

THE CONDOR

A BI-MONTHLY MAGAZINE OF
WESTERN ORNITHOLOGY
Published by the
COOPER ORNITHOLOGICAL CLUB

VOLUME XXXVII

JULY-AUGUST, 1935

NUMBER 4

BIRD LIFE AT HORSE LAKE, BRITISH COLUMBIA

WITH THREE ILLUSTRATIONS

By J. A. MUNRO

Horse Lake, nine miles long and a quarter to a half mile wide, is an expansion of Bridge Creek in the Cariboo region of British Columbia. The altitude is approximately 3600 feet; the life-zone is Canadian with some intrusion of Transitional fauna. During the period July 31 to August 8, 1934, an opportunity occurred to study the bird life of this hitherto unvisited region. Observations were confined chiefly to an area of two square miles on the south side of the lake near its western end. Within this circumscribed area there are seven definite habitats.

1. **The open forest.**—This consists of a peninsula covered with open woods of trembling aspen, among which are Douglas firs of great age, clear stands of lodge-pole pine and clumps of black spruce. The original forest was fire-swept many years ago and here and there are prostrate trees now reduced to mounds of crumbling wood which gradually are being absorbed by the forest floor. There is little underbrush. On the north side thickly wooded banks drop steeply to a shore-line growth of alder, willow and mountain birch. Balm of Gilead grows along the west shore, the apex of the peninsula. On the south side the aspen forest ends abruptly near the edge of, but well above, a swamp area which occupies the shoreward portion of a marshy bay. An ungraded road cuts through the forest to a ranch house and clearing on the end of the peninsula.

BIRDS OF THE OPEN FOREST

Gray Ruffed Grouse	Grinnell Chickadee
Western Goshawk	Red-breasted Nuthatch
Sharp-shinned Hawk	Western Robin
Cooper Hawk	Sierra Hermit Thrush
Golden Eagle	Mountain Bluebird
Eastern Nighthawk	Western Ruby-crowned Kinglet
Rufous Hummingbird	Cedar Waxwing
Red-shafted Flicker	Cassin Vireo
Red-naped Sapsucker	Red-eyed Vireo
Rocky Mountain Hairy Woodpecker	Tennessee Warbler
Hammond Flycatcher	Orange-crowned Warbler
Western Wood Pewee	Audubon Warbler
Olive-sided Flycatcher	Townsend Warbler
Tree Swallow	Shufeldt Junco
Cliff Swallow	Western Chipping Sparrow
Western Crow	

A migration of Tennessee Warblers, Townsend Warblers and Orange-crowned Warblers, accompanied by a few Western and Ruby-crowned kinglets, took place on August 7 and 8. Small bands of these birds frequented the tops of the tall aspens and their actions plainly indicated this to be a migratory movement. The raptors also were migrants. Otherwise the birds listed above, most of which were seen daily or at least several times, were believed to have nested in this habitat.



Fig. 35. Open forest habitat: Horse Lake, British Columbia.

The Western Crow, apparently a scarce bird locally, was seen once, as also were the Golden Eagle, Goshawk, Sharp-shinned Hawk, and Cooper Hawk. The Red-shafted Flicker, reported to have nested on the peninsula, was heard and I picked up a red primary feather. The abandoned nests of Cliff Swallows under the eaves of a log barn proved the earlier presence of this species. It was reported that a pine squirrel had eaten the young in one of these nests. Earlier in the summer a pair of Mountain Bluebirds occupied a bird house near the ranch buildings. These had left before my arrival.

Four sapsuckers collected, an adult female and three juvenal males, are typical of the race *Sphyrapicus varius nuchalis*; *ruber* occupies the Bowron Lake region, about 125 miles north, and its range probably extends some distance farther south. Just where the two races come together, if they do, has not been established. *Ruber* is unknown as a migrant in south-central British Columbia and must, obviously, reach

the northeastern section of its breeding ground in the interior from the west or the southwest. It seems likely that this race occupies a narrow belt of territory extending in a northeasterly direction from Howe Sound and Harrison Lake to the Barkerville-Bowron Lake region. The migration of the dry-belt race, *nuchalis*, is north and south. It has not been recorded from the coast of British Columbia.

2. **The willow swamp.**—Several acres of willow swamp lie between the high wooded area of the peninsula and a marshy bay to the south, the edge of which was outlined by a rank growth of tules. The swamp and the high wooded area of the peninsula are separated by a narrow strip of water. The maximum depth of water in August, 1934, was two feet. Tree growth included two or three species of willow (*Salix*), that reached a height of ten feet, and clumps of a dwarf birch. The dominant plants were Cyperaceae of several species. Other hydrophytic plants were bulrush (*Scirpus*), smartweed (*Polygonum amphibium*), a water butter-cup (*Ranunculus multifidus*), bladderwort (*Utricularia vulgaris*), peppermint (*Mentha canadensis*), *Potamogeton natans*, and duckweed (*Lemna* sp.). This area contained an unusual association of boreal and transitional bird species.

BIRDS OF THE WILLOW SWAMP

American Bittern	Grinnell Water-thrush
Marsh Hawk	Western Yellow-throat
Wilson Snipe	Giant Red-wing
Rufous Hummingbird	Rusty Blackbird
Alder Flycatcher	Western Savannah Sparrow
Long-tailed Chickadee	Gambel Sparrow
Cedar Waxwing	Lincoln Sparrow
Eastern Yellow Warbler	Song Sparrow

The young in first plumage of the four sparrows noted above were much in evidence. So also were juvenals of the Yellow Warbler and Yellow-throat. On one occasion a juvenal Song Sparrow and a juvenal Lincoln Sparrow, perched close together in the same bush, were in the field of my binoculars at one time. Red-winged Blackbirds had nested earlier in the tules and Rusty Blackbirds in the willows. The young of the former were in juvenal plumage; the young of the Rusty Blackbird were molting to first winter plumage. The Red-wing population consisted of three pairs with young, totalling fourteen individuals; the Rusty Blackbird colony was estimated to be twenty, including adults and young.

On August 3 a nest of the Cedar Waxwing (*Bombycilla cedrorum*) containing four eggs was found in a willow, well out in the swamp where the water was eighteen inches deep. The deep cup-shaped nest built of dry moss, willow cotton, twigs, and grass, and lined with willow bark fiber, was woven among five or six upright willow branches near the top of the tree. The sitting bird was very tame. With the possibility of Bohemian Waxwing in mind I pushed aside the intervening branches and pulled down toward me the higher, more slender, branches holding the nest until it was nearly on a level with my eyes so that the white under-tail coverts of the sitting bird could be seen. Not until then did the bird leave.

The nesting of the Rusty Blackbird (*Euphagus carolinus*) at Horse Lake marks a considerable extension of its breeding range in British Columbia. The most southerly breeding ground hitherto recorded was at Hazelton (Taverner, quoted by Brooks and Swarth, Pac. Coast Avifauna No. 17, 1925, p. 83). Hazelton is north of the 55th Parallel and west of the 127th Meridian; Horse Lake is south of the 52nd Parallel and close to the 121st Meridian.

The Brewer Blackbird was not seen at Horse Lake. This species nests commonly in the Lac La Hache Valley, fifty miles (by road) northwest. The altitude, 2649 feet, is almost a thousand feet lower than Horse Lake. The Lac La Hache Valley is a northern outpost of the Transitional zone isolated in the boreal forest and probably is the northern limit for the breeding of Brewer Blackbird in British Columbia.



Fig. 36. Willow swamp habitat at right, marshy bay habitat at left: Horse Lake, British Columbia.

The Red-winged Blackbird of the Horse Lake region proved to be a heavy-billed race closely resembling *Agelaius phoeniceus arctolegus*. Specimens of identical character have been taken in migration at Okanagan Landing, where, in some years, a large percentage of the wintering Red-wings are of this northern race.

It was new in my experience to find Song Sparrows (*Melospiza melodia*) nesting in the same environment as Lincoln Sparrows, Rusty Blackbirds, and Grinnell Waterthrushes. Subsequently it occurred to me that this might not be the Song Sparrow of the Okanagan dry belt with which I was so familiar, but another race associated with a boreal habitat. In a species so plastic as the Song Sparrow it might be expected that the individuals inhabiting such different environments as the transitional dry belt of British Columbia and the high swampy meadows of the boreal forest would have developed dissimilar characters. There was not an opportunity to put this reasoning to the test, because the few adults seen were in such worn plumage as to be considered useless for comparative purposes; so no specimens were taken. This applied also to most of the young birds, which were molting from the juvenal to the first winter plumage. One unworn juvenal obtained is somewhat darker on the dorsal surface than are birds of the same age from the Okanagan Valley. Further studies may show that Horse Lake comes within the breeding range of a dark Song Sparrow which in southern British Columbia is known as a migrant and winter visitant. Evidence for the existence of such a race is herewith submitted.

A creek bottom near Okanagan Landing, through all its gradual evolution from a brush-covered and swampy meadow to a cultivated area of grain fields with restricted natural cover, has maintained a large Song Sparrow population. Years ago it was observed that some fall and winter taken specimens were, in comparison with the breeding birds, darker and larger—larger, that is, in bulk, not necessarily

in actual measurements. To this large, dark bird the name *rufina* seemed applicable at that time, and the name *morphna* was used to designate the breeding birds.

The dark Song Sparrows arrived usually in November and at this time the local birds, the few which had not migrated, were still in possession of their summer territories comprising brushy thickets and the weed patches encompassed by growths of brush. For the most part the new arrivals frequented dense patches of amaranthus, sweet clover, Canada thistle and lamb's quarters, which occupied open parts of the meadow. It is not to be inferred that definite segregation took place. These extensive weed patches, at some distance from the brush thickets and for the most part unoccupied, were attractive because of the abundant food supply afforded in the shape of seeds. The presence of the "northern" birds was noticeable because, for a short time prior to their arrival, the species usually was scarce, or, in some years, so far as could be determined, absent. More precisely, in November, 1932, during a period of four days no Song Sparrows could be found; thereafter the species represented largely by dark birds, became abundant.

This race can usually be recognized in life. In the hand the large size and dark coloration of the dorsal surface—less gray than *merrilli* and less rufous than *morphna*—is apparent. Moreover, in comparison with the two races mentioned, the bill is commonly longer, with a darker lower mandible. Winter specimens of this dark Song Sparrow, which I have examined from the Okanagan Valley, Vancouver, Vancouver Island (Comox and Departure Bay), and Portland, Oregon, all show the characters cited. For some time past, to avoid the use of an explanatory prefix such as "the large, dark Song Sparrow that winters in the Okanagan Valley," I have called this bird *inexpectata* (Riley, Proc. Biol. Soc. Wash., 21, 1911, p. 234), a name which is available and, in my opinion, appropriate. Swarth (Condor, 25, 1923, pp. 214-223) does not accept the validity of *inexpectata* which he considers indistinguishable from *morphna*.

3. **The marshy bay.**—This is a shallow bay approximately half a mile long and a quarter of a mile wide. To the north lies the wooded peninsula (habitat 1), to the south a rough, timbered mountain side (habitat 6), to the east a sedge marsh of about eighty acres (habitat 4), and to the west the open lake. The outermost fringe of shore-line vegetation comprises tall, rank bulrush, succeeded by bog-rush, which in turn gives place to growths of sedge as the water shallows. The marsh belt was widest on the north and east sides of the bay and thinned out to a comparatively narrow strip on the south side.

BIRDS OF THE MARSHY BAY

Common Loon	Barrow Golden-eye
Holboell Grebe	American Coot
Osprey	Spotted Sandpiper
Bald Eagle	Black Tern
Baldpate	Kingfisher

Here was ample nesting cover for diving ducks, and the dryer areas adjoining provided suitable cover for pond ducks; but water-fowl were conspicuous because of their scarcity. The entire duck population consisted of one brood each of Baldpate and Barrow Golden-eye. One pair of Coots with two large young also frequented the bay. Some factor necessary to the requirements of a summer water-fowl population evidently was lacking. Food plants comprised: *Potamogeton perfoliatus*, *Potamogeton pectinatus*, *Chara*, and *Ceratophyllum demersum*. The growth of

these plants was not profuse and only *Chara* was abundant. *Potamogeton pectinatus* occurred in isolated plants growing a foot or more apart, and in no place had there developed the thick masses characteristic of this plant in other waters. The water temperature was approximately 60° Fahrenheit (estimated on August 5); the pH was not taken. Animal food consisted of numerous unidentified insects (adults and larvae) and 2 gastropods—a *Limnea* and a *Planorbis*.

There appeared to be ample food to satisfy the requirements of a large colony of Black Terns which nested in the sedge marsh and which were constantly seen hawking over the shallow waters of the bay, or passing to and from their nesting ground.

Two Bald Eagles, an adult and a juvenile, sometimes hunted near the mouth of the bay. On one occasion I watched the two birds tearing at the carcass of a large fish which had drifted in from the lake.

4. **The sedge marsh.**—This is an area of approximately eighty acres situated at the head of, and connected with, the marshy bay described above. This was the characteristic mountain hay-meadow of the region. The dominant plants were various species of sedge (*Carex*). Here and there open pools of water were covered by a luxuriant growth of smartweed (*Polygonum amphibium*) in profuse bloom. Along the shore were large, dense patches of cinquefoil (*Potentilla* sp.), and in some places fireweed grew shoulder high. In 1933 Horse Lake was higher than it had been for some years, as a result of which the entire meadow was flooded so late as mid-August. I learned later that high water conditions persisted into September so that much of the wild hay crop remained uncut.

BIRDS OF THE SEDGE MARSH

Great Blue Heron	Greater Yellow-legs
Common Mallard	Lesser Yellow-legs
Marsh Hawk	Least Sandpiper
Duck Hawk	Black Tern
Eastern Sparrow Hawk	Eastern Yellow Warbler
American Coot	Western Yellow-throat
Killdeer	Rusty Blackbird
Wilson Snipe	Giant Red-wing
Solitary Sandpiper	

Birds found exclusively in this habitat were: Great Blue Heron, Killdeer, Least Sandpiper, Solitary Sandpiper, Greater Yellow-legs and Lesser Yellow-legs. The Great Blue Heron remained well out in the sedges; the waders frequented an area of soft mud at the edge of the meadow. A pair of Killdeers had nested in the vicinity and were accompanied by young; the other waders, with the possible exception of the Greater Yellow-legs, were migrants. Ten Greater Yellow-legs, ten Lesser Yellow-legs and five Least Sandpipers were seen on August 7. Two days earlier an adult Greater Yellow-legs showed what seemed to be parental interest in a full-grown young bird which accompanied it, and, when excited by the presence of human observers, scolded noisily, with alarm notes characteristic of the nesting season. Wilson Snipe, apparently migrating, were abundant, as many as forty being flushed from the sedges during one morning's walk.

The Great Blue Heron was undoubtedly a wanderer, perhaps from the coast. Non-breeding individuals of this species are encountered each summer at different points in the interior of British Columbia. They have been seen at Lac La Hache and Bridge Lake in the Cariboo region, at Stump Lake in the Nicola district, and

at various places in the Okanagan Valley where as many as twelve individuals have been seen at one time beside a small, muddy lake. There is no definite breeding record for the interior, and the place of origin of these summer wanderers is uncertain. Two specimens which were picked up dead in the lower Okanagan Valley have been identified as of the coast race, *fannini*. These birds with several others had died of



Fig. 37. Sedge marsh habitat: Horse Lake, British Columbia.

starvation during the winter when their feeding grounds froze over, a fate which probably overtakes most of the individuals that attempt to winter in the interior of British Columbia.

The only ducks living in the meadow were a brood of seven full-grown Mallards, apparently raised in the vicinity and seen daily. Three Baldpates appeared one morning, and on another day three Mallards visited an open pool for a short time. These visitors were migrants.

In the center of the meadow, "islands" of willow and dwarf birch were frequented by Yellow Warblers, Yellow-throats, Lincoln Sparrows, Song Sparrows, Savannah Sparrows and, occasionally, Rusty Blackbirds and Red-winged Blackbirds.

5. **The open fields.**—A small, cultivated area with standing crops of oats and brome grass hay, a piece of dry hay meadow, and several small groups of trembling aspen are included in this habitat.

BIRDS OF THE OPEN FIELDS

Columbian Sharp-tailed Grouse
Eastern Sparrow Hawk

Western Vesper Sparrow
Western Savannah Sparrow

The Sharp-tailed Grouse and the Vesper Sparrow were seen only in this habitat. Both species were scarce, the grouse being represented by a female with half-grown brood and the Vesper Sparrow by one adult.

6. **The mountain side.**—This consisted of the north slope of a mountain rising approximately 500 feet above the lake. This rough, steep hillside was covered by a coniferous forest dominated by lodge-pole pine. It had been fire-swept in places.

Fallen trees in tangled confusion, with brush growth in the interstices, made walking difficult.

BIRDS OF THE MOUNTAIN SIDE

Western Red-tailed Hawk	Red-breasted Nuthatch
Western Pileated Woodpecker	Western Golden-crowned Kinglet
Batchelder Woodpecker	Audubon Warbler
Eastern Kingbird	Northern Pine Siskin
Olive-sided Flycatcher	Red Crossbill
Grinnell Chickadee	

The mountain side was a hunting ground for two Western Red-tailed Hawks, a normal pale adult and a very dark juvenile. The latter was examined at close range while it perched in a willow clump at the base of the mountain. This bird was so black as at first to be mistaken for a Swainson Hawk in the dark chocolate-colored phase. From the willows it flew to a dead aspen near-by and then on to the wood's edge, whence it rose and commenced ascending in widening circles, sometimes soaring with wings and tail so expanded as to form almost a complete plane. Meanwhile the adult, a bird with light underparts, soared and screamed across the face of the hill. Finally the two birds came closer and together gradually drifted out of sight.

A small band of Red Crossbills, several times observed, were feeding on seeds of the lodge-pole pine. Those examined at close range proved to be adults in worn plumage. The testes of males taken measured 2 to 3 mm., and the reduced size of these organs, together with the worn plumage, suggested that these birds had bred six weeks or two months earlier.

7. **The spruce swamp.**—Two small islands of black spruce lie near the base of the timbered mountain referred to above, at the edge of, and on the same level with, the sedge swamp from which they are separated by a dense belt of willows. Underfoot was a thick tangle of down timber, thickets of dwarf birch, pools of water and, in places, a deep growth of spongy moss—not sphagnum.

BIRDS OF THE SPRUCE SWAMP

Franklin Grouse	Red-breasted Nuthatch
Gray Ruffed Grouse	Rocky Mountain Creeper
Olive-sided Flycatcher	Western Ruby-crowned Kinglet
Red-naped Sapsucker	Orange-crowned Warbler
Batchelder Woodpecker	Audubon Warbler
Rocky Mountain Jay	Northern Pine Siskin
Grinnell Chickadee	White-winged Crossbill

Birds found solely in this habitat were Franklin Grouse, Rocky Mountain Jay, Rocky Mountain Brown Creeper, Northern Pine Siskin and White-winged Crossbill. The last mentioned were feeding on green spruce seeds.

This little swamp proved to be one of the most attractive habitats of the diversified area under review. Tall, slim spruces at the meadow's edge, bluish against a green background of pines—how they had fascinated me as I searched for water-fowl in the sedge marsh! So, one morning, the line of beckoning trees became my objective and I waded through the marsh directly toward them, floundered through their encircling belt of willows and finally came to rest upon an uprooted tree within the boundaries of the spruce stand. Pygmy Owl call, and squeak,

brought immediate response from a score of birds. Almost at once appeared Rocky Mountain Jays, imitating the owl call perfectly, while from the hidden depths of the swamp came that angry call of the Red-naped Sapsucker which mimicks, or seems to mimick, the Red-tail's scream. White-winged Crossbills with metallic notes of alarm alighted on the topmost twigs of the spruces above, and a mixed crowd of Ruby-crowned Kinglets, in dull, juvenal dress, Red-breasted Nuthatches, Aubudon Warblers, Chickadees, and a Brown Creeper flitted and scrambled through the surrounding trees as they searched for the source of those exciting noises.

A total of 77 species was observed (or recorded from other evidence) in the seven habitats studied during the course of a week at the latter end of the breeding season. Of these, 65 species can be regarded as summer visitants, or residents, and 12 species as vagrants or migrants.

Okanagan Landing, B. C., Canada, July 15, 1934.

THE CHANGING DISTRIBUTION OF THE WESTERN MOCKINGBIRD IN CALIFORNIA

WITH TWO MAPS

By JOHN R. ARNOLD

For a number of years the impression has been gaining ground among students of bird-life that the distribution of the Western Mockingbird (*Mimus polyglottos leucopterus*) in California has been undergoing considerable change. Recently a study was undertaken for the purpose of assembling definite data that would decide whether this impression were founded on fact, and if so, whether the observed change in distribution could be correlated with any causal factor.

The writer has secured his facts from three main sources: (a) from published reports in which the mockingbird has been mentioned; (b) from unpublished notes of experienced ornithologists and oologists in various parts of the State; and (c) from the records and files in the Museum of Vertebrate Zoology and the California Academy of Sciences. The writer's own observations were made while residing in mockingbird country as well as during frequent trips to various parts of central California, with the mockingbird the special objective.

The writer wishes to express great appreciation to the members of the staff of the Museum of Vertebrate Zoology for guidance and aid in his study and to members of the Cooper Ornithological Club for the use of their notes.

In 1911 there appeared a paper under the title, "Distribution of the mockingbird in California" (Grinnell, 1911), which included a map of California showing the distribution of the mockingbird as of that date. In addition to the map were several pages citing authorities for the data upon which the map was based and discussing the status of the species prior to 1911. This discussion was chiefly concerned with the changes in the mockingbird population of southern California, that area apparently being the only one in which an especially noticeable change had occurred. Since 1911, further published reports have brought out the fact that the mockingbird had been actively spreading into regions other than the southern area. Tyler (1913) first reported a changing distribution in the San Joaquin Valley; Wilder (1923) reported an unusual occurrence in Humboldt County; Kline (1931)