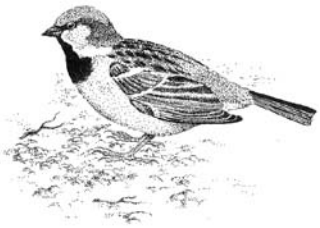
BIOLOGY, LEGAL STATUS, CONTROL MATERIALS AND DIRECTIONS FOR USE

Cliff Swallows

Petrochelidon phrrhonota

Family: Hirundinidae

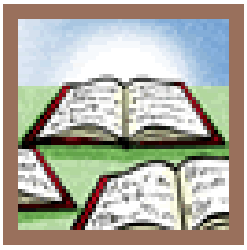


Introduction: Eight members of the swallow family Hirundinidae breed in North America. Of these barn and cliff swallows, regularly build mud nests attached to buildings and other structures, which sometimes puts them in conflict with humans. Cliff swallows are most common around homes and other structures.

Identification: Cliff swallows nest in large colonies of up to several hundred pairs. The cliff swallow is 5 to 6 inches in length, and is the only square tailed swallow in most of North America. Visually it has a pale, orange brown rump, white forehead, dark rust colored throat and steel blue crown and back. The cave swallow is similar in appearance but is found in southeast New Mexico and central, south, and west Texas. Further information including audio is available at:

Cornell Lab of Ornithology

The Royal Society for the Protection of Birds



Legal Status: All swallows are classified under the Migratory Bird Treaty Act as migratory insectivorous birds and are protected by state and federal regulations. It is illegal for any person to take, possess, transport, sell or purchase them or their parts,

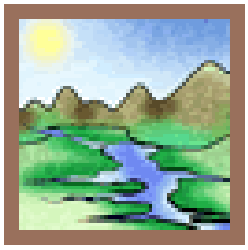
such as feathers, nests, or eggs, without a permit issued by the U.S. Fish and Wildlife Service. As a result, certain activities affecting swallows are subject to legal restrictions.

If the nests are occupied with eggs or young, a permit is required to destroy it. No permit is required to remove nests under construction or after the nests have been abandoned. California Fish and Game considers swallows as nesting from February 15 through September 1. During nesting, a permit authorizing nest removal may be issued only if strong compelling reasons exist. Some examples are safety and health hazards posed by nesting areas at warehouses and food processing centers, or at airports where aircraft safety is impaired. The permit will authorize the permittee, or its employees, to use specified methods to remove nests. For permit requirements, contact USDA-APHIS Wildlife Services at 3419A Arden Way, Sacramento, CA 95825; phone (916) 979-2675. You will be referred to a district biologist who will assess the problem and make control recommendations. If lethal control is recommended, then a permit application must be completed and sent to the U.S. Fish and Wildlife Service regional office along with a fee.

Damage: During the nesting period, March through June in California, swallows may become pests by building their mud nests beneath building eaves and other structures. Mud and fecal matter are dropped down onto power lines, walls, ledges, patios and walkways. They can interfere with human activities by fouling machinery, creating aesthetic problems and causing potential health hazards by contaminating foodstuffs. In addition, cliff swallow nests frequently contain insects such as swallow bugs (*Oeciacus vicarius*); these are related to bed bugs and will bite humans, although man is not their usual host.

Range: These migratory insectivorous birds spend the winter in South America and migrate annually to the United States. Cliff swallows are found throughout California, except in high mountains and the southeastern desert.

Cliff Swallow



Habitat: Cliff swallow colonies are found where there is a body of fresh water for drinking, open habitat for foraging, and a supply of mud suitable for nest building. In addition, they require a vertical surface immediately beneath an overhang for nest attachment.

The original nesting sites of cliff swallows were cliffs and walls of canyons and vertical banks. Human structures, such as buildings, bridges, and agricultural activities (irrigation, canals, reservoirs) have increased the number of suitable nesting sites and mud gathering areas. Cliff swallows populations have increased accordingly.

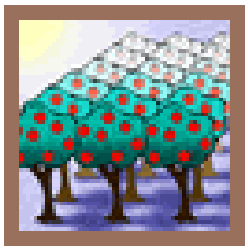
Biology: The cliff swallow is distinguished by its square tail, contrasting with the deeply forked tail of the barn swallow. Cliff swallows are 5 to 6 inches in length, have a white forehead, dark rust-colored throat, steel-blue crown and back and pale

orange-brown rump.

Cliff swallows spend their winters in South America and migrate northward to the United States in early spring. Nesting sites are reused and many birds return to the same site used in the previous year. Old nests are also reused, but it is only by chance that a particular nest will be reused by last year's occupant. If old nests are not used, the birds set about gathering quantities of mud that is plastered against a vertical wall immediately beneath an overhang, usually an eave.

In areas of California such as the Central Valley, many rivers, streams, gullies, and dirt-lined irrigation ditches carry water and provide an abundant supply of mud during the spring. Bridges and culverts over watercourses are preferred nest building sites for swallow colonies. In Southern California, where the winter rainy season is generally over before the swallows arrive, such structures are abundant but are rarely used as nesting sites. Dry conditions create a lack of mud available for nest construction. On the other hand, mud is available near dwellings where lawns and gardens are watered frequently, and most of the swallow nests are under the eaves of buildings.

Nests are gourd shaped, about 6 inches in diameter, with a neck like round entrance about 2 inches in diameter. During nest construction, birds do not inhabit the nests at night and begin to do so only when they are nearly complete. Eggs are laid during April and May, and the birds are very active tending and feeding the growing young. By the end of June, the young have left and the colony deserts the nests.



Damage Prevention and Control Methods

Exclusion: Exclusion refers to any control method that denies physical access to the nest site area. Exclusion can be a relatively permanent, long-term solution to the problem. A permit is not required for this method if it is applied before the swallows arrive or after they have left for the winter. If swallows are nesting and have eggs or young, exclusion may not be used without a permit.

Plastic net or poultry wire can provide a physical barrier between the swallows and the nest site. Optimum mesh size is ½ to ¾ inches; however, 1 inch has been used successfully. If plastic net is used, it should be attached so that it is taut. This reduces flapping in the wind, which looks unsightly and results in tangles or breakage at mounting points. For best results net or poultry wire should be attached to buildings before the swallows arrive and may be left up permanently or removed after the nesting season.

Usually, swallows will not fly into a net or other obstruction, but will stop and hover in front of it. If only that section of a building where swallows have nested is netted, the swallows will often choose alternative sites on the same structure. Therefore, any part of a building suitable for nesting must be netted.

Attachment methods may vary according to site requirements and the degree of permanence desired. Nets can be attached using tape, staples, Velcro, trash bag ties, or polyclips. More elaborate are hooks mounted on eaves and sides of buildings. One advantage is that netting can be removed more easily for painting or

maintenance. For net attachment, a supporting framework of wooden dowels along the edges can ease attachment. On concrete or cement structures, 'stud guns' can be used to attach wood lathes. The net or wire should extend from the outer edge of the eave down to the sides of the building so the eaves no longer provide protection from the elements. No openings should remain where swallows might enter. Hanging a curtain of netting from eaves is effective. The curtain should be 3 to 4 inches from the wall and extend down from the eave 18 inches or more.

A number of commercially available designs are available which provide metal projections that are sharp, needle-like wire devices generally installed on building ledges and window sills to discourage pigeons and starlings from roosting. Although adaptable to mounting and use under eaves, metal spines have not been widely used for swallow control. In one instance, cliff swallows learned to land on the metal spines and eventually built nests attached to them.

Habitat Modification: Substrate texture is a factor in nest site location. Wood, stucco, masonry, and concrete surfaces are favorable for nest attachment. Metal is rarely used as a nest substrate and then only at crotch or joints where the swallow can gain a foothold. In situations where construction is planned and swallows are present on nearby structures, consideration to materials and design may eliminate future problems.

Modification of the nest substrate has proven effective. Swallows overhang or prefer surfaces that provide a good foothold and nest attachment. Removal of the rough surface of a wall and or overhang makes a site less attractive. This may be accomplished in various ways. Fiberglass panels installed between the eave and wall to form a smooth, concave surface make nest attachment difficult. A smooth surface may also be created by draping a curtain of aluminum foil or plastic tarp from a wire strung along the junction of the wall and roof overhang. Other smooth-surfaced materials to deter nesting include glass and sheet metal.

Nest Removal: Only allowed outside of breeding season. During the season, the method of nest removal will be specified by the permit. Usually nests may be washed down with a water hose or knocked down with a pole. Swallows are strongly attracted to old nests or to the remnants of deteriorated nests, so all traces of mud should be removed to discourage renesting. Removing nests by these methods is a messy and time-consuming process and may cause dispersal of nest parasites and water damage to the building.

Architectural design can influence colony site suitability. Obtuse angles, rounded or concave meeting points for overhangs and wall are rarely used by cliff swallows. The width of the overhang may be important, although the point at which this becomes critical is unknown. Few colonies are observed with an overhang of less than 6 to 8 inches.

Frightening Devices: Hawk, owl, or snake models, noisemakers, and revolving lights have shown little, if any, success or are unproven against cliff swallows. As evidenced by colonies on buildings, cliff swallows are relatively tolerant of human activity and other disturbances.

Repellents: See earlier exclusion methods. There are no known chemical repellents.

Toxicants, Trapping, and Shooting: There are no chemical toxicants currently registered by EPA for swallow control; shooting, trapping or harming swallows is not permitted.

REFERENCES AND ADDITIONAL READING

Erickson, William A., R.E. Marsh, T.P. Salmon, 1992. High Frequency Sound Devices Lack Efficacy in Repelling Birds. Proc. 15th Vertebrate Pest Conf. (J.E. Borrecco & R.E. Marsh, Eds.) Published at Univ. of Calif., Davis. Pp. 103-104.

Slater, Arthur J., 1998. Twenty-Five Years of Managing Birds Associated with Buildings at the University of California, Berkeley. Proc. 18th Vertebrate Pest Conf. (R.O. Baker & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 315-318.