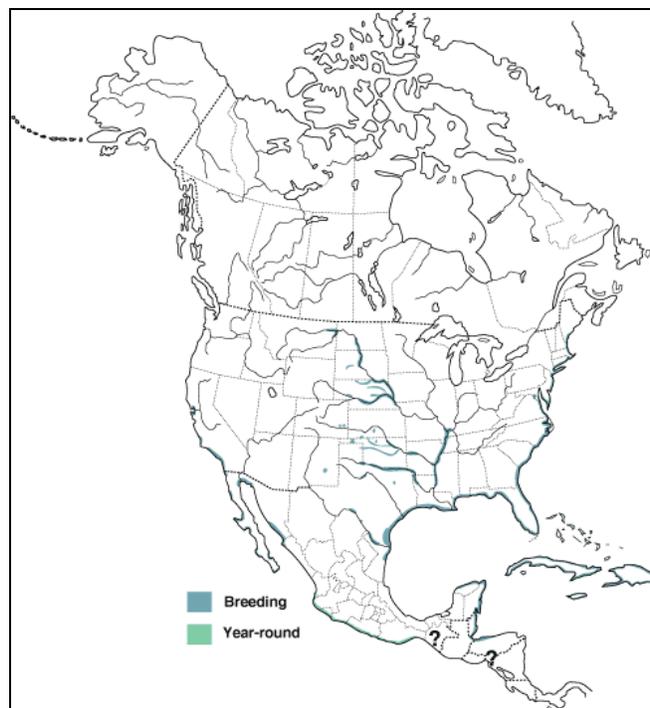


Figure 2: Distribution of least tern in North America (Birds of North America Online).

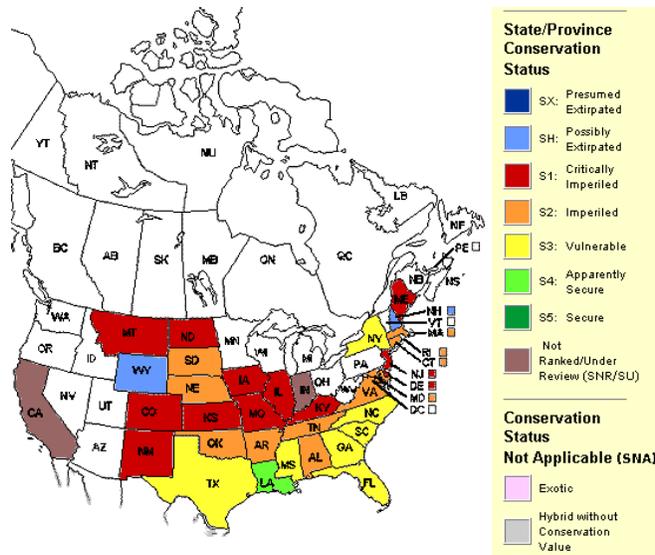


Figure 3: Conservation status of least tern in the United States (NatureServe 2012).

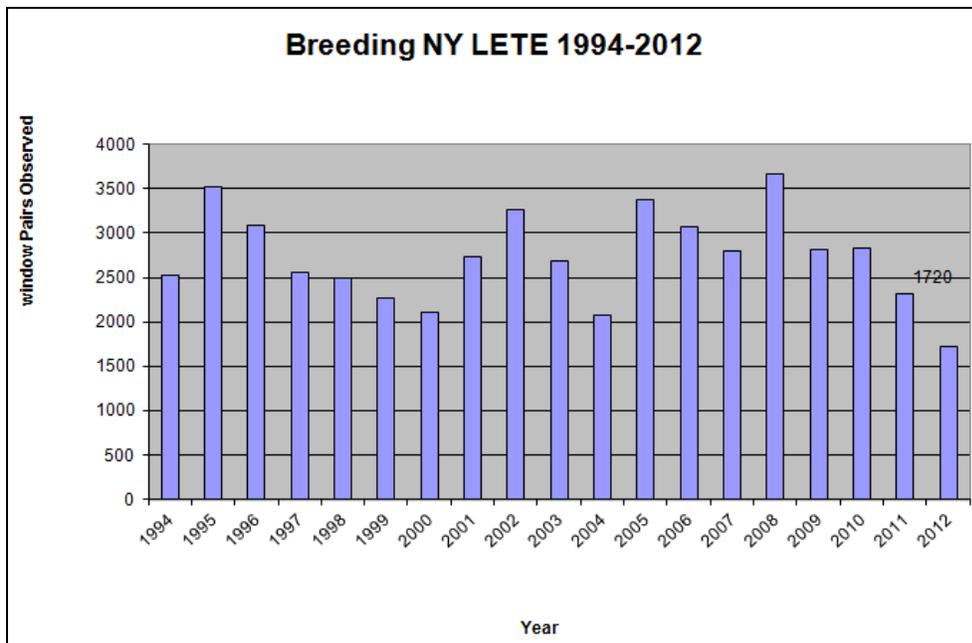


Figure 4: Number of least tern breeding pairs in New York, 1994-2012 (Chip Hamilton, personal communication).

III. New York Rarity, if known:

Historic	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
prior to 1970	_____	_____	_____
prior to 1980	<u>1,719-2,628 pairs</u>	<u>29-47</u>	_____
prior to 1990	_____	_____	_____

Details of historic occurrence:

Nesting was re-established in 1926 after extirpation due to the millinery trade in 1882. By the 1970s, colonies were documented in most of coastal New York from Staten Island to the Peconic Bay and Fishers Island, as far west along the north shore to Eaton’s Neck where 851 pairs nested in 1976 (Peterson 1988). During the 1970s, surveys documented 1,719 to 2,628 pairs at 29 to 47 active sites on the north and south shores of Long Island.

Current	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
	<u>2,832 pairs</u>	<u>59</u>	_____

Details of current occurrence:

The Long Island Colonial Waterbird Survey documented 2,832 pairs of nesting least terns at 59 active sites (out of 173 sites) in 2010. Surveys conducted from 2001 through 2009 show relatively stable numbers despite some annual variability.

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
- X common
- ___ fairly common
- ___ uncommon
- ___ rare

NY’s Contribution to North American range

- X 0-5%

recreate the preferred sandy conditions. They will nest on dredge material, and are capable of colonizing newly available areas.

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:

Most least terns begin breeding in their third year (Massey and Atwood 1981). Adults typically attempt to breed every year once they have started nesting. Only one successful brood is produced per season. Young of the year move from the natal colony within few weeks of fledging. Some terns banded as chicks were re-sighted breeding for the first time far from their natal area. One chick that was banded on Gulf Coast of Texas later nested in Kansas (Boyd and Thompson 1985).

Exposure is the greatest cause of mortality. Eggs and chicks frequently are killed by storm tide flooding in coastal areas, flooding of river sandbars, and sheet flooding of salt flats or mudflats. On sloping dredge piles, eggs have been swept out of nests during heavy rains. Eggs can die when exposed to cold or heat when adults are kept away from nests by human intruders, predators, or human recreation near nests. Eggs are sometimes buried by drifting sand from strong winds.

There is limited information of lifetime reproductive success. In California, lifetime productivity is estimated as 1.49 fledglings/adult on basis of calculated breeding life of 9.6 years (Massey et al. 1992). Substantial variation in estimated productivity relates to annual variation in colony outcomes, difficulty in locating young that fledge, and uncertainty about contribution of re-nesting.

Record longevity is 24 years, 1 month for a least tern banded in Massachusetts and recovered in New Jersey (Klimkiewicz and Futcher 1989).

VI. Threats:

As a beach-nesting bird, least tern chicks and eggs are lost each year to beach maintenance equipment and during annual Fourth of July fireworks and associated nighttime human presence on nesting areas. Airboats, off-road vehicles, and human recreationists can be detrimental to eggs and chicks. Wasilco (2008) suggests that disturbance by human recreationists has pushed least terns to start new colonies in the same areas where piping plovers breed, thereby benefiting from the protection afforded this endangered species.

Vegetative succession and lack of new dredge spoil are likely reasons for loss of tern colonies on the islands within the south shore bays of Long Island. Remaining habitats are subject to rising sea levels due to global climate change, and to storm surges (North American Bird Conservation Initiative 2010). In an assessment of vulnerability to predicted climate change conducted by the New York Natural Heritage Program, least tern was identified as a second-priority species whose sensitivity should be assessed in the future (Schlesinger et al. 2011).

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

No Unknown

Yes

The least tern is listed as a threatened 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.

Least terns are 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. Least terns benefit from protection provided to federally-endangered piping plovers, as the breeding habitat is shared.

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

Colony size and repeated use of nesting areas appear limited in part by predators or human disturbance at natural nesting sites (Jackson and Jackson 1985). Where these factors are eliminated or controlled, nesting pairs sometimes increase. Conservation actions following IUCN taxonomy are categorized in the table below.

Conservation Actions	
Action Category	Action
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, which includes least tern.

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 Tern Management Handbook (Kress and Hall 2002) 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.

VII. References

Banks, R.C., C. Cicero, J.L. Dunn, A.W. Kratter, P.C. Rasmussen, J.V. Remsen Jr., J.D. Rising, and D.F. Stotz. 2006. Forty-seventh supplement to the American Ornithologists' Union Check-list of North American Birds. *The Auk* 123(3):926-936.

Boyd, R. L. and B. C. Thompson. 1985. Evidence for reproductive mixing of Least Tern populations. *J. Field Ornithol.* 56:405-406.

Engstrom, T., G. S. Butcher, and J. D. Lowe. 1990. Population trends in the Least Tern (*Sterna antillarum*) from Maine to Virginia: 1975-1986. Pages 130-138 in Survey designs and statistical methods for the estimation of avian population trends. (Sauer, J. R. and S. Droege, Eds.) U.S. Fish Wildl. Serv. Biol. Rep. 90(1).

Jackson, J. A. and B. J. S. Jackson. 1985. Status, dispersion, and population changes of the Least Tern in coastal Mississippi. Colon. Waterbirds 8:54-62.

Klimkiewicz, K. M. and A. G. Fitcher. 1989. Longevity records of North American birds, Supplement 1. J. Field Ornithol. 60:469-494.

Kress, S.W. and C.S. Hall. 2002. Tern Management Handbook: Coastal Northeastern United States and Atlantic Canada. United States Fish and Wildlife Service, Hadley, MA. 165pp.

Massey, B. W. and J. L. Atwood. 1981. Second-wave nesting of the California Least Tern: age composition and reproductive success. Auk 98:596-605.

Massey, B. W., D. W. Bradley, and J. L. Atwood. 1992. Demography of a California Least Tern colony including effects of the 1982-1983 El Niño. Condor 94:976-983.

North American Bird Conservation Initiative, U.S. Committee. 2010. The State of the Birds 2010 Report on Climate Change, United States of America. U.S. Department of the Interior: Washington, DC.

Peterson, D.M. 1988. Least tern (*Sterna antillarum*). Pages 182-83 in The Atlas of Breeding Birds in New York State (R.F. Andrie and J.R. Carroll, eds.). Cornell University Press, Ithaca, NY.

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

Spendelov, J. A. and S. R. Patton. 1988. National atlas of coastal waterbird colonies in the contiguous United States: 1976-1982. U.S. Fish Wildl. Serv. Biol. Rep. 88(5).

Therres, G.D. 1999. Wildlife species of regional conservation concern in the northeastern United States. Northeast Wildlife 54:93-100.

Thompson, Bruce C., Jerome A. Jackson, Joanna Burger, Laura A. Hill, Eileen M. Kirsch and Jonathan L. Atwood. 1997. Least Tern (*Sternula antillarum*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/290> doi:10.2173/bna.290

Wasilco, M. 2008. Least tern, *Sternula antillarum*. Pages 260-61 in The second atlas of breeding birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.

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