

Riparia riparia (Sand Martin)

Family: Hirundinidae (Swallows)

Order: Passeriformes (Perching Birds)

Class: Aves (Birds)



Fig. 1. Sand martin, *Riparia riparia*.

[http://www.hlasek.com/riparia_riparia.html, downloaded 30 October 2016]

TRAITS. *Riparia riparia* is a small bird with dark brown or black feathers, and white feathers on its lower body surface. They are recognized by a dark brown band of feathers across their chest (Fig. 1). Sand martins weigh 10-19g. They have a slender body about 12-14cm long, with a wingspan of 25-29cm (Cornell Lab of Ornithology, 2015). They have brown or black legs and feet. Their beaks are relatively small, brown or black in colour. There is no sexual dimorphism within the species, both male and females look alike (Wildscreen Arkive, 2016). Juvenile sand martins differ from adults, their belly has a cream colour while their head (face, neck, and chin) and breast has a reddish-brown to buffy colour, and pale edges on the feathers of the upperparts. Their beaks and legs are brown. Compared to adult sand martins the brown colour is much darker (Wildscreen Arkive, 2016).

ECOLOGY. Their name *Riparia riparia* derived from their preferred habitat which is usually along riversides or streamsides, called riparian banks (Wildscreen Arkive, 2016). Geographically (Fig. 2), sand martins are found over wide ranges including Trinidad and Tobago, Africa, North

America, South America, Europe and Central Asia (BBC, 2014). They primarily breed in the banks of riversides (Fig. 3), and in some cases man-made banks such as quarries and drainage holes (BBC, 2014; Garrison, 1998).

SOCIAL ORGANIZATION. They are highly social birds. Sand martins travel and live in a pair, and furthermore groups. Their nests are close to each other in the sand banks (Garrison, 1998), creating colonies of 10 to nearly 2000 pairs (Wildscreen Arkive, 2016). They may nest and forage near other *Riparia* species as well (Cornell Lab of Ornithology, 2015).

ACTIVITY. *Riparia riparia* are active during the day, when foraging is done. Juveniles and adults regularly gather on the ground to bask in the sun, dust-bathe, and groom themselves (Garrison, 1998). Sand martins occasionally have associations with their own species and other swallow species (Wildscreen Arkive, 2016). In extreme cold weather sand martins and other *Riparia* species may huddle together to keep warm (Cornell Lab of Ornithology, 2015).

FORAGING BEHAVIOUR. Sand martins are carnivores that forage in groups (Fig. 4) most of the time (Garrison, 1998). However, they also forage in pairs or on their own. Foraging occurs from dawn to dusk, during the daylight period. Areas that have a high density of insect biomass are foraged by sand martins. Aquatic areas such rivers, streams, lakes, ponds and land surfaces such as meadows, fields, pastures and bogs are searched for food. Terrestrial areas such as forests and woodlands are occasionally foraged as well. Food is captured during flight, over the ground or water surfaces. Flying and jumping insects such as butterflies, flies, moths, bees, and wasps are the primary food source (WildLife Journal Junior, 2016). Sometimes plant materials such as wind-blown seeds are mistakenly consumed. They also drink water, in addition to getting a percentage of water content from the insects they eat (Garrison, 1998). Foraging during the breeding season is usually done close to the nest, within 200m. On the other hand, they may feed at least 8-10km from the nest (Garrison, 1998).

COMMUNICATION. A continuous twittering song is made when sand martins are in flight, then it becomes a 'conversational undertone' after they have settled in the roost. Communication between sand martins and predators results in a harsh alarm being sounded to deter falcon, crow or other suspected predator (Garrison, 1998). During the breeding period, Sand martins display several types of display flights when pair bonding. Garrison (1998) documented many of these flight displays. Frequent circular flights around the burrow entrance during the digging of the burrow by unpaired males are showcased to communicate to the females flying by. This display was termed 'territory-circle flights'. Invitation-flights are performed after the completion of the burrow. The males overtake females in flight and land at the burrow entrance, apparently to entice females into the burrow (Garrison, 1998). While the female does the finishing touches to the burrow, the male guards the opening of the burrow in flight termed 'guarding-flights'.

SEXUAL BEHAVIOUR. Courtship (Fig. 5) occurs between one male and one female sand martin which may nest together. Occasionally, extra-pair copulations may occur between a male and other females. Male sand martins attract females by showcasing their burrows. Nests are constructed by the males. They use their bills, feet and wings to burrow into the sand banks. The female sand martin builds the nest within the burrow by creating a mat using plant materials such as straw, grass and leaves.

JUVENILE BEHAVIOUR. The nestlings (Fig. 6) are left in the nests situated deep within the burrow in a sand bank. For 18-24 days they are fed by their parents (Fig. 7) until they learn to fly (Wildlife Journal Junior, 2016). Garrison (1998) reported that juveniles allocated a lot of energy and time to foraging when they became independent. However, when they were not foraging, they preened, roosted and loafed in large groups. Juveniles wandered about within and around the nesting site. Garrison (1998) hypothesized that the juveniles' wandering was to learn landmarks of their natal area for their return in spring, or to reduce competition for food sources with nesting adults.

ANTIPREDATOR BEHAVIOUR. Predators of sand martins include other birds, snakes and mammals. Sand martins guard-flight their nests while being constructed (Garrison, 1998). When flying and a falcon, crow or any other suspected predator is sighted, a harsh alarm is produced along with an action to drive it away (Garrison 1998). Blue herons (*Ardea herodias*) may feed on the nestlings and adults dwelling in burrows. Sand martins abandon the nest when a snake finds its way into the burrow (Garrison, 1998).

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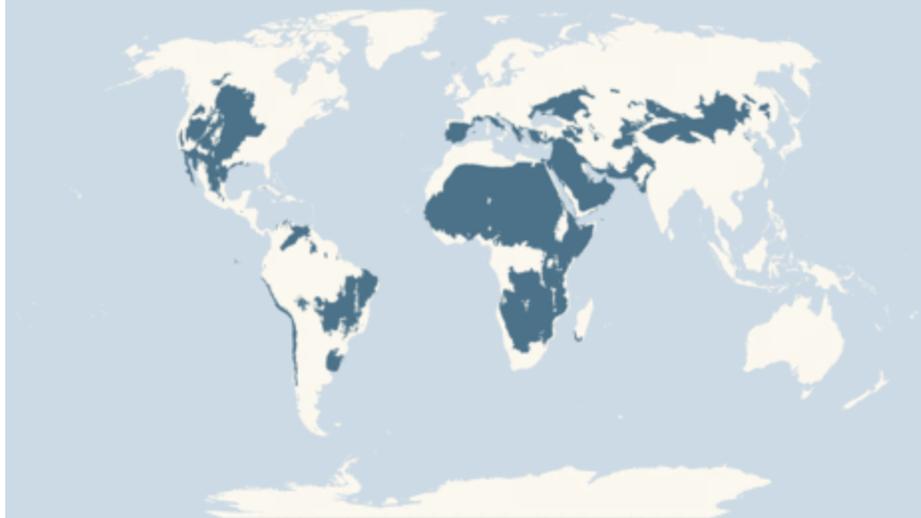


Fig. 2. Geographical range of sand martins.

[http://www.bbc.co.uk/nature/life/Sand_Martin, downloaded 30 October 2016]



Fig. 3. Nesting of sand martins in a sand bank.

[http://www.hlasek.com/riparia_riparia.html, downloaded 28 September 2016]



Fig. 4. A flock of sand martins.

[<http://www.arkive.org/sand-martin/riparia-riparia/image-G96214.html>, downloaded 13 November 2016]



Fig. 5. Sand martins courting.

[<http://www.arkive.org/sand-martin/riparia-riparia/image-G97872.html>, downloaded 14 November 2016]



Fig. 6. Three chicks in a nest.

[<http://www.arkive.org/sand-martin/riparia-riparia/image-G99814.html>, downloaded 14 November 2016]



Fig. 7. Sand martin feeding chicks.

[<https://www.flickr.com/photos/jsousa/3554260765>, downloaded 28 September 2016]

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