

Northern Harrier

Circus cyaneus

Gliding low over hayfields, pastures, and marshes, the rocking flight of the Northern Harrier as it searches for prey is distinctive. Historically a bird of prairie and marsh, the Northern Harrier has adapted to agricultural grasslands and has one of the broadest breeding distributions of any raptor. This species' North American range spans coastal Virginia northward to Newfoundland and Labrador, westward across Canada to Alaska, and southward through the plains and intermountain states to Baja and northern Mexico (MacWhirter and Bildstein 1996).

Once commonly called the "marsh hawk," the Northern Harrier nests on the ground in thick grasslands, marshes, and agricultural fields where it forages for small mammals, frogs, and birds. When food is plentiful, males may support 2 to 5 females and their broods, a practice not uncommon among grassland birds, but rare among raptors. Differences in male quality, as evidenced by courtship and food-provisioning rates, primarily influence females' mate choice (Simmons 1988). Food provisioning during courtship may begin as early as three weeks before the first egg is laid (Simmons et al. 1987). Generally, females incubate and maintain the nest area, while males provide food (MacWhirter and Bildstein 1996).

Harriers are easily recognizable by their bright white rump patch while gliding above agricultural areas. Females have russet-brown plumage and are 50 percent larger than males, who have gray upperparts. Clutches, averaging 4 to 6 eggs, are laid in mid-April through early May. Incubation lasts 30 to 32 days (MacWhirter and Bildstein 1996). The first egg laid typically develops into a female; male embryos appear in later eggs. Eggs hatch sequentially, with two-day intervals between hatchings (MacWhirter 1994). Fledglings in Vermont appeared as early as 12 June and as late as 14 July.

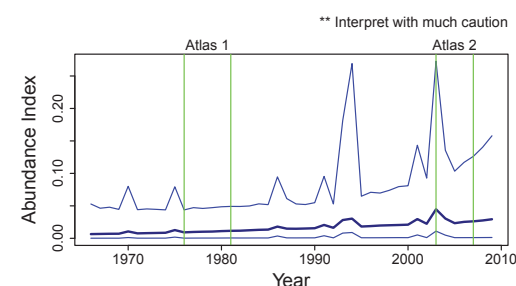
Unlike almost all other grassland-dependent species, the Northern Harrier broadly expanded its breeding range through Vermont between the two atlas periods. In the second atlas it was confirmed in 20 additional blocks, an increase of 91 percent. Populations either increased or remained fairly stable in most biophysical regions. The

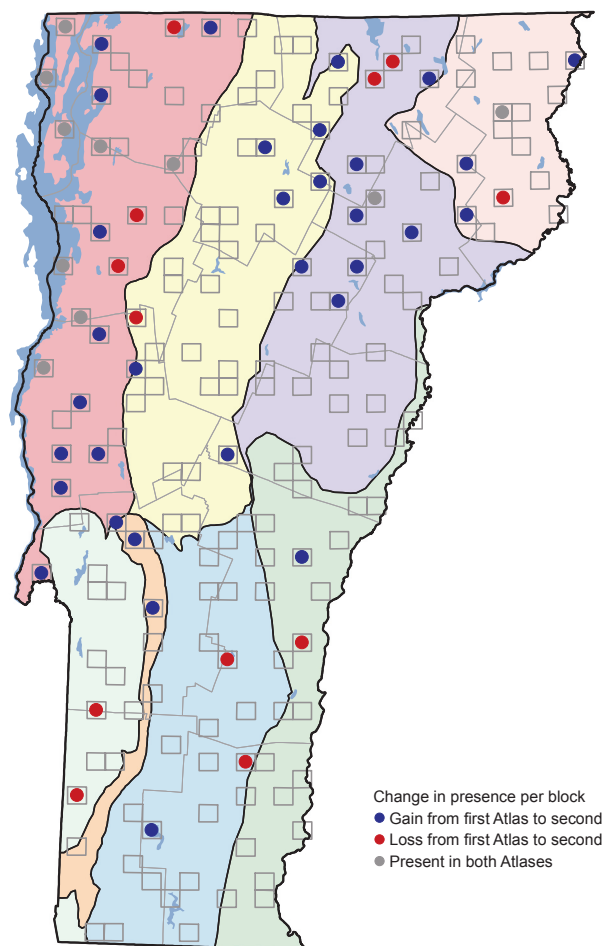


southern half of the state lost the most occupied blocks between atlas surveys. The Champlain Valley, where birds were confirmed in 18 of 42 blocks (43 percent), continues to harbor the core breeding habitat; 7 blocks were added since the first atlas, mostly in the southern part of the valley. This species was widespread, but densities may be low. For example, during 2004 and 2005, 10 Northern Harriers were counted on 774 point counts in 199 hayfields and 18 pastures, encompassing 1325 hectares (3273 acres) throughout Chittenden, Franklin and Addison counties (Perlut et al. 2008; A. Strong unpubl. data). Once established, territories seemed to be stable over time (although different individuals may occupy the same area in different years; N. Perlut pers. obs.).

Breeding Bird Survey data showed stable populations in Vermont, New Hampshire, and New York from 1982 to 2007 (Sauer et al. 2011). Between the first and the second New York atlases there was a modest 1 percent decrease in occupied blocks. In Pennsylvania this species decreased by 40 percent between the first and second atlases, although the Breeding Bird Survey recorded an an-

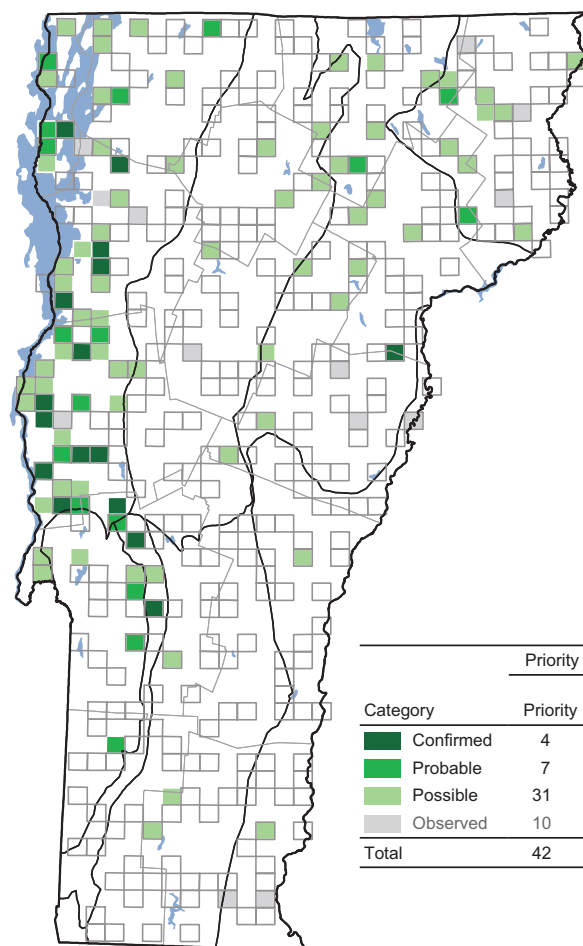
RELATIVE ABUNDANCE OVER TIME





CHANGE IN DISTRIBUTION BETWEEN ATLASES

Biophysical Region	First Atlas	Second Atlas	Change	% Change
Champlain Valley	11	18	+ 7	+ 64
Northeastern Highlands	2	4	+ 2	+ 100
Northern Green Mountains	1	7	+ 6	+ 600
Northern Vermont Piedmont	3	8	+ 5	+ 167
Southern Green Mountains	2	1	- 1	- 50
Southern Vermont Piedmont	1	1	+ 0	+ 0
Taconic Mountains	2	0	- 2	- 100
Vermont Valley	0	3	+ 3	+ 300
Totals	22	42	+ 20	+ 91



Category	Priority Block Count	
	Priority 1	Priority 1 & 2
Confirmed	4	13
Probable	7	14
Possible	31	51
Observed	10	12
Total	42	78

DISTRIBUTION IN CURRENT ATLAS

Biophysical Region	% of region species occupies	% of all records for this species found in region
Champlain Valley	54	51
Northeastern Highlands	21	10
Northern Green Mountains	12	10
Northern Vermont Piedmont	18	15
Southern Green Mountains	3	3
Southern Vermont Piedmont	5	3
Taconic Mountains	9	3
Vermont Valley	50	5

nual population growth of 3.9 percent from 1982 to 2007 (Sauer et al. 2011). These conflicting results in Pennsylvania may suggest a decreasing range, but increasing population density in suitable habitat. New Hampshire and Connecticut have listed the Northern Harrier as endangered, and it is a Species of Special Concern in Vermont.

Northern Harrier may be a more stable species in Vermont than others in the grassland suite because it can nest in wetter areas that cannot be mowed early in the season. A speculative reason for increases between atlases is that abandoned farmland resulted in more idle

wet fields. Primary threats are agricultural management and habitat loss through wetland destruction, grassland development, and succession to forest. To avoid disturbing nest sites, mowing and grazing of moist hayfields, pastures, and wetlands should occur after 1 August. Equally important, late-season mowing or grazing prevents critical old-field habitat from succeeding to shrubs.

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