

# The 1978-1979 Great Gray Owl incursion across northeastern North America

*A preliminary account of what, for this species, must have been  
the winter incursion of the century*

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**I**N THE WINTER AND SPRING of 1978-1979 northeastern North America experienced the largest recorded Great Gray Owl (*Strix nebulosa*) incursion of this century. Beginning in late December and finally concluding in April some 334+ Great Gray Owls were recorded in the following numbers: southern Ontario 112+<sup>1</sup>; southern Québec 55+; upper Michigan 12+; New York 60; Vermont 2; Massachusetts 15; Connecticut 2; Rhode Island 1; New Hampshire 7; Maine 67; New Brunswick 1. Although such numbers are without historical precedent, limited evidence suggests that a major flight of Great Gray Owls in the winter of 1890-1891 was probably on the same order of magnitude, at least in Québec, Maine and Massachusetts.

The initial movement of this winter's irruption occurred December 25 - January 17. Not surprisingly most of the owl sightings in this first wave were in northern areas. During this period 37± Great Gray Owls were located north of the St. Lawrence River in Québec, 17 birds were concentrated near Ottawa, Ontario, six scattered birds were seen in New York, 16 occurred in northern and central Maine and only one was seen in New Hampshire.

During the next two weeks the incursion spread southward. New Hampshire recorded three more owls, Maine another 11 and the first Great Gray Owl reached Massachusetts, at Topsfield January 28. In Ontario the owls appeared to shift

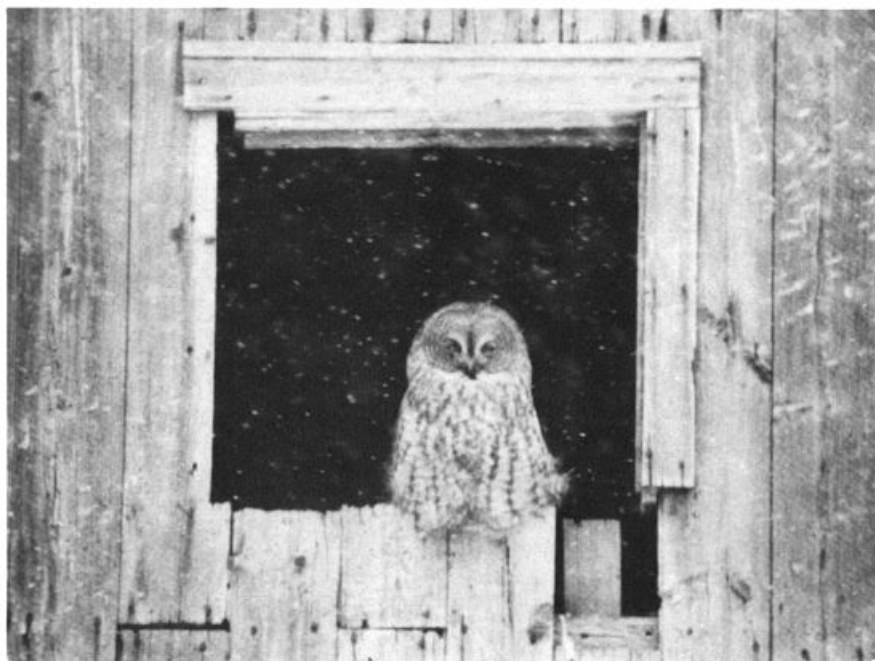
<sup>1</sup>The discrepancy between the Ontario Great Gray Owl total in the regional report and this review derives from Clive Goodwin's apparent assumption that some of Ontario's gray owls were duplicates. The authors did not share that assumption.

farther west and south; 25 birds were noted in the Peterborough area mid-January to mid-February. By this time New York had registered another ten owls.

**B**Y FEBRUARY THE INFLUX had already abated farther north. Except for the very southern part of the Province, at Dundee (nine birds), Québec only noted an additional seven owls. Ontario's gray owls were restricted along Lake Ontario: 7-14 in the Cobourg area, six in Oshawa, four in Toronto. Amherst Island's concentration numbered only three gray owls February 3, then went to 11 by February 17 and jumped to 30+ by February 25. This trend was reflected

southward as New York added 35 more in February. Clearly, New York's period of maximum activity was January 23 - February 22 when 42 of the 60 sightings were noted. Massachusetts recorded 14 of its 15 owls February 3 - March 4. During February Maine reported another 32 owls, many of these coastal, while Rhode Island and Connecticut recorded a total of three birds. New Brunswick's single gray owl was also noted in February at Fundy National Park, which incidentally was the easternmost recorded sighting of the flight. By March 4 the irruption was drawing to a close. After that date Maine added only three new birds and New York ten, with the last new sighting March 30. The western limit of the winter's flight extended to Sault Ste.-Marie, Michigan where 12+ Great Gray Owls were reported. An additional five owls were noted farther north in the Marathon, Ontario area.

The map clearly illustrates the extent and size of this winter's incursion. The scarcity of observations in western Ontario and along the northern shore of Lake Superior and through Minnesota, Wisconsin and lower Michigan seems to indicate that this winter's irruption *did not* have western origins but that it may have originated somewhere in northern Québec and northeastern Ontario. Interestingly, in southeastern Manitoba gray owls were numerous for the *third*



*Great Gray Owl in a Depauville, N. Y., barn. Feb. 1, 1979. Photo/D. W. Crumb.*

consecutive winter two banders captured and banded 46 gray owls and two, day-long excursions northeast of Winnipeg recorded a total of 14 owls. As numerous as gray owls were in this area, they did not appear to move east or south any distance.

**T**HE POSSIBILITY THAT Great Grays might have originated in northern Québec and northeastern Ontario comes as a surprise in light of what is presently known about the species distribution in North America. Although the species has a circumpolar breeding range, Godfrey (Birds of Canada, 1966) notes no breeding records and only three summer occurrences for Québec. In Ontario, the gray owl's southeastern limit reaches the Lake Nipissing area, just north of Lake Huron. If the winter's incursion did, in fact, originate in northern Québec and northeastern Ontario it would involve a new, apparently unrecorded and obviously sizable population of gray owls. This is perhaps less surprising when one considers the enormous size and remoteness of the territory in question. Interestingly, Todd (Birds of the Labrador Peninsula, 1963) notes that "probably its (gray owl) range extends right across the Labrador Peninsula to the east coast . . . Undoubtedly the Gray Owl breeds throughout our region, almost or quite to the northern limit of trees."

There seems little question that many of this winter's Great Gray Owls were severely food stressed. In New England, two birds that were known to have died of natural causes, presumably starvation, were grossly underweight. Nine birds were known to have died in Québec and two died and one was found too



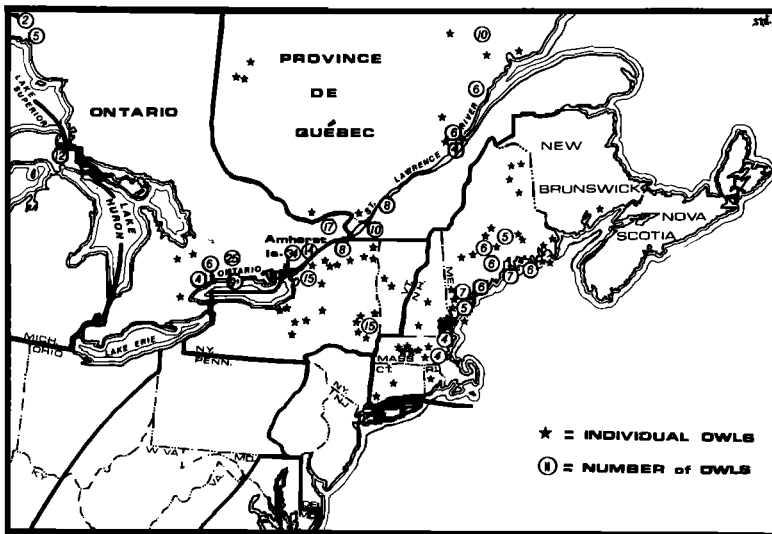
Great Gray Owl in a Long Island, N.Y., marsh. Photo/Adrian Dignan.

weak to fly in New York. Except for Amherst Island, the rodent population in New York and Ontario did not seem sufficient to support the owls. This may possibly explain why so many gray owls in this region were observed on only one day. By contrast Maine and Massachusetts had high rodent populations and a great many gray owls were faithful to a particular locality, sometimes as long as 6-8 weeks. A Long Island, New York, bird was present at least 12 weeks.

**T**HIS WINTER'S EXTRAORDINARY number of gray owls permitted close comparison of plumage characters. Several differences quickly became apparent. Some owls possessed very pale, "bleached" obviously frayed central rectrices that contrasted markedly to the remaining dark rectrices. Most,

but not all, of the pale-retrixed individuals also displayed equally "bleached" secondaries. Only a few owls with pale secondaries possessed dark tails. Further observations revealed some individuals with both brown-toned and gray-toned secondaries. Seemingly all these variations appeared connected to partial or interrupted molts but this is as yet not fully understood. If indeed these plumage anomalies result from arrested molts, then presumably these individuals were adult or at least second-winter birds. This suggests that this winter's flight was not simply composed of first-winter owls.

Examination of reports in recent issues of *Audubon Field Notes* and *American Birds* indicates that the 1978-1979 incursion in northeastern North America not only dwarfs any previously reported influx for the region, but also exceeds any reported flight in continental North America, except possibly for the less thoroughly documented incursion of 1890-1891. Palmer (Maine Birds, 1949) notes that 27 gray owl specimens were received by a single Bangor, Maine taxidermist and Normand David (pers. comm.) reports that the 1890-1891 irruption in Québec was quite likely as large as this winter's flight. Robbins (1966), presumably unaware of the 1890-1891 flight, labelled the 1965-1966 incursion into Minnesota, Ontario and Québec as the first real influx in ornithological annals in North America. This flight appeared to have a west-to-east progression with birds occurring in Minnesota (37) in December, Ontario (30) in January and Québec (14) in February.



Map indicates sightings of Great Gray Owls in the Winter 1978-79 incursion.

ruary. Plunkett (1969) found the 1968-1969 flight in the Western Great Lakes region to approximate that of the 1965-1966 irruption, with 60 reports in Minnesota and more than ever before (but no number given) in Manitoba. Goodwin and Rosche (1971) termed the 1971-1972 incursion in Ontario (15) the largest since that in 1965-1966, the latter of which they considered unprecedented. Gray owls were numerous in Ontario and Québec in 1972-1973 (23) and 1973-1974 (30).

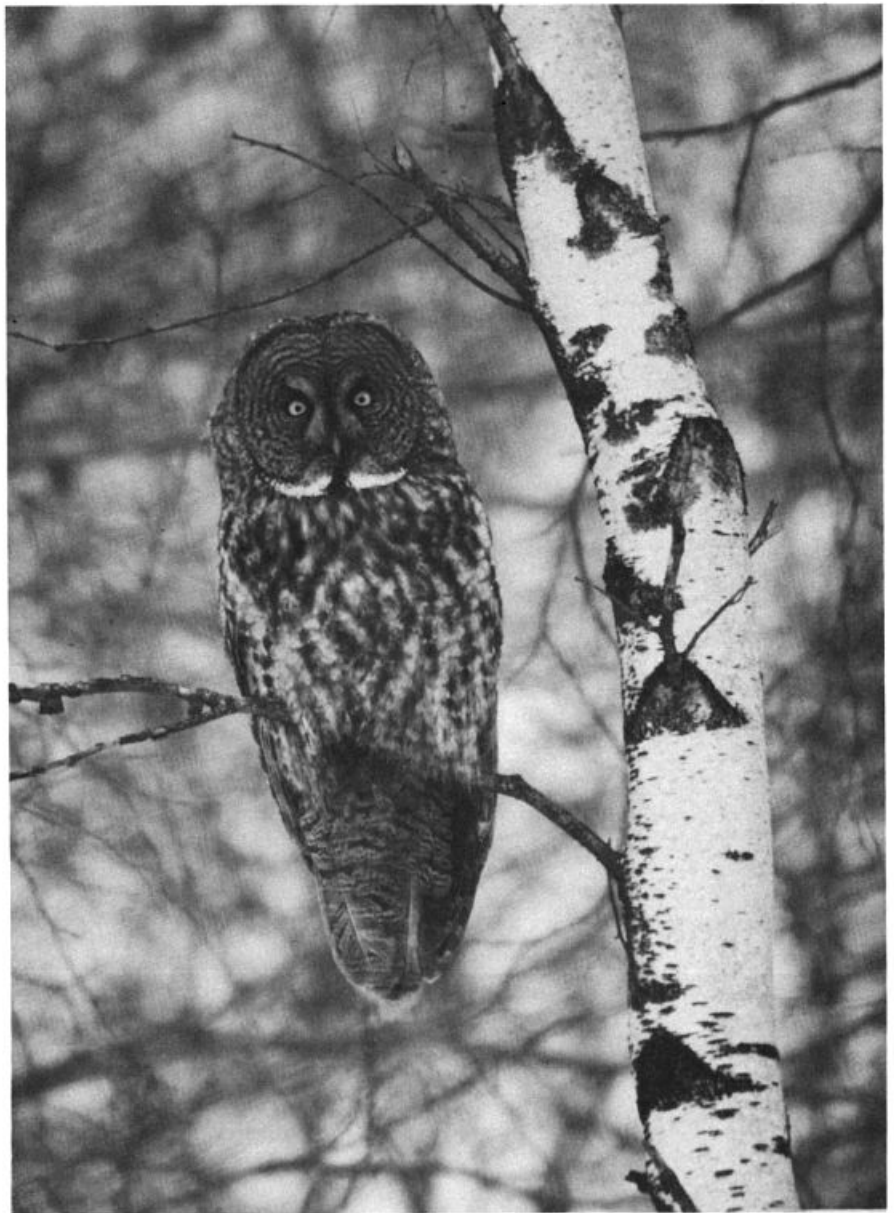
**M**ANITOBA EXPERIENCED ADDITIONAL irruptions in 1973-1974 and 1974-1975 with 59 and 53 reports respectively. Houston (1974) called the 59 reports "more than ever before." Based on color markings of 11 birds, one 15-mile diameter area was estimated to harbor 36 owls. This concentration parallels the Amherst Island experience of this past winter and reinforces the belief that where exceptionally abundant food persists, these owls will gather in large numbers. The large Manitoba-Minnesota incursion of 1977-1978 again produced pockets of concentration. In Minnesota, 39 of the state's total of 59 Gray Owls were found along a 33-mile stretch of road between Silver Bay and Tofte. Most numerous that winter were the reports from near Winnipeg where 125 were reported, 32 of which were banded (Serr 1978).

[The editor suggests that all totals are somewhat speculative, on one hand inflated because possible duplicate and multiple sightings of the same bird cannot always be discounted, and on the other hand lower than the *actual* total of invading individuals, an unknown number of which must have remained unreported or undiscovered.—Ed.]

There is little question that flights of Great Gray Owls have increased dramatically in recent years. Whether this new phenomenon reflects increased populations is not certain, but such a thesis seems possible. If this is the case, winter irruptions, notably in northeastern North America, should continue to occur with greater frequency and perhaps with more birds than in the past. Surely each new incursion warrants further careful scrutiny.

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Great Gray Owl. Skowhegan, Maine. Feb. 1, 1979. Photo/Peter D. Vickery.

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#### References Cited —

ECKERT, K., 1978. *American Birds* 32: 354-55.

- GODFREY, W. EARL, 1966. *The Birds of Canada*, National Museum of Canada, Ottawa, Ontario.
- GOODWIN, C. E. and ROSCHE, R. C., 1971. *American Birds* 25:572-73.
- HOUSTON, C. S., 1974. *American Birds* 28:654.
- PALMER, RALPH S., 1949. *Maine Birds*, Bulletin of the Museum of Comparative Zoology, Volume 102, Cambridge, Massachusetts.
- PLUNKETT, R. L., 1969. *Audubon Field Notes* 23:440-46.
- ROBBINS, S. D., JR., 1966. *Audubon Field Notes* 20:396-97.
- SERR, E. M., 1978. *American Birds* 32:367
- TODD, W. E. CLYDE, 1963. *Birds of the Labrador Peninsula and Adjacent Areas*, University of Toronto Press, Toronto, Ontario.

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