

Occurrence of Black-capped Chickadees in Delaware during the winter of 2016 – 2017 together with a local banding record

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The Black-capped Chickadee (*Poecile atricapillus*) is one of several irruptive seed-eating passerines that are only found in Delaware in some winters (Hess *et al.* 2000), which is thought to be a consequence of periodic failures of the food crop to our north. The winter of 2016 – 2017 was a modest irruption year and this article summarizes Black-capped Chickadee reports submitted to eBird (eBird.org) in this and the 9 previous years. We narrowed the search range from December to February for convenience since this is one of eBird’s pre-selected periods but also because any birds seen then have probably settled for the winter rather than migrants that may be reported from multiple locations.

There are several caveats to these data. First, they are an underestimate of total sightings since some Delaware reporters do not use eBird. Second, eBird has increased in popularity so any recent increase in rarity reports may simply be because there are more reporters, especially those who have been alerted to the presence of this species through social media causing them to inspect any chickadees more intently. Third, a few of the reported locations are fairly close together (within a mile) and may represent the same individuals. Finally, all of the records are assumed to be correct identifications. This is probably justified as all reports of rare birds have to be accompanied by a detailed description and preferably a photograph before they are accepted by regional eBird reviewers.

Black-capped Chickadees were reported in Delaware in 6 of the last 10 winters, with the highest number in the winter of 2016 – 2017. Most reports were of single birds (Table 1).

Figure 1 shows the location of Black-capped Chickadee sightings in Delaware during the modest irruption of 2016 – 2017 and although they are widely scattered they are all in the northern third of the state.

To test if this was a general pattern we searched the entire eBird database (1900 onwards) and found 56 locations in Delaware that have reported Black-capped Chickadees. These were almost all from New Castle County (51) with only two in Kent County and three in Sussex County. Hess *et al.* (2000) found a similar sharp decline in reports from southern Delaware based on Christmas Bird Count data. This could be a genuine pattern or simply reflective of the greater number of observers in northern Delaware. We suspect it is a genuine pattern since 1) several

Table 1. eBird records of Black-capped Chickadees in Delaware during Dec – Feb of 2007 – 2017. Data obtained from eBird (Sullivan *et al.* 2009), accessed 26 May 2017.

Winter	Number of locations	Total # birds seen
2007/8	7	10
2008/9	0	-
2009/10	0	-
2010/11	9	13
2011/12	0	-
2012/13	7	7
2013/14	3	3
2014/15	3	3
2015/16	0	-
2016/17	22	32

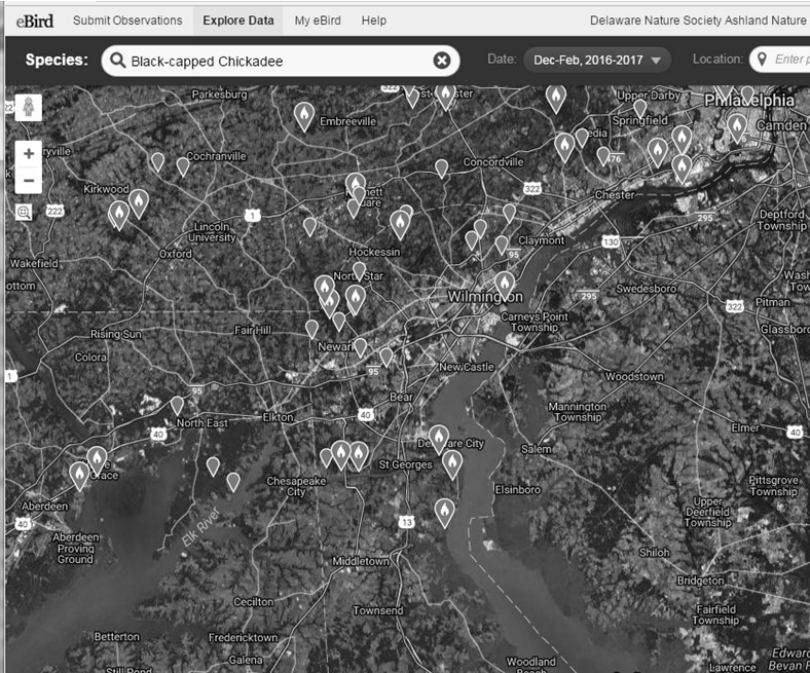
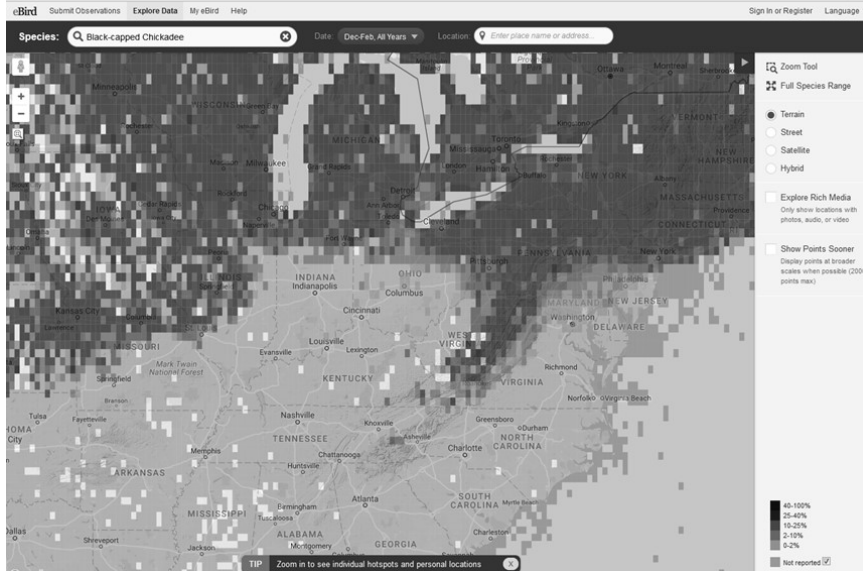


Figure 1. eBird records of Black-capped Chickadee in the Delaware area from December to February 2016 – 2017. Image provided by eBird (www.ebird.org) and created 26 May 2017.

sites in lower Delaware are intensively covered during the Christmas Bird Counts and yet only a handful of Black-capped Chickadees are found, and 2) there are relatively few reports of Black-capped Chickadees from heavily birded areas on the same or lower latitude as southern Delaware such as Cape May, New Jersey or the Washington D.C. area. A search of the entire eBird database of Black-capped Chickadee records for December through February shows that northern Delaware is at the southern limit of their winter range, except for a striking finger-like extension down the Appalachians as far as Tennessee and North Carolina (Figure 2).

Although the number of Black-capped Chickadees reported in the winter of 2016 – 2017 was by far the highest of the decade at 32 individuals, this pales in comparison with some of the previously reported totals. The average number reported from the 1966 – 1992 Christmas



**Figure 2.** eBird reports of Black-capped Chickadees in and around Delaware during December-February of 1900 to 2017. Image provided by eBird ([www.ebird.org](http://www.ebird.org)) and created 26 May 2017.

Bird Counts was 40 with a record total of 291 reported in 1975 (Hess *et al.* 2000, see also the thorough review of data on irruptive visitors to Delaware by Inksip in the same volume). However, the authors caution that these totals may have been exaggerated by misidentifications which

are less likely now because there are more resources available to allow an observer to distinguish between the two species.

### Banding report

Although we are not questioning the eBird records it must be acknowledged that distinguishing Black-capped from the common resident Carolina Chickadees (*Poecile carolinensis*) in the field can be challenging. The most conspicuous visual field mark is a white ‘hockey stick’ in the wing which is produced by a white outer edge to the inner secondary feathers and several of the secondary coverts. Black-caps also have larger, brighter white cheeks and nape, and a larger and more diffuse black bib (Sibley 2003). However, these plumage differences occur along a continuum and the situation is complicated by the fact that there is a hybrid zone which runs across Pennsylvania about 50 miles north of the state line so some birds could have intermediate characters. The species can often be identified by their calls but the most reliable way of distinguishing between the two species is measuring birds captured for banding, since the Black-capped is larger than the Carolina Chickadee and varies in certain body proportions, specifically the ratio of the wing length to tail length (Pyle 1997).

On 5 December 2016 a chickadee which appeared relatively large and brightly colored was captured in a mist-net erected near the feeding station at Bucktoe Creek Preserve near Kennett Square, Pennsylvania, only a few miles from the state border. Several body measurements were taken and the ratio of the wing to tail length was 1.03, which confirmed the bird was a Black-capped Chickadee (ratio > 0.9 for Black-capped versus < 0.9 for Carolina, Pyle 1997). The measurements were later compared with 16 Carolina Chickadees caught at Bucktoe at approximately the same time of year in 2015 (between 10 October and 29 November) and show that the Black-capped was slightly larger in almost all dimensions (Table 2).

Figures 3 – 5 show the Black-capped Chickadee as well as its upper wing feathers and tail undersides in comparison to those of a Carolina Chickadee caught at Bucktoe Creek on 28 September 2016. The outer tail feather of the Black-capped Chickadee was relatively tapered and the outer portion was pure white, although the white ended at the tip of the tail. This suggests that it was a hatch year bird (*i.e.* born in the summer of 2016) since if it was in at least its second year the outer tail feather would be more truncate and the white edge would continue around the tip (Pyle 1997). This age category was expected since most Black-capped Chickadee irruptions are composed of young birds (Foote

**Table 2.** A comparison of body measurements of a Black-capped Chickadee (BCCH) captured at Bucktoe Creek Preserve in Pennsylvania with those of 16 Carolina Chickadees (CACH) captured at around the same time of year in 2015. Data from 2015 were used since data on tarsus and tail length were not routinely collected in 2016.

	BCCH	Average of 16 CACHs
Weight (g)	10.6	9.6
Tarsus (mm)	16.7	15.6
Head and Bill (mm)	27	24.9
Culmen (mm)	7.6	6.4
Wing L (mm)	64	63
Tail (mm)	62	56

et al. 2010).

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**Literature Cited**

Foote, J. R., D. J. Mennill, L. M. Ratcliffe and S. M. Smith. 2010. Black-capped Chickadee (*Poecile atricapillus*), *The Birds of North America* (P. G. Rodewald, Ed.). Ithaca: Cornell Lab of Ornithology.

Hess, G.K., R.L. West, M.V. Barnhill III and L.M. Fleming. 2000. *Birds of Delaware*. University of Pittsburgh Press, Pittsburgh PA.

Pyle, P. 1997. *Identification guide to North American Birds. Part I: Columbidae to Ploceidae*. Slate Creek Press, Point Reyes, CA.

Sibley, D.A. 2003. *The Sibley field guide to birds of Eastern North America*. Knopf Doubleday Publishing Group.

Sullivan, B.L., C.L. Wood, M.J. Iliff, R.E. Bonney, D. Fink, and S. Kelling. 2009. eBird: a citizen-based bird observation network in the

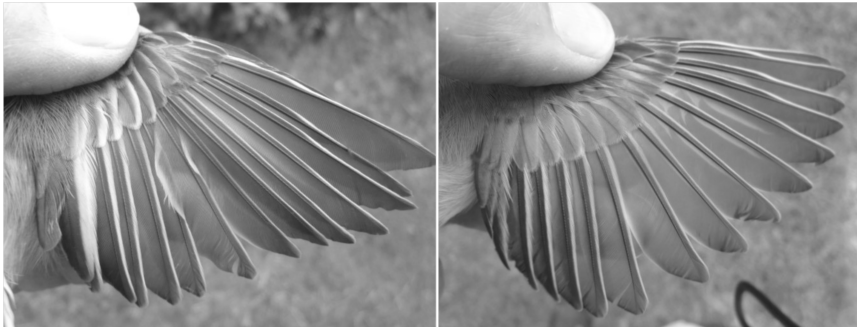
biological sciences. *Biological Conservation* 142: 2282-2292.



**Figure 3.** Black-capped Chickadee banded at Bucktoe Creek Preserve, PA, on 5 December 2016 showing the white ‘hockey stick’ in the wing.



**Figure 4.** Under tail pattern of a Black-capped Chickadee (L) and Carolina Chickadee (R) banded at Bucktoe Creek Preserve PA in the winter of 2016 – 2017 showing the longer tail and the strong white outer tail pattern of the Black-capped.



**Figure 5.** Upper wing of a Black-capped Chickadee (L) and a Carolina Chickadee (R) banded at Bucktoe Creek Preserve PA in the winter of 2016 – 2017 showing the strong white outer edging of the secondary feathers and secondary coverts of the Black-capped.