

## Urban roosting by Barn Swallows *Hirundo rustica* wintering in Thailand

PETER J. EWINS, PHILIP D. ROUND and DAWN R. BAZELY

Communal overnight roosts are characteristic of Barn Swallows *Hirundo rustica* and other hirundine species both in their winter quarters and on migration; winter roost-sites are typically in reedbeds (e.g. *Typha*, *Phragmites*), other tall grasses, or in crops such as maize or sugar-cane (Cramp 1988). Such winter roosts are often very large – e.g. Rudebeck (1955) estimated c. 1 million Barn Swallows to be roosting in a 30 ha reed marsh surrounded by open water in the Transvaal.

The use of urban sites, such as buildings and overhead cables, by Barn Swallows for roosting in winter has been described in only a few published accounts. Surveys in western Malaysia found that Barn Swallows roosted extensively in *Phragmites* beds, but also in 26 towns (Medway 1973). Similarly, near Bombay, sugar-cane plantations and mangrove swamps were used but thousands of Barn Swallows also roosted on overhead wires in well-lit areas of towns (George 1965). In South Africa cold weather in January resulted in wintering Barn Swallows roosting in buildings, huddled together presumably to conserve energy (G. J. Broekhuysen, cited in Rudebeck 1955), and we have noted this behaviour amongst migrant Barn Swallows on arriving in northern Scotland in cold weather in early spring.

Since at least the 1960s, mostly between November and April, Barn Swallows wintering in and around Bangkok have roosted communally on wires and buildings in the heart of the bustling commercial district. The Migratory Animals Pathological Survey (MAPS) carried out a detailed ringing and research programme from 1964 to 1966 on these birds, finding that they bred mostly in North Korea and south-eastern Siberia (King 1969). No subsequent study has been conducted, so we provide an update on this important roost, 25 years on, and review urban roosting elsewhere in Thailand.

In December 1987 and January 1988 large numbers of Barn Swallows roosted nightly in the busiest part of central Bangkok's Patpong district, above the nightlife and heavy traffic on Rama IV and Silom Roads. Most birds roosted on the numerous overhead electricity and telephone cables (both those running alongside buildings, suspended from poles above the pavement, and those crossing the streets), balcony and window ledges, but also in some small deciduous trees lining the roads. All parts of the roost were illuminated throughout the hours of darkness.

The roost extended along c. 500 m of one side of Rama IV Road and c. 400 m of both sides of Silom Road, plus a few side streets. From sample counts of roosting birds and occupied perch wires and ledges, based on a fairly regular spacing of 12 birds  $m^{-1}$  on each wire/ledge, we estimated that the roost

contained at least 280,000 individuals. No bird in our samples perched closer than about 8 cm from its neighbour. Most remained on perches throughout, despite the loud noises and car exhaust fumes a few metres below (the lowest occupied perches were those in tree branches, c. 5 m above the pavement), but groups perching on wires above the major road intersections took flight more regularly. At intervals small numbers were seen flying high over the roost area around the tops of buildings and appeared to be hawking for insects attracted by the bright lights. We did not note any other species of bird in the roost. Lines of guano accumulated below the roost each night but were presumably cleared away by street cleaners in the early mornings. The majority of pedestrians and vehicle drivers appeared to pay no attention to the birds.

By the winter of 1989–1990 the overhead electricity wires had been placed underground, forcing most birds to roost in the trees and on ledges of buildings. Consequently it is now much more difficult to obtain such an accurate estimate of numbers since many birds are hidden from view whilst roosting.

The roost used to occur in the heart of Chinatown but moved c. 3 km to the Patpong site sometime in the last 10–15 years. King (1969) noted that the birds were 'considered a pest by many of the residents who frequently had to clean the sidewalk in front of their shops', so it is possible that the shift was prompted by the introduction of deterrence measures at the Chinatown roost site.

We know of Barn Swallow roosts in urban situations at two sites in southern Thailand (Satun and Betong), and at Nan in northern Thailand. Roosts in *Phragmites* beds are more frequent, but poorly documented. One exception is the mixed hirundine roost at Bung Boraphet (a designated Non-Hunting Area in central Thailand, famous as the only locality known for the elusive White-eyed River Martin *Pseudochelidon sirintarae*). At this site local inhabitants and bird-catchers have reported 'drastic declines since the early 1970s' in numbers of roosting Barn Swallows (formerly hundreds of thousands) but it is unclear whether the wintering population is simply smaller now, or if disturbance has rendered the roost less suitable (Sophasan and Dobias 1984). One Barn Swallow ringed in the Bangkok roost was subsequently recovered in March at the Bung Boraphet roost (King 1969).

## DISCUSSION

This roost of wintering Barn Swallows in downtown Bangkok is the largest documented urban roost for the species. The MAPS ringing study revealed that the Chinatown roost was used by Barn Swallows foraging as much as 30 km away. Similarly, a large roost in Namibia was used by birds from within a 30–40 km radius (P. Becker, cited in Cramp 1988). Industrial and residential developments have dramatically increased the total area of Bangkok since the 1960s and virtually all the surrounding undeveloped land is

cultivated intensively for rice and vegetable crops. As a consequence there is an almost total lack of extensive or undisturbed reedbeds or other tall swamp vegetation stands in the Bangkok area which might serve as suitable roosts for hirundines. It is possible that the apparent increase in Barn Swallow numbers using the roost – from 150,000 in 1964–1966 to 280,000 in 1987–1988 and 200,000–400,000 in the 1980s (King 1969; Bangkok Bird Club unpublished data; pers. obs.) – is due to amalgamation of former roosts in Bangkok's suburban fringes.

We suspect that predation pressure may be the main reason accounting for the precise location of the roost. Most of the Patpong perches are relatively inaccessible to potential mammalian predators, and reptilian and avian predators are very scarce in this crowded man-made environment. Further, the chances of detecting a predator would be much higher under continuous illuminated conditions. Pied Wagtails *Motacilla alba yarrellii* also often roost communally in noisy and well illuminated man-made sites and ringers found it much easier to catch birds from small, rather than large, roosting groups without disturbing the rest of the roost (Broom *et al.* 1976).

Night-time temperatures are undoubtedly higher in the Patpong area than in quieter urban or reedbed locations, and so birds would lose less weight overnight there. However, no birds have been noted huddling together and more detailed research would be necessary before invoking this factor to explain the urban location of the roost. Similarly, the possibility that the Patpong roost serves as an 'information centre' (Ward and Zahavi 1973) for Bangkok's wintering Barn Swallows to gain information about productive feeding areas cannot be ruled out.

#### REFERENCES

- Broom, D. M., Dick, W. J. A., Johnson, C. E., Sales, D. I. and Zahavi, A. (1976) Pied Wagtail roosting and feeding behaviour. *Bird Study* 23: 267–279.
- Cramp, S., ed. (1988) *The birds of the western Palearctic*, 5. Oxford: Oxford University Press.
- George, P. V. (1965) Swallows *Hirundo rustica* Linnaeus roosting on wires. *J. Bombay Nat. Hist. Soc.* 62: 160.
- King, B. (1969) Swallow banding in Bangkok, Thailand. *Bird-Banding* 40: 95–104.
- Medway, Lord (1973) A ringing study of migratory Barn Swallows in west Malaysia. *Ibis* 115: 60–86.
- Rudebeck, G. (1955) Some observations at a roost of European Swallows and other birds in the south-eastern Transvaal. *Ibis* 97: 572–580.
- Sophasan, S. and Dobias, R. (1984) The fate of the 'Princess Bird', or White-eyed River Martin (*Pseudochebidon sibirica*). *Nat. Hist. Bull. Siam Soc.* 32(1): 1–10.
- Ward, P. and Zahavi, A. (1973) The importance of certain assemblages of birds as 'Information Centres' for food finding. *Ibis* 115: 517–534.
- P. J. Ewins and D. R. Bazely, Nature Conservancy Council, Archway House, 7 Eastcheap, Letchworth, Hertfordshire. SG6 3DG. U.K. (present address: c/o 727 Eaglemount Crescent, Mississauga, Ontario L5C 1H2, Canada).
- P. D. Round, Center for Conservation Biology, Mahidol University, Dept. of Biology, Rama 6 Road, Bangkok 10400, Thailand.