

**BIRDS AND HUMANS IN HARMONY:
A SUSTAINABLE MANAGEMENT SCHEME IN LONG VALLEY**

BIRD MONITORING PROGRAMME

Programme 2005/06

Spring

March - May 2006

Summary Report - Spring 2006 (March to May)

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Background

The Environment and Conservation Fund (ECF) supported a Hong Kong Bird Watching Society's project: Birds and Humans in Harmony - A Sustainable Management Scheme in Long Valley which aims to enhance conservation value of Long Valley, especially for birds through a public-private partnership (PPP) scheme between the Hong Kong Bird Watching Society and a local farming community. This project was approved by ECF in December 2005 and several aspects of this project have been started since then. This section of report presents data collected at the bird monitoring programme at Long Valley of this project.

Methodology

Bird survey was started since the commencement of this project in December 2005 and data is used to demonstrate effects of habitat enhancement exercises to the bird community in Long Valley area. Survey area is mainly confined by a drainage channel lying on west, north and east, and Yin Kong Village on the south. This bird monitoring work is conducted once per week by an accredited surveyor. The survey was conducted by following a standard transect in order to obtain comparable results and complete coverage of all farmlands in the shortest time. Total surveying time of one survey maintains at about 3.5 hours in the mornings of the scheduled dates. The surveys were scheduled in dates during spring 2006 as follows: 2, 9, 16, 23, 29 March; 7, 13, 19, 27 April; 4, 10, 19, 25 May. All the fields in the survey area are also given a specific number. Bird species and numbers are recorded with the field number.

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One of the objectives of this project is to demonstrate an enhancement of conservation value of Long Valley through a sustainable management scheme from a public-private partnership. This is achieved by altering some micro-habitats in crop fields in Long Valley to attract wild birds increasing utilizations of these habitats. Some exercises has been started to implement in this study period. Effects of these exercises to the birds are addressed below.

Results

Regular bird monitoring

A total of 13 surveys were conducted during this spring and details are referred to table 1. Changes of total numbers of birds in the whole Long Valley area is shown in figure 1 and changes of numbers of bird species is shown in figure 2. Numbers dropped slightly in March because wintering birds departed Long Valley and returned to their breeding grounds. Then, it slightly increased in April that is apparently caused by an influx of some spring passage migrants, e.g. Yellow Wagtail *Montacilla flava*. Finally, it dropped again in May and presumably many migrants have already passed through Hong Kong and only resident birds still utilized the Long Valley area. Furthermore, breeding activities such as egg hatching and nest building would decrease frequency of visiting Long Valley of birds.

Table 1. Numbers in each counts and monthly average figures (and SD) of birds counted at Long Valley, March to May 2006.

	Mar 2006	Apr 2006	May 2006
Number of birds counted	329, 272, 317, 240, 282	312, 275, 353, 349	191, 137, 87, 117
Mean (SD)	288 (36)	322 (37)	133 (107)

Habitat enhancement

As mentioned, some fields in Long Valley have been changed their farming practices to attempt increasing utilizations by birds and so on to enhance their ecological values. Four types of habitats were created and maintained: dry agricultural land, wet agricultural land, shallow water habitats and farmland margins. Figure 1 and 2 shows the numbers of bird individual and bird species in these managed fields respectively. The effectiveness of these management practices to attract birds is less pronounced at this moment, but some increases on number of birds in those particular fields since the commencement of the management practices could still be

observed. Increase of bird species utilizing the managed fields could not be easily obtained because the modified fields would be only suitable to certain species. Below are brief summaries of changing of farming practices and bird utilization in several fields.

Dry agricultural land

Farming practices include:

- Bunds were maintained.
- Weeds were removed.
- Flowering Chinese Cabbage were planted in March.
- Flowers of the cabbage were come out in early April and seeds were produced in mid-April. All were uncut and used for attracting birds.

Field 101 and Field 110 were changed to this farming practice from 9 February onward.

Bird utilization:

Effect of attracting birds by providing flowers and seeds of Chinese Cabbage is yet to clear. Table 2 shows a few birds were recorded in December and January when the fields were not changed to cultivate Chinese Cabbage and in March when the Cabbage was still young and no flowers were formed. In February, a flock of 20 Yellow Wagtail was recorded in the field 101 which were seen feeding presumably on the soil but not on the Cabbage. Apparently more birds utilized these fields in April and May when flowers and seeds were produced and birds had been observed feeding on both flowers and seeds in this time.

Table 2. Monthly total number of birds recorded in field 101 and 110.

Month	Dec 05	Jan 06	Feb 06	Mar 06	Apr 06	May 06
Birds no.	5	2	23	4	16	13

A comparison is made to numbers of birds found in field 101 and 110 and in field 74 and 102 from counts after 9 February. Field 74 and 102 are adjacent to the field 101 and 110 but they were not modified for dry agricultural land and they are treated as a control in this comparison. Numbers of birds found in these two sets of fields are not significant different (Mann-Whitney Rank Sum Test, $T = 260.5$, $P = 0.253$, $N = 15$; mean \pm SD in managed fields: 3.6 ± 5.7 , mean \pm SD in control fields: 1.2 ± 2.4), but the managed fields tend to have more birds and more counts in coming months might give better results for showing the attractiveness of this farming practice.

Wet agricultural land

Farming practices include:

- Weeds were removed in the fields.
- Bunds were created and maintained.
- Water was pumped into the fields and water level was maintained to about 2.5 cm depth.
- Water Chestnuts were planted and germinated in May.

Field 242 was firstly changed to shallow water habitat on 10 February and Water Chestnuts were started to plant on 15 May.

Bird utilization:

Effect of habitat enhancement in this field is less clear. Before clearing weeds to provide open space and pumping water into the field for birds, only one occasion of a flock of 110 Crested Mynas *Acridotheres cristatellus* was recorded in the field. After the enhancement works, more different species of birds were recorded in this field in more occasions but numbers are not very high (table 3). The most notable is a count of 36 Wood Sandpiper *Tringa glareola* recorded on 27 April. Although the numbers of birds recorded in this field may be smaller than that before the commencement of the habitat enhancement exercises, more diverse of bird species were recorded after the exercises and some target waterbird species such as Green Sandpipers *Tringa ochropus* and Wood Sandpipers *Tringa glareola* could present in this open and wet area. It indicates the enhancement exercises could still benefit to the target bird species.

Table 3. Monthly total number of birds recorded in field 242.

Month	Dec 05	Jan 06	Feb 06	Mar 06	Apr 06	May 06
Birds no.	0	110	0	16	53	1

Field 241 is adjacent to field 242 and also in similar shape, so it is used as control for statistical comparison. Counts of these fields after 10 February are used. The mean numbers of birds counted in these two fields are not in significant difference (Mann-Whitney Rank Sum Test, $T = 218.5$, $P = 0.574$, $N = 15$; mean \pm SD in managed field: 4.7 ± 10.8 , mean \pm SD in control field: 1.4 ± 2.9), but the managed field tends to have more birds. More data are needed for further analysis.

However, effect of planting water chestnuts in field 242 could not be shown at this

moment and only two counts were made after planting the water chestnuts. This will be evaluated in forthcoming reports.

Field 257 was only started changing to wet agricultural land from 15 May onward. No immediate effect of the birds could be found in such short period to response to these habitat enhancement exercises. No statistical comparison is made at this moment as only two counts were made after commencement of the management practice in this field.

Shallow water habitat

Habitat management practices include:

- Open space was created for birds by removing portion of weed and water spinach in fields.
- Bunds of the fields were created and maintained.
- Water was pumped into the fields and water level was maintained between 1 to 5 cm depth.

Field 224, 225 and 226 were changed to this shallow water habitat from 9 February onward. Field 176 and 177 were only started changing to this habitat on 13 and 20 April respectively.

Bird utilization:

Numbers of birds increased drastically after pumping water into the field 224, 225 and 226 (table 4). These exercises primarily aim to provide a suitable habitat to some waterbirds, especially three species of snipes: Common, Pintail and Swinhoe's Snipes (*Gallinago gallinago*, *G. stenura* and *G. megala*).

Before changing the habitats, birds recorded in these three fields were mainly several pipits including Richards *Anthus richardi*, Olive-backed *A. hodgsoni* and Red-throated *A. cervinus* and a total of 14 individuals of them were recorded in December, together with a flock of 10 Red-billed Starlings *Sturnus sericeus* in one occasion. After pumping water into the fields in February, several high counts of these snipes were made as 36 birds on 23 February, 84 birds on 9 March, 60 birds on 29 March and finally 20 birds on 13 April. Subsequently, no snipes were recorded in these fields but presumably they had left this wintering ground and staging ground for northward migration. Later, the general water level in the fields was increased due to rainfall and it might be less suitable for these waterbirds. This is the best example of enhancing ecological value of farmland through active management activities.

Table 4. Monthly total number of birds recorded in field 224, 225 and 226.

Month	Dec 05	Jan 06	Feb 06	Mar 06	Apr 06	May 06
Birds no.	27	11	47	169	33	6

Field 227, 229 and 232 are used as control for comparing the effectiveness of the management practices conducted in field 224, 225 and 226 because these fields are in similar size and adjacent to the others. Counts from 16 February onward in these fields are used for this comparison. The mean number of birds used in managed field is significantly higher than the mean number in control field (Mann-Whitney Rank Sum Test, $T = 298.5$, $P = 0.007$, $N = 15$; mean \pm SD in managed fields: 16.1 ± 25.3 , mean \pm SD in control fields: 1.1 ± 1.5). This result shows that this farming practice could effectively attract more birds.

The habitat enhancement works in field 176 and 177 were started late till mid-spring and effects to the birds are not very clear so far. Table 5 shows the numbers of birds recorded in these fields. It is noted that a total of 58 birds recorded in March included a count of 53 Common Snipes in field 177 on 2 March. Field 176 and 177 are located adjacent to the field 224. Such large number of Common Snipes in the field 177 was likely to be attracted by the habitat enhancement exercises conducted in field 224 to 226 as well.

Table 5. Monthly total number of birds recorded in field 176 and 177.

Month	Dec 05	Jan 06	Feb 06	Mar 06	Apr 06	May 06
Birds no.	6	14	4	58	24	2

Field 173 and 174, which are adjacent to field 176 and 177 and have similar size, are used as control for statistical comparison. The mean number of birds in managed fields is not in significant difference to the mean number in control fields (Mann-Whitney Rank Sum Test, $T = 30$, $P = 0.69$, $N = 5$, mean \pm SD in managed fields: 0.4 ± 0.5 , mean \pm SD in control fields: 0.2 ± 0.4), but the sample size is small. In addition, the management practice was only applied to the field in spring and most of the migratory birds had left Long Valley. It is expected that this will give a better result when more data is collected.

Farmland margin

Farmland practices include:

- Weeds are removed.

- Target plant species, e.g. Tomato, were planted to attract birds from their flowers and seeds.

This habitat enhancement exercises were only started on 15 May and this was done on fields 152, 153, 228, 229, 231 and 232. Statistical analysis will be done in the forthcoming reports.

Bird utilization:

Effects of these habitat enhancement exercises to the birds could not be observed because this exercise has only been started in mid-May and many migratory birds have left Long Valley by that time.

Other notable observations

Baillon's Crake *Porzana pusilla*

A scarce passage migrant in spring and autumn and this species is favour to freshwater marsh area. One was recorded on 29 March and it is apparently the new earliest date for this species in spring.

Citrine Wagtail *Motacilla citreola*

A scarce winter visitor to Hong Kong and mostly recorded at Long Valley. Single, presumably the same individuals in the earlier months, was recorded on 16 March.

Buff-bellied Pipit *Anthus rubescens*

A scarce winter visitor to Hong Kong. Four individuals were recorded on 9 March and one still remained on 23 March 2006.

Japanese Yellow Bunting *Emberiza sulpharata*

A scarce spring passage migrant and this species is listed as globally vulnerable by BirdLife International (2000). Single male was recorded on 19 April.

Purple-backed Starling *Sturnus sturninus*

A scarce passage migrant in autumn and very rare in spring. A male was recorded on 13 April.

Rosy Pipit *Anthus roseatus*

Single individual of this species was firstly seen on 14 to 17 May, but this bird was not recorded during the bird monitoring work of this project. This is apparently the

first record to Hong Kong.

References

BirdLife International. 2000. Threatened birds of the world. BirdLife International and Lynx edicions. Cambridge and Barcelona.

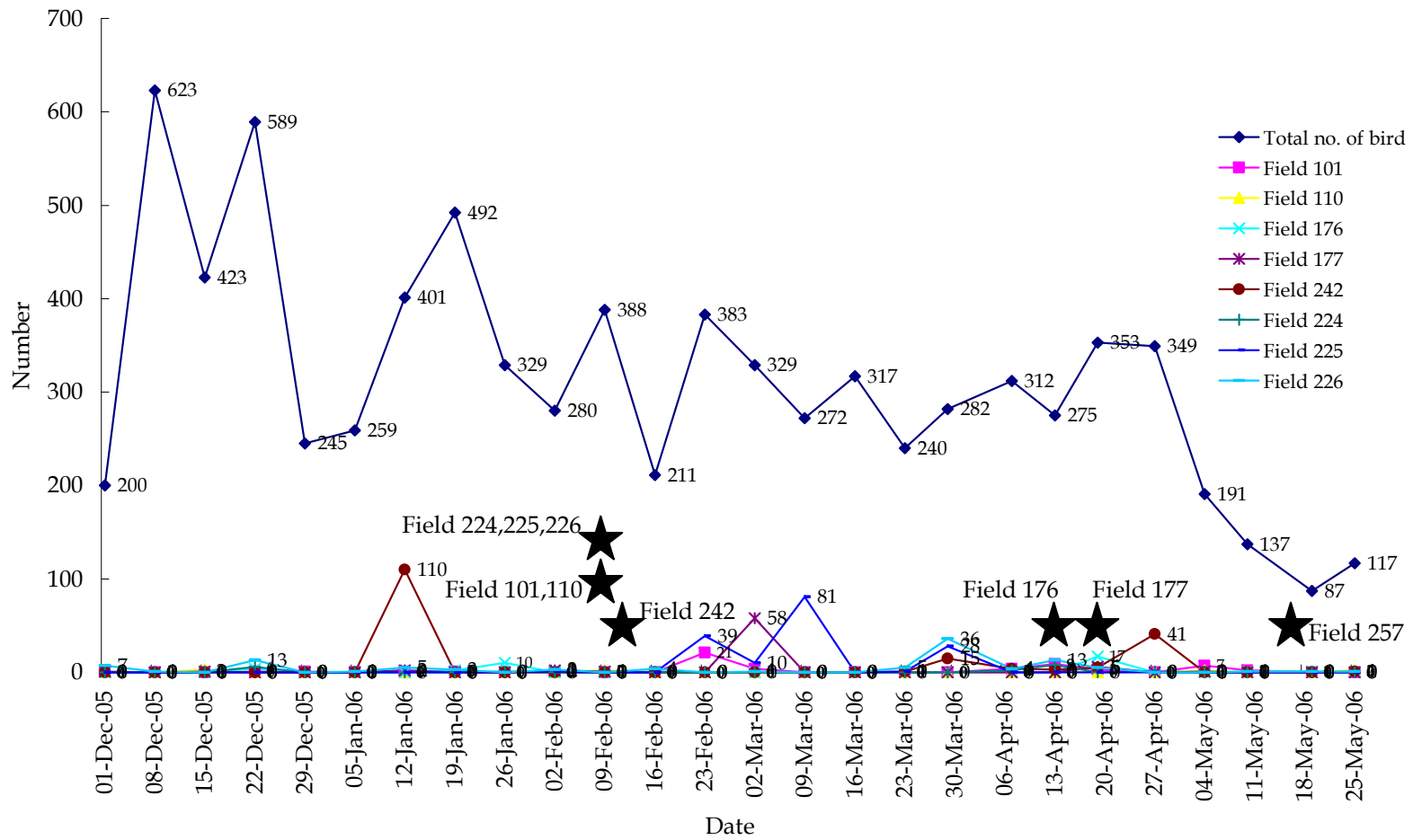


Figure 1. Numbers of bird in the whole Long Valley area and some managed fields. Note that asterisks indicate the time of farmland management practices which were started to implement.

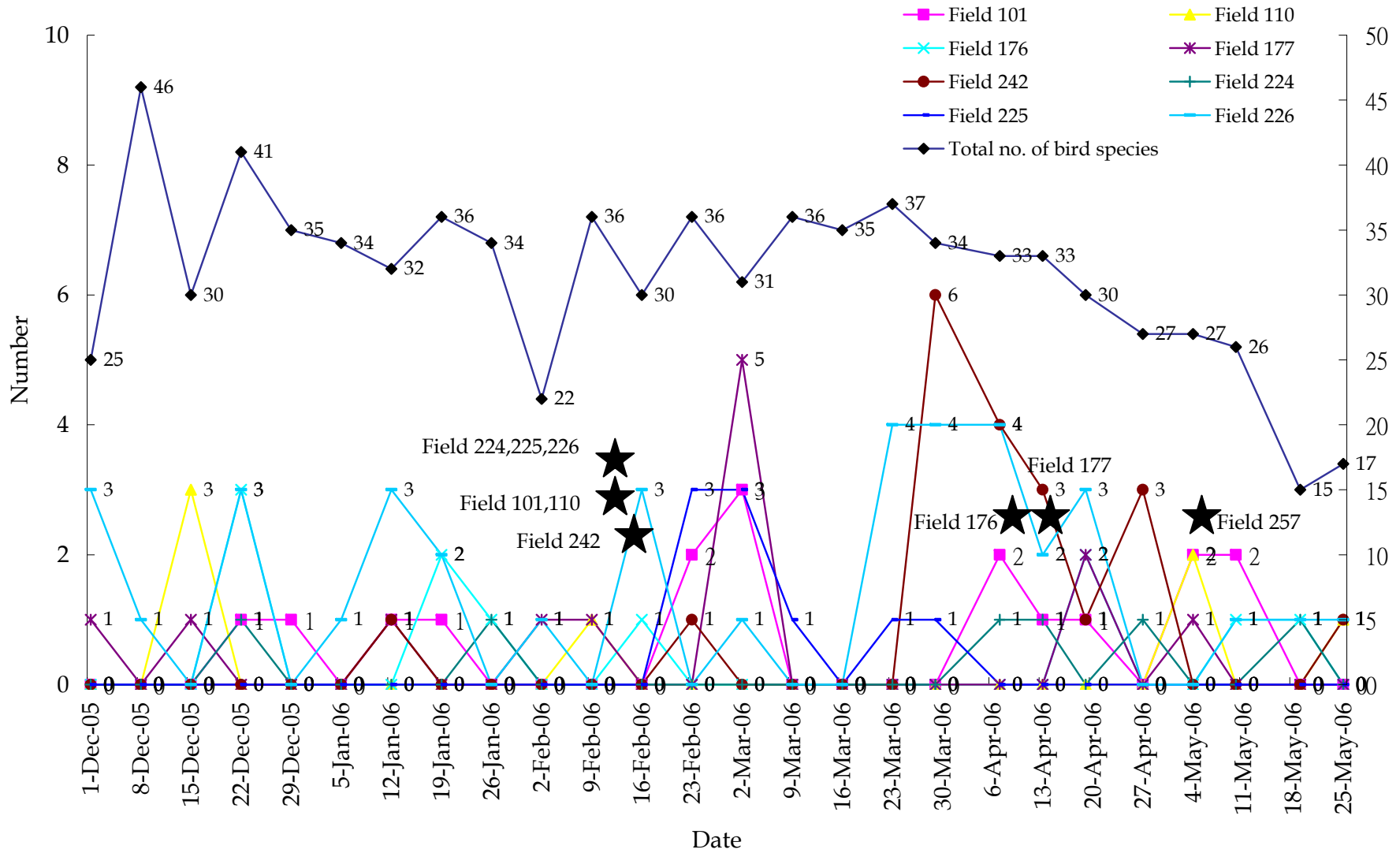


Figure 2. Numbers of bird species in the whole Long Valley area and some managed fields. Note that asterisks indicate the time of farmland management practices which were started to implement.