

BIRD OBSERVATIONS AT JOHNSON RIVER, ALASKA

By LAWRENCE H. WALKINSHAW and JOHN J. STOPHLET

On June 1, 1946, accompanied by Jim Walkinshaw, we arrived at Bethel in the Yukon-Kuskokwim River delta region of Alaska. The next few days we made field trips into the surrounding tundra, and on June 4, Nat Browne, a local pilot, flew us out to the Johnson River cabin, about 30 miles west of Bethel. Here we remained until June 20 when Nat returned and flew Walkinshaw back to Bethel, then across to Chevak, a few miles east of Hooper Bay on the Kashunuk River, then along the Yukon as far east as Marshall and finally back to Bethel on June 23 where Stophlet and Jim Walkinshaw joined him.

Bethel is located at latitude $60^{\circ} 47'$ and longitude $161^{\circ} 41'$. It lies at an elevation of 28 feet and to the north and west is surrounded by tundra and lakes extending for



Fig. 1. Cotton sedge (*Eriophorum*) on tundra along bank of Johnson River, 30 miles west of Bethel, Alaska, June 18, 1946.

miles toward the Bering Sea and the Yukon. The Johnson River originates to the north and east of Bethel, about half way between the Yukon and Kuskokwim rivers and then flows southwest toward Baird Inlet. About 40 miles from Baird Inlet it changes its course to southeast, flowing into the Kuskokwim River between 25 and 35 miles below Bethel. We spent from June 4 to June 22, except as mentioned above, in a Reindeer Service cabin on the west bank of the Johnson River about 20 miles from the mouth of the river. The river, at this point, had a very swift current, was dark and deep, and about 200 meters wide. The tide raised it nearly a meter.

The weather of the Yukon-Kuskokwim River delta region was far from good. Rain fell at least 18 of the first 24 days of June and the percentage of cloudiness, according to the Bethel weather records, was over 80 per cent. On no day was the sky completely clear for 24 hours. The wind blew almost continuously and on days of wind and rain, with the temperatures often as low as 35° or 40° F., we shivered as we trudged through the mossy tundra. Mosquitoes swarmed about us after the middle of June.

There were deep drifts of snow in many places when we arrived on June 4, and we were unable to reach the Bering Sea region at that time because rivers were frozen. The Johnson River, however, was open.

Temperatures at Bethel recorded at the United States Weather Bureau showed a low for May of 12°F. on May 1. On this date the mean was 25°F.; on May 6, 26°F.; and on May 10, 46°F. After May 18 the mean temperature did not go below 40°F. until September 22. For June the mean was 50.8°F. and the high daily temperature varied between 44° and 70°; the low was between 35° and 51°, and the mean daily temperature between 42° and 60°. The highest wind velocity ranged between 9 and 36 miles per hour, daily, and although it rained frequently, only 1.13 inches of rain fell at Bethel during June, and the greatest amount in 24 hours was .18 inches on June 8. The ice left the Kuskokwim River between May 25 and May 28. In the fall it froze over on November 11, 1946.

At Bethel the sun rose on June 1 at 3:28 a.m. and set at 10:02 p.m., and on June 20 and 21, the longest days of the year, it rose at 3:12 a.m. and set at 10:25 p.m., Alaska



Fig. 2. View of tundra showing patches of low scrub. Johnson River, June 18, 1946.

Standard Time. During the month of June it does not get dark in the Johnson River area, the middle of the night being nothing more than a period of dusk.

Plants of the Alaska tundra have been well recorded by Palmer and Rouse (U. S. Dept. Int. Fish and Wildlife Research Rept. 10, 1945). Of the plants listed they say (p. 7) "the *Carex* and *Cladonia* species are dominants in the tundra climax. Subdominants include species of *Eriophorum*, *Ledum*, *Salix* and *Betula* (low growing forms), *Vaccinium*, *Empetrum nigrum*, *Arctous alpina* and *Rubus chamaemorus*. Prominent grasses are *Festuca*, *Poa*, *Arctagrostis*, and *Agrostis*. The most common mosses are *Sphagnum* and *Polytrichum*. Characteristic forbs include species of *Pedicularis*, *Polygonum*, *Chrysanthemum*, *Arnica*, *Gentiana*, *Saxifraga*, *Senecio*, *Polemonium*, *Campanula*, and the Arctic coltsfoot (*Petasites frigida*)."

Many of the plants here recorded have been identified by Henry Kyllingstad of Mountain Village, Alaska, and Dr. J. P. Anderson of Iowa State College, Ames, Iowa.

In addition to the great stretches of mosses and lichens found over the tundra, some of the tundra plants found west of the Johnson River were: Alaska tea (*Ledum decumbens*), alpine bearberry (*Arctostaphylos alpina*), dwarf birch (*Betula*), salmonberry

(*Rubus chamaemorus*), blueberry (*Vaccinium uliginosum*), salmonberry (*Vaccinium vitis-idaea*), and fernweed (*Pedicularis verticillata*) and in large waving patches scattered groups of large cotton sedge (*Eriophorum angustifolium*). The most common plant, other than the sedges, mosses and lichens, was the crowberry (*Empetrum nigrum*) and last year's berries of this plant were found in the stomachs of many birds.

During 165 hours in the field at Johnson River, Walkinshaw listed the species shown in table 1.

Table 1

Birds observed near the Johnson River, 30 miles west of Bethel, Alaska

Species	June	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total
Arctic Loon		2		7	1	3	3	1	1	1	2	1	2	3	1	2	1	1	32
Red-necked Grebe		1	7	2	2	2	2	2		2	1		2					2	25
Whistling Swan			15	2		7						1	1					4	30
Canada Goose		2	8	7		5	5	2	3	2	1		4	3	4			2	48
White-fronted Goose				2			2						4	18	2			2	30
Mallard			3			1	2												6
Baldpate			2			1	1			2									6
Pintail		4		21	2	18	8	3	4	8	2	2	6	8	2	3	4	3	98
Green-winged Teal			1	1			1			1			2						6
Shoveller		1	3	2		5	4			4			2	1		1			23
Greater Scaup Duck			4		3	3	2		2	6			8	4	2			2	36
Old-squaw		2	4			3	2		2	1	4	6	8	6	4	8	4	8	54
American Scoter				3		5	7						2						19
Marsh Hawk									1										1
Am. Rough-legged Hawk														1					1
Willow Ptarmigan		12	18	4	4	18	6		12	15	6	8	38	20	18	8	6	3	196
Sandhill Crane		4	19	6		9	1	1	2	6		4	3	4	3	4	4		70
Golden Plover			2		2	4	1	2		2	2	4	8	6	2	2	4		41
Black-bellied Plover		4	4	4	2	2	2		1	6	1	2	2	4	4	2	2	2	44
Wilson Snipe		2	8	6	4	15	6	3	2	4	1	8	12	12	10	3	2	2	100
Hudsonian Curlew			2	2		3			2	8		4	8	2	2	2	2		37
Spotted Sandpiper		1																	1
Dowitcher		1	2			2				2									7
Western Sandpiper		8	12	15	12	10	4	6	4	8	4	12	30	35	35	27	12	4	238
Pacific Godwit						1	1			1									3
Northern Phalarope		1	8	12	4	6	6	2		6		4	8	4	8	2	2		73
Pomarine Jaeger				1															1
Parasitic Jaeger			2	8	4	4	2			2	2		2	2					28
Long-tailed Jaeger		5	15	10	2	6	2	4	2	8	2	4	4	6	2	2	2	1	77
Glaucous Gull			2														1		3
Short-billed Gull		2	15	6	2	4	8	2		4		2	2	6	2	2	2	2	61
Arctic Tern		18	14	16	6	18	18	6		8		10	18	12	2	8	4	6	164
Short-eared Owl						1							1						2
Tree Swallow		2	2	2	2	6	2			4	2	2	4	4	4	2	2	2	42
Bank Swallow		18	6	6	18	25	55	18	8	6	4	18	28	50	30	18	18	16	342
Barn Swallow		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	34
Raven									1				1	1				1	4
Robin					1		1	1	1		2	2	2	2	4	2	1		19
Gray-cheeked Thrush		1	1	1	2	3	2	3	1	1	2	2	1	3	1	1	1	1	28
Yellow Wagtail		2	2	4	6	25	8	6	4	12	4	8	25	16	12	8	8	3	153
Yellow Warbler					4	3	3	4	2	2	1	3	4	2	2	2	3	2	37
Northern Water Thrush		1	2		2	2	3	1		1	1	1	2	2	1				19
Pileolated Warbler		1			1	2	2	1			2		1		1	1	1	1	14
Rusty Blackbird			1	2							8		2	2	2	1			20
Redpoll		2	3		2	8	15	8	5	8	18	7	7	10	6	3	4	6	112
Savannah Sparrow		8	16	8	6	15	6	8	6	10	2	8	12	10	10	8	10	3	146
Tree Sparrow		6	18	12	8	18	12	12	10	18	6	18	25	28	16	6	12	8	233
Fox Sparrow			1		2	3	3			2	2	4	6	2	2	2	1		32
Lapland Longspur		25	18	4	10	28	10		12	6	20	35	38	18	6	8	2	2	242
Total species		29	34	30	28	39	38	23	23	36	26	29	41	34	32	29	32	25	49
Total individuals		139	241	178	116	296	220	98	88	188	93	182	336	310	204	136	132	81	3038

Nestings of the Golden Plover, Black-bellied Plover, Hudsonian Curlew, Western Sandpiper, Northern Phalarope, Yellow Wagtail, Hoary Redpoll, Common Redpoll, and Tree Sparrow in this region have been reported by Walkinshaw (Condor, 50, 1948: 64-70, 220-223). The following completes the list of species which we found nesting within five miles of our cabin:

Branta canadensis. Canada Goose. A nest with eight eggs was located in a dense bed of horsetail (*Equisetum*) along a small lake shore June 5, 1946 (Walkinshaw).

Anser albifrons. White-fronted Goose. On June 9 Eskimos showed us a nest with six eggs and a nest was found by Walkinshaw on June 16 with six eggs. The nests were built on the open tundra, one far from water, the other adjacent to a small lake.

Anas acuta. Pintail. Nests were found on June 5 with seven eggs, on June 6 with eight eggs, on June 6 with five eggs, on June 8 with eight eggs, on June 17 with three eggs, and on June 19 with six eggs. Nests were located in the tundra near the marshes or far from the marshes on high tundra. They varied in diameter from 12.9 to 17.8 cm. and from 74 to 85 mm. in depth.



Fig. 3. Willow Ptarmigan on nest in tundra near Johnson River, Alaska, June 15, 1946.

Mareca americana. Baldpate. On June 8 John Stophlet and Jim Walkinshaw found a nest with seven eggs high up on the tundra above the river. On June 9 the eighth and last egg was laid.

Clangula hyemalis. Old-squaw. On June 8 Walkinshaw found a nest with three unmarked, cream-colored eggs near the shore of a small lake. On June 14 he found another nest hidden under dwarf birch right on the shore of a small lake. Usually the female sat very close until we were within a few meters, then she flew into the adjoining lake. On June 18 Stophlet found a nest some distance from any lake.

Lagopus lagopus. Willow Ptarmigan. Nests were found by Walkinshaw on June 11 and 12 with 10, 8, 9, 8 and 10 eggs, and a nest was shown to us by Eskimos on June 9 which contained 8 eggs. A male collected on June 10, 1946, by Walkinshaw showed considerable molting. It weighed 546.2 grams and had many crowberries (*Empetrum nigrum*), several darker berries as well as many buds from the alders in its stomach. The young in one nest hatched on June 18.

Grus canadensis. Sandhill Crane. On June 8, 1946, Walkinshaw found a nest with two eggs. The nest measured 38×33 cm. in diameter and was almost completely surrounded by *Empetrum nigrum* and associated tundra plants. On June 9 the Eskimos, Joseph Andrews and Isaac Tuntusuk, showed us a nest with one egg. The nest was located in a deep mossy ravine on the open tundra and measured 45.7×53.3 cm. across.

Capella delicata. Wilson Snipe. A nest was found on June 6, 1946, containing a full complement of three eggs. It was built under grasses and sedges in the moss with some crowberry, cranberry and Alaska tea hanging over it. It measured 100 mm. across and 77 mm. deep. Stophlet found a nest with four eggs.

Stercorarius parasiticus. Parasitic Jaeger. A nest built on a small knoll was found on June 6. It measured 53 mm. in depth and between 15.2 and 19 cm. across. The two spotted, gull-like eggs were dark gray-green. Both parents were present and greeted us on June 8, June 11 and June 15. The calls were a shrill *keeee* or a guttural *kaww*. Both flopped along on the tundra ahead of us as we approached and were more demonstrative the closer we approached the nest site.

Stercorarius longicaudus. Long-tailed Jaeger. A female taken on June 10 by Walkinshaw was in complete, unworn breeding plumage. She weighed 330.5 grams; largest ova were 4 mm. This bird had eaten some ptarmigan eggs and berries of *Empetrum nigrum*. At the nest these jaegers were quite tame. They were often observed chasing other birds near their nest. These included Sandhill Cranes, Hudsonian Curlews, Parasitic Jaegers and other Long-tailed Jaegers. Four nests were found. The first measured 41 mm. in depth and was 17.8×18.9 cm. in diameter; the second nest was 38 mm. deep, 110×113 mm. in diameter and the other two were merely depressions in the top of the mounds on which they were built. Each nest contained only one dark gray-green egg.



Fig. 4. Arctic Tern on nest. Johnson River, June 18, 1946.



Fig. 5. Long-tailed Jaeger. Johnson River, June 6, 1946.

These eggs were much darker than those of the Parasitic Jaeger and were covered with more and finer dark grayish spots concentrated at the larger end. None of the eggs had hatched by June 20. Calls given by the adults while we were in the nest vicinity were *keee-keee* and *yaeee-yaeee-yaeee*.

Larus canus. Short-billed Gull. A nest was found far out on open tundra partly covered with water by Walkinshaw on June 12, 1946. It was built on a low knob and as he approached the region, the gulls came out to meet him. They were much more vociferous when he approached the nest region, even attacking him when he finally reached the spot. The nest was 163 mm. in diameter and 33 mm. in depth and contained three grayish-green eggs sparingly covered with black spots. The parents chased intruders for over a mile after they visited the nest.

Sterna paradisaea. Arctic Tern. Isaac Tuntusuk found a nest with one egg on June 8. It was destroyed by June 15. Walkinshaw found a nest with two eggs on June 12. It measured 97 mm. in diameter and 23 mm. in depth. John Stophlet found a nest with one egg on June 17. The adults at both of these nests attacked us, repeatedly hitting us on our heads. The call was a shrill *keeer*, sometimes a sharp *kik*. Nests were built on the small mounds found throughout the tundra.

Asio flammeus. Short-eared Owl. John Stophlet found a nest with five eggs on a small island in a marsh on June 8, 1946. One of the owls chased a Raven away from the nest.

Iridoprocne bicolor. Tree Swallow. We were surprised to find this species at Johnson River far from the nearest trees. One nested in a log building used for a cache near our cabin and Walkinshaw found a nest with six eggs on June 12. It was built in an old tin can lying on the tundra. The female was banded on June 15. She weighed 17.6 grams.

Riparia riparia. Bank Swallow. In examining the records of birds found near our Johnson River cabin this was found to be the most common species. This might be misleading because 28 nests dug into the high bank just a few hundred meters from the cabin were probably the only ones for quite some distance in any direction. The continual coursing back and forth of the Bank Swallow as it searched for food always brought many individuals within sight. A Bank Swallow egg was found on the bank underneath one of these holes on June 9. The burrows were about one meter beneath the top of the bank.

Hirundo rustica. Barn Swallow. A pair was found in an old sod igloo near our cabin and the remains of a last year's nest were fastened to a beam in the ceiling. On cold, windy days and during the dusky nights, both swallows stayed in this nest, side by side. Although both these swallows were there when we arrived on June 4, there was only one egg laid by June 20. Another pair nested in another nearby igloo.

Turdus migratorius. Robin. At Johnson River there were two pairs of Robins near our cabin. On June 11 Stophlet found a nest built on the ground at the base of an alder standing about one meter above it. It contained three young. The selection of the nest site was good because here on the ground the nest was able to withstand the terrific winds which whip across the area.

Hylocichla minima. Gray-cheeked Thrush. A male taken on June 14 by Walkinshaw weighed 34.1 grams. Thrushes were found in high tundra regions covered sparingly with alders.

Passerculus sandwichensis. Savannah Sparrow. At Johnson River nests were found as follows: June 4, 1946, three eggs; June 5, two nests with six and five eggs, respectively; June 6, four eggs; June 8, four eggs; June 12, five eggs. The average inside measurements of five nests were: depth, 55 mm. (48-60); inside diameter, 54.2 mm. (44.5-59.0).

Nests were built in lowland or highland tundra, under the grasses and sedges, often under dwarf birch and crowberry, and sunk into the moss so that their rims were even with the surface of the moss. The nests were made of grasses and sedges and were lined with fine grasses. This was one of the few small bird species whose nests were not lined with ptarmigan feathers.

A male taken on June 14 by Walkinshaw weighed 18.8 grams.

Calcarius lapponicus. Lapland Longspur. Two males were collected by Stophlet on June 11. They weighed 25.6 and 29.8 grams, respectively. A nest was found on June 8 by Walkinshaw with five eggs just five meters from a ptarmigan nest. A second nest was found the same day with three eggs, a third nest on June 15 with five eggs and another on June 17 with four young. The eggs were so heavily marked with brownish spots that no ground color was discernible.

An area of 60 acres was censused for breeding birds at Johnson River on the tundra area; another 20-acre area was censused along the Johnson River bank. These have been summarized by Walkinshaw, Stophlet and Walkinshaw (Audubon Mag., Breeding Bird Census, 1946:132-133). On these tundra plots only 70 pairs were found per 100 acres. Many areas had smaller populations. Censuses taken at Fairbanks and McGrath showed that the populations were definitely higher where spruce forests were present.

Battle Creek, Michigan, and Toledo, Ohio, August 15, 1947.