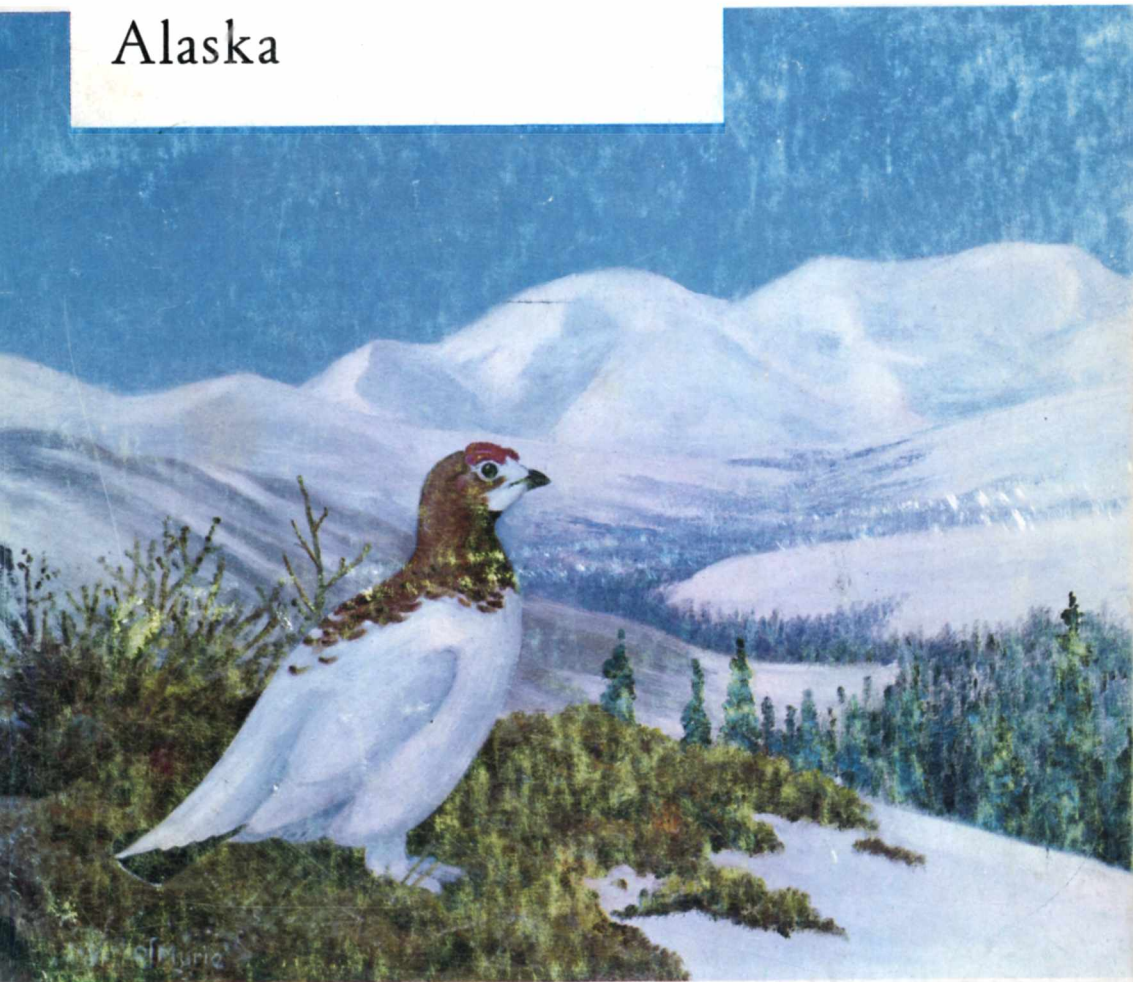


BIRDS
of
MOUNT McKINLEY
Alaska



Adolph Murie

B I R D S

OF

MOUNT MCKINLEY
NATIONAL PARK
ALASKA

by

ADOLPH MURIE

Illustrated by OLAUS MURIE

with

Photographs by CHARLES OTT



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ABOUT THE AUTHOR

Adolph Murie was born and raised in Moorhead, Minnesota. He obtained his M.S. and Ph.D. degrees in natural sciences from the University of Michigan. His career has included many assignments with the U. S. Fish and Wildlife Service and the National Park Service. Years of field work have resulted in detailed studies of such species as the coyotes, Dall sheep, wolves, bears, moose, and elk. Since 1947 he has been a field research biologist for the National Park Service, devoting the greater part of his time to field work in Mount McKinley National Park in Alaska. Among Murie's published works are: *Ecology of the Coyote in the Yellowstone* and *The Wolves of Mount McKinley* in the Fauna Series produced by the National Park Service; *Mammals of Mount McKinley National Park, Alaska*, *A Naturalist in Alaska*, and a number of natural history articles in both popular and scientific journals. These have established Adolph Murie as a staunch conservationist, dedicated to the preservation of our wildlife fauna and the remaining wilderness areas of the United States.

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Introduction

National Parks serve to perpetuate primeval wilderness, where the highest values are esthetic and spiritual. In these wilderness areas natural inter-relationships between all species of plants and animals are permitted free play. Cycles of scarcity and abundance are recognized as a part of the natural scene. The chief consideration is to adjust park boundaries to assure ample size for a natural interplay of ecological factors.

Mount McKinley National Park, lying in the Alaska range, was established in 1917. It is a little over a hundred miles long, and, considering the parts habitable for wildlife, only 15 or 20 miles wide. Mount McKinley and a number of other adjacent peaks, all mantled with snow and ice, lie within the park boundaries. At Wonder Lake, from a foreground of 2,000 feet, Mount McKinley, the highest mountain in North America, rises to a height of 20,300 feet. Numerous huge glaciers are still sculpturing the range. Muldrow Glacier, reaching almost to the road, is about 35 miles long.

Rugged spur ranges extend northward from the main range, and there is much mountain country more or less detached, all of which contributes to the extensive alpine habitat where we find Dall sheep, some nesting birds, mats of exquisite flowers, and delightful hiking and climbing. There is also much low rolling tundra in which are many small ponds used by nesting waterfowl and visited by moose.

Timberline varies from 2,000 to 3,800 feet on some favorable mountain slopes. A narrow strip of white spruce follows the river valleys varying distances into the park. Aspens and cottonwoods, growing in patches or

Loons. (Left to right foreground) Red-throated loon, Pacific loon, yellow-billed loon, common loon; (background) winter plumage of red-throated and Pacific loons.

scattered, a few birches, and in the lower country some tamarack, are other species present. The short-limbed scrubby black spruce grows in marshy or soggy areas.

In the open tundra there is much dwarf birch, and various species of willows are also here widely distributed. Dwarf willows, only 2 or 3 inches high may form a sod in some places. Along creeks the larger willows may grow 15 or 20 feet tall. Alder, growing in dense tangles, forms scattered patches, especially on some mountain slopes and in the rolling country about Wonder Lake.

There are several kinds of berry shrubs that are abundant and widely distributed, and that serve as highly important foods for many birds and mammals. Blueberries and crowberries are especially abundant and there is much lowbush cranberry, buffaloberry, and two species of a ground-hugging shrub sometimes called bearberry (genus *Arctous*). Limited amounts of currants, highbush cranberry, and raspberry are present in special habitats.

A road extends from the eastern boundary of the park to Wonder Lake, a distance of about 90 miles. It crosses a few low passes between the several parallel, northward-flowing rivers. The rivers are bordered by broad gravel bars that are characteristic of the northern glacial streams. The braided streams carrying sediment alternately erode and deposit sediment in their beds, and this causes them to constantly change their channels and move back and forth across the bars. Most of the rivers can be waded where they break up into several channels. These glacial streams are clear in winter and occasionally so in summer during cool weather. The non-glacial streams such as Moose Creek are clear in summer except during heavy rains, and they support a grayling population.

This booklet on bird life consists of brief accounts of all the birds recorded from Mount McKinley National Park through 1962. It is intended as a quick reference. Short descriptions are given of the 132 species in the park checklist and many of these birds are illustrated by sketches drawn and donated by O. J. Murie, Director of the Wilderness Society. The scientific names used in the checklist are chiefly based on geographical distribution as recorded in the American Ornithologist Union Checklist of North American Birds, 1957.

Since Joseph Dixon published on the birds of McKinley Park in 1938, 26 new species have been added to the park checklist and one dropped because of what seems insufficient data. New species will no doubt continue to be added to the park checklist. Some likely additions include the sharp-tailed grouse (along the north boundary), the duck hawk, American scoter, and pine siskin. The migrants arrive in May and some begin to depart in late July and early August. About 30 species have been recorded in the park in winter but the bulk of some of these species may move southward in winter.

In McKinley Park the visitor has a rare opportunity to enjoy northern landscapes, a variety of lichens and flowers, and grizzlies, caribou, Dall sheep, perhaps a wolf or a wolverine, and a number of birds in their northern breeding grounds. Of special interest among the birds are the three species of ptarmigan, each with a specialized voice and an inclination to use it. There are the shorebirds, two of which, the surfbird and wandering tattler, are of special interest because most of the nesting data on them have been gathered in the park. The arctic warbler and the wheatear, visitors from Asia, are relatively common. The golden eagle, unmolested and free, may frequently be seen soaring in the blue sky over its mountain home. May this magnificent bird and other migrants, survive the many new hazards in the south and continue returning each spring in the future, to contribute beauty and spirit to this northern wilderness.

Common Loon

Gavia immer

All of the four species of loons found in North America have been recorded in Mount McKinley National Park. In breeding plumage the loons have striking patterns so identification of the different species is relatively easy. However when they are in their subdued winter plumages identification is rather difficult.

The common loon has a black head and neck with a row of vertical white stripes across the upper foreneck, and similar white stripes lower down on the sides of the neck. The black back is checked with rows of white squarish markings. It weighs from 5 to 9 pounds and is 26 to 34 inches long. The larger yellow-billed loon is similarly marked but the bill is pale yellow or ivory rather than blackish as in the common loon, and the iridescence of the neck is dominantly purple rather than green.

The common loon nests at Wonder Lake and I have often seen one or two feeding in small ponds in that area along the road. It breeds throughout the interior of Alaska.

This loon also nests in our northern states but has been eliminated from many of the lakes by shooters. With protection it may return to many of its former haunts. The decrease of loons in settled areas began long ago, for Thoreau wrote: "At rumor of his [loon's] arrival all the Milldam sportsmen are on the alert, in gigs and on foot, two by two, and three by three, with patent rifles and conical balls and spy-glasses. They come rustling through the woods like leaves, at least ten men to a loon."

All loons have loud well-developed voices which may create the dominant mood on the breeding ponds and lakes. I have heard only the common loon in the park. One of its musical songs is wild, high-pitched, and quavering; another, in a lower key, is prolonged like the call of the wolf. One summer, wolves were reported to be howling across Wonder Lake every night, but on checking, it was learned that the calling of the loons had been mistaken for that of the wolf.

Yellow-billed Loon

Gavia adamsii

The yellow-billed loon in breeding plumage is similar to the common loons. Its larger bill is yellowish or ivory, and the reflections from the black neck are purplish rather than green. It is larger than the common loon, weighing 10 to 12 pounds, and in total length is 33 to 36 inches.

The only record from the park is of a loon that was shot at Wonder Lake many years ago. The yellow-billed loon breeds in the larger inland ponds along the northern coast, and is scarce in the interior of Alaska. The calls and general habits apparently are similar to those of the common loon.

Arctic Loon (Pacific Loon)

Gavia arctica pacifica

The plain gray wash over the top of head and hind neck distinguishes the arctic loon from the common and yellow-billed loons, and the white-checked back separates it from the red-throated loon. In 1955 one of these loons was seen on a small pond near Wonder Lake from June 16 to June 22. On only two or three other occasions have I seen this species in the park.

The arctic loon is a common nesting bird in the ponds along Bering Sea and the Arctic Ocean. In the nesting season they are extremely noisy and make the marshes ring with their loud cries, which are described as the most unearthly and dismal of the strange sounds of the tundra.

Red-throated Loon

Gavia stellata

The red-throated loon lacks the striking white-checked back of the other loons. The top of the head is ashy gray; black and white stripes cover the nape and hind neck. The patch of reddish-brown on lower foreneck gives this loon its name. This is the smallest of the loons; perhaps for this reason it does not require the expanse of water for a take-off needed by the larger species.

The red-throated loon has been seen a few times during July and August on the small ponds near Wonder Lake. They nest abundantly along Bering Sea and the Arctic Ocean. Here they arrive in numbers and their hoarse, grating cries, and wailings may be heard through the 24-hour day during the first part of the summer as the birds float upon the ponds or fly about from one pond to another.

Red-necked Grebe

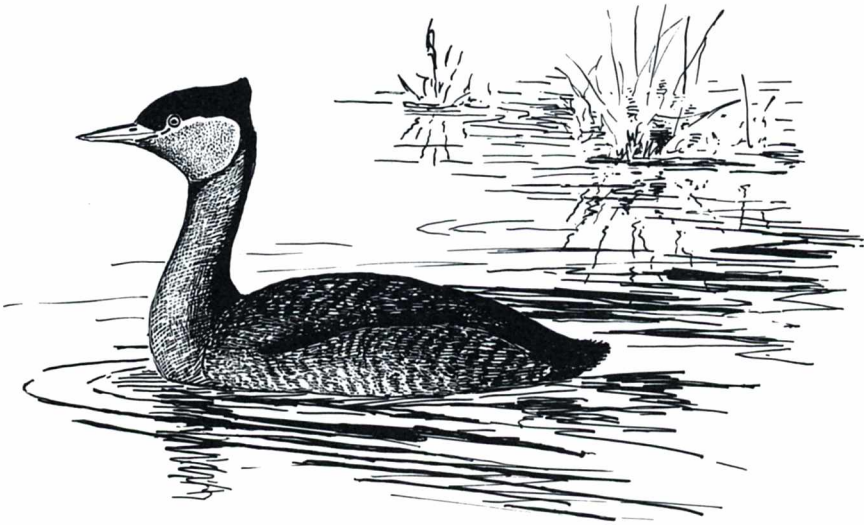
Podiceps grisegena holbollii

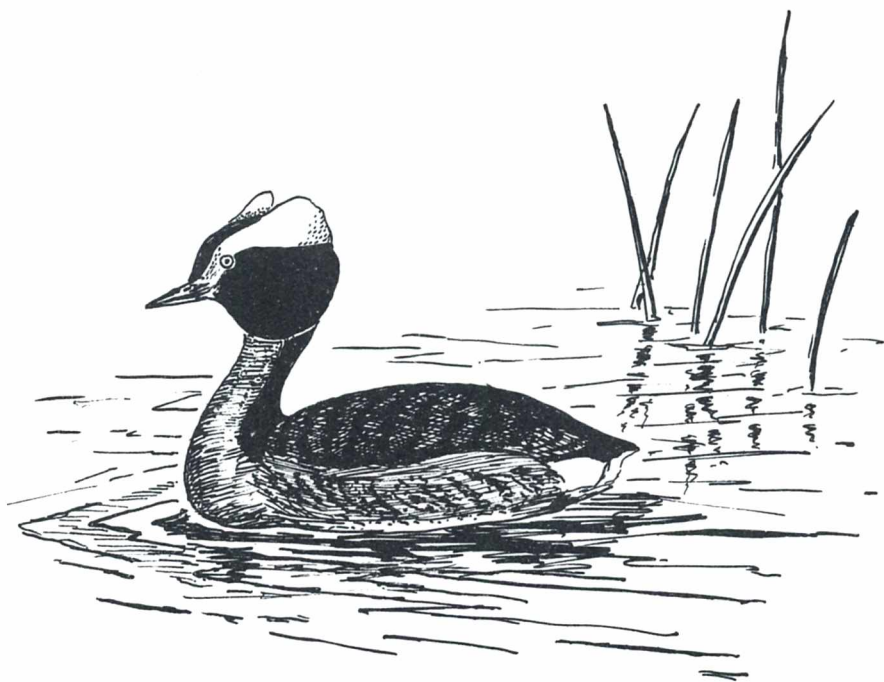
Grebes like loons are highly specialized for aquatic living. The feet are lobed rather than webbed; the legs are laterally flattened so that they cut the water like a knife. Grebes can dive like a flash or sink gradually out of sight. On land they are awkward because of their posteriorly situated legs. For a take-off they require a stretch of water to patter over—they are unable to take flight from land.

Two kinds of grebes are rather widely distributed in Alaska and both occur in the park. The red-necked grebe may be identified in breeding plumage by the long, tapering, sharp-pointed bill, the whitish cheek patches, and the brick-red neck and breast. The top of the head is black and a small crest is knoblike. The back is blackish.

There is no breeding record for the park. In May I once saw a flock of 8 in a pond near the Nenana River and a lone bird on Horseshoe Lake. In July, August, and September, lone grebes have often been seen on the ponds along the road west of the Muldrow glacier. A grebe seen one year on August 27 was either a young of the year or an adult that had already acquired winter plumage—probably the latter. The neck and breast were whitish rather than the brick-red of the breeding plumage.

On the breeding grounds, which extend from the northern states to the arctic, the birds utter a variety of loonlike wailings and raucous cries, especially during the courtship period. The nest is built in shallow water among reeds. Several pairs often breed near one another.





Horned Grebe

Podiceps auritus cornutus

The horned grebe is rich chestnut over most of neck, breast, and sides of the body. The prominent ruffs on the sides of the head are black, bordered above by light yellowish-brown feathers. In winter plumage the chestnut coloring and dark cheek patches are lost and replaced by whitish plumage. On August 7 one member of a pair, feeding young (with striped heads), was already in winter plumage.

The horned grebe breeds regularly in some of the many small ponds in the park. The parents cooperate in caring for the young. On one occasion the food items secured by diving were so small I could barely see them. After emerging from a dive the parent would swim to the nearest youngster, and he would pick the food item from the parent's bill. The food consists of crustaceans, small fish, and aquatic insects.

All grebes have the strange habit of eating feathers from their own plumage. Even the young have been noted eating their down. Practically all stomachs contain a large mass of feathers. The habit is a mystery. This feather-eating habit was suggested by one of the parents I was watching when it picked down feathers off a young one four or five times.

Whistling Swan

Olor columbianus

The whistling swan nests throughout most of Alaska, where conditions are suitable. In spring and autumn, swans have been seen quite often on Wonder Lake. In the spring of 1941 Laura Mommsen saw one in a pond near the Nenana River where it remained for about a week; later 5 swans were seen in the area for 2 or 3 days. On May 13, 1960 two swans were seen on a small pond on Polychrome Pass.

In recent years the more rare and southern trumpeter swan has been found nesting in the Copper River country and on the Kenai Peninsula. Although the trumpeter is larger than the whistling swan, field identification is difficult. The call of the whistling swan is, however, much higher-pitched than the rich deep tones of the trumpeter. In both of these swans the windpipe makes a long loop into the breast bone, but the upper part of the loop in the trumpeter makes an upward secondary loop. The plumage of the young of both species is grayish; that of the adults, all white.

Canada Goose

Branta canadensis

Five subspecies of the Canada goose have been recognized in Alaska. They range in size from the very short-billed cackling goose that weighs only 3 or 4 pounds, to the large forms that weigh up to about 12 pounds. There is some difference of opinion as to whether the cackling goose is a subspecies or full species. There is much evidence that it does not interbreed with the larger forms and therefore should perhaps be recognized as a separate species.

On September 3 and 5, 1949 I saw two Canada geese on a pond near Wonder Lake—my only record. They belonged to one of the larger kinds, probably the lesser Canada goose (*Branta canadensis leucopareia*) that breeds in the interior of Alaska. The black head and neck, with white cheeks and throat, serve to identify the Canada goose.

Black Brant

Branta nigricans

The black brant is a seagoing bird migrating chiefly along the coast, but a few flocks in migration are occasionally encountered inland in the interior of Alaska. The only record for the park is an observation of 15 standing on a gravel bar along Savage River in early May, 1948.

The black brant is in general similar to a Canada goose but it lacks the white throat and cheeks of the latter. A row of short white streaks forms a partial collar on the neck.

White-fronted Goose

Anser albifrons

The white-fronted goose has been reported in the park only once. In June, 1961 Elizabeth Berry reported two of these geese on a small pond near Wonder Lake. This is a brownish-gray goose with scattered black blotches on belly, white area around base of bill, bill pinkish, feet orange. Their chief nesting grounds in Alaska are the northern coastal marshes southward to Bristol Bay. Their range is circumpolar.

Lesser Snow Goose

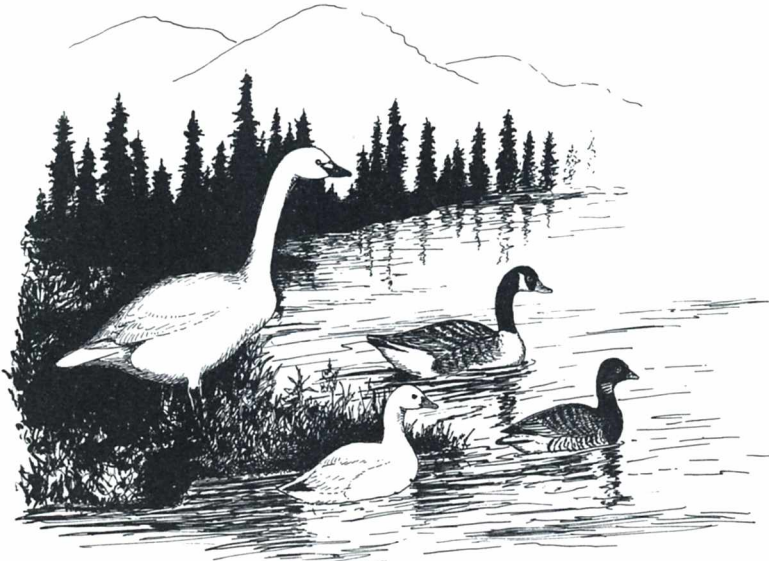
Chen hyperborea hyperborea

Snow geese have been seen a few times in the park during spring and autumn migrations to and from their arctic breeding grounds. In North America we have three kinds of snow geese. The lesser snow goose frequently interbreeds with the blue goose. Like other geese they graze, feed on berries, and grub for roots and basal parts of various plants in shallow water. Their future depends fundamentally upon the continued availability of their wintering grounds in the States to the south. The black wing tips serve to separate the snow geese from the much larger all-white swans.

Mallard

Anas platyrhynchos

Seven species of surface-feeding ducks, 10 diving ducks, and one merganser have been recorded for the park. The surface-feeding ducks to which the mallard belongs are as a rule more vegetarian than the other two groups, and, rather than diving, usually feed by submerging only the head and neck, or, to reach a little deeper, by tipping. Anatomically they differ from the other two groups by the lack of a lobe on the small hind toe; also the legs are placed farther forward so they are better able to walk on land, and the speculum on the wing is generally more brilliant.

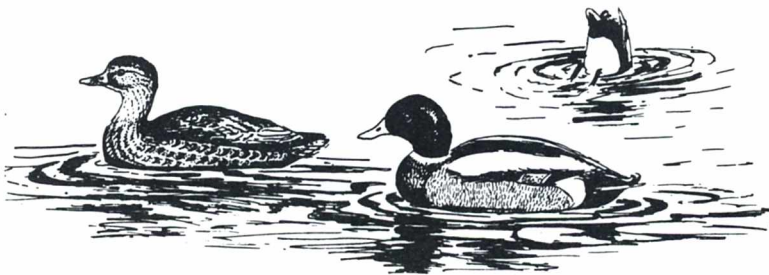


(Left to right) Whistling swan, lesser snow goose, Canada goose, and black brant

Both sexes in most species of ducks pass into an eclipse plumage during the summer. In this plumage the male generally resembles the female. The wing feathers are lost simultaneously, thus leaving the birds flightless for a period. With the completion of this molt the birds molt completely again except for the flight feathers which are retained. The males acquire their colorful plumage during the autumn.

The male mallard may be identified by the iridescent green head and neck, narrow white collar, and chestnut breast. The brown streaked and spotted female is similar to the female of some other species but the

Mallard—female and male



iridescent purplish speculum bordered fore and aft by white is distinctive. The female's rich orange bill splotched with blackish is also sometimes a useful character.

Each spring a few pairs may be seen on the ponds. They become less evident during the summer. In past years a few mallards have been noted wintering a few miles north of the park on Moose Creek and on the Toklat River. Where the rivers were open the mallards fed on salmon eggs and the bodies of salmon that had died during spawning. The flesh of these mallards tasted so fishy that even the Indians could not eat them. Charles Sheldon found the mallards on the Toklat River in January 1908, and O. J. Murie, passing that way in 1920, saw them. The distribution of the mallard is circumpolar. It is one of the ancestors of our domestic breeds.

Gadwall

Anas strepera

The gadwall has been recorded in the park only two or three times. It is rare in interior Alaska, but it has been frequently noted in the Copper River area, on the Alaska peninsula, and in the Aleutians. It is a circumpolar species.

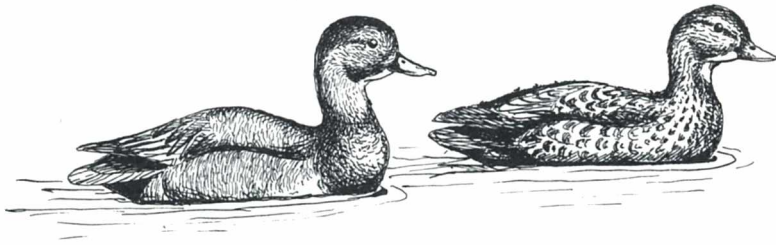
This trim duck has no conspicuous markings except for the white patch on the speculum which is diagnostic. The male has a finely marked grayish head and neck, a blackish breast marked with fine whitish crescents; a patch of chestnut on fore edge of wing, blackish bill, and orange feet with blackish webs. The female is mottled gray and brown with whitish belly; feet dull orange and bill dull orange and dusky.

Pintail

Anas acuta

The handsome male is easily recognized by the white stripe that reaches up the sides of the chocolate-brown neck and head, and the long pointed tail feathers. The mottled brown female has a gray bill and grayish-blue feet, characters that are useful in distinguishing it from the female mallard and gadwall.

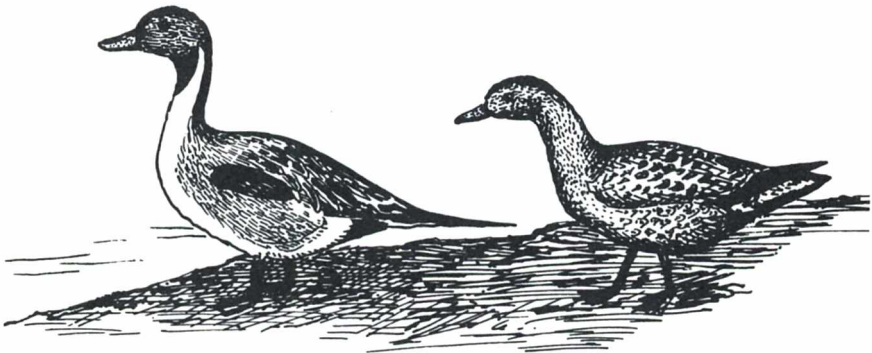
The pintail is a common breeding duck in the park and over much of Alaska. Its range is circumpolar.



Gadwall—male and female

The nest, like that of many other surface-feeding ducks, is usually built on dry ground, sometimes several hundred yards from the water. During courtship a female followed by two males has been reported to descend from high flight and dive into the water at full speed. During the egg-laying period the male waits at a pond while the female is occupied with her daily chore of laying one egg. But after the clutch is completed the male departs, forgets about family cares, and joins others of his sex—a custom practiced by most ducks.

Pintail—male and female

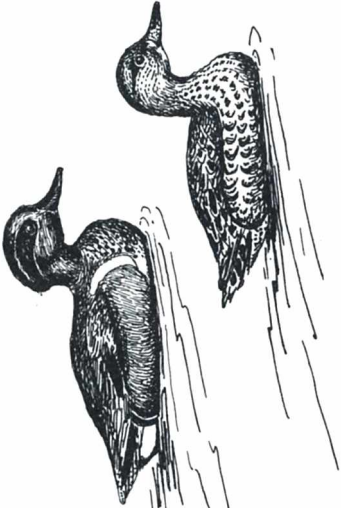


Green-winged Teal

Anas carolinensis

The green-winged teal is a common nesting duck in Alaska and in the park. The male may be identified by the prominent white crescent in front of the wing, and the chestnut head with glossy green patch extending back from the eyes and terminating on the nape in a crest. The small size and the green speculum are good field characters that identify the brown, streaked female. The males utter a pleasing piping note. The take-off is sudden and their flight swift.

(Right) Green-winged teal—male and female



Blue-winged Teal

Anas discors

The blue-winged teal is an uncommon summer resident in Alaska. The only record for the park is a pair seen at Mile 78 on June 11 and 12, 1959. The male has a conspicuous white crescent in front of the eye, a large blue patch on fore part of wing, and a green speculum. Underparts are reddish cinnamon. The mottled brown female may be identified by the blackish speculum glossed with green, and a blue patch on the wing (duller than in the male).

(Left) Blue-winged teal—female and male



American Widgeon (Baldpate)

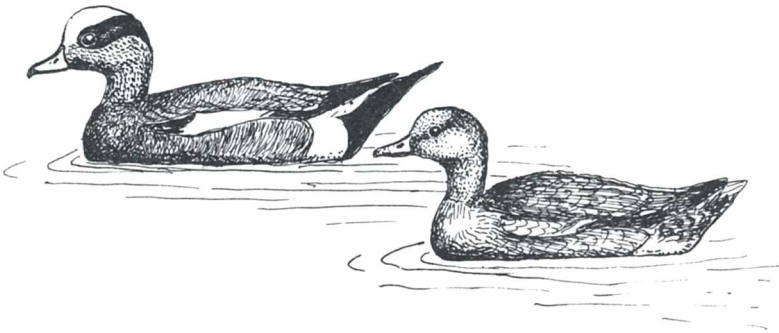
Mareca americana

The male widgeon has a white cap and a bright green patch through the eye. The white patch on the fore part of the wing is also distinctive; speculum greenish. The brownish female is only lightly streaked on breast and sides, and the sides have a pinkish hue. The wing patch is grayish white; speculum glossy black reflecting green. The bill and feet are grayish-blue.

The widgeon is one of the more abundant and widespread nesting ducks in Alaska and is frequently seen in the park. A flock of "hundreds" was seen on Wonder Lake in September 1955; and in 1956 two were noted there as late as October 8.

The widgeon is particularly inclined to accompany diving ducks, grebes, geese, and swans, and feed on the loosened bottom vegetation as it comes to the surface. They have been observed snatching vegetation from the bills of divers as the latter surfaced. One year in late June, I watched a female swimming along in a pond, skimming some of the numerous flies off the surface.

American widgeon—male and female



Shoveler (Spoonbill)

Spatula clypeata

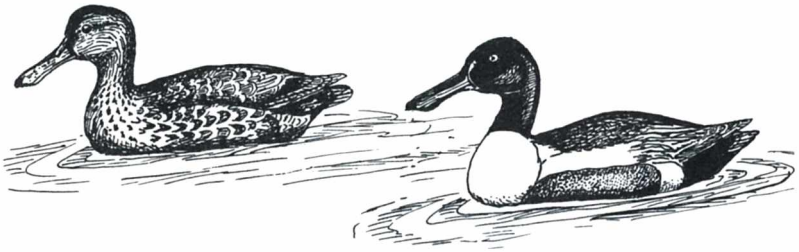
The plumage pattern of the male shoveler has the simplicity of a color-book picture. The head and neck are green, the breast white, and the belly and sides of the body have been painted a bright chestnut; the eye is golden. The very long and broad-tipped bill is a conspicuous character in both sexes. The brown female is coarsely mottled; the bill is dusky and orange and the feet orange.

The shoveler is widely distributed in Alaska but apparently is not plentiful. Each spring a few are seen on the small ponds in the park.

Frequently two males accompany a single female. It has been surmised that the "extra" male is one not sexually active, perhaps a yearling, and is therefore tolerated. The mated drake may drive away one intruding male yet tolerate another.

Three or four shovelers have been observed to form a line and swim in a circle, each one apparently straining through its bill the turgid water stirred up by the paddling feet of those ahead. Marion Anderson has observed large groups of ducks near Klamath Lake in Oregon, numbering in the hundreds, swimming en masse in a circle. He was told that the water was shallow, that the swimming ducks stirred up the vegetation, creating a readily available food supply on which the mass of ducks fed. The ducks on the circumference of the large group were observed to swim away and join new-forming circles, which gradually built up to large numbers. Most of these ducks were thought to be mallards.

Shoveller—female and male



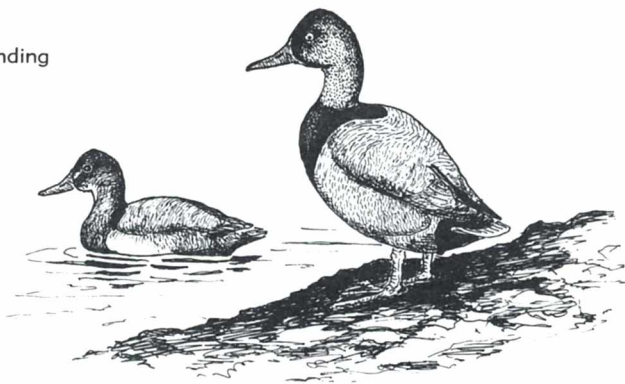
Redhead

Athya americana

On May 16 and 20 I saw a male redhead on Horseshoe Lake. It was on the lake for about 2 weeks. Until recent years the redhead, along with the blue-winged teal and canvasback, were rarely recorded for Alaska, but in the last few years these ducks have been seen rather frequently.

The red-brown head and abruptly rising forehead are good identification marks for the male. The bill is blue with black tip; the lower neck and breast blackish. The head and neck of female is yellowish-brown; area at base of bill, paler; body color grayish-brownish. Bill as in male but duller. The somewhat similar canvasback has a long sloping forehead, black bill, and is lighter over back.

Canvasback—male standing



Canvasback

Aythya valisineria

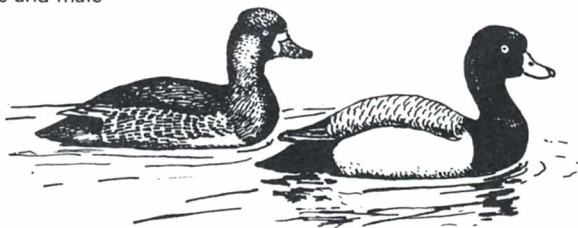
The male canvasback may be identified by its reddish-brown head and neck, whitish back, and the low forehead that continues in the line of the bill. In the female the reddish-brown of the head and neck is duller, and the back is more gray than in the male.

This is an uncommon duck in Alaska. A pair was seen on Horseshoe Lake on May 13, 1949 by Ruth Carson and William Nancarrow. On June 11, 1959 I observed four males and three females on Wonder Lake. They remained on the lake a few days. During this same period they were reported at Horseshoe Lake. These are the only records for the park. On May 20, 1959 Mrs. William Nancarrow saw two males on Diniki Lake just east of the park, and 6 were reported there about May 20, 1961 by William Nancarrow.

The canvasback belongs to the diving ducks, which secure most of their food by diving. It is more of a vegetarian than the other diving ducks.

This is one of the species that requires special protection for its preservation.

Scaup—female and male



Greater Scaup

Aythya marila nearctica

The male greater scaup has a black head, neck, and breast; the back is whitish, and the underparts white. The iridescent reflections from the head are useful in separating the greater from the similar lesser scaup; these reflections are predominantly green in the greater, and purple in the lesser. The white stripe on the wing of the greater scaup extends across the secondaries and primaries in both sexes; in the lesser scaup the white stripe is confined to the secondaries. The female is brownish gray without streaks. The ring of white at the base of the bill is a good field character for recognizing the female scaup, but the females of the two species are practically indistinguishable in the field.

Both species are common in interior Alaska. My observations indicate that in the park the lesser scaup is the more abundant.

Lesser Scaup

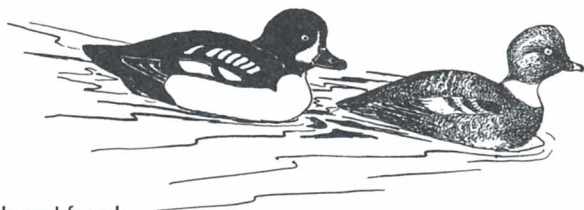
Aythya affinis

The appearance of the lesser scaup is similar to that of the greater scaup. In the male the head, neck and breast are black, and the back and underparts whitish. The iridescence on the head is purple in this scaup and green in the greater scaup. The females of the two species are generally indistinguishable in the field.

Both species are late fall migrants and congregate in large rafts in lakes to the south. They seem to be especially subject to lead poisoning. In the hunted areas where lead shot has accumulated on the lake bottoms the scaups and other ducks probing in the mud ingest the lead. Two or three pellets have been known to be fatal. In a single duck as many as 76 pellets have been found in the digestive tract.



Common goldeneye
—male and female



Barrow's goldeneye—male and female

Common Goldeneye

Bucephala clangula americana

The male has a large black head that reflects predominantly green but at some angles purple. The white spot in front of the eye is oval (in the Barrow's goldeneye it is crescent-shaped). The back is black; the breast and rest of the underparts are white. The sides are white marked by a series of black lines; in flight, white patch on wing. Head and neck of the female is a chocolate brown; upper parts of body brownish-gray; breast and sides light gray, rest of underparts white. In the spring the blackish bill acquires a yellowish tip.

The goldeneye is not uncommon in interior Alaska. A pair was noted on Horeshoe Lake in 1950 for a week beginning May 7.

Both species of goldeneye nest in tree cavities. Dr. J. H. Sandness wrote me that near Detroit Lakes, Minnesota a female nested in a tree 35 or 40 feet from the ground. One morning he saw the mother "sort of tumble and flop to the ground," followed by the young that jumped into the air without hesitation, lined up behind their mother in single file and marched off through the woods toward a slough.

Barrow's Goldeneye

Bucephala islandica

The Barrow's goldeneye is rather common in the park. The color pattern of the male is similar to that of the male common goldeneye with the following differences: the white mark in front of the eye is crescent-shaped rather than oval, the head reflections are dominantly purple rather than green, and the pattern on the sides of the body consists of a row of six or seven white spots on black background rather than a series of black lines on white foreground, as in the common goldeneye.

The female is similar to the female common but there is a difference in the color of the bill. In the former the bill in spring is a rich orange, while in the latter the bill is blackish with a yellowish tip.

The goldeneye apparently prefers nesting in a tree cavity but will nest in a rock crevice or similar situation. During the first 2 weeks of July 1953 a female kept lighting on the stovepipe chimney of our cabin at Igloo Creek. This usually took place early in the morning and in the evening. Apparently the chimney was of interest as a potential nesting site. A female was also seen circling near some cliffs on Igloo Mountain.

Bufflehead—female and male



Bufflehead

Bucephala albeola

Pairs of the small bufflehead are frequently to be seen on small ponds in the spring. The large black head of the male is iridescent and has a conspicuous white patch covering the cheek and posterior part of the large head. The female is characterized by a horizontal white patch on its dark head just back of the eye. In summer the bufflehead seeks the wooded ponds of interior Alaska where, like the goldeneye, it nests in tree holes. In Alaska it winters along the ocean shore from the Aleutians to southeastern Alaska.

Oldsquaw

Clangula hyemalis

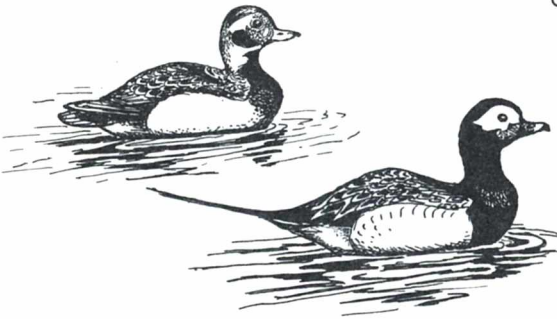
The oldsquaw is a common nesting species in the park. It arrives about the middle of May and it has been recorded in the autumn as late as the middle of October.

When the oldsquaws arrive in spring, some of the courting males may be in the light winter plumage, others in the dark summer dress. Both plumages are contrasty and striking. In winter plumage the head and neck are white except for dark patch on cheek extending on to neck. In summer plumage the head and neck are blackish with whitish patch over the eye. The pink tip of the bill and the long tail are identifying in either plumage. The female lacks the long tail and the gray and white color pattern is much subdued. In summer the head is grayish with indistinct light areas back of the eye and between the bill and eye. Bill is bluish-gray. In winter the head is largely white.

The male oldsquaw has a rich gooselike voice. Two or three assembled together can fill the air with clamorous but pleasing music, all talking at once and saying the same thing, over and over again which may be written "ah - hung - ya, ah - ya - hung - ya" and which means "How good to be alive in the far north." Those who have watched flocks of noisy oldsquaws winging low over ocean ice floes, or heard their musical conversation, always remember them with nostalgia for the northland.

The mother can be aggressive when she feels that her young are in danger. On one occasion as I was watching a mother and seven downy young very actively diving for food in the middle of a pond, a Bonaparte's gull flew close overhead. The young all dived in a twinkling, but the mother at once flew at the gull. Later the family rested on shore and the gull swam along the edge of the pond picking food items from the sedges. When the gull came near the spot where the family was resting it made a respectable detour.

Oldsquaw—male in foreground



Harlequin Duck

Histrionicus histrionicus

The bizarre male harlequin duck is easily recognized by the chestnut flanks and the pattern of white crescents and stripes on the bluish-gray body. The female is uniform brownish-gray with three whitish spots on the side of the head.

During May and June, I have often seen harlequins on Savage River, and in small ponds between Savage and Toklat rivers. The males generally leave after the egg-laying period but I have seen one as late as July 24. These ducks spend the winter in favorable inlets on the ocean coast. One year I saw six, presumably a female with young, on Igloo Creek on September 2, and four were seen at the head of Savage River on September 9. In 1960 I saw a mother with six downy young, on Igloo Creek. On August 13, 1960 I saw a female with six almost full grown young at Stony Creek; in the same place on September 1, I saw five young.

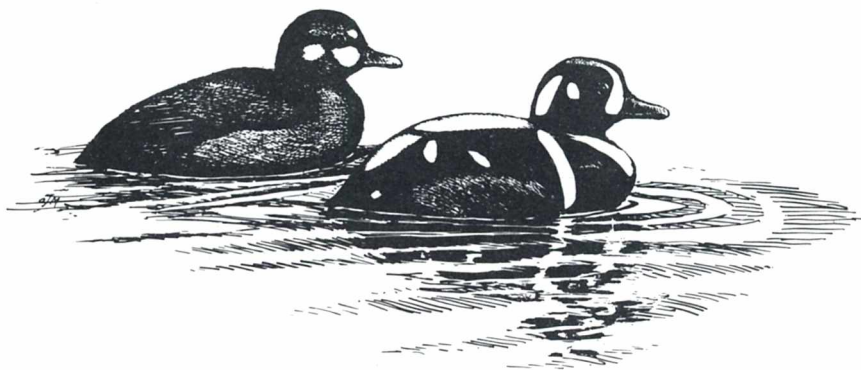
The harlequins are at home in the swift mountain streams in summer. In Sweden it is called the stream duck. In feeding they either come down a stream or negotiate their way against the current, taking advantage of the eddies, but also hopping neatly over miniature falls, and forcing their way against fast water. They feed by diving, submerging only the head, or picking food items off the surface and from shore vegetation drooping over the water.

Beginning June 7, 1956 I watched a pair near Igloo Creek that spent several days in a tiny secluded pond. They rested under willows that were partially flooded, and moved about over the shallow pond to feed. After one session of feeding the male touched the female's head and neck repeatedly with its bill as he uttered soft sounds. She swam low in the water, bobbing her head up and down in courting fashion. Then she sank in the water until the back was barely submerged, and while she was in this position the male mated with her. Eggs were no doubt being deposited in some rock or tree cavity nearby, if available, otherwise in a ground nest.

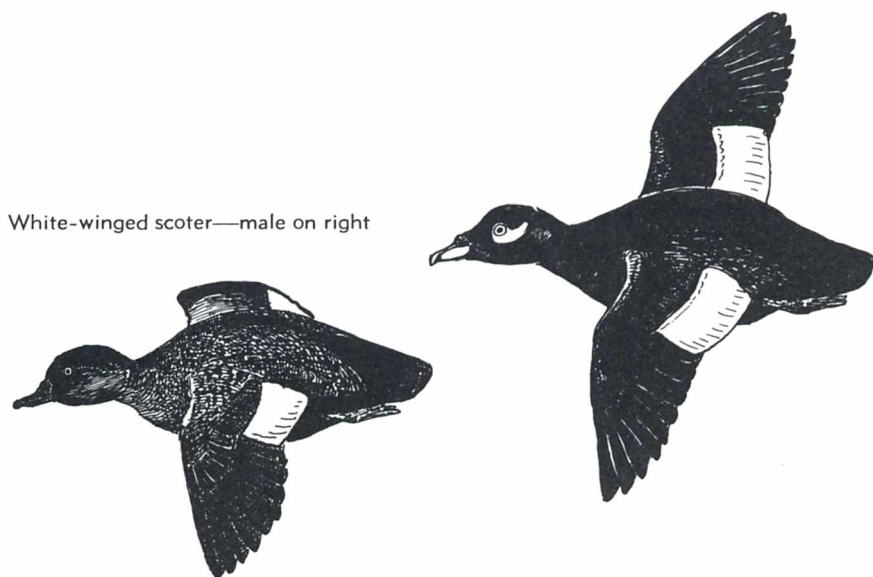
White-winged Scoter

Melanitta deglandi dixonii

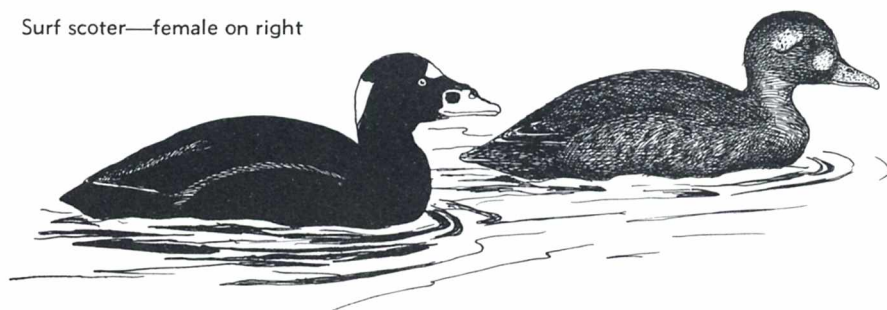
On May 28, 1955, I watched a very tame pair on a small temporary pond near the Teklanika River. The black male was somewhat brownish along the sides. A small white crescent touched the yellow eye. The swollen part of the bill was blackish and the terminal part a rich orange.



Harlequin duck—male on right



White-winged scoter—male on right



Surf scoter—female on right

The large white wing patches present in both sexes were at times completely hidden by the rest of the plumage. The brownish-gray female had a faint whitish patch back of the eye and another at the base of the bill. (These light patches are conspicuous in the immature plumage.) The basal swelling on the dusky bill was less prominent than in the male. The feet were reddish.

At Wonder Lake on May 31, 1947 about 60 white-winged scoters were seen sleeping in a long line. The line moved slowly toward shore, then slowly away from shore, the spacing of the ducks remaining constant. Thus they maintained their position in the center of the lake even though a strong wind was blowing. On July 10, 1948, 24 males were seen in a pond near Wonder Lake. On October 17, 1947, I saw two scoters in the swift water of Savage River in the canyon. One of these was apparently a female and the other a young of the year. As they fed they allowed themselves to be carried over waterfalls, through white water and spray and around rocks; all the while they bounced about they faced various directions, seemingly surrendering themselves completely to the whims of the stream. In an eddy they bathed elaborately.

The three species of scoters are most abundant along the seacoast where they are found in large numbers. There are relatively few Alaskan breeding records of the white-winged scoter.

Surf Scoter

Melanitta perspicillata

The male surf scoter is black with conspicuous white patches on forehead and hind neck. The swollen bill is highly colored with orange and red. The female is brownish-gray with two obscure whitish patches on side of head; top of head to below eyes black. The absence of white wing patches separates it from the white-winged scoter. (The common scoter has been seen near the park. The female of this species is similar to the female surf scoter but is said to typically sit with bill held horizontally or tipped slightly upward rather than downward as in the latter. The black male common scoter has a blackish bill with bright yellow basal swelling.)

The surf scoter, paired or in flocks, has frequently been seen in the park. Dixon (1938) reported seeing 50 to 75 surf scoters "and their young" at Wonder Lake on July 19, 1926. He also reported seeing three separate broods of young at Wonder Lake on August 18, 1932. In May I have occasionally seen a pair in small ponds. One spring I saw a pair feeding on Horseshoe Lake. They swam side by side and almost always dived simultaneously.

Large flocks of nonbreeders are found on the Alaska coast in the spring. The males assemble on the ocean in large flocks after the eggs are laid. Nelson (1877) enroute to Steward Island near St. Michaels on August 23, 1878, saw a flock of male surf scoters about 10 miles long and one-half to three-quarters of a mile wide. The following year in September he saw a similar congregation there.

An interesting courtship is described by Alford (1920) : "I once watched 8 male surf scoters wooing one female, and a most absurd spectacle it was. Immediately the female dived, down went all her admirers in pursuit. Then after a lapse of about 40 seconds the males would reappear one by one, the female, who was always the last to rise to the surface, being invariably accompanied by one male; but whether it was the same male on each occasion I was unable to distinguish. For a few seconds pandemonium would reign, the rejected suitors splashing through the water and pecking at their rivals in the most vicious manner, whilst the object of their desire floated serenely in their midst, apparently well pleased that she should be the object of so much commotion. Then she would dive again, and so the performance continued for over an hour, when they drifted out of sight."

Red-breasted merganser—male on left



Red-breasted Merganser

Mergus serrator

The beautiful male is easily identified in spring plumage. The black head and long, hairy double crest is glossed with green; the reddish-brown breast is mottled with black; the rounded bill is bright red. (The common merganser has a white breast. Rare in interior but should be looked for in the park.) The female also has the red bill; her cinnamon-brown head has a ragged, hairy crest with two points. She is similar in looks to

the female common merganser; the best distinguishing field character is the sharper demarcation of the white and brown on the upper neck of the common.

The red-breasted merganser is most plentiful near salt water; scattered pairs are found in the interior of Alaska. I have observed this merganser in the park on only two occasions. On May 21, 1948 I saw a female merganser at Horseshoe Lake that I judged to be this species, and on June 18, 1956 at Wonder Lake a male in partial eclipse plumage.

This merganser nests on the ground under trees, or under roots or driftwood. The male sometimes accompanies the female and downy young.

Goshawk

Accipiter gentilis atricapillus



The broad, rounded wings, the long tail, and large size characterize the goshawk in the distance. As is generally true among hawks the female is the larger. The plumage in the two sexes is alike. Upper parts dark bluish-slate; top of head black bordered with whitish line passing over eye and continuing to back of neck; underparts pale gray, finely barred with gray; the black feather shafts contribute fine black streaks

to the ventral pattern; four or five indistinct dusky bars on tail. The immature mottled brown plumage is retained for over a year and the birds may breed in this plumage.

The goshawk is a year-round resident in the park. Although primarily a woodland species it may at times be seen far from trees. I have seen it quite often in and near the heavy patch of spruce along Teklanika River near the bridge.

Because of its swift flight and ability to maneuver it is an efficient hunter. Twice I have surprised a goshawk in woods feeding on willow ptarmigan, and watched it fly off heavily with what remained of the carcass. Once a goshawk that I flushed on an open slope dropped a ground squirrel as it flew away.

Ravenal Sass eulogized him as follows:

"We do not live by bread alone. Beauty and courage, swiftness and strength mean something to us; and we shall find these qualities in high degree in the hawks of the *Accipiter* clan. Especially is this true of the largest and strongest of them, the goshawk, one of the deadliest, hand-somest, bravest birds of prey in the world."

Sharp-shinned Hawk

Accipiter striatus velox

The small sharp-shinned hawk, about the size of the pigeon hawk, has short, rounded wings and a long tail. The adult is bluish gray dorsally and heavily barred with reddish brown underneath. The brown immature birds are streaked underneath so are similar to the brown-backed female and immature pigeon hawks, but the sharp pointed, long wings of the latter species serves in any plumage to distinguish it from the sharp-shinned. When perched, the tips of the folded wings of the sharp-shin reach short of the middle of the tail, but the folded wings of the pigeon hawk reach almost to the tip of the tail. The immature plumage is worn for over a year. This is primarily a woodland species but I have generally observed the sharp-shinned in late summer and autumn on Sable Pass and on other high, open passes. It is seldom seen in summer but perhaps it is more common than the records indicate.

The food of this hawk is chiefly small birds of which there is normally a surplus in nature.

Red-tailed Hawk

Buteo jamaicensis calurus

The hawks commonly seen over the continent, leisurely sailing in circles, or perched on poles or other prominent lookouts, belong to a group that feed chiefly on rodents, and in some species, extensively on insects, especially grasshoppers. They are often called "chicken hawks," although it is a rare one that has tasted chicken. They are the hawks that give life to a landscape, and the hawks that because they are so prominent, are most often used for targets by the thoughtless with a gun. These hawks have long, broad wings and short, broad tails, a combination adapted for sailing in summer skies. In the park the soaring hawks are represented by four species: red-tail, Harlan's, Swainson's, and rough-leg—none of them common.

The brick-red tail of the red-tail is diagnostic. The underparts are light, streaked with blackish, sometimes forming a patch across the abdomen. Melanistic birds would be difficult to separate from the Harlan's hawk if the tail were also black.

Harlan's Hawk

Buteo harlani

The taxonomic status of the Harlan's hawk has been confusing to the authorities. It has been considered both a color phase and a sub-species of the red-tail. The latest decision designates it a full species.

The Harlan's hawk varies considerably in appearance, there being, according to Bent (1937) an extremely dark phase and a light phase as well as intermediate plumages. In the dark phase the hawk is overall blackish, while in the light phase the upper parts are dark and the head and underparts whitish. The consistent character that seems to separate it from the redtail is the mottled tail—a mixture of grayish, dusky, and white, often tinged or mixed with rufous.

Dixon (1938) found a breeding pair at Wonder Lake on July 19, 1926. The birds were perched in a tall spruce beside their large bulky nest of sticks. He also reported seeing it at Igloo Creek and Savage River. In recent years I have not observed these hawks in the park.

Swainson's Hawk

Buteo swainsoni

The Swainson's hawk is uncommon. Usually only one or two have been noted during a summer. Because of the presence of three color phases—black, red, and light—and considerable age and sex variation, great variety of plumages occur in most populations. In the lighter phase the underparts are light with a dark breast. But all hawks of this species that I have seen in the park have been melanistic, so dark that no color pattern could be recognized in the field. The wings of the Swainson's hawk are more slender than in the other soaring hawks and the tail is finely barred in all color phases. Farther south large flocks of these hawks have frequently been observed during migration feeding on grasshoppers.

Rough-legged Hawk

Buteo lagopus s. johannis

The rough-leg is a large soaring hawk with long, broad wings and a tail that is broad and rounded. The legs are feathered to the toes. The plumage is variable, some birds being so dark that the plumage pattern is lost. In the basic pattern the head, neck, and breast are whitish, streaked with blackish; the belly is blackish; and the basal half of the tail is whitish. In flight the underside of the wing is whitish (more gray anteriorly) except for the black wrist patch and the black tip. This hawk is not uncommon in interior Alaska but I have seen only a few in the park, and these mostly during migration.

Golden Eagle

Aquila chrysaëtos canadensis

The golden eagle is plentiful in the park and may frequently be seen soaring high, or sailing low over the ridges as it hunts ground squirrels, its staff of life in summer. The hoary marmot sounds his piercing "police-whistle" alarm whenever he spies an approaching eagle, for he also is a potential victim. The food habits of the eagle were studied chiefly from an examination of the cylindrical pellets regurgitated after a meal. The pellets contain the fur, feathers, and bones of animals eaten. They were collected at eagle nests, and on prominent grassy points on ridges where the birds perched to feed or rest. A total of 774 pellets were gathered and examined over a period of years. I have observed a few caribou calf carcasses, apparently the result of eagle predation, but I have no record of predation on the lambs of Dall sheep. Whatever predation there is would be insignificant in either species.

The large stick nests are built on rocky ledges. The same nest with additions may be used over a long period of years. The one or two young remain in the nest for 9 or 10 weeks. August 15 is the latest date on which I have observed an eaglet in a nest. Two young at one nest frequently returned to use the nest for a perch after they had left it.

Because the large soaring hawks are scarce in the park one can be fairly certain that any large dark soaring bird is a golden eagle. The adult plumage is blackish except for the golden brown feathers on top of the head and neck. The fully adult plumage is said to be attained in about 4

years. Yearling eagles have a prominent white wing patch and a white tail with a broad black terminal band. Often, in early summer I have seen one sailing with a pair of adults, apparently a young of the previous year.



Bald eagle

Bald Eagle

Haliaeetus leucocephalus alascanus

The handsome bald eagle may occasionally be seen at Wonder Lake and I have observed a few along the Nenana River. The adult birds with white head and tail are easily recognized but the immature are dark and resemble the golden eagle. The tail of the immature bald eagle is generally indistinctly blotched with whitish. The ideal home of this beautiful eagle is along the Alaska coast from the Aleutian islands southward. It is now protected by Federal Law.

Marsh Hawk

Circus cyaneus hudsonius

The long tail, long narrow wings, and the white rump patch characterize the marsh hawk. It courses low over the open country, sailing and flapping along on its erratic way as it examines the terrain for food items, chiefly mice. It nests on the ground in the open country. In 1959 a pair nested about 2 miles east of the Toklat River. In August, due to the young being on the wing, and to an influx of migrating marsh hawks, the species becomes more prevalent and a dozen or more may be seen some years on a trip to Wonder Lake. The numbers may vary from year to year; their status is perhaps roughly correlated with the size of the mouse populations.

Gyr Falcon

Falco rusticolus

The gyrfalcon is one of the many special birds in the park. It is a large (20 to 25 inches long) falcon about the size of a goshawk, and has the same light gray coloration, with varied, fine barring and streaking. The tail is barred with 10 or 12 light grayish bands. The wings are long and pointed; the wing beat is rapid and shallow.

The stick nest is built on a rock ledge, and nesting sites are used repeatedly over a long period of years. One of the most reliable localities for seeing gyrfalcons is Polychrome Pass.

The food habits of gyrfalcons in the park were determined from an examination of regurgitated pellets that contain the bones, fur, and feathers of the animals eaten. The ground squirrel was found to be the chief food item. Ptarmigan, small birds, and mice are also eaten.



Gyrfalcon

Pigeon Hawk

Falco columbarius bendirei

One of the pleasant surprises for the ornithologist visiting the park is the opportunity to see pigeon hawks on their nesting grounds. Year after year these hawks return to their favorite patches of spruce woods, where they make their presence known with loud, piercing cries. Perhaps the most convenient and reliable localities for finding them are the woods near the cabin on Igloo Creek, and in the last timber on both sides of the Toklat River just above the bridge. In late August and early Sep-

tember, I have often seen a pigeon hawk or two beyond timber near Stony Hill, and on Highway and Thorofare Passes. One day in early September, 1956, a pigeon hawk, sparrow hawk, and sharp-shinned hawk were all seen along the road near Stony Hill.

The male is bluish-gray over upper parts, and the female and young are brownish. Underneath, the whitish plumage is streaked with black; a blackish vertical mark below the eye; the wings are long and pointed.

Sparrow Hawk

Falco sparverius

The sparrow hawk is a beautiful falcon slightly smaller than the pigeon hawk. The male has a bright reddish-brown back and tail and bluish wings. The head is conspicuously marked with a black patch below the eye and two additional black marks farther back. The female is similar but with coloring more subdued.

They are not plentiful. Each year a pair has been nesting in a patch of spruce toward the head of Hogan Creek. One year a pair nested in the last patch of spruce on the west side of the Toklat River. In June, I saw one on top of Wright Mountain, and in the autumn they are frequently seen on Sable Pass and other passes along the highway.



Spruce grouse

Spruce Grouse

Canachites canadensis osgoodi

The spruce grouse are found in the more extensive and deep spruce woods. Here in their foraging they move slowly and quietly over the velvety forest floor. Or they may be perching on spruce limbs, which, to them, are green pastures the year round, for they feed much on the spruce needles. They ordinarily go to the stream beds or natural bank cuts for pebbles to replenish the supply of gizzard gravel needed for trituration. Those living near the road come often to it for pebbles.

Some likely places to find spruce grouse along the road are the spruce woods on either side of the road at Mile 1 and Mile 5, and in the heavy woods below Teklanika bridge. A few years ago an ornithologist from England who had been birding for months and was out to make a record in number of birds seen in North America in a year (and he did), had not yet seen the spruce grouse. We hunted the woods at these favorite places, found several dusting beds with grouse feathers in them—but unfortunately none of the grouse. Another day, or very early some morning, one or more might have been seen beside the road. But we enjoyed the search and saw a great horned owl and heard him hooting.

The spruce grouse may be recognized by the terminal orange-brown band on the tail. The tone of the plumage is dark—much black on the male, who is indeed handsome. Triangular white spots on the sides of the body are prominent. Often called “fool hen,” this grouse is exceedingly tame.



Ruffed grouse

Ruffed Grouse

Bonasa umbellus yukonensis

The ruffed grouse is found sparingly in the woods along the north and east boundaries of the park. The spring drumming, a roll produced by the rapid beating of the wings as the grouse perches on his favorite log, is characteristic of grouse country. An intricate and delicate pattern of browns characterizes its plumage. The topknot, the black neck ruffs, and the black bar near the tip of the fanlike tail are diagnostic. When the snow is deep and not crusted this grouse roosts in a snow tunnel.

Willow Ptarmigan

Lagopus lagopus alascensis

Those who have met the willow ptarmigan will never forget him. He embodies the spirit of the northland. His crowing, his talk, asking you to "come 'ere" or "go-back," the contented chatter around one's tent when it is too stormy to move, the big autumn assemblages numbering sometimes into the scores and hundreds—all become a deep and lasting part of one's northern experience.

Nature has been lavish in Alaska, for all three species of ptarmigan occurring in North America are found in the park. Each kind fills a slightly different niche in this northern environment. The willow ptarmigan, the largest, noisiest, the most abundant, inhabits the lower elevations. It is the one most often seen in a trip through the park. It is fond of the willow bottoms, where the willow brush grows tall, and it is found in the willows along the main streams and the sides of the streams, but it also may at times venture out among the sedge hummocks or may enter the open spruce woods adjoining the treeless tundra.

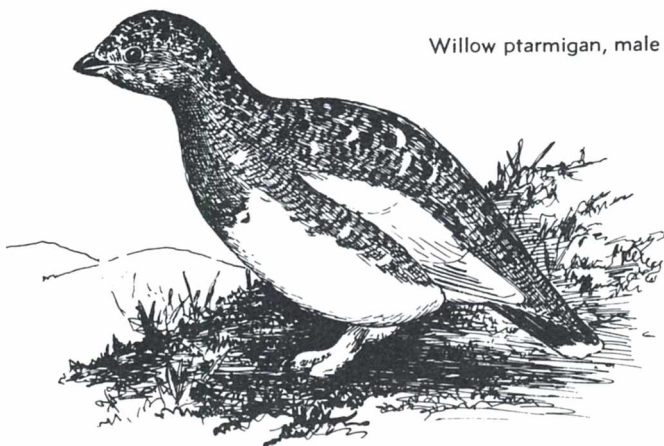
Then there is the rock ptarmigan, a little smaller, a quieter bird, less lusty, and if he were in a choir, the male of this species would surely be among the basses because of his deep voice! It tends to live at a higher elevation, especially in summer, where the vegetation is short. The third species, the white-tailed ptarmigan, is the smallest of the three, and it is not plentiful. It seeks in summer the ridges at the heads of the valleys, or the tops of the more outlying ridges, often being found near the limit of vegetation.

Living under rather extreme conditions, it is not surprising that the ptarmigan have developed special adaptations for life in the snow country. Like the snowshoe rabbit, they are white in winter and brown in

summer, thus harmonizing with their background. The exception to their whiteness in winter is the black bill and eyes, and in addition, in the willow and rock ptarmigan, the black tail. Although the tail is black in these two species it is almost hidden by the long, white tail coverts.

Toward the end of the snow season the white feathers of winter are replaced by the browns of the summer plumage, with one important exception—the wings remain white. When the bird is at rest the white wings do not make the birds conspicuous, for they are hidden by the brown body plumage just as in winter the black tail is hidden by white feathers. In flight, however, the black tail becomes conspicuous in winter, as do the white wings in summer. The male has a rich reddish-brown head and neck; the female is barred with black and browns.

The generic name of ptarmigan, “Lagopus,” means rabbit foot. The legs and toes are kept warm in winter by a dense feathering, which on



Willow ptarmigan, male in summer

the toes is like the hair on the bottom of a snowshoe rabbit's foot. Through wear and shedding, the feathering is largely lost during the summer period and is replaced in the fall.

The toe nails or claws are especially long and broad. In winter, when the ptarmigan scratches out a hollow in the snow each night, big enough to nestle his body, the large claws no doubt make this task much easier. The wide claws also add to the snowshoe effect of the feathered toes, and on hard snow they serve well as “creepers.” In the spring I have watched the females using the claws to scratch away the moss in feeding. An interesting fact about the claws, at least this is true in the willow ptarmigan, is that they are shed each summer—pushed out by the growth of new claws.

As already suggested, the ptarmigan are characterized by special voice development, and, strangely, the three species differ strikingly in the loud calls uttered by the males. The willow ptarmigan has a rich

voice and some of its calls sound like words. It plainly says, "go-back," "go-back, go-back." There is also a higher pitched "come - 'ere, come - 'ere, come - 'ere" uttered by the females. The spring call of the male consists of a series of syllables, in part rattled off with tongue-twisting rapidity. It may be written "k-r-r-r, cuta-cuta-cuta-cuta-cuta," uttered rapidly, followed by a deliberate "puk-quow, puk-quow, puk-quow." Various snatches of this call, together with others, make up a miscellaneous multitude of variations, which may be uttered at all times of the year. The females sometimes utter a plaintive "cow-cow" which closely resembles the call of a turkey. A flock carries on much little talk in comforting, rich notes. The calls in late summer may be uttered after nightfall. At Wonder Lake after dusk I have heard snatches of ptarmigan calls coming from three or four directions, off in the distance. And here, too, I have watched a group of ptarmigan moving along, foraging in the semidarkness, the flock apparently held together by many low calls.

The nest is a scratched-out hollow in the moss, containing a few dry leaves or straws. While the female incubates the light-brown, darkly spotted eggs, the male stands by in the general vicinity, sometimes resting under the same willow bush day after day, or it may be seen perched in a spruce top. I have seen as many as eight or nine perched in spruces at one time in early June, spaced no nearer one another than about 200 yards. The eggs hatch the latter half of June, my earliest record for young being June 15. The incubation period is about 25 days.

Both parents accompany the young. The male is fearless and belligerent, frequently attacking a person if the situation seems to demand it. A male once recklessly beat his wings against my companion's head and shoulders when we came upon the family. The young, as usual, scattered and hid.

The willow ptarmigan is highly gregarious; as summer progresses families band together. One year I noted three families together as early as July 31. On August 29 a flock on the rolling tundra east of Sanctuary River numbered about 180. In approaching a large flock at this time, one can hear much ptarmigan talk. They become more and more alert, heads held high with concern. At this point the flock is ready to explode into flight by the action of a single bird. And the flock does explode with a whirl of wings and the air is full of white flashing wings, and the careening birds speed low over the tundra. Always a few individuals fail to respond to the group movement, and as one walks forward, these fly off to join the others.

The food of the willow ptarmigan in winter consists chiefly of twig tips of willow, dwarf birch, and blueberry. At this season a beautiful lacework of tracks often shows how the birds have traveled across the snow in their feeding, as they visited the protruding shrubs. In summer the leaves of willow and other shrubs, horsetail, and flower heads become

available, and in berry season quantities of blueberries and other fruits are eaten.

Although foxes, gyrfalcons, golden eagles, and other species prey on the ptarmigan, reproduction is geared to these losses, and the population holds its own, sometimes becoming exceptionally large. Always numbers are sufficient to add a special charm to the tundra.

Rock Ptarmigan

Lagopus mutus nelsoni

The rock ptarmigan are found at elevations a little higher than the habitat of the willow ptarmigan, seeming to prefer terrain characterized by lower vegetation. There is, of course, some overlap in the distribution of these two species, but the habitat preferences are nevertheless quite definite. For instance, on Sable Pass I have often found the willow ptarmigan confined to a narrow draw grown up in willow brush, while the rock ptarmigan would be out in the open, foraging where only a carpet of low vegetation covers the ground.

Along the highway one may see rock ptarmigan during the summer season midway between Savage and Sanctuary rivers, on the slopes along

Rock ptarmigan in winter



Igloo Creek and on Sable, Polychrome, Highway, and Thorofare passes. Wherever one hikes in the sheep hills, from the north boundary to the heads of the rivers, rock ptarmigan may be encountered in summer, for at this season they are widely dispersed. In September large flocks often occur along Igloo Creek on the low slopes among heather and mountain avens. There is a tendency to move to lower ground in winter, yet many areas may be utilized at all seasons.

The rock ptarmigan are slightly smaller than the willow ptarmigan. The females of the two species are much alike in summer, both being barred with blackish and golden brown. For identification one had best concentrate on the males. The dark, barred plumage of the male rock ptarmigan is distinctive, as is the rather uniform deep reddish-brown head, neck, and breast of the male willow ptarmigan. The bill of the willow is proportionately heavier. In winter the male rock ptarmigan and some of the females have a black line through the eye.

The male's call is low and guttural, unbirdlike, and similar in quality to that of a bullfrog, or the deep voice of the sheep with which they associate. For identification it is very useful.

The males generally retain the white winter plumage (excepting for a few dark feathers on the head) until the middle of June, in this respect differing from the male willow ptarmigan which begins acquiring a brown head, neck, and breast in March. The females show brown feathers early in May, and soon after the middle of May are practically in the protective brown summer plumage. Ptarmigans have two summer plumages. The first brown plumage is coarsely barred in black and browns; the second is more finely barred or vermiculated, being especially fine in the male. The change to the white plumage takes place chiefly in September. On September 8, I have noted much white showing up in the plumage, and as early as September 20 almost wholly white birds have been seen. By early October the molt to winter plumage is almost complete.

The mating behavior is similar to that of the willow ptarmigan. The comb above the eye enlarges and becomes a brilliant red. There is some strutting, nuptial flights are taken, and the males frequently chase one another. In crowing, the head is held forward and down, and with mild contortions, it manages to create its guttural sound. On May 24, 1956, I saw an extraordinary nuptial flight. While watching a pipit in his nuptial flight, I chanced to see a white flash much higher, against the blue sky. Using the field glasses I was barely able to make out a white bird flying in great circles, alternately flapping its wings and sailing. For about 2 minutes this flight in the sky continued. Then suddenly the bird plummeted earthward in a spectacular dive, so rapid that I saw only a white streak. Just before alighting it disappeared behind a nearby knoll. A little later a similar flight was seen.

While the female is occupied with egg-laying and incubation, the male, still in white plumage, sits conspicuously on a favorite hummock. A scraped-out hollow lined with a few straws and leaves serves as a receptacle for the six or seven blackish-brown spotted buff-colored eggs. Frequently only the female is seen with the chicks. Apparently the parental instinct in the male sometimes wanes during the incubation period to the point where he no longer is interested in family life, and departs. More observations are needed to determine the statistics of the male's status in this respect.

Usually the rock ptarmigan are quite tame. Late in July, I watched a female and four young for about 2 hours, as they fed and rested only three or four steps away. The mother had a quiet danger call which she uttered when gulls or jaegers flew by, and another call to bring forth the young from hiding. About noon the chicks rested in the shade of a sod clump, and the mother stood watch, but napped, each nap being short, no longer than 8 seconds. The instant she closed her eyes she apparently was asleep, for her head would nod over to one side or somewhat backward, and then she would awake with a start and bring her head erect again. In this same area in August two of us were able to herd a flock of twenty-five which were tamer than chickens. But at other times, especially in autumn and in winter, the birds may be quite wild, flying away with speed, barely missing lone trees in their path, and sweeping low over ridgetops.

The food habits are similar to those of the willow ptarmigan. In winter they feed on fine twigs of willow, birch, and blueberry and what berries they can find. In summer, leaves, blossoms, and seed heads, of a variety of herbaceous plants are eaten. Crowberry, blueberry, cranberry, and buffaloberry are important foods. Insects are sought on the snowfields in spring and whenever available in summer. In the spring I have analyzed the droppings found at the hummocks where the males perched and noted that the food consists mainly of willow catkins and crowberries. In August flocks may be seen feeding on high rocky slopes where the vegetation is sparse.

White-tailed Ptarmigan

Lagopus leucurus peninsularis

The white-tailed ptarmigan, more gray than brown in summer, is the smallest of the three species in the park. Its white tail is distinctive at any season, and likewise is its call, which consists of a high-pitched scream uttered in three syllables.

In winter I have seen small flocks, up to a dozen, in Sanctuary and Savage River canyons. In summer they occur high on the outer range, on Sable Mountain, and other high ridges. One of the best places to find them is on the ridges at the head of Savage River. This ptarmigan is scarce compared to the other two species.

The white-tail is extremely tame in summer. I have picked up young almost full grown without greatly alarming them. When released after capture the young would walk 2 or 3 feet and begin to feed again.

One July day two of us watched a male feeding on a rock slope about 4 feet away. We admired the exquisite vermiculated plumage. For a time he kept quiet except for raising briefly the combs over the eyes, a movement indicating the play of his emotions. After a time he slowly, almost imperceptibly, moved a foot cautiously forward, so slowly it was hardly recognizable as motion. Later he commenced to feed, nipping at leaves of the mountain avens, and seed heads and stems of a saxifrage (*Saxifraga reflexa*). So perfectly did he blend with the gray rocks that, after taking our eyes from him, it was not easy to make him out again.

On July 8, 1961, I was hiking up one of the canyons of Cathedral Mountain with a group when I almost stepped on a female brooding three eggs. It walked away from the nest 3 or 4 feet and puffed out its feathers, spread its white tail, lowered its wings, and hissed. In a few minutes she returned to the nest, so tame she pecked at a finger if within reach. Later we saw her feed on leaves of mountain avens, dwarf willow, and sorrel, and she neatly removed the blossoms of an anemone. Three days later she was still on the nest. On July 16 the eggs had hatched and the eggshells were still in the nest. This ptarmigan, as well as some others seen here and at Toklat, were at a lower elevation than I have usually encountered this species.

Sometime in late summer, a change in the psychology of the white-tailed ptarmigan takes place, and they become wild spirits, alert and restless. So we found them on August 24, 1953, when four of us climbed up Sable Mountain from the south side. After watching mountain sheep and having a grizzly come close to us as it walked between us and the sheep, we crossed over the east shoulder and started down the north slope to look for milder adventures with flowers in autumn colors, and to search for white-tail. The weather took a change for the worse, a cold rain and sleet blew into our faces, and clouds scudded over the slope. Then, 50 yards away, movements on the ground attracted our attention to a dozen white-tails standing erect and alert, with necks craned. Perhaps the storm had added to their wildness, yet their behavior was no different than I had encountered in winter flocks. The new spirit had taken hold of these white-tails—perhaps the spirit of the flock. First one bird took flight and disappeared into the fog, and a few moments later the rest of the flock followed and we heard their high screams as they vanished









PLATE 1. One of the myriads of small ponds scattered over the tundra with Mount McKinley in the background. Ducks and other water birds seek these ponds as do some shorebirds, gulls, and terns.

PLATE 2. Teklanika River showing the typical broad river bars. On the far side of the river is a dense stand of spruce where the spruce grouse, goshawk, woodpeckers, chickadees and other woods species are found. Once a great gray owl was seen here.

PLATE 3. An old river bar along the East Fork River grown over with vegetation, mostly mountain avens. The foreground is torn up by grizzlies seeking peavine roots. Here we find golden and semiplated plovers, and the Baird sandpiper.

PLATE 4. This scene shows a large patch of white spruce (middle left) about 1 mile south of Wonder Lake. On the near side of the woods are wet meadows where the least sandpiper has been found nesting. The Bohemian waxwings have frequently been seen fly catching over ponds to the left of the picture among scattered spruces.





PLATE 5. On small creeks such as this one we frequently find the wandering tattler nesting and in the bordering willow brush, the arctic warbler. Rock ptarmigan are often found on the slopes covered with short vegetation.

PLATE 6. A view toward the head of Sanctuary River. The scattered spruces play out farther up the river. The treeless area on the bottom is moist, and hummocky, and grown up chiefly in sedges. Excellent habitat for willow ptarmigan.

PLATE 7. A view of Mount McKinley from the sheep hills in the Big Creek country. Near the tops of these picturesque ridges we find the golden eagle, wheatear, snowbird, surfbird, rosy finch, and white-tailed ptarmigan.

PLATE 8. Savage River. The first wandering tattler nest known to science was found on a gravel bar between the two near ridges. On the slopes at the head of the valley near the fresh snow, white-tailed ptarmigan have frequently been seen in summer. The tall willow brush on the bar and surrounding tundra is excellent habitat for willow ptarmigan.

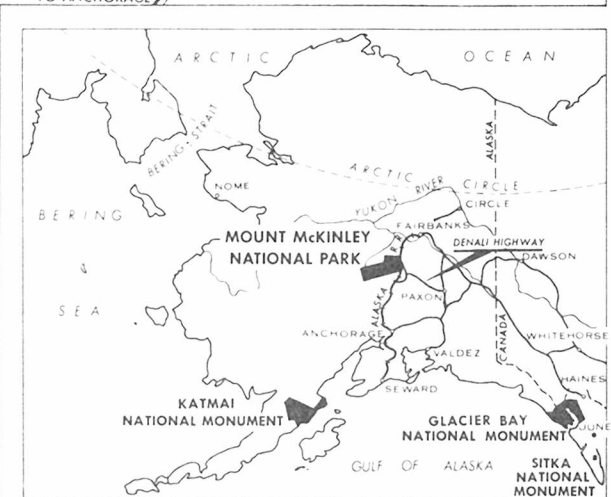
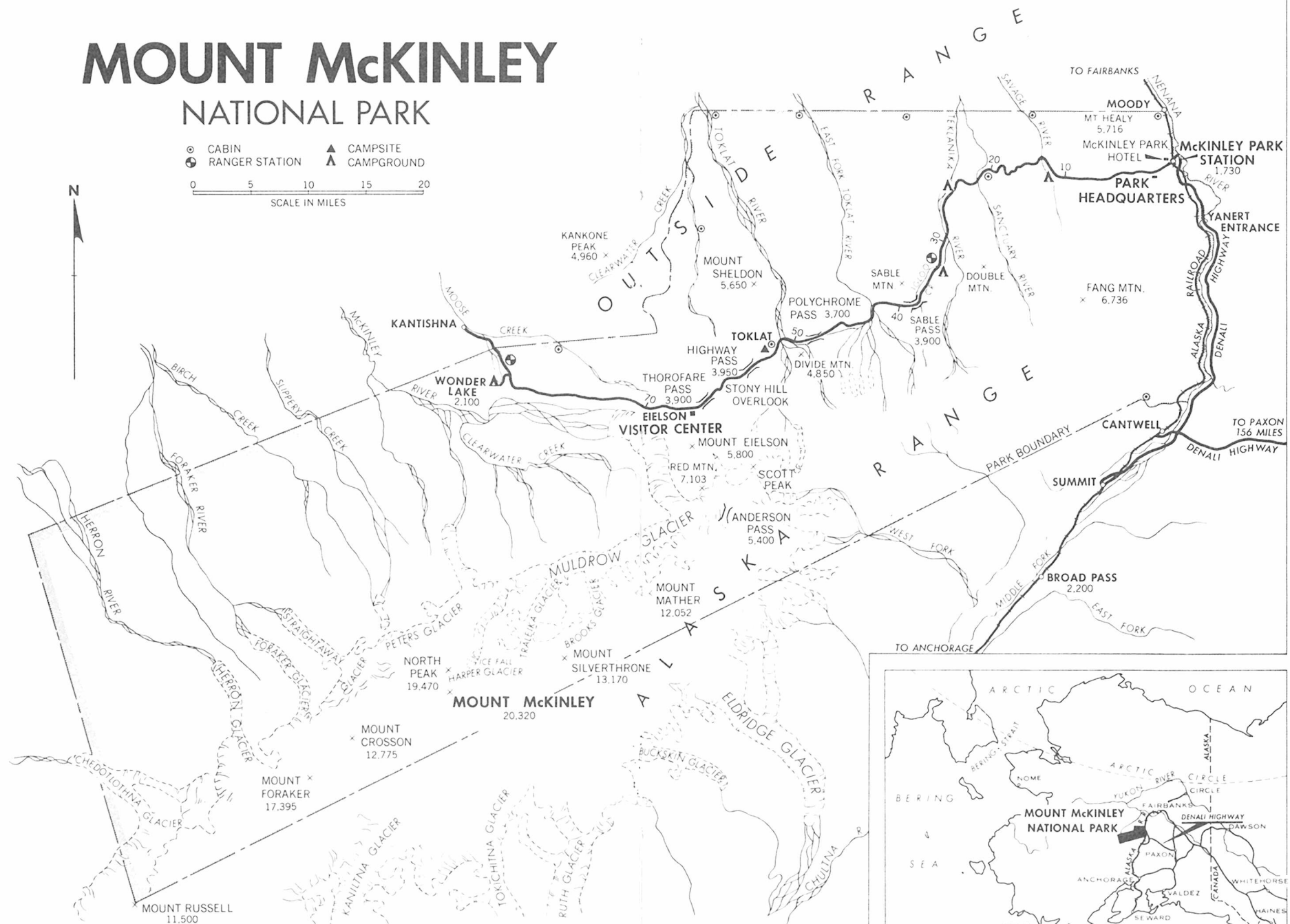


MOUNT MCKINLEY

NATIONAL PARK

○ CABIN
 ● RANGER STATION
 ▲ CAMPSITE
 ▲ CAMPGROUND

0 5 10 15 20
SCALE IN MILES





into the mountain fog. As we moved down the slope through the dense fog we heard their screaming again, a refreshing wild music that harmonized with the wind and stinging sleet.

Sandhill Crane

Grus canadensis

Beginning the latter part of August and continuing through September, cranes in large flocks pass along the Alaska Range in their southward migration. A flock consists of one or more V formations which may have subsidiary lines joined to the main V. When a flock enters an upward air current, a sort of bedlam ensues. The formation disintegrates amid much crying, and the birds begin to circle as they are carried upward—sometimes several thousand feet. Having gained altitude, forward progress is resumed, and the cranes again fall into an orderly pattern. On one occasion in early September, I saw a number of flocks passing along the range. Some of them flew just behind the top of Mount McKinley, some above it, and others in front of the mountain. I estimated that 5 or 6 thousand cranes were seen during the day. Occasionally a flock alights in the tundra to feed on roots and berries. The call is a loud trumpeting that can be heard from afar.

The general color of this crane is slaty-blue, but the immature are brownish, and the adults often acquire a brown stain over the back. The bare face and forehead are red. The sandhill crane is about 35 inches long, is slightly smaller than its southern relative, the greater sandhill



crane. In flight the long neck is held outstretched (not doubled back as in the herons) and the long legs trail straight out behind. In their spring mating dance they hop about grotesquely on their long legs. They nest in open marshy tundra over much of Alaska. Apparently many nest over the lower Kuskokwim and Yukon River country.

Semipalmated Plover

Charadrius semipalmatus

In hiking up any of the larger streams one is likely to encounter this small, quiet plover, for it favors the broad gravel bars. It resembles the killdeer but is smaller and has only one black band across the white breast. The forehead is white, bordered by a black band that extends through and below the eye. The basal half of the bill is orange.

American Golden Plover

Pluvialis dominica fulva

The American golden plover nests regularly on Sable Pass, the flats along Stony Creek, and similar areas over the park. A half grown young one was once seen near Wonder Lake. In breeding plumage the golden plover is black underneath from throat to tail; has a white stripe across forehead, that continues over the eyes and down the sides of the neck; the back is blackish speckled with gold. The male is slightly more intensely colored than the female. A specimen from the park was identified as the "Pacific" subspecies that winters in Hawaii and localities southwest of these islands. It is thought that farther north in interior Alaska it is the eastern subspecies that is the breeding form. Some of the eastern birds make a long flight over the Atlantic Ocean to South America in their southward migration.

The black-bellied plover is similar to the golden plover but is much lighter over head and back, has a partially white belly and white rump. There is no authentic record from the park yet, but it nests in the arctic, and a few have been seen in interior Alaska.

The nest of the golden plover is in the open tundra and consists of little more than a scraped-out shallow depression. The four eggs blend perfectly with the ground cover. The eggs hatch about the first of July. The mottled greenish chicks also blend with the background and are difficult to locate.

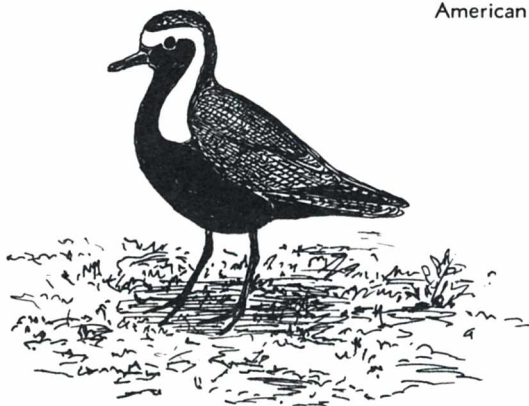
Surfbird

Aphriza virgata

The surfbird spends most of the year foraging along the seashore from Alaska to the Straits of Magellan. Springtime finds them northward bound to nest on mountain slopes in interior Alaska.

This plover has been considered one of the elite because of the rarity of nesting information. On July 13, 1921, O. J. Murie, hiking cross-country at the head of Fortymile River, found a downy young on a high open slope—the first definite information on a nesting site of the surfbird. On May 28, 1926, George Wright and Joseph Dixon discovered a nest on a high ridge in McKinley Park. The nest contained four buff-colored, heavily spotted eggs. The bird on the nest flushed at Wright's

American golden plover



Surfbird

feet when the discovery was made. The biologists watched the nest throughout the night and part of the following day but saw only the one bird, the male, in attendance at the nest. When a mountain sheep approached the nest the bird flushed suddenly into its face. This explosive movement, with flashing of white on the bird's wings and tail, caused the startled sheep to jump back away from the nest. If the behavior of this bird is typical it can readily be understood that it would be difficult for one to discover a nest.

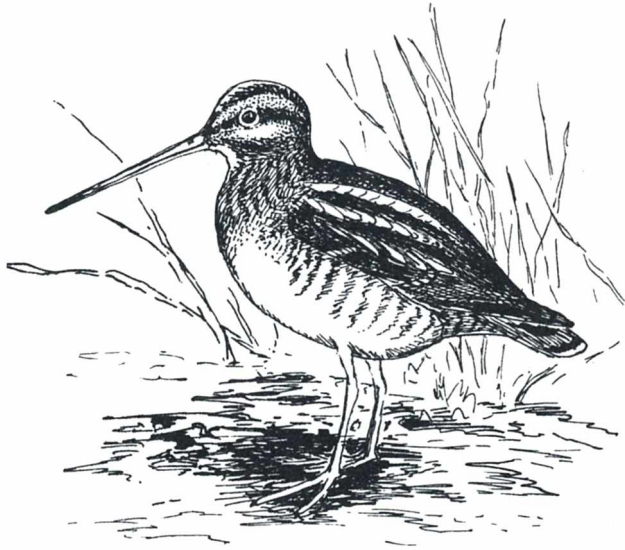
On June 26, 1953 two of us discovered a downy young near a ridgetop bordering Savage canyon. We were classifying sheep. As we came around an escarpment we startled an adult surfbird about 40 yards below us, and a second adult was not far off. Both adults uttered sharp worried calls. Walking toward the spot where the first bird was seen, we discovered a plump downy chick on a patch of green moss. If the chick had been in the lichen-strewn ground-cover that characterized most of the slope, I am confident it would have escaped discovery. The following day three of us climbed the ridge again for pictures. Although a parent was in the area, much worried, not until watching and hunting for 4 hours did we find one of the young.

On June 20, 1961 Charles Travers and I found, on a high slope, four chicks that appeared to be newly hatched. The parents called anxiously and at times came within 10 feet of us. Two other adults made an appearance but soon left. The following day the family was in the same area. The young were much more active and ran rapidly over the tundra, and once went quite a distance over a snow patch. Both parents were seen brooding a chick.

There were two additional reports of downy young in 1961, one on Stony Hill, and another on Sable Pass. In 1962 a family was reported on Polychrome Pass, and one at the head of Tattler Creek. There are two other nesting records in Alaska. Dr. Brina Kessel (1960) found a downy young on Eagle Summit on June 25, 1952, and Ronald O. Skoog discovered a nest, containing four eggs, south from this area on June 11, 1953.

During May and June, I have frequently seen the adult birds on the high ridges uttering their loud call—"throi-dee, throi-dee, throi-dee." On several occasions in May, I have seen surfbirds on Sable Pass.

The surfbird is a plump plover about the size of a robin; it is finely marked with streaks over head and neck. The white rump and basal part of the tail are conspicuous; a white stripe across the wings shows in flight.



Common Snipe

Capella gallinago delicata

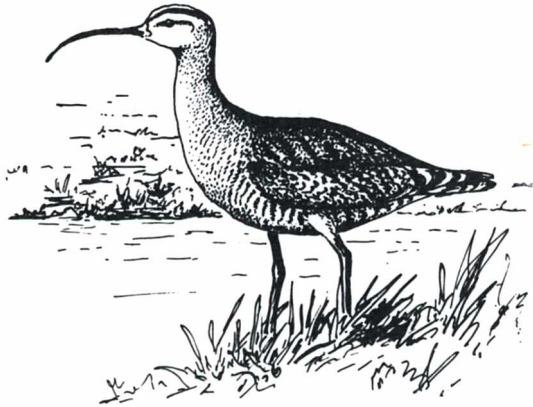
Although the common snipe is seldom seen as it skulks in its wet sedge habitat, it occasionally flushes at one's feet, utters a few sharp cries, and after a short erratic flight again drops into the sedges. The long straight bill (2½ inches) and the two broad black streaks on the crown are identifying characters. The rest of the plumage of this plump bird is a mottling of black and browns. The short tail is in part brick-red.

During the breeding period the male leaves his sedges and climbs skyward. Back and forth, or in great circles, he flies, so high he becomes a mere speck, and all the while he keeps flying downward and then upward. Each time he flies downward a winnowing sound is heard which may be written "wah, wah, wah." The sound is thought to be due to the vibration of the stiff, narrow, outer tail feathers held at an angle during the downward flight.

Whimbrel (Hudsonian Curlew)

Numenius phaeopus hudsonicus

The whimbrel may be identified as a curlew by its large size and the long (3 to 4 inch), downward-curved bill. Its general color is brownish, rather finely barred and streaked. The alarm call is loud and sharp, but sometimes one may hear a prolonged trill, or, off in the distance, a drawn-out "cur-l-o-o-o." The bristle-thighed curlew which nests farther west in Alaska, is a possibility in the park but it is so similar to the whimbrel that field identification would be difficult. The characteristic elongated shafts of some of the flank feathers, lacking barbs and therefore having appearance of long bristles, would not be readily visible in the field. The reddish, unbarred rump of the bristle-thighed curlew has been given as a field character, contrasting with the rump of the whimbrel which is buffy, barred with blackish.



The whimbrel arrives in the park as early as May 10. During the latter half of May, June, and July it is a rather conspicuous nesting bird in the low, rolling, open tundra, among sedge hummocks. Along the road it is often seen between Savage and Sanctuary rivers, and it has been seen quite often between East Fork and Toklat rivers, and from the Muldrow Glacier to Wonder Lake. Quite a number have been seen north of Mile 80 toward Moose Creek. After early August the whimbrels become scarce; they gather in small flocks and move elsewhere. The largest flock I have observed is one of twenty that was seen on August 1, 1950. A former railway agent at Broad Pass reported that he had often

seen large flocks of several hundred eastward from Broad Pass. They are reported to nest in numbers east of Cantwell.

The nest consists of a shallow depression with little or no nest material. It may be located on a hummock or a slightly raised grassy spot, and is usually in moist tundra.

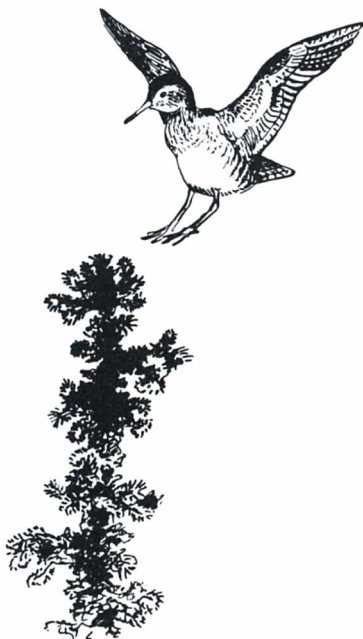
A favorite food of the curlew in the north is the crowberry. In the spring and early summer much of the previous year's crop is still available. Blueberries, and possibly other kinds of berries, are also eaten.

The upland plover is not a plover, but a true sandpiper that has deserted ponds and streams and moved into the grassy uplands. Over wide areas of its former range it has become scarce so it is a pleasant discovery to find it widely distributed and not uncommon in the park. Usually six or seven pairs nest on the grassy flats on the west side of the Toklat River a little south of the road. As one approaches the area an outpost utters an alarm, and soon other members of the colony are calling worriedly from many points.

On a high open slope on the east side of the Toklat River Charlie Ott and I found a nest on July 7, 1955. The plover on the nest flushed only a few steps from us and fluttered away along the ground. Five or six plovers soon were calling worriedly in the general area. The nest was effectively hidden by the overhanging grass blades of a grass clump in low dryas vegetation. The plover's general coloration is light brown, and the spots and streaks on head, neck and underparts are fine and subdued. The small head and thin neck are characteristic. The voice is loud and penetrating.

Upland Plover

Bartramia longicauda



Spotted Sandpiper

Actitis macularia

The spotted sandpiper is one of the most abundant and widespread of our shorebirds in America, nesting from the timberline southward over Canada and Alaska and throughout most of the other forty-eight continental States. It is not abundant in the park. In summer the large black dots on the white breast are diagnostic for this small sandpiper that keeps up a constant teetering and flies on quivering wings over the water as it utters its cheery "peet - weet."

Solitary Sandpiper

Tringa solitaria cinnamomea

The solitary sandpiper is a little larger than the spotted sandpiper which it resembles. Its neck and upper breast is finely marked with gray; the rest of underparts are white and the back is a lustrous dark olive-brown. The legs are dull greenish. I have seen only an occasional one in a few of the many ponds in the park. This sandpiper has the unusual habit of laying its eggs in old nests of other birds such as robins, Canada jays, and kingbirds. The nests used may be from 4 to 40 feet above the ground.

Wandering Tattler

Heteroscelus incanum

One of the special birds in the park from the standpoint of the ornithologist is the wandering tattler. It is a rather large sturdy sandpiper about the size of a killdeer, dark slate-gray in color and heavily barred underneath and on sides of body. Its haunts are the river bars, especially those along the smaller creeks and tributaries, such as Igloo Creek and its small tributaries. The call notes are loud and penetrating—"deedle-deedle-deedle-dee." One of their calls is a rolling, liquid trill which one often hears faintly from off in the distance. When the nesting area



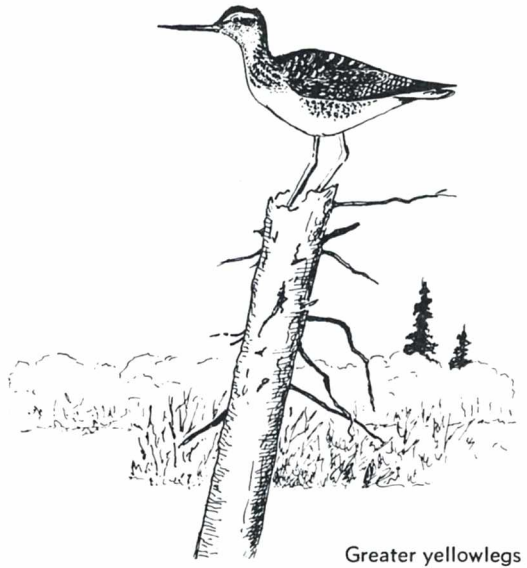
Wandering tattler

is invaded, both parents become noisy, perch near the hiker, and keep moving ahead of him for a quarter of a mile or so before circling back to the young. On these occasions they frequently scold from a willow perch.

The first nest of the wandering tattler known to science was found on a barren gravel bar along Savage River. On July 1, 1923, three of us were traveling up Savage River when a bird flushed from the nest a few feet from us. The nest was quite elaborate for a shorebird, consisting of a firm structure of roots and twigs. Three other nests that I found in later years along Igloo Creek and tributaries consisted only of a slight depression with just a suggestion of nest material present. One nest had a few grass stalks laid around the depression as a sort of token rim, and the other two contained only a few straws and a few leaves. Two of the four nests were on an older part of a bar where mountain avens had become established.

The newly hatched chick is a rather uniform slate blue, matching closely the sprinkling of slate-blue rocks where it is found. The color pattern of this chick is very different from that of the surfbird baby—each one matches its own background. The surfbird chick living on ground covered with threadlike lichens, and gray rocks speckled with lichens, is spotted and lined to match this mottled ground cover.

The young begin foraging soon after hatching and run away from the mother on twinkling feet in various directions in their search for food. The parent in attendance (they relieve each other on nest and in brooding young) remains stationary, and utters an occasional call, apparently to control the wanderings of the young. After the chicks have foraged a few minutes they are called back in a subdued voice and the chicks respond by foraging back toward the parent, and then disappearing under her feathers to be brooded.



Greater yellowlegs

Greater Yellowlegs

Totanus melanoleucus

The greater yellowlegs is apparently rather uncommon in interior Alaska. The only record in the park is that of one I saw standing on the mud bank of a pond a few miles east of Wonder Lake. Its large size and the very slightly upward bend of the long bill were readily discernible. The upper parts are grayish, heavily speckled with whitish; chin and throat white; sides of neck and breast marked with short fine streaks, rump white; the long legs are yellow.

Lesser Yellowlegs

Totanus flavipes

The lesser yellowlegs is marked similarly to the greater yellowlegs, but it is only about 10 inches long rather than 14 inches as is the latter. The lesser yellowlegs lacks the slightly upturned bill of the greater, and the bill is shorter. The long yellow legs are characteristic of both species. The call is loud and penetrating. The lesser yellowlegs is quite common at the small ponds in the spring, and some remain to nest.

Baird's Sandpiper

Erolia bairdii

The Baird's sandpiper (length 7.5 inches), about the size of a spotted sandpiper, has a pale, finely-streaked buffy breast, and a somewhat scaly pattern on the back due to the buffy edgings of the feathers; bill and feet black. It resembles a large least sandpiper.

It is found on the higher, wet passes in the park. On June 28, 1926 J. S. Dixon found two males in hot pursuit of a female at the head of Savage River on a high hanging meadow. He saw an immature bird at Copper Mountain, and a pair on Sable Pass that, from their actions, appeared to be nesting. I have also seen them on the south side of Thorofare Pass. In July 1956, several seemed to have young on a ridge north of about Mile 70.

Least Sandpiper

Erolia minutilla

The least, semipalmated, and western sandpipers, all small, look much alike and are difficult to identify in the field. The least is the darkest, the western the reddest, and the semipalmated the grayest, however this characterization is perhaps only suggestive in making identifications. The legs of the least are described as yellowish or yellowish-green; in one bird I examined they were yellowish-brown. The legs of the other two species here mentioned are black. The back is dark grayish-brown, finely marked; sides of head and breast washed with brownish and finely streaked with gray.

In 1959 a bird was noted on a nest on Thorofare Pass and in 1960 adults and young were observed on a wet meadow south of Wonder Lake.

Dunlin (Red-backed Sandpiper)

Erolia alpina pacifica

The reddish-brown upper parts and black patch on the belly identify the dunlin in breeding plumage. The bill is longer with a more pronounced downward curve than in the western sandpiper. Only one record of its occurrence in the park; should be looked for during migration.

Long-billed Dowitcher

Limnodromus scolopaceus

This dowitcher was first observed in Mount McKinley National Park on May 12, 1948. Three of them and a few common (Wilson) snipes were probing in the wet mud by a temporary puddle near the Nenana River. More recently Ranger Warren Steenberg photographed one at a small pond in the same general area. These birds were probably migrating to nesting grounds along the western and northern coasts of Alaska. Pictures taken of the birds on the two occasions and the geographic distribution of the two species of dowitchers suggest that the birds seen belonged to the long-billed rather than the short-billed species.

The dowitcher in breeding plumage may be identified by its straight bill, white lower back and rump, and white tail barred with black, and the reddish-brown underparts. In winter plumage the general body color is more gray. The whitish posterior part of back is diagnostic in any plumage.

Western Sandpiper

Ereunetes mauri

The western sandpiper is similar to the least sandpiper. The legs are black rather than yellowish-green or brown and the bill has a perceptible dip near the tip. The one record in the park was of a bird that appeared to be nesting.

Northern Phalarope

Lobipes lobatus

The northern phalarope is the smallest of the three kinds found in North America. Small companies may be seen on the ponds, all swimming jerkily as they feed off the surface. Frequently they twirl as though stirring the water life to the surface.

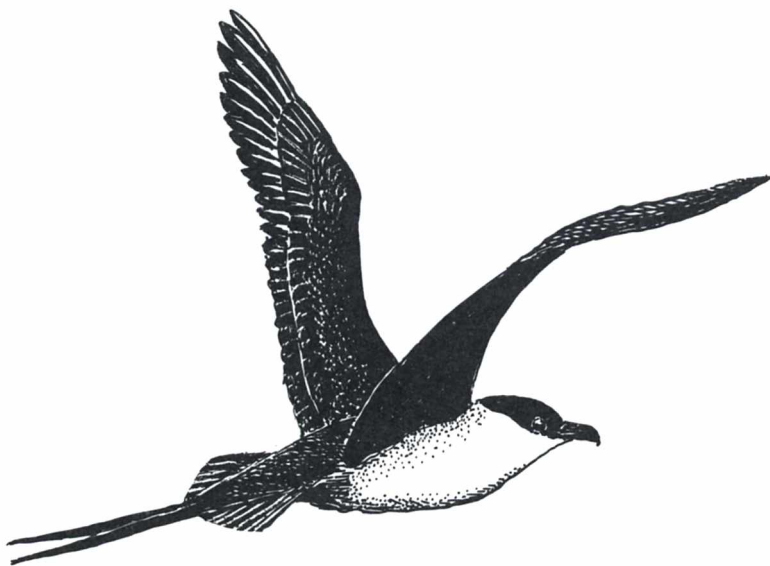
The female is the more brightly colored sex and does the courting. The male incubates the eggs and cares for the young. The nest is built in grassy vegetation bordering ponds.

The northern phalarope (7 inches long) resembles a sandpiper. The upper parts of the female are blackish with four tan stripes on the back; sides of neck rich chestnut; chin and throat white; slender bill black; toes lobed and partially webbed. The male is similar but less bright. The chestnut on the neck is absent in the winter plumage.

Long-tailed Jaeger

Stercorarius longicaudus

Of the three jaegers that nest in Alaska only the long-tailed has been recorded for the park. It is present in good numbers. This jaeger, with its black cap and two long central tail feathers extending far beyond



the rest of the tail, adds a striking and handsome touch to the landscape. It is similar in size and general appearance to a small gull or tern, and belongs to the same suborder. In flight the jaegers are unusually graceful and may often be seen sailing back and forth over the tundra, chasing one another in play, or hovering to look for prey on the ground. Their sharp cries may be heard as they dive at a herd of caribou, or at a fox, or gull found trespassing on their nesting grounds. The pass between Savage and Sanctuary Rivers, Stony Hill, and Sable and Highway passes, are favored localities. Their food consists of berries, mice, insects and an occasional small bird.

Herring Gull

Larus argentatus smithsonianus

The large herring gull may be distinguished from the more common mew (short-billed) gull by its much larger size (24 inches long), the red spot on the lower half of the yellow bill near the tip, the yellow eyes, and by flesh-colored rather than greenish feet. It is relatively scarce. Usually a few are found attending the hotel garbage dump but it is seldom seen out in the park along the highway.

Mew Gull (Short-billed Gull)

Larus canus brachyrhynchus

The mew gull is the common gull in the park. It may be seen patrolling the countryside near and far. Like the herring gull it is chiefly white with a pearly gray mantle over the back and wings, but it is considerably smaller (17 inches long). The bill is greenish-yellow and lacks the red spot that is present on the bill of the herring gull; the feet are greenish, eyes dark. They feed on mice, insects, and occasionally on berries, and



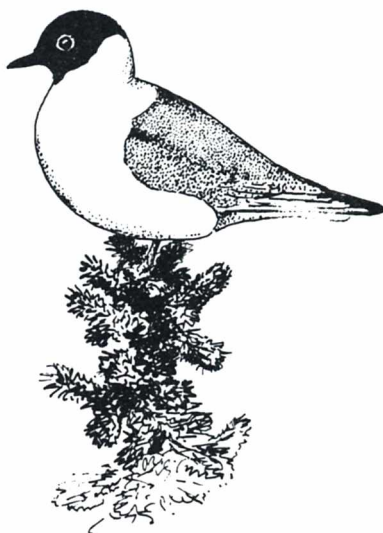
Mew gulls

visit, in their patrolling, fox dens, campgrounds, and dumps, on the chance of salvaging food items. They generally thoroughly soak their mouse victims, apparently to lubricate them for the early part of the passage through the digestive system. The gulls nest both on the river bars and in the tops of spruce trees. One of their nesting grounds is along Sanctuary River near the bridge.

Bonaparte's Gull

Larus philadelphia

The black head, black bill, and bright orange legs and feet are diagnostic marks of the Bonaparte's gull. It is smaller (13 inches long) than the mew gull; in flight it suggests a tern, which it also resembles in its low rasping call. It nests in spruce trees or on hummocks in ponds. Year after year a few nest at a pond along the road near the Wonder Lake ranger station. It is seldom seen in other parts of the park.



Bonaparte gull

Arctic Tern

Sterna paradisaea

The arctic tern has a sharp-pointed carmine bill, a black cap, and a long, forked tail. Its flight is light and graceful. In foraging, the tern flies slowly over a pond with bill pointed downward. Frequently it hovers, wings beating, and tail pointing downward. Having located a food item it plunges into the water with a splash, and sometimes submerges. The food consists chiefly of small fish, crustaceans, and insects. Its annual migrations may carry it from the arctic to the antarctic. The best place to see the tern along the road is in the Wonder Lake area.



Great Horned Owl

Bubo virginianus lagophonus

The large great horned owl (18 to 25 inches long) is a year-round resident in the park. Its size together with the prominent feather tufts (ears) are diagnostic. The call is the "who - whoo" that we expect owls to make. The nest site consists of a ledge, tree stub, or an old hawk nest. The two or three eggs are laid in March or April when subzero weather still prevails. For a number of years the owls nested near park headquarters and the young were often seen perched on old dead aspen limbs. These owls add charm and wildness to any piece of woods.

Snowy Owl

Nyctea scandiaca

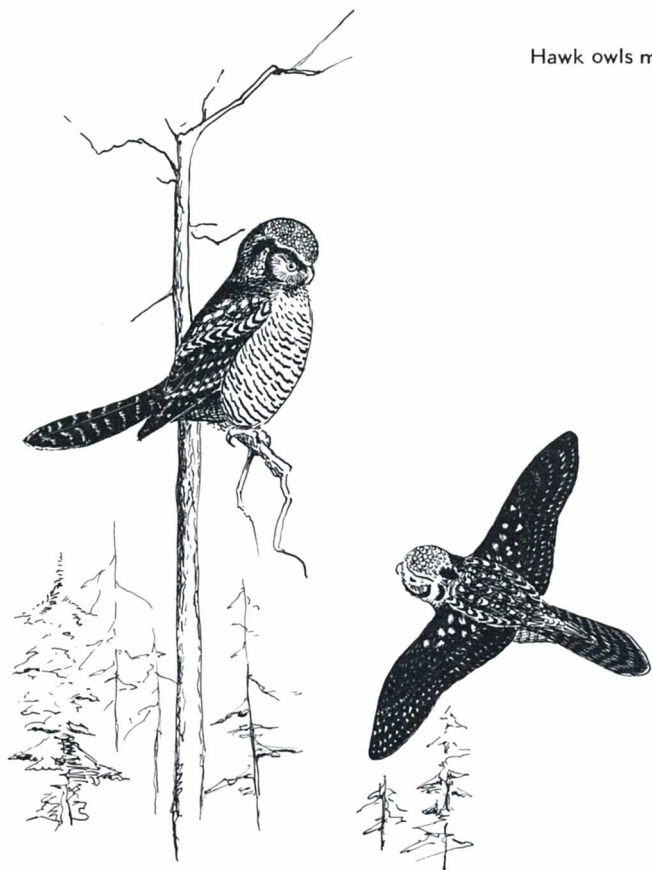


The snowy owl is a winter visitor. Charles Sheldon in the winter of 1907-08 frequently observed owls down the Toklat River just outside the mountains. Here he encountered large numbers, 40 or 50 in an afternoon, all sitting about on hummocks watching for mice that swarmed over the tundra that winter. With the cyclic build-up of mouse and lemming populations, these owls multiply, and when the rodent population crashes the owls are usually left stranded. It is at such times that large numbers move into the northern states in winter searching for food. The hoot of this owl is a deep booming, that causes the air to fairly throb with dull, thick sounds. They are also said to have a tremulous scream, uttered either when perching or on the wing. This owl is about the size of the great horned owl; it lacks ear tufts. Its color is white with few to many dark bars. They nest on hummocks in the open tundra, especially near Bering Sea and the Arctic coast.

Hawk-Owl

Surnia ulula caparoch

The handsome hawk-owl, about 15 inches long, has a sharply defined black and white facial pattern; top of head profusely spotted with whitish; no ear tufts; chest and belly sharply barred with brown and gray. Like other owls in the north it is quite active during the bright part of the day and may frequently be seen perched on a spruce top. A hollowed-out stub or tree cavity is used for the nest which the owls guard belligerently against human intrusion. The hawk-owl may be present in moderate numbers, but often is rather scarce. In 1955, an excellent mouse year, it was plentiful. That year, along Igloo Creek, I encountered three families in a mile and a half walk. The following year the high mouse population had collapsed and I saw this owl only twice all summer.



Great Gray Owl

Strix nebulosa

On July 2, 1955, I saw a great gray owl in a patch of woods along the Teklanika River. The latter part of July 1960, young of this species were reported seen at park headquarters.

This owl is generally distributed in interior Alaska so probably is a regular resident in the park near the north boundary. In external dimensions it exceeds the heavier snowy and great horned owls. This grayish owl has prominent facial disks, consisting of a number of concentric dark circles around each eye. There are no ear tufts; the tail is long. Often it takes over an old hawk nest for its eggs.



Great gray owl



Short-eared owl diving downward in its mating flight

Short-eared Owl

Asio flammeus

The medium-sized (15 inches long) short-eared owl has small ear tufts, and its brownish plumage is streaked with black or brown. In its hunting it flaps along over the open tundra as it watches for an opportunity to drop on a vole or lemming. The nest is built on the ground. Their nuptial flight consists of much high soaring and an occasional vertical dive with wings beating together very rapidly in front of the abdomen. A rattling sound made by the quills is audible. The abundance of these owls tends to be correlated with the mouse populations, so that when mice are numerous the owls may be present in large numbers.

Boreal Owl

Aegolius funereus richardsoni

The boreal owl is only about 10 inches long, is dark brown above, white-spotted on top of head, streaked broadly with brown underneath, and lacks feather ear tufts. The bill is yellow. This owl is extremely tame. It is found in the woods or in the open. An old woodpecker hole or similar cavity serves for nesting. It has an exhilarating bell-like love song. The owl is seldom seen but is no doubt more common than the records indicate.

Belted Kingfisher

Megasceryle alcyon caurina

The kingfisher's long stout bill, its large crest, and loud rattling call are good field characters. I have seen it at Horseshoe Lake, Riley Creek, and several times along Igloo Creek. The eggs are laid in a long burrow excavated in a cut bank. Its chief food is fish but the diet includes mice, insects, and even berries. The picturesque kingfisher adds life and charm to the streams.

Yellow-shafted Flicker

Colaptes auratus borealis

The yellow-shafted flicker occurs sparingly throughout the wooded sections of the park and a few have been seen 2 or 3 miles from the nearest woods. This flicker is readily identified by the golden color of the underside of wings and tail, the crimson band across hind neck, black crescent on breast, and the white rump. The flicker spends considerable time foraging on the ground, and in regions where ants are available they form an important part of its diet.

Hairy Woodpecker

Dendrocopus villosus septentrionalis

The hairy woodpecker may be recognized from the following description: back black with white median stripe; many white spots on black wings; top of head black bordered with white; black stripe through eye bordered by white, and another black stripe extends back from lower bill; underside of body white. The male has a red patch on the nape. The outer tail feathers are plain white, center ones black; larger than similarly colored downy woodpecker.

Downy Woodpecker

Dendrocopus pubescens nelsoni

The color pattern of the downy woodpecker differs from that of the hairy woodpecker in having outer white tail feathers barred with black (plain white in hairy). The downy woodpecker is 3 inches shorter in length than the hairy, which is 9 inches long. Also the bill of the downy seems to be proportionately shorter. The downy sometimes is found out in the willows some distance from woods.

Black-backed Three-toed Woodpecker

Picoides arcticus

This bird is rare in Alaska. The upper parts are solid black except that the male has a golden patch on top of its head. The underparts of the body are white, strongly barred with black on the sides. It has three toes on each foot instead of the usual four of most woodpeckers. In September 1962, one of these birds spent several days feeding on a spruce at park headquarters.



Northern Three-toed Woodpecker

Picoides tridactylus fasciatus

This bird differs from the black-backed three-toed woodpecker in having a white median stripe down the back that is usually barred. The three-toed woodpeckers may be recognized in the park by the prominent barring on the sides of the body.

This woodpecker has been seen quite frequently in the park.

Say's Phoebe

Sayornis saya yukonensis

The Say's phoebe makes its appearance during the first two weeks in May and returns southward about the middle of August. It may be identified by its black tail that contrasts sharply with its ashy-brown back. The pale gray breast shades into pale yellowish-brown posteriorly. This phoebe is common, and each year may be found nesting in the cliffs at Polychrome Pass. On two occasions I have found it nesting on a shelf inside a cabin.

Traill's Flycatcher

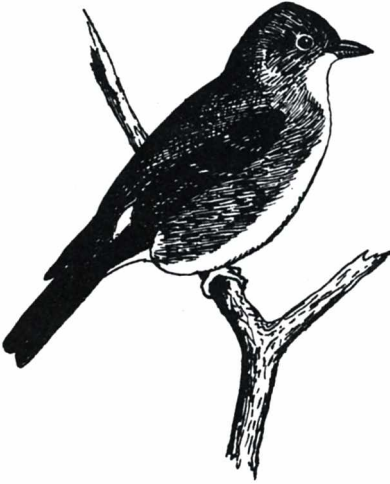
Empidonax traillii

This small flycatcher (5½ inches long) frequents brush areas. Its presence may be detected by its loud calling. The upper parts are greenish; eye-ring yellowish, throat white, and a pale grayish band across the breast. Not uncommon.

Western Wood Pewee

Contopus sordidulus veliei

The western wood pewee (6½ inches long) may be identified by its song which has been characterized as more abrupt and emphatic than that of the long drawn-out melancholy call of the eastern pewee. Its upper parts are dark brownish-gray; underparts are gray; lighter on throat and belly; the two white wing bars are indistinct. It is rare in the park.



Olive-sided Flycatcher

Nuttallornis borealis

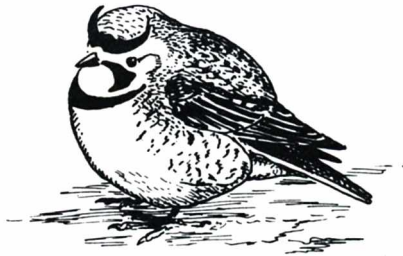
The olive-sided flycatcher is frequently heard in the lower, wooded parts of the park, his loud, ringing call being variously interpreted as "who-be-you" or "quick-three-beers." The top of head and back are dark brownish-gray with a white patch often showing on each side of the lower back; the throat is white; underside of body dark gray with a whitish stripe down the middle.

Horned Lark

Eremophila alpestris arctica

The horned lark, widely distributed in the park, seeks open areas where the vegetation is short. Along the road it nests regularly on Sable, Highway, and Thorofare passes. I have often encountered it

Horned lark—fluffed out



on the high slopes of the outer range. It may be identified by the black "horn tufts" on the head, the black line back from the eye, the black chest band, and a black tail that contrasts with the light brownish back. It is about 7½ inches long. The male's plaintive song may be delivered while he is in flight or perched on the ground.

Violet-green Swallow

Tachycineta thalassina lepida

The small (5½ inches long) violet-green swallow is similar to the tree swallow. It differs in having green, violet, and bronze reflections from the glossy black back rather than the dominantly steely-blue reflections of the tree swallow. The sides of the rump show white in the violet-green while in the tree swallow the rump is all dark. Also, in the violet-green, the white on the lower face terminates above rather than below the eyes. Both swallows are white on lower side of body. This swallow usually seeks holes and crevices in cliffs for its nesting. Along the road I have found a few nesting in the cliffs above Thorofare River. In favorable localities these swallows nest in large assemblages. This swallow has frequently been seen about the McKinley Park Hotel.

Tree Swallow

Iridoprocne bicolor

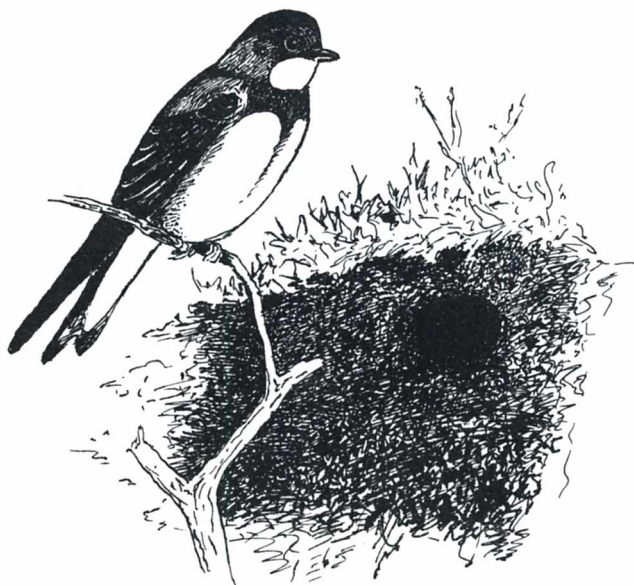
The tree swallow resembles the violet-green swallow. It is slightly larger, has a solid black rump which is not encroached on by white from the sides as in the violet-green; the black upper parts reflect steely blue. Both swallows are white on the lower side of body. The white of lower face does not reach the eyes—in the violet-green it extends above the eyes. The tree swallows have been seen several times during migration. It is likely that a few may nest in tree cavities along the north boundary of the park.

Bank Swallow

Riparia riparia

The bank swallow is grayish-brown over dorsal surface and white underneath with a grayish band across the breast. This swallow is abundant in interior Alaska but I have seen only one in the park. Some banks along

the railroad near the town of Nenana are riddled with their nesting holes. It is likely that the bank swallow will be found nesting near the north boundary, perhaps in banks of the Toklat River.



Bank swallow

Barn Swallow

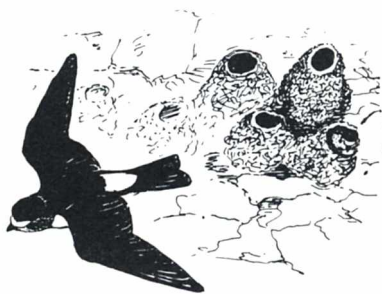
Hirundo rustica erythrogaster

The barn swallow may readily be identified by its steel-blue upper parts, reddish-brown underparts, and the long, forked tail. It has seldom been seen in the park but is widely distributed over Alaska. The mud nest is often lined with feathers. Where buildings are available the nest is built on beams and similar platforms or shelves.

Cliff Swallow

Petrochelidon pyrrhonota hypopolia

The cliff swallow has a glossy, blue back, a whitish forehead, tan rump, and white underparts except for a chestnut throat. The tail is



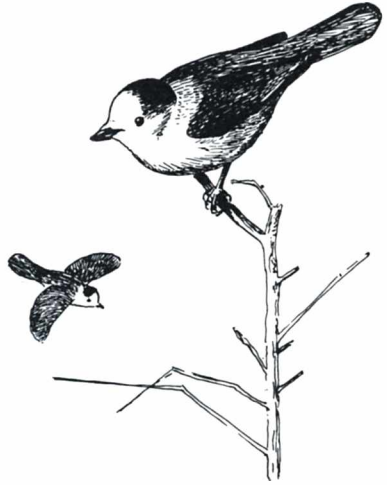
Cliff swallow

squared off rather than forked as in the barn swallow. The only authentic record of the cliff swallow in the park is that of a pair nesting on the underside of a concrete bridge across Stony Creek in 1959. The gourd-shaped nest is made from wet mud.

Gray Jay (Camprobber)

Perisoreus canadensis pacificus

At any season of the year the camper may expect a quiet, friendly visit from a company of two or three camprobbers. They come to camp for the same reason that they investigate a fox or wolf rendezvous, that is, to salvage any stray food items. They come with subdued calls, rich and pleasing, and occasionally one may hear a sweet warbling song, so low the bird appears to be singing to itself. Their plumage is loose and full, giving them a buoyancy that is evident as they slowly sail in graceful dips from one perch to another as they make their approach. Their color is gray-blue, with a whitish forehead and blackish crown. Nesting may take place as early as March in subzero weather. The nest is especially well-built and warm. Their food consists chiefly of carrion, insects, and berries.



Black-billed Magpie

Pica pica hudsonia

This magpie, because of its striking black and white uniform and long, iridescent tail, is a conspicuous year-round resident. Like the camprobber it often visits cabins and garbage dumps but it generally is not as confiding. In Norway it used to be a special favorite with the farm people. Back in the hills I have met extremely tame magpies that would alight in nearby bushes to satisfy their curiosity. On one occasion a young of the year walked into the Igloo cabin and hopped up on the bed while I was preparing a meal. The magpie does much chattering. However, when it tries to sing, something happens to its voice for only faint squeaking

sounds with here and there an accidental partial warble comes forth. The nest consists of a mass of sticks with an entrance on one side leading into the chamber. It is rather widely dispersed and nests are consistently found in timber along Igloo Creek and above the Toklat bridge.



Common Raven

Corvus corax principalis

The large black raven is an all-year resident. In winter he feeds on carrion in the hills, does not disdain garbage dumps, and on wind-blown hillsides he picks cranberries and crowberries. The most characteristic call is bell-like, but he has a dozen different calls which he sometimes utters in succession as though he meant them for song. Apparently the ravens remain paired all year, and some of their caressing in winter suggests a mutual fondness. In summer the ravens disperse to distant



remote ledges to nest, and are then not often to be seen. Their graceful play in the air currents has often been noted. In native villages along the Alaska coast the ravens are protected and they respond by becoming tame and neighborly.

Black-capped Chickadee

Parus atricapillus turneri

The jet black cap distinguishes this chickadee from the boreal and gray-headed chickadees which have brownish caps. The black-capped is less common than the boreal, but it is not rare and often comes to feeding stations. The chickadee nests in a natural cavity or one excavated in a decayed stub.

The chickadees are always active as they inspect all sides of twigs, nooks and crannies for eggs, larvae, and adult insects. They also feed extensively on seeds, especially those of spruce. Dr. Svein Haftorn, in his studies of the food habits of the different kinds of chickadees in Norway, found that they stored great quantities of seeds and insects, individually, for later use, particularly for winter. It is thought that the members of a species store collectively and therefore find and eat one another's stores as they forage in their usual ecological niche. Each species tends to concentrate its activities in different parts of the trees. One species may hunt and store on the bare parts of a branch while another may work the finer twigs. The insects they feed upon, including aphids, are all beneficial in one sense, for they help maintain the chickadee populations. Of course, much of their food can be looked upon as harmful from the standpoint of the vegetation. As the chickadees feed they maintain a constant chattering and twittering—pleasant chickadee notes. Sometimes they utter two prolonged whistling notes, remindful of the phoebe call.

Gray-headed Chickadee

Parus cinctus

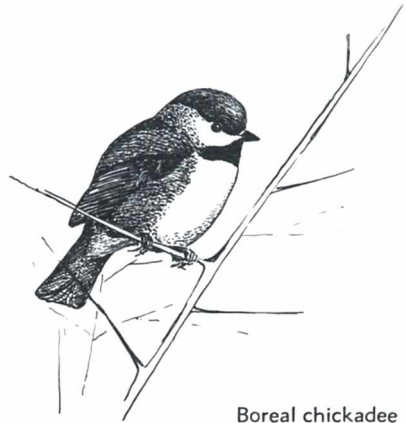
This chickadee is rare in the park as it is in many parts of its range. The gray-headed chickadee differs from the boreal in lacking the chestnut flanks. Also, the sides of the neck are white rather than gray. Its range in North America is restricted to Alaska and adjacent parts of Canada.



Gray-headed chickadee



Black-capped chickadee



Boreal chickadee

Boreal Chickadee

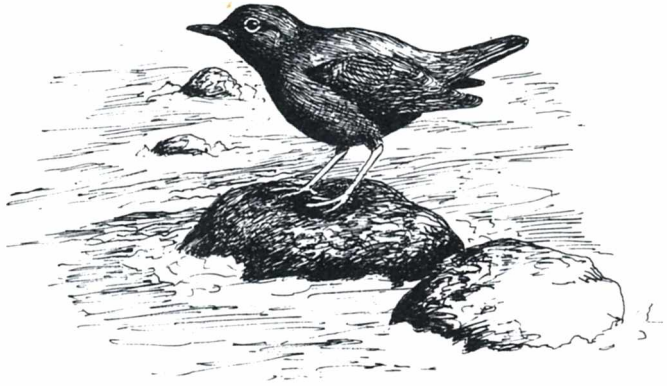
Parus hudsonicus

The boreal chickadee has a gray-brown cap; it differs from the gray-headed in having chestnut flanks, and in being gray on the sides of the neck rather than white. Dr. Svein Haftorn studied the summer storing habits of this chickadee in the park and found that it stored insects and seeds for winter in the same manner as he had noted among the chickadees in Norway. The boreal is the most plentiful of the chickadees in the park.

Brown Creeper

Certhia familiaris montana

The only record of the brown creeper in the park is a male collected by Charles Sheldon in the patch of woods where he had his cabin on the Toklat River. This is probably the most northern record for Alaska. The long curved bill, long stiff tail feathers, and brown color identify this small tree climber. Its highpitched, weak call serves to apprise one of its presence—otherwise it would easily escape observation because of its protective coloration.



Dipper (Water Ouzel)

Cinclus mexicanus unicolor

The dipper is about 8 inches long, plump, and slate-colored, and has a short tail held at an upward angle. It is a dweller of clear, swift, sparkling mountain streams where one may see it perched on a rock jerking the body down and up, or flying low over the water calling sharply. It feeds along the shore, on wet rocks, and in shallow water, or dives and disappears, sometimes in deep, swirling pools. I have seen it maneuver with an occasional quick flip of its wings when submerged. The feet are not webbed, but are large and sturdy with well-developed, curved claws, a general development which is no doubt useful for clinging when walking on the stream bottom. The nest is a bulky moss structure placed preferably on a shelf behind a curtain of water streaming down from moss-covered rocks. The dipper sings beautifully. In winter his prolonged cheery song warms the coldest day.

Robin

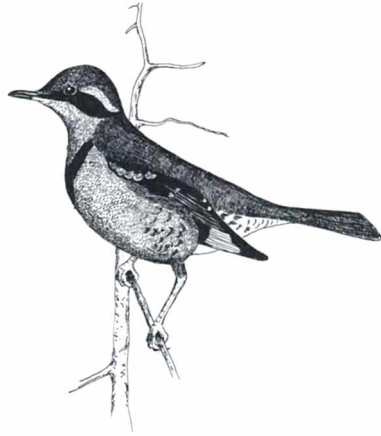
Turdus migratorius

The robin, a member of an outstanding group of musicians, the thrushes, is plentiful throughout interior Alaska. It occurs in the woods, and also far beyond timber at the heads of rivers and on the high passes. Often it nests under the sod edge of cut banks, and on ledges among the cliffs. Its song seems lustier than ever in the far north.

Varied Thrush

Ixoreus naevius meruloides

The varied thrush is about the size of a robin, which it resembles. The black band across the orange-brown breast, and the orange stripe back from the eye are good distinguishing marks. The song is a single drawn-out note with a rich organ quality, that is uttered in different keys. Grinnell (1900) writes: "It is an odd bird song, but when heard amid the solitude of the dark, damp spruce woods, it has an indescribably melancholy quality, which sets one to dreaming of far away home. Many a half-hour have I spent lying on my back on a mossy hummock in the northern forest, mesmerized, as it were, by this hypnotizer of the woods."



Hermit Thrush

Hylocichla guttata

The hermit thrush is bluebird size and has large spots on the breast. A good field character is the reddish-brown tail that contrasts sharply with the grayish-brown back. A pair was seen at Horseshoe Lake in three successive summers, and it has been seen near park headquarters, in Savage Canyon, and along the Toklat River. The song is outstanding, even among thrushes.

Swainson's Thrush

Hylocichla usulata incana

The Swainson's (olive-backed) thrush and the gray-cheeked thrush are both found in the park. The Swainson's is generally found in the woods, while the gray-cheeked may be abundant in willow and alder brush beyond spruces in some parts of Alaska. These two thrushes are very similar—the Swainson's has a more prominent buffy eye ring; and the cheek, throat, and breast are more tawny. Both are uniform olive-brown on upper parts, and have spotted breasts. In early summer the Swainson's beautiful song may be heard in the evenings in the wooded sections of the park.

Gray-cheeked Thrush

Hylocichla minima

The gray-cheeked thrush is found in scraggly timber and in brushy areas beyond timber. I have seen it in brushy areas at Teklanika campground, on Cathedral Mountain, Sable and Polychrome Passes, and at the tip of Muldrow Glacier. Four birds were heard singing in a patch of small cottonwoods on Moose Creek in early June 1960. These thrushes seemed especially abundant in 1960. Along Bering Sea they are abundant in the woods and out in the willow and alder brush.

The upper parts are uniformly olive-brown; sides of neck and breast with very faint tinge of cream-buff; middle of throat and belly whitish; rather faint grayish-brown spots on breast; cheeks grayish. It is less buffy than Swainson's thrush on cheeks and underparts, and lacks the distinct eye ring of the Swainson's.

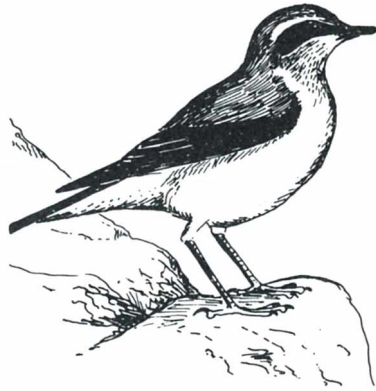
Wheatear

Oenanthe oenanthe

The wheatear breeds across Europe and Asia and northern North America, and spends the winter in the old world. The McKinley birds winter in eastern Asia. Only rarely is one found south of Canada. In the park it nests above timber and is rather common. The bulky nest of grass, rootlets, feathers, and sheep hair is hidden in a rock crevice. Nests have

been seen in cliffs on Sable and Polychrome passes and a mile or two beyond Eielson. The male is ashy-gray over the back, has a black band through the eye, and is washed with tan on throat and breast. The female is similar but duller. The white rump and black and white tail are diagnostic. The tail is swayed vertically, and at intervals the body is jerked downward. It is about the size of the bluebird. They become scarce after the middle of August.

Wheatear



Townsend's Solitaire

Myadestes townsendi

The Townsend's solitaire is uniformly dark gray with tan wing patches noticeable in flight; the outer tail feathers are edged and tipped with white. The solitaire behaves much like the thrush that it is, and like the thrushes has a beautiful song. The nest is placed on or near the ground and is usually protected from above by an overhang of some sort. Nests have been found in such places as a stump cavity, among roots of a fallen tree, and in rock crevices. Each year the solitaire may be found in a small canyon cutting into Igloo Mountain. It has been noted on Cathedral and Healy Mountains. Its call note is a bell-like "ting" which it repeats at short intervals for long periods.

Arctic Warbler

Phylloscopus borealis kennicotti

The arctic warbler ($4\frac{3}{4}$ inches long) is another species that nests in Alaska, and winters in Asia. It is plentiful in the willows along Igloo Creek, in the willows on both sides of the Toklat River near the road, and in other similar willow areas in the park. It is plain olive-green above



Arctic warbler

and whitish underneath. The white stripe over the eye on the side of the head is distinctive. The song is loud and incisive, and early in the season the males sing all day long. The nest, on the ground, is a compact cup of grass and hair roofed over with loosely piled moss. The young leave the nest the latter part of July. On July 23, 1955, I found the first nest of this warbler recorded for North America, and the following day a second nest—both of them in the willows along Igloo Creek.

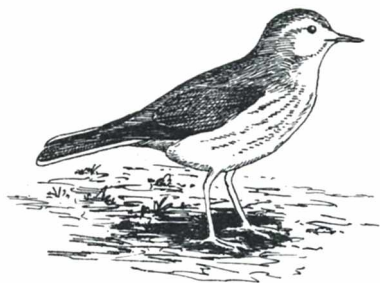
Ruby-crowned Kinglet

Regulus calendula

The ruby-crowned kinglet arrives in the park as early as late April and its loud song may be heard through May and June. This tiny sprite is olive-green with a white eye-ring. The males have a crimson spot on the crown which may be hidden but usually is visible during the courting period. The nest is built in a conifer up to 100 feet from the ground.

Water Pipit

Anthus spinoletta pacificus



Water pipit

The water pipit (6½ inches long) is a slender, brownish bird. Underneath it is buff, finely streaked on breast and sides of body. The white on outer tail feathers is a helpful identification character. It walks rather than hops, and has a habit of moving its tail up and down. Its flight song is a thin repeated "wheet" or "wheet-tsee."



Bohemian Waxwing

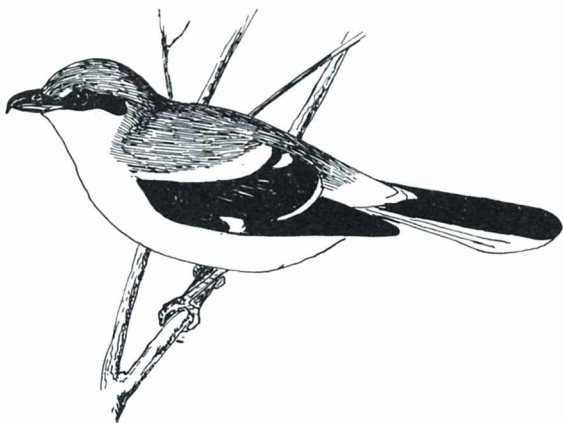
Bombycilla garrula pallidiceps

The Bohemian waxwing is a rather common nesting bird in the wooded sections of the park. It has often been seen in the big spruce woods south of Wonder Lake. Its general color consists of soft light shades of blending browns and grays. The prominent crest, the

black line through the eye, and red "wax" tips on some of the wing feathers (secondaries) are distinctive marks. They have been seen in the park in late March. They are fond of berries at any time, and in winter they feed extensively on buds. In early July 1960, 9 or 10 waxwings fed all day like flycatchers over small ponds south of Wonder Lake. No other method of feeding was noted during the day.

On June 19, 1950 a nest of a waxwing was found on a wooded slope near park headquarters in a spruce tree about 10 feet from the ground. On June 24 one of the four young had left the nest and the other three left while I was at the nest. Near the nest a flock of seven waxwings was seen. This species is said to nest in loose colonies.

In some winters the waxwings invade areas south of Canada in large numbers. In February 1917 it was estimated that at least 10,000 waxwings were present within the corporate limits of the city of Denver. Similar invasions have been recorded in Iowa, the New England states, and elsewhere.



Northern Shrike

Lanius excubitor invictus

The northern shrike (10 inches long) may be identified by its general ashy-gray color, a black line through the eye, black and white pattern on wings and tail, and white rump. It has a rather stout, hooked bill adapted for tearing apart mice and small birds. It also feeds on grasshoppers and other insects. Food items are cached in the crotch of a branch, or impaled on a thorn. The nest is a bulky affair built in a small spruce or, beyond timber, in a willow. A few shrikes have been noted wintering in interior Alaska, but there is a southward movement, and in some years the northern shrike invades the states south of Canada in large numbers.

Orange-crowned Warbler

Vermivora celata

The orange-crown patch identifies the male, but in the female this patch is restricted and sometimes absent. The upper parts are olive-green becoming brighter green toward the tail. The underside is a more yellow-

ish olive-green, becoming yellow posteriorly. The breast shows a faint streaking of olive-green. This warbler has been noted in May and June, and in August during migration. It has been reported to nest rather commonly on the lower Yukon River.

Yellow Warbler

Dendroica petechia amnicola

The yellow warbler has been noted frequently in the park. It has been seen during the nesting season in willows along Igloo Creek and elsewhere. The male is olive-green over the back, and yellow underneath, striped on breast with reddish-brown.

Myrtle Warbler

Dendroica coronata hooveri

The crown, rump, and sides of lower chest are bright yellow; the back is grayish-blue; forehead, sides of head, breast and sides of body blackish; throat white; white spots near tips of outer tail feathers; two white wing bars. The myrtle warbler is frequently seen during migration. A nest was noted in a spruce near the Nenana River. It may occur in willow brush far beyond timber.

Blackpoll Warbler

Dendroica striata

The blackpoll warbler can be identified by its black cap and white cheeks; it is white underneath with stripes down sides of neck and flanks. The female is greenish above and white below, streaked on sides of neck and flanks as in the male. This warbler generally nests in spruce trees. I have frequently observed them in the park.



Northern Waterthrush

Seiurus noveboracensis notabilis

The northern waterthrush has forsaken the more usual habits of warblers. Instead of foraging among branches and twigs it feeds on the ground like a thrush. It may be found along streams and ponds, in wet areas under heavy brush, and in moist mossy woods. These warblers walk or run instead of hopping, and have the habit of continually teetering and moving the tail up and down. The upper parts are uniformly dark olive-brown; the underparts are yellow, sharply streaked with blackish; and a prominent yellow line passes over the eye and extends back on side of head.

Wilson's Warbler

Wilsonia pusilla pileolata

The black glossy cap, yellow forehead and underparts characterize the Wilson's warbler. The nest is built on the ground in the moss or under matted dead grass, usually in alder or willow thickets. No nests have been found in the park but it apparently nests in willows along Igloo Creek and in other similar areas where it has been heard singing during the nesting season.

Rusty blackbird—male on left



Rusty Blackbird

Euphagus carolinus

In its northern migration the rusty blackbird, like several other eastern species, travels northwestward across Canada into Alaska. In spring the males are glossy black and the females are slate-colored. The fall plumage of both sexes is tipped with rust, the young of the year being especially rusty about head and shoulders. The rusty blackbird is not plentiful but is occasionally seen feeding along ponds. One year a late straggler was seen on November 22, long after the advent of subzero weather.

Pine Grosbeak

Pinicola enucleator alascensis

The mature male pine grosbeak is rosy red with blackish wings and tail, and two white wing bars. The female is gray with a dull golden crown and rump patch. The bill is short and thick. The soft, liquid call notes and warbles seem in harmony with the beautiful plumage, and

often serve to call one's attention to their presence. The song is a melodious elaboration of their mellow warblings. Their manner is gentle and confiding.

Although there is a tendency for a general southward movement in winter, some birds remain year around in the northern parts of their nesting range. Their food consists of buds, seeds, fruits, and insects. One day in October, I saw several small flocks feeding on pine cones. Some nests have been reported that were located only a few feet from the ground in the branches of spruce trees.

Gray-crowned Rosy Finch

Leucosticte tephrocotis littoralis

The rosy finches are generally distributed over the park on the ridges where they nest among the cliffs in crevices. In winter they move southward, often assembling in large flocks.

The blackish patch on the crown and the gray border that extends down over face and nape, are distinctive. The body is a bronzy brown; with feathers on belly, rump, and wings edged with rose. The wings and tail are blackish. The plumage of the female is more subdued than the male's.

Common Redpoll

Acanthis flammea

The redpolls occur in the park in small flocks the year round, but are most evident from April to November. This small, streaked finch may be identified by the glossy crimson patch on top of the head and the black chin. The breast of the adult male is washed with rose, the rump is streaked. The lighter-colored hoary redpoll, not yet recorded from the park should be looked for. The unstreaked white or rosy rump is a good distinguishing character for the hoary redpoll.

Common redpoll—male above



White-winged crossbill—male

White-winged Crossbill

Loxia leucoptera

The white-winged crossbill is another year-round resident. In August I have seen many small flocks feeding on spruce cones constantly calling and singing. Apparently nesting commences in May and the nest is built in a spruce tree, sometimes close to the trunk. Although restless, the birds are tame so that with binoculars one may approach close enough to see their crossed bills. The male is bright red with black wings and tail and two white wing bars. Young males have much yellow mixed in with the red. The female is olive-green and gray, the tail and wings are dark, and there are two white wing bars.

Savannah Sparrow

Passerculus sandwichensis anthinus

The Savannah sparrow is widely distributed over the tundra. The weak song with its buzzing phrase is distinctive. The breast is sharply streaked; the yellow line passing over the eye helps to identify this bird.

Slate-colored Junco

Junco hyemalis

The slate-colored junco is a rather common nesting species in the park. With the exception of the white outer tail feathers and white belly, the plumage of the adults is blackish with a brown tinge on the back and sides of the body. The bill is pinkish. The nestlings are dark gray and heavily streaked.

Tree Sparrow

Spizella arborea ochracea

The tree sparrow is one of the most abundant sparrows in the park. Its clear, pleasing song contributes much to the springtime music. It may be recognized by the chestnut crown, and the light gray underparts with a dark spot on the breast.

White-crowned Sparrow

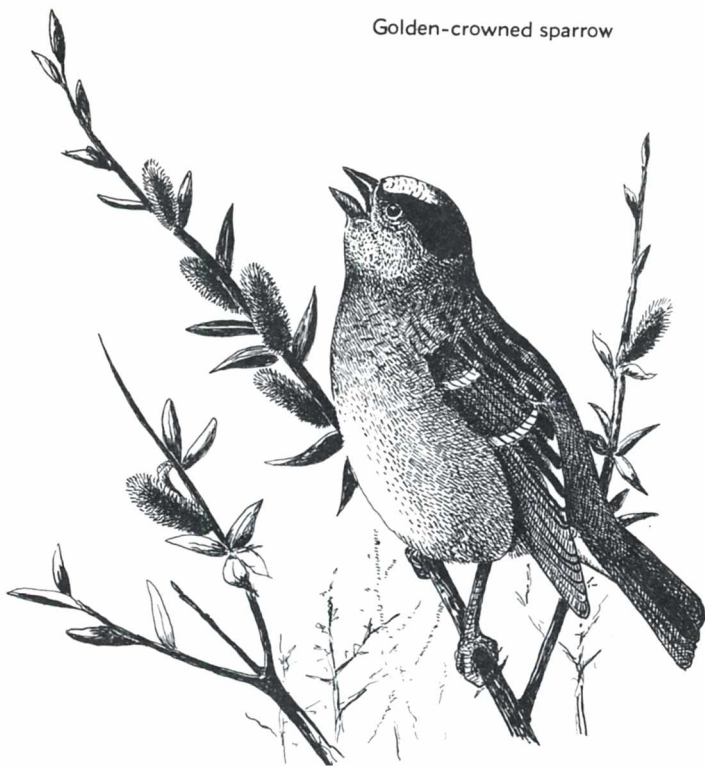
Zonotrichia leucophrys gambelii

The white-crowned sparrow is abundant and widely distributed over the park in the open woods and beyond in the willows and alders. It may be recognized by the contrasting black and white stripes on the head. The bill is light orange color, and the underparts plain gray.

Golden-crowned Sparrow

Zonotrichia atricapilla

The golden-crowned sparrow has a jet black crown with a golden patch in its center. The breast is plain gray. The song consists of three pure notes of plaintive quality. This sparrow has been seldom seen in the park. On July 2, 1956 on the slope above Thorofare River, our attention was attracted to the beautiful song while we were eating lunch. It sang, as



it perched on cliffs or tall willow brush, with its head thrown back and open bill directed skyward. The song has a ventriloquial quality so one cannot always be sure where it is originating. The singer moved about from one perch to another on the slope over an area 200 yards across, its chief and only end apparently being to fill the air with melody. I thought it the finest, clearest song I had heard. Two days later it was singing and also following what appeared to be its mate. In 1959, I found the golden-crowned in the same area and located the bulky nest hidden in low willows.

Fox Sparrow

Passerella iliaca zaboria

The fox sparrow is found in willows along the creeks and in patches of alder and willow in the canyons. It was present in dense alders near the top of Wright Mountain. The reddish-brown upper parts and the large brown spots and splotches on breast are diagnostic. Its sparrow bill separates it from thrushes somewhat similarly colored. Its song is loud and energetic.

Lincoln's Sparrow

Melospiza lincolnii

The Lincoln's sparrow is common in parts of interior Alaska but there are but few records for the park. The throat, breast, and sides are marked by narrow black streaks. The buffy band across the breast is distinctive. It has a prolonged song with a bubbling lilt that suggests the song of the house wren. Found in brushy, moist situations.

Lapland longspur



Lapland Longspur

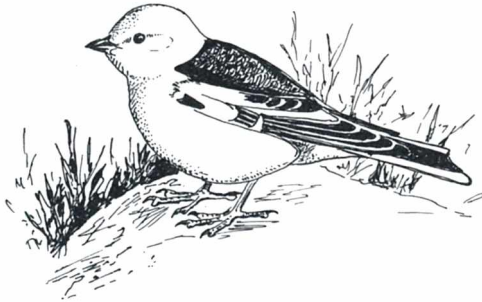
Calcarius lapponicus alascensis

Lapland longspurs nest in the short vegetation on Highway Pass, Stony Hill, and similar habitats in the park. The handsome male has a black head, throat, and chest; a yellowish cream line running back from eye; and a chestnut patch on hind neck. The female plumage is more subdued. A brownish spot on side of head is bordered with blackish, and the hind neck is rusty. The nest is hidden in clumps of dead grass. The males are constantly occupied with flight songs in early summer.

Snow Bunting

Plectrophenax nivalis

The male snowbird in summer is white with a black back, and black and white wings and tail. The female is similar but the black areas are broken, and partly brown. The birds are extremely conspicuous on the wing. They nest on the ridge tops and are widely dispersed, from the outer range to the heads of the rivers, where I have seen them assembled on the dryas-covered river bars as well as on the ridges. The nest is usually built in a rock crevice.



CHECKLIST OF BIRDS OF MOUNT MCKINLEY NATIONAL PARK

- | | |
|----------------------------------|-----------------------------------|
| Common Loon | Pintail |
| Yellow-billed Loon | Green-winged Teal |
| Arctic Loon (Pacific Loon) | Blue-winged Teal |
| Red-throated Loon | American Widgeon (Baldpate) |
| Red-necked Grebe | Shoveler (Spoonbill) |
| Horned Grebe | Redhead |
| Whistling Swan | Canvasback |
| Canada Goose | Greater Scaup |
| Black Brant | Lesser Scaup |
| White-fronted Goose | Common Goldeneye |
| Lesser Snow Goose | Barrow's Goldeneye |
| Mallard | Bufflehead |
| Gadwall | Oldsquaw |

-Harlequin Duck
-White-winged Scoter
-Surf Scoter
-Red-breasted Merganser
-Goshawk
-Sharp-shinned Hawk
-Red-tailed Hawk
-Harlan's Hawk
-Swainson's Hawk
-Rough-legged Hawk
-Golden Eagle
-Bald Eagle
-Marsh Hawk
-Gyr Falcon
-Pigeon Hawk
-Sparrow Hawk
-Spruce Grouse
-Ruffed Grouse
-Willow Ptarmigan
-Rock Ptarmigan
-White-tailed Ptarmigan
-Sandhill Crane
-Semipalmated Plover
-American Golden Plover
-Surfbird
-Common Snipe
-Whimbrel (Hudsonian Curlew)
-Upland Plover
-Spotted Sandpiper
-Solitary Sandpiper
-Wandering Tattler
-Greater Yellowlegs
-Lesser Yellowlegs
-Baird's Sandpiper
-Least Sandpiper
-Dunlin (Red-backed Sandpiper)
-Long-billed Dowitcher
-Western Sandpiper
-Northern Phalarope
-Long-tailed Jaeger
-Herring Gull
-Mew Gull (Short-billed Gull)
-Bonaparte's Gull
-Arctic Tern
-Great Horned Owl
-Snowy Owl
-Hawk-Owl
-Great Gray Owl
-Short-eared Owl
-Boreal Owl
-Belted Kingfisher
-Yellow-shafted Flicker
-Hairy Woodpecker

-Downy Woodpecker
-Blackbacked Three-toed Woodpecker
-Northern Three-toed Woodpecker
-Say's Phoebe
-Traill's Flycatcher
-Western Wood Pewee
-Olive-sided Flycatcher
-Horned Lark
-Violet-green Swallow
-Tree Swallow
-Bank Swallow
-Barn Swallow
-Cliff Swallow
-Gray Jay (Campropper)
-Black-billed Magpie
-Common Raven
-Black-capped Chickadee
-Gray-headed Chickadee
-Boreal Chickadee
-Brown Creeper
-Dipper (Water Ouzel)
-Robin
-Varied Thrush
-Hermit Thrush
-Swainson's Thrush
-Gray-cheeked Thrush
-Wheatear
-Townsend's Solitaire
-Arctic Warbler
-Ruby-crowned Kinglet
-Water Pipit
-Bohemian Waxwing
-Northern Shrike
-Orange-crowned Warbler
-Yellow Warbler
-Myrtle Warbler
-Blackpoll Warbler
-Northern Waterthrush
-Wilson's Warbler
-Rusty Blackbird
-Pine Grosbeak
-Gray-crowned Rosy Finch
-Common Redpoll
-White-winged Crossbill
-Savannah Sparrow
-Slate-colored Junco
-Tree Sparrow
-White-crowned Sparrow
-Golden-crowned Sparrow
-Fox Sparrow
-Lincoln's Sparrow
-Lapland Longspur
-Snow Bunting

