

ABOUT THE COVER: BLACK-CAPPED CHICKADEE

The Black-capped Chickadee (*Parus atricapillus*) is a common, well-known, well-loved little bird, best known for the *chick-a-dee-dee-dee* call which gives it its name, and for its sprightly presence at winter bird feeders. It is the state bird of Massachusetts, and its namesake, *The Chickadee*, is the journal of the Forbush Bird Club of Worcester. These active little birds have been studied for more than twenty years by Susan M. Smith, a professor at Mount Holyoke College in South Hadley, and she has published the definitive monograph on the species (*The Black-capped Chickadee: Behavioral Ecology and Natural History*, Cornell University Press, 1991).

The chickadee's small size, black cap and bib, grayish-green back, and white ventral surface highlighted by buffy flanks (the sexes are similar) make this species unmistakable in New England. Farther south and west, they can be separated from the similar Carolina Chickadee by the Black-cap's conspicuous pale edging of the wing coverts and flight feathers. The Black-capped Chickadee is polytypic with nine subspecies generally recognized. Its sedentary nature makes it prone to geographic isolation and hence genetic differentiation. In our area we have the Eastern Black-capped Chickadee, *P. a. atricapillus*, in the Appalachians *P. a. praticus*, and in Newfoundland *P. a. barletti*. The Black-capped Chickadee is most closely related to the Mountain Chickadee of the west, with which it interbreeds rarely. It more commonly hybridizes with the more distantly related Carolina Chickadee.

The breeding range of the Black-capped Chickadee includes most of the northern half of the United States, and from Alaska across Canada south of Hudson's Bay to Newfoundland. It is resident throughout its range, switching its social structure from territorial monogamous pairs in breeding season to flocks of up to a dozen individuals in winter. Chickadees often are part of mixed-species foraging flocks, and may be the nuclear species around which such flocks are organized. In the dominance hierarchies of chickadee flocks, males usually outrank females, and older birds outrank hatch-year birds. They are able to survive harsh northern winters partly by achieving a "regulated hypothermia" in which their body temperature may drop substantially during cold nights, thus conserving energy. Although sedentary, Black-capped Chickadees may experience irruptive movements, presumably triggered by the failure of food crops farther north and perhaps unusually high reproductive success, in which large numbers of mostly juvenile birds move south in fall. Unlike most passerines, they migrate during daytime, and in irruptive years large numbers may be mist-netted at Manomet Center for Conservation Sciences (formerly Manomet Bird Observatory).

In this monogamous species, pair bonding may occur at any time, but usually peaks in the fall during winter flock formation, and to a lesser extent in

the spring, prompted by overwinter mortality. Black-capped Chickadees nest in deciduous or mixed deciduous/conifer forest and woodlands. They tend to be an edge species and frequent disturbed areas such as old fields, orchards, and scattered suburban vegetation. Their vocalizations are highly variable and more than fifteen kinds have been identified. The most commonly heard vocalizations are the *fee-bee* and the *chick-a-dee* (with from one to ten *dees*). They sometimes give distress calls and *zee* alarm notes, as well as assorted *tseets* and gargles. They do not perform complicated nuptial displays, but have several aggressive displays in which they fluff their body, crown, and back feathers. They sleek their plumage as an appeasement display.

Both parents participate in excavating a nesting cavity, often in the rotten wood of a snag, stump, or branch, but only the female makes the nest of moss, fur, and other fine material. Most nests are 4-20 feet from the ground, and this species will sometimes utilize nest boxes. The clutch size is highly variable, but usually is 6-8 whitish, red-brown spotted eggs. Incubation is performed by the female alone and lasts 11-13 days, during which the male feeds her at the nest. Only the female broods the young, which fledge in about two-and-a-half weeks. Adults perform distraction displays with wings and tail fully spread if humans or potential predators approach the nest. Young are fed by both parents, and stay with the parents for 3-4 weeks after fledging, catching an increasing proportion of their own food prior to their joining winter flocks.

Chickadees shift their diet from about 50 percent plant, 50 percent animal food in winter to 80-90 percent animal food in summer. They eat a wide variety of small insects, caterpillars, slugs, and spiders, and fruit such as blueberries, blackberries, and cherries. It should surprise no one who has watched chickadees at a suet feeder that they also take fat from natural suet feeders — dead mammals. Chickadees cache food items including seeds and insects under bark or leaves and in knotholes. They cache food items separately — “scatter hoarding” — and have exceptional memories for the location of cached items.

Chickadees are preyed upon by owls, accipiters, and shrikes. They are rarely parasitized by cowbirds, but House Wrens may destroy their eggs when competing for nest sites. Their life span is ordinarily about 2.5 years, but the longevity record is more than twelve. Starvation in winter is a problem for northern chickadees, but their survival chances are enhanced by the presence of winter bird feeders within their home range. Breeding Bird Survey data suggest that chickadees are increasing in much of their eastern range. Forest fragmentation tends to increase the edge habitat that is to their liking, and may actually be beneficial to chickadees in some areas. Black-capped Chickadees get along well with humans and have become a tame and common backyard bird year-round. But winter can be hard on them, so keep those feeders full!

— *W.E. Davis, Jr.*