

TRAFFIC

May 2023

ILLEGAL WILDLIFE TRADE:

# BASELINE FOR MONITORING AND LAW ENFORCEMENT

IN THE SULU-CELEBES SEAS

*Olivia H. Armstrong  
Rama Wong  
Antonio Lorenzo  
Amirah Sidik  
Glenn Sant  
Serene C.L. Chng*

# TRAFFIC REPORT

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Marine turtle slaughtered at fish market, Indonesia

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Lahad Datu fish landing jetty

# TERMINOLOGY AND ABBREVIATIONS

**BKSDA** – Balai Konservasi Sumber Daya Alam (Natural Resources Conservation Centre/BKSDA)

**CITES** – Convention on International Trade in Endangered Species of Wild Fauna and Flora

**Indonesia** - refers generally to North and East Kalimantan, North Sulawesi, and Gorontalo (except where stipulated)

**IUCN** – International Union for Conservation of Nature

**KSDAE** – Directorate General of Nature Resources and Ecosystem Conservation, Indonesia

**Littoral Communities** – refers to the people living in coastal edge communities of the three countries in the Sulu-Celebes region

**Malaysia** – generally refers to Sabah, the relevant state of Malaysia to this project (except where stipulated)

**States** – the provinces surrounding the Sulu-Celebes Seas from the three countries.

**Sulu-Celebes region** – the waters and the land of the states/countries bordering the Sulu and Celebes seas (geographic scope of this project)

**Sulu-Celebes Seas** – The waters of the Sulu Sea and Celebes Sea

**Trade** – The buying and selling of goods.

**Trafficking** – The transporting or transferring of illegal goods, including protected wildlife and products

**WiTIS** – TRAFFIC's Wildlife Trade Information System

# EXECUTIVE SUMMARY

This report presents a baseline which describes the context of current marine and terrestrial wildlife trafficking and related transboundary crime issues in the Sulu Sea and Celebes Seas (hereafter referred as Sulu-Celebes Seas) region, bordering three countries: Indonesia, Malaysia, and the Philippines. This baseline is derived from an analysis of all wildlife seizures from the region combined with an analysis of online trade in the same region focused on marine turtles, sharks and rays, and pangolins. A summary of the maritime activity, legal and policy frameworks around wildlife trade in this region is also presented. Based on these analyses, key issues are identified and recommendations suggested for future work.

*Green Sea Turtle (Chelonia mydas), Tubbataha Reef, Sulu Seas, Palawan, Philippines*

## SEIZURE ANALYSIS

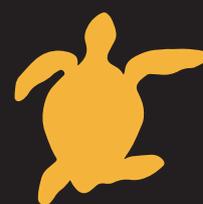
There were 452 recorded wildlife confiscations in the Sulu-Celebes region between June 2003 and September 2021; 239 took place in the Philippines, 125 in Malaysia, and 88 in Indonesia. The seizures involved 69 Orders or 118 Families of wildlife, demonstrating the breadth and magnitude of wildlife trafficking taking place in this hotspot. The greatest number of incidents involved turtles (marine and freshwater) (128) and songbirds (40), followed by parrots (39), pangolins (36) and molluscs (35).

- **Marine turtle smuggling is a major issue in the Sulu-Celebes region.** Turtles (Testudines) made up 28% of all seizures in the region. Marine turtles were the most seized taxa, involved in at least 71 incidents. Much of this trade is carried out in-person rather than on open online platforms. Marine turtle eggs accounted for 95% of counted marine turtle items seized, with large volumes trafficked between the southern Philippines and Sabah, Malaysia; almost 80% were seized in Malaysia. Most are believed to originate from the Philippine Turtle Islands Wildlife Sanctuary and destined for the major consumer market of Sabah, with Sandakan implicated as the main entry point for turtle eggs into Sabah
- **Over 69 tonnes of pangolins were confiscated in weight alone, plus 5,737 individuals.** Pangolins were seized in 36 incidents in total: 13 in Malaysia and 23 in the Philippines
- **Giant clams were confiscated in the largest volumes by weight (99.9%),** with over 120,716 tonnes seized in 23 seizures
- **Seahorses were the Family with the highest number of individuals seized** (at least 12,041 individuals), and bonnet snail shells were one of the most seized items by count

- Parrot species native to eastern Indonesia were seized in North Sulawesi and the Philippines, and **live parrot seizures were frequently made** between these locations
- **Live starlings were seized in significant numbers.** The main species recorded were Common Hill Myna (*Gracula religiosa*): 670 individuals, Javan Myna (*Acridotheres javanicus*): 766 individuals, and Palawan Hill Myna (*G. religiosa palawanensis*): 307 individuals
- **Sharks and rays were seized in 12 incidents, all in the Philippines except for one seizure in Malaysia.** Seized items were predominantly dead individuals and meat

Seizures were distributed across the region, however, there was a higher concentration of seizures in major cities, including Kota Kinabalu and Sandakan in Malaysia (23 and 20 incidents, respectively); Cebu City and Puerto Princesa in the Philippines (19 and 18 incidents, respectively); and Balikpapan and Samarinda in Indonesia (17 and 15 incidents, respectively). At least nine countries and territories were implicated as trade destinations, and the most frequent destination was the Philippines.

At least 119 (36%) incidents resulted in arrests of at least 392 people, and a minimum of 26 incidents (6%) resulted in convictions. Of the 392 people arrested, 253 were identified as nationals from six countries within and outside the region, which points to transnational trafficking networks. Although seizure records are an indirect measure of trafficking levels, the covert nature of any illicit activity and the many variables that influence crime and detection effort mean that the true numbers are likely to be far greater than those reflected by these seizure records.



**large numbers**  
of marine turtle  
eggs are trafficked

## INTER-AGENCY AND TRANSBOUNDARY COOPERATION

Records indicate that 45 different law enforcement agencies across the three countries worked on these seizures. Environment and Forestry law enforcement agencies in each country were the most active law enforcement agencies<sup>1</sup> recorded, with a direct involvement in almost a quarter of incidents (104) across the Sulu-Celebes region. However, low conviction rates undermine these enforcement actions. The seizure record showed that just over a quarter of incidents resulted in reported successful arrests, and only 6% of incidents

resulted in convictions. In addition, cross-agency coordination at the national level can be further improved, with only a quarter (27%) of incidents involving more than one law enforcement agency. International cooperation of law enforcement agencies across the three countries was also identified as one of the key gaps that need to be closed to make enforcement more effective. Standard Operating Procedures for "hot pursuit" of criminals across international territories are unclear, which is challenging for authorities and provides opportunity for criminals.



**a quarter**  
of incidents  
resulted in arrests

## ONLINE TRADE

In an online trade survey, 601 online posts offering marine turtles, sharks and rays, and pangolins for sale were recorded from six platforms across the three countries between September to December 2021. This includes illegal trade (marine turtles, pangolins and some protected sharks and rays) and legal trade in sharks and rays. At least 28 taxa of sharks and rays were identified from 562 posts, including four CITES Appendix II-listed

species. Marine turtles were only recorded in Indonesia, and most were shell carvings, predominantly bracelets and rings. Pangolins were recorded in Indonesia and Malaysia, and mostly comprised scales and other parts. Live pangolins largely appeared to be posted opportunistically by sellers offering small quantities of pangolins that they had reportedly encountered in the wild.

**601**

**online posts**  
were recorded  
offering focal  
wildlife for sale

## MARITIME TRAFFICKING AND ILLEGAL, UNREGULATED AND UNREPORTED FISHING

Maritime transport is crucial in moving wildlife commodities across the Sulu-Celebes Seas. These range from small-scale local trade to large foreign vessels trafficking on vast scales. The littoral communities of the Sulu-Celebes Seas have historically strong relationships, where unchecked and unregulated trade of a variety of goods may facilitate illegal wildlife trade. Seizures show examples of pursuit and apprehension at sea, demonstrating the necessity for effective national and transboundary marine patrols to combat wildlife crime in the region.

Illegal, Unregulated and Unreported (IUU) fishing activity is an issue in the region and constitutes activities such as fishing without

a legitimate licence or vessel registration papers, vessels with more than one flag, use of destructive fishing gear, unreported transactions at sea, landing products in unauthorised landing sites, and non-reporting, misreporting, or under-reporting of catch. All three countries in the Sulu-Celebes region have taken steps to reduce the prevalence of IUU fishing, including banning foreign vessels, strengthening enforcement action, introducing vessel monitoring systems, and adopting electronic catch documentation and traceability (eCDT) systems. However, the scale of the trade in IUU-caught fish remains largely unknown. Recommendations from this report include:



**All three countries**  
in the Sulu-Celebes  
region worked to  
reduce maritime  
trafficking

<sup>1</sup> See Annex 1 for the list of law enforcement agencies that were categorised as 'Environment and Forestry Law Enforcement Agencies' for each country.

## IMPROVE INTER-AGENCY AND INTER-COUNTRY COORDINATION

The international nature of these crimes supports the need for more strategic cooperation and collaboration between the three countries (and among agencies within those countries) to tackle the high level of wildlife trafficking, specifically:

- Identify areas to improve communication streams between national and local law enforcement agencies, and between agencies of different countries
- Develop cross-agency and cross-border task forces to combat wildlife trafficking
- Set up communication pathways and explore the development of jointly used regional seizure databases, for information and intelligence sharing. This could include making links with the region's already established maritime security network that has its own Information Fusion Centre in Singapore producing open-source intelligence reports on seizures of all illicit commodities in this region
- Develop transboundary Standard Operating Procedures (SOPs) in handling cross-border incidents, including hot pursuit of suspects across the boundaries of national waters, and covering the whole chain from investigation to interception to prosecution
- Anchor the organisation and facilitation of capacity building for national task forces in regional-level institutions, such as ASEANAPOL, with support from the Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security Regional Secretariat

## IMPROVE CAPACITY TO COUNTER WILDLIFE TRAFFICKING

- Build capacity of frontline officers in the care for seized live wild animals and evidential handling practices
- Work with the private sector (e.g. tech platforms) to increase detection and removal of illegal wildlife trade online, with the assistance of machine-led detection
- Build capacity for arresting officers, prosecuting officers, and judges on the range of laws that could be used to charge offenders with, to increase successful convictions
- Conduct interagency and cross-border training sessions on best practice methods to identify and dismantle illicit wildlife trade supply chains. These training events can also provide opportunities for officers from each agency or country to interact and break down communication barriers, while learning how to operate together in pursuing suspects who may be violating multiple laws
- Use available tools to help tackle wildlife trafficking, with a focus on species identification, financial mechanisms, and technologies on traceability of confiscated wildlife products.
- Use artificial intelligence to distinguish between real and fake parts and products (e.g. by using innovative technologies, or open source intelligence reverse imaging)
- Use link analysis and other effective methods to “follow the money” to determine financial sources of wildlife trafficking, uncover and seize assets procured through the proceeds of wildlife trafficking, and identify and destabilise criminal networks

## FOCUS ENFORCEMENT EFFORTS ON TRAFFICKING HOTSPOTS

- Conduct regular patrolling at both terrestrial and marine poaching and trafficking hotspots, especially around protected areas, and increase maritime (at-sea) monitoring
- Landing sites and ports function as bottlenecks. Increase vigilance and checks at known formal and informal landing sites, especially at major cities, which could intercept attempts to bring contraband ashore. These can include introducing more modern equipment at ports, such as state of the art scanners, K9 units, and building the capacity of staff at key border entry and exit locations (e.g. on wildlife identification and threatened species status, wildlife handling and holding)
- To complement marine patrols, utilise intelligence-led operations combined with vessel-tracking technology to intercept suspicious vessels at sea
- Empower and build capacity for coastal communities to patrol poaching hotspots especially remote areas where law enforcement capacities and assets are limited
- Conduct regular crackdowns at known marketplaces in main commercial hubs, cities, and online platforms to eliminate the open illegal sale of wildlife
- Ensure rigorous vetting processes for personnel deployed in protected areas and IWT hotspots

## REDUCE THE TRAFFICKING OF MARINE TURTLES

- Increase marine patrols and vigilance between Tawi-Tawi Province in the Philippines and Sandakan, Sabah Malaysia, focused particularly on marine turtle egg trafficking. Use the Joint Management Committee meeting held by both countries as a platform to discuss and advance these actions
- Improve the enforcement of legislation and regulations that apply to marine turtles at smuggling entry/exit points and marketplaces, and on beaches, foraging grounds and other developmental habitats where turtles are being poached
- Build awareness at the community and government levels on the ecological and tourism roles of marine turtles and respective applicable legal frameworks
- Encourage law enforcement agencies to participate in ShellBank and use genetic traceability to track the illegal trade of marine turtles (including products, such as tortoiseshell) and to help identify which populations are being targeted for poaching
- Support the declaration of the Turtle Islands Heritage Protected Area as the first transboundary ASEAN Heritage Park (AHP), based on the declaration of TIWS, Philippines, and Turtle Islands Park, Malaysia, as AHPs at the national level, and support the process of declaring TIWS a UNESCO World Heritage Site, advancing it from the tentative list it was added to in March 2015
- NGOs and local governments are encouraged to work with local communities in the islands of Tawi-Tawi Province of the Philippines and island communities of Sabah to develop holistic conservation strategies to reduce poaching and trafficking, such as alternative economic livelihoods and environmental stewardship. This is particularly relevant to marine turtle and marine turtle egg poaching
- Develop demand-reduction campaigns to reduce consumption of marine turtle eggs in Sabah

## REDUCE THE TRAFFICKING OF PANGOLINS

- Increase vigilance of law enforcement at international crossings and borders, regarding methods used to smuggle pangolins and pangolin products (use existing red-flag indicators or develop these for the countries involved)
- Increase attention of law enforcement agencies and tech companies to tackle the illegal online trade of wildlife, particularly in Indonesia and Malaysia, where online trade of pangolins and their products persist
- Conduct population studies in the Sulu-Celebes region to identify priority locations for in-situ protection to reduce poaching and protect wild populations

## REDUCE THE TRAFFICKING OF SHARKS AND RAYS AND IMPROVE THE REGULATION OF LEGAL SHARK AND RAY TRADE

- Improve national regulations, especially for protected species, on catch, recording and reporting for domestic and international trade
- Encourage the use of traceability systems such as SharkTrace and the eCDT to detect the presence of IUU fishing products and reduce their accessibility to supply chains
- Conduct further research on the trade of ray tails in the Philippines to understand the scale of it, how it is regulated, how it impacts ray populations and if there are any regional linkages
- Conduct further research into the shark trade in this region, specifically: stock-pilers of shark fins in northern Sulawesi, Indonesia, and locations of processing and onwards trade of sharks caught in the Sulu-Celebes Seas
- Identify which species are used in processed shark products, such as oil, via DNA barcoding, to detect the utilisation of protected species



*Philippine Pangolin in the wild*

# INTRODUCTION

**The Sulu Sea and Celebes Sea (hereafter referred to as Sulu-Celebes Seas), also recognised as the special management area Sulu-Sulawesi Marine Ecoregion (SSME) (ADB, 2011; WWF, 2004), is a complex region, bordering three countries: Indonesia, Malaysia, and the Philippines (Figure 1). These countries are three of the 17 global megadiverse countries for both terrestrial and marine biodiversity (Rintelen, *et al.*, 2017). This large marine ecosystem covers around one million km<sup>2</sup>, but currently only 1.03% of it is protected. The Sulu-Celebes Seas boast more than 2,500 species of marine fishes, five species of marine turtles, and at least 22 species of marine mammals (DeVantier, *et al.*, 2004), as well as over 75% of the world's coral species (Amling, *et al.*, 2019) and 6.1% of the world's coral reefs (Heileman, 2021). The region also has several World Heritage Protected Areas, including Tubbataha Reefs Marine Park and the Turtle Islands Wildlife Sanctuary (tentative since 2015) in the Philippines, Kinabalu Park in Malaysia, and Bunaken National Park in Indonesia (tentative since 2005).**

The Sulu-Celebes Seas support a wide range of fisheries, including local artisanal fishing on reefs, high-value fisheries for national and international export, as well as live catch for the aquarium trade. Aquaculture is also an important industry in these seas, including prawns, oysters, mussels, fish, and seaweeds (Heileman, 2021). These industries together support a population of around 40 million people living in the surrounding communities (Conservation International, 2021). There are important global commercial shipping trade routes across these seas, with around 100,000 ships carrying some 55 million tonnes of cargo travelling through the area each year (Alverdian, 2020), particularly the routes between Australia and East Asia (Amling, *et al.*, 2019). Local trade is also important, particularly for the littoral communities, because many of them share similar cultures. This local trade often involves goods that are illegal, unreported,

and untaxed (Amirullah, *et al.*, 2017). These transactions create strong social connections between the communities from different nationalities bordering the Sulu-Celebes Seas, but this largely unquestioned trade undermines law enforcement agencies' authority for acting on other illegal activities in the same communities. These factors create opportunities for international wildlife trafficking across the Sulu-Celebes Seas.

This area has been highlighted as a hotspot for international crimes, with incidents of piracy and robbery to terrorism occurring (Storey, 2018). Between 2014-2016 there was a build-up of international crimes in the region, including terrorism, hostage takings, and killings. The Sulu Archipelago reportedly has high levels of violence and the greatest network of transnational criminal networks in the Philippines, which threaten all littoral communities of the Sulu-Celebes Seas (Amling, *et al.*, 2019).

These communities often suffer from economic and political exclusion, which drives maritime crime (Alverdian, *et al.*, 2020).

The rich biodiversity, combined with the geography of the region, creates the perfect storm for illegal wildlife trade (IWT). Indonesia, Malaysia and the Philippines have been highlighted for their roles in IWT, as source, transit and consumer countries (Krishnasamy and Zavagli, 2020). As a result, the Targeting Regional Investigations for Policing Opportunities & Development (TRIPOD) project was launched by Freeland, International Fund for Animal Welfare (IFAW) and the World Wide Fund for Nature (WWF) to address wildlife trafficking and strengthen transboundary law enforcement in the Sulu-Celebes region.

This report describes the context of current marine and terrestrial wildlife trafficking and related transboundary crime issues covering states and provinces surrounding the Sulu-Celebes Seas (Figure 1).

**40**  
**million**  
people living in  
the surrounding  
communities

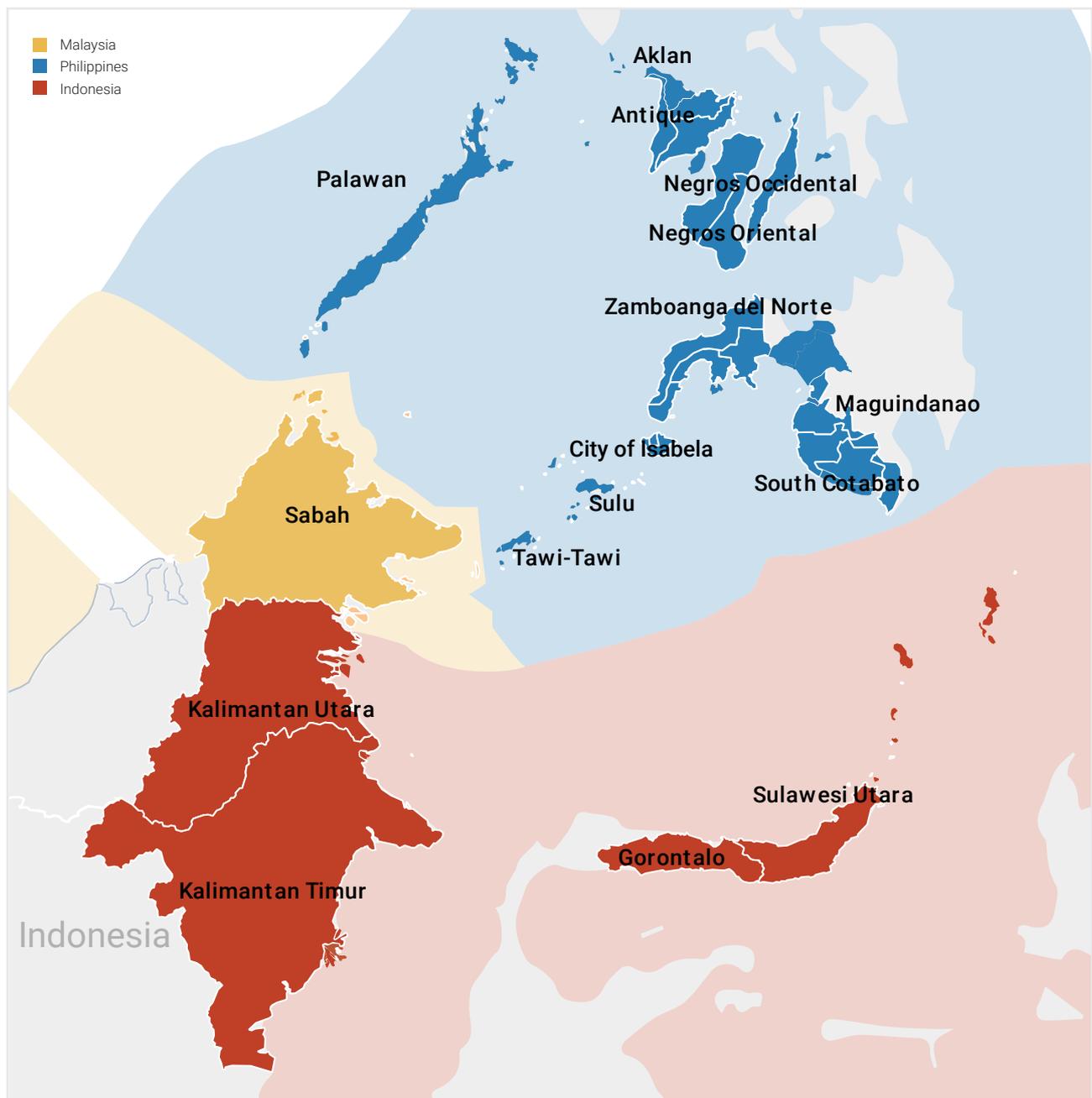
This report serves to provide a baseline of information on wildlife trafficking throughout the region, to inform development of counter-wildlife trafficking (CWT) tools and future project activities, and to serve as a resource for the governments of Indonesia, Malaysia and the Philippines as they to continue to address domestic and transboundary IWT.

The data presented in this report provides insight into the species, quantities and trade routes of wildlife traded across this region. Further information into the trafficking of three focal taxa; marine turtles, sharks and rays, and pangolins is presented. An overview of maritime activity, IUU fishing, and relevant legislation is included.

**marine turtles,**  
sharks and rays,  
and pangolins are  
heavily trafficked

**FIGURE 1**

A map of the Sulu-Celebes region, showing the geographical scope covered under this report. This includes the states or provinces surrounding the Sulu-Celebes Seas from Indonesia, Malaysia and the Philippines and the corresponding economic exclusion zones (EEZ).



Source: Flanders Marine Institute. Data is updated to 2019-11-18. There are no "high seas" or international waters in the Sulu-Celebes Seas because the distance between the countries land is always less than 11 nautical miles.

# LEGISLATION OVERVIEW

Legislation and enforcement are key to protecting wildlife, and authorities successfully upholding the law and convicting criminals serves as a deterrent to other criminals. Legislation regarding wildlife, protected species, fisheries and related penalties vary across the countries in this region. This section provides a brief overview of the laws in the Sulu-Celebes region regarding wildlife trade, it is not intended to be a full legislative review, but to highlight some of the important laws related to the topic. Other laws that can also be used to prosecute wildlife crime are included in the *Convictions and Penalties and Financial Mechanisms and Tools* sections of this report.

## INDONESIA

### The main laws regarding the conservation of terrestrial and marine wildlife include:

- *Law No. 5/1990 Concerning the Conservation of Living Resources and their Ecosystems*
- *Law No. 60/2007 on the Conservation of Fishery Resources*
- *Law No. 7/1999 on Preserving Flora and Fauna Species*
- *Law No. 8/1999 on Wild Flora and Fauna Exploitation*
- *Law 31/2004, amended 2009 on Fishery*
- *Law No. 32/2014 Law on the Sea*

Any catch, trade, import, export, possession, and transfer of protected species is prohibited under *Law No. 5* (Table 1). Convicted offenders may receive a maximum penalty

for committing these crimes of five years imprisonment and a fine of up to IDR 100,000,000 (USD 6,973).

Under *Law No. 8/1999*, annual harvest quotas cover species which can be collected with permits, the allocated number of individuals, and the location from which wildlife can be harvested (KSDAE, 2021). Table 2 presents 2021 harvest quotas for BKSDA and KKP (Dermawan, et al., 2013). <sup>2</sup>Additional 2021 KKP harvest quotas are provided *here*.

*Law 31/2004* refers to all organisms living, for all or part of their life cycle, in the water, such as sharks, rays, and marine turtles. The goal of this law is to promote the sustainability of fisheries, and to stop Illegal Unreported and Unregulated (IUU) fishing (Ezekiel, 2018).

TABLE 1

Indonesian protected species focal in this report. CITES Appendix I species in **bold**.

TAXA	COMMON NAME	SCIENTIFIC NAME	LAW
Marine turtles	<b>Loggerhead Sea Turtle</b> <b>Green Sea Turtle</b> <b>Hawksbill Sea Turtle</b> <b>Olive Ridley Sea Turtle</b> <b>Flatback Sea Turtle</b>	<i>Caretta caretta</i> <i>Chelonia mydas</i> <i>Eretmochelys imbricata</i> <i>Lepidochelys olivacea</i> <i>Natator depressus</i>	<i>Law No. 5 1990</i>
Sharks and rays	Giant Oceanic Manta Ray Reef Manta Ray	<i>Mobula birostris</i> <i>Mobula alfredi</i>	<i>4/KEPMEN-KP/2014 (Establishment Of The Full Protection Status Of Manta Ray)</i>
	Whale Sharks <b>Largetooth Sawfish</b> <b>Knifetooth Sawfish</b> <b>Dwarf Sawfish</b> <b>Longcomb Sawfish</b>	<i>Rhincodon typus</i> <i>Pristis pristis</i> <i>Anoxypristis cuspidate</i> <i>Pristis clavata</i> <i>Pristis zijsron</i>	<i>18/KEPMEN-KP/2013 (Establishment Of The Full Protection Status Of Whale Shark)</i>  <i>Law No. 5 1990</i> <i>01/KEPMEN-KP/2021 (Protected Fishes Species)</i>
Pangolins	<b>Sunda Pangolin</b>	<i>Manis javanica</i>	<i>Law No. 5 1990</i>

<sup>2</sup> In 2021, the BKSDA and KKP/MMAF released harvest quotas together. As of 2022, only the KKP/MMAF will release the marine species quotas, and BKSDA will release the quotas for terrestrial species.

TABLE 2

Sharks and rays on the KSDAE (2021) Indonesian harvest quota released by the BKSDA and the KKP, all of which were designated for export.

COMMON NAME	SCIENTIFIC NAME	2021 INDONESIAN HARVEST QUOTA (BKSDA)	2021 INDONESIAN HARVEST QUOTA (KKP)
Silky Sharks	<i>Carcharhinus falciformis</i>	29,756	52,316
Broadnose Wedgefish	<i>Rhynchobatus springeri</i>	15,129	17,887
White-spotted Wedgefish	<i>Rhynchobatus australiae</i>	13,643	22,147
Smoothnose Wedgefish	<i>Rhynchobatus laevis</i>	4,357	5,644
Bowmouth Guitarfish	<i>Rhina ancylostoma</i>	3,789	6,269
Scalloped Hammerhead Sharks	<i>Sphyrna lewini</i>	1,194	6,006
Shortfin Mako Shark	<i>Isurus oxyrinchus</i>	700	547
Great Hammerhead Sharks	<i>Sphyrna mokarran</i>	269	1,353
Longfin Mako Shark	<i>Isurus paucus</i>	176	138
Smooth Hammerhead Sharks	<i>Sphyrna zygaena</i>	31	152

## MALAYSIA

**There are separate wildlife laws for the different jurisdictions in Malaysia. The relevant legislation applicable to the Sulu-Celebes region is for the state of Sabah, including:**

- *Sabah No. 6 of 1997 Wildlife Conservation Enactment* (amended 10/2017)
- *Sabah No. 6, 1984 Parks Enactment* (amended 2007)
- *Sabah No. 2 1968 Forest Enactment*
- *Fisheries Act 1985* (applies across all Malaysian states)
- *Sabah Inland Fisheries and Aquaculture Enactment 2003*
- *International Trade In Endangered Species Act 2008* (applies across all Malaysian states)

In Sabah, maximum penalties under the *Wildlife Conservation Enactment 1997 (Sabah No. 6 of 1997, amended 10/2017)* are up to MYR 250,000 (USD 59,469) and a maximum of five years imprisonment. This law includes a list of totally protected species (Table 3), a second list of protected species with limited hunting and collection under a license, and a third list of protected species for which a hunting license is required. The *Sabah Inland Fisheries and*

*Aquaculture Enactment 2003* serves to prevent IUU fishing around Sabah, where maximum penalties are up to MYR 100,000 (USD 23,744) and up to two years imprisonment.

Maximum penalties under the *International Trade In Endangered Species Act 2008* are a fine of MYR 200,000 (USD 45,118) and/or five years imprisonment. Penalties under the *Sabah Parks Enactment 1984 (amended 2007)* are a year imprisonment for first offence, and/or MYR 20,000 (USD 4,511) fine. The fine and length of imprisonment are doubled for a second offence.

All sale of marine turtles and their products, including eggs, is illegal under the 1997 *Enactment*. However, there is a clause in the 1997 *Enactment* allowing those who have traditionally collected marine turtle eggs from a designated area to do so without a permit, so long as the eggs are not be traded commercially, however such mechanism is not practised anymore. *Fisheries Control of Endangered Species of Fish (Amendment) Regulations 2019* protects a range of marine species including specified sharks and rays (Department of Fisheries, 2014).

TABLE 3

Focal protected species under Sabah law, CITES Appendix I species in **bold**.

TAXA	COMMON NAME	SCIENTIFIC NAME	LAW
Marine turtles	<b>Green Turtle</b> <b>Olive Ridley Turtle</b> <b>Hawksbill Turtle</b>	<i>Chelonia mydas</i> <i>Lepidochelys olivacea</i> <i>Eretmochelys imbricata</i>	<i>Wildlife Conservation Enactment 1997</i> (amended 10/2017)
Marine turtles	All marine turtles including eggs		<i>Malaysian Fisheries Act 1985</i>
Sharks and rays	Oceanic whitetip shark Smooth Hammerhead Great Hammerhead Shark Winghead Shark Giant Oceanic Manta Ray Reef Manta Ray <b>Sawfish</b>	<i>Carcharhinus longimanus</i> <i>Sphyrna zygaena</i> <i>Sphyrna mokarran</i> <i>Eusphyra blochii</i> <i>Manta birostris</i> <i>Manta alfredi</i> <i>Pristidae spp.</i>	<i>Fisheries Control of Endangered Species of Fish (Amendment) Regulations 2019</i>
Pangolin	<b>Sunda Pangolin</b>	<i>Manis javanica</i>	<i>Wildlife Conservation Enactment 1997</i> (amended 10/2017)

## PHILIPPINES

**All terrestrial wildlife, marine turtles, and dugongs are protected in the Philippines under Republic Act No. 9147, or Wildlife Resources Conservation and Protection Act (currently under revision), including non-native wildlife species if they enter the Philippines.**

Other relevant laws in the Philippines include:

- *Republic Act No. 8550 (Fisheries Code of 1998)* as amended by *Republic Act No. 10654 of 2015* – to prevent, deter, and eliminate IUU fishing and aid the conservation of marine wildlife
- *Fisheries Administrative Order No. 193 (Series of 1998)* -- which bans the taking or catching, selling, purchasing and possessing, transporting and exporting, of whale sharks and manta rays

In the Philippines, the maximum penalties under *Republic Act No. 9147* are up to 12 years imprisonment and/or a fine of PHP 1,000,000 (USD<sup>3</sup> 19,092). Maximum penalties under *Republic Act No. 10654* include imprisonment of three years and a fine of up to USD 2,400,000 for foreign vessels fishing illegally in Philippine waters (Section 91). The maximum prison sentence for the catching of rare, threatened or endangered species (Table 4), or CITES Appendix I species, is 20 years and the maximum fine is equivalent to twice the administrative fine, forfeiture of the species and the cancellation of fishing permit (Section 102)

3 Conversion rate of PHP 1: USD 0.019092 used throughout this report.

TABLE 4

Focal native species protected in the Philippines, with CITES Appendix I species in **bold**.

TAXA	COMMON NAME	SCIENTIFIC NAME	LAW
Marine turtles	<b>Loggerhead Sea Turtle</b> <b>Green Sea Turtle</b> <b>Hawksbill Sea Turtle</b> <b>Olive Ridley Sea Turtle</b> <b>Leatherback Turtle</b>	<i>Caretta caretta</i> <i>Chelonia mydas</i> <i>Eretmochelys imbricata</i> <i>Lepidochelys olivacea</i> <i>Dermochelys coriacea</i>	Republic Act No. 9147 and DAO 2019-09
Sharks and rays	Whale Shark Giant Oceanic Manta Ray Reef Manta Ray Great White Shark Silky Shark Oceanic Whitetip Common Thresher Shark Bigeye Thresher Pelagic Thresher Scalloped Hammerhead Sharks Great Hammerhead Sharks Smooth Hammerhead Sharks Shortfin Mako Shark Longfin Mako Shark Bentfin Devil Ray Giant Devil Ray Chilean Devil Ray Shortfin Devil Ray <b>Longcomb Sawfish</b> <b>Large-tooth Sawfish</b> <b>Knifetooth Sawfish</b> White-spotted Guitarfish Broadnose Wedgefish Bowmouth Guitarfish Common Shovelnose Ray	<i>Rhincodon typus</i> <i>Manta birostris</i> <i>Manta alfredi</i> <i>Carcharodon carcharias</i> <i>Carcharhinus falciformis</i> <i>Carcharhinus longimanus</i> <i>Alopias vulpinus</i> <i>Alopias superciliosus</i> <i>Alopias pelagicus</i> <i>Sphyrna lewini</i> <i>Sphyrna mokarran</i> <i>Sphyrna zygaena</i> <i>Isurus oxyrinchus</i> <i>Isurus paucus</i> <i>Mobula thurstoni</i> <i>Mobula mobular</i> <i>Mobula tarapacana</i> <i>Mobula kuhlii</i> <i>Pristis zijsron</i> <i>Pristis pristis</i> <i>Anoxypristis cuspidate</i> <i>Rhynchobatus australiae</i> <i>Rhynchobatus springeri</i> <i>Rhina ancylostoma</i> <i>Glaucostegus typus</i>	DA-FAO 193 S. 1998 and Republic Act No. 9147
Pangolin	<b>Philippine Pangolin</b>	<i>Manis culionensis</i>	Republic Act No. 9147 and DAO 2019-09



Side view of a big Pelagic Thresher Shark (*Alopias pelagicus*) in Malapascua, Philippines

# METHODOLOGY

## SEIZURE ANALYSIS

Records of illegal wildlife poaching, trafficking and trade are continually collected from open-source media reports by TRAFFIC and entered into TRAFFIC's Wildlife Trade Information System (WiTIS). Seizure information regarding incidents in the Sulu-Celebes region were collated from WiTIS, and additional information was provided by WWF teams in Indonesia, Malaysia, and the Philippines and by IFAW. The first seizure in this analysis was recorded in June 2003, therefore analysis was conducted for the period June 2003 to September 2021. Relevant government agencies in the three target countries provided additional data

after the data analysis was complete, so are presented separately in Box 1 to illustrate the gap between government-held records and seizure data from open sources.

The geographic parameters were the Sulu-Celebes region, including all waters within and transit connection to and through the Sulu-Celebes Seas, and the land surrounding the Sulu-Celebes Seas, inclusive of: North and East Kalimantan, North Sulawesi, Gorontalo Province, Indonesia; Sabah, Malaysia; and western Mindanao (and its island group, the Sulu Archipelago), and western Visayas, Philippines (Figure 1).



### wildlife seizures

from June 2003 to Sept 2021 were analyzed



Dried seahorses for traditional Chinese medicine. Philippines

All marine and terrestrial wildlife taxa were included, and additional analysis is provided for marine turtles, sharks and rays, and pangolins. Plants were included in data collection, however due to low numbers, were not analysed in detail or discussed. Wildlife taxa are defined to the most accurate level possible. However, in many cases there is insufficient detail available. Most of the analyses disaggregate taxa at the Family level, but where this is not feasible, a higher taxonomic level (e.g. Order) is used. Reports of apprehension at sea are usually filed on landing, therefore it is not possible to differentiate between the number of seizures which occurred at sea and the ones that occurred at sea ports from the data at hand.

Factors affecting records of seizures are manifold, including but not limited to changes in law enforcement focus, law enforcement effort, number of trafficking cases, public reporting of such events, and available records of these events over a specific period of time. Although seizure records are an indirect measure of trafficking levels, the covert nature of any illicit activity and the many variables that influence crime and detection effort means that the true extent is likely to be far greater than those reflected by these seizure records alone. The results of this dataset may potentially cause bias in analysis and should therefore not be considered as absolute trafficking trends.



### seizure records

are an indirect measure of trafficking levels



Dolphin skeleton and whale shark fins hang on rack. Pamilacan Island, Philippines

## ONLINE SURVEY

An online trade survey was carried out, focusing on marine turtles, sharks and rays, and pangolins for three months (20 September 2021 to 17 December 2021). To maximise the data collected, the survey includes retrospective data; advertisements and posts offering wildlife for sale (hereafter posts) from before this period were also recorded, with the oldest post recorded from 3 June 2020. The survey recorded posts that were in any way linked to the following locations: North and East Kalimantan, North Sulawesi, and Gorontalo Province, Indonesia; Sabah, Malaysia; and all of the Philippines<sup>4</sup>.

One researcher for each of the three countries spent one hour per day (Monday to Friday), searching for online posts selling, or implying to sell, the focus taxa. The time was split into 20 minutes searching for each taxa: marine turtles, sharks and rays, and pangolins. The total combined survey effort was 180 hours.

Google Search was used for initial pilot searches to identify where focal taxa were being advertised online, and to determine the methodology and keywords used for the search. The platforms in Table 5 were surveyed. Keywords in the respective local language and English were used (Table 6).



**online**  
wildlife trade data was collected from September - December 2021

<sup>4</sup> The decision to widen the search to cover all of the Philippines for the online survey was because in the pilot survey, there were no posts found in only the focal provinces, and in the interest of not excluding any posts related to the Sulu-Celebes region.

TABLE 5

Platforms surveyed for online wildlife monitoring.

COUNTRY/PLAT-FORMS	GOOGLE SEARCH	FACEBOOK	LAZADA	SHOPEE	BUKALAPAK	BILIBILI	TOKOPEDIA	CAROUSEL	MUDAH.MY
Indonesia	X	X	X	X	X	X	X		
Malaysia	X	X	X	X				X	X
Philippines	X	X	X	X					

TABLE 6

Keywords used for online trade survey for marine turtles, sharks and rays, and pangolins in Indonesia, Malaysia, and the Philippines in 2021.

ENGLISH TERM	INDONESIA (BAHASA INDONESIA) KEYWORDS	MALAYSIA (BAHASA MALAYSIA) KEYWORDS	PHILIPPINES (TAGALOG) KEYWORDS
Marine turtle	Penyu Cangkang penyu Telur penyu	Penyu	Bao ng pagong Itlog ng pagong Pawikan
Sharks and rays	Ikan hiu Sirip hiu Daging hiu Ikan pari Insang pari	Ikan Yu Yu Ikan pari Pari	Buntot pagi Buntot ng pagi
Pangolin	Trenggiling Sisik trenggiling	Tenggiling	Balintong Balinton

Taxa and commodity types included in the survey covered all whole animals, parts, products, and derivatives of marine turtles, marine sharks and rays (manta rays, stingrays, guitarfish), and pangolins. Duplicate posts (e.g. by the same seller of the same items) were removed before analysis.

Species were identified based on the photos posted by the seller, not from descriptions posted in the text. Species identification guides were used, particularly for sharks and rays, including White, *et al.* (2006), and Last *et al.* (2010). Live and dead individuals were mostly identified to genus or species level, however parts and products of wildlife were largely not able to be identified, except those with specific markings.

Quantities of wildlife and parts/products are counted and reported in different units, such as by the number of individuals or parts or products (referred to in this report as count), or by metric weight. Some wildlife products, such as bottles of oil, are not consistently quantifiable; in some instances, the number of bottles, and in others, the volume of oil may

be reported. Due to these factors, estimates of total numbers of animals involved are not calculated.

**'Individuals'** were defined as whole live or dead animals. **'Parts'** include, but were not limited to; body parts, eggs, meat, gills, tails, fins, scales, shells (raw and worked), bones, teeth and oil. Wildlife offered for sale was quantified in the following ways:

- Where photos or video evidence was available, the number of items was counted
- Where that was unavailable, the minimum number of items or weight written in the post was recorded
- If no number of items or weight was provided, the minimum of one item was used
- Where the asking price of the item was given, this was recorded as price per item or unit

Monetary values were converted to USD using XE Currency Converter<sup>5</sup> and correspond to the exchange rate of 21 March 2022.

5 <https://www.xe.com/currencyconverter>



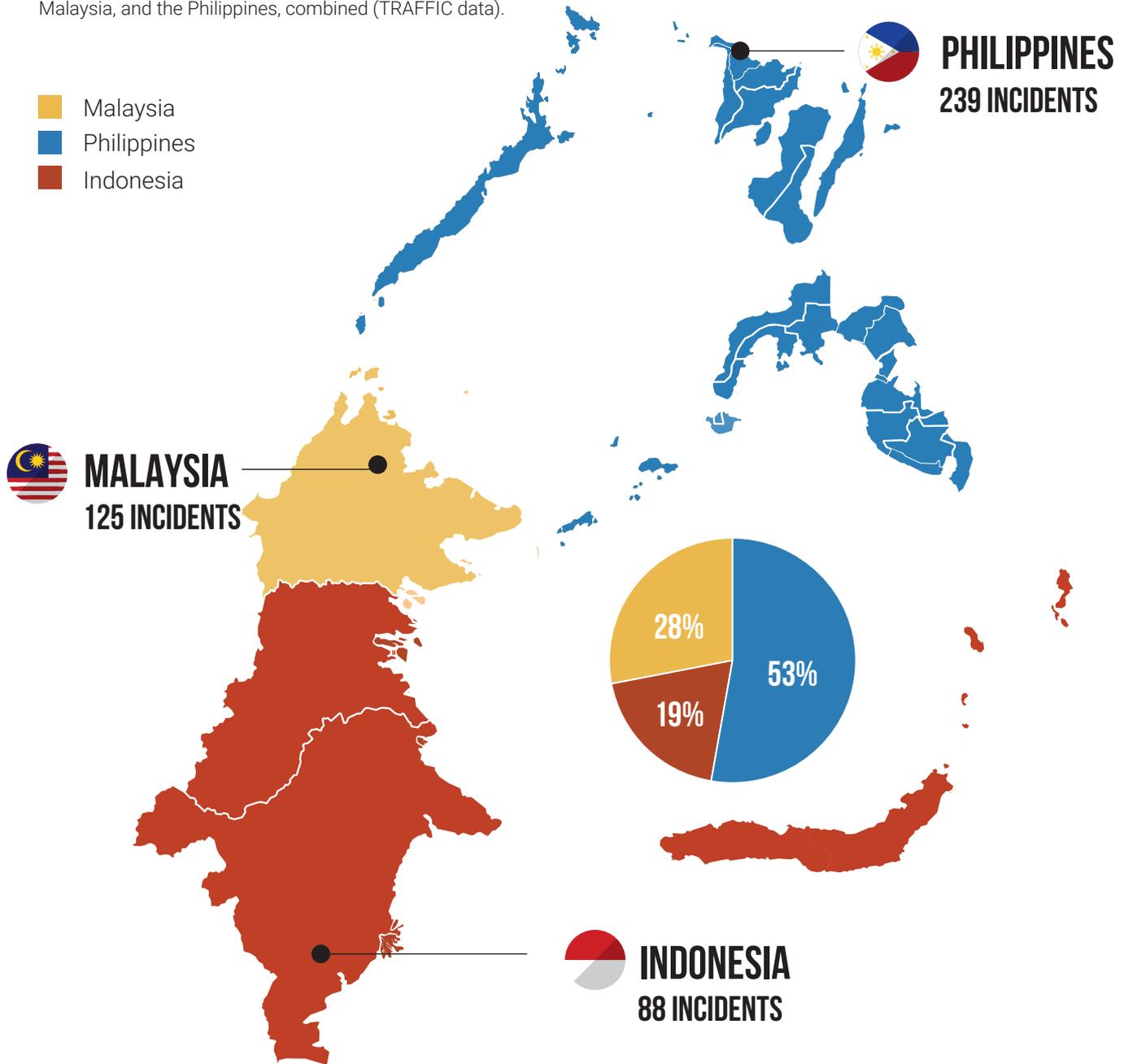
Sharks' fins and sea cucumbers displayed for drying, Philippines

# RESULTS

## SEIZURE ANALYSIS

### SEIZURE ANALYSIS FINDINGS

There were 452 illegal wildlife confiscations recorded in the Sulu Celebes region between June 2003 and September 2021. This accounted for 14% of the total number of seizure incidents that occurred across Indonesia, Malaysia, and the Philippines, combined (TRAFFIC data).

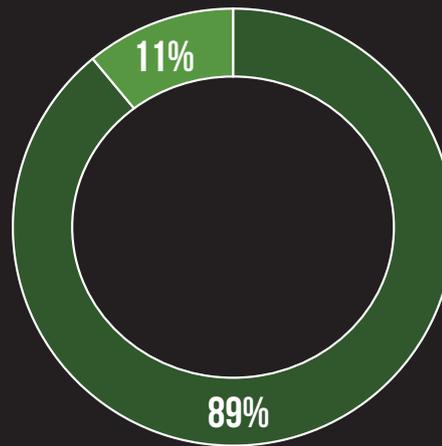


The data was recorded between June 2003 and September 2021

# TRAFFIC

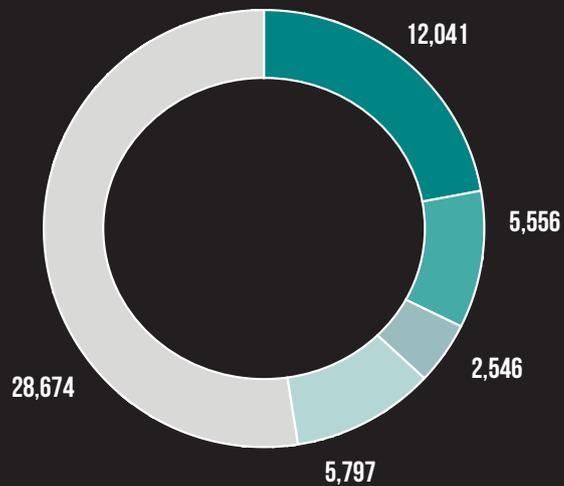
## SEIZURE INCIDENTS

- Animals
- Plants



## INDIVIDUALS SEIZED

- Seahorses
- Freshwater Turtles  
*Geoemydida*
- Marine Turtles  
*Cheloniidae*
- Pangolins
- Others



## TOP 3 WEIGHT OF WILDLIFE SEIZED\*

	SPECIES	WEIGHT
#1	<b>GIANT CLAMS</b>	<b>120,716 tonnes</b>
#2	<b>PANGOLINS</b>	<b>35 tonnes</b>
#3	<b>BAMBOO CORALS</b>	<b>16 tonnes</b>

\*Seizures where wildlife were recorded by the weight of the items seized.

## TAXA, VOLUMES, AND COMMODITY TYPE

From June 2003 to September 2021, there were 452 illegal wildlife confiscations recorded. Incidents in the Sulu-Celebes region involved 69 Orders or 118 Families including both terrestrial and marine wildlife. Animals made up 89% of seizure incidents, while the remaining 11% were of plants. Live animals were seized in 171 seizures (37.8%), with 25,894 live animals seized. Birds accounted for 96% of all live animals rescued in seaports across the Sulu-Celebes Seas focal area. 60% of the confiscated live taxa were starlings (*Sturnidae*), followed by leafbirds (*Chloropseidae* 17%) and flycatchers (*Muscicapidae* 7.8%).

A total of 54,614 individuals were recorded in 263<sup>6</sup> seizures that occurred within the Sulu-Celebes Seas region. By Family, seahorses (*Syngnathidae*) were the largest quantity of confiscated individuals (12,041), followed by turtles (*Geoemydidae*, 5,556; and *Cheloniidae*,

2,546) and pangolins (*Manidae*) (5,797) (Figures 2, 3 and 4). A total of 165,448 parts were recorded in 224 incidents. The most seized wildlife parts by count were eggs (127,352) and shells (23,916) for all species combined.

By weight, 120,816 tonnes of wildlife were recorded in 103 incidents. Almost all of these were giant clams (*Tridacnidae*), with over 120,716 tonnes confiscated in 23 seizures by weight (see *Shells and Giant Clams*).

However, these were skewed by one particular incident in South Cotabato, Philippines, of 120,000 tonnes of giant clams seized. These were followed by pangolins with 35 tonnes confiscated in 19 seizures (see *Pangolins*). The third-most seized taxa by weight were bamboo corals (*Isididae*), with nearly 16 tonnes confiscated from one seizure.

# 452

**seizures** were recorded within the Sulu-Celebes region

FIGURE 2

Top five marine taxa recorded in seizures between 2003 and 2021.

### Confiscated Marine Animals

Top 5 by # Incidents		Top 5 by # Individuals	
Marine Turtles ( <i>Cheloniidae</i> )	67	Seahorses ( <i>Syngnathidae</i> )	12,041
Giant Clams ( <i>Tridacnidae</i> )	35	Marine Turtles ( <i>Cheloniidae</i> )	2,616
Seahorses ( <i>Syngnathidae</i> )	9	Giant Clams ( <i>Tridacnidae</i> )	381
Sea Cucumber ( <i>Holothuroidea</i> )	8	Requiem sharks ( <i>Carcharhinidae</i> )	265
Sharks & Rays ( <i>Elasmobranchii</i> )	7	Wrasses ( <i>Labridae</i> )	181
Top 5 by # Volume (kg)		Top 5 by # Body Parts	
Giant Clams ( <i>Tridacnidae</i> )	120,715,589	Marine Turtles ( <i>Cheloniidae</i> )	40,869
Bamboo coral ( <i>Isididae</i> )	15,977	Bonnet snails ( <i>Cassidae</i> )	17,325
Corals ( <i>Anthozoa</i> )	11,917	Sea snails ( <i>Tegulidae</i> )	4,830
Marine Turtles ( <i>Cheloniidae</i> )	9,146	Black Corals ( <i>Antipatharia</i> )	1,812
Sea Cucumber ( <i>Holothuroidea</i> )	5,155	Leatherback sea turtles ( <i>Dermochelyidae</i> )	1,320

<sup>6</sup> Commodities may be recorded as individual animals, counted parts and products or by weight. Some seizure incidents involve more than one commodity type.

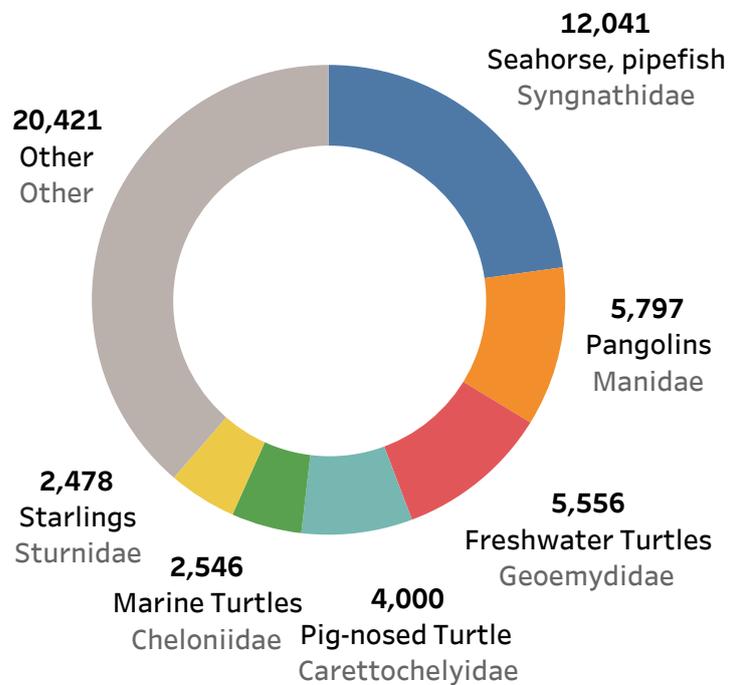
FIGURE 3

Top five terrestrial taxa recorded in seizures between 2003 and 2021.



FIGURE 4

The Families with the highest number of individuals seized between 2003 and 2021.



## FOCAL TAXA

Focal taxa of marine turtles, sharks and rays, and pangolins, were involved in over a quarter (27%) of the incidents (Table 7), and made up

16.4% of all individuals seized and 26% of parts confiscated (Figure 5).

**TABLE 7**

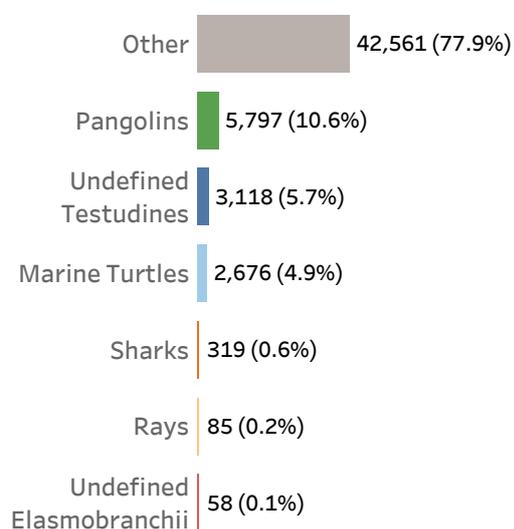
*Distribution of focal taxa by number of seizure incidents across the countries in the Sulu-Celebes region between 2003 and 2021.*

	INDONESIA	MALAYSIA	PHILLIPINES	TOTAL
Marine Turtles	12	29	30	71
Pangolins	0	13	23	36
Sharks & rays	0	1	9	10
<b>TOTAL</b>	<b>12</b>	<b>43</b>	<b>62</b>	<b>117</b>

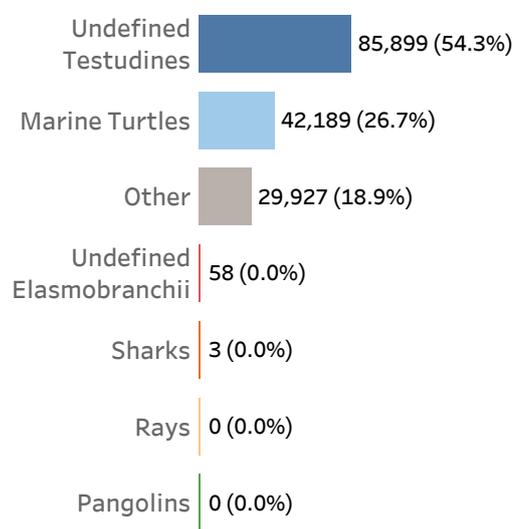
**FIGURE 5**

*Quantity of focal taxa vs other taxa seized in the Sulu-Celebes region between 2003 and 2021 showing number of individuals (left) and numbers of wildlife parts (right).*

### Focal Taxa (individuals) vs Others



### Focal Taxa (parts) vs Others



*Note: Marine turtles here includes all species.*



*Chelonia mydas* Green Sea Turtle Swimming Indo Pacific Ocean

# MARINE TURTLES

## TOTAL SEIZED\*

- 2,676 INDIVIDUALS
- 42,189 PARTS/PRODUCTS
- 5,145.7KG SEIZED

\*All species are listed as CITES - Appendix I



### MALAYSIA



25,216 EGGS



719 INDIVIDUALS  
(LIVE & DEAD)



### INDONESIA



7,177 EGGS



12 INDIVIDUALS  
(LIVE & DEAD)



## PHILIPPINES



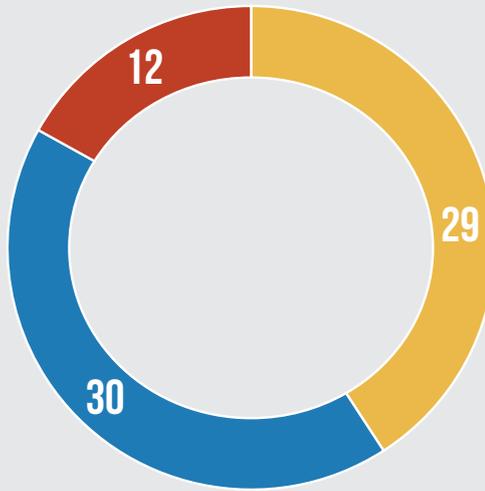
9,228 EGGS



1,945 INDIVIDUALS  
(LIVE & DEAD)

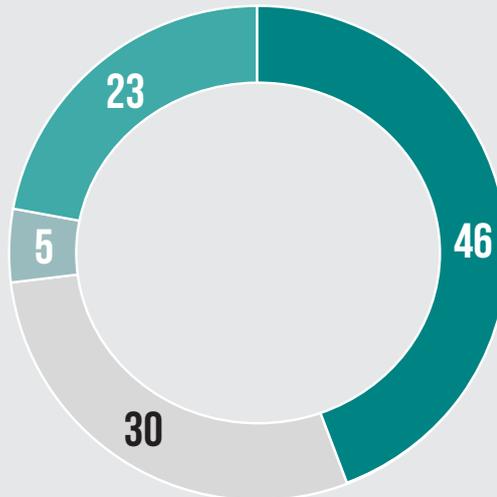
- Malaysia
- Philippines
- Indonesia

### MARINE TURTLE SEIZURES



### MARINE TURTLE SPECIES NUMBER OF SEIZURE INCIDENTS

- Green Sea Turtle  
*Chelonia mydas*
- Unknown  
*Cheloniidae spp.*
- Leatherback Sea Turtle  
*Dermochelys coriacea*
- Hawksbill Sea Turtle  
*Eretmochelys imbricata*



## MARINE TURTLES

Marine turtles were seized in 71 incidents in total. Marine turtle eggs accounted for 95% of marine turtle items seized by count. Other

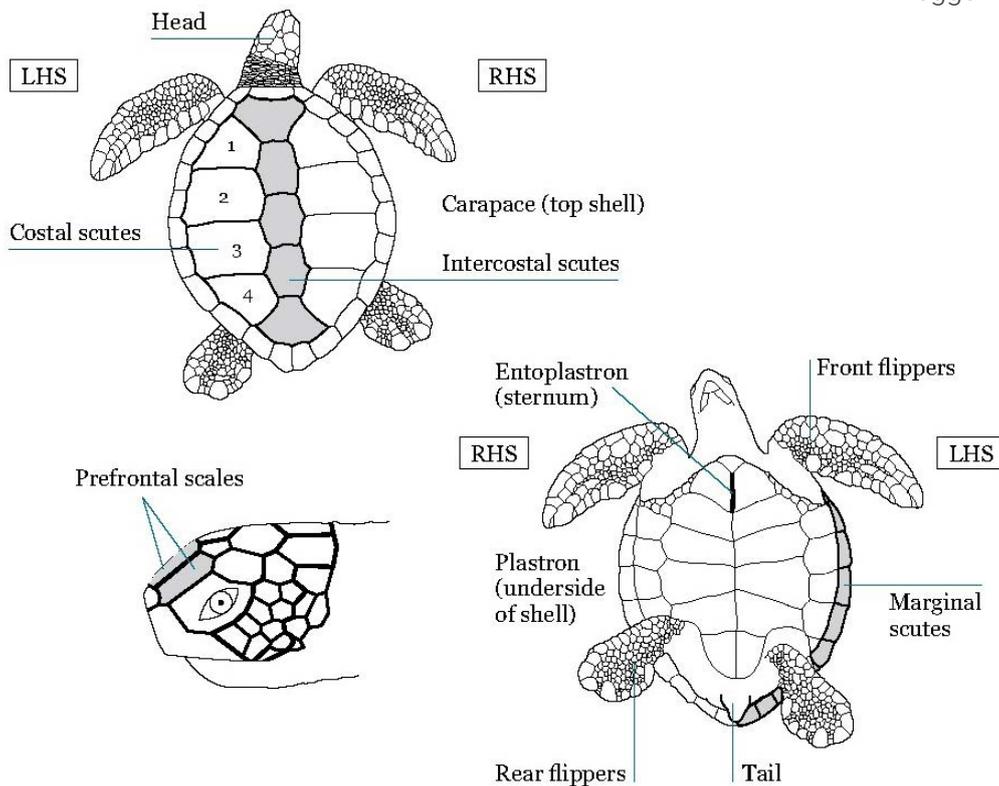
marine turtle items confiscated included individuals, shells (including scutes, carapace and plastron), and meat (Plate 1 and Table 8).

# 95%

**of marine turtle items seized were turtle eggs**

PLATE 1

A labelled diagram of a marine turtle.



Source: Marine Animal Stranding Quick Guide WWF, Sea Turtle Foundation, and Cairns Turtle Rehabilitation Center, 2014.

TABLE 8

Marine turtle parts seized in the Sulu-Celebes region between 2003 and 2021 (incidents may have included more than one commodity type).

MARINE TURTLE PART	COUNT	WEIGHT (KG)	NUMBER OF INCIDENTS
Eggs	41,621	29	20
Individuals (dead, live and unknown)	2,676	4,030	25
Shell	467	434	15
Meat		649	7
Others	101	32.7	15
<b>GRAND TOTAL</b>	<b>44,865</b>	<b>5,145.7</b>	



Manta ray on a reef, Indonesia

# SHARKS AND RAYS

## TOTAL SEIZED

- 28,964 ITEMS
- 409 INDIVIDUALS
- 2269.7KG SEIZED

## CITES APPENDIX II SEIZED \*

- 59 INDIVIDUALS
- 42,189 PARTS/PRODUCTS
- 885KG SEIZED

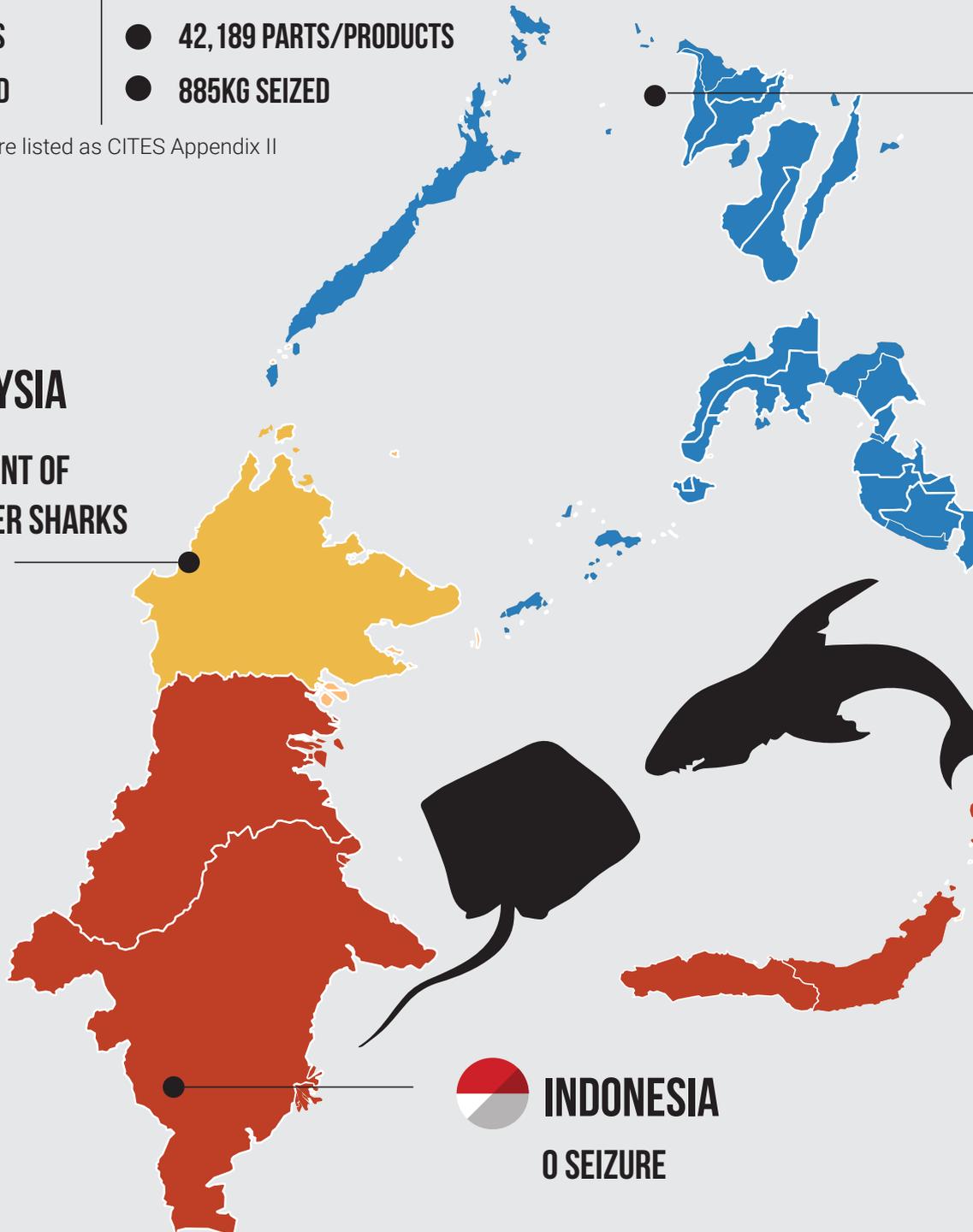
\*Six species recorded are listed as CITES Appendix II



### MALAYSIA



1 INCIDENT OF  
228 TIGER SHARKS



### INDONESIA

0 SEIZURE



## PHILIPPINES



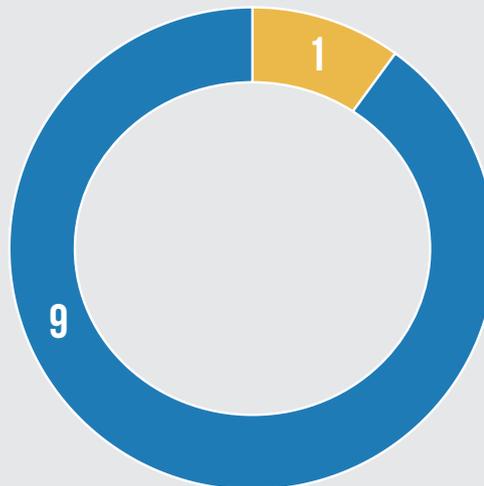
**96 ITEMS & INDIVIDUAL SHARKS**  
**1,200KG SHARKS**



**85 ITEMS & INDIVIDUAL RAYS**  
**465KG RAYS**

### SHARK AND RAY SEIZURES

- Malaysia
- Philippines
- Indonesia



### SHARK AND RAY SPECIES

NUMBER OF SEIZURE INCIDENTS

SPECIES	NUM	SPECIES	NUM
<b>Thresher Shark</b> <i>Alopias sp.</i>	<b>2</b>	Stingray <i>Myliobatiformes-Myliobatoidei</i>	<b>1</b>
<b>Pelagic Thresher</b> <i>Alopias pelagicus</i>	<b>1</b>	Kuhl's Maskray <i>Neotrygon kuhlii</i>	<b>2</b>
<b>Silky Shark</b> <i>Carcharhinus falciformis</i>	<b>1</b>	<b>Whale Shark</b> <i>Rhincodon typus</i>	<b>1</b>
Blacktip Reef Shark <i>Carcharhinus melanopterus</i>	<b>1</b>	<b>Scalloped Hammerhead</b> <i>Sphyrna lewini</i>	<b>1</b>
Tiger Shark <i>Galeocerdo cuvier</i>	<b>1</b>	Hammerhead Shark <i>Sphyrnidae</i>	<b>1</b>
<b>Manta Ray</b> <i>Mobula sp.</i>	<b>1</b>	Whitetip Reef Shark <i>Triaenodon obesus</i>	<b>1</b>

\*\*CITES-listed species in **bold**

Protected, Critically Endangered, and CITES Appendix II-listed sharks and rays were seized (Table 9 and 10). All seized sharks and rays

by count were dead individuals (404) except for two live Pelagic Thresher and three Whale Shark tails.

**TABLE 9**

The species, protection status, counted quantities, and weight of shark and rays seized in the Sulu-Celebes region between 2003 and 2021. International Union for the Conservation of Nature (IUCN) categories CR: Critically Endangered, EN: Endangered, VU: Vulnerable, NT: Near Threatened, DD: Data Deficient.

SCIENTIFIC NAME	COMMON NAME	CITES	IUCN	COUNT	WEIGHT (KG)
<i>Alopias sp.</i>	Thresher Shark	II	VU (Lowest for <i>Alopias</i> Spp.)		530
<i>Alopias pelagicus</i>	Pelagic Thresher	II	EN	2	
<i>Carcharhinus falciformis</i>	Silky Shark	II	VU		
<i>Carcharhinus melanopterus</i>	Blacktip Reef Shark		VU	16	
<i>Galeocerdo cuvier</i>	Tiger Shark		NT	229	50
<i>Mobula sp.</i>	Manta Ray	II			315
<i>Myliobatiformes-Myliobatoidei</i>	Stingray			60	150
<i>Neotrygon kuhlii</i>	Kuhl's Maskray		DD	25	
<i>Rhincodon typus</i>	Whale Shark	II	EN	3	40
<i>Sphyrna lewini</i>	Scalloped Hammerhead	II	CR	54	
<i>Sphyrnidae</i>	Hammerhead Shark				600
<i>Triaenodon obesus</i>	Whitetip Reef Shark		VU	20	
<b>GRAND TOTAL</b>				<b>409</b>	<b>1,685</b>

**TABLE 10**

The commodity types of sharks and rays seized in the Sulu-Celebes region between 2003 and 2021 recorded by weight (kg).

SPECIES SEIZED / WEIGHT RECORDED (KG)	COMMON NAME	INDIVIDUAL DEAD	INDIVIDUAL UNKNOWN	MEAT	TAIL	TOTAL
<i>Alopias sp.</i>	Thresher Shark			530		530
<i>Galeocerdo cuvier</i>	Tiger Shark	50				50
<i>Mobula sp.</i>	Manta Ray/Mobula Ray			315		315
<i>Myliobatiformes-Myliobatoidei</i>	Stingray	150				150
<i>Rhincodon typus</i>	Whale Shark				40	40
<i>Sphyrnidae</i>	Hammerhead Shark		600			600
<b>GRAND TOTAL</b>		<b>200</b>	<b>600</b>	<b>845</b>	<b>40</b>	<b>1,685</b>



Sunda pangolin

PANGOLINS

# PANGOLIN

TOTAL SEIZED \*

- 5,737 INDIVIDUALS
- 35,495.6 KG OF PANGOLINS SEIZED

\*All species are listed as CITES - Appendix I



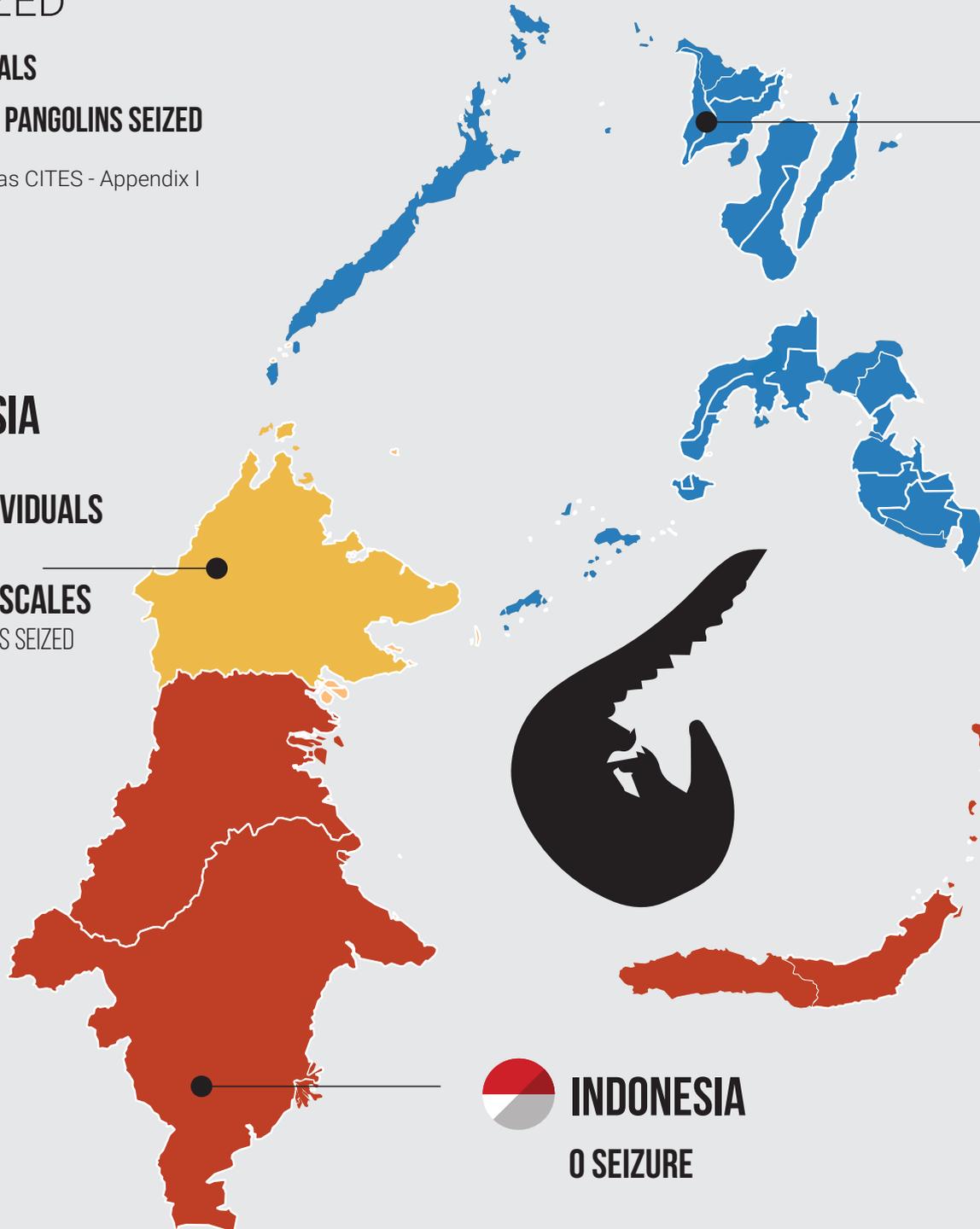
## MALAYSIA



2,634 INDIVIDUALS  
(LIVE & DEAD)



13,420KG SCALES  
87% OF SCALES SEIZED



## INDONESIA

0 SEIZURE



## PHILIPPINES



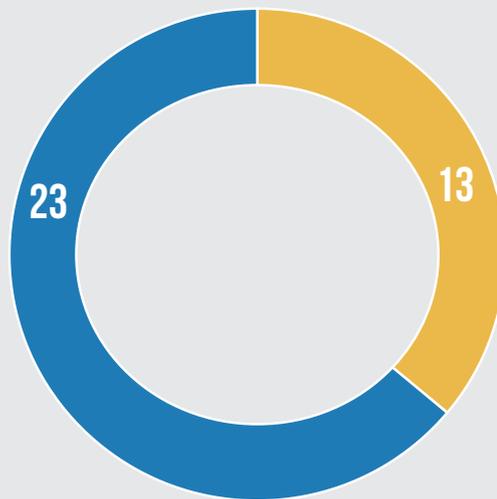
**3,103 INDIVIDUALS**  
(LIVE & DEAD)



**2,020 KG SCALES**  
13% OF SCALES SEIZED

- Malaysia
- Philippines
- Indonesia

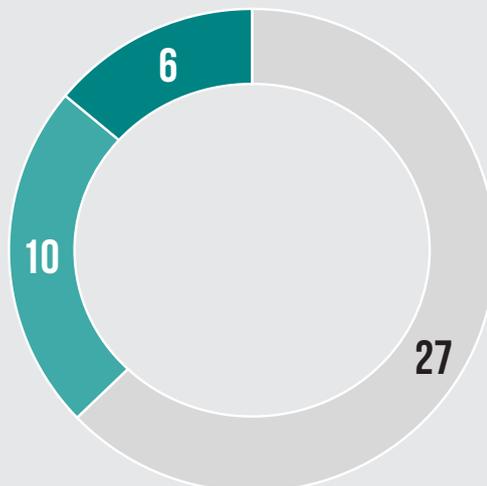
### PANGOLIN SEIZURES



### PANGOLIN SPECIES

NUMBER OF SEIZURE INCIDENTS

- Sunda Pangolin  
*Manis javanica*
- Philippine Pangolin  
*Manis culionensis*
- Unknown  
*Manis sp.*



Nearly 6,000 (5,797) individuals and pangolin parts were seized. An additional 35.57 tonnes of pangolins (individuals, bodies and parts) were seized, 95% of which were dead

pangolins. By weight, dead pangolins made up 55% (19.9 tonnes) of all pangolin items seized, followed by pangolin scales at 44% (15.5 tonnes) and a remaining 1% (62kg) of meat.

## OTHER KEY FINDINGS

While the focal taxa are important, the wide range of species seized indicates a need to look beyond these to fully understand

the importance of this region and the trade dynamics at play. Other key findings are briefly presented below.



**over 120,000 tonnes** of giant clams were seized

### SHELLS AND GIANT CLAMS

Bonnet snail (Cassidae) shells were one of the most seized items by count. There were 17,325 bonnet snail shells retrieved from four seizures, and an additional four seizures saw "hundreds" of sacks and boxes full of shells including bonnet snail shells, giant clams, trumpet shells, hoof shells, and triton shells. All bonnet snail

shell seizures took place in the Philippines. Giant clams (Tridacnidae) dominated the volume of items seized by weight. Forty incidents saw seizures of giant clams in this region, 39 of which occurred in the Philippines, and one which occurred in Malaysia (Table 11).

TABLE 11

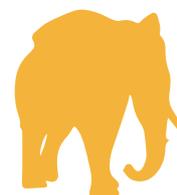
Counted and weighed items (tonnes) of giant clams seized in the Sulu-Celebes region between 2003 and 2021.

GIANT CLAM COMMODITY TYPE	COUNT	WEIGHT (TONNES)	NUMBER OF INCIDENTS
Individuals (dead, live, and unknown)	381	120,071.3	7
Shells	1,177	640.2	33
<b>TOTAL</b>	<b>1,558</b>	<b>120,711.5</b>	<b>40</b>

### ELEPHANT IVORY

A total of 3.77 tonnes, and an additional 1,181 tusks and unworked ivory pieces were seized in 13 seizures. The border between Sabah in Malaysia and North Kalimantan in Indonesia was identified as a hotspot for elephant tusk trafficking. Nine of the 13 seizures included either or both border locations of Tawau, Sabah, Malaysia, and Nunukan, North

Kalimantan, Indonesia. Six of the seizures took place at Nunukan Port, from ferry passengers or people using long-boats. Several incidents indicate that the elephant tusks came from Sabah, and in three cases offenders claimed they were taking ivory to Indonesia as a dowry for a wedding.



**offenders** claimed the ivory was to be used as wedding dowry

7 This includes one large seizure of 1,800 boxes full of frozen pangolins inside three refrigerated containers, 572 more frozen pangolins in six freezers, 61 live pangolins in cages and 361 kg of pangolin scales, in total amounting to around 30 tonnes of pangolins. <https://www.traffic.org/news/record-setting-30-tonne-pangolin-seizure-in-sabah-ahead-of-world-pangolin-day/>

## PARROTS

A total of 1,520 parrots were recorded from seizure records. The most commonly recorded parrot (Psittacidae) species were the Hanging Parrot (*Loriculus sp.*, CITES Appendix II) (365 individuals seized), and the Blue-naped Parrot (*Tanygnathus lucionensis*, CITES Appendix II) (330 individuals). There were 27 records of parrots seized in the Philippines, and 20 seizure records in Indonesia, with one seizure

in Malaysia. In Indonesia, parrots were often seized in Bitung, North Sulawesi. Records state that many of these came from further east, such as Papua and Maluku. Seizure reports indicate Bitung may be a consolidation point to then sell on the birds, be it to other areas of Indonesia or to the Philippines via Talaud Island, which is located between Sulawesi and the Philippines.



Blue-naped parrot (*Tanygnathus lucionensis*)

## STARLINGS

Almost 3,000 starlings (Sturnidae) were recorded in seizures. The main species recorded were Common Hill Myna (*Gracula religiosa*) (670 individuals), Javan Myna (*Acridotheres javanicus*) (766 individuals), and

Palawan Hill Myna (*G. religiosa palawanensis*) (307 individuals). Similarly to parrot seizures, most seizures were recorded in the Philippines (23) and Indonesia (20), with one incident in Malaysia.



Common Hill Myna in Malinau

## LAW ENFORCEMENT ACTIONS

Records indicate that 45 law enforcement agencies across the three countries worked on these seizures. Across all countries, environment and forestry law enforcement

agencies were the most active agencies<sup>8</sup> recorded (Figure 6 and 7), with a direct involvement in almost a quarter of incidents (104) across the Sulu-Celebes region.

FIGURE 6

Agencies that carried out seizures in each country in the Sulu-Celebes region between June 2003 and September 2021 (see Annex 1 for list of agencies and categorisation).

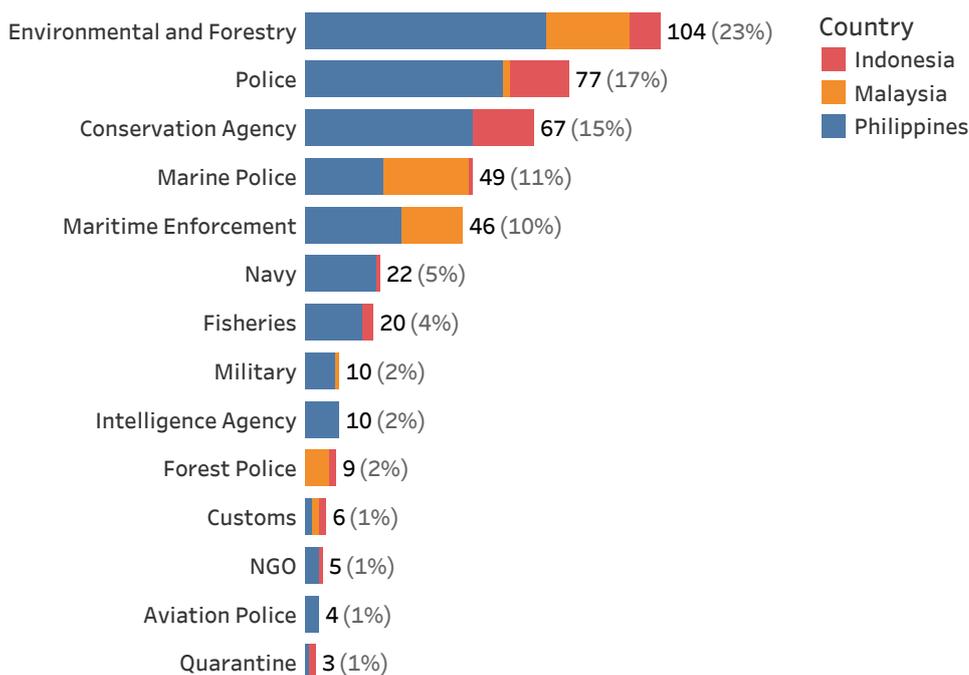
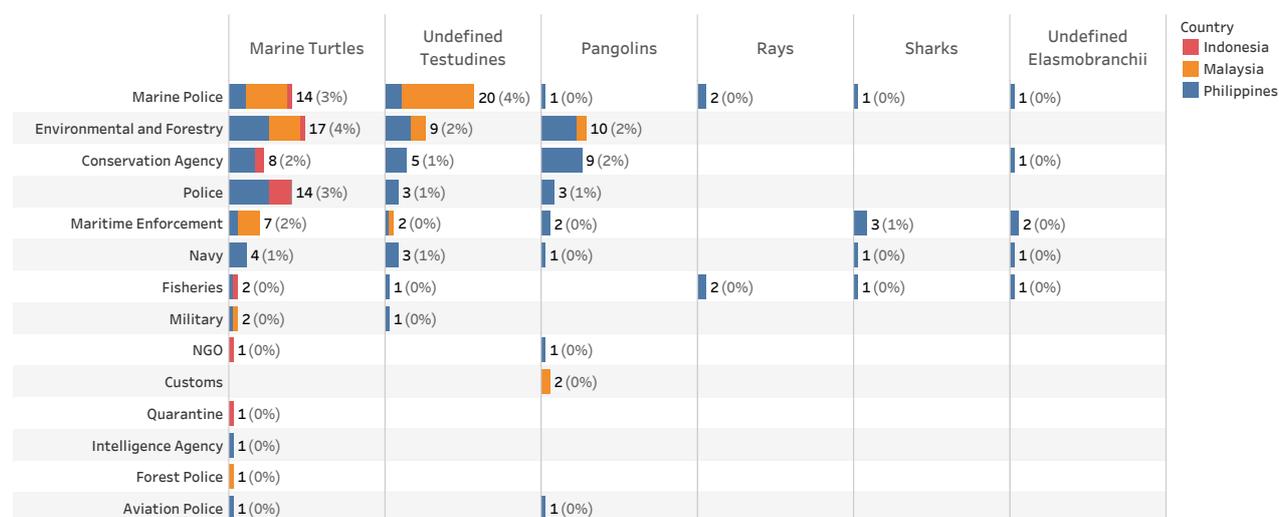


FIGURE 7

The involvement of law enforcement in wildlife seizures across the focal species in each country in the Sulu-Celebes region.



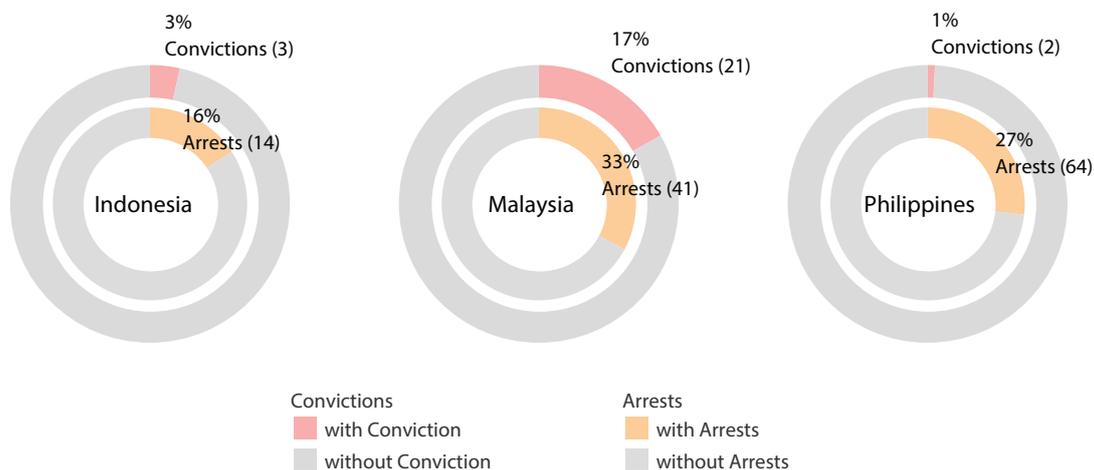
<sup>8</sup> Refer to Annex I for list of Law Enforcement classifications in this report. The following were considered Environment and Forestry Agencies in this analysis: GAKKUM in Indonesia, PROTECT Sabah Forestry Department, Sabah Wildlife Department, Sandakan Municipal Council Enforcement unit in Sabah, Malaysia and CENRO PLETF PENRO TF-DEMM In the Philippines.

Records show that 119 incidents (36%) resulted in arrests involving 392 people, and 26 incidents (6%) resulted in convictions<sup>9</sup> (Figure 8). Of the 392 people arrested, 253 were identified as nationals from six countries

(Figure 9)<sup>10</sup>. There appeared to be high numbers of Filipinos arrested in Malaysia, and Chinese and Vietnamese arrested in the Philippines, indicating the presence of international trafficking networks.

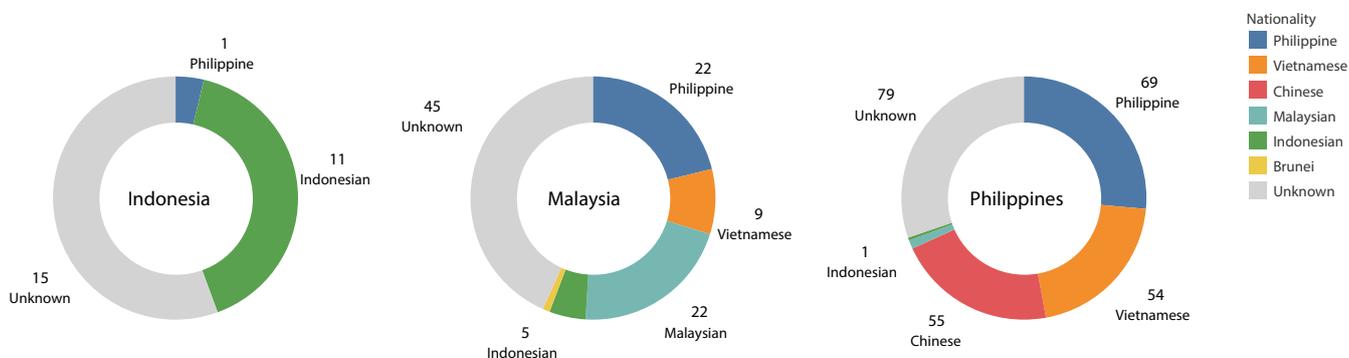
**FIGURE 8**

Percentage of seizure incidents which resulted in arrests and convictions in each country.



**FIGURE 9**

The number of people and their nationalities from arrests made in Indonesia, Malaysia and the Philippines.



There was little information on what happened to the wildlife after the seizures. The only reports of live wildlife being released after having been seized included 10 live pangolins that were released into the wild in the Philippines. Twenty-four pangolins as well as numerous birds, including White-rumped Shama (*Copsychus malabaricus*) were reportedly sent to a wildlife rehabilitation centre in Sabah, Malaysia. In one incident of a seizure

involving 450 animals in the Philippines, mostly birds and reptiles from the island of New Guinea, 98 of the surviving confiscated animals were repatriated back to Indonesia over a year after confiscation, for rehabilitation and later release. This shows that the authorities are willing to collaborate to repatriate wildlife where possible, but in the vast majority of cases, there was no information on how confiscated wildlife were dealt with.

<sup>9</sup> Records on arrests, prosecution and convictions are likely incomplete due to a lack of open reporting by the relevant agencies, and this data therefore represents the minimum known information.

<sup>10</sup> Information on nationalities of suspects or offenders was only included when explicitly reported.

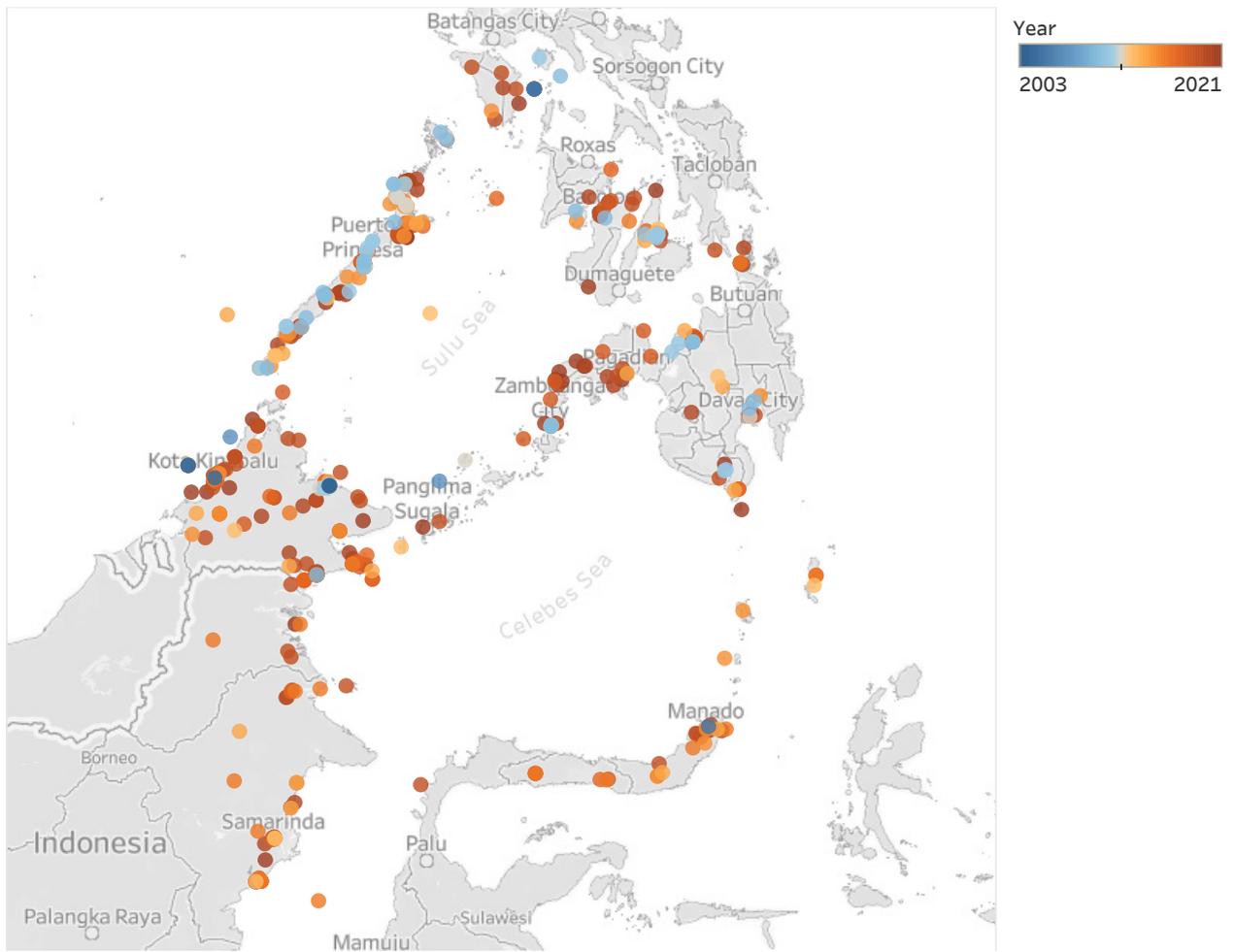
# GEOGRAPHIC DISTRIBUTION OF SEIZURES

Seizures were distributed across the region, however, there was a higher concentration of seizures in major cities, including Kota Kinabalu and Sandakan in Malaysia (23 and 20 incidents, respectively); Cebu City and

Puerto Princesa in the Philippines (19 and 18 incidents, respectively); and Balikpapan and Samarinda in Indonesia (17 and 15 incidents, respectively) (Figure 10).

**FIGURE 10**

Wildlife seizures in the Sulu-Celebes region from 2003-2021. Colours indicate when the seizures took place; darker colours refer to more recent seizures (lightest- 2003, darkest red- 2021).



COUNTRY	PROVINCE	NO. SEIZURES
Philippines	Palawan	109
	Cebu	19
	Zamboanga del Sur	14
	Unknown	11
	<b>Total</b>	<b>239</b>
Malaysia	Sabah	125
	<b>Total</b>	<b>125</b>
Indonesia	East Kalimantan	45
	North Sulawesi	24
	North Kalimantan	10
	Gorontalo	6
	<b>Total</b>	<b>88</b>

**BOX 1**

**THE IMPORTANCE OF SEIZURE RECORDS FROM GOVERNMENT AGENCIES: AN EXAMPLE FROM ZAMBOANGA**

The Department of Environment and Natural Resources Regional Division IX - Zamboanga del Sur Law Enforcement Agency (DENR Zamboanga) in the Philippines, shared additional data from 22 seizures in Zamboanga provinces: Zamboanga del Norte, Zamboanga del Sur, Zamboanga Sibugay, which had not previously been recorded. In total, 48 incidents occurred in Zamboanga

provinces, with an additional two incidents implicating the area but those two seizures occurred elsewhere.

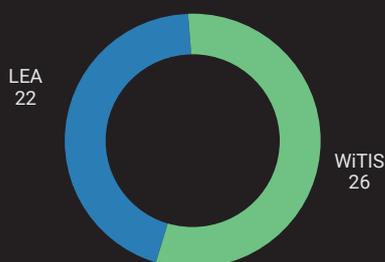
Number of incidents and commodity quantities for focal species confiscated in Zamboanga provinces 2010-2021 (note: a single incident may have involved the confiscation of multiple commodities).

*Number of incidents and commodity quantities for focal species confiscated in Zamboanga provinces 2010-2021 (note: a single incident may have involved the confiscation of multiple commodities)*

FOCAL SPECIES	SPECIES	COMMODITY TYPE	INCIDENTS	COUNT	WEIGHT (KG)
Marine Turtles	Green Sea Turtle	Individual - Live	1	8	0
	Hawksbill Turtle	Body parts (Other)	1	2	0
		Shell	1	29	0
	Olive Ridley Sea Turtle	Individual - Live	1	1	0
Rays	<i>Mobula</i>	Meat	1	0	315
Sharks	Whale Shark	Tail	1	3	40
Undefined Sharks and Rays	<i>Elasmobranchii</i>	Fins	1	20	70
		Tail	1	38	40

Out of the 48, 22 incidents were contributed by DENR Zamboanga but had not been recorded from open media sources into the WiTIS

database; these were not part of the main seizure analysis.



This illustrates that open-source data alone can be incomplete, and that direct data sharing across agencies and countries is crucial to get a complete picture of enforcement actions occurring. Using a platform such as TWIX<sup>11</sup> would help facilitate this. Sensitive information regarding seizures

may not be reported by authorities to the media due to ongoing cases or investigations. Once possible, publicising seizure information and outcomes in the media can help to deter potential offenders and highlight enforcement successes.

11 <https://www.traffic.org/what-we-do/projects-and-approaches/supporting-law-enforcement/twix/>

## TRADE ROUTES

**113 seizures documented trade route information. At least nine countries and territories were implicated as trade destinations, and the most frequent destination<sup>12</sup> was the Philippines (Figure 11).**

The majority (32) of seizures destined for the Philippines were confiscated in country, while others were confiscated in Indonesia (7) and Malaysia (1). While available documentation reports that most of the seizures were

destined for the country where the seizure took place, at least nine countries and territories were implicated as destinations (Figure 12).

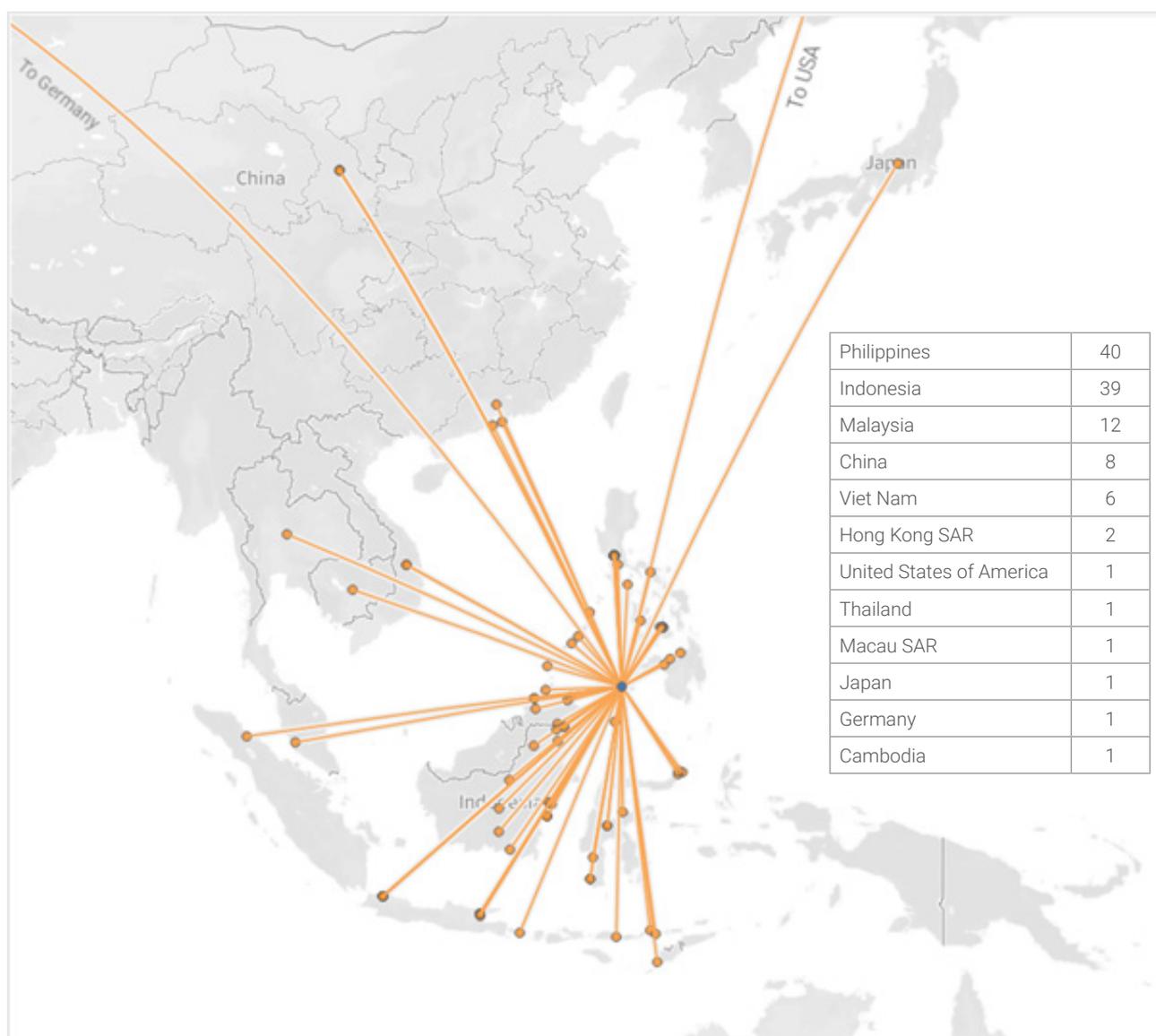
Considering seizures that crossed international borders only, China and its territories was implicated as the destination of the most (11) confiscations, followed by the Philippines (8) and Viet Nam (6). All other destination countries were reported in three or fewer seizures.

>9

**countries**  
and territories  
were trade  
destinations

**FIGURE 11**

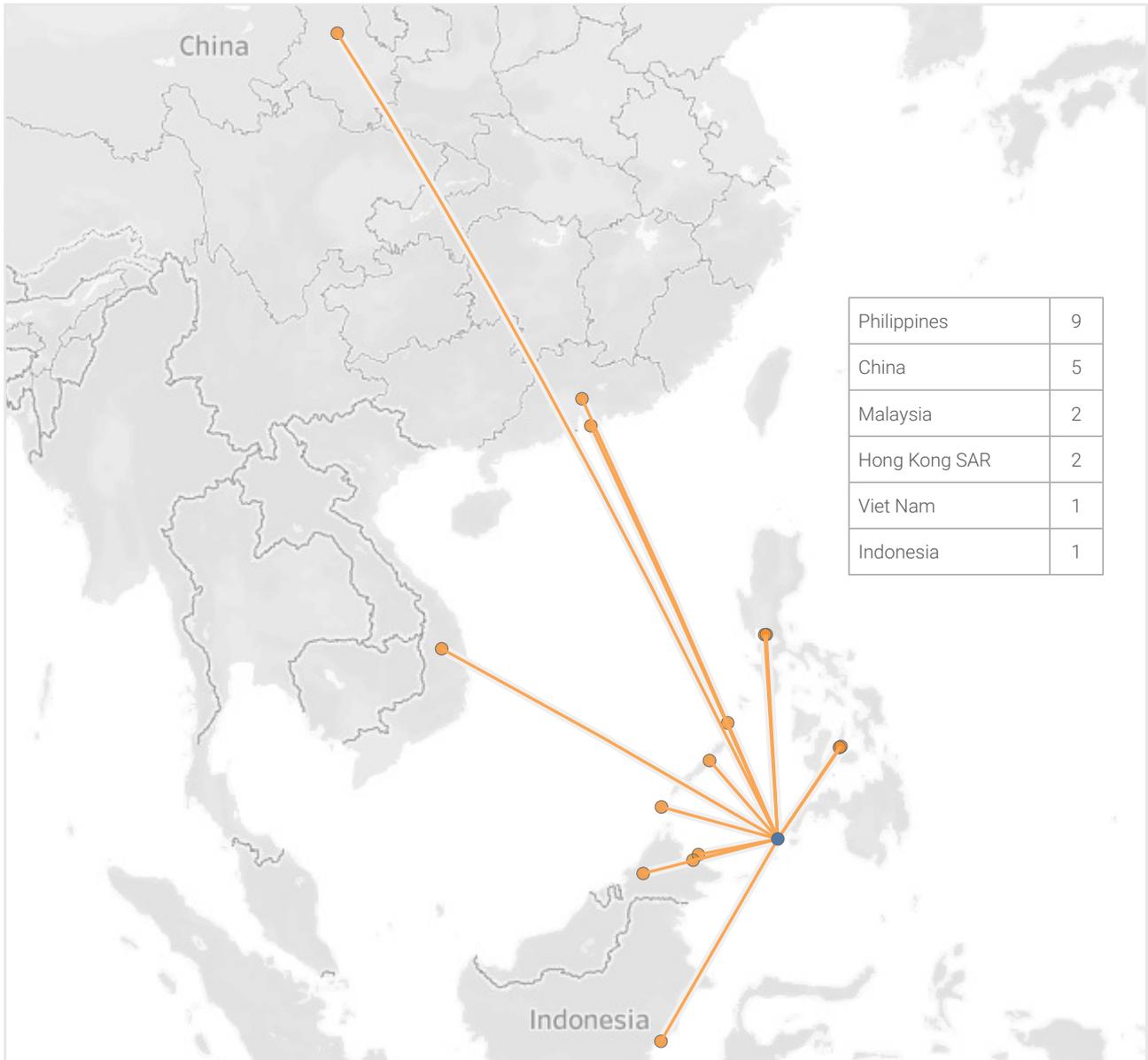
*Destination countries for wildlife seized in the Sulu-Celebes region between 2003 and 2021, and the number of intercepted wildlife incidents destined for those countries (113 incidents).*



<sup>12</sup> The last known location on the trade route is defined as the destination, and in cases where onward destinations are not known or reported, this coincides with the seizure location.

**FIGURE 12**

Destination countries of focal wildlife (marine turtles, sharks and rays, and pangolins) seized in the Sulu-Celebes region between 2003 and 2021 (20 incidents).



Wildlife seizures occurred not only at sea, but also at airports, on roads and from premises (Table 12). Out of a total of 39 seizures reportedly occurring at seaports, 18 confiscations of live wildlife were recorded

at seaport locations, 13 of which were in Indonesia, and five in the Philippines; no live wildlife seizures were recorded at Malaysian ports within the Sulu-Celebes region in this dataset<sup>13</sup> (Table 13).

13 Where ports were not named as a seizure location (only the city, for instance), this would not be captured as port-related seizure.

**TABLE 12**

The number of seizure incidents occurring at different landing sites in the Sulu-Celebes region.

		INCIDENTS	% SHARE
Indonesia	Airport	8	9.1%
	Road	4	4.5%
	Sea Port	20	22.7%
	Other	65	73.9%
	<b>Total</b>	<b>88</b>	<b>100.0%</b>
Malaysia	Airport	1	0.8%
	Bus Station	1	0.8%
	Road	3	2.4%
	Sea Port	2	1.6%
	Other	121	96.8%
	<b>Total</b>	<b>125</b>	<b>100.0%</b>
Philippines	Airport	14	5.9%
	Road	2	0.8%
	Sea Port	17	7.1%
	Other	210	87.9%
	<b>Total</b>	<b>239</b>	<b>100.0%</b>
<b>GRAND TOTAL</b>		<b>452</b>	<b>100.0%</b>

Note: seizures that took place at sea were reported as 'seaport' when they reached the shore. 'Other' includes domestic and business premises or were not specified.

**TABLE 13**

Ports where live wildlife were seized in the Sulu-Celebes region.

			INDIVIDUAL-LIVE	
			INCIDENTS #	COUNT
Indonesia	East Kalimantan	Samarinda Port	6	1,334
		Semayang Port	4	783
	North Kalimantan	Kayan II Port	1	
	North Sulawesi	Bitung Port	1	63
		Tahuna Port	1	25
Philippines	Palawan	Port of El Nido	1	114
		Puerto Princesa Seaport	1	1
	Surigao del Norte	Lipata Port	1	16
	Zamboanga del Sur	Zamboanga City Port	2	58



*Coral reef seen underwater from above Turtle Islands, Philippines*



Rays in Sandakan market

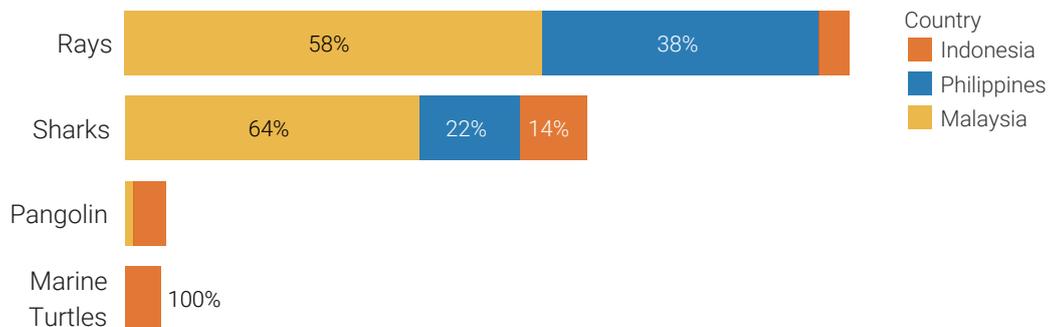
## ONLINE SURVEYS

There were 601 online posts that offered the focal taxa for sale. Rays were the most frequently offered taxa, with 394 posts recorded (57%), followed by 251 posts (37%) of sharks, 22 posts of pangolins (4%) and 20 posts of marine turtles (3%) (some posts offered more than one taxa for sale, these were counted twice). More than 58% of posts

of sharks and rays were recorded in Malaysia, followed by the Philippines, whereas most posts of pangolins and all marine turtles were in Indonesia (Figure 13). The survey recorded 286 seller accounts in total. Most sellers posted infrequently; the majority of sellers (90%) posted fewer than three times over the three months.

FIGURE 13

Distribution and total number of online posts per taxa in each country.



## TAXA

Sharks and rays made up the majority of the online posts recorded. The trade in sharks and rays is largely legal in the three countries, depending on the specific species and circumstances. At least 28 taxa of sharks and rays were identified from 562 posts (Figure 14 and 15) (see Annex 2 for full list

of sharks and rays identified); this comprised 1,812 whole bodies, 400 pieces of meat, 131 bottles of oil, 109 bones (cartilage), 71 fins and 2,051 ray tails. Four CITES Appendix II-listed species were recorded from 26 posts in total. All of these were recorded from Malaysia (Table 14).



**sharks and rays** were the most frequently offered focal taxa

FIGURE 14

The number of items and individuals of sharks and rays recorded from online monitoring by country. All 5,007 items and individuals were identified as sharks or rays.

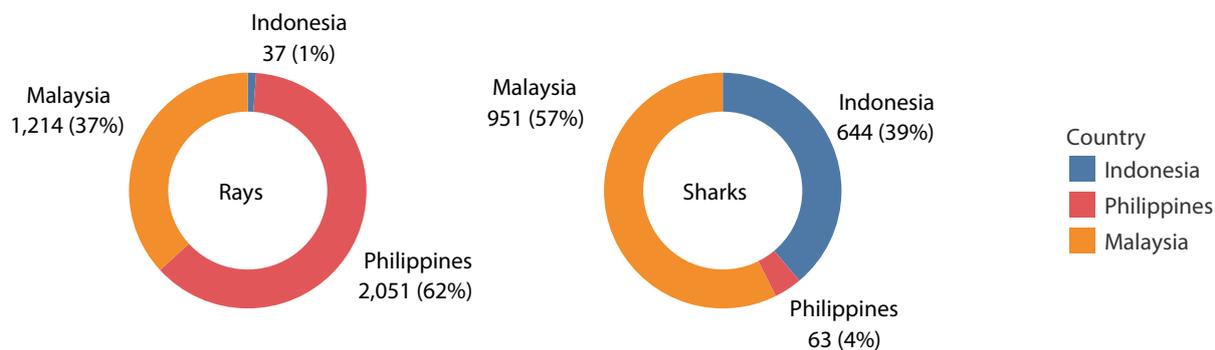


FIGURE 15

Top 10 most recorded sharks and rays from online monitoring by number of items and individuals.

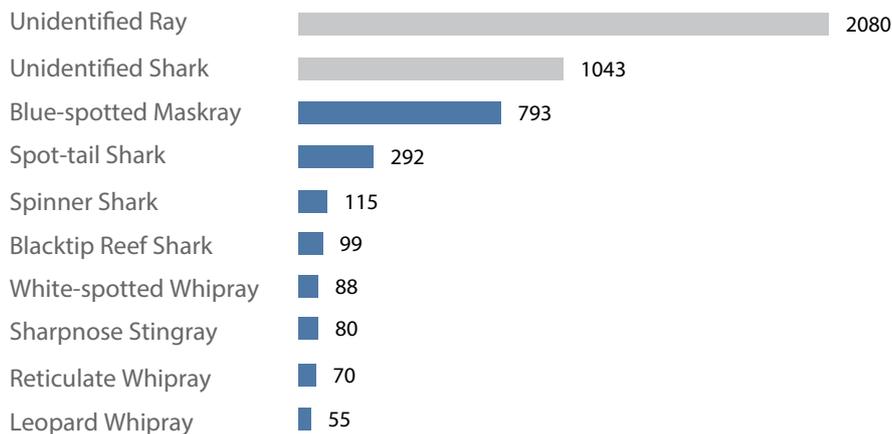


TABLE 14

CITES Appendix II-listed species recorded from online monitoring in Malaysia.

SPECIES	NO. POSTS	NO. INDIVIDUALS	SABAH NO. 6 OF 1997 WILDLIFE CONSERVATION ENACTMENT	IUCN STATUS
Broadnose Wedgefish	4	19	Not protected	CR
Scalloped Hammerhead	9	34	Not protected	CR
Whitespotted Wedgefish	8	33	Not protected	CR
<i>Mobula sp.</i>	3	3	Species dependent	Species dependent

Of the pangolin and marine turtles recorded in online trade, only the live animals – one Sunda Pangolin (*Manis javanica*) and one Hawksbill Sea Turtle (*Eretmochelys imbricata*) – were

identified to species-level. The other wildlife recorded were parts and products, which could not be reliably identified to species-level from the photos posted.

## COMMODITY TYPES

Online posts advertising pangolins mainly comprised scales. Rays were offered as meat and unspecified body parts, of which most were ray tails in the Philippines (2,051 tails from 151

posts). Sharks were offered mostly as meat, bones, and oil. Marine turtles were offered mostly as shell carvings and jewellery parts, and, to a lesser extent, as eggs (Table 15).

**TABLE 15**

*Quantities and commodity types recorded for each taxa.*

SPECIES	COMMODITY TYPE	INDONESIA		MALAYSIA		PHILIPPINES	
		COUNT	WEIGHT (KG)	COUNT	WEIGHT (KG)	COUNT	WEIGHT (KG)
Marine Turtles	Carvings	508	0.0				
	Eggs	121					
	Body	1					
	Live	1					
Pangolin	Meat		10.0	1			
	Scales		75.0	138	11.0		
	Body	4		1			
	Claw	7	1.6				
	Live	1					
Rays	Other Body Parts					2,051	
	Meat	29	8.5	200	135.5		
	Body	8	10.0	1,014	1.3		
Sharks	Other Body Parts	389	0.4			5	1.9
	Oil	73	1.0			58	
	Meat	10	0.2	161	402.6		
	Bone	109	1.6				
	Fins	63					
	Body			790	400.0		

*Note: Count and weight (kg) refer to separate posts (weight was selected for posts where both measurements were available).*



*Screenshot of rays for sale online*

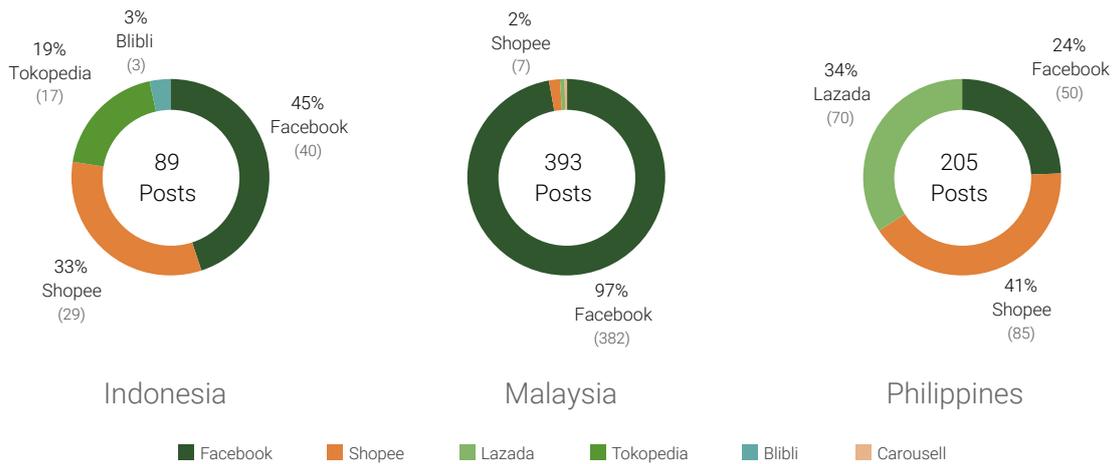
# PLATFORMS

Posts offering focal taxa for sale were recorded from six platforms. Most of the posts were recorded from Facebook, but there were some differences across countries (Figure 16) and taxa (Figure 17). For instance, more posts were

found on Shopee and Lazada combined for the Philippines, while Facebook was the dominant trade platform in Malaysia and made up a large share (45%) in Indonesia, as well.

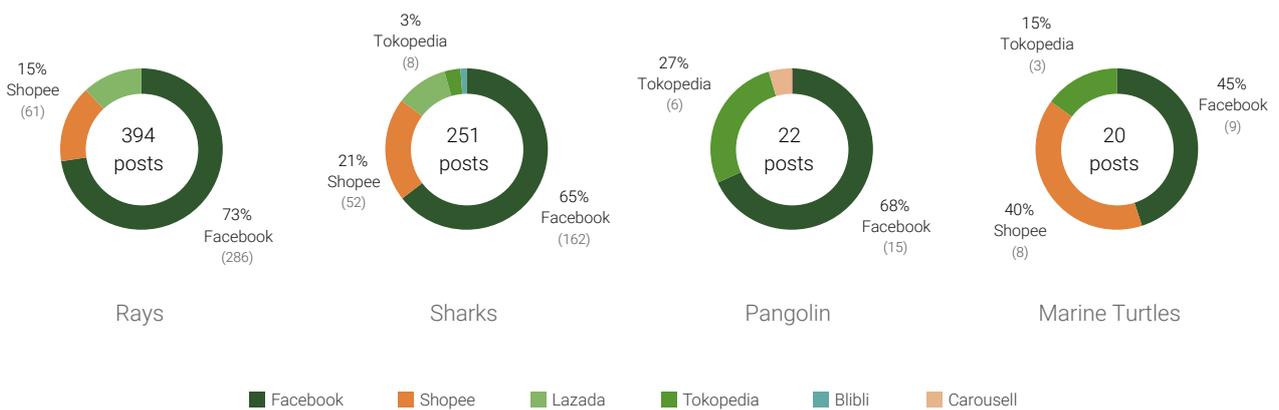
**FIGURE 16**

Number of posts by platforms for each country.



**FIGURE 17**

Proportion of posts by taxa and online platforms.



None of the posts mentioned the legality of the specific products they were selling. However, there were occasional comments on some Facebook posts in Indonesia that said species

were protected, threatened, or that the activity was illegal. This was not noted in Malaysia or the Philippines.

## PRICE

Asking price data was available for 506 posts, covering all commodity types. The sum of the value of focal wildlife recorded in this survey – for both that are legal and illegal to trade in - reached a minimum of USD 42,577. Rays yielded the highest sum, due to high numbers of ray tails offered for sale in the Philippines (Table 16). The real value of the wildlife recorded is likely much higher because many posts did not state an asking price.

In Indonesia, the most expensive items recorded were pangolin claw necklaces,

reaching IDR 950,000 (USD 66) per item, and the cheapest was dried ray meat (IDR 15,000, USD 1). In Malaysia, the most expensive item recorded was a bag of pangolin scales, costing MYR 400 (USD 95) per kg, whereas the cheapest was ray (*Dasyatidae*) meat, at MYR 4.9 (USD 1) per kg. In the Philippines, the most expensive item recorded were ray tails costing PHP 6,500 (USD 126) per tail, whereas the cheapest products were shark liver oil (PHP 36, USD 0.70) and also ray tails (PHP 49, USD 0.95) per tail, indicating a wide range in value of ray tails.

**TABLE 16**

*Minimum sum financial value of wildlife commodities offered for sale online.*

Rays	Body	\$ 2,442
	Meat	\$ 314
	Other Body Parts	\$ 3,130
	Tail	\$ 22,748
	<b>Total</b>	<b>\$ 28,635</b>
Sharks	Body	\$ 1,560
	Bone	\$ 175
	Meat	\$ 1,303
	Oil	\$ 1,524
	Other Body Parts	\$ 5,192
	<b>Total</b>	<b>\$ 9,754</b>
Marine Turtles	Carvings	\$1,012
	Eggs	\$ 1,798
	<b>Total</b>	<b>\$ 2,811</b>
Pangolins	Claw	\$ 328
	Scales	\$ 1,050
	<b>Total</b>	<b>\$ 1,378</b>
<b>GRAND TOTAL</b>		<b>\$ 42,577</b>



## ADDITIONAL OBSERVATIONS

### ONLINE STREAMING OF INDONESIAN FISH MARKETS

Sharks and rays were seen being offered for sale via online live streaming of fish markets in Indonesia. These were streamed via Facebook. Videos consisted of people walking around a fish market highlighting different species available and their prices. In one example, a lot

of Guitarfish were being auctioned off in a live stream at a fish market. Viewers of the videos commented asking prices of the commodities. It appears that those watching online were able to order or participate in the trade e.g. to ask questions, bargain prices (OHA, pers. obs.).



### sharks and rays

were auctioned online in live streams

### STOCKPILING SHARK FINS IN GORONTALO

There were some examples online of traders who appeared to be buying up large amounts

of shark fins and stockpiling them in Gorontalo, Indonesia (Figure 19).

FIGURE 19

A large stock of shark fins from a Facebook account based in Gorontalo, Indonesia. The caption translated from Bahasa Indonesia: "Those with a stock of shark fins, offer them to me. Who knows, maybe we can be partners. There are many parties (people/ members) ready to collect".



## MARINE TURTLE CARVINGS IN INDONESIA

Indonesia was the only country to record marine turtles in the online trade. These were

predominantly bracelets and rings carved out of turtle shell, recorded as carvings (Figure 20).

FIGURE 20

An example of bracelets being made from marine turtle shell on Shopee Indonesia.



## RAY TAILS

For centuries, it has been common for Filipinos to catch manta and sting rays for their meat, skin, gill plates, and even the internal organs (Alava, *et al.*, 1992; Acebes and Tull, 2016). The tails of these marine animals are also kept and used as amulets, a culture which is embedded in the beliefs of the Filipinos. The tails of juveniles are also used. Filipinos believe that these tails can be used as a whip to ward off evil from their homes and protect their families from mythological creatures of Philippine folklore locally known as 'aswang'.

This provides a sense of security for most people living in the rural areas of the country. (AL, pers. obs.).

It was noted from the online posts recorded in Malaysia, that the majority of rays had their tails cut off; however, there was no evidence of a trade in ray tails in Malaysia, as was seen in the Philippines. This may have been to prevent harm or for ease when handling the animals. No links were recorded to the trade in ray tails in the Philippines (Figure 21).



**ray tails**  
are sold in the  
Philippines as  
amulets

FIGURE 21

Left: Rays offered for sale in Malaysia with tails cut off. Right: Dried ray tails offered for sale in the Philippines.





# DISCUSSION

This section outlines the trafficking dynamics, illustrated using the priority taxa and providing the local context. Enforcement successes and challenges are discussed, especially pertaining to multi-agency and multi-national cooperation, convictions and penalties. The role of maritime trade routes is also discussed. Seizure cases are provided as examples, and a range of tools available to tackle wildlife trafficking within this context are also presented.

*Confiscated marine snail shells, Philippines*

## TAXA SEIZED

**The wide range of species and incredible volume: 69 Orders or 118 Families, including 54,614 individuals plus 120,816 tonnes of wildlife seized in the Sulu-Celebes region shows the breadth of wildlife trafficking taking place in the region, justifying particular scrutiny and a need for action. The trafficking patterns for each taxa are different, so distinct strategies and interventions may be required; it is therefore important to look at the trade in each taxa separately. The trafficking issues for each of the most prominent taxa and the focal taxa are explored in more detail below.**

Giant clams were the most seized taxon by weight. Almost all of the volume seized took place in the Philippines (99.7%); a recent analysis by TRAFFIC found that the Philippines and Indonesia combined accounted for more than 75% of giant clam seizures in Southeast Asia between 2003 and 2022 (Lee and Wong, unpublished).

Seahorses were seized in great numbers, and all seizures took place in the Philippines. Almost all seahorses were dead when seized. Seahorses are primarily traded when dried, for use in Traditional Chinese Medicine (TCM) (Louw and Burgener, 2021, Vincent *et al.*, 2011). The catch and trade of seahorses in the Philippines is illegal under the 1998 Fisheries Code, as amended, and all Hippocampus species are listed on CITES Appendix II, regulating international commercial trade. However, there are still significant numbers of dried seahorses illegally exported from the Philippines (Foster, *et al.*, 2019). Worldwide illegal exploitation of seahorse populations is resulting in substantial population declines for a threatened taxon (Louw and Burgener, 2021).

Parrots were also among the most frequently seized taxa. Seizures of parrots saw species from eastern Indonesia including Papua and North Maluku provinces being traded via Sulawesi to the Philippines. This is consistent with other TRAFFIC research, which highlights the most common Indonesian parrots for sale in the Philippines came from Sulawesi, Maluku and Papua (Sy, *et al.*, 2022). In this analysis,

parrots were most commonly seized departing from North Sulawesi to the Philippines. The bird trade between Indonesia and the Philippines needs to be addressed by law enforcement and sea patrols, particularly between Bitung and Manado, North Sulawesi, and General Santos, Philippines, and the surrounding smaller islands (Bashari and Nurdin, 2009).

Freshwater turtles and tortoises were also seized in large numbers. The most prominent species seized was the Philippine Forest Turtle (*Siebenrockiella leytensis*). In most of these seizures the animals were alive, and almost all seizures occurred in the Philippines. The Philippine Forest Turtle is Critically Endangered and is listed on CITES Appendix II, restricting international commercial trade. However, the illegal pet trade poses an immediate threat to wild populations of the Philippine Forest Turtle (Sy, *et al.*, 2020). The results in this report highlight that this threat is ongoing and requires action from the Philippine government.

Corals, including CITES Appendix II-listed species, were seized in large numbers, including black corals (Antipatharia) and sea corals (Anthozoa). Almost all of these seizures occurred in the Philippines. The trade in these is usually for jewellery and some traditional cultural uses (Shiraishi, 2018; Anonymous, N.D.). There have been reports of illegal international trafficking of corals from the Philippines to the United States and to Germany, reportedly for collectors and hobbyists<sup>14,15,16</sup>.

Considerable numbers of bonnet snail shells were reportedly seized. There is limited research available into the trade in bonnet snails, however, there are anecdotes that the Sulu Sea, and the Philippines in general are considered the "Mecca for seashell collectors" (Anonymous, 2019). Generally, these shells are used as souvenirs, in making jewellery and as collectors' items. The lack of understanding of this trade, despite the evident high quantities of snail shells in this region being trafficked, requires further research.

14 <https://www.justice.gov/usao-ak/pr/10-charged-illegally-trafficking-corals-philippines>  
15 <https://www.justice.gov/opa/pr/german-national-arrested-smuggling-coral-philippines>  
16 <https://www.pna.gov.ph/articles/1045867>

## FOCAL TAXA

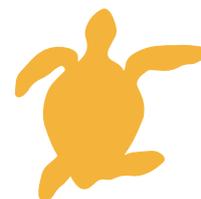
### MARINE TURTLES

**Marine turtles were the most frequently seized family, involved in at least 67 incidents. Turtle eggs emerged as the most numerous confiscated wildlife part, with a minimum total of 67,329 marine turtle eggs seized in 40 incidents.**

All three countries in this region play roles as source, importer, exporter and re-exporter, and consumer of marine turtles, including supply to international markets. Egg seizures in Sabah, Malaysia feature prominently in this analysis. Consistent with the findings in this report, Gomez and Krishnasamy (2019) highlight Sandakan as an entry point of turtle eggs into Sabah. Sabah is known for the illegal trade in turtle eggs, which are for consumption; illicit traders use the 'ok' hand signal on the streets to show they have turtle eggs for sale (Gomez and Krishnasamy, 2019). There have been previous reports of seizures of marine turtle eggs from online posts in Malaysia<sup>17</sup>, however there were no online posts of turtle eggs recorded in this study.

Significant numbers of marine turtle eggs were reported to be smuggled between Tawi-Tawi, Philippines and Sabah, Malaysia. From this seizure analysis, at least 47,250 marine

turtle eggs were seized in nine incidents of smuggling from the Philippines to Sabah. This figure is likely to be higher; Sy (2020) reported more than 95,000 marine turtle eggs intercepted in this area between 2010 to 2019. The majority of turtle eggs seized are believed to originate from the Philippine Turtle Islands Wildlife Sanctuary (TIWS) (Fischer, *et al.*, 2021), the largest Green Sea Turtle nesting ground in ASEAN (UNESCO, 2015), together with the adjacent Turtle Islands Park, in Sabah, Malaysia. Hawksbill Turtles are also known to nest on these islands. Although Tawi-Tawi Province, Philippines, was not highlighted as a seizure hotspot, records indicate that it is a significant area for poaching turtle eggs (e.g. Case 1, 2). These trade dynamics were confirmed by Gomez and Krishnasamy (2019), who reported that turtle eggs allegedly from TIWS were trafficked to Sandakan, Sabah, and were illegally transported to Peninsular Malaysia where egg consumption also occurs<sup>18</sup>. There were some convictions recorded of Filipino nationals in Sabah for turtle trafficking in this seizure analysis. Conservation work has been on-going in TIWS since 1982, and it was formally designated a protected area in 1999 (ADB, 2011).



**67,329**  
**marine**  
**turtle eggs**  
seized in 40  
incidents



*Nesting Green Sea Turtle (Chelonia mydas), Philippines*

<sup>17</sup> <https://www.traffic.org/news/huge-fine-and-arrest-cautions-turtle-egg-traders-against-online-sales-in-sabah/>

<sup>18</sup> Ban on turtle egg selling in Terengganu is now in force effective 1 June 2022

<https://www.malaymail.com/news/malaysia/2021/11/18/terengganu-bans-sale-of-all-types-of-turtle-eggs/2021884>,

<https://www.macaranga.org/turtle-egg-sale-ban-terengganu-traders/>

Actions to conserve the marine turtle population include improving alternative income opportunities for local communities, good governance, and the importance of local authorities in enforcing these measures for the conservation of turtles – the report states that “[c]onservation of marine turtles in the TIWS cannot be implemented successfully without addressing the socioeconomic needs of the community” (ADB, 2011). In Tawi-Tawi Province, the life expectancy, income, and education rates of people dropped significantly between 1997 and 2009 (HDN, 2013). The poverty incidence in the Turtle Islands municipality was 35.1% in 2015, which was the highest poverty incidence among all municipalities in the province (PSA, 2019 in Fischer *et al.*, 2021). These factors are likely to drive people to criminal activity. When combined with the locality of the TIWS, it is clear that the problem of poaching turtles and eggs in this province is a complicated issue and needs holistic, long-term solutions. The socio-economic instability in this area, with basic services such as health services, education, financial infrastructure, and electricity still lacking in these communities, needs to be considered when developing actions to conserve marine turtle populations (Fischer *et al.*, 2021).

In Sabah, Malaysia between 2004 and 2007, there were reports of seizures of large amounts of dead Hawksbill Turtles and some Green Sea Turtles on the west coast of Sabah, found on board non-Malaysian fishing boats. In recent years, dead Green Sea Turtles were found to be stockpiled (two cases), and live Hawksbill Turtles with missing scutes were observed in north of Sabah, and turtle plastrons and marginal scutes were seized several times in the southeast of Sabah (Semporna district). Reportedly, the seizure cases in Semporna district included people from island communities instructed by middlemen to poach turtles at turtle foraging grounds (Jolis, G., *in litt.*).

The sale of turtle shell products is still common throughout the world, despite all international commercial trade having been illegal for over

30 years (CITES Secretariat, 2019). Turtle products were recorded being sold openly in shops and recorded in small volumes in online trade in Indonesia. In a three year worldwide study, Indonesia was highlighted for having the highest numbers of online turtle shell products (Nahill, *et al.*, 2020), predominantly catering for the domestic market on Bali.

The Philippines has been highlighted as a source country for raw turtle shell (Nahill, *et al.*, 2020), and marine turtle taxidermy and shell products have been observed in the domestic market (Sy, E.Y., *in litt.*). Indonesia, Malaysia, and the Philippines have also been implicated as the main source for marine turtles and their products to supply mainland China (CITES Secretariat, 2019; Lam, *et al.*, 2012).

However, only small amounts of marine turtle shells were recorded in this seizure analysis. Continued trade in marine turtles is of significant concern given the three most prominent species seized are listed as Critically Endangered (Hawksbill Turtles and Leatherback Turtles) and Endangered (Green Sea Turtles) under the IUCN Red List. Understanding the origin of the turtle populations in trade by using traceability tools such as ShellBank can help to focus anti-poaching law enforcement and support those populations. Any take of these species may have a detrimental and long-lasting impact as they are threatened by extinction.

Two seizure cases display the different techniques and modus operandi that allow for such high numbers of marine turtles and turtle eggs to be trafficked across these seas, providing insights into this complex problem. Case 1 and Case 2 demonstrate turtle eggs smuggled in large numbers is an international matter, as Filipino, Malaysian, and Chinese nationals were involved. For such large-scale trafficking, increased vigilance at hotspots and concerted enforcement operations are required, coupled with effective convictions of key players orchestrating the trafficking.

## CASE 1: CHINESE TURTLE TRAFFICKING CREW INTERCEPTED DURING JOINT TASK FORCE'S ROUTINE INSPECTION

<b>Summary</b>	A Chinese poaching vessel was apprehended when moored in Philippine waters. Thousands of turtle eggs, hundreds of marine turtles, and two sharks were seized from the boat. The crew were charged with wildlife crimes, illegally entering the Philippines, and breaking the Fisheries Code. Nine of the 126 turtles survived, including seven males and two females.
<b>Date of seizure</b>	2 September 2007
<b>Seizure location</b>	The vessel was moored in the Sulu Sea in the waters of Tawi-Tawi Province when apprehended.
<b>Items trafficked</b>	Over 10,000 turtle eggs, 126 adult Green Turtles including some dried, some freshly gutted and some still alive, and a pair of live pelagic thresher sharks ( <i>Alopias pelagicus</i> ).
<b>Agencies involved</b>	A joint task force of Philippine Navy, Coast Guard, Police, and the Department of Environment and Natural Resources (DENR). This activity was uncovered as part of routine inspections in the seas.
<b>Actors involved</b>	Nineteen Chinese nationals were on board the Chinese boat.
<b>Outcome</b>	The crew and the boat were detained at Bongao Port, Tawi-Tawi Province. The people onboard the boat were all charged with violating the Philippine Wildlife Conservation and Protection Act (RA9147), as well as the National Integrated Protected Areas System (NIPAS) Act (RA7586), illegal incursion, and breaking the Fisheries Code of 1998 (RA8550). However, there was no further information on the outcome of this case, such as convictions, reported.

Solutions to reduce poaching and trafficking of turtle eggs could include community livelihood development strategies in Tawi-Tawi Province, conservation education, demand reduction, and wildlife trafficking awareness campaigns. An international approach to conservation is essential in this region, therefore, improved transboundary collaboration among the

countries' law enforcement agencies is essential, e.g. by improving communication channels, and joint border patrols. These actions could be leveraged from the most recent (2018) agreements made by the Joint Management Committee for the Turtle Islands Heritage Protected Area.



Marine turtle eggs from Semporna Sea

## CASE 2: TIMELY TURTLE EGG HEIST FROM TURTLE ISLANDS TO SANDAKAN

<b>Summary</b>	The suspect attempted to smuggle turtle eggs by boat at 2030HRS, in the evening in the month of Ramadan. Officials suspect that the smuggler had chosen that particular time to evade detection as enforcement officers could be occupied during Tarawih, the evening prayers during Ramadan. While officials were chasing him by boat, the suspect was seen throwing items into the sea, which the officers believe were more turtle eggs. Therefore, the actual volume is likely to have been more than was seized.
<b>Date of seizure</b>	17 April 2021
<b>Seizure location</b>	In the waters surrounding Pulau Nunuyan Darat, Sandakan, Sabah, Malaysia.
<b>Trade route</b>	From the Turtle Islands, Tawi-Tawi Province, Philippines, to Sandakan market, Sabah, Malaysia.
<b>Item trafficked</b>	Three thousand turtle eggs
<b>Value</b>	MYR 10,000 (USD 2,378) in confiscated items:  Estimated value of turtle eggs: MYR 1.80 (USD 0.42) each, a total value of MYR 5,400 (USD 1,284).  The boat, worth an estimated MYR 4,000 (USD 951), and the boat engine worth MYR 600 (USD 142).
<b>Agencies involved</b>	The Malaysian General Operations Force (GOF) Tiger Platoon, part of the Royal Malaysia Police carried out the seizure during sea patrols. The police handed over the investigation to the Sabah Wildlife Department for further action to be taken under the Wildlife Conservation Enactment 1997 for possession of the turtle eggs, and the suspect was referred to the Immigration Department.
<b>Modus Operandi</b>	The turtle eggs were contained in sacks, each sack containing around 500 eggs. As the official approached, the man started throwing the eggs into the water.
<b>Actors involved</b>	A 31-year-old male, Philippine national from Tawi-Tawi Province was arrested.
<b>Outcome</b>	Following the arrest and confiscation there were no records of further action on this case.

## SHARKS AND RAYS

Almost one third (32%) of the world's sharks, rays and chimera species (*Chondrichthyes*) are threatened with extinction, primarily due to overfishing (Bräutigam, *et al.*, 2015; Dulvy, *et al.*, 2014; Dulvy, *et al.*, 2021). Sharks are coveted for their fins, and also for meat, liver oil, and cartilage; while rays are hunted for their meat, and gills, which are used in TCM (Wu, 2016). All three countries in the Sulu-Celebes region play roles in the sourcing, importing, exporting and re-exporting, and consuming of sharks and rays. All three countries also supply the international market for sharks and rays. Indonesia and Malaysia were in the world's top 10 for shark catch between 2007-2017 and play major roles in the international trade in rays and skates; and Indonesia and the Philippines are reported to be sources and

exporters of ray gills and shark fin (Okes and Sant, 2019; Croll, *et al.*, 2015). Sharks sourced from Malaysia and Indonesia are also reported to be re-exported from Singapore (Boon, 2017).

Shark and ray seizures in this analysis consisted mostly of whole bodies and meat, and almost all took place in the Philippines. The online trade findings indicate that the main local demand for sharks and rays were ray tails in the Philippines, and meat in Malaysia. There is no detailed documentation on the traditional use of ray tails in the Philippines, despite it dominating online trade in the country, in this analysis. There was also a small trade in shark bone bracelets for traditional use in Indonesia, which according to the posts, is designed to be worn by sick children for healing purposes.



**overfishing**  
is the main  
reason the world's  
sharks and rays  
are threatened



An adult Whitetip Reef Shark (*Triaenodon obesus*) rests in Shark Airport, Tubbataha, Philippines

The illegal and legal unregulated trade in protected shark and ray species is concerning, in this analysis CITES-listed and nationally protected species were recorded for sale online. The lack of data for numbers of sharks and rays caught that enter trade, and the inconsistent use of trade terms between countries means it is difficult to integrate different countries trade databases. Another major enforcement and prosecution challenge is accurately identifying species. This becomes particularly difficult once animals have been processed into smaller products such as meat, fins, gills, or oils (Prasetyo, *et al.*, 2021). The majority of online trade in sharks consisted of bodies and commercial shark oil, which presented a species identification challenge for the researchers, as commercial shark oil

products did not visibly state the species. DNA barcoding could be used as a potential tool to investigate what species are being used for this oil and if it is a threat to species survival. This has been carried out on other processed commercial shark products, where unlabelled CITES-listed species were discovered (Hellberg, *et al.*, 2019); this method can even work on highly processed products such as oils. Proper identification of sharks and rays is necessary because different species are targeted for different products (Booth, *et al.*, 2018), which impacts actions to reduce capture, trade, and demand, where needed. In addition, it is essential that these species are identified to enable enforcement of national and international trade regulations.



Frozen pangolins seized in the Philippines

## PANGOLINS

Pangolins are the most trafficked mammals in the world, and they are in severe decline due to hunting for the wildlife trade (Challender, *et al.*, 2014). Pangolins are mainly poached for their scales which are used in TCM; they are also eaten as a delicacy in several countries (Gomez, *et al.*, 2017; Heinrich, *et al.*, 2017).

Southeast Asia, including the Sulu-Celebes region, is a major source for Sunda and Philippine pangolins. Philippine Pangolins have been seized in the Philippines (Sy and Krishnasamy, 2020), and whole Sunda pangolins have been confiscated in large volumes in Indonesia and Malaysia (Pantel and Anak, 2010; Gomez, *et al.*, 2017). This suggests local parties are involved in the trafficking and supplying demand within the region.

All three countries have been implicated in seizures of African pangolin species smuggled across their borders (TRAFFIC, 2022; Gomez, *et al.*, 2017), and at least some of the pangolin bodies and scales seized in Malaysia and the Philippines were reportedly destined for China and Viet Nam. There were at least seven seizures with a possible 14.7 tonnes of African pangolin scales seized in Malaysia in 2017 (Krishnasamy and Shepherd, 2017), and Sepanggar Port in Sabah was highlighted as a potential transit point for wildlife commodities from Africa and passing through Malaysia.

Some of the seizures in the Sulu-Celebes region involved Chinese nationals trafficking pangolins (e.g. Case 3). Other reports show trade routes of pangolins between the Philippines and Sabah, and between Indonesia and Malaysia (Pantel and Anak, 2010). In an analysis of pangolin seizures from 2010 to 2015, Indonesia was reported as an origin and exporting country. It was observed that China, Malaysia, and Viet Nam were closely linked to Indonesia, with China and Viet Nam as destination countries, and Malaysia mainly for transit onwards (Heinrich, *et al.*, 2017). At least 67 countries and territories across six continents were involved in global pangolin trafficking. With pangolin trafficking routes constantly shifting and new trade routes emerging every year, it is challenging for law enforcement to predict high-risk trade routes (Heinrich, *et al.*, 2017).

The online survey recorded low numbers of pangolins offered for sale; in several posts, sellers offering pangolins claimed to have found and taken them opportunistically, rather than having targeted them on purpose. Local demand for pangolins was documented outside this study, where a sequence of whole Philippine Pangolin seizures and retrievals in the Philippines, mostly outside the Sulu-Celebes region, indicated a demand for wild meat (Sy and Krishnasamy, 2020).



**pangolins** are mainly poached for use in TCM, or eaten as a delicacy

### CASE 3: CHINESE CREW SMUGGLING PANGOLINS INTERCEPTED BY PHILIPPINE COASTGUARD AND MILITARY

<b>Summary</b>	Twelve Chinese nationals were convicted after their 15m long boat ran aground on a protected coral reef in the Philippines, without a permit to be in that area. Some 10,000 kg of frozen pangolin meat was seized from the boat. DNA and Cytochrome c Oxidase I sequencing results showed they were Critically Endangered Sunda Pangolin. The defendants were all convicted under Philippine wildlife laws. It was also planned for them to be charged with bribery and illegal entry, but the appeals court reversed the decision and they were then deported back to China before having been sentenced. The reason for this is unknown.
<b>Date of seizure</b>	8 April 2013
<b>Seizure location</b>	Tubbataha Reefs Natural Park, Palawan Province, Philippines.
<b>Items trafficked</b>	10,000 kg of frozen pangolin carcasses (2,870 pangolins) with the scales removed.
<b>Agencies involved</b>	Philippine Palawan Coastguard and Philippine Military.
<b>Actors involved</b>	Twelve Chinese nationals, including the boat captain.
<b>Modus Operandi</b>	<p>The pangolins were packed in around 400 boxes, with five or six skinned frozen pangolins in each box. All boxes were kept in the hold below the deck.</p> <p>The pangolins seized were the Sunda Pangolin species, which is not native to the Philippines. They appeared to have already been processed, as the scales and skin were not found on the boat. The Sunda Pangolin is native to Indonesia and Malaysia, so it is probable that they were sourced from one of these two countries before being consolidated and smuggled.</p>
<b>Outcome</b>	<p>Eleven of the defendants were sentenced to between six and 10 years imprisonment, whilst the captain was sentenced to 12 years imprisonment. All were fined PHP 4,300,000 (USD 82,070) for violations of Republic Act 10067 or the Tubbataha Protected Area Law of 2009 at the Palawan Regional Trial Court on 5 August 2014. The prison sentences were to be served at the Iwahig Penal colony in Palawan.</p> <p>They faced a separate case for bribery after they attempted to offer money to members of the Tubbataha Management Office in exchange for their release, and another case for illegally entering Philippine territory. However, they were all ordered to be deported back to China by the Bureau of Immigration before they were charged on these cases and before they began to serve their sentences.</p>

## LOCAL GEOGRAPHICAL AND CULTURAL CONSIDERATIONS

The local trade in goods across the Sulu-Celebes region is commonly referred to as the barter trade, although it is now more common for money to be used to purchase goods, instead of true bartering (goods for goods). This trade mostly involves illegal, unreported, and untaxed goods. Reportedly, much of this trade is overlooked, as local communities are dependent on it and officials may benefit from it (Amling, *et al.*, 2019).

The barter trade began before the current country borders were established, and traditionally, prices were flexible, allowing discounts for people in need (Gallien and Weigand, 2022). The trade was used to strengthen relationships between individuals and communities. Gallien and Weigand (2022) give a useful insight into the past and present of smuggling in the region: *“Even today, the Bajau, [the] largest ethnic group in Sabah, and the Sama Bajau of Southern Philippines pay no heed to the notion of national borders”*. The barter trade is described as *“a social practice that is mutually recognized by both the Philippines and Malaysia”*. Indeed, many Philippine islands are geographically and culturally closer to Malaysia than to the

mainland of the Philippines. For example, Muslim communities living on those islands are more likely to be able to get halal meat from Malaysia than they are from other areas of the Philippines (Amling, *et al.*, 2019).

Although the bartering of some commodities such as rice may not represent a major economic and security threat to the countries involved, wildlife trafficking can also occur within these same channels. In the circumstance of a strong social and traditional way of life, a hard enforcement restriction of all illegally bartered goods is unlikely to succeed (Gallien and Weigand, 2022). However, localised education regarding wildlife conservation may be one way to engage with these communities.

As well as investigating organised crime networks, the role of local communities and corrupt officials in wildlife poaching and trade needs to be recognised and investigated, particularly where wildlife trafficking is unorganised and low-level, as reportedly much of it is in Kalimantan and Sulawesi, in Indonesia (Gallien and Weigand, 2022).

## MARITIME PORTS AND ROUTES

Maritime transport is crucial in moving wildlife commodities across the Sulu-Celebes Seas. Seizures show examples of pursuit and apprehension at sea, demonstrating the necessity for marine patrols to combat wildlife crime in the region. The modus operandi regarding wildlife trafficking in the Sulu-Celebes region range from people in littoral communities, trafficking locally sourced wildlife and travelling alone in small boats at night, to large vessels of foreign nationals transporting wildlife and committing a host of crimes. These littoral communities of the Sulu-Celebes Seas have strong historic relationships, where unchecked and unregulated trade of a variety of goods may facilitate IWT. These complicate the role of law enforcement and the approach to conservation in this region.

Live wild animals are not commonly

transported by sea because most sea journeys are long, resulting in high mortality of the animals (Zavagli, 2021). Despite this, live wildlife were recorded to have been seized at ports in this analysis. Primary ports, where seizures of live animals occurred, were at Samarinda Port and Semayang Port in Indonesia. Samarinda Port is the main harbour for East Kalimantan, and some 17,900 vessels and 51,000,000 tonnes of cargo pass through the port annually (Seabay Logistics, N.D).

Many of the boats recorded in the seizures over the Sulu-Celebes Seas were referred to as wooden long boats, which are no longer allowed to cross international waters and are no longer registered for import trading. Since 2007, all Philippine ships crossing international borders are required to be made of steel (Maritime Industry Authority, 2007).



### live wild animals

are not commonly transported by sea

However, wooden long boats are still commonly used to transport goods between Sabah and the islands of Tawi-Tawi Province, Philippines (Gallien and Weigand, 2022). This should be an indicator for authorities to investigate such boats. This law could also be used to prosecute wildlife traffickers using wooden boats.

In a recent TRAFFIC and WWF report about the role of containerized sea cargo in the illegal wildlife trade, Indonesia was highlighted as a source country for illegal wildlife seized from container ships, including pangolin scales and meat, shark fins, seahorses and timber, whilst Manilla Port in the Philippines was noted for its transit role in elephant ivory (Zavagli, 2021). Container ships have often been reported transporting illegal goods, with wildlife such as pangolin scales and elephant ivory being concealed in shipments of other goods such as nuts, coffee, shells and frozen meat (Zavagli, 2021). This makes detection of illegal items challenging, and intelligence and technology needs to be increasingly used to help officers detect such items.

Due to the threat of abduction and piracy

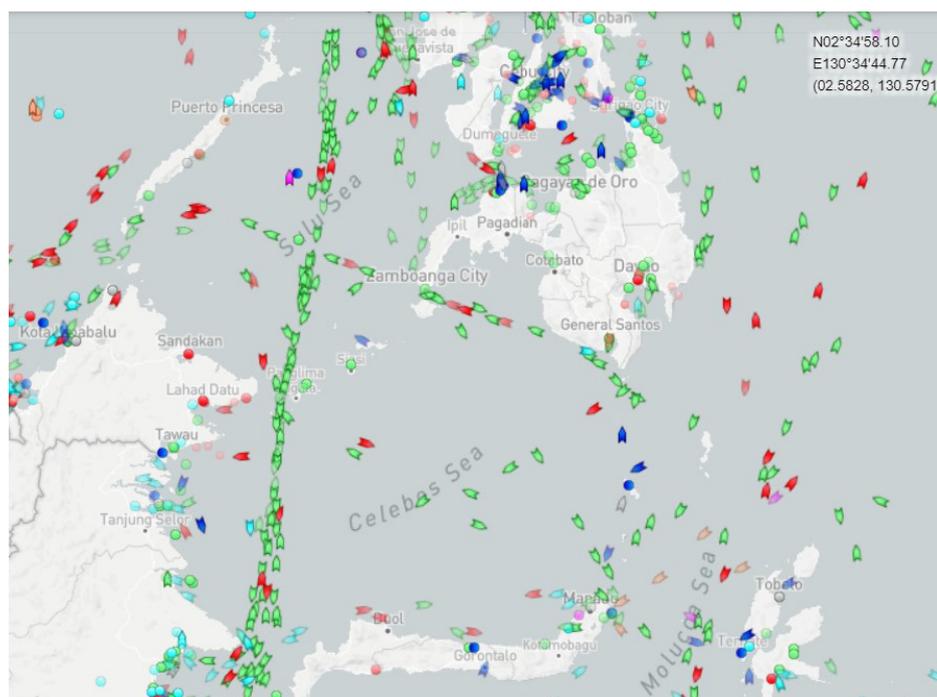
of ships in the Sulu-Celebes Seas, there are recommended routes which are used because they are easier to monitor and trace shipping traffic through the region (ReCaap, 2019). Common shipping routes across the Sulu-Celebes Seas can be seen in Figures 22 and 23.

There are gaps in our knowledge about the patrol routes of law enforcement in each country, however, knowing these together with more information on vessel passages would allow for an overlay of these routes and thus help to build a greater understanding of where gaps in patrols allow illegal activities to take place across these seas.

Most of the wildlife seized appeared to be harvested from the Sulu-Celebes region and destined for Indonesia, Malaysia, and the Philippines, rather than transiting through these seas between two other countries outside the region (for example, shipping through the Sulu-Celebes Seas from Australia to China). However, it is possible that the contraband is processed in these countries, to be then re-exported and traded onwards, beyond the region.

**FIGURE 22**

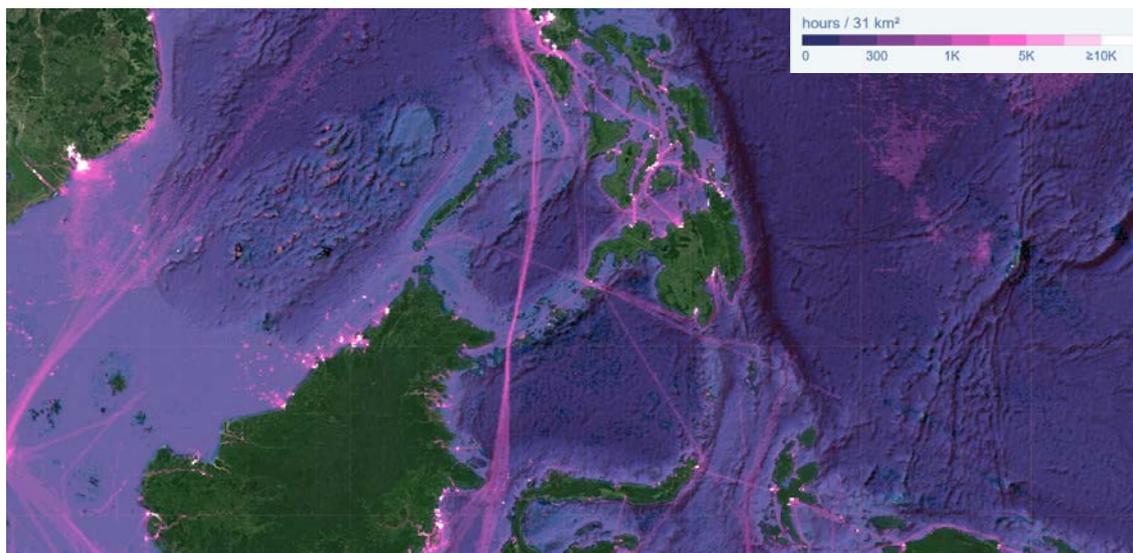
Marine traffic map of vessels in the Sulu-Celebes Sea on 17/05/2022. Colour markers represent green: cargo vessel, red: tanker, light blue: tugs and special craft, dark blue: passenger vessel, purple: pleasure craft, orange: fishing vessel.



Source: Marine traffic: <https://www.marinetraffic.com/en/ais/home>

FIGURE 23

Global Fishing Watch data for the Sulu-Celebes region for the year 2021. The heatmap presents the presence activity of all vessels in each 31km<sup>2</sup> grid. Lighter colour denotes greater vessel presence.



Source: Global Fishing Watch

## IUU FISHING: STRENGTHENING ENFORCEMENT TO REDUCE TRADE IN IUU FISHED SPECIES IN THE REGION

To assess the volume and species caught through IUU fishing in the Sulu-Celebes Seas and then landed outside of the region is very difficult, even beyond examining seizure data. By definition, the very nature of IUU activity and trade is not transparent, which is why these illicit activities continue. Major efforts have been made to stop it through greater maritime enforcement and through the design and implementation of vessel monitoring and traceability systems. Combined, these offer solutions to reduce IUU fishing activity and the access of products of species derived from them to supply chains.

IUU fishing activities are widespread in Asia and in the Sulu-Celebes Seas, and constitute activities such as fishing without a legitimate licence or vessel registration papers, vessels with more than one flag, use of destructive fishing gear (e.g. cyanide, dynamite fishing), landing products in unauthorised ports, non-reporting, misreporting, or under-reporting of catch. IUU activities have mostly been conducted by vessels flagged as Indonesia, Malaysia, Philippines, People's Republic of

China, Taiwan, Thailand, and Viet Nam (Palma & Tsamenyi, 2008). IUU fishing has targeted tuna, billfish, other pelagic fishes, sharks, reef fish (e.g. Humphead Wrasse), corals, marine turtles and marine mammals.

To deal with IUU activities, Indonesia banned all foreign vessels from Indonesian waters in 2014. This included the banning of transshipment, cancelling the operation of more than 1,300 registered foreign fishing vessels. Around 50% of domestic catches were being illegally transferred to foreign vessels on the edge or outside Indonesia's EEZ. Since then, the presence of foreign vessels has declined by 90% and the authorities have destroyed some 300 vessels caught violating the ban (Amling, *et al.*, 2019).

In Malaysia, most IUU activities observed seemed to relate to licensing issues, such as vessels operating without licences, using restricted or excess amounts of fishing gear, and low detention and arrest rates of foreign vessels (Amling, *et al.*, 2019).



**1,300  
vessels**

were caught by Indonesia for violating its 2014 ban of foreign vessels

In 2020, the arrest rate of Vietnamese nationals for all wildlife crimes in Malaysia tripled compared with data from 2018 and 2019. From 2018 to 2020, 99% of Vietnamese nationals arrested (702 individuals) were detained and arrested for illegal fishing (TRAFFIC data). There could be many reasons for such an increase, but a commonly observed situation by TRAFFIC is that the COVID-19 pandemic has seen dramatic changes in fishing behaviour and effort globally, including:

- Increased catch and trade in many countries to supply desperately needed income to coastal states due to a lack of income from tourism
- Lack of onboard observers collecting

reliable data on catch for sustainability purposes, and checking on compliance with regulations due to social distancing requirements; and

- Anecdotal reports of increased illegal fishing

Major fishing concerns in the Philippines are misreporting catch or an absence of reporting (Amling *et al.*, 2019). Due to the depletion of coastal resources, there is also concern of fishers illegally extending their fishing activity into Indonesian waters.

Several key national and regional activities have been undertaken to combat IUU activity in the region and complement each other in their overall objective of eradicating IUU (Table 17).



**most  
vietnamese  
nationals**  
detained in  
Malaysia were for  
illegal fishing

**TABLE 17**

*National and Regional initiatives to reduce Illegal, Unreported and Unregulated (IUU) fishing activity in the Sulu-Celebes Seas.*

INITIATIVES TO REDUCE IUU	CONTRIBUTING AGENCIES	INDONESIA	MALAYSIA	PHILIPPINES
To develop and implement Electronic Catch Documentation and Traceability (eCDT) systems to combat IUU fishing, improve sustainable fisheries management, and address the sectors human welfare and gender equity concerns <sup>1</sup> .	USAID Oceans in partnership with the Southeast Asian Fisheries Development Center (SEAFDEC), national and local governments across the Asia-Pacific region, private sector, and non-governmental partners.	Indonesia Sistem Telusur dan Logistik Ikan Nasional (National Fish Traceability and Logistic System, STELINA)  The Indonesian Ministry of Marine Affairs and Fisheries (MMAF) has developed an internal downstream traceability system that not only serves to bridge eCDT data capture solutions, but also integrates more than twelve existing fisheries management databases that are currently used by MMAF.		Electronic Catch Documentation and Traceability System (BFAR eCDTS)  The Philippines' Bureau of Fisheries and Aquatic Resources (BFAR) has developed an internal traceability system, the eCDTS, to bridge small, medium, and large-scale eCDT data capture tools and to integrate existing national databases. The BFAR eCDTS also enables supply chain actors to enter data through web and mobile-based database modules in port, supporting the generation of nationally mandated certificates and documentation.
Regional Plan of Action to Promote Responsible Fishing Practices Including Combating IUU Fishing (RPOA IUU) <sup>2</sup> .		Participating	Participating	Participating
Other initiatives		In 2014, the government banned all foreign vessels from Indonesia's waters	National Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated Fishing 2013	

INITIATIVES TO REDUCE IUU	CONTRIBUTING AGENCIES	INDONESIA	MALAYSIA	PHILIPPINES
Other initiatives		Indonesian Maritime Information Center (IMIC), Address IUU through linking data and analysis from various ministries and agencies	Other initiatives	National Coast Watch Center, which is the central maritime law enforcement inter-agency mechanism
SEAFDEC Regional Fishing Vessels Record (RFVR) Database is an online system to support the fishing vessel inspection to reduce the IUU fishing vessels <sup>3</sup> .				

Sources: Amling et al., 2019,

<https://www.seafdec-oceanspartnership.org>,

<https://www.fao.org/faolex/results/details/en/c/LEX-FAOC163554/>

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- 1 [https://media.salttraceability.org/wp-content/uploads/2020/03/04115256/USAID-Oceans\\_eCDT-Technology-Booklet\\_2019\\_web.pdf](https://media.salttraceability.org/wp-content/uploads/2020/03/04115256/USAID-Oceans_eCDT-Technology-Booklet_2019_web.pdf)  
2 <https://www.rpoaiuu.org/1233-2/>  
3 <http://www.seafdec.or.th/home/phocadownload/FisheryKnowledge/IUU/RFVR.pdf>

The 2007 Regional Plan of Action to Promote Responsible Fishing Practices Including Combating Illegal, Unreported and Unregulated Fishing (RPOA IUU) was adopted in the region, which seeks to apply a “*common and collaborative approach to promote responsible fishing practices and to combat illegal, unreported and unregulated (IUU) fishing in the region, in particular, in the South China Sea, the Sulu-Sulawesi Seas, and the Arafura-Timor Seas;...*”<sup>19</sup> Workshops are regularly convened by participant countries to consider technical aspects of eradicating IUU, with the most recent one held in August 2021<sup>20</sup>.

There are indications at the enforcement level in the Sulu-Celebes Seas that the naval and civilian maritime agencies in Indonesia, Malaysia and the Philippines are recognising and acting on environmental crime as an issue of concern. This includes improved naval capabilities for deployment in the shallow waters of these seas and increased inter-agency coordination and information-sharing mechanisms within the civilian enforcement agencies. Closer collaboration between countries at the regional level are also

a priority through the Trilateral Cooperative Arrangement (TCA) and the Contact Group on Maritime Crime in the Sulu-Celebes Seas (Amling, et al., 2019). These initiatives focus on crimes such as piracy and kidnapping. While they are not created to address IUU fishing, they do offer collaborative approaches for sharing of information, with strong links between different forms of organised crime. Given the increased collaborative enforcement efforts within the region with regard to maritime crime, it is important to ensure all the agencies participating in joint operations are knowledgeable on key challenges concerning IUU fishing and trade, and in relevant key species, products and shipping routes.

There are opportunities to support RPOA IUU activities, by using key supportive tools. This could include product identification materials, the identification of key species, their products and supply chains, and putting in place traceability systems (see Traceability systems). The valuable contribution traceability can play in reducing accessibility of IUU fishing products in supply chains or in detecting their presence is widely recognised.

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19 Statement agreed by Ministers from Australia, Brunei Darussalam, Indonesia, Malaysia, Papua New Guinea, The Philippines, Singapore, Thailand, Timor-Leste and Vietnam attending the Regional Ministerial Meeting on Promoting Responsible Fishing Practices including Combating IUU Fishing in the Region, Bali-Indonesia, 4th May 2007. <https://www.rpoaiuu.org/joint-ministerial-statement/>  
20 <https://www.rpoaiuu.org/1233-2/>

# ENFORCEMENT SUCCESSSES AND CHALLENGES

Law enforcement agencies in the Sulu-Celebes Region successfully carried out at least 452 wildlife seizures from 2003 to 2021, which is no small feat. The main types of illegal activities to be actioned upon broadly cover poaching (illegal collection and harvest), smuggling (illegal transport and transactions from point of collection to point of sale), and illegal trade (buying and selling). The strategies to tackle each may be different, but must be linked so that whole trafficking networks can be disrupted.

Poaching often occurs in the most resource-rich locations, which often coincide with protected areas. Regular patrolling by vetted personnel, at both terrestrial and marine poaching hotspots (such as TIWS, Tubbataha Reef Natural Park) could deter poachers. Poaching is often carried out by local communities with little alternative livelihood options, hence targeted, in-situ habitat protection, and enforcement against poaching should be complemented by community-based conservation.

Tackling trafficking is particularly challenging because of the many route possibilities that can be used by vessels. While sea patrols have successfully resulted in many seizures (e.g. Case 1, Case 2), conducting patrols across the entirety of the Sulu-Celebes Seas would be extremely costly, so efforts need to be targeted towards popular routes and

bottlenecks. While the seizure analysis has indicated some cities and ports with high levels of intercepted smuggling, this detection bias could mean that there are other locations with high smuggling activity, but low detection. Generally, landing sites and ports function as bottlenecks, therefore, increasing vigilance and checks and introducing more modern equipment at formal and informal landing sites could intercept attempts to bring contraband ashore. Intelligence-led operations combined with vessel-tracking technology can be utilised to intercept suspicious vessels at sea, whereas state of the art scanners and K9 units could be used to interrupt traffickers at ports. Capacity building of staff on wildlife identification and protected and CITES-listed species is also essential for officers to be able to identify and apprehend criminals.

The illegal trade of wildlife within the Sulu-Celebes region often takes place in commercial hubs like cities. Regular crackdowns at known marketplaces can serve to eliminate the illegal open sale of wildlife (e.g. Case 5). Another challenge is the illegal online wildlife trade, which is difficult to regulate (WWF, 2021). Cooperation between law enforcement agencies, NGOs and online trade platforms (e.g. Case 4, TRAFFIC, 2021), and employing the assistance of artificial intelligence algorithms, can enable the detection and timely removal of posts illegally offering wildlife, and enforcement action against serious traders.



**enforcement  
strategies**  
for poaching,  
trafficking and illegal  
trade needed



Coron Cityscape with Mt. Tapyas Mountain in Background. Palawan, Philippines

## WORKING TOGETHER: MULTI-AGENCY AND MULTI-NATIONAL COOPERATION

More than a quarter of seizure incidents (27% or 89 incidents) were reported to involve collaboration between multiple law enforcement agencies within a country. However, from this seizure analysis there were few recorded incidents of international enforcement agency collaboration. This may be due to a lack of reporting or recording, nonetheless, it highlights a gap in cooperation between the countries' law enforcement

agencies to combat wildlife trafficking in this region. The international nature of these crimes supports the need for a wildlife-focused multi-national, multi-agency working group to tackle the range of wildlife crimes in the area. Other organisations working with the government, such as non-government organisations, can also play a role in assisting and supporting enforcement actions, as in Case 4.



### **international and multi-agency collaboration**

can support successful enforcement

#### **CASE 4: NGO ASSISTANCE IN DETECTING AND CONFISCATING TURTLE SHELL JEWELLERY**

<b>Summary</b>	Jewellery made from turtle shell was seized during shop inspections in East Kalimantan. The NGO ProFauna aided ministerial level and district level fisheries agencies in the seizure.
<b>Date of seizure</b>	27 - 28 February 2016.
<b>Seizure location</b>	Various shops on Derawan Island and Tanjung Redeb, Berau Regency, East Kalimantan, Indonesia.
<b>Items trafficked</b>	One hundred and thirty-five rings and bracelets made from protected Hawksbill Turtle ( <i>Eretmochelys imbricata</i> ) shells.
<b>Value</b>	Items were being sold for between IDR 5,000 (USD 0.35) and IDR 500,000 (USD 35).
<b>Agencies involved</b>	Ministry of Marine Affairs and Fishery (KKP), together with Berau District Marine and Fishery Agency (DPK), and ProFauna Borneo (a non-government organisation) carried out the seizures.  On 1 March 2016, the Berau Regent, Berau district agencies, as well as the police and army discussed the seizures in a multi-agency meeting in Tanjung Redeb. ProFauna Borneo and Konservasi Biota Laut Berau (a local conservation group) had carried out surveys of shops on Derawan Island and Tanjung Redeb in Berau Regency in the months prior to the seizure.
<b>Outcome</b>	The items were confiscated, but there were no reported arrests.

There are several working groups aiming to improve collaboration among law enforcement agencies of the three countries, predominantly the Trilateral Maritime Patrols (TMP, also known as INDOMALPHI). TMP was established after

several incidents of kidnappings for ransom in the Sulu-Celebes region, as well as increased piracy and sea robbery (Storey, 2018). The region also faced a particular threat from the criminal-terrorist Abu Sayyaf Group (ASG).

These threats led to heightened cooperation of law enforcement between the three states, including a Maritime Command Center, Trilateral Maritime Patrol, Trilateral Air Patrol, and Port Visits. Reports are generally positive about the TMP, and some suggest that it has led to a reduction in crime rates in the Sulu-Celebes region (Atamimi, 2020). However, others suggest that unilateral Philippine actions against the ASG are responsible for the reduced crime rates (Storey, 2018).

The region also has an established Maritime Security network, with an Information Fusion Centre based in Singapore<sup>21</sup>. Leveraging on this and other existing regional-level institutions, such as ASEANAPOL, the Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security Regional Secretariat could improve communication and capacity building. Additionally, the uptake of a shared regional communication platform and seizure database such as TWIX would support improve multi-country, multi-agency coordination.

There are still unresolved issues, which may cause tension between the states, including territory disputes (Storey, 2018). When criminals move between territories, law enforcement agencies of one nation may therefore be reluctant to pursue them into another country's territory, as there is no clear Standard Operating Procedure (SOP) for such pursuit and collaboration (Atamimi, 2020).

An example of this is in Case 5, where rather than crossing into Malaysian waters to pursue a vessel, Philippine officials had to wait for a boat carrying dried shark and protected fish to enter their territory before they could apprehend it. It is reported that TMP are in disagreement about the SOP regarding "hot pursuit". This means there is no agreed procedure among the three countries on what to do when criminals leave or enter territories and are being pursued by foreign authorities, and if authorities are allowed to enter the territory for the purpose of apprehending criminals or not (ASEAN, 2018).



**shared regional**  
communication platform and seizure database could improve multi-country coordination

## CASE 5: HOT PURSUIT OR WAITING GAME?

<b>Summary</b>	A group of Indonesian and Philippine nationals were apprehended in Tawi-Tawi waters, Philippines, with dried shark and other illegally caught threatened fish on their boat. This group had been under surveillance for some time.
<b>Date of seizure</b>	28 July 2019.
<b>Seizure location</b>	Tawi-Tawi Province waters, Philippines.
<b>Items trafficked</b>	Dried shark and threatened fish species of unreported quantities.
<b>Trade route</b>	The boat was first spotted in the seas of Sabah, Malaysia, and the crew was apprehended once it entered Philippine waters.
<b>Value</b>	No estimated value was reported.
<b>Agencies involved</b>	The Philippine National Police - Maritime Group's Special Operations Unit I. The authorities reportedly waited until the group entered the Philippine waters before acting.
<b>Actors involved</b>	Six Indonesian and three Philippine nationals were arrested.
<b>Outcome</b>	The nine fishermen were detained, but there was no further information recorded. The contraband was confiscated.

21 [https://www.mindef.gov.sg/web/portal/mindef/news-and-events/latest-releases/article-detail/2019/May/14may19\\_fs](https://www.mindef.gov.sg/web/portal/mindef/news-and-events/latest-releases/article-detail/2019/May/14may19_fs)



Confiscated Vietnamese fishing vessel, Philippines

## CONVICTIONS AND PENALTIES

Low conviction rates undermine enforcement actions. According to the seizure data, 119 incidents resulted in arrests, but only 26 incidents reportedly resulted in convictions. Although conviction data is incomplete due to reporting and recording gaps, there appears to be a wide gap between seizures and successfully reported convictions. This is a global concern and not unique to the Sulu-Celebes region.

Investment into effective prosecution and the conviction of wildlife criminals to the full extent of the law helps to reduce wildlife crimes, as it enables enforcement agencies to maintain a presence of authority and deters illegal activity.

Wide reporting of successful seizures and convictions is also important to ensure that criminals are aware of the consequences of wildlife crime and can deter potential wildlife traffickers.

Wildlife traffickers in the Sulu-Celebes Seas are often in breach of multiple laws. Common wildlife crimes relevant to the Sulu-Celebes

Seas that often occur in conjunction include:

- lack of permits for harvest, trade, or transportation of wildlife or fishing
- use of unauthorised processing or harvest techniques, including destructive fishing practices, or use of unauthorised fishing equipment
- exploitation in unauthorised areas, in protected areas in land or sea
- exceeding harvest quotas of wildlife
- harvest and trade of terrestrial and marine wildlife species prohibited by law
- illegal export of regulated commodities without necessary documentation, such as CITES-listed species

These may also converge with additional non-wildlife crimes, including illegally entering another country's territory, bribery and corruption, money laundering, animal health and quarantine violations, and evading authorities. This presents an opportunity for leveraging upon such non-wildlife laws to prosecute wildlife traffickers more successfully (e.g. Case 1, Case 3 and Case 6).

**119**  
**arrests**  
but only 26  
convictions  
reported

## CASE 6: PHILIPPINE NATIONALS CONVICTED IN SABAH FOR WILDLIFE TRAFFICKING AND ILLEGAL ENTRY

<b>Summary</b>	Twelve Philippine nationals were detained in Sabah waters for trafficking 19,000 marine turtle eggs. Three skippers were successfully convicted in Sabah for the possession of turtle eggs.
<b>Date of seizure</b>	16 July 2016.
<b>Seizure location</b>	The waters of Sungai Batu 2 on the east coast of Sandakan, Sabah, Malaysia.
<b>Trade route</b>	Philippines to Sandakan, Sabah, Malaysia.
<b>Items trafficked</b>	Nineteen thousand turtle eggs.
<b>Value</b>	Estimated value MYR 30,400 (USD 7,230).
<b>Agencies involved</b>	The confiscation and arrest was carried out by the Marine Operation Force (MOF) of the Royal Malaysia Police.
<b>Actors involved</b>	Twelve Philippine nationals, including four skippers aged between 21 and 49, and eight passengers comprised of seven men and one woman, aged between 17 to 63. None were carrying valid identification documents.
<b>Modus Operandi</b>	Four boats were used to carry the contraband overnight - they were detected by officials at 0130 HRS.
<b>Outcome</b>	<p>Initially all of the people onboard were detained. However, only three of the skippers were charged. They all pleaded guilty before the Sessions Court Judge after the charges against them were read on 2 November 2016.</p> <p>All were found guilty of illegally entering Sabah and were each handed six-month jail sentences on top of wildlife violations. They were also charged under Section 41(1) of the Sabah Wildlife Conservation Ordinance 1997 for possession of turtle eggs.</p> <p>The first skipper was jailed for four years and fined MYR 25,000 (USD 5,910) or a further 18 months' jail in default for possession of 11,000 turtle eggs.</p> <p>The second was sentenced to three years and fined MYR 15,000 (USD 3,567) or another year in jail in default for possession of 5,000 turtle eggs.</p> <p>The third was sent to prison for two years and ordered to pay a fine of MYR 10,000 (USD 2,378) or another six months' jail in default, for having 3,000 turtle eggs.</p> <p>The judge ordered the eggs to be destroyed and the boats to be forfeited.</p>

It is worth noting that international politics can undermine national law when foreign nationals are charged. An example is where foreign

criminals are deported back to their country because of government pressure, and this results in unserved sentences (Case 3).

# TOOLS TO ADDRESS TRAFFICKING

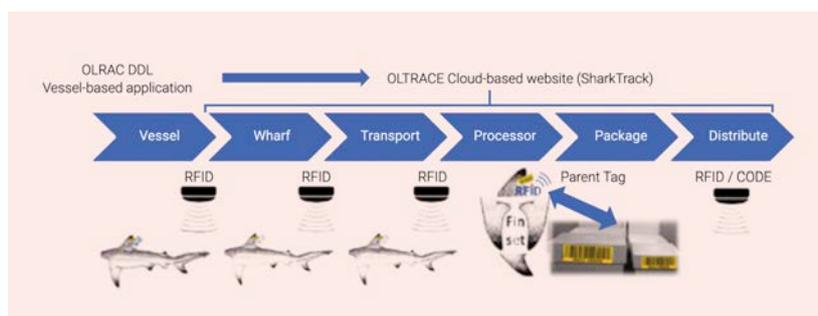
## TRACEABILITY SYSTEMS AND TOOLS

Traceability systems allow for the storage and transfer of information of products within a supply chain. This information can be used to verify the provenance of products from legal and sustainable sources through the examination of critical information pertaining to such things as regulatory requirements and associated validation certificates. Regulatory requirements often also represent points at which there is regulatory action, such as the issuing of a permit, and can be assessed if they are Critical Control Points (CCP) in a supply chain, which could be used to exert control over products in the supply chain. As an example, in a CITES context it would be ensuring appropriate certificates and permits accompany the product. Certain requirements have been added for the trade in crocodile skins (individually identifiable tags attached to each skin), caviar (tamper proof

packaging and identifiable labelling), and a combination of specific requirements for trade in timber and queen conch (Mundy and Sant, 2015). When designing new traceability systems, it is important that the product supply chain is examined and a system is designed accordingly as one system does not fit all situations (Mundy and Sant, 2015). There are many traceability systems designed for different types of products, production systems, and supply chains to deal with the problems that exist, such as mixing of legal and illegal products, mixing of sustainable and unsustainable products and substitution. Mundy and Sant (2015) offer more details on what traceability elements have been required, how they contribute to preventing illegal trade, and what administrative processes have been introduced to implement them.

FIGURE 24

*SharkTrace tool system flowchart.*



Source: Lau, W. and Sant G. (2022). Compliance protocol for managing stockpiles of CITES-listed shark fins in Hong Kong SAR, China. TRAFFIC, WWF and Bloom.

TRAFFIC and partners have developed a traceability system called SharkTrace<sup>22</sup>, a tool that can trace sharks from capture to consumption and supports responsible and legal shark fisheries. It employs user-friendly and cost-effective mobile applications designed for use at sea, at processing sites, and in transport. Vessel-based electronic logbooks and GPS technology record

information at the point of catch, and radio-frequency identification (RFID) tags are used to track the landing and transport of whole or processed sharks. SharkTrace (Figure 24) has been successfully trialed in an Australian fishery and TRAFFIC continues to work with industry and government agencies to carry out more trials in South Africa.

22 <https://www.traffic.org/sharktrace/>



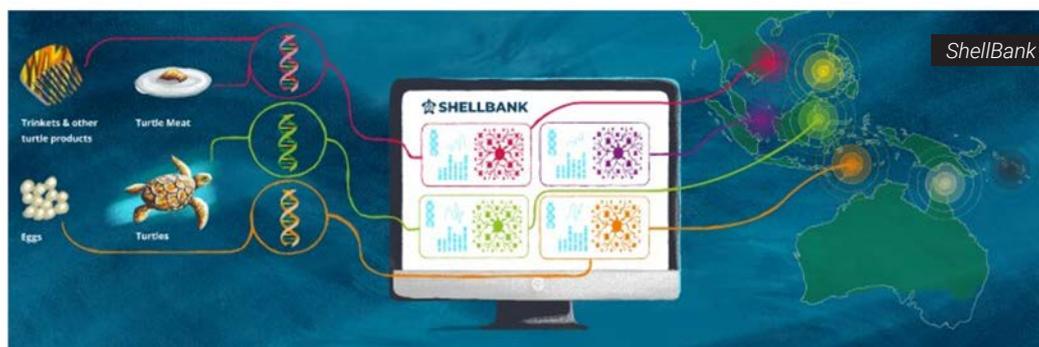
*Hawksbill turtle swimming through a reef*

An electronic catch documentation and traceability (eCDT) system has been developed by USAID Oceans in partnership with the Southeast Asian Fisheries Development Center (SEAFDEC), national and local governments across the Asia-Pacific region, private sector, and non-governmental partners. The purpose of this system is to combat IUU fishing, improve sustainable fisheries management and address human welfare and gender equity. The partnerships have already led to implementation in some fisheries in Indonesia and the Philippines<sup>23</sup>.

Accurately pinpointing the identity and source of traded wildlife is challenging, particularly where processed commodities are used, yet it is important for the identification of trafficking routes and thus preventing and/or regulating the trade in protected species. As shown above, marine turtle products do not necessarily come from local marine turtle populations, and new and emerging technology allows DNA sampling of marine turtle shells and products to be traced to the marine turtle population of origin (LaCasella, *et al.*, 2021). This technology was tested as part of the ShellBank initiative.

WWF established ShellBank to bring together multiple organisations, nations, and communities to work together to collectively develop a global repository for marine turtles, initially focussed on Hawksbill Turtle mtDNA

haplotype (genetic variant) data, supported by a toolkit of operating procedures and training packages to guide its uptake and use across the globe. ShellBank training is being delivered under the TRIPOD project, as the aim is for ShellBank to become a useful resource for law enforcement, allowing routine identification of populations most impacted by the illegal turtle trade and which populations targeted by this trade are most at risk and in need of protection. It includes genetic Rookery Baseline (nesting origin) and In-Water (population boundary) Databases, as well as a Confiscation Database containing genetic information from seized or confiscated products. This allows for tracing the origin of traded products from 'sale' back to 'source' populations (Madden Hof *et al.*, 2022a). The recent application of ShellBank in Australia showed hawksbill products surrendered from within Australia could be traced back to hawksbill populations from Eastern Malaysia, the Caribbean and Japan (foraging areas) (Madden Hof *et al.*, 2022b). Formally released in November 2022, governments and organisations can join to help grow this database and expand it to other geographical regions and marine turtle species. DNA barcoding is also a potential tool to identify shark species from oils and other commercially available products (Hellberg, *et al.*, 2019). There is reportedly work underway to turn this technology into a kit for authorities to use (Cowan, 2021).



**The world's first traceability toolkit and global database of marine turtle DNA**



Source: Madden Hof *et al.*, 2022 / WWF International Wildlife Practice and Coral Triangle Programme

23 [https://media.saltraceability.org/wp-content/uploads/2020/03/04115256/USAID-Oceans\\_eCDT-Technology-Booklet\\_2019\\_web.pdf](https://media.saltraceability.org/wp-content/uploads/2020/03/04115256/USAID-Oceans_eCDT-Technology-Booklet_2019_web.pdf)

## FINANCIAL MECHANISMS

In the Sulu-Celebes region, the convergence of crimes such as human trafficking, piracy, robbery, and terrorism have been reported (Storey, 2018). While there is no definitive evidence that these are combined with wildlife trafficking, it is plausible that, in some cases, wildlife trafficking financial flows may be linked to these other crimes. No information of financial transactions or examples of financial crime was available from the data analysed in this report. Regardless, any financial transaction involving a criminal activity (in this case, wildlife trafficking) is a financial crime, and can be charged under a country's anti-money laundering laws. The following anti-money laundering laws consider wildlife crime as predicate offences:

- Indonesia's *Law No. 8/2010 on Anti-Money Laundering*
- Malaysia's *Anti-Money Laundering and Anti-Terrorism Financing Act 2001 (Act 613)*
- The Philippines' *Anti-Money Laundering Act of 2001, as amended by RA 9194, 2003*

No information on financial transactions or

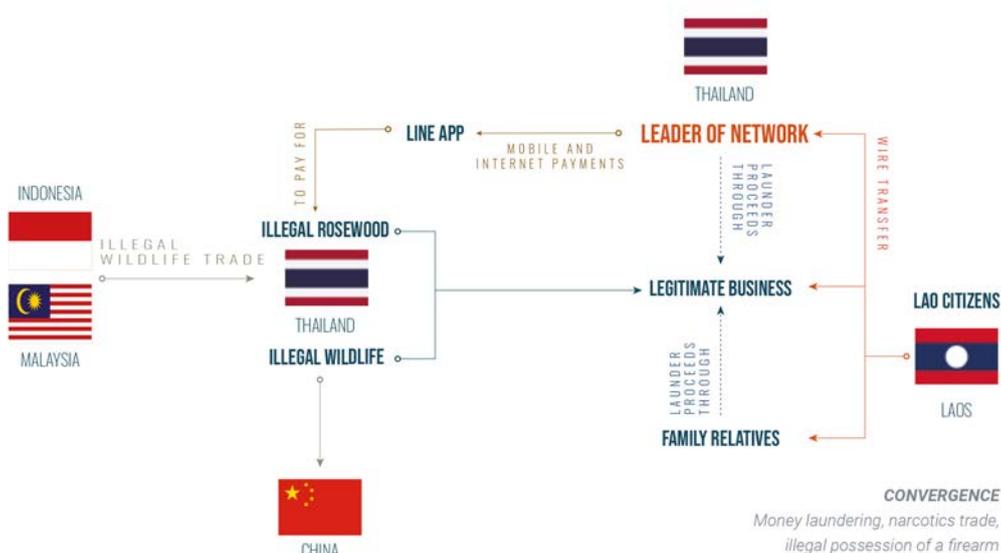
examples of financial crime were available from the data analysed in this report. However, online wildlife sellers in Indonesia often use the term 'rekber' in their posts, which refers to using a third-party escrow to complete transactions, which allows anonymity and reduces risk of being caught (Indraswari, *et al.*, 2020; OHA, pers. obs.).

Cashless payment systems such as LINE, and an array of mobile and internet-based payments are used by wildlife traffickers internationally (Figure 25, TRAFFIC, 2020). These are used for both online and in-person transactions to reduce traceability and risk.

The TRAFFIC (2020) Case Digest<sup>24</sup> is a useful resource, particularly Appendix I "Key Trends and Red Flag Indicators", and Appendix II "High-Risk Indicators for Financial Institutions and Financial Intelligence Units", which include tools to identify 'red flags' for government agencies and private sector stakeholders (e.g. financial regulators, tax authorities, Financial Intelligence units) to help identify and investigate criminal activity by tracking financial flows.

FIGURE 25

An example of how the illegal wildlife trade can be used in convergence with other crimes, and the use of online platform LINE application to transfer money.



Source: TRAFFIC, 2020.

24 <https://www.traffic.org/publications/reports/case-digest-an-initial-analysis-of-the-financial-flows-and-payment-mechanisms-behind-wildlife-and-forest-crime/>

A new Illegal Wildlife Trade Financial Flows Toolkit<sup>25</sup> developed by the UK Serious and Organised Crime Network with Themis, WWF and TRAFFIC was launched in March 2022. It is a free online toolkit for governments and financial institutions to support tackling illicit money flows associated with IWT. The toolkit

addresses the nexus where IWT converges with serious organised crime, and includes sections on red flags and risk assessments to identify suspicious transactions associated with IWT, as well as practical solutions to report and mitigate these.

## SPECIES IDENTIFICATION TOOLS AND GUIDES

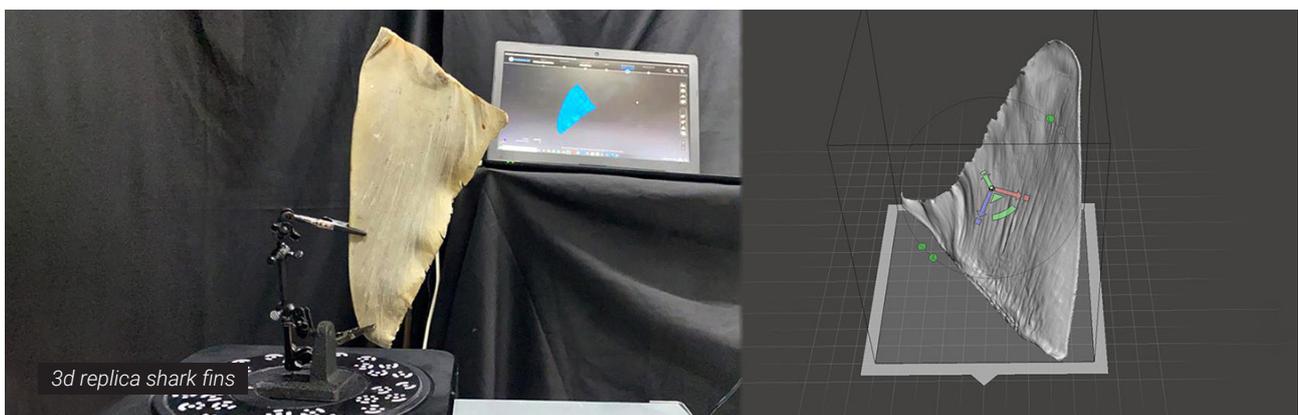
One obstacle in regulating wildlife trade is the ability of authorities to accurately identify species. This is particularly difficult when they are faced with only a portion of an animal such as a fin, scale or shell. The resources below are a small sample of tools relevant to the focal taxa and this region, and can be used to assist in identifying the species discussed in this report. Different species that look alike

can be difficult for enforcement officers to distinguish, which is particularly problematic if one species is protected and a similar looking species is not. This can lead to the wrong perceptions concerning the legality of trade in these species. The use of species identification guides and input from species specialists can help to address this challenge.

### 3D SHARK FIN GUIDE

This innovative guide aims to assist law enforcement and customs officials in identifying 22 CITES-listed shark species based on their fins. The fins of CITES-listed species have been replicated using a 3D printer and painted, to enable authorities to differentiate between species. Available resources include the 3D print files, painting guides and further information on each species, for free.

Available at: <https://www.traffic.org/3d-replica-shark-fins/>



### GLOBAL SHARK AND RAY INITIATIVE (GSRI)

The Global Sharks and Ray Initiative is a collaboration between organizations working to conserve populations of sharks and rays from overfishing and other threats. Publications and resources made available by GSRI include a Rapid Assessment Tool Kit for Sharks and Rays, and A Guide to the Design and Management of Marine Protected Areas for Sharks and Rays, among other useful documents.

Available at: <https://www.globalsharksraysinitiative.org/news-publications>

25 <https://themisservices.co.uk/iwt>

## GUIDEBOOKS OF SHARKS AND RAYS

Guidebooks to aid the identification of sharks and rays in the region are available. A comprehensive compilation of identification materials can be found here: <https://cites.org/eng/prog/shark/resources.php>

In addition, the following guidebooks are available specifically for the countries bordering the Sulu-Celebes Seas; these books were used as identification tools in this report.

- Economically important sharks and rays Indonesia  
Available at: <https://www.aciar.gov.au/publication/books-and-manuals/economically-important-sharks-and-rays-indonesia>
- Sharks and Rays of Borneo  
Available at: [https://www.researchgate.net/publication/235665017\\_Sharks\\_and\\_Rays\\_of\\_Borneo](https://www.researchgate.net/publication/235665017_Sharks_and_Rays_of_Borneo)
- Pating Ka Ba? An identification guide to Sharks, Batoids and Chimaeras of the Philippines  
Available at: <http://www.mwwphilippines.org/downloads/pating-ka-ba.pdf>

## TRAFFIC SPECIES IDENTIFICATION GUIDES

An expanded wildlife identification guide for law enforcement agencies across Southeast Asia. This photographic guide provides information on a wide range of species which are commonly traded and seized, including identification tools for marine turtles and pangolins.

Available at: [https://www.traffic.org/site/assets/files/17352/eng\\_identification\\_sea\\_e.pdf](https://www.traffic.org/site/assets/files/17352/eng_identification_sea_e.pdf)

## USAID PANGOLIN IDENTIFICATION GUIDE

This reference and identification guide is available in multiple languages, and provides a guide for identifying all eight species of pangolins and parts. Other resources include a quick reference guide and a smartphone Application to help identify pangolins and parts.

Available at: <https://www.usaidwildlifeasia.org/pangolin-guide>

## SEE SHELL APP

This is a mobile application from the NGO SeeTurtles, which provides image-based recognition to identify if a product is made from genuine turtle shell or not.

Available at: <https://www.seeturtles.org/see-shell>

## WILDSCAN APP

WildScan is an intuitively simple species identification smartphone app, with information on over 800 heavily trafficked species and law enforcement contacts from 25+ countries on two continents. It is available in nine languages and available for free on iOS and Android platforms. It can be used by frontline enforcement officers, transportation and shipping officers (aviation, courier, postal), and by members of civil society, including youth.

Free on Google Play and IOS platforms.

Available at: <https://www.bornfreeusa.org/campaigns/wildlife-trade/wildscan/>

## TRIPOD ENFORCEMENT TRAINING AND REFERENCE GUIDES

- Laws: Rapid Reference Guide (WWF)
- C-TOC (Counter-Transnational Organized Crime) trains enforcement officers to illuminate and disrupt illicit supply chains. Participants also learn how to form task forces that can operate across agency and national lines to counter wildlife trafficking. (Freeland with ASEANAPOL and other enforcement agencies)
- Marine Enforcement Patrolling: PROTECT-Marine Enforcement Training Program (Freeland)
- Caring for confiscated wild animals: Care for Confiscated Wildlife Training and Kits (IFAW)



*Common Green Sea Turtle hatchlings rush to the sea. Turtle Islands, Philippines*

# RECOMMENDATIONS

*THIS RESEARCH CLEARLY SHOWS THAT THE SULU-CELEBES REGION PLAYS AN IMPORTANT ROLE IN WILDLIFE TRADE IN SOUTHEAST ASIA AND BEYOND, WITH SIGNIFICANT LEVELS OF IWT OCCURRING. THIS IS A COMPLEX REGION, WITH HISTORICAL, CULTURAL, SOCIO-ECONOMIC AND POLITICAL FACTORS COMING INTO PLAY.*

The on-going illegal, unregulated, and likely unsustainable exploitation of the three countries' natural resources is an urgent matter, and these governments should make this issue a priority. The seas are also used as a conduit to smuggle terrestrial and marine wildlife between the three countries. Seizures of large quantities of marine commodities indicate a high level of exploitation of marine resources in the Sulu-Celebes Seas. Greater action to prevent these crimes needs to be taken by the respective governments to ensure the sustainability of their natural resources.

Law enforcement agencies have been active, as evidenced by over 450 successful seizure incidents, and national agencies worked well with each other. There is still room for improvement, nonetheless. The low conviction rates undermine enforcement actions. Investment into effective prosecution and the conviction of wildlife criminals to the full extent of the law helps to reduce wildlife crimes as it enables enforcement agencies to maintain a presence of authority, deters illegal activity, and alters the perceived level of risk for criminals to engage in these practices. There was also a lack of reported details of international cooperation between law enforcement agencies.

The highly interconnected nature of IWT in this region means that solutions must involve looking at the region as a whole and close collaborations between law enforcement agencies and various stakeholders across the three countries. Based on the findings in this report, the actions below are recommended.

## IMPROVE INTER-AGENCY AND INTER-COUNTRY COORDINATION

The international nature of these crimes supports the need for more strategic cooperation and collaboration between the three countries (and among agencies within those countries) to tackle the high level of wildlife trafficking, specifically:

- Identify areas to improve communication streams between national and local law enforcement agencies, and between agencies of different countries
- Develop cross-agency and cross-border task forces to combat wildlife trafficking
- Set up communication pathways and explore the development of jointly used regional seizure databases for information and intelligence sharing. This could include making links with the region's already established maritime security network that has its own Information Fusion Centre in Singapore producing open-source intelligence reports on seizures of all illicit commodities in this region
- Develop transboundary Standard Operating Procedures (SOPs) in handling cross-border incidents, including hot pursuit of suspects across the boundaries of national waters, and covering the whole chain from investigation to interception to prosecution
- Anchor the organisation and facilitation of capacity building for national task forces in regional-level institutions, such as ASEANAPOL, with support from the Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security Regional Secretariat

# IMPROVE CAPACITY TO COUNTER WILDLIFE TRAFFICKING

- Build capacity of frontline officers in the care for seized live wild animals and evidential handling practices
- Work with the private sector (e.g. tech platforms) to increase detection and removal of illegal wildlife trade online, with the assistance of machine-led detection
- Build capacity for arresting officers, prosecuting officers, and judges on the range of laws that could be used to charge offenders with, to increase successful convictions
- Conduct interagency and cross-border training sessions on best practice methods to identify and dismantle illicit wildlife trade supply chains. These training events can also provide opportunities for officers from each agency or country to interact and break down communication barriers, while learning how to operate together in pursuing suspects who may be violating multiple laws
- Use available tools to help tackle wildlife trafficking, with a focus on species identification, financial mechanisms, and technologies on traceability of confiscated wildlife products
- Use artificial intelligence to distinguish between real and fake parts and products (e.g. by using innovative technologies, or open source intelligence reverse imaging)
- Use link analysis and other effective methods to “follow the money” to determine financial sources of wildlife trafficking, uncover and seize assets procured through the proceeds of wildlife trafficking, and identify and destabilise criminal networks

# FOCUS ENFORCEMENT EFFORTS ON TRAFFICKING HOTSPOTS

- Conduct regular patrolling at both terrestrial and marine poaching and trafficking hotspots, especially around protected areas, and increase maritime (at-sea) monitoring
- Landing sites and ports function as bottlenecks. Increase vigilance and checks at known formal and informal landing sites, especially at major cities, which could intercept attempts to bring contraband ashore. These can include introducing more modern equipment at ports, such as state of the art scanners, K9 units, and building the capacity of staff at key border entry and exit locations (e.g. on wildlife identification and threatened species status, wildlife handling and holding)
- To complement marine patrols, utilise intelligence-led operations combined with vessel-tracking technology to intercept suspicious vessels at sea

# REDUCE THE TRAFFICKING OF MARINE TURTLES

- Empower and build capacity for coastal communities to patrol poaching hotspots especially remote areas where law enforcement capacities and assets are limited
- Conduct regular crackdowns at known marketplaces in main commercial hubs, cities, and online platforms to eliminate the open illegal sale of wildlife
- Ensure rigorous vetting processes for personnel deployed in protected areas and IWT hotspots
- Increase marine patrols and vigilance between Tawi-Tawi Province in the Philippines and Sandakan, Sabah Malaysia, focused particularly on marine turtle egg trafficking. Use the Joint Management Committee meeting held by both countries as a platform to discuss and advance these actions
- Improve the enforcement of legislation and regulations that apply to marine turtles at smuggling entry/exit points and marketplaces, and on beaches, foraging grounds and other developmental habitats where turtles are being poached
- Build awareness at the community and government levels on the ecological and tourism roles of marine turtles and respective applicable legal frameworks
- Encourage law enforcement agencies to participate in ShellBank and use genetic traceability to track the illegal trade of marine turtles (including products, such as tortoiseshell) and to help identify which populations are being targeted for poaching
- Support the declaration of the Turtle Islands Heritage Protected Area as the first transboundary ASEAN Heritage Park (AHP), based on the declaration of TIWS, Philippines, and Turtle Islands Park, Malaysia, as AHPs at the national level, and support the process of declaring TIWS a UNESCO World Heritage Site, advancing it from the tentative list it was added to in March 2015
- NGOs and local governments are encouraged to work with local communities in the islands of Tawi-Tawi Province of the Philippines and island communities of Sabah to develop holistic conservation strategies to reduce poaching and trafficking, such as alternative economic livelihoods and environmental stewardship. This is particularly relevant to marine turtle and marine turtle egg poaching
- Develop demand-reduction campaigns to reduce consumption of marine turtle eggs in Sabah

## REDUCE THE TRAFFICKING OF PANGOLINS

- Increase vigilance of law enforcement at international crossings and borders, regarding methods used to smuggle pangolins and pangolin products (use existing red-flag indicators or develop these for the countries involved)
- Increase attention of law enforcement agencies and tech companies to tackle the illegal online trade of wildlife, particularly in Indonesia and Malaysia, where online trade of pangolins and their products persist
- Conduct population studies in the Sulu-Celebes region to identify priority locations for in-situ protection to reduce poaching and protect wild populations

## REDUCE TRAFFICKING AND IMPROVE REGULATION OF SHARK AND RAY TRADE

- Improve national regulations, especially for protected species, on catch, recording and reporting for domestic and international trade
- Encourage the use of traceability systems such as SharkTrace and the eCDT to detect the presence of IUU fishing products and reduce their accessibility to supply chains
- Conduct further research on the trade of ray tails in the Philippines to understand the scale of it, how it is regulated, how it impacts ray populations and if there are any regional linkages
- Conduct further research into the shark trade in this region, specifically: stock-pilers of shark fins in northern Sulawesi, Indonesia, and locations of processing and onwards trade of sharks caught in the Sulu-Celebes Seas
- Identify which species are used in processed shark products, such as oil, via DNA barcoding, to detect the utilisation of protected species

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## ANNEXES

Annex 1. Law enforcement agencies in Indonesia, Malaysia, and the Philippines which were involved in wildlife seizures in the Sulu-Celebes Seas region.

LEA CATEGORY	POLICE	MARINE POLICE	FOREST POLICE	AVIATION POLICE	ENVIRONMENTAL AND FORESTRY LAW ENFORCEMENT	CONSERVATION AGENCY	MARITIME ENFORCEMENT/ SECURITY AGENCY	NAVY	MILITARY	FISHERIES	CUSTOM	INTELLIGENCE AGENCY	NGO
Indonesia	POLRI	POLAIRUD	POLHUT	AVSEC	GAKKUM	BKSDA / BPSPL	BAKAM-LA	TNI-AL		Marine and Fisheries Resources Monitoring Base (PSDKP)	Customs Indonesia		
	Polda												
	Polred												
Malaysia	PDRM	MOF	GOP	RMP Air unit	PROTECT Sabah Forestry Department Sabah Wildlife Department Sandakan Municipal Council Enforcement unit	alays	MMEA	TLDM	ATM/ MALBATT	Malaysian Fisheries Department	Royal Malaysian Customs Department	alays	alays
Philippines	PNP	PNP-Marine Group		PNP-Aviation Security Group	CENRO	PCSD	Philippine Coast Guard	Philippine Navy	Philippine Armed Forces	Bureau of Fisheries and Aquatic Resources	Bureau of Customs	National Bureau of Investigation	Turtle Foundation activists
					PLETF					Cebu City Department of Veterinary Medicine and Fisheries (DVMF)			Palawan NGO PNNI (Global Legal Action for Climate Change)
					PENRO					Fisheries Protection and Law Enforcement Group			Palawan NGO Network, Inc.

Annex 2. Shark and ray species recorded from an online monitoring survey in the Sulu-Celebes region.

COMMON NAME	SCIENTIFIC NAME	NO. INDIVIDUALS	WEIGHT (KG)
Unidentified Shark	<i>Carcharhiniformes</i>	1044	408.08
Blue-spotted Maskray	<i>Neotrygon spp</i>	793	10.3
Spot-tail Shark	<i>Carcharhinus sorrah</i>	292	400
Spinner Shark	<i>Carcharhinus brevipinna</i>	115	
Blacktip Reef Shark	<i>Carcharhinus melanopterus</i>	99	
White-spotted Whipray	<i>Himantura gerrardi</i>	83	1
Sharpnose Stingray	<i>Dasyatis zugei</i>	80	
Reticulate Whipray	<i>Himantura uarnak</i>	70	75
Leopard Whipray	<i>Himantura leoparda</i>	55	
Brownbanded Bamboo Shark	<i>Chiloscyllium punctatum</i>	47	
Blackspot Shark	<i>Carcharhinus sealei</i>	46	
Scalloped Hammerhead	<i>Sphyrna lewini</i>	34	
Whitespotted Wedgefish	<i>Rhynchobatus australiae</i>	33	
Blue-spotted Ribbontail Ray	<i>Taeniura lymma</i>	30	60
Bleeker's Whipray	<i>Himantura uarnacoides</i>	25	
Broadnose Wedgefish	<i>Rhynchobatus springeri</i>	19	
Unidentified Stingray	<i>Rajiformes and Myliobatiformes</i>	17	0.45
Cowtail Ray	<i>Pastinachus solocirostris</i>	10	
Whitespotted Bambooshark	<i>Chiloscyllium plagiosum</i>	6	
Dwarf Whipray	<i>Himantura walga</i>	5	
Jenkins' Whipray	<i>Himantura jenkinsii</i>	4	
Grey Sharpnose Shark	<i>Rhizoprionodon oligolinx</i>	4	
Whitetip Reef Shark	<i>Triaenodon obesus</i>	4	
Borneo Devilray	<i>Mobula sp</i>	3	
Cowtail Stingray	<i>Pastinachus sephen</i>	3	
Taiwan Guitarfish	<i>Rhinobatus formosensis</i>	2	
Milk Shark	<i>Rhizoprionodon acutus</i>	2	
Blue Shark	<i>Prionace glauca</i>	1	
Bull Shark	<i>Carcharhinus leucas</i>	1	
<b>GRAND TOTAL</b>		<b>5007</b>	<b>963.3</b>

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**MAY 2023**

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

**TRAFFIC**

TRAFFIC SOUTHEAST ASIA  
+603 7880 3940  
[tsea@traffic.org](mailto:tsea@traffic.org)  
[traffic.org](http://traffic.org)