

EVIDENCE OF ILLEGAL TRADE OF THE CRITICALLY ENDANGERED BLACK CRESTED MACAQUE *Macaca nigra* FROM INDONESIA TO THE PHILIPPINES

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ABSTRACT

The Black Crested Macaque *Macaca nigra* (Desmarest) is a Critically Endangered species endemic to Indonesia. Populations are in decline due to habitat loss and hunting for the wild meat and exotic pet trade. International trade data involving this species is lacking, though anecdotal information suggests it is being smuggled to the Philippines. To verify this, we conducted online and physical market surveys of publicly accessible wildlife facilities in the Philippines and analysed seizure data for *M. nigra* in Indonesia and the Philippines from 2010 to 2019. This study reveals insights into illegal trade in *M. nigra*, which is enabled by laundering illegally sourced animals through zoos and wildlife breeding facilities. Surveys of publicly accessible wildlife facilities in the Philippines confirmed the presence of at least 36 individuals in the country, and an additional 12 were exported from the Philippines to China in 2014–2015. The acquisition of this species by wildlife facilities such as zoos in the Philippines is a concern, as there are no records of legal export to the Philippines. We also documented evidence of smuggling of at least 30 *M. nigra* individuals to the Philippines through seizure analysis. These findings warrant further research and investigation by authorities to determine the origins of *M. nigra* in captive wildlife facilities to assess whether they were legally acquired and to prevent the laundering of illegally acquired wildlife.

INTRODUCTION

Primates worldwide are facing a perilous future, with at least 60% of species in decline (Estrada et al., 2017). Illegal and unsustainable wildlife trade is among the principal threats to primates (Nijman et al., 2011; Estrada et al., 2017). Primates are traded as pets for consumption, traditional medicines, bio-medical research, wildlife collections, and the entertainment industry (Alves et al., 2010; Nijman et al., 2015; Mardiatuti et al., 2021; Svensson et al., 2021). Southeast Asia is a significant source of primates to meet these demands (Kavanagh, 1984; Soehartono & Mardiatuti, 2002). Indonesia, in particular, is in the top four countries with the highest diversity of primate species (Rosenbaum et al., 1998; Estrada et al., 2018), and a major hub for wildlife trade and a significant

country of origin for illegally traded primates (Shepherd, 2010; Nijman et al., 2017). Primates are openly traded in markets on Sumatra, Java, Bali, Sulawesi, and Indonesian Borneo (Kalimantan) (Shepherd, 2010; Estrada et al., 2018). One affected species is the Black Crested Macaque *Macaca nigra* (Desmarest), a Sulawesi Island endemic.

Macaca nigra, also known as the Celebes Crested Macaque, occurs in the northeast of Sulawesi and the adjacent islands of Manado Tua and Talise (Lee et al., 2020). There is also an introduced population on the Bacan islands (Lee et al., 2020). *Macaca nigra* is listed as Critically Endangered on the IUCN Red List of Threatened Species (hereafter the Red List), and populations continue to decline, predominantly due to hunting pressure and habitat loss (Hilser et al., 2013;

Lee et al., 2020). *Macaca nigra* is protected under two Indonesian wildlife laws, *Act of the Republic of Indonesia No.5 of 1990 concerning conservation of living resources and their ecosystem and Government Regulation No.7, 1999 concerning the preservation of flora and fauna*. As a protected species, it cannot be caught, injured, killed, kept, possessed, cared for, transported, or traded, whether alive or dead. *Government Regulation No.8 1999 Concerning the utilisation of wild plants and animals*, however, allows trading of protected species provided they are captive bred to the second and subsequent generations. Under the Decree of the Ministry of Forestry, No P.19/Ministry of Forestry-II/2005, all breeders must be registered with the Ministry of Environment and Forestry's Department of Forest Protection and Nature Conservation (for breeders that are also exporters) or the Natural Resources Conservation Agency (breeders supplying to exporters but not exporting themselves). No commercial captive breeding for this species has been permitted in Indonesia.

Despite being a protected species, *M. nigra* is commercially hunted for the local bushmeat trade as it is considered a delicacy and believed to have medicinal properties that enhance physical strength and cure skin diseases (Lee, 1999; Lee et al., 2005; Hilser et al., 2013; Mittermeier et al., 2013). Demand for *M. nigra* as pets is also a threat but has been poorly documented (Rosenbaum et al., 1998; Hilser et al., 2013). It appears that pets are mostly infants obtained either through opportunistic capture or as a result of hunting and killing of the mother (Hilser et al., 2013). While some infants are kept solely as pets, others are kept for relatively short periods prior to consumption (Hilser et al., 2013).

International trade dynamics involving *M. nigra* are largely unknown, though individuals have been seized in the nearby Philippines. This is not surprising, as the smuggling of live animals, including Sulawesi endemic species, from Sulawesi to the Philippines has been documented for over 30 years, with at least 30 cases in the last 12 years alone (Riley, 2003; Sy et al., in prep.). Illegal international trade is facilitated by the close proximity of the two countries and insufficient enforcement efforts (Shepherd, 2005; Shepherd et al., 2018). The main objective of this study is to compile evidence of illegal trade in *M. nigra* from Indonesia to the Philippines that can be used to prioritise national and international actions against the trafficking of *M. nigra* between these two countries.

METHODS

To assess international trade in *M. nigra* from Indonesia to the Philippines, we conducted online surveys as well as physical surveys of publicly accessible wildlife facilities in the Philippines. In addition, we extracted trade data from the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Trade Database to determine whether there were legal exports of *M. nigra* from Indonesia to the Philippines. We also collected information on seizures of *M. nigra* resulting from enforcement actions in the Philippines and Indonesia to identify and understand illegal trade dynamics such as trafficking routes and trade hotspots.

Online Surveys

We surveyed online trade in *M. nigra* on Facebook in the Philippines from March to August 2020. This involved a survey effort of four hours per week over the study period encompassing 25 Facebook groups (21 private and four public) specialising in the trade of live animals. We used the following keywords for the search: *Macaca nigra*, Black Crested Macaque, Celebes Crested Macaque, black ape, *yaki* (the local name in Indonesia), and black monkey. Manual searches of the groups were also conducted to detect posts that did not include the keywords or descriptions.

Survey of wildlife facilities

We compiled a list of publicly accessible wildlife facilities such as zoos, wildlife safari/parks, and wildlife rescue centres across the Philippines that could potentially hold captive *M. nigra*. An initial list was generated using online searches and followed up by requesting information from colleagues residing in various parts of the Philippines. Subsequently, to determine whether these facilities held captive *M. nigra* and the quantities held, we conducted: (1) physical surveys of facilities, where possible, between February 2020 and April 2021; (2) interviews with owners or employees of facilities that could not be physically visited; and (3) reviews of video footage taken in wildlife facilities or that we found posted online (i.e., Facebook, YouTube). Each facility was surveyed only once during the study period.

Seizure Data Philippines

We extracted seizure data for *M. nigra* in the Philippines for 2010-2019 from Sy (2021), which

provided a current account of the illegal wildlife trade in the Philippines through an analysis of seizure data. The data in Sy (2021) were a collation of datasets from relevant government agencies, published literature, open-source news and social media.

Indonesia

Seizures and prosecution records relating to *M. nigra* in Indonesia were collected for 2010 - 2020. Data were extracted from the Indonesian government website, Sistem Informasi Penelusuran Perkara (SIPP) (<https://sipp.pn-negara.go.id/>), an open access information database of the courts for each district in the country. Information was also collected from published online media articles. Searches for related seizures were conducted in both English (search terms: hunting, trapping, trade, illegal trade or wildlife trade in *Macaca nigra*, Black/Celebes/Sulawesi Crested Macaque, Yaki, black ape, black monkey) and Indonesian (search terms: 'BKSDA', 'penyelundupan'/'perdagangan' *Macaca nigra*/monyet hitam Sulawesi /yaki /yaki monyet hitam /monyet yaki).

Data Analysis

From each record obtained, we extracted, where available, information on the date of seizure, commodity (live animals, body parts), quantities of each commodity seized, the purpose of hunting/trade (i.e., for consumption, pets, trophies, etc.), location of seizures and trafficking routes, suspects arrested and prosecution outcomes. Species identification was based on information extracted from seizure records, and is assumed to be accurate, as additional verification was impossible. In addition, all reported seizures were carefully checked to avoid duplication by cross-referencing and comparing incident details, e.g., date of seizures, commodities seized and quantities.

CITES Trade Data

Macaca nigra was included in Appendix II of the

CITES in 1977 as part of listing all non-human primates not in Appendix I (UNEP-WCMC, 2018). Therefore, to be legal, all exports of this species from Indonesia require an export permit, which should be recorded in the CITES Trade Database. Data on international trade in *M. nigra* from Indonesia to the Philippines and from the Philippines to other countries were extracted from the CITES Trade Database (<https://trade.cites.org>) in April 2021. Table 1 refers to the search terms used to extract data from the CITES Trade Database.

RESULTS

Online Survey

There were no advertisements for the sale of *M. nigra* in any of the Philippine Facebook groups surveyed.

Survey of wildlife facilities (zoos, wildlife collections, places of entertainment)

A total of 57 wildlife facilities were surveyed, and 12 were found to hold *M. nigra*, amounting to 36 animals. The majority of these were found in Cebu and Luzon (Table 2, Fig. 1). Most facilities held between one and three animals except for the one facility in Cebu, which had 14. One video reviewed revealed a troop of *M. nigra* containing a mixture of adults, juveniles and infants.

Seizure Data Analysis

There were a few reported seizures of *M. nigra* in Indonesia and the Philippines, with 16 incidents reported from 2010 – 2020. Of these, only one occurred in the Philippines, involving four live *M. nigra* seized in Surigao del Norte, Mindanao, on 20 March 2016. Five suspects were arrested, but the city prosecutor dismissed the case in May 2016, who cited a lack of probable cause. The four *M. nigra* were subsequently donated to Albay City Zoo. However, these four individuals are no longer at the zoo and the Department of Environment and

Table 1. Search terms used to extract trade data of *M. nigra* from the CITES Trade Database

Year Range:	From: 1975 To: 2020
Exporting countries:	Indonesia and Philippines
Importing countries:	All Countries
Source:	All
Purpose:	All
Trade Terms:	All
Species:	<i>Macaca nigra</i> (Black crested macaque)

Table 2. Number of facilities with *M. nigra* and number of animals recorded in the Philippines between 2020 and 2021

Island	Wildlife Facility	Method	Individuals	Total
Cebu	Cebu Safari and Adventure Park	Interview/Video	14	14
	Zoobic Safari	Physical	1	
	Animal World	Physical	3	
Luzon	Cavite City Botanical and Zoological Park	Physical	1	14
	Laguna Wildlife Park and Rescue Center	Physical	3	
	Avilon Zoo	Physical	3	
	Manila Zoo	Physical	3	
	El Toro Zoo de la Castellana	Physical	3	
Negros	Dreamland Nature and Adventure Park / Amlan Zoo	Physical	1	4
Bohol	Bohol Python and Wildlife Park	Physical	2	2
Mindanao	Davao Crocodile Park & Zoo	Physical	1	2
	Genalin Park and Zoo	Interview	1	
Grand Total				36

Natural Resources (DENR) regional office does not have any records of zoological facilities in the region with *M. nigra*. Therefore, the status or whereabouts of the four individuals remain unknown.

In Indonesia, *M. nigra* was confiscated in 13 incidents (Table 3) and voluntarily handed over in three additional incidents. In total, these incidents involved 70 animals: 49 live, 15 dead, five skulls and one skin. Seven of the 13 incidents resulted in the arrests and prosecution of 12 individuals. In addition, potential international trafficking of *M. nigra* was revealed in at least two incidents, which implicated the Philippines as the destination country, involving 30 live animals (Table 3).

CITES Trade Data

There has been a relatively active international trade (>200 CITES Trade records) in *M. nigra* since its CITES listing in 1977. The UK, US, and Canada are the main exporting countries, with all specimens reported as captive bred. Export of the species from Indonesia was only first recorded in 1990. From 1990 to 2018, Indonesia exported 12 live captive-bred animals (source code C): five were exported to the US in 1990 (purpose and source not given) and seven to Singapore for zoo purposes (purpose code Z). Based on 11 records, Indonesia exported >10,000 wild sourced *M. nigra* 'specimens' (a term which could refer to dead animals

or hair, blood samples, etc.) to the US and Germany, ten of which were for scientific purpose (purpose code S) and one for commercial purposes (purpose code T). According to the CITES Trade database, Indonesia has never issued a CITES permit for exporting *M. nigra* to the Philippines.

In 2014 and 2015, the Philippines exported six *M. nigra* to China each year. The Philippines reported these as being for breeding in captivity (purpose code B) and China importing them for zoo purposes (purpose code Z). However, all 12 animals were declared as being bred in captivity (source code C).

DISCUSSION

Our study documents evidence of the illegal trade of *M. nigra* from Indonesia to the Philippines. Seizure data revealed demand for the species revolving around the meat and pet trade in Indonesia and the zoological display and pet trade in the Philippines. These seizures also revealed evidence of international trafficking, from one seizure of this species in the Philippines that occurred in 2016 and two seizures in Indonesia that revealed the intended smuggling of the species to the Philippines.

The seizure in the Philippines occurred during the transportation of various wildlife that were all Philippine native species except for *M. nigra* and one Blyth's



Fig. 1. *M. nigra* is a Critically Endangered species with a restricted range in Indonesia. Though no import records exist in the CITES Trade Database, at least 36 individuals were recorded in the Philippines through surveys of publicly accessible wildlife facilities (zoos, wildlife collections, places of entertainment) throughout the country in 2020/2021

Hornbill *Rhyticeros plicatus* (Forster). The native species included six Long-tailed Macaques *Macaca fascicularis* (Raffles), four Brahminy Kites *Haliastur indus* (Boddaert), one Philippine Serpent-eagle *Spilornis holospilus* (Vigors), and one Philippine Deer *Rusa marianna* (Desmarest). Under the Wildlife Resources Conservation and Protection Act of 2001/Republic Act No. 9147, all terrestrial wildlife (native and non-native) are prohibited from being kept, transported, traded, etc., without a valid permit from the DENR.

The first incident in Indonesia occurred in 2015 when port authorities at Tahuna (North Sulawesi) found dozens of wild animals on a commercial vessel headed for the Philippines. Among the wildlife seized were two live *M. nigra* and 23 tarsiers. No suspects were arrested. The second incident occurred in 2018 when authorities on Bacan Island rescued 28 *M. nigra*, along

with dozens of other species, including parrots and turtles, reportedly en route to the Philippines. At least four suspects were arrested and sentenced to one year in jail and a fine of IDR 30 million (~USD 2,000).

No export records of *M. nigra* from Indonesia to the Philippines were reported in the CITES Trade Database. Indonesia and the Philippines have been parties to CITES since 1979 and 1981, respectively. As such, both countries have implemented mechanisms to control, regulate and report international trade in wildlife listed in the Appendices of the Convention. Yet, surveys of publicly accessible wildlife facilities in the Philippines revealed that at least 36 *M. nigra* are present in the country, and an additional 12 were exported from the Philippines to China in 2014-2015. The acquisition of this species by wildlife facilities such as zoos in the Philippines is an issue of concern, as

Table 3. Seizures of *M. nigra* in Indonesia between 2010 and 2020

Year	Seizure Location	Destination	Commodity	Quantity	Suspects arrested	Prosecution
2014	Mongondow, North Sulawesi		dead; live	12; 4	4	Sentenced to 8 months in jail and IDR 10,000,000 fine/ additional 1 month jail
2014	Manado, North Sulawesi		Dead	1	4	no sentence
2015	Sangihe Islands, North Sulawesi	Philippines	Live	2	-	-
2015*	Garut, West Java		Live	3	1	Sentenced to 1 year 6 months in jail and IDR 5,000,000 fine/ additional 1 month jail
2016*	Bandung, West Java		Skin	1	2	Sentenced to 1 year 4 months in jail and IDR 2,500,000 fine/additional 3 months jail; Sentenced to 1.6 years in jail and IDR 1,000,000 fine/additional 3 months jail
2017*	Makassar, South Sulawesi		Live	3	1	Sentenced to 9 months in jail and IDR 50,000,000 fine/additional 3 months jail
2018	North Maluku	Philippines	Live	28	2	Sentenced to 1 year in jail and IDR 30,000,000 fine/additional 4 months jail
2019	Minahasa Regency, North Sulawesi		Live	2	-	-
2019*	West Java		Live	1	1	Sentenced to 1 year 3 months in jail and IDR 50,000,000 fine/additional 2 months jail
2019*	Manadao, North Sulawesi		Skull	5	1	Sentenced to 7 months in jail and IDR 25,000,000 fine or additional 3 months in jail.
2020	Palu, Central Sulawesi		Live	1	-	-
2020	North Sulawesi		Live	2	-	-

*incidents involving the sale of *M. nigra* on social media

how and when the Philippines first acquired these animals is unclear. No *M. nigra* has been reported as being imported by the Philippines or exported by any other country to the Philippines since *M. nigra* was listed in 1977. The lack of import records or export permits to the Philippines implies that some of these animals may have been smuggled into the country. Further indications of trafficking were described by a former veterinarian at one of the wildlife facilities in the Philippines, who suspected that three *M. nigra* were brought to the Philippines approximately four years ago in a wire cage with dividers similar to ones used by smugglers from Indonesia. It is uncertain whether the facility still has these animals.

We did not find *M. nigra* for sale on social media during the study period. However, this study monitored at least two Facebook groups that advertised three individual *M. nigra* for sale in 2015 and 2016 (Fig 2). A possible reason for the apparent absence of advertisements for animals for sale during the study period is that it coincided with the emergence of COVID-19, which resulted in international border closures, restrictions on travel and movement of people, and increased surveillance and security at international borders. We expect this may have impacted the trafficking of wildlife from Indonesia to the Philippines and the availability of non-native species for sale in the Philippines. For example, a wildlife trafficker in the Philippines posted an advertisement pre-selling Indonesian reptiles and mammals on Facebook in March 2020, unaware that the lockdown would last more than a year. During the study period, many of these Facebook groups were also exposed by a conservation advocate for facilitating illegal trade in wildlife. As a result, one group removed all members after being exposed, and a further five groups were deactivated. The awareness that Facebook groups were being monitored could have also potentially deterred the advertising of illegally sourced wildlife. Based on TRAFFIC monitoring data, the remaining surveyed groups were among the more than 1,000 Facebook Philippine wildlife trade groups that Facebook permanently deactivated between January and May 2021 for violating Facebook's policy on the trade of protected animals/wildlife (TRAFFIC, 2021).

While we know that illegal trade of *M. nigra* from Indonesia to the Philippines has occurred, it is not possible to determine whether all individuals currently present in the Philippines are of illegal origin. During the initial implementation of the Philippines' Wildlife Resources Conservation and Protection Act of 2001 / Republic Act No. 9147 in 2004, private individuals and

wildlife facilities were required to register wildlife in their possession. Wildlife with dubious origins, including Critically Endangered and CITES-listed species without legal import records, were allowed to be registered (i.e., legalised) (Sy, 2018). The action may have resulted in the legalisation of *M. nigra* held in private collections and commercial wildlife facilities in the Philippines. However, it is not possible to determine how many were legalised at this time. Further, governmental authorities in provinces or regions in the Philippines with limited or no rescue centres often rely on private wildlife facilities' assistance for short-term or long-term care of rescued or confiscated wildlife. Some *M. nigra* in publicly accessible zoos documented in this study may have been acquired from the wildlife authorities. Private individuals and wildlife facilities with DENR-issued Wildlife Farm Permits can engage in domestic and international commercial trade in wildlife. So, despite there being no legal importations of *M. nigra* to the Philippines, registered individuals of the species are present in the country (legalised through legislative changes as mentioned above), and a few wildlife facilities in the Philippines have apparently bred the species in captivity. Captive breeding of wildlife is legal with a valid permit, but there are restrictions on trade in threatened wildlife. For instance, Wildlife Farm Permit holders are permitted to sell second-generation (F2) captive-bred individuals but not personal wildlife permit holders (individuals with registered wildlife in their possession). As such, this complicates efforts to distinguish illegally sourced *M. nigra* from those legalised and subsequently captive-bred. It also potentially provides an opportunity to launder illegally sourced animals through zoos and wildlife breeding facilities. This possibility merits concern, considering that seizure data provide current evidence of illegal international trafficking of *M. nigra* from Indonesia to the Philippines.

CONCLUSION

Clearly, trafficking of *M. nigra* from Indonesia to the Philippines is taking place. We strongly recommend that the authorities in the Philippines investigate and determine the origins of all *M. nigra* held in captive wildlife facilities to assess their legality. Appropriate penalties should be handed down to all individuals or organisations found guilty of trafficking or illegally keeping this species. While wildlife facilities can play an important role in providing sanctuary for confiscated or seized species, there needs to be greater scrutiny of such facilities, such as regular physical inspections and wildlife inventory audits, to ensure that the system

For sale tamed black crested macaque...pm me...for serious buyers only...

PTPA. FOR SALE PO OFFER NALANG

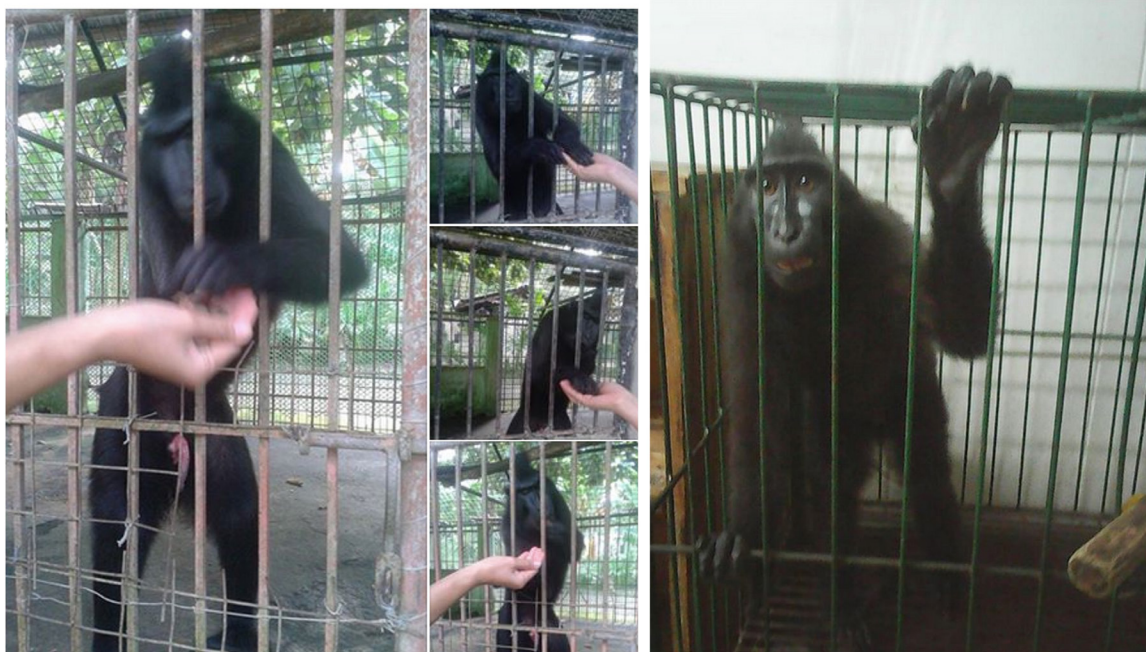


Fig. 2. Screenshots of *M. nigra* for sale on Facebook Groups in the Philippines in 2015 and 2016

is not being exploited or manipulated to facilitate trade in protected species with illegal origins.

One of the greatest threats to *M. nigra* is illegal capture and killing for trade in Indonesia and as such, enforcement efforts in Indonesia needs to be enhanced to better protect this species not only from local exploitation but also from illegal international trade. We recommend that the CITES Management authorities of both Indonesia and the Philippines increase collaboration to reduce the trafficking of this species and all wildlife between the two countries. Finally, we recommend that monitoring of the trade in *M. nigra* continue to support enforcement efforts, to guide future policy interventions and to better inform conservation strategies.

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