

## Division Column

# A Note on the Use of Nest Boxes by Owls and other Birds in the Hong Kong Wetland Park

Jackie Y. Yip

Wetland Park Division

## Introduction

Ten artificial bird nests were installed in the woodland of the Hong Kong Wetland Park in March 2004, to provide artificial habitats for woodland birds. The woodlands are well established and free of human disturbance, and hence considered suitable sites for setting up the nest boxes.

Previous work in the Country Parks found that three species of birds have been attracted to artificial nests of different dimensions: Great Tits (大山雀 *Parus major*), Magpie Robins (鵲鴝 *Copsychus saularis*) and Collared Scops Owls (領角鴞 *Otus bakkamoena*) (Lock, 2001). In this study we have installed nest boxes to attract owls especially the common Collared Scops Owls because Lock (2001) suggested there are not enough natural nesting sites for them in Hong Kong.

Collared Scops Owl is a nocturnal species recorded in many places around Hong Kong. Breeding season is from March to May (Cary *et al.*, 2001). This species utilizes a variety of wooded habitats including forests, shrubs with large trees, gardens and urban parks, and is not particularly shy. They have been found nesting in tree holes and disused Magpie nests. It is considered the most common owl in Hong Kong. The species has occasionally been recorded in the Wetland Park since 2003.

## Methods

### a) Design and material

Ten nest boxes (internal dimension: 16 x 21 x 44.5 cm) were installed. Design follows the L Type boxes in Lock (2001) with the following improvements (Fig. 32):



Fig 32. CCTV in nest box.

- Seal the top joints with waterproof glue, and face the entrance slightly downwards to prevent rain from entering.
- Apply a thick layer of Vaseline onto the tree trunks below and above the boxes to deter ants and predators such as snakes.

A pin-hole camera with infrared LEDs was attached to the bottom of the roof, with power and AV cables hanging down tree trunks. These cables, properly wrapped in plastic bags for water-proofing, can be connected to hand-held power supply and AV output devices (such as a digital video recorder) to check the inside of the boxes. This will enable regular video-taking without disturbing the inhabitants. This also provides a safe way to check the boxes that are placed high above ground.

### b) Installation

We have considered the following principles in the installation of nest boxes (Lock, 2001; du Feu, 2003):

- Fix the nest boxes to tree trunks at 4 m or over above ground, preferably with leaves and branches around them to make them less conspicuous to predators.
- Place them away from direct sunlight.
- Not to place them towards the east as east-facing boxes are least likely to be inhabited (Lock, 2001).
- Not to place them too close to each other (i.e. at least 50 m apart).

### c) Data collection

Data were collected between 2 April 2004 and 24 August 2006. Systematic surveys were not carried out in 2005 due to faulty cameras but we were able to make casual observations at some boxes. There was a data gap from mid-April to early June 2006 due to lack of manpower.

During each survey, the number of eggs, chicks and adults were recorded using the cameras installed, with any observations of interest such as the presence of any birds nearby and the presence of nesting material. If animals other than birds (e.g. rodents, wasps) were found inside the nests in the early breeding season, they would be removed at the earliest instance. Nesting materials left over from the previous breeding season were not removed.

## Results and Discussion

The nest boxes were used by at least four species of birds from March to July, during 2004 and 2006 (Table 2, detailed sighting information can be downloaded from the web at [http://www.afcd.gov.hk/english/conservation/hkbiodiversity/leaflets/leaflets\\_doc.html](http://www.afcd.gov.hk/english/conservation/hkbiodiversity/leaflets/leaflets_doc.html)). All of the nest boxes except WP-04 have been used at least once by breeding birds. The occupancy rate of nest boxes is 80% in the first year and 60% in the third year (but two boxes were re-located in mid-April). Half of the boxes have been used twice in the breeding season of 2004 (i.e. first year), and the inhabitants were Magpie Robin and Crested Myna (八哥 *Acridotheres cristatellus*). In the second year Collared Scops Owl (Fig. 33) and Asian Barred Owllet (斑頭鶯 *Glaucidium cuculoides*) (Fig. 34) started to use the nest boxes, as observed by casual observation. In the third year, five out of the ten nest boxes have been used by owls for breeding, followed by other species of birds including Crested Myna and Magpie Robin later in the season. It has been observed that Collared Scops Owl laid 2 to 4 eggs, and Asian Barred Owl laid 2 to 6 eggs each time in the nest boxes.

Many of the nest boxes have been used twice by same species or different species of birds in one breeding season. In the first year, we have recorded the breeding of Magpie Robin twice in three boxes, but we do not know if these were the same pairs. In the third year, at least half of the boxes were used by owls from March to May, and by other species of birds from June to July.

The nest boxes have provided nesting habitats for the two commonest species of owls in Hong Kong. We observed that the owls did not use the nest boxes for breeding until the second year. This could be due to the fact that the nest boxes were installed in mid-March 2004, after the start of owl's breeding season. The rapid colonization and high occupancy of nest boxes by owls in the Hong Kong Wetland Park indicated the lack of natural breeding habitats nearby. The installation of artificial nest boxes is likely to increase their breeding success.



Fig 33. Collared Scops Owl in nest box.



Fig 34. Asian Barred Owllet nestlings in a box.

	2004						2005	2006					
	Mar	Apr	May	Jun	Jul	Aug		Mar	Apr	May	Jun	Jul	Aug
WP-01	X	---- no breeding observed ---											
WP-02	X	-----											
WP-03	X	-----											
WP-04	X	---- no breeding observed ---											
WP-05	X	-----											
WP-06	X	-----											
WP-07	X	-----											
WP-08	X	-----											
WP-09	X	-----											
WP-10	X	-----											

  

-----	Unknown species	-----	Collared Scops Owl
-----	Crested Myna	-----	Asian Barred Owllet
-----	Magpie Robin	X	nest box installed

Table 2 Usage of nest boxes in the Hong Kong Wetland Park by breeding birds from 2004 to 2006.

## Acknowledgements

I wish to thank all colleagues of the Hong Kong Wetland Park who have taken part in the nest box project, especially Stanley Chow who designed and installed the pin-hole cameras, and Yam Wing Yiu who conducted most of the surveys.

## References

- Carey, G.J. et al. 2001. *The Avifauna of Hong Kong*. Hong Kong Bird Watching Society, Hong Kong.
- du Feu, C. 2003. *The BTO Nestbox Guide*. The British Trust for Ornithology, Thetford.
- Lock, N.Y. 2001. Nest Box Survey in Country Parks of Hong Kong. *Proceedings of the 2001 IUCN World Commission on Protected Areas, East Asia Conference, Hong Kong*. pp. 187-192.