

## T11.7 SEABIRDS AND BIRDS OF MARINE HABITATS

The term “seabird” is used here to denote birds that obtain the majority of their food from coastal waters (neritic species) or from the open ocean (pelagic species), although some people restrict its use to the latter group. Neritic (secondary) seabirds use the land for feeding or resting at certain times, whereas pelagic (primary) seabirds are largely independent of the land except for nesting. By this definition, marine ducks, such as eiders and scoters, and shorebirds, such as phalaropes, are seabirds, as well as the pelagic species, of which three species of alcid, three saltwater terns, three gulls, two cormorants, one eider and one storm petrel breed here in Nova Scotia.

### COASTAL HABITATS

Coastlines exposed to the open sea are discussed here rather than in T11.6 because their use by birds is nearly restricted to resting and nesting, foraging being in adjacent waters rather than on the shores. Such arbitrary arrangements always have some exceptions: the use of (exposed) sand beaches by shorebirds such as Piping Plovers was covered in the previous topic, whereas foraging on rocky shores by Purple Sandpipers and Ruddy Turnstones is treated here. Islands are mostly included with marine habitats, unless they are sheltered within narrow inlets or lagoons.

### FOOD SUPPLY

Seabirds feed almost entirely on fish and marine invertebrates. Spatial and temporal variations in the abundance of food species, such as immature herrings, sand lance and capelin, are major determinants of the breeding seasons, colony locations and movements of seabirds. The abundance of food for seabirds is dependant on such factors as ocean currents, seasonal phytoplankton blooms, localized upwellings, and the presence of a fishery (see Plate T11.7.1).

### BREEDING

The breeding season stretches from March to September. Seabirds differ from other birds in that usually they cannot breed on their feeding grounds. At

breeding time birds, their eggs and young are particularly vulnerable to predation, so adults seek safe island breeding sites. The distribution of seabirds during the breeding season, therefore, is largely determined by the availability of suitable breeding sites and accessible food. The number of suitable breeding sites is generally limited, and seabirds assemble to breed in colonies. Pelagic seabirds spend almost their entire life at sea, coming ashore only to breed. They are characterised by clutches of a single egg, and they breed, typically, in large colonies on the most inaccessible islands. Coastal seabirds, in contrast, are characterised by multi-egg clutches and normally breed in many more, smaller colonies.

Island breeding sites are most numerous along the complex Atlantic coast of Nova Scotia, particularly where there are drowned drumlin fields (District 830). Gull, tern and cormorant colonies favour these sites. Cliff nesting sites provide protection from



Plate T11.7.1: The Herring Gull is our most common gull. Its numbers have increased since the use of open landfills and modern fish-processing methods have augmented food supply. There are an estimated 25 000 breeding pairs in Nova Scotia.<sup>1</sup> Photo: M. Elderkin

ground and aerial predators. High, stable cliffs are limited to northern Cape Breton (District 210). Lower, eroding cliffs can be found on the Northumberland Strait (Districts 520, 580) and the Bay of Fundy (Regions 600, 700). Black-legged Kittiwakes and cormorants breed on cliffs in Cape Breton Island, while cormorants and gulls breed on the lower cliffs in the Bay of Fundy.

Common Eiders breed on largely wooded islands adjoining waters with rocky reefs and islets (typically in Unit 834). Wintering species are sparsely distributed, except in the major coastal marshes that occur in Unit 833.

#### BREEDING SPECIES

Seabird species known to be breeding in Nova Scotia at present are:<sup>1</sup>

##### **Pelagic Species**

- Leach's Storm Petrel (*Oceanodroma leucorhoa*)
- Atlantic Puffin (*Fratercula arctica*)
- Razorbill (*Alca torda*)
- Black-legged Kittiwake (*Rissa tridactyla*)

##### **Neritic Species**

- Double-crested Cormorant (*Phalacrocorax auritus*)
- Great Cormorant (*Phalacrocorax carbo*)
- Common Eider (*Somateria mollissima*)
- Black Guillemot (*Cephus grylle*)
- Herring Gull (*Larus argentatus*)
- Great Black-backed Gull (*Larus marinus*)
- Arctic Tern (*Sterna paradisaea*)
- Common Tern (*Sterna hirundo*)
- Roseate Tern (*Sterna dougallii*)

Leach's Storm Petrels breed on several islands on the Atlantic Coast. They breed in burrows and their numbers are not well known. However, it is estimated 100 000 pairs breed in Nova Scotia.<sup>2</sup> Puffins breed at three sites and Razorbills, in very small numbers, at only two. A related species, the Black Guillemot, breeds much more abundantly in small colonies or individually at many sites around the coast. Kittiwakes are small pelagic gulls which breed abundantly from Newfoundland north to the Arctic. They also breed at five recently occupied sites in Cape Breton.

Herring Gulls and Great Black-backed Gulls breed abundantly all around the coast, as do Double-crested Cormorants. Great Cormorants have a more northerly distribution, not breeding in the Bay of Fundy or on the Atlantic Coast south of Shelburne County (Unit 841). Great Cormorants and Great

Black-backed Gulls forage offshore more than inshore during breeding season (when only immature Black-backs are at dumps or fish plants). Eiders are most abundant on the Eastern Shore and southern Cape Breton Island, breeding abundantly in the Bay of Fundy only on the New Brunswick side. Terns also breed most abundantly on the Atlantic Coast. There are few available breeding sites on the Gulf and Fundy coasts.

#### OTHER PELAGIC BIRDS

Sightings of another eighteen species of seabirds are regularly reported in Nova Scotia.<sup>3</sup> Most of the birds in the ocean off Nova Scotia breed at more northerly locations. The Greater and Sooty Shearwaters, which sweep north into our waters in April, breed in the South Atlantic; Wilson's Storm Petrels breed in the Antarctic. All come to take advantage of seasonal fish runs or zooplankton abundance.

#### SEABIRDS OUTSIDE THE BREEDING SEASON

Outside the breeding season, the pelagic species retreat out to sea, some species completely leaving Nova Scotia waters in winter. Non-breeding birds of these species, and pelagic visitors, seldom come in sight of land in summer except when storm-driven or where upwelling concentrates feeding opportunities. Brier Island (District 810, Unit 912) is an important area for phalaropes during fall migration. Tens of thousands of Red Phalaropes take advantage of the large amounts of food brought to the surface by highly localized upwellings.

The neritic species spread out from their colonies along the shores, in some cases moving inland along river and lake systems, before some of them depart southward. Seabird species that breed farther north, up to the Arctic (e.g., Northern Fulmar, Northern Gannet, Black-legged Kittiwake [only a few breed here], Thick-billed Murre, Dovekie), appear in Nova Scotia waters, mostly out of sight of land, in late fall, some staying for the winter along the shelf break.

The return movement, to local and more northern breeding colonies, gets under way in late March and continues into May, when the Southern Hemisphere breeders begin to arrive, especially Greater Shearwater, Sooty Shearwater and Wilson's Storm Petrel.

Eiders also appear along coasts where they do not breed, starting with moulting males in July, and including all age and sex classes by September. The coastline of southwest Nova Scotia is typically inhabited by moulting male Eiders. Through the fall, they are joined by thousands of passing scoters, of all

three species, from Labrador, Ungava, and the Hudson Bay lowlands, nearly all of which winter south of Nova Scotia. Smaller concentrations of other diving-duck species (e.g., Oldsquaw, Harlequin Duck [endangered], Common Goldeneye [also on rivers and estuaries], Red-breasted Merganser) frequent the province's nearshore waters in late fall through early spring, as do various piscivorous diving birds that breed inland or farther north, such as Red-throated Loon, Common Loon, Horned Grebe, and Red-necked Grebe. The first and last of these mostly winter farther south, but the others are regular here through the colder seasons.

#### DISTRIBUTION

In all seasons, substantial numbers of pelagic birds are found to the north and east of Newfoundland and on the continental shelf, with the greatest densities at areas of upwelling and high productivity along the shelf slope. In winter, northerly birds such as fulmars, murres, kittiwakes and Dovekies dominate the pelagic-seabird community. By April, the shearwaters have arrived and are most abundant along the edge of the Scotian Shelf and on the Grand Banks. In summer, the more northerly species have retreated to their breeding range and shearwaters are the most abundant species. At the mouth of the Bay of Fundy at this season, local up-welling and enhanced productivity attract large numbers of phalaropes, relatives of sandpipers that spend most of the year at sea. Seabirds are not abundant in the upper reaches of the Bay of Fundy or in the southern part of the Gulf of St. Lawrence.

#### HISTORICAL CHANGES

There have been major changes in the Nova Scotian seabird community since European settlement. Initially heavy exploitation reduced the numbers of most species, but in the last hundred years conservation efforts have brought increases in most species. Eiders have increased from a few hundred pairs at the beginning of the century to an estimated 8000 pairs breeding in the province now. In the same time period, Great Cormorants increased from a remnant population of less than a hundred breeding pairs to around 3700 pairs, and the Double-crested Cormorant increased from a few hundred pairs breeding on the eastern shore to some 12 000 pairs. Herring and Great Black-backed Gulls have increased from only a few thousand pairs to more than 60 000 pairs. The number of immature gulls in this population is about

100 000, a total of over 220 000 birds.

There have also been decreases. Laughing Gulls ceased to breed in Nova Scotia in the early 1960s, having been displaced by increasing numbers of larger gulls. Terns have decreased from several hundred thousand pairs (the majority breeding on Sable Island, District 890) to only a few thousand pairs at present. This decline is continuing. Roseate Terns, a threatened species, have a North American population of around 3600 pairs and perhaps 50 pairs breed in Nova Scotia, which is near the northern limit of their breeding range. Their numbers appear to be decreasing in parallel with decreases in numbers of Arctic and Common Terns.

Recently there have been substantial increases in the Nova Scotian populations of several seabirds. Black-legged Kittiwakes extended their breeding range to Cape Breton, south from Newfoundland in the early 1970s. Since that time they have increased to over 600 pairs, and in 1992 began breeding in southern New Brunswick. Black-headed Gulls are European birds which began breeding in western Newfoundland in the 1960s and have recently been observed, in increasing numbers, in Nova Scotia during the summer. There have been indications that they have attempted to breed in tern colonies on the eastern shore. Atlantic Puffins have increased at both their traditional breeding places in Nova Scotia (Bird Islands, Unit 531 and Pearl Island, Unit 832) and have recently begun breeding in the Seal Island group. More than 120 puffins now summer at Pearl Island, a tenfold increase in the last decade.

#### CULTURAL FACTORS

The changes which have been observed in the seabird community in Nova Scotia can be ascribed to human influence. In Atlantic Canada, direct exploitation of seabirds is no longer the major conservation problem nor is human disturbance of colonies; most changes are incidental affects of human use of the oceans (see T12.16).



**Associated Topics**

T6.1 Ocean Currents, T6.2 Oceanic Environments, T6.3 Coastal Aquatic Environments, T6.4 Estuaries, T11.14 Marine Fishes, T11.16 Land and Freshwater Invertebrates, T12.11 Animals and Resources

**Associated Habitats**

H1.2 Benthic Ocean, H2.1 Rocky Shore, H5.3 Cliff and Bank

**References**

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- 2 Scott, F. (1993) Nova Scotia Museum, Personal Communication.
- 3 Tufts, R.W. (1986) *The Birds of Nova Scotia*, 3rd ed. Nimbus Publishing & Nova Scotia Museum, Halifax.

**Additional Reading**

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