

BIRDS OF SABLE ISLAND

Cedar Waxwing	12	18	58	22 May	3 June	8 June	26 June	12	40	466	17 July	16 Aug.	4 Oct.	8 Nov.
Solitary Vireo	5	5	5	17 May	20 May	20 May	5 June	1	1	1	29 Aug.	-	-	29 Aug.
Red-eyed Vireo	11	15	29	28 May	6 June	8 June	22 June	6	10	21	19 Aug.	3 Sept.	11 Sept.	20 Sept.
Philadelphia Vireo	2	3	3	27 May	4 June	4 June	12 June	5	5	5	23 Aug.	15 Sept.	15 Sept.	16 Oct.
Black-and-White Warbler	13	30	71	1 May	19 May	8 June	18 June	13	38	126	5 Aug.	20 Aug.	1 Oct.	5 Nov.
Prothonotary Warbler	2	2	2	20 May	-	-	9 June	5	6	9	10 Aug.	10 Sept.	15 Sept.	1 Oct.
Tennessee Warbler	13	33	54	16 May	26 May	11 June	29 June	7	12	63	12 Aug.	31 Aug.	13 Sept.	23 Sept.
Nashville Warbler	8	13	16	16 May	25 May	1 June	15 June	5	5	8	5 Sept.	12 Sept.	13 Sept.	29 Sept.
Northern Parula Warbler	13	23	63	13 May	23 May	9 June	24 June	2	2	2	12 Sept.	-	-	12 Oct.
Yellow Warbler	13	43	103	13 May	20 May	14 June	26 June	13	39	188	22 July	6 Aug.	16 Sept.	20 Oct.
Magnolia Warbler	13	41	116	7 May	17 May	16 June	25 June	12	24	49	28 July	23 Aug.	16 Sept.	20 Oct.
Cape May Warbler	11	27	39	12 May	23 May	5 June	2 July	12	26	253	11 Aug.	7 Sept.	19 Sept.	20 Nov.
Black-throated Blue Warbler	7	9	9	18 May	30 May	30 May	10 June	6	7	9	1 Sept.	16 Sept.	26 Sept.	17 Oct.
Yellow-rumped Warbler	13	66	476	10 Apr.	2 May	10 June	22 June	13	47	1529	31 July	22 Aug.	15 Nov.	20 Dec.
Black-throated Green Warbler	13	26	52	4 May	27 May	9 June	20 June	12	15	27	19 Aug.	9 Sept.	13 Sept.	17 Oct.
Blackburnian Warbler	12	21	30	10 May	23 May	6 June	19 June	10	11	12	21 Aug.	14 Sept.	14 Sept.	14 Oct.
Chestnut-sided Warbler	7	12	16	10 May	28 May	3 June	15 June	5	7	8	29 Aug.	6 Sept.	14 Sept.	15 Oct.
Bay-breasted Warbler	12	35	90	7 May	22 May	8 June	26 June	13	31	141	15 Aug.	26 Aug.	19 Sept.	13 Nov.
Blackpoll Warbler	13	46	427	14 May	20 May	17 June	26 June	13	28	352	21 July	10 Sept.	2 Oct.	28 Nov.
Prairie Warbler	0	-	-	-	-	-	-	11	33	46	8 Aug.	26 Aug.	16 Sept.	16 Oct.
Palm Warbler	12	31	61	18 Apr.11	2 May	24 May	7 June	10	29	95	10 Aug.	13 Sept.	10 Nov.	22 Dec.
Ovenbird	13	24	36	14 May	26 May	9 June	14 June	9	20	32	13 Aug.	31 Aug.	19 Sept.	14 Nov.
Northern Waterthrush	13	40	113	16 May	23 May	12 June	27 June	12	30	84	3 Aug.	10 Aug.	14 Sept.	17 Oct.
Mourning Warbler	12	23	34	30 May	8 June	15 June	30 June	3	6	13	27 Aug.	31 Aug.	15 Sept.	16 Oct.
Common Yellowthroat	13	40	91	1 May	19 May	15 June	21 June	9	15	29	5 Aug.	12 Sept.	25 Sept.	24 Oct.
Yellow-breasted Chat	0	-	-	-	-	-	-	8	14	28	27 Aug.	10 Sept.	14 Sept.	22 Oct.
Hooded Warbler	3	5	5	15 May	20 May	10 June	14 June	7	9	11	7 Aug.	10 Sept.	15 Sept.	17 Oct.
Wilson's Warbler	13	27	79	16 May	25 May	12 June	29 June	11	24	58	30 July	25 Aug.	12 Sept.	25 Sept.
Canada Warbler	12	25	69	22 May	31 May	12 June	21 June	7	8	13	25 Aug.	31 Aug.	13 Sept.	17 Oct.
American Redstart	13	42	103	17 May	25 May	20 June	27 June	13	55	327	12 Aug.	25 Aug.	18 Oct.	14 Nov.
Bobolink	13	31	76	16 May	23 May	8 June	19 June	9	16	271	21 Aug.	6 Sept.	16 Sept.	18 Oct.
Yellow-headed Blackbird	1	1	1	8 May	-	-	17 May	6	10	12	15 Aug.	3 Sept.	21 Sept.	12 Oct.
Red-winged Blackbird	13	27	41	2 Apr.	10 May	25 May	24 May	8	21	274	20 Aug.	9 Sept.	30 Oct.	12 Dec.

SPECIES	SPRING MIGRATION						FALL MIGRATION						
	Number of		First Seen		Last Seen		Number of		First Seen		Last Seen		
	years	occu- r- re- nces	years	earliest	median	latest	years	occu- r- re- nces	years	earliest	median	latest	
Orchard Oriole	6	6	6	16 May	24 May	22 June	4	4	5	10 Sept.	24 Sept.	24 Sept.	3 Oct.
Northern Oriole	9	15	19	7 May	18 May	11 June	13	44	290	19 Aug.	4 Sept.	2 Oct.	18 Dec.
Rusty Blackbird	12	29	284	29 Mar.	3 May	7 June	10	23	535	5 Sept.	18 Sept.	23 Oct.	21 Dec.
Common Grackle	10	21	92	2 Apr.	1 May	11 June	5	8	21	12 Sept.	28 Sept.	20 Nov.	12 Dec.
Brown-headed Cowbird	12	24	251	4 Apr.	23 Apr.	31 June	13	41	332	19 July	15 Aug.	24 Oct.	12 Dec.
Scarlet Tanager	5	6	6	10 May	24 May	7 June	6	6	15	11 Sept.	15 Sept.	25 Sept.	27 Oct.
Rose-breasted Grosbeak	13	25	45	25 Apr.	17 May	24 June	11	13	42	15 Aug.	13 Sept.	16 Sept.	29 Oct.
Indigo Bunting	10	16	20	25 Apr.	23 May	18 June	4	5	5	14 Aug.	14 Oct.	25 Oct.	13 Nov.
Dickcissel	3	4	4	27 Apr.	3 May	24 May	6	18	47	27 Aug.	20 Sept.	25 Oct.	30 Dec.
Evening Grosbeak	10	29	70	2 Apr.	10 May	22 June	12	27	344	4 Aug.	4 Oct.	12 Nov.	28 Dec.
Purple Finch	13	26	113	18 Apr.	13 May	6 July	11	27	212	24 July	14 Aug.	29 Oct.	11 Dec.
Pine Grosbeak	5	7	7	9 May	24 May	14 June	7	9	25	5 Aug.	18 Oct.	26 Oct.	17 Nov.
Common Redpoll	5	5	37	8 Apr.	22 Apr.	10 June	1	1	6	4 Nov.	-	-	6 Nov.
Pine Siskin	11	27	77	18 Apr.	26 May	2 July	8	17	250	15 July	10 Aug.	1 Oct.	5 Nov.
American Goldfinch	9	19	32	14 May	30 May	26 June	5	9	12	3 Aug.	28 Aug.	1 Oct.	17 Oct.
White-winged Crossbill	1	1	2	23 June	-	28 June	5	14	21	25 July	7 Aug.	7 Nov.	24 Dec.
Rufous-sided Towhee	4	5	8	15 May	18 May	15 June	5	5	24	23 Aug.	6 Oct.	12 Oct.	19 Oct.
Savannah Sparrow	11	19	47	29 Apr.	16 May	14 June	8	12	39	1 Sept.	7 Oct.	19 Oct.	13 Nov.
Dark-eyed Junco	12	34	233	20 Mar.	3 Apr.	10 June	11	28	321	9 Sept.	26 Sept.	20 Nov.	28 Dec.
Tree Sparrow	5	7	9	22 Apr.	13 May	26 May	3	4	13	1 Oct.	7 Oct.	27 Oct.	4 Nov.
Chipping Sparrow	7	12	17	30 Apr.	19 May	11 June	8	10	20	4 Aug.	15 Sept.	16 Sept.	17 Oct.
White-crowned Sparrow	13	27	129	23 Apr.	8 May	12 June	10	19	84	16 Sept.	25 Sept.	1 Nov.	8 Dec.
White-throated Sparrow	13	55	452	2 Apr.	26 Apr.	16 June	13	42	330	29 Aug.	15 Sept.	28 Oct.	26 Dec.
Fox Sparrow	12	29	187	22 Mar.	3 Apr.	14 June	11	21	144	15 Sept.	3 Oct.	25 Oct.	16 Dec.
Lincoln's Sparrow	13	22	77	17 May	25 May	13 June	7	12	19	28 Aug.	19 Sept.	18 Oct.	17 Nov.
Swamp Sparrow	13	32	77	14 May	17 May	16 June	8	13	45	1 Sept.	23 Sept.	3 Oct.	10 Nov.
Song Sparrow	12	35	175	24 Mar.	7 Apr.	11 June	8	9	31	12 Sept.	12 Oct.	12 Oct.	26 Nov.
Lapland Longspur	3	4	4	30 Apr.	14 May	21 May	6	7	183	14 Sept.	29 Oct.	31 Oct.	19 Nov.
Snow Bunting	12	22	612	14 Mar.	6 Apr.	21 May	9	25	2345	2 Oct.	25 Oct.	-	-

**Table IV** Migration table, 1901-1908, for species recorded as first seen during at least 3 falls or 3 springs on the Bouteilliers' published and unpublished lists.

Species	Spring Migration			Autumn Migration		
	no. years	earliest	median	no. years	earliest	median
Pied-billed Grebe				3	28 Sept.	4 Oct.
Great Blue Heron	1	18 May	—	5	5 Aug.	5 Oct.
American Bittern	1	4 May	—	5	8 Sept.	4 Oct.
Blue-winged Teal				4	19 Sept.	18 Oct.
American Wigeon				3	28 Oct.	7 Nov.
Greater Scaup				7	18 Oct.	20 Nov.
Common Goldeneye				3	20 Oct.	28 Oct.
Bufflehead				4	11 Sept.	31 Oct.
Oldsquaw				6	20 Oct.	29 Oct.
White-winged Scoter				4	21 Oct.	26 Nov.
Osprey				3	26 Sept.	30 Sept.
Semipalmated Plover	6	23 Apr.	24 Apr.			
Piping Plover	5	25 Apr.	7 May			
Killdeer				3	22 Oct.	17 Nov.
Golden Plover				3	20 Aug.	20 Aug.
Black-bellied Plover	5	8 May	22 May	5	4 Aug.	16 Aug.
Common Snipe				5	5 July	13 July
Whimbrel*	1	10 June	—	3	18 July	20 July
Spotted Sandpiper	5	12 May	18 May			
Greater Yellowlegs	5	22 Apr.	5 May	7	5 July	10 July
Lesser Yellowlegs				4	5 July	3 Aug.
Ruddy Turnstone	2	25 May	6 June	3	12 July	3 Aug.
Pectoral Sandpiper				5	22 July	5 Aug.
White-rumped Sandpiper				8	14 July	1 Aug.
Least Sandpiper	7	30 Apr.	8 May			
Semipalmated Sandpiper				5	26 July	3 Aug.
Red Phalarope	7	4 May	21 May			
Common, Arctic Terns	7	23 Apr.	26 Apr.			
Roseate Tern	7	13 May	16 May			
Belted Kingfisher	3	14 Apr.	12 May	2	26 Sept.	2 Oct.
Common Flicker	1	27 Apr.	—	5	10 Sept.	16 Sept.
Eastern Kingbird	2	19 May	26 May	3	3 Aug.	7 Sept.
Yellow-bellied Flycatcher	4	25 May	14 June			
Horned Lark	3	23 Mar.	29 Mar.	3	20 Sept.	30 Sept.
Common Crow	5	20 Mar.	24 Mar.			
White-breasted Nuthatch				3	11 Sept.	20 Sept.
Red-breasted Nuthatch†	1	27 June	—	5	2 Aug.	7 Sept.
Brown Creeper	1	15 May	—	3	20 Sept.	25 Oct.
Northern Mockingbird				3	5 Sept.	20 Sept.
American Robin	6	20 Mar.	24 Mar.	7	9 Oct.	24 Oct.
Hermit Thrush	3	25 Apr.	24 May	6	20 Sept.	23 Oct.
Golden-crowned Kinglet°				5	29 Sept.	18 Oct.
Water Pipit	2	12 May	14 May	7	16 Sept.	19 Sept.

\* Includes "curlew", unidentified to species.

† Includes "nuthatch", probably this species.

° Once as "Golden-crested Wren".

Species	Spring Migration			Autumn Migration		
	no.years	earliest	median	no.years	earliest	median
Cedar Waxwing	1	7 June	—	3	11 Sept.	12 Sept.
Northern Shrike				4	4 Nov.	23 Nov.
Black-and-white Warbler				6	20 Aug.	18 Sept.
Yellow Warbler	3	23 May	4 June	3	3 Aug.	3 Aug.
Magnolia Warbler	4	24 May	28 May	1	8 Oct.	—
Black-throated Blue Warbler				3	16 Sept.	28 Sept.
Yellow-rumped Warbler	2	10 May	22 May	5	15 Sept.	29 Sept.
Black-throated Green Warbler				3	12 Sept.	20 Sept.
Blackpoll Warbler	5	18 May	23 May			
Palm Warbler				3	16 Sept.	20 Sept.
House Sparrow	2	22 Apr.	6 May	5	4 Oct.	14 Oct.
Pine Siskin	5	23 May	3 June	1	4 Oct.	—
Vesper Sparrow	2	27 Apr.	8 May	3	20 Sept.	21 Oct.
Dark-eyed Junco	6	20 Mar.	11 Apr.	5	2 Oct.	5 Oct.
White-crowned Sparrow	3	13 May	25 May			
White-throated Sparrow	6	29 Mar.	28 Apr.	6	23 Sept.	26 Sept.
Fox Sparrow	4	20 Mar.	4 Apr.	5	29 Sept.	4 Oct.
Snow Bunting	2	21 Apr.	6 May	5	4 Oct.	7 Oct.

### Absolute and Relative Abundances of Species

When censusing populations of Ipswich Sparrows on selected areas of vegetation (Stobo & McLaren 1975), and on occasion when searching known areas for banded sparrows, counts were kept of all other landbirds present on the areas covered. These allow estimates to be made of the numbers of such landbirds on the island (Table V). Unfortunately, there are few or no counts from some parts of the migration seasons, but there is weak indication of seasonal cycles in the low counts from early and late in spring and from late in autumn.

The variances of counts in midseason are very high (cf. counts in late May and in mid-September, Table V). The abundance of migrant landbirds on the island is strongly dependent on weather. After days of southwesterly or easterly winds, there may be very few. Following the passage of a cold front, with westerly or northwesterly winds, the dunes may seem relatively swarming with landbirds. These conditions may also bring large numbers of shorebirds (Burton 1974).

The estimated mean abundances of migrant landbirds on the island are very low: 359 (or about 1 individual/3 ha) in spring and 2366 (or about 2/ha) in autumn. These abundances are much lower than found in breeding bird surveys on the mainland, and elsewhere I have shown (McLaren 1981) that daily counts of birds on Sable Island are only about one-sixth to one-quarter as high as those made on the same days on Seal Island, Yarmouth Co., and Brier Island, Digby Co., nearer to the mainland of Nova Scotia. Clearly, Sable Island is off the normal routes of most landbirds, and may be actively avoided by many regional individuals (see McLaren 1981).

The extensive daily observations of birds on the island can be used to estimate relative abundances of species. Some birds were identifiable as individuals on successive days, but this could not be done with more frequent species, for which



**Table V** Estimated numbers of nonresident landbirds on the vegetated terrain (total ca. 1018 ha) of Sable Island, from censuses of selected areas.

Dates	% of terrain censused	Estimated no. (nearest 10)
<b>Spring</b>		
10-16 June 1971	52.0	130
27-29 June 1971	42.0	30
10-11 Apr. 1972	12.6	150
26 May—1 June 1975	3.8	820
17-22 June 1975	3.2	340
17-22 May 1977	19.7	860
23-24 May 1977	10.2	650
28-29 May 1977	6.0	470
24-29 May 1978	6.9	100
13-17 June 1979	6.9	40
<b>Autumn</b>		
12-13 Sept. 1972	6.9	4340
13-14 Sept. 1973	6.9	2940
24 Oct. 1973	2.1	1760
11-12 Sept. 1974	6.9	730
16 Oct. 1975	1.6	4590
13-16 Sept. 1977	6.9	1810
15 Nov. 1977	1.9	430
5-10 Sept. 1978	6.9	2330

an estimate of the residence time of individuals was needed. For this purpose, I used daily counts made by at least 2 active observers over at least 2 weeks (ignoring birds seen on the first and last days) in the vicinity of the Meteorological Station and West Light, where birds were often quite sedentary. I chose species that were large or conspicuous because of habits or appearance: hawks, large flycatchers, swallows, jays, nuthatches (almost always on buildings), mimids, thrushes, icterids, tanagers, grosbeaks, buntings, and towhees. To minimize confusion, I chose only those species of the above that were relatively infrequent (<30 individuals in the period 1967-1979 on uncorrected lists). Many of these birds were in fact reported as individuals on successive days by observers. Altogether, 114 individuals of 25 species satisfied all criteria, and these were seen for an average of 3.7 days.

I assumed, therefore, that a species (or sex or age category) represented a new occurrence of individuals if not seen during the previous 4 days. Also, when a species was recorded in larger numbers than had occurred during the previous 4 days, the increment was assumed to be of new individuals. I made no attempt to correct for "turnover" of species that were present in about the same numbers for periods of more than 4 days; for these a single peak count often stood as a total for a period. Against this tendency to possible underestimation, there were periods of inactivity or bad weather that could lead to recounting of birds that were present, but not seen, for 4 or more days.

The 4-day rule may be inappropriate for shorebirds, which are known to make longer stopovers to gain resources for their extensive flights. Indeed, Burton (1974) found that some banded individuals stayed on the island for nearly 3 weeks. However, generally the areas of concentration of shorebirds around Wallace Lake (Fig 1) were surveyed infrequently, so that large counts were made at intervals considerably greater than 4 days.

Some judgement had to be made in using the sequences of numbers in the daily lists. Thus, birds counted during brief visits to other parts of the island were added to those counted during the same 4-day period in areas routinely surveyed. However, these were not assumed to have arrived as a new occurrence of the species on the day of the visit to the new area. Judgment was also used in dealing with some of the lists submitted by A. Richard, in which he estimated numbers seen during portions of some seasons (see Recent Records of Birds). His estimates in this form, made during times when other individuals were not making daily counts, were added to the overall estimates of relative abundances based on the 4-day rule. However, they could only be counted as a single occurrence of the species during that portion of the season.

The estimates of relative abundance of the more commonplace migrants and vagrants on the island (those that occurred during at least 5 springs or 5 autumns in the 13 years), are summarized in Table III. Seabirds, which do not depend on the terrain of the island and cannot be compared in abundance with those that use the island and its ponds, are excluded. I also exclude the abundant resident species: gulls, terns, Black Duck and Red-breasted Merganser, and Ipswich Sparrow. For the rest, the years in which it was seen give an impression of the regularity of the species. Relative abundance is self-evident, and an impression of the size and frequency of visits during a season can be gained from the figures on number of occurrences. (Numbers of occurrences are not included in Table III for the partly transient Semipalmated Plover and Least Sandpiper. For these the spring estimates of abundance are based on maximal seasonal counts of residents and autumn estimates on maximal July counts, assumed to be resident adults and offspring, to which were added later occurrences in the usual manner.)

### Vagrants

Sable Island is certainly one of the best localities in eastern North America for the occurrence of vagrant species (Table VI). Among species that nest in North America, a vagrant is defined as a species that did not nest in Nova Scotia prior to 1971 (Tufts 1973, although a few have nested since) or that does not migrate or erupt into the province from the north or northwest, however rarely. Thus such birds as Western Sandpiper, Hawk Owl, and Connecticut Warbler, all on the island list, are not considered to be vagrant there. A true vagrant by definition must show displacement to the north or east from its normal breeding or migratory range. Among such vagrants I define birds from range maps in Robbins et al. (1966) as *southern* if they are mapped as not nesting north of Cape Cod, Massachusetts, on the coast, and as *western* if they do not nest west of Lake Michigan. There have been subsequent range changes and cases of extralimital nesting, but the maps are a useful device for separating broad classes of vagrants. The rest are designated as *regional* vagrants, some of which nest as nearby as Maine or New Brunswick. (Black-crowned Night Heron, Common Gallinule, and Wood Thrush have all nested in the province since Tufts', 1973, accounts).

In addition to such birds from the south and west of the province, I include Willow Ptarmigan and Wheatear as clearly displaced *northern* birds. Certain *European* seabirds and shorebirds complete the list.

**Table VI** Occurrences of vagrant species on Sable Island, as documented in the Account of Species. The geographical origins of the birds are: regional (R), southern (S), western (W), northern (N), and European (E), as defined in the text. Authentication is by photograph (P) or specimen (S). A question mark means that the observation was unaccompanied by a description or is otherwise problematic. A blank denotes a satisfactory sight record.

Species	Geographical origin	Authentication	First record for
Little Shearwater	E	S	N. America
British Storm-Petrel	E	S	N. America
Brown Pelican	S		
Little Blue Heron	S	P,S	
Cattle Egret	S	P	
Great Egret	S	S	
Snowy Egret	S	S	
Louisiana Heron	S	P	
Green Heron	R	P	
Black-crowned Night Heron	R	P	
Yellow-crowned Night Heron	S	P,S	
Glossy Ibis	S	S	
Roseate Spoonbill	S	?	Canada
Willow Ptarmigan	N		
Limpkin	S		
Purple Gallinule	S		
Common Gallinule	R	P,S	
Wilson's Plover	S	P	
Curlew Sandpiper	E		
Upland Sandpiper	R	P,S	Nova Scotia
Marbled Godwit	W	P	
Ruff	E	P	
American Avocet	W		
Wilson's Phalarope	R	P,S	Nova Scotia?
Lesser Black-backed Gull	E		
Mew (Common) Gull	E (prob.)		Nova Scotia
Franklin's Gull	W	P	Nova Scotia
Little Gull	E	P	
Gull-billed Tern	S	?	Nova Scotia
Sooty Tern	S		
Least Tern	S	?	
Royal Tern	S		
Black Tern	R	P,S	
Black Skimmer	S	S	
White-winged Dove	W		Nova Scotia
Yellow-billed Cuckoo	R		
Gray Kingbird	S		
Western Kingbird	W		
Say's Phoebe	W	P	
Rough-winged Swallow	R		Nova Scotia
Cave Swallow	S	S	Canada

Species	Geographical origin	Authentication	First record for
Fish Crow	S		
House Wren	R		
Long-billed Marsh Wren	R		
Brown Thrasher	R	P	
Varied Thrush	W		
Wood Thrush	R	P,S	
Wheatear	N	P	
White-eyed Vireo	S	P	
Yellow-throated Vireo	R		
Warbling Vireo	R		
Prothonotary Warbler	S	P,S	Nova Scotia?
Worm-eating Warbler	R	S	Canada
Blue-winged Warbler	S		
Black-throated Grey Warbler	W		Nova Scotia
Townsend's Warbler	W	P	Nova Scotia
Hermit Warbler	W	P	E. Canada
Cerulean Warbler	S		Nova Scotia
Yellow-throated Warbler	S	P	Nova Scotia
Pine Warbler	R		Nova Scotia?
Prairie Warbler	R	P	
Louisiana Waterthrush	R	P	Nova Scotia
Kentucky Warbler	S	S	Nova Scotia
Yellow-breasted Chat	R	P,S	
Hooded Warbler	S	P,S	
Yellow-headed Blackbird	W	P	Nova Scotia?
Orchard Oriole	R	P,S	
Brewer's Blackbird	W		Nova Scotia
Boat-tailed Grackle	S		Nova Scotia
Scarlet Tanager	R	P,S	
Summer Tanager	S	P,S	
Black-headed Grosbeak	W		
Blue Grosbeak	S		
Painted Bunting	S		Nova Scotia
Indigo Bunting	R	P,S	
Dickcissel	R	P	Nova Scotia
Green-tailed Towhee	W	P	
Rufous-sided Towhee	R	P	
Grasshopper Sparrow	R	S	
Henslow's Sparrow	R	?	Nova Scotia
Seaside Sparrow	R		
Lark Sparrow	R	P,S	Nova Scotia
Field Sparrow	R		Nova Scotia?
Golden-crowned Sparrow	W		Nova Scotia
Chestnut-collared Longspur	W		

The island has also been visited by well-marked western subspecies of the Yellow-rumped Warbler ("Audubon's Warbler"), Dark-eyed Junco ("Oregon Junco"), and White-crowned Sparrow ("Gambel's White-crowned Sparrow").

The regional vagrants are of course the most abundant class of *individual* vagrants on the island, although more species of southern ones have occurred, and a few species of vagrants from remote regions have been more frequently seen than some from more nearby parts. Only the following species of regional vagrants have been seen in Nova Scotia, but not yet on Sable Island: Turkey Vulture, Red-shouldered Hawk, Red-headed Woodpecker, Carolina Wren, Short-billed Marsh Wren, Golden-winged Warbler, and Cardinal (which has recently nested in the province). The 2 raptors are probably capable of avoiding extreme offshore displacement and the Red-headed Woodpecker, Carolina Wren, and Cardinal probably seldom make major migratory movements of the sort that might carry them to Sable Island.

Among the birds designated as southern, most herons and their relatives are so regular in their northward movements that they might not properly be considered to be vagrant. Similarly, the Marbled Godwit and Wilson's Phalarope may routinely come to the east coast farther south, although their breeding ranges, prior to 1971, and usual routes qualify them as western.

Most southern and western landbirds in Table VI are exceedingly displaced and probably seldom regain their normal ranges. Elsewhere I have analysed the incidence of vagrant landbirds on Sable Island, as well as on Seal Island, Yarmouth Co., and Brier Island, Digby Co., in comparison with other localities in eastern North America (McLaren 1981). The abundance, or diversity, of western migrants is higher in Nova Scotia than on islands off North Carolina and Florida, and more comparable vagrant species have been seen on the Nova Scotian islands than in any other locality of similar size in eastern North America. The convergence of continental windstreams from the south and west on Nova Scotia during migration seasons may play a role in this vagrancy. However, within Nova Scotia the relative abundance of western and southern vagrants is higher on Sable Island than on Seal Island or Brier Island, both of which are much closer to the mainland. It appears that, although regional species tend to avoid Sable Island (see previous section), birds from remote regions do not, and may indeed be attracted to refuge from a large sweep of ocean. From this analysis and from selected records of arrivals in relation to weather patterns, I concluded (McLaren 1981) that navigational error by vagrants is paramount in bringing them to Sable Island. Southern and southwestern species may "overshoot" their normal destinations in spring. Some western species may come by "mirror-image misorientation", whereby a normal tendency to migrate northwest from Mexico is expressed as a misorientation northeastward; support for this comes from analysis of records of western *Dendroica* in the east (McLaren 1981). Southern birds may show reverse migration in autumn, or they, along with western species, may show tendencies to fly downwind, which may lead them ultimately to Nova Scotia and offshore to Sable Island.

Given the occurrence of such unprecedented species as Little Shearwater, Cave Swallow, and Hermit Warbler, prediction of future candidates for the island's list would be idle. However, McLaren (1981) lists 14 southern and western species that have been found on Brier or Seal Island, but not yet on Sable Island, and there are 9 more on the Nova Scotian list. In addition, about 24 vagrant seabirds, waterfowl, herons (and relatives), rallids, and shorebirds have been seen elsewhere in the province, but not yet on Sable Island. Any of them could occur in future, and quite probably some totally new ones as well.

### Unseasonable Records

Many records of birds out of their normal seasons add to the unusual flavor given by the vagrant species. These are reviewed briefly here under several categories.

Numbers of early dates for spring migrants are given in the Account of Species. Most are of scattered individuals, but some occurred in groups, suggesting that meteorological conditions played a role. A striking example was the appearance in early April 1972 of a number of species of shorebirds, including a vagrant Wilson's Plover and a probable "western" Willet (Table VII). During the first days of April a stalled front extended the length of the coast of the eastern United States, with strong southwesterly flow outside it. Shorebirds coming north to the southeastern states may have been prevented from making a landfall by unsettled coastal weather, and impelled too far north by the winds. Also of interest were mid-April occurrences of Prothonotary and Blue-winged Warblers, accompanied respectively by an Ovenbird and Wilson's Warbler, and by a Yellow Warbler. Both occurrences were accompanied by slack, high-pressure conditions in the southeastern and eastern states, although there were offshore winds farther north. It appears that these early birds had "voluntarily" flown beyond their normal limits at this season because of excellent conditions for northward migration.

A number of regional migrants, especially those that nest in Newfoundland, routinely lingered through June. A wide variety of species also appeared in early July, suggesting a widespread pattern of wandering by nonbreeders other than the well known shorebird examples. "Winter" finches were particularly common in summer 1968, prior to an "unprecedented" (Plunkett 1969) eruption southward next winter. There were also odd cases of boreal or subarctic birds in summer: Water Pipits in early August 1965 and 1968; a Bohemian Waxwing on 29 June 1968, presaging an invasion in the province next winter; Common Redpolls through July 1968; a Snow Bunting in late July 1902; numbers of summer Snowy Owls; and a Hawk Owl on 10 June 1902. In general, there were gaps between the

**Table VII** Unusually early occurrences of shorebirds (all single individuals) in April 1972 (none included in migration table, Table III).

Species	Date
Semipalmated Plover	11 Apr.
Wilson's Plover <sup>†</sup>	2 Apr.*
Whimbrel	6-7 Apr.*
Greater Yellowlegs	6-7 Apr.
Lesser Yellowlegs	3,6 Apr.*
Willet <sup>°</sup>	2 Apr.*
Red Knot	2 Apr.*
Least Sandpiper	11 Apr.*
Pectoral Sandpiper	7 Apr.*
Short-billed Dowitcher	8 Apr.*

\* Earliest spring record for the province.

† Third provincial record, first well authenticated (Fig 6).

° Probably western race (see text, Fig 7)

occurrence of such summer stragglers on the island and their appearance as normal fall migrants later in the summer.

Late autumn occurrences are common on the island, and some postdate latest records from other Nova Scotian localities. For some boreal species the frequency of late records implies a normal pattern. For example, there were Gray-cheeked or Swainson's Thrushes during November in 7 years and Blackpoll Warblers during mid-November to mid-December in 3 years of 1967-1979. Some late records of other regional species may represent returns to the region from the south, along with reverse-migrating vagrants.

Winter records imply that there is more movement of birds at this season than might have been expected. Perhaps least surprising are the records of seabirds that normally winter farther south, as these are readily caught in storms. These include storm petrels (probably Leach's), a Double-crested Cormorant, a Laughing Gull, and 2 sightings of Sabine's Gulls. There are subsequent winter sightings of these species from elsewhere in Nova Scotia. The list of "half-hardy" shorebirds and landbirds arriving in winter implies that there is some potential for unseasonable emigration by these birds from deteriorating habitats on the mainland. Such records are given for Great Blue Heron, Killdeer, Common Snipe, Belted Kingfisher, Common Flicker, Northern Mockingbird, American Robin, Yellow-rumped Warbler, Eastern Meadowlark, Rusty Blackbird, and Common Grackle. More surprising are records of birds that do not winter in the region: a Barn Swallow, a Swainson's Thrush, and a Blackpoll Warbler have all turned up in midwinter on the island.

### Historical Changes

Of prehistoric avifauna nothing is known, but the greatly enlarged landmass during and after the last great advance of Pleistocene ice (see sketch map in McLaren 1972) must have supported more breeding birds, perhaps including forest species. Since its discovery, Sable Island has always offered the same limited kinds of environments described under Bird Habitats and Bird Finding. However, there has been a considerable loss of vegetated terrain (sequential maps in McLaren 1972) and one great change in the virtual disappearance of Wallace Lake, once an extensive lagoon, with a warm-water fauna of such species as oysters (*Ostrea virginica*) and bay scallops (*Pecten irradians sablensis*), now extinct on the island (Clarke et al. 1967). This big lagoon, with its shallows, saltmarshes, and freshwater reaches, may well have offered habitat for nesting species not found today. Thus statements that Osprey, Common Snipe, and perhaps even Gull-billed Tern nested in the last century are plausible in the light of such environmental changes.

The great restriction in the lagoon habitat of Wallace Lake has certainly had an effect on the occurrence and abundance of waterfowl on the island. Whereas at the turn of the century Greater Scaup, Oldsquaw, and the scoters were common in winter, they are rather infrequently sighted today. There are also references in the diaries (in Nova Scotia Archives) of island superintendents to the hunting of ducks in fall and winter on Wallace Lake.

Other changes in the avifauna of the island reflect the fortunes of bird populations on a wider scale. The breeding terns have undergone catastrophic decline, while gulls have begun to nest and have become abundant in this century. Whereas the Bouteilliers collected or noted only a Great Egret, a Yellow-crowned Night Heron, and a probable Little Blue Heron during their years of observation, southern herons and their relatives are quite regular today; this no



doubt reflects recovery from 19th century overkilling. The shorebirds were also subjected to heavy hunting in those days, and it is perhaps of interest that the species most frequently reported by them were the small White-rumped Sandpiper and the wary Greater Yellowlegs (Table IV), rather than such gamebirds as Black-bellied and Golden Plovers.

Elsewhere (McLaren 1981) I have suggested that there have been changes in the incidence of vagrancy by certain landbirds since the turn of the century. The Bouteilliers recorded 14 species (some perhaps doubtful) that I have classed as vagrant, most of them quite uncommon today (fewer than 10 individuals during 1967-1979). The most abundant vagrant species in recent years ( $\geq 20$  individuals 1967-1979) have been, in order, Dickcissel, Prairie Warbler, Rufous-sided Towhee, Brown Thrasher, Yellow-breasted Chat, Indigo Bunting, and Scarlet Tanager. Of these, the Bouteilliers reported or collected 1 Indigo Bunting and 3 Dickcissels. It would have been hard for them to overlook some of the others, most quite conspicuous, if they were as common then as today. These birds have shown range expansions in recent years, and all except the Dickcissel and tanager have probably benefited from the proliferation of second growth and scrub in human-disturbed habitats.

### Account of Species

Here details are given on the 325 species that have been reported on Sable Island up to the end of 1979. For many, the dates and numbers in Tables III and IV summarize much that needs to be said, except for short comments on extra-seasonal occurrences and other observations of possible interest. Data on occurrences are more comprehensive for species that have been seen less frequently—arbitrarily those that have occurred in fewer than 5 times in 5 different springs or autumns between 1967 and 1979.

After 236 species names, confirmation of the bird's presence on the island is given in parentheses. "P" indicates that the bird has been photographed, and the color slide is on file at the National Museum of Natural Sciences, Ottawa. The various museums where specimens from the island are deposited are: American Museum of Natural History, New York (AMNH); National Museum of Natural Sciences, Ottawa (NMC); Nova Scotia Museum of Science, Halifax (NSMS); the Royal Ontario Museum, Toronto (ROM); the Science Museum at Springfield, MA. (SMS); and the museum at l'Université de Montréal (UM).

I have accepted sight records made in recent years based on my knowledge of the observers and on written descriptions of some rare or "difficult" species. I give certain of the descriptions and circumstances for some such species. The following have supplied extensive notes on which the migration table (Table III) and many of the following accounts are based (initials given for those used as authorities for more unusual records): Christel and Norman Bell (CB, NB), Jean Boulva (JB), Jean Burton (JBu), Davis W. Finch (DWF), E.H. Miller (EHM), Eric L. Mills (ELM), Alban A. Richard (AR), Howard Ross (HR), Wayne Stobo (WS), and Dan Welsh (DW). Notes for shorter periods were supplied by Eleanor Androschuk, R.G.B. Brown, Donald Gunn, Robert Lamberton and Bruce Mactavish, and a few interesting records were supplied by other individuals, as named in the accounts.

In making use of the many contributions by the Bouteilliers, I give formal references to their published notes (in bibliography), and give the year of sighting for the unpublished manuscript lists, as given in Table I. The interview of James Bouteillier on birds of the island, by Harry Piers in 1902, is referred to throughout as "Piers MS".



In considering the seasonal status of species in comparison with other Nova Scotian records up to the end of 1979, I have referred to Tufts (1973) and to the *Nova Scotia Bird Society Newsletter*, and the journal *American Birds* (formerly *Audubon Field Notes*).

**Common Loon** *Gavia immer* (SMS)

The 6 sightings since 1965 include 1 each from February, May, June, and October, and 2 from September. It was thought to be "rare" in 1901 (Piers MS).

**Red-throated Loon** *Gavia stellata* (SMS)

One long-dead in June 1967 and 3 near shore on 17 October 1975 are our only recent records. The specimen is dated 23 November 1900, and Bouteillier (1908b) reported another.

**Red-necked Grebe** *Podiceps grisegena* (P)

An adult was found "grounded" on 18 August 1965, another was unseasonable on a pond on 3 July 1967 (CB), and a corpse was found in spring 1970.

**Pied-billed Grebe** *Podilymbus podiceps* (P; AMNH)

Eight individuals on ponds during 3 recent autumns were seen as early as 13 September 1973 and as late as 14 December 1969. Specimens taken on 14 September and 30 December 1901 are additional to those reported in Table IV.

**Northern Fulmar** *Fulmarus glacialis* (AMNH, NMC, NSMS)

Fulmars are regular in surrounding waters (Brown et al. 1975). In recent years they have been seen from the island or found recently dead on beaches during every month, most frequently in May-June and September. An estimated 650 came ashore in 'Arrow' oil in late winter 1970, mostly *F. g. glacialis* from Greenland or eastern Atlantic colonies (Brown et al. 1973). The specimen in the Dwight collection is also labelled as this race.

**Cory's Shearwater** *Puffinus diomedea* (ROM)

This species is commonest near the island (Fig 3) in July (Brown et al. 1975). First sightings from the island were in 1968, and about 25 have been seen since, as early in the summer as 19 June 1979 and as late as 11 September 1974.

**Greater Shearwater** *Puffinus gravis* (AMNH, NMC, NSMS, ROM, SMS)

Shearwaters are readily seen from the island's tips in summer, especially when winds are easterly. The earliest spring record was of a freshly dead bird on 23 May 1971 and the latest was found dying on the beach on 2 December 1970. When shearwaters were present in large numbers in early summer (i.e., 5000 or more estimated), this species was generally outnumbered (ratios of 3:1 to 20:1) by Sooty Shearwaters. However, an estimated 14,000 Greater and only a few Sooty Shearwaters passed the island on 5 June 1978 (P. Vickery). The largest count of Greaters in late summer was 650 on 22 August 1977.

**Sooty Shearwater** *Puffinus griseus* (AMNH, NSMS, SMS)

Numbers were greatest in early summer, varying with wind and weather. The earliest seen from the island was a bird on 20 May 1977. However, S.W. Gorham (in litt.) saw 3 very near the island on 9 May 1961. The latest were 3 on 26 November 1969, later than they normally are found in the region (Brown et al. 1975). Estimates have been made of 1000-3000 birds passing the island during periods of a few hours in some years, but counts made after early August never exceeded 50.

**Little Shearwater** *Puffinus assimilis* (AMNH)

A specimen found dead on 1 September 1896 (Dwight 1897) is the only Canadian record. It is of the *baroli* (Madeira-Azores) race.

**Manx Shearwater** *Puffinus puffinus* (NMC)

This species, which has recently colonized islands off southern Newfoundland, was evidently first seen off Nova Scotia in 1963 and is now regular in summer (Brown et al. 1975). The first from Sable Island was seen on 3 July 1966 (CB, NB). It has been seen regularly in recent years, as early in the season as 28 May 1974 and as late as 19 September 1974. During July 1978 it was the commonest shearwater around the island on calm days, with 125 along the south beach on 24 July. A corpse found on 23 June 1970 had been banded as a nestling in the previous summer on Skokholm Island, Wales.

**Leach's Storm-Petrel** *Oceanodroma leucorhoa* (P; AMNH, ROM, SMS, UM)

There were scattered sightings of the species as early as 18 May 1972 and as late as 27 October 1968. Very late fall or winter sightings of storm petrels, presumably this species, were 60 on 30 November 1964, and "flocks" on 3 January and 23 March 1967 (CB, NB). These, along with 8 oiled Leach's in "Arrow" oil on 1 March 1970 (Brown et al. 1973) are somewhat unexpected (cf. Brown et al. 1975). A dead bird on 2 July 1968 had been banded on 17 July 1965 on Kent Island, N.B. Early reports of "Storm Petrels" (meaning *Hydrobates pelagicus*) nesting on Sable Island (e.g. Bent 1922) would possibly be referable to *O. leucorhoa*. However, James Bouteillier (Piers MS) did not mention breeding, and Dwight (1895) thought that birds taken by him had wandered from the Nova Scotian coast. Certainly it does not now nest, although there are places where the soil might be adequate.

**British Storm-Petrel** *Hydrobates pelagicus* (NMC)

One that blundered into a mist net, set by JBu for shorebird banding, on 10 August 1970 was a first specimen for North America, earlier records being suspect (McNeil & Burton 1971).

**Wilson's Storm-Petrel** *Oceanites oceanicus*

An early individual was identified on 2 May 1971 (JB). The few sightings in recent years between June and September do not reflect its abundance near the island (Brown et al. 1975).

**Brown Pelican** *Pelecanus occidentalis*

A bird sitting in a shallow pond on the beach on 26 June 1963 was approached very closely before it flew (CB, NB). Almost all the 8 or so records in the province are for late spring or early summer.

**Northern Gannet** *Morus bassanus* (P)

This species is more regular around the island than maps in Brown et al (1975) might suggest. The earliest was an oiled bird on 1 March 1970 and the latest were 3 on 29 December 1969. Hundreds passed the island on some days in late March and early April 1972, and they have probably been overlooked during migration in other years. Smaller numbers have been seen during every month between April and November, especially immature birds in summer. A recently dead bird on 16 September 1964 had been banded a month earlier on the nest at Ile Bonaventure, Qué.

**Great Cormorant** *Phalacrocorax carbo* (P)

Since 1977 about 23 individuals have been seen in spring, as early as 24 April 1977 and as late as 28 June 1977. Ten individuals in autumn since 1968 have been seen as early as 11 September 1974 and as late as 4 November 1968.

**Double-crested Cormorant** *Phalacrocorax auritus*

The species was regular in small numbers in spring, as early as 28 April (median

30 May) and as late as 16 June (median 2 June), thus much later on average than on the mainland. They rarely lingered, and were still presumably migrating northward. Three between 31 August and 24 September 1978 were the only fall sightings. An adult closely observed on 3 February 1965 (CB, NB) was a first winter record for the province, although there have been several since. A record of an unspecified cormorant on 1 January 1907 Bouteillier (1908a) was, on the original list, noted as "not . . . a whole bird", and may have been a long-dead corpse.

#### **Great Blue Heron** *Ardea herodias* (P)

Most herons of this and other species are seen around ponds near West Light, where there are only mummichog (*Fundulus heteroclitus*), sticklebacks (3 species), and perhaps a few eels (*Anguilla rostrata*) as food (Garside 1969). Numbers of individuals of various heron species have been found dead on the island, probably of exhaustion and subsequent starvation. Great Blue Herons occurred every year since 1966, but not always in both spring and fall (Table III). One on 14 January and another on 14 February 1969 (not in Table III) may have been attempting to winter in the region. The bird on 16 March 1973 can be assumed to have been an early migrant; it died on 22 March. The earliest fall record was on 5 August 1904 (Table IV).

#### **Great Egret** *Casmerodius albus* (AMNH)

There were 3 recent sightings of this vagrant: individuals on 28 May 1966 (CB, NB), during 7-25 May 1968 (CB, IM, et al), and between 30 June and 4 July 1977 (HR et al.). The male in the Dwight collection was taken on 10 April 1897.

#### **Snowy Egret** *Egretta thula* (NMC)

This was the most frequent vagrant heron in recent springs (Table III). Two between 24 March and 10 April 1977 and another on 29 March 1979 (all AR) were unusually early (included in Table III). A bird evidently freshly killed by gulls on 26 December 1974 (EHM) was very late (not in Table III). A Snowy Egret mentioned by Richard Bouteillier (Piers MS) apparently refers to the specimen of Great Egret in the Dwight collection.

#### **Little Blue Heron** *Florida caerulea* (P; NMC)

This vagrant has been most regular in fall (Table III). One on 20 June 1965 (CB) was later than any of the more recent spring birds (cf. Table III). All but 2 of the fall birds were adult or near-adult. James Bouteillier's "Blue Heron" of 1 May 1902 was evidently (Piers MS) a specimen of this smaller species which was not sent to Dwight.

#### **Louisiana Heron** *Hydranassa tricolor* (P)

One seen on 3 August 1972 (DW) and another on 18-20 May 1979 (B. Mactavish) are among about a dozen records from the province.

#### **Cattle Egret** *Bubulcus ibis* (P)

Single birds were seen on 12 June 1965, 1 May 1967, 15-22 May 1968 (all CB, NB), 7 July 1977 (HR), 17 November 1975 (AR), and 10 September 1979 (AR et al.). Old corpses were found in July 1969 and 1970.

#### **Green Heron** *Butorides striatus* (P)

This vagrant was quite regular in spring, less so in fall (Table III). often on smaller, isolated ponds.

#### **Black-crowned Night Heron** *Nycticorax nycticorax* (P)

Three have been sighted in spring (26 May 1968, 21 March to 11 April 1971, 27 May 1975) and 3 in fall (2 on 10 October 1974, 1 on 16 October 1975). Although it



Fig 3 A Cory's Shearwater near the northern limit of its range, over Sable Island Bank. (Photo: July 1968, P. Germain.)

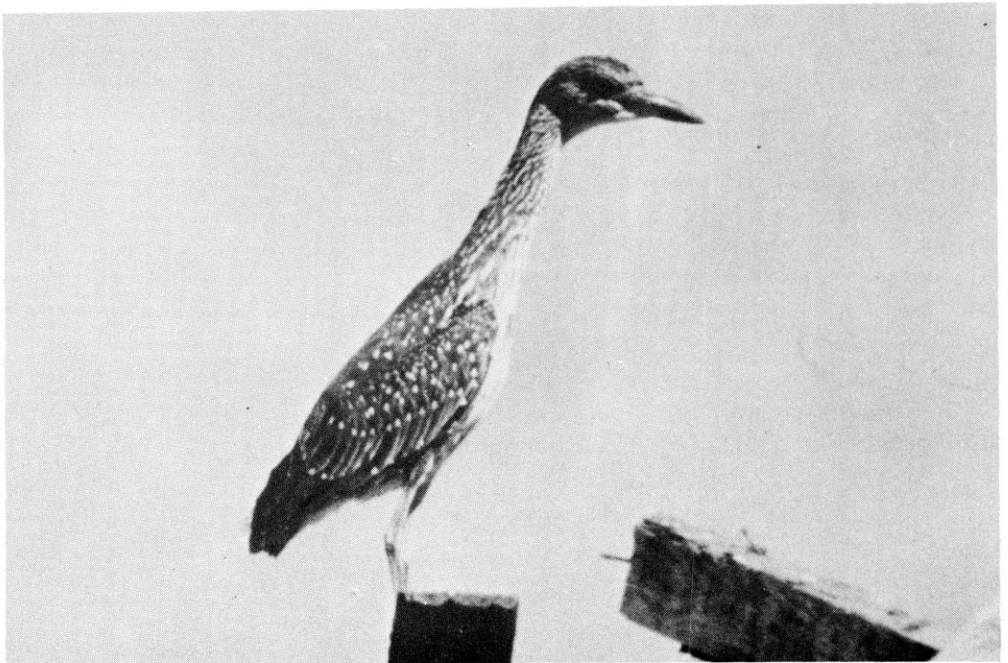


Fig 4 A Yellow-crowned Night Heron, the most regular of the vagrant herons, on the rubble of the Old No. 3 Station. (Photo: 25 August 1977, I. McLaren)

has nested recently in Nova Scotia, it is thus much less frequent on the island than are some other vagrant herons.

**Yellow-crowned Night Heron** *Nyctanassa violacea* (P; AMNH, NMC)

Most recent records (Table III) were immature birds (e.g. Fig 4). Bouteillier's (1905) specimen on 13 April 1904 is the only spring record.

**Least Bittern** *Ixobrychus exilis*

Four individuals of this rare species have occurred in recent years: on 11 July 1966, 1 June 1969, 1 November 1969 (all CB, NB), and 12 September 1974 (IM, B. Mactavish). Bouteillier (1908a; 1908b) reported individuals on 9 October 1906 and 13 May 1907, and 2 or 3 occurred "about 3 years" before 1901 (Piers MS).

**American Bittern** *Botaurus lentiginosus* (P)

Bitterns have been quite regular in fall, but not in spring (Table III). A late bird was seen on 4 December 1968 (CB; not in Table III). It was also regular in fall at the turn of the century, when 1 on 5 December 1903 (not in Table IV) was unusually late.

**Glossy Ibis** *Plegadis falcinellus* (P; NMC)

This vagrant has been occasional in spring since 1968 (Table III).

**Roseate Spoonbill** *Ajaia ajaja*

In a conversation some years ago with Richard Ryan (in litt. to IM, 23 May 1980), the late J.J. Elliot told of seeing a Roseate Spoonbill on Sable Island during his visit between 30 July and 3 August 1948. Evidently Elliot was loath to publish this sighting (e.g. in Elliot 1956), as it was unsupported by specimen or photograph, although it seems unlikely that such a species could have been mistakenly identified by an observer of Elliot's experience. The species has not been reported in Canada, and must clearly remain at best "hypothetical" on this evidence.

**Canada Goose** *Branta canadensis* (P)

Small numbers stopped on the island in spring and fall most years (Table III). Six wintered in 1976-77 and were last seen on 5 April (not in Table III). A very large group of about 1000 passed southward over the island on 6 September 1975 (not in Table III).

**Brant** *Branta bernicla*

One was listed by Richard Bouteillier on 7 November 1908, but none has been seen in recent years.

**Snow Goose** *Chen caerulescens*

According to Gilpin (1880) 2 young "Barnacle Geese" sent to him from Sable Island resembled 2 young geese shot in Halifax, later determined by Downs (1888) as Snow Geese. Gilpin's description of the Sable Island birds fits Snow Goose, but not Barnacle Goose.

**Mallard** *Anas platyrhynchos*

Mallards were occasional in recent years in spring and fall (Table III). The "6 or 7" seen by Bouteillier (1908a) on 1 November 1906 probably antedated introduced stock in the region. An apparent Mallard X Black Duck hybrid was noted on 3 June 1969 (JB).

**Black Duck** *Anas rubripes* (P; AMNH)

In recent times the Black Duck (Fig 5) has occurred at all seasons, augmented by larger numbers of migrants (counts up to 300 on the island) in fall. It was sometimes common in winter, with counts of 40-100 reported at times during the

open winter of 1968-69. It left during hard weather in other winters, as none was found during extensive travels in late February 1971 and January 1972. Estimates of the resident adult population of the whole island in May or early June of recent years ranged between 12 and 30 individuals. As a commonplace species it was rarely listed by the Bouteilliers, but evidently occurred in flocks of up to 300-400 in winter (Piers MS). The earliest eggs in recent years were found on 1 May 1977, but diaries of 19th-century superintendents record eggs on 20 April 1833 and on 22 April 1848 (Nova Scotia Archives). Complete clutches in recent years (with number of nests in parentheses) were 6(1), 7(1), 8(12), 9(7), 10(9), and 11(2). First new ducklings were reported during 10 seasons between 16 May and 9 June (median 24 May). An incomplete (?) clutch of 3 incubated eggs was found as late as 3 July 1972, and a new brood as late as 23 July 1971. Despite gull predation, production of flying young is quite successful. Four clutches taken for captive rearing programs of the United States Fish and Wildlife Service in late May 1977 hatched in Maryland, but the young died of egg-transmitted *Salmonella* (A.R. Lock, Canadian Wildlife Service, in verb.). Yet 9 healthy broods were found that year on the island during early June. A long-dead bird in May 1970 had been banded near Debert, N.S., on 9 December 1969.

#### **Northern Pintail *Anas acuta* (P)**

The Pintail was a regular migrant (Table III), and also nested in several years. Six half-grown young were seen on 6 July 1967, a brood of 8 was fledged in 1975, and 8 of 9 hatched were fledged in 1976, all on ponds near West Light. In 1977 up to 6 males and 7 females in May led to 5 discovered nests during 21-26 May (clutches 7, 8, 9, 9, 12) and a replacement clutch (incomplete?) with 5 eggs on 9 June. First young appeared on 7 June and at least 14 full-grown young were about in later summer. In 1978 numbers dwindled, and only a brood of 5 was noted. In 1979 a resident pair was present, but no evident nesting occurred. Richard Bouteillier (Piers MS) thought they were 'uncommon in winter', and they otherwise were mentioned only tentatively (Bouteillier 1901).

#### **Gadwall *Anas strepera* (P)**

The only record is of a pair that spent the day on ponds near West Light on 12 June 1973 (DWF, IM).

#### **Green-winged Teal *Anas crecca* (P; SMS)**

This teal was generally scarce in spring, but at times common in autumn (Table III), with large counts of 80 on 3-5 November 1968 and 62 on 13 September 1972. It nests irregularly. Nests were found on 17 May 1976 (10 eggs) and in late May 1979 (5 & 8 eggs), and broods were noted on 6 July 1967 (6 new ducklings), mid-August 1977 (4 large young), and 15 July 1978 (2 small young). In other years birds lingered in June, but neither nests nor broods were found. There are no references to it in earlier publications, and evidently "only a few flocks of half-dozen a winter" occurred 80 years ago (Piers MS).

#### **American Wigeon *Anas americana* (P)**

There are only a few modern sightings: 3 during 26-29 November 1970, 2 on 24 October 1973, 1 on 2 May 1974, a pair during 1-3 May 1976, and 1 on 6-9 September 1978. Among 3 early reports (Table IV) they were rated as "numerous" on 28 October 1905 (Bouteillier 1906).

#### **Blue-winged Teal *Anas discors* (P)**

This teal is a regular migrant (Table III), with flocks of 30-50 reported some years in September. Pairs, with an extra male at times, could generally be found into June, but nesting was only thrice confirmed: Erskine (1953) noted a female





Fig 5 A Black Duck nesting in the disappearing rose garden at Old Main Station. (Photo: 23 May 1977, I. McLaren.)

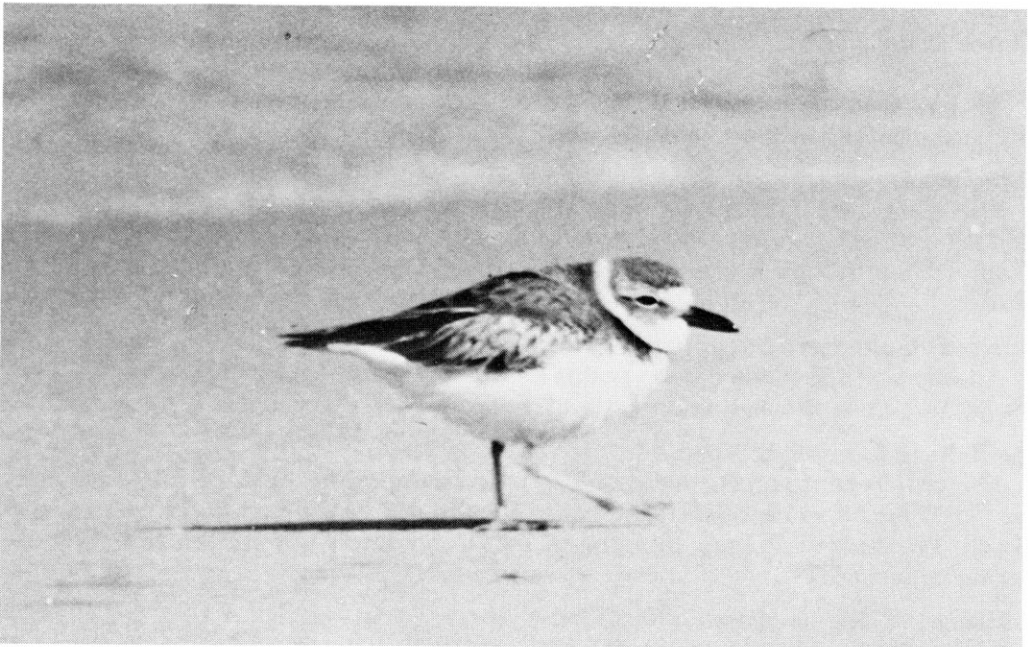


Fig 6 Nova Scotia's first well-authenticated Wilson's Plover, exceptionally early near the west tip of the island in spring. (Photo: 2 April 1972, I. McLaren.)

with young in late August 1953; 8 newly hatched young were seen on 30 June 1971; and a female hatched a clutch of 5 eggs on 21 June 1975. The species was not common in earlier times (Table IV).

**Northern Shoveler** *Anas clypeata*

Richard Bouteillier (Piers MS) reported "only one—a couple of years ago [i.e., prior to 1901] in spring." It is to be expected today in view of its recent increase in Nova Scotia.

**Wood Duck** *Aix sponsa* (NMC)

This species, uncommon in Nova Scotia, was occasional in spring and rare in fall (Table III). Also, long-dead birds were found in spring 1969 and 1976.

**Canvasback** *Aythya valisineria* (NMC)

A desiccated corpse of a female or immature bird was found in late May 1974.

**Redhead** *Aythya americana*

Richard Bouteillier (Piers MS) reported it as "rare; towards spring" 80 years ago, when there was a remnant east-coast population (e.g., see Tufts 1973).

**Ring-necked Duck** *Aythya collaris* (P)

It was occasional in spring and fall (Table III). Bouteillier (1901) reported it once: 5 on 20 October 1901.

**Greater Scaup** *Aythya marila* (P; AMNH, ROM)

The only recent records were: 1 on 17 September 1964, a pair between 28 March and 16 April 1972, a flock of 15 during 12-15 November 1977, and 2 during 16-18 October 1978. The Bouteilliers, on the other hand, reported them regularly in fall (Table IV), sometimes as "numerous". The beak and wing catalogued in the Dwight collection are missing.

**Lesser Scaup** *Aythya affinis*

Single drakes were closely observed on 3 August 1963 and 17-18 August 1968 (both CB), and on 28 May 1977 (IM). It was rated as "uncommon" in winter by Richard Bouteillier (Piers MS).

**Common Goldeneye** *Bucephala clangula*

There are only 3 recent sightings, 12 on 5 November 1968, 1 on 24 May 1978, and 20 on 12 December 1979. These augment the few reports from earlier times (Table IV), although Richard Bouteillier (Piers MS) thought them "common" in winter.

**Barrow's Goldeneye** *Bucephala islandica*

A tame pair spent the day on ponds near the Meteorological Station on 2 April 1971 (DW), constituting the only island record.

**Bufflehead** *Bucephala albeola*

The only recent records were of 2 female or immature birds on 28-30 November 1970 and a male on 7 April 1972. The Bouteilliers listed them more often (Table IV), and they were thought to be "uncommon [in] winter and towards spring" (Piers MS).

**Oldsquaw** *Clangula hyemalis* (P; AMNH)

The only recent sightings were of 20 offshore on 4 November 1968 and of a female on ponds near West Light on 6-9 April 1972. An estimated 30 corpses came ashore in "Arrow" oil in late winter 1970 (Brown et al. 1973). Bouteillier (1908a) listed 2 on the unusual date of 26 June 1906, and they were frequent in



fall (Table IV), generally "in no.". Richard Bouteillier (Piers MS) also stressed that they were "very abundant" between September and April prior to 1901.

**Harlequin Duck *Histrionicus histrionicus***

Five frequented the surf zone off the north beach near West Light between 28 September and 3 October 1977 (AR).

**Common Eider *Somateria mollissima* (P)**

Lone females were seen on 31 March 1972 (feeding near a wreck) and on 13-15 November (on a flooded beach), and a flock of ca. 100 was present beyond the surf on 1-2 February 1978. The Bouteilliers did not record them.

**White-winged Scoter *Melanitta deglandi***

The only recent records were of 2 on 9 September 1963, 5 on 29 September 1968, 5 stragglers on 11 July 1969 (all these on ponds or Wallace Lake), and an off-shore flock of ca. 400 on 20 November 1970. Evidently it was "the most common scoter" at the turn of the century (Piers MS) and was listed regularly (Table IV).

**Surf Scoter *Melanitta perspicillata***

Our only recent reports were of a single male on a pond on 5 June 1963, an off-shore flock on 24 April 1968, a male on Wallace Lake on 20 June 1973, and 4 off-shore on 29 August 1978. The Bouteilliers did not report the species on annual lists, but evidently it was "common" in winter (Piers MS).

**Black Scoter *Melanitta nigra***

An unseasonable male was seen on Wallace Lake on 14 July 1965. The Bouteilliers did not list it, but it was apparently "common" in winter (Piers MS).

**Ruddy Duck *Oxyura jamaicensis* (AMNH)**

A male on 25 June 1971 was unseasonable (IM, WS). At least 3 were present in late November and early December 1974, and a male was seen on 4 April 1975. The Bouteilliers did not include it on annual lists, but evidently it was "uncommon" in winter (Piers MS). The specimen catalogued in the Dwight collection, as "head and beak only, winter 1896-97", could not be found.

**Hooded Merganser *Mergus cucullatus***

The only record is of 3 on 5 November 1978 (AR).

**Common Merganser *Mergus merganser***

The few records are: a female on 6 April 1972, a male during 22-25 April 1976, 2 males on 15-19 October 1978, and a pair on 10-24 March 1979.

**Red-breasted Merganser *Mergus serrator* (P; AMNH, ROM)**

This species nests on the island, its numbers increasing in fall, with flocks of up to 150 in August-September, often as molting groups on the remnants of Wallace Lake. It winters on the island, with counts as high as 75 on 18 February 1971 and 175 on 21 January 1972, made on the whole island. Island counts of adults (with some subadults courting and perhaps breeding) during late May and June in recent years ranged between 20 and 60. Full clutch sizes (with number of nests in parentheses) were: 8(2), 9(2), 10(4), 11(1), and 13(2). The earliest nest found was on 1 June 1970; however, the earliest brood had 6 hatchlings on 2 June 1968. Most nests were found later and other first broods of the season occurred during 3-21 July (median 14 July) in 5 years. The breeding success of mergansers seemed lower than that of the Black Duck, but a few full-grown broods and flying young were seen in late August in some years. It was recognized as breeding by Gilpin (1858) and Vieth (1907) in the mid-19th century.

**Goshawk** *Accipiter gentilis*

Fully 5 of the fall birds in Table III occurred in 1967, and were preceded by an early adult on 24 July (not in Table III). The Bouteilliers reported "various" hawks (unspecified) in several years, including a "chicken hawk" on 10 May 1902, and Richard Bouteillier did "not know the hawks sufficiently to name all that occur on the island" (Piers MS).

**Sharp-shinned Hawk** *Accipiter striatus* (NMC)

In recent years 3 have occurred in spring (30 May 1977, during 19-24 May and on 3 June 1978) and 4 in fall (28 September - 1 October 1970, 17 October 1975, 16 September 1977, and 25 August - 13 September 1978). Dead birds were found in mid-May 1977 and early December 1970.

**Red-tailed Hawk** *Buteo jamaicensis*

Individuals perched on towers on 8 August 1965 and 22 October 1969.

**Broad-winged Hawk** *Buteo platypterus*

A very tame adult occurred on 17 August 1966, another was found recently dead on 2 June 1969, and a third was seen on 16 October 1978.

**Rough-legged Hawk** *Buteo lagopus*

This was the most regular *Buteo*, especially in fall migration, once quite early (Table III). Two were seen at times through the winter of 1977-78, although there are no rodents available on the island.

**Bald Eagle** *Haliaeetus leucocephalus*

Richard Bouteillier (Piers MS) stated that "a couple" were obtained some years before 1901.

**Marsh Hawk** *Circus cyaneus* (NMC)

The bird was rare in spring and uncommon in fall (Table III). The only older report is of a bird rather tentatively identified in the summer of 1866 (Vieth 1907).

**Osprey** *Pandion haliaetus* (P)

Single birds passed the island with some regularity in spring, but it was seen rarely in fall (Table III). One on 8 July 1971 was presumably not a normal migrant (not in Table III). The Bouteilliers reported a few in autumn (Table IV), and it was noted (Piers MS) as uncommon and nonbreeding. However, it is possible that it nested in the dunes in earlier times, as it still does in some parts of its range, for Vieth (1907) wrote from his visit in summer 1866 that "fish hawks (*Falco halioetus* of Lin) are common." The great expanse of Wallace Lake would have offered good fishing then.

**Peregrine Falcon** *Falco peregrinus*

Spring birds were on 13 May 1973, 28 May 1976, and 4-5 May 1978. Fall migrants occurred on 14 October 1971, 16 October 1975, and 29 September 1976. A winter bird was seen well on 7 February 1978 (AR).

**Merlin** *Falco columbarius* (P)

Merlins appeared in every month from March to December (Table III). One between 30 June and 3 July 1969 and another on 28 June 1971 were between seasons, and another stayed from mid-October 1968 until at least 25 February 1969 (none of these in Table III).

**American Kestrel** *Falco sparverius* (P)

Kestrels are the most regular raptor on the island (Table III). Since 1967 most have occurred in May (16 individuals) and September (21, including 9 during 25-29 September 1970). A winter bird occurred between 21 January and 25 February

1974 (not in Table III). Bouteillier (1908a) reported an early fall migrant on 4 August 1906.

**Willow Ptarmigan** *Lagopus lagopus*

An extraordinary ptarmigan perched on a fence near West Light on 12 August 1966, and was studied within 3 m by CB and NB. Although they hesitated to identify the species as other than a ptarmigan at the time of sighting, their written description indicates a male Willow Ptarmigan in summer dress. Presumably it came from Newfoundland, as it antedates introductions of the species to Scatari Island, off Cape Breton Island.

**Bobwhite** *Colinus virginianus*

An individual on 26-27 July 1966 (CB, NB, E. Androschuk) presents a puzzle. There is no record of the species having been introduced with the pheasants in 1961 (see next species), and no Bobwhites had been seen by CB during 1963-1965. The possibility of its arriving on its own is, however, very remote.

**Ring-necked Pheasant** *Phasianus colchicus*

About 25 pheasants introduced on private initiative in 1961 remained scarce until 1964, when they began to increase in numbers with winter feeding. They became extinct in winter 1970-1971 with the cessation of chicken-rearing in 1970, and the resulting curtailment of an incidental food supply for the pheasants. The largest counts around West Light and the Meteorological Station were 16 on 8 November 1968 and 18 on 28 December 1969. Two hens in the fall of 1970 were the last birds seen alive, but remains of at least 40 on the whole island were found by DW et al. in April 1971, and this probably indicates their final abundance. Nests were found with 12, 8, and 17 eggs (the last with 8 remaining unhatched, and probably produced by 2 females). Young broods were seen frequently in mid- to late June, and flying young as early as 29 June 1968.

**Limpkin** *Aramus guarauna*

One was well-observed by CB and NB on 12 September 1964 and another was seen by them briefly on 27 November 1967. The first bird was observed for about 0.5 h and at close range for 5 min. Its brown, white-streaked neck, back, and breast, long bill and neck, and long legs, were all clearly observed. The second bird, similarly brown and white-streaked, flew by at close range, but did not settle within sight. Its extended neck and legs and odd wingbeat (described by CB as resembling that of the European White Stork, *Ciconia ciconia*, with which she was familiar) were noted. These sight records, together with that of an injured bird captured in the mid-1950's on Brier Island, Digby Co. (W. Lent, in verb.) appear to be the only records north of Maryland on the Atlantic Coast.

**Virginia Rail** *Rallus limicola*

Spring individuals occurred on 7 June 1966 and during 6-23 May 1969, the latter at times feeding on sowbugs (Isopoda) around a house (CB). There were 6 individuals in fall of 4 years, between 24 August and 16 September.

**Sora** *Porzana carolina* (AMNH)

One on 29 June 1965 was around buildings near West Light. Others were flushed as frequently from dunes as from pond margins, almost all in autumn (Table III). Nine of these were counted around ponds near West Light on 16 September 1973. The Bouteilliers reported a Sora and an unidentified rail in fall, as additions to the fragments in the Dwight collection labelled 10 September 1898.

**Yellow Rail** *Coturnicops noveboracensis*

A small, buffy rail with white on the wing was flushed by DW on 16 September 1973. Characteristically, it could not be put up again for other observers.