

Cliff Swallow

Petrochelidon pyrrhonota

The Cliff Swallow is an active, social bird of open areas, often observed feeding among other swallow species. Today its breeding range encompasses most of North America south of the tree line (Brown and Brown 1995). Nineteenth-century records of Cliff Swallow in Vermont helped to confirm the species' eastward range expansion (Norse and Ellison 1985). Cliff Swallows return to Vermont late in April from their wintering grounds in South America, and most have departed by mid-September (eBird 2008).

Cliff Swallows are efficient aerial insectivores—capturing 5 to 10 insects per minute (Brown and Brown 1996). They are colonial nesters, building distinctive, jug-shaped, mud nests on man-made structures with overhead cover, such as building eaves and bridges. (Natural cliffs are no longer used for nesting in the eastern United States.) During the second atlas, nest building or inspection of pre-existing nests was first noted 18 May, nearly two weeks later than observed during the first atlas. Young were observed in nests as early as 10 June and as late as 24 July (N = 30). The Cliff Swallow is rather conspicuous while feeding and gathering mud around colonies; not surprisingly, breeding was confirmed in 75 percent of all priority blocks where the species occurred.

The Cliff Swallow is rather evenly distributed throughout Vermont, with a relatively high concentration of occupied blocks along an east-west swath through central Vermont. Their distribution does not closely reflect biophysical region boundaries; only the Northeastern Highlands stands out as having an appreciably lower-than-average proportion of occupied blocks (13 percent).

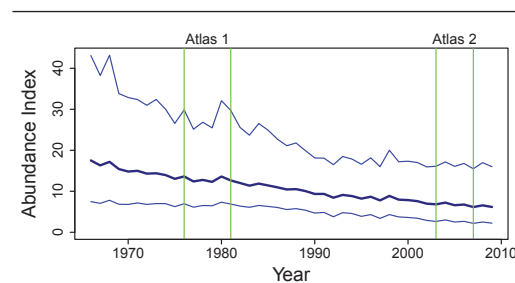
The abundance of Cliff Swallow in Vermont has been reduced extensively since the first atlas. Confirmed breeding was observed in less than half as many Priority 1 blocks in the second atlas as during the first. The proportion of Priority 1 blocks in which the species was recorded dropped 55 percent in northern biophysical regions, with even greater declines in northeastern Vermont; in southern regions, the average decrease was 32 percent.

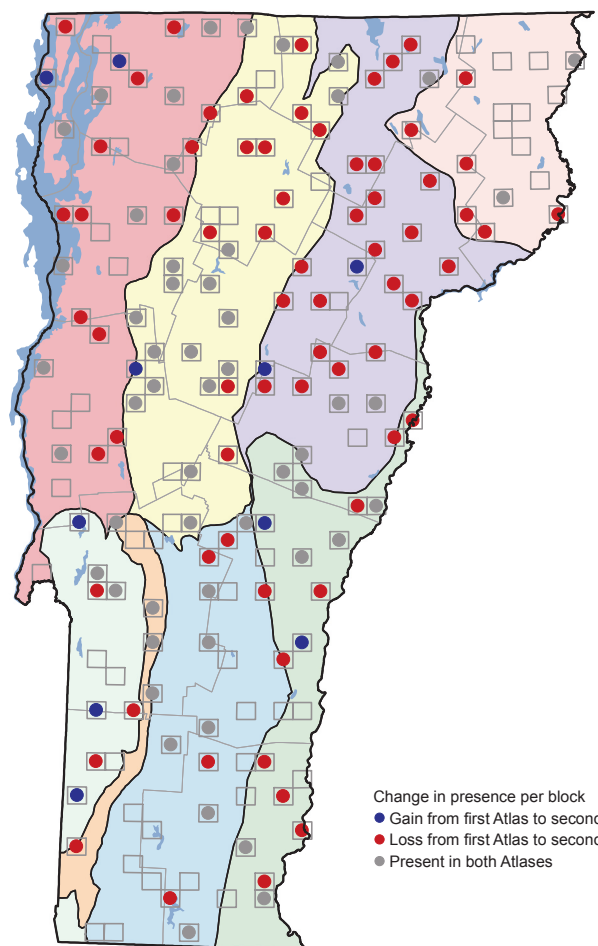


Nationally, the map of Cliff Swallow breeding population trends from 1966 to 2003 illustrates a mosaic of gains and losses (Sauer et al. 2008), with widespread increases restricted to a region roughly coinciding with the Mississippi River basin. The Breeding Bird Survey reveals losses in the northeastern United States and adjacent Canada, especially New Hampshire, Massachusetts, and central New York (Sauer et al. 2008). Breeding Bird Survey data for New Hampshire indicate a significant annual decline of 8.1 percent from 1982 to 2007 (Sauer et al. 2011), and Cliff Swallow is listed there as a Species of Special Concern (New Hampshire Fish and Game Department 2010). The second New York atlas revealed a 12 percent decline in blocks occupied by Cliff Swallow, with the most dramatic decreases occurring north of the Adirondacks (Medler 2008).

Multiple factors are likely responsible for the state-wide Cliff Swallow decline. For example, the widespread and abundant House Sparrow is a formidable nest competitor (e.g., Norse and Ellison 1985, Brown and Brown 1995, Leasure et al. 2010). However, House Sparrow populations have been declining regionally for nearly a century (Ellison 1985) and, during the interval between first and second atlases, the number of blocks occupied by

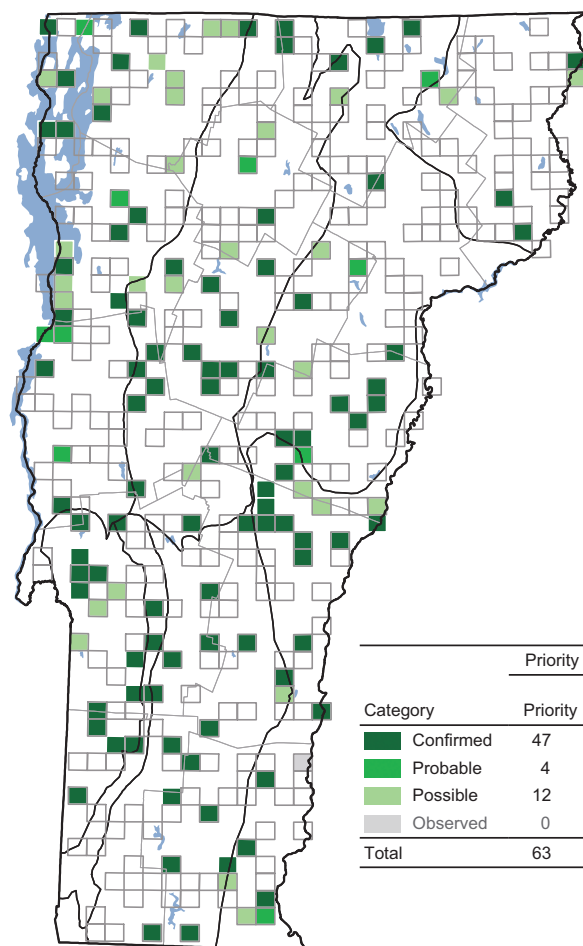
RELATIVE ABUNDANCE OVER TIME





CHANGE IN DISTRIBUTION BETWEEN ATLASES

Biophysical Region	First Atlas	Second Atlas	Change	% Change
Champlain Valley	23	12	- 11	- 48
Northeastern Highlands	8	2	- 6	- 75
Northern Green Mountains	28	18	- 10	- 36
Northern Vermont Piedmont	26	6	- 20	- 77
Southern Green Mountains	13	8	- 5	- 38
Southern Vermont Piedmont	15	9	- 6	- 40
Taconic Mountains	5	5	+ 0	+ 0
Vermont Valley	4	3	- 1	- 25
Totals	122	63	- 59	- 48



DISTRIBUTION IN CURRENT ATLAS

Biophysical Region	% of region species occupies	% of all records for this species found in region
Champlain Valley	31	20
Northeastern Highlands	13	4
Northern Green Mountains	40	22
Northern Vermont Piedmont	26	15
Southern Green Mountains	26	13
Southern Vermont Piedmont	42	15
Taconic Mountains	47	9
Vermont Valley	37	3

that species dropped by 9 percent in Vermont (Kibbe, this volume) and 6 percent in New York (McGowan and Corwin 2008). It is more probable that Cliff Swallows are suffering from reduced insect prey populations associated with a 22 percent decline in Vermont farm acreage from 1982 to 2007 (USDA 2007). Loss of farmland would also result in less of the open habitat that nesting colonies require (Brown and Brown 1995). Another likely factor in Cliff Swallow decline is human interference with nesting, due to an intolerance of the mess created beneath colo-

nies, as suggested by Unitt (2004). Lastly, late spring climate disruptions (such as cold spells) that affect insect abundance could have a disproportionate impact on Cliff Swallows (e.g., Brown and Brown 1998).

Public education, especially within the agricultural community, may benefit the species locally. Outreach should highlight the tangible benefits of Cliff Swallow colonies such as insect control.

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