

**TRAFFIC**

BRIEFING PAPER

AUGUST 2023

# FARMERS OF THE FOREST IN CAGES:

THE ONLINE TRADE OF HORNBILLS IN THE PHILIPPINES

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# TRAFFIC BRIEFING PAPER

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## DESIGN

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*Visayan Tarictic Hornbill*

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# From forest to cages: trade of hornbills in the Philippines

All hornbills are legally protected in the Philippines, and many are assessed as nationally Threatened.

Philippine Red List

VU VULNERABLE

LUZON TARICTIC HORNBILL



143

live hornbills from 9 taxa were offered for sale in 76 posts by 55 unique Facebook accounts between 2018-2022.

73%

of hornbills recorded were the endemic Luzon Tarictic Hornbill.



66 hornbills seized in 24 incidents from 2018-2022.



Hornbills observed in trade are most likely wild-sourced.



The ongoing online trade and hornbill seizures highlight the urgent need to curb illegal trade.

# GLOSSARY

<b>BARMM-MENRE</b>	Bangsamoro Autonomous Region in Muslim Mindanao-Ministry of Environment, Natural Resources and Energy
<b>CWR</b>	Certificate of Wildlife Registration
<b>CITES</b>	Convention on International Trade in Endangered Species of Wild Fauna and Flora
<b>DENR</b>	Department of Environment and Natural Resources
<b>IUCN</b>	International Union for Conservation of Nature
<b>PCSDS</b>	Palawan Council for Sustainable Development Staff
<b>PNP</b>	Philippine National Police
<b>WFP</b>	Wildlife Farm Permit

# EXECUTIVE SUMMARY

**The hornbills are a group of charismatic bird species occurring in Asia and Africa. Dubbed the “farmers of the forest”, these birds contribute to natural forest regeneration by acting as seed dispersers. The hornbill diversity in the Philippines includes 15 taxa, some of which are the most endangered in the world. Aside from habitat loss, hornbills are also threatened by hunting for wild meat, cultural objects, sport hunting, and live bird trade.**

The Philippine laws protect all wildlife, and possession, trade or transportation of wildlife is highly controlled. Despite these laws and regulations, hornbills have been observed for sale in the lucrative and ever-growing online wildlife trade. TRAFFIC conducted online bird trade surveys on Facebook, the preferred platform of wildlife traders in the Philippines, for the past five years (2018–2022) to gather information on hornbills offered for sale.

This has been a relatively undocumented threat in the Philippines and will provide important insights as part of TRAFFIC’s long-term commitment to combat the illegal wildlife trade in the Philippines.

A total of 143 live hornbills representing nine taxa were offered for sale in 76 posts by 55 unique Facebook accounts between 2018–2022. More than half of endemic hornbills in the trade were nestlings or about to fledge. The Luzon Tarictic Hornbill *Penelopides manillae* (73% of all individuals) was the most recorded species in the online trade. Two-thirds of traders recorded were in central Luzon (Region III, IV-A, and National Capital Region [NCR]) and likely wild-sourced hornbills within or nearby provinces. Seizure records during the same period recorded 66 hornbills seized in 24 incidents. The quantity of hornbills in trade and seizure incidents peaked in 2019 within the study period.



# INTRODUCTION

The hornbills (Bucerotidae) are charismatic birds easily identified by their distinct large bill and often well-developed casque. Currently, 66 hornbill species across Asia and Sub-Saharan Africa are recognised (del Hoyo, 2020). Hornbills play an important ecological role as seed dispersers in helping natural forests regenerate and have been dubbed “farmers of the forest” (Kitamura, 2011).

*Palawan Hornbill*

The Philippines has a rich hornbill diversity with 11 species and four subspecies. The survival of hornbills in the wild is threatened by habitat loss, degradation, conversion, and fragmentation (IUCN, 2023). They are highly dependent on ever-decreasing large living trees to breed in the wild (Klop et al., 2000; Mynott et al., 2021; Reintar et al., 2022; Rode-Margono et al., 2022). In addition, hornbills in the Philippines are poached for the live bird trade as pets and zoological display animals, wild meat, and for traditional indigenous and contemporary material culture (Gonzalez, 2011; Scheffers et al., 2012; Sy, 2021; Tanalgo, 2017; **Figure 1a-c**).

The International Union for Conservation of Nature (IUCN) Red List assessed seven of 11 Philippine hornbill species as threatened (2 Critically Endangered, 2 Endangered, 3 Vulnerable). At a national level, all 15 hornbill taxa are listed as threatened in the Philippine Red List (Gonzalez et al., 2018). The Sulu Hornbill *Anthracoseros montani* is the most endangered hornbill in the world, with an estimated population of 27 adult individuals (Datta et al., 2019), while the Ticao Tarctic Hornbill *Penelopides panini ticaensis* is suspected to be extinct (Allen, 2020).



**FIGURE 1 A**

Mindanao Tarictic Hornbill hunted for food in Cagayan de Oro, Mindanao Island in January 2023.

**FIGURE 1 B**

A juvenile Luzon Rufous Hornbill was hunted in Adams, Ilocos Norte in 2014.





FIGURE 1C

A traditional indigenous people hornbill headdress for sale in an antique shop in Manila City.

All hornbills are protected under the Republic Act No. 9147, the country's law implementing the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) that covers all wildlife, including non-native species and those not listed in CITES appendices. The transport, import/export, possession, and/or trade of hornbills require a permit from the Department of Environment and Natural Resources (DENR). The Philippines has been a Party to CITES since 1981.

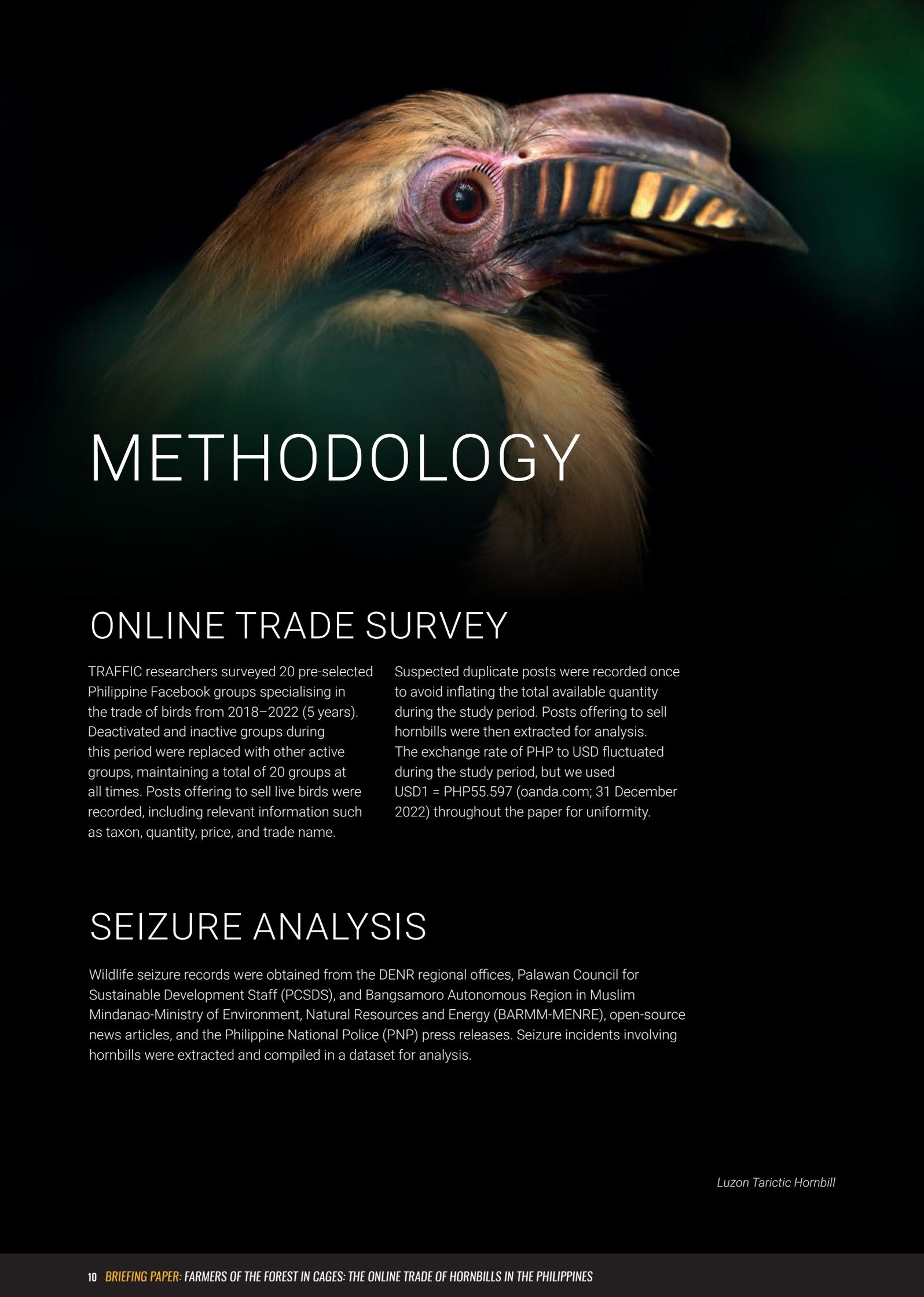
Hornbills are difficult to breed in captivity (Jennings & Rundel, 1976; Myers, 2000). For instance, it took Talarak Foundation, a conservation organisation based on Negros Island, nearly a decade of captive breeding attempts before successfully producing the first three Visayas Wrinkled Hornbill

*Rhabdotorhinus waldeni* from two breeding pairs (Ward *et al.*, 2020). Based on seizure records, Indonesian wildlife, including hornbills, have been documented to be regularly smuggled to the Philippines in the past decades (Sy, 2021; Sy *et al.*, 2022).

TRAFFIC has conducted online wildlife trade studies in the Philippines for the past seven years. The collated dataset allowed us to elucidate the current status of the live hornbill trade in the Philippines.



**HORNBILLS  
ARE PROTECTED**  
under Philippine  
law

A close-up photograph of a Luzon Tarictic Hornbill, showing its large, dark, textured beak and its reddish-brown eye. The bird's feathers are a mix of brown and tan. The background is dark and out of focus.

# METHODOLOGY

## ONLINE TRADE SURVEY

TRAFFIC researchers surveyed 20 pre-selected Philippine Facebook groups specialising in the trade of birds from 2018–2022 (5 years). Deactivated and inactive groups during this period were replaced with other active groups, maintaining a total of 20 groups at all times. Posts offering to sell live birds were recorded, including relevant information such as taxon, quantity, price, and trade name.

Suspected duplicate posts were recorded once to avoid inflating the total available quantity during the study period. Posts offering to sell hornbills were then extracted for analysis. The exchange rate of PHP to USD fluctuated during the study period, but we used USD1 = PHP55.597 (oanda.com; 31 December 2022) throughout the paper for uniformity.

## SEIZURE ANALYSIS

Wildlife seizure records were obtained from the DENR regional offices, Palawan Council for Sustainable Development Staff (PCSDS), and Bangsamoro Autonomous Region in Muslim Mindanao-Ministry of Environment, Natural Resources and Energy (BARMM-MENRE), open-source news articles, and the Philippine National Police (PNP) press releases. Seizure incidents involving hornbills were extracted and compiled in a dataset for analysis.

*Luzon Tarictic Hornbill*

# RESULTS AND DISCUSSION

A total of 143 live hornbills representing nine taxa were offered for sale in 76 posts by 55 unique Facebook accounts between 2018–2022 (Table 1). The endemic Luzon Tarictic Hornbill *Penelopides manillae* was the most common species offered for sale and accounted for 73.4% (n=105) of the total. Prices ranged from PHP1,500 (USD27) for a Luzon Tarictic Hornbill to PHP30,000 (USD540) for the non-native Papuan Hornbill *Rhyticeros plicatus*. The low asking prices, especially for endemic hornbill species, could indicate that the birds were illegally collected from the wild, considering the cost and difficulty of maintaining and breeding hornbills in captivity.

TABLE 1  
Number of live hornbills offered for sale on Facebook from 2018-2022.

TAXON	ENGLISH NAME	QUANTITY	IUCN RED LIST	PHILIPPINE RED LIST
<i>Penelopides manillae</i>	Luzon Tarictic Hornbill	105	LC	VU
<i>Buceros hydrocorax</i>	Luzon Rufous Hornbill	12	VU	EN
<i>Penelopides panini</i>	Visayas Tarictic Hornbill	5	EN	CR
<i>Rhabdotorrhinus leucocephalus</i>	Mindanao Writhed Hornbill	5	NT	NT
<i>Rhyticeros plicatus</i>	Papuan Hornbill	5	LC	EN
<i>Penelopides sp.</i>	Tarictic Hornbill	3	-	-
<i>Buceros mindanensis mindanensis</i>	Mindanao Rufous Hornbill	2	VU	EN
<i>Buceros mindanensis semigaleatus</i>	East Visayas Rufous Hornbill	2	VU	EN
<b>Bucerotidae</b>	Unidentified Hornbill	2	-	-
<i>Anthracoceros marchei</i>	Palawan Hornbill	1	VU	VU
<i>Penelopides affinis</i>	Mindanao Tarictic hornbill	1	LC	EN
<b>TOTAL</b>		<b>143</b>		

# MONTHLY TREND

Based on the five-year online hornbill trade data, the trade started to pick up in April, peaked in June-July, and suddenly dropped in August (Figure 2). The dry season (December to May) is critical since the hornbill breeding season is within the period in the Philippines. For instance, the Luzon Tarictic Hornbill breeds from March to April, the incubation period is 28-31 days, and offspring fledge in 50-65 days (Kemp and Boesman, 2020). Considering the

species' breeding biology, the species is most vulnerable to nest poaching between May-June since nestlings and rearing females are still sealed in nest cavities. Poaching of Palawan Hornbill *Anthracoceros marchei* while still in the nest has also been reported (Cruz *et al.*, 2007). More than half of endemic hornbills in the trade were nestlings or about to fledge (Figure 3).

FIGURE 2

The overall monthly trend of online trade of live hornbills in 2018–2022.

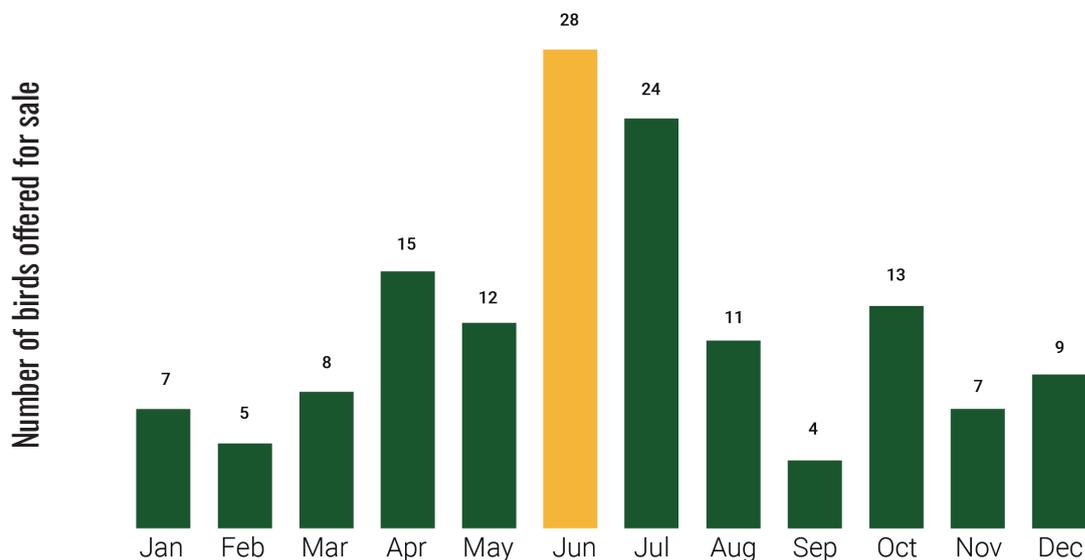


FIGURE 3

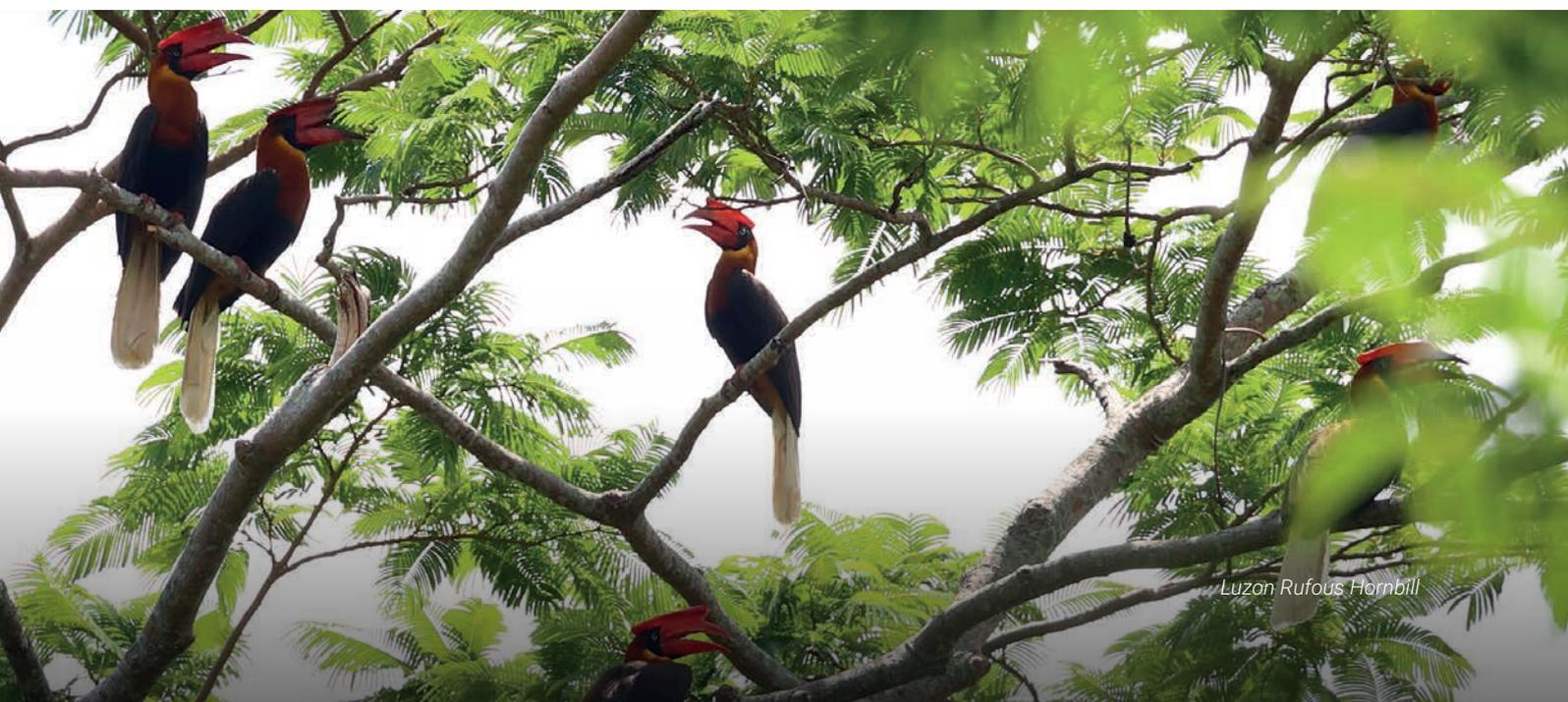
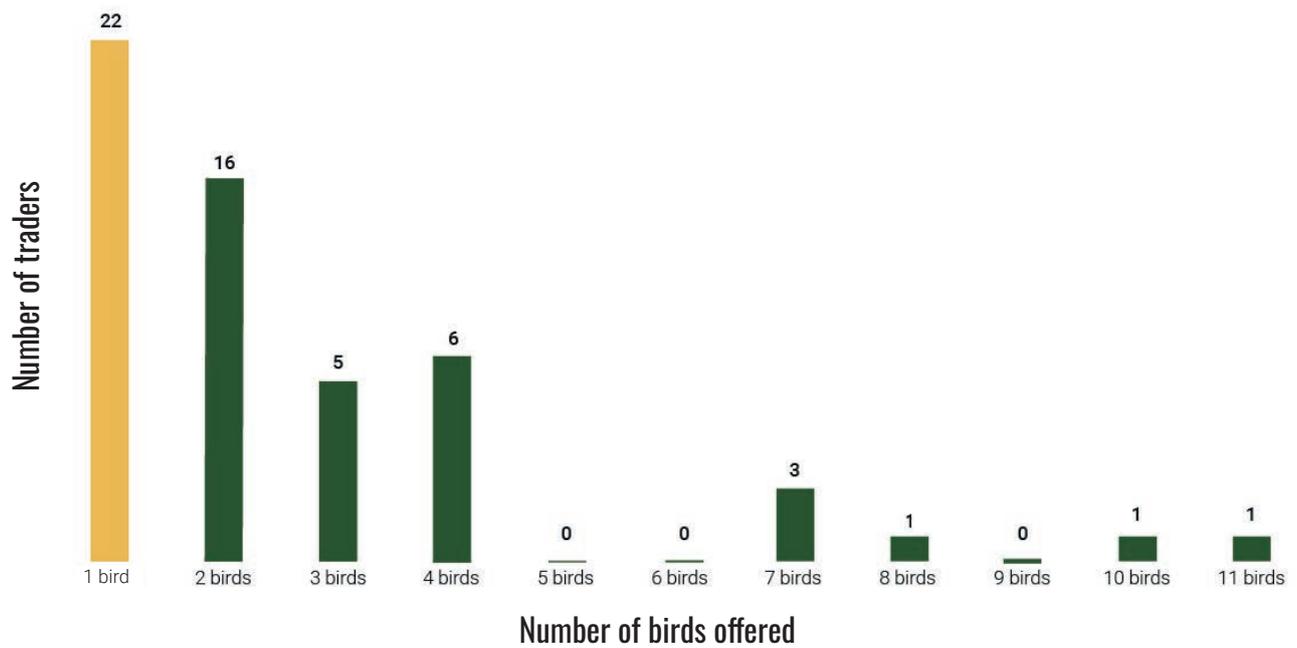
Nestling hornbills offered for sale in May 2022.

# TRADERS

The top six traders offered a total of 50 hornbills (range 7-11) accounting for 35% of the total hornbills for sale online. The majority of the traders (n=43; 78%) posted once and offered between 1-8 hornbills (**Figure 4**).

FIGURE 4

Number of hornbills offered for sale by traders

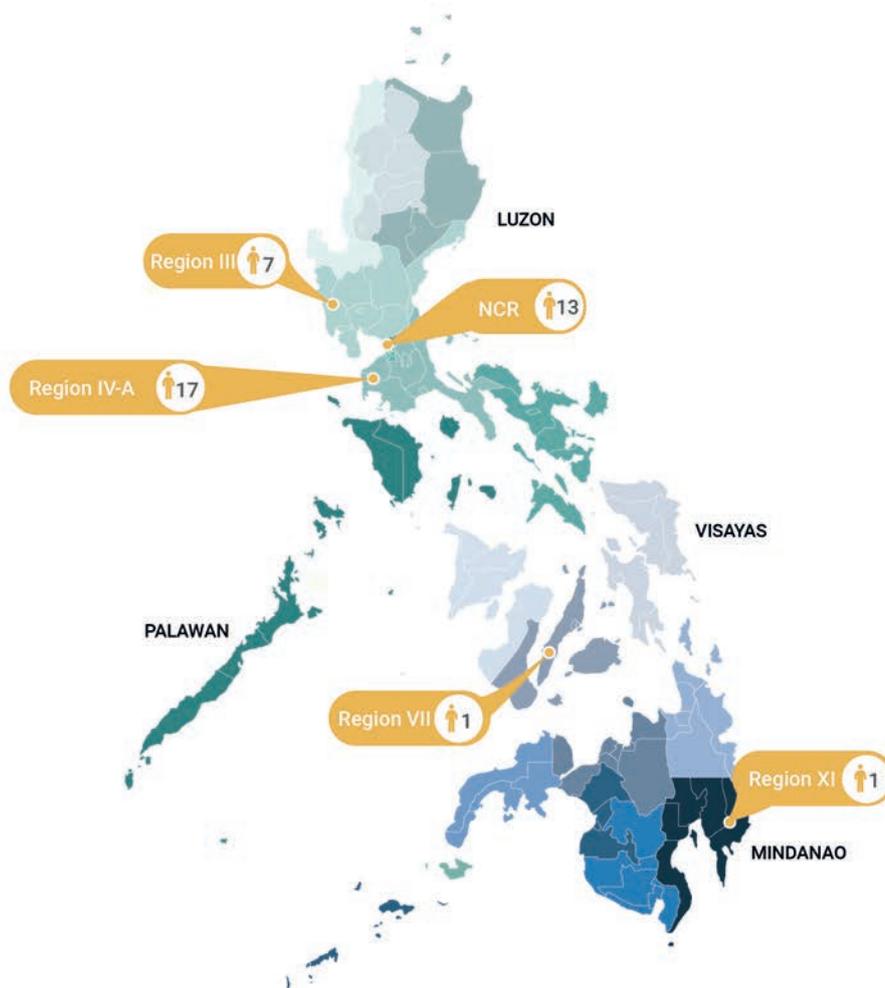


Luzon Rufous Hornbill

Most of the traders (n=37; 67%) with known locality were from Central Luzon (National Capital Region (NCR), III, IV-A), while 15 traders (27%) did not indicate their location in their posts or public profiles. Previous research on the online wildlife trade also found a concentration of traders in central Luzon (Sy & Lorenzo, 2020; Sy et al., 2022) (Figure 5).

FIGURE 5

Location of hornbill traders, showing number of traders recorded from each region



## LEGALITY

Only two out of 76 posts mentioned legal documents for hornbills offered for sale. Although wildlife enthusiasts with a Certificate of Wildlife Registration (CWR) may be allowed to keep threatened wildlife legally, they are not allowed to sell their registered threatened wildlife based on the implementing rules and regulations of R.A. No. 9147. Enthusiasts must apply for a Wildlife Farm Permit (WFP) to legally trade wildlife nationally assessed as threatened or listed in any of the CITES appendices.

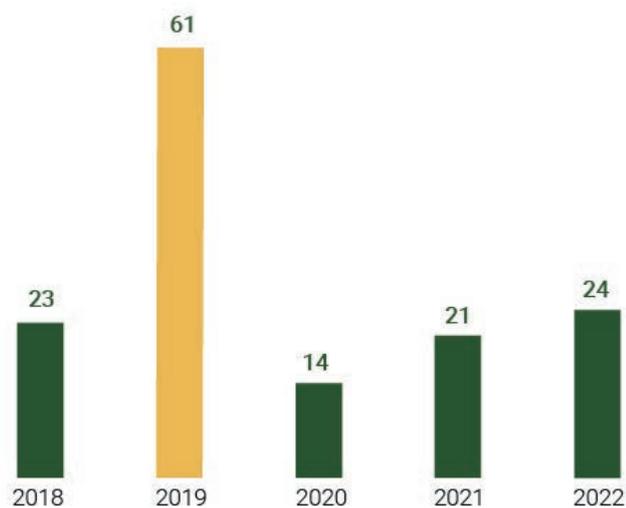
# EFFECT OF THE COVID-19 PANDEMIC LOCKDOWN

The online trade of hornbills peaked in 2019 with 61 individuals, which accounted for 42.7% of the total quantity. 2020 is the year with the least hornbills in trade (**Figure 6**). Travel restrictions and lockdowns (e.g. only one person is allowed to go out per household; cannot cross city or provincial

borders unless with a special pass and police checkpoints) implemented during the height of the COVID-19 pandemic in 2020 could have temporarily severed the supply chain between poachers and online sellers. The resurgence in online trade corresponded to the gradual lifting of travel restrictions in 2021.

**FIGURE 6**

*Number of hornbills offered for sale in 2018-2022.*



*Visayan Tarictic Hornbill*

# EFFECT OF THE FACEBOOK CRACKDOWN

Posts offering to sell wildlife before 2021 usually explicitly indicated that animals were for sale and included details such as location, price, and description of animals (Figure 7). From 2021-2022, Facebook deactivated at least 1,837 Philippine Facebook wildlife trade groups based on information provided by TRAFFIC. Traders appeared to respond by creating

new groups and using more creative evasive techniques, such as purposefully using misspelled words, codes, and emojis to avoid being flagged by the platform's algorithm (Figure 8a-b). However, without sustained, timely and proactive efforts to deactivate groups, these new groups operate unhindered and illegal wildlife trading activities continue to proliferate.



**FIGURE 7**

*A typical post offering to sell wildlife in 2018 included details such as the price and location.*



FIGURE 8A

A group administrator reminding members to use codes when posting to prevent Facebook from detecting wildlife trading activities within the group. September, 2021, from Facebook.

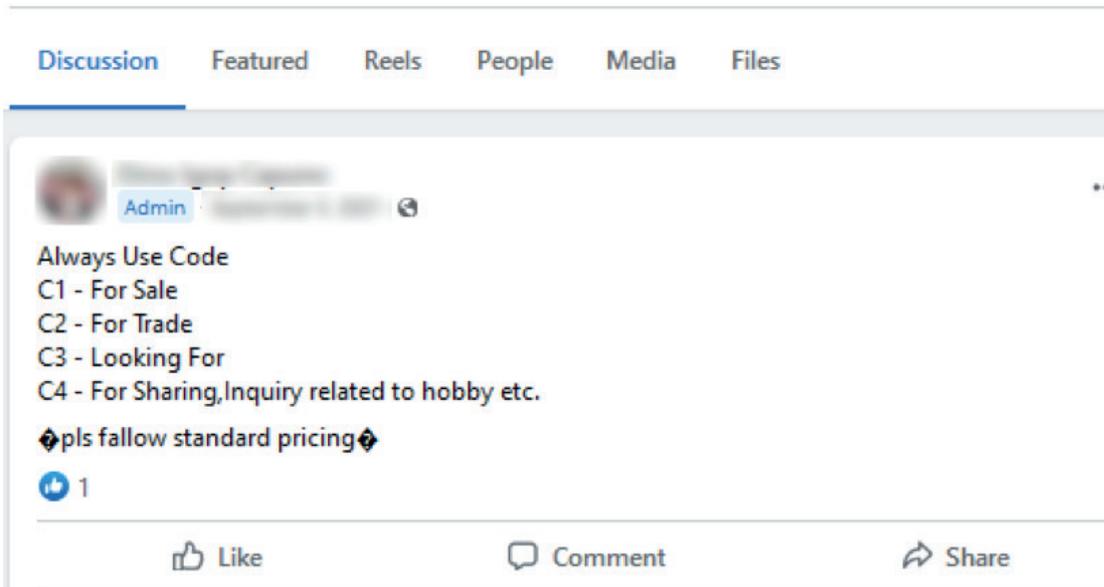


FIGURE 8B

Evolving trade: A post offering to sell a nestling hornbill in April 2023 used code (C1 = for sale) and envelope emoji (i.e. send private message)



# SEIZURE ANALYSIS AND INDICATION OF ILLEGAL SOURCING

From 2018-2022, authorities conducted 24 seizure activities involving 66 hornbills of eight taxa in the Philippines (Table 2, Figure 10). Hornbill seizure incidents peaked in 2019, with 21 individuals (32%) in five incidents. The Luzon Tarictic Hornbill (n=29; 44%) was the top seized species, followed by

the Papuan Hornbill (n=23; 35%; Figure 9). In June 2022, the PNP-Maritime Group seized several wildlife, including 17 juvenile Luzon Tarictic Hornbills in the house of a trafficker, who also offered hornbills and other wild birds online, in Nueva Ecija Province, central Luzon.

TABLE 2  
Seized hornbills in the Philippines between 2018–2022.

TAXON	ENGLISH NAME	QUANTITY	INCIDENT
<i>Penelopides manillae</i>	Luzon Tarictic Hornbill	29	9
<i>Rhyticeros plicatus</i>	Papuan Hornbill	23	4
<i>Buceros hydrocorax</i>	Luzon Rufous Hornbill	7	4
<i>Anthracoceros marchei</i>	Palawan Hornbill	2	2
<i>Penelopides panini</i>	Visayas Tarictic Hornbill	2	2
<i>Buceros mindanensis mindanensis</i>	Mindanao Rufous Hornbill	1	1
<i>Buceros mindanensis semigaleatus</i>	East Visayas Rufous Hornbill	1	1
<i>Rhabdotorrhinus waldeni</i>	Visayas Wrinkled Hornbill	1	1
<b>TOTAL</b>		<b>66</b>	<b>24</b>

The result of a query on the CITES Trade Database on 25 April 2023 showed no records of legal export of Papuan Hornbills to the Philippines since 1975. Some individuals could have been imported before the establishment of CITES or legalised during the initial implementation of R.A. No. 9147 in 2004. However, a more likely source is smuggling since Papuan Hornbills observed in the online trade and seizures were all adults.

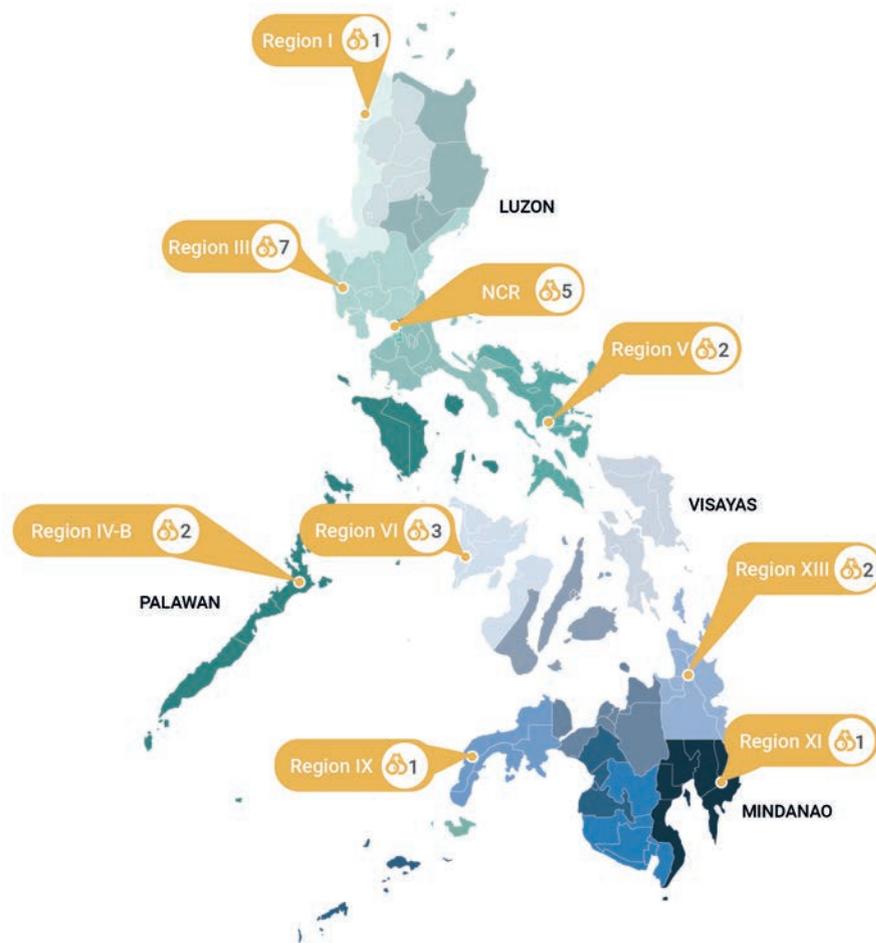
Wild-collected nestlings and juveniles are less likely to survive the arduous journey from poaching sites in Indonesia to the black markets in the Philippines (Sy et al., 2022). Furthermore, the presence of Papuan Hornbills in several seizure incidents, especially in the southern Philippines, strongly indicates that some individuals in the Philippines were sourced illegally.

FIGURE 9  
Seized Papuan Hornbills in Surigao del Norte Province, Mindanao Island, in 2022.



FIGURE 10

Number of hornbill seizure incidents and locations in the Philippines between 2018–2022



## ENFORCEMENT OUTCOMES

Among the 17 arrested individuals for suspected hornbill trafficking, at least five were convicted in three separate cases.

On 8 April 2019, authorities seized 450 smuggled Indonesian wildlife in Davao Oriental Province, Mindanao Island. After more than a year, 91 remaining wildlife, including seven Papuan Hornbills, were repatriated to Indonesia on 27 July 2020.

*A Luzon Tarictic Hornbill accidentally trapped in a homemade wire trap baited with a live White-eared Brown Dove *Phapitreron leucotis* and plastic grapes.*



# CONCLUSION AND RECOMMENDATIONS

The endemic hornbill populations in the Philippines have declined primarily due to habitat loss. Additional pressure from the illegal wildlife trade and other threats could further expedite the population decline. As seed dispersers, hornbills play a crucial role in natural forest regeneration. Taking hornbills out of natural habitats and putting them in cages prevents them from functioning as “farmers of the forest”. We make the following recommendations based on the findings of this paper:

## TACKLE HOTSPOTS

Greater attention is urgently needed in hornbill habitats to prevent poaching. Enforcement efforts could **focus on the major illegal wildlife trade centers**, particularly on the islands of Luzon (Region III, IV-A, and NCR ) and Mindanao (Region XII).

## INVESTIGATE AND CONVICT

Appropriate resources should be allocated to the wildlife authorities to conduct **in-depth investigations**. In collaboration with other law enforcement agencies, key wildlife traffickers should be identified, arrested, and **charged in court** to deter other traffickers.

## PROTECT HORNIBILLS IN-SITU

Conservation groups in coordination with the wildlife authority, local governments (i.e. city and provincial level) and local communities need to develop and implement **pragmatic hornbill conservation programs in the wild** such as strategic efforts to patrol suitable habitats and expand nest protection activities, especially during the nesting season.

Local non-governmental organisations’ conservation programs such as nest guarding and employment of former poachers as wardens, have had positive results in the provinces of Antique, Aklan, and Palawan (Katala Foundation, n.d.; Schwarz and Curio, 2019).

## DEACTIVATE ONLINE SELLERS

Facebook should consider allocating additional resources (e.g. to identify evolving evasive tactics utilised by traffickers), and strengthen collaborative work with conservation groups to curb wildlife crime taking place on its platform. Wildlife trade group administrators and individual accounts violating Facebook’s policy on selling endangered species should be deactivated promptly and sustainably to serve as a deterrent and curtail the ongoing illegal wildlife trade.



*Mindanao Tarictic Hornbill*

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WORKING TO ENSURE THAT TRADE  
IN WILD SPECIES IS LEGAL AND  
SUSTAINABLE, FOR THE BENEFIT OF  
THE PLANET AND PEOPLE

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