

## CHICKADEE INVASION

by Trevor Lloyd-Evans, Manomet Bird Observatory

The most spectacular feature of the 1980 autumn landbird banding at Manomet Bird Observatory (MBO) was the continuous passage of migrant Black-capped Chickadees heading south along the bluff. They are generally diurnal or daytime migrants, rather than nocturnal like the majority of passerine species. Manomet banded 2,610 in the year, 2,531 of those as fall migrants between 1 August and 15 November. This is a huge number, well above average for the species, 55% above last fall! Manomet knows they are migrating south, partly because they can be seen moving down the edge of the coastal vegetation; partly because the number of banded chickadees caught on subsequent days is minute. They are replaced each day by more unbanded birds. Major invasions are always in the fall from late August to mid-November and occur at intervals of several years. The only other such flight since Manomet started banding in 1966 was the even more impressive year of 1971 (see table) when over 4,000 chickadees were banded. A. M. Bagg (Audubon Field Notes 23(1):8-12, 1969) noted another major flight year in 1961. Ludlow Griscom (Birds of Massachusetts, 1955) also singles out October 1954 as a major flight season on Cape Cod, and there were doubtless others before that.

### MBO PROPERTY - YEARLY BANDING TOTALS BLACK-CAPPED CHICKADEES

<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
158	82	1308	1011	436	4642	204	1031	254	990	856	183
					<u>1978</u>	<u>1979</u>	<u>1980</u>				
					273	443	2610				

### Why do they migrate in some years?

British ornithologists at the Edward Grey Institute in Oxford first showed that in the closely related tits they were studying, numbers of young produced depended on exact synchronization of the breeding cycle with the hatch of the insect larvae which are the main food item of young tits and chickadees. Exact timing can produce a lot of young. They have up to three broods per year and up to 14 young per brood! That certainly accounts for the numbers, but why the autumn movement in some years? In 1975 then Staff Biologist Bruce A. Sorrie summarized MBO data and that of A. M. Bagg (1969) in volume 3, no. 5 of Bird Observer of Eastern Massachusetts. When natural foods such as cones and certain hardwood seeds are in good supply in the northeastern U. S. and southeast Canada (often a two-year cycle), the chickadees have enough food for the winter and stay there, or move only short distances. If, on the other hand, a poor natural food crop coincides with an excellent

breeding season, the local food is quickly used up and the fall invasion starts. Perhaps weather also helps determine movements? At least, a series of NW winds (as seen this fall) will drift moving chickadees and other migrants to the east coast in increased numbers. This northern origin is perhaps also indicated by the presence of Boreal Chickadees only in major Black-capped Chickadee years. The former species breeds only as far south as the spruce zone in North America.

The 1980 invasion was heralded by September reports of unusual numbers from as far away as northern Maine islands and Derby Hill, New York, on Lake Ontario. The migration was very heavy from 12 September to 7 November, peaking at the end of October. Manomet did not actually fall behind the 1971 rate of catching until 12 October, but then the 1980 numbers slackened off a little.

BLACK-CAPPED CHICKADEE - RECOVERIES 1966-1980



Where do they go?

The southern limit of normal Black-capped Chickadee winter (or summer) range is in central New Jersey on the coast, a little farther south higher in the Appalachian Mountains. The map shows all the recovery sites of chickadees banded at MBO (open circles) and three sites in New York and Rhode Is-

land where fall chickadees were banded before recapture at MBO (crosses). 81% of the recoveries are from autumn birds, presumable migrants, the rest are mostly from summer banding and were recovered within Plymouth County. All out-of-county recoveries (except one) were of birds banded in the fall. Black-capped Chickadees will very seldom cross more than a mile or two of water; for example, they hardly ever reach Block Island, Rhode Island and are not seen on MBO seabird cruises. Thus the movement must follow the coastlines, mostly south and west, only reaching Long Island from the west end where it is closest to shore, and terminating in southern New England, New York or New Jersey. They never return in spring in more than token numbers on the coast, 14 banded from 1 April to 16 June 1980, and no return movement has been noted inland. We must assume that the great majority of these mostly young birds perish through lack of winter food.

The exception was banded at MBO on 16 September 1976, a normal fall migrant, vanished for a year and a half, and then turned up in Madsen, Ontario in May 1978. A Mr. Ernie Brown caught the bird, released it alive, and returned our band to the Fish and Wildlife Service in Washington, D. C. This was a really unusual recovery; Madsen lies at 50°N, 93°W on the Manitoba border. Do chickadees from that far west routinely reach New England? What are their chances of getting back? Was this just a disoriented bird, atypical of its species and lost? Manomet looks forward to at least a few more recoveries from the 1980 banding of 2,610 Black-capped Chickadees now that the invasion is over.

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