Bruce E. Weber

Birds of Isle Royale In Lake Superior



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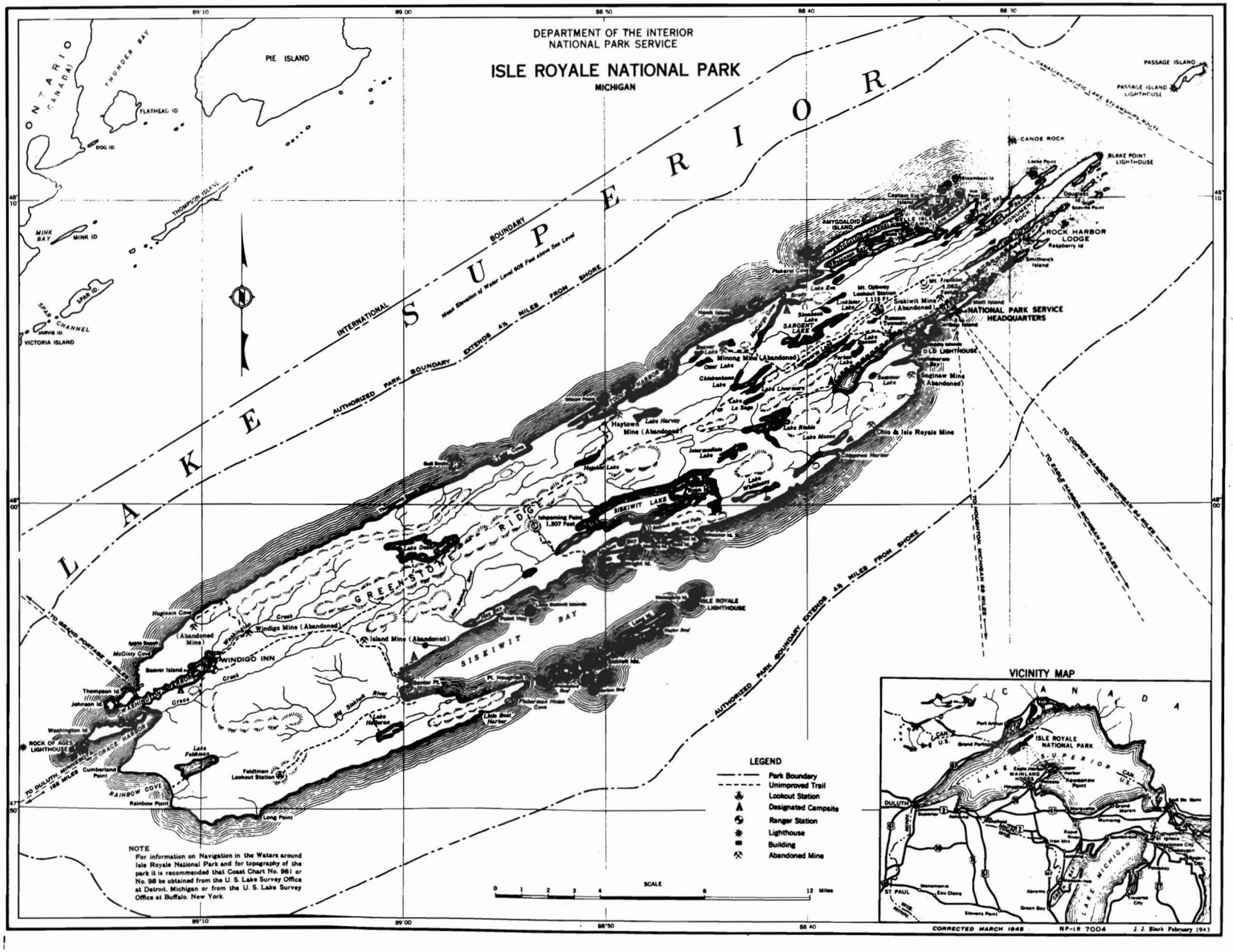
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On the cover. Gray jay.

Photographs are by the authors.

Abstract -- This report constitutes an annotated list of 197 species of birds reported from Isle Royale National Park, a 210-square-mile archipelago in northwestern Lake Superior including some 200 islets and rock outcrops. The island is 45 miles long and 8 miles wide at its widest point. Bird distribution and habitats are described, along with geography and vegetation; 62 species are known to have bred at least once, 26 are thought to be breeders, and the rest are migrants.


DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
ISLE ROYALE NATIONAL PARK
MICHIGAN
LAKE SUPERIOR
ONTARIO (CANADA)
THUNDER BAY
PIE ISLAND
FLATHEAD ID
BOG ID.
MINK BAY
MINK ID
SPAR CHANNEL
JARVIS ID
VICTORIA ISLAND
THOMPSON ISLAND
INTERNATIONAL BOUNDARY
Mean Elevation of Water Level 609 Feet Above Sea Level
AUTHORIZED PARK BOUNDARY EXTENDS 4½ MILES FROM SHORE
PASSAGE ISLAND
PASSAGE ISLAND LIGHTHOUSE
CANOE ROCK
BLAKE POINT LIGHTHOUSE
ROCK HARBOR LODGE
NATIONAL PARK SERVICE HEADQUARTERS
OLD LIGHTHOUSE
AMYGDALOID ISLAND
Mt. Ojibway Lookout Station 1,115 Ft.
Siskiwit Mine (Abandoned)
Minong Mine (Abandoned)
Saginaw Mine (Abandoned)
Haytown Mine (Abandoned)
Ohio & Isle Royale Mine
SARGENT LAKE
SISKIWIT LAKE
Ishpeming Point 1,307 Feet
GREENSTONE RIDGE
Windigo Mine (Abandoned)
Island Mine (Abandoned)
WINDIGO INN
ISLE ROYALE LIGHTHOUSE
SISKIWIT BAY
ROCK OF AGES LIGHTHOUSE
GRACE HARBOR
RAINBOW COVE
Rainbow Point
Cumberland Point
Feldtman Lookout Station
Long Point
TO DULUTH, MINN. 156 MILES
TO GRAND PORTAGE 54 MILES
TO COPPER HARBOR, MICHIGAN 43 MILES
TO HOUGHTON, MICHIGAN 68 MILES
AUTHORIZED PARK BOUNDARY EXTENDS 4½ MILES FROM SHORE
NOTE
For information on Navigation in the Waters around Isle Royale National Park and for topography of the park it is recommended that Coast Chart No. 981 or No. 98 be obtained from the U. S. Lake Survey Office at Detroit, Michigan or from the U. S. Lake Survey Office at Buffalo, New York.
LEGEND
Park Boundary
Unimproved Trail
Lookout Station
Designated Campsite
Ranger Station
Lighthouse
Building
Abandoned Mine
SCALE
0 1 2 3 4 8 12 Miles
VICINITY MAP
CANADA
ISLE ROYALE NATIONAL PARK
LAKE SUPERIOR
LAKE MICHIGAN
DULUTH
ST PAUL
CORRECTED MARCH 1948
NP-IR 7004
J. J. Black February 1943

Birds of Isle Royale in Lake Superior

Majestic Isle Royale, largest island in Lake Superior, and Lake Superior itself, largest fresh-water lake in the world, were important in the development of the Great Lakes region, particularly during the early period of exploration. George Shiras 3d regarded Isle Royale as the most beautiful and the most interesting island in the Great Lakes (18)[1/]. Others described it as the enchanted island, the wonder island of the north; some likened it to a battleship accompanied by a fleet of destroyers. Indians of the 17th century feared the island, and referred to it as the floating island.

Radio-carbon dating of wood recovered from prehistoric mines indicated that the Indians were mining copper on Isle Royale at least 3,300 years ago (5). With the ending of prehistoric mining, the island seems to have been abandoned except for occasional visits by fishermen and trappers (10). Copper mining was tried intermittently in the last half of the 19th century, but none of these operations proved economically feasible, and explorations were abandoned by 1900.

The American Fur Company operated five fishing posts on the island from 1837 to 1842 although the fur industry could have been a sideline (13). In 1840 the island was reported to be destitute of game with the exception of a herd of "reindeer." Commercial fishing continues today, making it the most enduring enterprise on the island, although depredations on food fish by the sea lamprey have diminished it to a marginal industry.

Interest in the island as a natural area, valuable for its scenery and wilderness character, as well as its interesting fauna, history, and archeology, brought about its establishment as a National Park in 1946.

Located in northwestern Lake Superior, at latitude 48°N. and longitude 89°W., Isle Royale (frontispiece) lies 13 miles from Thunder Cape on the Canadian north shore. The southwestern part is 18 miles northeast of Grand Portage in Minnesota, from which it is visible on clear days. The finger-like northeastern section, with its many peninsulas, bays, and harbors, is 30 miles east of Fort William and Port Arthur, Ontario. Southeastward, it is approximately 55 miles to Michigan's Keweenaw Peninsula.

The 210-square mile National Park is an archipelago--approximately 200 islands and numerous rock outcrops surround the main island which is 45 miles long by 8 miles wide at its widest point. The topography is a series of northeast-southwest parallel ridges and valleys, formed by differential erosion of alternating layers of Keweenaw basalts, conglomerates, and sandstones. Greenstone Ridge is the highest and most prominent and forms the backbone of the island. Other prominent ridges are Minong,

1/ Numbers in brackets refer to the references at the end of this report.

Feldtmann, Houghton, and Red Oak. All are more precipitous on the northwest faces, while the southeast slopes are usually quite gentle. The highest elevation is Mount Desor, 1,394 feet above sea level and 792 feet higher than Lake Superior (602 feet).

Between the numerous ridges are 38 named lakes and about as many unnamed ponds. Siskiwit Lake, 7 miles long and about 140 feet deep, is the largest and deepest. There are five major streams and many intermittent ones. Sheltered coves and deep, fiordlike harbors offer good protection along much of the shoreline, especially in the northeast and southwest sections.

The climate is typical of the upper Great Lakes area, with cool summers and severe winters, although temperature extremes are modified by Lake Superior. Ice bridges sometimes form in winter between the island and the Canadian shore, and the open southeast side of the island is usually trimmed by a shelf of ice a few yards to a mile wide. Snow depths have exceeded 3 feet, but 2 feet may be more normal.

The island was completely glaciated, and there has been no direct overland access to the island since the glacial retreat. This has meant that invasion by terrestrial organisms has been only through circuitous means. Most birds, bats, and organisms dispersed by wind and water have been successful colonizers. Because of the island's isolation, many mammals typical of the region are missing. Among these are the white-tailed deer, black bear, porcupine, skunk, raccoon, and most of the small mammals.

The coyote was numerous in the 1940's and early 1950's but became extinct about 1958, possibly because of competition by the timber wolf, which first appeared (at least in this century) about 1949. Woodland caribou were present until about 1927, when they disappeared, probably because of habitat changes. Marten and Canada lynx, both present at the beginning of the century, disappeared for unknown reasons. Last reports of marten were about 1905, of lynx about 1935. Recent reports suggest the possibility that lynx may have established themselves during the 1962-63 winter.

Mammals present now include the moose, beaver, mink, otter, and muskrat, which may have reached the island by swimming. The moose has also been reported to have reached Isle Royale via an ice bridge between the island and the north shore of Lake Superior during the winter of 1912-13 (12). The timber wolf, red fox, and snowshoe hare probably crossed on an ice bridge. The red squirrel, white-footed mouse, and two species of weasel, whose means of access are less easy to visualize, may have used floating debris or possibly had help from man.

Five species of bats, nine amphibians, and three reptiles have been recorded. Several other species of reptiles and amphibians that occur around Lake Superior have not been found on Isle Royale.

In the avian fauna, the only conspicuous absences are the ruffed and spruce grouse. There would seem to be adequate habitat for these birds on the island, but neither species has ever been recorded there. The inability of these grouse to fly long distances probably has prevented their colonization of Isle Royale. Sharp-tailed grouse now inhabit the island and are known to have been present for about a century.

VEGETATION

Vegetation is important to bird life, and in a large measure determines the variety of habitats available (11). Isle Royale has two basic climax forest types, sugar maple-yellow birch and spruce-fir-white birch. The relations between these two types were studied by Cooper (4) and Linn (37).

Extensive fires have reduced climax forests to about half of the island. Succession on fire-denuded areas usually proceeds through an aspen-white birch cover to climax conditions. Two major periods of burning are evident: one dates from the mining era of about 100 years ago, when extensive fires were set to denude the rock strata to facilitate search for copper, and the other from 1936, when about a quarter of the island burned in a series of fires of uncertain origin.

In addition to the major climaxes, a significant part of the island is occupied by bog forest types, mainly white cedar and black spruce.

The island's woody vegetation currently may be grouped into five general types on the basis of present cover conditions (9):

	Percent	Sq. Mi.
1.Sugar maple-yellow birch	9	20
2.Spruce-fir-white birch	36	73
3.Aspen-birch-conifer (100-year-old burns)	25	52
4.Aspen-birch (1936 burns)	23	50
5.Bog forests	7	15

The sugar maple-yellow birch climax forest type is largely confined to the higher slopes of the Greenstone Ridge on the southwestern third of the island, extending about 10 miles from near the head of Washington Harbor to Lake Desor (fig.1). Of the two dominant species, sugar maple is much more abundant. Trees of both species are often overmature, and specimens 20 inches in diameter are common. The understory consists of a dense growth of sugar maple reproduction 2 to 10 feet high, with some mountain ash, mountain maple, American yew, beaked hazel, yellow birch and Canadian honeysuckle. In places where drainage is poor, white cedar and balsam fir are also found. Aspen, white birch, juneberry, fire cherry, white spruce, red-berried elder, roundleaf dogwood, black ash, and an occasional virgin white pine occur scattered in this type.

In the spruce-fir-birch climax forest type, balsam fir is most abundant, with white birch and white spruce scarce to common (figs. 2, 3, and 4). Parts of this type which have been subjected to fires most recently also contain scattered, relict aspen. This type is maintained by the cooling influence of the lake water, and therefore is found on the lower slopes of the island shore. The northeast section of the island where most of the land is quite close to water, is covered largely by this type or by seral stages leading to it. Low vegetation is usually a mixture of mountain ash, mountain maple, willow, ground hemlock, red-osier dogwood, mountain alder, and highbush cranberry.

The aspen-birch-conifer type is largely confined to the northeastern section of the island, where there were extensive fires in the last century (fig. 5). This type, intermediate between the aspen-birch and the spruce-fir-birch climaxes,is characterized by extensive, pure, even-aged stands of aspen and white birch. Balsam fir and white spruce are invading rapidly in some areas, while white cedar and white pine occur occasionally. Ground vegetation



Figure 1. Sugar maple-yellow birch climax forest type.



Figure 2. Spruce-fir-birch forest type and riparian brush.



Figure 3. Birch-conifer forest type.



Figure 4. Spruce-fir-birch climax forest type (browsed by moose).

is similar to that found in the climax type, except that extensive stands of beaked hazel, thimbleberry, and bracken fern are often present.

The main area of the 1936 burn is the middle quarter of the island and is 5 miles across at its widest point, extending from the head of Rock Harbor 18 miles southwest to Lake Desor. A separate fire in 1936 burned about 10 square miles between the head of Siskiwit Bay and Feldtmann Lookout. Most of this burn is dominated by sapling white birch, particularly on the southeast side of the Greenstone Ridge while the burned area around Lake Harvey, on the northwest side of the ridge, is predominately aspen. Willows and fire cherry are common shrubs in the burned area. Tangled masses of fallen trees, in various stages of decay, and standing white cedar and white pine snags still occur in some areas. Most of the tree growth has been suppressed by moose browsing for at least part of the 30 years that have elapsed since the burn. On rocky sites where erosion following the fire removed most of the soil, trees are still stunted, gnarled, and often killed by moose browsing. In depressions and on areas where erosion was less severe, sufficient soil and moisture have been present to allow most of the trees to escape from the moose, and specimens over 20 feet high are now common. Denser parts of this new forest are now presenting conditions favorable to birds which prefer shaded areas. Plant succession in the burned areas leads to the aspen-birch-conifer type and eventually a return of the spruce-fir-birch climax forest.

Although small swamp forest areas are found in all parts of the island, the only extensive area is in the southwestern section, mostly along Big Siskiwit River. White cedar, black spruce, and, in some cases, black ash make up the tree species in this type. Extensive speckled alder stands occur under much of the swamp forests, and in moist ravines too small to support the tree species. There is little ground cover other than sedges and shade-tolerant shrubs.

Several tree species occur only sparingly on the island. Tamarack, for example, is found in small numbers in bog and swamp forests, usually as small trees, although large trees formerly occurred. The present scarcity is probably due to the larch sawfly (3). Red pine is found on a few dry ridges. Jack pine forms extensive stands in a few areas in the northeast section, and is scattered in other areas. Red maple and red oak occur as scattered trees along the Greenstone Ridge. Big-toothed aspen is found in a few locations, apparently as a successional species in the sugar maple-yellow birch forest. Ironwood also grews rarely in the maple-birch forest.

On exposed southeast-facing slopes, especially in the younger forest types, there is often insufficient soil and moisture to support continuous forest stands. Extensive moose browsing over the past 50 years has accentuated this condition by suppressing the invading trees and shrubs. Because populations of moose have been smaller in the last 10 years, many kinds of trees and shrubs have recovered in some of these locations.

Similarly, much of the openness of the forest understory has resulted from moose browsing. This condition also has changed, especially in parts of the northeastern section where dense stands of young balsam firs are growing unrestrained by moose browsing under birch-aspen forests. On Passage Island, uninhabited by the moose, American yew

balsam fir, highbush cranberry, mountain ash, and other species grow luxuriantly (figs. 6 and 7).

An extensive and widely distributed habitat is furnished by the irregular shoreline of Isle Royale, the inland bodies of water, and streams and beaver ponds. The shoreline of Isle Royale is mostly rocky, and except in protected bays and coves the water may be quite turbulent. Beaches are scarce and while there are some sand beaches (fig. 8) most of them are coarse gravel (fig. 9). Inland lakes provide shoreline habitat similar to the island's shoreline (fig. 2), but generally less subject to wave-washing and pounding. Inland streams and beaver ponds provide aquatic habitat (fig. 10). The shoreline association is quite variable owing to the variety of plant and forest types found at the water's edge. Marshes are scarce on the island, and only a few water areas have characteristic marsh plants such as cattail or water lily (fig. 11).

BIRD DISTRIBUTION AND HABITATS

Isle Royale presents many interesting opportunities for the study of bird ecology because of its insular position. Adams based his pioneering treatise concerning the ecological succession of birds on the findings of the Biological Survey of Michigan at Isle Royale (1 and 2).

The available habitats and niches on the island result from the major vegetative types as described above, and from a number of special situations determined by topography, physiography, or the actions of animals.

The following is a brief description of each of the major habitat types on the island, including mention of the most obvious birds associated with each habitat. Following this is a reference chart on which all the birds are listed with their status, abundance, and habitat type.

1. The sugar maple-yellow birch climax forest type, the most homogeneous habitat on the island, presents a fairly continuous canopy, both horizontally and vertically (cf. aspen-birch-conifer). An understory, mostly of sugar maple reproduction, fills in below the tree canopy so that there is little open space in the forest. Breeding species closely associated with this type are the red-eyed vireo, ovenbird, black-throated blue warbler, and the wood peewee. The ovenbird and red-eyed vireo are also abundant in other types, especially the spruce-fir-birch climax.

2. The spruce-fir-birch climax forest type is variable. Some areas have closed canopies through which little light penetrates, resulting in a paucity of ground vegetation, and self-pruning of the trees. Gray and blue jays, Swainson's thrushes, and chickadees use the dead branches resulting from limited light, as perches.

The more open stands permit development of an understory, which is favorable for other species, chipping sparrows for example.

Kinglets, red-breasted nuthatches, and several species of warblers make use of the upper layer of the coniferous forest and are presumably little affected by the presence or absence of ground vegetation.

3. The aspen-birch-conifer type presents a much more open canopy than the sugar maple-yellow birch climax, and has a more definite stratification of elements. The canopy is



Figure 5. Aspen-birch-conifer forest type.



Figure 6. American yew on Passage Island.



Figure 7. Balsam fir on Passage Island.



Figure 8. Sand beach habitat.



Figure 9. Gravel beach habitat.



Figure 10. Beaver pond habitat, 1936 burn.

densest near the top, with lower limbs frequently missing. The understory is variable, but often well developed. Several species of warblers, red-eyed vireos, and rose-breasted grosbeaks use the canopy. Species of the understory are about the same as those found in open brush habitat.

4. The aspen-birch cover type of the 1936 burn is now a very diverse habitat, with remnants of the former forest still represented by snags which are used by several hole-nesting birds, including flickers, starlings, and sparrow hawks. The new forest is now large and dense enough to support brush species in abundance, and much of this area is best assigned to the brush type. More advanced areas in the burn are now dense enough to support forest species such as the ovenbird.

5. Swamp and bog forests are usually not large enough to maintain separate bird faunas, although crossbills, purple finches, and olive-sided flycatchers are often associated with the trees of this type.

6. Open areas are scattered throughout all but the best developed climax types, and usually represent stages in succession from the xerosere (fig. 12). Bare rocks are common on the upper slopes of ridges in recently burned areas. The only birds known to make use of this habitat are some of the migrants or winter visitors, such as nighthawks, horned larks, lapland longspurs, and water pipits. Grassy areas are used by several species of sparrows; sharp-tailed grouse depend upon grass mixed with brush; and upland brush provides habitat for white-throated sparrows and mourning warblers.

7. Riparian brush is well developed on the shores of Lake Superior and on small islands, as well as along streams (fig. 2). The most characteristic bird of this type is the song sparrow. Parula warblers are found in dense, high brush or small tree habitats, most often near the lake, but sometimes along streams. Yellowthroats, Canada warblers, redstarts, and water thrushes also use this habitat.

8. Basically two habitats are formed by beaver ponds: aquatic, used by mallard ducks, black ducks, wood ducks, ring-necked ducks, herons, and kingfishers; and snag habitat for tree swallows, starlings, and woodpeckers (figs. 10 and 11).

Drained ponds present a variety of conditions ranging from mud flats on which a few shorebirds (solitary sandpipers, for instance) are sometimes found, to heavy growths of sedges, grasses, and rushes which gradually are replaced by riparian brush.

9. Inland lakes and ponds probably are not as productive as they formerly were, owing to elimination of a large amount of the aquatic vegetation by moose, and they may be less suitable for waterfowl and marsh birds. Black ducks, goldeneyes, mergansers, and loons are common inhabitants of these lakes.

Sheltered harbors present essentially the same habitats as inland lakes, except that they are usually clearer and more sterile; approximately the same species inhabit both types.

10. Lake Superior and some of the larger bays, especially Siskiwit Bay, present shoal and deep reef habitats for deep-water divers such as grebes, oldsquaws, and scoters, all migrants.

11. Shoreline habitat is variable including wave-washed rocks, small islets, and a few beaches, most of



Figure 11. Aquatic habitat of Ojibway Lake.



Figure 12. Rock outcrop opening.

which are coarse gravel (figs. 8 and 9). Shorebirds are scarce. The most common species is the spotted sandpiper, especially along rocky shores. Several other species have been recorded during migrations, but none in great numbers.

Mergansers and herring gulls are frequent users of offshore rocks and small islets, where they are relatively free from land predators. Gulls normally nest on these islands and reefs.

BIRD SPECIES OF ISLE ROYALE

Status, Abundance, and Habitat Type

Key to habitat types:

1. Sugar maple-yellow birch climax forest
2. Spruce-fir-birch climax forest
3. Aspen-birch-conifer forest
4. Aspen-birch (1936 burn)
5. Swamp forest
6. Open areas
7. Riparian brush
8. Beaver ponds and streams
9. Inland lakes, ponds, and sheltered harbors
10. Lake Superior
11. Lake shore, beaches, small islands, and rocky reefs

Species	Permanent Resident		Summer Resident			Winter Resident			Migrant			Rare	Habitat type
	Common	Rare	Common	Uncommon	Rare	Common	Uncommon	Rare	Common	Uncommon	Rare		
1. Common Loon	.	.	X	.	.	.	.	.	X	.	.	.	9, 10, 11
2. Red-necked Grebe	.	.	.	.	.	.	.	.	.	X	.	.	9, 10
3. Horned Grebe	.	.	.	.	.	.	.	.	X	.	.	.	9, 10
4. Pied-billed Grebe	.	.	.	X	.	.	.	.	.	X	.	.	9, 10
5. White Pelican	.	.	.	.	.	.	.	.	.	.	X	.	9
6. Double-crested Cormorant	.	.	.	X	.	.	.	.	.	X	.	.	9, 10, 11
7. Great Blue Heron	.	.	.	X	.	.	.	.	X	.	.	.	8, 9, 11
8. Green Heron	.	.	.	.	.	.	.	.	.	.	.	X	
9. American Bittern	.	.	.	X	.	.	.	.	.	.	.	.	8, 9
10. Whistling Swan	.	.	.	.	.	.	.	.	.	.	X	.	9
11. Canada Goose	.	.	.	.	.	.	.	.	X	.	.	.	9
12. Snow Goose	.	.	.	.	.	.	.	.	.	X	.	.	
13. Blue Goose	.	.	.	.	.	.	.	.	.	.	X	.	9

Species	Permanent Resident		Summer Resident			Winter Resident			Migrant			Rare	Habitat type
	Common	Rare	Common	Uncommon	Rare	Common	Uncommon	Rare	Common	Uncommon	Rare		
14. Mallard	.	.	.	X	.	.	.	.	.	X	.	.	8, 9, 11
15. Black Duck	.	.	X	.	.	.	.	.	.	.	.	.	8, 9, 11
16. Pintail	.	.	.	.	.	.	.	.	.	.	X	.	9
17. Green-winged Teal	.	.	.	X	.	.	.	.	.	.	.	.	8, 9
18. Blue-winged Teal	.	.	.	X	.	.	.	.	.	X	.	.	8, 9
19. American Widgeon	.	.	.	.	.	.	.	.	.	.	.	X	8
20. Shoveler	.	.	.	.	.	.	.	.	.	.	.	X	
21. Wood Duck	.	.	X	.	.	.	.	.	.	.	.	.	8
22. Ring-necked Duck	.	.	X	.	.	.	.	.	.	.	.	.	8, 9
23. Greater and Lesser Scaup	.	.	.	.	.	.	.	.	X	.	.	.	9
24. Common Goldeneye	.	.	X	.	.	.	.	.	X	.	.	.	9, 10, 11
25. Bufflehead	.	.	.	.	.	.	.	.	X	.	.	.	9, 10
26. Oldsquaw	.	.	.	.	.	.	.	.	X	.	.	.	10
27. White-winged Scoter	.	.	.	.	.	.	.	.	X	.	.	.	10
28. Common Scoter	.	.	.	.	.	.	.	.	.	.	X	.	10
29. Ruddy Duck	.	.	.	.	.	.	.	.	.	.	.	X	
30. Hooded Merganser	.	.	.	X	.	.	.	.	X	.	.	.	8, 9, 11
31. Common Merganser	.	.	X	.	.	.	.	.	X	.	.	.	9, 10, 11
32. Red-breasted Merganser	.	.	X	.	.	.	.	.	.	.	.	.	9, 10, 11
33. Goshawk	.	.	.	.	X	.	X	.	.	.	.	.	2, 3, 4, 5
34. Sharp-shinned Hawk	.	.	.	.	X	.	.	.	X	.	.	.	2, 3, 4, 6
35. Cooper's Hawk	.	.	.	.	X	.	.	.	.	X	.	.	3, 4, 6, 11
36. Red-tailed Hawk	.	.	.	X	.	.	.	.	.	.	.	.	1, 3, 4, 6
37. Red-shouldered Hawk	.	.	.	.	X	.	.	.	.	.	.	.	1, 4, 6
38. Broad-winged Hawk	.	.	X	.	.	.	.	.	X	.	.	.	1, 2, 3
39. Rough-legged Hawk	.	.	.	.	.	.	.	.	.	X	.	.	
40. Golden Eagle	.	.	.	.	.	.	.	.	.	.	.	X	
41. Bald Eagle	.	.	.	X	.	.	.	.	.	.	.	.	1, 2, 3, 4, 9, 10
42. Marsh Hawk	.	.	.	X	.	.	.	.	.	X	.	.	4, 6
43. Osprey	.	.	.	X	.	.	.	.	.	.	.	.	2, 5, 9, 11
44. Gyrfalcon	.	.	.	.	.	.	.	.	.	.	X	.	
45. Peregrine Falcon	.	.	.	X	.	.	.	.	.	.	.	.	11
46. Pigeon Hawk	.	.	.	X	.	.	.	.	.	.	X	.	2, 6, 9, 11
47. Sparrow Hawk	.	.	X	.	.	.	.	.	X	.	.	.	4, 6
48. Sharp-tailed Grouse	X	.	.	.	.	.	.	.	.	.	.	.	3, 4, 6
49. Virginia Rail	.	.	.	.	.	.	.	.	.	.	.	X	
50. Sora	.	.	.	X	.	.	.	.	.	X	.	.	8
51. American Coot	.	.	.	.	.	.	.	.	.	.	X	.	9, 10
52. Semipalmated Plover	.	.	.	.	.	.	.	.	.	.	.	X	11

Species	Permanent Resident		Summer Resident			Winter Resident			Migrant			Rare	Habitat type
	Common	Rare	Common	Uncommon	Rare	Common	Uncommon	Rare	Common	Uncommon	Rare		
53. Killdeer	.	.	.	X	.	.	.	.	.	X	.	.	6, 11
54. Black-bellied Plover	.	.	.	.	.	.	.	.	.	X	.	.	11
55. American Woodcock	.	.	.	X	.	.	.	.	.	.	.	.	3, 4, 6, 7
56. Common Snipe	.	.	.	.	X	.	.	.	.	X	.	.	7, 11
57. Whimbrel	.	.	.	.	.	.	.	.	.	.	X	.	
58. Spotted Sandpiper	.	.	X	.	.	.	.	.	.	.	.	.	9, 11
59. Solitary Sandpiper	.	.	.	.	X	.	.	.	.	X	.	.	8, 9, 11
60. Greater Yellowlegs	.	.	.	.	.	.	.	.	.	.	.	X	11
61. Lesser Yellowlegs	.	.	.	.	.	.	.	.	.	.	.	X	11
62. Least Sandpiper	.	.	.	.	.	.	.	.	.	.	.	X	9, 11
63. Sanderling	.	.	.	.	.	.	.	.	.	.	.	X	11
64. Herring Gull	.	.	X	.	.	.	.	.	.	.	.	.	9, 10, 11
65. Ring-billed Gull	.	.	.	.	.	.	.	.	.	X	.	.	9
66. Bonaparte's Gull	.	.	.	.	.	.	.	.	.	X	.	.	9, 10
67. Common Tern	.	.	.	.	.	.	.	.	.	.	.	X	10
68. Caspian Tern	.	.	.	.	.	.	.	.	.	.	X	.	10
69. Mourning Dove	.	.	.	.	.	.	.	.	.	.	X	.	
70. Rock Dove	.	.	.	.	.	.	.	.	.	.	.	.	
71. Yellow-billed Cuckoo	.	.	.	.	X	.	.	.	.	.	X	.	4, 6, 11
72. Black-billed Cuckoo	.	.	.	.	X	.	.	.	.	.	.	.	4, 6, 11
73. Great Horned Owl	.	X	.	.	.	.	.	.	.	.	.	.	1, 2, 3, 5
74. Snowy Owl	.	.	.	.	.	.	X	.	.	.	.	.	4, 11
75. Hawk Owl	.	X	.	.	.	.	.	.	.	.	.	.	2
76. Short-eared Owl	.	.	.	.	.	.	.	.	.	.	.	X	6
77. Saw-whet Owl	.	.	.	.	.	.	.	.	.	.	.	X	
78. Whip-poor-will	.	X	.	.	.	.	.	.	.	.	.	.	6
79. Common Nighthawk	.	.	X	.	.	.	.	.	.	.	.	.	4, 6, 8
80. Chimney Swift	.	.	.	X	.	.	.	.	.	.	.	.	1, 2, 4, 11
81. Ruby-throated Hummingbird	.	.	.	X	.	.	.	.	.	.	.	.	6, 7, 8
82. Belted Kingfisher	.	.	X	.	.	.	.	.	.	.	.	.	8, 9, 11
83. Yellow-shafted Flicker	.	.	X	.	.	.	.	.	X	.	.	.	3, 4, 6, 8
84. Pileated Woodpecker	.	X	.	.	.	.	.	.	.	.	.	.	1, 2, 3
85. Red-headed Woodpecker	.	.	.	.	.	.	.	.	.	.	.	X	
86. Yellow-bellied Sapsucker	.	.	.	X	.	.	.	.	.	.	.	.	2, 3, 5
87. Hairy Woodpecker	X	.	.	.	.	.	.	.	.	.	.	.	1, 2, 3, 5
88. Downy Woodpecker	X	.	.	.	.	.	.	.	.	.	.	.	1, 2, 3, 4, 5
89. Black-backed Three-toed Woodpecker	.	X	.	.	.	.	.	.	.	.	.	.	2, 3
90. Northern Three-toed Woodpecker	.	.	.	.	.	.	.	.	.	.	X	.	2, 3

Species	Permanent Resident		Summer Resident			Winter Resident			Migrant			Rare	Habitat type
	Common	Rare	Common	Uncommon	Rare	Common	Uncommon	Rare	Common	Uncommon	Rare		
91. Eastern Kingbird			X										4, 8
92. Eastern Phoebe				X					X				6, 8, 11
93. Yellow-bellied Flycatcher				X									3, 5, 7
94. Traill's Flycatcher				X									3, 6, 7
95. Least Flycatcher				X					X				2, 3, 6, 7
96. Eastern Wood Pewee				X						X			1, 3
97. Olive-sided Flycatcher				X									4, 5
98. Horned Lark									X				6, 11
99. Tree Swallow			X										8, 9, 11
100. Bank Swallow												X	11
101. Barn Swallow				X									6, 11
102. Cliff Swallow					X								11
103. Gray Jay	X												2, 3, 4, 5, 6
104. Blue Jay	X												1, 2, 3, 4, 5, 6
105. Common Raven		X											2, 3, 4, 5, 6
106. Common Crow			X										2, 3, 4, 5, 6, 11
107. Black-capped Chickadee	X												1, 2, 3, 4, 5, 6, 7
108. Boreal Chickadee								X					
109. White-breasted Nuthatch					X								1, 2
110. Red-breasted Nuthatch	X												2, 3, 5
111. Brown Creeper				X									2, 3, 5
112. House Wren					X								
113. Winter Wren			X										1, 2, 3, 5, 11
114. Short-billed Marsh Wren				X									7, 8
115. Mockingbird												X	
116. Catbird											X		7
117. Brown Thrasher											X		3, 4
118. Robin				X					X				3, 4, 6
119. Wood Thrush					X								
120. Hermit Thrush				X									2, 3
121. Swainson's Thrush			X										2, 3
122. Gray-cheeked Thrush												X	
123. Veery				X									2, 3, 5
124. Eastern Bluebird				X									3, 6
125. Golden-crowned Kinglet				X					X				2, 3, 5
126. Ruby-crowned Kinglet				X					X				2, 3, 5
127. Water Pipit											X		6, 11
128. Cedar Waxwing			X										3, 4, 6, 11
129. Northern Shrike								X		X			3, 6

Species	Permanent Resident		Summer Resident			Winter Resident			Migrant			Rare	Habitat type
	Common	Rare	Common	Uncommon	Rare	Common	Uncommon	Rare	Common	Uncommon	Rare		
130. Loggerhead Shrike	.	.	.	.	.	.	.	.	.	.	.	X	
131. Starling	.	.	.	X	.	.	.	.	.	.	.	.	4, 6, 8
132. Yellow-throated Vireo	.	.	.	.	.	.	.	.	.	.	.	X	
133. Solitary Vireo	.	.	.	.	X	.	.	.	.	X	.	.	2, 3, 4
134. Red-eyed Vireo	.	.	X	.	.	.	.	.	.	.	.	.	2, 3
135. Philadelphia Vireo	.	.	.	.	.	.	.	.	.	.	.	X	
136. Warbling Vireo	.	.	.	.	.	.	.	.	.	.	.	X	
137. Black and White Warbler	.	.	.	X	.	.	.	.	.	X	.	.	2, 3
138. Tennessee Warbler	.	.	.	.	X	.	.	.	X	.	.	.	2, 3
139. Orange-crowned Warbler	.	.	.	.	.	.	.	.	.	X	.	.	3, 4, 6
140. Nashville Warbler	.	.	X	.	.	.	.	.	X	.	.	.	3, 4, 6
141. Parula Warbler	.	.	.	X	.	.	.	.	.	.	.	.	2, 7
142. Yellow Warbler	.	.	.	.	.	.	.	.	.	.	.	X	7
143. Magnolia Warbler	.	.	X	.	.	.	.	.	.	.	.	.	2, 3
144. Cape May Warbler	.	.	.	.	.	.	.	.	X	.	.	.	2, 3, 5, 6
145. Black-throated Blue Warbler	.	.	X	.	.	.	.	.	.	.	.	.	1, 3, 5
146. Myrtle Warbler	.	.	X	.	.	.	.	.	X	.	.	.	2, 3, 11
147. Black-throated Green Warbler	.	.	X	.	.	.	.	.	.	.	.	.	1, 2, 3
148. Blackburnian Warbler	.	.	X	.	.	.	.	.	.	.	.	.	1, 2, 3
149. Chestnut-sided Warbler	.	.	X	.	.	.	.	.	.	.	.	.	3, 4, 6
150. Bay-breasted Warbler	.	.	.	.	X	.	.	.	.	X	.	.	2, 3
151. Blackpoll Warbler	.	.	.	.	X	.	.	.	.	X	.	.	2, 3
152. Pine Warbler	.	.	.	.	.	.	.	.	.	.	X	.	
153. Palm Warbler	.	.	.	.	.	.	.	.	X	.	.	.	2, 3, 4, 6, 8, 11
154. Ovenbird	.	.	X	.	.	.	.	.	.	.	.	.	1, 2, 3, 4
155. Northern Water Thrush	.	.	.	.	X	.	.	.	.	X	.	.	8, 11
156. Connecticut Warbler	.	.	.	.	X	.	.	.	.	X	.	.	3, 6
157. Mourning Warbler	.	.	X	.	.	.	.	.	.	.	.	.	3, 4, 6
158. Yellowthroat	.	.	.	.	X	.	.	.	.	X	.	.	7, 8
159. Wilson's Warbler	.	.	.	.	.	.	.	.	X	.	.	.	2, 6, 7
160. Canada Warbler	.	.	.	X	.	.	.	.	.	.	.	.	3, 7
161. American Redstart	.	.	.	X	.	.	.	.	.	.	.	.	3, 7
162. House Sparrow	.	.	.	.	.	.	.	.	.	.	.	X	6
163. Bobolink	.	.	.	.	.	.	.	.	.	.	X	.	
164. Eastern Meadowlark	.	.	.	.	.	.	.	.	.	.	X	.	6
165. Redwinged Blackbird	.	.	X	.	.	.	.	.	.	.	.	.	6, 7, 8, 9, 11
166. Baltimore Oriole	.	.	.	.	.	.	.	.	.	.	X	.	
167. Rusty Blackbird	.	.	.	.	.	.	.	.	X	.	.	.	6, 11
168. Brewer's Blackbird	.	.	.	.	.	.	.	.	.	.	X	.	11

Species	Permanent Resident		Summer Resident			Winter Resident			Migrant			Rare	Habitat type
	Common	Rare	Common	Uncommon	Rare	Common	Uncommon	Rare	Common	Uncommon	Rare		
169. Common Grackle	.	.	X	.	.	.	.	.	.	.	.	.	6, 8
170. Brown-headed Cowbird	.	.	.	X	.	.	.	.	X	.	.	.	6, 8, 11
171. Scarlet Tanager	.	.	.	.	X	.	.	.	.	X	.	.	2, 3, 5, 6
172. Rose-breasted Grosbeak	.	.	.	.	X	.	.	.	.	.	X	.	3
173. Indigo Bunting	.	.	.	.	X	.	.	.	.	X	.	.	6
174. Evening Grosbeak	.	.	.	.	X	.	.	.	.	X	.	.	6
175. Purple Finch	.	.	.	X	.	.	.	X	.	.	.	.	2, 3, 5
176. Pine Grosbeak	.	.	.	.	X	.	X	.	.	.	.	.	2, 3, 6
177. Common Redpoll	.	.	.	.	.	X	.	.	.	.	.	.	2, 3
178. Pine Siskin	.	.	.	X	.	.	.	.	X	.	.	.	2, 3, 5, 6
179. American Goldfinch	.	.	.	.	.	.	.	.	.	.	X	.	6
180. Red Crossbill	.	.	.	.	X	.	.	.	.	.	X	.	2, 3, 5
181. White-winged Crossbill	.	.	.	X	.	.	.	.	.	X	.	.	2, 3, 5
182. Rufous-sided Towhee	.	.	.	.	.	.	.	.	.	.	.	X	
183. Savannah Sparrow	.	.	.	.	.	.	.	.	X	.	.	.	6
184. Vesper Sparrow	.	.	.	X	.	.	.	.	X	.	.	.	6
185. Slate-colored Junco	.	X	.	.	.	.	.	.	X	.	.	.	2, 3, 4, 6
186. Tree Sparrow	.	.	.	.	.	.	.	.	.	X	.	.	6
187. Chipping Sparrow	.	.	.	X	.	.	.	.	X	.	.	.	2, 3, 6
188. Clay-colored Sparrow	.	.	.	.	.	.	.	.	X	.	.	.	6
189. Harris' Sparrow	.	.	.	.	.	.	.	.	.	.	X	.	4, 6
190. White-crowned Sparrow	.	.	.	.	.	.	.	.	.	X	.	.	4, 6
191. White-throated Sparrow	.	.	X	.	.	.	.	.	.	.	.	.	4, 5, 6, 7, 11
192. Fox Sparrow	.	.	.	.	.	.	.	.	.	X	.	.	6
193. Lincoln's Sparrow	.	.	.	.	.	.	.	.	X	.	.	.	6
194. Swamp Sparrow	.	.	X	.	.	.	.	.	.	.	.	.	6, 7, 11
195. Song Sparrow	.	.	X	.	.	.	.	.	.	.	.	.	6, 7, 11
196. Lapland Longspur	.	.	.	.	.	.	.	.	.	X	.	.	6, 11
197. Snow Bunting	.	.	.	.	.	.	.	X	X	.	.	.	6, 11

ANNOTATED LIST OF BIRDS BY FAMILIES

The annotated list of Isle Royale birds follows the order and terminology of the fifth edition (1957) of the American Ornithologists' Union Check-List of North American Birds. The list, by families, comprises 197 species and includes the species listed by Wood (21) and Zimmerman and Van Tyne (23) as well as many others. The species believed to be possible breeders are preceded by an asterisk (*); the species known to have bred at least once are preceded by two asterisks (**).

GAVIIDAE (Loons)

**1. Common Loon (Gavia immer (Brünnich))

This is a common migrant and summer resident. It breeds on the inland lakes and protected harbors of the main island and on the smaller surrounding islands. Between 1890 and 1892, Scott noted that fishermen caught loons on set lines and in gill nets near Windigo (17). In the early 1900's both adult and young birds were observed on the inland lakes (19, 14). Adult birds were noted almost daily in 1929 and 1930 (6, 21) as well as in the 1940's (25, 27, 29, 30, 36, 38). Pairing off of loons was noted as early as May 4 and as late as May 25 (36, 35). Shelton saw four pairs with one young each in 1960 and one pair with one young in 1963 (39). Two of these five young were on harbors and three on lakes. In early August 1963, nine adult loons were seen in the harbors of Isle Royale (34).

PODICIPEDIDAE (Grebes)

2. Red-necked Grebe (Podiceps grisegena (Boddaert))

This grebe is primarily a spring migrant and is erratic in its appearance along the shores of the island. Observations were made in the summer and fall of 1929 and in the spring of 1937 (21). In May 1948, 43 of these grebes were seen in Lake Superior, scattered singly or in pairs along the south shore of the island (36). Observations in the same general area in 1950 revealed a single adult bird in Siskiwit Bay (35). Shelton saw a single bird off Todd Harbor, July 28, 1961, and one in Tobin Harbor on August 15, 1963 (39).

3. Horned Grebe (Podiceps auritus (Linnaeus))

The horned grebe is a common migrant. It was first reported in the fall of 1929 and again in the spring of 1937 (21). During the 1940's and early 1950's the species was reported as a common spring and fall migrant (30, 35). Shelton regarded the species as a common migrant in the early 1960's. Singles or groups of five or six or more were common between mid-September and October, almost always in or near deep water (39).

**4. Pied-billed Grebe (Podilymbus podiceps (Linnaeus))

This grebe is an uncommon migrant and an uncommon summer resident. It is usually observed in the inland lakes and in the harbors around the main island. The species was more common in the early 1900's when it was considered a common summer resident at Washington Harbor. A pair of adults and five young were noted in August and September, and young birds in their first plumage were taken (14, 22). In 1924, fall flocks totalling 22 birds were seen, and the species was reported again in the fall of 1930 at Tobin Harbor (21). Several were reported again in the mid-1940's (24, 28). Shelton saw only three pied-billed grebes in 1960-63 (39).

PELECANIDAE (Pelicans)

5. White Pelican (Pelecanus erythrorhynchos Gmelin)

Commercial fishermen and others regard the white pelican as a rare migrant (8, 30).

PHALACROCORACIDAE (Cormorants)

6. Double-crested Cormorant (Phalacrocorax auritus (Lesson))

This cormorant is an uncommon summer resident and migrant. The species was first recorded in the spring of 1930 (21). In 1943 it became quite common in the Washington Harbor area with the introduction of pound nets for commercial fishing. A flock of these birds inhabited a rocky reef near Beaver Island in Washington Harbor in the mid-1940's (27, 30). In 1948 and 1950 only two were seen at the same location (35, 36). On July 28, 1960, Shelton saw one cormorant flying high over Washington Harbor.

ARDEIDAE (Herons and Bitterns)

**7. Great Blue Heron (Ardea herodias Linnaeus)

The great blue heron is a common migrant but an uncommon summer resident. Two small rookeries are known, and young birds are occasionally seen in late summer. Several specimens were noted at Rock Harbor, Siskiwit Bay, and Washington Harbor in the early 1900's (21). It was also observed in the inland lakes, beaver ponds, and small islands and rocky reefs, as well as Passage Island, between 1940 and 1951 (27, 30, 35, 36). Four of these herons were observed in early August in 1963 at various locations (34).

8. Green Heron (Butorides virescens (Linnaeus))

Shelton saw a single bird at Hidden Lake near Tobin Harbor on May 30, 1963.

**9. American Bittern (Botaurus lentiginosus (Rackett))

This bittern is an uncommon summer resident and is a nester. In the early 1900's several observations were made in the Washington Harbor area. A nest containing one addled egg and two dead young birds was found on Sumner Lake (14, 22). The species was reported again in 1929 (21). Gilbert reported in 1946 that a bittern nested in the big swamp along Big Siskiwit River and along Grace Creek (30). During the mid-1940's occasional birds were noted in Siskiwit Bay, in a small marsh on Passage Island, and in a beaver pond near Lake Richie. Shelton found American bitterns to be occasional summer residents in the early 1960's.

ANATIDAE (Swans, Geese, and Ducks)

10. Whistling Swan (Olor columbianus (Ord))

This swan is a rare migrant. A single specimen was observed in the fall of 1930 (21). In 1963 Shelton saw an immature bird near Rabbit Island on May 27 and two others (adults or yearlings) in mid-June near Baker Point (39).

11. Canada Goose (Branta canadensis (Linnaeus))

This goose is a common fall and spring migrant, but stops at Isle Royale only rarely. In the early 1900's large flocks of these geese passed over Isle Royale, sometimes stopping a few hours at a time (14). During the 1940's the species was regarded as a common migrant, often seen in large flocks flying over the island. In the spring of 1950 a flock of nine Canada geese was noted in flight over Rock Harbor (35). In late September and early October, 1962, three of these geese rested for several days around the mouth of Washington creek, and one very tame

goose spent several days in Rock Harbor (39).

12. Snow Goose (Chen hyperborea (Pallas))

This goose is an uncommon migrant usually observed in flight with other geese, but none has been known to stop. During the mid-1940's it was noted in small numbers with larger flocks of Canada geese. In early October 1962 Shelton reported flocks which appeared to be made up mostly of snow geese, along with a small number of blue geese (39).

13. Blue Goose (Chen caerulescens (Linnaeus))

The blue goose is a rare migrant. In May 1948 a single bird was observed at close range in the vicinity of Washington Island. The specimen had immature plumage and was quite tame. A year later, a blue goose, believed to be the same bird, appeared at the same location in adult plumage. A few probably migrate over the island in flocks with snow geese (36).

**14. Mallard (Anas platyrhynchos Linnaeus)

The mallard is an uncommon summer resident and an uncommon spring and fall migrant. Six of these ducks were reported by A. Murie on September 16, 1929 (21). During the 1940's and early 1950's a total of 19 were noted on beaver ponds and on several inland lakes and streams (29, 30, 31, 35, 36). Observations by Shelton include a female mallard with five young on Ojibway Lake on July 31, 1960 (39). In August 1963, Krefting and Lee reported a single male on Sumner Lake and a female with four young in a beaver pond along the Huginnin Cove Trail near Windigo Mine (34).

**15. Black Duck (Anas rubripes Brewster)

The black duck is a common summer resident and the most abundant breeding duck on the island. It is most common on sheltered harbors, lakes, beaver ponds, and sometimes streams. The first records are in the journal for the lighthouse station at Menagerie Island (Siskiwit Bay) during the later part of the 19th century. In October 1891 the two lighthouse keepers shot six of these ducks (40). Black ducks were reported again in the late 1920's and in the 1930's by A. Murie and N. Wood (21). During the 1940's many observers reported this duck as a common summer resident particularly in beaver ponds, inland lakes, and protected harbors (24, 27, 29, 30, 36, 38). On a field trip in May 1948, 40 of these ducks were noted, 26 in beaver ponds or small streams and 14 either in the inland lakes or in the protected harbors of the main island. In the spring of 1950, black ducks were fairly common throughout the island, and one nest was located (35). Twenty-five were noted at various locations in early August 1963 (34).

16. Pintail (Anas acuta Linnaeus)

The pintail is a rare migrant. Five were seen in the fall of 1929 and the spring of 1930 (21). These are the only records for Isle Royale.

**17. Green-winged Teal (Anas carolinensis Gmelin)

This duck is an uncommon summer resident. In September 1904, Peet noted a flock of five in Washington Harbor (14). Fargo noted five in September 1924 (21). Gilbert in 1946 reported a brood at the mouth of Grace Creek (30). On field trips to the island in 1946, 1948, and 1950, a total of nine of these ducks was seen, mostly in beaver ponds and often in pairs (29, 35, 36). In 1962 and 1963 Shelton saw this duck nine times, six in May or early June and three in September and October. All were in groups of four or less (39).

**18. Blue-winged Teal (Anas discors Linnaeus)

This is an uncommon summer resident and an uncommon migrant. Small inland lakes and beaver ponds are the preferred habitat. In 1904, 33 blue-winged teal were noted in the Washington Harbor area (22). The species was reported again in 1929 and 1937 (21). Gilbert in 1946 reported a few in the spring (30). A brood of nine young was reported on May 27, 1946 (29). Shelton saw a brood of eight on a beaver pond near Lake Ojibway July 13, 1960.

19. American Widgeon (Mareca americana (Gmelin))

This duck has been reported only three times. During the falls of 1904 and 1905 Peet noted three of these ducks in the Washington Harbor area (14). Wood collected a single specimen October 19, 1929 (21).

20. Shoveler (Spatula clypeata (Linnaeus))

There is only one record for Isle Royale. Wood reported a single adult male on May 6, 1930 (21).

**21. Wood Duck (Aix sponsa (Linnaeus))

The wood duck is a common summer resident and is most often seen in beaver ponds. Several broods were observed in the Washington Harbor area in 1946 (29, 30), and a single male was observed in the same area in 1950 (35). The marked increase in wood ducks between 1940 and 1950 was associated with the increase in the number of beaver ponds resulting from the beaver irruption. Between 1950 and 1960, sight records indicate there probably was a decrease in population. In recent years (1960-63) the beavers have been on the increase and again there seems to be an increase in wood ducks. Several broods and single birds have been reported on beaver ponds (34, 39).

**22. Ring-necked Duck (Aythya collaris (Donovan))

The ring-necked duck is a common summer resident and is usually observed on beaver ponds and inland lakes. It was first reported in 1929 and again in 1937 (21). During the 1940's adult birds were seen in midsummer, and for that reason it was believed to be a nester (30). This assumption proved correct, as four broods have been reported by Shelton (39). He observed these broods as follows: a female and nine young on a beaver pond near Lake Whittlesey (July 22, 1960); a female and seven young on a beaver pond near Tobin Harbor (June 26, 1962); two downy young on Lake Ojibway (July 23, 1963); and a female with six young on Sumner Lake (August 5, 1963). Two additional females were observed on Sumner Lake on August 5, 1963 (34).

23. Great Scaup (Aythya marila (Linnaeus)) and Lesser Scaup (Aythya affinis (Eyton))

An accurate account of the scaups is not possible because of the difficulty of making accurate field identifications. The lesser scaup is the commoner species, although the greater scaup may be common at times, especially on larger bodies of water. In the early 1900's the lesser scaup was reported at Wright Island and Washington Harbor (14). The species was recorded again in 1929 and 1937 (21). During the 1940's a number of observers reported the species during migration (27, 29, 30). Gensch saw 50 lesser scaup during his stay on the island May 8 to June 4, 1946. Several pairs were noted in 1948 and 1950 (35, 36). On July 17 and 19, 1961, a total of 19 was noted in the Washington Harbor area (26).

**24. Common Goldeneye (Bucephala clangula (Linnaeus))

This goldeneye is a common summer resident and migrant. The species may be found in a variety of habitats, including Lake Superior and the harbors of Isle Royale, the inland lakes, and around the lake shore and beaches. Broods are commonly seen on the sheltered harbors and the larger inland lakes throughout the summer. The first published account was in 1924 when flocks were observed by William Fargo and F.M. and A.M. Baumgartner (7). Laurence Dayton also noted the species as common in the fall of 1936 and spring of 1937 (21). During the 1940's and early 1950's it was reported by many investigators to be distributed in all parts of the island (27,29,30, 35,36). Four of these ducks were also observed in early August 1963 (34).

25. Bufflehead (Bucephala albeola (Linnaeus))

The bufflehead is a common migrant that frequents Lake Superior and the harbors of Isle Royale as well as the inland lakes. Paired birds have been seen on occasion, but no young have been reported. Flocks were reported in the 1920's, and small numbers were observed during the 1930's (21). During the 1940's and in 1950 the species was regarded as a common spring and fall migrant (29, 30,35,36,38). In 1962 Shelton saw small flocks of buffleheads five times between May 12 and 20, and twice in the fall, October 25, and December 6 to 11. In the last observation, three birds were seen 5 consecutive days between Washington and Barnum Islands (39).

26. Oldsquaw (Clangula hyemalis (Linnaeus))

The oldsquaw is a common fall and spring migrant and is observed most often on the large harbors of Isle Royale or on Lake Superior. The species appears in the spring soon after the breakup and apparently goes back north by late May or early June. During the 1930's and 1940's these ducks were observed on numerous occasions, usually in rafts (21,27,29,30,36). On a single field trip to the island in May 1948, 280 were tallied in the open water surrounding Isle Royale (36). Flocks of at least 100 birds each were observed in the open water around Wright's Island in Lake Superior in the spring of 1950 (35). Shelton's earliest fall observation was September 26, 1961, and the latest spring observation was May 27, 1962 (39).

27. White-winged Scoter (Melanitta deglandi (Bonaparte))

The white-winged scoter is a common migrant in the spring and fall. It occurs most often in the open waters surrounding Isle Royale, seldom in flocks of more than 20 birds. Between April 1935 and May 1950 the species was reported on several occasions, and the largest flock contained about 20 (21, 29,30,35,36). On June 8, 1962, Shelton noted about 12 birds in Siskiwit Bay. His only fall record was one bird seen November 23, 1962 (39).

28. Common Scoter (Oidemia nigra (Linnaeus))

This scoter is a rare migrant, and the literature contains only one reference. According to Roberts (16) L.O. Dart observed "quite a number in groups of two to five" along the shore of Isle Royale between Tobin Harbor and Washington Harbor on June 8, 1905.

29. Ruddy Duck (Oxyura jamaicensis (Gmelin))

This species was reported only once: Laurence Dayton listed it on May 16, 1937 (21).

**30. Hooded Merganser (Lophodytes cucullatus (Linnaeus))

The hooded merganser is an uncommon summer resident (more common migrant) and most often occurs on the inland lakes and on beaver ponds and streams. It nests on the island, and

broods of young have been reported (14, 30). Pairs of these birds were noted in 1948 and 1950 (35,36). Shelton saw a female with young on a beaver pond on the stream draining Lake Richie, June 23, 1961 (39).

**31. Common Merganser (Mergus merganser Linnaeus)

This bird is a common summer resident and common migrant. The preferred habitat includes Lake Superior and the protected harbors, the inland lakes, and the lake shores and beaches. Both young and adults have been reported numerous times since 1904 (15,21,26, 27,29,30,36,38). Lee and Krefting tallied 88 in May 1948, usually in pairs but sometimes in groups of up to 4 or 5 birds (36). In early August 1963, 8 broods containing from 4 to 20 young were recorded in various parts of the island (34). Broods of 25 to 30 young have been recorded, and chances are they represent the broods from 2 or more hens.

**32. Red-breasted Merganser (Mergus serrator Linnaeus)

This merganser is a fairly common summer resident, but is far less numerous than the common merganser. The preferred habitat includes Lake Superior, protected harbors, and inland lakes. It nests along the shores of the protected harbors, but very few nests have been found. Adults and pairs of adults have been reported on numerous occasions, but reports of broods are infrequent (27,29,30,36). Like the common merganser, large broods are often seen in summer on protected waters.

ACCIPITRIDAE (Hawks)

**33. Goshawk (Accipiter gentilis (Linnaeus))

This hawk is a rare summer resident and an uncommon winter visitor. It was reported twice in 1905; one was a young bird which probably was born on the island (14). Gilbert listed the species as a rare migrant (30). Shelton made the following observations: on November 16, 1962, an adult was seen with a freshly killed hare; on November 29, two immature goshawks and one adult were recorded; and on February 16, 1963, an immature specimen was flushed from the remains of a freshly eaten hare in the Siskiwit swamp (39). The habitats in which the goshawk are most likely to be found are birch-conifer, aspen-birch-conifer, burned areas, and swamp forest.

34. Sharp-shinned Hawk (Accipiter striatus Vieillot)

This is a rare summer resident and a common migrant. In 1904 and 1905 it was abundant and had a preference for clearings and the more open woodland (14, 22). Numbers of these hawks were observed again in 1924 and 1929 (7, 21). During the first half of the 1940's it was one of the most common hawks and seemed to delight in chasing songbirds, especially flickers (30). In May 1948 two were recorded on Passage Island, and one caught a flicker (36). In recent years there has been a preference for the 1936 burn area, the birch-conifer type, and the aspen-birch conifer type.

35. Cooper's Hawk (Accipiter cooperii (Bonaparte))

This is a rare summer resident and an uncommon migrant. In 1904 and 1905 the Cooper's hawk was fairly numerous but was regarded as one of the rarest hawks even though food was abundant (14,22). From about 1940 to 1950 it was seen at various times on Isle Royale and Passage Island (28,30,33,35). The preferred habitat seems to be clearings and the more open wooded areas. Other habitats include the 1936 burn area and the aspen-birch-conifer type.

*36. Red-tailed Hawk (Buteo jamaicensis (Gmelin))

The red-tailed hawk is an uncommon summer resident. It has been observed in the sugar maple-yellow birch forest

and the white-birch-conifer forest, but it prefers the more open burn habitat and clearings. On occasion it may be seen around beaver dams or smaller lakes. A few individual birds were seen in 1904 and 1905 (14,22), and the species was noted again in 1924 (21). Since then it has been reported in 1943, 1946, 1948, 1950, and 1963 (27,29,34,35,36). Most of the observations were made in the 1936 burn area or in the natural rock outcrop openings.

37. Red-shouldered Hawk (Buteo lineatus (Gmelin))

This is a rare summer resident. Two were seen in 1904 and 1905 (14,22) and two more were reported in 1930 (21). No observations have been made since that time.

**38. Broad-winged Hawk (Buteo platypterus (Vieillot))

This is a common summer resident and a common migrant. The preferred habitats are the sugar maple-yellow birch forest, the aspen-birch-conifer forest, and the swamp type. It tends to migrate with large waves of songbirds and for that reason may be more common than most observers have indicated. Single birds and small flocks were first reported in August and September 1905 (14). From about 1941 to 1946 this hawk was regarded as one of the most common hawks on the island (30). A total of five was seen in May or June, 1946, 1948, 1950, and 1963 (29,34,35,36). Shelton found nests with two young July 24, 1960 and July 2,1962, both in spruce-fir-birch forest (39).

39. Rough-legged Hawk (Buteo lagopus (Pontoppidan))

This is an uncommon migrant; only seven specimens have been recorded. They were seen at the following locations: three at Tobin Harbor in September 1929; one at Rock Harbor in September 1938 (21); one at the Daisy Farm on Rock Harbor in May 1948 (36); and Shelton saw two at McCargoe Cove in October 1962 (39).

40. Golden Eagle (Aquila chrysaetos (Linnaeus))

The golden eagle is an occasional fall and winter visitor. Shelton saw three immature birds: Mount Ojibway, October 16, 1960; Siskiwit Lake, November 24, 1962; Siskiwit swamp, March 14, 1963; and an adult was identified by Park Ranger Robert Peterson near Huginnin Cove, March 18, 1963 (39).

**41. Bald Eagle (Haliaeetus leucocephalus (Linnaeus))

Before 1958, the bald eagle was considered quite common on Isle Royale especially when we consider how few of these large birds of prey usually occupy an area of that size (210 square miles). Nine active nests at seven locations were known in 1948. A pair of bald eagles had a nest in a large tree near Washington Harbor in 1890, and another nest was reported for Tobin Harbor that year. In 1904 and 1905 two adults and several nests with young were observed in various parts of the island (14, 22). White pines are used most commonly, although birch and aspen trees are chosen at times (fig. 13). Although the island provides an excellent habitat, the number of eagles has declined in a striking manner the past few years. One young eagle hatched in 1961 near Lookout Louise represents the last known successful nesting. Krefting reported an active nest at Malone Bay in July 1962. Shelton observed two adults at this nest as late as November 23, 1962, but saw no young (39). Single eagles were reported at Hay Bay and Ishpeming Lookout Tower in the summer of 1963 (34).

*42. Marsh Hawk (Circus cyaneus (Linnaeus))

The marsh hawk is an uncommon summer resident and an uncommon migrant. The habitat most preferred includes the burn area and clearings.



Figure 13. Bald eagle nest in white pine.

Marsh hawks were reported first at Washington Harbor and Rock Harbor in the summer and fall of 1905 (14). Since then, single birds have been reported as follows: Passage Island, May 24, 1945; Lake Halloran, May 17, 1946; Siskiwit Lake, May 16, 1948; Passage Island, May 19, 1950; and Siskiwit Lake, May 24, 1950 (25, 29, 35, 36). Shelton saw single birds at Passage Island on September 20, 1961, crossing Siskiwit Bay on May 21, 1962, and at the head of Duncan Bay on August 21, 1962 (39).

PANDIONIDAE (Ospreys)

**43. Osprey (Pandion haliaetus (Linnaeus))

The osprey is an uncommon summer resident. The species occurs on some inland lakes, along the shores of Isle Royale, and especially on the larger harbors. Three adult ospreys were observed in 1904 and 1905 at Rock Harbor, Siskiwit Bay, and Washington Harbor (14, 22). Single birds were seen again in 1929, 1930, and 1941 (6, 21). For a long span of years there was a large osprey nest on the top of Monument Rock, a landmark near Tobin Harbor, visited by many tourists. A pair was reported from this rocky pinnacle in 1944, 1946, 1948, and 1950 (28, 35, 36, 38). The nest has been abandoned in recent years. A second nest was located on the shore of Lake Richie on the top of a white pine snag in 1946 (29). More recently single ospreys have been seen at Windigo, Hay Bay, and Siskiwit Bay (26, 34). Also, Shelton reported a nest with one young near Duncan Bay in July 1963 (39).

FALCONIDAE (Falcons)

44. Gyrfalcon (Falco rusticolus Linnaeus)

Johnsson and Shelton list the species as a rare winter resident (8).

*45. Peregrine Falcon (Falco peregrinus Tunstall)

Although Isle Royale appears to provide suitable habitat for this species, few records exist, and none verifies nesting. On Passage Island, it has been recorded three times during spring and summer; 1929, 1948, and 1961 (21, 36). Shelton also recorded it at Passage Island and Merritt Lake on September 22, 1961, at McCargoe Cove on October 10, 1962, and between Moskey Basin and Lake Richie on March 15, 1962 (39).

*46. Pigeon Hawk (Falco columbarius Linnaeus)

The pigeon hawk is an uncommon summer resident. It presently appears to be a rare migrant; early records show it was formerly found in greater abundance during migration. Specimens were collected and migrating birds were observed commonly in August and September of 1904 and 1905 (14, 19, 22). During September 1929, four specimens were collected on Passage Island (21). Gilbert in 1946 reported this hawk as a rare migrant at Washington Harbor (30). Shelton observed a pair copulating at Mott Island on May 13, 1962 (39).

**47. Sparrow Hawk (Falco sparverius Linnaeus)

The sparrow hawk is a common summer resident, breeder, and migrant. It has been observed at many locations and in many habitats but is seen most often near clearings, and in burned-over areas. Numerous observations have documented the occurrence of this species on Isle Royale during the spring, summer, and fall months (7, 14, 22, 27, 28, 29, 30, 34, 35, 36).

TETRAONIDAE (Grouse)

**48. Sharp-tailed Grouse (Pedioecetes phasianellus (Linnaeus))

The presence of this grouse on Isle Royale is of particular interest

because the ruffed and spruce grouse are absent. Along the north shore of Lake Superior, the nearest mainland, the sharp-tailed grouse is rare or absent while the others are common residents. Apparently the sharp-tailed grouse has been a year round resident of Isle Royale for a long time. The first recorded observations are in the journal for the lighthouse station at Menagerie Island (Siskiwit Bay) by Stearns and Malone (40). It is found mostly on the higher open ridges and in the burned-over areas (fig. 14). It has been recorded by Scott (17), Peet (14), Wood (20,21), Aldous (24), Aldous and Krefting (25), Gensch (29), Krefting (32), Lee and Krefting (36), and Krefting and Lee (34). Shelton saw an adult with young on the Feldtmann Trail, June 22, 1960, and a nest with seven young freshly hatched and five eggs, four of which were almost hatched, on the Greenstone Ridge Trail about 2 miles east of Chickenbone Lake on June 25, 1960 (39).

RALLIDAE (Rails and Coots)

49. Virginia Rail (Rallus limicola Vieillot)

One Virginia rail was flushed from the sedge mat of an almost-closed bog half a mile south of the head of Conglomerate Bay on July 1, 1962, by P. Shelton and S. Viers. This is the only record for Isle Royale (39).

*50. Sora (Porzana carolina (Linnaeus))

The sora is an uncommon migrant and summer resident. However, there is a possibility that it may nest on the island. Observations have been mostly of single birds in habitat associated with beaver ponds and small streams (21, 22, 30).

51. American Coot (Fulica americana Gmelin)

The coot is a rare migrant and has been observed both spring and fall (21, 22, 36).



Figure 14. Sharp-tailed grouse habitat.

CHARADRIIDAE (Plovers)

52. Semipalmated Plover (Charadrius semipalmatus Bonaparte)

This plover is rare. It has been recorded only once (21).

53. Killdeer (Charadrius vociferus Linnaeus)

The killdeer is an uncommon spring and fall migrant; it has been seen in clearings and along beaches. The species has been recorded between 1904 and 1948 by many observers (14, 21, 29, 36). A record by Shelton July 1, 1962, may have been a late migrant or non-breeding bird (39).

54. Black-bellied Plover (Squatarola squatarola (Linnaeus))

Shelton saw one of these plovers on the beach at the head of Siskiwit Bay on September 28, 1962, and another one the next day at Fisherman's Home Cove (39). The species is an uncommon migrant.

SCOLOPACIDAE (Woodcock, Snipe, and Sandpipers)

**55. American Woodcock (Philohela minor (Gmelin))

The woodcock is known to breed on Isle Royale. It is an uncommon summer resident and has been recorded by observers in clearings at Windigo, Siskiwit Camp, and other locations, including the 1936 burned-over area. At both Siskiwit Camp and Windigo male birds were heard on the singing grounds. Observations have been made by Wood (21), Gilbert (30), Aldous and Krefting (25), Gensch (29), and Lee and Krefting (36). Shelton saw an adult with three young on Tobin Creek, June 1, 1962 (39).

56. Common Snipe (Capella gallinago (Linnaeus))

This is a rare summer resident and an uncommon migrant. It has been heard "winnowing" at Siskiwit Camp and Washington Harbor. Observations have been made by many investigators (14, 21, 22, 29, 32, 35, 36).

57. Whimbrel (Numenius phaeopus Linnaeus))

The whimbrel is a rare migrant. In 1943, Cahalane noted the species at the head of Siskiwit Bay on June 2 (27), Hosley and Krefting saw one on the Windigo dock on September 25, 1949. Six were seen at Malone Bay on May 29, 1963, by John W. Weber and Max Holden (39).

*58. Spotted Sandpiper (Actitis macularia (Linnaeus))

The spotted sandpiper is quite common. It is usually seen along lake shores and beaches in spring, summer, and fall. While there are no records, it is likely that it breeds on Isle Royale. Observations have been made on a number of occasions (14, 21, 22, 28, 29, 34, 36, 39).

*59. Solitary Sandpiper (Tringa solitaria Wilson)

This species is far less common than the spotted sandpiper during the spring and fall migration periods. It probably breeds on the island, although there are no summer records. It has been recorded at Washington Creek, Siskiwit Bay, Passage Island, and various beaver ponds (14, 21, 22, 29, 39).

60. Greater Yellowlegs (Totanus melanoleucus (Gmelin))

This bird is a rare transient as there are only three sight observations (14, 21, 36).

61. Lesser Yellowlegs (Totanus flavipes (Gmelin))

The species is a rare transient and has been recorded only by Wood, Peet, and McCreary in 1906 (22) and by Shelton in 1962-63 (39).

62. Least Sandpiper (Erolia minutilla (Vieillot))

The species is a rare transient. It has been recorded as follows: Wood, Peet, and McCreary in 1902 (22); Wood in Birds of Michigan (21); and Krefting and Shields in 1950 (35).

63. Sanderling (Crocethia alba (Pallas))

Gilbert reported seeing a small flock of these birds on the beach at the head of Siskiwit Bay on June 2, 1943 (30). This is the only Isle Royale record.

LARIDAE (Gulls and Terns)

**64. Herring Gull (Larus argentatus Pontoppidan)

Both early and recent bird expeditions to the island reported that the herring gull was probably the most common bird of Isle Royale (fig. 15). From August 16 to September 5, 1904, these birds were seen in Washington Harbor daily and were abundant at all times (22).

In 1905, Peet (14) stated, "No matter on what part of the island, within a mile or so of the



Figure 15. Herring gull.

water, these gulls were nearly always in sight." Large numbers stay around the fishermen's docks, especially when the catch has been brought in and the fish cleanings are thrown away.

Gilbert kept bird records from 1941 to 1946 and noted that the birds usually migrate to the mainland of Minnesota and Ontario during the winter months but may also be seen on or near Isle Royale in midwinter (30). Shelton saw one immature herring gull in early February 1962 (39).

They nest by the hundreds on the Siskiwit Islands, Long Island, Menagerie Island, Taylor Reef, Bradsford Reef, and Harlem Reef (figs. 16 and 17). Smaller numbers of nests may be found on some of the reefs near Scoville Point and Passage Island and on the smaller rocky reefs scattered around Isle Royale. On May 17, 1948, Lee and Krefting visited the breeding colonies on Menagerie and Long Islands and on Taylor Reef. On Menagerie Island the gulls were perched on the old lighthouse and also over all other parts of the small rocky island (fig. 18). Most of the nests were found in the rocky shelves and crevices and on the more level grassy area in the interior. Each nest had from one to three eggs and they were usually lined with dry grass. Some of the nests were small while others were large and bulky. On a small area of the island (33 by 300 feet) 24 nests were found. On Long Island, 290 nests were counted on a very narrow strip about 2½ miles long. These nests were built in rocky crevices and shelves and for the most part were on the east or Lake Superior side of the island. A few of the Long Island nests were located on the grassier areas at the edge of the tree cover, while six were found within the balsam-fir cover on level ground. One nest was under a clump of mountain ash and balsam fir about 5 feet in from the edge of the forest cover. It was lined with lichen (Usnea sp.) sphagnum moss, and small sticks from tree branches. Taylor Reef was also visited, and 100 nests were counted on the east end.

References to these gulls, and especially their eggs, are contained in the journal for the lighthouse station at Menagerie Island by Stearns and Malone, 1875-93 (40), since the eggs served as an important source of food. In the log for May 13, 1886, Malone wrote, "The sea gulls commenced laying their eggs. We got 12 on Menagerie Island." For the year (1886) 1,028 eggs were gathered, and the last collection date mentioned was May 20. In 1887 Malone made only two references to gull eggs. On May 20 he wrote, "The assistant got 740 gull eggs at Siscowette Point. He said he counted 32 dead gulls. It seems they are killing each other." Again on June 1 the log states, "We have 32 gull eggs blowed out for the Supply Vessel Crew." No mention was made of gull eggs in 1888, but on May 11, 1889, the entry read, "Got some gulls eggs today. First for the season. We got 122 gull eggs to date." The last entry was on June 6, when 798 eggs had been gathered for the season. The first entry for 1890 was May 13, and the log stated, "Found four gull eggs. The first for the season at Rabbit Island." The last eggs were taken that year on June 4, and the season total was 1,505 eggs. No mention was made of collections in 1891, but in 1892 the season total was 1,390 eggs, and in 1893 it was 1,764 eggs. Since the log book that covered the years after 1893 could not be located, no other egg collection information is available.

Adult gulls have been observed on several occasions chasing songbirds during migration while out over the main lake. Oftentimes when pursued by gulls, the songbirds took refuge on small fishing boats in the vicinity.

Krefting and Lee visited Menagerie Island and Long Island on August 7, 1963. Herring Gulls were numerous and at each island one young not yet able to fly swam out into the lake as the boat drew near shore (34).

65. Ring-billed Gull (Larus delawarensis (Ord))

This gull is an uncommon migrant on Isle Royale, and none was recorded on the early bird expeditions to the island. Shelton found an immature bird dead on the shore of Moskey Basin on September 1,1962. This specimen is now in the Purdue University collections (39). Other records are by Wood, Gilbert, and Lee and Krefting (21,30,36).

66. Bonaparte's Gull (Larus philadelphia (Ord))

This gull is an uncommon migrant on Isle Royale. It has been seen at Grace Harbor, Moskey Basin, and Baker Point. Records are by Wood in Birds of Michigan and by Shelton in 1960-62 (all in August or September)(21,39).

67. Common Tern (Sterna hirundo Linnaeus)

This tern is a rare migrant. Gilbert in 1946 (30) reported that it was seen on rare occasions along the shores of Isle Royale but never on the island proper. Park Service Ranger George Pine observed one at the Siskiwit camp dock on July 14, 1963 (39).

68. Caspian Tern (Hydroprogne caspia (Pallas))

This tern has been reported from Isle Royale only once (21).

COLUMBIDAE (Pigeons and Doves)

69. Mourning Dove (Zenaidura macroura (Linnaeus))

This dove is a rare migrant since it has only been observed on three occasions: Wood (1930), Wood (1951), and by Shelton in 1961 (39).

70. Rock Dove (Columba livia Gmelin)

Shelton reported that several of these birds, all banded, with



Figure 16. Gull rookery on Siskiwit Island.



Figure 17.. Gull nest with young birds hatching out.

the band designation beginning with the letters CU, and all very tame, showed up at various parts of the island during the spring and summer of 1962 and 1963. Their origin has not yet been determined (39).

CUCULIDAE (Cuckoos)

71. Yellow-billed Cuckoo (Coccyzus americanus (Linnaeus))

This cuckoo apparently visits the island only on rare occasions. None was seen on the early bird expeditions, and the first observations were made in the fall of 1929 (20). Gilbert in 1946 (30) reported seeing adult birds on the island in midsummer.

72. Black-billed Cuckoo (Coccyzus erythropthalmus Wilson))

The black-billed cuckoo is a rare summer resident. It has been recorded by Peet (14) and Wood (21). Shelton saw one in 1960 and 1962, both in the 1936 burn area (39).

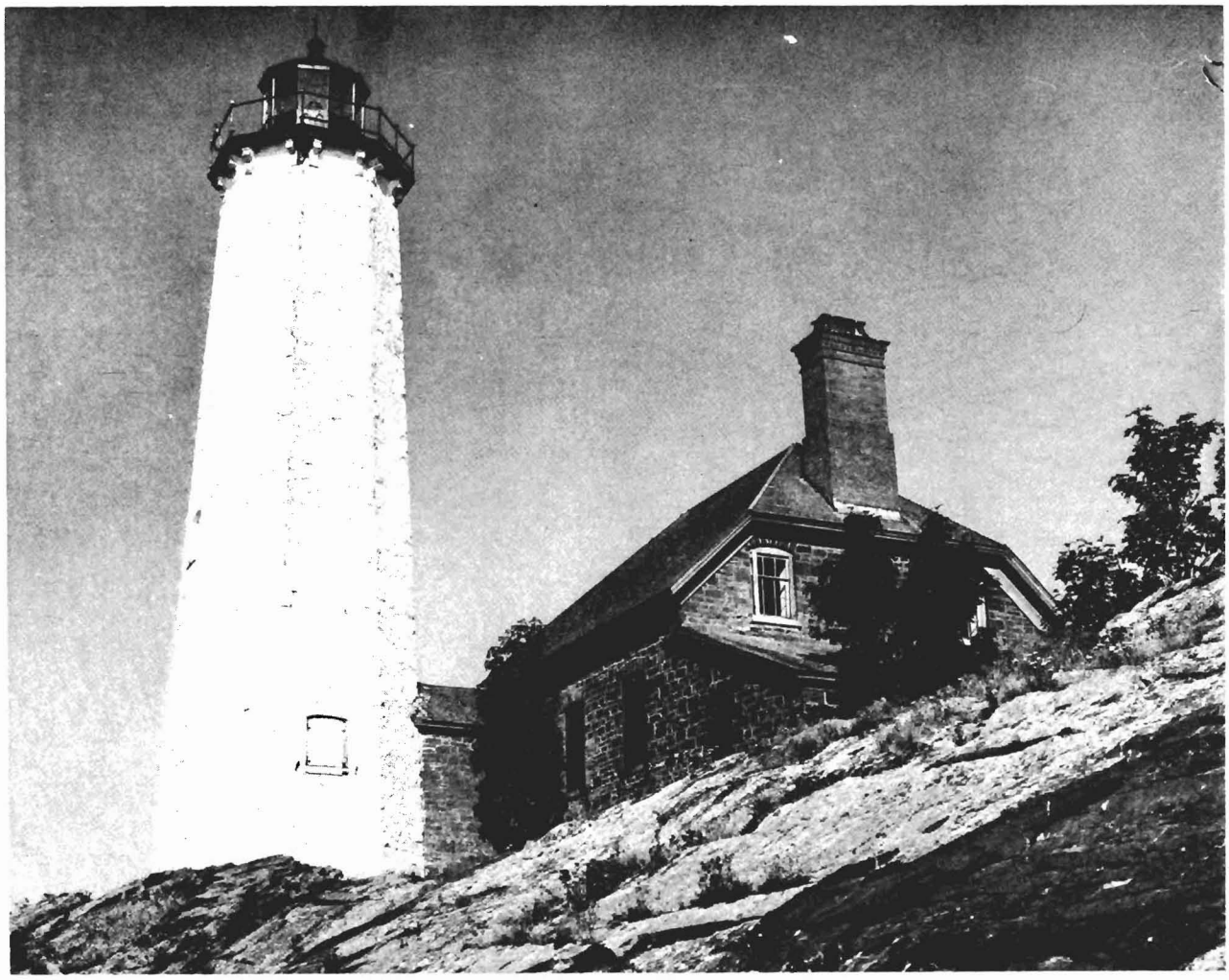


Figure 18. Old lighthouse on Menagerie Island.

STRIGIDAE (Typical Owls)

**73. Great Horned Owl (Bubo virginianus (Gmelin))

This owl is an uncommon permanent resident. Young were reported by Peet (14). Other recordings are by Wood, Peet, and McCreary (22), Fargo (7), and Wood (21). Shelton heard great horned owls in February, March, September, and November, 1962, and March 1963 (39).

74. Snowy Owl (Nyctea scandiaca (Linnaeus))

This owl is an uncommon winter visitor. It is mentioned in the journal for the lighthouse station at Menagerie Island by Stearns and Malone, 1875-93 (40). It was later recorded by Gilbert (30). Shelton saw one at the head of Siskiwit Bay on November 23, 1962 (39).

*75. Hawk Owl (Surnia ulula (Linnaeus))

This owl is a rare permanent resident, at least formerly. Peet saw an adult and a young bird in downy plumage near Siskiwit Falls on August 4, 1905 (14). Other records are cited by Scott (17).

76. Short-eared Owl (Asio flammeus (Pontoppidan))

This species has been reported only once (22).

**77. Saw-whet Owl (Aegolius acadicus (Gmelin))

This owl is a rare species having been reported only by Peet (14) and Wood (21). Peet observed a juvenile male in brown plumage of the first molt and concluded that it bred nearby.

CAPRIMULGIDAE (Goatsuckers)

**78. Whip-poor-will (Caprimulgus vociferus Wilson)

This rare summer resident was first reported by Peet (14). More recently Shelton reported hearing it near the Minong Mine and Lake Richie in 1960. He also reported that one was flushed from an open ridge near Tobin Creek on June 8, 1963, and on July 2, 1963, a nest with one egg was found on an open ridge near Newt Lake (39).

*79. Common Nighthawk (Chordeiles minor (Forster))

The nighthawk is a common summer resident which has been observed at several locations, including the 1936 burn area. It is commonly observed in flight in the evening. Observations have been made by Wood, Peet, and McCreary (22), Peet (14), Wood (21), Gilbert (30), Krefting and Shields (35), and Krefting and Lee (34).

APODIDAE (Swifts)

*80 Chimney Swift (Chaetura pelagica (Linnaeus))

This uncommon summer resident has been seen at Washington Harbor, in the sugar maple forest, Rock Harbor, Menagerie Island, and Mount Ojibway. Observations have been reported by Wood, Peet, and McCreary (22), Peet (14), Wood (21), Cahalane (27), Gilbert (30), and Krefting and Lee (34). Shelton saw swifts six times in May, June, and July, most of these in the maple forest and in the Windigo area (39).

TROCHILIDAE (Hummingbirds)

81. Ruby-throated Hummingbird (Archilochus colubris (Linnaeus))

This uncommon summer resident has been seen at Washington Harbor and Menagerie Island. Observations have been reported by Wood, Peet, and McCreary (22), Peet (14), and Gilbert (30). Shelton saw hummingbirds occasionally on the northeast end of the island in the early 1960's (39).

ALCEDINIDAE (Kingfishers)

**82. Belted Kingfisher (Megaceryle alcyon (Linnaeus)

The kingfisher is a common summer resident in suitable habitat in all parts of the island. It has been recorded by Wood, Peet, and McCreary (22), Peet (14), Wood (21), Gensch (29), Lee and Krefting (36), and Krefting and Lee (34). The species nests on the island.

PICIDAE (Woodpeckers)

**83. Yellow-shafted Flicker (Colaptes auratus (Linnaeus))

This bird is very common during spring and fall migrations. It is a common summer resident and nests in limited numbers, especially in the clearings and burned-over areas. It was recorded by Stearns and Malone (40), Wood, Peet, and McCreary (22), Peet (14), Cahalane (27, 28), Wood (21),Gensch (29), Lee and Krefting (36), and Krefting and Lee (34).

**84. Pileated Woodpecker (Dryocopus pileatus (Linnaeus))

This uncommon permanent resident is found around forest clearings and in the aspen-birch-conifer type as well as in the swamp forest type. It has been recorded by Wood, Peet, and McCreary (22), Peet (14), Wood (21), Cahalane (27), Gilbert (30), Lee and Krefting (36), and Krefting and Shields (35). Shelton had records for all seasons, and one nest record (one young bird) for 1962 (39).

85. Red-headed Woodpecker (Melanerpes erythrocephalus (Linnaeus))

This woodpecker is a rare visitor, having been recorded by Wood (20) and Gilbert (30). Shelton noted John Weber saw a single specimen on May 30, 1963 (39).

86. Yellow-bellied Sapsucker (Sphyrapicus varius (Linnaeus))

This uncommon summer resident has been recorded by Wood, Peet, and McCreary (22), Peet (14), Gilbert (30), and Shelton in 1960 and 1963 (39).

*87. Hairy Woodpecker (Dendrocopos villosus (Linnaeus))

This woodpecker is a common permanent resident, most often found in the aspen-birch-conifer type. It has been recorded by Wood, Peet, and McCreary (22), Wood (19), Peet (14), Wood (21), Gilbert (30), Gensch (29), Lee and Krefting (36), Krefting and Shields (35), and Shelton in 1962 and 1963 (39).

*88. Downy Woodpecker (Dendrocopos pubescens (Linnaeus))

This bird is a common permanent resident found in all the major forest types. It has been recorded by Wood, Peet, and McCreary (22), Peet (14), Cahalane (27), Gilbert (30), Gensch (39), Lee and Krefting (36), Krefting and Shields (35), and Krefting and Lee (34). Shelton observed the species in 1962 and 1963 (39).

89. Black-backed Three-toed Woodpecker (Picoides arcticus (Swainson))

This rather rare permanent resident has been seen at Washington Harbor, Rock Harbor, Lake Richie, Wright's Island, and other locations in spruce-fir-birch forest type and in the 1936 burn area. It has been recorded by Wood, Peet, and McCreary (22), Peet (14), Wood (21), Cahalane (27), Aldous and Krefting (25), Gilbert (30), Gensch (29), Krefting and Shields (35), and Shelton in 1960, 1961, 1962, and 1963 (39).

90. Northern Three-toed Woodpecker (Picoides tridactylus (Linnaeus))

This woodpecker migrates to Isle Royale on rare occasions. It has been reported by Wood (20, 21), and by Shelton in 1963 (39).

TYRANNIDAE (Tyrant Flycatchers)

**91. Eastern Kingbird (Tyrannus tyrannus (Linnaeus))

This kingbird is a fairly common summer resident found around streams and old beaver ponds. Gilbert noted a nest with young at Lake Halloran (30). Other observations are reported by Peet (14), Wood (21), Cahalane (27), Gensch (29), and Krefting and Shields (35). Shelton observed specimens in 1963 (39).

**92. Eastern Phoebe (Sayornis phoebe (Latham))

This bird is a common migrant and uncommon summer resident. In August 1904 two specimens were collected and several others noted in the Washington Harbor area (22). In 1905, young and adult birds were observed by Peet (14). Other observations are by Wood (21), Gilbert (30), Gensch (29),and Krefting and Shields (35).

93. Yellow-bellied Flycatcher (Empidonax flaviventris (Baird and Baird))

This bird is an uncommon summer resident and has been seen at Siskiwit Lake, Tobin Creek, and other locations in habitats containing cedar, balsam, alder, and birch. It has been recorded by Peet (14), Wood (21), and Krefting and Shields (35). Shelton noted the species in 1962 and 1963 (39).

94. Traill's Flycatcher (Empidonax traillii (Audubon))

This species is less common than the Least Flycatcher and is regarded as an uncommon summer resident. It has been recorded by Peet (14), by Wood (21), and by Shelton in 1963 (39).

95. Least Flycatcher (Empidonax minimus (Baird and Baird))

This is an uncommon summer resident and common migrant found in open birch aspen forests usually near water. It has been reported by Wood, Peet, and McCreary (22), Peet (14), Wood (21), Gilbert (30), Shelton in 1963 (39), and Krefting and Lee (34).

*96. Eastern Wood Pewee (Contopus virens (Linnaeus))

This bird is fairly common in the sugar maple forest during the summer, and is probably a migrant elsewhere. It has been reported by Wood (21), Cahalane (27), Gilbert (30), and Krefting and Lee (34).

97. Olive-sided Flycatcher (Nuttallornis borealis (Swainson))

This uncommon summer resident has been noted at Washington Harbor, Siskiwit Bay, and Rock Harbor, particularly in the open cedar, spruce, and tamarack swamps. It has been reported by Wood (21), Cahalane (27), and Shelton in 1962 and 1963 (39).

ALAUDIDAE (Larks)

98. Horned Lark (Eremophila alpestris (Linnaeus))

These birds are seen commonly during the spring and fall migration periods in clearings and on other open areas such as the beaches. Records are by Peet (14), Wood (21), Gilbert (30), Gensch (29), and Shelton in 1961 and 1962 (39).

HIRUNDINIDAE (Swallows)

*99. Tree Swallow (Iridoprocne bicolor (Vieillot))

Tree swallows are common inhabitants of dead trees in beaver ponds throughout the island. The species

has been reported by Peet (14), Wood (21), Cahalane (27), Gilbert (30), Gensch (29), Lee and Krefting (36), Krefting and Shields (35), and Shelton (39).

100. Bank Swallow (Riparia riparia (Linnaeus))

This swallow visits the island only on rare occasions. It was reported by Peet (14), and Wood (21).

**101. Barn Swallow (Hirundo rustica Linnaeus)

The first mention of the barn swallow for Isle Royale is in the log of J. H. Malone, the Menagerie Island Lighthouse keeper, written in 1884. This swallow is an uncommon summer resident. Peet observed four nests in a boathouse at Menagerie Island (14), Gilbert reported nests at Wright's Island and Siskiwit Camp (30). The species has also been reported by Lee and Krefting (36) and Krefting and Lee (34).

**102. Cliff Swallow (Petrochelidon pyrrhonota (Vieillot))

This swallow has been observed nesting at Rock Harbor and other locations. Observations are reported by Peet (14), and Wood (21).

CORVIDAE (Jays and Crows)

**103. Gray Jay (Perisoreus canadensis (Linnaeus))

This interesting bird is a common permanent resident of the island. It has been observed in most forest types but is most closely associated with coniferous trees. Its inquisitiveness and tameness make it a favorite with tourists (cover). Young birds have been noted on several occasions. Observations have been recorded by Scott (17), Wood, Peet, and McCreary (22), Wood (19, 21), Peet (14), Dustin (6), Cahalane (27), Gilbert (30), Krefting (33), Lee and Krefting (36), and Krefting and Shields (35).

*104. Blue Jay (Cyanocitta cristata (Linnaeus))

This jay is a common permanent resident found in a wide variety of forest habitats. This colorful bird has been reported by Scott (17), Wood, Peet, and McCreary (22), Peet (14), Wood (21), Cahalane (27, 28), Gilbert (30), Gensch (29), Lee and Krefting (36), Krefting and Shields (35), and Shelton in 1962 and 1963 (39).

**105. Common Raven (Corvus corax Linnaeus)

The raven is a permanent resident and occurs in small numbers in most parts of the island. Shelton reported that two young ravens were seen on a nest on the Palisades, May 30, 1962. He further noted that flocks of up to a dozen were almost always present with the wolf pack during the winters of 1962 and 1963 feeding on remains of wolf-killed moose (39). Other observations are reported by Scott (17), Wood, Peet, and McCreary (22), Peet (14), Cahalane (27), Gilbert (30), Gensch (29), and Lee and Krefting (36).

**106. Common Crow (Corvus brachyrhynchos Brehm)

The crow is a common summer resident and occupies a variety of habitats: lake shores and beaches, birch-conifer type, aspen-birch-conifer type, swamp forest type, 1936 burn area, and the clearings and partial clearings. Expeditions in 1905 demonstrated that crows were present, and young of the year were found. They were reported in 1946 and 1948, sometimes in flocks of up to 15 birds, and nests were found at Windigo (28, 30, 36).

PARIDAE (Titmice)

**107. Black-capped Chickadee (Parus atricapillus Linnaeus)

This very common permanent resident is found in a wide variety of forest types, especially those containing spruce, fir, and birch trees. It has been observed nesting in hollow birches on two occasions. Observations are reported by Wood, Peet, and McCreary (22), Peet (14), Cahalane (27), Presnall (38), Aldous and Krefting (25), Gilbert (30), Gensch (29), Lee and Krefting (36), Krefting and Shields (35), and by Shelton in 1963 (39).

108. Boreal Chickadee (Parus hudsonicus Forster)

This rare winter visitor has been recorded only once. Shelton saw two in a burned area near Siskiwit Camp, March 4,1963 (39).

SITTIDAE (Nuthatches)

109. White-breasted Nuthatch (Sitta carolinensis Latham)

This species is considered a rare summer resident. Wood, Peet, and McCreary indicate that an adult male was collected in a birch stand at Washington Harbor on August 24, 1904 (22). Other observations are reported by Wood (21) and Gilbert (30).

**110. Red-breasted Nuthatch (Sitta canadensis Linnaeus)

This species is a common permanent resident and is found in the coniferous forests. Young birds were reported by Peet (14). Other observations are reported by Wood, Peet, and McCreary (22), Wood (21), Aldous (24), Gilbert (30), Gensch (29), Lee and Krefting (36), Krefting and Shields (35) and Shelton (39).

CERTHIIDAE (Creepers)

**111. Brown Creeper (Certhia familiaris Linnaeus)

This bird is considered an uncommon summer resident of the island. A nest was reported by Gilbert (30). Other observations are reported by Wood, Peet, and McCreary (22), Peet (14), Wood (21), Cahalane (27), Gensch (29), Lee and Krefting (36), Krefting and Shields (35), Krefting and Lee (34), and Shelton (39).

TROGLODYTIDAE (Wrens)

112. House Wren (Troglodytes aedon Vieillot)

This is a rare summer resident which has been seen at Windigo, Siskiwit Bay, and Washington Harbor. Observations were recorded by Wood (21), Gilbert (30), and Lee and Krefting (36).

*113. Winter Wren (Troglodytes troglodytes (Linnaeus))

This winter wren is a common summer resident. The preferred habitats are the aspen-birch-conifer type and the swamp forest type. A number of individual winter wrens were seen at Washington Harbor in 1904 and 1905 and two adults were collected (14, 15, 22). The early sight records indicated a preference for white cedar and tamarack swamps (14). Individuals were seen in May and June 1930, and two specimens were collected in September of that year (21). Another observation was made in April 1937 (21). During the 1940's winter wrens were seen in all parts of the island and were probably heard more often than seen. These observations indicated a preference for the dense spruce-fir-birch habitat where little light reached the ground (27, 28, 29, 30, 35, 36).

114. Short-billed Marsh Wren (Cistothorus platensis (Latham))

This wren is an uncommon summer resident. In the spring of 1930 several were observed, and one specimen was collected (21). More recently, in 1960 and 1962, Shelton observed this wren on seven occasions, all in dense marsh grass, and was of the opinion that it breeds on the island.

MIMIDAE (Mockingbirds and Thrashers)

115. Mockingbird (Mimus polyglottos (Linnaeus))

This bird is a very rare visitor. One immature specimen was collected at Tobin Harbor on September 26, 1929 (20).

116. Catbird (Dumetella carolinensis (Linnaeus))

The catbird is a rare migrant. A single bird was collected from a dense balsam, birch, and alder thicket along Washington Creek in 1905 (14). In 1929 two specimens were taken (21). Shelton saw one in the vicinity of a beaver pond near Moose Lake on May 25, 1963 (39).

117. Brown Thrasher (Toxostoma rufum (Linnaeus))

The brown thrasher is a rare migrant. Laurence Dayton saw one on the island, May 4, 1937 (21). In recent years Shelton noted the species on three occasions: one singing in the 1936 burn area near Lake Harvey (May 14, 1962), one singing near Rock Harbor opposite Mott Island (May 20, 1962), and one seen at Tobin Harbor (May 25, 1963) (39).

TURDIDAE (Thrushes and Bluebirds)

**118. Robin (Turdus migratorius Linnaeus)

The robin is an uncommon summer resident and a common migrant. The habitats most preferred seem to be the aspen and birch conifer types, the 1936 burn area, and the clearings and partial clearings. J.H. Malone caught a robin on Menagerie Island in 1891 and noted that these birds were migrating in October 1892 (40). At Washington Harbor, robins appeared in hundreds during migrations in the spring and fall of 1891 and the spring of 1892 (17). In 1904 and 1905 the robin was regarded as rather rare and was found nesting at Menagerie Island, Siskiwit Bay clearings, and in the clearings at Windigo (14). Observations were made again in 1929 and 1937 (21). During the 1940's and early 1950's, the robin was recorded by a number of biologists and was generally regarded as a fairly common summer resident (25, 27, 29, 30, 35, 36). In recent years Shelton regarded the species as an uncommon summer resident and a more common migrant. He noted large flocks of noisy robins at the Todd Harbor campground in October 1962 (39). Krefting and Lee also noted nine in the Windigo Mine area on August 9, 1963 (34).

119. Wood Thrush (Hylocichla mustelina (Gmelin))

The wood thrush is a rare summer resident. A single bird was observed on June 13, 1930 (21), and during the 1940's they were seen on rare occasions (29, 30).

**120. Hermit Thrush (Hylocichla guttata (Pallas))

The hermit thrush is an uncommon summer resident. In 1905 it was observed regularly at Washington Harbor, and the dense clumps of mountain maple were the favorite habitat. No nests were found, but an immature specimen was collected (14, 15). Specimens were collected in 1929 and 1930, and others were seen in 1937 (21). In 1948 nine were observed in a variety of habitats; all were single birds that appeared to be moving about at random (36). The general habitat types preferred seem to be clearings and partial clearings, the birch-conifer type, and the aspen-birch-conifer type. Shelton's observations

indicate that hermit thrushes may be more common as migrants (39). Six of nine records were from spring (May) or fall (late September and October).

**121. Swainson's Thrush (Hylocichla ustulata (Nuttall))

This is a common summer resident, and has a preference for the birch-conifer type and the aspen-birch-conifer type. In 1904 and 1905 two specimens were collected, a nest with three young birds was found, and the species was observed on numerous occasions (14, 15, 22). Since that time, it has been observed in 1930, 1937,1943,1946, and 1950 (27,29,30,35).

122. Gray-cheeked Thrush (Hylocichla minima (Lafresnaye))

This thrush now visits the island rarely, but it was regarded as abundant in 1905 (14, 15). In September 1929 a specimen was collected and observations were made (21). Single birds were observed in 1943 by Cahalane (27) and in 1963 by Shelton (39).

**123. Veery (Hylocichla fuscescens (Stephens))

The veery is an uncommon summer resident, although it apparently was much more common during the early 1900's. In 1905 it was present in all parts of the island and was usually observed in the balsam forest (14, 15). Observations were made in 1943 and 1946 (27, 29). Records kept at one location in the 1940's indicated the species was a common summer resident (30). Between 1960 and 1963 Shelton heard the veery only on rare occasions and felt that it was an uncommon summer resident (39). The preferred habitats included the mixed conifer swamp, the aspen-birch-conifer type, and the birch-conifer type.

**124. Eastern Bluebird (Sialia sialis (Linnaeus))

This bluebird is an uncommon summer resident. It breeds on the island, as nests have been located (14). Habitats most preferred include the aspen-birch-conifer type and the clearings and partial clearings. Observations in 1905 and during the 1940's and early 1950's show that the species is an uncommon summer resident (14, 29, 30, 35). In June 1963 Shelton observed a pair that may have been nesting in a small birch snag near Newt Lake (39).

SYLVIIDAE (Kinglets)

**125. Golden-crowned Kinglet (Regulus satrapa Lichtenstein)

This kinglet is an uncommon summer resident and a common migrant. The habitats most preferred are the birch-conifer type, the aspen-birch-conifer type, and the swamp-conifer type. Field observations in 1904 and 1905 indicate that this bird nested and raised young, and there were spectacular fall migrations (14, 15, 22). Sight records made during the 1930's through the early 1950's indicated that a nest was found and single and paired kinglets were present, usually in the birch-balsam type or the white cedar swamp type (29, 30, 35, 36). Observations in the early 1960's by Shelton suggest that this kinglet is an uncommon summer resident but probably a common migrant (39). One dead kinglet was found in the Menagerie Island lighthouse on August 7, 1963 (34).

*126. Ruby-crowned Kinglet (Regulus calendula (Linnaeus))

An uncommon summer resident and a common migrant, this species has habitat preferences similar to the

golden-crowned kinglet. In 1904 and 1905 flocks of 25 to 30 were reported, specimens were collected, and spectacular migrations were noted (14,15,22). The species was recorded again in May 1930, May 1937, and on several occasions in May and June during the 1940's and early 1950's (29,30,35,36). Gilbert concluded that the species was a rare summer resident (30). During the early 1960's Shelton heard singing males in late spring and early summer, especially in the spruce-fir-birch forests (39).

MOTACILLIDAE (Pipits)

127. Water Pipit (Anthus spinoletta (Linnaeus))

The water pipit is a rare migrant, although flocks of 100 and 200 were reported in 1904 and 1905 (14, 15). Preferred habitats are the lake shores and beaches and the small clearings. Single birds or small groups were observed again in 1937 (21), and by Shelton in the fall of 1961 and the spring and fall of 1962 (39).

BOMBYCILLIDAE (Waxwings)

**128. Cedar Waxwing (Bombycilla cedrorum Vieillot)

The cedar waxwing is a common summer resident, possibly more abundant during migrations. Both nests and young have been reported on numerous occasions (30). Preferred habitats include lake shores and beaches, the aspen-birch-conifer type, the swamp forest type, and the clearings and partial clearings. In 1904 and 1905, the species was abundant at Washington Harbor and Rock Harbor, nests were common, and young birds were found (14,15,22). A single specimen was noted in 1930, and a flock of 20 or more was recorded in 1938 (21). During the 1940's the species was observed on numerous occasions during the summer months, and nests were quite common (27,30). In May 1950, five were noted on Houghton Point (35). During the early 1960's Shelton found it to be a fairly common summer resident (39). Four were seen at Windigo on August 9, 1963 (34).

LANIIDAE (Shrikes)

129. Northern Shrike (Lanius excubitor (Linnaeus))

The northern shrike is an uncommon migrant and a winter visitor. Preferred habitats include the clearings and partial clearings and the aspen-birch-conifer type. Between the falls of 1890 and 1892, this shrike was a winter resident at Windigo and migrant from the north (17). Single birds were noted at the same location in 1905, and one was eating a songbird (14,15). Gilbert (30) concluded that the northern shrike was common during migration. On December 15,1944, he sighted a single bird following a flock of robins. Shelton saw a shrike chase a flock of rusty blackbirds at the McCargo Cove Campground, October 10, 1962. On March 1,1963, he saw a single bird at Windigo (39).

130. Loggerhead Shrike (Lanius ludovicianus Linnaeus)

This shrike apparently visits Isle Royale only on rare occasions, as there has been but one sight record. One individual was observed in a clearing at Windigo on August 23,1905 (14).

STURNIDAE (Starlings)

**131. Starling (Sturnus vulgaris Linnaeus)

This exotic species apparently did not reach the island until the early 1940's. At present the starling is an uncommon summer resident. It has been sighted most often around beaver ponds and streams, the 1936 burn area, and the clearings and partial clearings. Apparently the burn area offers the most suitable habitat, because it not only has a good supply of dead trees for nesting but also has flickers that make the nesting

cavities needed by starlings. During the 1940's nests were located in the burn area, and sight records were made in all parts of the island (27,29,30, 36). In 1963 Shelton felt that the starling was an occasional summer resident and preferred old beaver ponds where it probably nested in dead snags (39).

VIREONIDAE (Vireos)

132. Yellow-throated Vireo (Vireo flavifrons Vieillot)

This vireo visits the island only on rare occasions. It has been observed only twice, in 1925 and 1943 (21, 27).

133. Solitary Vireo (Vireo solitarius (Wilson))

This vireo is an uncommon migrant and a rare summer resident. It has a preference for the birch-conifer type, the aspen-birch-conifer type, and the swamp forest type. A pair and a single bird were observed in the birches and alders in 1905 (14). Also, one was sighted in 1929, and one was collected the following year (21). During the 1940's, this vireo seemed to be fairly common, especially during migrations (27,30,35,36). In the early 1960's Shelton obtained one summer singing record and four sight records (39).

**134. Red-eyed Vireo (Vireo olivaceus (Linnaeus))

This vireo is a common summer resident observed most often in the birch-conifer type and the aspen-birch-conifer type. Specimens were collected and observed in 1904 and 1905. At that time the species seemed to prefer the open grown birch and aspen stands (14,22). Specimens were collected in 1929 and 1930, and sight records were made in all parts of the island, especially in the birch-balsam thickets (27,29,30). Gilbert in 1946 (30) and Shelton in the early 1960's concluded that the red-eyed vireo was one of the most common summer residents on the island (39).

135. Philadelphia Vireo (Vireo philadelphicus (Cassin))

This vireo visits the island only on rare occasions. In 1904 and 1905 a single bird and a pair were observed in the coniferous forest (14). Specimens were collected in 1929 and 1930 (21). Shelton noted a single observation was made by John Weber at Malone Bay on May 27, 1963 (39).

136. Warbling Vireo (Vireo gilvus Vieillot))

The species visits the island only rarely. One specimen was observed in 1929, and two were noted in 1930 (21).

PARULIDAE (Wood Warblers)

137. Black and White Warbler (Mniotilta varia (Linnaeus))

This warbler is an uncommon summer resident and migrant. The preferred habitats seem to be the birch-conifer type and the aspen-birch-conifer type. Three sight records were made in 1904 and 1905, one at the Siskiwit Lake outlet and two at Washington Harbor (14, 22). Since then, one was reported in 1924 and a second in 1937 (21). Records kept during the 1940's indicate the species was an uncommon summer resident (27,29,30,36). Ten specimens were recorded during the early 1960's by Shelton (39). One sight record on August 9, 1963, was from the Windigo Mine area (34).

*138. Tennessee Warbler (Vermivora peregrina (Wilson))

The Tennessee warbler is a rare summer resident and a common migrant. The species has a preference for the birch-conifer and aspen-birch-conifer types. Specimens were collected in 1904, and on the basis of observations

made in 1905 this was the most common of the warblers (22). Single birds were seen in 1929, and in 1930 it was regarded as common (21). Shelton heard singing males in July 1960 on Grace Creek and in the aspen-birch-conifer type near the west end of Siskiwit Lake (39).

139. Orange-crowned Warbler (Vermivora celata (Say))

This warbler is an uncommon migrant. During migration the species appears to prefer the 1936 burn area, the clearings and partial clearings, and the aspen-birch-conifer types. Specimens were taken in 1929, and observations were made in 1930 and 1943 (21,27). Shelton reported them migrating in late May 1963 (39).

**140. Nashville Warbler (Vermivora ruficapilla (Wilson))

This warbler is a common summer resident and migrant. The species occurs in a wide variety of habitats: birch-conifer type, aspen-birch-conifer type, swamp forest type, the 1936 burn area, and the clearings and partial clearings. In 1904 and 1905, specimens were taken, and the sight records made indicated that the warbler preferred the high open mixed forest and the borders of clearings (14,22). In 1929 and 1930, three specimens were taken (21). During the 1940's records were kept by a number of observers and they concluded that the species was common, particularly during migration (29,30,36). The preferred habitats were the spruce-fir-birch type and the birch-balsam. In the early 1960's Shelton noted that the species was one of the most common summer residents, especially in the 1936 burn area and in the more open birch-aspen forest (39).

141. Parula Warbler (Parula americana (Linnaeus))

This warbler is an uncommon summer resident. Habitats most preferred include beaver ponds, streams, and the birch-conifer type. A single specimen was taken in 1930 (21). Gilbert in 1946 concluded that this warbler visited the island only on rare occasions (30). About a dozen sight records by Shelton in the early 1960's indicate that the species is an occasional summer resident, particularly in dense mountain-maple thickets near water (39).

142. Yellow Warbler (Dendroica petechia (Linnaeus))

There are only three sight records for the island. Observations have been made in 1943, 1950, and 1963 (27, 35).

**143. Magnolia Warbler (Dendroica magnolia (Wilson))

This species is a common summer resident that prefers the birch-conifer type and the aspen-birch-conifer type. In 1904 and 1905 several young birds were located and several adult specimens were taken. Sight records indicated that this warbler was common in the spruce-balsam and in the second-growth birch stands (14, 22). During the 1940's and 1950's, numerous observations were made at a variety of locations (27,29,30,35). Observations by Shelton in the early 1960's have shown that this warbler is a fairly common summer resident, mostly in the spruce-fir-birch forest (39).

144. Cape May Warbler (Dendroica tigrina (Gmelin))

This warbler is a common migrant that has a preference for clearings and partial clearings, the swamp forest type, the birch-conifer type, and the aspen-birch-conifer type. Six or seven were noted in a tamarack swamp at Siskiwit Bay in 1905 (14). Specimens were taken and sight records made in 1929 and 1930 (21). During the 1940's and 1950's numerous sight records were made, especially during the spring and fall migrations (29,30, 35). A few sight records were also made in May 1962 and 1963 by Shelton (39).

*145. Black-throated Blue Warbler (Dendroica caerulescens (Gmelin))

This bird is a common summer resident. The species also has a preference for the swamp forest and the sugar maple-yellow birch forest. In 1904 and 1905 specimens were taken and a number of sight records were obtained, especially in favored swamp habitat of balsam, spruce, and tamarack (14). All sight records obtained in the 1940's and early 1950's were taken from the maple forest (29,30,35). Shelton reported two records in early spring in an aspen-birch-conifer habitat; these were probably migrants, since all summer records were from the maple forest (39).

**146. Myrtle Warbler (Dendroica coronata (Linnaeus))

This warbler is a common summer resident and migrant. Preferred habitats include the lake shores and beaches, the birch-conifer type, and the aspen-birch-conifer type. In 1904 and 1905, adult specimens were taken, nests and young were located, and specimens were noted almost daily (14, 22). This warbler was also observed in 1929, 1930, and 1937 (21). During the 1940's and early 1950's, general observations indicate, the summer resident population was small and the species was most common during the spring migration period (27,29,30,35,36). Shelton noted specimens as early as May 9 and as late as October 14 and considered the species to be one of the most common summer warbler in the spruce-fir-birch habitat (39).

**147. Black-throated Green Warbler (Dendroica virens (Gmelin))

This bird is a common summer resident. Preferred habitats include the sugar maple-yellow birch type, the birch-conifer type, and the aspen-birch-conifer type. In 1904 and 1905, specimens were taken, nests and young birds were found, and a fairly large number of sight records were made (14, 15,22). On visits to the island in 1929 and 1930, a specimen was taken and sight records were obtained (21). During the 1940's and early 1950's numerous sight records were made. On the basis of these records, the species was regarded as a common summer resident over most of the island (29, 30,35,36). Also, records kept by Shelton in the early 1960's showed that the species was one of the most common summer warblers, especially in the spruce-fir-birch forest (39).

148. Blackburnian Warbler (Dendroica fusca (Müller))

This warbler is a common summer resident. The habitats most preferred are the sugar maple-yellow birch type, the birch-conifer type, and the aspen-birch-conifer type. One specimen was taken in 1929, and sightings were made in 1929, 1930, and 1937 (21). Sight records kept during the 1940's and early 1950's indicate that this warbler was a common summer resident (27, 29,30,35). In the early 1960's Shelton thought that it might not be a regular summer resident (39).

*149. Chestnut-sided Warbler (Dendroica pensylvanica (Linnaeus))

This warbler is a common summer resident. Habitat preferences are the more open aspen-birch-conifer type, the 1936 burn area, and the clearings and partial clearings. The species was recorded for the first time in 1924, and specimens were collected in 1930 (21). During the 1940's and 1950's, it was recorded in all parts of the island and was regarded as a common summer resident (27,29,30,35). In the early 1960's Shelton found it to be an abundant summer resident, usually in the aspen and birch areas (39).

150. Bay-breasted Warbler (Dendroica castanea (Wilson))

This warbler is a rare summer resident and an uncommon migrant.

Preferred habitats include the birch-conifer type and the aspen-birch-conifer type. In 1904 and 1905 sight records indicated that this warbler was an uncommon summer resident although it was particularly abundant during warbler migrations (14,15). Specimens were taken and observations were made in 1929 and 1930 (21). Observations were made also in 1943, 1946, and 1950 (27,29,35). Shelton had only two sight records, May 17 and 25, 1963 (39).

151. Blackpoll Warbler (Dendroica striata (Forster))

This warbler is a rare summer resident and an uncommon migrant. The birch-conifer type and the aspen-birch-conifer type are the habitats most preferred. In 1904 and 1905, specimens were taken, observations were made, and the species was found to be common during the fall migration (14, 22). This warbler was reported in 1920, 1930, and 1937 (21). Gilbert in 1946 felt that the species was a rare summer resident (30). Shelton saw blackpolls on May 19,21,and 25,1963 (39).

152. Pine Warbler (Dendroica pinus (Wilson))

This warbler is a rare migrant (30). In 1924 several were found, and in 1929 the species was recorded again (21).

153. Palm Warbler (Dendroica palmarum (Gmelin))

This warbler is common during spring and fall migrations. Preferred habitats are the lake shores and beaches, beaver ponds and streams, the birch-conifer type, the aspen-birch-conifer type, the 1936 burn area, and the clearings and partial clearings. In 1904 and 1905 specimens were taken and flocks of 30 to 40 were noted during migration (14,22). It was recorded again in 1929, and specimens were collected in 1930 (21). During the 1940's it was found in 1943,1946, and 1948 (27,29,36). This is one of the first warblers to reach the island in the spring (30). On a 1946 spring migration, 30 or more were noted next to beaver ponds and creek bottoms (29). Three were observed in the spring of 1950 (35). Shelton found this bird to be abundant during spring and fall migrations in the early 1960's (39).

**154. Ovenbird (Seiurus aurocapillus (Linnaeus))

This warbler is a common summer resident of the dense parts of several forest cover types. Habitat preferences include the sugar maple-yellow birch type, the birch-conifer type, the aspen-birch-conifer type, and dense parts of the 1936 burn area. In 1904 and 1905 specimens were taken and small numbers were reported,especially in damp, cool habitats along streams and in the tamarack swamps. No nests were found, but young were observed (14,22). They were noted in 1930 (21), and found to be common during spring migrations in the 1940's. Gensch (29) counted 10 of them, mostly in the sugar maple forest, and Lee and Krefting (36) reported 54 song records from the sugar maple forest in May. They were regarded as numerous in the same habitat in 1950 (35). A single dead ovenbird was found in the lighthouse on Menagerie Island, August 7, 1963 (34).

155. Northern Waterthrush (Seiurus noveboracensis (Gmelin))

The waterthrushes are rare summer residents and are uncommon spring and fall migrants. Preferred habitats are the lake shores and beaches and the beaver ponds and streams. At least 10 specimens have been taken on Isle Royale (21). Shelton made three sight records, one on Edward's Island (May 18, 1962) and two on Tobin Creek (May 23 and September 9, 1963 (39).

*156. Connecticut Warbler (Oporornis agilis (Wilson))

This warbler is a rare summer resident and an uncommon migrant. The

preferred habitats are the aspen-birch-conifer type and the clearings and partial clearings. In 1905 they were common during the September fall migration and were noted often in the damp alder thickets (14). Wood saw two of these warblers in June 1930 (21) and Shelton two in July 1960. Shelton felt the species may be a rare nester (39).

**157. Mourning Warbler (Oporornis philadelphia (Wilson))

This warbler is a common summer resident and can often be seen in the aspen-birch-conifer type or in the clearings or partial clearings. In 1905 an immature specimen and an adult female were noted (14). One sight record was made in 1924, and two nests were found in 1930 (21). Later sight observations were made in 1943 and 1946 (27, 30). During the early 1960's, Shelton regarded this warbler as a common summer resident (39). The preferred habitat seemed to be dense patches of hazel with an aspen overstory. Two dead warblers were picked up in the lighthouse on Menagerie Island August 7, 1963 (34).

*158. Yellowthroat (Geothlypis trichas (Linnaeus))

The yellowthroat is an uncommon migrant and a rare summer resident. During the early 1940's Gilbert kept records and regarded the species as a rare summer resident (30). Shelton noted the species on six occasions in recent years: two were singing on July 18, 1962, one was noted on September 22, 1961, one on May 25, 1962, one on May 30, 1962, and one on May 24, 1963 (39). On August 7, 1963 a single dead male was picked up in the lighthouse on Menagerie Island (34).

159. Wilson's Warbler (Wilsonia pusilla (Wilson))

The Wilson's warbler is a common spring and fall migrant found in clearings and partial clearings, in birch-conifer type, and around beaver ponds and streams. In 1904 and 1905 a specimen was taken and observations were made during the fall migration (14, 22). Specimens were collected and sight records obtained on expeditions to the island in 1925, 1929, 1930, and 1937 (21). Cahalane in 1943 noted them at several locations in the spring (27), and Gensch observed a single specimen in May 1946 (29). Shelton observed the species five times in 1962 and 1963, all between May 20 and June 3 (39).

**160. Canada Warbler (Wilsonia canadensis (Linnaeus))

This is an uncommon summer resident usually associated with riparian brush or the aspen-birch-conifer type. In 1905 the species was recorded at Rock Harbor and there was evidence of nesting (14). Specimens were taken in 1929 and 1930 (21), and sight records were made in 1943 (27). Shelton regarded the species as an occasional summer resident based on 10 sight records during the summer months, including an adult feeding young (39).

**161. American Redstart (Setophaga ruticilla (Linnaeus))

The redstart is an uncommon summer resident that may be seen around beaver dams and streams or in the aspen-birch-conifer type. In 1904 and 1905, a number of sight records were made, specimens were collected, and an adult was found feeding young (14, 15). Two specimens were also taken in 1930 (21), and sight records were made in 1943 (27). Gilbert in 1946 felt that the species was a rare summer resident (30). During the early 1960's, Shelton considered this bird to be an occasional summer resident on the basis of singing records during the summer months (39).

PLOCEIDAE (Weaver Finches)

162. House Sparrow (Passer domesticus (Linnaeus))

The house sparrow visits Isle Royale only rarely and has been observed around abandoned buildings in clearings. A single bird visited a window feeding tray at Windigo in 1943 (30). Krefting and Shields noted a single bird around the buildings at Siskiwit Camp in May 1950 (35).

ICTERIDAE (Meadowlarks, Blackbirds, and Orioles)

163. Bobolink (Dolichonyx oryzivorus (Linnaeus))

Gilbert listed the bobolink as a rare spring migrant at Windigo (30).

164. Eastern Meadowlark (Sturnella magna (Linnaeus))

The meadowlark is a rare migrant and has been observed only three times. These observations were made at Windigo in May 1943 (27), at Passage Island on May 19, 1950 (35), and on Rock Harbor (Daisy Farm) on May 19, 1963 (39).

*165. Redwinged Blackbird (Agelaius phoeniceus (Linnaeus))

This blackbird is a common summer resident, especially around beaver ponds and bog-rimmed lakes. Numerous sight records have also been made by other workers (14, 27, 29, 30, 36).

166. Baltimore Oriole (Icterus galbula (Linnaeus))

This oriole is a rare migrant. Gilbert in 1946 saw a single bird (30), and according to Shelton, John Weber observed an adult male at Malone Bay on May 19, 1963 (39).

167. Rusty Blackbird (Euphagus carolinus (Müller))

This blackbird is a common migrant that may be scarce some years and abundant in others. It may be seen most often around lake shores and beaches and in clearings or partial clearings. In 1905 large flocks were reported around the Windigo clearings in the fall and spring (14). Sight records were also made in 1929, 1930, and 1937 (21). Gensch saw two individuals on Siskiwit Bay on May 19, 1946 (29). During the early 1960's they were observed by Shelton on three occasions: on Passage Island, September 24, 1961; in the vicinity of Mount Ojibway on September 24, 1961; and at the head of Siskiwit Bay on September 28, 1962 (39).

168. Brewer's Blackbird (Euphagus cyanocephalus (Wagler))

Shelton saw one on the beach at Mott Island on October 18, 1960 (39).

**169. Common Grackle (Quiscalus quiscula (Linnaeus))

This common summer resident is usually present around beaver ponds and streams and in clearings or partial clearings. In 1904 a single specimen was collected at a cabin in a clearing along Washington Creek (22). Wood reported this grackle in the fall of 1924 and the spring of 1937 (21). At Windigo, Gilbert in 1946 reported seeing single birds during migration (30), and Gensch noted two at Windigo clearing on May 19, 1946 (29). During the early 1960's, Shelton made numerous observations that included spring migrations and adults throughout the summer. On July 18, 1960, he saw adults feeding young in a thick alder growth on Tobin creek (39).

170. Brown-headed Cowbird (Molothrus ater (Boddaert))

The cowbird is an uncommon summer resident and a common migrant. Like other blackbirds, it frequents the beaver ponds, streams, clearings, and partial clearings. Observations have been made at various locations in 1929, 1937, 1943, 1946, and 1948 (27, 29,36). Shelton noted two pairs at Windigo on May 16, 1962, and a single bird at the same location May 13, 1963 (39).

THRAUPIDAE (Tanagers)

171. Scarlet Tanager (Piranga olivacea (Gmelin))

This tanager is a rare summer resident and an uncommon migrant. A single bird was observed in 1929 and two others in 1930 (21). Single birds and occasionally pairs were reported in 1943, 1946, and 1950 (27, 29, 30, 35). Shelton saw two males singing July 6, 1960 on Washington Creek: one male in the mature birch type at Siskiwit Lake on May 21, 1962; and one near Tobin Creek on May 23, 1963 (39). The data suggest that the most preferred habitats are the birch-conifer type, the aspen-birch-conifer type, the 1936 burn area, and the clearings and partial clearings.

FRINGILLIDAE (Grosbeaks, Finches, Buntings, and Sparrows)

*172. Rose-breasted Grosbeak (Pheucticus ludovicianus (Linnaeus))

This grosbeak is a rare migrant and a rare summer resident. The habitat most preferred is the aspen-birch-conifer type. Observations have been made in 1929, 1930, and in 1945 (21, 25). Shelton saw two singing males at Lookout Louise on June 12, 1962, one singing male at Tobin Creek on June 21, 1962, and a single bird at Tobin Harbor on May 25, 1963 (39).

173. Indigo Bunting (Passerina cyanea (Linnaeus))

The species is a rare summer resident and an uncommon migrant. Shelton saw two males at the Windigo clearing on July 6, 1960, and noted that John Weber saw an adult male at Malone Bay on May 24, 1963 (39).

*174. Evening Grosbeak (Hesperiphona vespertina (Cooper))

This is an uncommon migrant and also a rare summer resident. Clearings and partial clearings appear to be preferred. Small flocks were observed in 1930 and both juvenile and adult birds were collected (20, 21). Several pairs were noted at Washington Harbor in 1946 (30). Chances are good that the evening grosbeak breeds on the island some years.

175. Purple Finch (Carpodacus purpureus (Gmelin))

The purple finch is an uncommon summer resident and a rare winter visitor. The habitats most preferred are the birch-conifer type, the aspen-birch-conifer type, and the swamp forest. In 1905 the purple finch was uncommon all over the island (14). It was recorded again in 1929, a flock of a dozen or more was seen in 1930, and they were reported again in 1937. Specimens were also observed in 1943 and 1946 (27, 39, 30). During the early 1960's, Shelton obtained about a dozen records from February through March at Windigo and concluded that this finch was a rare winter resident (39).

*176. Pine Grosbeak (Pinicola enucleator (Linnaeus))

The pine grosbeak is a rare summer resident and an uncommon winter visitor. Habitat preferences are the birch-conifer type, the aspen-birch-conifer type, and the clearings and

partial clearings. On the 1905 expedition to Isle Royale only two specimens were noted but there was reason to believe the species was much more common (14). In the early 1960's Shelton sighted this bird eight times, all between October 26 and February 24. They were particularly conspicuous during the late winter in 1963 (39). Wood speculated that the species might breed on Isle Royale (21).

177. Common Redpoll (Acanthis flammea (Linnaeus))

This redpoll is a common winter visitor and is often found in the birch-conifer and aspen-birch-conifer types. Some winters the species is common and in others, absent. A small flock of six specimens was noted in September 1930, and small flocks were present during the colder part of the winter of 1936-37. Shelton saw large numbers between November 1962 and March 1963, but none was seen the previous winter (39).

178. Pine Siskin (Spinus pinus (Wilson))

The pine siskin is an uncommon summer resident and a common migrant. There is also reason to believe the species is an irregular permanent resident. The preferred habitats are the birch-conifer type, the aspen-birch-conifer type, the swamp forest type, and the clearings and partial clearings. On the 1904 expedition flocks of siskins were frequently seen in August and September, but in 1905 the species was seen only occasionally (14, 19). A single bird was collected in 1930, and in the winter of 1936-37 the species was fairly abundant (21). In May 1948, a spectacular migration was observed, several hundred landing in the top of a single birch tree at the mouth of Halloran Creek on Siskiwit Bay (36). A single specimen was recorded again in May 1950 (35). During the early 1960's Shelton saw them at all seasons of the year but recorded them more often in the fall and spring than in the winter or summer (39).

179. American Goldfinch (Spinus tristis (Linnaeus))

The goldfinch is a rare migrant. On the 1904 expedition a flock was reported (22); a single bird was noted in 1930, and a flock of six was found in 1938 (21). Shelton saw several in September 1961 and three together in June 1963 (39).

**180. Red Crossbill (Loxia curvirostra Linnaeus)

This crossbill is a rare summer resident and a rare migrant. The habitats preferred are the birch-conifer, the aspen-birch-conifer, and the swamp forest types. One specimen was reported in 1905 and another one in 1929 (21). Shelton recorded red crossbills four times during 1960; on July 27, he saw six birds, including young being fed by adults on Washington Creek; the others were small traveling flocks observed on August 16, October 16, and October 17 (39).

181. White-winged Crossbills (Loxia leucoptera (Gmelin)

The white-winged crossbill is an uncommon summer resident and migrant. Preferred habitats are the birch-conifer type, the aspen-birch-conifer type, and the swamp forest type. On the 1904 expedition small flocks were reported, and in 1905 the species was quite common in the sphagnum bogs (14, 22). Wood (21) reported the species again in 1929, and Gilbert in 1946 concluded that the species was a rare migrant (30). In the early 1960's, Shelton made the following observations: flock of six in July 1960; flock of 18 on June 30, 1960; flock of 20 on December 6, 1960; and a single male on July 8, 1963 (39).

182. Rufous-sided Towhee (Pipilo erythrophthalmus (Linnaeus))

The towhee visits Isle Royale only on rare occasions. A single specimen was taken on June 1, 1930 (21).

**183. Savannah Sparrow (Passerculus sandwichensis (Gmelin))

This sparrow is a common migrant and is usually found in clearings and partial clearings. In 1904 and 1905 flocks were observed and specimens collected (14, 22). Observations were made again in 1924, 1937, and 1938 (7, 21). During the 1940's they were reported in 1943, 1946, and 1948 (27, 29, 30, 36). Shelton noted John Weber saw a single bird at Windigo, May 22, 1963 (39).

*184. Vesper Sparrow (Pooecetes gramineus (Gmelin))

This sparrow is an uncommon summer resident and a common migrant. The habitats most preferred are the clearings and partial clearings. In 1905 one specimen was collected (14, 15). This sparrow was observed again in 1930 and 1937 (21). Shelton made four observations: June 3, September 28, and October 1, 1962, and May 24, 1963 (39).

**185. Slate-colored Junco (Junco hyemalis (Linnaeus))

This junco is an uncommon permanent resident and a common migrant. Preferred habitats include the birch-conifer type, the aspen-birch-conifer type, and 1936 burn area, and the clearings and partial clearings. In 1904 and 1905 the species was common all over the island (14, 15). Single specimens or small flocks were reported in 1937, 1945, 1946, and 1948 (25, 29, 30, 36). Gilbert in 1946 was of the opinion the species was present occasionally in winter and common throughout most of the year (30). Shelton regarded the junco as an abundant migrant, especially in the fall, and an occasional summer resident. On July 22, 1960, he saw young birds and on May 29, 1963, flushed a female from a nest with four eggs (39). Krefting and Lee in 1963 found one dead in the lighthouse on Menagerie Island in August (34).

186. Tree Sparrow (Spizella arborea (Wilson))

This uncommon migrant has been observed in spring and fall clearings and partial clearings. Observations were made by Wood (21), Gilbert (30), Lee and Krefting (36), and Shelton (39).

**187. Chipping Sparrow (Spizella passerina (Bechstein)

The chipping sparrow is very numerous during spring and fall migrations, when it may be seen around clearings in the aspen-birch-conifer forest types. Gilbert in 1946 regarded it as a fairly common resident (30), while Shelton considered it to be an occasional summer resident in the early 1960's. Other observations have been made by Peet (14), Wood, Peet, and McCreary (22), Wood (21), Cahalane (27), Aldous and Krefting (25), Gensch (29), Lee and Krefting (36), and Krefting and Lee (34). Peet (14) reported finding a nest in a beech tree near the lighthouse on Rock Harbor, July 20, 1904.

188. Clay-colored Sparrow (Spizella pallida (Swainson))

This sparrow has been seen during spring and fall migration periods, but it appears to be rather uncommon on the island. It seems to prefer the clearings and partial clearings. Observations have been reported by Wood, Peet, and McCreary (22), and Wood (20).

189. Harris' Sparrow (Zonotrichia querula (Nuttall))

This bird has been reported so few times that it must be considered a rare migrant. It has been sighted in 1946 in the 1936 burn area near Camp Siskiwit by Gensch, and on Passage Island by Shelton, September 20 and 22, 1961. Other observations were by Wood (20) and Gilbert (30).

190. White-crowned Sparrow (Zonotrichia leucophrys (Forster))

Most observers consider this species a rare or uncommon migrant, although Aldous and Krefting found these sparrows numerous on Houghton Ridge in May 1945 (25). It has been observed in clearings or partial clearings near Washington Harbor and Lake Richie. Other observations are reported by Wood, Peet, and McCreary (22), Peet (14), Wood (21), Aldous and Krefting (25), Gilbert (30), and Gensch (29).

**191. White-throated Sparrow (Zonotrichia albicollis (Gmelin))

The white-throated sparrow is one of the most characteristic birds of Isle Royale. It is a common summer resident, and several nests have been found. It is especially abundant near the water, the lake shores, the streams, the beaver ponds, as well as in the burn area, and near clearings in the coniferous forest types. Shelton heard them singing as early as May 10 and as late as October 10 (39). Observations have been made by Wood, Peet, and McCreary (22), Peet (14), Wood (21), Cahalane (27,28), Gilbert (30), Gensch (29), Lee and Krefting (36), and Krefting and Lee (34).

192. Fox Sparrow (Passerella iliaca (Merrem))

This sparrow has been observed on a few occasions in clearings or partial clearings, and it is considered an uncommon migrant. Wood (1951) collected a specimen on the island in 1929. Gilbert (1946) listed it as a migrant at Washington Harbor. Shelton saw the species four times in 1963, all between September 28 and October 17 (39).

193. Lincoln's Sparrow (Melospiza lincolnii (Audubon))

The Lincoln's sparrow is a common migrant and has been observed most often in the vicinity of clearings at such places as Washington Harbor, Passage Island, and Malone Bay. Observations have been reported by Wood, Peet, and McCreary (22), Peet (14,15), Wood (21), and Krefting and Shields (35).

**194. Swamp Sparrow (Melospiza georgiana (Latham))

The swamp sparrow is a common summer resident. Shelton found it fairly common in its particular habitat -- open bog vegetation, beaver meadows, and marshy pond margins. Peet (14) reported seeing breeding adults and an adult with one young. Other observations are by Wood (21), Gilbert (30), Gensch (29), and Krefting and Lee (34).

*195. Song Sparrow (Melospiza melodia (Wilson))

The song sparrow is a common summer resident and might be considered one of the characteristic summer birds of the island. The species is less abundant than the white-throated sparrow, since its distribution is more restricted. It is found in clearings or partial clearings near the lake shore and beaches as well as near streams and beaver ponds. Observations are reported by Peet (14), Fargo (7), Wood (21), Cahalane (27), Gilbert (30), Gensch (29), Lee and Krefting (36), Krefting and Shields (35), and Krefting and Lee (34).

196. Lapland Longspur (Calcarius lapponicus (Linnaeus))

Shelton reported several sightings of Lapland longspurs from 1960 to 1963, all in May or in late September and October. They were numerous only during the fall of 1961, when flocks of 15 or more were often seen. Wood reported that he and A. Murie collected specimens in September 1929 (21). Gilbert in 1946 regarded the species as migrant, common in some years and rare in others (30).

197. Snow Bunting (Plectrophenax nivalis (Linnaeus))

The first recorded observation of the snow bunting at Isle Royale is found in the log of J. H. Malone, keeper of the Menagerie Island lighthouse. These birds were observed passing south in October of 1885 and 1892 and in September 1893 (40). Wood noted that they were common on the island during the second half of December 1936 and that they were seen on occasion from about the middle of April to the middle of May 1937 (21). Gilbert in 1946 reported the species as a common migrant and said that it appeared in large flocks during the fall and spring migrations (30). Shelton saw it only in 1961, when he found several on open ridges and beaches from October 18 through November 2 (39).

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APPENDIX

List of Plants

alder, mountain	Alnus crispa
speckled	rugosa
ash, black	Fraxinus nigra
mountain	Sorbus americana
aspen	Populus tremuloides
big-toothed	grandidentata
birch, white	Betula papyrifera
yellow	alleghaniensis
cattail	Typha latifolia
cherry, fire	Prunus pensylvanica
cranberry, highbush	Viburnum trilobum
cedar, white	Thuja occidentalis
dogwood, red-osier	Cornus stolonifera
roundleaf	rugosa
elder, red-berried	Sambucus pubens
fern, bracken	Pteridium aquilinum
fir, balsam	Abies balsamea
hazel, beaked	Corylus cornuta
honeysuckle, Canadian	Lonicera canadensis
ironwood	Ostrya virginiana
juneberry	Amelanchier spp.
maple, mountain	Acer spicatum
red	rubrum
sugar	saccharum
oak, red	Quercus rubra
pine, jack	Pinus banksiana
red	resinosa
white	strobus
spruce, black	Picea mariana
white	glauca
tamarack	Larix laricina
thimbleberry	Rubus parviflorus
waterlily	Nymphaea spp.
willow	Salix spp.
yew, American	Taxus canadensis

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