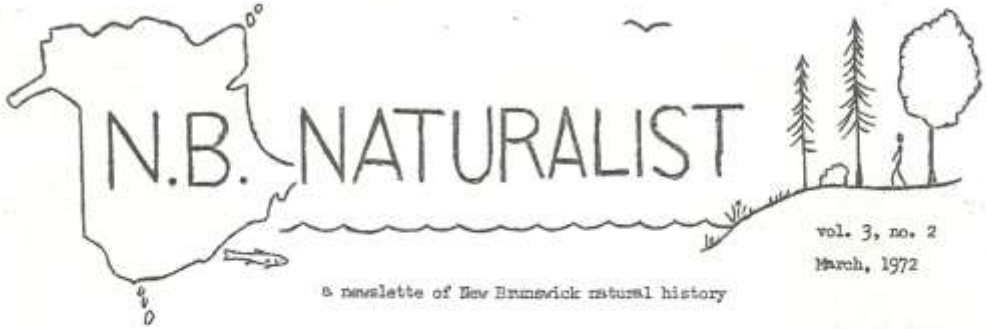

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a newslette of New Brunswick natural history

In this issue of the N.B. Naturalist we depart from our normal format with the inclusion of a paper by Rudy Stocek about Osprey nesting on power lines. In future, we may include similar articles from time to time, as they are available.

Unfortunately, we do not yet have ready a tabulation of the Bald Eagle and Osprey reports from 1971. We plan to include it next month.

WEATHER

This winter, much of New Brunswick had less than usual snow depths until the last week of February. From then through March, snow was frequent and its depth built up greatly throughout the province. The northwestern part of the province was the exception with considerable snow all winter. Temperature-wise, December was a bit colder than normal and January near normal while February and March were each about 5° colder than is usual. All in all, winter packed most of its wallop into a four week period when we normally expect progressively milder conditions. Particularly difficult for wildlife was an ice storm March 2-3 which brought unusually large amounts of freezing rain and ice pellets to southern New Brunswick.

MAMMALS

One of the most interesting mammal reports in quite a while comes from Henrik Deichmann who has provided details of what he suspects was a Coyote in Fredericton January 27. The long-legged animal was seen running "swiftly and apparently effortlessly" across an opening in the Forest Hill area. Although the identification of such animals is made difficult by the similarity of some German shepherd dogs and their mutt offspring we do know that the Coyote's range is expanding eastward and that they have been recorded in several parts of Maine. Therefore, it would not be too surprising to have them reported here also. Characteristics noted by Mr. Deichmann were: "alert, obviously wild demeanor; rather small ears and slightly pointed muzzle; brown back and flank fur and ochre belly; long-legged, slight build; noteworthy skill and speed at which it ran; tail held horizontally." The manner of carrying the tail actually is typical of a Timber Wolf, rather than Coyote which normally holds its tail low. Just what this "dog" actually was will remain a mystery. However, it is worthwhile for naturalists to keep on the watch for bushy-tailed, long-legged wild dogs, since either the wolf or the coyote might be seen here.

Another predator of interest, though of widespread occurrence is the seldom reported Long-tailed Weasel. One was brought to the museum by John Painter after it was hit by his car in Saint John West Feb. 12. Mr. Painter, a spare-time trapper, recognized it and remembered that we were interested in them. The weasel most frequently seen and trapped here is the Short-tailed Weasel.

The Meadow Vole population in Albert County appears finally to have subsided from the very high numbers of the past two years, but in St. Martins area Frances Bradshaw reports that small rodents are very plentiful and that she has seen more owls at night because of it.

Squirrel numbers also exhibit considerable fluctuation and we have some reports on them. Stella Wheaton, of R.R. #3, Petitcodiac, says Red Squirrels are scarce and that during December she had none at her bird feeders. Just the opposite is reported from Lockstead Settlement, near Blackville, by Norman Stewart who noted that they were coming about homes in large numbers this winter. The varying supply of seeds in the forest gives rise to such differences. Spruce budworm probably contributes to greater differences than normal since heavily defoliated trees cannot build up the food reserves necessary for production of a large flower and seed crop. Flying Squirrels are "plentiful" at Lockstead Settlement (Stewart) while at Cambridge Lida Belyea was thrilled to observe one of these common, yet very nocturnal, squirrels Feb. 26 and Mar. 5.

BIRDS

One of our few inland records of Great Cormorant was a bird that had the poor judgment of landing on the ice of the Kennebecasis River from which it could not get into flight again. Discovered at Kingshurst by Betty Driscoll on March 8, the bird died the next day shortly before it was to be taken to Saint John for release. The Double-crested Cormorant seen during Christmas Count* period in the Lepreau area was an adult at Little Dipper Harbour Dec. 21 (Deichmann).

The only winter Great Blue Heron, aside from the one on the Riverside-Albert C.C. was at Saint John Dec. 11 (Jim Wilson). The first spring arrival was seen Mar. 22 at Quaco (Frances Bradshaw). Three other heron species appeared early: one Common Egret and 2 Cattle Egrets were at White Head Island on the record date of Mar. 19 (Nancy Small). One of the Cattle Egrets (which were also reported in N.S. during March) was found dead two days later; the other birds were not seen again. Exceptionally early was a Least Bittern picked up alive at Fredericton March 24 (fide Harold Ferguson); normal arrival would be in early May.

362 Canada Geese were recorded on the C.C.'s, 351 of them passing southwest at Sackville on Dec. 18. That same day 400 flew over White Head, Grand Manan (Ellis Small). Several were found in the Saint John River during January, recalling the 6 or 7 that spent the winter on the Tobique three years ago. 31 were at Douglas Jan. 16 (Peter Pearce) and 7 there on the 23rd (Deichmann). Nine that flew over Saint John West on the evening of Feb. 14 (Keith Ingersoll), if passing northward, must have beat a hasty retreat when winter really began a week later. Two flocks, totalling 25, flew east at Musquash March 8 (Art Calleghan), a more usual time for migrants. Arrivals at some of their favorite feeding areas appeared Mar. 16 at Oak Point (fide Stanley Gorham) and Mar. 18 at St. Martins (Bradshaw) and Harvey (David Christie & the Majkas).

This was one of the occasional winters that Brant remain at Grand Manan. Mrs. Small reports that they began to arrive at White Head about Nov. 25, building up till Jan. 1 when she saw 100+. At nearby Ingalls Head there were 6 on Jan. 12 (Elmer Wilcox), the same day that 12 were noted at St. Andrews (Jack Rigby). One at Maces Bay Feb. 26 (John Mercer, fide Pearce) was at the time the first migrants usually reach that area.

* hereafter abbreviated as C.C.

Here and there, where water remains open, a few ducks will stay inland during winter. Turbulence below the Nictaquac dam has created a favorable open area for them. From Nictaquac downriver to Douglas, in addition to the geese already noted, were found the following waterfowl in January: 179 Black Ducks, 75 Common Goldeneyes, 2 Hooded Mergansers and 52 Common Mergansers on the 23rd (Deichmann), and in addition 2 Pintails on the 15th. (Pearce). At Hartland Donald Kimball reports 8 Black Ducks and 5 Common Mergansers Feb. 16, and 3 Common Goldeneyes Feb. 29. At the outlet of Nauklahagen Lake, at McAdam, Walter Sangster saw 30 Black Ducks, and 3 Common Mergansers Jan. 1. The area below the Turtle Creek dam in Albert County is another spot for winter ducks. It was there that a Green-winged Teal was seen throughout December (Doug Whitman et al).

The Pintail seen during C.C. period in the Lepreau area apparently met its end Jan. 8. At least on that day one was shot at Dipper Harbour (fide Al Smith). The first migrant Pintails were 2 at Saint John West Mar. 19 (Cecil Johnston). A large gathering of Common Mergansers was 125 in the Petitcodiac River below the Moncton causeway Dec. 27 (Whitman).

Dalhousie

We do not have any late winter information on the concentration of Barrow's Goldeneyes. Presumably there were large numbers as last year. As many as 60 were there Dec. 6 (Alan Madden) and 147 on the C.C. Dec. 30 (Jean-Paul Lebel). In southern N.B. they were at their regular spot at Cocagne (Route 11 bridge) with from 2 to 4 reported in January (Whitman, Eric Tull et al).

A rare species, the King Eider was reported from Maces Bay where an adult male was seen Jan. 30 (Pearces & Nettie Moore) and Feb. 26 (Mercer). About 500 Common Eider were there Feb. 13 (Saint John Naturalists' Club). This species is one of the earliest migrants. Reid McManus reports seeing flocks passing over Memramcook two or three times a week beginning Feb. 20. Migrants follow the Memramcook valley to pass from the Bay of Fundy to Northumberland Strait. Chris Majka, out on the waters of Passamaquoddy Bay Feb. 27 and 29, around Deer Island and St. Andrews, reported "thousands" of Oldsquaw, 200 Common Eider, 53 White-winged Scoters, 30 Common Scoters and "lots" of Red-breasted Mergansers.

Paul Germain saw a Cooper's Hawk at Moncton in the latter part of December, perhaps the same individual noted by Marguerite Hope on the C.C. there. Rough-legged Hawks continued to be reported frequently through the winter though numbers were probably less than in December. It is interesting to note that the Nova Scotia Bird Society Newsletter reports only 18 of these hawks on C.C.'s there compared to 135 in New Brunswick.

Vernon Bagley was lucky enough to see 2 magnificent, adult Golden Eagles at Castalia March 18. Interestingly at least one bird of this species spent the winter at Brier Island, N.S. directly across the bay from Grand Manan. No Pigeon Hawks were reported during December, January or February. One at Memramcook Mar. 17 (McManus) was probably a returning migrant. The Sparrow Hawk at Sussex was seen till at least Feb. 1 (Christie) and another was in Saint John Feb. 26 (Christie).

Spruce Grouse, scarce in most settled areas, are not often reported. Tim Davis saw one at Poley Mountain, near Sussex Feb. 27. Interesting is the report from Flora Zwicker who saw 2 male Bobwhite at White Head twice during February. This small quail is not prone to wander far from its usual range so undoubtedly some one had released the birds on the island.

An American Coot picked up Jan. 20 at St. Joseph by Reid McManus appeared to be in excellent health and was released later in open water near Sackville. The occasional one is seen here in early winter.

A lingering Killdeer was seen at Saints' Rest Marsh, Saint John West, Jan. 2 (Johnston). Another out-of-season shorebird was a Dunlin seen well, and photographed, at the mouth of the Upper Salmon River, Fundy Park Feb. 6-7 (John MacFarlane and Bruce Bradbury). Two Am. Woodcock returned very early, 1 at White Head Mar. 1 (Mrs. Small) and 1 at Fundy Park Mar. 10 (MacFarlane).

A Glaucous Gull was seen inland in the Jemseg area Dec. 11 (Pearce & Darrell Kitchen). Small numbers were reported from all coastal areas. It was somewhat unusual to see a Great Black-backed Gull at Sussex Mar. 6 (Christie), considering the ice and snow conditions at the time.

Bill Townsend saw several severely oiled Kittiwakes from East Lubec, Maine Jan. 15. Other oiled birds reported were a Common Murre "probably oiled" at Dipper Harbour Jan. 30 (Deichmann) and a dead Thick-billed Murre at Saint John West Feb. 12 (Johnston). With two or more small oil spills near Saint John this winter there were undoubtedly quite a few casualties but most are never found.

Jack Russell reports that a few Puffins were seen in the waters around Machias Seal Island in early January. He does not normally see them at that time of year. Other Thick-billed Murres were 1 at Maces Bay Feb. 6 (Wilson) and 4 at Deer Island Jan. 30 (Wilson & Johnston). 150 Dovekies were seen in Little Letete Passage Feb. 29 (C. Majka) and one was stranded on land in Saint John West Jan. 3 (Mr. Blanchard).

Virtually none of the Mourning Doves found in December survived later in winter, but one was seen in Saint John West Feb. 20 (Dorothy Ann Cowan). An early migrant (?) was at Browns Flat Mar. 20 (Gorham). One area where they were seen before the C.C. is Jemseg where there were 4 on Dec. 9 (Enid Inch, fide Melvin Moore).

Snowy Owls continued to be seen throughout the winter. Places where they were not seen on the C.C. were: Lower Jemseg (1, Jan. 30 & Feb. 6 - Pearcees & N. Moore), Gagetown (1, Dec. 17 - M. Moore - probably the same as the Lower Jemseg bird), Moncton (1, Jan. 30 - Christie), Salmon River (2, Feb. 3 - Bradshaw), Lakeside, Kings Co. (1, Dec. 27 - Wilson), French Village (1, in January - Osborne Thorne), Norna Heights (1, Mar. 7 - Mike Crawford), Fundy Park (1, Feb. 17 - MacFarlane).

The Great Gray Owl at Sisson Ridge, near Plaster Rock, was seen till Jan. 6 (fide Laverne Rabatich). Another was seen at Browns Flat Dec. 22 and 26 by Irenie Gorham. She was puzzled about what it was at the time but recognized it immediately when she saw its photograph on the cover of the Canadian Field-Naturalist which arrived early in January. Two records constitutes an invasion of this species in New Brunswick.

A Short-eared Owl was seen at Hammond River Feb. 27 (Wilson) and another was found dead at Saint John about Mar. 12 (fide S. Gorham). The ice storm of early March was hard on Saw-whet Owls, wintering birds or perhaps returning migrants. At any rate they appeared in residential areas and a number were found dead. One was dead at Rothesay on March 4 (John Mather) and the next day they were reported in two areas of Saint John. Mr. & Mrs. John Corbett had two at their house, one of which died. The second bird dragged the body into a bush and disappeared. Jack Crammond watched one capture a Starling at his bird feeder, then drag it out of sight near a fence. 15 minutes later the Starling reappeared, limping across the snowy yard with the owl in pursuit. The Saw-whet eventually killed its large prey, ate some and flew to the branch of a tree from which it later was seen to fall into the snow. Mr. Crammond picked it up and it died shortly after. Before this wildlife drama occurred

the owl had flown against a window, but examination of it showed no injury that would have resulted in death. Another, in pursuit of unusual prey, was one that tried to capture a hockey puck where some children were playing in a street in Oromocto early in March (fide W.A. Squires). One was seen in a tree at Fredericton March 6 (Ellen Gregg). Other March reports were of one at Acadia Forestry Station (fide Deichmann), one each in two areas of Saint John West (Brian Cougle; & fide Pat Hansen) and another dead one at Saint John (Marcel Dornan & Joanne Pearce). A Barred Owl was also found dead, Mar. 12 at St. Andrews (Willa MacCoubrey). All these dead owls, examined by Stan Gorham, had empty stomachs and were fairly thin, particularly the Short-ear. In some of the Saw-whets there was also sign of lung infections. Lack of food and stress from the weather probably led to their death.

In the woodpecker family, a Yellow-bellied Sapsucker, normally a summer resident, was seen at White Head Jan. 1 (Mrs. Small). Three-toed woodpeckers were little reported after C.C. period. Single Black-backs were seen Feb. 23 at Somerville (Kimball) and Feb. 2 and 15 at Fundy Park (MacFarlane).

Despite the weather, migrant Horned Larks appeared as usual in early March. Mrs. M.C. Morehouse saw 5 at Blacks Harbour Mar. 1, and the next day Rowena MacDonald had 2 at Upper Woodstock. Two were at Seal Cove Mar. 4-7 (Wilcox), 5 at Chamcook Mar. 4 (MacCoubrey) and 20 at Saint John West Mar. 5 (fide Gorham). In eastern N.B., the first reports were on Mar. 16, 7 at Colpitts Settlement (Mary Majka & Christie) and 7 at Memramcook (McManus). We don't know the subspecies of most of these birds. The ones at Chamcook and Seal Cove had the white eye-line of praticola, the race which nests here, whereas the Colpitts Sett. birds were the more northern, yellow-lined alpestris.

A Western Kingbird that appeared in November, survived until the first week of December at the feeder of Mrs. Jean Beaumont in Alma (fide MacFarlane).

During January & February, most songbirds were seen in numbers similar to those reported on the Christmas Counts. At bird feeders, many persons commented on the lack of native sparrows but this was no doubt due to the general availability of seeds. When the snow did begin to build up in southern N.B., finches and sparrows appeared around homes in search of food. It was then that persons operating bird feeders began to have large clienteles.

The Mockingbird at Riverview was seen till Jan. 2, then not again until Mar. 11 (Whitman). The one at St. Andrews was still around in mid-January (Rigby). Robins were common enough this winter that it is hard to pick out the first arrivals. March 19, when 4 were seen at Harvey and 1 at Calhoun, Westmorland Co. (Majkas), seems a reasonable date. Of course it was a couple of weeks later before many were seen.

The Bohemian Waxwing invasion this year was a good one. These birds of the northwest periodically move eastwards in great numbers during winter. In recent years they seem to be occurring more frequently here than they did formerly. Our last issue noted the first arrivals during November. The most interesting story comes from Moncton where 36 appeared at Mrs. Ken MacPherson's, feeding on highbush cranberries. When the berries were gone, she attracted them to her feeder with canned cherries. At the peak Feb. 21, Mrs. MacPherson had 70+ of these beautiful birds and there were still 25 left on Mar. 9 (fide Marguerite Hope). Peak numbers reported from various localities during the winter were an unknown (to us) number at Dalhousie (Lebel), a small flock near Edmundston (Germain), 38 at Fredericton (Pearce), 5 at McAdam (Holly Sister, fide Sangster), 8 at Upper Hampstead (M. Moore), 30 at

Riverview (Art Dobson, fide Whitman), 10 at Upper Sackville (Lindsay Smith, fide Al Smith), 9 at Albert (Ford Alward), 11 at Fair Vale (Mrs. Malcolm Ward), 15 at East Riverside (Mrs. J.A. Gillies), 12 at Saint John (fide Christie), 12 at South Bay (Dot Laskey), and 26 at St. Andrews (Rigby). The latest report we have is of 30 at Fredericton Mar. 12 (N. Moore).

The Loggerhead Shrike recorded on the Fredericton C.C. was seen there several times from Dec. 19 to Jan. 2 by Mr. & Mrs. J.B. Griffiths who reported that it was very small compared to the Northern Shrikes they have seen previously around their home. A Yellow-breasted Chat was seen at Hopewell Cape Dec. 9 by Geneva Bennett (fide Mary Majka).

Two Eastern Meadowlarks were reported, 1 at McAdam Jan. 1 (Sangster) and 1 at Seal Cove Mar.1 (Wilcox). There was also the bird on the Riverside-Albert C.C. A Baltimore Oriole that appeared at Saint John Dec. 12 managed to survive at a feeder until mid-February, when it disappeared (Crammond). Wilma Miller writes that the Red-winged Blackbird and one of the Rusty Blackbirds at her feeder in Nictau were still doing fine Mar. 2. The other Rusty fell victim to a cat.

A very interesting report of an out-of-season bird surviving at a feeder is of a Rose-breasted Grosbeak seen off and on all winter at Grand Bay by Mr. & Mrs. Jim Hamilton. The dark brown and white streaked bird, with flashy red wing linings, puzzled them very much. Eventually it was identified as an immature male Rose-breast by Wilfred Wood.

Evening Grosbeaks appeared commonly at bird feeders in late winter, occasionally accompanied by a few Purple Finches. Pine Siskins and Common Redpolls were more noteworthy. Writing Feb. 1, Al Smith reported that Pine Siskins were "fairly abundant at feeders" in the Sackville area. Elsewhere they were less common, though Mrs. D. Patterson had 20 in the first week of February at Saint John and Bruce Bosence had 25 in late January at Saint John West. Miss MacCoubrey's feeder at St. Andrews was visited by up to 20 siskins at their peak. Common Redpolls seen in large numbers at C.C. time, rushed to bird feeders in mid to late February and peaked about mid-March when their numbers may have been swelled by migrants from areas to the south. Typical of their buildup were numbers at Jan Dexter's feeder in Saint John West: 11 on Feb. 15, 37 on Feb. 29 and 66 on March 8. These are the maxima that could be counted at one time; the total visiting might have been two or three times this number.

Redpolls can be a somewhat confusing group of birds for there are two subspecies of Common Redpolls, one somewhat larger and darker than the other. As well, there is the Hoary Redpoll, a generally more pale and whitish species often difficult to identify. In 1952, W.A. Squires who could not find any good evidence for the occurrence of Hoary Redpolls in New Brunswick, stated that it "undoubtedly occurs here rarely, but indisputable evidence is still lacking." (The Birds of New Brunswick, p. 123). Since then there have been some observations of possible Hoary Redpolls but none where the observer has been very certain of the identification.

On January 30 this year Eric Tull and David Christie came upon a flock of about 100 Common Redpolls feeding on birch seeds in a bog at Point-Sapin. One of these birds was considerably paler than the others with a very conspicuous white rump patch. After watching it for about five minutes, they were fully satisfied that it was a Hoary Redpoll. A few minutes later, another one, somewhat paler than the Common Redpolls and with an unstreaked, pinkish rump, was seen. This was also

believed, though not as surely as with the first bird, to be a Hoary Redpoll. As other persons began to check redpolls closely, more were seen. Peter Pearce found a conspicuous one amongst 400 Common Redpolls at Jemseg February 5. Eric Tull and Dr. H. Majka revisited the Point Sapin area February 19, discovering a different bird (an apparent female) than seen there earlier and getting a quick look at a second bird that was perhaps a Hoary. Following this was the first opportunity for leisurely study when one visited Dr. Squires' feeder in Fredericton for four days Feb. 24-27, reappearing again on March 6. (Squires, Pearce, Ferguson et al). One was seen at St. Andrews Mar. 4 (MacCoubrey) and a female visited a feeder in Saint John regularly March 9-26 (Christie, Johnston, Wilson, et al). The latter bird was photographed several times.

Given the difficulty of identification of redpolls one probably cannot say that all these birds definitely were Hoary Redpolls but certainly the evidence suggests that most of them were. Thus we can say with some assurance that Hoary Redpolls finally have been found in New Brunswick.

A Rufous-sided Towhee present from November was still visiting a feeder at Saint John in the first week of February (Patterson). Another was seen at a Fredericton feeder Feb. 23 to Mar. 2 (Harold Hatheway, fide Ferguson).

Tree Sparrows, like White-throats and Song Sparrows increased at feeders late in February when snow covered the ground deeply. At Cambridge, Lida Belyea had 10 visiting during February. Their numbers did not diminish in the Hartland areas where 25 were found on the C.C. At Somerville 7 were seen Jan. 1, 5 Feb. 1-20 and 17 Feb. 23 (Kimball). Miss MacCoubrey's White-crowned Sparrow survived the entire winter at St. Andrews, aided of course by her bird feeder. Only one Fox Sparrow was seen on the C.C.'s this winter so it's interesting to note that single birds were reported from six localities during the rest of the winter. They were also seen in two areas during C.C. period.

Rowena MacDonald reports "large flocks" of Snow Buntings at Upper Woodstock this winter and Donald Kimball saw 50 at Somerville Feb. 3, 250 at Bannon Feb. 12 and 10 at Waterville Feb. 28 - all in Carleton County. Most reporters did not mention this species, though Miss MacCoubrey passed on the fact that Mrs. Sydney Wyman had from 4 to 20 visiting her bird feeder at Chamcook Mar. 4-19.

A BIRD WATCHER'S YEAR IN NEW BRUNSWICK

Recently published by Brunswick Press, is "A Bird Watcher's Year in New Brunswick" by D. Kermode Parr. Many residents of central New Brunswick were regular readers of Mr. Parr's twice-weekly column, "Mixed Cargo," in The Daily Gleaner. In recent years, that column became more and more devoted to accounts of his adventures with birds. This new book is a selection of these episodes arranged in sequence through the months of the year. It should be of interest to all New Brunswick birdwatchers, both for its contents and its excellent style. Unfortunately, Mr. Parr passed away last fall and so did not see his book in print. The price is $4.50.

THE GUILLEMOT

A new publication that may be of interest to readers is entitled The Guillemot. A mimeographed newsletter, appearing 6 times a year, it will report natural history news from eastern, coastal Maine (roughly from Bangor to Calais and south). The annual subscription of $1.00 should be sent to W.C. Townsend, Sorrento, Maine 04632.

THE OCCURRENCE OF OSPREY ON ELECTRIC POWER LINES IN NEW BRUNSWICK

The osprey, Pandion haliaetus has become an endangered species on many parts of the North American continent in the last decade. Yet in some areas (all too few unfortunately) production, in terms of young birds fledged, is not appreciably different from the pre-1960 era. The present status of the osprey in New Brunswick seems uncertain (though many observers believe their numbers have declined over the years) principally because of the lack of information on past (and present) population parameters. An attempt to partially fill this void was made by Christie (N.B. Naturalist, 1(5):29-31, September 1970) who compiled provincial osprey observations for 1970.

This report will present data on the occurrence of osprey nesting on electric power lines in New Brunswick between 1957 and 1971, a 15 year period. This may be one of the very few sources of information (limited as it is) that is available on the past abundance of this bird in the province.

Past History

Osprey nesting on power line structures have been a problem of sorts for many years past. In 1905 it was reported that one bird persistently rebuilt a nest four times before the line finally shorted out and the hydro structure was destroyed, presumably by fire. Power blackouts in southern New Brunswick at times were attributed to osprey activity on the power lines.

The New Brunswick Electric Power Commission, in an effort to discourage the osprey in these particular nesting activities, had installed navigational markers with clappers to act as bells on certain hydro structures; these proved ineffective. In 1963 three wooden platforms were built adjacent to the power lines to provide alternate nesting sites. While some of these were occasionally used, it did not discourage the birds from still cluttering the structures with sticks and branches. In 1970 and 1971 a repellent grease was applied to the wooden crossarms of some of the structures used by the osprey. This apparently has been the most successful deterrent utilized to date.

In the past 15 years, nine power lines in the province have had osprey nesting on them. The overwhelming majority of the birds have been active on line 16, along the Bay of Fundy coast. This was the only line to be continually used since 1957 and consequently most, if not all, of the deterrent action has been directed toward the osprey on this line.

Procedure

Information derived from the files (microfilm and reports) of the New Brunswick Electric Power Commission are used exclusively for this presentation.

Since at least 1957, aerial reconnaissance (air patrols) of all the transmission lines in the province has been routinely made three or four times annually for the purpose of effectively locating faulty equipment and obstructions (including osprey nests) on the structures. An intensification of osprey nesting activities in the early 1960's, particularly on line 16, prompted the establishment of weekly air patrols (dubbed bird patrols). However, the frequency of these patrols was

actually governed by the degree of osprey activity during a particular nesting season.

Pertinent data from numerous maintenance and interoffice reports were used in addition to that obtained from the following number of flights:

1957 - 7	1961 - 10	1965 - 18	1969 - 16
1958 - 3	1962 - 5	1966 - 10	1970 - 17
1959 - 6	1963 - 8	1967 - 8	1971 - 25
1960 - 2	1964 - 13	1968 - 41	Total - 189

A few of these flights were made before as well as after the osprey nesting season.

A small, single-engine aircraft was normally used for flying the power lines (with pilot and observer). Altitudes of 50 to 100 feet were usually flown at air speeds of 80 to 85 mph, depending on structure heights and weather conditions. Consequently it was possible for the observer to record both faulty equipment and the presence of osprey nests or nesting material on the numbered structures of a line (including the number of branches and sticks).

The power line structures consisted of either steel towers of varying heights and sizes or wooded two-pole H-frame construction with double crossarms. It was on these crossarms that many of the osprey built their nests.

The transmission lines on which osprey activity was noted over the past 15 years are as follows (listed in order of total useage by the birds):

Line No.	Location	Structure	Length (miles)
16	Musquash to Oak Bay	wood	51.4
8	Grand Lake to Brookville	steel	67.4
25	Bathurst to Dalhousie	wood	54.6
45	St. George to Deer Island	steel	13.2
1104	Fredericton to Saint John	steel	67.8
63	Bathurst to Caraquet	wood	36.5
1109	Saint John to Moncton	steel	84.8
40	Lancaster to Westfield	steel & wood	10.6
1101	Grand Lake to Moncton	steel	59.4

It is obvious that most of the active lines were found in the southern part of the province. Much of the data used in this report will be from line 16 since well over 50% of the observations and nests were made on this line.

After each air patrol the obstructions were reported and usually removed from the structures before the next flight (particularly in the later years of study). While this did little to enhance the breeding activities of the osprey, it did provide an excellent opportunity to assess the renesting activities of these birds. This in itself could also give some measure of abundance on the power lines over the years.

For the purpose of this study, osprey nests were classified as complete, incomplete (not entirely built) or start, which amounted to the haphazard deposition of a few sticks. An incomplete nest was arbitrarily defined as one where at least 12 branches or sticks were deposited on a nest site (but this usually consisted of much more material). A complete or incomplete nest does not imply here that it was used or even built by a breeding bird, only that it was the work of an osprey.

Records of branches or twigs deposited on a structure in small numbers (probably indiscriminately) were not weighed too heavily in this report, unless it seemed probable that they constituted part of a continued nesting effort.

The analysis of the data consisted, in part, of plotting osprey centers of activities and comparing them from week to week where possible, and from year to year. From this it was possible to establish preferred nest sites (i.e. structures) on the power lines, some measure of abundance and a crude nesting chronology.

Osprey were occasionally seen at the nest sites, both singly and in pairs and building or rebuilding nests. Young osprey were also seen in the nest on at least two occasions. However, since these observations were only scattered reports and secondary in importance to the main purpose of the aerial flights (i.e. obstructions and defects), they alone cannot be used as an indication of the abundance of osprey on the power lines.

Osprey Abundance

In discussing osprey abundance on the transmission lines it is important to realize that the data presented here relate only to the birds nesting on these lines, not to any adjacent countryside where there may or may not have been other nesting pairs. What proportion of the entire osprey population in the province nests on power lines is not known but it is probably low and varies from year to year. About 15% of all the osprey recorded in the province during the 1970 breeding season were birds nesting on power lines (data, in part, from Christie (op.cit.)), but this is, indeed, a crude estimate. Further, the degree of interchange between power structures and adjacent off-line nesting sites by these birds is also unknown. Hence, osprey numbers are comparable from year to year on the power lines only.

Treatment of the nesting data involved assigning the nest building to a single bird, not a pair; consequently the population estimates are conservative, based on individual birds only. While a few pairs of osprey were observed on the lines over the years, no estimate of their numbers is possible.

In arriving at yearly figures of abundance for each transmission line, the following factors were taken into consideration:

(a) the location of the nest (i.e. the structure number),

(b) the persistence in rebuilding after each nest or attempt was removed,

(c) the fidelity to a particular structure (nest site) or series of structures by a bird or birds, year after year and

(d) the birds seen on the nest site.

An estimated total of 87 osprey were engaged in nest building on the nine power lines between 1957 and 1961 (Table 1). Fifty-one of these were found on line 16, along the Bay of Fundy coast, providing a good example of continued use year after year. An average of 3.4 osprey used this line annually in the 15 year period, 1.1 birds used line 8 and considerably less used the other lines.

Table 1. Conservative estimates of osprey engaged in nest building on nine New Brunswick transmission lines for the 15 year period 1957 to 1971. Blanks indicate that the line had not been constructed yet.

Year	Line 16	8	25	1101	1104	45	63	40	1109	Total
1957	3	1	0	0						4
58	1	2	0	1						4
59	2	4	0	0						6
1960	1	2	0	0	0					3
61	2	4	1	0	0					7
62	6	0	0	0	0					6
63	5	0	0	0	0	0	0	0		5
64	6	0	0	0	0	0	0	0		6
65	4	0	1	0	0	0	0	0	0	5
66	5	0	0	0	0	0	0	0	0	5
67	5	0	0	0	0	0	0	0	0	5
68	3	2	1	0	2	0	3	1	1	13
69	4	2	0	0	1	1	0	0	1	9
1970	3	0	3	0	0	1	0	0	0	7
71	1	0	0	0	0	1	0	0	0	2
Total	51	17	6	1	3	3	3	1	2	

Examination of the total yearly figures shows the trend of abundance to be a more or less stable condition until 1968 where an abrupt increase in numbers declined to a new low in 1971 (Figure 1). Line 16 does not show this increase in 1968 but the decline thereafter is, nonetheless, evident, eventually reaching pre-1960 estimates. The use of the bird repellent on line 16 may have possibly affected the 1970 and 1971 osprey numbers to some degree. Yet only about 10 structures were treated which left plenty of preferred sites (as seen from past nest site distribution) that were available for use by the osprey. Also the repellent was not used on any other lines. Considering the total osprey seen on the lines, it appears that their activity and numbers were increasing until recently. Twenty-four birds were active from 1957 to 1961, 27 from 1962 to 1966 and 36 from 1967 to 1971; yet within this there was a tendency for a decline in the past three years. The year 1968 appeared to be one of considerable extensive (nesting on more lines) and intensive (more nests per line) osprey activity.

Figure 2 presents the data in a different perspective, that of comparing the number of lines over the years that had osprey nesting on them, thus establishing a crude trend of abundance. It is evident here that from 1957 to 1967 fewer and fewer lines were being used by the osprey, but again the increase in 1968 (where almost 80% of the nine lines were used) and the eventual decline to 1971 is most apparent. apparent.

Yearly comparisons of osprey numbers per line or birds per mile of power line are not appropriate in this study since (a) not all lines were used each year, (b) not all lines were in existence in the earlier years and (c) the length of each line varied considerably. What is needed is a more meaningfull measure, one that represents those segments of the lines that the osprey actually use for nesting, that is, the habitable portions. Plotting the locations of the nest sites on each line

indicates that, as expected, most of the birds nested near large bodies of water. This appears to be one reason why only some of the transmission lines in the province are used for nesting. It was found that all nests were located within one mile of water, often times much closer (as on line 16); this then defined the habitable segment of a line, with one exception. Only on one inland line, No. 8, was it necessary to extend this habitable portion to five miles because of the nest distribution and the fact that little of the power line is as near as one mile to water. The term "large body of water" is seemingly vague; however, locating the nest sites on the lines leaves little doubt as to the waters in question. These bodies of water include

near line 16 - Bay of Fundy (Macos Bay, Passamaquoddy Bay, Oak Bay)

near line 25 - Chaleur Bay (Eel Gully)

near line 45 - Bay of Fundy (Passamaquoddy Bay)

near line 1104 - Saint John River (Long Beach, Grand Bay, South Bay)

near line 1109 - Kennebecasis Bay, River and Lake

near line 8 - Belleisle Bay, Washademoak Lake (Canaan River), Grand Lake (Northeast Arm, Cumberland Bay)

The lines chosen for this comparison of osprey density had the greatest total number of birds over the years plus at least two successive years of nesting activity - lines 16, 25, 45, 1104 and 1109. About 23% of their total mileage was considered habitable for osprey.

Figure 3 shows the osprey density on these five power lines. After an apparent decrease in the late 1950's, stability at a higher level is indicated in the order of one osprey per 10 miles of habitable line. Again the decrease in 1971 is evident. Adding line no. 8 produces a similar trend, though the decrease in the late 1950's is not as apparent.

Line 8 ceased to be an important segment of osprey activity after 1961, thereafter nesting increased considerably on line 16. It seems possible that 34 different birds nested on this last line during the 15 year period. The highest density of osprey on any line was about one per five miles.

Osprey Breeding Activities

Before commencing with a discussion of the breeding activities it is worth recalling that all nests and nesting materials were usually removed after each air patrol was made. Consequently we are dealing here mostly with nesting and renesting activities of the osprey rather than with the complete breeding cycle. Most of the information for this is concerned with the years 1961 to 1971 and comes primarily from line 16.

A. The Breeding Season: General Remarks

The initiation of nesting building by osprey on transmission lines varied from year to year. Aerial inspection indicated that nesting was underway infrequently by late March and sometimes by mid-April. In almost all years, where observations were made, many of the nests were complete in early May. During the first few days of May 1964, two nests on line 16 were discovered with young birds (and parents) in the

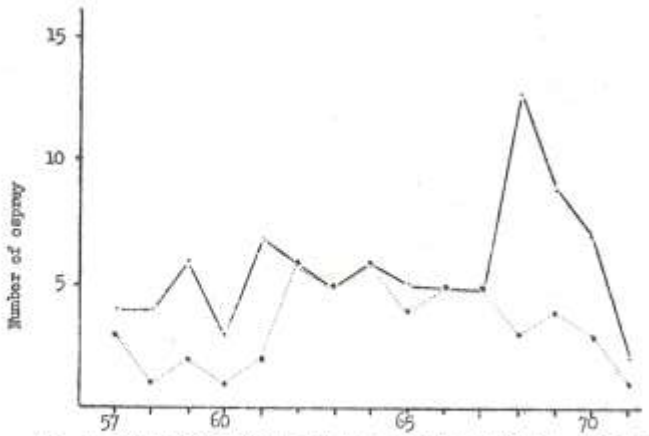

Fig. 1. Osprey abundance on 9 N.B. power lines, 1957-71. Solid line represents all lines; dotted line shows only line 16.

Fig. 2. Osprey abundance on 9 N.B. power lines, 1957-71, presented as percentage of lines showing nesting activity

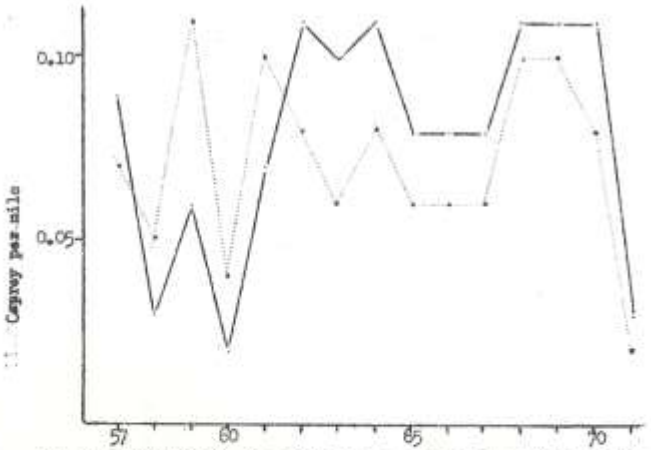

Fig. 3. Osprey density expressed as osprey per miles of line within one mile of a body of water (or 5 mi. for line 8), i.e. the habitable portion. Solid line represents the 5 power lines mentioned in the text; the dotted line includes line 8.

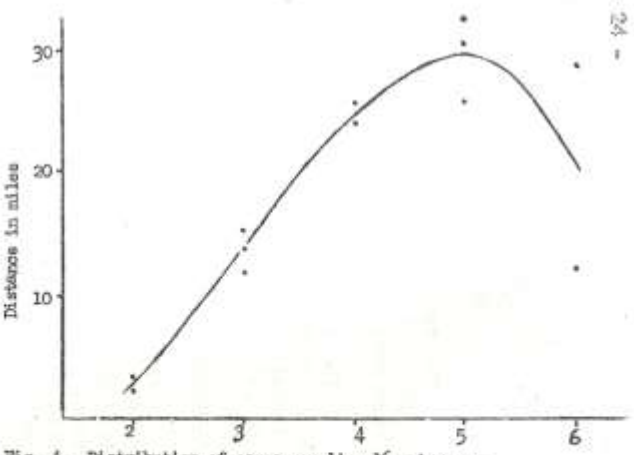

Fig. 4. Distribution of osprey on line 16, shown as distance between the extreme nests (i.e. furthest apart) each year compared to osprey numbers on the line, 1957-71.

nest; here, obviously, breeding must have commenced in late March or early April. An extremely early nest was found on February 27, 1965 on line 25. The previous December inspection showed no evidence of osprey activity on the line at that time. This leads one to wonder whether the osprey involved was an extremely early migrant or one that over-wintered in the area.

The termination of nest building usually occurred in July but this also varied. Two nests (renests) were found completed in August (both on line 16); two others were built in late July - early August and between August 21st and 26th.

The length of the breeding season (i.e. the nesting season) then is highly variable. Early years such as 1964, for example, may see nests in late March with no new renests after early June. Late years may have nesting start in early July (1966) or late June (1971) and end in early August.

B. Nest Construction

The extent of nest building and the persistence of rebuilding can be demonstrated, in part, by considering the number of air patrols with complete and incomplete nests present during the nesting season (Table 2). It is apparent that the intensity of nest building peaked from late April to mid-June. About 75% of these flights showed new nests being built up to the middle of June. Curiously almost half of the patrols saw renewed osprey activity in late July (in a number of different years).

Building activity for the semi-monthly periods in terms of the number of nests present on each inspection flight is shown in Table 2. Nesting started in April, increased to a maximum in May and then gradually declined to September. The increase in the latter part of July is apparently real since it occurred on a few lines in a number of different years.

As the season progressed the initiative to build nests gradually waned in the osprey. Examination of the data indicated that the osprey will persist in nest construction even when the nesting material is removed four, five or even six times. The waning of nesting activity can be seen by following individual birds (through their nest building) during the season. This persistence depends on when the nest was removed as shown in the following table:

Date of Removal		No. of Renesting Birds	No. of Renests Per Bird
May	1 - 15	4	3.5
	16 - 31	5	2.6
June	1 - 15	6	2.0
	16 - 30	3	2.9
July	1 - 15	3	1.0
	16 - 31	3	1.3
Aug.	1 - 15	0	-
	16 - 31	1	1.0

It appears that the later in the season the nests are disturbed, the less persistent are the osprey in renewing their building efforts.

Table 2. Seasonal distribution of osprey nesting activity on nine New Brunswick lines during the 15 year period 1957 - 1971. Data include both complete and incomplete nests. Nests or nesting material were removed from the line structures before each successive flight.

Date	No. of Air Patrols		Aerial Flights With New Nests (%)		No. of New Nests Per Aerial Flight	
	Line 16	Total	Line 16	Total	Line 16	Total
April						
1-15	2	2	50	50	0.5	0.5
16-30	3	3	67	67	0.7	0.7
May						
1-15	7	10	71	70	2.0	1.8
16-31	11	13	73	62	1.2	1.0
June						
1-15	11	11	73	73	1.4	1.4
16-30	10	16	50	31	1.1	0.7
July						
1-15	12	18	42	33	0.7	0.6
16-31	13	20	46	40	0.9	0.7
August						
1-15	9	15	22	13	0.3	0.2
16-31	3	4	33	25	0.3	0.2

Nest Site Location

As previously mentioned, most of the osprey nests on the power lines were located near some body of water. The main areas of osprey concentration on the lines in the past five years are as follows:

line 16 - the vicinities of Lepreau, Pocologan, New River Beach, Upper Le'Etang, Saint George, Digdeguash and Bocabec,

line 8 - the vicinities of Long Creek, East Scotch Settlement and Belleisle Creek,

line 25 - the Eel River estuary, vicinity of Mountain Brook,

line 1104 - the vicinities of Grand Bay and Lingley,

line 45 - the vicinity of Lotete

line 1109 - the vicinity of Kennebecasis Lake

Given sufficient numbers, tree-nesting osprey will often concentrate in local areas (usually near water) and nest in colonies. On the few power lines with sufficient data, it seems that there was a tendency for the spreading out of nest

sites along the line rather than linear clusterings of nesting birds. Figure 4 shows this change in spatial relations as the osprey increased in numbers on line 16. Apparently beyond a density of five birds or 0.18 per habitable mile on this line the additional osprey fit into an already established linear distribution pattern. This phenomenon may not apply to osprey nesting on all lines but more limited density and nest distribution data for line 8 does suggest a similar relationship. Certainly local environmental conditions could affect this spatial distribution and the relationship may be more apparent than real. Nevertheless, because it seems so clearcut on line 16, it is worth noting.

Summary

Aerial reconnaissance of New Brunswick electric power lines from 1957 to 1971 showed that osprey were active on only nine of these. Most were found in the southern half of the province and in the vicinity of large bodies of water.

Osprey abundance remained fairly stable over the 15 year period until 1968 when both an increase in the number of lines with birds and the number of birds per line increased considerably. Thirteen osprey nested on the power lines in that year. A gradual decrease in activity thereafter to a low in 1971 was observed. That same low was also seen in the number of birds per habitable mile of line. Previous to that (from 1961 on) osprey density remained high, about one bird per 10 miles of line, and for the most part, was in excess of pre-1961 estimates. The more recent N.B.E.P.C. control measures (on line 16) have probably had a minor influence on the overall abundance of birds on the lines in 1970 and 1971, but further monitoring of the power lines in future years is needed to ascertain this. An estimated 87 osprey nested on the lines in the 15 year period.

Osprey nesting usually began in April and with continued removal of the nests and nesting material extended well into August. The peak of nesting occurred from mid-April to mid-June depending on the year. While some osprey attempted to rebuild a nest four to six times after removal, a gradual waning of this persistence was shown to occur from May to August.

Osprey nested in certain preferred locals over the years, usually near water. Some suggestion of a relationship between density and the spatial distribution of nests was shown on line 16.

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