BIRDS AND HUMANS IN HARMONY –
A SUSTAINABLE MANAGEMENT SCHEME IN LONG VALLEY

BIRD MONITORING PROGRAMME

Summary Report

1. Background

1.1. The Environment and Conservation Fund (ECF) supports a Hong Kong Bird Watching Society's project: Birds and Human in Harmony – A Sustainable Management Scheme in Long Valley, which aims to enhance conservation value of Long Valley, especially for birds, through a management agreement (MA) scheme between the Hong Kong Bird Watching Society (HKBWS) and local farming community since December 2005.

1.2. The aim of this project is to demonstrate that conventional farming operation could benefit wildlife in particular to wild birds with specific management practices and adoptions. Effectiveness of the management practices is reflected by utilization of birds in the area and the regular Bird Monitoring Programme records this data.

1.3. This report presents and concludes results of the bird monitoring programme conducted in the whole project period, i.e. 1st December 2005 to 31st January 2008.

2. Methodology

2.1. The Bird Monitoring Programme consists of regular bird surveys in the Long Valley area. The study area covers the whole Long Valley area confined by a drainage channel lying on west, north and east and Yin Kong Village on the south.

2.2. The survey was conducted by following a standard transect to obtain comparables and complete coverage of all farmlands in the shortest time. Total surveying time maintains at about 3.5 hours in the morning.

2.3. Regular survey was conducted once per week throughout the project period. During autumn migration period, i.e. September to November, survey was increased to twice a week.

2.4. Surveyors who are accredited by HKBWS recorded all wild birds in numbers and species with the specific field numbers in the whole study area.

3. Results and Findings

Overall Result

During the project period, a total of 150 bird species were recorded during regular surveys. Appendix 1 listed the 150 bird species and the IUCN status of rare and endangered species. Including both regular surveys and casual records reported by bird watchers, there were thirteen bird species which are new record to Long Valley and one of them is the first record of Hong Kong (See Table 1). Appendix 2 showed the detailed information of each sighting.

Table 1. List of Hong Kong first record and Long Valley first records.

Hong Kong First Record	Long Valley First Record
Rosy Pipit	Broad-billed Sandpiper
	Black-winged Cuckoo-shrike
	Intermediate Egret
	Great Bittern
	Pied Avocet
	Pale Thrush
	Japanese Thrush
	Brown-headed Thrush
	Dunlin
	Grey Bushchat
	Grey Plover
	Brownish-flanked Bush Warbler

The total number of birds and species recorded in the second project year is 18.9% and 1.6% higher than that of the first project year respectively (See Table 2).

Table 2. Total number of birds and species recorded in Long Valley in the two project years during Dec 2005 to Jan 2008.

	Total no. of birds	Total no. of species
Dec 05- Nov 06	22,475	122
Dec 06 – Nov07	26,713	124
	+18.9%	+1.6%

Table 3 showed the total number and mean number of birds counted in each season throughout the project period. Since the frequency of bird survey in autumn was doubled, the number of birds counted is much higher than other seasons. Figure 1 showed the mean number of birds recorded in each season. Autumn and winter are peak seasons for birds in Long Valley. Both abundance and species diversity decrease in spring since passage migrants and winter visitors return to their breeding site. Only resident species and some summer visitors are recorded in summer and therefore the number of birds and species in summer is the lowest.

Table 3. Total number and mean number of birds counted in Long Valley in each season during Dec 2005 to Jan 2008.

Season	No. of birds counted	Mean ±SD
Winter 05/06	4,823	371 ±136
Spring 06	3,261	251 ±90
Summer 06	2,361	169 ±91
Autumn 06	12,030	463 ±133
Winter 06/07	5,500	458 ±118
Spring 06	4,463	319 ±132
Summer 07	3,907	301 ±130
Autumn 07	12,843	494 ±174
Winter 07/08 (Dec07-Jan08)	3,875	431 ±112

Figure 1. Mean number of birds recorded in Long Valley in each season during Dec 2005 to Jan 2008.

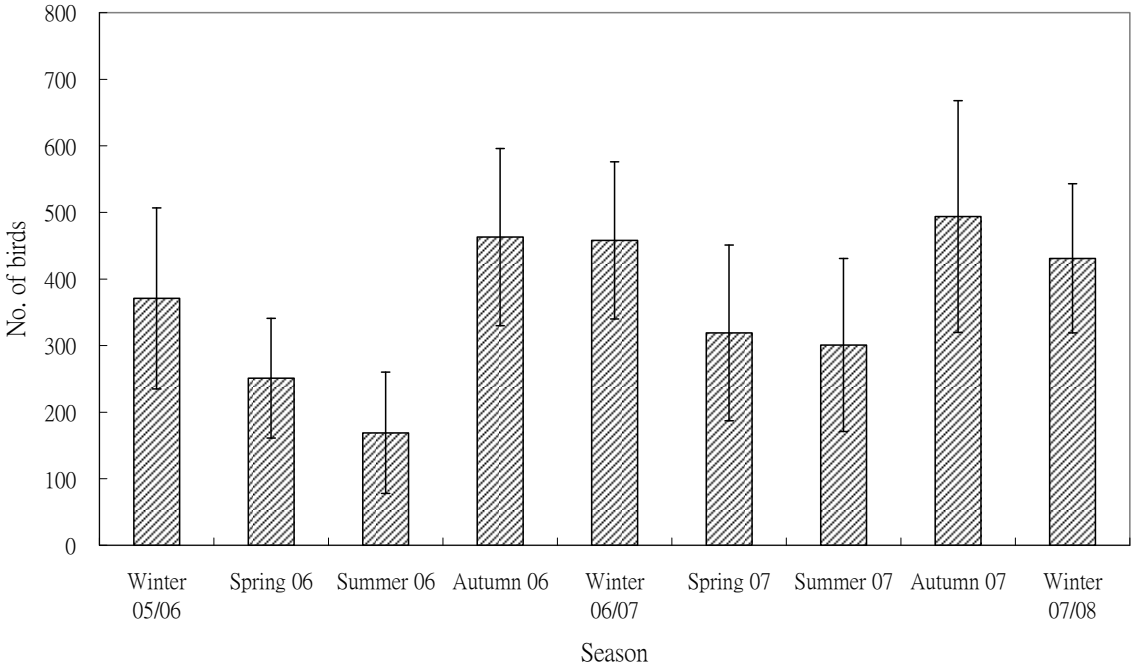
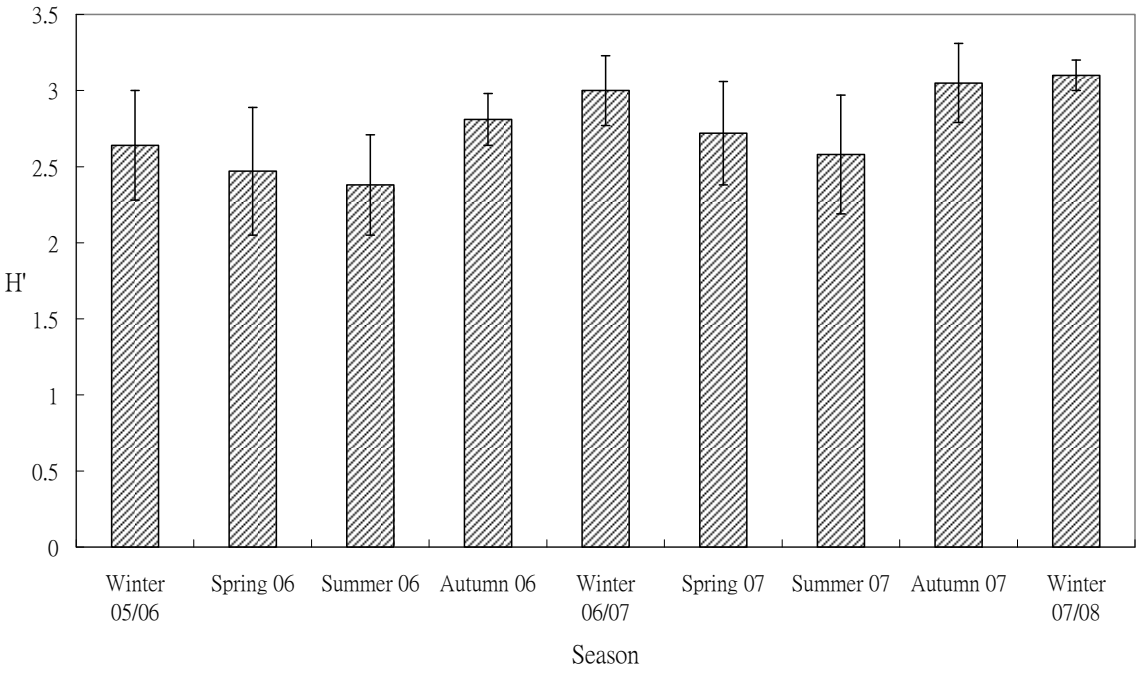


Table 4 and Figure 2 below showed the diversity index (Shannon index, H') of birds counted in each season throughout the project period.

Table 4. Mean diversity index (Shannon Index, H') of birds counted in Long Valley in each season during Dec 2005 to Jan 2008.

	Winter	Spring	Summer	Autumn
Dec 05–Nov 06	2.64 ±0.36	2.47 ±0.42	2.38 ±0.33	2.81 ±0.17
Dec 06-Nov 07	3.00 ±0.23	2.72 ±0.34	2.58 ±0.39	3.05 ±0.26
Dec 07-Jan 08	3.1 ±0.10			

Figure 2. Mean diversity index (Shannon Index, H') of birds counted in Long Valley in each season during Dec 2005 to Jan 2008.



After the implementation of habitat management, both abundance and species diversity increased. Although only the diversity index of autumn 07 and winter (06/07 and 07/08) are significantly higher than their counterparts in the first project year, there is a general increase in the diversity throughout the project period. This indicates more diverse habitats are available for different bird species.

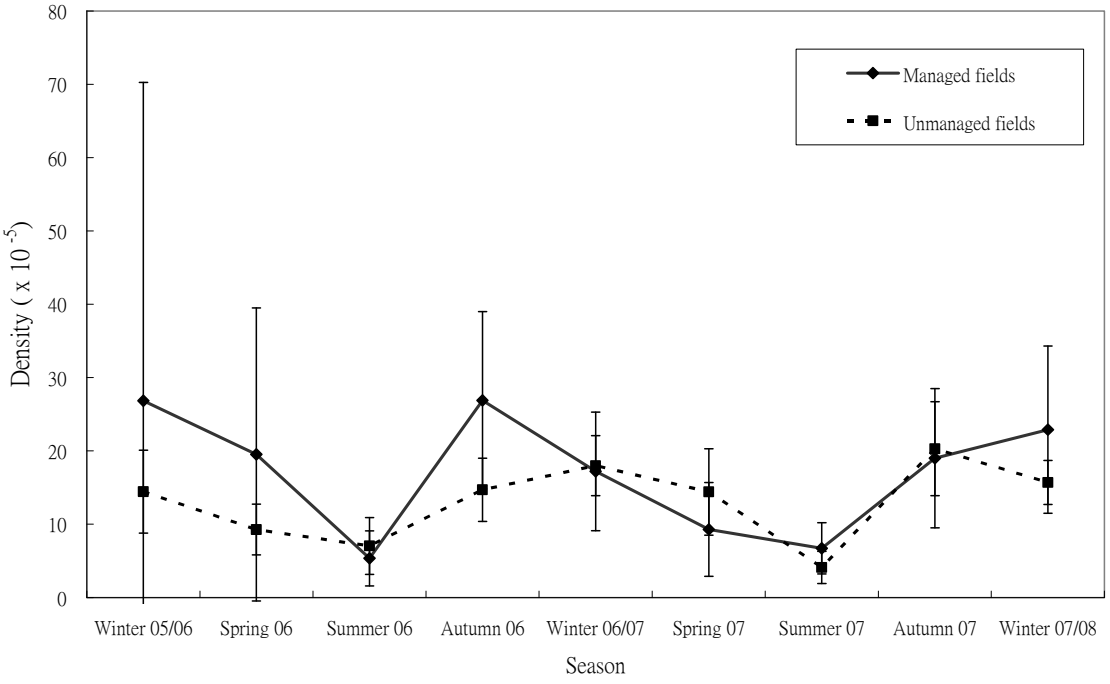
Managed Area

During the project period, five different habitat types are managed: dry agricultural land, wet agricultural land, wet agricultural land (during migration period), shallow water habitat and farmland margin. The managed area of the habitats is listed in Table 5. Figure 3 showed the bird density of managed and unmanaged fields in each season during the project period.Generally, more birds are recorded in managed fields than in unmanaged fields in the first project year. However, bird utilization on managed fields decreased in the second project year and the difference between managed and unmanaged fields reduced.

Table 5. Habitat types and area managed by HKBWS in Long Valley during Dec 2005 to Jan 2008.

Habitat Types	**Area (ft ^{2})**
Dry Agricultural Land	20,000
Wet Agricultural Land	23,500
Wet Agricultural Land (during migration period)	50,000
Shallow Water Habitat	127,200
Farmland Margin	265,200

Figure 3. Bird density of managed and unmanaged fields recorded in Long Valley in each season during Dec 2005 to Jan 2008.



Effectiveness of Managed Habitats

To evaluate the cost effectiveness of different habitat types managed in the project, Figure 4 to 7 showed the bird density recorded in different managed habitats in each season during the project period. Table 6 to 9 listed the bird assemblages recorded in different managed habitats.

Dry Agricultural Land (DAL)

Figure 4. Bird density of DAL and its control recorded in Long Valley in each season during Dec 2005 to Jan 2008.

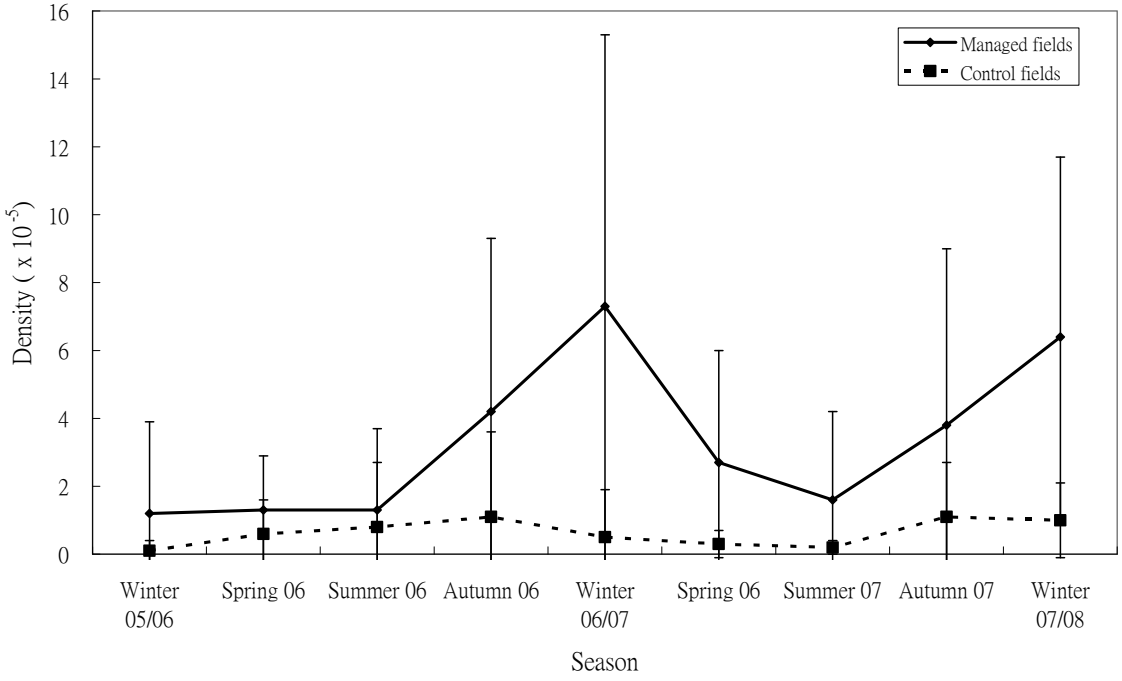


Table 6. Bird assemblage of DAL in Long Valley recorded during Dec 2005 to Jan 2008.

Species (Common Name)	**Total no.**	**Percentage (%)**
Spotted Dove	184	20.60%
Yellow Wagtail	149	16.69%
Red-throated Pipit	137	15.34%
Black-collared Starling	104	11.65%
Rock Dove	71	7.95%
White Wagtail	56	6.27%
Dusky Warbler	51	5.71%
Little Ringed Plover	27	3.02%
Eurasian Tree Sparrow	15	1.68%
Olive-backed Pipit	13	1.46%
Others	86	9.63%
Total	**893**	**100.00%**

Wet Agricultural Land (WAL)

Figure 5. Bird density of WAL and its control recorded in Long Valley in each season during Dec 2005 to Jan 2008.

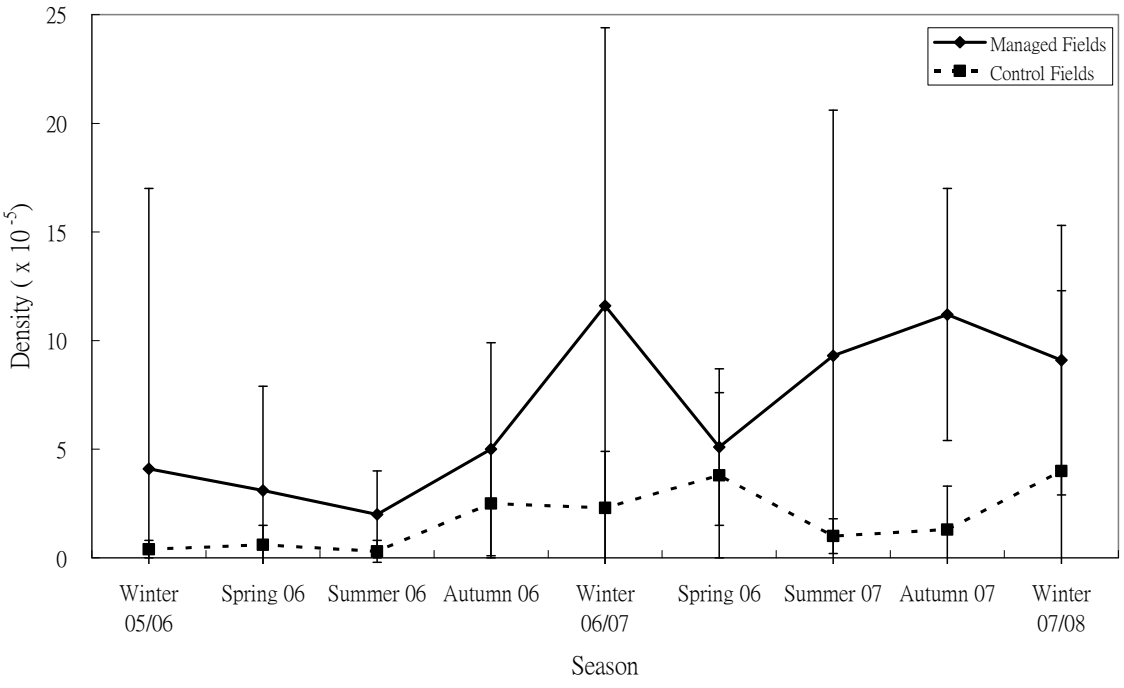


Table 7. Bird assemblage of WAL in Long Valley recorded during Dec 2005 to Jan 2008.

Species (Common Name)	**Total no.**	**Percentage (%)**
Gallinago sp.	518	24.69%
Wood Sandpiper	333	15.87%
Scaly-breasted Munia	281	13.39%
Crested Myna	153	7.29%
Greater Painted Snipe	115	5.48%
Chinese Pond Heron	75	3.57%
Little Egret	61	2.91%
White-breasted Waterhen	59	2.81%
White Wagtail	52	2.48%
Yellow Wagtail	49	2.34%
Others	402	19.16%
Total	**2,098**	**100.00%**

Wet Agricultural Land (during migration period)

The bird density of WAL (during migration period) and its control recorded in Sep to Nov 2006 is 1.2±1.5 and 0.3±0.4 respectively. While in Sep to Nov 2007, the bird density of managed and control fields is 4.9±4.2 and 0.8±2.5 respectively. The difference between the two autumns is in significant different due to different management practices applied. In the first autumn, Water Spinach fields were flooded with shallow water and the crop height is managed. However, this management method did not attract birds effectively. In the second autumn, a more active management is carried out by ploughing Water Spinach fields and planting Water Cress. By this practice, the number of birds increased greatly.

Table 8. Bird assemblage of WAL (during migration period) in Long Valley recorded during Sep to Nov 2006 and 2007.

Species (Common Name)	**Total no.**	**Percentage (%)**
Gallinago sp.	276	36.17%
Wood Sandpiper	135	17.69%
Little Ringed Plover	86	11.27%
Black-winged Stilt	48	6.29%
Yellow Wagtail	39	5.11%
White Wagtail	24	3.15%
Crested Myna	23	3.01%
Chinese Pond Heron	19	2.49%
Common Stonechat	14	1.83%
Richard's Pipit	9	1.18%
Others	90	11.80%
Total	**763**	**100.00%**

Shallow Water Habitat (SWH)

Figure 7. Bird density of SWH and its control recorded in Long Valley in each season during Dec 2005 to Jan 2008.

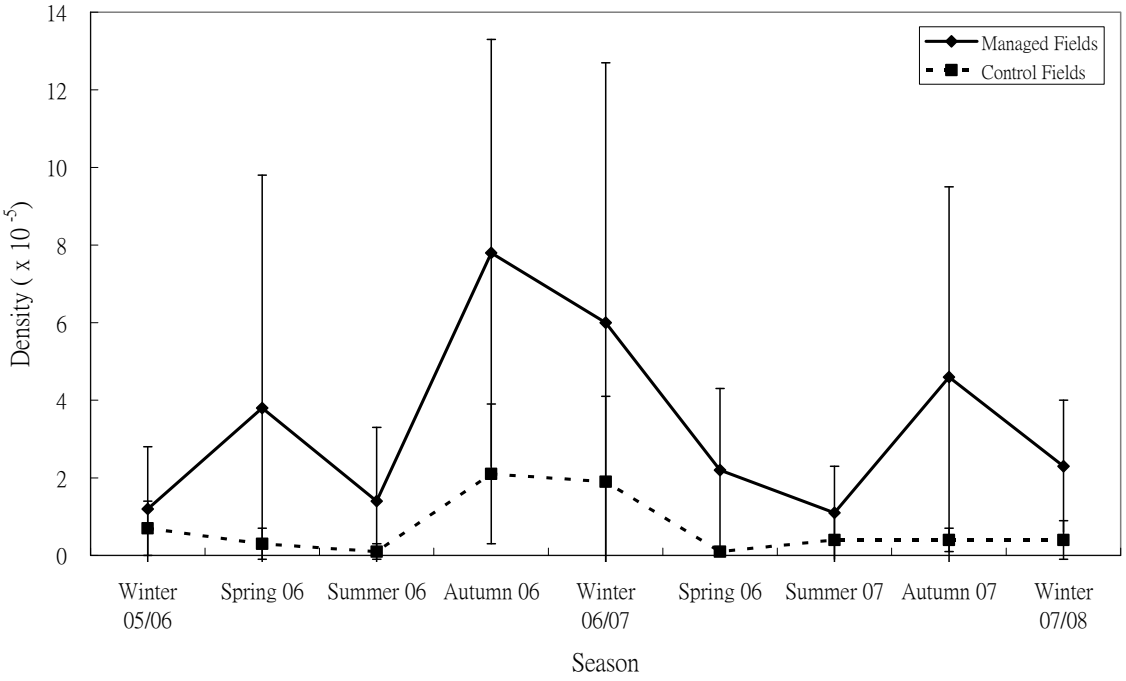
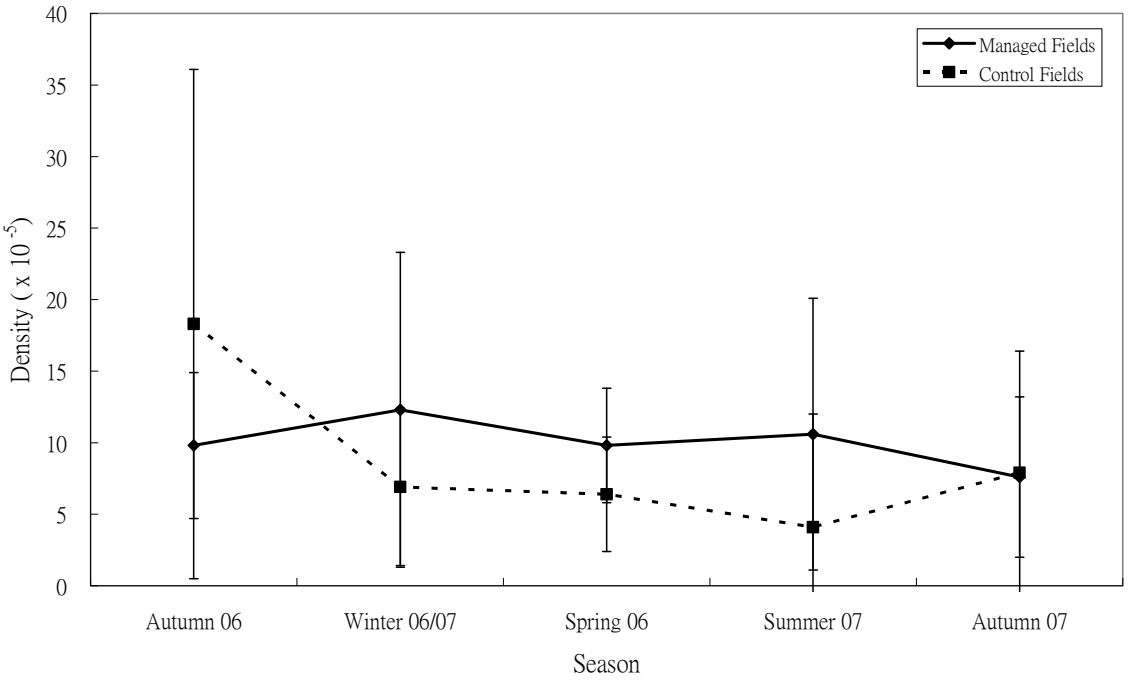


Table 9. Bird assemblage of SWH in Long Valley recorded during Dec 2005 to Jan 2008.

Species (Common Name)	**Total no.**	**Percentage (%)**
Gallinago sp.	1,408	25.08%
Crested Myna	970	17.28%
Wood Sandpiper	926	16.50%
Scaly-breasted Munia	641	11.42%
Little Ringed Plover	202	3.60%
Little Egret	157	2.80%
Chinese Pond Heron	139	2.48%
Black-winged Stilt	89	1.59%
White Wagtail	87	1.55%
Common Teal	77	1.37%
Others	989	17.61%
Total	**5,613**	**100.00%**

Farmland Margin (FM)

Figure 8. Bird density of FM and its control recorded in Long Valley in each season during Sep 2006 to Nov 2008.



Among the habitat types managed, both wet agricultural land and shallow water habitat are the most effective in attracting target bird species especially *Gallinago* sp. (i.e. snipe species) and Wood Sandpiper (See Table 7, 8 and 9). Shallow water habitat is the most cost effective since the amount of money and manpower input is relatively low.

For the dry agricultural land, it did attract birds successfully and the number of birds recorded in DAL is significantly higher than that of control fields in most of the seasons. However, most of them are non-target species such as Spotted Dove and Yellow Wagtail etc (See Table 6).

The combination effect of farmland margins and the field as well as other factors such as disturbance make it difficult to assess the effectiveness of farmland margin vegetations. The effectiveness of solely this habitat is still unclear.

Effectiveness of Management Practices

Data also showed that turning abandoned fields into shallow water habitat and wet agricultural land with practices include removing weeds and inundated with water, could also increase the number of birds. Figure 9 and 10 showed the mean number of birds recorded in the shallow water habitats and wet agricultural lands respectively, in each season throughout the project period.

Generally, the number of birds recorded in shallow water habitat increased after adoption of management practices. However, immediate

change in bird utilization is not noticeable in some of the farmlands e.g. #176 and 177, due to seasonal factor. Since birds are attracted to newly created habitats, the effect is obvious in the first year of management. Attractiveness as well as food content of shallow water habitats decreases over time. Therefore, bird utilization drops in the second project year.

Figure 9. Monthly mean number of birds recorded in SWH in Long Valley during Dec 2005 to Jan 2008. * = habitat management began.

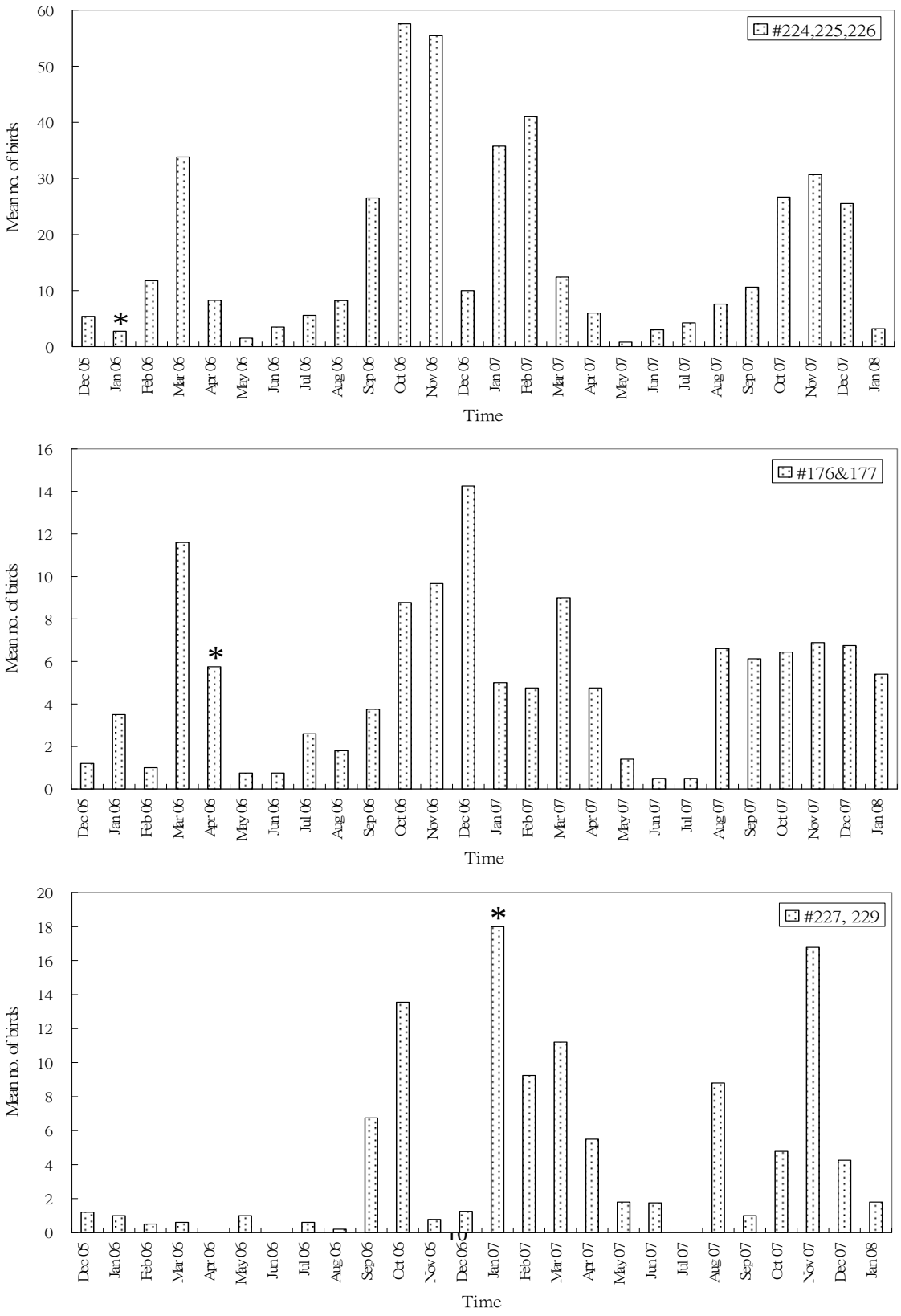
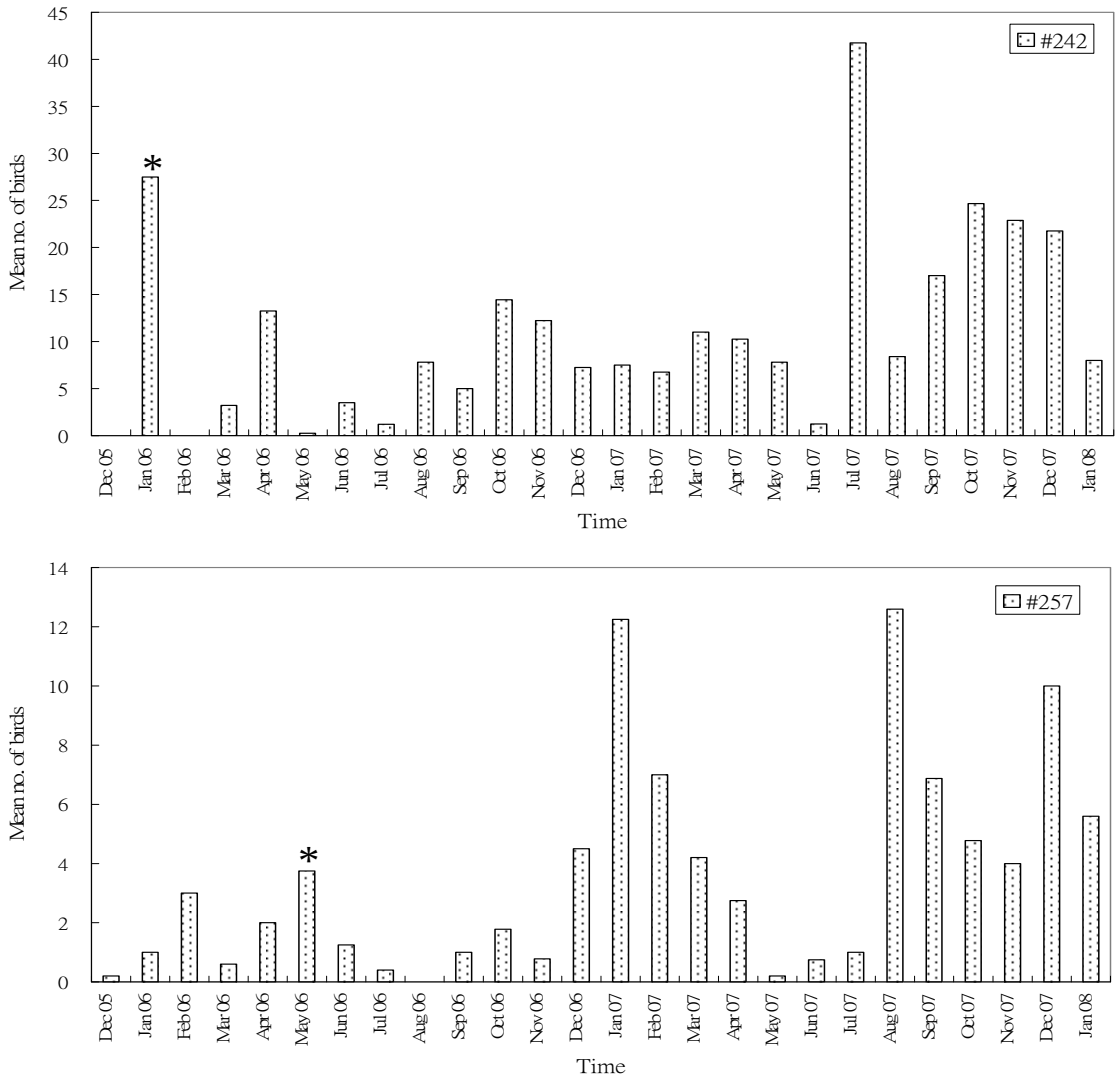


Figure 10. Monthly mean number of birds recorded in WAL in Long Valley during Dec 2005 to Jan 2008. * = habitat management began.



From Figure 10, the effect of wet agricultural lands in the second project year is much obvious than the first project year. This is due to the high crop density in the first year when we start planting Water Chestnut and Paddy Rice. In the next growing season, i.e. second project year, we reduced the vegetation density and bird utilization increased. This can be explained that densely vegetated field reduced the accessibility of birds to the farmland.

A special case is field #238. #238 comprised of more than twenty farmlands and it was abandoned for several years. A large-scale weed clearance was carried out in August 2006 in which eight fields were opened and turned into shallow water habitat (#238e, h, l and p), wet agricultural lands (#238f, g, q) and composting field (#238b) managed by HKBWS and The Conservancy Association (CA). Figure 11 below showed the mean number of birds recorded in #238 in each season during the

project period. Surprisingly, the change in bird abundance of this field is the most conspicuous among the managed shallow water habitat and wet agricultural land. The bird assemblage of #238 before and after management during December to July is listed in Table 10a & b.

In Table 10a, the top ten bird species recorded are common species and open country species. After opened abandoned farmlands and implemented with management practices, wetland habitats are created and more waterbirds are able to use the fields.

Figure 11. Monthly mean number of birds recorded in #238 in Long Valley during Dec 2005 to Jan 2008. * = habitat management began

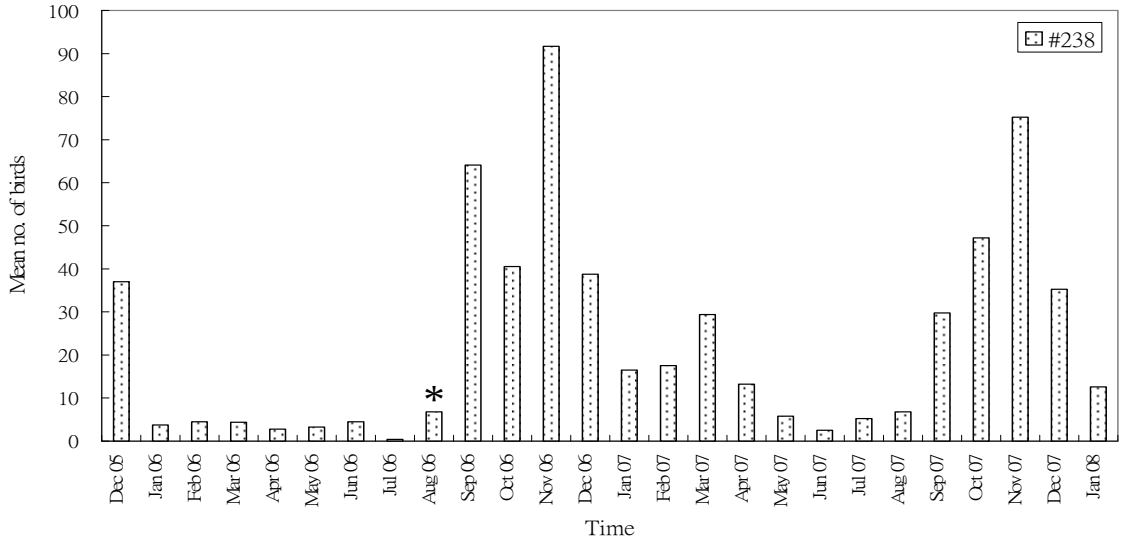


Table 10a (left). Bird assemblage of #238 before (Dec05 - Jul06) implementation of management practice. Table 10b (right). Bird assemblage of #238 after (Dec06 – Jul07) implementation of management practice. Only birds recorded in managed fields are counted.

Bird Species	**Total no.**	**%**
Red-billed Starling	78	27.46%
Scaly-breasted Munia	64	22.54%
Yellow-bellied Prinia	40	14.08%
Little Bunting	18	6.34%
Siberian Rubythroat	13	4.58%
Chinese Bulbul	11	3.87%
Plain Prinia	11	3.87%
Common Stonechat	9	3.17%
Dusky Warbler	7	2.46%
Long-tailed Shrike	7	2.46%
Others	26	9.15%
Total	**284**	**100.00%**

Bird Species	**Total no.**	**%**
Scaly-breasted Munia	194	43.60%
Yellow-bellied Prinia	56	12.58%
Chinese Pond Heron	26	5.84%
Common Snipe	19	4.27%
Crested Myna	14	3.15%
Plain Prinia	13	2.92%
Wood Sandpiper	13	2.92%
Zitting Cisticola	13	2.92%
Spotted Dove	11	2.47%
Little Egret	10	2.25%
Others	76	17.08%
Total	**445**	**100.00%**

Result of Plough Test

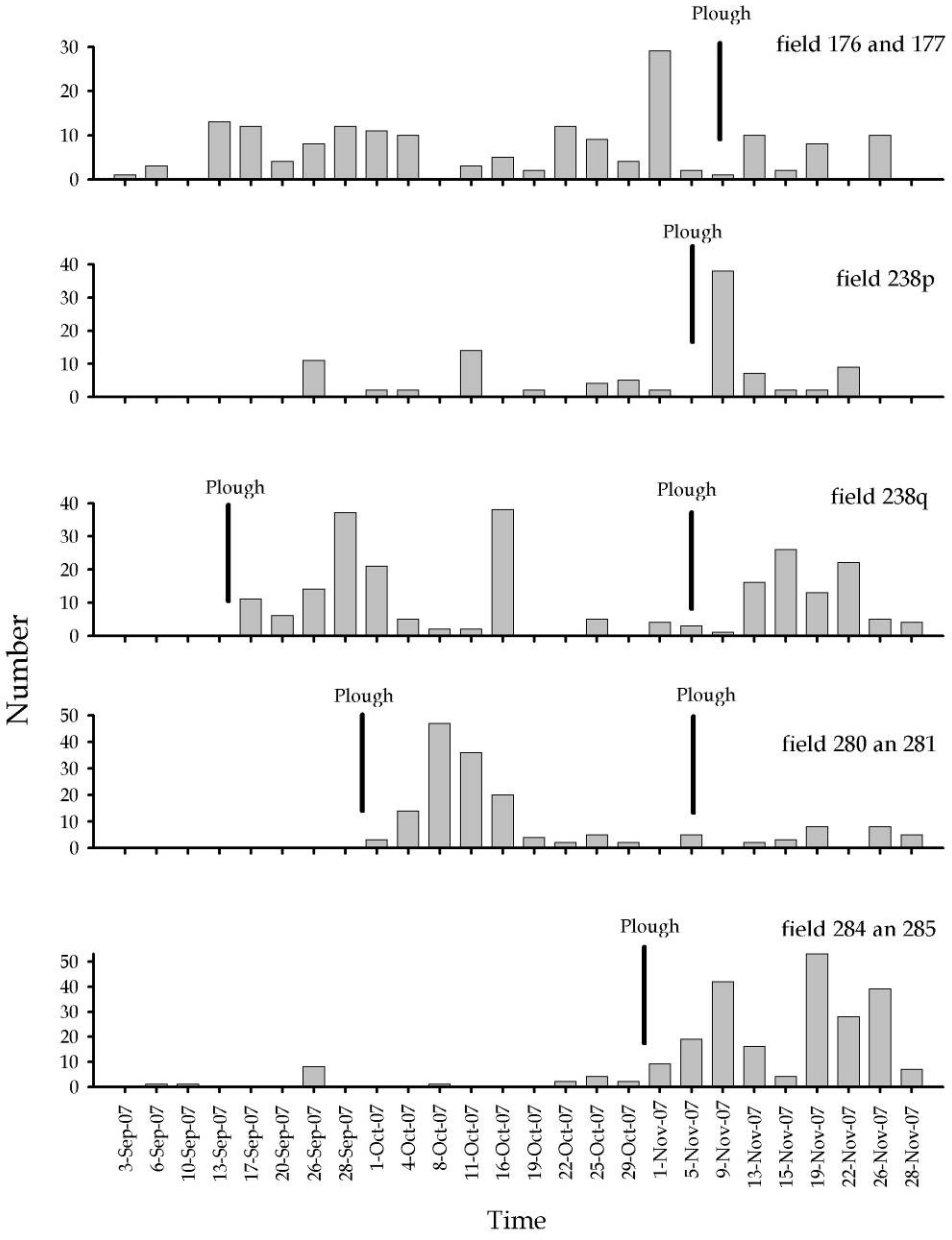
In autumn 2007, active management practice was carried out in the additional wet agricultural land that Water Spinach fields were ploughed one by one and one of them (part of #285a) was planted with Water Cress after the plough. Figure 12 showed the number of birds recorded in wet agricultural land (during migration period) and shallow water habitat (#176&177, #238p) during Sep to Nov 2007 with indication of plough schedule.

It is obvious that the number of birds increased greatly after each plough and the bird utilization drops after about two weeks. Some of the farmlands (#238q, #280&281) were ploughed twice. The bird utilization rose again after the second plough. However, the increase is not as prominent as the first plough.

At the same period of time, plough is also conducted in shallow water habitats (#176&177, #238p). In #238p, a similar result that a "peak" in the number of birds obtained right after the plough. Nevertheless, the result of #176&177 is different. The bird utilization did not change much after the plough. The difference may due to the additional wet agricultural lands were conventional farmlands and planted with crops all along. Fertilizers were added regularly to the fields and the soil is believed to be rich in worm. Crops in high density, which conventional farmlands always do, affect the accessibility of birds from worms inside soil. And shallow water habitat #238p was not ploughed for more than a year after it was opened from abandoned field. Once the fields were ploughed, vegetations were cut and mixed with soil and worms were exposed as well. This action created new habitats and food source for birds which could attract birds successfully. Contrastingly, #176&177 is an open-water type shallow water habitat. Worms in these fields are relatively exposed than in vegetated field. In addition to the high bird usage since management began (See Figure 9), worm content in #176&177 may be low. Thus, plough in these fields may not have the same effect as other fields.

To sum up, plough does have positive effect to bird utilization. Yet the amplitude of the effect is influence by many factors such as the period of abandonment or fallow, vegetation coverage and application of fertilizers etc. Further investigation is recommended.

Figure 12. Number of birds recorded in WAL (during migration period) and SWH (#176&177, #238p) with plough schedule during Sep to Nov 2007.



4. Conclusion and Recommendations

To conclude, habitat management carried out in this pilot project is a success that both number of birds and species diversity of Long Valley increased. Shallow water habitat and wet agricultural land are identified as the most effective habitat types. It is recommended to expand the managed area of these two habitats in future. Yet, the increase in bird population will level off when it reaches the carrying capacity. Though the carrying capacity of Long Valley is unknown, bird monitoring programme should be continued in a long term basis to record the bird assemblages, pattern and changes of

this site so as to provide more information on habitat change and the effectiveness of habitat management.

Maintaining the wetness of farmland is also crucial to bird utilization. It is suggested to monitor water level more closely in order to minimize fluctuation.

Preliminary result indicates that plough is effective in attracting bird utilization. However, there are still confining factors affecting the effectiveness of plough. Further investigation is recommended.

Appendix 1. List of bird species recorded in regular bird survey in Long Valley during December 2005 to January 2008.

No.	English Name	Scientific Name	Chinese Name	Status
14	Grey Heron	*Ardea cinerea*	蒼鷺	
15	Purple Heron	*Ardea purpurea*	草鷺	
16	Great Egret	*Egretta alba*	大白鷺	
17	Intermediate Egret	*Egretta intermedia*	中白鷺	
18	Little Egret	*Egretta garzetta*	小白鷺	
21	Cattle Egret	*Bubulcus ibis*	牛背鷺	
22	Chinese Pond Heron	*Ardeola bacchus*	池鷺	
24	Black-crowned Night Heron	*Nycticorax nictycorax*	夜鷺	
26	Yellow Bittern	*Ixobrychus sinensis*	黃葦鳽	
27	Schrenck's Bittern	*Ixobrychus eurhythmus*	紫背葦鳽	
28	Cinnamon Bittern	*Ixobrychus cinnamomeus*	栗葦鳽	
43	Eurasian Wigeon	*Anas penelope*	赤頸鴨	
47	Common Teal	*Anas crecca*	綠翅鴨	
50	Spot-billed Duck	*Anas poecilorhyncha*	斑咀鴨	
51	Northern Pintail	*Anas acuta*	針尾鴨	
53	Northern Shoveler	*Anas clypeata*	琵咀鴨	
64	Black Baza	*Aviceda leuphotes*	黑冠鵑隼	
65	Crested Honey Buzzard	*Pernis ptilorhyncus*	鳳頭蜂鷹	
67	Black Kite	*Milvus migrans*	黑鳶（麻鷹）	
71	Crested Serpent Eagle	*Spilornis cheela*	蛇鵰	
78	Besra	*Accipiter virgatus*	松雀鷹	
80	Common Buzzard	*Buteo buteo*	普通鵟	
83	Bonelli's Eagle	*Hieraaetus fasciatus*	白腹山鵰	
85	Common Kestrel	*Falco tinnunculus*	紅隼	
86	Eurasian Hobby	*Falco subbuteo*	燕隼	
89	Japanese Quail	*Coturnix japonica*	鵪鶉	
94	Water Rail	*Rallus aquaticus*	普通秧雞	
98	Baillon's Crake	*Porzana pusilla*	小田雞	
99	Ruddy-breasted Crake	*Porzana fusca*	紅胸田雞	
101	White-breasted Waterhen	*Amaurornis phoenicurus*	白胸苦惡鳥	
102	Watercock	*Gallicrex cinerea*	董雞	
103	Common Moorhen	*Gallinula chloropus*	黑水雞	
104	Eurasian Coot	*Fulica atra*	白骨頂	
105	Pheasant-tailed Jacana	*Hydrophasianus chirurgus*	水雉	
106	Greater Painted Snipe	*Rostratula benghalensis*	彩鷸	
107	Black-winged Stilt	*Himantopus Himantopus*	黑翅長腳鷸	
108	Pied Avocet	*Recurvirostra avosetta*	反咀鷸	
109	Oriental Pratincole	*Glareola maldivarum*	普通燕鴴	

111	Grey-headed Lapwing	*Vanellus cinereus*	灰頭麥雞	
112	Pacific Golden Plover	*Pluvialis fulva*	太平洋金斑鴴	
113	Grey Plover	*Pluvialis squatarola*	灰斑鴴	
116	Little Ringed Plover	*Chadarius dubius*	金眶鴴(黑領鴴)	
127	Spotted Redshank	*Tringa erythropus*	鶴鷸	
128	Common Redshank	*Tringa totanus*	紅腳鷸	
130	Common Greenshank	*Tringa nebularia*	青腳鷸	
133	Green Sandpiper	*Tringa ochropus*	白腰草鷸	
134	Wood Sandpiper	*Tringa glareola*	林鷸	
136	Common Sandpiper	*Actitis hypoleucos*	磯鷸	
139	Red-necked Phalarope	*Phalaropus lobatus*	紅頸瓣蹼鷸	
141	Eurasian Woodcock	*Scolopax rusticola*	丘鷸	
142	Pintail Snipe	*Gallinago stenrua*	針尾沙錐	
143	Swinhoe's Snipe	*Gallinago megala*	大沙錐	
144	Common Snipe	*Gallinago gallinago*	扇尾沙錐	
152	Temminck's Stint	*Calidris temminckii*	青腳濱鷸	
153	Long-toed Stint	*Calidris subminuta*	長趾濱鷸	
160	Ruff	*Philomachus pugnax*	流蘇鷸	
191	Rock Dove	*Columba livia*	原鴿	
192	Oriental Turtle Dove	*Streptopelia orientails*	山斑鳩	
193	Red Turtle Dove	*Streptopelia tranquebarica*	火斑鳩	
194	Spotted Dove	*Streptopelia chinensis*	珠頸斑鳩	
205	Oriental Cuckoo	*Cuculus saturatus*	中杜鵑	
207	Plaintive Cuckoo	*Cacomantis merulinus*	八聲杜鵑	
208	Common Koel	*Eudynamys scolopacea*	噪鵑	
209	Greater Coucal	*Centropus sinensis*	褐翅鴉鵑	
210	Lesser Coucal	*Centropus bengalensis*	小鴉鵑	
216	Asian Barred Owlet	*Glaucidium cuculoides*	斑頭鵂鶹	
220	Savanna Nightjar	*Caprimulgus affinis*	林夜鷹	
225	Pacific Swift	*Apus pacifius*	白腰雨燕	
226	Little Swift	*Apus affinis*	小白腰雨燕	
228	Pied Kingfisher	*Ceryle rudis*	斑魚狗	
229	Common Kingfisher	*Alcedo atthis*	普通翡翠	
230	White-throated Kingfisher	*Halcyon smyrnensis*	白胸翡翠	
231	Black-capped Kingfisher	*Halcyon pileata*	藍翡翠	
236	Eurasian Hoopoe	*Upupa epops*	戴勝	
238	Eurasian Wryneck	*Jynx torquilla*	蟻鴷	
247	Eurasian Skylark	*Alauda arvensis*	雲雀	
251	Barn Swallow	*Hirundo rustica*	家燕	
252	Red-rumped Swallow	*Hirundo daurica*	金腰燕	

255	Yellow Wagtail	*Motacilla flava*	黃鶺鴒	
256	Citrine Wagtail	*Motacilla citreola*	黃頭鶺鴒	
257	Grey Wagtail	*Motacilla cinerea*	灰鶺鴒	
258	White Wagtail	*Motacilla alba*	白鶺鴒	
259	Richard's Pipit	*Anthus richardi*	田鷚	
260	Olive-backed Pipit	*Anthus hodgsoni*	樹鷚	
261	Red-throated Pipit	*Anthus cervinus*	紅喉鷚	
262	Pechora Pipit	*Anthus gustavi*	北鷚	
263	Buff-bellied Pipit	*Anthus rubescens*	黃腹鷚	
265	Black-winged Cuckoo-shrike	*Coracina melaschistos*	暗灰鵑鵙	
270	Red-whiskered Bulbul	*Pycnonotus jocosus*	紅耳鵯	
271	Chinese Bulbul	*Pycnonotus sinensis*	白頭鵯	
272	Sooty-headed Bulbul	*Pycnonotus aurigaster*	白喉紅臀鵯	
278	Brown Shrike	*Lanius cristatus*	紅尾伯勞	
279	Long-tailed Shrike	*Lanius schach*	棕背伯勞	
283	Siberian Rubythroat	*Luscinia calliope*	紅喉歌鴝(紅點頦)	
285	Bluethroat	*Luscinia svecica*	藍喉歌鴝(藍點頦)	
287	Oriental Magpie Robin	*Copsychus saularis*	鵲鴝	
289	Daurian Redstart	*Phoenicurus auroreus*	北紅尾鴝	
292	Common Stonechat	*Saxicola torquata*	黑喉石[即鳥]	
302	Japanese Thrush	*Turdus cardis*	烏灰鶇	
303	Common Blackbird	*Turdus merula*	烏鶇	
304	Brown-headed Thrush	*Turdus chrysolaus*	赤胸鶇	
305	Grey-backed Thrush	*Turdus hortulorum*	灰背鶇	
306	Pale Thrush	*Turdus pallidus*	白腹鶇	
308	Dusky Thrush	*Turdus naumanni*	斑鶇	
312	Masked Laughingthrush	*Garrulax perspicillatus*	黑臉噪鶥	
325	Japanese Bush Warbler	*Cettia diphone*	日本樹鶯	
331	Lanceolated Warbler	*Locustella lanceolata*	矛紋蝗鶯	
332	Pallas's Grasshopper Warbler	*Locustella certhiola*	小蝗鶯	
335	Black-browed Reed Warbler	*Acrocephalus bistrigiceps*	黑眉葦鶯	
336	Manchurian Reed Warbler	*Acrocephalus tangorum*	東北稻田葦鶯	VU
340	Oriental Reed Warbler	*Acrocephalus orientails*	東方大葦鶯	
343	Zitting Cisticola	*Cisticola juncidis*	棕扇尾鶯	
344	Bright-capped Cisticola	*Cisticola exilis*	黃頭扇尾鶯	
345	Yellow-bellied Prinia	*Prinia flaviventris*	灰頭鷦鶯	
346	Plain Prinia	*Prinia inornata*	褐頭鷦鶯	
347	Common Tailorbird	*Orthotomus sutorius*	長尾縫葉鶯	
349	Dusky Warbler	*Phylloscopus fuscatus*	褐柳鶯	
352	Pallas's Leaf Warbler	*Phylloscopus proregulus*	黃腰柳鶯	
354	Yellow-browed Warbler	*Phylloscopus inornatus*	黃眉柳鶯	

356	Arctic Warbler	*Phylloscopus borealis*	極北柳鶯	
358	Pale-legged Leaf Warbler	*Phylloscopu tenellipes*	灰腳樹鶯	
369	Asian Brown Flycatcher	*Muscicapa dauurica*	北灰鶲	
377	Red-throated Flycatcher	*Ficedula albicilla*	紅喉姬鶲	
389	Great Tit	*Parus major*	大山雀	
397	Japanese White-eye	*Zosterops japonicus*	暗綠繡眼鳥(相思)	
401	Chestnut-eared Bunting	*Emberiza fucata*	栗耳鹀(赤胸鹀)	
402	Little Bunting	*Emberiza pusilla*	小鹀	
406	Yellow-breasted Bunting	*Emberiza aureola*	黃胸鹀	NT
407	Chestnut Bunting	*Emberiza rutila*	栗鹀	
409	Japanese Yellow Bunting	*Emberiza sulphurata*	硫黃鹀	VU
410	Black-faced Bunting	*Emberiza spodocephala*	灰頭鹀	
418	Yellow-billed Grosbeak	*Eophona migratoria*	黑尾蠟咀雀	
420	White-rumped Munia	*Lonchura striata*	白腰文鳥	
421	Scaly-breasted Munia	*Lonchura punctulata*	斑文鳥	
424	Eurasian Tree Sparrow	*Passer montanus*	樹麻雀	
427	Red-billed Starling	*Sturnus sericeus*	絲光椋鳥	
429	Purple-backed Starling	*Sturnus sturninus*	北椋鳥	
432	White-cheeked Starling	*Sturnus cineraceus*	灰椋鳥	
433	Black-collared Starling	*Sturnus nigricollis*	黑領椋鳥	
434	White-shouldered Starling	*Sturnus sinensis*	灰背椋鳥	
435	Common Myna	*Acridotheres tristis*	家八哥	
436	Crested Myna	*Acridotheres cristatellus*	八哥	
437	Black-naped Oriole	*Oriolus chinensis*	黑枕黃鸝	
438	Black Drongo	*Dicrurus macrocercus*	黑卷尾	
440	Hair-crested Drongo	*Dicrurus hottentottus*	髮冠卷尾	
444	Common Magpie	*Pica pica*	喜鵲	
447	Large-billed Crow	*Corvus macrorhynchos*	大嘴烏鴉	
448	Collared Crow	*Corvus torquatus*	白頸鴉	
783	Red Avadavat	*Amandava amandava*	紅梅花雀	
800	Azure-Winged Magpie	*Cyanopica cyanus*	灰喜鵲	

Status listed in Appendix 1 is according to the IUCN Red List of Threatened Species 2007; VU = Vulnerable; NT = Near Threatened.

Appendix 2. New bird records and detailed information

	English Name	Chinese Name	Species Name	Date Recorded	Field Located	Habitat Information
1	Rosy Pipit	粉紅胸鷚	*Anthus roseatus*	14-May-2006	#181	Water Cress
2	Broad-billed Sandpiper	闊咀鷸	*Limicola falcinellus*	17-Sep-2006	#270/271	Bare field, water level < 2.5 cm
3	Black-winged Cuckoo-shrike	暗灰鵑鵙	*Coracina melaschistos*	9-Oct-2006	#254	---
4	Intermediate Egret	中白鷺	*Egretta intermedia*	26-Oct-2006	#219	---
5	Great Bittern	大麻鳽	*Botaurus stellaris*	4-Dec-2006	#238e	Tall and dense grass, water level ~ 5 cm
6	Pied Avocet	反咀鷸	*Recurvirostra avosetta*	9-Dec-2006	#176, 222, 242	#176: open water, water level ~ 2.5 cm #222: water flea pond #242: wet agricultural land with Water Chestnut, Paddy Rice and open water ~ 3 cm.
7	Pale Thrush	白腹鶇	*Turdus pallidus*	13-Jan-2007	---	---
8	Japanese Thrush	烏灰鶇	*Turdus cardis*	30-Jan-2007	---	---
9	Brown-headed Thrush	赤胸鶇	*Turdus chrysolaus*	1-Feb-2007	#257	Wet agricultural land with wilted Water Chestnut and open water
10	Dunlin	黑腹濱鷸	*Calidris alpine*	21-Oct-2007	---	Water level < 2.5 cm
11	Grey Bushchat	灰林[即鳥]	*Saxicola ferrea*	4-Nov-2007	#189-196	Water Spinach and Water Cress fields
12	Grey Plover	灰斑鴴	*Pluvialis squatarola*	9-Nov-2007	#238L	Open water
13	Brownish-flanked Bush Warbler	強腳樹鶯	*Cettia fortipes*	5-Jan-2008	---	---

Since some of the records are reported by bird watchers, only limited information is available