
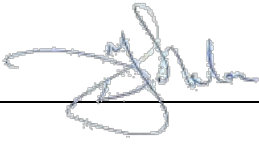


## Precautionary Ecological Checks for Peter Scott Field Studies Centre

Monthly Report for March-April 2020

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## INTRODUCTION

- 1.1 These precautionary surveys commenced in April 2019 in order to generate robust baseline data with which to formulate and develop suitable mitigation proposals for each species group and to liaise and obtain appropriate permits that may be required from the appropriate government bodies.
- 1.2 It should be noted that these specific ecological studies are separate to those to be conducted by the Environmental Team (ET) for the non-statutory EM&A for PSFSC for which the ET Site Inspector will undertake regular site inspections and audit to ensure construction site practices are not adversely impacting on the surrounding environment.
- 1.3 If the results of ecological checks show egrets (or any other species of conservation significance) are breeding in the trees next to the forecourt of the PSFSC, this may have ramifications for the demolition and rebuild programme, as there will be a need to avoid impacts to breeding birds. Likewise, checks of the PSFSC building itself and associated structures were required to ensure there was no impact on nesting or roosting bird species.

## METHODOLOGY

### BATS

- 2.1 Weekly bat surveys (a combination of dawn and/or dusk depending on site conditions) were conducted by suitably qualified ecologists to check for bats emerging/returning to roost during the breeding season (April-end July). Surveys were conducted at a frequency of twice per month during the non-breeding season (August-March) as bats may still use natal roosts during the cooler months.
- 2.2 Up to two surveyors were being used in order to view different aspects of the buildings and associated structures/trees within the development footprint.
- 2.3 Dusk emergence surveys using a bat detector and a thermal imaging device were carried out to allow a population estimate of any roost to be made and also help to try and confirm species present. Bats are counted as they leave the roost and recordings of their calls can be made to aid identification. Given the lack of published information on bat calls in Hong Kong, identification to species level is not always possible. These surveys may be complemented by dawn swarming surveys, when bats are counted returning to roost at first light. Any locations where bats roosts were observed were recorded and mapped, with numbers of bats enumerated where possible.
- 2.4 Such regular surveying provided a solid set of data with which an understanding of any bat use of the PSFSC and its environs was acquired.

### BIRDS

- 2.5 The stand of large trees adjacent to the PSFSC forecourt has been used in recent years by large numbers of ardeids as a night roost. It also has the potential to become a suitable breeding site for these waterbirds, which was the case for Chinese Pond Herons some years ago. Non-breeding birds may also continue to roost in this area.
- 2.6 These precautionary ecological checks were also undertaken to determine if any birds utilized the structure of the PSFSC building so as to prevent mortality during demolition and

construction, with potential entry points for roosting or breeding birds closed on 11<sup>th</sup> December 2019.

- 2.7 Two survey visits a month were scheduled to confirm whether ardeids are utilizing the large stands as a nesting site and/or night roost between April 2019 and April 2020. The methodology for this was to carry out a count of birds flying to the roost beginning in the hour prior to sunset until birds stop arriving.
- 2.8 In addition, visual checks of the PSFSC were made in the breeding season for any evidence of birds nesting within the structure (including outbuildings and associated facilities).

## RESULTS

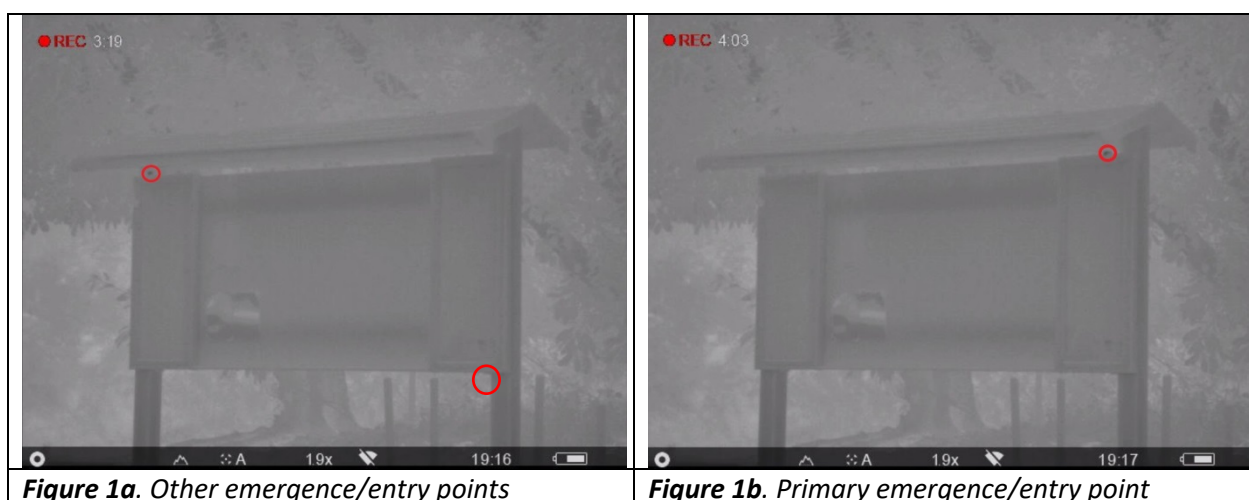
- 3.1 Bat surveys have not recorded any bats entering or emerging from the PSFSC.
- 3.2 **Table 1** summarises the bat count data collected at dawn and dusk. The highest count of bats emerging from the noticeboard was 69 on 9<sup>th</sup> July. **Figure 1** illustrates the location of the two emergence/entry points for these bats (61 of the 69 used the primary emergence point) (see **Figures 1A/B**).

*Table 1. Numbers of bats counted entering/emerging from the noticeboard roost site. (Asterisk indicates rainy conditions during survey). N.b. bats may still be in the roost during cooler months and do not emerge to feed every night.*

Date	Dawn/ Dusk	Total Count	Date	Dawn/ Dusk	Total Count	Date	Dawn/ Dusk	Total Count
30-May-19*	Dawn	4	11-Sep-19	Dusk	2	23-Dec-19	Dusk	2
6-Jun-19*	Dawn	35	17-Sep-19	Dawn	5	3-Jan-20	Dusk	4
10-Jun-19*	Dusk	10	25-Sep-19	Dawn	3	7-Jan-20	Dusk	7
18-Jun-19	Dawn	68	3-Oct-19	Dusk	4	13-Jan-20	Dusk	2
24-Jun-19	Dawn	63	9-Oct-19	Dawn	3	20-Jan-20	Dusk	2
27-Jun-19	Dusk	61	15-Oct-19	Dawn	8	27-Jan-20	Dusk	0
5-Jul-19	Dusk	54	21-Oct-19	Dawn	1	3-Feb-20	Dusk	8
9-Jul-19	Dusk	69	28-Oct-19	Dusk	7	10-Feb-20	Dusk	2
15-Jul-19	Dusk	64	4-Nov-19	Dusk	3	18-Feb-20	Dusk	2
24-Jul-19	Dusk	58	11-Nov-19	Dusk	12	24-Feb-20	Dusk	6
30-Jul-19	Dawn	52	19-Nov-19	Dusk	17	2-Mar-20	Dusk	5
6-Aug-19	Dawn	49	27-Nov-19	Dusk	22	9-Mar-20	Dusk	12
12-Aug-19	Dusk	66	2-Dec-19	Dusk	0	16-Mar-20	Dusk	8
20-Aug-19	Dusk	54	9-Dec-19	Dusk	5			
27-Aug-19	Dusk	53	18-Dec-19	Dusk	7			

- 3.3 Bats were regularly recorded foraging around the PSFSC building and forecourt, and high above the trees, shortly after sunset and also before sunrise. None were seen to enter the PSFSC and some originated from the east, presumably from the roost at Mai Po Village.

- 3.4 Numbers have fallen considerably since 12 August 2019 indicating that this roost is used primarily as a maternity roost, though low numbers continue to use the Noticeboard for roosting.
- 3.5 Low numbers were observed exiting the roost in December 2019, though these numbers do not reflect roost occupancy. Mean 24 hour temperature levels were down to 18.3°C (as measured at the HK Observatory), and visual checks of the roost spaces revealed bats remaining in the roost cavities during this cold weather, though difficult to enumerate due to limited observation access.
- 3.6 Originally surveys were set to continue every 2 weeks in September; however, this was adjusted to continue on a weekly basis in order to gain a better understanding of this roost.
- 3.7 The count on the 16 March 2020 was the final survey before the exclusion process took place, which commenced on 23 March 2020. During the exclusion process in March, endoscopes were used to verify the roost was vacant. The Noticeboard was successfully relocated on 26 March 2020.



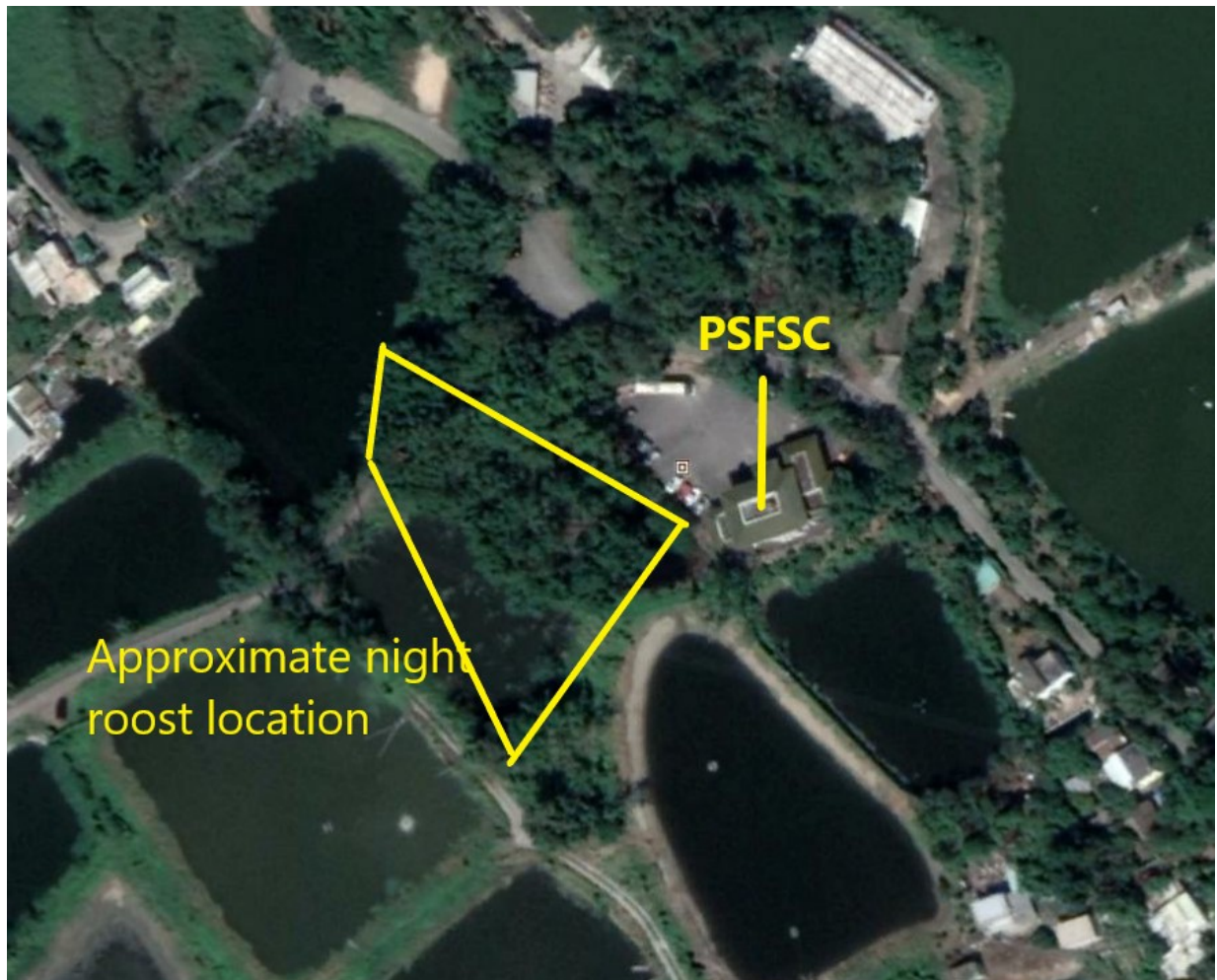
- 3.8 In regard to avifauna, surveys were carried out on 31<sup>st</sup> March and 8<sup>th</sup> April. Breeding activity by Spotted Doves was noted on 6<sup>th</sup> March in the form of an occupied nest with two chicks; by the 18<sup>th</sup> these birds had fledged and the nest was empty. However, a second brood was discovered on 5<sup>th</sup> April; two chicks were photographed on 14<sup>th</sup> April. It is anticipated these birds will have fledged by the end of April. Appropriate measures were taken at all times to prevent disturbance to the nest and its occupants.
- 3.9 Starting in the Apr/May 2019 report, during every evening bird survey Eurasian Tree Sparrow calls were heard coming from inside the building, and sparrows were seen around the building and roosting in the ornamental planting alongside. However, since January 2020 no Eurasian tree sparrows were heard or seen inside the building.
- 3.10 As part of the mitigation strategy to prevent mortality during demolition and construction, the potential entry points for roosting or breeding birds were closed during the daytime on 11<sup>th</sup>

December 2019. Since then, sparrows have been recorded roosting in the bushes alongside the building.

- 3.11 Surveys carried out from a vantage point 70 metres away at its nearest revealed that a non-breeding roost of egrets is using the group of trees next to the PSFSC forecourt at night. The roost is near the small pond to west of the PSFSC. Species and the number recorded during this monitoring contract are presented in **Table 2**. While numbers of non-breeding egrets declined to low levels in December and early January, subsequently they increased. No evidence of breeding was observed, however.

**Table 2** Egret species and number recorded flying to a night roost in the trees adjacent to the PSFSC during monitoring work under this contract

Date of survey	Little Egret	Chinese Pond Heron	Great Egret	Cattle Egret	Grey Heron	Total
18 <sup>th</sup> April 2019	84	33				117
24 <sup>th</sup> April 2019	75	25				100
30 <sup>th</sup> April 2019	74	31	6	1		112
16 <sup>th</sup> May 2019	39	12	13	6		70
29 <sup>th</sup> May 2019	51	12	10	1		74
20 <sup>th</sup> Jun 2019	50	13	14	1		78
5 <sup>th</sup> Jul 2019	52	15	19			86
15 <sup>th</sup> Jul 2019	48	12	20			80
24 <sup>th</sup> Jul 2019	127	22	16			165
15 <sup>th</sup> Aug 2019	83	18	6			107
27 <sup>th</sup> Aug 2019	16	15	12			43
11 <sup>th</sup> Sep 2019	33	24	9		1	67
24 <sup>th</sup> Sep 2019	21	17	7		1	46
3 <sup>rd</sup> Oct 2019		7	1		2	10
21 <sup>st</sup> Oct 2019	29	7			1	37
4 <sup>th</sup> Nov 2019	21	9	2		2	34
18 <sup>th</sup> Nov 2019	17	12	2		3	34
11 <sup>th</sup> Dec 2019	0	0	0	0	0	0
27 <sup>th</sup> Dec 2019	12	1	1			14
8 <sup>th</sup> Jan 2020	18	6	1			25
30 <sup>th</sup> Jan 2020	631	12	3		2	648
11 <sup>th</sup> Feb 2020	270	21	3		1	295
26 <sup>th</sup> Feb. 2020	280	6	2			288
13 <sup>th</sup> Mar. 2020	260	14	12			286
31 <sup>st</sup> Mar. 2020	271	16	21			308
8 <sup>th</sup> Apr. 2020	269	18	33	4		324



**Figure 2.** Location of birds as stated in Table 2.