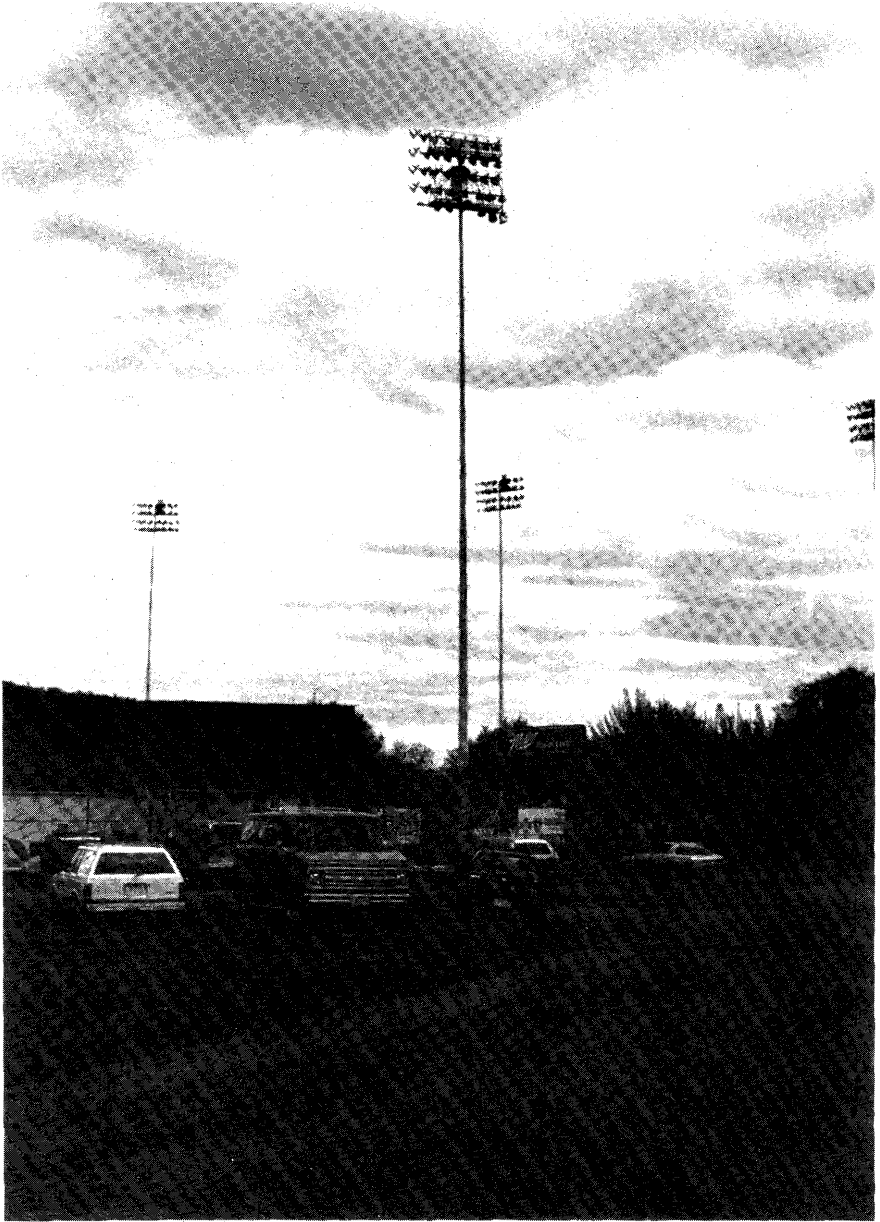




Common Raven nest site at Elmira, New York. See Notes and Observations. Photograph by Richard Clements.

MOVEMENT OF THE BLACK-CAPPED CHICKADEE IN NEW YORK STATE ANALYZED THROUGH BANDING RE-ENCOUNTERS

ELIZABETH W. BROOKS

The status of the Black-capped Chickadee (*Parus atricapillus*) in New York State is described by Bull (1974) as sedentary and migratory, occasionally very abundant in fall irruptions. Studies by Butts (1931) and Yunick (1982) described fall and winter influxes of chickadees in New York. Chickadee irruptive years in the northeast are identified and summarized by Bagg (1969), DeBenedictis (1976, 1987, 1982, 1984, 1986) and Hall (1981). Fascinating accounts in Bull (1974) and Beardslee and Mitchell (1965) describe massive movements of chickadees along the Lake Ontario shore in October 1954 and 1961.

Banding re-encounters of Black-capped Chickadee provide fragmented but useful data that allow analysis of timing, duration, direction and extent of movement of this species. Between 1922 and 1986, nearly 46,000 Black-capped Chickadees were banded in New York. The Bird Banding Laboratory in Laurel, MD, supplied a computer printout listing 1378 chickadees which were banded in the state and re-encountered elsewhere. Most of these re-encounters involved retraps or deaths in the immediate vicinity of the banding location. Twenty-one involved movement less than ten miles from the banding site and were not included in my analysis. Thirty-two New York chickadees were re-encountered more than ten miles from the banding location. An additional 14 birds were banded outside New York and re-encountered within the state.

METHODS

I analyzed these re-encounters to determine timing, duration, direction and extent of movements. Timing of movement was organized by seasons. Fall was defined as any time between 15 July, when breeding and post-breeding dispersal should have been completed, and 12 January, the earliest date when spring movement is thought to be initiated (Brooks 1989, Yunick 1982). Spring was defined as any time between 13 January and 14 July, although this obviously includes the breeding season. Birds encountered between 1 June and 14 July would not have moved in any substantial distance away relative to their location at the onset of the breeding season.

RESULTS

Figure 1 shows directions taken by 11 Black-capped Chickadee involved in fall movements in New York State. Table 1, part A, shows data on nine Black-capped Chickadee banded in New York and re-encountered the same fall. Four of these represent re-encounter distances over 200 miles. The Penn Yan, NY, to Monroeville, PA, record demonstrates the fastest rate of movement (11.6 miles/day). Especially noteworthy are the two birds, banded within 24 hours of each other at Braddock Bay, Town of Greece, that were retrapped three weeks later at Clarkson (14 miles SW) where one was recaptured 12 times between 22 November 1987 and 1 March 1988 and the other was recaptured ten times between 25 November and 28 April 1989 before both disappeared. Part B shows data on three chickadees banded out-of-state during fall and re-encountered in New York during the same or a subsequent fall. In the ten fall re-encounters during the same fall, the average distance moved was 135 miles, the average interval between banding and re-encounter was 45 days, and the average distance moved was 3 miles per day. Of the 12 chickadees involved in fall movements, five were hatching year (HY), three were after hatching year (AHY), and three were of unknown age (U). Seven of the 12 birds moved toward the southwest quadrant. All but two of the birds moved in years identified as irruptive years but it should be noted that 1987, when the two birds moved from Braddock Bay to Clarkson together, was designated as a locally heavy

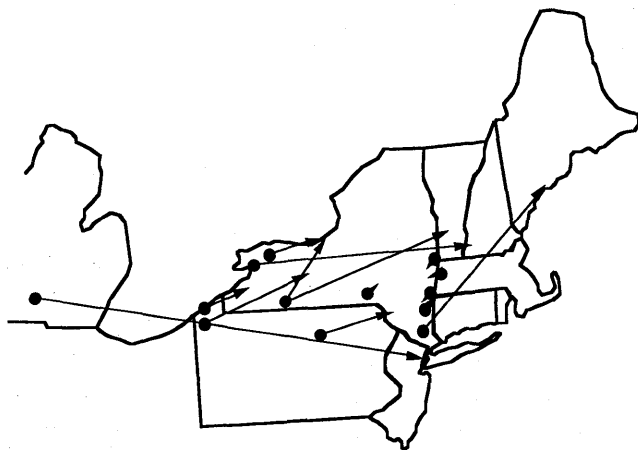


Figure 1. Direction taken by seventeen Black-capped Chickadee banded and/or re-encountered in New York during the spring.

Table 1. Re-encounters of Black-capped Chickadees banded in the fall
 Years identified as irruptive years are italicized

Age	Banding Location	Date	Re-encounter Location	Date	Distance & Direction	Days Elapsed
A) Banded in New York and re-encountered the same fall						
AHY	Meridian, NY	<i>6 Oct 61</i>	Longmeadow, MA	2 Dec 61	220 mi ESE	57
AHY	Kingston, NY	<i>12 Sep 61</i>	Buffalo, NY	19 Nov 61	260 mi WNW	68
U	Bronx, NY	<i>25 Sep 65</i>	Brookhaven, NY	9 Oct 65	50 mi E	14
HY	Ellenville, NY	<i>23 Sep 68</i>	Monaca, PA	4 Nov 68	318 mi WSW	42
U	Penn Yan, NY	<i>26 Oct 69</i>	Monroeville, PA	13 Nov 69	208 mi SW	18
AHY	Babylon, NY	<i>23 Jul 71</i>	St. James, NY	3 Dec 71	16 mi NE	133
U	Penn Yan, NY	<i>27 Sep 75</i>	Cortland, NY	26 Oct 75	47 mi E	29
HY	Braddock Bay, NY	1 Nov 87	Clarkson, NY	22 Nov 87	14 mi SW	21
HY	Braddock Bay, NY	2 Nov 87	Clarkson, NY	25 Nov 87	14 mi SW	23
B) Banded out-of-state and re-encountered in New York in the fall						
AHY	Martha's Vnyd, MA	<i>15 Nov 59</i>	White Plains, NY	21 Oct 60	166 mi WSW	
HY	Manomet, MA	<i>24 Sep 69</i>	Richmond Hill, NY	Dec 69	201 mi SW	
HY	Manomet, MA	<i>16 Oct 71</i>	Ardsley, NY	Aug 72	178 mi SW	
C) Banded in New York State and re-encountered in a subsequent spring						
U	Brookhaven, NY	<i>2 Oct 65</i>	Old Furnace, MA	9 Mar 67	115 mi NNE	
			Oakham, MA	30 Dec 68	120 mi NNE	
U	Penfield, NY	<i>25 Nov 65</i>	Mexico, NY	14 Apr 66	67 mi EME	
U	Ithaca, NY	<i>9 Nov 69</i>	W. Glover, VT	4 Apr 71	254 mi NE	
U	Binghamton, NY	<i>11 Oct 83</i>	Oswego, NY	5 May 84	99 mi NNW	
HY	Voorheesville, NY	<i>27 Oct 85</i>	Dummerston	11 Apr 86	75 mi EME	
D) Banded out-of-state and re-encountered in New York in a Subsequent Spring						
U	Rector, PA	<i>11 Oct 61</i>	Hancock, NY	Mar 63	239 mi NE	
U	Meadville, PA	<i>28 Dec 61</i>	Gloversville, NY	Feb 64	313 mi NE	
U	Morris Plains, NJ	<i>22 Sep 75</i>	Hopewell Jct., NY	5 Apr 76	75 mi NME	
U	Brush Valley, PA	<i>8 Nov 75</i>	Port Henry, NY	9 Jun 76	400 mi NE	

migration but was not identified as a generally occurring irruption. Part C shows data on five chickadees banded during the fall in New York and re-encountered during a subsequent spring. Part D shows data on four chickadees banded out-of-state in the fall and re-encountered in New York in the spring. Distances averaged 182 miles and all but one chickadee had moved toward the NE quadrant.

Figure 2 shows the direction of movement of 20 Black-capped Chickadee moving during the spring. Table 2, Part A, shows data on nine Black-capped Chickadee banded in New York that were banded and re-encountered in the same spring. The average distance moved was 74 miles; the average time elapsed was 50 days; and the average rate of movement was about 1 mile per day. Part B shows an additional three re-encounters involving chickadees banded in New York in the spring and re-encountered in a later spring. Part C shows five more chickadees banded out-of-state during spring and re-encountered in New York during the same or subsequent spring. Nine of the 17 spring chickadees had moved toward the NE quadrant. Part D, shows data on four Black-capped Chickadees banded during spring and re-encountered during fall, including the remarkable record of a chickadee banded in Pennsylvania that moved 225 miles NE and was recaptured four times in Phoenix, New York, on dates ranging from late fall to early spring from 1980 to 1984. What is noteworthy about these captures is that this bird never repeated at the banding site nor at the recapture site at any other time other than the dates noted.

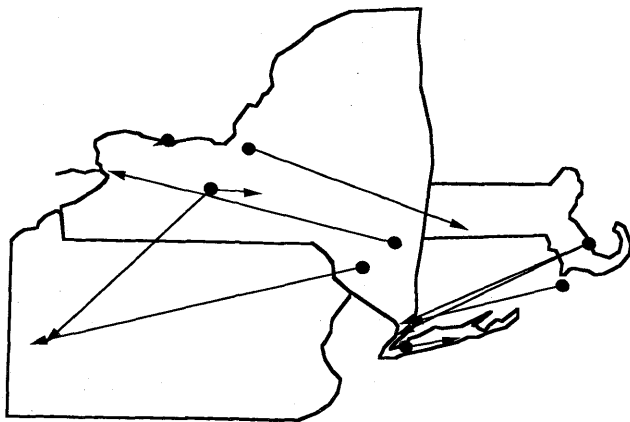


Figure 2. Direction taken by eleven Black-capped Chickadee banded and/or re-encountered in New York during the fall.

Table 2. Re-encounters of Black-capped Chickadees banded in the spring

Banding Location	Date	Re-encounter Location	Date	Distance & Direction	Days Elapsed
A) Banded in New York and re-encountered the same spring					
Arlington, NY	14 Jan 55	Clove, NY	13 Apr 55	17 mi E	89
E. Sydney, NY	13 Jan 60	Dreadwell, NY	1 Feb 60	21 mi NE	19
E. Aurora, NY	26 Jan 62	Marlborough, NH	Jul 62	320 mi E	
Amenia, NY	29 Jan 71	Verbank, NY	17 Apr 71	15 mi SW	78
Amenia, NY	3 Feb 71	Verbank, NY	19 Apr 71	15 mi SW	75
Alps, NY	20 Feb 77	Chatham Cntr., NY	23 Apr 77	15 mi SSW	62
Albion, NY	10 Apr 84	Nine Mile Pt., NY	17 May 84	87 mi ENE	37
Alfred, NY	16 Apr 84	Nine Mile Pt., NY	20 May 84	110 mi NE	34
Braddock Bay, NY	11 May 87	Nine Mile Pt., NY	16 May 87	70 mi E	5
B) Banded in New York and re-encountered in a subsequent spring					
Wingdale, NY	16 Jan 62	Ashley Falls, MA	3 Mar 63	25 mi NNE	
Mohegan L., NY	27 Feb 72	Topsham, ME	3 Mar 73	288 mi NE	
Alfred, NY	25 Apr 78	S. Londonderry, VT	31 Jan 79	275 mi ENE	
C) Banded out-of-state and re-encountered in New York					
Battle Creek, MI	26 Jan 47	Queens, NY	25 Apr 48	556 mi E	
Meadville, PA	8 Apr 62	Penn Yan, NY	24 Jun 62	172 mi ENE	
Proctor, PA	28 Feb 63	Monticello, NY	21 May 66	110 mi EME	
Lenox Dale, MA	1 Mar 63	Livingston, NY	5 May 64	30 mi SW	
Erie	2 May 82	N. Java, NY	16 Jan 83	94 mi NE	
D) Re-encountered during a variety of seasons					
Otto, NY	11 Apr 62	E. Eden, NY	2 Nov 62	21 mi N	
Amenia, NY	14 Feb 67	Verbank, NY	1 Nov 67	15 mi SW	
Millbrook, NY	11 Apr 69	Pelham, NH	16 Nov 69	130 mi NE	
Saegertown, PA	10 Apr 78	Phoenix, NY	20 Dec 80*	225 mi NE	

* Re-encountered at this site on 24 Jan 82, 18 Dec 83 and 5 Feb 84

Table 3. Miscellaneous Black-capped Chickadee re-encounters.

Banding Location	Date	Re-encounter Location	Date	Distance & Direction
Johnson, VT	29 Dec 36	Pawling, NY	Jan 40	206 mi S
Jamesville, NY	26 Oct 57	Virgil, NY	Jan 59	35 mi SSW
Dormansville, NY	1 Jan 70	Nassau, NY	3 Apr 70	20 mi ENE
S Rutland, NY	12 Jan 72	Vernon Ctr, NY	2 Oct 75	61 mi SSE

Table 3 shows data on four Black-capped Chickadee re-encounters during a variety of seasons. These recaptures are more difficult to interpret. Most interesting is the bird banded in Vermont in late December 1936 and re-encountered 206 miles S of the banding site in a subsequent winter. This indicated that the bird had remained on northern territory during one fall/winter period but had migrated south during a subsequent fall/winter when conditions had warranted.

DISCUSSION

Since New York is located in the center of the north-south range of Black-capped Chickadee, it is not surprising that so many interesting re-encounter records exist. The analysis of banding re-encounters of chickadees involved in fall movement in the state demonstrates long distance migration in a generally SW direction at a leisurely rate of three miles per day. These findings agree with those found in a similar study of chickadee movements in the northern states (Brooks 1991). Spring movement in New York is in a generally NE direction at a rate of about one mile per day, which is somewhat slower than the 2.6 mi/day average for the northern states in general (Brooks 1987; Stewart 1988). However, describing fall or spring movement as leisurely based on banding captures may be an oversimplification. Indeed, one fall re-encounter (Penn Yan, NY, to Monroeville, PA) averaged 11.6 miles/day and one spring re-encounter (Braddock Bay to Nine Mile Pt.) averaged 14 miles/day. Chickadee movements may be rapid at some stages of migration and leisurely at others. There is no evidence of long distance movement during winter (1 December to 12 January) in New York chickadees. Also in agreement with analyses of the general population of northern chickadees is the finding

that both HY and AHY chickadees are involved in migration. The records of the two chickadees banded at Braddock Bay and recaptured repeatedly in Clarkson provide evidence that birds migrating together during fall may winter together. Virtually all the fall re-encountered New York chickadees were moving in irruptive years, whereas in analyses of re-encounters throughout the northeast, a third of the re-encountered chickadees moved in non-irruptive years (Brooks 1991).

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