

Purple Finch

Carpodacus purpureus



The loud, rich, warbling song and bright rose-colored plumage of older males make the Purple Finch a conspicuous species of the transcontinental evergreen forest. Vermont is located near the center of the species' migratory range in the Northeast and supports a population year-round. Purple Finches display a rare molt pattern: in first-year males, plumage maturation is delayed. Capable of breeding, the streaked first-year male, attired much like the female, often can be seen singing from the crown of a conifer.

Although coniferous forests are the Purple Finch's primary breeding habitat, it also will use mixed coniferous-deciduous forest and does not avoid forest edges, occasionally nesting even in developed areas (Wootton 1996). In the second atlas, nest building was documented between 7 May and 10 July ($N = 12$) and nests with young were recorded between 15 May and 1 July ($N = 4$). The Purple Finch is sometimes double-brooded, which may account for the wide range in nesting dates. Nests are well concealed; despite the propensity to sing loudly and from exposed perches, less than half of the records for this species were confirmations, with more than 85 percent of those based on adults feeding fledglings. The median date for fledglings was the first week of July.

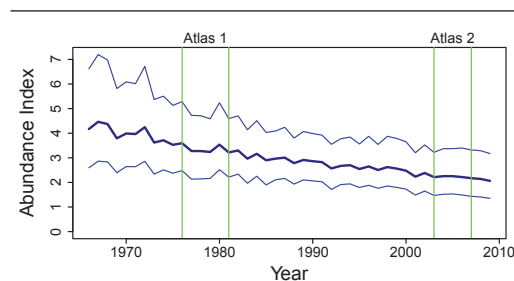
The Purple Finch was found in more than 87 percent of blocks in the Vermont Valley, Northern and Southern Vermont piedmonts, Northern and Southern Green Mountains, and the Northeastern Highlands. The species was distributed less widely in the Taconic Mountains, and occupied only 35 percent of blocks in the Champlain Valley, presumably because of the relatively low proportion of coniferous forest in these regions. With a net loss of 6 Priority 1 blocks, the Champlain Valley showed the only substantial decline in the state. Most other regions in the state documented more moderate changes.

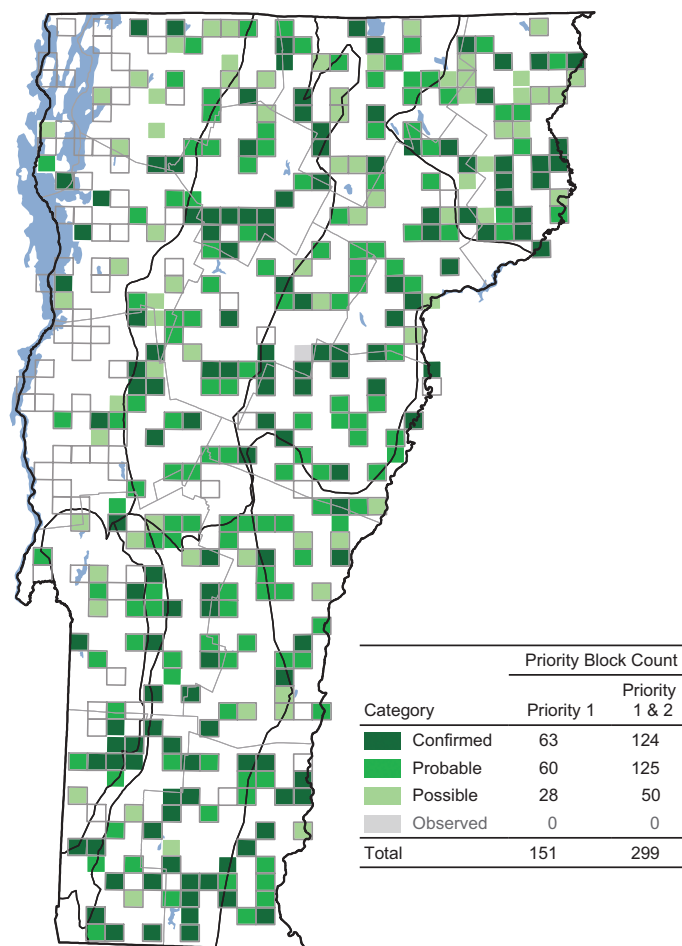
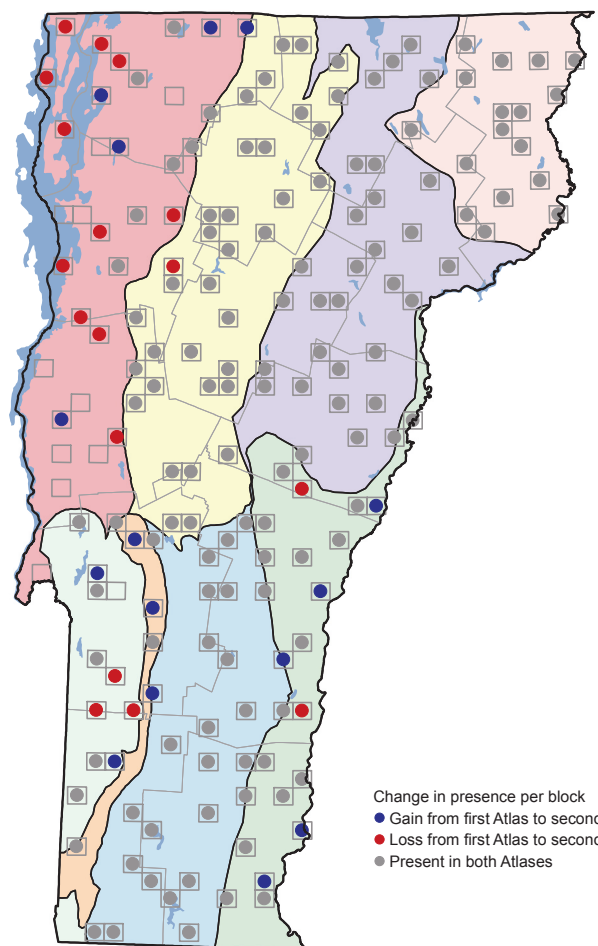
Range-wide, Purple Finch populations showed a significant 1.1 percent annual decline from 1982 to 2007; in Vermont they decreased by a non-significant 1.7 percent annually during the same period (Sauer et al. 2011). Steep declines occurred in Vermont prior to the first atlas, and

the state's population of Purple Finch is still roughly half that of forty years ago. Data from states that have completed their second atlases revealed variable patterns of block occupancy: Ontario documented a 5.7 percent decrease (Cadman et al. 2007), Pennsylvania a 22.0 percent increase (Wilson et al. 2012), and Maryland a 29.3 percent increase (Ellison 2010), although that state supports only a small breeding population. There was no change in the proportion of blocks occupied by Purple Finch in New York (Corwin and McGowan 2008).

Despite little overall change in block occupancy in Vermont, the data do show a noticeable shift in distribution toward the south and east. Wootton (1987) hypothesized that competition with the House Finch might cause a withdrawal of the Purple Finch from regions experiencing an increase in development pressure, although both development and competition could be acting independently. Vermont atlas data are consistent with this idea: House Finches colonized 14 of the 17 Priority 1 blocks in which Purple Finch disappeared between atlases. Although information about its scope and effects are limited, conjunctivitis has been documented in wild Purple Finches (Hartup et al. 2000). There also is some suggestion that the Purple Finch responds to spruce budworm outbreaks (Crawford and Jennings 1989), which

RELATIVE ABUNDANCE OVER TIME





CHANGE IN DISTRIBUTION BETWEEN ATLASES

Biophysical Region	First Atlas	Second Atlas	Change	% Change
Champlain Valley	18	12	- 6	- 33
Northeastern Highlands	17	17	+ 0	+ 0
Northern Green Mountains	35	34	- 1	- 3
Northern Vermont Piedmont	30	30	+ 0	+ 0
Southern Green Mountains	26	27	+ 1	+ 4
Southern Vermont Piedmont	16	19	+ 3	+ 19
Taconic Mountains	8	7	- 1	- 13
Vermont Valley	3	5	+ 2	+ 67
Totals	153	151	- 2	- 1

DISTRIBUTION IN CURRENT ATLAS

Biophysical Region	% of region species occupies	% of all records for this species found in region
Champlain Valley	35	9
Northeastern Highlands	100	12
Northern Green Mountains	95	21
Northern Vermont Piedmont	95	21
Southern Green Mountains	98	18
Southern Vermont Piedmont	90	12
Taconic Mountains	66	5
Vermont Valley	87	2

would imply that changes in the bird's distribution reflect changes in the distribution of food resources. Although there is currently little concern for the welfare of Purple Finch populations in Vermont, the anticipated effects of climate change, an increase in House Finch populations, and changes in forest cover all will likely play a role in the species' future in the state.

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