

Cliff Swallow

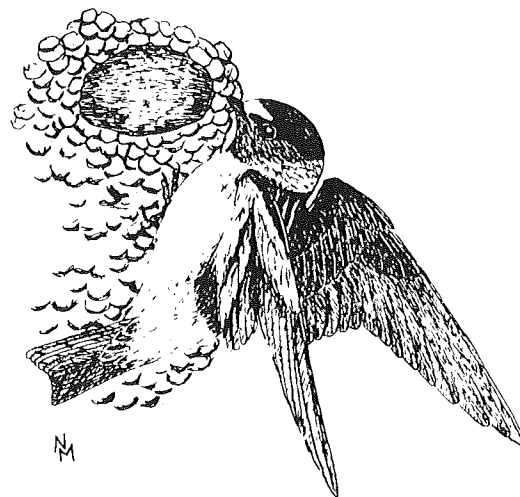
Hirundo pyrrhonota

Breeding by the Cliff Swallow is limited to areas that offer open areas for foraging, vertical surfaces with an overhang for nest sites, and mud for nesting material (Emlen 1954). In Vermont, the species is most frequently encountered in open farmlands near large barns or other buildings suitable for nest sites. The species has been found nesting in forested areas, such as the base lodge at Jay Peak, where adjacent ski trails presumably provide the prerequisite open foraging areas. Although the eaves of buildings provide by far the most common sites in Vermont, the species has been recorded nesting under highway bridges, on one-story shopping malls, on houses, and inside sheds. Originally the species nested on cliffs, but there has been no reference to cliff nesting in Vermont since Cutting (1884).

Cliff Swallows are frequently conspicuous as they hawk insects over hayfields and bodies of water. Groups of these swallows gathering mud, all with wings held high over their backs, also call attention to the species. Once an observer has located the swallows, it is usually an easy matter to find the nests under the eaves of nearby buildings. Such ease is reflected in the high number of confirmations of nesting recorded by the Atlas Project. In more than 71% of breeding confirmations, active nests were located.

The Cliff Swallow arrives in Vermont in late April; the average arrival date between 1973 and 1983 was April 27 (RVB, Spring 1973–83). Pair formation begins almost immediately upon return to the colony site and takes place at the nest site (Emlen 1954). Cliff Swallows may reuse old nests or construct new ones. Nest building or repair has been noted in Vermont as early as May 2.

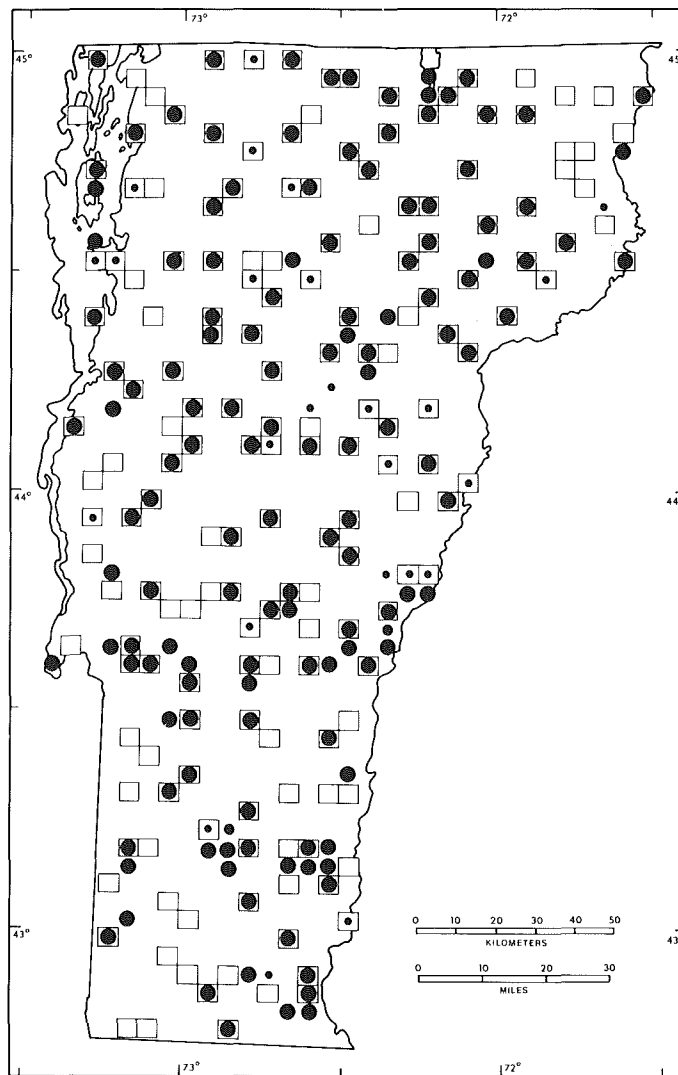
The eggs are white with brown spotting (Gross 1942); clutch size ranges from 3 to 6 eggs, with most containing 3 or 4 eggs (Grant and Quay 1977). Nine dates for eggs in Vermont range from May 23 to July 30. The incubation period lasts about 15 days



(Samuel 1971). Twenty-seven dates for nestlings in Vermont range from June 11 to August 12. The nestling period lasts about 24 days (Samuel 1971). There are only two reported dates for dependent young for Vermont—July 16 and August 8; egg and nestling dates indicate that dates for dependent young should range from the first week of July to the fourth week of August. The autumn migration peaks in August. A few Cliff Swallows are seen during September each year; an extreme date is September 28.

During the eighteenth century, the Cliff Swallow was apparently so local in the East that no ornithologist reported it; first reports were in the early nineteenth century. Some of the earliest records of the Cliff Swallow in eastern North America were from Vermont; the species was reported from Randolph in 1817, Burlington in 1836, and Coventry in 1837 (Gross 1942). It appears likely that the arrival of European settlers opened up an array of new nesting sites for the species during the nineteenth century, thereby allowing a local species to increase to a relatively common one.

Although the species is considered scarce and local over much of its eastern range (AOU 1983), this swallow appears to be doing relatively well in upstate New York (Bull 1974) and in Vermont. Cliff Swallows were recorded in 68% of the Vermont priority blocks, and records were from all physiographic regions. The 68% of occurrence



No. of priority blocks in which recorded

TOTAL 122 (68%)
 Possible breeding: 20 (16% of total)
 Probable breeding: 0 (0% of total)
 Confirmed breeding: 102 (84% of total)

Physiographic regions in which recorded

| | no. of priority blocks | % of region's priority blocks | % of species' total priority blocks |
|---------------------|------------------------------|--|---|
| Champlain Lowlands | 21 | 68 | 17.2 |
| Green Mountains | 37 | 68 | 30.3 |
| North Central | 16 | 84 | 13.0 |
| Northeast Highlands | 7 | 44 | 6.0 |
| East Central | 17 | 89 | 14.0 |
| Taconic Mountains | 9 | 56 | 7.3 |
| Eastern Foothills | 15 | 63 | 12.2 |

in the apparently suitable Champlain Lowlands may reflect high amounts of clay in the soil. Kilgore and Knudsen (1977) found that the soil types most preferred by Cliff Swallows range from sandy loam to loam with low quantities of clay. Cliff Swallows are markedly absent from areas of high elevation and heavy forest cover in Vermont, such as portions of the Northeast Highlands and the southern Green Mountains.

Factors that may cause declines in the Cliff Swallow population include competition with House Sparrows, construction and painting of buildings during the breeding season, and deliberate destruction of nests by homeowners and farmers who view

the birds as nuisances. New coats of paint may prevent nests from adhering to walls (Gross 1942). Many modern barns have eaves lower than the 2.4 m (8 ft) minimum height for nesting cited by Emlen (1954). Although all of these factors have caused disruption of nesting by Cliff Swallows in Vermont, the species continues to be fairly common, if local, in the state.

WILLIAM J. NORSE
 WALTER G. ELLISON