

House Finch

Carpodacus mexicanus

The House Finch, native to western North America, was introduced to Long Island in New York State in 1940 (Elliott and Arbib 1953) and spread up the Eastern Seaboard. The first Vermont sighting was in 1968; the first breeding record occurred in Bennington in 1976 (Nichols 1985). Since then, the House Finch has become fully established in Vermont's avifauna. In addition to being the subject of research on invasion ecology, it also has served as a model species for the study of carotenoid pigments in plumage and the effects of disease in regulating populations. The species' breeding range now includes all of the lower forty-eight states and extends across the Canadian border from southern British Columbia to Nova Scotia (Hill 1993, Sauer et al. 2008).

Generally a synanthropic species, the House Finch is rarely found far from human habitation. It is particularly abundant in suburban areas with bird feeders. Although it can be found in less developed habitats in the western United States, in the East it is rarely found in large forest patches. House Finches build their own nests, preferring a solid platform on man-made structures or ornamental conifers. Based on distributional patterns, there is some suggestion that they compete with Purple Finches during summer (Wootton 1987). House Finches fledge two or occasionally three broods per year (Hill 1993). As a result, they have a protracted nesting season, with nests recorded from 23 April to 1 August ($N = 35$) during the second atlas. Egg dates ranged from 23 April to 21 June ($N = 10$), and nestlings from 7 May to 18 July ($N = 11$). Their propensity to nest in developed areas probably resulted in an accurate representation of their distribution in Vermont.

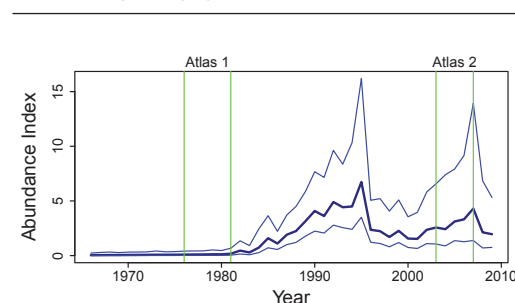
Already well-established in Vermont during the first atlas, the House Finch substantially expanded its range during the intervening twenty-five years. Statewide, the House Finch showed a net gain of 58 blocks, the seventh-greatest rate of range expansion between atlases. Generally confined to the southern Connecticut River Valley and Champlain Valley in the first atlas, the House Finch now nests in all regions except the Northeastern Highlands. In the Northern and Southern Green Mountains,

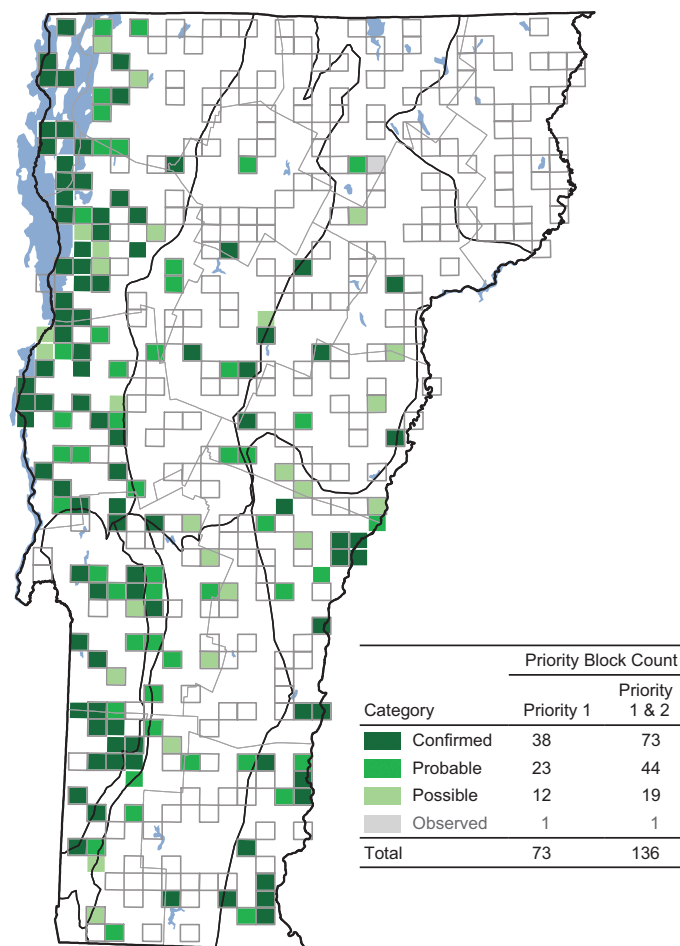
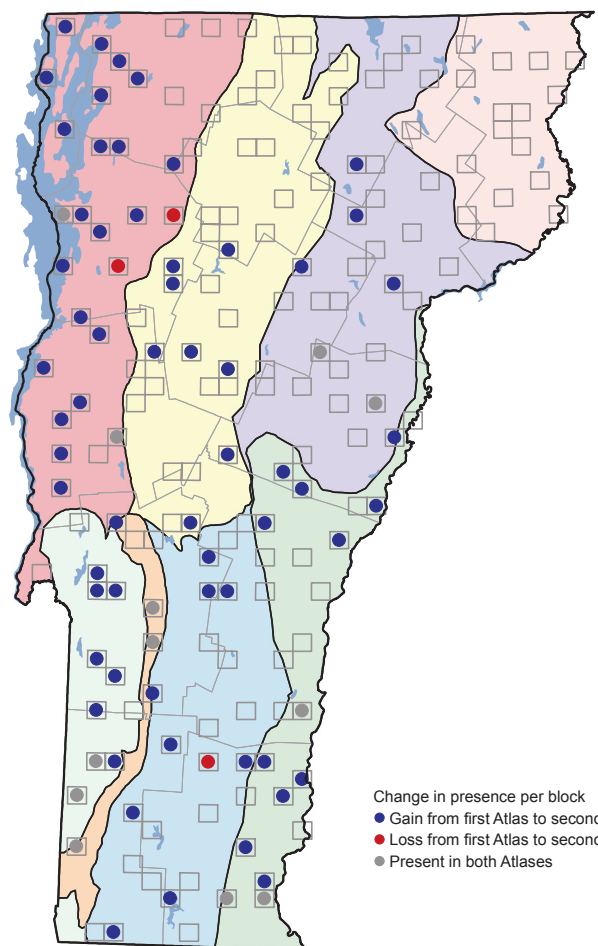


the number of occupied blocks increased by eightfold. Western Vermont continues to be the stronghold of the state's population, with the number of occupied blocks in the Champlain Valley increasing by 475 percent.

Breeding Bird Survey data indicate exponential population growth in Vermont from 1982 through 1995 (Sauer et al. 2011). In 1996, however, the population crashed, presumably a result of an epidemic of House Finch bacterial disease (Hochachka and Dhondt 2000). Upon completion of the second atlas, Vermont populations were at approximately 60 percent of peak (1995) levels, but they have since dropped again (Sauer et al. 2011). Populations in New York and Massachusetts decreased significantly from 1996 to 2007 (Sauer et al. 2011). Second atlases in New York, Maryland, Pennsylvania, and Ontario all documented moderate increases in distribution (19, 28, 39, and 6 percent, respectively; McGowan and Corwin 2008, Ellison 2010, Wilson et al. 2012, Cadman et al. 2007).

RELATIVE ABUNDANCE OVER TIME





CHANGE IN DISTRIBUTION BETWEEN ATLASES

Biophysical Region	First Atlas	Second Atlas	Change	% Change
Champlain Valley	4	23	+ 19	+ 475
Northeastern Highlands	0	0	+ 0	+ 0
Northern Green Mountains	0	8	+ 8	+ 800
Northern Vermont Piedmont	2	7	+ 5	+ 250
Southern Green Mountains	1	9	+ 8	+ 800
Southern Vermont Piedmont	3	13	+ 10	+ 333
Taconic Mountains	2	9	+ 7	+ 350
Vermont Valley	3	4	+ 1	+ 33
Totals	15	73	+ 58	+ 387

DISTRIBUTION IN CURRENT ATLAS

Biophysical Region	% of region species occupies	% of all records for this species found in region
Champlain Valley	71	38
Northeastern Highlands	0	0
Northern Green Mountains	18	9
Northern Vermont Piedmont	16	8
Southern Green Mountains	25	10
Southern Vermont Piedmont	57	17
Taconic Mountains	80	13
Vermont Valley	87	5

The House Finch's rapid range expansion is likely a result of its high reproductive potential as well as its utilization of an underexploited niche. There is some suggestion that reduced genetic variation in the Eastern population (resulting from a founder effect) will continue to make it susceptible to bacterial disease (Hawley et al. 2006). Whether Vermont's population will continue to fluctuate in abundance while expanding its distribution remains to be seen.

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