

**MAI PO INNER DEEP BAY RAMSAR SITE
WATERBIRD MONITORING PROGRAMME**

Programme 2003/04

Egretry Counts

Summer 2003

**EGRETRY COUNTS IN HONG KONG, WITH PARTICULAR REFERENCE TO
THE MAI PO INNER DEEP BAY RAMSAR SITE**

SUMMER 2003 REPORT

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Summary

In the 2003 breeding season in the Deep Bay area, a total of 209 nests of four ardeid species in seven egretries were recorded. Chinese Pond Herons (*Ardeola bacchus* 119 nests) was the dominant species in the Deep Bay area, which comprised 46% of local populations of that species, respectively. The Deep Bay nesting population accounted for 28.4% of the total number of nests in Hong Kong in 2003. The total nest number in Hong Kong in 2003 was 732 nests of five species in 20 egretries. Ha Mei San Tsuen and Tuen Mun were first reported, while the two at To Kau Wan and Shing Uk Tsuen were abandoned. Compared with the 2002 figures, a 24% decrease in the nesting population was noted in both the Deep Bay area and Hong Kong. Decline in number of nests at the Mai Po Village egretry may be related to road maintenance works while the abandonment of the Shing Uk Tsuen egretry should relate to an unauthorized site formation nearby. For the nest number decrease in Deep Bay or all over HK, an explanation is difficult to make as no prey and wetland quality monitoring can be referenced.

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Chinese Pond Heron at Tam Kon Chau (by Henry Lui)



Cattle Egret in breeding plumage (by Henry Lui)

1 INTRODUCTION

Breeding activity is an important aspect of population dynamics. Nest count is the fundamental part of long-term monitoring studies of tree nesting ardeids in Mediterranean Europe (Tourenq *et al.* 2000), Australia (McKilligan 2001) and the United States (Gawlik *et al.* 1998). In East and Southeast Asia long-term records of breeding populations of colonial nesting ardeids only exist in the Hong Kong Special Administrative Region (HKSAR) and Vietnam (Lansdown *et al.* 2000). Reporting of the number of nesting pairs in Hong Kong, organized by the Hong Kong Bird Watching Society, started as early as 1958. This kind of record submission was suspended between 1975 and 1989 (Young and Cha 1995). Recording was far from complete, and on many occasions only breeding species were recorded with no count of nesting pairs made. In addition, not all colonies were counted each year.

The recording of breeding populations of egretries in the Deep Bay area, as part of the long-term monitoring of waterbird abundance in the Mai Po and Inner Deep Bay Ramsar Site, started in 1998. Both breeding species and the number of nesting pairs, in the Deep Bay area are recorded. This information will be useful for the long-term monitoring of local ardeid nesting population, in particular those in the Inner Deep Bay area.

2 METHODS

Egretries between 2001 and 2002 were surveyed between March and July 2003 (Table 1, Figure 1). In addition, potential new nesting sites were also visited. New egretries were located by personal observations. Active nests determined by the presence of incubating adults or chicks, were counted from vantage points or by the walk-and-count method at all egretries. In addition, the nesting substratum was also identified. The nesting population egretry surveyed more than once was taken to be the sum of the highest count of the number of nests of each species.

Table 1. Dates of egret surveys in the 2003 breeding season (*: egretries in Deep Bay area). Ha Mei San Tsuen and Tung Mun were first reported in this year. Shing Uk Tsuen and To Kau Wan egretries were abandoned this year.

Egrettry	Date
Mai Po Village*	19 Apr, 18 May
Tam Kon Chau*	19 Apr,
Pak Nai*	21 May
Ngau Hom Shek*	21 May
Ho Sheung Heung	23 Apr, 23 May, 25 June
Tai Po Market	16 May
Centre Island	17 May
Penfold Park	15 May
A Chau	13 Mar, 27 Apr, 23 June
Stonecutters	27 Apr, 17 May
Lam Tsuen	16 May
Tai O	14 May
Ho Pui	28 May
Ma On Kong	28 May
Mai Po Lung Village*	18 May
Small Traders New Village*	1 May
Ha Che	7 May, 18 June, 15 July
Tai Tong	11 May
Ha Mei San Tsuen*	mid July
Tuen Mun	11 May
Shing Uk Tsuen*	23 Apr
To Kau Wan	17 May

3 RESULTS and DISCUSSION

3.1 Breeding population in the 2003 breeding season

A total of 732 nests were recorded at 20 egrettries in Hong Kong (Figure 1, Appendices 1 - 21). Underestimation of active nests may occur at A Chau, Centre Island and the Stonecutters egrettries as some nests may hide in dense vegetation. There was a 24% decrease in total nests between 2002 and 2003. Ha Mei San Tsuen and Tuen Mun were first reported but the two colonies at To Kau Wan and Shing Uk Tsuen were abandoned in 2003. In addition, a second patch of nesting egrettry at Ha Che was found. This new patch Ha Che egrettry is located about 300 m west of the original Ha Che egrettry. The Tai Tong egrettry, which was mentioned in the 2002 report, was counted this year. The egrettries at Pak Nai and the Stonecutters moved to new locations near their former sites.

The highest number of nests was recorded at the A Chau Egrettry (27% of total nests in Hong Kong) while the lowest was at Ha Che II (1.1% of total nests in Hong Kong) (Table 2). The A Chau

Egretry contained the highest number of nests of Great Egrets (*Egretta alba*) (56% of the total number of nests), Black-crowned Night Herons (*Nycticorax nycticorax*) (82% of the total number of nests), and Cattle Egrets (*Bubulcus ibis*) (60% the total number of nests) in Hong Kong. With regard to Little Egrets, the Mai Po Village Egret and Penfold Egret (14% of total Little Egret nests in Hong Kong in each colony) are the two most important sites, while the Ho Sheung Heung Egret is the main nesting site of Chinese Pond Herons (*Ardeola bacchus*) (26% of the total Chinese Pond Heron nests in Hong Kong).

Chinese Pond Heron was the numerical dominant breeding species in Hong Kong (35% of the total number of nests), while Great Egrets were the least numerous (7% of the total number of nests, Table 2). Little Egrets and Chinese Pond Herons are the most widespread species. Little Egrets bred at 16 egrettries, while Chinese Pond Herons bred at 14 egrettries. The nesting of Great Egret and Black-crowned Night Heron was only found in only three and four egrettries, respectively.

Table 2. The number of nests at surveyed egrettries in Hong Kong in the 2003 breeding season (*: egrettries in Deep Bay area).

	Great Egret	Little Egret	Black-crowned Night Heron	Chinese Pond Heron	Cattle Egret	Total	%
1. Mai Po Village*	2	42		14	3	61	8.3
2. Tam Kon Chau*				37		37	5.1
3. Pak Nai*		18				18	2.5
4. Ngau Hom Shek*		5		8		13	1.8
5. Ho Sheung Heung		4		64	6	74	10.6
6. Tai Po Market		4	11			15	2.0
7. Centre Island	22	16	9		1	48	6.6
8. Penfold Park		30		3	3	36	4.9
9. A Chau	30	12	115	1	39	197	26.9
10. Stonecutters		22	6			28	3.8
11. Lam Tsuen		4		13		17	2.3
12. Tai O		16				16	2.2
13. Ho Pui					12	12	1.6
14. Ma On Kong				17		17	2.3
15. Mai Po Lung Village*		1		36		37	5.1
16. Small Traders New Village*		16		7		23	3.1
17. Ha Che I		3		33		36	4.9
18. Tai Tong				8	2	10	1.4
19. Ha Mei San Tsuen*		3		17		20	2.7
20. Tuen Mun		17				17	2.3
Total	54	213	141	258	66	732	100
%	7.3	28.9	1.2	35.1	9.0	100.0	
No. of egrettries that the particular ardeid was found	3	16	4	14	7		

3.2 Disturbances at egretries

(i) The maintenance works by the Highways Department (HyD) and Drainage Services Department (DSD) in April 2003 may be responsible for the decline in nesting population in the Mai Po Village egretty. Grass-cutting was carried out inside the egretty on 17 April 2003. Wheelbarrows were taken back from the drainage channel passing through the nesting colony to a light van with plastic DSD logo on 3 May 2003 indicating that maintenance work has been conducted. The identified impact due to these maintenance works was human disturbance. Presence of human in close vicinity of nesting colony in early stage of breeding season may have discouraged the ardeids from attempting to nest.

(ii) In late April 2003, the Shing Uk Tsuen egretty was first reported to be disturbed by clearance of grass. Fresh egg shells were found on the ground and the understorey of the site was thought to be disturbed by bulldogging. The presence of fresh egg shells indicated that breeding had started at the time when the disturbance took place. The abandonment of the Shing Uk Tsuen may be related to a nearby unauthorized site formation from abandoned fields and fishponds to open ground.

(iii) In the Mai Po Lung Village egretty, a site visit on 1 August 2003 revealed that the egretty was threatened by an unauthorized expansion of an open storage. Part of the egretty had been physical fenced by green metal board of about two meter high. It is expected that disturbances to the breeding birds, in particular to the nestlings, were serious during the fencing as the boundary of the expansion is in close proximity to the egretty. The Planning Department invited comments from environmental NGOs about the planning application for the open storage expansion after receiving a letter of concern from Kadoorie Farm and Botanic Garden. With consideration of objections from the (Hong Kong Bird Watching Society?), WWFHK and KFBG, the Town Planning Board rejected the planning application of this expansion on 19 September 2003.

(iv) The Ngau Hom Shek egretty was lost to the Deep Bay Link project in 2003. Various options of highway alignments were considered and ranked during the environmental impact assessment study of the Deep Bay Link project. As the ecological impact to ardeids from feeding habitat loss is likely to more severe than lost of nesting habitats, the one caused lost of Ngau Hom Shek egretty but least net loss of wetland was chosen (Ove Arup & Partners Hong Kong Limited. 2002). Trees and bamboos on which herons and egrets build their nests were removed after the 2002 breeding season and before the 2003 breeding season to avoid unnecessary mortality of ardeid birds due to construction works. All mature bamboo (*Bambusa sp.*) in the former Ngau Hom Shek egretty were transplanted to the western edge of compensation wetlands of the project at Ngau Hom Shek, provide an alternative potential egretty (*ibid.*).

3.3 Egrettries in Deep Bay

A total of 209 nests of four species in seven egrettries in the Deep Bay area were found during the 2003 breeding season (Table 2 and 3). The Tam Kon Chau Egrettry is the only egrettry inside the Mai Po Inner Deep Bay Ramsar Site. Ha Mei Shan Tsuen was a new egrettry in the Deep Bay area. No Black-crowned Night Herons was recorded nesting in Deep Bay area in 2003. The total number of nests in egrettries in the Deep Bay area accounted for 28% of the total number of nests in Hong Kong (Table 3). Chinese Pond Herons was the dominant species in the Deep Bay area, and comprised 46% of local population.

Table 3. The relative importance of Deep Bay egrettries to other egrettries in Hong Kong in the 2003 breeding season. Deep Bay egrettries are Mai Po Village, Tam Kon Chau, Pak Nai, Ngau Hom Shek, Mai Po Lung Village, Small Traders New Village, and Ha Mei San Tsuen.

Species	No. of nests in Deep Bay	Total no. of nests in Hong Kong	Deep Bay nests as % of all nests in Hong Kong
Great Egret	2	54	3.7
Little Egret	85	213	39.9
Black-crowned Night Heron	0	141	0.0
Chinese Pond Heron	119	258	46.1
Cattle Egret	3	66	4.5
Total	209	736	28.4

3.4 Nesting habitats

Bamboo was the main nesting habitat of ardeids nesting in North and North West New Territories (including Ho Sheung Heung, Mai Po Lung Village) and Ho Pui (Table 4). All nests at the Tam Kon Chau Egrettry were built on Banyan trees (*Ficus microcarpa*). Exotic trees and were used by nesting ardeids in Mai Po Village (Lemon-scented Gum *Eucalyptus citriodora*) and Tuen Mun egrettries (Queen Crape-myrtle *Lagerstroemia speciosa*) respectively. The majority of nests were in the A Chau Egrettry were built on Cuban Bast (*Hibiscus tiliaceus*).

Table 4. The use of bamboo and other plants by ardeids as nesting habitats in 2003.

	Bamboo	Non bamboo plants*	Remarks
1. Mai Po Village	+	<i>Ficus microcarpa</i> <i>Melaleuca leucadendron</i>	
2. Tam Kon Chau		<i>Ficus microcarpa</i>	
3. Pak Nai	+		
4. Ngau Hom Shek	+		
5. Ho Sheung Heung	+		
6. Tai Po Market		+	No detailed plant survey was conducted
7. Centre Island			No detailed plant survey was conducted
8. Penfold Park		<i>Ficus microcarpa</i>	
9. A Chau		Mainly <i>Hibiscus titiaces</i> , and <i>Mallotus mamiculatus</i> ,	
10. Stonecutters			No detailed plant survey was conducted
11. Lam Tsuen	+		
12. Tai O			No detailed plant survey was conducted
13. Ho Pui	+	Lychee and Longgan trees	
14. Ma On Kong		Lychee and Longgan trees	
15. Mai Po Lung Village*	+		
16. Small Traders New Village*	+		
17. Ha Che			No detailed plant survey was conducted
18. Tai Tong	+		
19. Ha Mei San Tsuen*	+		
20. Tuen Mun		<i>Lagerstroemia speciosa</i>	

3.5 Recommendation

In considering the disturbances at egretries, it is recommended that egretty locations should be circulated within relevant government departments to increase the awareness of the existence of egretries. Therefore, the potential impact on egretries should be taken into account when maintenance works and planning applications are planned and considered, respectively. The recommended list should be circulated in the Planning Department, in particular Central Enforcement and Prosecution Section, Lands Department, Environmental Protection Department, Drainage Department, Territorial Development Department and Highways Department. Maintenance works close to nesting colonies should be arranged outside breeding season (March to July) as far as possible.

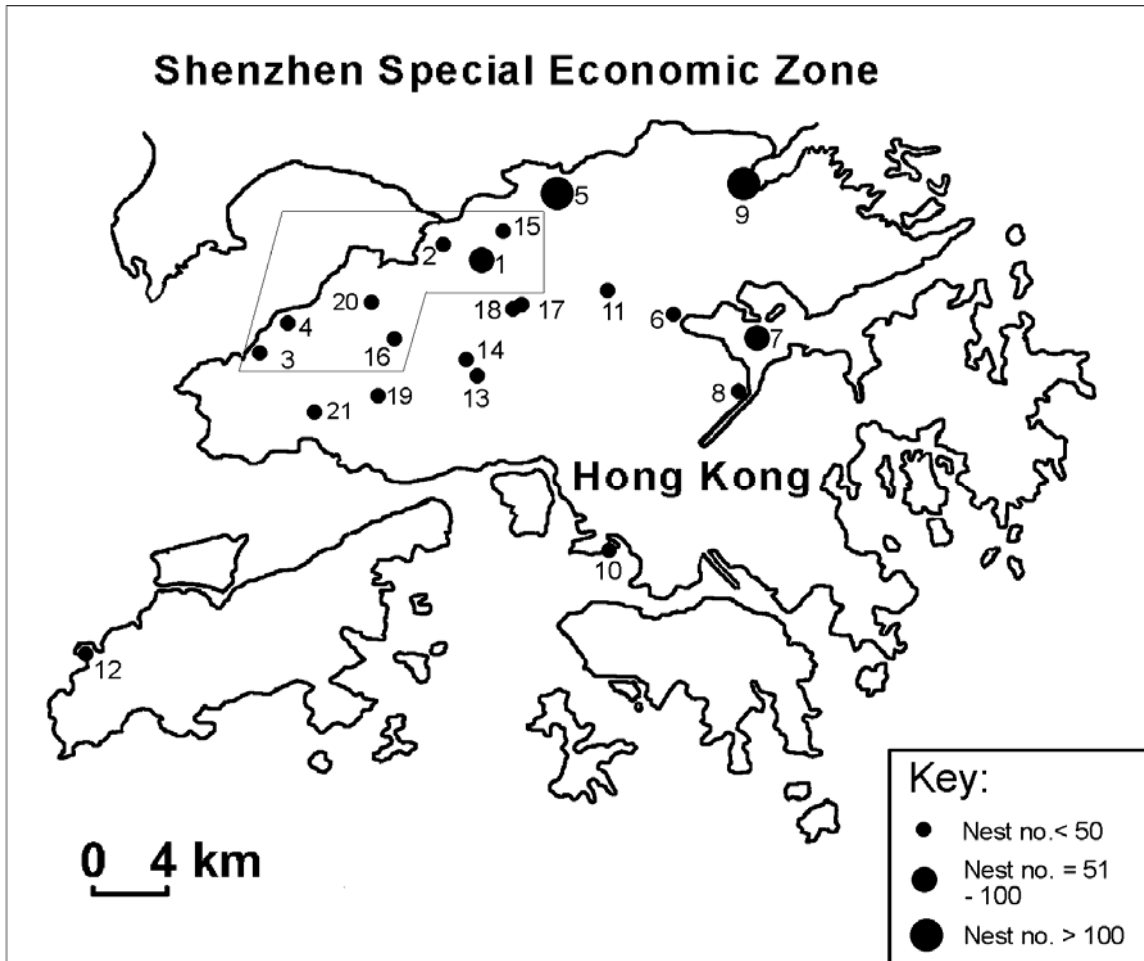
4. ACKNOWLEDGEMENTS

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Figure 1. Locations of egrettries in Hong Kong. Egrettries in the Deep Bay area are enclosed. (1: Mai Po Village, 2: Tam Kon Chau, 3: Pak Nai, 4: Ngau Hom Shek, 5: Ho Sheung Heung, 6: Tai Po Market, 7: Centre Island, 8: Penfold Park, 9: A Chau, 10: Stonecutters, 11: Lam Tsuen, 12: Tai O, 13: Ho Pui, 14: Ma On Kong, 15: Mai Po Lung Tsuen, 16: Small Traders New Village and 17 Ha Che, 18: Tai Tong, 19: Ha Mei San Tsuen and 20: Tuen Mun).



APPENDICES

Appendix 1. Number of nests at the Mai Po Village Egretty (NC: not count; *: all CPH nests were found at a nearby sub-egretty)

	3 May	18 May	Max
Great Egret		2	2
Little Egret	27	42	42
Chinese Pond Heron*	NC	14	14
Cattle Egret	3	3	3
Total	30	61	61

Appendix 2. Number of nests at the Tam Kon Chau Egretty

	19 Apr	18 May	Max
Chinese Pond Herons	31	37	37
Total	31	37	37

Appendix 3. Number of nests at the Pak Nai Egretty

	21 May
Little Egrets	18
Total	18

Appendix 4. Number of nests at the Ngau Hom Shek Egretty.

	21 May
Little Egrets	5
Chinese Pond Herons	8
Total	13

Appendix 5. Number of nests at the Ho Sheung Heung Egretty

	23 Apr	23 May	25 Jun	Max
Little Egrets	4	4	2	4
Chinese Pond Herons	25	64	7	64
Cattle Egrets	6	3	2	6
Total				74

Appendix 6. Number of nests at the Tai Po Market Egretty (+: Present).

	2 May	16 May	Max
Great Egrets			
Little Egrets	+	4	4
Black-crowned Night Herons	3	11	11
Chinese Pond Herons			
Total	3	15	15

Appendix 7. Number of nests at the Centre Island Egrettry

	17 May
Great Egret	22
Little Egret	16
Black-crowned Night Heron	9
Cattle Egret	1
Total	48

Appendix 8. Number of nests at the Penfold Park Egrettry.

Penfold Park	15 May
Little Egret	30
Chinese Pond Heron	3
Cattle Egret	3
Total	36

Appendix 9. Number of nests at the A Chau Egrettry (NC: not count). No counting of Great and Little Egrets in June as less than 10 pairs were seen to breed.

	16 Mar	27 Apr	25 May	23 Jun	Max
Great Egret	28	30	18	NC	30
Little Egret	12	10	11	NC	12
Black-crowned Night Heron	27	55	96	115	115
Chinese Pond Heron			1		1
Cattle Egret		18	25	39	39
Total	67	113	151	154	197

Appendix 10. Number of nests at the Stonecutters Egrettry

	27 Apr	17 May	Max
Little Egret	10	22	22
Black-crowned Night Heron	3	6	6
Total	13	28	28

Appendix 11. Number of nests at the Lam Tsuen Egrettry

	16 May
Little Egrets	4
Chinese Pond Herons	13
Total	17

Appendix 12. Number of nests at the Tai O Egrettry.

	14 May
Little Egrets	16
Total	16

Appendix 13. Number of nests at the Ho Pui Egretty.

	8 May	28 May	Max
Cattle Egrets	12	10	12
Total	12	10	12

Appendix 14. Number of nests at the Ma On Kong Egretty.

Ma On Kong	8 May	28 May	Max
Chinese Pond Herons	8	17	17
Total	8	17	17

Appendix 15. Number of nests at the Mai Po Lung Tsuen Egretty

	19 Apr	18 May	Max
Chinese Pond Herons	36	29	36
Little Egrets		1	1
Total	36	30	37

Appendix 16. Number of nests at the Small Traders New Village Egretty.

	1 May
Little Egrets	16
Chinese Pond Herons	7
Total	23

Appendix 17. Number of nests at the Ha Che I Egretty

	7 May	18 Jun	Max
Little Egrets	2	3	3
Chinese Pond Herons	16	25	25
Total	18	28	28

Appendix 18. Number of nests at the Ha Che II Egretty

	15 Jul
Chinese Pond Herons	8
Total	8

Appendix 19. Number of nests at the Tai Tong Egretty

	11 May
Chinese Pond Herons	8
Cattle Egrets	2
Total	10

Appendix 20. Number of nests at the Ha Mei San Tsuen Egrettry

	mid July
Little Egrets	3
Chinese Pond Herons	17
Total	20

Appendix 21. Number of nests at the Tuen Mun Egrettry

	11 May
Little Egrets	17
Total	17