Committee Paper NCSC 7/06

Advisory Council on the Environment
Nature Conservation Subcommittee

Egretries in Hong Kong

Purpose

The Agriculture, Fisheries and Conservation Department (AFCD) has commissioned the Hong Kong Bird Watching Society (HKBWS) to carry out a territory-wide egretry survey in Hong Kong since 1998. This paper provides an overview of the egretries in Hong Kong based on a review of historical records and results of the surveys carried out by the HKBWS. It also describes AFCD's work in conservation and management of egretries.

Background

2. Members of the family Ardeidae (i.e. herons and egrets) nest in colonies forming an egretry, which sometimes contain different ardeid species, with the size ranged from a few pairs to several thousands. In Hong Kong, there are five main species of ardeids, namely Little Egret (*Egretta garzetta*), Great Egret (*Egretta alba*), Cattle Egret (*Bubulcus ibis*), Black-crowned Night Heron (*Nycticorax nycticorax*) and Chinese Pond Heron (*Ardeola bacchus*), currently breeding in colonies. The numbers of active nest/nesting pair of ardeids in breeding colonies of Hong Kong were monitored by volunteers of the HKBWS as early as 1950's and up to 1975. However, such reporting was suspended between 1975 and 1989.

3. In Hong Kong, egrets and herons generally breed between mid March and August each year. The breeding periods may vary between different locations and species, or affected by poor weather conditions. For example, high frequency of typhoon in a particular year may lengthen the breeding period to September or October.

4. Egrets and herons nest in colonies and the egretries may be used

for many years in succession. Protecting the breeding habitats from disturbances is therefore important for the conservation of these species in Hong Kong. In addition, Great Egret nests in Hong Kong represents about half of the known nests in the Southern China and are of regional importance.

Survey

Methodology

5. The present review has made reference to HKBWS' historical records on known egretries[Note 1] and other internal records of AFCD. In 1998, AFCD commissioned the HKBWS to carry out a systematic and territory-wide egretry survey as part of the waterbird monitoring programme for the Mai Po Inner Deep Bay Ramsar Site. During the period between 1998 and 1999, the Conservancy Association was also involved in the monitoring work.

6. An active egretry or nesting colony is defined as a locality where egrets and herons nest colonially. All active egretries in Hong Kong were surveyed at least once between March and August. Active nests determined by the presence of incubating adults or chicks, were counted directly from vantage points or by the walk-and-count method at all colonies. For some sites in remote islands, boat surveys were also used to minimize disturbances.

An Overview of Egretries in Hong Kong

7. According to the historical records and recent survey results from HKBWS, over 40 egretries have been reported in Hong Kong from 1958 up to 2005. Currently, there are about 20 active egretries and the rest have been abandoned. It is noted that egretries are relatively mobile as egrets and herons may search for alternative nesting sites and abandon the old one due to disturbance, food availability or other unknown reasons. There are at least 20 abandoned egretries and the majority of them had

[1] Young and Cha (1995) The history and status of egretries in Hong Kong with notes on those in the Pearl River Delta, Guangdong, China. Hong Kong Bird Report 1994: 166-215, Dec. 1995.

only been used for less than three breeding seasons before they were abandoned. The egretry in Shuen Wan was once abandoned in late 1990s but was re-colonized by several pairs of Chinese Pond Herons since 2000. While certain egretries were abandoned at times, new egretries have been established and the total number of active egretries in Hong Kong remained rather stable in recent years i.e. ranged from 18 to 21 from year 2000 to 2005.

8. In terms of the length of colonization, three egretries had been used for more than 20 years, namely Mai Po Village, Yim Tso Ha and A Chau. The existing egretry at Mai Po Village has the earliest breeding records since 1958, and was once the largest egretry in Hong Kong with over 500 nests recorded in 1988. The egretry is still being actively used as breeding habitat but the location has been shifted slightly. The Egretry at Yim Tso Ha, after almost 30 years of colonization, was abandoned in 1993. It is believed that the populations used to breed at Yim Tso Ha have moved to A Chau, which is a small island free from human disturbance. Currently, A Chau is the largest egretry in Hong Kong and is also an important night roosting site for ardeids in winter.

9. The egretries appear to be smaller in size and scattered in different locations in recent years. The most peculiar year for comparison was 1992 when only four egretries were recorded with some 800 nests, i.e. an average of 200 nests per egretry; whereas in 2005, there are 20 egretries with a total of over 1000 nests recorded and A Chau Egretry is the only big egretry with over 200 nests.

10. The majority of egretries are located in the Northern and Western parts of the New Territories **(Annex 1)**. There is so far no egretry reported on Hong Kong Island and Sai Kung District. Ardeids are wetland-dependent species and their populations and breeding success are closely related to food availability and the size of wetland habitats available for foraging. As such, the distribution of egretries in Hong Kong is related to the locations of suitable foraging habitats, e.g. shallow coastal waters, inter-tidal mudflats, freshwater marshes, mangroves and fishponds. Local studies reported that the foraging distances for egrets and herons range from about 2 km to 4 km.

11. The total number of nests from all egretries in the past six year remained rather stable i.e. ranged from about 800 to 1000 nests. The numbers of Great Egret, Little Egret and Cattle Egret are also relatively stable **(Annex 2)**. The number of nests of Chinese Pond Heron has been gradually increased from 125 in 2000 to 350 in 2005. On the other hand, the number of nests of Black-crowned Night Heron has been decreased from 254 in 2000 to 170 in 2005.

Detailed Analysis by Species

12. The summary of egretry counts in 2005 with a breakdown by species at different egretries is set out at **Annex 3**. The species with the highest number of nests in the territory is Chinese Pond Heron, followed by Little Egret. These two species are also the most widespread species. Out of the 20 egretries recorded in 2005, Chinese Pond Heron bred at 13 colonies and Little Egret bred at 16 of them.

13. On the other hand, breeding records of Great Egret could only be found at two egretries at A Chau and Centre Island. These two egretries are each located on a small island surrounded by sea which indicated that the Great Egret preferred habitats relatively isolated from human inhabitants. Black-crowned Night Heron and Cattle Egret tend to be relatively restricted in distribution with six and seven breeding localities respectively in 2005.

14. Both egretries at A Chau and Centre Island have the highest species diversity as four species of egrets and herons bred at these sites. Indeed, over 50% of the nests of Great Egret, Black-crowned Night Heron and Cattle Egret were recorded in one single site at A Chau Egretry. Both sites at A Chau and Centre Island are considered important for conservation of egrets and herons in Hong Kong.

15. Interestingly, the Chinese Pond Heron were absent from both A Chau and Centre Island egretries, but were the dominant or the only specie recorded in 13 egretries. This may suggest that the Chinese Pond Heron have a different niche from other ardeids species, or the small sized Chinese Pond Heron is less competitive in securing a nesting place amongst other breeding ardeids at the same location. Based on field

observation, the nests in egretries of Chinese Pond Herons were more scattered, particularly in bushes amongst village environs. Having reviewed the number of egretries in which they bred and the respective locations, it seems that Chinese Pond Heron along with Little Egret could tolerate a relatively higher level of human disturbance, implying that the two species are more adaptive in selecting their nesting habitats.

16. In summary, A Chau is the most important egretry that supports the highest number of nests (268 nests/nesting pairs or 26% of total number of nests surveyed) and four different ardeids species including the Great Egret which is regionally important. Similarly, Centre Island is also important as it is one of the two egretries that supports the same four species.

Conservation and Management of Egretries

17. The Wild Animals Protection Ordinance, Cap. 170 provides for the protection of all wild birds, including egrets and herons, and their eggs and nests against hunting, trapping and willful disturbance in Hong Kong. Moreover, the Forests and Countryside Ordinance, Cap. 96 provides for the protection of trees in forests and plantations on Government land. Hence, the trees, nests, nestlings and the breeding pairs of the egretries are all protected by legislation. Damaging the trees or disturbing the nests at an egretry is an offence.

18. In addition, active conservation management work has been carried out at important egretries to keep the nesting habitat in good conditions. For instance, Mikania at the egretries in A Chau, Centre Island and Shuen Wan were cleared regularly, and a total of about 4,000 tree seedlings have also been planted in these egretries. The clearance and tree planting work were carried out outside the breeding season in order to avoid unnecessary disturbance to the nestling egrets and herons.

19. Control of direct and indirect impacts of developments and inappropriate land uses on egretries can be achieved through listing of Site of Special Scientific Interest (SSSI). Listing of SSSI is an administrative measure to ensure that government departments concerned are aware of the scientific interest of the site in question and that due

consideration is given to conservation when developments in or near these sites are proposed. Important egretries have been listed as SSSI and there are currently seven SSSIs which have been listed because of its scientific importance as egretries at the time when they were listed.

20. Egretries which are covered by statutory plans could be zoned with conservation-related zonings such as "Conservation Area" where appropriate to enjoy the statutory protection from development under the Town Planning Ordinance, Cap. 131. The Environment Impact Assessment Ordinance, Cap 499, also stipulates requirements in respect of impact of projects on ecology. For example, for any designated projects to be carried out in or in the proximity of egretries, the potential impacts on the egretries would be assessed and appropriate mitigation would be implemented to avoid or minimize such impacts.

Recommendations

21. It is recommended to monitor all active egretries in Hong Kong on an ongoing basis. AFCD should maintain an inventory of active egretries based on the most updated surveys. Recommendations such as revision of boundaries, conservation and management work should be made where necessary.

Advice Sought

22. Members are invited to note the survey results, AFCD's conservation work on egretries and comment on the recommendations set out in para. 21.

Agriculture, Fisheries and Conservation Department
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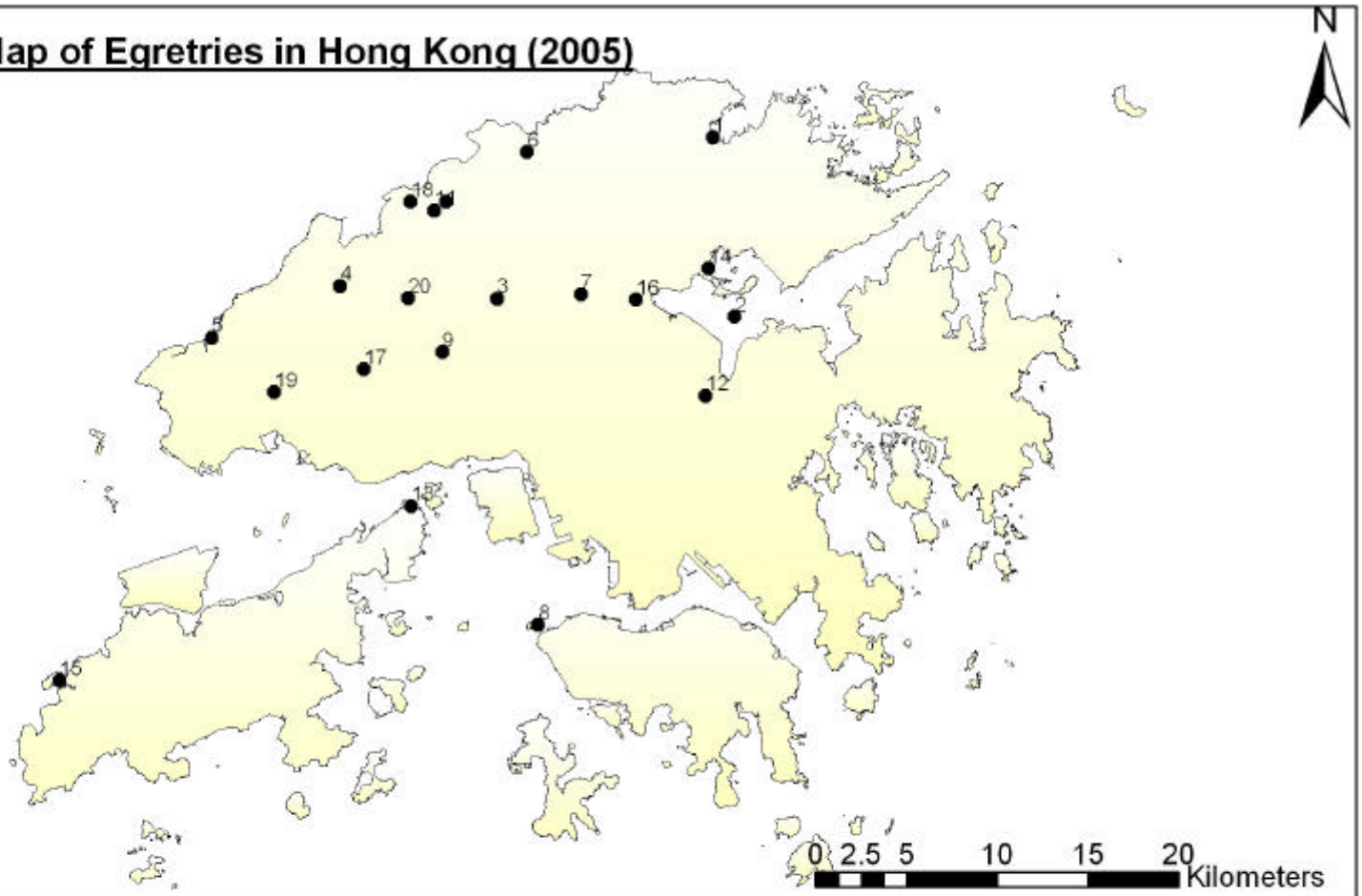
Annex 1

Distribution Map of Egretries in Hong Kong (2005)

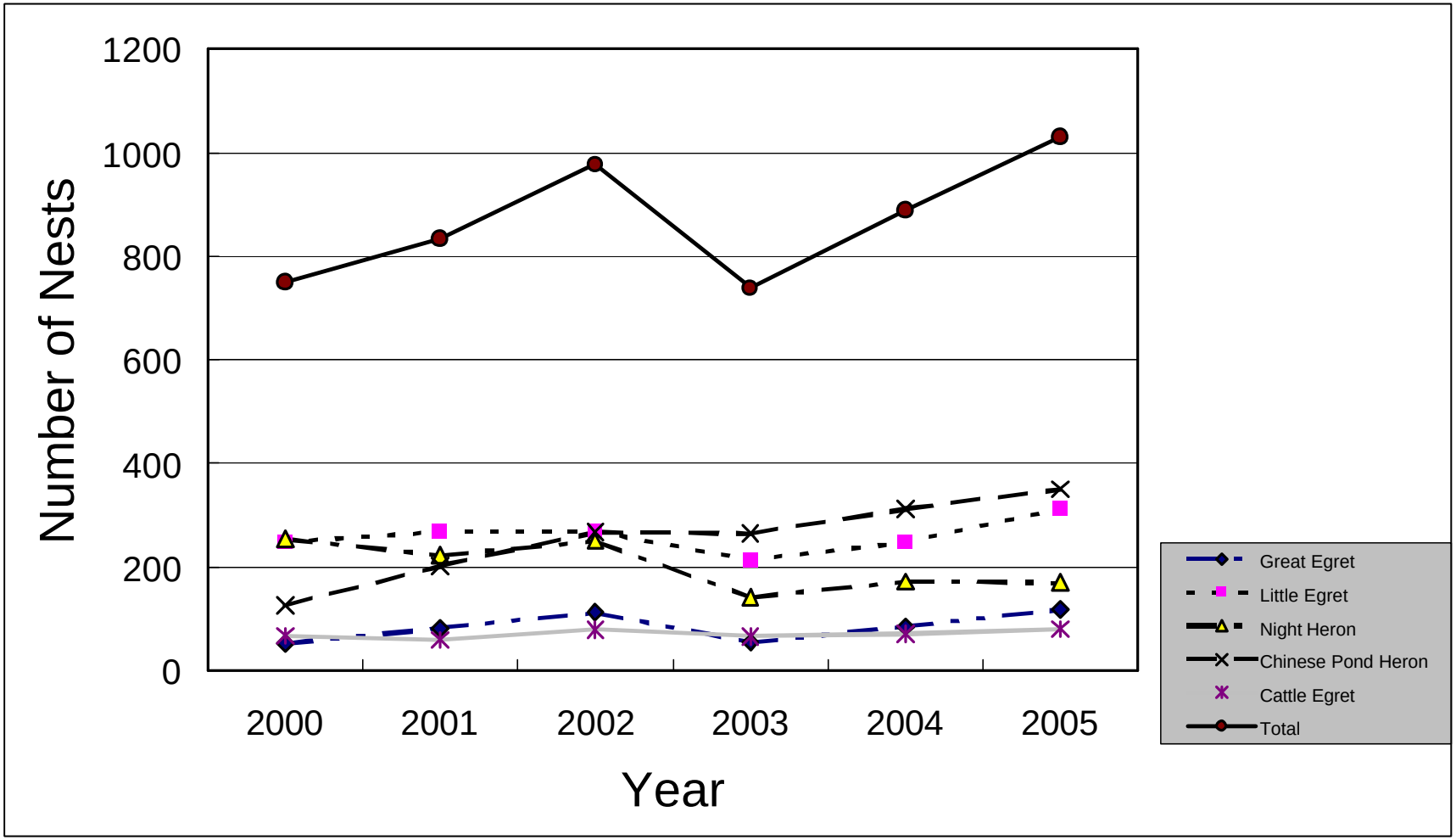


Legend:

1. A Chau
2. Centre Island
3. Ha Che
4. Ha Mei San Tsuen
5. Pak Nai
6. Ho Sheung Heung
7. Lam Tsuen
8. Little Green Island
9. Ma On Kong
10. Mai Po Lung Village
11. Mai Po Village
12. Penfold Park
13. San Po Tsui
14. Shuen Wan
15. Tai O
16. Tai Po Market
17. Tai Tong
18. Tam Kon Chau
19. Tuen Mun
20. Tung Shing Lane

Annex 2

Total number of nests of five ardeid species between 2000 and 2005



Annex 3

Summary of egretry counts in 2005

Location	Number of active nests or breeding (% of nest / breeding pair)					
	LE	GE	CE	NH	CPH	Total
A Chau	29 (9.3%)	79 (66.9%)	49 (61.3%)	111 (65.3%)	0 (0%)	268 (26%)
Ho Sheung Heung	17 (5.4%)	0 (0%)	12 (15%)	0 (0%)	73 (20.9%)	102 (9.9%)
Mai Po Village	37 (11.9%)	0 (0%)	0 (0%)	0 (0%)	51 (14.6%)	88 (8.5%)
Tung Shing Lane	36 (11.5%)	0 (0%)	3 (3.8%)	0 (0%)	36 (10.3)	75 (7.3%)
Centre Island	17 (5.4%)	39 (33.1%)	3 (3.8%)	15 (8.8%)	0 (0%)	74 (7.2%)
Mai Po Lung Village	5 (1.6%)	0 (0%)	0 (0%)	0 (0%)	56 (16%)	61 (5.9%)
Pak Nai	40 (12.8%)	0 (0%)	1 (1.3%)	0 (0%)	11 (3.1%)	52 (5%)
San Po Tsui	25 (8%)	0 (0%)	0 (0%)	25 (14.7%)	0 (0%)	50 (4.9%)
Tai O	30 (9.6%)	0 (0%)	0 (0%)	8 (4.7%)	0 (0%)	38 (3.7%)
Ha Mei San Tsuen	8 (2.6%)	0 (0%)	0 (0%)	0 (0%)	26 (7.4%)	34 (3.3%)
Tai Tong	1 (0.3%)	0 (0%)	10 (12.5%)	0 (0%)	17 (4.9%)	28 (2.7%)
Ha Che	3 (1%)	0 (0%)	0 (0%)	0 (0%)	24 (6.9%)	27 (2.6%)
Tuen Mun	27 (8.7%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	27 (2.6%)
Penfold Park	17 (5.4%)	0 (0%)	2 (2.5%)	0 (0%)	5 (1.4%)	24 (2.3%)
Little Green Island	15 (4.8%)	0 (0%)	0 (0%)	8 (4.7%)	0 (0%)	23 (2.2%)
Tam Kon Chau	0 (0%)	0 (0%)	0 (0%)	0 (0%)	23 (6.6%)	23 (2.2%)
Lam Tsuen	0 (0%)	0 (0%)	0 (0%)	0 (0%)	11 (3.1%)	11 (1.1%)
Ma On Kong	0 (0%)	0 (0%)	0 (0%)	0 (0%)	11 (3.1%)	11 (1.1%)
Tai Po Market (Tai Po Egretry)	5 (1.6%)	0 (0%)	0 (0%)	3 (1.8%)	0 (0%)	8 (0.8%)
Shuen Wan	0 (0%)	0 (0%)	0 (0%)	0 (0%)	6 (1.7%)	6 (0.6%)
Total in 2005	312 (100%)	118 (100%)	80 (100%)	170 (100%)	350 (100%)	1030 (100%)

Footnotes: LE-Little Egret; GE-Great Egret; CE-Cattle Egret; NH-Black-crowned Night Heron; CPH-Chinese Pond Heron;