Monitoring the State of the
ST. LAWRENCE RIVER

Seabirds – Sentinel Species of the Gulf, 5th Edition

Seabirds
Status: moderate in 2022
Trend: unchanged since 2005

Highlights

Seabirds nesting in the migratory bird sanctuaries of the North Shore are surveyed every five years. Their status is considered “moderate” due to trends observed in five indicator species: the Common Murre and Razorbill are doing very well, the reduced number of Atlantic puffins is increasing, the status of tiny Caspian Tern population remains precarious despite recent growth, and the decline of the American Herring Gull continues. The abundance of food resources, the presence of predators, and human disturbance are key factors at play.

Problem

Following the adoption of the *Migratory Birds Convention Act* (1917), migratory bird sanctuaries were established in 1925 on the North Shore of the Gulf of St. Lawrence to protect important seabird colonies (Figure 1). Since then, these sanctuaries have been censused every five years. Sixteen seabird species nest there. Among them, five species have been selected as bioindicators of the ecosystem’s state because they use varied feeding strategies and exhibit different levels of vulnerability to human disturbance. For example, the Common Murre, Razorbill, and Atlantic Puffin, belonging to the Alcidae family, dive to feed, while the American Herring Gull (formerly “Herring Gull”) and Caspian tern, from the Laridae family, feed at the surface. However, the Alcidae have different ecological niches: the Razorbill feeds more in coastal areas than the Atlantic Puffin, and the Common Murre dives to much greater depths than the Razorbill and the Atlantic Puffin. Furthermore, the American Herring Gull can be observed in highly anthropized environments, whereas the Caspian tern is sensitive to human disturbance. Monitoring the status and trends of seabird populations in migratory bird sanctuaries provides information on prey abundance, predation, human disturbance and, more generally, the health of the Gulf of St. Lawrence, a rich and diverse ecosystem.

Canada
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Study area

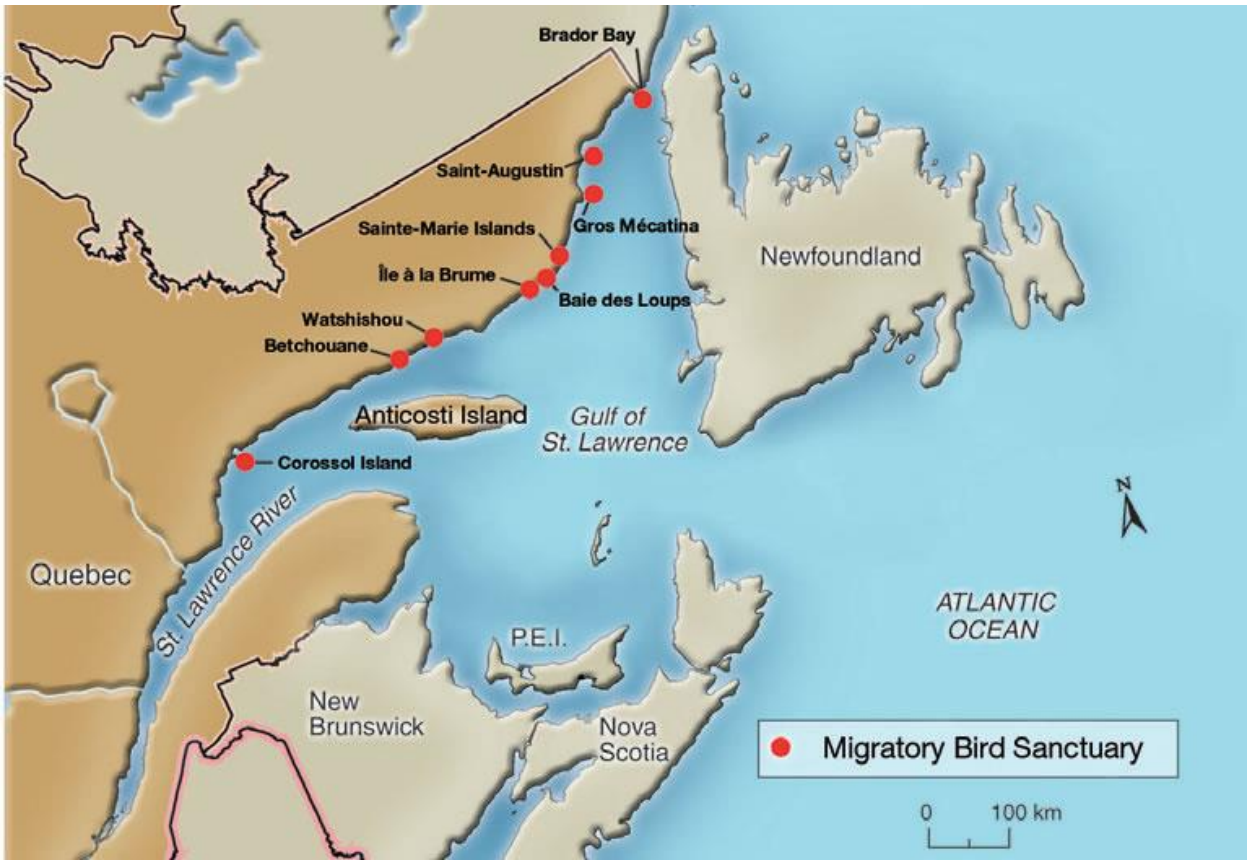

Figure 1. The nine migratory bird sanctuaries of the North Shore of the Gulf of St. Lawrence are distributed between Sept-Îles and Blanc-Sablon.

Key measures

We assess the status of the breeding populations of five seabird species representative of the Gulf of St. Lawrence, considering short-term trends (since 2010) and long-term trends (since 1982). A variation of less than 25% is considered a relatively stable trend. Population status and rating are determined according to the following criteria:

- "Good" status and rating of 0: long-term and short-term trends increasing (by 25% or more).
- "Moderate-good" status and rating of 1: long-term and short-term trends respectively stable and increasing or increasing and stable.
- "Moderate" status and rating of 1: long-term and short-term trends stable, or opposite trends in the long and short term.
- "Moderate-poor" status and rating of 1: long-term and short-term trends respectively stable and decreasing (by 25% or more) or decreasing and stable.
- "Poor" status and rating of 2: long-term and short-term decline.

Additionally, the status and rating of a population with very limited numbers can be adjusted to better reflect its precarious situation, beyond short- and long-term trends.

The sum of the five species' ratings defines the overall indicator status (total of 0-1 = good; 2-3 = moderate-good; 4-6 = moderate; 7-8 = moderate-poor; 9-10 = poor).

Status and trends

The American Herring Gull: a continuing decline

The American Herring Gull population grew steadily in the decades following the creation of the migratory bird sanctuaries (1925). However, the decline of cod and the subsequent Canadian moratorium on groundfish fishing in 1992 had significant impacts on American Herring Gulls, which relied heavily on fish waste discarded at sea by fishers. By 1993, the population had shrunk to 22% of its 1988 size. More recently, the small population, which seemed to have stabilized, has resumed its decline, with a 64% decrease since 2010 (Figure 2). The presence of terrestrial predators (such as red foxes) in certain sanctuaries could partly explain this downward trend. In view of the negative short- and long-term trends observed, the population status is considered "poor."

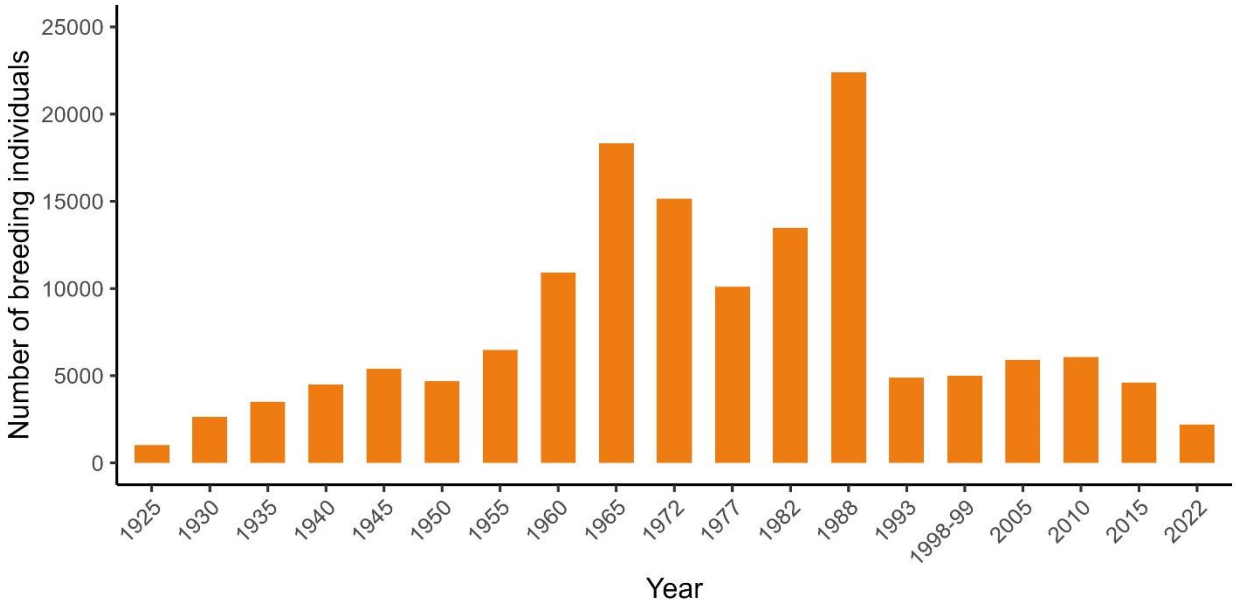

Figure 2. Number of American Herring Gulls breeding in the migratory bird sanctuaries of the North Shore between 1925 and 2022.

The Caspian Tern: encouraging signs despite precariousness

The only regular nesting site of the Caspian Tern in Québec is in the Île à la Brume Migratory Bird Sanctuary. The Caspian Tern population totalled several dozens breeding pairs between 1925 and 1950, disappeared for the first time in 1950, then reappeared only to quickly decline between 1955 and 1965, reaching very low levels. The population has been struggling for several decades, deserting the Île à la Brume in some years, then reappearing with generally fewer than five pairs (Figure 3). Human disturbance could affect this sensitive species. Nevertheless, the latest survey revealed encouraging signs for the species: four nests were counted at the Île à la Brume, in addition to a fifth in the Saint-Augustin sanctuary, where the last nesting record dated back to 1976. Despite the short- and long-term increase in the population, its small size remains a major concern, which is why its status is considered “moderate-poor.”

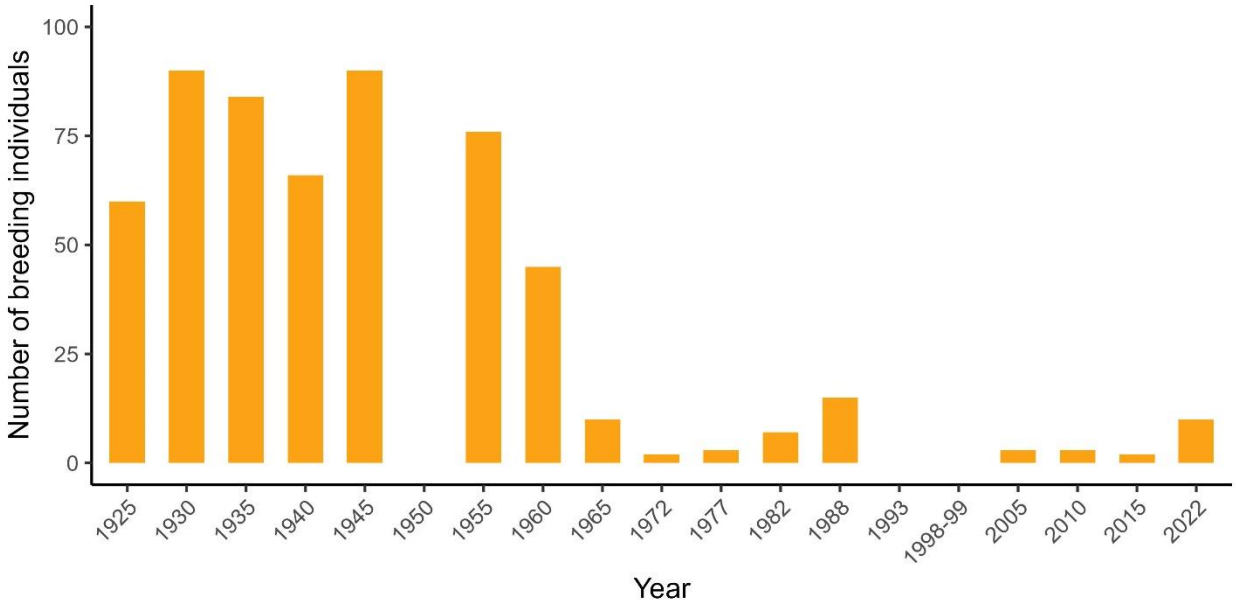

Figure 3. Number of Caspian Terns breeding in the migratory bird sanctuaries of the North Shore between 1925 and 2022.

The Alcidae: generally positive trends

The Alcidae, once exploited for their eggs, meat, and feathers, have greatly benefited from the Migratory Birds Regulations, resulting from the *Migratory Birds Convention Act* (adopted in 1917), and the migratory bird sanctuaries of the North Shore established in 1925. The Act prohibits the hunting, harassment and disturbance of migratory bird nests and eggs. Relatively stable between 1925 and 1960, Alcidae populations subsequently plummeted to their lowest levels in the 1970s. Disturbance and poaching in the sanctuaries, facilitated by the popularization of outboard motors, is suspected to be the cause. The increased surveillance of the sanctuaries that followed allowed the populations to recover. Population trends for all three alcid species are generally positive, although they vary from one species to another.

The Common Murre population on the North Shore has experienced rapid growth in recent years. The number of breeding birds has more than doubled since 2010 and nearly quadrupled since 1982 (Figure 4). Despite a marked decline in numbers between 1999 and 2005, there is no doubt that the population status is “good.”

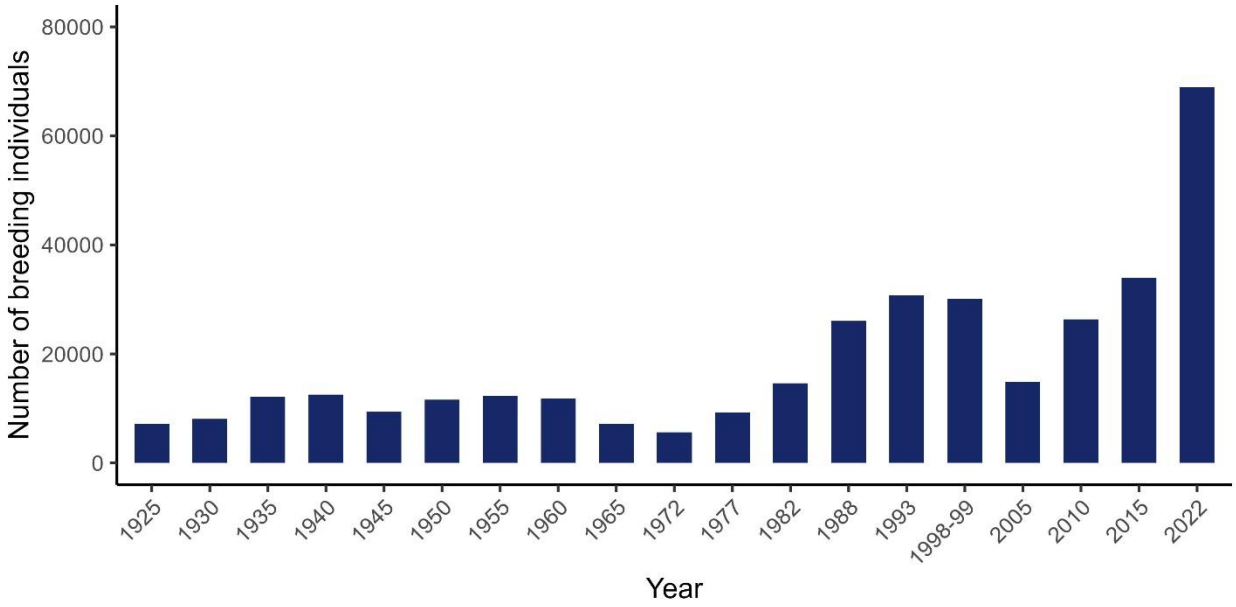

Figure 4. Number of Common Murres breeding in the migratory bird sanctuaries of the North Shore between 1925 and 2022.

The number of Razorbills has risen steadily over the past 40 years, reaching 16 times the number recorded in 1982 (Figure 5). This growth suggests that forage fish are abundant and that conditions in the migratory bird sanctuaries are highly suitable for Razorbill reproduction. Therefore, the population status is also considered “good.”

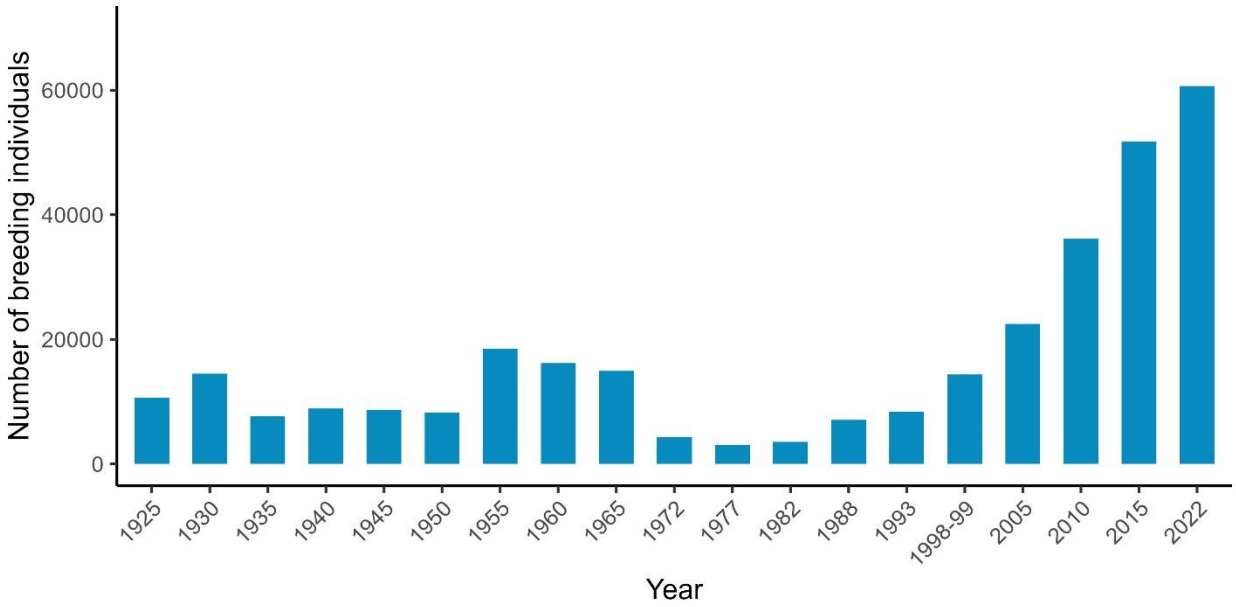

Figure 5. Number of Razorbills breeding in the migratory bird sanctuaries of the North Shore between 1925 and 2022.

The Atlantic Puffin population shows a stable long-term trend despite fluctuations (an increase of 53% between 1982 and 1993, a decrease of 54% between 1993 and 2010, then an increase of 60% between 2010 and 2022) (Figure 6). The population status is “moderate-good.” The underlying causes of this trend reversal are poorly understood.

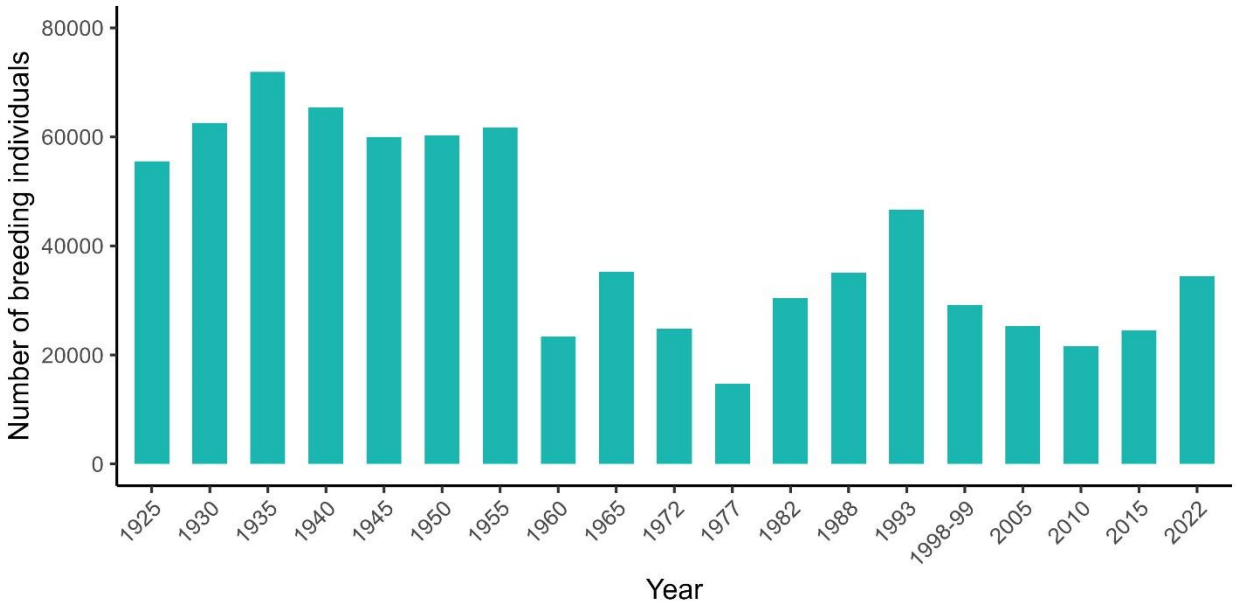

Figure 6. Number of Atlantic Puffins breeding in the migratory bird sanctuaries of the North Shore between 1925 and 2022.

Outlook

The population trends of the five indicator species nesting in the migratory bird sanctuaries of the North Shore have remained relatively unchanged: Common Murre and Razorbill populations continue to grow in the short and long term; the Atlantic Puffin population is stable in the long term, although it has shown growth in the short term; the Caspian Tern population is increasing in the short and long term but remains extremely fragile; and the decline in the American Herring Gull population has resumed its course. As a result of these trends, the overall status of the indicator remains “moderate.” The next quinquennial censuses of the migratory bird sanctuaries will enable us to verify whether the trends observed for the different species will continue or be reversed.

For more information

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State of the St. Lawrence Monitoring Program

Four government partners—Environment and Climate Change Canada; Fisheries and Oceans Canada; Parks Canada; the Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs du Québec—and Stratégies Saint-Laurent, a non-governmental organization that works actively with riverside communities, are pooling their expertise and efforts to provide Canadians with information on the state of the St. Lawrence and the long-term trends affecting it.

For more information about the State of the St. Lawrence Monitoring Program, please consult our website: www.planstlaurent.qc.ca/en/developing-knowledge/state-st-lawrence-monitoring-program

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