

**The Status of  
Caspian Tern  
*Sterna caspia***

**in Newfoundland and Labrador**



Caspian Tern, Deer Lake (*Ken Knowles photo*)

**prepared for**

**THE SPECIES STATUS ADVISORY COMMITTEE**

**by**

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## STATUS REPORT

***Sterna caspia* Pallas 1770** (Syn. *Sterna tschegrava* and *Hydroprogne caspia*)

Common Name:  
Caspian Tern

Other Common Names:  
French – Sterne Caspienne  
Newfoundland and Labrador –  
Mackerel gull, mackerel bird, rape<sup>1</sup>

Subspecies: Monotypic

Family: Laridae (the gulls and terns)

Life Form: Aves (the birds)

<sup>1</sup> Source: Montevecchi and Tuck 1987

### Distribution

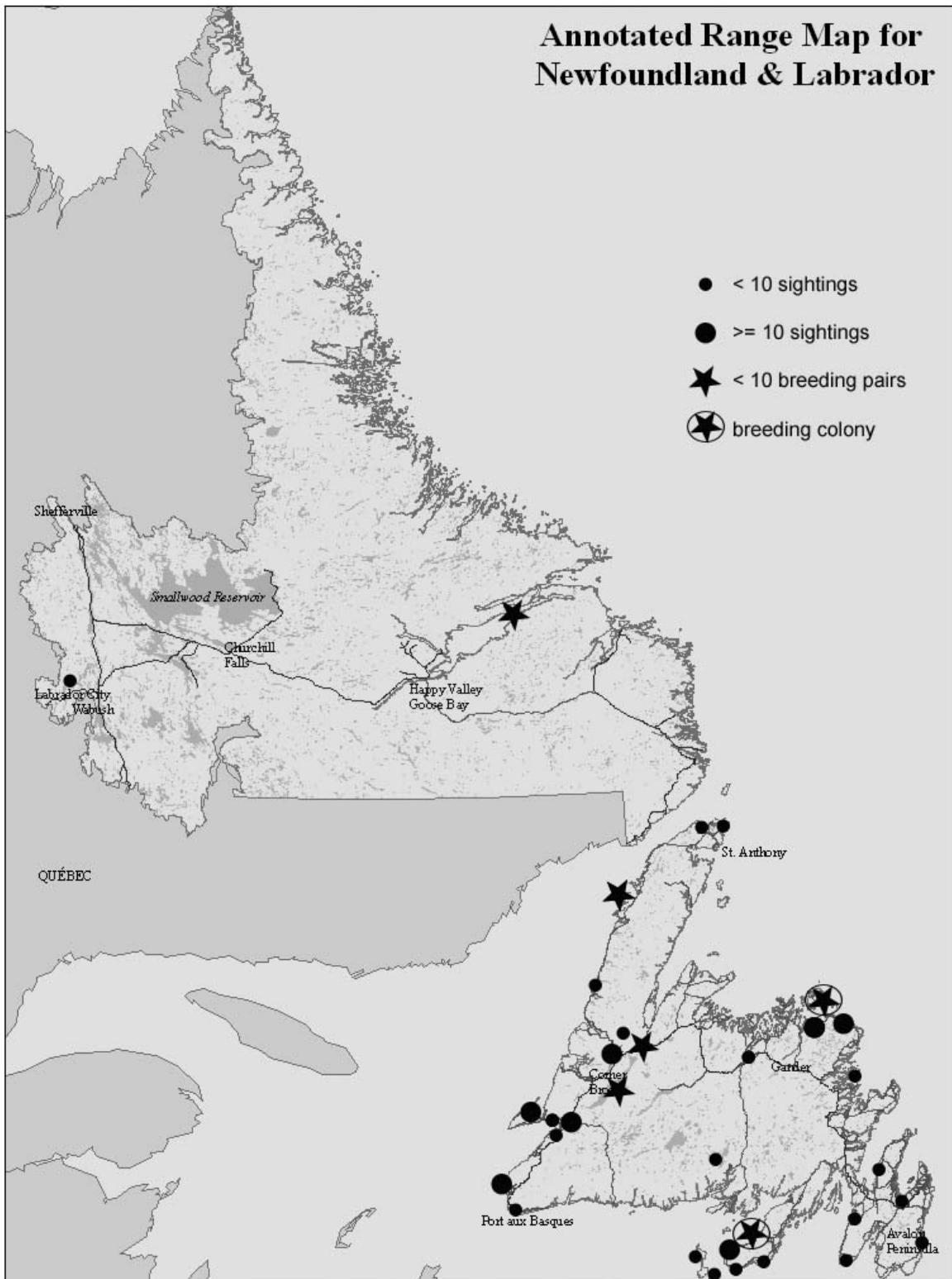
**Global:** Found on all continents except South America and Antarctica. Breeds in North America, Europe, Asia, Africa, and Australia. Winters in North America, Europe, Asia, and Africa (Cuthbert and Wires 1999).

**National:** Disjunct breeding populations in Northwest Territories, British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, Nunavut, and Newfoundland and Labrador. Two-thirds of Canadian population found in southern Manitoba (James 1999); comparatively large numbers also breed on the Great Lakes (Lock 1983).

**Provincial:** Insular Newfoundland: Few (1-2) main breeding colonies. Nesting records for Devils Brook Island near Garnish, Fortune Bay: 112 nests in 1973; 118 in 1975; no confirmed breeding records for that locale since 1975 (P. Linegar, personal communication). Also nest regularly on offshore islands in Gander Bay, including North Penguin Island – 28 nests in 1986 (Cairns et al. 1986); Ladle Cove Island – 36 nests in 1992, 86 adults and chicks in 1994, 100 adults and chicks in 1997, 150 individuals in 2000, 120 nests in 2001, no birds detected in 2002 (G. Robertson, personal communication). Continued sightings suggest that the species continues to breed at an undetermined location in the area. The colony regularly relocates between local islands. Breeding colony of unknown size also recorded at Lake Koskaecoddee in 2003 (P. Linegar, personal communication), and there are historical records for this site (Montevecchi and Tuck 1987). Scattered breeding records for small numbers of nesting pairs (< 5) throughout insular Newfoundland: Twin (1-2 nests 1993) and Fox (3 nesting pairs 2001) Island in St. John Bay, Carey Island off Plum Point (1 nest 1999), Doctors Rock (1 nest 2001), and an historical record for Sandy Lake (1912; Bent 1921). Probable breeding status in vicinity of Stephenville Crossing, where 5-30 individuals are observed annually (K. Knowles, personal communication). Regular along western side of Northern Peninsula during late summer to early autumn, possibility indicative of nesting in Labrador (Chaulk et al. 2004). Regularly observed but uncommon along coast (Musgrave Harbour, Carmanville, St George's, Stephenville Crossing, Codroy)

and near

### Annotated range map



Note: Refer to text and Table 1 (Appendix A) for observation date.

larger inland lakes (Deer Lake, Sandy Lake, Grand Lake, Bonne Bay Big Pond, Godaleich Pond).

Labrador: Not known to breed to significant extent, but regularly reported from Lake Melville and interior highlands (P. Linegar, personal communication). One breeding record for Labrador at Gull Island in Lake Melville (Lock 1983). Annual reports of breeding behaviour since 2000 suggest nesting on Grassy and Gull Islands in Lake Melville, but ground searches have found no active nests (Chaulk et al. 2004). Sightings on Little Wabush Lake suggest the possibility of breeding in central Labrador (e.g., Smallwood Reservoir; B. Dalzell, personal communication).

### Description and habitat

Note: A comprehensive review of the biology and ecology of the Caspian Tern in North America is provided in Cuthbert and Wires (1999); unless otherwise noted all information reported here is taken from this source.



The largest and most powerful tern; gull-like; length 47-54 cm, wingspan 137 cm, mass 530-782 g. Distinguished from other terns by massive, dagger-shaped coral-red bill. Legs and feet black. Tail forked approximately  $\frac{1}{4}$  its length.

Breeding plumage: upperparts light grey; underparts, rump, and tail white; black cap extends below eye; slight crest at back of head. Non-breeding plumage: crown mottled or streaked with black or grey-brown and white. Characteristic large dark patch on underside of primaries in all plumages. Sexes indistinguishable throughout the year. Juvenile plumage similar to winter adult, with dark marks across base of neck, back, and scapulars. Immature plumage similar to adult in winter plumage, with white speckled crown. Adult plumage obtained in spring of second year.

Typically nests on islands in large lakes or islands well offshore. Can also breed on peninsulas, although these colonies tend not to persist for long periods of time (James 1999). Breeding habitat is diverse but specific; requires open, fairly flat islands with little or no vegetation cover, with sand or gravel for nest substrate. Presence of reliable food source in surrounding waters also preferred, though breeding individuals have been observed foraging > 50 km from colony. Partial to medium-distance migrant. During migration, uses outer barrier islands, beaches, sand spits, impoundments, and managed wetlands. Winters along Pacific Coast from central California south through Baja California, and along Atlantic and Gulf Coasts from southern North Carolina south to Gulf of Mexico, Caribbean, and West Indies (Godfrey 1986).

## Overview of Biology

Caspian Terns feed almost exclusively on small (5-15 cm) fish; small molluscs and insects may also be taken. Adults have been reported to take eggs and young from nests of neighbouring birds. This species is generally monogamous and typically nests in colonies, often with other breeding larids. In insular Newfoundland, they are reported to nest among Ring-billed Gull (*Larus delawarensis*) on North Penguin and Ladle Cove Islands (Gander Bay), in association with Ring-billed and Common Black-headed Gulls (*L. ridibundus*) on Carey Island (Great Northern Peninsula; John Gibbons, personal communication), and among Ring-billed Gulls on Fox Island (St John Bay; Chaulk et al. 2004). In Labrador, one nest was found on Gull Island (Lake Melville) in a Ring-billed Gull colony, along with 2 pairs of Great Black-backed Gull (*L. marinus*) and 2 pairs of Arctic Tern (*Sterna paradisaea*; Lock 1983). Caspian Terns exhibit territorial behaviour and aggressively defend nest sites during the breeding season; territories are small (50-150 cm in diameter), but solitary pairs defend much larger areas than colonial nesters. Both sexes are involved in nest building, and the nest is generally a shallow depression formed in rocky-gravel substrate. It may be lined with dried vegetation, pebbles, broken shells (Bent 1921), and can also be constructed from piled sticks and wood debris.

The average clutch size of Caspian Terns is 1-3 eggs (3 more common in northern part of range; Bent 1921); eggs are laid 2-3 days apart (Quinn 1980). Incubation is initiated after the first egg is laid and lasts approximately 26 days; both sexes incubate steadily (Ludwig 1965). Asynchronous hatching results in chicks of unequal size, and the age difference between the youngest and oldest chick is 5-6 days in a brood of 3. Chicks are semiprecocial, down-covered with their eyes open at hatching, and remain in and around the nest for 1 week (Kirven 1969). Both parents brood and feed the young; young are first fed small fish at 0-1 day old (Quinn 1990) and attain adult body mass after approximately 31 days. Caspian Terns have the longest period of parental care of all terns, with immatures remaining partly dependent for food for several months (L'Arrivee and Blokpoel 1988). This species is a single brooder, but may relocate and re-nest if an initial nesting attempt fails. Young typically do not return to the breeding grounds until age 3 years (i.e., their fourth summer), but some may attempt to breed at age 2 years (Gill and Mewaldt 1983). First-time breeders tend to nest at sites other than natal grounds, while adults return to the same colony if nesting was successful in the previous year. Mature birds generally breed every year. Hatching success in North American colonies ranges from 70 to 85%, and the mean number of eggs hatched per nest ranges from 1.4 to 1.7. Fledging success ranges from 52 to 66%, with 0.6 to 1.6 chicks fledged per nest (Fetterolf and Blokpoel 1983, Mitchell and Custer 1986). Mortality rates are greatest in the first 6 months of life and approximately 60% of fledglings reach adulthood (Gill and Mewaldt 1983). Banding records for Great Lakes birds suggest that the mean breeding-life expectancy is 8.8 years, and birds reaching adulthood had an average lifespan of 11.9 years. Some individuals live to be older than 15 years, with 4 birds from the Great Lakes region living at least 26 years (Ludwig 1965).

Predators of the Caspian Tern include Bald Eagle (*Haliaeetus leucocephalus*), red fox

(*Vulpes vulpes*), and coyote (*Canis latrans*); Common Raven (*Corvus corax*), Great Horned Owl (*Bubo virginianus*), red fox, and coyote take eggs and chicks.

## **Population size**

The most recent documentation (James 1999) estimates the current provincial population to be 50 nesting pairs comprising 2-3 main colonies (30 pairs) along with breeding pairs scattering throughout the province (20 pairs). However, the colony at Ladle Cove Island increased from 36 nests in 1992 to 120 nests in 2001 (W.A. Montevecchi, Memorial University of Newfoundland, unpublished data). Chaulk et al. (2004) report that numbers in Lake Melville are low ( $\leq 14$  individuals) but possibly increasing, though breeding has not been documented at this site since 1983 (Lock 1983). This suggests a provincial breeding population of 250-350 individuals including 100-150 breeding pairs, though estimation is problematic because individuals are highly mobile and occupancy of individual breeding sites varies from year to year.

## **Traditional and local ecological knowledge**

Inuit elders report that the Caspian Tern is rare in Labrador (Chaulk et al. 2004). No information was found for insular Newfoundland. Mr. R.J. Nuna of the Innu Nation Environment Office was contacted, but did not provide any information relating to Caspian Tern.

## **Trends**

North America: Numbers appear to have increased substantially on North American breeding grounds. Breeding colonies on the Atlantic Coast of North America are reported as stable or increasing (Cuthbert and Wires 1999). Numbers across Canada have increased approximately threefold in the past 30 years (James 1999).

Newfoundland and Labrador: The breeding population appears to have increased in recent years. 'Several pairs' were first recorded by J.J. Audubon in 1833 near St. George's (Bent, 1921). Few ( $< 20$ ) individual sightings were reported throughout the province during the first half of 20<sup>th</sup> century (W.A. Montevecchi, Memorial University of Newfoundland, unpublished data). A population estimate of little more than 100 pairs at 3 sites was reported in the 1978 Committee on the Status of Endangered Wildlife in Canada (COSEWIC) status report (Martin 1978); the updated COSEWIC report states approximately 50 pairs breeding at 1 main colony plus others at scattered locales (James 1999). For the main breeding colony at Hamilton Sound/Gander Bay the following were reported: North Penguin Island – 28 nests in 1986; Ladle Cove Island – 37 nests in July 1992; 150 individuals in July 2000; 120 nests in July 2001; surveys conducted in 2002 detected no birds, though numbers of sightings along the northeast coast have not decreased (P. Linegar, personal communication). Numbers of birds appear to be increasing in Labrador (Chaulk et al. 2004).

Banding data indicate historical connectivity with populations breeding outside of the province: 1 chick banded in southern Quebec (Cape Whittle area) in July 1933 was recovered in insular Newfoundland in June 1935; 2 chicks banded at Lake Michigan in June 1958 were recovered in October 1958; and 2 chicks banded in Ontario at Lake Huron in June 1958 were recovered in October 1958 (Bird Banding Office, Canadian Wildlife Service, unpublished data).

### Threats and limiting factors

The availability of high-quality nest sites protected from storms/floods and devoid of mammalian and avian predators is suggested as the primary factor limiting Caspian Tern populations in many areas (Cuthbert 1981). Breeding birds are often out-competed for nesting space by aggressive Double-crested Cormorants (*Phalacrocorax auritus*), as well as Great Black-backed, Herring (*L. argentatus*), and Ring-billed Gulls. Increased nest predation by growing gull populations has been documented for Atlantic Canada (Lock 1993). Large quantities of guano produced by numerous gulls present on current or potential nesting sites may stimulate growth of plants, such as cow vetch (*Vicia cracca*), which can eventually render the site unusable nesting habitat (James 1999). Caspian Terns are highly sensitive to disturbance, particularly during breeding and incubation; entire colonies may be abandoned due to increased predation or human intrusion (Koonz and Rakowski 1985). Significant increases in chick mortality result from human entrance to colonies, thus increased boat traffic and accessibility to islands are concerns.

That only one relatively large breeding colony exists in Newfoundland presents the risk of a substantial population reduction if that colony is disturbed or fails due to demographic stochasticity. This is of particular concern given the ephemeral nature of Caspian Tern colonies in Newfoundland and Labrador (see above) and elsewhere (Cuthbert and Wires 1999).

### Existing protection

Caspian Terns have been protected under the Migratory Birds Convention Act since 1916 (Department of Justice of Canada 1994). Though initially listed by COSEWIC in 1978 as *Vulnerable* nationally (Martin 1978), this species has since been downlisted and is currently ranked as *Not at Risk* in Canada (James 1999).

### Ranks or Status

Ranking System	Rank or Status
G-rank/IUCN	G5
N-rank/National General Status/COSEWIC	N3/N4B (Not at Risk)
General Status – provincial Newfoundland – S-rank/General Status	S3B/May be at risk
Labrador – S-rank/General Status	S2B/Undetermined

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### **Collections examined**

None

## TECHNICAL SUMMARY

<b>Distribution and Population Information</b>	<b>Criteria Assessment</b>
<ul style="list-style-type: none"> <li>• <i>extent of occurrence (EO)(km<sup>2</sup>)</i></li> </ul>	Coastal areas and large inland lakes
<ul style="list-style-type: none"> <li>• <i>area of occupancy (AO) (km<sup>2</sup>)</i></li> </ul>	Coastal areas and large inland lakes
<ul style="list-style-type: none"> <li>• <i>number of extant locations</i></li> </ul>	< 15 where regularly sighted
<ul style="list-style-type: none"> <li>• <i>specify trend in # locations, EO, AO (decline, stable, increasing, unknown)</i></li> </ul>	Stable
<ul style="list-style-type: none"> <li>• <i>habitat trend: specify declining, stable, increasing or unknown trend in area, extent or quality of habitat</i></li> </ul>	Stable
<ul style="list-style-type: none"> <li>• <i>generation time (average age of parents in the population) (indicate years, months, ds, etc.)</i></li> </ul>	Unknown
<ul style="list-style-type: none"> <li>• <i>number of mature individuals (capable of reproduction) in the Provincial population (or, specify a range of plausible values)</i></li> </ul>	100-150 breeding pairs, 250-350 individuals
<ul style="list-style-type: none"> <li>• <i>total population trend: specify declining, stable, increasing or unknown trend in number of mature individuals or number of populations</i></li> </ul>	Stable or increasing
<ul style="list-style-type: none"> <li>• <i>are there extreme fluctuations (&gt;1 order of magnitude) in number of mature individuals, number of locations, AO and/or EO?</i></li> </ul>	No
<ul style="list-style-type: none"> <li>• <i>is the total population severely fragmented (most individuals found within small and isolated populations between which there is little exchange, i.e., <math>\leq 1</math> successful migrant / year)?</i></li> </ul>	No
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<b>Rescue Effect (immigration from an outside source)</b>	
<ul style="list-style-type: none"> <li>• <i>does species exist elsewhere?</i></li> </ul>	Yes
<ul style="list-style-type: none"> <li>• <i>status of the outside population(s)?</i></li> </ul>	Stable or increasing
<ul style="list-style-type: none"> <li>• <i>is immigration known or possible?</i></li> </ul>	Yes
<ul style="list-style-type: none"> <li>• <i>would immigrants be adapted to survive here?</i></li> </ul>	Yes
<ul style="list-style-type: none"> <li>• <i>is there sufficient habitat for immigrants here?</i></li> </ul>	Yes

