



**Age Structure Assessment of Wintering  
Black-faced Spoonbill in Hong Kong 2004-05**

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Hong Kong SAR Government**

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**The Hong Kong Bird Watching Society Ltd.**



# Age Structure Assessment of Wintering Black-faced Spoonbill in Hong Kong 2004-05

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Survey organized by  
The Hong Kong Bird Watching Society Ltd.

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## Report Available for Public Information

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# Age structure assessment of Wintering Black-faced Spoonbill in Hong Kong, 2004-05

Yat-tung Yu

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## Background

An endangered Black-faced Spoonbill *Platalea minor* has only a small known population of 1,475 birds living in the coastal area of East Asia. Mai Po is the second largest wintering site of this species and over 300 individuals were recorded in this site during winter 2004-05 (Yu 2005). The Agriculture, Fisheries and Conservation Department (AFCD) commissioned the Hong Kong Bird Watching Society Limited (HKBWS) to conduct the study: Age structure assessment of wintering Black-faced Spoonbill in Hong Kong 2004-2005. This is an on-going monitoring since firstly conducted in 1998 (Anon. 1999, 2001a, 2001b, 2002, 2003, 2004). Results of this study provide important information for predicting the trend of the global Black-faced Spoonbill population.

### *Objectives*

This present study aims to assess the age structure of the globally endangered Black-faced Spoonbills *Platalea minor* in winter 2004-05, i.e. the ratio between adult and non-adult of wintering birds in Hong Kong, and comparing the result with the previous studies.

## Methodology

### *Age determination*

The adult and non-adult Black-faced Spoonbills have different colour on their primary feathers on both wings. Adults have all white tips and non-adults have different amount of black colour on tips which are gradually replaced by adult white feathers (e.g. Hancock *et al.* 1992, Melville *et al.* 1999, Anon. 1999, 2001a, 2001b). This study involved taking photographs of the flying birds which show their wing tips, followed by investigating the ratio of adults and non-adults birds present in Mai Po during winter 2004-05.

### *Study area and period*

A total of 18 surveys were conducted in the Mai Po Nature Reserve (Map 1) from November

2004 to April 2005 at interval of  $10 \pm 2$  days (Table 1). This study in previous winters consisted 19 (winter 2002-03) or 20 (winter 2001-02, 2003-04) surveys. The number of surveys depends on the earlier commencement date of the project and it has no remarkably difference to the result of this survey. Several small flocks of the loafing spoonbills scattered widely in Mai Po over the winter contrasting to a large flock usually present in previous winters. It is because water levels in different *gei wai* were fluctuated over the winter and hence more shallow water areas became available for both feeding and loafing of the wintering spoonbills. As a result, the surveys were taken place all over Mai Po to where the spoonbills aggregated, except the Waterfowl Collection and Pond 9. The former remained high water level during winter time and the latter is small in size and has no permanent open area.

A minimum of 20 spoonbills were photographed in each survey in order to recording a total of 60 spoonbills in each month, except in April 2005. It is because very few spoonbills presented in Mai Po in that month, it increased the difficulty to encounter the birds, and thus fewer spoonbills were photographed.

## Results

The first survey started on 6 November 2004 and last one was conducted on 25 April 2005. The total cumulative number of spoonbills recorded was 977 individuals, of which 470 birds were adult identified from their white wing tips and 507 birds were non-adults. The monthly total number of spoonbills recorded is ranged from 87 to 337 birds, while only 20 birds in April. Details are listed in Table 1. The monthly percentage of adult birds was relatively stable and lies in the range of 49 to 55% from November to February and dropped to 33% in March (Figure 1).

The mean percentage of adult birds in winter 2004-05 derived from the monthly mean percentages was  $41\% \pm 22$  (SD) (Table 1). In April 2005, all the spoonbills recorded were non-adult birds that gives bias on the percentage of the non-adult group to the overall mean percentage. By excluding April data, the mean percentage of adult birds in winter 2004-05 was  $49\% \pm 9$  (Table 1), which is marginally higher than the same figure of winter 2003-04 (i.e.  $47\% \pm 11$ ) (Anon. 2004 and Table 2) but lower than the figure of winter 2002-03 (i.e.  $58\% \pm 19$ ) (Anon. 2003). It reflects that the proportion of the non-adult wintering Black-faced Spoonbills in Hong Kong has become stable in previous two winters.

## Discussion

This study was undertaken smoothly over the winter because many spoonbills were present

in Mai Po over the winter. It became difficult to find flocks of spoonbills after mid-February till April. Adults started northward migration in March (Ueta *et al.* 2002) and it is presumed that some more birds might leave Mai Po earlier in this winter. In April, only a total of 10 to 20 non-adult birds remained in Mai Po which also appeared less regularly till the day of the last survey. Notwithstanding that previous studies (e.g. Anon. 2002, 2003) showed that the April data gave bias to the percentage of non-adults and it was treated separately in previous studies as well (Anon. 2002, 2003).

This study was recommended as a long-term monitoring for predicting the health of the Black-faced Spoonbill's population (Anon. 2001a) and it is being fully implemented so far. The proportion of non-adult birds has an increasing trend from winter 2001-02, indicating that the breeding of the Black-faced Spoonbill should be success in recent years. The known global population of the spoonbill also reached to a new high of 1,475 birds and it had a 22% increase from previous census (Yu 2005). These two facts give a hint that the Black-faced Spoonbill is having a healthy trend of increasing its population from previous low numbers.

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Map 1. The Mai Po Nature Reserve – the study site of age structure survey of wintering Black-faced Spoonbills, winter 2004-05.

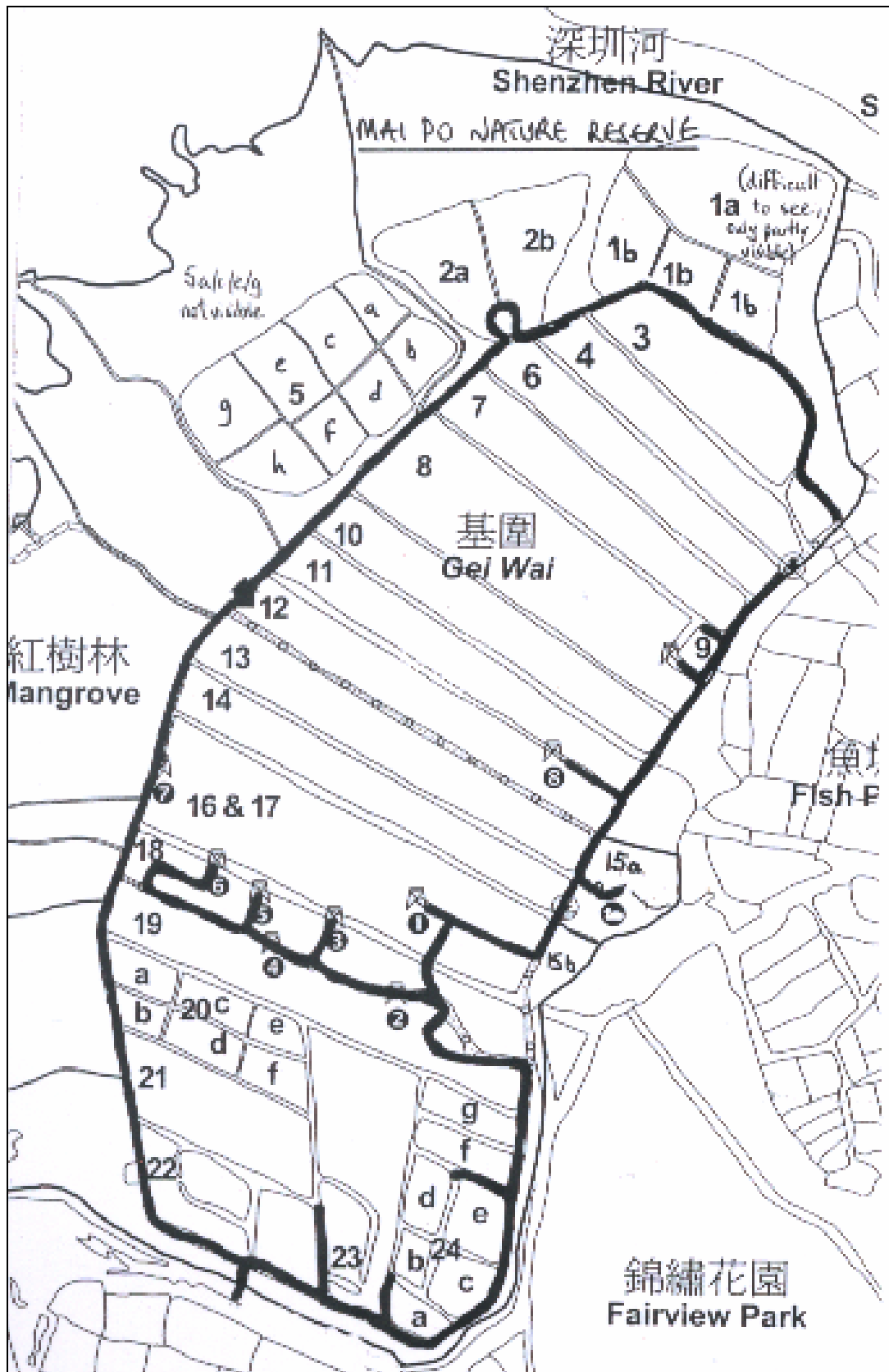




Table 1. Result of age structure survey of the wintering Black-faced Spoonbills in Mai Po, 2004-05.

Session	Date	Adult	Non-adult	Sub-total	Percentage of adults	Percentage of non-adults
1	6 November 2004	15	17	32	47	53
2	14 November	50	48	98	51	49
3	24 November	56	46	102	55	45
	Monthly subtotal	121	111	232	52	48
4	3 December	21	25	46	46	54
5	15 December	46	35	81	57	43
6	25 December	23	13	36	64	36
	Monthly subtotal	90	73	163	55	45
7	4 January 2005	55	45	100	55	45
8	15 January	67	70	137	49	51
9	25 January	44	56	100	44	56
	Monthly subtotal	166	171	337	49	51
10	5 February	26	16	42	62	38
11	15 February	14	7	21	67	33
12	25 February	8	16	24	33	67
	Monthly subtotal	48	39	87	55	45
13	6 March	8	29	37	22	78
14	16 March	34	51	85	40	60
15	26 March	3	13	16	19	81
	Monthly subtotal	45	93	138	33	67
16	6 April	0	10	10	0	100
17	15 April	0	3	3	0	100
18	25 April	0	7	7	0	100
	Monthly subtotal	0	20	20	0	100
Total (include April)		470	507	977	41% $\pm$ 22 (n = 6)	59% $\pm$ 22 (n = 6)
Total (exclude April)		470	487	957	49% $\pm$ 9 (n = 5)	51% $\pm$ 9 (n = 5)

Table 2. Mean percentages of adult Black-faced Spoonbills in Mai Po from winter 1998-99 to winter 2004-05 (data from Anon. 1999, 2001a, 2001b, 2003, 2004).

Winter	Mean percentage and SD
1998-99	56 ± 12*
1999-2000	53 ± 22*
2000-01	61 ± 7^
2001-02	68 ± 4^
2002-03	62 ± 6^
2003-04	47 ± 11^**
2004-05	49 ± 9

\* Data are re-analyzed for this comparison. It is noted that the methodology of studies in these winter is different from the following studies.

^ Data are re-analyzed from the average of monthly mean percentages of adult birds to the average of monthly percentages of the adult numbers to the total numbers.

\*\* Original data was presented as 47% ± 17 (Anon. 2004) but apparently there was a mistake in calculation of the January mean percentage. It is also noted that the 2003-04 winter mean percentage does not include the February data.

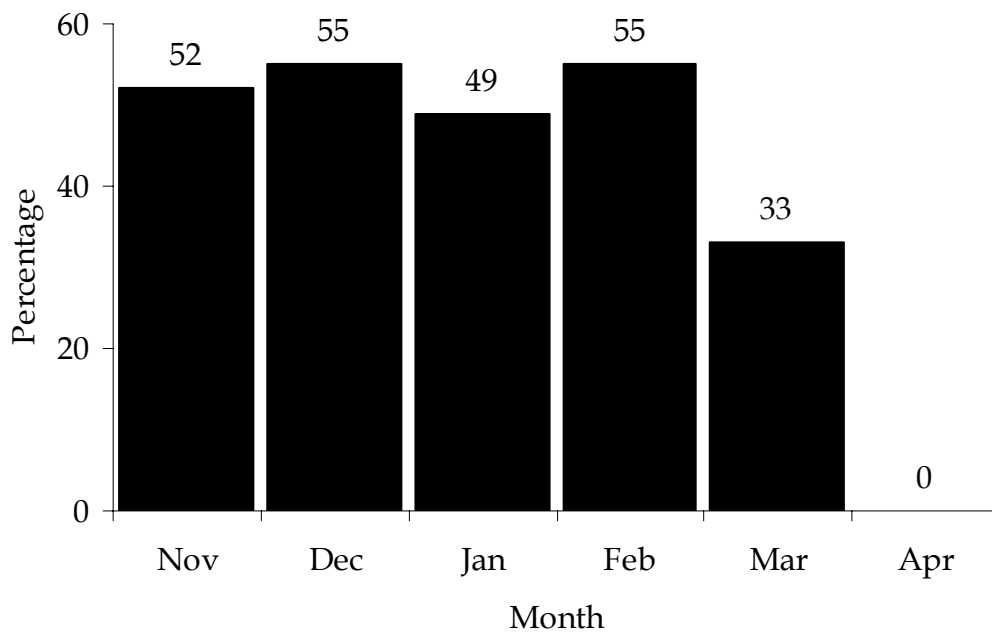


Figure 1. Monthly percentage of adult Black-faced Spoonbill, winter 2004-05.