



Chimney Swift, Purple Martin and Swallows

Swifts, martins, and swallows are built for life in the air. They have long tapering wings and lightweight bodies. Their short, wide bills open to expose gaping mouths for scooping up insect prey on the wing. The chimney swift belongs to Family Apodidae, with more than 90 species worldwide. The purple martin and the swallows are in Family Hirundinidae, also with about 90 species around the globe. The chimney swift has tiny, vestigial feet with four clawed toes facing forward, letting it cling to upright surfaces; the feet of the purple martin and the swallows have three toes forward and one to the rear, for perching on branches and wires. As a group, aerial insectivores have been declining in numbers so conservationists are concerned for these species and seeking the reasons for these declines and solutions to prevent further losses. Common traits of the declining species are very long migration distances to Central and South American wintering grounds and the perceived decline of flying insects in areas of higher air pollution and calcium-depletion on their nesting grounds.

Many of these birds are social and breed in colonies. Purple martins usually nest in artificial boxes with multiple chambers, put up by folks wanting to attract these insect eaters; the other swallows build or occupy different sorts of nests, depending on their species. Most swallows do not defend territories. The males sing mainly to attract mates and to communicate with them. Both parents usually share in incubating eggs and feeding young. Swifts, martins, and swallows often forage in groups, soaring above forests, farms and urban areas to take advantage of locally available flying insect prey. During wet weather they hunt at lower altitudes, where insects fly under damp conditions. These birds undertake long migrations. The seven species that breed in Pennsylvania winter in the Gulf states, Mexico, Central America, and South America.



chimney swift

Chimney Swift (*Chaetura pelagica*)

The common name comes from the bird's favorite nesting habitat and the speed of its flight. A chimney swift is sooty gray, about five inches long, and has a one-foot wingspan; the body looks stubby between the long, narrow wings. The bird spends most of the daytime hours in the air and like other swifts is among the most aerial of birds; its flight is bat-like, with shallow wingbeats and erratic stalls and turns as the bird singles out insects or sweeps through clouds of prey. Since they have a slim profile and short tail, they often have been described as a "cigar on wings" by birders. A loud clicking call is uttered in flight. Chimney swifts eat flies, leafhoppers, flying ants, mayflies, stoneflies, beetles, leaf bugs, and other flying insects. They take spiders, mainly small ones floating on strands of silk borne aloft by air currents. Chimney swifts drink on the wing, skimming low over ponds, and they even gather materials for their nests while in flight, using their feet to break tips off dead branches and carry them back to the nest

purple martin



Chimney swifts are not common in the densely wooded parts of Pennsylvania, where trees may not be mature enough to offer cavities for nesting and roosting. They are particularly common in urban areas in river valleys. Swifts arrive in the Northeast in late April and early May, raise a single brood in June and July, and head south in August and September. Large flocks or “tornadoes” of thousands of swifts will funnel into chimneys to roost overnight during their migration. These large swirls of swifts are an amazing sight. They winter mainly in the Amazon Basin of South America. The average lifespan is four to five years, but individuals have lived as long as 15 years. Declines in swift populations are prompting concerns for roost sites, nesting habitat, winter ground habitat, and insect populations that support this species. There now are tower designs for artificial swift nest and roosts that have proven to be successful measures for enhancing swift habitat.

Purple Martin (*Progne subis*)

At eight inches in length, the martin is the largest North American swallow. Adult males are a glistening blue-black; females and yearlings are grayish with pale bellies. Both sexes have a notched tail. Martins, less maneuverable than other swallows, glide in circles punctuated with short periods of flapping flight. Before Europeans came to the New World, native Americans were hanging gourds around their villages to attract purple martins, which also nested in caves and hollow trees. In Pennsylvania today, the vast majority of martins nest colonially in compartmented boxes that people put up for them. This species may be the most intensely managed migratory songbird in the nation, being almost entirely dependent on artificial structures for housing. The

site. Swifts do not perch on branches, but instead cling to the surface of human-made structures and tree trunks.

Chimney swifts are thought to be monogamous and to mate for life. Pairs sometimes glide in tandem with their wings raised in a V. In the past, chimney swifts nested in hollow trees and caverns more frequently than today and can still be found nesting in older forests where large hollowed tree trunks provide nesting habitat. Today they use human-made structures almost exclusively: factory and house chimneys, silos, air shafts and old wells, where they are protected from storms and predators. The nest is shaped like a half-saucer and cemented to a vertical surface, the twigs held together by the adults’ glutinous saliva, which solidifies and binds as it dries. Females lay three to six eggs (four or five are usual), which are white and unmarked. Both sexes participate in the 18 to 21 day incubation. The newly hatched young are altricial and are fed regurgitated insects. Sometimes a third “parent,” probably a yearling offspring of the adults, helps to feed and brood nestlings. The young fledge a month after hatching and join feeding flocks. In late summer swifts gather in the evening before flying into large factory chimneys, where they roost by the thousands.



tree swallow

loss of artificial nest sites is probably the most important cause for the decline of the species in population size and nesting distribution in the state. Fortunately, this popular bird responds well to new martin housing initiatives. Martins inhabit open areas near water, meadows, and farmland. They feed on winged ants, wasps, bees, flies, dragonflies, beetles, moths, and butterflies. Males arrive first in the spring, followed by females. The call is a throaty, gurgling *tchew-wew*. One male may mate with more than one female. The four or five eggs are white and unmarked, laid on a nest of grass, twigs, and leaves inside the nest chamber. The female incubates them for 15 to 18 days. Flocks of martins gather by the thousands in August and September prior to migration. The species winters in South America as far as southern Brazil. Declines in this species are greater than others in the swallow family, prompting more conservationists to propose that it is especially needful of management initiatives.

Tree Swallow (*Tachycineta bicolor*)

Tree swallows nest across Canada and most of the northern United States. They are five to six inches long, an iridescent green-black or blue-black above and bright white below. They nest in tree cavities, woodpecker holes, and bluebird houses put up by humans. The earliest of our swallows to return north, they arrive in mid-March in southern counties and late March and April in northern counties and at higher elevations; unlike the other species, tree swallows switch to eating berries and seeds to survive cold periods when insects become torpid. They often breed near the still waters of lakes, ponds and marshes, competing for nest cavities with bluebirds, starlings, house sparrows, and house wrens. Ornithologists believe that individuals choose new mates each year. Tree swallows are more aggressive than other swallow species and defend an area within a radius of about 15 yards from the nest. Bird box trails often include double boxes on a pole to allow both



northern rough-winged swallow

eastern bluebirds and tree swallows to nest on the same post.

The female lines the nest cavity with grass, weeds, rootlets, and pine needles; after the four to seven pinkish-white eggs are laid, she often adds feathers (usually white ones) from other birds. Incubation takes 14 to 15 days. The young fledge three weeks after hatching. Tree swallows migrate in flocks to wintering grounds in the Gulf states, Mexico, and Central America.

bank swallow



Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)

This small nondescript brown and white swallow is named for slight serrations in its outermost (primary) wing feathers. The body length is about five inches. The species breeds across the United States, southern Canada, and in Central America. Rough-winged swallows often forage in flight above moving water. It is even more associated with water than other swallows. The call is a short, harsh *trit bit*. The birds nest in cavities near water using natural and man-made structures for nesting, including crevices found in rock faces, quarries, mines, gravel pits, and vertical stream banks; frequently nest in abandoned kingfisher and swallow burrows, quarries, bluffs, drainpipes, and culverts; they rarely excavate their own burrows. At the end of a one- to six-foot tunnel, the birds heap up twigs, bark, roots, and weeds, and line a central cup with fine grasses. The four to eight pure white eggs hatch after about 16 days of incubation. Rough-winged swallows nest throughout Pennsylvania, rarely in colonies like the similar bank swallow. They winter along the Gulf Coast and in Central America.

Bank Swallow (*Riparia riparia*)

About five and a half inches long, Pennsylvania's smallest swallow, this small brown-backed swallow has a dark band across its pale breast. Although they have small feet and tiny bills, bank swallows usually dig their own burrows, up to five feet deep in vertical banks and cliffs of dirt, sand, or

cliff swallow

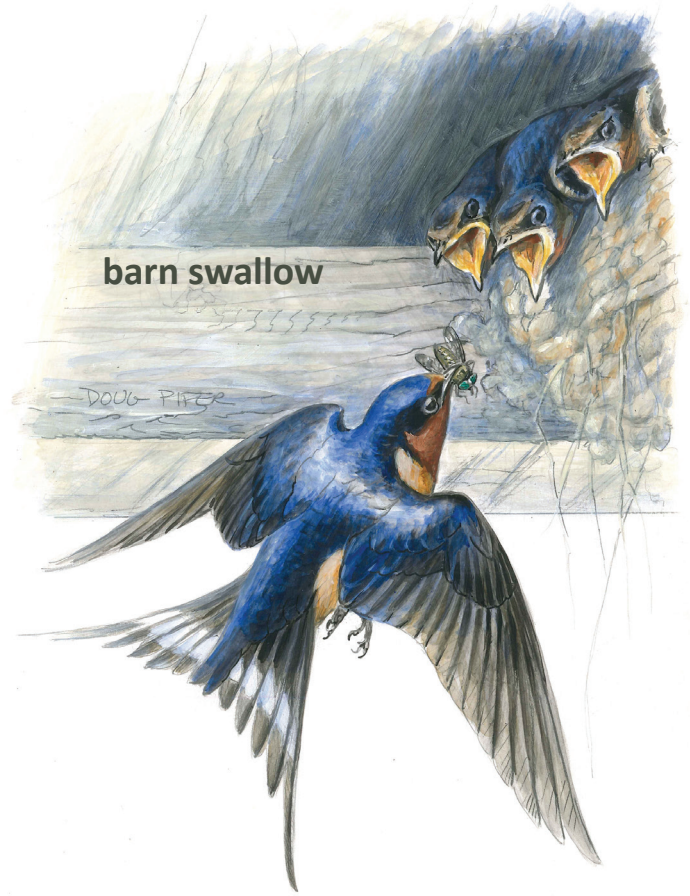


gravel as found in lake bluffs, river banks, and stream cuts or along roadcuts and in sand and gravel quarries. Nest entries of neighboring pairs may be only a foot apart. Colonies arise and die out as banks of suitable burrowing materials become available and then lose qualities that bank swallows require, such as steepness and height. Changes in the way that quarries are managed may be detrimental to continued occupancy of bank swallows and subsequent abandonment of former colonies. Extreme spring and summer flood events also have a negative effect on colony occupancy. Bank swallows forage over fields and wetlands and along rivers and ponds, taking flies, beetles, wasps, winged ants, dragonflies, stoneflies, moths, and other flying insects. They nest from May until early July. The clutch averages four or five eggs. In late summer, bank swallows may gather in large flocks before departing for wintering grounds in South America. The species also breeds in Europe and Asia, where it is known as the sand martin.

Cliff Swallow (*Petrochelidon pyrrhonota*)

Body length, five to six inches; a pale rusty or buff-colored rump distinguishes this species. From below, the tail looks squared-off. Cliff swallows eat flying beetles, flies, winged ants, bees, wasps, mayflies, lacewings, and many other insects. They build gourd-shaped nests out of pellets of mud attached to cliffs, bridge supports, dams, and walls of unpainted barns and derelict buildings under eaves that protect against rain. A typical nest takes one to two weeks to build and requires more than 1,000 mud pellets. Colonies can be dense: in one instance, 800 nests were clustered on the side of a barn and other large colonies have formed at power plants, dams, or bridges. The adults line the inside of the nest with grass, hair, and feathers. The three to six eggs are white spotted with brown. Both sexes incubate for about 15 days. A female cliff swallow will sometimes lay an egg in another swallow's nest, or carry an egg in her bill to a neighboring nest. Cliff swallows winter in South America as far south as Uruguay and Argentina. The overall population trend appears to be increasing but in Pennsylvania cliff swallow populations have steeply declined in northeast counties while increasing in the northwest region of the state according to Breeding Bird Surveys.

barn swallow



Barn Swallow (*Hirundo rustica*)

The flight of these sleek, long-tailed blue-and-buff swallows can look like an aerial ballet, with the birds sideslipping, stalling, twisting, and turning low over water or fields in pursuit of their prey: house flies, horse flies, beetles, wasps, bees, winged ants, and other flying insects. In bad weather, barn swallows may land and eat spiders, ants, and aphids. Pairs nest on their own, or near a few other pairs. Barn swallows are common, abundant breeding birds in Pennsylvania and throughout most of North America. However, they have been declining in recent decades. They build bowl-shaped nests out of mud and straw, fixing them to walls, beams, and eaves of barns and other outbuildings; in culverts and under bridges; and rarely on the cliff faces and caves, which were the species' original habitat before Europeans settled North America. Barn swallows often line their nests with poultry feathers. The adults scold human intruders and dive at them, zipping past their heads. Most females lay four or five eggs, which are white spotted with brown. During the day both male and female take turns incubating, switching about every 15 minutes. Young leave the nest about three weeks after hatching. Some pairs raise a second brood. Barn swallows from eastern North America winter in Panama, Puerto Rico, and throughout South America. *Hirundo rustica* is the most widely distributed swallow species in the world, breeding in North America, Europe, and Asia.