

Roosting Behaviour of the Common Mynahs *Acridotheres tristis melanosturnus* at an Urban Roost

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Introduction

The Common Mynah (*Acridotheres tristis*), belongs to the family Sturnidae of the Order Passeriform. According to Henry (1953) the race peculiar to Sri Lanka is *A. t. melanosturnus*. It is slightly larger than a common babbler, with a glossy black head, neck and breast. Bill, legs and orbital skin is yellow. It has white tips on tail and white wing patch. Both sexes are alike. Juveniles are generally duller than adults (Grimmett et al., 1998). It is also the only mynah with a white wing patch (King et al., 1975).

They can occupy a wide breadth of habitats varying from agricultural landscapes, home gardens, urban centers, forest and even deserts (Grimmett et al., 1998; Kotagama, 1994). They usually live in pairs or small flocks and are bold, tame and sometimes pugnacious. Commonly found scavenging in built up areas, and flocks often seen following grazing cattle or feeding in agricultural landscapes. They are primarily ground feeders and can be classified as generalist omnivores feeding on variety of food types ranging from insects, ripe fruits and berries, flowers, nectar and food refuse.

They roost at specific sites, making a loud noise as they arrive at the roost and settle down for the night. Mynahs perch readily in trees forming large noisy communal roosts, often along with other species.

All birds roost, that is, have a period of inactivity, analogous to sleep in human beings. Some birds do it alone,

others with birds of the same species or with several other species in communal roosts. Birds that roost communally do so in a wide variety of situations and for variety of reasons. The sites they choose for roosting also show an enormous diversity (e.g. swallows roost on telephone wires, some seabirds roost on islands, small groups of nuthatches spend the night in tree cavities). The phenomenon of communal roosting came to public attention when thousands or sometimes millions of birds made pests of themselves by spending the night close to human habitats (Ehrlich et al., 1988). The communal roosts in urban areas can create health concerns for human residents because of the dirt and odor caused by the accumulation of their faeces under their roosts. This causes problems to local authorities maintaining the cities.

Study site

A communal roost situated in the center of the City of Gampaha, in Gampaha district, Western Province, Sri Lanka was selected for this study. The main roost included twenty-four trees arranged in a row along a 50 m stretch (Figure 1). There were eighteen Pink tabebuia (*Tabebuia rosea*) and six Australian Blackwood trees (*Acacia melanoxylon*). Trees in the surrounding areas were used as a secondary roost, where they rested or paused for a while before coming to the main roost. All these trees were above 5 m tall.



Figure 1. A panoramic view of the main roosting site.

Objective

The objective of this study was to investigate the roosting behavior of birds in such an urban community roost with a special emphasis on the roosting behavior of the common mynah.

Study methods

This study was conducted for a period of three months from January 18 to April 24, 2003. Two main study methods, namely visual observation and direct census were used for data gathering. Visual observations were carried out three times a week on Wednesdays, Saturdays and Sundays between 16h45 and 19h45 for a period of three months. Censuses were carried out fortnightly using two main methods. The first method involved four observers counting the mynahs coming into the roost from four directions simultaneously. The second method involved counting by a single observer for four consecutive days from four different sides of the roost. To facilitate the counting of large number of birds, observers were placed approximately 30 m away from the roost in an area with a clear view. The observer was required to count all the Mynahs in a flock on their way to the roost.

Species composition of the roost

The roost was used by eight species of birds including the common mynahs. The House crow (*Corvus splendens*), Little egret (*Egretta garzetta*), Intermediate egret (*Mesophoyx intermedia*), Great egret (*Casmerodius albus*), Black-crowned night heron (*Nycticorax nycticorax*), Indian cormorant (*Phalacrocorax fuscicollis*) and Little cormorant (*Phalacrocorax niger*) were the other species that were seen in the main roost. However, the level of usage varied among the eight species. The common mynahs used this site for roosting throughout the study. The House crows visited the roost in the evening but did not roost in the main roost. Little egrets, Intermediate egrets, Great egrets, Black-crowned night herons, Indian cormorants and Little cormorants used the main roost for both roosting as well as breeding. During the breeding season the birds remained at the main roost throughout the day. However, during the non breeding season the roost was devoid of birds during the day time. The spatial occupation of the roost by birds also changed with time as can be seen in figure 1a-d. These spatial changes were found to be directly correlated with the breeding activities of the different species that occupied the roost.

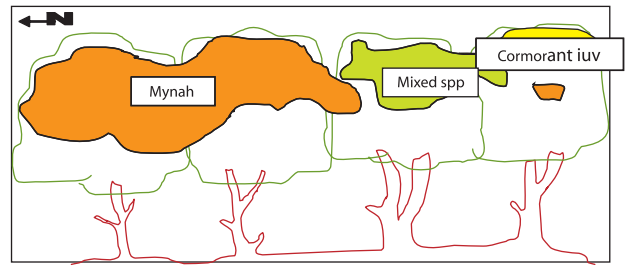


Figure 2a. Spatial occupation of the main roost by different bird species at the beginning of the study in early January. Each tree represents 25% of the main roost.

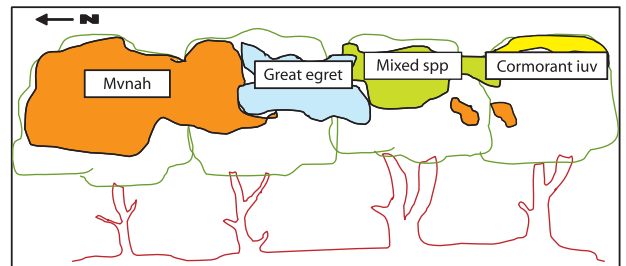


Figure 2b. Spatial occupation of the main roost after the arrival of Great egrets. Each tree represents 25% of the main roost.

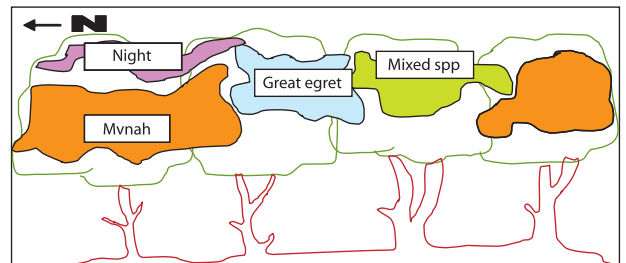


Figure 2c. Spatial occupation of the main roost after the arrival of Black-crowned night heron and departure of Cormorant juveniles. Each tree represents 25% of the main roost.

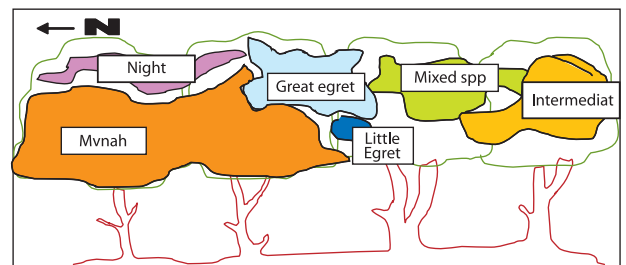


Figure 2d. Spatial occupation of the main roost after the arrival of Intermediate and Little egrets. Each tree represents 25% of the main roost.

Flight paths

The Mynahs used fixed directional, purposeful flight at dusk to reach their roosting site. The same path was used every day. They generally used four flight paths to reach the main roost. These four flight paths were named as the northern, eastern, southern and western flyways. It was observed occasionally, that some birds flew back, waited on a tree on the flight path before returning to the roost.

Mynahs did not come straight to the main roost. They stayed for a certain period of time on surrounding trees, rooftops, or electrical wires, calling, preening or just searching the surrounding area before coming in to the main roost. The time spent on the primary roosts (waiting time) varied with the time of arrival and the flight path they were using. For instance birds arriving along the western flight path had a longer "waiting time".

As they came along these flight paths the first few mynahs, (1 or 2 pairs) paused on a treetop in the flight path calling. Then the other mynahs that were coming from the same flight path joined them. Thus, the size of the flock increases before heading towards the main roost. Observed flocks consisted of 2 to 36 birds. (Minimum and maximum counts during the study period). There was always an even number of mynahs per flock. If the number of birds in a flock comprised an odd number a single mynah immediately followed it or else a flock with an odd number of birds immediately joined another flock with an odd number of mynahs. Early comers were always in pairs or in small flocks (less than 6 birds). Further, the number of birds per flock increased as the intensity of light decreased (Figure 3).

Irrespective of the weather, wind speed, or the time of sunset common mynahs followed the same behavioral pattern throughout the study period.

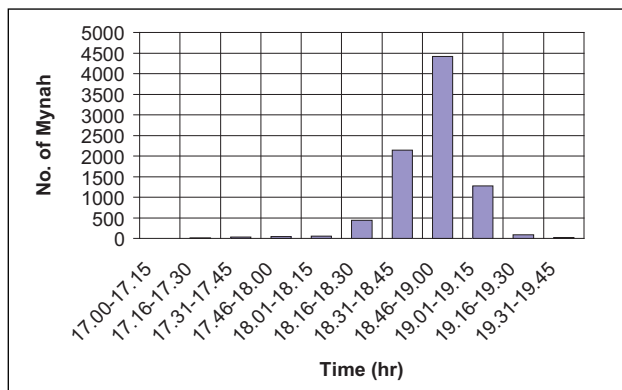


Figure 3. Number of common mynahs arriving at the main roosting site at dusk.

Behaviour of Common Mynahs at the roosting site

Time spent by mynahs at the roosting site was limited to approximately 14 hours per day. Mynahs make a continuous call as they arrive at the roost. A sudden decrease of the intensity (volume) was noticed between 19h30 and 19h45 on all days. They made very low intensity sound throughout the night. The sound never ceased until the last Mynah had left the roost on the following morning.

When calling, Common Mynahs fluffed out their plumage, raising their crests, and jerked their beaks towards their toes. When one mynah shows this behavior pattern, four types of responses were observed. The nearest individual flew away followed by the caller settling down on that branch. The nearest individual showed no reaction and the caller settled down where it was. The nearest individual showed no reaction and the caller chased it out of the tree. The nearest individual also responded by calling and both birds displayed the fluffing out behavior pattern alternatively followed by both birds moving away and settling in completely different places.

It was difficult to determine whether birds make alarm calls at the roost. However, brief silence with an approximate duration of one second was always observed immediately before the birds took flight. Three behavior patterns were observed as response to alarm calls that were raised among the birds in the main roost. Out of all the bird species only House crows (*Corvus splendens*) demonstrated a synchronized behavior pattern with Common Mynah in response to alarms. These were

- i. Mynahs and Crows left the roost, circled above and came back to the main roost.
- ii. Mynahs and Crows left the roost, settled on a nearby tree, electrical wire, lamppost or a rooftop and then came back to the main roost.
- iii. Only Crows left the roost, circled above and came back to the main roost, but Mynahs stayed on.

When Mynahs arrived at the main roost, they immediately perched on open branches without many leaves, or went directly to a covered branch. However, the final site selected was almost always a branch that was covered with leaves or flowers. They generally settled closer to each other, sometimes cuddling each other. They always avoided the branches directly under the nests of other species, especially the nests containing nestlings, and also the branches with leaves spoiled by defecation of other

species or underneath a roost occupied by other Mynahs.

During the first half hour of sampling the Mynahs were very active. Birds that arrived first spent more time searching their surroundings, preening, sun bathing, beak cleaning, playful behavior, and begging for food. During the next half hour, fighting, chasing, and moving from branch to branch were the main behavior patterns observed. As the number of arriving birds increased the space available for each Mynah decreased. Hence chasing, fighting and moving from branch to branch increased further. They begin to settle down around 18h00 and the majority of birds had settled down and were resting by 19hrs (Figure 4).

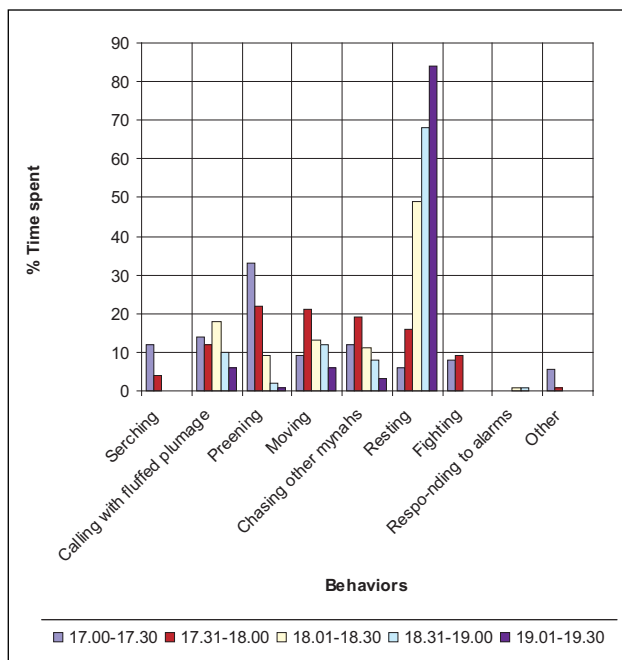


Figure 4. Behaviour patterns shown by Mynahs as they arrive at main roosting sites.

In the morning during the departure from the roost, these behavioral patterns were reversed. At first the majority of mynahs were resting. Then, towards dawn and morning, their activities increased gradually until they left the roost forming little flocks. Generally the departure was initiated by a single bird that moved from the main roost to a nearby tree and started calling. This would prompt other birds to join it. Together they formed a small flock on a nearby tree before leaving the roosting site. However, it is difficult to quantify the behavior of this flock formation due to the high level of activity taking place in the morning as

all the mynahs follow this flock formation before they leave the roost. They did not follow specific flight paths on leaving the roost but dispersed in random directions.

Discussion

The study site was an urban roost used by several species of birds throughout the year. Some birds used it mainly for roosting or breeding while others used the site for both breeding and roosting. For the past several years, this has created many problems for both humans and birds. Dirt and odor caused by birds has prompted the city authorities to cut out the branches of the main roost during their breeding season with nests, eggs and nestling spreading all over the main road that runs by the roost.

Out of the seven species of birds that uses the roosting place regularly the Common Mynah have the largest population, and they roost there all year round. Based on the direct counts the population size of the Common Mynahs at the main roosting site was estimated to be around 8500.

No significant relationship was observed between the daylight intensity and arrival time of Mynahs at the roosting site. However, communication played a vital role here as calling prompted formation of flocks that preceded arrival or departure of birds from the roost.

Communal roosting may be advantageous as they can get better protection from predators as there are many individuals to look out for potential dangers. Another advantage of communal roosting is that older, more experienced birds are better able to find food hence younger birds roost with them in order to follow their elders to better hunting grounds. Observations made on departure pattern of Mynahs from the roost lend support to this hypothesis. One aspect of the selection of an urban site to roost can be to utilize the heat emitting from the buildings to keep themselves warm.

Postscript

Six months after this study, one fourth of the trees at the northern end were reduced to stumps by city authorities. The Mynahs were compelled to use the secondary roost as their main roost. However, once the trees regenerated they moved back showing their ability to adapt to new situations. The branches of the *Tabebuia* trees were once again removed to accommodate the new bus stand that was followed by removal of 90% of the trees in the secondary roost by the Municipal Council. The resulting

habitat loss has led to increased competition for roosting sites. Many mynahs had been observed falling from the trees or being subjected to predation by stray cats and toddycat *Paradoxurus hermaphroditus* at their new roosts which are easily accessible to these predators. They still share the few trees that are left at the southern end of the roost with cormorants, and despite the insecurity caused by the habitat destruction Common Mynahs still frequent the city centre.

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Oriental Bay Owl

Brian Clasper

This Oriental Bay Owl (*Phodilus badius*) has been seen in Kudawa - Sinharaja at a day roost on 17.01.2006. This has been reported by Prasanjith Caldera who was accompanied by Ranjith Premasiri, Brian Clasper, James France and Samantha Kumara. Oriental Bay Owl is a rare resident who inhabits wet zone forests in Sri Lanka.