

Ontario Species at Risk Evaluation Report for
Black Tern
Guifette noire
(*Chlidonias niger*)

Committee on the Status of Species at Risk in Ontario
(COSSARO)

Assessed by COSSARO as Endangered

April 2024
Final

Executive summary

The Black Tern (*Chlidonias niger*) is a gull that develops black head plumage during breeding. A small gull, the species is a long distance migrant. It breeds across much of Canada and the United States and overwinters on the coasts of South and Central America. It is wide-ranging across Ontario, nesting colonially in wetlands and often utilizes coastal wetlands.

In Ontario, 42 extant element occurrences are identified through the Natural Heritage Information Centre data. A loss of 81-87% of occupied breeding sites and a greater than 50% decline in Index Area of Occupancy (IAO) has been documented through coastal wetland and waterbird surveys in the past 40 years in Ontario.

Threats to Black Tern include wetland loss or modification, water pollution, human interference/disturbance, invasive species, as well as potential impacts from climate change and decline in prey of aerial insects.

Black Tern was previously classified as Special Concern in Ontario. It has been reassessed and is classified as Endangered in Ontario based on meeting criteria A2bc. This species was assessed and determined to be Not at Risk in 1996 by COSEWIC. Ongoing trends in decline in Ontario Element Occurrences as well as continued decline in habitat meet the criteria for Endangered in Ontario.

1. Eligibility for Ontario status assessment

1.1. Eligibility conditions

1.1.1. Taxonomic distinctness

The Black Tern (*Chlidonias niger*) is a species of bird belonging to the family Laridae, which includes gulls and terns. The genus *Chlidonias* includes several other marsh terns. There are two recognized subspecies. *C. niger surinamensis* is found in North America and *C. niger niger* is found in Eurasia (Kudell-Ekstrum 2004, as cited in Shephard 2022).

1.1.2. Designatable units

A single designatable unit occurs in Canada for this species.

1.1.3. Native status

Black Tern is native to Ontario.

1.1.4. Occurrence

Black Tern occurs in all provinces and territories in Canada except for Newfoundland, Prince Edward Island, and Nunavut (NatureServe 2023). It is reported for every state in the United States except for Alaska (NatureServe 2023). In Ontario, Black Tern is found throughout the province, and breeding in the marshes along edges of the Great Lakes (Ontario 2023). In winter, it is found in the coastal areas of Central and South America.

1.2. Eligibility results

Black Tern is eligible for status assessment in Ontario.

2. Background information

2.1. Current designations

- GRANK: G4 (NatureServe 2023)
- IUCN: Least Concern (Assessed in 2018, BirdLife International 2023)
- NRANK Canada: N5B (NatureServe 2023)
- COSEWIC: Not at Risk (1996)
- SARA: Not at Risk
- ESA 2007: Special Concern (Assessed as Special Concern when the Endangered Species Act took effect in 2008)
- SRANK: S3B, S4M (ranked in 2020)

2.2. Distribution in Ontario

In Ontario, Black Terns can be found breeding in various parts of the province. Suitable habitats include wetlands and water bodies across both northern and southern regions. The Natural Heritage Information Centre (NHIC) data indicates that 42 extant element occurrences are currently reported for Ontario. The number of locations is not identified. Natural Heritage Information Centre biologists have compared element occurrences with records from the third iteration of the Ontario Breeding Bird Atlas. The NHIC recommends that 42 element occurrences be treated as extant, and that others are considered probably historical.

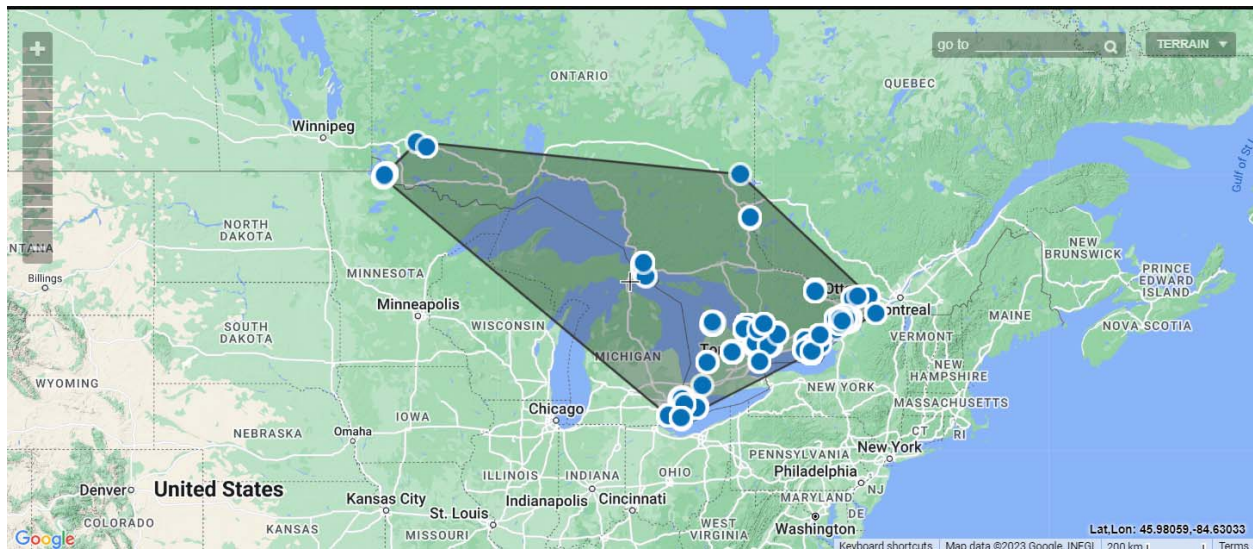


Figure 1. Black Tern records from Natural Heritage Information Centre. Created for this report using [GeoCAT](#) [website accessed November 21, 2023].

2.3. Distribution, status and the broader biologically relevant geographic range outside Ontario

Outside of Ontario, the range for Black Tern is Holarctic, and the species is found throughout the northern continents. Its conservation status varies regionally, and in most adjacent areas to Ontario, the species is at risk or extirpated. Across Canada, Black Tern has a declining annual population trend of $-2.96\%/year$ (CI: $-1.32 - -4.49$, 1970-2019) across the breeding range (Smith et al. 2020, as cited in Shephard 2022) and a population that is approximately one-third the size of what it was in the 1960s (Stephens et al. 2015, as cited in Shephard 2022). The Black Tern is identified as a species of high conservation interest. Other than in the Prairie Pothole Region of Canada, this species is vulnerable across the balance of its range. It is likely that Ontario populations mix with other North American populations on wintering grounds (Shephard 2022).

Both short term (up to 10 years) and long term (>10 years) population trends in Breeding Bird Survey (BBS) results for Black Tern indicate continued decline in Ontario, at $-6.17\%/year$ (CI: $-8.4 - -4.55$) and $-6.61\%/year$ (CI: $-11.7 - -1.67$) respectively (D. Ethier, pers. comm. 2023).

The Broader Biologically Relevant Geographic Range (BBRGR) for this species may be considered wide ranging as it is a migratory species. For the purposes of this assessment, the BBRGR will be treated as adjacent provinces and states, including the three provinces of Manitoba, Saskatchewan and Alberta which comprises important breeding habitat for the species.

Table 1. Condition of the Species in Adjacent Jurisdictions and Broader Biologically Relevant Geographic Range

Adjacent Jurisdictions	Biologically Relevant to Ontario (n/a, yes, no)	Condition	Notes & Sources
Quebec	Yes	S3	NatureServe 2023
Alberta	Yes	S4S5B	NatureServe 2023
Manitoba	Yes	S4B	NatureServe 2023
Saskatchewan	Yes	S5B	NatureServe 2023
Michigan	Yes	S2	NatureServe 2023
Minnesota	Yes	SNRB	NatureServe 2023
New York	Yes	S2B	NatureServe 2023
Ohio	Yes	S1	NatureServe 2023
Pennsylvania	Yes	S1B, S3M	NatureServe 2023
Wisconsin	Yes	S2B	NatureServe 2023
<i>Other Relevant Jurisdiction</i>	Yes	G4	NatureServe2023, reviewed 2016

2.4. Ontario conservation responsibility

Likely less than 25% of the range in Ontario, considered low.

2.5. Direct threats

Ontario (2023) has previously identified threats to include wetland loss or modification, water pollution and human interference/disturbance. Wetland alteration, particularly due in the Prairie Pothole Region is identified as a threat to the species (Shephard 2022). Water levels can affect available nesting habitat and invasive species may affect wetland structure. Climate change may also affect the species, particularly in the northeastern United States. Black Tern consumes insect prey more than other waterbirds and may be affected by widespread declines in aerial insects, similar to swifts and swallows (North American Bird Conservation Canada 2012, as cited by Ontario 2023).

The Black Tern in the province of Ontario faces multiple challenges summarized by Burke (2012), including low population density, habitat loss, invasive species, human population growth, and climate change. Wetlands on the Great Lakes have significantly diminished, especially outside protected areas, jeopardizing remaining habitats. The lack of suitable nesting sites contributes to population decline. However, suitable or previously occupied habitats may now be unoccupied (Richer. Pers. Comm. 2024). Water level fluctuations, invasive species like European Common Reed Grass

(*Phragmites australis*) and Common Carp (*Cyprinus carpio*), and climate change further threaten the species.

2.6. Specialized life history or habitat use characteristics

The Black Tern is described as semi-colonial in its breeding behaviour, usually in colonies of less than 20 pairs and up to 100 pairs in some parts of the prairies (Gerson 1988, Weseloh 2007, as cited in Ontario 2023). This species prefers freshwater wetland habitats, with shallow water, emergent vegetation and floating vegetation. Coastal wetlands are often utilized. Black Tern hunts over water and dive to catch prey. During the breeding season they have a black cap plumage on their head, and plumage is less conspicuous outside breeding season. They are migratory and travel long distances to wintering grounds in South America, often using inland and coastal water bodies. There are concentrations off the coast of Panama and that area may be a key location for mixing within the population (Shephard 2023). Habitat along migration routes may be important for conservation.

2.7. Existing Conservation and Recovery Actions

Conservation and recovery actions that propose wetland creation (such as through Ducks Unlimited) may serve to support wetland habitat as Black Tern is known to use constructed or restored wetlands. Consideration of wetland restoration models that target waterbirds (not just waterfowl) would be beneficial.

The Marsh Monitoring Program has and continues to provide information used by organizations and researchers. The Ontario Black Tern Management Plan (Burke 2013) objectives include to determine distribution and abundance of Black Tern populations in Ontario, clarify the main threats, and maintain the distribution and abundance in Ontario by protecting habitat and reducing the impacts of threats. The Ontario Black Tern Government Response Statement (Ontario 2014) outlines Ontario's goal for the species to maintain or improve its distribution or abundance. The focus areas include inventory and monitoring, protection and management of habitat and research to clarify the main threats, particularly breeding success and impacts of water levels and invasive species.

3. Ontario status assessment

3.1. Application of endangered/threatened status in Ontario

3.1.1. Criterion A – Decline in total number of mature individuals

Multiple lines of evidence have indicated continued population reductions of Black Tern in Ontario. The Breeding Bird Survey data reveals Ontario's short term population trend (2011-2021) is -6.61%/year (LCI -11.7, UCI -1.67) and for Canada is -2.04%/year, however with low confidence for the Canadian trend (LCI -7.71, UCI 6.27) (D.Ethier, pers. comm. 2023)

Three generation population reduction trend in Ontario in the short term is calculated at

-68.8% (CI: -88.009 - -24.954) (D.Ethier, pers. comm. 2023). This trend is based on Breeding Bird Census Trend Data from Environment and Climate Change Canada.

Meets **Criteria A2bc** for Endangered. Population reduction observed in the past where reduction has not ceased, is partially understood (A2), based on an index of abundance appropriate to the taxon (b), decline of IAO (c).

3.1.2. Criterion B – Small distribution range and decline or fluctuation

Does not apply. EOO in Ontario estimated at 712,085 km², for 42 element occurrences.

3.1.3. Criterion C – Small and declining number of mature individuals

Does not apply.

3.1.4. Criterion D – Very small or restricted total population

Does not apply.

3.1.5. Criterion E – Quantitative analysis

Insufficient information.

3.2. Application of Special Concern in Ontario

May apply, based on observed declining trend in Ontario in the short term, similar to long term decline since the 1970's.

3.3. Status category modifiers

3.3.1. Ontario's conservation responsibility

Ontario's conservation responsibility is low. Does not apply.

3.3.2. Status modification based on level of risk in broader biologically relevant geographic range

The Canadian population appears stable, and the short-term decline calculation is considered to have low confidence. Adjacent provinces to the west are considered secure. However, threats to the species are considered similar across the Canadian population and ongoing. Given its secure status in the stronghold region of the Prairie Potholes, the BBRGR could be a factor to reduce the threat from Endangered to a lower classification (Threatened or Special Concern). However, as Ontario decline continues this modifier has not been applied.

3.3.3. Rescue Effect

Immigrants would be considered adapted to surviving in Ontario and suitable habitat is considered available.

3.4. Other status categories

3.4.1. Data deficient

Not applicable.

3.4.2. Extinct or extirpated

Not applicable.

3.4.3. Not at risk

Does not apply.

4. Summary of Ontario status

Black Tern (*Chlidonias niger*) is classified as Endangered in Ontario based on meeting criterion Criteria A2bc for Endangered. Population reduction observed in the past where reduction has not ceased, is partially understood (A2), based on an index of abundance appropriate to the taxon (b), decline of IAO (c). Black Tern was assessed and determined to be Not at Risk in 1996 by COSEWIC. Ongoing trends in decline in occurrences and breeding sites, as well as continued decline in habitat meet the criteria for Endangered in Ontario.

This status of this species is consistent with the definition of Endangered under the *Endangered Species Act, 2007*.

The change in status of this species from Special Concern is considered a genuine¹ change based on new data.

5. Information sources

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Peter S. Burke. 2012. Management Plan for the Black Tern (*Chlidonias niger*) in Ontario. Ontario Management Plan Series. Prepared for the Ontario Ministry of Natural Resources (OMNR), Peterborough, Ontario. vi + 47 pp.

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¹ A change in the classification of a species during reassessment by COSSARO may be for genuine or non-genuine reasons. Genuine reasons may include a reduction in threats to a species such that status of the species has improved, or the continuation of threats to the species such that the status of the species has further deteriorated. Non-genuine reasons may include new information on population size or threats that was not available during a previous assessment, the use of previous COSSARO criteria that may have yielded a different result or, taxonomic revisions that result in changes in range, population sizes or designatable units.

Appendix 1: Technical summary for Ontario

Species: Black Tern (*Chlidonias niger*)

Demographic information

Demographic attribute	Black Tern
Generation time. Based on average age of breeding adult: age at first breeding = X year; average life span = Y years.	5.68 years (Birds Canada 2023)
Is there an observed, inferred, or projected continuing decline in number of mature individuals?	Yes, continued decline (NatureServe long term >50% and short term > 30%)
Estimated percent of continuing decline in total number of mature individuals within 5 years or 2 generations.	Unknown
Observed, estimated, inferred, or suspected percent reduction or increase in total number of mature individuals over the last 10 years or 3 generations.	-68.8% (CI: -88.009 - -24.954) (D. Ethier, pers. comm. 2023, based on the North American Breeding Bird Survey data, coordinated by Environment and Climate Change Canada's Canadian Wildlife Service)
Projected or suspected percent reduction or increase in total number of mature individuals over the next 10 years or 3 generations.	Unknown
Observed, estimated, inferred, or suspected percent reduction or increase in total number of mature individuals over any 10 years, or 3 generations, over a time period including both the past and the future.	Unknown
Are the causes of the decline (a) clearly reversible, and (b) understood, and (c) ceased?	a. Yes, in part b. Yes, partially c. No
Are there extreme fluctuations in number of mature individuals?	No

Extent and occupancy information in Ontario

Extent and occupancy attributes	Black Tern
Estimated extent of occurrence (EOO).	712,085 km ² (estimate based on 2023 NHIC data in geocat.kew.org)
Index of area of occupancy (IAO).	1,124 km ² (estimated based on 2023 NHIC data used in geocat.kew.org)
Is the total population severely fragmented? i.e., is >50% of its total area of occupancy is in habitat patches that are: (a) smaller than would be required to support a viable population, and (b) separated from other habitat patches by a distance larger than the species can be expected to disperse?	a. No b. No
Number of locations.	Locations not identified.
Number of NHIC Element Occurrences	42 (NHIC 2023)
Is there an observed, inferred, or projected continuing decline in extent of occurrence?	712,085 km ² Extent of occurrences reflects 81%-87% loss of occupied breeding sites up to 2015 based on coastal wetland waterbird surveys.
Is there an observed, inferred, or projected continuing decline in index of area of occupancy?	1,124 km ² Observed historical occurrences would result in an IAO of 2,728km ² , based on current 42 extant element occurrences IAO is calculated at 1,124 km ² .
Is there an observed, inferred, or projected continuing decline in number of sub-populations or EOs?	Observed decline – Breeding Bird Atlas 3 data to Fall 2023 have been used to determine that only 42 of 246 historic sites in Ontario are still occupied. Representing a loss of 80% of sites in 40 years.
Is there an observed, inferred, or projected continuing decline in number of locations?	Unknown, locations not defined
Is there an observed, inferred, or projected continuing decline in [area, extent and/or quality] of habitat?	Yes, continued wetland loss, pollution, invasive species

Extent and occupancy attributes	Black Tern
Are there extreme fluctuations in number of populations?	No
Are there extreme fluctuations in number of locations?	Unknown
Are there extreme fluctuations in extent of occurrence?	No
Are there extreme fluctuations in index of area of occupancy?	No

Number of mature individuals in each sub-population or total population (if known)

The North American population is reported between 100,000 and 500,000 birds (Kushlan et al. 2002, as cited in Burke 2012). American Bird Conservancy reports the North American population at 500,000 for this species, and 1.5 million worldwide (ABC 2023). Canada reports 200,000 to 300,000 breeding birds (Canada 2023). The Ontario population is assumed to be greater than 100,000 individuals.

NatureServe Explorer (2023) reports the long-term trend of a decline of >50%, and short-term trend of decline of >30%, and estimates global abundance at 100,000 to > 1,000,000 individuals.

Birdlife.org (2023) indicates the overall population trend is declining (Wetlands International 2015). In North America, this species has undergone a small or statistically insignificant decrease over the last 40 years (data from Breeding Bird Survey and/or Christmas Bird Count: Butcher and Niven 2007). The European population trend is unknown (BirdLife International 2015).

Quantitative analysis (population viability analysis conducted)

Probability of extinction in the wild is unknown. Population viability analysis was not conducted.

Threats

A threats calculator was not prepared for this species.

Rescue effect

Rescue effect attribute	Value
Does the broader biologically relevant geographic range for this species extend beyond Ontario?	Yes
Status of outside population(s) most likely to provide immigrants to Ontario	Apparently Secure (S4) in MB, AB; Secure (S5) in SK, Vulnerable (S3) in QC, Imperiled (S2) or not ranked in bordering states.
Is immigration of individuals and/or propagules between Ontario and outside populations known or possible?	Probably/Possibly
Would immigrants be adapted to survive in Ontario?	Yes
Is there sufficient suitable habitat for immigrants in Ontario?	Unknown, likely yes.
Are conditions deteriorating in Ontario?	Probably/Possibly (wetland loss, invasive species, water pollution, insect decline, human disturbance at nesting colonies)
Is the species of conservation concern in bordering jurisdictions?	Yes, except for Manitoba
Is the Ontario population considered to be a sink?	Unknown
Is rescue from outside populations likely?	Unknown

Sensitive species

This is not a data sensitive species.

Acronyms

COSEWIC: Committee on the Status of Endangered Wildlife in Canada
COSSARO: Committee on the Status of Species at Risk in Ontario
ESA: Endangered Species Act
EO: Element occurrence (as defined by NHIC)
EOO: extent of occurrence
GRANK: global conservation status assessments
IAO: index of area of occupancy
IUCN: International Union for Conservation of Nature and Natural Resources
MNRF: Ministry of Natural Resources and Forestry
NHIC: Natural Heritage Information Centre
NNR: Unranked
NRANK: National conservation status assessment
SARA: Species at Risk Act
SNR: unranked
SRANK: subnational conservation status assessment
S1: Critically Imperiled
S2: Imperiled
S3: Vulnerable
S4: Apparently Secure
S5: Secure
IUCN: International Union for Conservation of Nature and Natural Resources
CDSEPO: Le Comité de détermination du statut des espèces en péril en Ontario