

Red Crossbill

Loxia curvirostra



Nomadic and irruptive, the Red Crossbill is a morphologically, ecologically, and vocally diverse species. Variations in bill size, ecology, and vocalizations separate the species into ten “call types,” found throughout the boreal and montane coniferous forests of North America (Groth 1993a, Benkman 1999, K. Irwin unpubl. data). Each call type, possibly an incipient species, has a unique bill width that is adapted for its respective niche. Tightly tied to coniferous forests in regions with high cone yields, the Red Crossbill breeds in an east-west band from Alaska across southern Canada to Newfoundland, and southward through the Sierras, Rockies, and Appalachians. It also breeds in the mountain pine forests of Central America (Adkisson 1996). In years when the northern cone crop fails, Red Crossbills wander in search of food resources, extending their range into the conifer forests of Vermont. Thompson (1853) stated that the Red Crossbill was “common” in northern Vermont in winter, and was also seen in southern Vermont. Five call types have likely occurred in Vermont: small-billed type 3; medium-billed types 1, 4, and (the slightly smaller) type 10; and large-billed type 2. Type 10 may occur most frequently in the state (M. Young unpubl. data).

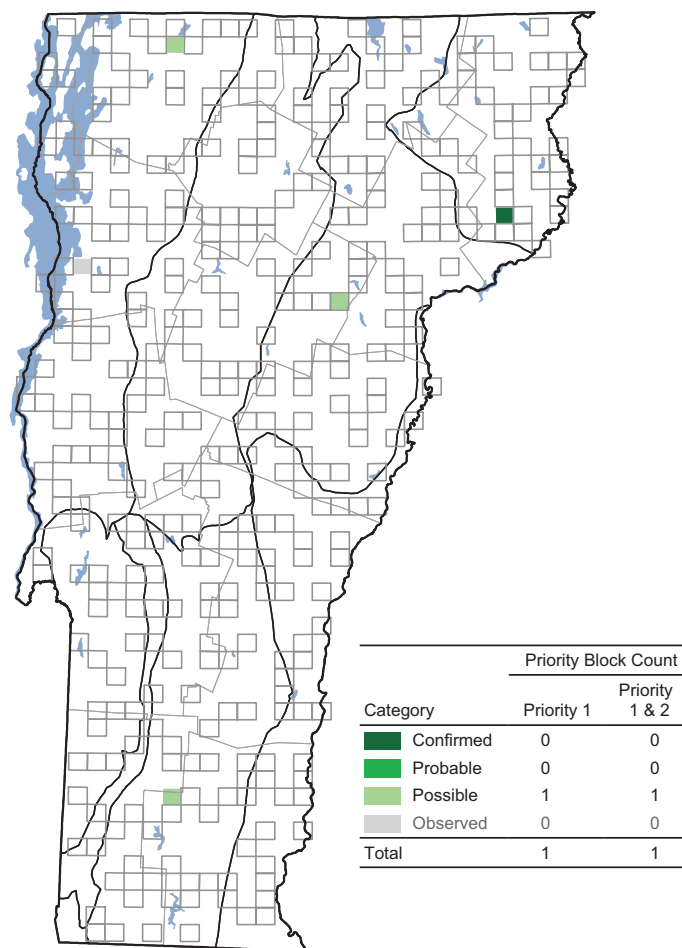
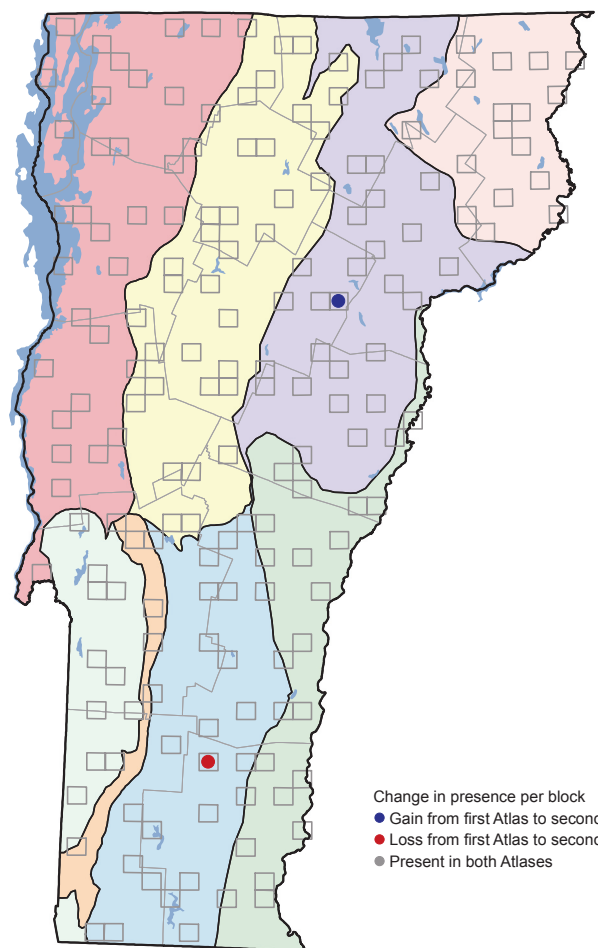
In the Northeast, birds nest in a variety of coniferous forest types that include pine, spruce, or hemlock. Mature forests produce the most reliable and abundant cone crops (Benkman 1993). Breeding occurs from January to September, and incubation and nestling stages last approximately 28 days in all.

Three of the five possible breeding records from the first atlas were clustered in the central portion of the Southern Green Mountains. Only one additional observation was documented between atlases: a pair on Mount Holly in Rutland County in September 1988. During 2007, the final year of the second atlas, Red Crossbills (types 3 and 10) irrupted into the Northeast in response to an abundant cone crop (M. Young unpubl. data). That year, atlasers followed up on sightings in the Northeastern Highlands and surveyed the area in the Southern Green Mountains that had produced records

during the first atlas. On 21 April, three recently fledged young were documented begging for food in Victory Bog, Essex County—the first confirmation of Red Crossbill nesting in Vermont, and the only CO record during the atlas. Possible records were scattered across the state: atop Stratton Mountain in Windham County (2003); in a red spruce and tamarack stand in the Groton State Forest in Caledonia County (2006 and 2007); and in a black spruce–tamarack bog at the south end of Lake Carmi in Franklin County (2007). A pair was also seen foraging on white pine near the LaPlatte River Marsh in Chittenden County (2003).

Range-wide, Breeding Bird Survey data indicate non-significant Red Crossbill population declines from 1966 to 1981, and stable populations from 1982 to 2007 (Sauer et al. 2011). Ontario supports a limited population, with only a 2 percent chance of finding the species in an atlas block, and the province showed no overall changes from the first to second atlas (Cadman et al. 2007). A 64 percent decline in the second New York atlas (McGowan and Corwin 2008) is evidence that more localized changes can occur, although this may simply reflect the irruptive, dynamic distribution of the species (Simard 2008).

The Red Crossbill has no conservation status in Vermont because it is an irruptive and irregular breeder. Declines of Red Crossbill in the Northeast in the early 1900s were likely related to logging of mature coniferous forests (Dickermen 1987). While forest maturation in Vermont will increase available habitat for the species, outbreaks of pests such as the hemlock woolly adelgid may compromise that habitat. The potential for some call types to become distinct species warrants additional efforts to record Red Crossbill vocalizations. Studies have shown that some call types in the United States and Europe pair with their own call types 95 to 99 percent of the time



CHANGE IN DISTRIBUTION BETWEEN ATLASES

Biophysical Region	First Atlas	Second Atlas	Change	% Change
Champlain Valley	0	0	+ 0	+ 0
Northeastern Highlands	0	0	+ 0	+ 0
Northern Green Mountains	0	0	+ 0	+ 0
Northern Vermont Piedmont	0	1	+ 1	+ 100
Southern Green Mountains	1	0	- 1	- 100
Southern Vermont Piedmont	0	0	+ 0	+ 0
Taconic Mountains	0	0	+ 0	+ 0
Vermont Valley	0	0	+ 0	+ 0
Totals	1	1	+ 0	+ 0

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	0	0
Northern Green Mountains	0	0
Northern Vermont Piedmont	1	100
Southern Green Mountains	0	0
Southern Vermont Piedmont	0	0
Taconic Mountains	0	0
Vermont Valley	0	0

(Groth 1993b, Summers et al. 2007, Benkman 2009), suggesting there may be fairly distinct populations to consider for any conservation efforts.

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