Nest boxes for tree martins

Tree martins *Petrochelidon nigricans* are one of the declining woodland birds of the Adelaide and Mount Lofty Ranges. They're a small (12-13 cm) dark swallow with a shallow forked tail. When perched, the bird appears rather stumpy, with the folded wings reaching beyond the tail. The bird's crown, back of the neck and back are black, with the chin, throat, breast and flanks cream to buff, and lightly striated. Wings and tail feathers are brown, the rump cream to off-white. Deep-buff to rufous forehead.

Photograph: Avecida www.avecida.org

The species forages on the wing, hunting insects at canopy level or higher, or low over open areas or water. Tree martins commonly forage in flocks of 30-60, often with similar species such as welcome swallows and fairy martins, although flocks in the hundreds or thousands have also been reported, particularly before departure from breeding areas.

Tree martins are largely migratory, with the majority of the population wintering in northern Australia and Papua New Guinea, returning south to breed. Breeding generally occurs in spring and early summer, with nesting occurring from August through to December. Nesting is colonial, with nests in close proximity within the same tree (generally a eucalypt). Where there are few suitable nest sites in close proximity nest sites may become scattered. Nests are usually in hollow spouts or knot holes of dead branches. Eggs may be laid directly onto the rotten wood within a hollow, or a bed of eucalypt leaves, sometimes supplemented with dry grass, straw, feathers or other available materials. Occasionally nests are constructed of mud mixed with grass or straw, or mud may be plastered around the entrance of large spouts or other openings, such as in caves or cliffs, to reduce the diameter of the entrance. Nests in colonies may have a single entrance.

Unlike many woodland birds, tree martins occur in the Adelaide metropolitan area. Due to the absence of suitable natural nest sites, artificial sites, or natural but atypical nest sites are often used. Stobie poles are probably the most common, as one of the older designs incorporated a cross-piece of open-ended rectangular steel tube, with a bolt dividing the open end. The tube is a suitable size for a tree martin nest, while the bolt prevents access by species such as starlings that compete with tree martins for nest sites. Tree martins have also been observed using ventilation holes in old brick buildings, and crevices in earthen banks. Unfortunately most of these sites are becoming increasingly rare. As buildings are modernised or replaced, bricks with ventilation holes are lost. Similarly, electrical supply cables are increasingly being placed underground, or the old stobie poles are replaced with newer designs that do not have openings suitable for tree martin nests. Earthen cliffs are being removed in an attempt to both improve public safety and to reduce erosion. A large colony of tree martins once nested in the small cliffs along parts of the River Torrens, however for safety reasons these have now been battered-off to form sloping vegetated banks, and tree martins no longer nest there.

As nest sites, stobie poles are problematic, as summer temperatures climb, so too does the temperature inside the steel cross-pieces, to such an extent that nestlings climb out of the nest to seek relief, usually falling to their death

on the street below. Alternatively they die in the nest due to heat stress.

The loss of suitable nesting sites, and the resulting reduction in the number of young being recruited into the population, is a significant threat to this species.

Photograph: Julian Robinson

One means of addressing this issue is the provision of suitable artificial nest sites. As the species nests colonially, nest boxes catering to large numbers of birds are feasible, if not preferable. Nest boxes need to be constructed and sited in such a way that predators and aggressive competitors such as starlings cannot gain entry, sufficient protection is provided from the weather, a suitable temperature is maintained, and martins can gain easy entry and exit.

Design:

- Height: at least 2 m above ground level
- Location: 2 m from trees or other objects that may allow rats to gain access, and with open flight lines to the entrance
- Entrance hole: 3 cm diameter (any larger will allow access by starlings and other competitors)
- Height of entrance hole above nest box floor: 2-3 cm
- Entrance should be designed to prevent moisture entering the nest box. This can be achieved by using either a projecting tubular entrance, or providing a roof for the entrance
- Easy access to the nest box can be achieved by providing a small ledge or perch in front of the entrance hole
- Nest box orientation: horizontal
- Nest box internal dimensions:
  - floor: 15 cm x 15 cm
  - height: 10 cm
- Orientation: at least partially shaded (particularly from afternoon sun), facing away from prevailing summer winds/rain
- Consider nesting colonies with multiple nest boxes
- Access: consideration should be given to potentially opening the nesting boxes for maintenance purposes

Materials:

Highly insulative (eg Hebel or thick timber). Timber should be untreated on the inside and painted white on the outside to reflect heat

Should be mounted on legs or poles, or attached to buildings in such a manner that rats or mice cannot gain access

Once established, nest boxes should be checked at least annually to ensure bees or other pests have not colonised them. A removable back will allow the nest boxes to be cleaned annually, reducing the chances of pathogen build up, or other unhealthy conditions developing.

Examples of tree martin nest sites. Top – open end of stobie pole. Bottom – ventilation opening in historic building

If you are interested in developing a large nest facility for tree martins please contact DENRthreatenedwildlife@sa.gov.au

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Government of South Australia