

CONSERVATION ALERT

Snapshot of an on-going trade: an inventory of birds for sale in Chatuchak weekend market, Bangkok, Thailand

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Introduction

Chatuchak weekend market (also known as Jatujak or JJ market), Bangkok, Thailand, is a huge, popular market with over 15,000 stalls selling everything from food, clothes and household items to live animals. The latter areas offer domestic pets such as dogs, cats and rabbits, freshwater and marine fish, as well as exotic and native wild animals. Previous studies have shown that it is a centre for illegal wildlife trade (Round 1990, Shepherd & Nijman 2008, Todd 2011).

Historical accounts of birds observed for trade here are available for the late 1960s (McClure & Chaiphaphun 1971) and the late 1980s (Round 1990). More recent wildlife surveys in this market have mainly focused on reptiles (Nijman & Shepherd 2007, Shepherd & Nijman 2008, Nijman & Shepherd 2011, Todd 2011, Nijman & Shepherd 2015). Here we provide an inventory of birds for sale in the market on a single weekend to give a snapshot of the species available and highlight key conservation concerns.

Thailand has been a signatory to the Convention on International Trade in Endangered Species (CITES) since 1983, and the Wild Animal Reservation and Protection Act B.E. 2535 (1992) (WARPA) is the key legislation giving legal effect to the implementation and enforcement of the Convention in Thailand. While WARPA adequately covers the import, export, hunting, domestic trade and possession of native species, it only covers the import and export of CITES-listed non-native species (Nijman & Shepherd 2016).

Methods

The survey was carried out on the weekend of 28–29 March 2015; a full inventory was made, with individuals of every species counted and where possible recorded to subspecies level. Domesticated species (e.g. budgerigars, cockatiels, lovebirds, canaries) were excluded. Price data were obtained by asking dealers or observing prices openly advertised; this was largely done opportunistically when it was possible to engage with dealers. We only counted birds openly displayed for sale and no covert investigation or research methods were

employed. As some traders are aware that at least part of their trade is illegal, photography is often not permitted.

Birds are defined to species level for the analyses in this study, except for analyses of origins for which the subspecies level is used. Individuals that could not be identified to species were omitted from the analyses. Price data were collected in Thai Baht and presented here in US\$, based on a conversion rate of THB 32.5 = US\$ 1.

Results

Species composition and volume

A total of 1,271 birds comprising 117 species from 45 sales outlets were counted during the survey

Plate 1. A typical scene at Chatuchak market, Bangkok, Thailand showing the temporary lots used by many traders in native birds, 31 January 2016.



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Plate 2. Cockatoos for sale in a fixed shop lot at Chatuchak market, 30 January 2016.

(Appendix 1). Although this equates to an average of 28 birds per stall, 50% of the shops had 14 or fewer individuals, while on the other hand one shop had 382 birds and a further three had between 50 and 90 birds. Only four shops had more than 10 different species for sale, whilst 12 had only one species.

The most numerous species was Zebra Dove *Geopelia striata*, followed by Red-whiskered Bulbul *Pycnonotus jocosus* (Appendix 1); both are popular entries in singing competitions. Of the 117 species observed, nine (103 individuals) are designated threatened on the IUCN Red List, and a further eight (67 individuals) are designated Near Threatened (Appendix 1). Of particular note was the presence of four Critically Endangered Yellow-crested Cockatoos *Cacatua sulphurea*.

The range of species in each outlet suggested that shops tended to stock birds from a particular region or of a particular speciality. For example, some shops specialised in seed-eating birds (which included finches from Africa, Australia and Asia), some in Galliformes and some in Psittaciformes;

one shop sold mostly species native to China. Traders selling native birds tended to set up temporary stalls rather than be based in a fixed shop lot, possibly due to an awareness that they were illegally trading in protected species (Plates 1 & 2).

Origin and source

Native species

From the inventory, a total of 61 species (709 individuals) were native to Thailand. Of these, 59 species (449 individuals or 63%) are listed on WARPA's list of protected species; only Zebra Dove and Eastern Spotted Dove *Spilopelia chinensis* are not protected. All capture or trade in Thailand's protected species for commercial purposes is prohibited, which means that the sale of these species at the market is in violation of national laws.

The native birds recorded were a mix of forest and open habitat (wetland and grassland) species. In the case of forest species, 18 (143 individuals) are found widely in the country, seven in the north (43 individuals), 11 in the central region (114 individuals) and four in the peninsula (5 individuals). The remaining 21 open habitat species (404 individuals) are distributed across the country. About 85% (50) of the native species can be found within a 150 km radius of Bangkok. Such a high percentage suggests a large proportion of the individuals of these species originates within this limited area.

Non-native species

Figure 1 illustrates the regions from which the 56 non-native species (562 individuals) originate. All of the birds from South America were parrots, with the exception of two Channel-billed Toucans *Ramphastos vitellinus*. Most of the birds originating from East Asia were being sold in one particular shop that accounted for 14 East Asian species (221 individuals).

Of the non-native birds, four species (21 individuals) are listed in Appendix I of CITES,

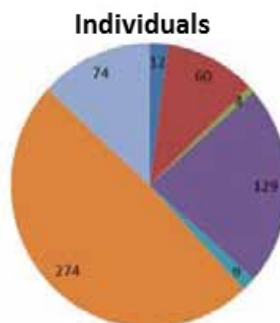
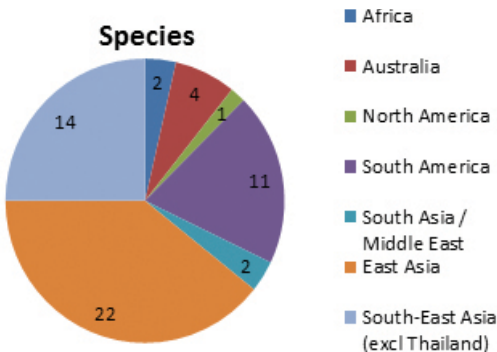


Figure 1. The distribution of species (left) and individuals (right) of non-native species recorded in the inventory.

which means that all international commercial trade in the species is prohibited. A further 25 species (261 individuals) are listed in CITES Appendix II, which means that international trade in the species requires a permit. All the CITES Appendix II species were parrots and cockatoos, except for Red-billed Leiothrix *Leiothrix lutea* (50 individuals).

Based on data from the UNEP-WCMC CITES Trade Database, 11 species listed in the CITES Appendices were not recorded as being imported into Thailand between 2005 and 2014. This suggests these 11 species (at least) may have been smuggled into the country to be sold without CITES permits, or imported over a decade ago and bred in Thailand.

Prices

Price data, collected opportunistically, were obtained for 21 species (Appendix 2). The highest price was THB 50,000 (US\$ 1,538) for Eclectus Parrot *Eclectus roratus* and Salmon-crested Cockatoo *Cacatua moluccensis*, and the lowest was THB 300 (US\$ 9) for Black Kite *Milvus migrans* and Red-whiskered Bulbul. As found by Round (1990), non-native species were far more expensive than native ones, with the exception of Orange-headed Thrush *Zoothera citrina* at THB 25,000 (US\$ 769). For just these 21 species, the estimated total potential sale value was over US\$ 85,000.

Discussion

Compared with previous surveys (McClure & Chaiyaphun 1971, Round 1990), the number of birds openly displayed for sale appeared to be relatively lower, particularly the number of native species. Round (1990) recorded an average of 2,746 native birds each weekend and McClure & Chaiyaphun (1971) recorded an average of 6,287 native birds, which comprised over 80% of all birds observed. The evident reduction in open illegal trade may be in response to (albeit inconsistent) law enforcement efforts at the market following increased public awareness of conservation and welfare implications for live animals sold there (e.g. Ellis 2015). Another factor could be the threat of avian influenza that has emerged since the earlier surveys, with live bird markets facilitating the spread of diseases (Amonsin *et al.* 2008).

In Thailand, the Red-whiskered Bulbul is one of the most popular cage-birds, with Red-whiskered Bulbul owners' clubs and singing competitions throughout the country; this demand has resulted in high levels of trapping and the disappearance of the species from much of its range in Thailand (Techachoochert & Round 2013). Only 93 individuals were recorded in this inventory,

compared with the thousands recorded previously (McClure & Chaiyaphun 1971, Round 1990); however, this does not necessarily represent the full extent of the trade in this species in Chatuchak as it varies from weekend to weekend. We observed that shops specialising in Red-whiskered Bulbuls were in narrow back-alleys and had an air of exclusivity (windowless shop lots with doors often closed), and it is likely that a significant proportion of Red-whiskered Bulbul trade occurs out of sight of casual observers, or online as in Indonesia (Iqbal 2015).

The high demand for pet owls appears to continue and may be in part due to the 'Harry Potter' films (Ahmed 2010). During this survey we recorded 17 individuals of three species, all of which are native to and protected in Thailand (Plate 3), indicating that the animals were being illegally traded. Most of these birds appeared to be in poor condition, gaping and lying on their side with wings partially spread (indicating overheating and dehydration), with some being on the verge of unconsciousness, suggesting a high level of mortality. Several individuals had been adorned with ribbons to make them look more attractive to potential buyers. Neither hunting nor trade are currently listed as threats to any of the owl species

Plate 3. Owls for sale in a temporary lot, Chatuchak market, 19 December 2015.



recorded in this survey according to the IUCN Red List (IUCN 2014).

Chng *et al.* (2015) recommended using indicator species such as the Chattering Lory *Lorius garrulus* in future surveys to monitor abundance and price changes over time and location. During our survey, four Chattering Lories were identified to subspecific level, as the *morotaianus* race endemic to Morotai, North Maluku, Indonesia. According to the UNEP-WCMC CITES Trade Database, none were reported to have been imported into Thailand between 2005 and 2014. The trade route by which these birds arrive in Chatuchak market warrants further study: it is possible they are traded via the Philippines (ProFauna 2008, Bashari & Nurdin 2009); there is certainly a trade in birds from the Philippines to Thailand given the records of Coleto *Sarcops calvus*, a Philippine endemic, in our survey. Another Philippine species, Luzon Hornbill *Penelopides manillae*, was also observed in early 2016 (SCLC pers. obs.).

A large number of nestlings and fledglings were observed for sale. Most of these were Psittacines, which are likely to be captive-bred, legitimately or otherwise. On the other hand, the passerine (largely corvids and sturnids) and raptor chicks (mostly Black-winged Kites *Elanus caeruleus*) observed were most likely to have been taken from nests in the wild. Thai legislation (WARPA) states that a reserved or protected species can only be bred if it is a species permitted for approved breeding operations and is covered by a licence. Ministerial Regulation 2546 (protection of breeding wildlife species) lists native species that can be captive bred. Commercial breeding of a number of bird species in Thailand appears to be well established and takes place on a large scale. Many of the exotic finches and Psittacines were observed with closed leg rings and exhibited colour mutations typical from commercial breeding, and a quick search on the internet found a number of commercial parrot breeders. However, it is unknown if such captive breeding operations are all legitimate and adhere to WARPA guidelines.

As detailed in Nijman & Shepherd (2016), loopholes in WARPA, Thailand's main CITES-implementing legislation, allow any non-native CITES-listed species that has evaded Customs checkpoints to be traded within the country's boundaries. Although many of the non-native birds observed could plausibly have been bred in Thailand, it is more than likely that some of them may have entered the country illegally. Unfortunately, even if this is proved to be the case, due to this loophole, law enforcement action cannot be taken against traders selling illegally-imported CITES-listed species under WARPA. Furthermore,

the WARPA list of protected species is outdated, due to changes in taxonomy since it was drawn up, and it may no longer protect all the species it was originally intended to cover.

Recommendations

As illegal trade continues to take place openly in Chatuchak weekend market, regular and effective enforcement is essential, especially for native protected species in which trade is prohibited. The Thai Government is urged to review WARPA to update the list of protected species and include provisions regulating domestic trade of non-native CITES-listed species. As little is known about the commercial breeding of birds for sale, monitoring and regulation of captive breeding operations in Thailand is required to ensure that laundering of wild-caught birds is not occurring, and that breeding stock is obtained legally and does not have negative impacts on wild populations. It is also important to raise awareness among customers that many of the birds sold are protected and endangered, and to reduce the demand for unsustainably and illegally sourced wild animals. We also recommend a re-evaluation of the status of owl species on the IUCN Red List given the large numbers that continue to be recorded in trade.

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Editors' note: It was not possible to obtain images during the survey weekend; however, these images taken at Chatuchak weekend market in December 2015 and January 2016 have been provided by the authors to illustrate their findings.

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Appendix 1

Birds recorded in Chatuchak weekend market, Bangkok, Thailand, 28-29 March 2015.

Key: * = species native to Thailand, NT = Near Threatened, VU = Vulnerable, CR = Critically Endangered, EN = Endangered

Species	No. of birds	No. of shops	Species	No. of birds	No. of shops
* Zebra Dove <i>Geopelia striata</i>	182	5	* Asian Blue Quail <i>Synoicus chinensis</i>	12	3
* Red-whiskered Bulbul <i>Pycnonotus jocosus</i>	93	8	Salmon-crested Cockatoo <i>Cacatua moluccensis</i> VU	10	6
* Eastern Spotted Dove <i>Spilopelia chinensis</i>	78	7	Turquoise Parrot <i>Neophema pulchella</i>	10	1
Grey-capped Greenfinch <i>Chloris sinica</i>	73	1	Grey Parrot <i>Psittacus erithacus</i> VU	10	4
Sun Parakeet <i>Aratinga solstitialis</i> EN	67	6	Maroon-bellied Parakeet <i>Pyrrhura frontalis</i>	10	2
Red-billed Leiothrix <i>Leiothrix lutea</i>	50	6	* Black-winged Kite <i>Elanus caeruleus</i>	9	3
* Red-breasted Parakeet <i>Psittacula alexandri</i> NT	46	6	Chinese Grosbeak <i>Eophona migratoria</i>	9	3
* Greater Necklaced Laughingthrush <i>Garrulax pectoralis</i>	34	1	Red-and-green Macaw <i>Ara chloropterus</i>	8	6
Long-tailed Finch <i>Poephila acuticauda</i>	32	2	* Black-throated Laughingthrush <i>Garrulax chinensis</i>	8	1
* Black-headed Greenfinch <i>Chloris ambigua</i>	30	2	Blue-and-yellow Macaw <i>Ara ararauna</i>	7	5
* Streaked Weaver <i>Ploceus manyar</i>	27	1	Violet-necked Lory <i>Eos squamata riciniata</i>	7	2
* Brambling <i>Fringilla montifringilla</i>	24	2	Blue-faced Parrotfinch <i>Erythrura trichroa</i>	7	1
Red-billed Starling <i>Poliopsar sericeus</i>	24	2	Indian Peafowl <i>Pavo cristatus</i>	7	2
* White-rumped Munia <i>Lonchura striata</i>	23	2	Lady Amherst's Pheasant <i>Chrysolophus amherstiae</i>	6	2
* Garganey <i>Anas querquedula</i>	18	1	Coledo <i>Sarcops calvus</i>	6	4
Azure-winged Magpie <i>Cyanopica cyanus</i>	18	4	* Eurasian Hoopoe <i>Upupa epops</i>	6	1
Red-winged Laughingthrush <i>Trochaloxyeron formosum</i>	18	1	* White-breasted Waterhen <i>Amaurornis phoenicurus</i>	5	2
European Goldfinch <i>Carduelis carduelis carduelis</i>	16	1	Yellow-crowned Amazon <i>Amazona ochrocephala</i>	5	3
Sulphur-crested Cockatoo <i>Cacatua galerita triton</i>	15	7	* Common Hill Myna <i>Gracula religiosa</i>	5	3
Eclectus Parrot <i>Eclectus roratus roratus</i>	15	6	Black-headed Parrot <i>Pionites melanocephalus</i>	5	3
Vinous-throated Parrotbill <i>Sinosuthora webbiana</i>	15	1	Dusky Parrot <i>Pionus fuscus</i>	5	2
Chestnut-fronted Macaw <i>Ara severus</i>	13	3	Long-tailed Parakeet <i>Psittacula longicauda</i> NT	5	1
* Spotted Owllet <i>Athene brama</i>	13	5	Coconut Lorikeet <i>Trichoglossus haematodus haematodus</i>	5	1
* White-rumped Shama <i>Copsychus malabaricus</i>	13	4	Yellow-crested Cockatoo <i>Cacatua sulphurea</i> CR	4	2
Elliot's Laughingthrush <i>Trochaloxyeron elliotii</i>	13	1	* Grey-capped Emerald Dove <i>Chalcophaps indica</i>	4	1
Golden Pheasant <i>Chrysolophus pictus</i>	12	3			

Species	No. of birds	No. of shops	Species	No. of birds	No. of shops
Northern Bobwhite <i>Colinus virginianus</i> NT	4	1	* Stripe-throated Bulbul <i>Pycnonotus finlaysoni</i>	2	2
Blue-streaked Lory <i>Eos reticulata</i> NT	4	1	White-eared Bulbul <i>Pycnonotus leucotis</i>	2	1
Chattering Lory <i>Lorius garrulus morotaianus</i> VU	4	2	Channel-billed Toucan <i>Ramphastos vitellinus</i> VU	2	1
Monk Parakeet <i>Myiopsitta monachus</i>	4	1	Eurasian Siskin <i>Spinus spinus</i>	2	1
* Black-naped Oriole <i>Oriolus chinensis</i>	4	1	* Chestnut-tailed Starling <i>Sturnia malabarica</i>	2	1
Eurasian Magpie <i>Pica pica</i>	4	1	Reeves's Pheasant <i>Symaticus reevesii</i> VU	2	1
* Blue-winged Pitta <i>Pitta moluccensis</i>	4	1	* Red-tailed Laughingthrush <i>Trochalopteron milnei</i>	2	1
* Lineated Barbet <i>Psilopogon lineatus</i>	4	1	Black-chinned Yuhina <i>Yuhina nigrimenta</i>	2	1
* Alexandrine Parakeet <i>Psittacula eupatria</i> NT	4	1	* Oriental Skylark <i>Alauda gulgula</i>	1	1
* Brown-breasted Bulbul <i>Pycnonotus xanthorrhous</i>	4	1	* Puff-throated Bulbul <i>Alophoixus pallidus</i>	1	1
Lilac-crowned Amazon <i>Amazona finschi</i> EN	3	2	White Cockatoo <i>Cacatua alba</i> EN	1	1
* Oriental Magpie Robin <i>Copsychus saularis</i>	3	1	* Blue-winged Leafbird <i>Chloropsis cochinchinensis</i>	1	1
Galah <i>Eolophus roseicapilla</i>	3	2	* Lesser Green Leafbird <i>Chloropsis cyanopogon</i> NT	1	1
* Collared Scops Owl <i>Otus letitia</i>	3	2	* Greater Green Leafbird <i>Chloropsis sonnerati</i>	1	1
* Black-crested Bulbul <i>Pycnonotus flaviventris</i>	3	1	* Racket-tailed Treepie <i>Crypsirina temia</i>	1	1
Collared Finchbill <i>Spizixos semitorques</i>	3	1	* Common Flameback <i>Dinopium javanense</i>	1	1
* Green Broadbill <i>Calyptomena viridis</i> NT	2	1	Yellow-throated Bunting <i>Emberiza elegans</i>	1	1
* Greater Racket-tailed Drongo <i>Dicrurus paradiseus</i>	2	1	* Lesser Necklaced Laughingthrush <i>Garrulax monileger</i>	1	1
Red Lory <i>Eos bornea</i>	2	1	* Orange-headed Thrush <i>Zoothera citrina</i>	1	1
Tricoloured Parrotfinch <i>Erythrura tricolor</i>	2	1	* Eared Pitta <i>Hydrornis phayrei</i>	1	1
* White-crested Laughingthrush <i>Garrulax leucolophus</i>	2	2	Mongolian Lark <i>Melanocorypha mongolica</i>	1	1
Masked Laughingthrush <i>Garrulax perspicillatus</i>	2	2	* Blue-winged Minla <i>Minla cyanouroptera</i>	1	1
* White-browed Laughingthrush <i>Garrulax sannio</i>	2	1	* Oriental Scops Owl <i>Otus sunia distans</i>	1	1
* Eurasian Jay <i>Garrulus glandarius leucotis</i>	2	2	* Cinereous Tit <i>Parus cinereus</i>	1	1
* Asian Pied Starling <i>Gracupica contra floweri</i>	2	1	* Ashy Minivet <i>Pericrocotus divaricatus</i>	1	1
* Asian Fairy Bluebird <i>Irena puella</i>	2	1	Green Pheasant <i>Phasianus versicolor</i>	1	1
* Silver-eared Mesia <i>Leiothrix argenteauris</i>	2	2	* Hooded Pitta <i>Pitta sordida</i>	1	1
Black-capped Lory <i>Lorius lory</i>	2	2	Black-streaked Scimitar Babbler <i>Pomatorhinus gravivox</i>	1	1
* Siberian Rubythroat <i>Luscinia calliope</i>	2	2	* Blue-rumped Parrot <i>Psittinus cyanurus</i> NT	1	1
* Black Kite <i>Milvus migrans</i>	2	1	Eurasian Bullfinch <i>Pyrrhula pyrrhula</i>	1	1
* Spot-breasted Parrotbill <i>Paradoxornis guttaticollis</i>	2	1	* Dusky Thrush <i>Turdus eunomus</i>	1	1
* Scarlet Minivet <i>Pericrocotus speciosus</i>	2	1	* Eyebrowed Thrush <i>Turdus obscurus</i>	1	1
Senegal Parrot <i>Poicephalus senegalus</i>	2	1	Total	1,271	
* Coppersmith Barbet <i>Psilopogon haemacephalus</i>	2	1			

Appendix 2

Price data obtained during the survey.

Common name	Price (THB)	Price (US\$)	No. of birds	Potential total value (US\$)	Common name	Price (THB)	Price (US\$)	No. of birds	Potential total value (US\$)
Eclectus Parrot	50,000	1,538	15	23,070	Red-billed Starling	1,800	55	24	1,320
Salmon-crested Cockatoo	50,000	1,538	10	15,380	Alexandrine Parakeet	1,500	46	4	184
White Cockatoo	45,000	1,385	1	1,385	Black-winged Kite	800	25	9	225
Sulphur-crested Cockatoo	40,000	1,231	15	18,465	Asian Blue Quail	700	22	12	264
Black-throated Laughingthrush	35,000	1,077	8	8,616	Red-breasted Parakeet	500	15	46	690
Yellow-crested Cockatoo	30,000	923	4	3,692	Spotted Owlet	500	15	13	195
Orange-headed Thrush	25,000	769	1	769	Eurasian Hoopoe	500	15	6	90
Yellow-crowned Amazon	8,500	262	5	1,310	Collared Scops Owl	500	15	3	45
Red-winged Laughingthrush	6,500	200	18	3,600	Red-whiskered Bulbul	300	9	93	837
Greater Necklaced Laughingthrush	4,500	138	34	4,692	Black Kite	300	9	2	18
Common Hill Myna	2,500	77	5	385	Total				85,232