



Geoff Malosh

## Black-capped Chickadee

*Poecile atricapillus*

Because they are widespread, common, and frequent visitors at bird feeders, chickadees are among the most familiar of forest songbirds throughout Pennsylvania. The Black-capped Chickadee is more widespread and abundant than the Carolina Chickadee. Both are small and active year-round residents that share black, gray, and white plumage patterns; distinguishing features of the Black-capped Chickadee includes its relatively long tail and simple two-note song. The two chickadees are not only similar, but they also hybridize where their geographic ranges overlap (Reudink et al. 2006, 2007).

The extensive breeding range of the Black-capped Chickadee spans a broad swath of forested habitats across the northern states and southern Canada, from coast to coast. The species' southern range limit crosses Pennsylvania from east to west, with a dip south of the Mason-Dixon Line following the higher elevations of the Appalachian Mountains. Its range covers most of Pennsylvania, except for the southeastern and southwestern corners, where it is replaced by the Carolina Chickadee. During the second Atlas period, breeding Black-capped Chickadees were recorded in 83 percent of all blocks, and in almost every block within its range. By the first Atlas period, populations had undergone a long-term increase; Breeding Bird Survey data showed gradual increases from the 1960s through the 1980s (Sauer et al. 2011), which continued between the first and second atlas.

The Black-capped Chickadee's status in Pennsylvania is secure, but the second Atlas documents a contraction at the southern edge of its range where it comes into contact with the Carolina Chickadee. In 59 percent of blocks inhabited by both species, Carolina Chickadees joined Black-capped Chickadees only during the second Atlas

period. Contraction of the Black-capped Chickadee's southern range limit was expected, because research has provided evidence of northward movement of the hybrid zone at a rate of roughly 1 km (0.6 miles) per year (Reudink et al. 2007; Curry et al. 2007). The species occupied only 36 fewer blocks—disproportionately along the southern range limit—during the second Atlas period than in the first, a change of less than 1 percent. However, taking into account lower average effort in the first Atlas, we estimate that the actual range change between atlases was closer to 5 percent. Over the same interval, though, the number of blocks with both chickadee species reported increased by 85 percent, mainly due to Carolina Chickadees moving into blocks in which only Black-capped Chickadees were found in the first Atlas period.

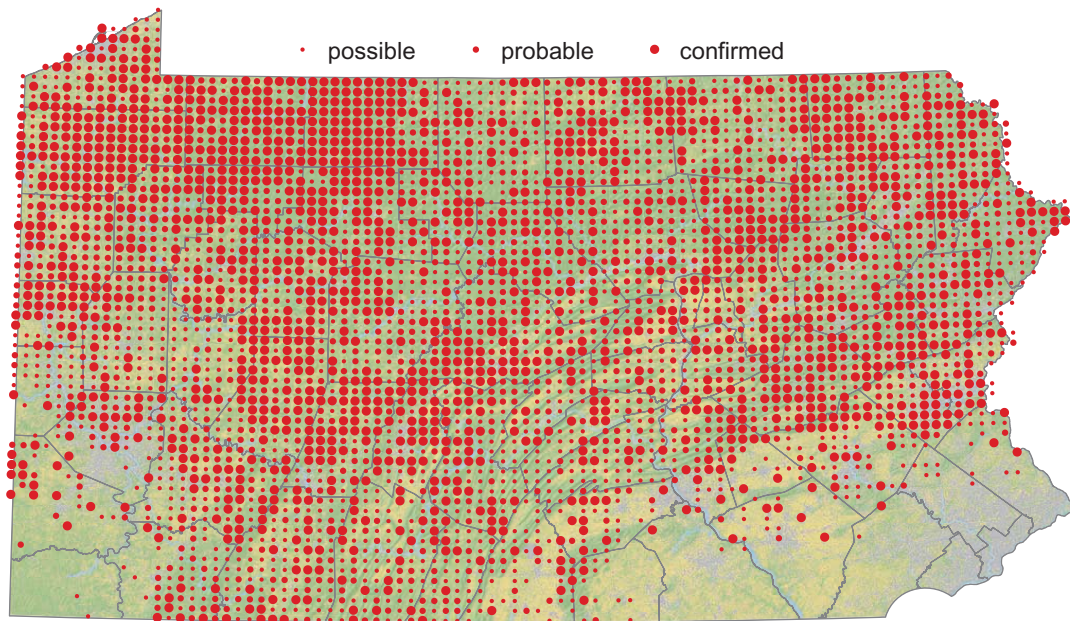
Identification based on song is especially problematic in or near the area of overlap with Carolina Chickadees, because both hybrid and genetically pure chickadees of both species are known to be able to learn the song of the other species and thus to produce the “wrong song” (Curry et al. 2007). Extralimital records of Black-capped Chickadees in counties well south of the current position of the hybrid zone (including Chester, Montgomery, and Greene) are suspect and might be attributable to aberrant vocal behavior of hybrid or Carolina Chickadees.

With a statewide population estimated at more than 800,000 pairs, the Black-capped Chickadee ranks fifteenth in overall abundance, just behind its larger close relative, the Tufted Titmouse. Currently, it is most abundant in Pennsylvania's northern and northwestern counties. During the second Atlas period, abundance of the Black-capped Chickadee was positively associated with forest cover (appendix D), and densities were lowest in blocks dominated by non-forest habitat cover. The species is a primary cavity nester, with most nests excavated in dead hardwood trees (especially birch and aspen) beginning in late April; pairs occasionally use existing cavities or nest boxes. These habits allow chickadees to occupy suburban and fragmented landscapes as well as forests. Black-capped Chickadee densities generally increase with elevation, in part because the species is absent from the low-elevation regions occupied by Carolina Chickadees, but also because forest cover tends to increase with elevation.

The Black-capped Chickadee will long be a conspicuous and important component of Pennsylvania's avifauna. However, the species probably will continue to lose ground to the Carolina Chickadee, and the zone of apparent overlap between the two may continue to widen.

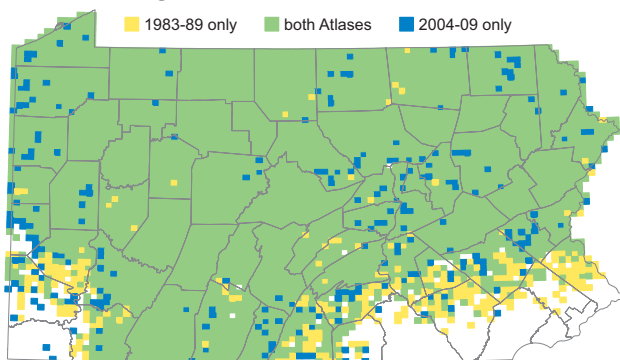
ROBERT L. CURRY

**Distribution**



MAP\_9.105.1

**Distribution Change**



MAP\_9.105.2

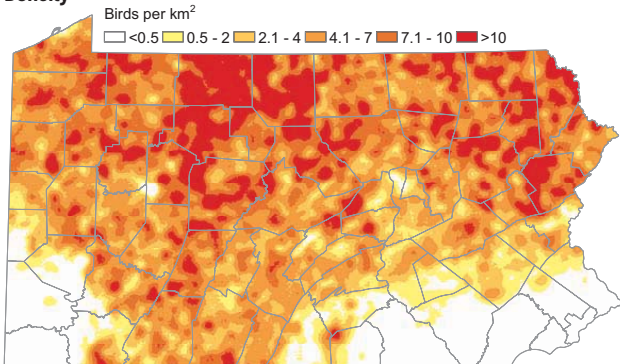
**Number of Blocks**

Table 9.105

	first Atlas 1983-89	second Atlas 2004-09	Change %
Possible	1,085	1,524	40
Probable	1,332	1,066	-20
Confirmed	1,734	1,524	-12
Total	4,151	4,114	-1

Population estimate, males (95% CI):  
810,000 (780,000-855,000)

**Density**



MAP\_9.105.3

**Breeding Bird Survey Trend**

CHART\_9.105

