

BARN SWALLOW - HIRUNDO RUSTICA

Taxonomy: Kingdom: Animalia Phylum: Chordata Class: Aves Order: Passeriformes Family: Hirundinidae Genus: Hirundo
Species: H. rustica

Habitat:

Biomes: Barn Swallows forage in open areas throughout most of the continent, including suburban parks and ball fields, agricultural fields, beaches, and over open water such as lakes, ponds and coastal waters. They range from sea level up to 10,000 feet. Breeding habitat must include open areas for foraging, structures or cliffs to build nests on, and a source of mud such as a riverbank to provide the material for building nests.

Distribution:

In US: It breeds in the Northern Hemisphere from sea level to typically 2,700 m (8,900 ft), but to 3,000 m (9,800 ft) in the Caucasus and North America, and it is absent only from deserts and the cold northernmost parts of the continents. Over much of its range, it avoids towns, and in Europe is replaced in urban areas by the house martin. However, in Honshū, Japan, the barn swallow is a more urban bird, with the red-rumped swallow replacing it as the rural species. In winter, the barn swallow is cosmopolitan in its choice of habitat, avoiding only dense forests and deserts. It is most common in open, low vegetation habitats, such as savanna and ranch land, and in Venezuela, South Africa and Trinidad and Tobago.

In Other Countries: NONE

Holistic Description: Glistening cobalt blue above and tawny below, Barn Swallows dart gracefully over fields, barnyards, and open water in search of flying insect prey. Look for the long, deeply forked tail that streams out behind this agile flyer and sets it apart from all other North American swallows. Barn Swallows often cruise low, flying just a few inches above the ground or water. True to their name, they build their cup-shaped mud nests almost exclusively on human-made structures.

Species Richness: 6 SUBSPECIES

Population Dynamic: The barn swallow has an enormous range, with an estimated global extent of 51,700,000 km² (20,000,000 sq mi) and a population of 190 million individuals. The species is evaluated as least concern on the 2007 IUCN Red List, and has no special status under the Convention on International Trade in Endangered Species of Wild Fauna and Flora, which regulates international trade in specimens of wild animals and plants.

Evolution and Systematics:

Evolution: The closest fossil is *Hirundo aprica*, an Upper Pliocene species described from Kansas (dated 3.5–3.3 mya; 151, 4) that resembles modern *H. rustica*.

Systematics: Populations of this cosmopolitan species vary in body size, throat and ventral plumage coloration, length of outer tail streamers, and the width and pattern of the breast band. The ventral color of adults in fresh plumage ranges from whitish in western Europe to rufescent in the Americas to deep reddish brown in northeastern Africa. The juvenile stage offspring of birds that breed on islands of the northern Gulf of Mexico are described as having the dorsum dark brown (nearer olive-brown rather than fuscous) and the nape lacking blue-black, whereas adults of this population reportedly have a paler ventrum.

Number of Species: 6 SUBSPECIES

Number of Genera: 6 SUBSPECIES

Physical Characteristics:

Size and Length: Length: 5.9-7.5 in (15-19 cm) Weight: 0.6-0.7 oz (17-20 g)

Wingspan: 11.4-12.6 in (29-32 cm)

Coloration: Barn Swallows have a steely blue back, wings, and tail, and rufous to tawny underparts. The blue crown and face contrast with the cinnamon-colored forehead and throat. White spots under the tail can be difficult to see except in flight. Males are more boldly colored than females.

General Body Features: When perched, the sparrow-sized Barn Swallow appears cone shaped, with a slightly flattened head, no visible neck, and broad shoulders that taper to long, pointed wings. The tail extends well beyond the wingtips and the long outer feathers give the tail a deep fork.

Special Features of the Body: NONE

Special Features of the Head and Sensory Organs: Because it's long, slender and angled, this wing type is great for flying quickly because it has very little drag (resistance that slows motion). This wing type is also capable of fast movements, which allows the bird to turn quickly. The Barn Swallow is a great example – it can often be seen catching insects in mid-flight!

Dentition: BEAK/LAMELLAE/GIZZARD

Special Features of the Limbs and Digits: They have long, pointed wings and a long, forked tail. These physical adaptations have helped them become truly amazing fliers. The barn's swallows speed and agility in flight may also keep them from

becoming prey. Birds of prey like the peregrine falcon, kestrel and broad-winged hawk all hunt birds. The swallow's ability to change directions at high speeds helps it get away from winged predators as well as catch insects.

Any Special Internal Anatomy: NONE

Sexual Dimorphisms: Males and females are similar in appearance, but males have longer outer tail feathers than females (males 79–106 mm, females 68–84 mm) and tend to have darker chestnut underparts.

Differences Between Juvenile Stage and Adult: Juveniles (Juvenile plumage) are similar to adults, but have paler underparts and shorter outer tail feathers.

Behavior:

Diurnal, Nocturnal, or Crepuscular: Diurnal

Activity: Watch for the Barn Swallow's smooth, fluid wingbeats and the way they pull their wingtips back at the end of each stroke. These birds feed almost exclusively in flight, flying lower than many other swallow species and often nearly hugging the ground or water surface. They catch flies and other prey in midair above fields, marshes, lakes, and coastal waters, and often follow farm implements, cattle herds, and humans to snag flushed insects. They occasionally feed on sluggish or dead insects on the ground, and in cold weather will pluck flies off barn walls. Barn Swallows also drink and even bathe on the wing, dipping down to take a mouthful of water or touch their belly to the surface for a quick rinse. Males defend a small territory around the nest site and aggressively chase away other males, even grabbing them with their feet and tumbling to the ground. Individuals or groups of Barn Swallows mob predators such as hawks, gulls, or grackles that approach nests.

Locomotion: When on the ground, Barn Swallows walk exclusively. They only go to the ground to collect mud, grass, or feathers for the nest, to pick up bits of gravel or (rarely) moribund insects, to sunbathe, or to seek refuge from strong winds. Birds move along a wire, tree branch, or other perching substrates using a sideways walk. Barn Swallows fly at various heights from just above the ground to ≥ 25 m. Flight consists of longer periods of straight flight than of other swallow species; birds frequently alter course slightly to the left or right, and these shifts cancel each other, leading to a straight course. They often alter course dramatically when encountering an obstacle as small as tall grass stems. Birds may fly in a circular pattern when feeding over an insect concentration, such as around cattle.

Communication and Perception: Both male and female Barn Swallows sing a "twitter-warble" song during courtship and egg-laying, with a long series of continuous warbling sounds followed by up to a dozen rapid, mechanical-sounding whirrs. The song can last 4–20 seconds and is often introduced and followed by a chirp.

Home Range: Birds defend a small space around their nest and favor perch sites near the nest; territory size among European birds usually averages 78 m² during pair formation, nest-building, and egg-laying, declining in size to about 4 m² during incubation and brood-rearing and increasing again when a second clutch is started. Defense usually is directed against neighboring pairs, but also against unmated birds looking for nest sites or mates. Males usually defend against males and females defend against females.

Degree of Sociality: When found nesting in caves, usually only 1-2 pairs at a site, although occasionally nesting colonies of 3-30 nests have been reported in natural sites. With the switch to artificial nesting sites, birds are now sometimes found in colonies consisting of several nests on a single structure. These nesting groups are probably on average larger than what the birds historically experienced, although many solitary nesting pairs do still occur.

Level of Aggression: Male Barn Swallows defend their nest sites and mates by attacking intruders, chasing and pecking them, and sometimes grappling together and falling to the ground in physical combat. Male approaches intruders in flight or by sidling sideways along a perch; feathers are sleeked down and carpal joints exposed; the bird sings repeatedly in threat before initiating attack. Birds at perching sites away from nests adjust their spatial positions with in-flight approaches by one bird at another, hovering, and displacements. New arrivals at perching sites remain motionless for a few seconds before initiating preening or aggression toward adjacent birds; head orientation is apparently important in setting distances between birds.

Migration: Long-distance migrant. Barn Swallows fly from North American breeding grounds to wintering areas in Central and South America. Southbound fall migration may begin by late June in Florida or early July in Massachusetts. They return as early as late January in southern California to mid-May at Alaskan breeding sites.

Predators:

Predators: Accipiters, Hawks, American Kestrel, Screech-Owls, Barred Owl, Parasitic Jaeger, California Gull, Great-tailed Grackle, Common grackle, Boat-tailed Grackle, Corvids, Rats, Squirrels, Weasels, Raccoon, Bobcat, Cat, Snakes, American Bullfrogs, Fish, Great Burdock Plant.

Anti-Predator Defenses: Barn Swallows mob predators near the nest sites by circling, giving alarm calls repeatedly, and diving toward the predator, sometimes coming within a few centimeters of or physically striking the predator. Approaches predators more closely (more likely to dive) than more colonial swallows do. Mobbing is most intense when young are in the

nest; birds direct alarm calls at predators, but they do not dive if young are not present in the nest. Mobs may consist of 1–19 birds, depending on the number of active nests nearby.

Diet and Nutrition:

Adult Diet: Flies of all types make up the majority of the Barn Swallow's diet, along with beetles, bees, wasps, ants, butterflies, moths, and other flying insects. Barn Swallows usually take relatively large, single insects rather than feeding on swarms of smaller prey. They will also pick up grit and small pebbles, or eggshells and oyster shells set out by humans, which may help the birds digest insects or add needed calcium to the diet.

Juvenile Diet: ^^^^^

Special Adaptations for Getting Prey: Diurnal forager, pursuing insects in flight. Often feeds on insects flushed by farm implements, domestic or wild grazing mammals, humans, and flocks of other bird species. During breeding season, usually feeds singly or in groups of 2, with no coordinated group foraging, although birds may occasionally cue on foraging activities of conspecifics through local enhancement.

Reproduction:

Mode of Reproduction: Monogamous

Mating System: Usually socially monogamous, but genetically polygamous (see discussion of extra-pair copulations, below). Polygyny is known, with male devoting most of his parental care to first mate.

Mating Season: February to September

Courtship: The male barn swallow returns to the breeding grounds before the females and selects a nest site, which is then advertised to females with a circling flight and song. Plumage may be used to advertise: in some populations, like in the subspecies *H. r. gutturalis*, darker ventral plumage in males is associated with higher breeding success. In other populations, the breeding success of the male is related to the length of the tail streamers, with longer streamers being more attractive to the female. Males with longer tail feathers are generally longer-lived and more disease resistant, females thus gaining an indirect fitness benefit from this form of selection, since longer tail feathers indicate a genetically stronger individual which will produce offspring with enhanced vitality.

Territoriality: HOME RANGE

Mating: NONE

Nest Placement: Barn Swallow pairs explore a number of potential nesting spots, flying up and hovering to investigate a location, then moving to another site before narrowing their choice. Preferred sites include eaves, rafters, and cross beams of barns, sheds and stables, as well as the undersides of bridges, wharfs, and culverts. They may also use nests from previous years, but avoid those infested heavily with mites or other parasites.

Nest Description: Both male and female build the nest cup using mud. They collect mud in their bills and often mix it with grass stems to make pellets. They first construct a small shelf to sit on, then build up the nest's sides. If built against a wall or other vertical surface the result is a semicircular, half-cup shape. Nests built on top of a beam or other horizontal surface form a complete cup about 3 inches across at the rim and 2 inches deep. The birds line the cup first with grass, then feathers, and in colonies may steal nest-lining materials from neighboring nests. When reusing nests, Barn Swallows clean out old feathers and add new mud to the nest's rim.

Egg-Laying: Clutch Size: 3-7 eggs Number of Broods: 1-2 broods Egg Length: 0.6-0.8 in (1.6-2.1 cm) Egg Width: 0.5-0.6 in (1.2-1.5 cm) Incubation Period: 12-17 days Nestling Period: 15-27 days Egg Description: Creamy or pinkish white, spotted with brown, lavender, and gray.

Hatching and Incubation/Gestation: Eyes closed, naked except for sparse tufts of pale gray down. ALTRICIAL

Development: Mean mass at hatching reported as 2.2 g ± 0.5 S.

Parental Care: Feeding is directed toward young in relation to begging intensity; those that open the mouth widest and reach forward farthest are fed. All nestlings in a brood tend to receive relatively equal amounts of food, in part because each nestling turns around to defecate over nest rim after being fed and remains in this position for several minutes, during which time other brood members are fed.

Lifespan: Around 4 years.

Conservation:

Official Federal Status: Least Concern

Special Statuses in Individual States: NONE

Threats: Barn Swallow populations declined by over 1% per year from 1966 to 2014, resulting in a cumulative decline of 46%, according to the North American Breeding Bird Survey. Partners in Flight estimates a global breeding population of 120 million with 24% spending some part of the year in the U.S, 2% in Mexico, and 4% breeding in Canada. They rate an 8 out of 20 on the Continental Concern Score and are not on the 2014 State of the Birds Watch List. Barn Swallows were

hunted for the hat trade in the nineteenth century, and are still hunted for food in parts of their wintering range. Discarded twine or fishing line can pose a problem when Barn Swallows use these materials to line their nests, where the strands can entangle adults or young and trap them. On a more positive note, this species has benefited from human-made structures, and people generally encourage these pretty, insect-eating birds to nest near them. As a result, Barn Swallows have greatly expanded their breeding range and numbers as people have settled the continent.

Conservation Efforts: ^^^^^^^

Extra Facts:

1. An unmated male Barn Swallow may kill the nestlings of a nesting pair. His actions often succeed in breaking up the pair and afford him the opportunity to mate with the female.
2. The Barn Swallow is the most abundant and widely distributed swallow species in the world. It breeds throughout the Northern Hemisphere and winters in much of the Southern Hemisphere.
3. Barn Swallows once nested in caves throughout North America, but now build their nests almost exclusively on human-made structures. Today the only North American Barn Swallow population that still regularly uses caves as nest sites occurs in the Channel Islands off the California coast.
4. Barn Swallow parents sometimes get help from other birds to feed their young. These “helpers at the nest” are usually older siblings from previous clutches, but unrelated juveniles may help as well.
5. Although the killing of egrets is often cited for inspiring the U.S. conservation movement, it was the millinery (hat-making) trade’s impact on Barn Swallows that prompted naturalist George Bird Grinnell’s 1886 Forest & Stream editorial decrying the waste of bird life. His essay led to the founding of the first Audubon Society.
6. According to legend, the Barn Swallow got its forked tail because it stole fire from the gods to bring to people. An angry deity hurled a firebrand at the swallow, singeing away its middle tail feathers.
7. The oldest known Barn Swallow in North America was at least 10 years old, when it was recaptured and rereleased during a banding operation in Maryland.

Notable Species:

1. *H. r. rustica* Linnaeus, 1758. - Breeds from western Europe east to Yenisey Basin, Russia, and south to the Maghreb, northwestern Africa, east, exclusive of parts of the Middle East, to south-central Asia.
2. *H. r. transitiva* (Hartert, 1910). - Breeds in Lebanon, Syria, Israel.
3. *H. r. savignii* Stephens, 1817. - Resident in north-central Egypt.
4. *H. r. tytleri* Jerdon, 1864. - Breeds from central Siberia south to northern Mongolia and northeastern China; overwinters in southeastern Asia.
5. *H. r. gutturalis* Scopoli, 1786. - Breeds from the Himalaya region east and north through much of China to the Kamchatka Peninsula and Japan south to southern China, including Taiwan and Hainan; overwinters from Southeast Asia south to northern Australia and west to India and eastern and southern Africa.
6. *H. r. erythrogaster* Boddaert, 1783. - Breeds across North America and in South America