

# SNOWY OWLS IN NEW YORK STATE IN THE WINTER OF 1960-61

DAVID B. PEAKALL

The long expected invasion of Snowy Owls (*Nyctea scandiaca*) occurred last winter; these invasions are cyclic, dependent on the tundra rodent population (Gross, 1931, Shelford, 1945). The regularity of the cycle is not of mathematical precision but for a natural phenomenon it is remarkably regular. For a detailed review of cycles in the animal kingdom the reader is referred to Lack (1954). The literature on four year cycles in tundra mammals has been reviewed by Elton (1942), and more recently by Chitty (1950). The reasons for the cyclic changes in the population of lemmings are obscure, but for fine reading on the subject I strongly recommend 'The Hare and the Haruspex' (Deeves, 1960).

Svardson (1957) considers that invasions should be thought of as invasion migration. He suggests that these migrations start annually, as is the case with ordinary migration, and that this behaviour is released by the same factors. However, unlike ordinary migration, the movement is usually halted early by reaching a good food supply. In invasion years the necessary food supply is not found until the species is further south than its usual wintering range. Svardson has contrasted ordinary and invasion migration in detail. The most important difference is that ordinary migration is an adaption to a seasonal food shortage, while invasion migration is a corresponding adaption to annual food fluctuations.

Rating the invasion James (1961), in Audubon Field Notes, called it 'fair', thus making it comparable with 1954-55, 1953-54 and larger than 1949-50 which was called a 'slight' invasion. The last 'large' invasion was 1945-46 (James, 1958). These ratings are for the Eastern United States as a whole and thus would not necessarily apply to any one state. However, it is difficult to understand how the invasion of 1949-50 could be called slight. Griscom (1950) called it 'spectacular' and the Audubon Christmas Count Report featured a special map in its honor.

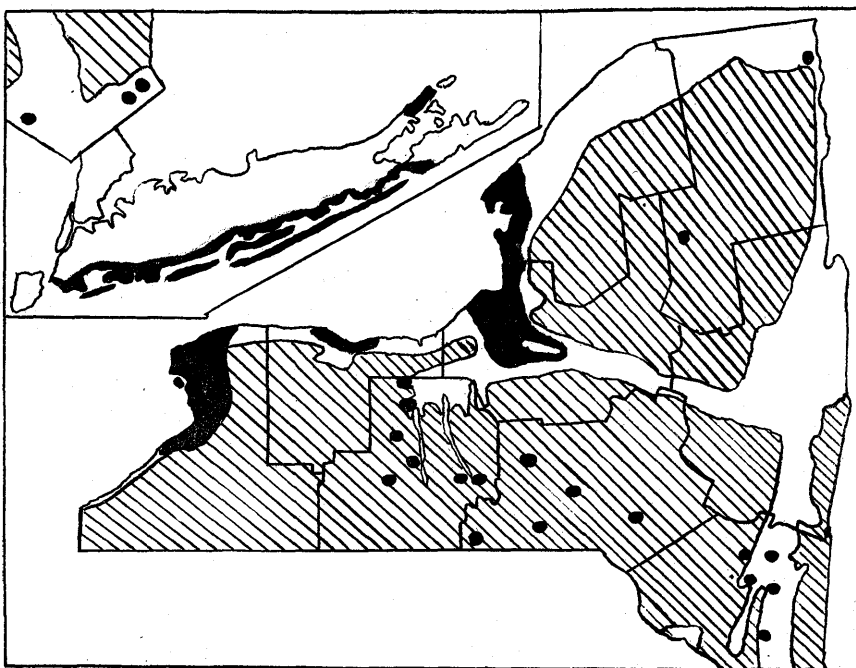
The data from Audubon Christmas Counts are given in table one. The first figure is the number of Snowy Owls reported and the second figure the number of counts for each region. The regions are those currently used for recording in 'The Kingbird'.

Table 1

| Region                 | 60-61 | 59-60 | 58-59 | 57-58 | 56-57 | 55-56 | 54-55 | 53-54 | 52-53 | 51-52 | 50-51 | 49-50 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1                      | 4-5   | 0-5   | 0-5   | 0-5   | 1-5   | 0-5   | 0-4   | 1-4   | 0-4   | 0-3   | 1-4   | 6-4   |
| 2                      | 3-2   | 0-2   | 0-2   | 1-2   | 0-3   | 0-1   | 3-2   | 2-2   | 0-1   | 0-2   | 1-1   | 2-1   |
| 3                      | 0-4   | 1-4   | 0-4   | 1-3   | 1-2   | 0-3   | 0-4   | 1-4   | 1-2   | 0-3   | 1-4   | 1-3   |
| 4                      | 1-2   | 1-3   | 0-3   | 0-3   | 0-3   | 0-3   | 0-4   | 0-3   | 0-2   | 0-1   | 0-2   | 1-2   |
| 5                      | 9-3   | 0-2   | 0-3   | 0-3   | 0-2   | 1-2   | 0-1   | 1-1   | 0-2   | 0-1   | 1-1   | 0-0   |
| 6                      | 3-1   | 1-1   | 0-2   | 1-2   | 0-2   | 1-2   | 0-2   | 0-2   | 0-1   | 0-1   | 2-1   | 3-1   |
| 9                      | 3-6   | 0-5   | 2-5   | 0-4   | 0-4   | 0-4   | 0-6   | 1-4   | 0-4   | 0-5   | 0-5   | 0-3   |
| 10                     | 14-10 | 5-11  | 0-11  | 3-11  | 2-11  | 0-12  | 5-12  | 4-12  | 0-8   | 0-10  | 3-10  | 25-11 |
| Owls per<br>100 counts | 95    | 16    | 5     | 15    | 12    | 6     | 20    | 29    | 4     | 0     | 26    | 123   |

## NOTES:

- (1) The Central Orleans counts are arbitrarily included in Region One.
- (2) The Bronx-Westchester counts are included in Region Ten as the Snowy Owls seen there in the winter of 1949-50 appear to have occurred in this region (Nichols, 1950).
- (3) Snowy Owls reported as seen in the count period are included.
- (4) Off-shore counts are excluded.



■ Principal wintering areas.

▨ Land over 600 feet.

● Isolated records.

No Snowy Owls were recorded in regions 7 and 8 on Christmas counts throughout this period. The number of counts in these areas are, however, included in the calculation of the owls per hundred counts.

It is seen that both the 1953-54 and the 1954-55 invasions were slight in New York State and the invasion of last winter was a little smaller than the one of 1949-50. The data from Christmas counts only gives information for one short period of the winter, but these conclusions are borne out by an examination of the regional accounts in 'The Kingbird'.

The first record for the state last winter was an unverified record from the central part of the state; one near Dundee on October 25th. Excluding this record, the pattern of migration shows a general invasion occurring in late October — early November. The first birds appeared in the Buffalo area in late October. At the other end of Lake Ontario the first birds were noted at Kingston, Ontario on November 9th, Sandy Pond on November 6th. The first Long Island record was Riis Park on November 13th.

The winter distribution of Snowy Owls is shown in figure one. All isolated records are shown for regions 3, 4, 7 & 9. Eleven occurrences were reported for region 8 but no details are available. It will be clearly seen that the favored areas are the coastal plains of the Great Lakes and Long Island. The three principal wintering areas are considered in turn.

1. The Buffalo area contributed the greatest number of records. Dr. Harold Axtell estimates that the reports he received during the winter referred to 100-200 individuals within fifty miles of Buffalo. He further estimates that the total number of individuals would not be more than twice this figure. There was a pronounced return movement in March; the last stragglers were observed on April 16th. In the Rochester area only a few birds were reported, but they were seen throughout the winter along the lake shore to the west of the city. Last date was April 30th.

2. In the Syracuse area, Snowy Owls were plentiful throughout the winter. The best areas being the shores of the smaller lakes, Oneida and Onondaga. They were also recorded along the shores of Lake Ontario but less regularly than in the fall. Scheider considered that 30-35 would be a conservative estimate for region 5. I think 50-60 would be more realistic. There was evidence of a return movement along the shores of Lake Oneida in late March and early April. No movement was noted along Lake Ontario. The last Snowy Owl was seen in the region on May 5th. In region 6 Snowy Owls were apparently largely confined to Jefferson county although this may represent a concentration of observers to a certain extent. They were commonest along Lake Ontario with a peak count of seven on March 25th. This may indicate a return movement.

3. On Long Island the Snowy Owls favored the barrier beaches. A few were recorded on the extreme S. W. of Long Island, several at Jamaica Bay, at least six on the west end of Jones Beach, three or more from the Moriches area, a similar number at Shinnecock, and two or more at Orient State Park. Snowy Owls were practically absent from the north shore of Long Island, the rocky Montauk Point and the Bronx-Westchester area. The numbers increased from mid-November to late December and then decreased rapidly and the birds were scarce thereafter. There was no evidence of a return passage despite good coverage of the area.

Snyder (1957) considers that most of the Snowy Owls that emigrate from the tundra do not survive to return. He quotes in support of this (Snyder, private communication) the heavy mortality due to shooting (839 out of 1,104 seen in New York State alone for the flight of 1945-46) and the idea that if most of them returned the following spring with the food supply still low, the situation would still be out of balance. Gross (1947) considers that there is probably a considerable loss due to owls overshooting into the Atlantic. Both Harold Axtell and John Elliott report that they found considerably less shooting of owls in the past winter compared with earlier invasions. This is probably due, in part, to legislation protecting the Snowy Owl in this state. We may hope never again to see a photograph like that shown by Gross (1927) of 81 Snowy Owls in a single taxidermist's window. The data from the Buffalo and Syracuse areas indicate comparatively successful wintering, although this is not true for Long Island. It will be interesting to see if decreased shooting pressure increases the 'echo' invasions following the main invasions.

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Literature cited carried over to May issue. Upstate Medical Center, 766 Irving Ave., Syracuse, N. Y.