



A Survey of the Prayer Bird Trade at the Yuen Po Bird Market, Hong Kong August 2008 - August 2009



26 August 2011

Kadoorie Farm and Botanic Garden Publication Series

Number 8



Executive Summary

A one year survey of the prayer bird trade at the Yuen Po Bird Market, in Kowloon, Hong Kong was undertaken between August 2008 and August 2009. The survey recorded an average of 1,470 birds per visit, which was a reduced number compared to a similar study carried out by the University of Hong Kong between 2004-2005 (7,736 birds, Chan 2006). The term ‘prayer bird’ refers to the fact that these bird species are released for ‘religious’ ceremonial purposes. Birds included under this term were Japanese White-eye (*Zosterops japonicus*), Eurasian Tree Sparrow (*Passer montanus*), Scaly-breasted Munia (*Lonchura punctulata*) and White-rumped Munia (*L. striata*). The four species were counted once a month during the study period. Examination of official bird importation records showed that none of these species were imported through the government special permit system during the same period, and there were no licensed bird breeding farms in Hong Kong for these species, indicating that the birds recorded in the present study were most likely smuggled into the territory. As H5N1 infected birds have been discovered by Government inspectors both inside the Bird Market and in the adjacent area of Mongkok, it would be appropriate for the authorities to identify the likely source of these birds and to take necessary actions to stop any illegal import that may be taking place. There is also the occurrence of contact between wild and captive birds at the market, which may need to be addressed in order to reduce the chance of disease transmission. Regular health screening of the captive birds in the Bird Market for infectious diseases is also required as an early warning system in combating these diseases. It is also recommended that the practice of releasing traded birds should be looked at seriously so that regulatory measures can be adopted to address the ecological, animal welfare and disease transmission issues. The results of this project are to be shared with the relevant authorities in Hong Kong.

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Editors

Captain WONG, Gary ADES, Michael LAU and Roger KENDRICK

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For enquiries about this report, please contact:

Fauna Conservation Department,
Kadoorie Farm and Botanic Garden Corporation
Lam Kam Road, Tai Po, N.T.
Hong Kong Special Administrative Region
fauna@kfbg.org

Document citation

Kadoorie Farm and Botanic Garden. 2011. *A Study of the Prayer Bird trade at the Yuen Po Bird Market, Hong Kong, August 2008 - August 2009*. Kadoorie Farm and Botanic Garden Publication Series No. 8, Kadoorie Farm and Botanic Garden, Hong Kong Special Administrative Region. 15 pp.

Cover photo: A sign indicating “birds for release” at Yuen Po Bird Market, Mongkok, Hong Kong.

Introduction

In countries that have large Buddhist and Taoist communities, releasing animals is believed to not only bring good luck, but also to help atone for sins and accrue good karma (Blackburn *et al.* 2009). Most released animals are sourced from captive pets or food animals purchased from markets, and generally have a poor health condition. Also, animals are often released in inappropriate habitats, for instance the release of freshwater turtles into estuarine and marine environments. Animals may also be released during unfavourable weather conditions. The survival rate of these released individuals is low. In Hong Kong, mortality at bird release activities can be as high as 75%, based on observations made within a five day period following a ceremonial release at Plover Cover Reservoir in 2005 (Captain Wong, personal observation).

Another serious aspect of animal release events relates to the potential spread of disease to the native fauna and to humans. Between 2006 and 2008, there were 45 cases of wild birds infected with H5N1¹ reported in Hong Kong. Of these cases, 17 were recorded in highly urbanized areas with one concentration in the vicinity of the Yuen Po Bird Market in Mongkok (hereafter ‘the Bird Market’). This market represents the largest live bird market in Hong Kong. The high concentration of H5N1 infected birds near the Bird Market, in particular non-native and traded species such as Chestnut Munia, suggests that many of them are likely to have originated from the Bird Market itself. Scaly-breasted Munias that were H5N1 positive were discovered in Happy Valley, Hong Kong Island and Sham Shui Po, Kowloon, these locations were unusual for this open country bird species. This species is usually seen on farmlands and grasslands in rural Hong Kong (Carey *et al.* 2001). Therefore, it is suspected that these birds may have originated from released or escaped cage birds.

Regions where animal release activities are frequently practised include China, Taiwan, Hong Kong, Singapore, Cambodia and Vietnam. Such activities are also known to be undertaken in other countries with significant Chinese communities. Therefore, animal release is no longer a regional issue, it could have global consequences when such events are carried out all over the world.



Birds are commonly released as part of Buddhist and Taoist rituals. In Hong Kong, Eurasian Tree Sparrows (*Passer montanus*), Japanese White-eyes (*Zosterops japonicus*) and munias (Scaly-breasted Munia, *Lonchura punctulata*, and White-rumped Munia, *L. striata*) are known to be frequently released during ceremonial events, due to their low sale price and availability in large numbers (Chan 2006). Therefore, monitoring the number of these birds on sale at the Bird Market (Figure 1) could give some indication regarding trends associated with release of prayer birds, with relatively low resource input.

Figure 1.
Yuen Po Bird Market. A total of 70 stores are present.

¹ Confirmed H5N1 infected wild bird records in Hong Kong are available at http://www.afcd.gov.hk/english/quarantine/qua_vetlab/qua_vetlab_nldr/qua_vetlab_nldr.html

Nature and purpose of this study

The purpose of this study was to investigate the relative intensity of bird release events and the trade volume of prayer birds, by recording the number of prayer birds being sold at the Bird Market over a year long period and comparing the results with a similar study undertaken in 2004 and 2005 by Chan Sin Wai, whose post-graduate thesis entitled 'Religious release of birds in Hong Kong' (Chan, 2006) covered not only the Bird Market in Mongkok, but also other markets in Hong Kong.

Methods

An estimate of the number of prayer birds for sale in the Bird Market was undertaken once a month from August 2008 to August 2009. The species included under the term 'prayer birds' were the four species commonly used for release events: Japanese White-eyes, Eurasian Tree Sparrow, White-rumped Munia and Scaly-breasted Munia. Other released bird species such as Silver-eared Mesia (*Leiothrix argentea*), Red-billed Leiothrix (*Leiothrix lutea*), Red-whiskered Bulbul (*Pycnonotus jocosus*) and Chinese Bulbul (*Pycnonotus sinensis*), were also noted. With regard to the Japanese White-eye, only those packed together in large cages were included in the count and those caged individually were considered to be sold as song birds, the associated price of the single birds often reflected this. All counts were made in the afternoon, except for one visit in the morning undertaken at the beginning of August 2008. Early observations suggested that most shops appeared to be conducting business in the afternoon. Data were recorded in a data logbook and then subsequently transferred to computerised spreadsheet file.

In some cases identification of birds was difficult especially when cages were stacked at the back of a store where lighting was poor. It was sometimes difficult to distinguish between the Japanese White-eye and Munia species in poor lighting conditions, therefore, the species were grouped together when identification was not possible.

Apart from the stores clearly selling birds (Figure 2), it was noted that several stores that probably once sold live birds were now being used as storage facilities, and for sales of hardware such as cages, and for bird food. Some stores appeared to have suspended or closed their operations.

Official bird importation records were also examined through appointment with the Agriculture, Fisheries and Conservation Department (AFCD) of the Hong Kong SAR Government, to find out the numbers of prayer birds that were legally imported to Hong Kong during that period.



Figure 2.
A typical live bird store in
Yuen Po Bird Market.

Results

The Prayer Bird trade

A total of 19,113 prayer birds were recorded from 13 monitoring trips between August 2008 and August 2009 (Table 1). The Japanese White-eye was numerically the dominant species and the Eurasian Tree Sparrow the least numerous among the four major release bird species. The highest count was made in August 2009, while the lowest was made in September 2008. On average, 1,470 birds were recorded during each monitoring exercise (sample size $N = 13$, $SD = 320.4$, range 808-1,760). No obvious peak was witnessed during the Buddha's birthday month in May 2009, although this was expected (Figure 3). The prayer birds were sold for approximately HK\$8 each. The feather condition of Japanese White-eyes considered to be for ceremonial release was often poor and they were clearly not sold as pet birds.

Table 1. The number of birds of the four major 'prayer bird' species recorded during monitoring between August 2008 and August 2009

Species	Number of birds
Japanese White-eye	5,018
Eurasian Tree Sparrow	1,931
Scaly-breasted/White-rumped Munia	3,924
*Japanese White-eye or Scaly-breasted/White-rumped Munia	8,240
Total	19,113

* impossible to distinguish species due to poor visibility conditions

Figure 3. The number of prayer birds recorded at the Yuen Po Bird Market between August 2008 and August 2009.

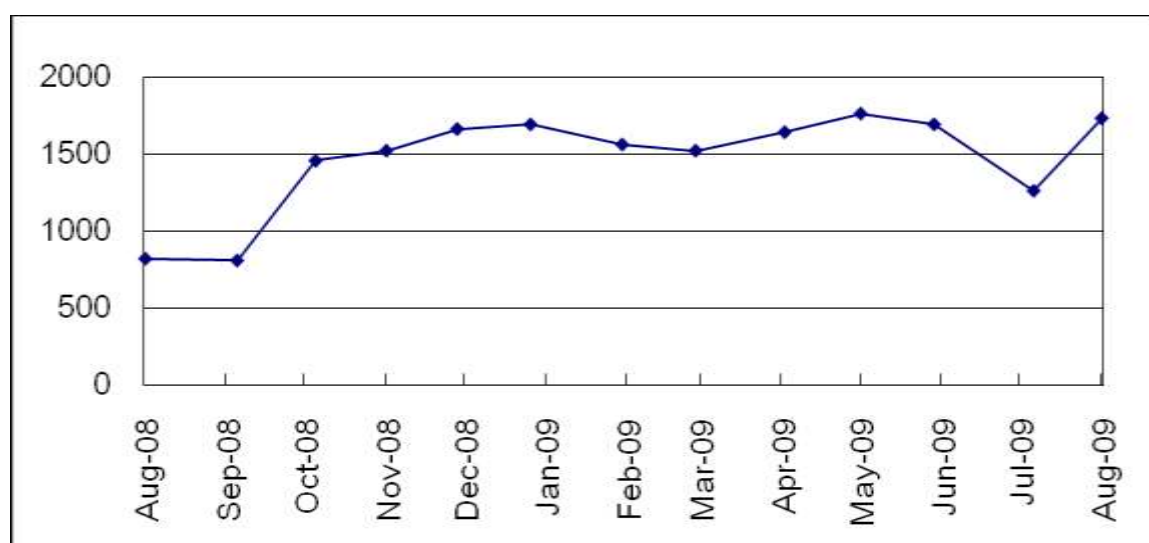


Figure 4.

Red-billed Leiothrix (*Leiothrix lutea*) in poor feather condition.



Regarding numbers of other bird species, Silver-eared Mesia and Red-billed Leiothrix (Figure 4) ranged from 50 to 200 individuals during each monitoring session. The feather condition of some of these birds was also poor and they were crowded together in cages, thus they were unlikely to be pet birds. The number of bulbuls remained low at about 20-40 birds counted each time.

Store types at the Bird Market

The total number of stores at the Bird Market was 70. The monitoring in August 2009 showed that most stores sold bird food and hardware (Table 2). Only about 1/3 of the shops sold live birds. Over 14% of the stores were closed.

Table 2. Breakdown of store types at the Bird Market in August 2009

Store Type	Number of shops	Percentage of total
Bird food/hardware	32	45.7
live bird trade	24	34.3
Closed	10	14.3
live bird trade/bird food/hardware	1	1.4
Storage	1	1.4
Undetermined	2	2.9
Total no of stores	70	100.0

Bird Importation Records

During the study period (August 2008 – August 2009), a total of 21,295 birds were imported into Hong Kong (Table 3). Based on the importation records, no Japanese White-eye, Scaly-breasted Munia (Figure 5), White-rumped Munia or Eurasian Tree Sparrow were imported into Hong Kong. Exotic finches were the dominant imported bird group, while parrots and the Oriental Magpie Robin (*Copsychus saularis*) accounted for the remainder. Parrots included all parakeets, macaws and cockatoos. Exotic finches included *Serinus* spp, *Vidua* spp, *Euplectes* spp and *Estrilda* spp. None of these species are commonly released during local religious events (Chan, 2006). Two Munia species (*Lonchura bicolor* and *L. fringilloides*) were also imported as pet birds. The imported bird species above are common pet birds in Hong Kong.

Table 3. Official bird importation records for Hong Kong (August 2008 to August 2009).

Month	Bird species				Total
	Parrots	Exotic finches	Oriental Magpie Robin	others	
Aug-08	143	2,500	300	---	2,943
Sep-08	232	1,885	140	10	2,267
Oct-08	64	2,580	---	3	2,647
Nov-08	143	1,450	---	4	1,597
Dec-08	89	---	---	---	89
Jan-09	35	---	---	3	38
Feb-09	326	1,280	510	---	2,116
Mar-09	302	315	160	2	779
Apr-09	183	---	630	---	813
May-09	373	1,632	200	3	2,208
Jun-09	338	700	240	7	1,285
Jul-09	236	1,220	290	---	1,746
Aug-09	347	2,140	280	---	2,767
Total	2,811	15,702	2,750	32	21,295
%	13.2	73.7	12.9	0.2	100.0

Figure 5. A cage containing Scaly-breasted Munias. The sign reads “birds for release”.



A comparison between the present study and a University of Hong Kong study carried out between 2004 and 2005

The average prayer bird count during 24 surveys at the Bird Market carried out during the University of Hong Kong study was 7,736 birds (Chan 2006). This figure is more than five times the average for the present study (1,470 birds per monitoring session). In a single release event (Figure 6), 500 to 1000 birds could be released.

Figure 6. A cage containing Japanese White-eyes. Each cage usually contains 40-50 birds. The total numbers of birds released in a group event can be around 500-1,000 birds.



Discussion

Low trade volume of prayer birds in the present study

The present study indicates that the number of prayer birds for sale from 2008 to 2009 is much lower than that recorded between 2004 and 2005 and it reflects a likely decline in the number of bird release activities. A number of factors have probably contributed to the lower number of prayer birds observed. During the period 2006 to 2008, there were 45 confirmed cases of birds infected with the H5N1 virus in Hong Kong. One was actually found in the Bird Market in May 2007. The Bird Market was subsequently closed from 17 June to 5 July 2007 (Government press release: 4 July 2007).

The frequent occurrence of H5N1 infected, 'wild' birds during the last few years is likely to have resulted in a more cautious approach regarding the handling and release of birds, thus the subsequent fall in demand. In addition, there was also a Government warning during the period not to undertake bird release activities because of the health risks. The same recommendation has been advocated by environmental NGOs for a number of years (also relating to concerns about disease spread among native birds, bird welfare and effects on local ecology). In Taiwan, a similar decline in prayer bird release activities has been reported in recent years, but details were not available at the time of writing (Dr. Lucia Severinghaus, pers. comm.).

Origin of Prayer Birds

Currently, all bird importation into Hong Kong should be accompanied by a Special Permit from the HKSAR Government. Examination of official importation records in the present study could not uncover any import record of the prayer bird species during the one-year study period. Commercial bird breeding farms in Hong Kong would require licensing from the Agriculture, Fisheries and Conservation Department and they have no records of breeding farms for these bird species locally. The four bird species are native to Hong Kong and are common and widespread (Carey *et al.*, 2001), however, it is unlikely that the large numbers of prayer birds for sale at the Bird Market were caught locally. All wild birds are protected in Hong Kong and there are now many bird-watchers and informed members of the public visiting the countryside that would report illegal bird catching activities to the Hong Kong authorities. Through Kadoorie Farm and Botanic Garden's wild animal rescue work, reports are occasionally received regarding villagers placing nets to catch birds near fish ponds or near agriculture crops as a measure to reduce damage to the fish stock or agricultural produce, but we have never come across cases of live trapping for these bird species. Therefore, the most likely explanation for their presence is that the birds were smuggled into the territory probably as a result of the tightening of the import regulations and the resulting compliance difficulties encountered by traders. Chan (2006) also stated that many prayer birds were likely to have been smuggled into Hong Kong during the 2004-2005 study.

Another suspected reason for the smuggling of the prayer birds relates to the high cost of the importation permits. In 2009, the permit application fee for the first 50 birds was HK\$344 and for every additional 50 birds, HK\$78. Thus, the permit fee per bird ranges from \$4.22 (100 birds per import) to \$1.8 (1000 birds per import). The cost per bird will be further reduced if a larger number of birds are imported each time (\$1.6 for 10,000). As the retail price per prayer bird observed in the present study was about HK\$8, the permit fee would have accounted for 22.5% to 50% of the sale price. Such a high proportionate cost incurred by the importation permit would probably make it no longer profitable for the traders. Therefore, it is possible that the prayer birds are smuggled into Hong Kong in order to avoid the permit fee and to make the business more lucrative.

Biosecurity at the Bird Market

The Bird Market is an outdoor, open market. Wild birds are able come into close contact with the imported caged birds (Figure 7). During the monitoring, wild Eurasian Tree Sparrows were frequently seen to feed on bird food on the ground in the shops and even on the bird cages where faecal matter could mix. They were also seen to share food with captive display parrots chained to stands. Such close contact between captive and wild birds could promote cross transmission of disease, such as H5N1. As both local wild birds and caged birds at the Bird Market have been found to be infected with H5N1, and smuggled birds presumably have not undergone health checks, it would be wise to segregate the wild birds from caged birds as far as feasible.



Birdlife International (2007) note that birds in markets in South-east Asia have been found with the H5N1 infection, caused by cross-contamination from poultry, the primary source for H5N1 (Van Kerkhove, 2011); any of these birds ending up in Hong Kong bird markets could then infect local wild bird populations. Regular screening of the captive birds in the Bird Market for infectious diseases such as H5N1 should also be seriously considered as an early warning system in the combat against infectious disease, and the Public Health (Animals and Birds) Ordinance Cap. 139 should be effectively enforced to help minimise the risk of bird transmitted diseases in Hong Kong.

Figure 7.
A wild Eurasian Tree Sparrow sharing food with a parrot at the Bird Market. Such close contact between wild and captive birds increases the risk of disease transmission.

Recommendations

The release of trade birds into the wild has significant ecological, welfare, and health implications. This practice should be examined carefully with the aim of regulating it so as to minimise all the risks and eventually stopping it completely. Further investigation would be useful in the future to determine whether trends in prayer bird trade have changed significantly from those suggested by this one year study.

Acknowledgments

We would like to thank the Director of Agriculture, Fisheries and Conservation Department for permitting examination of bird importation records. We also thank Dr Lucia Severinghaus for commenting on bird release events in Taiwan.

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doi:10.1371/journal.pone.0014582

Appendix

Summary of a visit to Yuen Po Bird Market on 11 Oct 2011

(summary prepared by Philip YIP)

A follow-up visit to the Yuen Po Bird Market was undertaken in October 2011. In total, 11 cages (some marked “birds for release”, see Figure 8) of prayer birds (around 440 individual birds in total) were seen during the site visit. The species involved were Scaly-breasted Munia and White-rumped Munia. Unlike the main survey in 2008-09 no caged Japanese White-eye and Eurasian Tree Sparrow were recorded. The feather condition of the Munias was poor and they were packed at a high density per cage (Figure 9). At least one wild Eurasian Tree Sparrow was observed feeding in close proximity to caged birds (Figure 10).

Several cages of prayer birds were placed inside the shop under poor ventilation and poor hygiene conditions. One cage was spotted outside the shop during heavy rainfall. The poor care of these birds will contribute to a decreased survival fitness, thus after releasing back to the wild they are more likely to die.

Although the trend of the prayer bird trade seems to be decreasing, based on the recent study and visit, it should be noted that the trade is still ongoing, apparently with little significant improvement in conditions since the first study (Chan, 2006) that took place in 2004. Thus it appears that the biosecurity, ecological and animal welfare issues discussed in the main report (pages 9 & 10) still remain. Further investigation and legislative enforcement would be appropriate in further dealing with the release of cage birds in Hong Kong.

Figure 8.

Prayer birds were still available at the Yuen Po Street Bird Market during the site visit in Oct 2011. The sign reads “birds for release”.



Figure 9.

Scaly-breasted and White- rumped Munias were packed in a small cages. Consistently, prayer birds were placed in a poor, crowded conditions.



Figure 10.

A wild Eurasian Tree Sparrow sharing food with a Yellow-fronted Canary at the Bird Market.



About KFBG

Kadoorie Farm and Botanic Garden (KFBG) is situated in the rural New Territories, on the northern slopes of Tai Mo Shan, Hong Kong's highest mountain. Two steep spurs enclose its deep-set valley. Within KFBG are streams, woodlands, orchards, vegetable gardens, walking trails, live animal exhibits, floral exhibits, sustainable agriculture demonstration plots, art exhibits, a wild animal rescue centre, a native tree nursery, and, other conservation and education facilities.

In the post-war years, Hong Kong was flooded with destitute refugees. Many had traditional knowledge of crop production and livestock farming but no stock, others had land but no experience. They required support to rebuild their lives. The farm site at Pak Ngau Shek was established in 1956 as a base for livestock breeding and distribution, agricultural research, farmers training, public education and recreation. The barren slopes were terraced and planted with orchards and vegetable gardens. The development of the botanic garden began in 1963 and the plant conservation programme from 1972.

On 20th January, 1995, the Legislative Council of Hong Kong passed an Ordinance (Chapter 1156) incorporating KFBG as a non-profit corporation designated as a conservation and education centre. It is a unique public-private partnership, for while the KFBG Corporation is a public organisation, it is privately funded by the Kadoorie Foundation.

Since 1995, KFBG has been conducting a wide range of nature education, nature conservation and sustainable living programmes both on-site, and, throughout Hong Kong and South China.

In this time of severe global crisis KFBG raises awareness, undertakes rigorous science-based species conservation and ecosystem restoration, and offers new ways of thinking and living to respond to the world's problems. Hence, our work brings hope and improvement by focusing on nature conservation, sustainable living and holistic education that re-connects people with nature. By working together with the public, Governments, academia, NGOs and businesses, we can protect our common future.

Our mission is to harmonise our relationship with the environment. Our vision is a world in which people live sustainably with respect for each other and nature.

