

White-winged Crossbill

Loxia leucoptera



In most bird species, photoperiod controls the levels of hormones related to reproduction. In crossbills, however, food availability is the proximate cue that dictates when and where breeding will occur. The White-winged Crossbill is distributed throughout the boreal forest from Alaska across central Canada to Newfoundland, extending south into the Cascades and Highlands of the Northeast, with isolated populations in the Rocky Mountains (Benkman 1992). In years when spruce cone crops fail across Canada, the species moves southward in search of food resources, extending into the spruce forests of Vermont.

The White-winged Crossbill appears only sporadically in Vermont but can breed in any month except December. Non-breeding individuals may roam the boreal spruce-fir forest for all but a few weeks from early June to mid-July. The species nests in two cycles, corresponding with diet shifts. As with the Red Crossbill, the first cycle coincides with the development of new cone crops from July through August. The second cycle occurs from January to March, when nesting occurs where spruce cones from the preceding year's crop are abundant. A third diet shift (to black spruce) often takes place in March, after white and red spruce have dropped their remaining seeds. White-winged Crossbills can be found at low elevations in the Northeastern Highlands, and in montane forest in the rest of the state. The well-concealed nest is usually constructed in a spruce tree. In the second atlas, nest building was documented on 23 January and 24 March. Little is known about nesting phenology, but it is thought to be very similar to that of the Red Crossbill, which takes approximately 28 days from incubation to fledging. A fledgling was found on Mount Mansfield on 5 June.

During the first atlas, searches for this species focused on the winter months, but no breeding was documented (Ellison 1985). The spruce cone crop was abundant across the Northeast in 1984 and 1985, however, and many birds encountered in February and March 1985 likely were nesting (Peterson 1988). In 2006 and 2007, White-winged

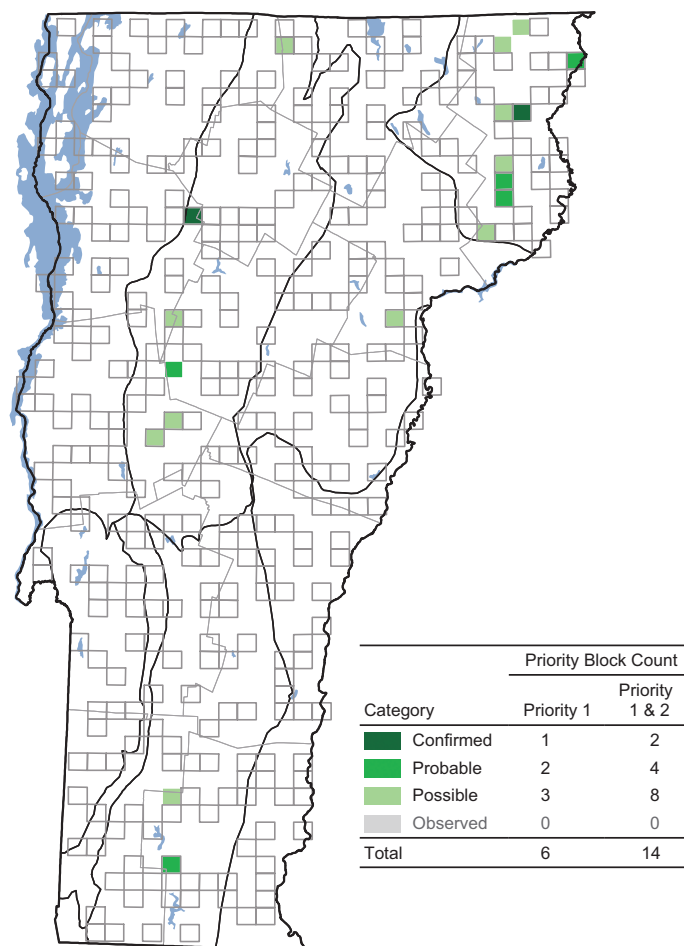
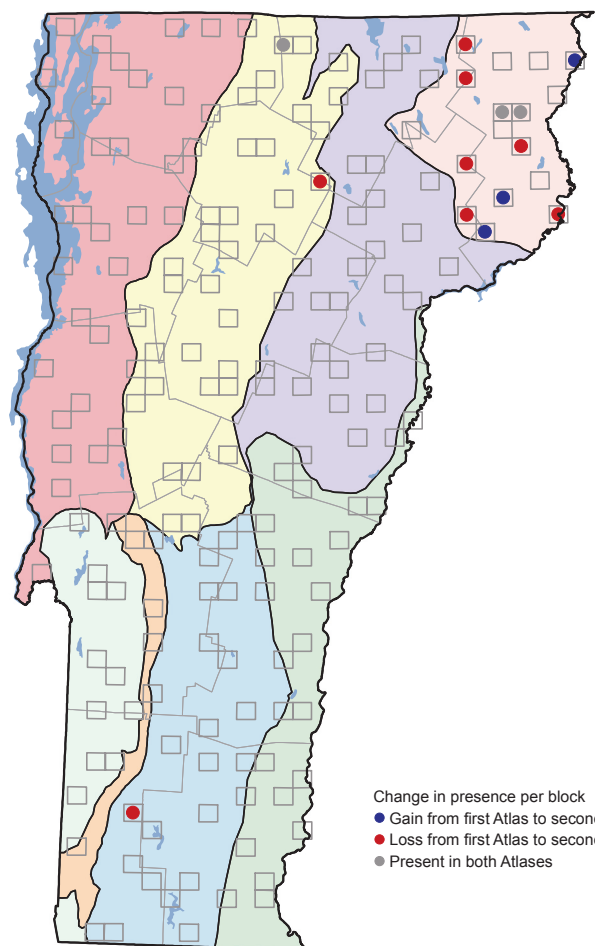
Crossbills irrupted into Vermont, appearing in the Northeastern Highlands in substantial numbers. After several winter excursions to Yellow and Moose Bogs (Essex County), an atlaser spotted a female carrying nest material at Moose Bog—the first documented breeding record in the state. White-winged Crossbills also were observed singing at Moose Bog in February 2010 (D. Govatski pers. comm.).

The 45 percent decline in block occurrence between the first and second atlases may not reflect actual changes in the White-winged Crossbill population, as local food availability greatly affects the numbers of birds found in irruptive areas. Furthermore, safe dates were not strictly applied in the first atlas; though most records likely represented breeding birds, some may have been roaming, non-breeding individuals.

Other atlases also were unable to draw definitive inferences from their results. The New York atlas found a 14 percent increase but researchers were uncertain whether this represented a true change in population (Young 2008). In Ontario, a 61 percent increase in the probability of detecting White-winged Crossbill was likely due to frequent population irruptions rather than an increase in the general population (Coady 2007). Breeding Bird Survey data, however, indicate a significant range-wide population increase of 9.9 percent per year for White-winged Crossbill from 1982 to 2007.

If recent decreases in lumbering in the Northeastern Highlands allow regrowth of mature boreal forest, White-winged Crossbill irruptions and subsequent nesting events might become more frequent in Vermont. Like the Red Crossbill, however, the White-winged Crossbill will largely rely on food resources elsewhere in its range.

ROSALIND B. RENFREW & MATTHEW A. YOUNG



CHANGE IN DISTRIBUTION BETWEEN ATLASES

Biophysical Region	First Atlas	Second Atlas	Change	% Change
Champlain Valley	0	0	+ 0	+ 0
Northeastern Highlands	8	5	- 3	- 38
Northern Green Mountains	2	1	- 1	- 50
Northern Vermont Piedmont	0	0	+ 0	+ 0
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	11	6	- 5	- 45

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	18	50
Northern Green Mountains	7	36
Northern Vermont Piedmont	1	7
Southern Green Mountains	1	7
Southern Vermont Piedmont	0	0
Taconic Mountains	0	0
Vermont Valley	0	0