Poecile hudsonicus J. R. Forster — Boreal chickadee

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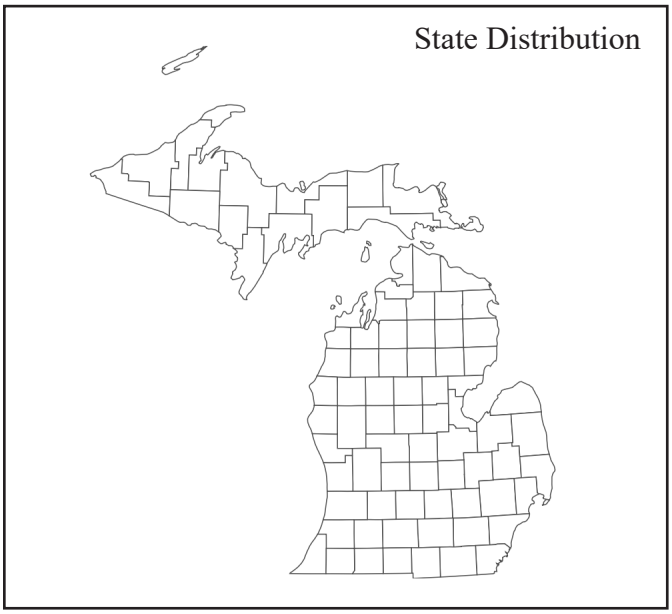

Best Survey Period

Status: State special concern

Global and state rank: G5/S2

Family: Paridae

Total Range: The boreal chickadee is a year-round resident throughout Canada and Alaska. Southern portions of its range extend south into northern Minnesota, Wisconsin, Michigan, and some parts of New England. (Ficken et al. 2020)

State Distribution: The boreal chickadee reaches the southern most extent of its range in Michigan, with breeding individuals confirmed throughout the Upper Peninsula (Hickman 2013).

Recognition: The boreal chickadee is a small songbird, 4.9-5.5 in (12.5-14 cm) in length. It has a **grayish-brown cap and back**, with a **black bib**. Sides and **flanks** are **brown to rufus**. It has a **small white cheek patch**. The boreal chickadee appears **more brown** than the black-capped chickadee (*Poecile atricapillus*), the only other chickadee species found in Michigan, which is easily distinguished by its black cap and larger white cheek patch. (National Geographic Society 1999, Ficken et al. 2020)

Best survey time/phenology: Boreal chickadees are resident in Michigan's Upper Peninsula year round (eBird 2025). They are regularly associated with multi-species foraging flocks during winter (Ficken et al. 2020). Males do not sing to defend their territories, so they can be difficult to find in the breeding season (Hickman 2013). The breeding season in Michigan begins in early May with pair formation, and young are often fledged by mid-July (Hickman 2013). Boreal chickadees are most frequently reported in Michigan during the months of May and June (eBird 2025).

Habitat: Boreal chickadees inhabit boreal forests and other conifer dominated forest types, particularly those that are wet and contain high proportions of spruce trees (*Picea* sp.) (Hickman 2013). They prefer mature forests, especially in winter, though they do inhabit regenerating forests provided they are not too young (Hadley and Desrochers 2008). The boreal chickadee is a cavity nester, and breeding habitat requires trees with suitable cavities, usually at heights less than 10 feet (3 meters)

(Ficken et al. 2020).

Biology: Winter flocks begin to break up in late April, at which point pairs have already formed (Hickman 2013). Pairs may remain together through multiple breeding seasons (McLaren 1975). Nests are built in cavities in snags and stumps, usually at heights of less than 10 feet (3 meters) and sometimes as low as ground level (Ficken et al. 2020). Boreal chickadees will use nestboxes when available (Dufour-Pelletier et al. 2020). The pair inspects a variety of potential cavities, and both contribute to excavation after a cavity is selected (Ficken et al. 2020). Once excavated, the female forms a nest with a bark and moss base and a cup made from fur (Baicich and Harrison 1997, Ficken et al. 2020).

Boreal chickadees lay 4-9 eggs which are incubated by the female (Baicich and Harrison 1997). Eggs hatch after about 13 days, and young are altricial and sparsely downy (Biacich and Harrison 1997). Both parents attend the young, though the male participates less as the young get older (Ficken et al. 2020). Young fledge at about 18 days and disperse from their natal site about two weeks later (Ficken et al. 2020).

Winter flocks begin forming as soon as fledging occurs, which may be as early as the end of June (Hobson and Van Wilgenburg 2006). Average flocks contain 4-6 boreal chickadees and may also contain black-capped chickadees and red-breasted nuthatches (Hadely 2006, Ficken et al. 2020). While their diets are similar, in winter boreal chickadees spend the majority of their time foraging in black spruce trees, while black-capped chickadees use a wider variety of conifer and deciduous tree species (Gayk and Lindsay 2012).

Boreal chickadees eat a variety of seeds, spiders, and adult and larval insects (Halftorn 1974). During summer they have been observed spending more time foraging in balsam firs (*Abies balsamea*), disproportionate to the tree's relative abundance (Cumming 2004). They appear to feed their young with high calorie *Lepidoptera* at rates higher than they occur relative to other prey items (Snow 2023) and will provision at higher rates to compensate when fewer high calorie foods are available (Senécal et al. 2021). Boreal chickadees also cache food during the summer for winter consumption (Halftorn 1974).

Conservation/management: Boreal chickadees require access to mature conifer forests to maintain populations, especially during winter (Hadley and Desrochers 2008). These habitats face increasing threats from logging and climate change (Zlonis et al. 2017, Ficken et al. 2020). Boreal chickadees prefer to forage in black spruce which elevates the importance of this species as a habitat requirement (Gayk and Lindsay 2012). Nestlings have better physical condition and higher growth rates when nests are located in larger black spruce stands, with the structural diversity to support higher arthropod diversity (Snow et al. 2023). During thinning or other forest management activities, snags and stumps should be retained for nesting (Bayne and Nielsen 2011). Maintenance of contiguous, mature black spruce stands is critical to boreal chickadee conservation.

Research needs: Population trends of the boreal chickadee are not well established, due in part to their low detectability during surveys (Ficken et al. 2020). Long term monitoring multiple boreal chickadee populations across their range would increase knowledge of local and range-wide population trends. Climate change may affect not only boreal chickadee habitat, but also the availability of prey species (Snow 2023). Information about changes in diet over time would illuminate current challenges and the degree to which boreal chickadees can adapt to future biotic and abiotic conditions. Forestry practices have variable impacts on boreal chickadees (e.g. Bayne and Nielsen 2011, Euler et al. 2014), and continued evaluation and consideration of how these practices impact this species is critical to ensuring habitats remain suitable and populations persist.

Related abstracts: Boreal forest, muskeg, hardwood-conifer swamp, northern shrub thicket, American goshawk, black-backed woodpecker, wood turtle, calypso orchid, ram's-head lady's-slipper, Lapland buttercup

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Abstract citation

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