Species Status Assessment

Common Name:	Barn Swallow	**Date Updated:**	2024-12-20
Scientific Name:	*Hirundo rustica*	**Updated By:**	tgh
Class:	Aves		
Family:	Hirundinidae		

Species Synopsis

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

Barn swallows are a very widespread bird and long-distance migrant. Their breeding range includes most of North America, with wintering grounds in South and Central America. New York is well within its range. They are also found across Europe, Asia, and Africa. Barn swallows need open habitat for foraging such as open fields or wetlands. They are known for favoring farmland, utilizing buildings for nest locations and taking advantage of the open fields and water access. Barn swallows build cup-type nests from mud that both the male and female gather. They will reuse nests year to year, so long as it is free from parasites and in good enough shape (Brown 1999). Their diet consists almost entirely of flying insects. Few studies have been done on effects of pesticides/insecticides, but one study done on *H. r. rustica* in Israel in the 1950s showed that pesticides did have a negative impact on the population (Turner 1991). Farmers tend to have positive associations with barn swallows, likely seeing them as natural insect control, and many build nest platforms or allow access to barns and outbuildings (Bent 1942). Introduced house sparrows are large competitors for nesting sites and are known to destroy eggs and nestlings (Turner and Christie 2012). Other threats include unpredictable changes to weather patterns and changes to building structures and materials on modern farms (Tucker and Heath 1994). Breeding Bird Survey (BBS) data shows a long-term (1966-2022) decline in all but eight regions, with a -1.4 decline in both New York and survey wide. Past three Breeding Bird Atlas (BBA) data have shown a negative trend with -12.4 decline in the 2020 atlas. BBA data showed a presence in 92.2% of blocks in 1980 and 79.8% of blocks in 2020. Although the barn swallow is still a numerous (population estimates around 300 million mature individuals) and widespread bird, the steady decline being observed in the population is concerning and more research will need to be done to understand this change.

I. Status

a. Current legal protected Status

i. Federal: None **Candidate:** No

ii. New York: Unlisted: protected native

b. Natural Heritage Program

i. Global: G5

ii. New York: S5B **Tracked by NYNHP?** No

Other Ranks:

-New York 2025 SGCN status: Species of Greatest Conservation Need
-COSEWIC: Threatened/Menacée
-IUCN Red List: Least Concern
-Northeast Regional SGCN: Not listed

Status Discussion:

Barn swallow is a widespread breeder in New York, present across the state except for higher elevations of the Adirondack mountains. It is a common and early Spring migrant, generally arriving in early April. It is a species of special concern with the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as of 2021, whereas it had been considered Threatened, but the population in Canada seems to have mostly stabilized (NatureServe). Barn Swallow is ranked Secure or Apparently Secure in all northeastern states and provinces except Nova Scotia and Quebec, where it is ranked as Vulnerable.

As of 2019 the barn swallow is listed as a species of least concern with the International Union for Conservation of Nature. However, Breeding Bird Survey and Breeding Bird Atlas data suggests that this species should be closely monitored and studied due to steady decline in both abundance and distribution. Looking at the BBS regional data, the decline is most extreme in the north: Canada had a significant decline of -3.5% annually 1966-2012, and other significant declines greater or equal to -5% per year were registered in the following BBS regions: Atlantic Northern Forest (-5.5%), Boreal Hardwood Transition (-5.0%), New Brunswick (-5.4%), British Columbia (-5.0), and Maine (-6.1%). The most significant increases were in the southeast and Texas: Louisiana had an annual increase of 7.4%, Edwards Plateau showed an increase of 5.4%, and Gulf Coastal Prairie increased by 9.7 % annually (Sauer, et. al. 2014). This may be related to climate change and the increase in unpredictable weather changes, as cold and rainy weather late in the season tends to cause higher mortality in both adults and nestlings (Brown 1999).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status or S-Rank	SGCN?
North America	Yes	Declining	Unknown	BBS 1966-2022 trend for US		
Northeastern US	Yes	Declining	Unknown	BBS 1966-		No

Region	Present?	Abundance	Distribution	Time Frame	Listing status or S-Rank	SGCN?
				2022 trend		
New York	Yes	Declining	Declining	BBS 1966-2022 trend	S5B	No
Connecticut	Yes	Declining	Unknown	BBS 1966-2022 trend	S4B	No
Massachusetts	Yes	Declining	Unknown	BBS 1966-2022 trend	S5B	No
New Jersey	Yes	Declining	Unknown	BBS 1966-2022 trend	S4B,S4N	No
Pennsylvania	Yes	Declining	Unknown	BBS 1966-2022 trend	S4B,S5M	No
Vermont	Yes	Declining	Unknown	BBS 1966-2022 trend	S5B	No
Ontario	Yes	Declining	Unknown	BBS 1966-2022 trend	S4B, Special Concern	
Quebec	Yes	Declining	Unknown	BBS 1966-2022 trend	S3B, candidate	

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

None.

Trends Discussion

Barn swallow have generally benefitted from the presence of humans, utilizing our structures for their nest building within close range of good foraging habitat. In the 19th century these birds were hunted for the use of their feathers in the hat trade and are still hunted in parts of their wintering range for food. Barn swallow populations have shown a yearly decline of about -0.6% per year from 1966 to 2019, resulting in an estimated cumulative decline of 25%, according to the North American Breeding Bird Survey. Population increases are being seen in the southern portion of their breeding range, with increases nearing 10% in some areas, however some of those regions show a deficiency in the data set. Other southern regions show declines ranging from -0.4 (Piedmont) to -4.5 (Chihuahuan Desert). The most significant declines are being observed in the north with -4.8 in the North Atlantic Forest region being the most significant. The second Breeding Bird Atlas (BBA) in New York documented a 5.4% decline in occupancy between 1980 and 2000, and another 7% between 2000 and 2020 was documented in the third BBA for a total decline in distribution of 12.4% over 40 years.

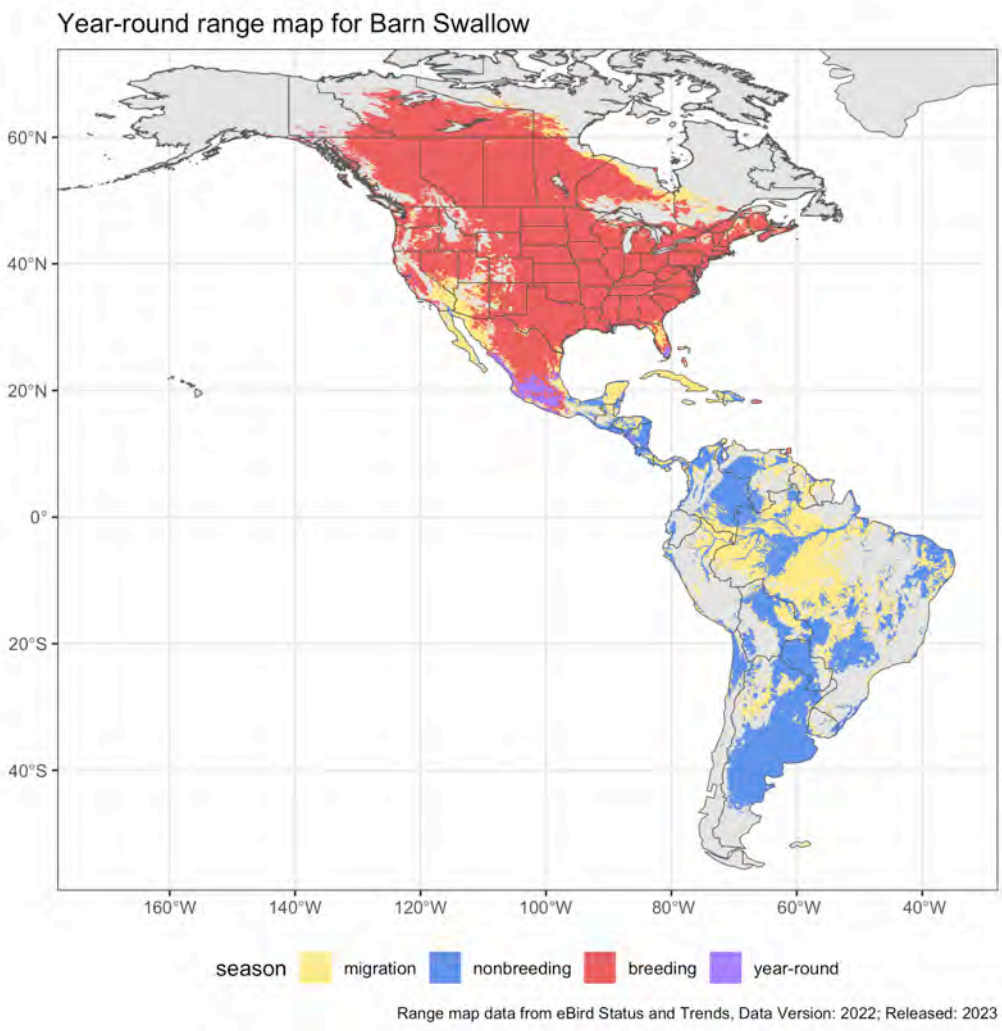

Figure 1. Full (year-round) range for barn swallow (eBird).

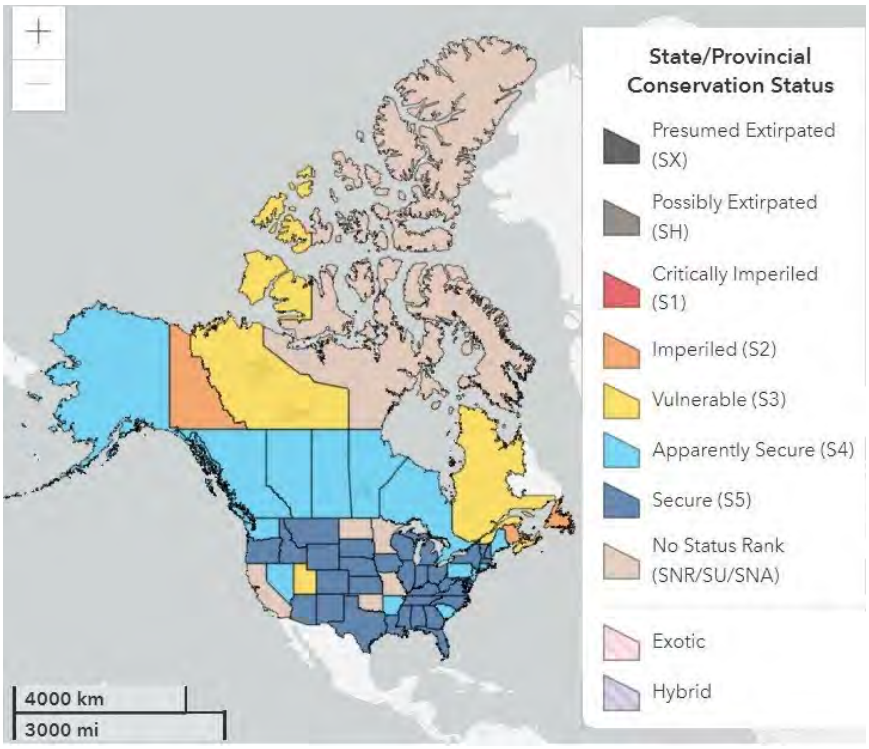

Figure 2. Conservation Status of barn swallow in North America (NatureServe 2024).

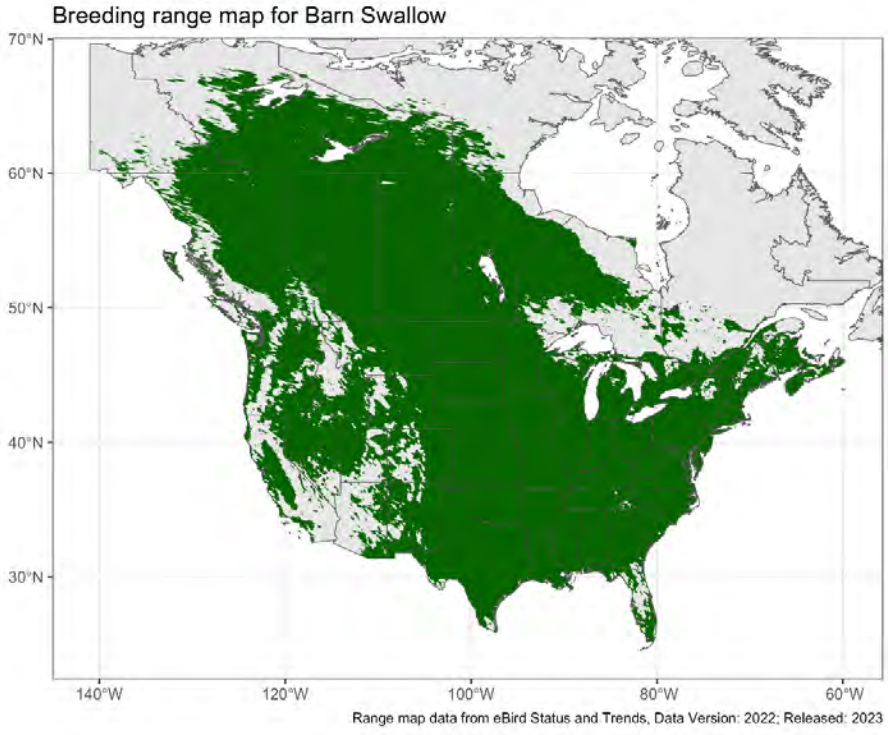

Figure 3. Breeding range for barn swallow (eBird).

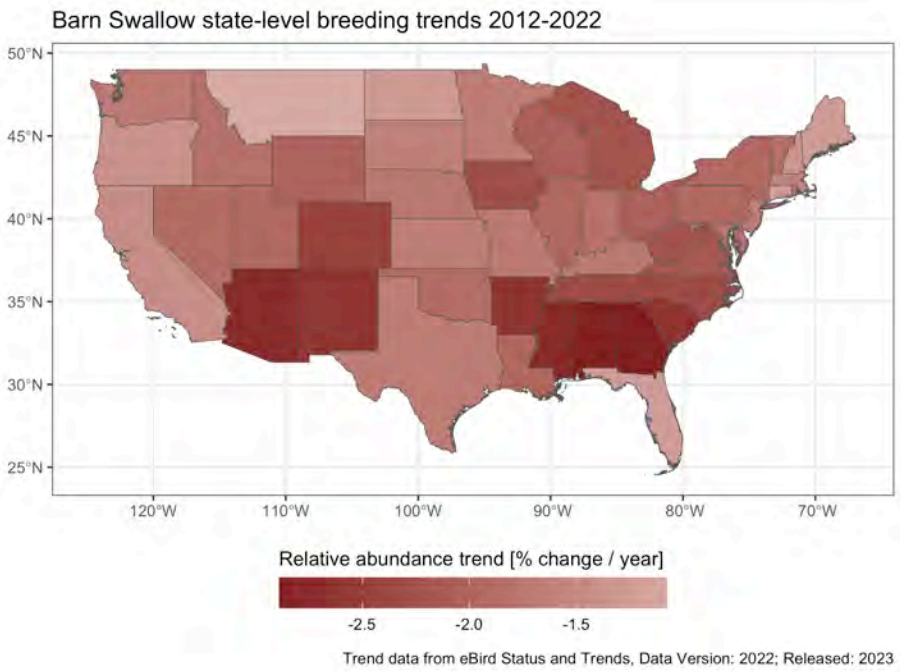

Figure 4. Trends, by state, for barn swallow (eBird).

III. New York Rarity

(provide map, numbers, and percent of state occupied)

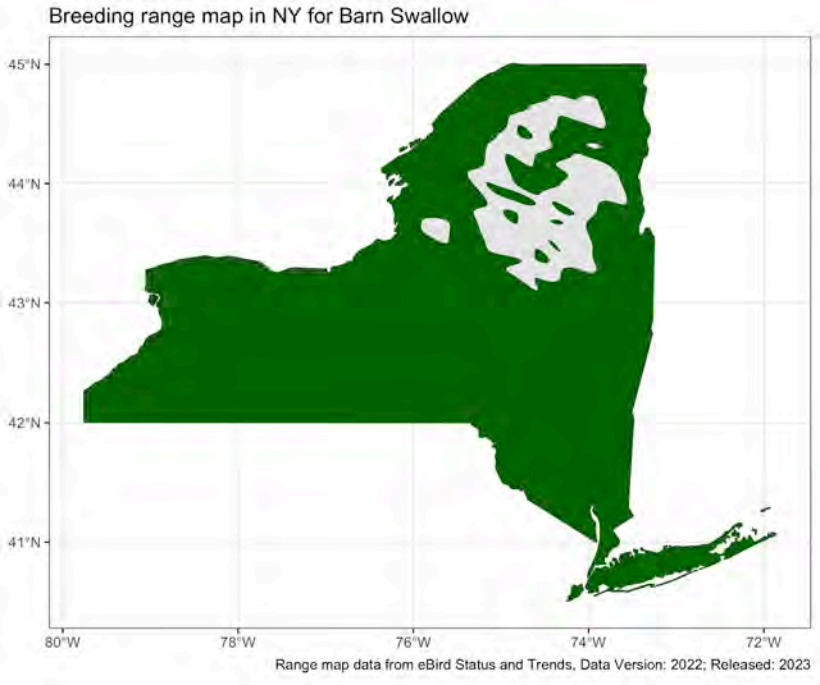

Figure 5. NYS breeding range for barn swallow (eBird).

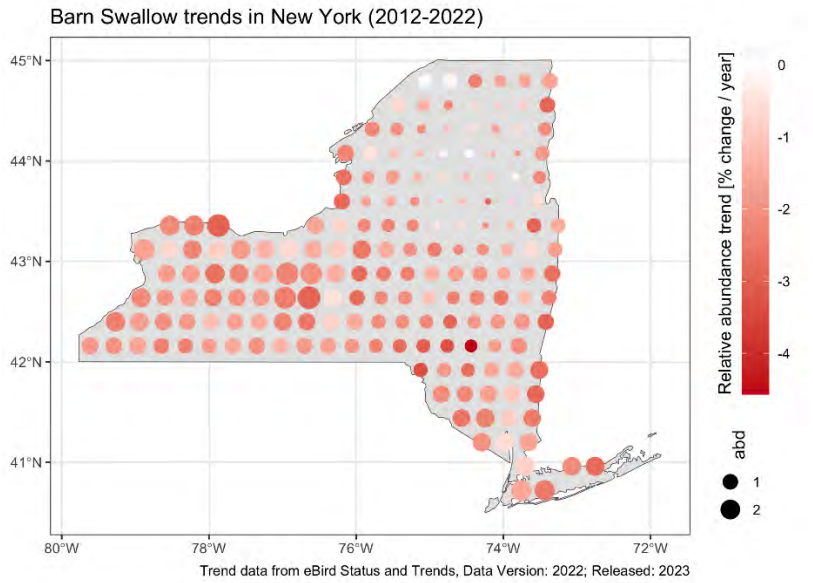

Figure 6. Breeding population trend of barn swallow in New York state.

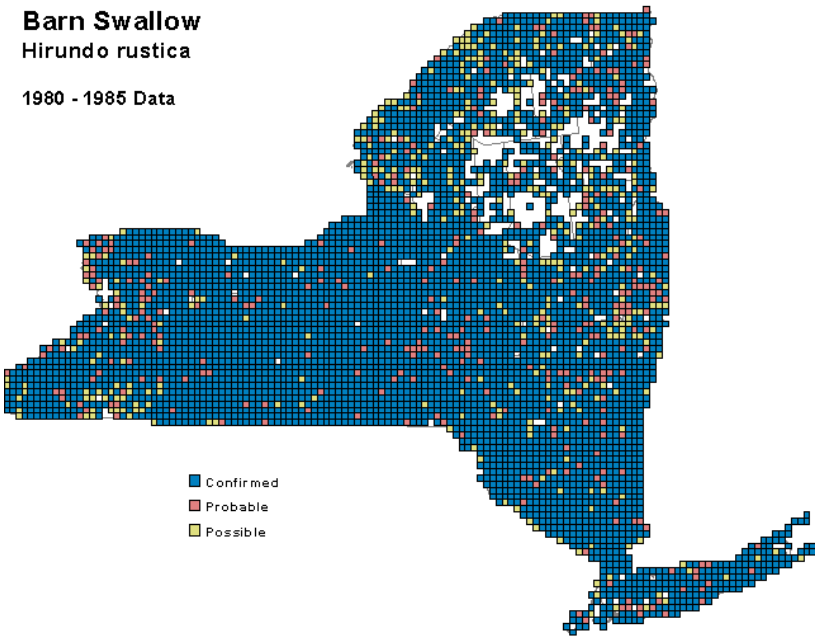

Figure 7. *Barn swallow occurrence in New York State during the first Breeding Bird Atlas.*

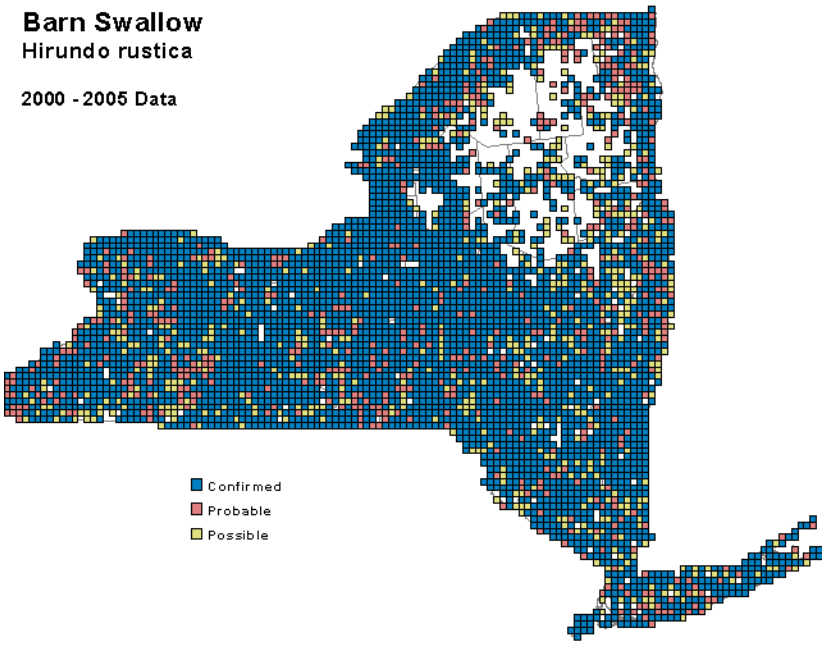

Figure 8. *Barn swallow occurrence during the second Breeding Bird Atlas.*

Details of historic and current occurrence:

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 4917 blocks, 92.2% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 4629 blocks, 86.8% 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, barn swallow has been documented in 3,163 blocks, of which 1,448 were priority blocks; 79.8% of all priority blocks statewide during the third BBA (NY BBA III Overview, 2024).

New York's Contribution to Species North American Range:

Based on eBird data, 0.16 percent of the population breeds in New York, while 0 percent of the non-breeding population occurs in New York. Among all states with breeding populations, New York ranks 28 of 49.

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

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):

NatureServe broad habitat types: Old field, Savanna, Cropland/hedgerow, Suburban/orchard, Grassland/herbaceous, Cliff, Aerial, Riparian, HERBACEOUS WETLAND, Aerial, Herbaceous wetland, Aerial

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Stable	

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:

Prefers open areas, agricultural fields, or lawns. Often seen over lakes and ponds. Usually nests under eaves or in barns and other buildings.

Open situations, less frequently in partly open habitats, frequently near water (AOU 1983). Wintering concentrations often associated with sugar cane fields (Hilty and Brown 1986, Ridgely and Tudor 1989). Nests in barns or other buildings, under bridges, in caves or cliff crevices, usually on vertical surface close to ceiling. Commonly reuses old nests. Usually returns to same nesting area in successive years; yearlings often return to within 30 km or closer to natal site (Turner and Rose 1989, Shields 1984).

IUCN habitat description: This species breeds in a wide range of climates and over a wide altitudinal range. It prefers open country, such as farmland where buildings provide nesting sites and where water is nearby. It is primarily a rural species in Europe and North America, whilst in north Africa and Asia it often breeds in towns and cities (Turner and Christie 2012). In Europe, it is superseded by the House Martin (Delichon urbicum) in urban areas (Turner and Rose 1989). The breeding season lasts from May to August. The nest is built by both sexes and is a cup or half-cup, made from mud pellets mixed with fibers such as dry grass, straw and horsehair and lined with dry grass and white feathers. Originally, nests were built in caves or on cliffs, but now almost always on artificial structures. Clutches consist of two to seven eggs (Turner and Christie 2012). Barn Swallow feeds almost entirely on flying insects (Snow and Perrins 1998). The species is migratory, with European birds wintering in sub-Saharan Africa (Hagemeijer and Blair 1997), although some individuals winter in southern and western Europe (Snow and Perrins 1998). Birds breeding in North America winter in South America, whilst birds breeding in East Asia winter in South Asia (Turner and Christie 2012).

V. Species Demographics and Life History

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Yes	No	Yes	Yes	No

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):

Barn swallows are most frequently observed nesting on man-made structures such as eaves of buildings or under bridges, but historically have been known to use cave opening, cliff sides, and other natural ledges. They build cup type nests made of mud pellets and lined with grass and feathers. Barn Swallows tend to reuse nests year after year if they remain in good condition and free of parasites. Nests can be solitary or in large colonies, sometimes upwards of 50 nests. Clutch sizes range from 3 to 7 eggs. Brood success appears to go down in large colonies due to increased infanticide by non-paired males (Brown 1999). Age at first breeding is known to be yearling for both sexes, though clutch sizes tend to be smaller for first year females (Brown 1999). These early spring arrivals often have two successful broods in a single breeding season. The oldest recorded banded barn swallow was 10 years old (BBL 2023). Nonbreeding: may form flocks of up to thousands.

VI. Threats

Taken from IUCN Red List: The main threat to the species is the intensification of agriculture. Changes in farming practices, such as the abandonment of traditional milk and beef production, have resulted in a loss of suitable foraging areas. In addition, intensive livestock rearing, land drainage and the use of herbicides and pesticides all reduce the numbers of insect prey available. Suitable nest sites are often scarcer on modern farms. The species is susceptible to changes in climate, with bad weather in the wintering areas as well as the breeding grounds affecting breeding success (Tucker and Heath 1994). It is occasionally hunted for sport, and nests are sometimes removed as a nuisance. In North America, introduced House Sparrows (Passer domesticus) are serious nest-site competitors, taking over nests and destroying eggs and nestlings (Turner and Christie 2012).

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
2. Agriculture & Aquaculture	2.3 Livestock and Poultry Farming	2.3.3 Indoor livestock operation	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
5. Biological Resource Use	5.1 Hunting & Collecting Terrestrial Animals	5.1.5 Management/control of terrestrial animals	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
7. Natural System Modifications	7.2 Dams & Water Management/Use	7.2.3 Water management using culverts	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	(nest-site competition with Eurasian house sparrows)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.3 Agricultural & Forestry Effluents	9.3.3 Herbicides & pesticides	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
11. Climate Change	11.3 Changes in Temperature Regimes	11.3.4 Increase in temperature fluctuations	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 1. Threats to barn swallow

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

Yes: ✓ **No:** **Unknown:**

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

This species is included in the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712) and is protected as a native species under the NYS Environmental Conservation Law.

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.2 Direct Species Management	A.2.1.1.0 Creating species-specific artificial structures	Encourage nesting by providing wooden ledges or artificial nest cups made of cement and sawdust or papier-mache.
B.3 Outreach	B.3.1.0.0 Outreach, communication, and distribution	Maintain large areas of suitable habitat through the continuation and promotion of low-intensity, traditional farming. Promote extensive livestock rearing, a reduction in pesticide use, and the preservation of wetland areas and waterbodies.
C.8 Research and Monitoring	C.8.1.0.0 Basic research and status monitoring	Investigate the impacts of climate variation
C.8 Research and Monitoring	C.8.1.1.1 Characterization, demographic study, population, or inventory	Monitor population trends

Table 2. Recommended conservation actions for *barn swallow*.

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This SSA drew heavily from these resources:

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