

# **WATERFOWL REPORT**

**Trial on Improving the Roosting Habitat for  
Wintering Waterfowl in Ponds #20 and #24  
at Mai Po Nature Reserve  
(Tender Ref.: AFCD/SQ/20/05)**

**May 2006**



**WWF Hong Kong  
1 Tramway Path  
Central  
Hong Kong**

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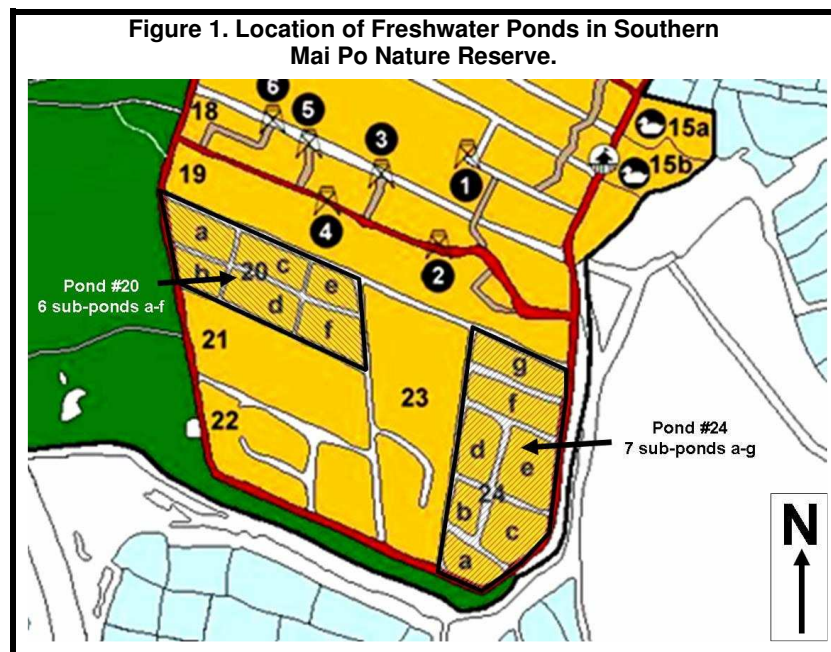
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## 1. INTRODUCTION

### 1.1 Background

- 1.1.1 Over the winter period 2005/06, the World Wide Fund For Nature Hong Kong completed two Anatidae related studies in the freshwater ponds of Mai Po Nature Reserve (Figure 1). Both studies are ecological monitoring components associated with trial habitat improvement works on the ponds as per the contract AFCD SQ/20/05. A similar trial and Anatidae study were both completed in winter 2004-05 (Anon, 2005a & Anon, 2005b).
- 1.1.2 The project aims are twofold:
- To determine if regular cutting of bund and bankside vegetation can create habitat conditions that attract greater numbers of roosting Anatidae.
  - To investigate the Anatidae preference of different species of aquatic vegetation for night time roosting and foraging.
- 1.1.3 The first habitat improvement trial set out to maintain internal and boundary bunds with short grass along the entire 5-kilometre freshwater pond bund network associated with Ponds #20 and #24 (containing 13 sub-ponds). To achieve this, bund and bankside vegetation was cut, collected and removed on a 4-week rotation period between mid-August and early November 2005, prior to the main arrival of wintering Anatidae. The second trial involved the creation of small quadrats (each ~50-75m<sup>2</sup>) of four different species of emergent aquatic vegetation; *Paspalum distichum* (Knot Grass), *Echinochloa crus-galli* (Barnyard Millet), *Ipomoea reptans* (Water Spinach) and *Leersia hexandra* (Rice Grass), in the central areas of Sub-ponds #20f, #24f and #24g.
- 1.1.4 The purpose of this report is to outline the avifauna monitoring work methodology, present results and basic findings. The subsequent 'Final Report' (in prep.) brings together the avifauna monitoring results, trial habitat management works and provides technical details and practical issues relating to both trials.



## 2. METHODOLOGY

### 2.1 Roosting Anatidae Count

- 2.1.1 Between mid October 2005 and late April 2006, sixteen individual counts were completed on each of the 6 sub-ponds within Pond #20a-f and 2 sub-ponds in Pond #24 (f and g). Counts were undertaken on a bi-weekly basis, although during January and February, two extra counts were completed to coincide with the expected peak influx of Anatidae.
- 2.1.2 Count dates were selected to (1) coincide with evening/dusk high tides in Deep Bay as these are known to increase the total number of waterbirds inside Mai Po Nature Reserve (Anon, 2002 & Anon, 2005a) and (2) be carried out within 1-2 days of the Hong Kong Bird-watching Society's Monthly Ramsar Site Waterbird Count to facilitate better data interpretation (as recommended in Anon, 2005a). Because these tidal conditions do not occur between October to December, count dates had to be selected in consideration of the best available tidal conditions and the need to collect data from dates approximately 2 weeks apart (Table 1).
- 2.1.3 On each date, Anatidae were counted over a 1-hour period using a 15-minute interval system; three counts before and one immediately after sunset. A 15-minute interval is sufficient to count the expected number of Anatidae and identify individual taxa correctly. A typical survey consists of 3 observers performing counts simultaneously at (Point 1) Sub-ponds #20a, #20b and #20d, (Point 2) Sub-ponds #20c, #20e and #20f, and (Point 3) Sub-ponds #24f and #24g (Figure 2). Recounts of species with low numbers after the main 1-hour count period were made for verification and to improve accuracy.
- 2.1.4 A final peak count for each Anatidae species in each sub-pond during a designated count was obtained by taking the highest number from all four interval counts i.e. 16 individual counts, totalling 64 interval counts. Double counting was avoided by recording all Anatidae movements between the surveyed sub-ponds and, if necessary, adjusting data values after the count.

**Table 1. Roosting Anatidae Count Dates, Times and Associated Tidal Conditions : Winter 2005/06**

Date	Sunset <sup>1</sup> (Time)	Observation Period	Tide <sup>1</sup>		
			Preceding Condition	Height <sup>2</sup>	Condition <sup>3</sup>
17 October 2005 <sup>4</sup>	17:56	17:11 – 18:11	0.6m@16:53	0.8m	↑
31 October 2005	17:47	17:02 – 18:02	0.8m@15:57	1.3m	↑
14 November 2005 <sup>4</sup>	17:40	16:55 – 17:55	0.8m@15:32	1.7m	↑
30 November 2005	17:38	16:53 – 17:53	1.1m@15:26	1.8m	↑
19 December 2005 <sup>4</sup>	17:43	16:58 – 17:58	1.3m@17:24	1.7m	↑
29 December 2005	17:49	17:04 – 18:04	1.2m@14:34	1.8m	↑
09 January 2006	17:56	17:11 – 18:11	1.0m@11:51	2.1m	↑
15 January 2006	18:00	17:15 – 18:15	1.1m@16:03	1.2m	↑
23 January 2006 <sup>4</sup>	18:06	17:21 – 18:21	2.0m@16:14	1.8m	↓
07 February 2006	18:15	17:30 – 18:30	2.1m@17:10	2.0m	↓
20 February 2006 <sup>4</sup>	18:23	17:38 – 18:38	2.1m@14:05	1.4m	↓
27 February 2006	18:26	17:41 – 18:41	0.9m@16:21	1.5m	↑
09 March 2006	18:30	17:45 – 18:45	0.5m@01:56	2.1m	↔
22 March 2006 <sup>4</sup>	18:35	17:50 – 18:50	2.4m@13:57	1.4m	↓
18 April 2006 <sup>4</sup>	18:44	17:59 – 18:59	2.7m@12:07	0.8m	↓
25 April 2006	18:47	18:02 – 19:02	0.7m@15:18	1.4m	↑

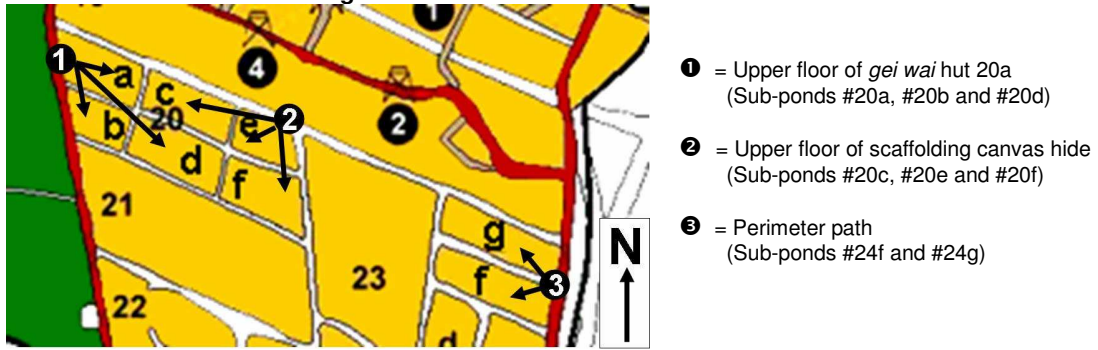
1 – Data from the HK Observatory (tide data relates to Tsim Bei Tsui tidal station)

2 – At mid-point of observation period

3 – General tidal condition during observation period (↑ = Rising, ↓ = Falling, ↔ = coincides with max or min tide)

4 – Dates selected to be within 1-2 days of the HKBWS Monthly Ramsar Site Waterbird Count.

Figure 2. Count and Observation Locations.



## 2.2 Anatidae Vegetation Use Study

2.2.1 Between late November 2005 and late April 2006, 18 observations were made upon waterbird\* usage of the 4 different vegetation species planted in Sub-ponds #20f, #24f and #24g from location points 2 and 3 as shown in Figure 2. Observation dates depended upon the rate of (1) vegetation growth and (2) consumption by Anatidae throughout the period. Consequently two intense observation periods proved necessary (Table 2); the first between late November and the end of December before vegetation cover fell below 10% and became unreliable for surveying (see 3.3.2), and the second between March and April once vegetation had regrown again.

(\* For the purposes of this study a waterbird belongs to one of the following bird families; Anatidae, Ardeidae, Charadriidae, Ciconiidae, Fregatidae, Glareolidae, Haematopidae, Jacanidae, Laridae, Pelecanidae, Podicipidae, Rallidae, Recurvirostridae, Scolopacidae, Stercorariidae, Threskiornithidae, Alcedinidae or Phasianidae.)

2.2.2 An individual observation period consisted of ten 6-minute interval counts (total 1-hour) commencing 45 minutes before sunset (Table 2). An interval count consisted of recording the number of each waterbird species using each vegetation plot for either feeding or roosting. This produced 180 interval counts (18 x 1-hour observations, with a 6 minute interval) were obtained for each vegetation type.

Table 2. Anatidae Vegetation Use Study Observation Dates and Times.

Date	Sunset <sup>1</sup> (Time)	Observation Period
23 November 2005	17:39	16:54 – 17:54
29 November 2005	17:38	16:53 – 17:53
06 December 2005	17:39	16:54 – 17:54
08 December 2005	17:40	16:55 – 17:55
12 December 2005	17:41	16:56 – 17:56
15 December 2005	17:42	16:57 – 17:57
20 December 2005	17:44	16:59 – 17:59
30 December 2005	17:49	17:04 – 18:04
06 March 2006	18:29	17:44 – 18:44
08 March 2006	18:30	17:45 – 18:45
09 March 2006	18:30	17:45 – 18:45
10 March 2006	18:31	17:46 – 18:46
13 March 2006	18:32	17:47 – 18:47
14 March 2006	18:32	17:47 – 18:47
16 March 2006	18:33	17:48 – 18:48
17 March 2006	18:33	17:48 – 18:48
18 April 2006	18:44	17:59 – 18:59
25 April 2006	18:47	18:03 – 19:03

<sup>1</sup> - Data from the HK Observatory

### 3. RESULTS

#### 3.1 Roosting Anatidae Count Data : Winter 2005/06

3.1.1 Data collected from the field-based counts is presented in Appendix 1 and shown according to each count date with the peak number of birds for each species given. A summary is presented in Table 3.

**Table 3. Roosting Anatidae Count Summary : Winter 2005/06.**

Date	Sub-Pond						Total	Sub-Pond		Total	TOTAL
	20a	20b	20c	20d	20e	20f		24f	24g		
17-Oct-05	0	0	0	0	0	0	0	0	0	0	0
31-Oct-05	3	11	48	20	0	2	84	0	0	0	84
14-Nov-05	14	0	78	76	19	31	218	12	7	19	237
30-Nov-05	130	11	1055	123	134	151	1604	65	6	71	1675
19-Dec-05	32	3	299	31	27	36	428	99	49	148	576
29-Dec-05	533	507	3320	105	24	124	4613	44	136	180	4793
09-Jan-06	221	103	1840	149	49	55	2417	12	82	94	2511
15-Jan-06	228	245	435	182	18	59	1167	29	91	120	1287
23-Jan-06	188	127	1264	52	6	25	1662	12	43	55	1717
07-Feb-06	285	428	1907	145	47	19	2831	100	109	209	3040
20-Feb-06	380	140	127	70	16	9	742	7	16	23	765
27-Feb-06	737	100	1505	198	17	5	2562	15	11	26	2588
09-Mar-06	591	135	385	134	4	27	1276	92	1	93	1369
22-Mar-06	723	235	152	41	18	7	1176	6	0	6	1182
18-Apr-06	0	0	109	0	0	3	112	0	0	0	112
25-Apr-06	0	0	50	2	0	1	53	0	0	0	53

3.1.2 Over the winter period the highest peak monthly counts (Ponds #20a-f and #24f-g combined) occurred in December (4,851) and February (3,545) (Table 4). Peak counts greater than 1000 birds occurred in each of the 5 months between November and March. In the remaining months, October and April, peak counts remained low at about 100 birds (Table 4 & Figure 3).

**Table 4. Peak Monthly Roosting Anatidae Counts : Winter 2005/06.**

Date	Sub-Pond						Total	Sub-Pond		Total	TOTAL
	20a	20b	20c	20d	20e	20f		24f	24g		
Oct-05	3	11	48	20	0	2	84	0	0	0	84
Nov-05	130	11	1055	123	134	151	1604	65	7	72	1676
Dec-05	533	507	3320	105	27	124	4616	99	136	235	4851
Jan-06	228	245	1840	182	49	59	2603	29	91	120	2723
Feb-06	737	428	1907	198	47	19	3336	100	109	209	3545
Mar-06	723	235	385	134	18	27	1522	92	1	93	1615
Apr-06	0	0	109	2	0	3	114	0	0	0	114
Mean	336.3	205.3	1237.7	109.1	39.3	55.0	1982.7	55.0	49.1	104.1	2086.9
S.D	323.3	208.5	1197.0	74.7	46.2	60.0	1663.5	45.0	60.3	92.4	1754.3

Rank	2	3	1	4	8	5
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	5	7
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3.1.3 The highest individual count within the 8 sub-ponds was recorded from #20c (3,320 on 29 December) (Table 4 and Figure 4). This sub-pond is the highest ranked with a mean peak monthly count of 1,237.7 birds accounting for 58.8% of all Anatidae records during the winter period. Other sub-ponds with mean peak monthly counts greater than 100 birds are #20a, #20b and #20d (ranked 2,3 and 4 respectively). Of these, #20a is notably higher (mean = 336.3) accounting for 16.8% of the winter Anatidae data set. Collectively, #20a and #20c comprise 75.4% of all Anatidae data.

3.1.4 A total of 13 Anatidae species were recorded. Three are considered to be of ‘uncertain’ origin; Falcated Duck, Greater Scaup and Mallard/Spot-bill hybrid (all recorded in April 2006), and are therefore omitted from the data set and subsequent analysis. The male Falcated Duck was noted (and photographed by Hong Kong birdwatchers) with a red ribbon tied on the right tarsus; Greater Scaup does not occur in Hong Kong during March or April (Carey *et al*, 1999); and although the Mallard/Spot-bill hybrid might be a genuine wild bird, it’s coincidental and simultaneous appearance as the other two non-wild birds casts doubt over it’s wild origin. The omission of these 3 records does not in anyway compromise the study data.

3.1.5 Northern Pintail with a mean peak monthly count of 651.5 individuals and high counts of 2,068 on 07 February (Table 5) and 2,056 on 29 December was the most abundant species. Common Teal (mean = 236.6), Northern Shoveler (mean = 189.6) and Tufted Duck (mean = 184.4) are notably more abundant than the other species and collectively with Northern Pintail, comprise 89.6% of the entire Anatidae winter data set from all surveyed ponds.

**Table 5. Maximum Anatidae Species Counts : Winter 2005/06.**

Species	Individual Sub-pond			Ponds #20a-f and #24f-g			
	Maximum Count	Sub-pond	Date(s)	Maximum Count	Date(s)	Mean <sup>1</sup> Count	Rank <sup>2</sup>
Northern Pintail	1600	#20c	07-Feb-06	2068	07-Feb-06	651.5	1
Common Teal	496	#20a	22-Mar-06	628	09-Mar-06	236.6	2
Northern Shoveler	1150	#20c	29-Dec-05	1471	29-Dec-05	189.6	3
Tufted Duck	540	#20c	09-Jan-06	633	09-Jan-06	184.4	4
Eurasian Wigeon	103	#20c	22-Mar-06	228	29-Dec-05	94.1	5
Garganey	126	#20a	22-Mar-06	253	22-Mar-06	41.9	6
Gadwall	28	#20f	15-Jan-06	31	15-Jan-06	9.2	7
Ferruginous Duck	3	#20a	07-Feb-06 09-Mar-06	3	15-Jan-06 07-Feb-06 09-Mar-06	0.8	8
Spot-billed Duck	3	#24f	15-Jan-06	3	15-Jan-06	0.6	9
Common Pochard	3	#20e	30-Nov-05	3	30-Nov-05	0.3	10

<sup>1</sup> - Calculated from all 16 counts (Oct-Apr)

<sup>2</sup> - Rank based on mean count

3.1.6 Of the remaining species, counts of 31 Gadwall and 253 Garganey are both among the highest for those species in Hong Kong in recent years (i.e. the HKBWS waterbird data from the last 5 winter periods, shows the maximum total Deep Bay count of Garganey was 112 in February 2003 and 10 Gadwall in March and February 2006). In addition, the counts of 3 Ferruginous Duck, being of a ‘near threatened’ conservation status (Birdlife International, 2000), are important.

3.1.7 Trends observed for the 7 most abundant species (Figure 5) reflect differing usage of the ponds by species and their general Hong Kong winter migration pattern. Of particular note/interest are:

- Erratic fluctuations in the number of roosting Northern Pintail.
- Comparative late usage of the ponds by Common Teal and peak count in late winter (March).
- Near confined usage of the ponds by Tufted Duck to the period between late December and early February.
- Clearly defined peak usage of the ponds by Garganey in late March.
- Suggestive peak usage of the ponds by Eurasian Wigeon in late December and again in mid March. Also a sustained and steady use of the ponds throughout winter.

3.1.8 Species showing a stronger preference/affiliation for a particular sub-pond (i.e. ~50% of the data set being recorded from a sub-pond) were Northern Pintail (77.0% in #20c), Tufted Duck (74.9% in #20c), Northern Shoveler (54.3% in #20c), Gadwall (65.3% in #20f), and Common Teal (49.4% in #20a) (Figures 6 and 7).

- 3.1.9 A comparison between the Ramsar Site Anatidae population and Pond #20 count data (Table 6) shows that for the more abundant months (November to March) 51.3% of the Ramsar population utilised the Pond for roosting in January 2006 and 40.3% in March 2006.

Table 6. Comparison of the Anatidae Count Data between Pond #20a-f and the Ramsar Site : Winter 2005/06.

Pond #20a-f		Ramsar Site*		Pond #20/Ramsar (%)
WWF HK Count Date	Total no. of Anatidae	HKBWS Count Date	Total no. of Anatidae	
17-Oct-05	0	16-Oct-05	35	0.0%
14-Nov-05	218	13-Nov-05	7355	3.0%
19-Dec-05	428	18-Dec-05	6150	7.0%
23-Jan-06	1662	22-Jan-06	3241	51.3%
19-Feb-06	742	19-Feb-06	9571	7.8%
22-Mar-06	1176	19-Mar-06	2921	40.3%
18-Apr-06	112	16-Apr-06	113	~100.0%

\* - HKBWS data (Anon, 2006)

### 3.2 Roosting Anatidae Count Data : Winter Period Comparison

- 3.2.1 Anatidae increased in Pond #20a-f from the corresponding 2004/05 winter period by a mean monthly change of +66.3% (Table 7). The highest % change occurred in November (+286.5%) with increases observed in 6 of the 7 winter months (Figure 3). Similarly a mean monthly increase occurred in Pond #24f-g (+185.6%) with the highest change in November (+1100%) and increases observed in 4 of the 7 survey months (Figure 3). The complete 2004/05 winter Anatidae data set is presented in Appendix 2.

Table 7. Comparison of the Anatidae Peak Count Data for Ponds #20a-f and #24f-g : Winters 2004/05 & 2005/06.

	Pond #20a-f			Pond #24f-g		
	2004/05*	2005/06	% Change	2004/05*	2005/06	% Change
Oct	394	84	-78.7%	7	0	-100.0%
Nov	415	1604	+286.5%	6	72	+1100.0%
Dec	3306	4616	+39.6%	72	235	+226.4%
Jan	1321	2603	+97.0%	170	120	-29.4%
Feb	1961	3336	+70.1%	70	209	+198.6%
Mar	1086	1522	+40.1%	90	93	+3.3%
Apr	104	114	+9.6%	31	0	-100.0%

\* - Data from Anon 2005a

- 3.2.2 Of the most abundant Anatidae species recorded from winters 2004/05 and 2005/06 (based on mean count), 4 species increased and 2 decreased between the two periods (Table 8). Of those to increase, Northern Shoveler and Tufted Duck both show significant changes (>600%). Others of note include Garganey and Northern Pintail. Eurasian Wigeon, the 2<sup>nd</sup> most common Anatidae inside MPNR in winter 2004/05, declined significantly by 68.4%. Common Teal declined by 23.0%.

Table 8. Comparison of the Most Abundant Anatidae Species : Winters 2004/05 & 2005/06.

Species	2004/05		2005/06		% Change <sup>3</sup>
	Maximum Count	Mean Count <sup>1</sup>	Maximum Count	Mean Count <sup>2</sup>	
Northern Pintail	1714	273.3	2068	651.5	+138.4
Common Teal	1549	307.4	628	236.6	-23.0
Northern Shoveler	135	24.6	1471	189.6	+670.7
Tufted Duck	138	25.1	633	184.4	+634.7
Eurasian Wigeon	1332	298.0	228	94.1	-68.4
Garganey	87	27.0	253	41.9	+55.2

<sup>1</sup> - Calculated from 15 counts (Oct-Apr)

<sup>2</sup> - Calculated from 16 counts (Oct-Apr)

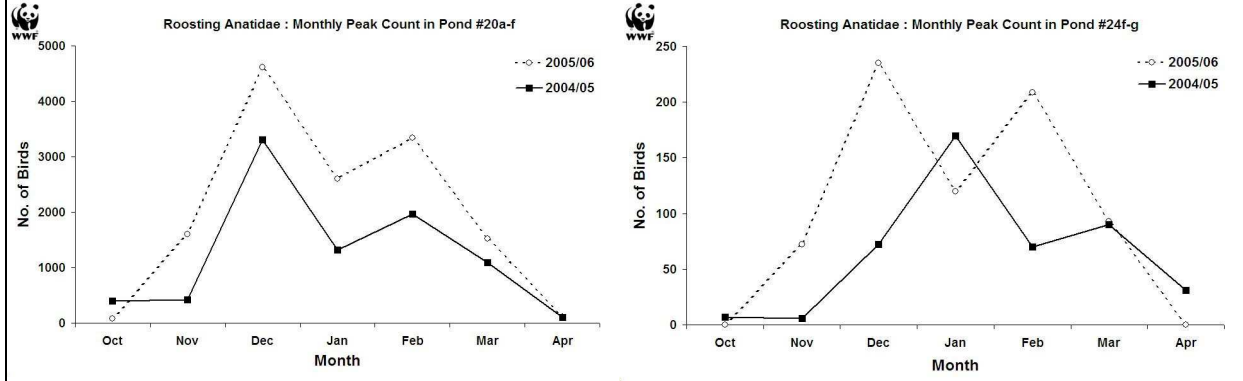
<sup>3</sup> - Based on mean count

(only species with a mean count >10.0 are shown)

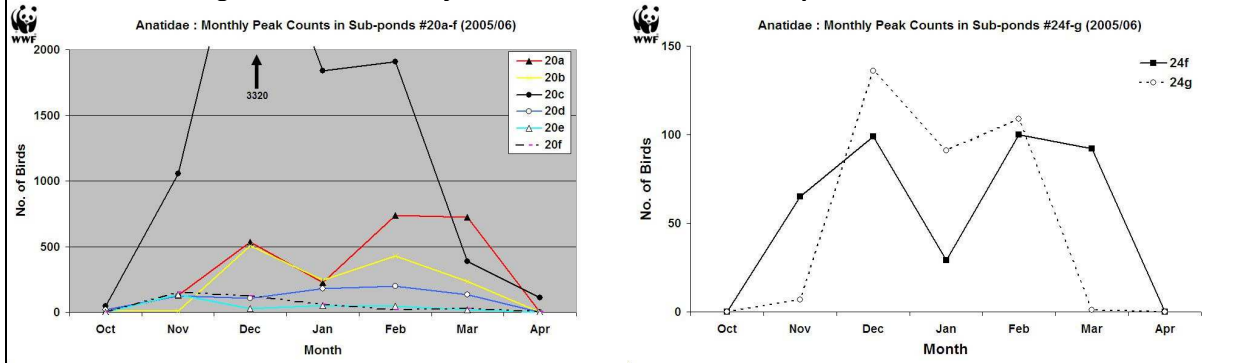
### **3.3 Anatidae Vegetation Use Data**

- 3.3.1 Data from this study is presented in Appendix 3 and shown according to each count date with the cumulative total of observations for each waterbird species per plant type given. Only Anatidae data is analysed within this report.
- 3.3.2 Throughout the winter period, vegetation cover in each of the survey plots varied. For example, when surveying commenced in late November, vegetation cover for all species in all plots was greater than 80%. However, in Sub-pond #24f, cover fell to 0% by mid December for V1 (Water Spinach) and V2 (Rice Grass). In Sub-pond #20f, V1 (Water Spinach) fell to 0% by the end of December, but V2 (Rice Grass) remained at 40% cover. This reduction in % cover was due to the combined effects of (1) Anatidae grazing (2) post planting success/failure of the vegetation to establish and (3) natural die back as winter sets in. Therefore to improve data interpretation and analysis, and be confident that a waterbird's choice to roost inside the quadrat was most likely related to the planted vegetation type, all usage data recorded from a plot where the vegetation percentage cover fell below 10% is considered unreliable and omitted. Consequently 27.8% of the data set for V1 (Water Spinach), 33.3% for V2 (Rice Grass), and 100% for both V3 (Knot Grass) and V4 (Barnyard Millet) are used in the analysis (Table 9).
- 3.3.3 Vegetation V4 (Barnyard Millet) with a mean observation rate of 10.85 birds, proved to be considerably more attractive to Anatidae than the other 3 vegetation types, accounting for 54.0% of the entire data set. Usage is predominantly by Common Teal and Eurasian Wigeon (Figure 8). Ranked second with a mean observation rate of 4.35, V2 (Rice Grass) is largely used by Eurasian Wigeon and Northern Pintail.
- 3.3.4 Of the 8 Anatidae species recorded, Eurasian Wigeon, Common Teal and Northern Pintail were recorded more frequently, accounting for 83.3% of all observations. Five of the 8 species made use of all 4 different vegetation types during the winter period. V3 (Knot Grass) and V2 (Rice Grass) attracted the highest diversity of species (8 and 7 respectively).

**Figure 3. Peak Monthly Anatidae Counts in Ponds #20a-f and #24f-g : Winter 2004/05 to 2005/06.**



**Figure 4. Peak Monthly Anatidae Counts in each Sub-pond : Winter 2005/06.**



**Figure 5. Individual Anatidae Species Trends in Ponds #20a-f and #24f-g : Winter 2005/06.**

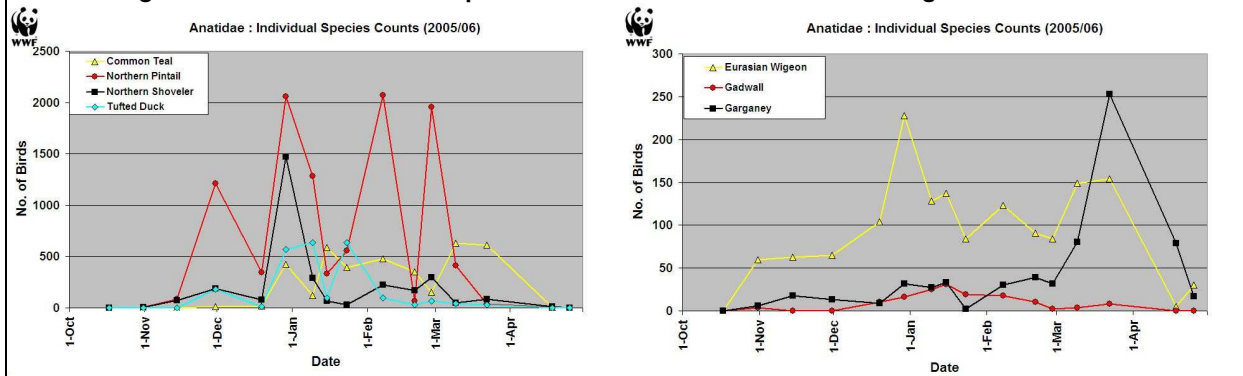


Figure 6. Distribution of Anatidae Species within Ponds #20a-f and #24f-g : Winter 2005/06.

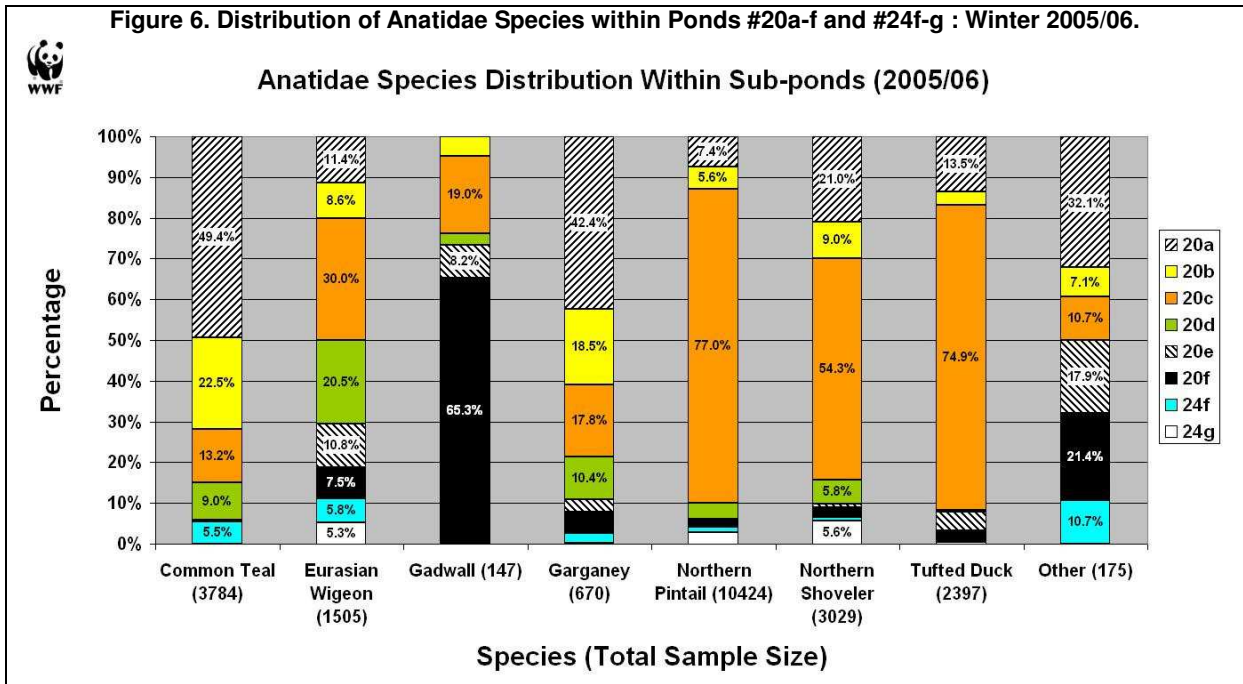


Figure 7. Distribution of Anatidae Species Across Ponds #20a-f and #24f-g : Winter 2005/06.

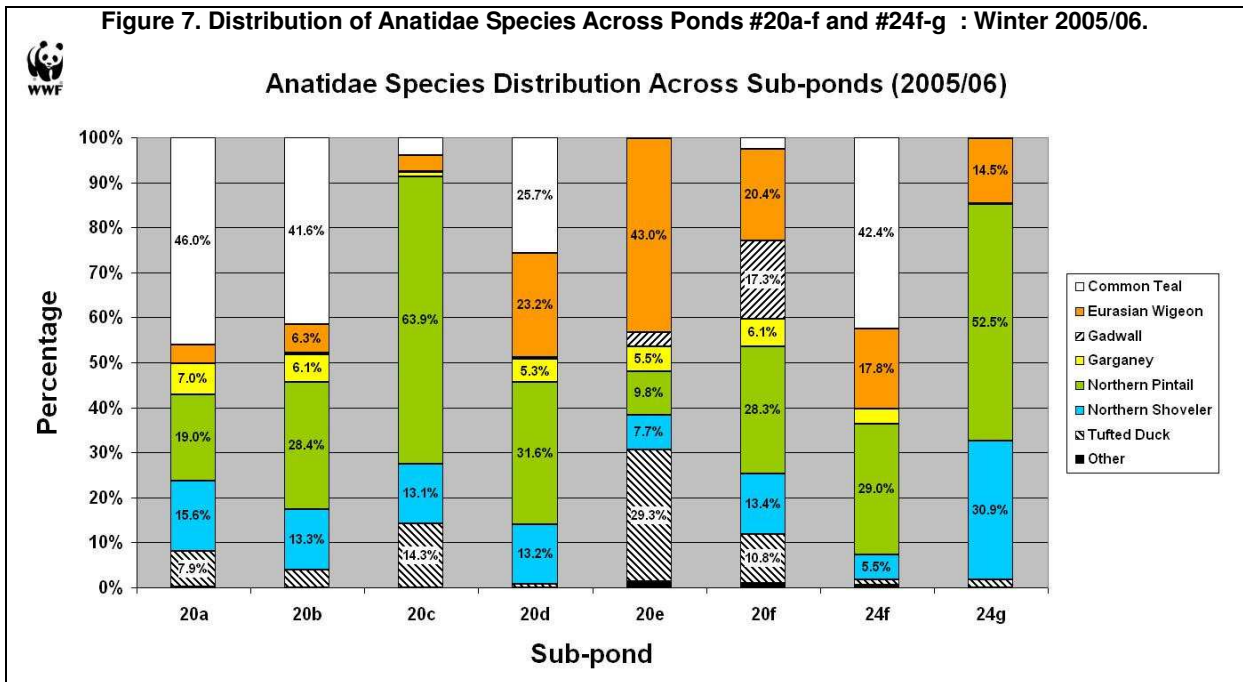


Figure 8. Anatidae Vegetation Usage : Winter 2005/06.

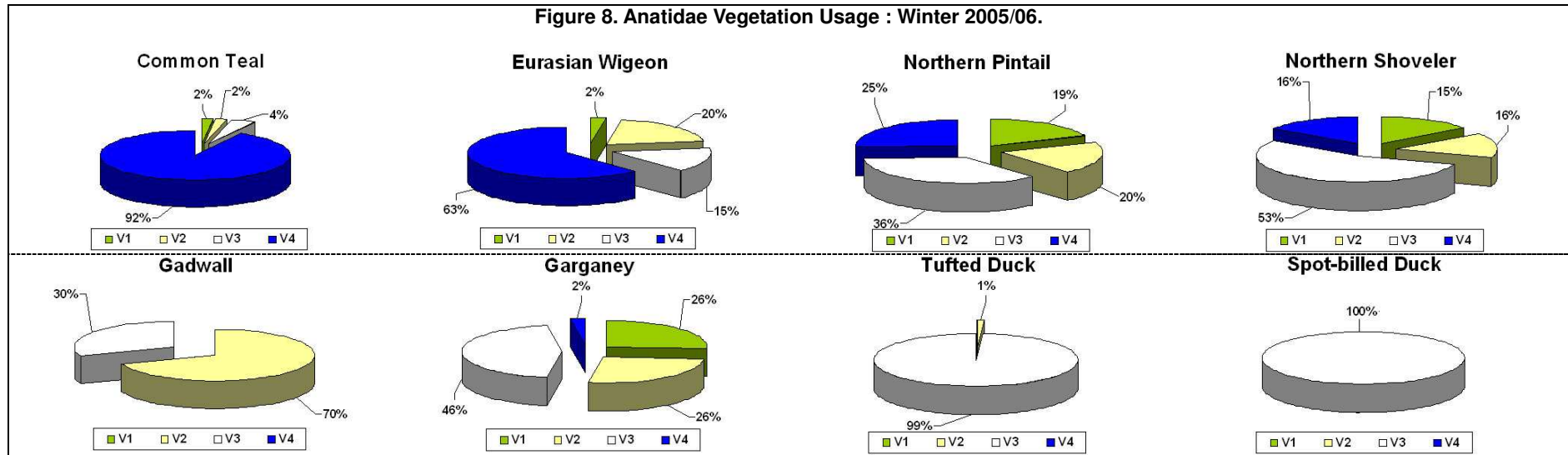


Table 9. Summary of the Vegetation Use in Each Quadrat for Individual Anatidae Species in Sub-ponds #20f, #24f and #24g.

Species	Observations per Species									
	Number					Mean				
	V1	V2	V3	V4	Total	V1	V2	V3	V4	
Common Teal	11(87)*	72(144)*	23	532	578	0.18	0.17	0.11	4.93	
Eurasian Wigeon	20(59)*	158(253)*	124	499	801	0.33	2.19	0.57	4.62	
Gadwall	0(34)*	16(12)*	7	0	23	0.00	0.22	0.03	0.00	
Garganey	11(23)*	11(38)*	19	1	42	0.18	0.15	0.09	0.01	
Northern Pintail	81(12)*	84(91)*	154	109	428	1.35	1.17	0.71	1.01	
Northern Shoveler	30(71)*	31(4)*	107	31	199	0.50	0.43	0.50	0.29	
Spot-billed Duck	0	0(1)*	14	0	14	0.00	0.00	0.06	0.00	
Tufted Duck	0(1)*	1	83	0	84	0.00	0.01	0.38	0.00	
<b>TOTAL</b>	<b>153</b>	<b>313</b>	<b>531</b>	<b>1172</b>	<b>2169</b>	<b>2.55</b>	<b>4.35</b>	<b>2.26</b>	<b>10.85</b>	
					<b>RANK</b>	<b>3</b>	<b>2</b>	<b>4</b>	<b>1</b>	

Code	Vegetation Species
V1	<i>Ipomoea reptans</i> (Water Spinach)
V2	<i>Leersia hexandra</i> (Rice Grass)
V3	<i>Paspalum distichum</i> (Knot Grass)
V4	<i>Echinochloa crus-galli</i> (Barnyard Millet)

No. of Observation Intervals per Species				
V1	V2	V3	V4	Total
60(156)*	72(144)*	216	108	456

\* - Numbers in parentheses refer to the number of omitted observations (Section 3.3.2)

## 4. DISCUSSION

- 4.1.1 The Anatidae count data highlights the importance of Sub-ponds #20a and #20c for attracting and supporting over 75% of the wintering birds known to be using the freshwater Ponds #20a-f and #24f-g. Furthermore during the course of the winter, Pond #20a-f supported 51.3% of the Ramsar Site Anatidae population (13.2% of the Deep Bay Area population) in January 2006. Conversely, the data shows a low usage of Sub-ponds #20e, #20f, #24f and #24g.
- 4.1.2 The total number of Anatidae roosting inside the surveyed ponds increased from the previous winter period (66.3% in Ponds #20a-f and 185.6% in Ponds #24f-g). This increase may be significant because the mean mid-winter Deep Bay population declined between winters (Table 10).

**Table 10. Comparison of the Deep Bay Area Anatidae Count Data : Winters 2004/05 and 2005/06.**

Winter Period	Dec	Jan	Feb	Mean
2004/05	11,211	22,297	16,011	16,506
2005/06	12,026	12,547	19,198	14,590

(HKBWS Data – Anon, 2005c & Anon, 2006)

- 4.1.3 Results indicate that tidal conditions in Deep Bay influence the number of roosting Anatidae inside MPNR (Table 11). Of the 6 most abundant Anatidae, 83.3% of the peak counts recorded from winters 2004/05 and 2005/06 are associated with tide heights equal to or greater than 1.8m. Garganey is the only 'abundant' species to not adhere to this finding.

**Table 11. Peak Counts of the Most Abundant Anatidae Species and Their Associated Tidal Conditions : Winters 2004/05 & 2005/06.**

Species	2004/05			2005/06		
	Peak Count	Date	Tide height during count	Peak Count	Date	Tide height during count
Common Teal	1549	04-Feb-05	2.3m	628	09-Mar-06	2.1m
Eurasian Wigeon	1322	22-Dec-04	1.9m	228	29-Dec-05	1.8m
Northern Pintail	1714	22-Dec-04	1.9m	2068	07-Feb-06	2.0m
Tufted Duck	138	05-Jan-05	2.0m	633	09-Jan-06	2.1m
Northern Shoveler	135	22-Dec-05	1.9m	1471	29-Dec-05	1.8m
Garganey	87	29-Oct-04	0.9m	253	22-Mar-06	1.4m

(Combined data for Ponds #20a-f and #24f-g)

- 4.1.4 Despite the removal of 38.2% of the collected Anatidae vegetation use data (section 3.3.2), Barnyard Millet (V4) is clearly the more attractive species to Anatidae, in particular Common Teal and Eurasian Wigeon, for either roosting or fodder material. The study also shows Rice Grass to be used by Eurasian Wigeon and Northern Pintail. Possible data biases include: (1) Barnyard Millet vegetation inside Plot V4 (Sub-pond #24f) had remained from the previous trial in 2004/05 and therefore had a longer time to establish, and (2) data for Water Spinach (V1) and Rice Grass (V2) could not be collected from January or February (i.e. <10% vegetation cover), both of which are peak months for Anatidae.
- 4.1.5 The full data set obtained from the vegetation use study, includes observations for all waterbirds. Although the non-Anatidae results are outside the immediate scope of this study/report, the high usage of Knot Grass (V3) and Barnyard Millet (V4) by Ardeids and Black-faced Spoonbill for roosting is of potential conservation interest.

- 4.1.6 Aside from the vegetation cutting habitat works undertaken for this project, Sub-ponds #20e and #20f received improvement works in summer 2005 whereby overgrown internal vegetation in both sub-ponds was cleared with a backhoe to increase the proportion of open water. However, the Anatidae data from this study shows a small net change to the total number of Anatidae in both sub-ponds and therefore the improvement works do not significantly influence data interpretation for this study.
- 4.1.7 Several on-site factors influenced the quality of data including; the daily presence of up to 4 Imperial Eagles roosting in close proximity to Pond #20 (particularly Sub-pond #20f) between November and February, presence of birdwatchers in the un-screened *gei wai* huts 20a and 20b, feral dogs walking along bunds and occasionally entering the survey areas, and the closure of Mai Po Nature Reserve to the public between 2<sup>nd</sup> February and 12<sup>th</sup> April 2006 resulting in less general disturbance.

## 5. MONITORING RECOMMENDATIONS

- 5.1.1 Recommendations to improve the quality of data collection (and interpretation) for Anatidae counting on the freshwater ponds include:
- Conduct counts at other ponds or *gei wai* to provide a more comprehensive understanding of wintering Anatidae within the Nature Reserve. In particular all other sub-ponds in #24, #15a-b, *gei wai* #16/17 and *gei wai* #8.
  - Continue to coincide one count per month with the HKBWS monthly Ramsar Site waterbird count to facilitate a better understanding of the wintering Anatidae importance of MPNR in a Deep Bay context.
  - Continue to conduct counts at periods of high tide in Deep Bay (it is noted that very few tides over 1.8m coincide with evening count times during October, November or December).
  - Record all Spot-billed Duck sightings to taxa/race level to provide information for a currently under-researched area of ornithology in Hong Kong.
  - To reduce recorder disturbance (1) a small one-man sized canvas hide should be used for counts at Pond #24 (2) a natural screen should be planted alongside the FCA road by Sub-ponds #20a and #20b, and (3) *gei wai* huts 20a and 20b should be converted to bird-watching facilities.

## 6. REFERENCES

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## Appendix 1. Roosting Anatidae Count Data : Winter 2005/06

Date	Common Name	Latin Name	Sub-pond							Weather/ Comments	
			20a	20b	20c	20d	20e	20f	24f		24g
17-Oct-05	No birds	-	-	-	-	-	-	-	-	-	Hazy with light rain
		<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
31-Oct-05	Common Teal	<i>Anas crecca</i>	-	-	1	-	-	-	-	-	Hazy conditions
	Eurasian Wigeon	<i>Anas penelope</i>	3	11	24	20	-	2	-	-	
	Gadwall	<i>Anas strepera</i>	-	-	4	-	-	-	-	-	
	Garganey	<i>Anas querquedula</i>	-	-	6	-	-	-	-	-	
	Northern Pintail	<i>Anas acuta</i>	-	-	9	-	-	-	-	-	
	Northern Shoveler	<i>Anas clypeata</i>	-	-	4	-	-	-	-	-	
	<b>Total</b>		<b>3</b>	<b>11</b>	<b>48</b>	<b>20</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	
14-Nov-05	Common Pochard	<i>Aythya ferina</i>	-	-	-	-	2	-	-	-	Overcast sky
	Eurasian Wigeon	<i>Anas penelope</i>	4	-	23	14	5	14	1	2	
	Garganey	<i>Anas querquedula</i>	-	-	-	13	-	-	5	-	
	Northern Pintail	<i>Anas acuta</i>	-	-	39	21	4	8	6	5	
	Northern Shoveler	<i>Anas clypeata</i>	10	-	16	28	8	9	-	-	
	<b>Total</b>		<b>14</b>	<b>0</b>	<b>78</b>	<b>76</b>	<b>19</b>	<b>31</b>	<b>12</b>	<b>7</b>	
30-Nov-05	Common Pochard	<i>Aythya ferina</i>	-	-	-	-	3	-	-	-	Hazy conditions
	Common Teal	<i>Anas crecca</i>	13	-	-	-	-	-	1	-	
	Eurasian Wigeon	<i>Anas penelope</i>	12	5	7	31	7	-	3	-	
	Garganey	<i>Anas querquedula</i>	1	-	-	5	-	-	7	-	
	Northern Pintail	<i>Anas acuta</i>	82	6	876	63	24	102	50	6	
	Northern Shoveler	<i>Anas clypeata</i>	15	-	111	24	5	28	4	-	
	Tufted Duck	<i>Aythya fuligula</i>	7	-	61	-	95	21	-	-	
	<b>Total</b>		<b>130</b>	<b>11</b>	<b>1055</b>	<b>123</b>	<b>134</b>	<b>151</b>	<b>65</b>	<b>6</b>	
	19-Dec-05	Common Teal	<i>Anas crecca</i>	2	-	1	7	-	6	-	
Eurasian Wigeon		<i>Anas penelope</i>	23	2	5	2	23	12	32	5	
Ferruginous Duck		<i>Aythya nyroca</i>	-	-	2	-	-	-	-	-	
Gadwall		<i>Anas strepera</i>	-	-	3	-	2	5	-	-	
Garganey		<i>Anas querquedula</i>	-	-	-	2	-	6	-	1	
Northern Pintail		<i>Anas acuta</i>	3	1	231	9	1	1	62	40	
Northern Shoveler		<i>Anas clypeata</i>	1	-	49	11	1	6	5	3	
Tufted Duck		<i>Aythya fuligula</i>	3	-	8	-	-	-	-	-	
<b>Total</b>			<b>32</b>	<b>3</b>	<b>299</b>	<b>31</b>	<b>27</b>	<b>36</b>	<b>99</b>	<b>49</b>	
29-Dec-05		Common Teal	<i>Anas crecca</i>	192	168	50	7	-	5	-	-
	Eurasian Wigeon	<i>Anas penelope</i>	64	42	60	10	12	14	24	2	
	Gadwall	<i>Anas strepera</i>	-	2	-	-	-	14	-	-	
	Garganey	<i>Anas querquedula</i>	32	-	-	-	-	-	-	-	
	Northern Pintail	<i>Anas acuta</i>	128	168	1540	57	-	40	7	116	
	Northern Shoveler	<i>Anas clypeata</i>	110	127	1150	31	8	20	7	18	
	Tufted Duck	<i>Aythya fuligula</i>	7	-	520	-	4	31	6	-	
	<b>Total</b>		<b>533</b>	<b>507</b>	<b>3320</b>	<b>105</b>	<b>24</b>	<b>124</b>	<b>44</b>	<b>136</b>	
09-Jan-06	Common Teal	<i>Anas crecca</i>	83	3	3	33	1	1	-	-	Cold and hazy
	Eurasian Wigeon	<i>Anas penelope</i>	43	4	15	13	29	16	8	-	
	Gadwall	<i>Anas strepera</i>	-	-	-	-	-	25	-	-	
	Garganey	<i>Anas querquedula</i>	7	-	2	7	-	9	2	-	
	Northern Pintail	<i>Anas acuta</i>	32	9	1100	74	8	1	2	58	
	Northern Shoveler	<i>Anas clypeata</i>	26	49	180	13	5	2	-	15	
	Tufted Duck	<i>Aythya fuligula</i>	30	38	540	9	6	1	-	9	
	<b>Total</b>		<b>221</b>	<b>103</b>	<b>1840</b>	<b>149</b>	<b>49</b>	<b>55</b>	<b>12</b>	<b>82</b>	

Appendix 1. Roosting Anatidae Count Data : Winter 2005/06 (Continued)

Date	Common Name	Latin Name	Sub-pond								Weather/ Comments
			20a	20b	20c	20d	20e	20f	24f	24g	
15-Jan-06	Common Teal	<i>Anas crecca</i>	168	189	72	140	-	-	17	-	Dry and hazy
	Eurasian Wigeon	<i>Anas penelope</i>	6	11	32	30	17	26	-	15	
	Ferruginous Duck	<i>Aythya nyroca</i>	1	2	-	-	-	-	-	-	
	Gadwall	<i>Anas strepera</i>	-	-	-	3	-	28	-	-	
	Garganey	<i>Anas querquedula</i>	15	8	5	2	-	-	3	-	
	Northern Pintail	<i>Anas acuta</i>	2	14	267	4	-	-	5	41	
	Northern Shoveler	<i>Anas clypeata</i>	2	4	18	1	1	5	1	34	
	Spot-billed Duck	<i>Anas poecilorhyncha</i>	-	-	-	-	-	-	3	-	
	Tufted Duck	<i>Aythya fuligula</i>	34	17	41	2	-	-	-	1	
		<b>Total</b>	<b>228</b>	<b>245</b>	<b>435</b>	<b>182</b>	<b>18</b>	<b>59</b>	<b>29</b>	<b>91</b>	
23-Jan-06	Common Teal	<i>Anas crecca</i>	150	100	92	50	-	-	-	-	Cold and windy
	Eurasian Wigeon	<i>Anas penelope</i>	-	6	30	2	6	6	12	22	
	Gadwall	<i>Anas strepera</i>	-	1	2	-	-	16	-	-	
	Garganey	<i>Anas querquedula</i>	-	-	2	-	-	-	-	-	
	Northern Pintail	<i>Anas acuta</i>	8	-	530	-	-	3	-	15	
	Northern Shoveler	<i>Anas clypeata</i>	-	10	14	-	-	-	-	6	
	Tufted Duck	<i>Aythya fuligula</i>	30	10	594	-	-	-	-	-	
		<b>Total</b>	<b>188</b>	<b>127</b>	<b>1264</b>	<b>52</b>	<b>6</b>	<b>25</b>	<b>12</b>	<b>43</b>	
07-Feb-06	Common Teal	<i>Anas crecca</i>	23	107	205	45	-	2	97	-	Hazy and dry
	Eurasian Wigeon	<i>Anas penelope</i>	3	11	40	11	37	6	-	15	
	Ferruginous Duck	<i>Aythya nyroca</i>	3	-	-	-	-	-	-	-	
	Gadwall	<i>Anas strepera</i>	-	-	8	-	10	-	-	-	
	Garganey	<i>Anas querquedula</i>	17	8	-	-	-	5	-	-	
	Northern Pintail	<i>Anas acuta</i>	164	260	1600	37	-	2	-	5	
	Northern Shoveler	<i>Anas clypeata</i>	16	35	23	52	-	4	3	89	
	Tufted Duck	<i>Aythya fuligula</i>	59	7	31	-	-	-	-	-	
		<b>Total</b>	<b>285</b>	<b>428</b>	<b>1907</b>	<b>145</b>	<b>47</b>	<b>19</b>	<b>100</b>	<b>109</b>	
20-Feb-06	Common Teal	<i>Anas crecca</i>	200	80	48	20	-	-	4	1	Overcast conditions
	Eurasian Wigeon	<i>Anas penelope</i>	-	10	30	30	7	2	3	9	
	Gadwall	<i>Anas strepera</i>	-	-	4	-	-	6	-	-	
	Garganey	<i>Anas querquedula</i>	-	10	-	20	9	-	-	-	
	Northern Pintail	<i>Anas acuta</i>	-	30	36	-	-	-	-	3	
	Northern Shoveler	<i>Anas clypeata</i>	150	10	9	-	-	-	-	3	
	Tufted Duck	<i>Aythya fuligula</i>	30	-	-	-	-	1	-	-	
		<b>Total</b>	<b>380</b>	<b>140</b>	<b>127</b>	<b>70</b>	<b>16</b>	<b>9</b>	<b>7</b>	<b>16</b>	
27-Feb-06	Common Teal	<i>Anas crecca</i>	122	17	3	5	-	-	2	-	Moderate rain and cold Unusual tidal surge (2.1m@18:10)
	Eurasian Wigeon	<i>Anas penelope</i>	-	3	-	59	12	-	-	10	
	Ferruginous Duck	<i>Aythya nyroca</i>	2	-	-	-	-	-	-	-	
	Gadwall	<i>Anas strepera</i>	-	2	-	-	-	-	-	-	
	Garganey	<i>Anas querquedula</i>	24	-	-	-	3	5	-	-	
	Northern Pintail	<i>Anas acuta</i>	327	49	1450	119	-	-	11	-	
	Northern Shoveler	<i>Anas clypeata</i>	196	27	52	15	1	-	2	1	
	Tufted Duck	<i>Aythya fuligula</i>	66	2	-	-	1	-	-	-	
	<b>Total</b>	<b>737</b>	<b>100</b>	<b>1505</b>	<b>198</b>	<b>17</b>	<b>5</b>	<b>15</b>	<b>11</b>		
09-Mar-06	Common Teal	<i>Anas crecca</i>	420	78	14	34	-	-	82	-	Very hazy Difficult conditions to identify Anatidae to species level
	Eurasian Wigeon	<i>Anas penelope</i>	8	9	49	64	-	14	5	-	
	Ferruginous Duck	<i>Aythya nyroca</i>	3	-	-	-	-	-	-	-	
	Gadwall	<i>Anas strepera</i>	-	-	1	1	-	2	-	-	
	Garganey	<i>Anas querquedula</i>	62	9	2	-	1	6	-	-	
	Northern Pintail	<i>Anas acuta</i>	26	34	317	35	-	-	-	-	
	Northern Shoveler	<i>Anas clypeata</i>	40	3	2	-	-	-	5	1	
	Spot-billed Duck	<i>Anas poecilorhyncha</i>	-	-	-	-	-	-	2	-	
	Tufted Duck	<i>Aythya fuligula</i>	32	2	-	-	3	3	-	-	
		<b>Total</b>	<b>591</b>	<b>135</b>	<b>385</b>	<b>134</b>	<b>4</b>	<b>27</b>	<b>92</b>	<b>1</b>	

## Appendix 1. Roosting Anatidae Count Data : Winter 2005/06 (Continued)

Date	Common Name	Latin Name	Sub-pond								Weather/ Comments
			20a	20b	20c	20d	20e	20f	24f	24g	
22-Mar-06	Common Teal	<i>Anas crecca</i>	496	108	1	-	-	-	6	-	Humid and overcast
	Eurasian Wigeon	<i>Anas penelope</i>	6	15	103	22	8	-	-	-	
	Gadwall	<i>Anas strepera</i>	-	2	6	-	-	-	-	-	
	Garganey	<i>Anas querquedula</i>	126	89	8	19	8	3	-	-	
	Northern Pintail	<i>Anas acuta</i>	-	9	26	-	-	-	-	-	
	Northern Shoveler	<i>Anas clypeata</i>	70	8	8	-	-	-	-	-	
	Spot-billed Duck	<i>Anas poecilorhyncha</i>	-	-	-	-	-	2	-	-	
	Tufted Duck	<i>Aythya fuligula</i>	25	4	-	-	2	2	-	-	
	<b>Total</b>			<b>723</b>	<b>235</b>	<b>152</b>	<b>41</b>	<b>18</b>	<b>7</b>	<b>6</b>	
18-Apr-06	Common Teal	<i>Anas crecca</i>	-	-	7	-	-	-	-	-	Humid and overcast
	Eurasian Wigeon	<i>Anas penelope</i>	-	-	5	-	-	-	-	-	
	Garganey	<i>Anas querquedula</i>	-	-	79	-	-	-	-	-	
	Mallard*	<i>Anas Platyrhynchos</i>	-	-	1	-	-	-	-	-	
	Northern Pintail	<i>Anas acuta</i>	-	-	6	-	-	-	-	-	
	Northern Shoveler	<i>Anas clypeata</i>	-	-	11	-	-	-	-	-	
	Spot-billed Duck	<i>Anas poecilorhyncha</i>	-	-	-	-	-	2	-	-	
	Tufted Duck	<i>Aythya fuligula</i>	-	-	1	-	-	1	-	-	
	<b>Total</b>			<b>0</b>	<b>0</b>	<b>110</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	
25-Apr-06	Common Teal	<i>Anas crecca</i>	-	-	2	-	-	-	-	-	Overcast conditions
	Eurasian Wigeon	<i>Anas penelope</i>	-	-	29	-	-	1	-	-	
	Falcated Duck*	<i>Anas falcata</i>	-	-	1	-	-	-	-	-	
	Garganey	<i>Anas querquedula</i>	-	-	15	2	-	-	-	-	
	Northern Shoveler	<i>Anas clypeata</i>	-	-	2	-	-	-	-	-	
	Spot-billed Duck	<i>Anas poecilorhyncha</i>	-	-	1	-	-	-	-	-	
	Greater Scaup*	<i>Aythya marila</i>	-	-	1	-	-	-	-	-	
	<b>Total</b>			<b>0</b>	<b>0</b>	<b>51</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	

\* - Regarded as potentially non-wild birds (refer to section 3.1.4).

## Appendix 2. Roosting Anatidae Count Data : Winter 2004/05

Date	Common Name	Latin Name	Sub-pond							Weather/ Comments	
			24f	24g	20a	20b	20c	20d	20e		20f
29-Oct-04	Eurasian Wigeon	<i>Anas penelope</i>	-	-	27	65	110	15	41	44	Sunny with clear skies 3 feral dogs disturbing birds at Sub-ponds #20a and #20b
	Garganey	<i>Anas querquedula</i>	-	4	21	-	54	-	8	-	
	Northern Pintail	<i>Anas acuta</i>	-	-	-	-	-	2	4	3	
	Spot-billed Duck	<i>Anas poecilorhyncha</i>	-	3	-	-	-	-	-	-	
	<b>Total</b>		<b>0</b>	<b>7</b>	<b>48</b>	<b>65</b>	<b>164</b>	<b>17</b>	<b>53</b>	<b>47</b>	
04-Nov-04	Eurasian Wigeon	<i>Anas penelope</i>	-	-	80	82	32	25	44	2	Sunny with clear skies
	Garganey	<i>Anas querquedula</i>	2	-	13	-	18	-	25	1	
	Greater Scaup	<i>Aythya marila</i>	-	-	-	-	-	-	4	-	
	Northern Pintail	<i>Anas acuta</i>	-	-	4	-	-	3	10	2	
	Northern Shoveler	<i>Anas clypeata</i>	-	1	-	-	-	-	-	-	
	Tufted Duck	<i>Aythya fuligula</i>	-	-	-	-	-	1	5	-	
<b>Total</b>		<b>2</b>	<b>1</b>	<b>97</b>	<b>82</b>	<b>50</b>	<b>29</b>	<b>88</b>	<b>5</b>		
18-Nov-04	Eurasian Wigeon	<i>Anas penelope</i>	1	4	5	20	106	5	12	7	Hazy with good visibility Kite flushed Anatidae in Pond #20
	Garganey	<i>Anas querquedula</i>	-	-	1	-	-	-	3	1	
	Northern Pintail	<i>Anas acuta</i>	-	-	-	-	3	-	-	2	
	Spot-billed Duck	<i>Anas poecilorhyncha</i>	-	-	2	-	-	-	-	-	
	<b>Total</b>		<b>1</b>	<b>4</b>	<b>8</b>	<b>20</b>	<b>109</b>	<b>5</b>	<b>15</b>	<b>10</b>	
03-Dec-04	Common Teal	<i>Anas crecca</i>	-	1	-	-	12	-	-	3	Sunny with clear skies Helicopter flew over during count causing birds to disperse
	Eurasian Wigeon	<i>Anas penelope</i>	4	8	6	23	243	-	8	6	
	Garganey	<i>Anas querquedula</i>	-	9	-	-	33	-	3	-	
	Northern Pintail	<i>Anas acuta</i>	-	5	2	-	175	-	-	-	
	Northern Shoveler	<i>Anas clypeata</i>	-	-	1	-	6	-	6	-	
	Tufted Duck	<i>Aythya fuligula</i>	-	-	-	-	9	-	-	-	
	Spot-billed Duck	<i>Anas poecilorhyncha</i>	2	2	-	-	-	-	-	-	
	<b>Total</b>		<b>6</b>	<b>25</b>	<b>9</b>	<b>23</b>	<b>478</b>	<b>0</b>	<b>17</b>	<b>9</b>	
22-Dec-04	Common Teal	<i>Anas crecca</i>	-	17	-	3	40	20	-	-	Overcast and cloudy
	Eurasian Wigeon	<i>Anas penelope</i>	7	6	19	42	1250	8	-	-	
	Gadwall	<i>Anas strepera</i>	-	-	6	-	-	-	-	-	
	Garganey	<i>Anas querquedula</i>	1	37	-	-	-	8	-	-	
	Northern Pintail	<i>Anas acuta</i>	-	-	14	22	1650	28	-	-	
	Northern Shoveler	<i>Anas clypeata</i>	-	3	1	2	115	14	-	-	
	Tufted Duck	<i>Aythya fuligula</i>	-	1	-	-	32	6	-	-	
	<b>Total</b>		<b>8</b>	<b>64</b>	<b>40</b>	<b>69</b>	<b>3087</b>	<b>84</b>	<b>0</b>	<b>0</b>	
05-Jan-05	Common Teal	<i>Anas crecca</i>	-	68	161	47	19	3	3	-	Overcast and cloudy
	Eurasian Wigeon	<i>Anas penelope</i>	6	51	-	85	72	30	2	-	
	Garganey	<i>Anas querquedula</i>	14	21	1	-	-	-	-	-	
	Northern Pintail	<i>Anas acuta</i>	-	2	10	137	194	-	-	-	
	Northern Shoveler	<i>Anas clypeata</i>	-	8	-	8	40	6	8	-	
	Tufted Duck	<i>Aythya fuligula</i>	-	-	8	-	130	-	-	-	
	<b>Total</b>		<b>20</b>	<b>150</b>	<b>180</b>	<b>277</b>	<b>455</b>	<b>39</b>	<b>13</b>	<b>0</b>	
13-Jan-05	Common Teal	<i>Anas crecca</i>	-	2	3	8	3	-	-	8	Overcast with light rain
	Eurasian Wigeon	<i>Anas penelope</i>	9	4	6	25	64	-	1	5	
	Gadwall	<i>Anas strepera</i>	-	-	-	4	-	-	-	-	
	Garganey	<i>Anas querquedula</i>	-	31	2	-	-	-	-	-	
	Northern Pintail	<i>Anas acuta</i>	-	-	-	-	4	-	-	-	
	Northern Shoveler	<i>Anas clypeata</i>	-	1	2	-	3	-	-	-	
	Tufted Duck	<i>Aythya fuligula</i>	-	-	7	-	-	-	-	-	
<b>Total</b>		<b>9</b>	<b>38</b>	<b>20</b>	<b>37</b>	<b>74</b>	<b>0</b>	<b>1</b>	<b>13</b>		
19-Jan-05	Common Teal	<i>Anas crecca</i>	-	8	1	48	51	-	-	-	Overcast and cloudy
	Eurasian Wigeon	<i>Anas penelope</i>	-	10	3	51	104	-	-	-	
	Ferruginous Duck	<i>Aythya nyroca</i>	-	-	-	-	-	-	2	-	
	Gadwall	<i>Anas strepera</i>	-	-	-	4	-	-	-	-	
	Garganey	<i>Anas querquedula</i>	-	4	4	-	3	-	-	-	
	Northern Pintail	<i>Anas acuta</i>	-	-	-	6	115	-	-	-	
	Northern Shoveler	<i>Anas clypeata</i>	-	-	1	-	4	-	-	-	
	Tufted Duck	<i>Aythya fuligula</i>	-	-	9	-	20	-	-	-	
	<b>Total</b>		<b>0</b>	<b>22</b>	<b>18</b>	<b>109</b>	<b>297</b>	<b>0</b>	<b>2</b>	<b>0</b>	

## Appendix 2. Roosting Anatidae Count Data : Winter 2004/05 (Continued)

Date	Common Name	Latin Name	Sub-pond							Weather/ Comments	
			24f	24g	20a	20b	20c	20d	20e		20f
31-Jan-05	Common Teal	<i>Anas crecca</i>	-	-	101	121	660	-	65	8	Overcast and cloudy
	Eurasian Wigeon	<i>Anas penelope</i>	-	-	-	33	50	-	19	-	
	Ferruginous Duck	<i>Aythya nyroca</i>	-	-	-	-	-	1	-	-	
	Gadwall	<i>Anas strepera</i>	-	-	2	4	-	-	-	-	
	Garganey	<i>Anas querquedula</i>	-	-	-	-	3	-	-	-	
	Northern Pintail	<i>Anas acuta</i>	-	-	-	17	5	-	-	-	
	Northern Shoveler	<i>Anas clypeata</i>	-	-	-	-	9	-	-	-	
	Tufted Duck	<i>Aythya fuligula</i>	-	-	6	-	1	-	-	-	
	<b>Total</b>		<b>0</b>	<b>0</b>	<b>109</b>	<b>175</b>	<b>728</b>	<b>1</b>	<b>84</b>	<b>8</b>	
04-Feb-05	Common Teal	<i>Anas crecca</i>	11	23	436	54	615	10	370	30	Overcast with light mist
	Eurasian Wigeon	<i>Anas penelope</i>	24	1	0	19	350	-	-	-	
	Garganey	<i>Anas querquedula</i>	-	-	8	-	2	-	-	-	
	Northern Pintail	<i>Anas acuta</i>	-	-	1	2	50	-	-	-	
	Northern Shoveler	<i>Anas clypeata</i>	1	-	1	-	11	-	-	-	
<b>Total</b>		<b>36</b>	<b>24</b>	<b>446</b>	<b>75</b>	<b>1028</b>	<b>10</b>	<b>370</b>	<b>30</b>		
18-Feb-05	Common Teal	<i>Anas crecca</i>	-	21	327	46	443	-	72	11	Overcast with poor visibility
	Eurasian Wigeon	<i>Anas penelope</i>	-	12	-	26	4	-	-	-	
	Ferruginous Duck	<i>Aythya nyroca</i>	-	-	-	-	2	-	-	-	
	Gadwall	<i>Anas strepera</i>	3	-	-	4	-	-	-	-	
	Northern Pintail	<i>Anas acuta</i>	-	-	-	-	9	-	-	-	
	Northern Shoveler	<i>Anas clypeata</i>	-	1	4	1	-	-	1	-	
	Spot-billed Duck	<i>Anas poecilorhyncha</i>	-	-	-	-	-	-	2	-	
	Tufted Duck	<i>Aythya fuligula</i>	-	-	-	-	5	-	-	-	
	<b>Total</b>		<b>3</b>	<b>34</b>	<b>331</b>	<b>77</b>	<b>463</b>	<b>0</b>	<b>75</b>	<b>11</b>	
07-Mar-05	Common Teal	<i>Anas crecca</i>	2	70	69	-	666	41	-	-	Clear, sunny with light breeze Marsh harrier flushed Anatidae on Ponds #20a and #20b during observation
	Eurasian Wigeon	<i>Anas penelope</i>	5	13	8	72	41	6	-	-	
	Gadwall	<i>Anas strepera</i>	-	-	-	2	-	-	-	-	
	Garganey	<i>Anas querquedula</i>	-	-	12	-	24	-	-	-	
	Northern Pintail	<i>Anas acuta</i>	-	-	-	-	5	-	-	-	
	Northern Shoveler	<i>Anas clypeata</i>	-	-	3	-	5	-	-	-	
	Tufted Duck	<i>Aythya fuligula</i>	-	-	-	-	2	-	-	-	
	<b>Total</b>		<b>7</b>	<b>83</b>	<b>92</b>	<b>74</b>	<b>743</b>	<b>47</b>	<b>0</b>	<b>0</b>	
17-Mar-05	Common Teal	<i>Anas crecca</i>	-	71	19	1	812	11	-	-	Cold with clear skies
	Eurasian Wigeon	<i>Anas penelope</i>	-	-	-	50	18	6	-	-	
	Gadwall	<i>Anas strepera</i>	-	-	-	2	4	-	-	-	
	Garganey	<i>Anas querquedula</i>	-	2	8	4	28	-	-	-	
	Northern Pintail	<i>Anas acuta</i>	-	-	-	-	5	-	-	-	
	Northern Shoveler	<i>Anas clypeata</i>	-	-	1	-	3	-	-	-	
	Spot-billed Duck	<i>Anas poecilorhyncha</i>	-	-	-	2	-	-	2	-	
	Tufted Duck	<i>Aythya fuligula</i>	-	-	1	-	1	-	-	-	
	<b>Total</b>		<b>0</b>	<b>73</b>	<b>29</b>	<b>59</b>	<b>871</b>	<b>17</b>	<b>2</b>	<b>0</b>	
04-Apr-05	Common Teal	<i>Anas crecca</i>	-	25	2	-	-	-	-	-	Clear skies
	Eurasian Wigeon	<i>Anas penelope</i>	-	4	94	-	-	-	-	-	
	Garganey	<i>Anas querquedula</i>	-	-	6	-	-	-	-	-	
	Spot-billed Duck	<i>Anas poecilorhyncha</i>	-	2	-	-	-	-	-	-	
	Tufted Duck	<i>Aythya fuligula</i>	-	-	-	-	-	2	-	-	
<b>Total</b>		<b>0</b>	<b>31</b>	<b>102</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>		
15-Apr-05	Common Teal	<i>Anas crecca</i>	-	3	-	-	-	-	-	-	Clear with high humidity
	Eurasian Wigeon	<i>Anas penelope</i>	-	-	4	-	-	-	-	-	
<b>Total</b>		<b>0</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

# APPENDIX 3 : Vegetation Use Data (Sub-ponds #20f, #24f & #24g combined)

Date	23-Nov-05				29-Nov-05				06-Dec-05				08-Dec-05				12-Dec-05				15-Dec-05				20-Dec-05				30-Dec-05				06-Mar-06				09-Mar-06							
	V1	V2	V3	V4	V1	V2	V3	V4	V1	V2	V3	V4	V1	V2	V3	V4	V1	V2	V3	V4	V1	V2	V3	V4	V1	V2	V3	V4	V1	V2	V3	V4	V1	V2	V3	V4								
<b>Vegetation Code</b>																																												
Black-faced Spoonbill <i>Platalea minor</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
Black-winged Stilt <i>Himantopus himantopus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Cattle Egret <i>Bubulcus ibis (coromandus)</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Common Moorhen <i>Gallinula chloropus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Common Sandpiper <i>Actitis hypoleucos</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
<b>Common Teal</b> <i>Anas crecca</i>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>				
Eurasian Spoonbill <i>Platalea leucorodia</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Eurasian Wigeon <i>Anas penelope</i>	15	6	10	0	0	1	0	0	1	72	7	36	3	35	49	78	0	0(2)	0	73	1(15)	2(43)	4	88	0	0(12)	2	26	0(1)	42	23	2	0	0(2)	4	21	0(7)	0(160)	1	111				
Gadwall <i>Anas strepera</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	0(33)	15	3	-	-	-	-	-	-	-	-	-				
Garganey <i>Anas querquedula</i>	-	4	2	-	-	-	-	-	-	-	-	-	-	7	2	1	-	-	-	-	11	-	-	-	0(14)	-	-	-	0(3)	-	-	-	0(4)	-	-	-	-	-	-	-				
Great Egret <i>Egretta alba</i>	3	-	4	-	-	2	-	-	1	2	4	-	-	1	1	11	-	-	-	-	-	3	-	8	-	3(1)	10	-	-	-	10	1	-	-	-	-	-	-	-	-				
Grey Heron <i>Ardea cinerea</i>	4	-	-	-	6	4	1	-	15	6	5	26	1	1	5	28	-	-	5	30	-	-	1	5	-	0(3)	-	14	0(1)	-	3	14	0(7)	0(11)	3	22	-	-	-	-				
Grey Wagtail <i>Motacilla cinerea</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0(1)	4	-	-	0(1)	-	-	-	-	-	-	-	-	-	-				
Grey-headed Lapwing <i>Vanelus cinereus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Intermediate Egret <i>Egretta intermedia</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Little Egret <i>Egretta garzetta</i>	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Little Grebe <i>Tachybaptus ruficollis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1(0)	1(2)	-	-	-	-	-	-				
Long-toed Stint <i>Calidris subminuta</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Northern Pintail <i>Anas acuta</i>	3	1	17	-	72	-	45	-	1	1	3	6	5	81	60	36	-	-	-	20	0(12)	0(83)	-	10	-	0(8)	16	37	-	1	13	-	-	-	-	-	-	-	-	-				
Northern Shoveler <i>Anas clypeata</i>	-	-	13	-	11	2	22	-	-	-	-	2	-	5	1	-	-	-	1	-	-	-	-	1	-	0(4)	1	16	0(43)	24	54	-	-	-	-	-	-	-	-	-				
Spot-billed Duck <i>Anas poecilorhyncha</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0(6)	-	-	-				
Tufted Duck <i>Aythya fuligula</i>	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0(1)	-	-	-				
White Wagtail <i>Motacilla alba</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Wood Sandpiper <i>Tringa glareola</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
<b>Weather/General Comments</b>																																												
Clear conditions																																												
Three feral dogs on #24@17:01																																												
Two juvenile Imperial Eagles flushed birds on #20f@17:23																																												
Maximum Anatidae Count : #24f/g [45] & #20f [13]																																												
Dry conditions & low temperature																																												
Two juvenile Imperial Eagles and two feral dogs on #20f																																												
Maximum Anatidae Count : #24f/g [65] & #20f [67]																																												
Dry conditions & low temperature																																												
Imperial Eagle flushed birds on #20@17:14																																												
Maximum Anatidae Count : #24f/g [43] & #20f [13]																																												
Dry conditions and cold																																												
Maximum Anatidae Count : #24f/g [65] & #20f [5]																																												
Dry conditions and cold																																												
Maximum Anatidae Count : #24f/g [26] & #20f [42]																																												
Dry conditions and cold																																												
Feral dog present @ 17:23																																												
Maximum Anatidae Count : #24f/g [67] & #20f [40]																																												
Dry conditions and cold																																												
Maximum Anatidae Count : #24f/g [99] & #20f [115]																																												
Dry conditions and cold																																												
Maximum Anatidae Count : #24f/g [6] & #20f [410]																																												
Misty and hazy, Poor visibility																																												
Maximum Anatidae Count : #24f/g [62] & #20f [16]																																												
Clear conditions																																												
Maximum Anatidae Count : #24f/g [46] & #20f [15]																																												

Species and data in bold relate to Anatidae  
Data in parentheses i.e. ( ) deemed unreliable and omitted from TOTAL

Code	Vegetation Species
V1	<i>Ipomoea reptans</i> (Water Spinach)
V2	<i>Leersia hexandra</i> (Rice Grass)
V3	<i>Paspalum distichum</i> (Knot Grass)
V4	<i>Echinochloa crus-galli</i> (Barnyard Millet)

# APPENDIX 3 : Vegetation Use Data (Sub-ponds #20f, #24f & #24g combined)

Date	09-Mar-06				10-Mar-06				13-Mar-06				14-Mar-06				16-Mar-06				17-Mar-06				18-Apr-06				24-Apr-06				TOTAL																															
	V1	V2	V3	V4	V1	V2	V3	V4	V1	V2	V3	V4	V1	V2	V3	V4	V1	V2	V3	V4	V1	V2	V3	V4	V1	V2	V3	V4	V1	V2	V3	V4	V1	V2	V3	V4																												
Black-faced Spoonbill				106																7																																												
Black-winged Stilt																																																																
Cattle Egret																																																																
Common Moorhen																																																																
Common Sandpiper																																																																
<b>Common Teal</b>	<b>0(4)</b>	<b>0(123)</b>	<b>2</b>	<b>127</b>	<b>-</b>	<b>0(29)</b>	<b>3</b>	<b>102</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>0(11)</b>	<b>0(2)</b>	<b>1</b>	<b>13</b>	<b>0(1)</b>	<b>0(3)</b>	<b>1</b>	<b>-</b>	<b>11</b>	<b>-</b>	<b>1</b>	<b>123</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>11</b>	<b>12</b>	<b>23</b>	<b>532</b>																												
Eurasian Spoonbill																																																																
<b>Eurasian Wigeon</b>	<b>0(18)</b>	<b>0(7)</b>	<b>-</b>	<b>8</b>	<b>0(6)</b>	<b>-</b>	<b>-</b>	<b>4</b>	<b>0(2)</b>	<b>0(1)</b>	<b>20</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0(10)</b>	<b>0(26)</b>	<b>4</b>	<b>46</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>20</b>	<b>158</b>	<b>124</b>	<b>499</b>																												
<b>Gadwall</b>	<b>-</b>	<b>-</b>	<b>4</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0(1)</b>	<b>0(12)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>																												
<b>Garganey</b>	<b>-</b>	<b>0(15)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0(2)</b>	<b>0(8)</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>11</b>	<b>11</b>	<b>19</b>	<b>1</b>																																
Great Egret		0(7)	6				6				5				6				1		0(1)	2				0(15)	51										4	11	106	20																								
Grey Heron	0(3)	0(1)	10	2	0(1)	0(4)	5			0(1)	17	2			10				13	23			9			0(6)	38						26	11	139	154																												
Grey Wagtail																																																																
Grey-headed Lapwing																																																																
Intermediate Egret		0(1)	9																																																													
Little Egret			4				5					3							1								1	1	0(1)																																			
Little Grebe																																																																
Long-toed Stint																																																																
<b>Northern Pintail</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>81</b>	<b>84</b>	<b>154</b>	<b>109</b>																												
<b>Northern Shoveler</b>	<b>0(9)</b>	<b>-</b>	<b>1</b>	<b>-</b>	<b>0(7)</b>	<b>-</b>	<b>5</b>	<b>-</b>	<b>0(4)</b>	<b>-</b>	<b>9</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0(2)</b>	<b>-</b>	<b>10</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>30</b>	<b>31</b>	<b>107</b>	<b>31</b>																												
<b>Spot-billed Duck</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>9</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>																												
<b>Tufted Duck</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>																												
White Wagtail																																																																
Wood Sandpiper																																																																
<b>Weather/General Comments</b>	Very hazy. Poor visibility				Maximum Anatidae Count : #24f(g) [92] & #20f [27]				Very hazy. Poor visibility				Maximum Anatidae Count : #24f(g) [61] & #20f [5]				Rainy and cold				Maximum Anatidae Count : #24f(g) [36] & #20f [8]				Overcast conditions				Maximum Anatidae Count : #24f(g) [11] & #20f [3]				Very hazy. Poor visibility				Maximum Anatidae Count : #24f(g) [51] & #20f [10]				Overcast conditions				Maximum Anatidae Count : #24f(g) [28] & #20f [12]				Overcast conditions				Maximum Anatidae Count : #24f(g) [01] & #20f [3]				Overcast conditions				Maximum Anatidae Count : #24f(g) [01] & #20f [1]			

Species and data in bold relate to Anatidae  
 Data in parentheses i.e. ( ) deemed unreliable and omitted from TOTAL

Code	Vegetation Species
V1	<i>Ipomoea reptans</i> (Water spinach)
V2	<i>Leersia hexandra</i> (Rice grass)
V3	<i>Paspalum distichum</i> (Knot grass)
V4	<i>Echinochloa crus-galli</i> (Barnyard millet)