
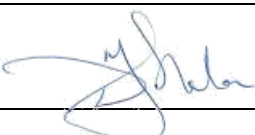


Precautionary Ecological Checks for Peter Scott Field Studies Centre

Monthly Report for December 2019 - January 2020

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CONTENTS

INTRODUCTION.....	2
METHODOLOGY	2
RESULTS	3

LIST OF TABLES

Table 1. Numbers of bats counted entering/emerging from the noticeboard roost site.

Table 2 Egret species and number recorded flying to a night roost in the trees adjacent to the PSFSC forecourt

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, the PSFSC building itself and associated structures may be suitable nesting locations for common bird species.

METHODOLOGY

BATS

- 2.1 Weekly bat surveys (a combination of dawn and/or dusk depending on site conditions) are conducted by suitably qualified ecologists to check for bats emerging/returning to roost during the breeding season (April –end July) . Surveys will also be 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 will be 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 are 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 may not be 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 are observed will be recorded and mapped, with numbers of bats enumerated where possible.
- 2.4 Such regular surveying can provide a solid set of data with which an understanding of any bat use of the PSFSC and its environs can be 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 Likewise, some species of birds may utilise the structure of the PSFSC building itself and associated structures/trees for nesting, e.g. White-shouldered Starling, Eurasian Tree Sparrow, Azure-winged Magpie.

- 2.7 Two surveys visits a month are 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 is 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 will also be made in the breeding season for any evidence of birds nesting within the structure (including outbuildings and associated facilities).

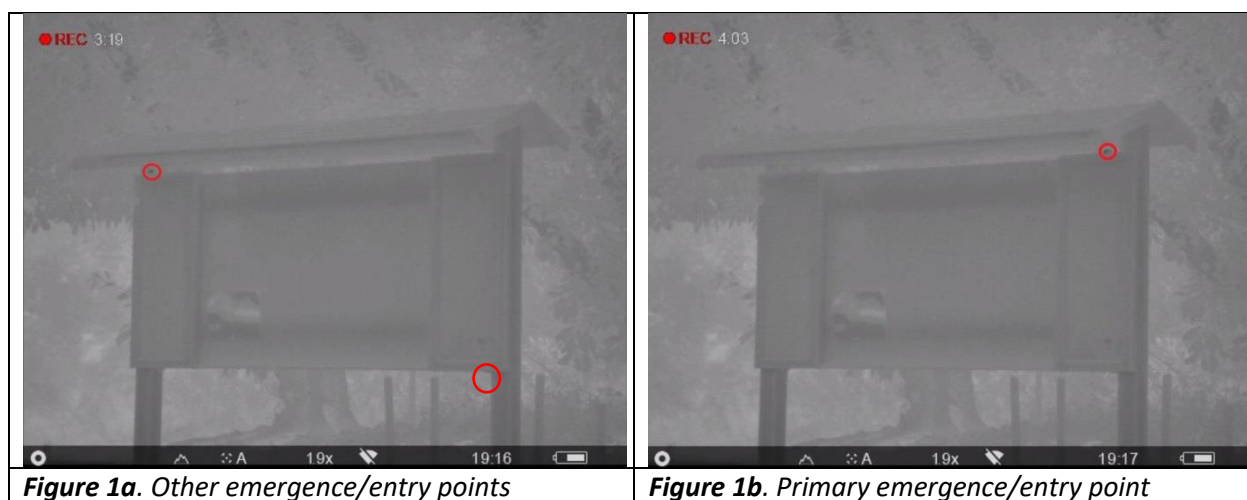
RESULTS

- 3.1 Bat surveys have not recorded any bats entering or emerging from the PSFSC despite the fact that external checks made of the building during daytime have revealed several potential roost entrances.
- 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 9th July. **Figure 1** illustrates the location of the two emergence/entry points for these bats (61 of the 69 used the primary emergence point). Up to three bats (*Pipistrelle* sp.) were recorded roosting in the corrugated roof of the bicycle shed throughout the study period. A third emergence/entry point was used from 9 October (see **Figure 1A**).

Table 1. Numbers of bats counted entering/emerging from the noticeboard roost site. (Asterisk indicates rainy conditions during survey).

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

- 3.3 Bats are 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 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, 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 has been adjusted to continue on a weekly basis in order to gain a better understanding of this roost.



- 3.7 In regard to avifauna, surveys were carried out on 18th November and 11th December. Breeding activity by birds at or in the vicinity of the PSFSC has ceased.
- 3.8 Prior to this report, during every evening bird survey Eurasian Tree Sparrow calls were heard coming from inside the building, where they appear to both roost and breed; it was not possible to estimate the numbers as the birds enter via holes that prevent their being counted. This is a very common and widespread species closely associated with urbanization, and the significance of potential impacts is negligible.
- 3.9 However, 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 11th December. Since then, sparrows have been recorded roosting in the bushes alongside the building. Dealing with these ahead of demolition will be straightforward, as it simply requires that the bushes are carefully removed in the daytime.
- 3.10 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**. For the first time in the surveys, no egrets or herons were recorded roosting in the trees; future surveys are required to determine if this is a long-term change. Although two surveys per month are scheduled, weather and scheduling reasons meant that the second June survey was postponed until 5th July. The second November survey will be carried out later this month.

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 th April	84	33				117
24 th April	75	25				100
30 th April	74	31	6	1		112
16 th May	39	12	13	6		70
29 th May	51	12	10	1		74
20 th Jun.	50	13	14	1		78
5 th Jul.	52	15	19			86
15 th Jul.	48	12	20			80
24 th Jul.	127	22	16			165
15 th Aug.	83	18	6			107
27 th Aug.	16	15	12			43
11 th Sep.	33	24	9		1	67
24 th Sep.	21	17	7		1	46
3 rd Oct.		7	1		2	10
21 st Oct.	29	7			1	37
4 th Nov.	21	9	2		2	34
18 th Nov.	17	12	2		3	34
11 th Dec.	0	0	0	0	0	0
27 th Dec.	12	1	1			
8 th Jan.	18	6	1			

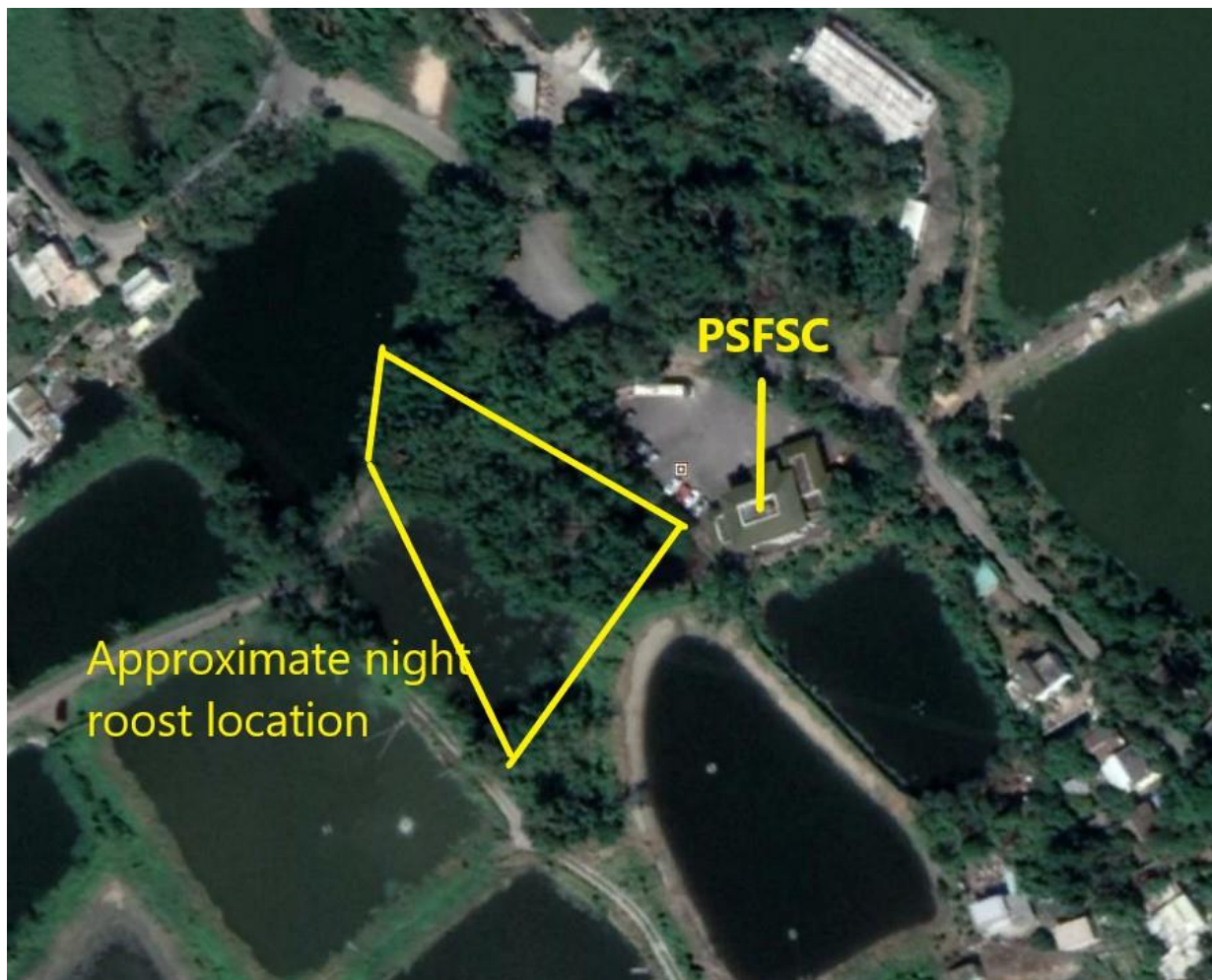


Figure 2. Location of birds as stated in Table 2.