

Boreal Chickadee

Poecile hudsonicus



The Boreal Chickadee is one of the few species that lives year round in the vast boreal biome of Canada and Alaska. Because these northern coniferous forests barely extend south of the Canadian border, Vermont is one of the few states where this species can be regularly found. Its industrious storage of insects and seeds in bark and branches helps it survive harsh winters. Though tame, it is much more unobtrusive than its inquisitive southern relative, the Black-capped Chickadee. But once found, the Boreal Chickadee is easily distinguished by its nasal call, brown cap and back, and rufous flanks.

The Boreal Chickadee inhabits young or mature forests containing primarily coniferous trees, especially spruce or fir. Near the southern limits of its range, such forests are often wet or at high elevations. Nests are constructed in tree cavities, typically less than 3 meters (10 feet) above the ground (Ficken et al. 1996). Clutch size ranges from 4 to 9 (Bent 1946). Only fledgling dates were reported during the second atlas; they ranged from 2 June to 4 July (N = 4). Based on these dates and incubation and nestling periods of 15 and 18 days, respectively (McLaren 1975), egg-laying in Vermont appears to occur from early May to early June.

The Boreal Chickadee inhabits Vermont's northeastern spruce-fir forests. The first and second atlases indicate that the Boreal Chickadee breeds primarily in the Northeastern Highlands, with fewer records in the Northern Vermont Piedmont and Northern Green Mountains. It occurs at low densities even in prime habitat and lacks an advertising song, making it difficult to detect (Ficken et al. 1996).

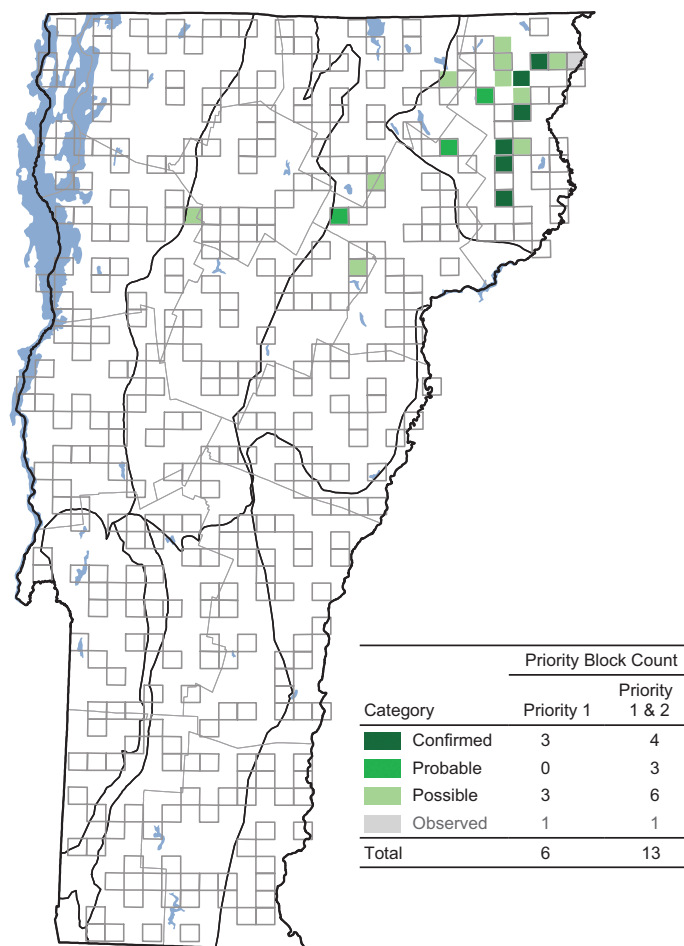
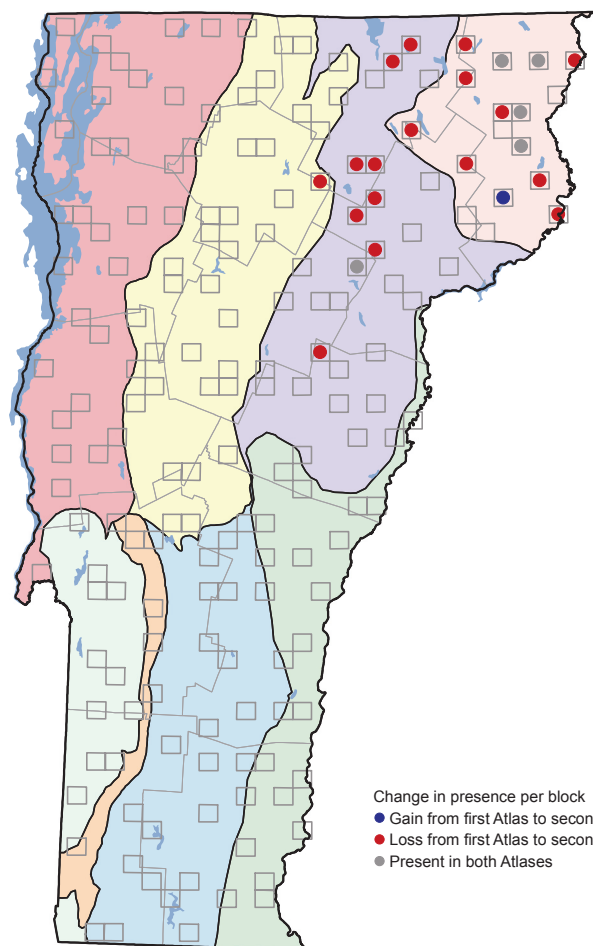
The Boreal Chickadee's range retracted substantially in Vermont between the first and second atlases. This change was not due to changes in observer effort, based on a comparison of the number of species found in blocks within Boreal Chickadee habitat. Almost all records in the second atlas occurred in the Boreal Chickadee's stronghold: the Northeastern Highlands. Even in that region, however, the chickadee was detected in fewer than half the Priority 1 blocks in which it occurred in the

first atlas. A spruce budworm outbreak in Vermont from 1975 to 1983 (VDFPR 1985), coincident with a large outbreak across eastern boreal Canada, may have temporarily boosted populations (Bolgiano 2004). Additionally, Boreal Chickadee may be sensitive to loss of mature coniferous forests, especially during winter, due to logging or other human activities (Imbeau et al. 2001, Hadley and Desrochers 2008). In northeastern Vermont, a combination of commercial logging and tree mortality due to the spruce budworm outbreak appears to have reduced the area of spruce-fir forest by more than 50 percent and the number of medium-sized to large conifers by more than 20 percent from 1983 to 2008, based on federal forest inventories (R. De Geus, VDFPR, pers. comm.).

Outside of Vermont, population trends are mixed. New York and Ontario atlases have reported stable or increasing populations, respectively (Cadman et al. 2007, McGowan and Corwin 2008). The only significant state or provincial Breeding Bird Survey trends from 1982 to 2007 were the 4.0 and 5.3 percent average annual losses in Nova Scotia and New Brunswick, respectively (Sauer et al. 2011). However, Boreal Chickadee is considered to be poorly detected by the Breeding Bird Survey (Ficken et al. 1996).

Based on its restricted distribution and small population in Vermont, the Boreal Chickadee has been designated a Species of Special Concern. Its status is likely to be affected by the fate of Canada's boreal forest, which has been under mounting development pressure but has also become a focus of protection and sustainable management activities (Canadian Boreal Initiative 2005). Although climate change may threaten the species' long-term viability, efforts to protect boreal forest in Vermont and elsewhere offer hopeful signs that this hardy songbird will endure in the state's spruce-fir forests for the foreseeable future.

ROXANNE E. BOGART & SCOTT SCHWENK



CHANGE IN DISTRIBUTION BETWEEN ATLASES

Biophysical Region	First Atlas	Second Atlas	Change	% Change
Champlain Valley	0	0	+ 0	+ 0
Northeastern Highlands	12	5	- 7	- 58
Northern Green Mountains	1	0	- 1	- 100
Northern Vermont Piedmont	9	1	- 8	- 89
Southern Green Mountains	0	0	+ 0	+ 0
Southern Vermont Piedmont	0	0	+ 0	+ 0
Taconic Mountains	0	0	+ 0	+ 0
Vermont Valley	0	0	+ 0	+ 0
Totals	22	6	- 16	- 73

DISTRIBUTION IN CURRENT ATLAS

Biophysical Region	% of region species occupies	% of all records for this species found in region
Champlain Valley	0	0
Northeastern Highlands	24	69
Northern Green Mountains	1	8
Northern Vermont Piedmont	4	23
Southern Green Mountains	0	0
Southern Vermont Piedmont	0	0
Taconic Mountains	0	0
Vermont Valley	0	0