

# The Birds of Sable Island, Nova Scotia

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## ABSTRACT

A total of 324 species of birds, 236 authenticated by specimens or photographs, are reported from Sable Island, a treeless sandbar 150 km from the nearest mainland of Nova Scotia. Historical records are reviewed, especially the underappreciated collections and observations by James and Richard Bouteillier between 1894 and 1910. Extensive records have been kept since 1963, including quantitative daily lists of birds during 1967-1979. Research on the Ipswich Sparrow, Least Sandpiper, *Larus* gulls, and shorebird migration, is reviewed briefly.

Twenty-five species nest or have nested on the island. Almost all the species that breed in Nova Scotia, or are normal migrants or eruptives to the province, except for a few mostly sedentary or rare species, have occurred on the island. For the period 1967-1979, extreme and median migration dates, and estimated numbers of occurrences and individuals, are given for all species except seabirds and year-round residents. Landbird migrants, about 6 times more common in autumn than in spring, are not as common as on islands nearer the Nova Scotian mainland, where about 5 times as many have been listed on comparable days.

Eighty-five species defined as vagrants in the province have been reported from the island, most based on specimens or photographs, or on well-documented sightings. These include 2 first records for North America, 4 for Canada, and 24 for Nova Scotia. In comparison with other localities in eastern North America, the proportion of landbird vagrants from more remote ranges is higher on Sable Island.

The island has also produced many late and early provincial records of migrants, including some totally unseasonable ones. A substantial amount of summer wandering by presumed nonbreeders is evident. A number of boreal and arctic-subarctic species have occurred during summer. Winter appearances by "half-hardy" species imply a sustained capacity for migratory escape from deteriorating conditions.

Extensive records from the late 19th and early 20th centuries allow assessment of historical changes. Herons, terns, and shorebirds have changed in abundance over their wider ranges. Wintering waterfowl and some breeding species have declined because of the virtual disappearance of Wallace Lake, a once-extensive lagoon. Populations of some of the most abundant vagrants today, not reported in earlier years, may have responded to proliferating second-growth habitats.

## RESUMÉ

On signale 324 espèces d'oiseaux sur l'Île-de-Sable, un banc de sable dénudé situé à 150 km du point le plus rapproché de la Nouvelle-Ecosse; de ce nombre, 236 espèces ont été établies par des spécimens ou par des photographies. On examine aussi des documents historiques dont les collections et les observations sous-estimées faites par James et Richard Bouteillier entre 1894 et 1910. Depuis 1963 on a accumulé des notes d'observation considérables dont des listes journalières quantitatives des espèces observées durant la période allant de 1967 à 1979. On critique aussi des recherches sur le Pinson d'Ipswich, la Maubèche Minimé, les goélands du genre *Larus*, et la migration des oiseaux côtiers.

Vingt-cinq espèces nichent sur l'Île ou l'ont déjà fait. Presque toutes les espèces qui se reproduisent en Nouvelle-Ecosse, qui y migrent normalement ou qui y sont irruptives ont été observées sur l'Île, à l'exception de quelques espèces sédentaires ou rares. Pour toutes les espèces, sauf les oiseaux de mer et ceux présents à l'année longue, on donne les dates de migration les plus hâtives et les plus tardives enregistrées ainsi que la médiane de ces dates. On donne aussi pour ces espèces une estimation du nombre de fois qu'elles sont venues sur l'Île et du nombre d'individus impliqués. Les espèces migratrices continentales, environ 6 fois plus communes en automne qu'au printemps, ne sont pas aussi communes sur l'Île-de-Sable que sur des îles plus rapprochées de la Nouvelle-Ecosse, îles où l'on dénombre environ 5 fois plus d'espèces que sur l'Île de Sable au cours de jours comparables.

On a signalé sur l'Île 85 espèces définies comme errantes dans la province; l'identité de la plupart de ces espèces est basée sur des examens de spécimens, des photographies ou des observations bien documentées. Ces rapports incluent 2 premières pour l'Amérique du Nord, 4 pour le Canada et 24 pour la Nouvelle-Ecosse. La proportion d'oiseaux continentaux errants venant d'habitats plus éloignés est plus grande sur l'Île de Sable qu'à tout autre endroit de l'est de l'Amérique du Nord.

Des migrations les plus hâtives et des plus tardives enregistrées dans la province, plusieurs ont eu lieu sur l'Île, dont certaines complètement hors-saison. En été il se produit un vagabondage important de la part d'espèces qui, présumément, ne se reproduisent pas sur l'Île. Un certain nombre d'espèces boréales et arctiques-subarctiques ont été rencontrées en été. L'apparition en hiver d'espèces "semi-résistantes" implique le maintien de la capacité d'émigrer pour échapper à la détérioration des conditions de vie.

Une documentation considérable d'antant de la fin du 19e siècle et du début du 20e siècle permet d'évaluer les changements de population dans le temps. Les hérons, les sternes et les oiseaux côtiers ont vu se modifier leur abondance dans leur habitat étendu. Les oiseaux aquatiques qui hivernent sur l'Île, et quelques espèces qui n'y viennent que pour se reproduire, ont décliné à cause de la disparition du lac Wallace, un lagon jadis très important. Les populations de certaines espèces errantes les plus importantes de nos jours et autrefois inconnues sur l'Île, peuvent s'être développées en réponse à la prolifération de nouveaux habitats là où se trouvait le lac.



## Introduction

Sable Island (Fig 1) has long been a theatre of human history, and today is a focus of economic hope. Yet it also has a rich natural history, somewhat diminished since the first human settlement almost 400 years ago. The famous horses, the seals and the Ipswich Sparrow are all well-known inhabitants, and a surprising amount of study has been made of the island's plants and smaller forms of animal life. This is the third study titled "... birds of Sable Island ...". The first (Saunders 1903) did not fulfill its title. The second (McLaren & Bell 1972) was a preliminary account of records made between 1963 and 1971, and is now out of print.

A much-travelled colleague has remarked that he has been in places more beautiful than Sable Island, but has seen more beauty there than anywhere else. The expansive seascapes and dunescapes, magnificent, yet "dreary" to some 19th century writers, soon force one's attention to the smaller scale. To me, the birds are an integral part of the island's beauty and, with so many of them from afar, they bring a larger sense of time and space to one's visits there. Amassing and analyzing bird records from the island has been a pleasant distraction since my first visit there in 1967. Others have been involved in, and sometimes cajoled into this labor. I thank them in the Acknowledgements, but I hope they find more satisfaction in seeing their efforts used.

Sable Island is difficult and expensive to visit (government permission must be obtained to stay on the island, and is granted generally only to those who have work to do there). Those who live or visit there may find this a helpful guide, and I hope that they can continue to supply bird reports in the future. Serious students of birds may find the data on occurrences and migrations of use in their own faunistic or comparative studies. Those who simply enjoy birds may find this account a means of visiting, in the mind's eye, what must surely be one of the most exciting places in North America for birdwatching.

## Early Records of Birds

The first descriptions of the general character of Sable Island, as in Champlain's *Voyages* and Governor Winthrop's *History of New England*, mention animals of obvious exploitability, such as seals, foxes, and cattle, but not birds (see Patterson 1894; St. John 1921, for these and other early references to the island). Andrew Le Mercier's 1753 description of the island, by which he hoped to sell it, states with advertising hyperbole that the "Air [abounds] with fowl, and especially with Black Ducks, so as to make money with their feathers" (St. John 1921). Des Barres' (1777) account accompanying his detailed survey of the island mentions "ducks, snipes, and other birds." This interest in the more useful avifauna prevailed into the 19th century in various reports (in Nova Scotia Archives) to the Nova Scotian government during and after the placement of life-saving facilities on the island. Governor Wentworth's plea in 1800 for such facilities mentions "the vast quantities of seabirds" there. Captain Jones Fawson, who took first Superintendent James Morris with his assistants and equipment to the island in October 1801, reported to Wentworth that "the pond . . . is frequented by blue winged ducks [i.e., Black Ducks] and other wild fowl in abundance." However, Morris was less enthusiastic after 6 months' experience, for he wrote in his first report on 29 March 1802: "I never saw wild fowl so scarce in any part of America near the ocean as at this Island we have only killed about 40—tho often seek after them." This may have been exaggeration of another sort, in an effort to gain more sustenance for the new enterprise.

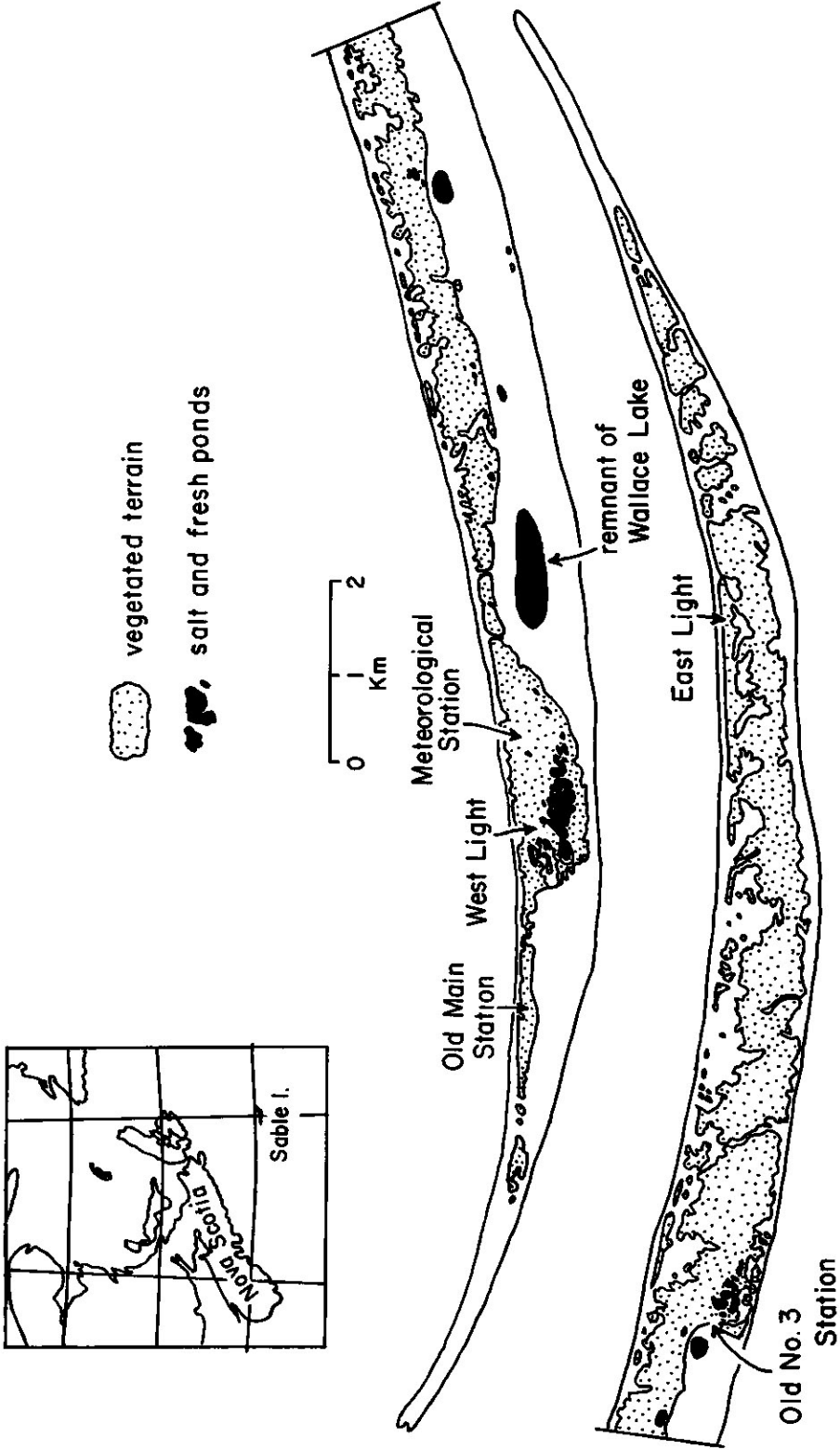


Fig 1 Sable Island, with place names mentioned in the text.

In the laconic entries in the diaries of successive 19th century superintendents of the island (in Nova Scotia Archives) there are occasional references to hunting of waterfowl and shorebirds, gathering of eggs, to arrival dates of terns (as a mark of season), and to Snowy Owls, which seemed sufficiently spectacular to command attention. Perhaps the most interesting bird reference is in a letter by Superintendent Edward Hodgson dated 30 September 1810: "We tried to raise some Oats, and had a very good appearance of a good crop but unfortunately a small bird we call the grey bird Destroyed the whole." This was clearly an early reference to the Ipswich Sparrow—one of the island's many dangers! A later hint of a broader interest in the natural history of this bird is found in the sets of eggs collected by J.P. Dodd, a resident of the island, in 1862, and subsequently attributed to the Ipswich Sparrow (Ridgway 1884).

Some published accounts of 19th century life on the island give a bit more information on birds, with the usual emphasis on game species. Captain J.A. Farquhar, whose father was posted to the island in the mid-1800's, writes (Martin 1946) that "in their season the curlew, plover, bluewing duck and snipe came by the thousand." After describing how once he killed 19 curlew with a single shot, he laments that on a visit to his old home in 1913 "there were very few curlew and plover compared with seventy years ago." Another sporting visitor to the island in the summer of 1866 was sufficiently interested to enumerate several species of shorebirds, ducks, and other species, complete with scientific names (Vieth 1907).

The first explicit references to the natural history of birds on the island during this era are in the small book by Dr. J.P. Gilpin (1858) based on his visit to the island in summer 1854. Gilpin makes statements about the breeding ducks, shorebirds, and terns, describes an earlier summer visit by a Snowy Owl, mentions "a small brown sparrow", and adds to the previous lists "a few Hawks, a Robin or two, a wild Pidgeon Plover, and some large, black-backed Gulls, . . . Shearwaters and Mother Carey's Chickens . . ." However, he subsequently (Gilpin 1880; 1881; 1882) included only a trickle of references to the island's birds in his series on the birds of Nova Scotia (Barnacle Goose—see under Snow Goose in the present account, Black Duck, Snowy Owl, and Upland Plover). The terse list of Downs (1888) refers only to the Razorbill, terns, Red Phalarope, and Snowy Owl from the island. Piers (1892; 1894; 1897) ignores these previous records and adds no more in his accounts of Nova Scotian birds.

Sable Island was, alas, not visited by any of the many naturalists who were exploring the reaches of the continent during the late 18th and early 19th centuries. Oddly, it is in the (literally) passing observations by Mrs. John Graves Simcoe (Robertson 1934) that we find the earliest hint of the real flavor of Sable Island ornithology. Mrs. Simcoe, coming to the New World with her husband, soon-to-be Lieutenant-Governor of Upper Canada, described in her diary the uneasiness aboard ship as it neared Sable Island during hard weather between 25 and 28 October 1771. However, her strong interest in natural history came to the fore, and she was able to note "a bird like a linnet and a crossbill" aboard ship on 26 October and next day described the capture of "a beautiful owl, olive colour, with white spots and black about his face . . . not larger than a thrush and not wild; also a bird the size of a lark." This scattering of landbirds far out to sea (including what may have been an early record of the rare Boreal Owl) is a feature of the ornithology of Sable Island that remained almost undocumented until another century had passed.

### The Ornithological Bouteilliers and their Naturalist Visitors

Beginning in 1894, there was a period of intense study of the island's birds. This was occasioned in part by the visits of some well-known naturalists of the day, but most of the activity was by some children of Robert J. Bouteillier, the island's Superintendent between 1884-1912. Bouteillier himself was a man of great vigor, intelligence, and organizational ability, of whose talents and hospitality have been widely written by visitors to the island during those days.

Some time after the discovery of the "Ipswich Sparrow" by Maynard (1872), and following upon indications that it nested on Sable Island (Ridgway 1884; Merriam 1884), Jonathan Dwight, Jr., of New York City visited the island between 28 May and 14 June 1894 in order to study the bird on its nesting grounds (Dwight 1895). The visit by this well-known American ornithologist had a profound influence on the 3 youngest Bouteilliers: Sara Beatrice or "Trixie" (1879-1978), Richard S. or "Dick" (1881-1928) and James W. McL. or "Jim" (1885-1971). In a taped interview a few years before her death, Trixie Bouteillier describes how Dwight taught them to make bird skins and was able, after so many years, to refer to some of the island's birds by the Latin names used in Dwight's day. The boys (Fig 2) became especially serious, and James retained his interest through his later years at Sault Ste. Marie, Ontario (R.S. Bouteillier, in litt.).



**Fig 2** Pioneer students of the birds of Sable Island, James (left) and Richard (middle) Bouteillier, with a companion, about to mount an attack on the island's introduced foxes. (Photo: ca. 1895, courtesy Robert S. Bouteillier.)

An important result of Dwight's visit was a series of bird skins from the island now in the American Museum of Natural History (AMNH) and the Science Museum, Springfield, Massachusetts (SMS). Some were taken by Dwight himself (90 catalogued in AMNH, 9 in SMS), but a larger number (177 in AMNH, 37 in SMS) are dated subsequently to his visit, and were clearly sent to him by the Bouteilliers; there is direct evidence of this on some labels. The earliest of these is a Lincoln's Sparrow dated 30 June 1894, and the latest are 3 Whimbrels taken 6 September 1910. The collection includes a substantial 107 species of birds. Others may be scattered elsewhere, for Dwight's correspondence at the Museum of Comparative Zoology (MCZ) at Harvard University, largely American Ornithologists Union (AOU) business, has references to the selling and trading of specimens, including eggs of the Ipswich Sparrow. A Long-tailed Jaeger was more recently sent from the AMNH to the Australian Museum, Sydney. I have been unable to trace other possible dispositions of Dwight's Sable Island material from known, but limited, correspondence at the Museum of Comparative Zoology and at the Academy of Natural Sciences, Philadelphia.

Between 29 July and 3 August 1898 the island received the polymathic Alexander Graham Bell and a party of 5, including his wife and daughter. The visit is recorded by J.R.T. Atwater in the *Baddeck Telephone* (Victoria Co. Archives, Nova Scotia) for 31 August 1898. Atwater gives an account of the people and natural history of the island, mentioning the common birds.

It is a measure of the esteem felt by the Bouteilliers for Bell and Dwight that both were included among 5 who received messages upon the opening of the wireless station on the island, on 27 June 1905 (Nova Scotia Archives).

John Macoun of the Geological Survey of Canada was the next bona fide naturalist to visit the island, for 5 weeks during July-August 1899. He made general observations, collected plants, but mentioned only the Ipswich Sparrows and the "Canada" (i.e., Red-breasted) Nuthatch in his brief report (Macoun 1899). However, he was obviously impressed by and wished to impress the young people, as shown by his Victorian homily in the Bouteilliers' visitors' book (R.S. Bouteillier, in litt.): "To the young people I may, as a teacher, say go on as you are doing—observing and thinking and although shut out from the world and all its vanities and follies you are not shut out from nature which if taken aright is the best teacher and the one that when accepted as a guide gives the purest happiness." Unfortunately Macoun's later somewhat careless use of the Bouteilliers' bird records (see below) did not match these sentiments.

In 1901 a massive and ultimately futile effort was made to plant trees on the island, under the direction of William Saunders, Director of the Dominion Experimental Farms system. St. John (1921) gives an accessible summary of this operation and its outcome. Accompanying Saunders was his son William Edwin, an active avocational ornithologist from London, Ontario. Based on his short stay, during 16-23 May 1901, W.E. Saunders (1902a) wrote an account of the birds (the same appeared in the *London, Ontario Advertiser* of 20 July 1901) and 2 short notes on the Ipswich Sparrow (Saunders 1902b; 1905), none of which added much to observations made by Dwight (1895). However, Saunders may have had an important role in initiating the Bouteillier boys in the keeping of seasonal lists in ensuing years (see below).

A series of notes on birds seen on the island by the Bouteilliers appeared at the beginning of the century in the *Ottawa Naturalist* (Bouteillier 1901; 1905; 1906; 1908a; 1908b). An indication that a list for 1902 had been circulated, although not published, came from 2 sources: 1) the minutes of 6 February 1903 of the Ornithological Section of the Entomological Society of Ontario (Judd 1972) state

**Table I** Annual lists, published and unpublished, made by Richard W. and James W. McL. Bouteillier on Sable Island, 1901-1908.

Period covered	Author of original list	MS on file	Published version Date	Stated Author
3 Aug. — 4 Nov. 1901	Richard	no	1901	Richard Bouteilier
28 Mar. — 30 Nov. 1902	James	yes	—	
2 Jan. — 25 Dec. 1903	James	yes	—	
21 Jan. — 20 Aug. 1904	James	yes	1905	James Bouteillier
23 Apr. 1905 — 6 Jan. 1906	James(?)	no	1906	James Bouteillier
28 Mar. 1906 — 1 Jan. 1907	Richard	yes	1908	James Bouteiler
20 Jan. — 16 Nov. 1907	Richard	yes	1908	James Bouteillier
20 Apr. — 31 Dec. 1908	Richard	yes	—	

that "an extended report on migrations on Sable Island, by Mr. James Boutilier (*sic*), was examined and discussed"; 2) Macoun and Macoun (1909) include several 1902 records. Through Dr. R.W. Tufts (in verb.) I discovered that handwritten lists, which he referred to in preparing his *Birds of Nova Scotia* (Tufts 1973), were on file at the Nova Scotia Museum. These lists for 6 years include 3 unpublished ones (Table I). Altogether, 149 species are included on the lists (113 on the published ones). In addition, there is an account of an interview on 10 June 1902 with Robert Bouteillier in the hand of Harry Piers, then Curator of the Provincial Museum, Halifax, describing the status of 104 species, including 24 not on the seasonal lists. The birds are mostly listed on the Piers manuscript by AOU number, rather than by name, and the list has evidently, and unfortunately, been truncated by the loss of one or more pages, as it ends at AOU number 621 (Northern Shrike).

The genesis of these annual lists is somewhat uncertain. The first is not on file in the Nova Scotia Museum, and it follows upon the spring visit by W.E. Saunders (see above). According to the minutes of the Ornithological Section of the Entomological Society of Ontario (Judd 1972), of a meeting held at Saunders' home on 13 December 1901, "a letter with records of autumn migration from Sable Island was read and elicited much discussion." It is probable this letter had been sent to Saunders and was the basis for the published list (Bouteillier 1901). The subsequent published lists are more comprehensive and the unpublished ones are organized in a standard way, with column headings ("Name of species; When first seen; When did it become common; When last seen; Does it breed in your locality; Abundance; Remarks") in the hand of Harry Piers. The columns have then been filled by the Bouteilliers. Furthermore, there are similar lists from the same era (1902 et seq.) on file at the Nova Scotia Museum. Clearly the lists from Sable Island and elsewhere were part of an enterprise by Harry Piers. It is not certain if their publication, beginning in 1904, was expedited through Piers or through copies made available to Saunders.

The annual lists, together with the Piers manuscript of the interview with Richard Bouteillier, are a remarkable and valuable contribution, and were obviously of sufficient interest to be partly published at the time. However, the published versions of the lists and other references to them contain numerous errors and infelicities that should be pointed out or corrected. First, there has



been a pervasive tendency in references to the Bouteilliers to misspell their name. The holographic version used by all members of the family was as I give it, and this spelling is still used by descendants today (R.S. Bouteillier, in litt.). Dwight (1895) and Saunders (1902a) used "Boutilier", Macoun (1899) and Macoun and Macoun (1909) used "Boutelier"; and the published lists give 3 variant spellings, none correct (see Table I). Another series of errors is in the attribution of some lists to the wrong Bouteillier brother in the published versions (Table I). In fact, the lists were begun by Richard, the older brother, and continued in 1902-1905 by James, as Richard was off the island between 4 June 1902 and 10 January 1905. In the absence of the original manuscript, the authorship of the published 1905 list is uncertain, although both brothers made observations recorded on the 1906 list (see below: case of the Henslow's Sparrows). However, James left the island for employment as a wireless operator between 14 August 1906 and 1 January 1910, and Richard kept the lists for 1906-1908, leaving the island himself on 26 March 1909. The errors of spelling and attribution on the published lists are all the more remarkable, as the authors' clearly handwritten names appear on all the original manuscripts. The published lists also have a few omissions and some errors in names, numbers, and dates of birds seen. I correct some of the more serious errors in the Account of Species. There are many more errors in the references to the birds of Sable Island by Macoun and Macoun (1909), almost all carelessly extracted from the unpublished 1902 list and subsequent published ones; it is best to ignore their secondhand reports.

Generally speaking it has been the fate of the Bouteilliers' records to be ignored in more recent accounts of the birds of the regions that include Sable Island. For example, Bent (1921; 1922; 1927) included records from Dwight's publications, but not those of the Bouteilliers. Possibly there was concern about the validity of some of the more unusual records. Piers annotated some of the Bouteilliers' lists with queries, and also wrote to them for further information on some records. A letter from James Bouteillier to Piers on 9 May 1903 (on file, Nova Scotia Museum) states that he had sent 3 skins of the Ipswich Sparrow and then, referring to the 1902 list, says: "I am absolutely certain of the identification of the Stilt Sandpiper, Mockingbird, Dickcissel, Yellowheaded Blackbird, and Orchard Oriole. I had all in hand and skinned some of them which I sent to a friend in the States". Some are indeed in Dwight (1903), although the Orchard Oriole (see Account of Species) remains in doubt. In a letter to Piers on 18 August 1907, concerning the published 1906 list (Boutillier 1908a), Richard Bouteillier writes: "I regret . . . we have not a specimen of Henslow's Sparrow . . . . My brother James, who is now on the mainland, recorded them, therefore I do not know much about the matter . . . ." Piers' marginal comment was: "probably not Henslow's." Macoun and Macoun (1909) echo this conclusion on the Henslow's Sparrows. Correspondence between Piers and P.A. Taverner, then Dominion Ornithologist, in 1920 (on file, Nova Scotia Museum) suggests that other records by association might be suspect. Tufts (1973) made only limited use of the published and unpublished material.

Certainly individual records on the Bouteilliers' lists can be questioned, and I consider a number of these records in the Account of Species. However, in view of the large number of unusual species that have been recorded in recent years, many of them fully authenticated, similar sight records on the Bouteilliers' lists certainly should not be rejected out of hand. There remain, of course, the extensive records of more commonplace birds, from a period of 8 years, and the many specimens taken over a period of 16 years. I make full use of these hitherto underappreciated contributions.

### Scattered Records of Birds, 1911-1953

After the departure of the Bouteilliers, there was a lengthy period when, as far as is known, no systematic records of birds were kept by the island's inhabitants, and there were only occasional visits from naturalists and scientists with ornithological interests.

Dr. H.T. Güssow of the Central Experimental Farm, Ottawa, visited in late August and early September 1911, and collected plants extensively, but evidently did not publish observations. Harold St. John visited the island in 1913, but his excellent account of the character, history, and botany of the island (St. John 1921) includes no original observations on birds.

Rosebrugh (1932) includes some casual observations on the birds based on his residence on the island during 1916.

I have been unable to find any records for the period between the World Wars, but in 1945, Dr. W.W. Judd landed briefly on the island and made hasty observations on natural history, sighting what he retrospectively believed was an Ipswich Sparrow (Judd 1948).

John J. Elliot of New York visited the island between 30 July and 3 August to see firsthand the breeding Ipswich Sparrow, as part of his preparation in writing an account of the bird for Bent's *Life Histories* (Elliot 1968). His earlier account of the bird (Elliot 1956) includes some observations on other species on the island, as does a letter dated 11 December 1948 to Dr. H.F. Lewis, Chief of the Dominion Wildlife Service (letter on file, Canadian Wildlife Service, Ottawa). The letter, incidentally, is of interest in having a sensible Long Islander's prescriptions for restoration of damaged dunes on Sable Island, using approaches that have come to be realized in the last few years. Neither account contains any reference to one most unusual species that Elliot is said to have seen on the island (see Roseate Spoonbill in the Account of Species).

John Erskine of Wolfville, Nova Scotia, an accomplished naturalist, made trips to the island in summer 1952 (no dates given) and on 28-30 August 1953. His account of the ecology of the island, with emphasis on its botany (Erskine 1953) includes a number of bird sightings.

### Recent Records of Birds

The Account of Species in this monograph is based largely on extensive records of birds begun in June 1963, with the arrival of Christel Bell, whose husband Norman Bell became employed on the island. The Bells observed birds largely in the vicinity of their house near West Light, perhaps the best area for a diversity of migrants and vagrants. Until the end of 1966, Mrs. Bell recorded all of the less common species, but only the first seasonal sightings of more common ones. From the beginning of 1967 until their departure in March 1970 (except for absences 19 August - 11 October 1968 and 24-30 September 1969) she kept daily records of numbers of individuals of all species seen. Her records, together with other recent ones through 1971 (see below) were the basis for an earlier, preliminary account of birds on the island (McLaren & Bell 1972), and are still the most seasonally sustained and comprehensive data available.

Beginning with a brief visit in June 1967 to census the Ipswich Sparrow (McLaren 1968), extensive research on the island's wildlife and environments has been carried out by myself and colleagues and students. Ecological research on certain species of birds will be summarized in the next section. In addition, some of us have also kept records of birds seen in the course of our work, and several have made daily lists of all species seen. Between 1968 and 1979, at least 1 and



often several observers were present on the island during spring and summer (usually from early or mid-May to the end of August or early September) and often at other times of year as well. In the course of their work, students lived at both East Light and West Light, and often ranged widely over the island. Some of these observers were active photographers who together have thus authenticated many species of birds on the island. Those who contributed are enumerated in the Acknowledgements and some are identified as authorities for more unusual sightings in the Account of Species.

Beginning in May 1974 and until the end of 1979, regular lists have been sent to me by Alban A. Richard, a government employee on the island. These were either daily counts of birds seen or were summaries of estimated numbers seen during portions of seasons. Most of his observing was done near West Light or around the Meteorological Station. His records are especially valuable in supplying early and late records during seasons, when no other observers were on the island.

Other visitors and residents on the island have supplied scattered records since 1963, and these have been incorporated in the Account of Species, although not in overall numerical estimates, which are based on the quantitative lists mentioned above.

### Recent Research on Birds

A brief summary is given here of research on birds carried out on Sable Island since 1967. Numerical and seasonal data resulting from these studies are included in the Account of Species.

I began a long-term study in May 1968 on the island's only endemic nesting bird, the Ipswich Sparrow, which next year was adopted by W. Stobo as the subject of doctoral research (Stobo 1973). As almost all nest on the island (a handful nests on the mainland, mated to Savannah Sparrows), and as it is relatively imperturbable, the bird offers advantages for study. A monograph on the subspecies (Stobo & McLaren 1975) gives many descriptions and analyses of its special life-history features. Between about 2000 and 3000 individuals returned each spring from 1967 to 1973, some pausing on the nearby mainland to await suitable weather. Males were vigorously territorial, and quite often bigamous, with the females out of phase in nesting cycles. A few females had as many as 4 successive successful broods in a season. Recruitment of fledged young (in late-summer censuses) was independent of breeding-population density, but much affected by weather. On the other hand, population density in late summer appeared to influence overwinter survival rate. Detailed measurements of live birds showed infinitesimal overlap between the island race and Savannah Sparrows from nearby mainland beaches.

Further doctoral research on the Ipswich Sparrow was done by H.A. Ross (1979), in an attempt to determine how the conditions of a young bird's rearing—habitat, season, age of parent—affect its early growth and subsequent survival. Ross (1980a) confirmed that young adult sparrows produced fewer offspring than did older ones, but also found (Ross 1980b) that older adults produced smaller young, in an evident sacrifice of quality for quantity. Most interestingly, there was no differential overwinter survival of young birds with respect to various measures of growth rate and size on the nest (except, weakly, tarsus length) or to habitat, month of birth, or age or longevity of parents (Ross 1979).

A.R. Lock (1973) studied the breeding biology of the Great Black-backed and Herring Gulls in 1969-1971. The island offered an unusual opportunity to study reproductive success in a setting remote from sources of food in garbage or

fisheries wastes. His work supplied many details of the nesting cycles and behavior of the 2 species on the island. His major conclusion was that the Herring Gull population is unable to supply the food demands of its young in summer, so that it is not self-sustaining. The larger black-backs, because of their superior ability to range offshore and catch fish, and also because they exploit other seabirds, are self-sustaining as a population.

E.H. Miller (1977) did doctoral research on the Least Sandpiper on the island in 1975 and 1976. He showed that about 37% of eggs laid produced fledged young, so that the birds are quite successful on the island, near the southern limit of their nesting range. From extensive analysis of movements, displays and songs, Miller (1979) concluded that males make display flights over and defend exclusive mating territories. The males have a greater role in incubation and care of the brood than do females. In spite of the fact that the nesting season is more prolonged than in most northern sandpipers, the birds do not depart from a conservative, monogamous, single-clutch breeding system.

Jean Burton (1974) did his doctoral research on southbound shorebird migration in eastern North America, using Sable Island as a convenient locale in 1970 and 1971. Returns from the 1912 individuals banded there, together with studies of weights of the birds and their arrivals and departures in relation to weather, helped to illuminate major features of this migration. McNeil and Burton (1973; 1977) concluded that species with large fat reserves, such as White-rumped Sandpiper and Red Knot, together with the fattest individuals of Least Sandpiper, Short-billed Dowitcher and Semipalmated Sandpiper, make oversea, nonstop flights from the Maritimes to the Lesser Antilles, at least.

### **Bird Habitats and Bird Finding**

The island is home for a number of breeding species, offers normal habitats on their usual migratory route for shorebirds and waterfowl, but is an unusual place in an unusual setting for the majority of species that have occurred there. Nevertheless, there are places on the island where many birds are attracted, and where particular kinds are found. Figure 1 should be consulted in connection with the following descriptions.

Truly pelagic species can be seen at times from anywhere along the island, especially when winds are easterly. However, much the best observing is from the island's tips, where pelagic birds can be seen rounding the ends of the island, and sometimes feeding in the turbulent, shallow waters. The outermost lengths of the island are also resting places for such pelagic birds as Kittiwakes, and occasional rare terns and gulls.

The extensive, unvegetated beaches on the island are used by nesting gulls and terns near the island's tips, and elsewhere by roosting flocks of gulls and terns, which can be scanned for occasional rarities. Although some shorebirds are to be found anywhere along the edge of the sea, the greatest concentrations occur seasonally on the often-flooded areas around the remnants of Wallace Lake. The westernmost and largest remnant has the largest concentrations, and the deeper part attracts occasional sea ducks or cormorants.

Waterbirds, herons, rallids, and shorebirds are to be looked for on and around the island's numerous brackish and fresh ponds. The complex of fresh ponds between West Light and the Meteorological Station is the best place for nesting ducks and shorebirds and for many visiting species. The areas just southwest of West Light have been recently protected from saltwater incursions by a large dyke, and the sandy-bottomed ponds often have unusual shorebirds. The generally brackish ponds at Old No. 3 Lifesaving Station are especially rich in

shorebird species. Dykes and sandfencing are being established to prevent excessive inundation of some of these areas by seawater, which will help maintain the habitat for use by birds. Some smaller ponds on the island are worth searching for birds. Series of ponds about 0.5 km and 2 km east of the westernmost basin of Wallace Lake are not very deep or vegetationally rich, but do have unexpected species at times. The relatively deep pond 1.3 km west of No. 3 Station is good for waterfowl. The very small, shallow, but vegetationally diverse pond 0.3 km northwest of this Station has produced numbers of rare herons and rallids. Unfortunately, it seems to be filling in with sand during recent years.

Some landbird migrants are at home in the dunes, but most are strongly attracted to more densely vegetated areas. Areas around ponds are always the best places to find birds in spring. A systematic search of "high" shrubs (i.e. >0.3 m) is worthwhile. However, in late summer and autumn the island is greatly transformed by the growth of marram grass (*Ammophila breviligulata*), and especially by thick growths of beach pea (*Lathyrus japonicus*) and seaside goldenrod (*Solidago sempervirens*) on the tops of some dunes. These insect-rich, virtual thickets of herbaceous growth attract large numbers of passerines, including hordes of juvenile Ipswich Sparrows, between about late August and the beginning of winter. Perhaps because it is the first attractive landfall for birds displaced over the sea beyond the island, the lush top and southern slope of the long, easternmost dune are excellent places for birds. Birds are also often very concentrated on the flanks of the dunes 0.5 km southwest of West Light, perhaps gathering there from the length of the island before flying in a westerly direction to regain their normal flight paths.

Finally, it is a great convenience for observers that man-made structures—buildings, towers and fences—are much frequented by landbirds using them as substitute trees. Many of the most interesting birds seen on the island have occurred on and around the occupied house nearest West Light. The Meteorological Station tends to attract somewhat fewer birds. Birds can also be found around the rapidly collapsing buildings at Old Main Station, and especially in the nearby rose garden (*Rosa rugosa*) planted in 1901 but, alas, becoming inundated by sand in recent years. The nearby buildings established recently by the Nova Scotian government should also be explored. The old house near East Light, recently abandoned by researchers from the federal Department of Fisheries and Oceans, has not been strongly attractive to birds, and the newly built house to the southeast nearer the beach may be similarly unattractive, probably because of the lack of dense vegetation in the area. The long-abandoned house at Old No. 3 Station is now reduced to piles of rubble, within which lurks an occasional bird of interest. It should also be stressed here that dead birds are most frequent in and around buildings and under towers. Such corpses have supplied confirming evidence for the occurrence of unusual species and should be looked for.

### Nesting Species

The species that nest or have nested on Sable Island include some obvious ones and a few surprises (Table II) that will be detailed in the Account of Species. In addition to these well-authenticated breeding birds, there are plausible but unsupported indications that Osprey, and possibly even Gull-billed Tern, nested in the last century. However, statements in the literature (see Account of Species) that "storm petrels", Razorbill, "yellowlegs", and Willet have nested are almost certainly in error.

A few species have shown breeding behavior on the island and could con-

**Table II** Birds that nest or have nested on Sable Island.

Species	Comments
Black Duck	Regular and common
Pintail	Few in recent years
Green-winged Teal	Few in recent years
Blue-winged Teal	Few in recent years
Red-breasted Merganser	Regular and common
Ring-necked Pheasant	Introduced 1961, extinct 1971
Semipalmated Plover	Regular, now uncommon
Piping Plover	Last known nesting in 1964
Common Snipe	In 1968 and perhaps earlier
Spotted Sandpiper	Regular, now uncommon
Least Sandpiper	Regular, quite common
Great Black-backed Gull	Since ca. 1920 (?), now common
Herring Gull	Since ca. 1920 (?), now common
Common Tern	Regular and abundant
Arctic Tern	Regular and abundant
Roseate Tern	Now diminishing rapidly
Tree Swallow	Single pairs, 1975, 1977
Barn Swallow	Pairs in ca. 1887, 1907, several 1976-1978
Common Crow	1948 (?), and 1-2 pairs since 1967
Common Starling	Regular and uncommon since ?
House Sparrow	Began 1930 (?), extinct 1970
Brown-headed Cowbird	Parasitized Ipswich Sparrows, 1963, 1968
Savannah Sparrow (mainland race)	A few miscegenates with Ipswich Sparrows
Ipswich Sparrow	Regular and abundant
Song Sparrow	1 pair, 2 broods, 1977

ceivably have nested, or might nest some time in the future. These have included Killdeer, Water Pipit and Red-winged Blackbird.

### Regional Migrants

Coastal localities in general and islands in particular are often thought to give a very abnormal picture of regional migration. It is true that many vagrants and out-of-season birds occur in such settings, and these will be considered in later sections. However, the great majority of individuals on Sable Island are of species that are found simultaneously on the nearby mainland. Some of these may be birds for which the island is on route to their normal destinations—e.g. shorebirds (McNeil & Burton 1977) and some passerines (Williams et al. 1977)—flying across the ocean to South America. Landbirds that nest in Newfoundland may also pass near Sable Island routinely on their ways to and from the mainland farther south and west. The list of wood warblers on the island is instructive. Among species that nest in Nova Scotia, those that do not breed in Newfoundland (Godfrey 1966; some have been found nesting since, but the criterion is still valid in separating the 2 groups) are: Nashville, Parula, Cape May, Black-throated Blue, Blackburnian, Chestnut-sided, Bay-breasted, and Canada Warblers. These species averaged significantly less common on Sable Island than did those that nest in Newfoundland (numbers of individuals in Table III, spring

and autumn combined; Mann-Whitney rank sums test,  $P = 0.02$ ). The extreme exceptions to the rule that non-Newfoundland species are scarce are the Cape May and Bay-breasted Warblers, but these have certainly responded in recent years to spruce budworm outbreaks in Cape Breton, and perhaps Newfoundland. Two other passerines are of interest. Neither the Grey-cheeked Thrush nor the White-crowned Sparrow is reported at all commonly on mainland Nova Scotia during migration, especially in spring, yet they are very regular on Sable Island, perhaps only slightly deflected on overwater crossings to Newfoundland and Labrador.

The list of Nova Scotian nesting species (per Tufts 1973) that have not yet occurred on the island is also instructive. The 8 species are either very rare or localized in the province (Cooper's Hawk, Gray Partridge, Loggerhead Shrike), or are essentially nonmigratory, though sometimes eruptive, forest species (Spruce Grouse, Ruffed Grouse, Great Horned Owl, Pileated Woodpecker, Boreal Chickadee). Even such supposedly sedentary species as House Sparrow have occurred as migrants on the island. Transients in the province (i.e. not vagrants as defined in the later section on Vagrants) that have not been sighted on the island are: Horned Grebe, King Eider, Golden Eagle, Gyrfalcon, Great Gray Owl, and Northern Three-toed Woodpecker. Only the first of these is at all regular in the province.

Even if the relative abundances of various migratory species are strongly distorted compared with those on mainland Nova Scotia, the various dates of arrival and departure of migrants should reflect regional patterns more faithfully. The dates used to construct Table III are considered to be normal ones for the island and the region. Some extremely early and extremely late dates are mentioned under individual species in the Account of Species. The migration table for the island has one feature that cannot be matched in records of most species on the mainland. On the island it is possible to obtain data on the cessation of migration in spring and its resumption in autumn, obscured by the presence of summer residents on the mainland. This allows estimates to be made of the relative lengths of migration seasons of different species, either from median dates of first and last sightings or from extreme dates of such sightings (Table III).

Some of the earliest and latest dates in Table III, although considered normal, are records for the province (Tufts 1973, and subsequent issues of the *Nova Scotia Bird Society Newsletter*). However, the median dates are of interest in suggesting that migration *routinely* carries on much later in spring than might be supposed for many species, and begins again quite early in summer for some species. Even such early spring migrants as American Robins and Song Sparrows are still on the move in late May, and often into June. Similarly the abundantly represented forest passerines are generally on the move well before the end of August. Observations are perhaps least adequate for the late-autumn period. Examples will be given in the Account of Species of some birds that have appeared routinely later in the season than might be suggested by the median dates of last sightings in Table III.

The observations by the Bouteilliers on arrival dates of regional migrants afford many comparisons with more recent observations. Dates for species that were sufficiently regular to be listed by them for 3 springs or 3 autumns during 1901-1908 are summarized in Table IV. Other records made by them of less common species or of early, late, or unseasonable sightings, will be referred to in the Account of Species.

Table III Migration table, 1967-1979, for selected species that have occurred during at least 5 springs or falls (see text).

SPECIES	SPRING MIGRATION					FALL MIGRATION								
	Number of years occur- individual- rences	First Seen earliest	median	Last Seen latest	Number of years occur- individual- rences	First Seen earliest	median	Last Seen latest	Number of years occur- individual- rences	First Seen earliest	median	Last Seen latest		
Great Blue Heron	9	18	23	16 Mar.	1 May	24 May	5 June	8	15	21	17 Aug.	26 Oct.	7 Nov.	4 Dec.
Snowy Egret	5	7	8	24 Mar.	10 May	23 May	10 June	2	3	5	22 Sept.	1 Oct.	14 Oct.	6 Nov.
Little Blue Heron	2	2	2	18 Apr.	-	-	1 May	5	6	8	17 Aug.	12 Sept.	29 Oct.	15 Nov.
Green Heron	8	9	9	30 Apr.	1 June	8 June	11 June	3	3	5	23 Sept.	14 Oct.	16 Nov.	16 Nov.
Yellow-crowned Night Heron	0	-	-	-	-	-	-	10	18	20	11 July	24 Aug.	14 Sept.	15 Nov.
American Bittern	4	4	4	22 May	28 May	28 May	29 June	8	17	18	12 Aug.	17 Oct.	6 Nov.	4 Dec.
Glossy Ibis	5	6	8	3 May	9 May	20 May	28 May	1	1	1	8 Aug.	-	-	8 Aug.
Canada Goose	11	18	104	1 Mar.	13 Apr.	16 May	12 June	10	18	181	27 Aug.	19 Oct.	22 Nov.	30 Dec.
Mallard	5	8	15	19 Mar.	2 June	3 June	22 June	4	4	5	12 Sept.	9 Nov.	9 Nov.	23 Nov.
Northern Pintail	10	13	39	28 Apr.	10 May	5 June	1 July	10	14	59	16 Aug.	13 Sept.	17 Oct.	20 Nov.
Greenwinged Teal	10	18	41	31 Mar.	12 May	10 June	2 July	12	32	546	17 July	10 Sept.	22 Oct.	30 Nov.
Bluewinged Teal	11	27	59	30 Mar.	30 Apr.	9 June	22 June	12	23	307	11 Aug.	1 Sept.	22 Sept.	24 Nov.
Mood Duck	5	6	12	29 Mar.	28 May	28 May	14 June	2	2	3	17 Nov.	-	-	29 Nov.
Ring-necked Duck	5	6	6	15 Apr.	18 May	8 June	18 June	3	3	7	25 Sept.	16 Oct.	17 Oct.	24 Oct.
Northern Goshawk	0	-	-	-	-	-	-	6	12	14	15 Sept.	25 Sept.	10 Oct.	11 Dec.
Rough-legged Hawk	1	1	1	11 Apr.	-	-	11 Apr.	7	11	26	28 Aug.	1 Oct.	1 Nov.	19 Nov.
Marsh Hawk	3	4	4	28 Mar.	1 May	17 May	26 May	9	11	11	13 Aug.	15 Sept.	19 Sept.	14 Nov.
Osprey	10	11	11	24 May	31 May	3 June	19 June	4	4	4	17 July	7 Oct.	7 Oct.	23 Nov.
American Kestrel	12	34	38	20 Mar.	4 Apr.	28 May	15 June	13	35	56	16 Aug.	15 Sept.	3 Nov.	29 Dec.
Martin	8	15	15	26 Mar.	20 May	1 June	11 June	10	20	22	30 July	16 Sept.	16 Oct.	11 Dec.
Sora	1	1	1	23 May	-	-	24 May	7	12	21	21 July	27 Aug.	10 Sept.	19 Sept.
American Coot	2	2	2	21 May	30 May	1 June	8 June	8	15	60	23 July	12 Oct.	16 Nov.	30 Nov.
Semipalmated Plover	13	-	55	3 May	16 May	-	-	13	-	1621	-	-	11 Oct.	30 Nov.
Piping Plover	3	6	11	23 Apr.	4 May	10 June	11 June	6	7	19	22 Aug.	20 Sept.	20 Sept.	24 Nov.
Killdeer	8	12	18	1 Apr.	13 May	4 June	27 June	12	39	79	4 July	23 Aug.	15 Nov.	28 Dec.
American Golden Plover	1	1	1	16 June	-	-	16 June	12	28	1415	6 Aug.	25 Aug.	7 Oct.	6 Nov.
Black-bellied Plover	11	27	85	22 Apr.	25 May	5 June	20 June	13	42	5155	15 July	2 Aug.	17 Oct.	1 Dec.
American Woodcock	6	11	11	3 Apr.	2 May	18 May	29 May	7	10	13	12 Sept.	20 Sept.	12 Oct.	10 Nov.



BIRDS OF SABLE ISLAND

Common Snipe	12	21	32	29 Mar.	17 May	2 June	19 June	12	39	121	24 July	15 Aug.	24 Oct.	30 Nov.
Whimbrel	4	4	4	5 May	11 May	11 May	24 May	13	33	286	2 July	12 Aug.	18 Sept.	26 Nov.
Upland Sandpiper	7	12	13	26 Apr.	13 May	3 June	27 June	6	7	9	14 July	9 Sept.	12 Sept.	19 Nov.
Greater Yellowlegs	13	68	153	17 Apr.	1 May	19 June	29 June	13	78	1257	1 July	16 July	13 Nov.	20 Nov.
Lesser Yellowlegs	9	11	19	2 May	20 May	26 May	7 June	12	49	424	9 July	11 Aug.	21 Sept.	28 Nov.
Solitary Sandpiper	5	5	5	28 Apr.	25 May	26 May	8 June	11	24	53	21 July	25 Aug.	15 Sept.	16 Nov.
Willet	13	30	61	30 Apr.	16 May	10 June	30 June	6	18	31	15 July	27 July	17 Oct.	29 Nov.
Spotted Sandpiper	13	-	40	27 Apr.	29 May	-	-	13	-	60	-	-	15 Sept.	25 Oct.
Ruddy Turnstone	7	9	10	14 May	26 May	3 June	22 June	12	46	604	5 July	9 Aug.	16 Sept.	1 Dec.
Red Knot	5	6	13	9 May	24 May	1 June	8 June	8	16	92	14 July	24 Aug.	15 Sept.	10 Nov.
Least Sandpiper	13	-	150	25 Apr.	11 May	-	-	13	-	575	-	-	14 Sept.	17 Nov.
Baird's Sandpiper	0	-	-	-	-	-	-	5	8	18	21 Aug.	13 Sept.	16 Sept.	22 Sept.
White-rumped Sandpiper	3	3	24	20 May	8 June	8 June	10 June	12	31	1927	25 July	17 Aug.	27 Sept.	12 Dec.
Pectoral Sandpiper	2	2	10	13 May	-	-	26 June	12	37	227	14 July	31 July	4 Oct.	5 Nov.
Dunlin	1	1	1	29 Apr.	-	-	29 Apr.	5	7	41	23 Aug.	15 Sept.	19 Sept.	30 Nov.
Semipalmated Sandpiper	9	15	74	3 May	26 May	11 June	5 July	13	31	3169	10 July	22 July	13 Sept.	22 Nov.
Sanderling	9	19	403	23 Apr.	16 May	30 May	8 June	12	48	4510	13 July	25 July	-	-
Stilt Sandpiper	3	3	3	8 May	8 June	8 June	13 June	10	13	29	10 July	26 Aug.	10 Sept.	15 Oct.
Buff-breasted Sandpiper	1	1	1	20 May	-	-	20 May	6	10	27	23 Aug.	30 Aug.	14 Sept.	16 Sept.
Hudsonian Godwit	0	-	-	-	-	-	-	7	10	44	2 July	23 Aug.	11 Sept.	30 Sept.
Long-billed Dowitcher	0	-	-	-	-	-	-	5	6	14	26 Aug.	13 Sept.	13 Sept.	2 Oct.
Short-billed Dowitcher	6	8	39	3 May	15 May	18 May	13 June	12	47	1109	29 June	15 July	16 Sept.	24 Oct.
Wilson's Phalarope	2	2	2	23 May	-	-	13 June	6	11	21	22 Aug.	1 Sept.	17 Sept.	15 Nov.
Black Tern	6	7	7	18 May	10 June	10 June	13 June	10	20	39	3 July	11 Aug.	4 Sept.	24 Sept.
Mourning Dove	3	6	6	29 Mar.	21 May	8 June	17 June	13	37	180	8 July	1 Sept.	9 Nov.	19 Dec.
Black-billed Cuckoo	5	5	5	12 May	10 June	10 June	3 July	10	21	29	8 July	13 Aug.	1 Oct.	26 Nov.
Yellow-billed Cuckoo	3	4	4	11 May	30 May	17 June	17 June	6	12	12	10 Aug.	5 Sept.	16 Oct.	13 Nov.
Common Nighthawk	9	15	16	24 May	3 June	12 June	23 June	6	12	15	3 July	18 July	3 Sept.	10 Oct.
Chimney Swift	13	27	63	7 May	19 May	3 June	11 June	6	9	35	24 July	28 Aug.	5 Sept.	9 Sept.
Ruby-throated Hummingbird	3	4	6	23 May	24 May	31 May	3 June	5	8	9	16 July	25 Aug.	13 Sept.	3 Oct.
Belted Kingfisher	11	25	30	11 Apr.	1 May	28 May	20 June	10	27	32	26 July	6 Sept.	14 Oct.	10 Dec.
Common Flicker	10	19	23	2 Apr.	20 Apr.	15 May	30 May	12	28	102	20 July	8 Sept.	23 Oct.	24 Nov.

SPECIES	SPRING MIGRATION					FALL MIGRATION					
	Number of years occur- rences	First Seen earliest	median	Last Seen latest	Number of years occur- rences	First Seen earliest	median	Last Seen latest	Number of years occur- rences	First Seen earliest	median
Downy Woodpecker	6	11	12 Apr.	24 May	13 June	9	16	16 Aug.	19 Sept.	2 Oct.	13 Nov.
Eastern Kingbird	13	46	30 Apr.	16 May	7 July	8	23	2 Aug.	1 Sept.	17 Sept.	26 Nov.
Great Crested Flycatcher	5	5	5 June	11 June	29 June	6	10	4 Sept.	7 Sept.	14 Sept.	17 Oct.
Eastern Phoebe	9	13	12 Apr.	16 May	16 June	4	6	22 July	1 Sept.	11 Sept.	17 Oct.
Yellow-bellied Flycatcher	13	38	29 May	2 June	4 July	10	22	17 July	27 Aug.	10 Sept.	20 Sept.
<i>Empidonax</i> spp.	13	29	1 May	25 May	30 June	11	22	1 Aug.	26 Aug.	14 Sept.	4 Oct.
Eastern Wood Pewee	13	38	16 May	27 May	27 June	9	12	24 July	11 Sept.	13 Sept.	27 Sept.
Olive-sided Flycatcher	11	15	19 May	8 June	19 June	3	3	27 Aug.	4 Sept.	4 Sept.	8 Sept.
Horned Lark	6	8	4 Apr.	11 May	5 June	6	10	27 Sept.	9 Oct.	16 Oct.	15 Nov.
Tree Swallow	13	28	18 Apr.	8 May	30 June	10	41	20 July	2 Aug.	28 Sept.	16 Nov.
Bank Swallow	13	41	9 May	19 May	1 July	8	16	15 July	16 Aug.	3 Sept.	13 Nov.
Barn Swallow	13	51	17 Apr.	8 May	8 July	10	32	13 July	12 Aug.	12 Sept.	15 Nov.
Cliff Swallow	13	24	3 May	24 May	1 July	7	11	12 July	25 Aug.	5 Sept.	13 Nov.
Purple Martin	11	30	12 Apr.	2 May	2 July	7	8	26 Aug.	22 Sept.	22 Sept.	28 Oct.
Red-breasted Nuthatch	8	12	7 May	16 May	26 June	12	23	23 July	17 Aug.	8 Sept.	18 Nov.
Winter Wren	5	10	3 Apr.	21 Apr.	2 June	3	4	2 Oct.	17 Oct.	23 Oct.	1 Nov.
Northern Mockingbird	3	3	31 May	31 May	14 June	11	25	17 July	10 Sept.	5 Nov.	16 Nov.
Gray Catbird	13	42	27 Apr.	11 May	1 July	10	21	20 July	19 Sept.	18 Oct.	26 Nov.
Brown Thrasher	9	19	28 Apr.	16 May	29 June	6	7	18 Sept.	24 Sept.	26 Sept.	20 Oct.
American Robin	12	34	29 Mar.	3 Apr.	12 June	12	42	31 July	10 Sept.	7 Nov.	29 Dec.
Wood Thrush	6	8	10 May	19 May	6 June	2	3	10 Sept.	1 Oct.	6 Oct.	19 Oct.
Hermit Thrush	13	35	28 Mar.	3 May	13 June	7	14	18 Sept.	9 Oct.	21 Oct.	18 Dec.
Swainson's Thrush	13	37	14 May	25 May	26 June	8	15	23 Aug.	19 Sept.	13 Oct.	20 Nov.
Gray-cheeked Thrush	13	34	9 May	24 May	11 June	8	16	3 Sept.	13 Sept.	25 Oct.	13 Nov.
Veery	13	22	10 May	25 May	4 June	2	2	12 Sept.	17 Sept.	17 Sept.	21 Sept.
Golden-crowned Kinglet	6	8	20 Apr.	3 May	18 May	0	-	-	-	-	-
Ruby-crowned Kinglet	13	27	7 Apr.	27 Apr.	15 June	10	17	26 Aug.	19 Sept.	17 Oct.	20 Nov.
Water Pipit	12	28	30 Apr.	19 May	21 June	10	16	9 Sept.	13 Sept.	17 Oct.	14 Nov.