

Bank Swallow

Riparia riparia



The Bank Swallow (also known as the Sand Martin) is one of the most cosmopolitan members of Vermont's avifauna, occurring on every continent except Australia and Antarctica. In North America, this aerial insectivore nests from Alaska to Newfoundland, southward across the northern two-thirds of the United States. It spends winters in the tropics of South America (Garrison 1999).

Well named, the Bank Swallow nests by excavating burrows in banks, often preferring to dig where higher proportions of very fine sand exist. The Bank Swallow is highly colonial, with colony sizes ranging from a few nests to several thousand. Historically, it has nested in vertically eroding banks or bluffs along streams, rivers, lakes or ocean coasts. However, anthropogenic habitats are also frequently used, including banks at sand and gravel quarries, and piles of sand and topsoil (at construction sites, for example). The size and longevity of colony sites greatly depends on erosional processes, which maintain nesting habitat suitability. For example, Bank Swallows have high site fidelity at sand quarries, where erosion is mechanically simulated (Petersen and Mueller 1979). When quarry operations are abandoned, however, Bank Swallow colonies often disappear within several years due to vegetation growth, bank slumping, and increased talus heights (Ghent 2001). Some early season and late June PO records for this species may represent far-ranging foragers or non-breeding individuals. Because of its colonial behavior and conspicuous and predictable nesting sites, the Bank Swallow should be easily confirmed as a breeder. In both atlases, confirmations accounted for at least 60 percent of the records. Nest building was reported from 13 May until 12 July, and young were reported from 30 June to 15 July.

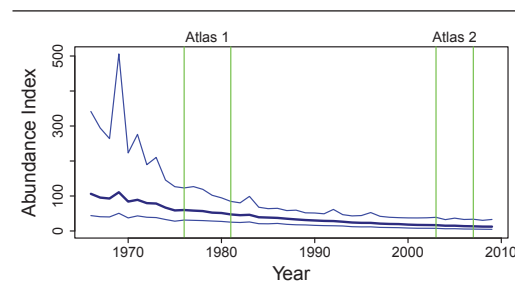
The Bank Swallow was locally but widely distributed across the state during the first atlas, with the highest concentration of records occurring in the Champlain Valley (84 percent). During the second atlas, this species continued to occur throughout the state in suitable habitat, with higher frequencies in the Lake Champlain and Connecticut River valleys and other major river valleys. Across

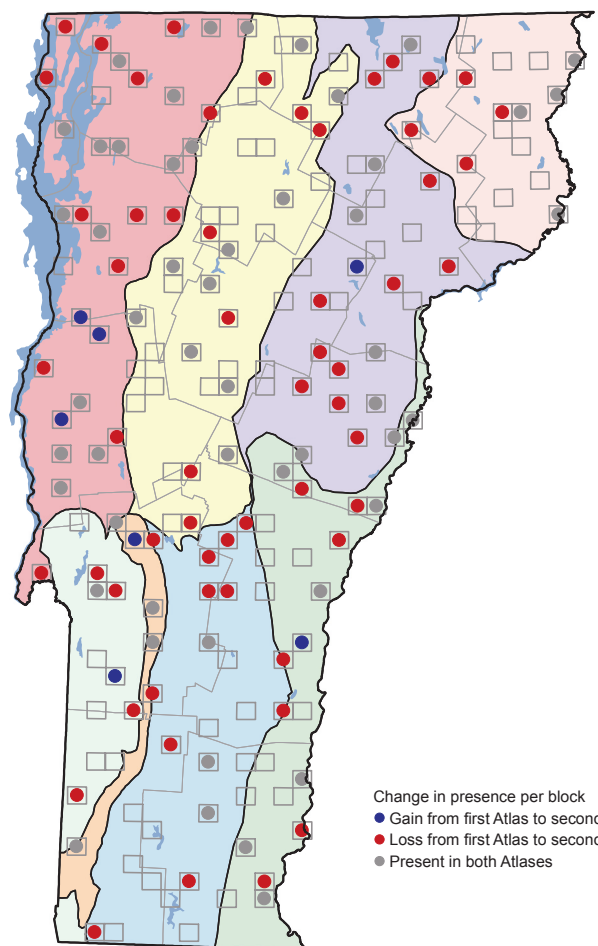
Vermont there was a 46 percent drop in the number of occupied blocks in the second atlas; decreases occurred in all but the smallest biophysical region. The proportion of CO records also was nearly halved—a telling change, given the relative ease of locating nesting habitat for this species. Breeding Bird Survey data corroborate these findings, showing a significant 5.0 percent decline in the state from 1982 to 2007 (Sauer et al. 2011).

Losses indicated by the Vermont atlas are part of a larger continental decline in Bank Swallow populations. Ontario showed a similar decline of 45 percent in probability of observation (Cadman et al. 2007). In Pennsylvania, block occupancy decreased by 35 percent (Wilson et al. 2012), and in New York the Bank Swallow declined by 28 percent, with losses apparent across the state (McGowan and Corwin 2008). Breeding Bird Survey data from 1982 to 2007 show a significant population decline (5.7 percent) in Bank Swallows throughout eastern North America, with even steeper declines of 10.3 percent within the Northern Atlantic Forest (Bird Conservation Region 14; Sauer et al. 2011).

Speculation regarding the Bank Swallow's population decline has generally referred to habitat and food availability. Bank Swallows are one of several aerial insectivore species that have declined in recent decades, suggesting a mechanism related to their food source: flying insects

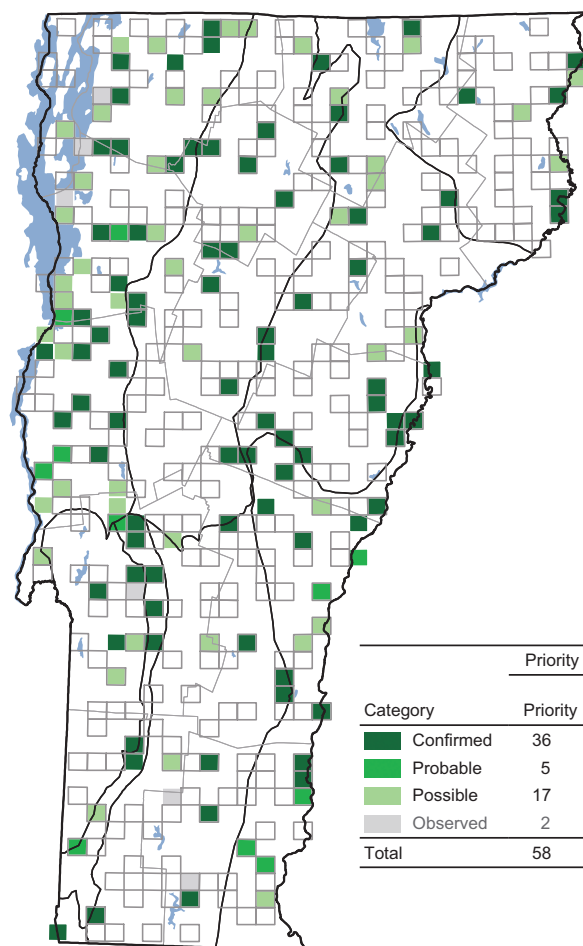
RELATIVE ABUNDANCE OVER TIME





CHANGE IN DISTRIBUTION BETWEEN ATLASES

Biophysical Region	First Atlas	Second Atlas	Change	% Change
Champlain Valley	28	18	- 10	- 36
Northeastern Highlands	8	4	- 4	- 50
Northern Green Mountains	17	10	- 7	- 41
Northern Vermont Piedmont	19	8	- 11	- 58
Southern Green Mountains	14	3	- 11	- 79
Southern Vermont Piedmont	13	8	- 5	- 38
Taconic Mountains	5	2	- 3	- 60
Vermont Valley	4	5	+ 1	+ 25
Totals	108	58	- 50	- 46



DISTRIBUTION IN CURRENT ATLAS

Biophysical Region	% of region species occupies	% of all records for this species found in region
Champlain Valley	46	29
Northeastern Highlands	18	6
Northern Green Mountains	26	15
Northern Vermont Piedmont	32	18
Southern Green Mountains	17	9
Southern Vermont Piedmont	40	14
Taconic Mountains	23	4
Vermont Valley	87	6

(Nebel et al. 2010). Along the Connecticut River, bank stabilization projects to control erosion have considerably reduced available nesting habitat (Silver and Griffin 2009). Efforts to establish artificial nesting structures in California have been unsuccessful because they were neither maintained nor cost-efficient (Garrison 1999). Surprisingly, no study has ever assessed the suitability of anthropogenic and natural habitats for breeding Bank Swallows, and this merits an assessment. Factors affecting adult survival on its South American wintering grounds are unknown, but the species may be vulnera-

ble to climatic conditions such as drought (Cowley 1979). In the interim, the protection of established colonies and available habitat is necessary to prevent further local and widespread extirpation of this species.

DOUGLAS P. KIBBE