

## Priority contribution

# Quantifying the illegal parrot trade in Santa Cruz de la Sierra, Bolivia, with emphasis on threatened species

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### Summary

We monitored the illegal pet trade in Los Pozos pet market from August 2004 to July 2005. As indicated in Bolivian law, all unauthorized trade in wild animal species is illegal, especially species considered threatened by IUCN. During this period, we recorded 7,279 individuals of 31 parrot species, including four threatened species, two of which were being transported from Brazil through Bolivia to markets in Peru. The most frequently sold species was the Blue-fronted Parrot *Amazona aestiva* with 1,468 individuals observed during our study, the majority of which (94%) were believed to have been captured in the wild. Most of the purchased birds remain within Bolivia, while the more expensive, threatened species frequently head to Peru; some individuals may even reach Europe. We believe our study describes only a small proportion of the Bolivian parrot trade, underscoring the potential extent of the illegal pet trade and the need for better Bolivian law enforcement.

### Resumen

Monitoreamos el comercio ilegal de aves en el mercado de mascotas de Los Pozos, desde agosto de 2004 a julio de 2005. De acuerdo a lo que establece la ley boliviana, todo comercio no autorizado de animales salvajes es ilegal, especialmente de especies consideradas Amenazadas por la IUCN. Durante este periodo, grabamos 7.279 individuos de 31 especies de loros, incluyendo 4 especies amenazadas, de las cuales dos fueron transportadas desde Brasil a través de Bolivia hacia mercados en Perú. La especie más frecuentemente vendida fue el Loro Frente Azul *Amazona aestiva*, con 1.468 individuos observados durante nuestro estudio, de los cuales creemos que un 94% ha sido capturado en su hábitat natural. La mayoría de la compra de aves permanece dentro de Bolivia, mientras que las más caras especies amenazadas, se dirigen a Perú; algunos individuos pueden incluso alcanzar Europa. Creemos que nuestro estudio describe sólo un pequeño porcentaje del comercio de loro boliviano, subrayando el grado potencial del comercio ilegal de mascotas y la necesidad de una mejor aplicación de la ley boliviana.

### Introduction

The Bolivian Environmental Law #1333 (Ministerio de Desarrollo Sostenible y Planificación 1999), Article 111 states that all persons involved in trade, capture and transportation without authorization of wild animals will suffer a 2 year prison sentence together with a fine equivalent to 100% of the value of the animal. This law is supported by an addendum that states that all

threatened species are of national importance and must be protected. Bolivia ratified the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) on 4 October 1979 (CITES – Bolivia 1996), a move that theoretically stopped unauthorized trade of all species listed in the Appendix. Bolivia further supported this by creating environmental law 1255 in 1991 (CITES – Bolivia 1996).

More than the present estimated population of 250 individuals (BirdLife International 2004) of the Blue-throated Macaw *Ara glaucogularis* have reportedly been sold to the pet trade, many of them since Bolivia ratified CITES. A total of 134 Blue-throated Macaws were reportedly exported to the United States between 1981 and 1985 (Traffic U.S.A. 1987). Lanning (1982) documented 90 individuals exported in 1981. Nilsson (1989), quoted in Yamashita and Barros (1997), reported 112 individuals imported to the United States from 1980 to 1985, and from 1981 to 1992 CITES recorded 99 individuals leaving Bolivia (CITES 2005). Yamashita and Barros (1997) calculated that approximately 1,200 Bolivian parrot species entered the world market during the 1980s. Although exact data are not available on the quantity of individuals traded on the black market before or after government prohibition, the numbers available and the generally high percentage of individuals that die during capture, suggest that the wild population of Blue-throated Macaw may have declined by at least 70% in the last 50 years. Hesse (2003) suggests it has declined considerably since it was rediscovered in 1992, mostly due to the illegal pet trade.

Fifty species of parrots have been recorded in Bolivia (Hennessey *et al.* 2003), three being endemic (Blue-throated Macaw, Red-fronted Macaw *Ara rubrogenys* and Cliff Parakeet *Myiopsitta luchi*) and four ranked as threatened: Critically Endangered (Blue-throated Macaw), Endangered (Red-fronted Macaw, Hyacinth Macaw *Anodorhynchus hyacinthinus*), Vulnerable (Military Macaw *Ara militaris*) (BirdLife International 2004). Though records of continued illegal trade after the CITES ratification exist, the extent and the species involved have not been assessed.

The illegal pet trade continues in Santa Cruz, though many traffickers have been arrested, charged with trafficking and released. National, departmental and municipal governments do nothing to halt the trade in the city centres, and local police refuse to be involved, claiming animal traffic is not a priority (*pers. obs.*). This has created a situation where there is no law enforcement regarding trade in CITES-restricted species and threatened species, and no restrictions regarding humane treatment of animals, disease control and proper hygiene. With Bolivia's lack of animal trade law enforcement, and information on threatened species involved in the trade, we speculated that the level of trade could be high and prohibitive to wildlife conservation. In order to prioritize and evaluate conservation programmes, it is imperative to measure and monitor the threat level where possible.

Given the constant threat of the illegal trade to wild parrots, we established a project to monitor the parrots that are sold in the city of Santa Cruz de la Sierra, principally in the Los Pozos market. Santa Cruz is the largest lowland city in Bolivia, receiving most of the trade from the biologically rich lowland savannas and rainforest. By monitoring the pet trade in this city we sought to gather data on the level of trade (especially for Blue-throated and Red-fronted Macaws), determine primary trafficking routes and begin to understand the social aspects associated with trading activities. The data from this study will serve as a baseline against which future levels of illegal parrot trade may be compared, and bring more national and international attention to this issue.

## Methods

From August 2004 to July 2005, we contracted a parabiologist (a person knowledgeable about wildlife but with no formal training) who was directly involved in the wild animal market of Los Pozos in Santa Cruz de la Sierra, Bolivia. This was the only way we could gain access to the more clandestine trade in large and threatened macaws and receive accurate data from the market all day, every day of the week. The parabiologist has worked in the pet trade for over 10 years, and

did not need training on species identification. We supplied a digital camera to verify the identification of difficult species and to document threatened and unusual species with dated photographs. Los Pozos market consists of around seven pet stalls and some street vendors. Trafficked animals are usually presented for sale at anytime during the week and day to the main vendors, where the price is negotiated. Using standardized forms, the parabiologist collected data on the species and quantities that arrived in the market each day: number of individuals, place, date, species, age, docility/unfriendliness (to estimate whether captive-bred or caught in the wild), origin, destination, and price. These forms were completed on the day parrots appeared for sale. Traders and middlemen (people who buy the animals in the market only to sell them later at higher prices in other cities) were not surveyed directly. Questions were directed at the people who brought the animals to sell to the traders in the market.

## Results

From August 2004 to July 2005, we recorded a total of 7,279 individuals of 31 species traded in the Santa Cruz Los Pozos pet market (Appendix), 306 of which were macaw species (within three genera). Parrots were sold as both adults (77%) and partially developed chicks (23%). The most frequently sold species were the Blue-fronted Parrot *Amazona aestiva* (1,468 individuals), Monk Parakeet *Myiopsitta monachus* (1,342) and Blue-winged Parrotlet *Forpus xanthopterygius* (1,243). The vast majority (6,859 or 94%) were said to have been captured wild, and the rest were apparently captive-bred, or captive-grown from chicks taken in the wild. There was no evidence of a breeding infrastructure for the market. About 89% of the birds offered for sale originated in the department of Santa Cruz, with 2,189 individuals coming from Cordillera province and 1,915 from Chiquitos province. Fewer birds were said to have originated from the departments of Tarija (10%), Beni (1%) and Sucre (0.2%). The species that commanded the highest price in the market was the Hyacinth Macaw (US \$1,000), followed by the Mealy Parrot *Amazona farinosa* and Red-and-green Macaw *Ara chloroptera* (US \$500–875). Smaller species such as *Forpus*, *Myiopsitta* and *Brotogeris* commanded much less, US \$5–10. About 76% (5,553 individuals) of all species were sold locally; 23% (1,711) were taken to Cochabamba and 1% (13) to Brazil and Peru. It was observed that the majority of the inexpensive species were sold for the internal market, but threatened and more valuable birds were frequently traded to middlemen with Peruvian trade connections.

Bolivia appears to serve as a bridge for the wildlife trade between Brazil and Peru, insofar as threatened species such as Lear's Macaw *Anodorhynchus leari* (two chicks arrived in the market on 18 November 2004) and Hyacinth Macaw (four chicks on 10 December 2004) are transported from Brazil to Peru via Bolivian roads. Furthermore, we discovered that Yellow-faced Parrot *Amazona xanthops*, a threatened species with only two site records in Bolivia, was offered for sale in the market. These birds most probably came from Brazil given the rarity of the species in Bolivia. On occasion, particular species are requested (ordered) from Lima, Peru and Mexico. It is unclear where the final market is for these threatened species, but there is evidence that they may be smuggled in legal bird trade transportation to Europe, with a recent arrest of traffickers in Spain with Bolivian endemic Red-fronted Macaws (Diario de Leon 2006).

## Discussion

The study shows that the level of illegal parrot trade in Bolivia continues at a high level, and suggests this is probably true for Peru and other receiving markets. The presence of Red-fronted Macaw adults and chicks in the local market demonstrates that threatened species are indeed still being traded, especially as there is no captive breeding programme in Bolivia. The Armonía Red-fronted Macaw conservation programme is working in the field on this threat through education programmes, and involving local people and rural communities in sustainable conservation

solutions, such as the creation of an Ecodge in an important breeding area for the macaw. The programme needs to expand to cover the entire range of the Red-fronted Macaw to educate local people about its threatened status. The absence of the Blue-throated Macaw in the market may point to the effectiveness of the widespread 'Pride' education campaign that the Armonía/Loro Parque Fundacion has developed within its Blue-throated Macaw Conservation Programme in the department of Beni. We are observing species breeding in the wild, and do not believe the reduction of the species in the illegal pet trade is an indicator of its increased rarity.

If Santa Cruz's other four wildlife markets (Abasto, La Ramada, Barrio Lindo and Tres Pasos al Frente) trade similar numbers of parrots then we estimate that the number of parrots recorded in the Los Pozos market represents only approximately 20% of the actual traffic in the city of Santa Cruz. The city of Cochabamba in Bolivia is expected to have similar animal trade numbers. If we deliberately underestimate the number of birds traded in Santa Cruz in a year, and assume that the Los Pozos market accounts for one-third of all birds sold in Santa Cruz, we estimate 22,000 parrots were illegally traded in 2004–2005. Approximately 900 of the estimated 22,000 parrots are listed as CITES II, while 20%, around 180, are threatened and CITES I listed species.

This is the first quantitative study of the wild bird trade in Bolivia. It demonstrates that thousands of birds are trafficked annually, despite the fact that such trade violates the Environmental Law No. 1333 (Ministerio de Desarrollo Sostenible y Planificación 1999). We detected 1,468 Blue-headed Parrots offered for sale in 1 year alone; if this is assumed to be 20% of the total trade, we can extrapolate a yearly total of more than 7,000 individuals. According to Guerrero and Arambiza (2004), between 10% and 20% of these parrots die during capture; thus, perhaps nearly 9,000 individuals may have been taken in total. It is not known whether this level of capture is sustainable, but certainly the trade in this species should be regulated with a management plan, which takes into account area, population and species fecundity. Any recommendations from such a plan must be strongly enforced, and externally monitored for any infringement. In addition, as this uncontrolled pet trade continues, it remains a constant threat for species such as the Blue-throated Macaw, which commands high prices.

We have shown that the illegal pet trade in Bolivia continues to involve CITES I and II species, threatened species, Bolivian endemic species, and that numbers of some species in trade are so high as to make this harvest more than likely unsustainable. We also suggest that similar problems exist in Peru and Brazil. We hope that by quantifying the level of illegal trade and publishing this information, international and Bolivian national regulation agencies will become aware of the effects of the illegal pet market, and begin to enforce restriction laws already in place.

#### **Appendix. Number of birds passing through the Los Pozos pet market, Santa Cruz, Bolivia in a 1 year period (August 2004 to July 2005)**

CR, Critically Endangered; EN, Endangered; VU, Vulnerable, NT, Near Threatened (BirdLife International 2004).

Common name	Scientific name	No. of individuals
Hyacinth Macaw (EN)	<i>Anodorhynchus hyacinthinus</i>	10
Lear's Macaw (CR)	<i>Anodorhynchus leari</i>	2
Blue-and-yellow Macaw	<i>Ara ararauna</i>	105
Military Macaw (VU)	<i>Ara militaris</i>	2
Scarlet Macaw	<i>Ara macao</i>	4
Red-and-green Macaw	<i>Ara chloroptera</i>	37
Red-fronted Macaw (EN)	<i>Ara rubrogenys</i>	26
Golden-collared Macaw	<i>Ara auricollis</i>	40
Chestnut-fronted Macaw	<i>Ara severa</i>	80
Red-shouldered Macaw	<i>Diopsittaca nobilis</i>	38
Blue-crowned Parakeet	<i>Aratinga acuticaudata</i>	811

Common name	Scientific name	No. of individuals
Mitred Parakeet	<i>Aratinga mitrata</i>	550
White-eyed Parakeet	<i>Aratinga leucophthalmus</i>	97
Dusky-headed Parakeet	<i>Aratinga weddellii</i>	48
Peach-fronted Parakeet	<i>Aratinga aurea</i>	71
Green-cheeked Parakeet	<i>Pyrrhura molinae</i>	148
Monk Parakeet	<i>Myiopsitta monachus</i>	1,342
Blue-winged Parrotlet	<i>Forpus xanthopterygius</i>	1,243
Yellow-chevroned Parakeet	<i>Brotogeris chiriri</i>	643
Black-headed Parrot	<i>Pionites melanocephala</i>	1
White-bellied Parrot	<i>Pionites leucogaster</i>	11
Blue-headed Parrot	<i>Pionus menstruus</i>	255
Scaly-headed Parrot	<i>Pionus maximiliani</i>	119
Bronze-winged Parrot	<i>Pionus chalcopterus</i>	2
Tucuman Parrot (NT)	<i>Amazona tucumana</i>	42
Yellow-faced Parrot (NT)	<i>Amazona xanthops</i>	1
Blue-fronted Parrot	<i>Amazona aestiva</i>	1,468
Yellow-crowned Parrot	<i>Amazona ochrocephala</i>	13
Orange-winged Parrot	<i>Amazona amazonica</i>	46
Mealy Parrot	<i>Amazona farinosa</i>	22
Total		7,279

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