

Contract Reference No. AFCD/SQ/49/14/C

**Mai Po Inner Deep Bay Ramsar Site
Waterbird Monitoring Programme
2014 - 15**

Monthly Waterbird Monitoring

Biannual Report 2

October 2014 to March 2015



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Mai Po Inner Deep Bay Ramsar Site Waterbird Monitoring Programme 2014-15

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**Mai Po Inner Deep Bay Ramsar Site
Waterbird Monitoring Programme**

**Monthly Waterbird Monitoring
Biannual Report 2 (October 2014 to March 2015)**

Report



The Hong Kong Bird Watching Society



Agriculture, Fisheries and Conservation Department

Mai Po Inner Deep Bay Ramsar Site Waterbird Monitoring Programme

Monthly Waterbird Monitoring Biannual Report 2

1. Introduction

Long-term monitoring of waterbirds provides an insight into the health of wetlands; it concerns not only the waterbird community, but also the entire ecosystem in the Deep Bay area. The Waterbird Monitoring Programme provides important baseline information for the management of the Mai Po Inner Deep Bay Ramsar Site (the 'Ramsar Site'). From December 1997 to March 2004, the programme was administered and executed by the Hong Kong Bird Watching Society (HKBWS) under a subvention from the Agriculture, Fisheries and Conservation Department (AFCD). Since April 2004, the programme has been arranged under service contracts funded by the AFCD.

The Waterbird Monitoring Programme comprises three major components: monthly waterbird counts, shorebird counts and egret counts. The monthly waterbird counts are conducted in the Deep Bay area, including the Mai Po Inner Deep Bay Ramsar Site, fishpond areas and mudflat adjacent to the Ramsar Site; the shorebird counts are conducted at the key feeding and loafing sites in the Mai Po Marshes Nature Reserve and intertidal mudflat during the migration seasons; and the egret counts are conducted all around Hong Kong during the breeding season. This report focuses on the results of the monthly counts of waterbirds during the winter period from October 2014 to March 2015 under contract reference number AFCD/SQ/49/14/C.

2. Methodology

The coordinated mid-monthly counts of wintering waterbirds in Hong Kong were carried out by accredited waterbird surveyors of the HKBWS, with support from reserve staff of Hong Kong Wetland Park, on 12 October 2014, 9 November 2014, 7 December 2014, 11 January 2015, 8 February 2015 and 8 March 2015. The survey area included the Ramsar Site and wetland areas around the Ramsar Site (the 'Deep Bay area'). The Deep Bay area covered the Ramsar Site and the surrounding area, including the mudflat between Tsim Bei Tsui and Lau Fau Shan, and the fishpond areas in Ma Tso Lung, Sam Po Shue, San Tin, Mai Po San Tsuen, Tam Kon

Chau, Tai Sang Wai, Lut Chau, Luen Hing Wai, Wing Kei Tsuen, Nam Sang Wai and Tsim Bei Tsui. The area also covered Hong Kong Wetland Park, in Tin Shui Wai, and the Futian National Nature Reserve, in the Shenzhen Special Economic Zone in the Mainland. Maps 1, 2 and 3 show the location of each of the survey sites in the survey area, together with the boundary of the Mai Po Inner Deep Bay Ramsar Site. Figures collected from the monthly waterbird counts are grouped and presented with respect to two main areas: (1) the Ramsar Site and (2) the Deep Bay area.

This monitoring programme involved the counting of waterbirds in these two survey areas. Habitat types included fishponds, *gei wais*, storm-water channels, streams, intertidal mudflats, mangroves, reedbeds and marshes. The survey sites, in particular the intertidal areas of Inner Deep Bay, were surveyed simultaneously so as to avoid double-counting as far as possible.

During the winter months, substantial numbers of waterbirds were present in the Deep Bay intertidal area. Waterbirds follow tidal movements to utilize different parts of the mudflats. They usually spend more time feeding during low-tide along the water's edge and more time resting either on the water surface or in the higher area of the mudflats during high tide. At high tide, the waterbirds move closer to the Mai Po boardwalk birdwatching hides, and therefore, waterbird counts conducted during high-tide periods are highly accurate. All counts were conducted on dates with a rising tide, preferably 1.7 m or above.

However, there were a few days when diurnal tides not high enough to force all waterbirds off the mudflat to the roosting sites in Mai Po and/or close to the floating bird-watching hides for the high-tide counts. Also, ducks may scatter in the river channel, and gulls may float on the bay far away from the boardwalk birdwatching hides at high tide, but they stay in the intertidal area at low tide. The low-tide count has been proven to be an effective method to acquire additional information on ducks and gulls, which prefer to stay in the intertidal area of Deep Bay (Anon 2011). Though the distance between birds and surveyors is sometimes too long during low-tide periods for waterbird species identification, and the surveyors cannot access the mudflat area at low tide, the low-tide count still helps provide peak numbers of some species or groups of waterbirds, which are used to determine the total waterbird abundance.

Low-tide counts were conducted in the mid-winter period (i.e. December to February) on the same dates scheduled for high-tide counts. The counts were

conducted in a synchronous manner at the jetty outside the police station in Tsim Bei Tsui and in the Futian National Nature Reserve in Shenzhen in December, January and February. The results of the low-tide count were treated and combined with those of the high-tide count to produce the monthly figures.

Other counts of individual species conducted within one week of the scheduled survey date were included if they were considered to provide more accurate counting results than those gathered on the counting day. The methodology is described in detail in the Waterbird Count Handbook (Anon. 2014).

Additional voluntary surveys of Great Cormorants were conducted from December to February at their known evening roosting sites in the Mai Po Marshes Nature Reserve and Nam Sang Wai in order to obtain more accurate information about their wintering population.

3. Results and discussion

3.1. Results of winter waterbird counts

All areas within the Deep Bay area and the Ramsar Site were covered during the survey period. Table 1 shows a comparison of the peak counts over the five winters from 2010-11 to 2014-15. The peak count of waterbirds in the Deep Bay area in winter 2014-15 was 52,584 individuals, recorded in January 2015, an increase of 20% over that of the previous winter (43,874 individuals). In the Ramsar Site, the peak count was 27,775 individuals, recorded in January 2015, an increase of 3% over the peak count of the previous winter (26,861 individuals). The January count has long been used to compare the long-term trend in waterbird numbers. It showed a 20% increase in the Deep Bay area (43,874 individuals in 2014) and a 9% increase in the Ramsar Site (25,467 individuals in 2014) over the previous January. The full data set of the surveys is provided in Appendix 1.

Table 1. Comparison of the number of waterbirds recorded at the Deep Bay area and the Ramsar Site from winter 2010-11 to winter 2014-15. The Ramsar Site covers part of the Deep Bay area, with details shown in Maps 2 and 3.

		Winter 2010-11*	Winter 2011-12	Winter 2012-13*	Winter 2013-14*	Winter 2014-15*
Winter peak monthly count [^]	Deep Bay	68,635	68,080	55,871	43,874	52,584
	Ramsar Site	42,699	45,744	31,171	26,861	27,775

January count	Deep Bay	68,635	49,202	55,871	43,874	52,584
	Ramsar Site	42,699	34,561	30,012	25,467	27,775

^ The winter peak monthly count refers to the highest count from December to February in the winter period.

* Counts in the whole Deep Bay area peaked in January for the winters in 2010-11, 2012-13, 2014-15 and 2014-15.

The results collected in the low-tide counts serve as supplementary information for the high-tide counts, as Grey-headed Lapwing, Black-tailed Godwit, Dunlin and Black-tailed Gull were more easily observed at low-tide periods this winter. The long distance between the birds and surveyors during low-tide counts makes good visibility a crucial factor in the accuracy of the counts. All the low-tide counts were conducted under good visibility this winter. The results of low-tide counts of the different waterbird groups are listed in Table 2 and further details are provided in Appendix 2.

Table 2. Number of waterbird groups recorded in the Deep Bay area during low-tide counts in mid-winter 2014-15. The number in parenthesis represents the results recorded in the Ramsar Site.

	December 2014	January 2015	February 2015
Cormorants	1,079 (818)	210 (180)	680 (182)
Ardeids	599 (365)	474 (153)	408 (126)
Ducks, grebes and pelicans	3,366 (1,765)	5,000 (3,805)	7,452 (3,666)
Rails and coots	49 (0)	54 (2)	86 (0)
Shorebirds	7,538 (697)	5,278 (3,090)	5,862 (2,112)
Gulls and terns	3,011 (1,679)	4,190 (3,970)	1,529 (1,473)
Total	15,462 (5,359)	15,206 (11,200)	16,017 (7,559)
High-tide count total	38,029 (16,692)	51,009 (26,201)	39,692 (21,428)
Aggregate total from low-tide count	38,321 (16,813)	52,584 (27,775)	39,692 (21,428)

The combined result of high-tide and low-tide counts show that the January count was the peak count for this winter (Table 3). Four waterbird groups had the peak number recorded in January, including wintering shorebirds, which was the most abundant waterbird group, with 18,261 individuals (accounting for 35% of the total number), followed by ducks and grebes, with 13,985 individuals (27%),

cormorants, with 9,891 individuals (19%), and gulls and terns, with 7,129 individuals (14%). The waterbird group ardeids had a peak count of 4,026 individuals, recorded in the November, and rails and coots had a peak count of 179 individuals, recorded in December.

Table 3. Number of waterbirds counted in winter 2014-2015 by groups and sites. Bold figures are the highest in this winter period.

Group	Site	Oct	Nov	Dec	Jan	Feb	Mar
Cormorants	Deep Bay area	1,020	4,112	8,629	9,891	8,021	3,782
	Ramsar Site	417	2,275	4,269	5,641	3,997	2,550
	Starling Inlet	1	26	108	51	105	190
Ardeids	Deep Bay area	2,159	4,026	3,569	3,158	3,050	2,940
	Ramsar Site	894	2,039	1,944	1,200	1,214	1,468
	Starling Inlet	161	157	121	164	173	129
Ducks and grebes	Deep Bay area	852	6,439	9,284	13,985	10,656	9,534
	Ramsar Site	224	2,045	3,037	5,468	4,987	2,668
	Starling Inlet	1	6	4	22	23	23
Rails and Coots	Deep Bay area	83	120	179	160	141	175
	Ramsar Site	31	38	68	52	45	64
	Starling Inlet	2	11	11	6	11	27
Shorebirds	Deep Bay area	2,112	5,773	12,339	18,261	10,719	11,169
	Ramsar Site	1,086	3,241	5,816	9,661	5,905	6,125
	Starling Inlet	10	7	1	46	26	0
Gulls and terns	Deep Bay area	11	2,863	4,321	7,129	7,105	3,761
	Ramsar Site	5	861	1,679	5,753	5,280	3,580
	Starling Inlet	0	21	0	0	0	0
Total	Deep Bay area	6,237	23,333	38,321	52,584	39,692	31,361
	Ramsar Site	2,657	10,499	16,813	27,775	21,428	1,6455
	Starling Inlet	175	228	245	289	338	369

Compared to the results of the previous year, there were increases in the peak counts of all the waterbird groups, except gulls and terns, and rails and coots. There was a substantial increase of 69% in the number of ducks and grebes compared with that of the previous winter (Table 4).

Table 4. Peak number of different waterbird groups in the Deep Bay area during the mid-winter period (i.e. December to February) from 2002-03 to 2014-15.

Winter	Cormorants	Ardeids	Ducks and Grebes	Rails and coots	Shore-birds	Gulls and Terns
2002-03	7,959 (Jan)	4,702 (Jan)	20,203 (Jan)	219 (Dec)	9,849 (Feb)	13,191 (Jan)
2003-04 [^]	8,964 (Jan)	3,963 (Dec)	16,856 (Feb)	362 (Jan)	12,856 (Jan)	8,469 (Dec)
2004-05	9,552 (Jan)	6,425 (Dec)	22,521 (Jan)	384 (Feb)	9,806 (Feb)	9,346 (Dec)
2005-06	10,347 (Jan)	4,345 (Jan)	19,657 (Feb)	597 (Dec)	13,695 (Feb)	14,417 (Feb)
2006-07	10,081 (Jan)	4,396 (Dec)	33,779 (Feb)	798 (Feb)	19,054 (Feb)	12,000 (Jan)
2007-08	11,144 (Jan)	3,549 (Jan)	35,066 (Jan)	866 (Jan)	27,720 (Jan)	11,787 (Jan)
2008-09	8,736 (Jan)	4,384 (Feb)	38,099 (Feb)	460 (Jan)	24,069 (Feb)	11,212 (Dec)
2009-10	10,758 (Feb)	3,357 (Jan)	28,700 (Jan)	523 (Jan)	23,926 (Jan)	11,331 (Jan)
2010-11	10,023 (Feb)	3,006 (Dec)	30,628 (Dec)	332 (Jan)	20,708 (Jan)	9,393 (Jan)
2011-12	9,636 (Feb)	3,384 (Dec)	25,739 (Feb)	206 (Jan)	25,299 (Feb)	5,128 (Jan)
2012-13	10,569 (Jan)	2,773 (Jan)	13,169 (Dec)	163 (Jan)	22,320 (Jan)	7,955 (Jan)
2013-14	8,761 (Feb)	2,728 (Feb)	8,259 (Dec)	199 (Dec)	17,573 (Jan)	9,216 (Jan)
2014-15	9,891 (Jan)	3,569 (Dec)	13,985 (Jan)	179 (Dec)	18,261 (Jan)	7,129 (Jan)

[^] Counts in the mid-winter period of 2003-04 were modified by incorporating the results of additional counts. The details are referred to in Part II: additional counts of waterbirds in the Deep Bay Intertidal area in January and February 2004 in Yu (2004) and Anon. (2005).

To avoid stochastic biases for solely adopting the January count (which has been widely used internationally for population estimates) and to acquire a more accurate profile of the number of waterbirds that were dependent on Deep Bay as their

habitat for at least part of the winter, the total peak count (i.e. the sum of the peak numbers of each waterbird species) in the mid-winter period (December to February) was extracted to show the maximum number of waterbirds that used the Deep Bay area in winter 2014-15. The total peak count for winter 2014-15 was 53,711 birds (Table 5 and Appendix 3), an increase of 4% over the 51,573 individuals recorded in the previous winter. A comparison of the total peak counts in the five winters from 2010-11 to 2014-15 is shown in Table 5. A comparison of the difference using the total peak count and January count to present the waterbird population is shown in Figure 1. There is a decreasing trend in the waterbird population from the high count of 90,986 individuals in winter 2007-08, while there was no obvious trend in the number of waterbird species.

Table 5. Total peak counts in the winters of past five years.

	Winter 2010-11	Winter 2011-12	Winter 2012-13	Winter 2014-15	Winter 2014-15
Total peak count	76,679	72,492	61,674	51,573	53,711
Total no. of positively-identified waterbird species	67	64	69	69	66

The 10 most numerous waterbird species recorded in the Deep Bay area in mid-winter (December to February) are shown in Table 6. These 10 waterbird species together made up a total of 43,146 individuals, constituting 80% of the total peak count of waterbirds recorded in the mid-winter period. This figure is similar to that of previous winters (winter 2013-14: 85%, winter 2012-13: 84%, winter 2011-12: 74%, winter 2010-11: 78%, winter 2009-10: 86%, winter 2008-09: 84%, and winter 2007-08: 84%). The number of waterbirds recorded on the Hong Kong side was higher than that in the Futian National Nature Reserve during the high-tide period. Surveyors also observed regular movement of wintering waterbirds in the Deep Bay area from Mai Po during the high-tide period to Futian during the low-tide period.

Table 6. The 10 most numerous wintering waterbird species recorded in the Deep Bay area of Hong Kong and Shenzhen in mid-winter (December to February).

Species	Number of birds at Hong Kong side	Number of birds at Futian (i.e. Shenzhen)	Total number
Pied Avocet	6,553	4,404	10,957
Great Cormorant	9,891	0	9,891
Black-headed Gull	6,930	16	6,946

Northern Shoveler	1,741	2,207	3,948
Eurasian Wigeon	2,515	386	2,901
Tufted Duck	2,663	110	2,773
Northern Pintail	1,101	920	2,021
Dunlin	1,570	0	1,570
Marsh Sandpiper	676	430	1,106
Little Egret	944	91	1,035
Total	34,584	8,564	43,148
	(80.2%)	(19.8%)	

3.2 *Species of conservation significance*

Some waterbird species recorded in the Deep Bay area are of conservation significance because they are globally threatened, according to BirdLife International (2014), or if the Deep Bay area supports at least 1% of their regional or flyway population. The data related to the '1% of the regional or flyway population' was adopted from Wetlands International (2015). The focus is on the wintering population, which refers to mid-winter peak counts (December to February), and significant figures in the other months during the study period are provided as supplementary information. Brief reviews of the important waterbird species recorded in winter 2014-15 are shown below.

Great Cormorant *Phalacrocorax carbo*

Coordinated counts at evening roosting sites in the Mai Po Marshes Nature Reserve and Nam Sang Wai in December 2014, January and February 2015 recorded 8,629, 9,891 and 8,021 individuals, respectively. The peak count (January 2015) showed an increase of 13% over that of the previous winter (8,761 individuals). Applying 1% of the regional population at 1,000 individuals (Wetlands International 2015), the Deep Bay wintering population of this species constituted nearly 10% of the regional population in winter 2014-15.

Great Egret *Ardea alba*

The mid-winter peak count was 949 individuals, recorded in December. Although this was an increase of 9% over that of the previous winter (871 individuals), the wintering population was just below the 1% regional population of 1,000 individuals (Wetlands International 2015). It is worth noting that the highest count in the whole survey period was 1,124 individuals, recorded in November 2014, which showed that the number of Great Egrets recorded in Deep Bay, possibly

involving passage individuals, once exceeded the 1% regional population.

Black-faced Spoonbill *Platalea minor*

Endangered

The International Black-faced Spoonbill Census in mid-January 2015 recorded a total of 3,272 individuals in the East Asia region (HKBWS 2015). The highest count of wintering Black-faced Spoonbills (i.e. from December to February) in the Deep Bay area was 455 individuals, recorded in the December count, which was an increase of 71% over that of the previous winter (266 individuals). The Deep Bay area supported 14% of the known world population of this species in winter 2014-15.

Falcated Duck *Anas falcata*

Near Threatened

Two individuals were recorded in December 2014, lower than the peak count of seven individuals recorded in the previous winter. This species was usually recorded in small numbers (fewer than 10 birds) in previous winters.

Northern Pintail *Anas acuta*

The 1% of the regional population level of this species was set at 2,400 individuals (Wetlands International 2015). The peak count was 2,021 individuals, recorded in February 2015, and therefore, this winter record did not meet the 1% level, even though there was an increase of 43% over that of the previous winter (1,410 individuals).

Northern Shoveler *Anas clypeata*

The 1% of the regional population number is set at 5,000 individuals (Wetlands International 2015). The peak count of this species was 3,948 individuals, recorded in February 2015, and therefore, the winter 2014-15 count was less than 1% of the regional population. The count was 42% higher than that of the previous winter (2,775 individuals).

Tufted Duck *Aythya fuligula*

The peak count in the mid-winter period was 2,773 individuals, recorded in January 2015, an increase of 75% over that of the previous winter (1,585 individuals). The 1% regional population level is set at 2,400 individuals (Wetlands International 2015), so the Deep Bay area supported over 1% of the known world population of this species in winter 2014-15.

Pied Avocet *Recurvirostra avosetta*

A total of 10,957 individuals were recorded in the January count, which was the peak count of this winter and a decrease of 7% from the peak count of the previous year (11,794 individuals). Applying the criterion of 1% of the regional population at 1,000 individuals (Wetlands International 2015), this winter peak count constituted nearly 11% of the regional population in winter 2014-15.

Black-tailed Godwit *Limosa limosa*

Near Threatened

A total of 780 individuals were recorded in Futian during the high-tide period of the January count. This was the peak count of winter 2014-15 and an increase of 11% over the peak count of the previous winter (700 individuals). This species was more frequently present in Futian during the mid-winter period. The 1% regional population was 1,400 individuals (Wetlands International 2015).

Eurasian Curlew *Numenius arquata*

Near Threatened

The winter peak count of this species was 1,005 individuals, recorded in December 2014, a decrease of 22% from the peak of the previous winter (1,297 individuals). As the 1% regional population was 1,000 individuals (Wetlands International 2015), this winter peak count constituted 1% of the regional population in winter 2014-15.

Common Greenshank *Tringa nebularia*

The winter peak count was 735 individuals, recorded in December, a decrease of 12% from the peak count of the previous winter (836 individuals). As the 1% regional population is set at 1,000 individuals (Wetlands International 2015), the wintering population did not meet the 1% level.

[Nordmann's Greenshank *Tringa guttifer*

Endangered

None were recorded this winter. The global population is estimated at 400-600 individuals and 1% of the global population is set at 5 individuals (Wetlands International 2015).]

Great Knot *Calidris tenuirostris*

Vulnerable

The peak count was 30 individuals, recorded in October, but it may have included passage individuals. The highest number in the mid-winter period was 15 individuals, recorded in the January count, a 25% increase from the peak count of 12 birds in the previous winter. The world population is estimated at 290,000 individuals, so 1% of the global population is 2,900 individuals (Wetlands

International 2015). The population of this species is rapidly declining due to habitat deterioration (BirdLife International 2015).

Relict Gull *Ichthyaetus relictus* Vulnerable

A single individual was recorded in the counts of January and February. The global population is estimated at 12,000 individuals, so the 1% of the global population is estimated at 120 individuals (Wetlands International 2015).

Saunders's Gull *Chroicocephalus saundersi* Vulnerable

The peak count was 65 individuals, recorded in February 2015, an increase of 76% over the peak count of the previous year (37 individuals). The global population is estimated at 14,000 individuals, so 1% of the global population is 140 individuals (Wetlands International 2015).

3.3 *Other notable counts*

Greater Crested Grebe *Podiceps cristatus*

The peak count of this species was 100 individuals, recorded in December 2014. This winter result was similar to that of the previous winter (103 individuals in November 2013). This was considerably below 1% of the regional population, which was set at 350 individuals (Wetlands International 2015).

[Common Shelduck *Tadorna tadorna*

This species was not recorded in winter 2014-15 or in the previous winter. This species has seen a drastic decline from the peak count of 4,011 individuals in January 1998 (Carey *et al.* 2001) to only one or none in recent years.]

Eurasian Teal *Anas crecca*

The peak count of this species was 842 individuals, recorded in February, a significant increase of 170% over the peak count of the previous winter (311 individuals). This species was once one of the most common ducks in the Deep Bay area, with a peak count of 5,348 individuals in February 1996 (Carey *et al.* 2001), but its numbers continued to fall in recent years: 2,332 individuals in 2008-09 winter, 1,459 individuals in winter 2010-11, 937 individuals in winter 2011-12, 512 individuals in winter 2012-13 and 311 individuals in winter 2013-14. The count was far below 1% of the regional population for this species, which is set at 7,700 individuals (Wetlands International 2015).

Eurasian Coot *Fulica atra*

The peak count was 42 individuals, recorded in January, a decrease of 12% from the peak count of 48 birds in the previous winter. This peak count was far lower than that in the past. The highest count, 3,245 individuals, was in January 1992 (Carey *et al.* 2001). This year's count was far below 1% of the regional population for this species, which is set at 20,000 individuals (Wetlands International 2015).

Grey Plover *Pluvialis squatarola*

The peak count was 594 individuals, recorded in December 2014, a decrease of 29% from the peak count in the previous winter (833 individuals). This year's count was less than 1% of the regional population for this species, which is set at 1,000 individuals (Wetlands International 2015).

Little Ringed Plover *Charadrius dubius*

One per cent of the regional population is set at 250 individuals (Wetlands International 2015). The population in the Deep Bay area occasionally exceeds this level (e.g. 315 individuals in February 2009), but the peak count this winter was only 90 individuals, far below the 1% level, even though there was an increase of 32% over that of the previous winter.

Kentish Plover *Charadrius alexandrinus*

The mid-winter peak count for this species was 429 individuals, recorded in December 2014, a decrease of 22% from the peak count of 549 individuals in the previous winter. The annual mid-winter peak count of this species has fluctuated in recent years (720, 2,640, 3,221, 549, 429 individuals in the past five winters). This winter's count was far less than 1% of the regional population, which is set at 1,000 individuals (Wetlands International 2015).

Spotted Redshank *Tringa erythropus*

The highest count in the mid-winter period was 88 individuals, recorded in January 2015, a decrease of 25% from the peak count of 117 individuals in the previous winter. This species continues its drastic decline from the historical peak count of 2,500 individuals in 2002. This count was far below 1% of the regional population, which is set at 250 individuals (Wetlands International 2015). The peak count in the whole study period was 123 individuals recorded in March 2015, which also not exceeded the 1% level and may have included passage individuals.

Marsh Sandpiper *Tringa stagnatillis*

The peak count for this species was 1,106 individuals in January 2015, a significant increase of 361% from the peak count in the previous winter (240 individuals). This species was also common in the Deep Bay mudflat area five winters ago, when 1,710 and 2,884 individuals were recorded in February 2010 and January 2011, respectively. This winter's count was considerably below 1% of the regional population, which is set at 10,000 individuals (Wetlands International 2015).

Black-headed Gull *Chroicocephalus ridibundis*

The peak count was 6,964 individuals, recorded in February 2015, a decrease of 23% from the peak count (9,000 individuals) in the previous winter. This species was once one of the most abundant waterbird species in the region, with the highest count of 20,629 individuals in winter 1995-96 (Carey *et al.* 2001), but its numbers have declined since then, with recent winter results usually falling in the range of 5,000 to 10,000 individuals. This winter's count was less than 1% of the regional population, which is set at 20,000 individuals (Wetlands International 2015).

3.4 *Other information collected*

Additional field surveys were conducted in December 2014 to collect more information on fishpond conditions for waterbirds. Out of 635 surveyed fishponds, 88 ponds had wires set up across them (Map 4) and 500 were actively managed (Map 5).

Table 7. Number of wired fishponds and managed fishponds.

Location of surveyed fishponds	No. of fishponds surveyed	Wired ponds	Managed ponds
Shenzhen River 'B'	112	15	72
Shenzhen River 'A'	34	0	33
Sam Po Shue	45	9	42
San Tin	52	3	40
Mai Po San Tsuen	45	5	32
Tam Kon Chau	104	44	97
Lut Chau	28	0	28
Tai Sang Wai	33	0	33
Luen Hing Wai and Wing Kei Tsuen	56	0	35
Nam Sang Wai	38	0	17
Tsim Bei Tsui	88	12	71
<i>Total</i>	635	88	500

4. Conclusion

In the period from October 2014 to March 2015, the peak winter count of waterbirds in the Deep Bay area was 53,711 individuals, including 18,550 shorebirds, 13,985 ducks and grebes, 9,891 cormorants, 7,250 gulls and terns, 3,832 egrets and herons, and 203 rails and coots. This peak count was higher than that of the previous winter, but there was still a declining trend from the peak count of 90,986 individuals in winter 2007-08. The peak count showed a decrease in species diversity, as 66 waterbird species were recorded this winter compared to 69 species in the previous winter. The 10 most numerous waterbird species constituted 80% of the total peak count in winter 2014-15, similar to that of winter 2013-14.

The low-tide count conducted this winter provided supplementary information about many species, such as the Grey-headed Lapwing, Black-tailed Godwit, Dunlin, and Black-tailed Gull. Many of these species prefer mudflats to habitats such as *gei wais*. Therefore, the low-tide count helped to increase survey accuracy for some species which prefer the Deep Bay intertidal mudflat area at low tide.

A total of 7 globally threatened or near-threatened waterbird species (i.e. the Black-faced Spoonbill, Falcated Duck, Black-tailed Godwit, Eurasian Curlew, Great Knot, Relict Gull and Saunders's Gull) and a total of 6 species having at least 1% of the regional population for the species (i.e. the Great Cormorant, Great Egret (in the November count), Black-faced Spoonbill, Tufted Duck, Pied Avocet and Eurasian Curlew) were recorded in the Deep Bay area in during the 2014-15 survey period. The Black-headed Gull showed a decrease again this winter, continuing a falling trend since the peak count of 20,629 in winter 1995-96. There has been a short-term (10-year) decline in the winter counts of the Chinese Spot-billed Duck, Great Egret, Spotted Redshank and Black-headed Gull, and a long-term (20 year) decline in the winter counts of the Falcated Duck, Common Shelduck and Eurasian Coot. Only the mid-winter peak count of the Great Egret this winter was higher than that of the previous winter; the counts of all other species remained low. The reasons for the decline of these species have not been fully studied or understood. More information on the numbers of wintering waterbirds in other coastal and inland wetland sites in the Mainland is needed as a reference for the figures recorded in the Deep Bay area.

Cross-border fishermen were again sighted during the low-tide count in the Deep Bay mudflat area this winter. Up to eight fishermen were found working on the mudflat and creating a disturbance to the waterbirds on the mudflat. Before more

information is available to understand the reasons for the decline in the number of waterbirds in Hong Kong, regular patrols and enforcement by the AFCD are an important means of avoiding further aggravation or disturbances to the waterbirds and to achieve better accuracy in the count.

5. Acknowledgements

We would like to thank the following surveyors who participated in the counts: K.H. Chan, Gary Chow, Camille Chung, Johnson Chung, Forrest and Emily Fong, Helen Fong, Vivian Fu, Mike Leven, Martin Hale, Jocelyn Ho, John and Jemi Holmes, W.M. Hung, Aaron Keung, Cecilia Kwan, N.Y. Lai, Alan Lam, Shirley Lam, Roger H. Lee, R.W. Lewthwaite, Austin Ng, C.C. Pang, Y.K. So, Y.H. Sung, Graham Talbot, Ivan Tse, Captain Wong, Walkman Wong, Haley Yeung, H.K. Ying, and the Shenzhen Bird Watching Society. We would also like to thank the reserve staff of Hong Kong Wetland Park for their contribution in collecting waterbird data.

6. References

Anon. 2005. Winter 2004-05 Report on Waterbird Monitoring at the Mai Po Inner Deep Bay Ramsar Site. Report by Hong Kong Bird Watching Society to the Agriculture, Fisheries and Conservation Department, Hong Kong Special Administrative Region Government.

Anon. 2014. Mai Po Inner Deep Bay Ramsar Site Waterbird Monitoring Programme: Waterbird Count Handbook (3rd ed.). The Hong Kong Bird Watching Society & Agriculture, Fisheries and Conservation Department, Hong Kong SAR Government.

BirdLife International. 2014. IUCN Red List for birds. Downloaded from <http://www.birdlife.org> on 27/03/2015.

Carey, G.J., Chalmers, M.L., Diskin, D.A., Kennerley, P.R., Leader, P.J., Leven, M.R., Lewthwaite, R.W., Melville, D.S., Turnbull, M. and Young, L. 2001. The Avifauna of Hong Kong. Hong Kong Bird Watching Society, Hong Kong.

HKBWS 2015. 2015 International Black-faced Spoonbill Census. The Hong Kong Bird Watching Society, Hong Kong. Available from <http://www.hkbws.org.hk/BBS/viewthread.php?tid=22981&extra=page%3D1> (Accessed on April 2015).

Wetlands International. 2015. Waterbird Population Estimates. Available from <http://wpe.wetlands.org>. (Accessed on 22 April 2015).

Yu, Y.T. 2004. Winter 2003-04 Report on Waterbird Monitoring at the Mai Po Inner Deep Bay Ramsar Site. The Hong Kong Bird Watching Society Limited. Hong Kong.

**Mai Po Inner Deep Bay Ramsar Site
Waterbird Monitoring Programme**

**Monthly Waterbird Monitoring
Biannual Report 2 (October 2014 to March 2015)**

Figure

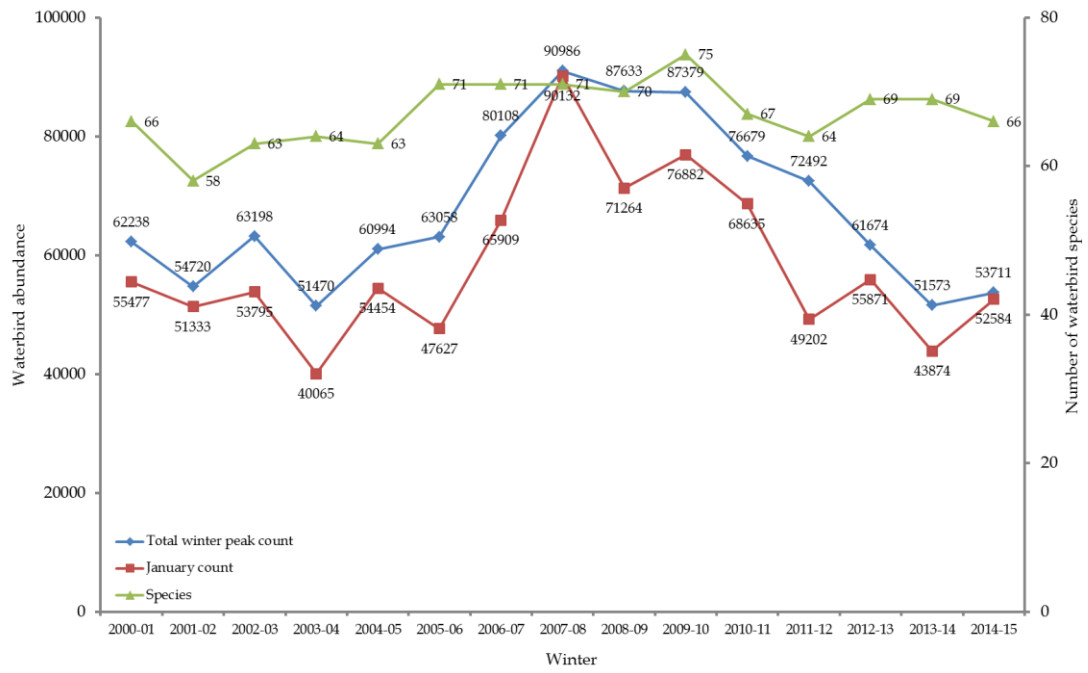


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Figure 1. Total winter peak counts and January (mid-winter) counts, from 2000-01 to 2014-15.



Note: number of waterbirds in winter 2003-04 was modified and details are referred to Anon (2005). Statistics for 2005-06 have also been revised.

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Maps

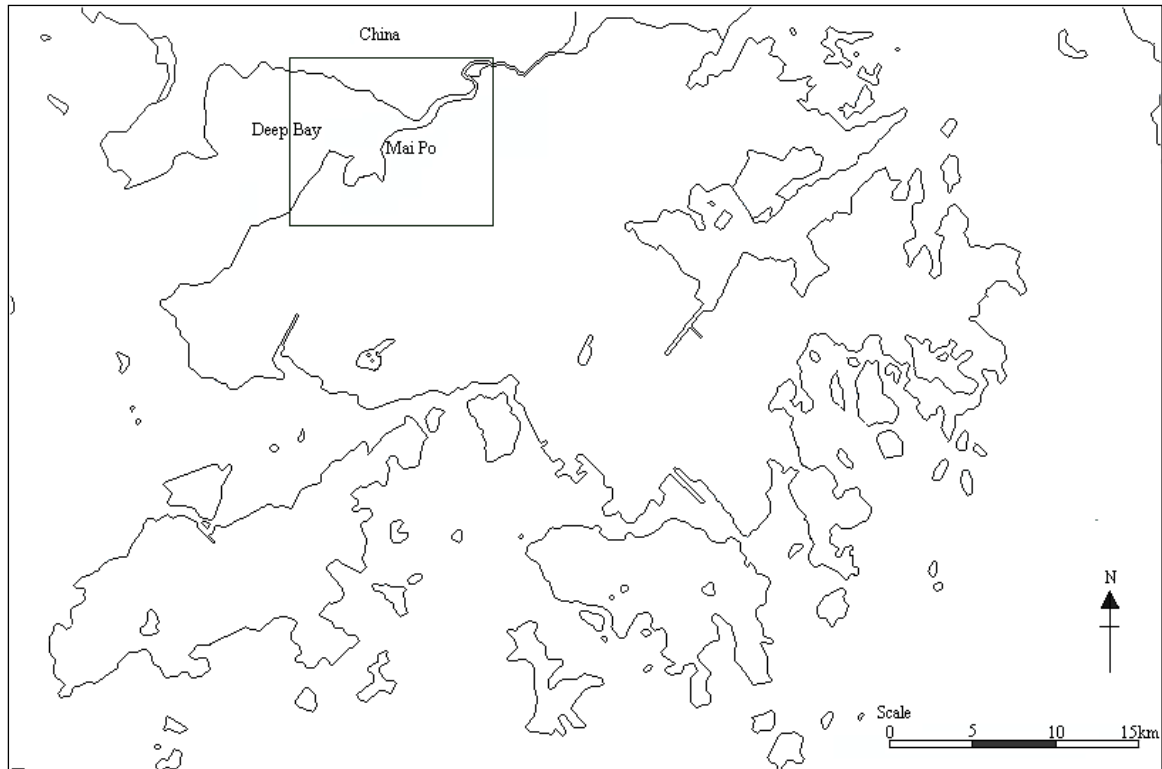


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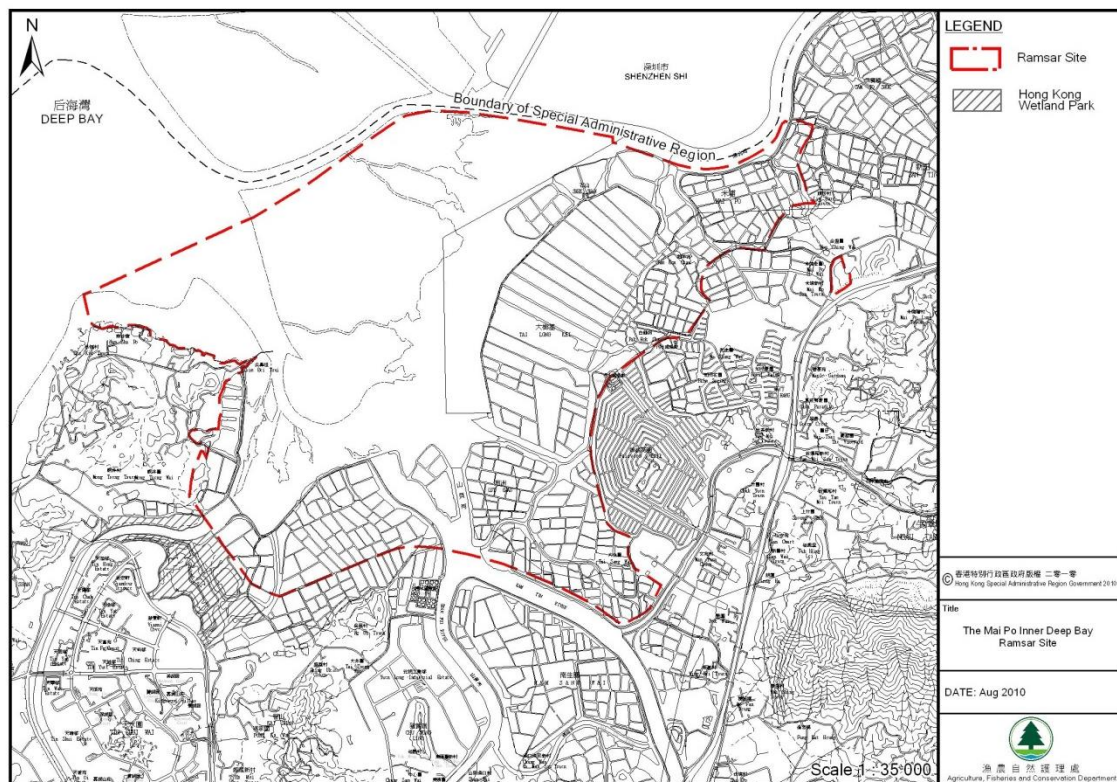


Agriculture, Fisheries and Conservation Department

Map 1. Map of Hong Kong showing location of the Mai Po Inner Deep Bay Ramsar Site.

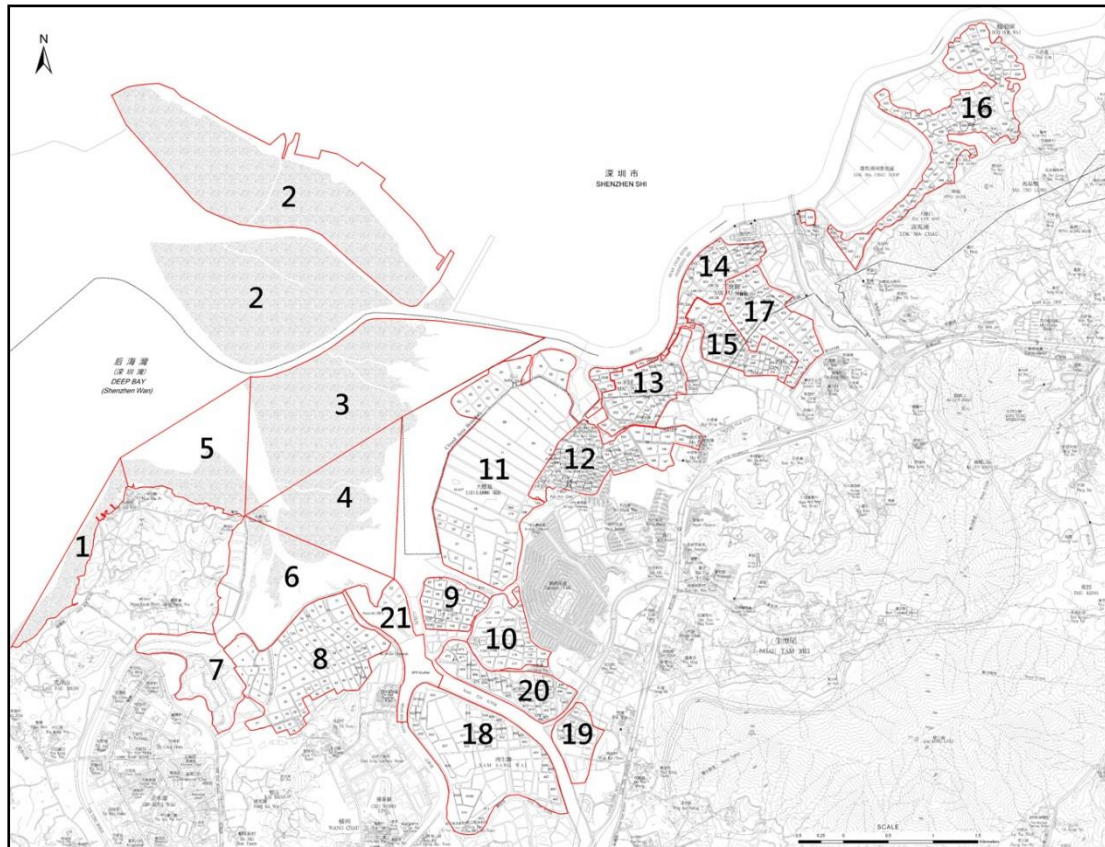


Map 2. Boundary of Mai Po Inner Deep Bay Ramsar Site.

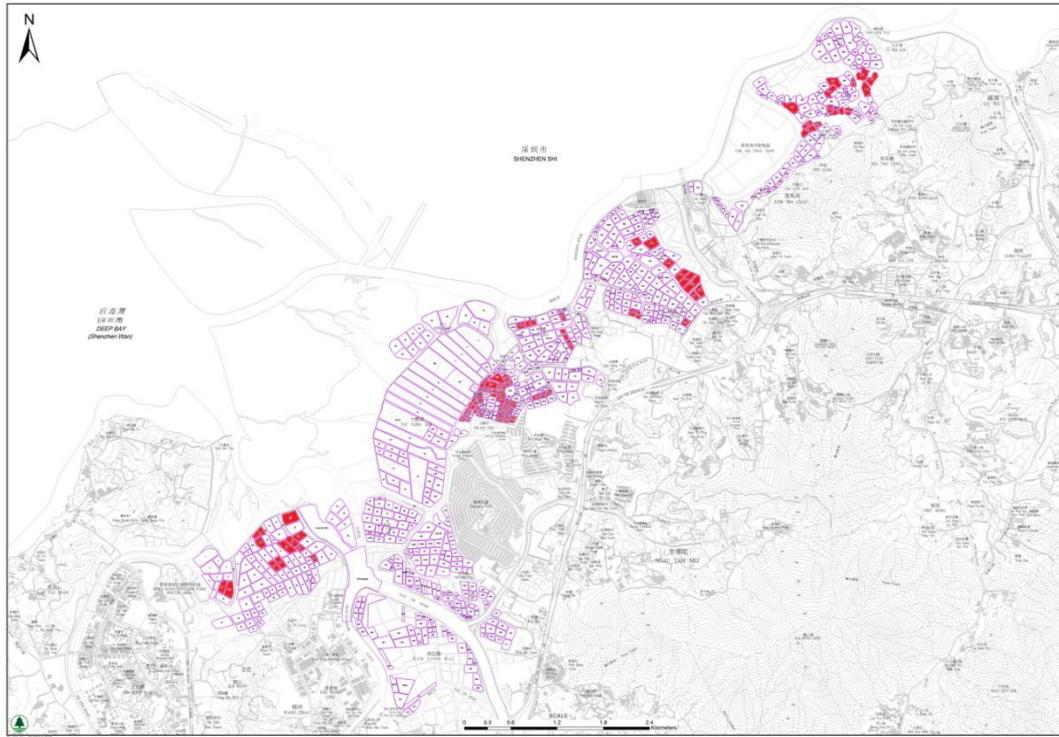


Source of map: AFCD

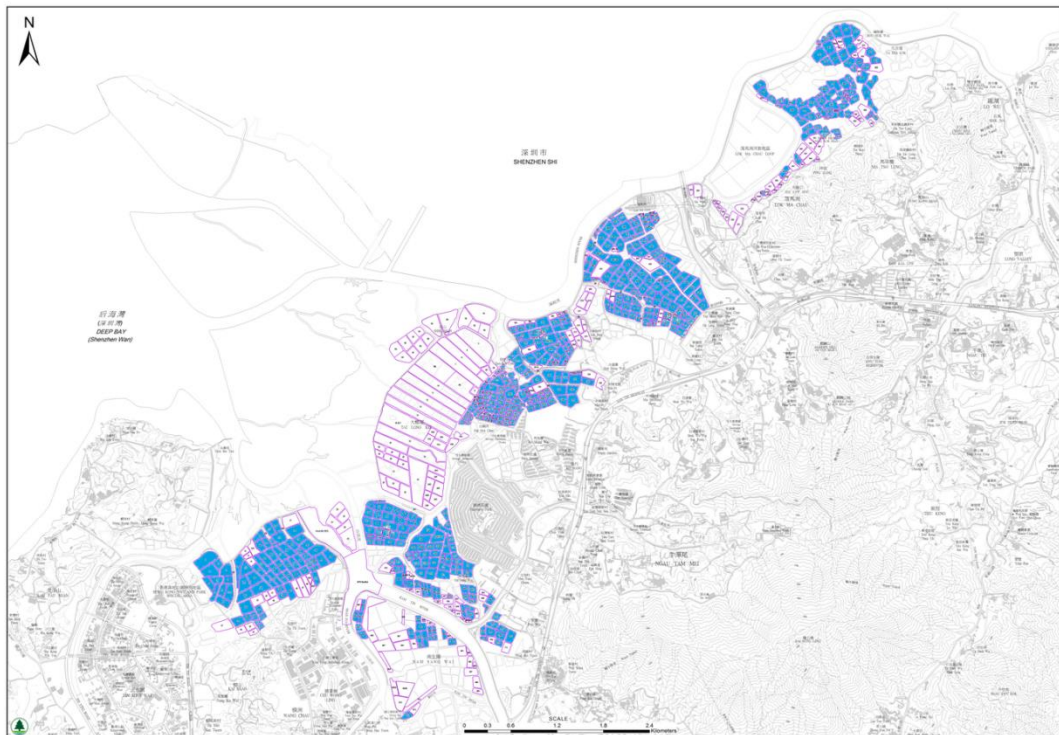
Map 3. Location of survey sites of the Waterbird Monitoring Programme.
 (1: Tsim Bei Tsui to Lau Fau Shan; 2: Deep Bay 'A'; 3: Deep Bay 'B'; 4: Deep Bay 'C';
 5: Deep Bay 'D'; 6: Deep Bay 'E'; 7: Hong Kong Wetland Park; 8: Deep Bay 'F' (Tsim
 Bei Tsui fishpond); 9: Lut Chau; 10: Tai Sang Wai; 11: Mai Po Marshes Nature
 Reserve; 12: Tam Kon Chau; 13: Mai Po San Tsuen; 14: Shenzhen River 'A'; 15: San
 Tin; 16: Shenzhen River 'B'; 17: Sham Po Shue; 18: Nam Sang Wai; 19: Wing Kei
 Tsuen; 20: Luen Hin Wai; 21: Shan Pui River north.)



Map 4. Distribution of wired ponds (in red) in fishpond area in the Deep Bay area, surveyed in December 2014.



Map 5. Distribution of managed ponds (in blue) in fishpond area in the Deep Bay area, surveyed in December 2014.



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Appendix 1



The Hong Kong Bird Watching Society



Agriculture, Fisheries and Conservation Department

Summary of Waterbird Count, October 2014

SPECIES	SRA	SRB	DBA	DBB	DBC	DBD	DBE	DBF (TBT)	SPR	NSW	LHW	WEP	Sha Kiu	NW / LFS	TKC	LC	TSW	MPST	ST	SPS	MPNR	Ramsar ponds	Ramsar intertidal areas	Ramsar Site	DEEP BAY AREA	Starling Inlet	
Little Grebe	11	35						10	0	6	4	4			31	0	9	2	23	54	17	39	0	56	206	1	
Great Crested Grebe																					0			0	0	0	
Great Cormorant	318	51	15					37	0	102	13	16			8	0	5	24	15	61	355	62	0	417	1020	1	
Dalmatian Pelican																					0			0	0	0	
Grey Heron	21	25	17	13	13	6		10	2	35	11	23			32	6	4	8	24	13	69	59	32	160	332	6	
Purple Heron	1																				3			3	4	4	
Great Egret	19	62	42	76	27	6		12	1	56	44	2	3	14	11	4	18	5	56	74	89	87	109	285	621	62	
Intermediate Egret	2	1						0	0	0	0				5	0	4	0	2	0	8	9	0	17	22		
Little Egret	15	89	55	81	14	6	1	14	2	57	25	5	1	15	52	7	75	10	21	194	29	162	102	293	768	61	
Swinhoe's Egret																					0			0	0	0	
Pacific Reef Heron																					0			0	0	0	
Eastern Cattle Egret	1	8	1					0	0	0	3	5		1	2	1	35	0	8	8	1	37	0	38	74	10	
Chinese Pond Heron	28	28	61	4				4	0	7	11	2		1	40	3	17	14	31	35	15	69	4	88	301		
Striated Heron	0	0						0	0	0	0				0	0	0	0	0	0	3	0	0	3	3	3	
B-c Night Heron	10	6					1	0	0	1	0				4	0	0	0	0	0	1	2	1	4	23	22	
Yellow Bittern	1	1						0	0	0	0	1			0	0	0	0	0	0	1	0	0	1	4	4	
Cinnamon Bittern																					0			0	0	0	
Eurasian Bittern																					0			0	0	0	
Black Stork																					0			0	0	0	
Black-headed Ibis																					0			0	0	0	
Eurasian Spoonbill				1																	0		1	1	1	1	
Black-faced Spoonbill			5	1																	0		1	1	6	6	
Common Shelduck																					0			0	0	0	
Eurasian Wigeon	0	0	42					0	0	0	0				0	0	0	0	0	0	54	0	0	54	96		
Falcated Duck																					0			0	0	0	
Gadwall																					0			0	0	0	
Baikal Teal																					0			0	0	0	
Eurasian Teal	33	0		3				0	0	0	0				0	0	0	0	0	0	59	0	3	62	95		
Mallard																					0			0	0	0	
Spot-billed Duck																					0			0	0	0	
Chinese Spot-billed Duck																					1			1	1	1	
Indian Spot-billed Duck																					0			0	0	0	
Northern Pintail			6																		15			15	21	21	
Garganey	2		65																		32			32	99	99	
Northern Shoveler			250	4																	0		4	4	254	254	
Common Pochard																					0			0	0	0	
Baer's Pochard																					0			0	0	0	
Tufted Duck																					0			0	0	0	
Greater Scaup																					0			0	0	0	
Red-breasted Merganser																					0			0	0	0	
Duck sp.			80																		0			0	80	80	
Slaty-breasted Rail																					0			0	0	0	
Eastern Water Rail																					0			0	0	0	
White-breasted Waterhen	3	7	2					2	0	6	4				8	2	1	3	1	4	3	17	0	20	46	46	
Watercock																					0			0	0	0	
Common Moorhen	2	6	13					0	0	1	0	3			4	0	0	0	0	1	7	4	0	11	37	2	
Eurasian Coot																					0			0	0	0	0

Summary of Waterbird Count, November 2014

SPECIES	SRA	SRB	DBA	DBB	DBC	DBD	DBE	DBF (TBT)	SPR	NSW	LHW	WEP	Sha Kiu	NW / LFS	TKC	LC	TSW	MPST	ST	SPS	MPNR	Ramsar ponds	Ramsar intertidal areas	Ramsar Site	DEEP BAY AREA	Starling Inlet
Little Grebe	19	36	6					6	0	8	3	8			44	0	17	29	20	42	23	84	0	107	261	5
Great Crested Grebe			2																		0		0		2	
Great Cormorant	1117	225	35	1100				360	0	113	38	65			32	0	0	131	55	119	722	453	1100	2275	4112	26
Dalmatian Pelican																					0		0		0	
Grey Heron	130	63	74	17	4	1	31	25	5	102	14	32	1	23	29	9	7	30	7	24	203	90	58	351	831	39
Purple Heron	1											1									0			0	2	
Great Egret	50	48	73	233	11	1	7	128	14	35	8	4	1	37	74	4	16	12	75	79	214	238	262	714	1124	79
Intermediate Egret	2	2						0	0	0	0	0			5	1	1	0	0	0	10	5	0	15	21	
Little Egret	30	96	235	32	46	3	6	38	9	71	36	3		37	149	15	31	17	58	111	102	260	96	458	1125	19
Swinhoe's Egret																					0			0	0	
Pacific Reef Heron																					0			0	0	
Eastern Cattle Egret	0	14	3					8	0	0	4	1			11	2	9	0	5	8	0	30	0	30	65	1
Chinese Pond Heron	41	46	36	4				3	8	15	28	1		3	53	9	10	36	41	32	28	115	11	154	394	4
Striated Heron	0	0						0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	0
B-c Night Heron	15	14						0	0	0	0	0			0	0	0	0	0	1	0	0	0	0	30	15
Yellow Bittern	0	0						0	0	0	0	0			0	0	0	0	1	0	0	0	0	0	1	
Cinnamon Bittern																					0			0	0	
Eurasian Bittern																					0			0	0	
Black Stork																					0			0	0	
Black-headed Ibis																					0			0	0	
Eurasian Spoonbill			2																1		0			0	3	
Black-faced Spoonbill	52		93	71	16*			53	42*	2	3								2	18*	3	151	42	124	317	430
Common Shelduck																					0			0	0	
Eurasian Wigeon	13	2	93	112		62	1	0	0	1	0	3			0	0	0	0	0	0	29	0	175	204	316	
Falcated Duck																					0			0	0	
Gadwall																					0			0	0	
Baikal Teal																					0			0	0	
Eurasian Teal	110	330		18		1	1	0	13	24	0				3	0	0	23	3	22	71	23	33	127	619	
Mallard																					0			0	0	
Spot-billed Duck																					0			0	0	
Chinese Spot-billed Duck										1											6			6	7	1
Indian Spot-billed Duck																					0			0	0	
Northern Pintail	9	1	7	207					1			3								43	109		208	317	380	
Garganey	2		50									2									4			4	58	
Northern Shoveler	20	8	1089	129	12	16			7	72		87								27	825		136	961	2292	
Common Pochard																					0			0	0	
Baer's Pochard																					0			0	0	
Tufted Duck			1201																		60	43		43	1304	
Greater Scaup																					0			0	0	
Red-breasted Merganser																					0			0	0	
Duck sp.			1200	276*																	0		276	276	1200	
Slaty-breasted Rail																					0			0	0	
Eastern Water Rail																					0			0	0	
White-breasted Waterhen	1	14	1					1	1	0	3				2	1	1	6	4	1	0	15	0	15	36	4
Watercock																					0			0	0	
Common Moorhen	4	4	27					2	0	1	0				8	0	0	7	4	15	7	16	0	23	79	7
Eurasian Coot		4																	1		0			0	5	

Pheasant-tailed Jacana		1																	0		0	1
Greater Painted-snipe	2									1									0		0	3
Black-winged Stilt	1	8	643	3			61	21				6	2	4	29		25	0	37	64	101	803
Pied Avocet		8	457	263			5	36	45			14			18	3	125	16	23	299	338	990
Oriental Pratincole																					0	0
Northern Lapwing																					0	0
Grey-headed Lapwing	1		6																		0	7
Pacific Golden Plover			30	470																	470	500
Grey Plover				55																	55	55
Common Ringed Plover																					0	0
Little Ringed Plover	1	14					0	0	0	0		22	4	0	0	2	4	2	2	5	0	51
Kentish Plover			9	520								31									520	560
Lesser Sand Plover																					0	0
Greater Sand Plover				16																	16	16
Black-tailed Godwit			120																		0	120
Bar-tailed Godwit																					0	0
Whimbrel																					0	0
Eurasian Curlew				101																	101	101
Far Eastern Curlew																					0	0
Spotted Redshank				91				4													91	95
Common Redshank			238	112																	112	350
Marsh Sandpiper	2	1	439	223			3	3				1				1				226	226	673
Common Greenshank	1		81	314			14				2	2				6	2	31	2	328	361	453
Nordmann's Greenshank																					0	0
Green Sandpiper	1	8	1				6	0	4	0		5	1	3	1	2	2	0	15	0	15	34
Wood Sandpiper	1	26	16				0	0	3	1		2	0	0	4	1	11	0	5	0	5	65
Terek Sandpiper			6																		0	6
Common Sandpiper	3	17	3				1	0	1	1		1	20	9	5	9	12	9	1	40	0	92
Grey-tailed Tattler																					0	0
Ruddy Turnstone																					0	0
Red-necked Phalarope																					0	0
Pintail Snipe																					0	0
Swinhoe's Snipe																					0	0
Pintail/Swinhoe's Snipe															1			0	1		1	1
Common Snipe	6	1	1																		0	8
Snipe sp.		2															2				0	4
Long-billed Dowitcher																					0	0
Asian Dowitcher																					0	0
Red Knot																					0	0
Great Knot				3																	3	3
Sanderling				3																	3	3
Red-necked Stint																					0	0
Little Stint																					0	0
Temminck's Stint		3													5		1	0	5		5	9
Long-toed Stint																					0	0
Pectoral Sandpiper																					0	0
Sharp-tailed Sandpiper																					0	0
Dunlin				740																	740	740
Curlew Sandpiper																					0	0
Spoon-billed Sandpiper																					0	0
Broad-billed Sandpiper																					0	0
Ruff																					0	0
Small wader spp.																					0	0

Wader sp.					30																	0		30	30	30	
Black-tailed Gull																						0		0	0	0	
Heuglin's Gull				5																		0		5	5	5	
Caspian Gull																						0		0	0	0	
Slaty-backed Gull																						0		0	0	0	
Pallas's Gull																						0		0	0	0	
Large Gull spp.																						0		0	0	0	
Brown-headed Gull																						0		0	0	0	
Black-headed Gull	0	0	2002	850				0	0	0	0				0	0	0	0	0	0	0	0	0	850	850	2852	20
Saunders's Gull				6																		0		6	6	6	1
Whiskered Tern																						0		0	0	0	
White-winged Tern																						0		0	0	0	
Gull-billed Tern																						0		0	0	0	
Caspian Tern																						0		0	0	0	
Total	1635	996	8279	5698	103	84	99	583	174	527	136	211	2	156	462	55	104	363	305	764	2597	1504	6398	10499	23333	228	
	Deep Bay Area	%	Ramsar Site	%	SI	%																					
Cormorants	4112	17.6%	2275	21.7%	26	11.4%																					
Ardeids etc	4026	17.3%	2039	19.4%	157	68.9%																					
Ducks, grebes, pelicans	6439	27.6%	2045	19.5%	6	2.6%																					
Rails, coot etc	120	0.5%	38	0.4%	11	4.8%																					
Shorebirds	5773	24.7%	3241	30.9%	7	3.1%																					
Gulls and terns	2863	12.3%	861	8.2%	21	9.2%																					
TOTAL	23333	100.0%	10499	100.0%	228	100.0%																					
Date of count: 9 Nov 2014																											
High tide measured at TBT: 2.1m																											
* = count not included in the total																											
Wetland-dependent																											
Species	SRA	SRB	DBA	DBB	DBC	DBD	DBE	DBF (TBT)	SPR	NSW	LHW	WEP	Sha Kiu	NW / LFS	TKC	LC	TSW	MPST	ST	SPS	MPNR	Ramsar ponds	Ramsar intertidal areas	Ramsar Site	DEEP BAY AREA	Starling Inlet	
Western Osprey			2	3			1					0		3	1						1	2			2	13	
Black Kite	1	1	5	3			2	2	1	6	1	0		15	3	2	3	4	2	3	0	14	6	20	54	2	
White-bellied Sea Eagle												0										0		0	0	0	
Eastern Marsh Harrier												0										0		0	0	0	
Eastern Buzzard			3				3	1		1		1		1								0	1		1	10	
Greater Spotted Eagle	1	0	1					0	0	0	0	0			0	0	0	0	0	0	0	1	0	0	1	3	
Eastern Imperial Eagle	1	0						0	0	0	0	0			0	0	0	0	0	0	1	0	0	0	2		
Peregrine Falcon			1									0										0			0	1	
Pied Kingfisher	3	5	3					1	2	3	0	1			0	1	0	3	1	2	4	7	0	11	29		
Common Kingfisher	0	12	3					0	0	3	0	1		1	13	2	1	6	3	7	1	21	0	22	53	6	
White-throated Kingfisher	1	3	3	2				0	1	1	0	2	1	2	0	0	0	3	1	2	1	3	3	7	23	2	
Black-capped Kingfisher	0	0	3					0	0	0	0	0		1	0	0	0	0	0	0	0	0	0	0	4		
Red-billed Starling	0	0						15	0	0	0	0			0	0	0	0	0	6	0	0	0	0	21		
Collared Crow	0	2	1					6	0	2	1	0		5	1	2	15	2	2	0	5	25	0	30	44		
Crested Serpent Eagle							1			1																	

Summary of Waterbird Count, December 2014

SPECIES	SRA	SRB	DBA	DBB	DBC	DBD	DBE	DBF (TBT)	SPR	NSW	LHW	WEP	Sha Kiu	NW / LFS	TKC	LC	TSW	MPST	ST	SPS	MPNR	Ramsar ponds	Ramsar intertidal areas	Ramsar Site	DEEP BAY AREA	Starling Inlet	
Little Grebe	21	37						15	0	8	6	6			68	4	22	32	26	47	25	118	0	143	317	4	
Great Crested Grebe			22	5	4	40	28							1							0		77	77	100		
Great Cormorant%	128*	541*	253*					575*	52*	4360	64*	81*			44*	4*	26*	264*	177*	8*	4269			4269	8629	108	
Dalmatian Pelican																						0			0	0	
Grey Heron	49	74	66	14	17	4	45	15	51	28	8	15	1	18	16	52	31	53	5	10	163	176	114	453	735	30	
Purple Heron												1									1			1	2		
Great Egret	6	73	108	165	12	4	24	174	70	10	5	3		8	19	0	16	18	114	14	106	205	275	586	949	80	
Intermediate Egret	0	1						0	0	0	0				0	0	0	0	0	0	1	0	0	0	1	2	
Little Egret	15	173	91	8	3	1	1	84	32	9	13	2	3	12	50	59	57	208	112	20	82	355	45	482	1035	8	
Swinhoe's Egret																						0			0	0	
Pacific Reef Heron																						0			0	0	
Eastern Cattle Egret	0	6						0	0	0	0				3	42	0	0	15	0	0	45	0	45	66		
Chinese Pond Heron	18	55	29					4	0	17	20	1		2	38	13	8	19	26	7	13	88	0	101	270	2	
Striated Heron	0	0						0	0	0	0				0	0	0	0	0	0	0	0	0	0	0	0	
B-c Night Heron	25	14						0	0	0	0				0	0	0	0	0	0	14	0	0	14	53	1	
Yellow Bittern	0	0						0	0	0	0				0	0	0	0	0	0	0	0	0	0	0	0	
Cinnamon Bittern																						0			0	0	
Eurasian Bittern																						0			0	0	
Black Stork																						0			0	0	
Black-headed Ibis																						0			0	0	
Eurasian Spoonbill	1																					1	1	2	2		
Black-faced Spoonbill	1	5	38					31	12	22	3				36			18	3	1	175	31	53	259	455		
Common Shelduck																						0			0	0	
Eurasian Wigeon	124	12	135	1020		64	29	0	0	0	0	47	200	5	0	0	0	0	6	0	100	0	1113	1213	1742		
Falcated Duck		2																				0			0	2	
Gadwall	1																					0			0	1	
Baikal Teal																						0			0	0	
Eurasian Teal	48	55						0	7	2	0	11			26	0	0	53	29	20	15	66	7	88	266		
Mallard																						0			0	0	
Spot-billed Duck																						2			2	2	
Chinese Spot-billed Duck																						6			6	6	
Indian Spot-billed Duck																						0			0	0	
Northern Pintail		1	36	203								8	200									115		203	318	563	
Garganey												5										3			3	8	
Northern Shoveler	22	8	443	491		11	4		45	108		128	40		34			27	11	5	328	44	534	906	1705		
Common Pochard																						0			0	0	
Baer's Pochard																						0			0	0	
Tufted Duck	14	3	13					21				11	1200		24					5	213	1		214	1504		
Greater Scaup																						0			0	0	
Red-breasted Merganser																						0			0	0	
Smew	1																					0			0	1	
Duck sp.			3000																			67		67	3067		
Slaty-breasted Rail																						0			0	0	
Eastern Water Rail																						0			0	0	
White-breasted Waterhen	2	10	3			1		2	0	4	1	3		1	15	0	1	2	1	5	1	16	1	18	52		
Watercock																						0			0	0	
Common Moorhen	7	4	25					2	0	4	0	10			10	0	0	12	1	11	23	23	0	46	109	11	
Eurasian Coot	1		11												1						2	3	1	4	18		

Pheasant-tailed Jacana																				0			0		0		0	
Greater Painted-snipe																					0			0		0		0
Black-winged Stilt			249	8				33		112				3			2	4	32	0	37		8	45		443		
Pied Avocet	5	5	2880	1407				3	180	309	2	25				38			44	16	29	371	27	1587	1985		5314	
Oriental Pratincole																						0			0		0	
Northern Lapwing																						0			0		0	
Grey-headed Lapwing			7																			0			0		7	
Pacific Golden Plover			29	56																		0		56	56		85	
Grey Plover				486									4									5		486	491		495	
Common Ringed Plover																						0			0		0	
Little Ringed Plover	14	27						0	0	0	6			20	10	1	0	0	0	12	0	0	10	0	10		90	
Kentish Plover				422										7								0		422	422		429	
Lesser Sand Plover																						0			0		0	
Greater Sand Plover																						0			0		0	
Black-tailed Godwit			210																			0			0		210	
Bar-tailed Godwit				2																		0		2	2		2	
Whimbrel																						0			0		0	
Eurasian Curlew			277	584						1			1									142		584	726		1005	
Far Eastern Curlew																						0			0		0	
Spotted Redshank				3						4		16										0		3	3		23	
Common Redshank			151									12		2								0	2		2		165	
Marsh Sandpiper	4		24	485				1	1	72								1	2	52	4	485	541		642			
Common Greenshank			113	247						34			50	5	4				1	2	279	2	247	528		735		
Nordmann's Greenshank																						0			0		0	
Green Sandpiper	3	13					0	0	0	0				6	1	0	1	0	3	0	7	0	7		7	27		
Wood Sandpiper	3	35	36				15	0	1	9				5	0	2	4	1	5	0	28	0	28		0	116		
Terek Sandpiper																						0			0		0	
Common Sandpiper	2	20	7				2		4	0	2	0		2	9	0	0	2	16	9	3	11	2	16		78		
Grey-tailed Tattler																						0			0		0	
Ruddy Turnstone																						0			0		0	
Red-necked Phalarope																						0			0		0	
Pintail Snipe																						0			0		0	
Swinhoe's Snipe																						0			0		0	
Pintail/Swinhoe's Snipe																						0			0		0	
Common Snipe	4	8												2							1	1		2		15		
Snipe sp.																					2	0		0		2		
Long-billed Dowitcher																						0			0		0	
Asian Dowitcher																						0			0		0	
Red Knot																						0			0		0	
Great Knot				9																		0		9	9		9	
Sanderling																						0			0		0	
Red-necked Stint																						0			0		0	
Little Stint																						0			0		0	
Temminck's Stint	5																		2		0	5		5		7		
Long-toed Stint																						0			0		0	
Pectoral Sandpiper																						0			0		0	
Sharp-tailed Sandpiper																						0			0		0	
Dunlin				1008																		0		1008	1008		1008	
Curlew Sandpiper																						0			0		0	
Spoon-billed Sandpiper																						0			0		0	
Broad-billed Sandpiper																						0			0		0	
Ruff																						0			0		0	
Small wader spp.																						70		70		70		
Wader sp.			1000																			70		70		70	1070	

Summary of Waterbird Count, January 2015

SPECIES	SRA	SRB	DBA	DBB	DBC	DBD	DBE	DBF (TBT)	SPR	NSW	LHW	WEP	Sha Kiu	NW/LFS	TKC	LC	TSW	MPST	ST	SPS	MPNR	Ramsar ponds	Ramsar intertidal areas	Ramsar Site	DEEP BAY AREA	Starling Inlet
Little Grebe	17	45	3					8	0	8	10	3			32	2	5	31	13	0	49	63	0	112	226	13
Great Crested Grebe				3	16	4	12						2	12							0			0	49	7
Great Cormorant%	213*	290*	98*					319*	93*	4250	54*	6*			17*	6*	44*	154*	25*	12*	5641	507*	41*	5641	9891	51
Dalmatian Pelican																					0			0	0	
Grey Heron	144	132	281	30	2	5	11	12	20	79	10	19	5	9	24	11	12	17	3	1	89	73	68	230	916	33
Purple Heron																		1			0			0	1	
Great Egret	12	67	169	173	2	26	5	64	19	30	7	3	2	12	27	4	6	5	16	3	53	47	224	324	705	119
Intermediate Egret	0	2		18				0	2	0	0				0	0	0	0	3	1	1	1	19	21	27	
Little Egret	8	89	171	119	1	5	6	7	11	18	12	2	3	8	123	9	20	4	43	1	79	144	142	365	739	10
Swinhoe's Egret																					0			0	0	
Pacific Reef Heron																					0			0	0	
Eastern Cattle Egret	0	13						0	0	0	0	0			1	22	4	1	2	0	0	28	0	28	43	
Chinese Pond Heron	34	62	24	8			1	4	12	39	9	1		1	7	8	11	22	13	3	8	58	21	87	267	2
Striated Heron	0	0						0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	
B-c Night Heron	5	39						0	1	6	0	0			0	0	0	35	0	0	0	35	1	36	86	
Yellow Bittern	0	0						0	0	0	0	0			0	0	0	0	0	0	0	0	0	0	0	
Cinnamon Bittern																					0			0	0	
Eurasian Bittern																					0			0	0	
Black Stork																					0			0	0	
Black-headed Ibis																					0			0	0	
Eurasian Spoonbill																					2			2	2	
Black-faced Spoonbill	3		152	5	4		2		4	5		105			1			5			86	6	15	107	372	
Common Shelduck																					0			0	0	
Eurasian Wigeon	43	0	386	1670	23	6	149	1	0	18	0	5	346	30	0	0	0	0	0	0	224	1	1848	2073	2901	
Falcated Duck																					0			0	0	
Gadwall																					1			1	1	
Baikal Teal																					0			0	0	
Eurasian Teal	7	63					274	0	0	3	0	15	5		0	0	0	0	7	0	248	0	274	522	622	
Mallard				1																	0		1	1	1	
Spot-billed Duck																					0			0	0	
Chinese Spot-billed Duck																					0			0	0	
Indian Spot-billed Duck																					0			0	0	
Northern Pintail		3	210	676		285	428					4	18		3						33		1389	1422	1660	
Garganey			60									12									0			0	72	
Northern Shoveler	32		1028	178		6	76		230	691		42	87		9						655		490	1145	3034	
Common Pochard																					0			0	0	
Baer's Pochard																					0			0	0	
Tufted Duck	9	4	110				2	115	5	104			2350		35				2		37	2	7	46	2773	2
Greater Scaup																					0			0	0	
Smew																					1			1	1	
Red-breasted Merganser																					0			0	0	
Duck sp.			2500																		145			145	2645	
Slaty-breasted Rail																					0			0	0	
Eastern Water Rail																					0			0	0	
White-breasted Waterhen	0	7	4					0	0	1	0	1			1	1	1	1	1	0	1	4	0	5	19	
Watercock																					0			0	0	
Common Moorhen	2	10	46					0	2	3	0	3			3	0	0	8	4	0	18	13	0	31	99	5
Eurasian Coot	5		20																		1			16	42	1

Pheasant-tailed Jacana																				0			0	0	
Greater Painted-snipe										2										0			0	2	
Black-winged Stilt	5	1	139	28					2	143				10			4	0	10	30	40		334		
Pied Avocet	3	1	4404	4252		345	476		640	723		18	45				43	7	5713	5720		10957			
Oriental Pratincole																				0			0		
Northern Lapwing																				0			0		
Grey-headed Lapwing	3																			0			3		
Pacific Golden Plover				226																0	226	226	226		
Grey Plover				338								8								2	338	340	348		
Common Ringed Plover																				0			0		
Little Ringed Plover	1	21		2				0	0	0	1	9		9	0	0	0	0	1	1	0	1	2	3	45
Kentish Plover				323																0	323	323	326		
Lesser Sand Plover				3																0	3	3	3		
Greater Sand Plover																				0			0		
Black-tailed Godwit			780																	0			780		
Bar-tailed Godwit				2																0	2	2	2		
Whimbrel				1																0	1	1	1		
Eurasian Curlew			320	233		15							85							0	248	248	653		
Far Eastern Curlew																				0			0		
Spotted Redshank				9																0	9	9	88		
Common Redshank			100	94																0	94	94	194		
Marsh Sandpiper			430	569																0	569	569	1106		
Common Greenshank				366				21	11		164	15			1					16	387	403	594		
Nordmann's Greenshank																				0			0		
Green Sandpiper	3	4						0	0	0	1				0	0	0	1	1	2	0	2	0	2	12
Wood Sandpiper	6	24		1				0	0	0	1	1			0	0	0	0	0	3	0	1	1	2	36
Terek Sandpiper				1																0	1	1	1		
Common Sandpiper	0	18	18	1		1		0	0	1	0	1		1	1	6	2	4	3	0	1	13	2	16	58
Grey-tailed Tattler																				0			0		
Ruddy Turnstone																				0			0		
Red-necked Phalarope																				0			0		
Pintail Snipe																				0			0		
Swinhoe's Snipe																				0			0		
Pintail/Swinhoe's Snipe																				0			0		
Common Snipe	20	5	6																1	0			32		
Long-billed Dowitcher																				0			0		
Asian Dowitcher																				0			0		
Red Knot																				0			0		
Great Knot				3																0	3	3	3		
Sanderling																				0			0		
Red-necked Stint																				0			0		
Little Stint																				0			0		
Temminck's Stint				16																0	16	16	16		
Long-toed Stint																				0			0		
Pectoral Sandpiper																				0			0		
Sharp-tailed Sandpiper																				0			0		
Dunlin																				0			0		
Curlew Sandpiper																				0			0		
Spoon-billed Sandpiper																				0			0		
Broad-billed Sandpiper																				0			0		
Ruff																				0			0		
Small wader spp.																				0			0		
Wader sp.			800				70													0	70	70	870		
Black-tailed Gull																				0			0		

Summary of Waterbird Count, February 2015

SPECIES	SRA	SRB	DBA	DBB	DBC	DBD	DBE	DBF (TBT)	SPR	NSW	LHW	WEP	Sha Kiu	NW / LFS	TKC	LC	TSW	MPST	ST	SPS	MPNR	Ramsar ponds	Ramsar intertidal areas	Ramsar Site	DEEP BAY AREA	Starling Inlet
Little Grebe	19	42	1					17	1	6	5	2			18	0	15	28	10	31	12	74	0	86	207	8
Great Crested Grebe			16											46						1	0			0	63	8
Great Cormorant%	435*	254*	902*			35*		505*	24*	4024	20*	89*			7*	2*	14*	142*	25*	79*	3997			3997	8021	105
Dalmatian Pelican																						0		0	0	0
Grey Heron	132	119	75	52	3		13	13	16	92	3	92		34	7	7	9	20	1	11	72	45	83	200	771	25
Purple Heron												1									0			0	1	
Great Egret	45	161	38	132	19		9	8	155	40	6	8		15	10	2	8	18	13	17	88	46	164	298	792	122
Intermediate Egret	2	1		5				0	1	0	0				0	1	1	0	0	0	0	1	6	7	11	
Little Egret	10	84	55	51	1		3	8	2	15	17		5	21	135	12	74	32	55	110	94	255	57	406	784	23
Swinhoe's Egret																					0			0	0	0
Pacific Reef Heron																					0			0	0	0
Eastern Cattle Egret	0	13						15	0	0	0	1			0	0	3	0	5	2	0	17	0	17	39	2
Chinese Pond Heron	4	42	26	3			1	1	1	11	7		1	2	13	5	11	28	18	5	6	55	5	66	185	1
Striated Heron	0	0						0	0	0	0				0	0	0	0	0	0	0	0	0	0	0	0
B-c Night Heron	5	59						0	0	0	0				0	0	0	44	0	0	0	44	0	44	108	
Yellow Bittern	0	0						0	0	0	0				0	0	0	0	0	0	0	0	0	0	0	0
Cinnamon Bittern	1																				0			0	1	
Eurasian Bittern																					1			1	1	
Black Stork																					0			0	0	
Black-headed Ibis																					0			0	0	
Eurasian Spoonbill	1																				0			0	1	
Black-faced Spoonbill		15	47	11	4		25		46	6		113			5	1		34			49	40	86	175	356	
Common Shelduck																					0			0	0	
Eurasian Wigeon	24	0	400	1214	84	3	135	0	0	20	0	20	23		0	0	0	0	0	0	409	0	1436	1845	2332	
Falcated Duck																					0			0	0	
Gadwall																					2			2	2	
Baikal Teal																					0			0	0	
Eurasian Teal	0	98		67			24	0	0	71	0	44			0	0	0	0	0	0	68	0	91	159	372	7
Mallard																					0			0	0	
Spot-billed Duck																					0			0	0	
Chinese Spot-billed Duck																					0			0	0	
Indian Spot-billed Duck																					0			0	0	
Northern Pintail			920	685	220		164					6									26		1069	1095	2021	
Garganey	2	1		3																	0		3	3	6	
Northern Shoveler	2	2	2207	194			19		430	732		45									317		643	960	3948	
Common Pochard																					0			0	0	
Baer's Pochard																					0			0	0	
Tufted Duck		1	240		180		398	13	8	14							1	3			246	12	578	836	1104	
Greater Scaup																					0			0	0	
Smew																					1			1	1	
Red-breasted Merganser																					0			0	0	
Duck sp.			600																		0			0	600	
Slaty-breasted Rail																					0			0	0	
Eastern Water Rail			0																		0			0	0	
White-breasted Waterhen	0	7	2		2		2	0	0	1	1				1	1	0	3	0	2	1	5	4	10	23	3
Watercock																					0			0	0	
Common Moorhen	0	13	47					0	0	1	0	3			8	0	0	15	0	7	0	23	0	23	94	8
Eurasian Coot	4		6												1					2	11	1		12	24	

Pheasant-tailed Jacana																				0			0	0		
Greater Painted-snipe																				0			0	0		
Black-winged Stilt			47	26				130	157		3								0			156	156	363		
Pied Avocet			2897	2949	8		12	510	680		26				1	12			197	1		3479	3677	7292		
Oriental Pratincole																			0				0	0		
Northern Lapwing																			1				1	1		
Grey-headed Lapwing			3								2								0				0	5		
Pacific Golden Plover																			0				0	0		
Grey Plover				363											1				0			363	363	364	11	
Common Ringed Plover																			0				0	0		
Little Ringed Plover	3	15		7				0	0	0	0	3		3	0	0	0	8	0	0	1	8	7	16	40	
Kentish Plover																			0				0	0	0	
Lesser Sand Plover																			0				0	0	0	
Greater Sand Plover																			0				0	0	10	
Black-tailed Godwit				1															0			1	1	1	1	
Bar-tailed Godwit				1															0			1	1	1	1	
Whimbrel				1								25							0			1	1	1	26	1
Eurasian Curlew			256	287				2	1					2					0			289	289	548		
Far Eastern Curlew																			0				0	0	0	
Spotted Redshank			4	1							5								19			1	20	29		
Common Redshank				17								106							0			17	17	123		
Marsh Sandpiper				863								68							16			863	879	947		
Common Greenshank				242			1	140	19		145	11	8						4			383	387	570	4	
Nordmann's Greenshank																			0				0	0	0	
Green Sandpiper	1	7					0	0	0	0			2	2	0	3	3	3	3	0	6	0	6	24		
Wood Sandpiper	7	28	8	1			0	0	0	0	3			1	0	4	11	1	2	0	15	1	16	66		
Terek Sandpiper																			0				0	0	0	
Common Sandpiper	2	13	3	1			3	0	8	1		1	3	5	3	2	6	1	1	1	16	1	18	54		
Grey-tailed Tattler																			0				0	0	0	
Ruddy Turnstone																			0				0	0	0	
Red-necked Phalarope																			0				0	0	0	
Pintail Snipe																			0				0	0	0	
Swinhoe's Snipe																			0				0	0	0	
Pintail/Swinhoe's Snipe																			0				0	0	0	
Common Snipe	3	5																	0				0	8		
Long-billed Dowitcher																			0				0	0	0	
Asian Dowitcher																			0				0	0	0	
Red Knot																			0				0	0	0	
Great Knot				3															0			3	3	3	3	
Sanderling																			0				0	0	0	
Red-necked Stint																			0				0	0	0	
Little Stint																			0				0	0	0	
Temminck's Stint				7															0			7	7	7	7	
Long-toed Stint																			0				0	0	0	
Pectoral Sandpiper																			0				0	0	0	
Sharp-tailed Sandpiper																			0				0	0	0	
Dunlin																			0				0	0	0	
Curlew Sandpiper																			0				0	0	0	
Spoon-billed Sandpiper																			0				0	0	0	
Broad-billed Sandpiper																			0				0	0	0	
Ruff																			0				0	0	0	
Small wader spp.																			0				0	0	0	
Wader sp.			200				47												0			47	47	247		
Black-tailed Gull																			0				0	0	0	

Heuglin's Gull				90						1											0		90	90	91		
Caspian Gull				2																		0		2	2	2	
Slaty-backed Gull																						0		0	0	0	
Pallas's Gull																						0		0	0	0	
Large Gull spp.																						0		0	0	0	
Brown-headed Gull																						0		0	0	0	
Relict Gull				1																		0		1	1	1	
Black-headed Gull	0	0	16	4148		66	3	22	790	1481	0			0	349	71	0	0	0	0	0	93	5029	5122	6946		
Saunders's Gull				65																		0		65	65	65	
Whiskered Tern																						0		0	0	0	
White-winged Tern																						0		0	0	0	
Gull-billed Tern																						0		0	0	0	
Caspian Tern																						0		0	0	0	
Total	267	726	8114	11493	521	69	856	100	2232	7387	40	689	66	137	206	381	202	254	119	194	5639	757	15032	21428	39692	338	
	Deep Bay Area	%	Ramsar Site	%	SI	%																					
Cormorants	8021	20.2%	3997	18.7%	105	31.1%																					
Ardeids etc	3050	7.7%	1214	5.7%	173	51.2%																					
Ducks, grebes, pelicans	10656	26.8%	4987	23.3%	23	6.8%																					
Rails, coot etc	141	0.4%	45	0.2%	11	3.3%																					
Shorebirds	10719	27.0%	5905	27.6%	26	7.7%																					
Gulls and terns	7105	17.9%	5280	24.6%	0	0.0%																					
TOTAL	39692	100.0%	21428	100.0%	338	100.0%																					
Date of count: 8 Feb 2015																											
High tide measured at TBT: 1.9m																											
* = count not included in the total														% = count made at evening													
Wetland-dependent species																											
Species	SRA	SRB	DBA	DBB	DBC	DBD	DBE	DBF (TBT)	SPR	NSW	LHW	WEP	Sha Kiu	NW / LFS	TKC	LC	TSW	MPST	ST	SPS	MPNR	Ramsar ponds	Ramsar intertidal areas	Ramsar Site	DEEP BAY AREA	Starling Inlet	
Western Osprey				5			1						1									1		6	7	8	1
Black Kite	1	2		4				7	0	6	0				2	1	1	4	0	0	10	13	11	34	38	1	
White-bellied Sea Eagle																						0			0	0	
Eastern Marsh Harrier				1																		0			0	1	
Eastern Buzzard	1	2															1	1				1	2	1	4	6	
Greater Spotted Eagle	1	0						0	0	0	0				0	0	0	0	0	0	0	0	0	0	0	1	
Eastern Imperial Eagle	0	0						0	0	0	0				0	0	0	0	0	0	0	0	0	0	0	0	
Peregrine Falcon																						0			0	0	
Pied Kingfisher	0	2	3					0	1	1	0				0	1	0	0	1	0	0	0	0	1	1	9	2
Common Kingfisher	0	6						0	1	5	2				0	1	2	1	0	0	2	5	1	8	20	1	
White-throated Kingfisher	1	2						0	0	0	0				1	0	0	0	0	0	0	1	0	1	4	1	
Black-capped Kingfisher	0	0	1					0	0	0	0				0	0	0	0	0	0	0	0	0	0	1	1	
Red-billed Starling	0	28						0	0	13	0				2	0	130	0	0	0	0	130	0	130	173		
Collared Crow	0	0	1	1				2	0	2	0				3	16	2	5	0	0	5	10	1	16	37		
Crested Serpent Eagle																											1

Summary of Waterbird Count, March 2015

SPECIES	SRA	SRB	DBA	DBB	DBC	DBD	DBE	DBF (TBT)	SPR	NSW	LHW	WEP	Sha Kiu	NW/LFS	TKC	LC	TSW	MPST	ST	SPS	MPNR	Ramsar ponds	Ramsar intertidal areas	Ramsar Site	DEEP BAY AREA	Starling Inlet
Little Grebe	50	41	1					3	0	3	2	2			23	0	12	45	6	45	27	75	0	102	260	5
Great Crested Grebe			1											12							0			0	13	17
Great Cormorant	174	413	104	71				298	78	161	63	102			26	12	47	136	26	57	2014	417	119	2550	3782	190
Dalmatian Pelican																					0			0	0	
Grey Heron	48	22	46	1	2		25	5	40	52	3	57		4	1	6	3	22	0	4	229	38	68	335	570	21
Purple Heron																		1			2	1		3	3	
Great Egret	18	58	90	81	52		17	43	24	25	8	2		5	24	10	9	192	36	45	38	203	174	415	777	94
Intermediate Egret	2	2						0	0	1	0				6	0	0	0	0	1	2	5	0	7	14	
Little Egret	15	82	112	47	24		14	9	5	35	20	3	1	45	168	30	40	39	91	42	119	224	90	433	941	11
Swinhoe's Egret																					0			0	0	
Pacific Reef Heron																					0			0	0	
Eastern Cattle Egret	0	29						0	0	0	0	1			4	0	1	7	9	0	15	12	0	27	66	
Chinese Pond Heron	16	24	12					3	2	40	6	3	1	1	35	2	10	24	22	28	29	63	2	94	258	2
Striated Heron	0	0						0	0	0	0				0	0	0	0	0	0	0	0	0	0	0	
B-c Night Heron	0	22						0	0	0	0				0	0	0	16	0	6	0	16	0	16	44	1
Yellow Bittern	0	0						0	0	0	0				0	0	0	0	0	0	0	0	0	0	0	
Cinnamon Bittern																					0			0	0	
Eurasian Bittern																					0			0	0	
Black Stork																					0			0	0	
Black-headed Ibis																					0			0	0	
Eurasian Spoonbill																					5			5	5	
Black-faced Spoonbill	2	1	34	9	2		11	7	17			90			6			2			81	13	39	133	262	
Common Shelduck																					0			0	0	
Eurasian Wigeon	22	0	665	498			9	0	8	22	0	23			0	0	0	0	0	0	335	0	515	850	1582	
Falcatid Duck																					0			0	0	
Gadwall																					3			3	3	
Baikal Teal																					0			0	0	
Eurasian Teal	10	6		3			4	0	6	29	0	8			0	0	0	1	0	0	149	1	13	163	216	
Mallard																					0			0	0	
Spot-billed Duck																					0			0	0	
Chinese Spot-billed Duck																					3			3	3	
Indian Spot-billed Duck																					0			0	0	
Northern Pintail			756	312						8		4									26		312	338	1106	
Garganey			2	2					1			17									43		3	46	65	
Northern Shoveler		3	1721	53					108	220		83		26	2				1		689	3	161	853	2906	1
Common Pochard																					0			0	0	
Baer's Pochard																					0			0	0	
Tufted Duck	4	1	2990	12	42		17	7		45					28			8			50	13	71	134	3204	
Greater Scaup																					0			0	0	
Smew																					1			1	1	
Red-breasted Merganser																					0			0	0	
Duck sp.							35														140		35	175	175	
Slaty-breasted Rail																					0			0	0	
Eastern Water Rail																					0			0	0	
White-breasted Waterhen	1	14	2					0	0	7	3			2	2	0	0	4	9	1	3	8	0	11	48	2
Watercock																					0			0	0	
Common Moorhen	3	13	43					1	0	0	0	7		2	11	0	0	14	0	0	9	26	0	35	103	25
Eurasian Coot	5		1																		18			18	24	

Pheasant-tailed Jacana																				0			0	0	
Greater Painted-snipe																				0			0	0	
Black-winged Stilt	13		201				4	123		1					5	25	0	5	4			9	372		
Pied Avocet	49		2817	2927			58	175		46	120			7	2	184	7	2985	3176			3176	6385		
Oriental Pratincole																						0	0		
Northern Lapwing																						0	0		
Grey-headed Lapwing			6					3														0	9		
Pacific Golden Plover				26															26			26	26		
Grey Plover			10	445															445			445	455		
Common Ringed Plover																						0	0		
Little Ringed Plover	0	4					0	0	0	0	3	2	7	0	0	1	1	0		0	5	0	5	18	
Kentish Plover				58																		58	58	58	
Lesser Sand Plover				6																		6	6	6	
Greater Sand Plover				28																		28	28	28	
Black-tailed Godwit			60	321																		321	321	381	
Bar-tailed Godwit				4																		4	4	4	
Whimbrel																						0	0	0	
Eurasian Curlew			590	398				1		1												398	398	990	
Far Eastern Curlew																						0	0	0	
Spotted Redshank			6	16																		16	16	123	
Common Redshank			30	242				4		27												242	252	313	
Marsh Sandpiper			2	411						172												411	411	585	
Common Greenshank			14	122				14		286						2	95					122	217	533	
Nordmann's Greenshank																						0	0	0	
Green Sandpiper	2	12					1	0	0	0			5	0	1	1	0	4			4	0	4	26	
Wood Sandpiper	0	10	7				0	0	8	0	3		19	0	0	7	10	1			0	25	0	25	65
Terek Sandpiper																						0	0	0	
Common Sandpiper	0	17	15				1	0	3	0	1	1	40	2	2	9	4	2			0	42	0	42	97
Grey-tailed Tattler																						0	0	0	
Ruddy Turnstone																						0	0	0	
Red-necked Phalarope																						0	0	0	
Pintail Snipe																						0	0	0	
Swinhoe's Snipe																						0	0	0	
Pintail/Swinhoe's Snipe																						0	0	0	
Common Snipe		5	2							2						1					0	1	1	10	
Long-billed Dowitcher																						0	0	0	
Asian Dowitcher																						0	0	0	
Red Knot				2																		0	2	2	2
Great Knot				18																		0	18	18	18
Sanderling																						0	0	0	
Red-necked Stint																						0	0	0	
Little Stint																						0	0	0	
Temminck's Stint								4														0	0	4	
Long-toed Stint																						0	0	0	
Pectoral Sandpiper																						0	0	0	
Sharp-tailed Sandpiper																						0	0	0	
Dunlin				660																		0	660	660	660
Curlew Sandpiper				1																		0	1	1	1
Spoon-billed Sandpiper																						0	0	0	
Broad-billed Sandpiper																						0	0	0	
Ruff																						0	0	0	
Small wader spp.																						0	0	0	
Wader sp.																						0	0	0	
Black-tailed Gull				1																		0	1	1	1

**Mai Po Inner Deep Bay Ramsar Site
Waterbird Monitoring Programme**

**Monthly Waterbird Monitoring
Biannual Report 2 (October 2014 to March 2015)**

Appendix 2



The Hong Kong Bird Watching Society



Agriculture, Fisheries and Conservation Department

Low-tide Count, December 2014

SPECIES	SRA	SRB	DBA	DBB	DBC	DBD	DBE	DBF (TBT)	SPR	NSW	LHW	WEP	Sha Kiu	NW/ LFS	TKC	LC	TSW	MPST	ST	SPS	MPNR	Ramsar ponds	Ramsar intertidal areas	Ramsar Site	DEEP BAY AREA	Starling Inlet
Little Grebe			5																				0	0	5	
Great Crested Grebe			20		42																		42	42	62	
Great Cormorant			295		760	7	17																801	801	1079	
Dalmatian Pelican																							70	70	0	
Grey Heron			55		37	2	5																39	39	99	
Purple Heron																							32	32	0	
Great Egret			80		80	1	22																81	81	183	
Intermediate Egret																							0	0	0	
Little Egret			65		140	10	21																150	150	236	
Swinhoe's Egret																							0	0	0	
Pacific Reef Heron																							0	0	0	
Eastern Cattle Egret																							0	0	0	
Chinese Pond Heron			41		2	1	2																10	10	46	
Striated Heron																							0	0	0	
B-c Night Heron			8																				0	0	8	
Yellow Bittern																							0	0	0	
Cinnamon Bittern																							0	0	0	
Eurasian Bittern																							0	0	0	
Black Stork																							0	0	0	
Black-headed Ibis																							0	0	0	
Eurasian Spoonbill																							0	0	0	
Black-faced Spoonbill			24		3																		3	3	27	
Common Shelduck																							0	0	0	
Eurasian Wigeon			119		22	28	15																50	50	184	
Falcated Duck			2																				0	0	2	
Gadwall																							0	0	0	
Baikal Teal																							0	0	0	
Eurasian Teal						6																	6	6	6	
Mallard																							0	0	0	
Spot-billed Duck																							0	0	0	
Chinese Spot-billed Duck																							22	22	0	
Indian Spot-billed Duck																							180	180	0	
Northern Pintail			29		20	4																	52	52	53	
Garganey						1																	1	1	1	
Northern Shoveler			1150		60	17																	77	77	1227	
Common Pochard																							0	0	0	
Baer's Pochard																							0	0	0	
Tufted Duck			26																				0	0	26	
Greater Scaup																							0	0	0	
Red-breasted Merganser																							0	0	0	
Duck sp.			550			1250																	1250	1250	1800	
Slaty-breasted Rail																							0	0	0	
Eastern Water Rail																							0	0	0	
White-breasted Waterhen			13																				0	0	13	
Watercock																							0	0	0	
Common Moorhen			27																				0	0	27	
Eurasian Coot			9																				0	0	9	
Pheasant-tailed Jacana																							0	0	0	

Low-tide Count, January 2015

SPECIES	SRA	SRB	DBA	DBB	DBC	DBD	DBE	DBF (TBT)	SPR	NSW	LHW	WEP	Sha Kiu	NW/LFS	TKC	LC	TSW	MPST	ST	SPS	MPNR	Ramsar ponds	Ramsar intertidal areas	Ramsar Site	DEEP BAY AREA	Starling Inlet
Little Grebe					21	32																			53	
Great Crested Grebe																									0	
Great Cormorant			30		180																				210	
Dalmatian Pelican																									0	
Grey Heron			60		4	6	3																		73	
Purple Heron			1																						1	
Great Egret			89		16	2																			107	
Intermediate Egret																									0	
Little Egret			127		93	12	4																		236	
Swinhoe's Egret																									0	
Pacific Reef Heron																									0	
Eastern Cattle Egret																									0	
Chinese Pond Heron			25			2	1																		28	
Striated Heron																									0	
B-c Night Heron			1																						1	
Yellow Bittern																									0	
Cinnamon Bittern																									0	
Eurasian Bittern																									0	
Black Stork																									0	
Black-headed Ibis																									0	
Eurasian Spoonbill																									0	
Black-faced Spoonbill			18		2		8																		28	
Common Shelduck																									0	
Eurasian Wigeon			62		320	270																			652	
Falcated Duck																									0	
Gadwall																									0	
Baikal Teal																									0	
Eurasian Teal							14																		14	
Mallard																									0	
Spot-billed Duck																									0	
Chinese Spot-billed Duck																									0	
Indian Spot-billed Duck																									0	
Northern Pintail					210	160																			370	
Garganey																									0	
Northern Shoveler			633		120	94	4																		851	
Common Pochard																									0	
Baer's Pochard																									0	
Tufted Duck					220	1640																			1860	
Greater Scaup																									0	
Red-breasted Merganser																									0	
Duck sp.			500			700																			1200	
Slaty-breasted Rail																									0	
Eastern Water Rail																									0	
White-breasted Waterhen			3			1	1																		5	
Watercock																									0	
Common Moorhen			48																						48	
Eurasian Coot			1																						1	
Pheasant-tailed Jacana																									0	

Low-tide Count, February 2015

SPECIES	SRA	SRB	DBA	DBB	DBC	DBD	DBE	DBF (TBT)	SPR	NSW	LHW	WEP	Sha Kiu	NW / LFS	TKC	LC	TSW	MPST	ST	SPS	MPNR	Ramsar ponds	Ramsar intertidal areas	Ramsar Site	DEEP BAY AREA	Starling Inlet
Little Grebe			7				9																9	9	16	
Great Crested Grebe					5																		5	5	5	
Great Cormorant			498		150	32																	182	182	680	
Dalmatian Pelican																							0	0	0	
Grey Heron			50		14	17																	31	31	81	
Purple Heron																							0	0	0	
Great Egret			39		31	22	2																55	55	94	
Intermediate Egret																							0	0	0	
Little Egret			87																				0	0	87	
Swinhoe's Egret																							0	0	0	
Pacific Reef Heron																							0	0	0	
Eastern Cattle Egret																							0	0	0	
Chinese Pond Heron			33				2																2	2	35	
Striated Heron																							0	0	0	
B-c Night Heron			7																				0	0	7	
Yellow Bittern																							0	0	0	
Cinnamon Bittern																							0	0	0	
Eurasian Bittern																							0	0	0	
Black Stork																							0	0	0	
Black-headed Ibis																							0	0	0	
Eurasian Spoonbill																							0	0	0	
Black-faced Spoonbill			66		32	6																	38	38	104	
Common Shelduck																							0	0	0	
Eurasian Wigeon			408		46	586	42																674	674	1082	
Falcated Duck																							0	0	0	
Gadwall																							0	0	0	
Baikal Teal																							0	0	0	
Eurasian Teal					820	22																	842	842	842	
Mallard																							0	0	0	
Spot-billed Duck																							0	0	0	
Chinese Spot-billed Duck																							0	0	0	
Indian Spot-billed Duck																							0	0	0	
Northern Pintail			881		230																		230	230	1111	
Garganey																							0	0	0	
Northern Shoveler			1480		31	180	6																217	217	1697	
Common Pochard																							0	0	0	
Baer's Pochard																							0	0	0	
Tufted Duck			10		140	240	9																389	389	399	
Greater Scaup																							0	0	0	
Red-breasted Merganser																							0	0	0	
Duck sp.			1000		1300																		1300	1300	2300	
Slaty-breasted Rail																							0	0	0	
Eastern Water Rail																							0	0	0	
White-breasted Waterhen			5																				0	0	5	
Watercock																							0	0	0	
Common Moorhen			74																				0	0	74	
Eurasian Coot			7																				0	0	7	
Pheasant-tailed Jacana																							0	0	0	

Greater Painted-snipe																					0	0	0
Black-winged Stilt		54																			0	0	54
Pied Avocet		3549	360	590	7																957	957	4506
Oriental Pratincole																					0	0	0
Northern Lapwing																					0	0	0
Grey-headed Lapwing		9																			0	0	9
Pacific Golden Plover																					0	0	0
Grey Plover				7																	0	7	7
Common Ringed Plover																					0	0	0
Little Ringed Plover																					0	0	0
Kentish Plover																					0	0	0
Lesser Sand Plover																					0	0	0
Greater Sand Plover																					0	0	0
Black-tailed Godwit																					0	0	0
Bar-tailed Godwit																					0	0	0
Whimbrel																					0	0	0
Eurasian Curlew		104	32	56																	88	88	192
Far Eastern Curlew																					0	0	0
Spotted Redshank																					0	0	0
Common Redshank		2			155																155	155	157
Marsh Sandpiper			700		3																703	703	703
Common Greenshank		2	200																		200	200	202
Nordmann's Greenshank																					0	0	0
Green Sandpiper																					0	0	0
Wood Sandpiper		15			1																1	1	16
Terek Sandpiper																					0	0	0
Common Sandpiper		8			1																1	1	9
Grey-tailed Tattler																					0	0	0
Ruddy Turnstone																					0	0	0
Red-necked Phalarope																					0	0	0
Pintail Snipe																					0	0	0
Swinhoe's Snipe																					0	0	0
Pintail/Swinhoe's Snipe																					0	0	0
Common Snipe																					0	0	0
Long-billed Dowitcher																					0	0	0
Asian Dowitcher																					0	0	0
Red Knot																					0	0	0
Great Knot																					0	0	0
Sanderling																					0	0	0
Red-necked Stint																					0	0	0
Little Stint																					0	0	0
Temminck's Stint		7																			0	0	7
Long-toed Stint																					0	0	0
Pectoral Sandpiper																					0	0	0
Sharp-tailed Sandpiper																					0	0	0
Dunlin																					0	0	0
Curlew Sandpiper																					0	0	0
Spoon-billed Sandpiper																					0	0	0
Broad-billed Sandpiper																					0	0	0
Ruff																					0	0	0
Small wader spp.																					0	0	0
Wader sp.																					0	0	0
Black-tailed Gull																					0	0	0
Heuglin's Gull			75	8																	83	83	83

**Mai Po Inner Deep Bay Ramsar Site
Waterbird Monitoring Programme**

**Monthly Waterbird Monitoring
Biannual Report 2 (October 2014 to March 2015)**

Appendix 3



The Hong Kong Bird Watching Society



Agriculture, Fisheries and Conservation Department

Peak count of each waterbird species, mid-winter period (December to February) 2014-15.

Cormorant

Great Cormorant	9,891
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Ardeids and Ciconiiformes

Grey Heron	916
Purple Heron	2
Great Egret	949
Intermediate Egret	27
Little Egret	1,035
Swinhoe's Egret	0
Pacific Reef Heron	0
Eastern Cattle Egret	66
Chinese Pond Heron	270
Striated Heron	0
Black-crowned Night Heron	108
Yellow Bittern	0
Cinnamon Bittern	1
Eurasian Bittern	1
Black Stork	0
Oriental Stork	0
Black-headed Ibis	0
Eurasian Spoonbill	2
Black-faced Spoonbill	455
Sub-total:	3,832

Ducks, Grebes and Pelicans

Little Grebe	317
Great Crested Grebe	100
Dalmatian Pelican	0
Common Shelduck	0
Eurasian Wigeon	2,901
Falcated Duck	2
Gadwall	2
Baikal Teal	0
Eurasian Teal	842
Mallard	1
'Unidentified' Spot-billed Duck	2
Chinese Spot-billed Duck	6
Indian Spot-billed Duck	0
Northern Pintail	2,021
Garganey	72
Northern Shoveler	3,948
Common Pochard	0
Baer's Pochard	0
Ferruginous Duck	0
Tufted Duck	2,773
Greater Scaup	0
Smew	1
Red-breasted Merganser	0
Unidentified duck	997
Sub-total:	13,985

Rails and Coots

Slaty-breasted Rail	0
Eastern Water Rail	0
White-breasted Waterhen	52
Ruddy-breasted Crake	0
Watercock	0
Common Moorhen	109
Eurasian Coot	42
Sub-total:	203

Shorebirds

Pheasant-tailed Jacana	0
Greater Painted-snipe	2
Black-winged Stilt	443
Pied Avocet	10,957
Oriental Pratincole	0
Northern Lapwing	1
Grey-headed Lapwing	9
Pacific Golden Plover	226
Grey Plover#	594
Common Ringed Plover	0
Little Ringed Plover	90
Kentish Plover	429
Lesser Sand Plover	3
Greater Sand Plover	0
Black-tailed Godwit	780
Bar-tailed Godwit	2
Whimbrel	26
Eurasian Curlew#	1,005
Far Eastern Curlew	0
Spotted Redshank	88
Common Redshank	194
Marsh Sandpiper	1,106
Common Greenshank	735
Nordmann's Greenshank	0
Green Sandpiper	27
Wood Sandpiper	116
Terek Sandpiper	1
Common Sandpiper	78
Grey-tailed Tattler	0
Ruddy Turnstone	0
Red-necked Phalarope	0
Pintail Snipe	0
Swinhoe's Snipe	0
Pintail/Swinhoe's Snipe	0
Unidentified Snipe	2
Common Snipe	32
Long-billed Dowitcher	0
Asian Dowitcher	0
Red Knot#	3
Great Knot#	15
Sanderling	0
Red-necked Stint	0
Little Stint	0
Temminck's Stint	16
Long-toed Stint	0
Pectoral Sandpiper	0
Sharp-tailed Sandpiper	0

Dunlin	1,570
Curlew Sandpiper	0
Spoon-billed Sandpiper	0
Broad-billed Sandpiper	0
Ruff	0
Unidentified small-sized Shorebird	Not included
Sub-total:	18,550

Additional counts from shorebird count in mid-winter period.

Gulls and Terns

Black-tailed Gull	1
Mew Gull	0
Heuglin's Gull	232
Caspian Gull	2
Slaty-backed Gull	1
Pallas's Gull	2
Unidentified large Gull (assumed to be same as Heuglin's Gull)	0
Brown-headed Gull	0
Relict Gull	1
Black-headed Gull	6,946
Saunders's Gull	65
Whiskered Tern	0
White-winged Tern	0
Gull-billed Tern	0
Caspian Tern	0
Sub-total:	7,250

Summary of sub-totals of different waterbird groups, December 2014 to February 2015.

Group	Sub-total
Cormorants	9,891
Ardeids	3,832
Ducks, Grebes and Pelicans	13,985
Rails and Coots	203
Shorebirds	18,550
Gulls and Terns	7,250
Total	53,711