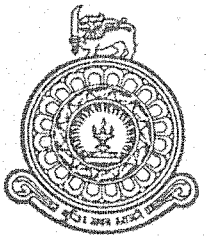

Study of roosting and breeding behaviour of *Pelecanus philippensis* (Family Pelecanidae; Spot billed Pelican) at one of the major roosting sites in Colombo

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ABSTRACT

It is projected that by year 2050, 70% of the world's population will live in urban areas. Most of this growth is expected to take place in ecologically sensitive areas in Asia and Africa that support high concentrations of biodiversity which will increase the pressures exerted by human beings on natural ecosystems. Amid these high pressures many species of animals and plants have become adapted to inhabit urban environments. However, until recently, conservation biologists have placed little importance on urban areas or urban biodiversity. The city of Colombo, the largest city and commercial capital in Sri Lanka and its immediate suburbs have been subjected to intense development activities over the past few decades. However, Colombo and its immediate suburbs still carry many man modified habitats that function as refuges for a variety of animals and plants. Out of these, Beira Lake with an extent of 65 hectares is one of the unique landmarks of Colombo.

The aquatic bird assemblage of Beira Lake also includes the near threatened *Pelecanus philippensis* (Spot-billed Pelican). *Pelecanus philippensis* was once common across much of Asia, but suffered a widespread decline causing it to be listed as a threatened species in 2003. However, its population has recovered due to many conservation measures resulting in its conservation status been down listed to a near threatened species in 2007. Spot-billed pelican is the only resident pelican species found in Sri Lanka. Even though Spot-billed Pelicans shows a wide distribution in Sri Lanka only few breeding sites have been reported. One of the breeding sites is located in Vauxhall Street, Colombo 2 adjacent to the CWE headquarters in close proximity to the Beira Lake. It is important to monitor breeding sites to predict long term trends in population. However, this site has not been investigated in detail and therefore no base line data is available for this site. The main objective of this study was to document the status of the breeding colony located at Vauxhall Street with respect to roosting and breeding behaviour of Pelicans that occupy this site.

The main breeding site is a large *Ficus bengalensis* tree, about 24 m (80 feet) tall with a crown that is 12-15 m (40-50 feet) in diameter. The study focused on this tree and was conducted from July 2005 to June 2006. Initially daily observations were carried out from 7.00 a.m. to 6.00 p.m. for a period of one week. Thereafter, observations were carried out once a week (every Monday) from 9.00 a.m. to 5.00 p.m. The temporal variations in population size, roosting behaviour, breeding behaviour and breeding success were determined based on visual observations. In addition, tree availability for roosting and breeding around Beira Lake was also determined.

The most abundant tree species around Beira Lake included *Ficus religiosa* (Bo) and *Ficus benghalensis* (Banyan). Pelicans showed a greater preference towards *Ficus benghalensis* as five out of the seven trees used at present for roosting or breeding belongs to this tree species. The breeding season of Pelicans spanned from January to June. The site carried more Pelicans during the breeding season compared to the non breeding period. Maximum number Pelicans (199 Individuals: 168 adults and 31 juveniles) were recorded during the month of March. In the months of November and December there was a significant drop in numbers of both adults and juveniles. During the non breeding season (July to December) most of the adults leave the roosting site before 9.00 a.m. and return to their roost around 5.00 p.m. During the breeding season most of the adults remained in the site throughout the day.

During the non breeding season they roost solitarily whereas during the breeding season they roost in groups of 6-10 individuals. They do not always occupy the same roosting location and the mean roosting time was 72.4 ± 11.9 min. During bad weather conditions arrivals and departures were limited and they tend to roost for longer periods.

Nest building started during the 1st week of January 2006 and continued until mid June. Maximum number of nests was observed in mid March. A total of 76 nests were constructed and the success rate was 71%. The mean duration taken for constructing the nest was 20.2 ± 1.1 days. They laid 1-3 white coloured eggs per nest (Mean number of eggs per nest 2.3). Egg laying started during the last week of January and continued till the middle of June. Total number of eggs counted was 147. The maximum number of eggs was laid during the last week of February. Out of the 147 eggs laid, 65 (44.2 %) hatched. Eggs were incubated by both males and females. Incubation period varied between 21-28 days and mean number of hatchlings per nest were 1.6 ± 0.09. They were cared for by both parents. Newly hatched young were fed on the cud regurgitated to the nest by its parents. Later they were capable of pulling the cud from the parent's gullet. On the average each feeding lasted about 2 min and they were fed twice or three times a day. Hatchlings fledged when they became 12 -14 weeks old. During the study period 20-30 hatchlings fledged which was about 30.7- 46.2% of the total number of hatchlings or 13.6-20.4 % of the total number of eggs laid.

Pelicans are known to be communal breeders where they share the breeding site with many other birds but this breeding colony did not show this. During the study period no direct egg predation was observed even though potential predators were seen near the nesting site. The main threat to the breeding site comes from humans. The breeding colony has become nuisance to the people that work or live in the vicinity and they cause disturbance to the

breeding birds. This could cause a reduction in breeding success and even colony abandonment. Therefore in order to ensure long term survival of this species, this breeding site needs to be managed so that disturbance is minimized. Protecting their feeding sites and conducting conservation awareness programmes are some other additional conservation measure that can be taken to conserve Spot-billed Pelicans in Sri Lanka.