THE TRADE IN TORTOISES AND FRESHWATER TURTLES IN JAKARTA REVISITED

Carrie J. Stengel
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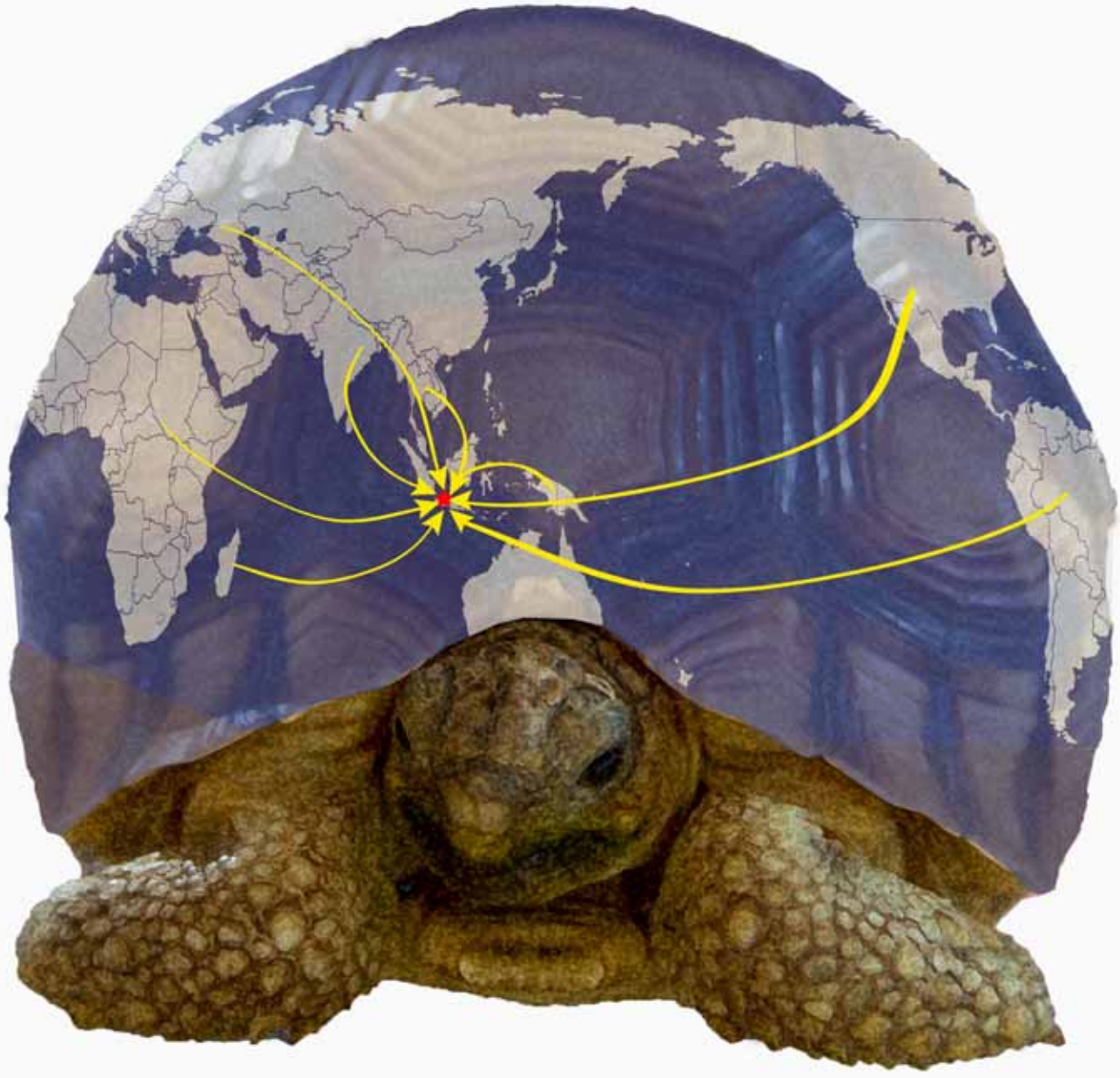
A TRAFFIC SOUTHEAST ASIA REPORT



The Rufford Maurice Laing Foundation

TRAFFIC
the wildlife trade monitoring network

Published by TRAFFIC Southeast Asia,
Petaling Jaya, Selangor, Malaysia

Suggested citation: Stengel, C.J., Shepherd, C.R. and Caillabet, O.S. (2011). *The Trade in Tortoises and Freshwater Turtles in Jakarta Revisited.* TRAFFIC Southeast Asia, Petaling Jaya, Selangor, Malaysia.

ISBN 978-983-3393-34-3

Cover: Image created by Olivier S. Caillabet

Background photograph: Young Ploughshare Tortoise *Astrochelys yniphora*. Photographed at a reptile expo in Jakarta, Indonesia, December 10, 2010.
Credit: O. Caillabet/TRAFFIC Southeast Asia

The Trade in Tortoises and Freshwater Turtles in Jakarta Revisited

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Kartini market in Jakarta, Indonesia where rare and often protected wildlife have been observed for sale.

CONTENTS

Young Indian Star Tortoise *Geochelone elegans* observed at a reptile expo in Jakarta, Indonesia, December 2010.

ABBREVIATIONS AND ACROYNMS

ASEAN-WEN Association of Southeast Asian Nations - Wildlife Enforcement Network

BKSDA Balai Konservasi Sumber Daya Alam (Natural Resources Conservation Agency of Indonesia)

CITES Convention on International Trade in Endangered Species of Wild Fauna and Flora
Appendix I includes species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances.
(Article II, paragraph 1 of the Convention)
Appendix II includes species not necessarily threatened with extinction, whose trade must be controlled in order to avoid utilization incompatible with their survival.
(Article II, paragraph 2 of the Convention)
Appendix III includes species that are protected in at least one country, which has asked other CITES Parties for assistance in controlling the trade.
(Article II, paragraph 3 of the Convention)

IUCN International Union for Conservation of Nature

IUCN Red List Status; abbreviations used in Appendix 1

Critically Endangered (CR)	Near Threatened (NT)
Endangered (EN)	Least Concern (LC)
Vulnerable (VU)	Not Evaluated (NE)

LIPI: Lembaga Ilmu Pengetahuan Indonesia
(Indonesian Institute of Sciences: Indonesia's CITES Scientific Authority)

PHKA Perlindungan Hutan dan Konservasi Alam
(Forest Protection and Nature Conservation: Indonesia's CITES Management Authority)

UNEP-WCMC United Nations Environment Programme World Conservation Monitoring Centre

ACKNOWLEDGEMENTS

The authors would like to thank the Turtle Conservation Fund and the Turtle Survival Alliance for their generous support of this project. Thanks go as well to the people who contributed time and energy to help make this report a success: Claire Beastall, Peter Paul van Dijk, Kaitlyn Foley, Sabine Schoppe and Loretta Shepherd. We also thank Dr. Novianto Bambang Wawandono, Director of Biodiversity Conservation, Ministry of Forestry of the Republic of Indonesia and colleagues for their review and comments on an earlier draft of this report.

Additional thanks to our colleagues at TRAFFIC for their time and support in the review, layout and press for this publication: Stephen Broad, Julie Gray, Nooraine Awang Anak, Elizabeth John and Richard Thomas.

Portions of the production of this report were made possible by contributions from the Rufford Foundation.

Malayan Snail-eating Turtle *Malayemys subtrijuga.* Twenty of these CITES Appendix II-listed individuals were observed in Jakarta in 2010.

EXECUTIVE SUMMARY

In recent years, the Indonesian capital of Jakarta has become a focal point for the pet trade in tortoises and freshwater turtles. Alarmingly, observed trends indicate much of this trade is illegal and includes a growing number of threatened species.

Regular monitoring of wildlife markets is essential to keep abreast of current trade dynamics and aid enforcement efforts at strategic points along the trade chain. In line with recommendations made in earlier studies on the trade in tortoises and freshwater turtles, TRAFFIC made follow-up observations of freshwater turtles and tortoises for sale in Jakarta's major markets in 2010. Direct observations were undertaken to determine the current extent of trade, trends, species composition and, through analysis of the collected data, attempt to obtain proxy measures of current enforcement effort to combat illegal trade.

Observations took place at three types of establishments: animal markets, reptile expos and pet stores. The species observed and volumes of individuals were recorded and, when possible, informal conversations were held with dealers regarding species' origin, rarity and price. These findings were analysed against the International Union for Conservation of Nature (IUCN) Red List information, the CITES Appendices, the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) CITES trade database and Indonesian national legislation. Finally, the results of the analysis were compared to data collected by Shepherd and Nijman in 2004 (published in 2007) to identify any new or continuing trends in origins of stock, threatened status and trade legality.

A similar number of species were observed in 2010 (49 species) and 2004 (47). Of the species observed, more were not native to Indonesia and more were threatened; both in terms of absolute numbers and as a percentage of total. The 2010 observations found more CITES-listed species of which a larger number were CITES Appendix I-listed.

Several observations are of particular concern: an increase in the number of non-native species for sale in the Jakarta markets and an increased amount of, and therefore a potentially growing emphasis on, threatened species in the pet trade. The major continuing trends between 2004 and 2010 are the continued trade in legally protected species on sale in Jakarta's markets and the apparent lack of effective enforcement to uphold national and international laws.

Since publication of Shepherd and Nijman's 2007 report, Indonesia has strengthened laws and increased enforcement effort. Species identification and capacity building workshops have been conducted for enforcement officers, and seizures and market raids have occurred. However these increased efforts appear to have had little impact as all of the CITES Appendix I and many of the Appendix II-listed species observed in 2010 lack proper import documentation. The ongoing presence of illegal species, widely available for purchase, indicates that increased effective effort to mitigate this trade is needed.

Ploughshare Tortoise *Astrochelys yniphora*. Photographed at a reptile expo in Jakarta, Indonesia on December 10, 2010. © O. Caillabet/TRAFFIC Southeast Asia

Following the findings of this and previous studies on the trade of tortoises and freshwater turtles in Jakarta, TRAFFIC makes the following recommendations:

The animal markets in Jakarta should be monitored regularly and instances of illegal trade acted upon by Indonesia's CITES Management Authority, Perlindungan Hutan dan Konservasi Alam (Forest Protection and Nature Conservation) (PHKA) and other relevant Indonesian enforcement agencies.

Dealers and retailers found with illegal species must be prosecuted to the fullest extent of the law, not merely have their illegal stock confiscated, by the Indonesian authorities. Those operating without licences should be penalised and those that are operating in breach of their licence should have that licence revoked by either PHKA or Indonesia's CITES Scientific Authority, Balai Konservasi Sumber Daya Alam (Natural Resources Conservation Agency of Indonesia) (BKSDA) as appropriate.

PHKA and other relevant Indonesian enforcement authorities must carefully monitor national reptile expos for illegal trade activity.

Key traders involved in illegal trade in Indonesia should be the focus of increased joint enforcement efforts by PHKA, BKSDA and other relevant Indonesian authorities. Customs should increase vigilance at Indonesia's borders and prosecute smugglers.

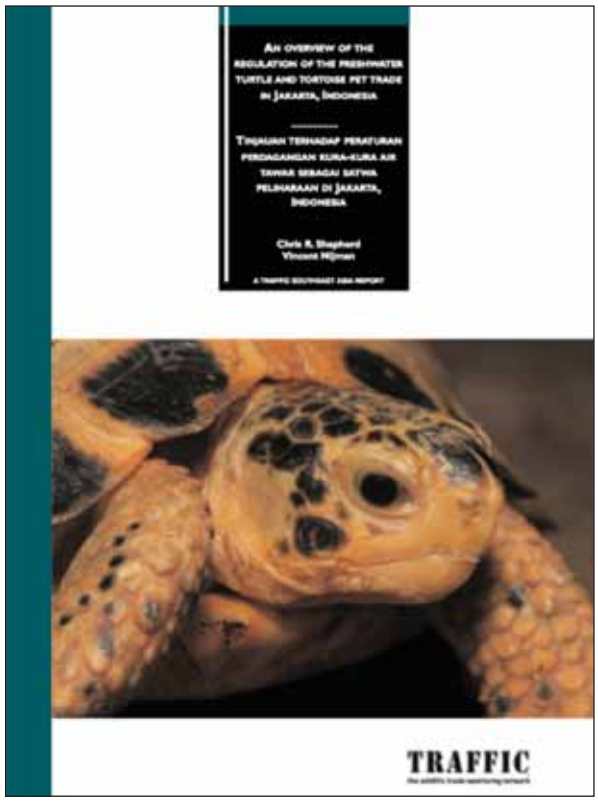
PHKA should monitor non-native CITES Appendix II-listed species in the markets and ensure that all animals have been imported legally by requiring proof of this from dealers and traders. Additionally, Indonesian authorities should increase communication and co-operation with source countries to disrupt international trade chains and focus enforcement efforts on key players. NGOs should continue monitoring the trade in tortoises and freshwater turtles in Indonesia and provide assistance to Indonesian authorities whenever possible.

Young softshell turtles, photographed at a market in Southeast Asia. © O. Caillabet/TRAFFIC Southeast Asia

INTRODUCTION

Previous research on Jakarta's pet markets: Shepherd and Nijman (2007)

In 2007 TRAFFIC published *An overview of the regulation of the freshwater turtle and tortoise pet trade in Jakarta, Indonesia* (Shepherd and Nijman, 2007). This report described the scale of trade in tortoises and freshwater turtles in Jakarta from data collected in 2004, emphasizing that a majority of the trade was illegal at that time. The report confirmed Jakarta to be a growing hub for the illicit trade in tortoises and freshwater turtles. Significant numbers of threatened and protected species were observed.



Cover of Shepherd and Nijman's 2007 report.
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Over half of the species observed by Shepherd and Nijman in 2004 were not native to Indonesia. Of the 47 species observed, 25 were from Madagascar, Africa, North America and Japan. Eighteen of these species were listed in the CITES Appendices at the time, and few were imported with the proper permits according to the Directorate General of Forest Protection and Nature Conservation (*Perlindungan Hutan dan Konservasi Alam*) (PHKA). PHKA is Indonesia's lead CITES Management Authority, responsible for the implementation of CITES regulations. Twenty-two Indonesian tortoise and freshwater turtle species, including six nationally protected ('Totally Protected') species were observed (Appendix 1).

Recommendations were made at the time of the report's 2007 publication to facilitate actions by Indonesian authorities against the illegal and possibly unsustainable trade. The report suggested that until sustainable trade levels could be determined, export quotas for native species (Appendix 2) should be lowered to zero. Additionally, the monitoring of wildlife markets and pet retailers, reporting on the trade and the monitoring of enforcement efforts should continue. Recommendations were made for law enforcement agencies to increase their vigilance and treat illegal wildlife trade as a high priority, penalizing dealers for harvesting or trading wildlife outside of the law. The importance of capacity building for enforcement officials was also emphasized.

Recent efforts to reduce the illegal trade in Jakarta's pet markets

Before and since publication of the 2007 report the government and the NGO community, including TRAFFIC, have made efforts to assist the Indonesian authorities interdicting illegal wildlife trade. Confidential information regarding such trade (e.g. details about dealers and shipments) has been provided to authorities in a discreet and timely manner. In addition there have been efforts to increase awareness and capacity to equip authorities better to recognize and act against illegal trade. Increasing awareness has been accomplished through capacity building workshops, species identification tools, media coverage and an increasing amount of research on wildlife trade in Indonesia.

Recent research on the wildlife trade in Indonesia has been carried out for many species, including: Tigers (cf. Ng and Nemora, 2007; Verheij *et al*., 2010), small mammals and primates (Shepherd, 2008; Nijman, 2009; ProFauna, 2009; Nekaris *et al*., 2010; Nijman, 2010; Pamuji *et al*., 2011; Silvagama, 2011), birds (Cooney, 2006; ProFauna 2009; Nijman, 2010), and reptiles (Iskandar, 2006; Nijman and Shepherd, 2009; Schoppe, 2009; Auliya, 2010; Nijman, 2010). All of the above are available online in English. Summary findings from most have also been translated into Indonesian and distributed to government officials. Findings of Schoppe's study on the illegal and unsustainable trade in Southeast Asian Box Turtles *Cuora amboinensis* (published in 2009) were presented to officials from PHKA and the Indonesian Institute

of Sciences (*Lembaga Ilmu Pengetahuan Indonesia*) (LIPI), Indonesia's CITES Scientific Authority, in a 2006 workshop designed to promote science in the CITES quota setting process known as 'Non Detriment Findings' (Anon., 2011d).

The Indonesian government has carried out a number of training and capacity building workshops for enforcement authorities in recent years. In addition, workshops have been co-ordinated by NGOs, including TRAFFIC, throughout Indonesia, including in Jakarta. Many have been implemented in collaboration with the Association of Southeast Asian Nations - Wildlife Enforcement Network (ASEAN-WEN). Such workshops typically include detailed information on wildlife trade, CITES history and regulations, legislation, species identification and the role of enforcement officers in stopping illegal trade. Supporting materials for this comprehensive training include Indonesian language species identification tools which are given to all participants (Box 1).

Wildlife Trade and Regulation Course (WTRC) held in Medan, Sumatra, Indonesia from 21-24 September, 2010. The training was supported by BKSDA (North Sumatra II Conservation Unit Office) and Angkasa Pura II (Polonia International Airport Operator). The course was organized by the United States Agency for International Development (USAID) funded Association of Southeast Asian Nations – Wildlife Enforcement Network (ASEAN-WEN) Support Program with technical support from TRAFFIC Southeast Asia. A total of 76 participants from 16 different divisions of government agencies and organizations working at Polonia International Airport and Belawan Sea Port participated in the training.

Box 1. Capacity building tools available to Indonesian enforcement officers

TRAFFIC Southeast Asia produced *An Identification Guide to the Tortoises and Freshwater Turtles of Brunei Darussalam, Indnesia, Malaysia, Papua New Guinea, Philippines, Singapore and Timor Leste (Buku Panduan Identifikasi Kura-kura di Brunei Darussalam, Indonesia, Malaysia, Papua Nugini, Filipina, Singapura dan Timor Leste)*. This guide, which includes all of the tortoise and freshwater turtle species native to Indonesia, was produced in five languages including the Indonesian language and was distributed to enforcement officials.

TRAFFIC, through the ASEAN-WEN Support Programme, has produced guides in the Indonesian language on the identification of commonly traded species. This resource uses photographs and detailed descriptions to help officers distinguish between species and authenticate CITES documents. The sheets are regularly updated to reflect current trade concerns and provided free of charge to enforcement officers by the ASEAN-WEN and TRAFFIC. An English version of this resource can be downloaded from www.asean-wen.org and www.traffic.org.

TRAFFIC and other NGOs have made efforts to raise awareness of potentially harmful trends in wildlife trade by generating media coverage. The 2007 report, the identification guides (Box 1) and other tortoise and freshwater turtle issues have been distributed to press outlets to raise public awareness about the illegal trade in these species and the need for urgent conservation actions (Appendix 3).

Following the publication of the 2004 survey findings (Shepherd and Nijman, 2007), the Indonesian government took a strong policy stance on trying to limit illegal import activity. Then Director General of Forest Protection and Nature Conservation of the Ministry of Forestry, Dr Tonny Soehartono, stated that Indonesia had written to the CITES Management Authorities of India, Madagascar, China, USA, Brazil, Peru, Chile, Ecuador, Guatemala and to the CITES Secretariat so they would be aware of the situation and presumably aid in preventing the flow of protected wildlife to Indonesia. The Indonesian government also announced that from 1 March 2008, all CITES Appendix II-listed tortoises and freshwater turtles exported to Indonesia would require import permits. CITES does not require import permits for Appendix II-listed species, but import permits may be mandated by national law. The new policy also requested that the countries of origin for species notify Indonesia before issuing export permits.

Indonesia's national laws and CITES-implementing laws are comprehensive (Box 2). Indonesia has been Party to CITES since 1979 and, as such, is required to implement CITES regulations through national legislation (Soehartono and Mardiastuti, 2002; Shepherd, 2010). The effectiveness of national legislation to implement CITES is regularly assessed under the CITES Secretariat's National Legislation Project. Indonesia's legislation is currently considered to be Category 1; meaning the national legislation meets all the requirements to implement and enforce the Convention thoroughly (Nijman, 2009; Nijman and Shepherd, 2009).

Box 2. Indonesian national legislation

According to the decree of the Ministry of Forestry *No. 447/Kpts- 11/2003*, the harvest or capture and distribution of wild plant and animal specimens in Indonesia can only be carried out with the proper licences obtained from PHKA. Transporting wildlife from one location to another may only be carried out legally if covered by documents obtained from the Natural Resources Conservation Agency of Indonesia (*Balai Konservasi Sumber Daya Alam*) (BKSDA) at the provincial level regardless of whether a species is protected or not (Article 42, Chapter X of the *Regulations of the Government of the Republic of Indonesia* Number 8, 1999). Both collectors and suppliers (middlemen) are required to register with BKSDA and once a year BKSDA provincial offices are supposed to report the species and volumes that have been harvested and by whom to PHKA (Siswomartono, 1998). Indonesia has taken a further step to manage and control the harvest and export of wildlife by requiring that the same quota system is followed for CITES listed and non-CITES listed species.

All wildlife exporters are required to register with PHKA. Therefore anyone not registered is technically not legally permitted to be involved in such trade. Registered exporters must use proper export permits regardless of whether the traded species is CITES-listed. Anyone wishing to breed reptiles in captivity for commercial purposes in Indonesia must have a licence to do so from PHKA.

Enforcement action taken by the Indonesian authorities

Indonesian authorities have clearly made efforts to combat the illegal wildlife trade in Jakarta, as evidenced by numerous seizures and market raids carried out, often in collaboration with locally-based NGOs. In January 2011, a series of high profile seizures took place at Jakarta's Soekarno-Hatta International Airport made up primarily of birds and small mammals. At least four separate seizures occurred at the airport in January 2011, one of which included eight Pig-nosed Turtles *Carettochelys insculpta*. In the same month, 744 Pig-nosed Turtles were seized at Merauke Airport in Papua, Indonesia, from a plane headed to Jakarta. There have been raids in several markets in Jakarta in the past, including Jati Negara, which was surveyed by TRAFFIC in 2004 and again in 2010 (Shepherd and Nijman, 2007). In February 2008, the *Elang* Brigade of the Quick Response Unit conducted a raid on Jati Negara market in collaboration with other enforcement agencies and NGOs where a number of protected species were seized.

According to the Indonesian government the Barito market, formerly the biggest market for freshwater turtles and tortoises, was officially closed in 2007. However observations since 2007 suggest a thriving wildlife trade still exists. Birds make up the majority of the wildlife stock on sale, but shops have often been observed selling mammals and reptiles, including freshwater turtles and tortoises.

Despite strengthened Indonesian legislative and regulatory tools, ongoing capacity building aimed at enforcement agencies, and recent seizure efforts, the illegal trade in tortoises and freshwater turtles in Indonesia continues. Consequently, TRAFFIC made recent observations at key markets in Jakarta to assess the presence of species illegally in trade. Following from the results of these observations, we make recommendations to assist future efforts by Indonesian authorities against the trade.

View of the Barito market in December, 2010, where several protected wildlife species were observed for sale.
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METHODS

Data acquisition

Observations on the tortoise and freshwater turtle pet trade in Jakarta were carried out by TRAFFIC in July and December of 2010. Three types of outlets were visited during the study: animal markets, reptile expos and pet stores. Reptile expos are shows where dealers from around the country and abroad exhibit and sell rare and often protected species (Box 3). As all of these outlets sell species for the pet trade they were treated as functionally equal in our analysis.

These outlets were visited twice in 2010, once in July and once in December. On both occasions, each site was visited once. Only the directly observable species and trade volumes were recorded. If dealers stated they could get an animal, but did not have it on display at the time, it was not counted. Therefore, the possibility of double counting between the shops, expos and dealers who share stock was eliminated. There is a possibility that stock observed in July was counted again in December; however informal conversations with dealers indicated they do not typically keep stock for long periods of time.

It should be noted that visible trade is often only a fraction of total trade. It is highly likely that many animals were not observed, as dealers stated extra stock was kept at their homes. Non-visible trade involving specimens not on display or for sale on the Internet was not investigated. Therefore, it is highly likely that the figures presented in this report are under-estimates. In addition, market turnover was not estimated during these observations. When possible, informal discussions were held with dealers about species' origin, rarity and price. Photographs were only taken when dealers allowed and no tortoises or freshwater turtles were purchased during this study.

Arial view of Jakarta, Indonesia.
© O. Caillabet/TRAFFIC Southeast Asia

View of Jati Negara market in Jakarta, Indonesia. A wide variety of mammals, birds and reptiles are openly sold by the side of the street, including many protected species.
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Data synthesis

The observation data were compiled in a database along with IUCN Red List status and CITES Appendix information for each species observed in trade. Data on availability and quantities were measured against the status of the species in an attempt to determine continuing and new trends in trade.

Species that could not be identified were omitted from the dataset. The Red Eared Slider *Trachemys scripta elegans* was also omitted from the data set and analysis as it is captive-bred in large quantities and is of low concern for the purposes of this report[1]. Tortoise and freshwater turtle species were analysed against international and national legislation, including harvest and export quotas (Appendix 2), to determine the legality of observed trade levels.

Plastic crates full of young Red Eared Sliders *Trachemys scripta elegans* at Jati Negara market. This North American species is popular in the global pet trade[1].
© TRAFFIC Southeast Asia

The legality of non-native species in trade was ascertained by cross checking against the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) CITES trade database. This database retains all records of import, export and re-export of CITES listed species reported by the Parties. Import data for taxa listed in Appendices I and II from 2005 were obtained. Data from before 2005 were considered irrelevant because 1) nearly all of the Appendix I and II individuals observed in markets in 2010 were juvenile and too young to have been included in pre-2005 records; and 2) it was deemed highly unlikely that dealers are retaining stock for periods of over five years.

It is important to note that analysis based on the UNEP-WCMC CITES trade database is inherently limited. The database is populated with information by the CITES Parties themselves, and consequently uneven because not all countries allocate adequate personnel and resources to the process. Political conflict and infrastructure issues may also hamper information submissions. Additionally, reports are sometimes late or incomplete. Hence, at any given time the most recent data available are normally two years old (CITES, 2011). This time lag in available data could mean that species observed were legally imported, but this trade information may not yet have been entered into the database.

In addition to gathering information directly from the markets and from the UNEP-WCMC CITES trade database, TRAFFIC also consulted relevant published and unpublished literature. Final numbers and percentages from this dataset were compared to data collected in 2004 by Shepherd and Nijman (2007). In both 2004 and 2010, data on the types and volumes of species observed, species' origins, and the relative proportions of protected and unprotected species were compared across the two datasets to determine shifting trends and to what extent illegal and unsustainable trade persists in Jakarta.

[1] It should be noted, however, that the trade in the Red Eared Slider is an issue of conservation concern since the species is invasive, adversely affecting many native freshwater turtles (Ramsay *et al*., 2007)

RESULTS

2010 species: origins

Forty-nine species of tortoises and freshwater turtles were seen during the 2010 observations. Of these, 35 were native to other parts of Asia (10), Africa (8), North America (8), South America (4), Madagascar (3), Europe (1) or multiple regions (1). Fourteen were native to Indonesia; one of which, the Sulawesi Forest Turtle *Leucocephalon yuwonoi*, is an endemic species.

2010 species: IUCN, CITES and national protection status

Over 60% (30 of 49) of the taxa observed in 2010 are considered threatened by IUCN (Appendix 1). Of these threatened species, six are Critically Endangered, six are Endangered and 18 are listed as Vulnerable. A minority of species are currently listed as Near Threatened (2) and Least Concern (8). Nine of the observed species had not been assessed at the time of this analysis.

Thirty-three of the 49 taxa are currently listed in the CITES Appendices, with seven in Appendix I, 21 in Appendix II and five in Appendix III (Appendix 1). Sixteen taxa are not currently listed in the Appendices. Three of the species observed are considered Totally Protected under Indonesian national law: the Pig-nosed Turtle, New Guinea Snapping Turtle *Elseya novaeguineae* and Malaysian Giant Turtle *Orlitia borneensis*. In total, the number of individuals observed in blatant illegal trade (summing the number of Totally Protected and Appendix I-listed individuals) equalled a minimum of 157 individuals.

2010 species: UNEP-WCMC CITES trade database analysis

The UNEP-WCMC CITES trade database records were analysed to determine the legality of trade for the CITES-listed species observed in Jakarta markets. At the time of the analysis, the database did not show any records of import into Indonesia for the seven Appendix I-listed species observed. Of 11 (non-native) Appendix II-listed species observed for sale, there were no import records for five species: the Indian Star Tortoise *Geochelone elegans*, Indian Tent Turtle *Pangshura tentoria*, Indochinese Box Turtle *Cuora galbinifrons*, Marginated Tortoise *Testudo marginata* and Pancake Tortoise *Malachochersus tornieri*.

CITES import data from 2005 were available from the database for the remaining six non-native Appendix II-listed species: African Spurred Tortoise *Geochelone sulcata*, Giant Aldabra Tortoise *Geochelone gigantea*, Leopard Tortoise *Geochelone paradalis*, Red-footed Tortoise *Geochelone carbonaria*, Spur-thighed Tortoise *Testudo graeca*, Yellow-spotted River Turtle *Podocnemis unifilis* (Table 1). The number of individuals per species observed in 2010 was below reported imports for all species except the Giant Aldabra Tortoise. Ten Giant Aldabra Tortoises were observed in this study, however the database indicates only three have been imported since 2005.

From left:

Two North American Mississippi Map turtles *Graptemys kohnii*; one North American Razorback Musk Turtle *Sternotherus carinatus*; one Southeast Asian Siebenrocks Snake-necked Turtle Chelodina siebenrocki. All three of these species were observed in Jakarta in December, 2010.

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Table 1

Non-native Appendix II-listed species observed in trade in 2010 for which CITES import records into Indonesia (from 2005) currently exist.
(W) wild-caught (C) captive-bred (F) F-1 species hatched, but not bred, in captivity

Species	Total Imported	Exporting Countries	Total/ Exporter	(W)	(C)	(F)
African Spurred Tortoise *Geochelone sulcata*	568	Ghana	546	-	546	-
		Sudan	22	-	22	-
Giant Aldabra Tortoise *Geochelone gigantea*	3	Thailand	3	-	3	-
Leopard Tortoise *Geochelone paradalis*	130	Thailand	130	-	130	-
Red-footed Tortoise *Geochelone carbonaria*	58	Guyana	10	10	-	-
		Suriname	18	18	-	-
		Thailand	30	20	10	-
Spur-thighed Tortoise *Testudo graeca*	125	Jordan		-	125	-
Yellow-spotted River Turtle *Podocnemis unifilis*	708	Ghana*	298	-	-	298
		Guyana	10	10	-	-
		Peru	400	-	-	400

* Ghana is not a range state for this species and therefore this may reflect incomplete and/or inaccurate data reporting.

Clockwise from top left: assorted tortoises for sale, including two Leopard Tortoises *Geochelone paradalis* (centre); Giant Aldabra *Geochelone gigantea*; fourteen African Spurred Tortoises *Geochelone sulcata* (lighter colour shell) and three Red-footed Tortoises *Geochelone carbonaria* (darker colour shell) on display.

All photos taken at a reptile expo in Jakarta, Indonesia on December 10, 2010.

DISCUSSION

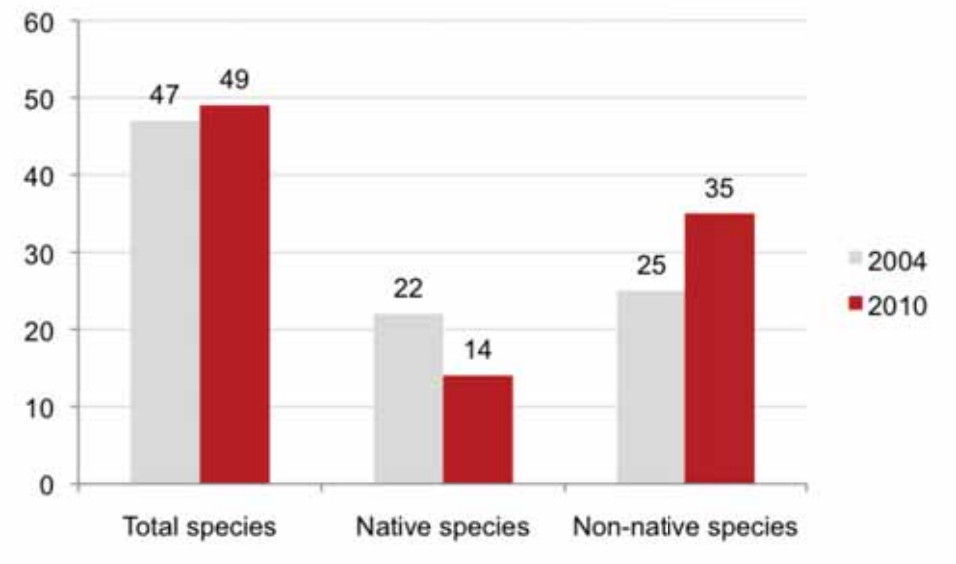
Illegal tortoise and freshwater turtle trade in Jakarta have been previously highlighted by Shepherd and Nijman (2007), and a number of efforts have been undertaken to address the problem. Nonetheless, observations in the same Jakarta markets in 2010 found greater numbers of tortoises and freshwater turtles including more non-native species, more threatened species and more CITES-listed species.

Comparison of taxa and species origins 2010 & 2004

In total, a similar number of taxa were observed in 2010 and 2004, however there were fewer native species and more non-native species found during 2010 observations (Figure 1). Species involved came primarily from Asia, Africa and North America. Comparative percentages of species' origins between 2004 and 2010 are presented in Figure 3.

Figure 1.

Comparison between 2004 and 2010 data showing total species, number of native species and number of non-native species.



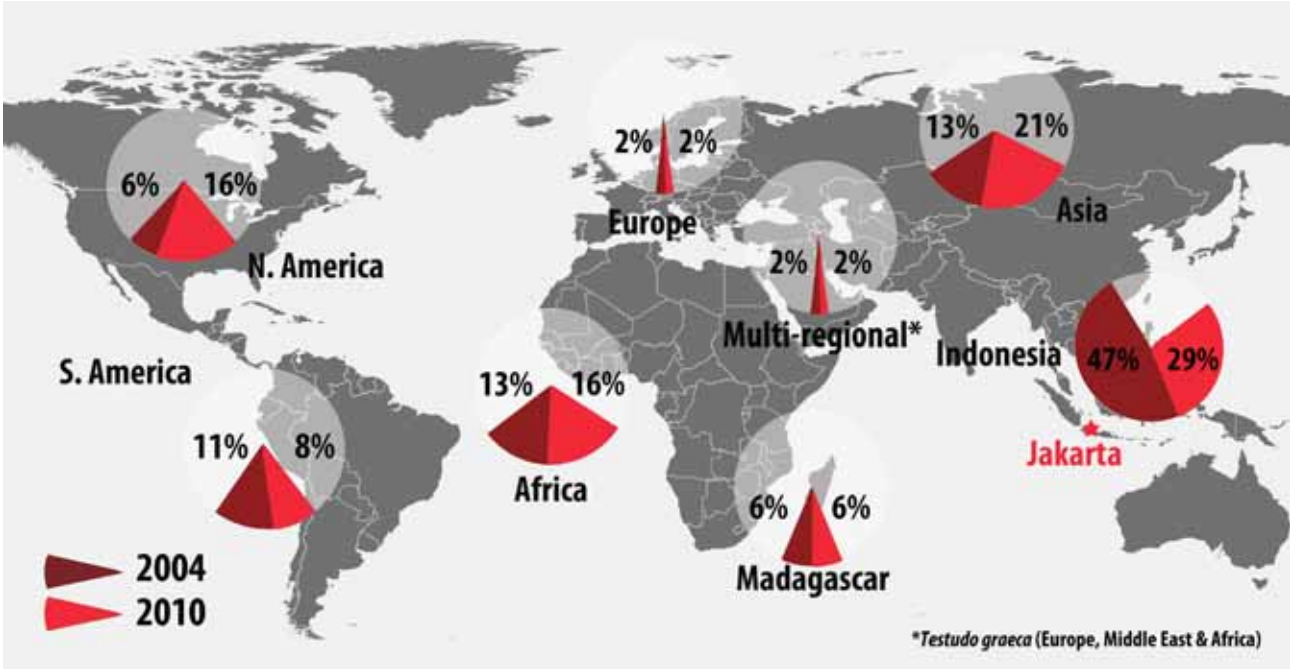
A greater number of Asian non-native species were observed in 2010 (10 vs. 6 in 2004), six of which are threatened. The most numerous species observed was the Indian Star Tortoise, with 97 individuals recorded. The Indian Star Tortoise is highly prized and common in the pet trade despite legal protection in its range countries of India, Sri Lanka and Pakistan (Shepherd *et al*., 2004). As Indian Star Tortoises were also the most prevalent Asian import in 2004, current observation data indicate this species continues to be the most heavily traded Asian non-native in Jakarta's markets.

Eight African species were observed in 2010 compared to six in 2004. The most commonly observed African species was the African Spurred Tortoise at 118 individuals, a considerable increase from eight individuals in 2004. African Spurred Tortoises are Appendix II-listed, however a zero export quota for commercially traded wild individuals has been in place since 2000. Therefore, for any individual of this species to be legally present in the Jakarta pet trade, it must have been captive bred and imported with the relevant CITES documentation. African Spurred Tortoises have been observed in large quantities at outlets in Thailand and Japan and the species is popular in the international pet trade (Shepherd and Nijman, 2008; Kanari and Auliya, (in prep.)). The species is bred in large numbers, primarily in the USA, for the international pet trade (*in litt*. Peter Paul van Dijk, Deputy Chair of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group to TRAFFIC Southeast Asia). However, Ghana and Sudan were the only two exporters of "captive-bred" African Spurred Tortoises to Indonesia recorded in the UNEP-WCMC CITES trade database at the time of this study (Table 1).

The increased number of non-native species for sale in Jakarta's markets is a noteworthy new development. Native Indonesian species made up less than 30% of the total turtle species in trade observed in 2010, compared to a nearly 50% share in 2004. Particularly high proportions of non-native species were observed at the two reptile expos in 2010 (Box 3). There are several potential explanations for this change: 1) the decrease in Indonesian species is related to declines in the wild; 2) enforcement has been particularly effective for Indonesian species and a corresponding shift in the illegal market has taken place; 3) there is an increased demand for exotic species that fetch higher prices. It is likely a combination of declining wild Indonesian species in tandem with a demand-driven trade, as there is no evidence pointing to increased enforcement specific to Indonesian native species. Declines of several Indonesian species have been attributed to unsustainable exploitation for use in the pet and meat markets (Samedi and Iskandar, 2000; Shepherd, 2000; Shepherd and Ibarrondo, 2005). Rising affluence and increasing disposable income in consumer countries has been highlighted as the major driver of demand for wildlife in several Southeast Asian countries, including Indonesia (TRAFFIC, 2008).

Figure 2.

Comparative percentages of tortoise and freshwater turtle species' origins observed for sale in Jakarta in 2004 and 2010.



Map design by Olivier S. Caillabet

Comparison of threatened and protected taxa 2010 & 2004

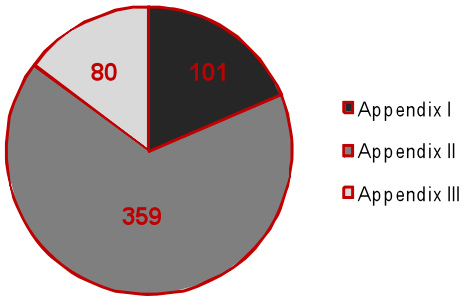
Slightly more threatened taxa were observed in 2010 (30) than in 2004 (28). A greater number of Critically Endangered and Vulnerable species, but the same number of Endangered species were observed in Jakarta outlets. These data indicate a continuing and possibly increasing emphasis on rare and threatened species in the pet trade (Box 3).

Jakarta has become a trade hub for the global tortoise and freshwater turtle trade, with dealers involved in supplying the demand for legally restricted species throughout Southeast Asia and beyond (Shepherd and Nijman, 2007). A recent high-value seizure of tortoises at the Kuala Lumpur International Airport, Malaysia, *en route* to Jakarta, demonstrates the role the Indonesian pet trade is playing in the global trade of highly threatened species. The specimens seized originated from Madagascar and had been flown to Malaysia via Mauritius. The seizure consisted of 285 Radiated Tortoises *Astrochelys radiata*, 14 Spider Tortoises *Pyxis arachnoides* and one Ploughshare Tortoise *Astrochelys yniphora*, all of which are listed in CITES Appendix I and considered Critically Endangered. Ploughshare Tortoises are considered to be among the rarest species on earth with consistent illegal harvest and trade pushing them ever closer to extinction (O'Brien *et al*., 2003; Leuteritz and Pedrono, 2008; Leuteritz and Rioux Paquette, 2008; Leuteritz and Walker, 2008).

Box 3. Reptile expos in Jakarta in July and December, 2010

A significant amount of threatened and internationally protected turtle species were found for sale at reptile expos in Jakarta. A total of 34 different species and over 600 individuals were observed between the two expos. Eight of the species displayed were native to Indonesia. Twenty-six taxa and 493 individuals were non-native imports with the highest proportions coming from Asia, Africa and Madagascar. Over 65% of the species observed on display are IUCN classified as threatened and included six Critically Endangered, four Endangered and 13 Vulnerable species.

Seventy percent of the observed species were CITES listed at the time of the study and therefore subject to international regulation. Five species (101 individuals) seen at the expos were listed in Appendix I: the Egyptian Tortoise *Testudo kleinmanni*, Indian Softshell Turtle *Aspideretes* (or *Nilssonia*) *hurum*, Spider Tortoise, Ploughshare Tortoise and the Radiated Tortoise. The Radiated Tortoise was by far the most commonly observed at 92 individuals. A further 15 species and 359 individuals seen at the expos are listed in Appendix II.



A critical look at the changing IUCN status of just the Malagasy tortoises involved in this study illustrates how rampant trade is contributing to tortoise and freshwater turtle declines around the world. In 2004 the Ploughshare Tortoise, Radiated Tortoise and Spider Tortoise were classified as Endangered or Vulnerable by the IUCN. Over the past few years, all three have been reclassified as Critically Endangered, with trade cited as a major factor contributing to endemic declines (Leuteritz and Pedrono, 2008; Leuteritz and Rioux Paquette, 2008; Leuteritz and Walker, 2008). These highly valued and highly threatened Malagasy species were primarily observed at reptile expos in 2010 (Box 3).

Two Appendix I-listed Spider Tortoises *Pyxis arachnoides* photographed at a reptile expo in Jakarta, Indonesia on December 10, 2010.
© C. Stengel/TRAFFIC Southeast Asia

The IUCN Red List statuses for a growing number of tortoise and freshwater turtle taxa have been recently re-assessed. Over 70 delegates from 20 countries, including 16 Asian nations, met in Singapore for a workshop (Conservation of Asian tortoises and freshwater turtles workshop, 21-24 Feb. 2011) to discuss what has been termed 'the Asian turtle crisis' and re-assess IUCN Red List status for 86 Asian species. At the time of publication, species-specific results from this workshop had not been formally incorporated into the Red List; however it is interesting to note that 38% of the 86 species were recommended to be assessed as Critically Endangered. This represents a 90% increase in the percentage of Critically Endangered Asian tortoise and freshwater turtle species since the last assessment workshop which took place in Cambodia, 1999.

The increasing number of species considered Critically Endangered obviously has implications for classic in situ conservation, however trade is an equally important concern. There is some evidence that higher IUCN classification and CITES-listing may unintentionally fuel greater demand (Cooney, 2006; Stuart *et al.*, 2006; Schoppe, 2009). Shepherd and Nijman (2007) found protected and CITES-listed species were often more expensive than non-protected, non-CITES listed species. Owning protected and rare animals is considered by some to be a status symbol in Indonesia (Shepherd *et*

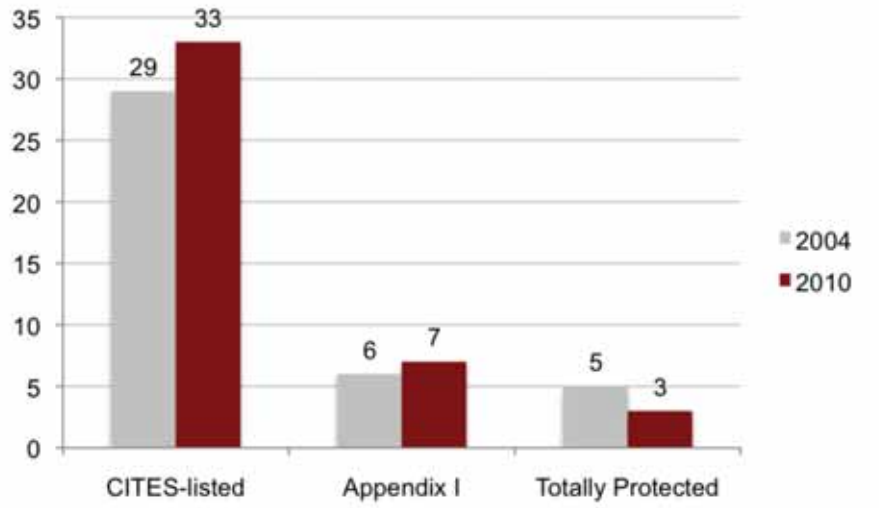
al., 2004; Cooney, 2006). In addition, rising prices for wildlife, driven by demand, encourage wildlife dealers to remain in or enter the trade in response to lucrative market opportunities (TRAFFIC, 2008). Dealers often use the fact that an animal is rare and illegal as a selling point, so it seems likely that most buyers are aware of the legal status and the consequences of owning the animals they are purchasing. However it is possible that some buyers are unaware of the legalities, therefore awareness-raising activities by the Indonesian government are key to ensuring wildlife laws are and the penalties for violating them are well known to the public.

A total of 33 CITES-listed species were observed in 2010 compared to 29 seen by Shepherd and Nijman in 2004 (Figure 3). The numbers are similar; however observations of only CITES Appendix I-listed species between the years indicates there was a greater proportion of Appendix I-listed species in 2010. It is noteworthy that in addition to the greater number of Appendix I species, there was also a greater number of individuals recently observed in trade (139 in 2010 vs. 113 in 2004). There were fewer Totally Protected Indonesian species seen in 2010 than in 2004. If effective enforcement was a significant reason for the decline of observed Totally Protected species, it stands to reason there would have been fewer Appendix I-listed species in markets in 2010 as well.

An Appendix I-listed Ploughshare Tortoise *A. yniphora* photographed at a reptile expo in Jakarta, Indonesia on December 10, 2010.
© C. Stengel/TRAFFIC Southeast Asia

Figure 3.

Observed species subject to international agreements or Indonesian national legislation



An analysis of the UNEP-WCMC CITES trade database records for imported Appendix II-listed species since 2005 revealed some anomalous results. Import records are present for six of the 11 Appendix II-listed species observed in 2010; however no records are present for the remaining five species. In addition, a total of ten Giant Aldabra Tortoises were recently observed, however only three have been reported imported by Indonesia since 2005 according to the UNEP-WCMC CITES trade database. The presence of CITES-listed taxa in markets without proper import records may relate to several factors: 1) import records for these individuals have not yet been incorporated into the trade database, 2) complete records have not been provided to the CITES Secretariat in the past or 3) individuals are being illegally brought into Indonesia without the proper import documentation. Discrepancies and information gaps in the UNEP-WCMC CITES trade database have been highlighted in previous research (Schoppe, 2008; Schoppe 2009; Nijman and Shepherd, 2010). Schoppe (2008) found substantial discrepancies between reported import and export figures for the Southeast Asian Box Turtle *Cuora amboinensis* in the CITES trade database between trading countries and Malaysia. Importantly, any non-native CITES Appendix I-listed species observed in trade are illegal.

Effective enforcement action and corruption

As previously detailed, there have been a significant number of seizures and market raids undertaken in recent years which have resulted in some confiscations of tortoise and turtle individuals. Improving enforcement to combat illegal trade effectively is critical, however obstacles such as corruption often hinder efforts even when good national legislation is in place and capacity building has been carried out.

Corruption is often unseen and rarely addressed, making it difficult to tackle (Azfar *et al*., 2001; Smith and Walpole, 2005). Concerns about the influence of corruption on law enforcement effectiveness in mitigating illegal wildlife trade in Jakarta have often been highlighted by popular Indonesian news media. These concerns have focused on how market raids can be largely ineffective as 1) plans are often leaked beforehand by enforcement officers to dealers; 2) dealers are rarely penalized, resuming business soon after raids (Saraswati, 2002; Dursin, 2004); 3) penalties are relatively low and perceived as an acceptable cost of doing business.

Although corruption may be an ongoing issue, action has been taken in the past against individuals who abuse their entrusted power for private gain. In 2006 two senior BKSDA officials, who headed District 1 and District 2 in Jakarta, were arrested and charged under Indonesia's corruption laws for selling seized animals including two tortoise taxa, the African Spurred Tortoise and Radiated Tortoise (Indarini, 2006; Subagja, 2006). Hence it appears that corruption has a hand in limiting the effectiveness of enforcement action, however the true extent of these limitations are unknown and difficult to quantify.

An Appendix II-listed Southeast Asian Box Turtle *Cuora amboinensis*. This species is traded in substantial volume throughout Southeast and East Asia for both the pet and meat trades.

CONCLUSIONS

The most alarming trend that emerges from analysis of the 2004 and 2010 data is the ongoing and potentially increasing open availability of protected and CITES Appendix I-listed species. Such sales flout national laws and international agreements and threaten species' survival in the wild. The fact that they are ongoing calls into question commitments by relevant government agencies to enforcement and commitments by the country to CITES implementation. However proactive efforts have been made. Indonesian national legislation has been strengthened to control the trade of native and non-native CITES Appendix II-listed species more thoroughly. Capacity building workshops and trainings on wildlife enforcement have been carried out by Indonesian authorities, the ASEAN-WEN and NGOs including TRAFFIC. Moreover, numerous seizures at airports and market raids have been conducted.

Unfortunately, it appears these actions have had little effect in decreasing the presence of illegal tortoises and freshwater turtles in Jakarta. Whilst there has been recent seizure and raid activity, protected species are still widely present in open markets and reptile expos. It is clear these seizures and raids, and the (lack of) resulting judicial actions, are not enough to change the illegal trade trends in Jakarta. Impromptu interviews with dealers during the 2010 observations support previous research that suggests dealers are fully aware of the law, but are clearly unconcerned about being penalized (Shepherd et al., 2004; Shepherd and Nijman, 2007; Shepherd and Nijman, 2008).

Indonesian laws protecting wildlife are among the strongest of any ASEAN nation. In addition, Indonesia, the ASEAN-WEN and others have committed significant time and resources to train enforcement agencies. As illegal trade persists in spite of previous efforts and appropriate resources, it would appear there is a gap between these efforts and resources and their effective application to change the current situation. Therefore it is reasonable to suggest that the continued persistence of open illegal trade is due to a lack of concentrated and persistent effort to eliminate illicit activity in markets and prohibitively penalize offenders.

From left:
Spotted Turtles *Clemmys guttata* observed at a reptile expo in Jakarta in December, 2010 © C. Stengel/TRAFFIC Southeast Asia; Radiated Tortoises *Astrochelys radiata* (top) and Pancake Tortoises *Malacochersus tornieri* (bottom) observed at a reptile expo in Jakarta in July, 2010 © K. Foley/TRAFFIC Southeast Asia

RECOMMENDATIONS

Ongoing illegal trade not only threatens native Indonesian species but also has ramifications for tortoise and freshwater turtle species worldwide. TRAFFIC and other NGOs are committed to assisting the Indonesian authorities to address the illegal trade in tortoises and freshwater turtles. With a view towards having an effective impact on the illegal trade in Indonesia, TRAFFIC makes the follow recommendations.

1. The markets of Jakarta including, but not limited to, Kartini, Jati Negara and Barito should be regularly monitored and all instances of illegal trade acted upon by PHKA and other relevant Indonesian enforcement agencies. Dealers found with illegal species must be prosecuted to the full extent of the law by the Indonesian authorities. Merely confiscating illegal specimens is not a sufficient deterrent. TRAFFIC recommends the application of the highest monetary penalties and imprisonment allowable within Indonesian law.

2. Traders found repeatedly trading illegal species should have their licences revoked and be severely penalized; those operating without licences should also be prosecuted to the fullest extent of the law. Actions should be taken by either PHKA or BKSDA as appropriate.

3. PHKA and other relevant Indonesian enforcement authorities should monitor the trade in non-native CITES Appendix II-listed species in the markets and ensure these species have in fact been imported legally.

4. Indonesian CITES authorities should increase communication and co-operation with source countries to disrupt international trade chains and focus enforcement efforts on key players.

5. Key traders involved in illegal trade in Indonesia should be the focus of increased vigilance and joint enforcement efforts by PHKA, BKSDA and other relevant Indonesian authorities.

6. Customs should increase vigilance at entry points to Indonesia and prosecute wildlife smugglers.

7. National reptile expos must be carefully monitored by PHKA to ensure these events are not facilitating or encouraging illegal trade.

8. Monitoring and researching internet trade should be a priority for CITES authorities and wildlife NGOs as an increasing amount of trade is being carried out online. This trade merits thorough investigation as it poses a significant threat to species survival and is an increasingly common avenue for illegal trade.

9. Indonesia, and other countries reporting data to the UNEP-WCMC CITES trade database, should take steps to provide CITES with as accurate and complete information as possible in a timely manner. Reporting and the data contained in the database should reflect as closely as possible the situation openly observed in outlets selling CITES-listed species. It should be done to ensure transparency in the international wildlife trade and to ensure the database can be used to its fullest potential.

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APPENDIX 1: 2004 and 2010 Observations

Species Name	IUCN	CITES	2004	2010
African Helmeted Turtle *Pelomedusa subrufa*	NE	-	-	5
African Mud Turtle *Pelusios subniger*	LC	-[1]	2	13
African Spurred Tortoise *Geochelone* (or *Centrochelys*) *sulcata*	VU	II[2]	8	118
Alligator Snapping Turtle *Macrochelys temminckii*	VU	III[3]	9	17
Asian Brown Tortoise *Manouria emys*	EN	II	71	6
Asian Giant Softshell Turtle *Pelochelys cantorii*	EN	II	2	6
Asian Leaf Turtle *Cyclemys dentata*[4]	NT	-	241	19
Bell's Hingeback Tortoise *Kinixys belliana*	NE	II	4	-
Black Marsh Turtle *Siebenrockiella crassicollis*	VU	II	164	40
Black Spotted Pond Turtle *Geoclemys hamiltonii*	VU	I	15	1
Central African Mud Turtle *Pelusios gabonensis*	NE	-[5]	-	5
Chinese Pond Turtle *Mauremys reevesii*	EN*	III[6]	18	1
Chinese Striped-neck Turtle *Mauremys sinensis*	EN	III	-	16
Common Snapping Turtle *Chelydra serpentina*	NE	-	35	5
Crowned River Turtle *Hardella thurjii*	VU	-	-	1
Diamondback Terrapin *Malaclemys terrapin*	NT	-	-	4
Egyptian Tortoise *Testudo kleinmanni*	CR	I	7	2
Florida Softshell Turtle *Apalone ferox*	NE	-	-	1
Four Eyed Turtle *Sacalia quadriocellata*	EN	III	-	3
Geoffroy's Side-necked Turtle *Phrynops geoffroanus*	NE	-	3	-
Giant Aldabra Tortoise *Aldabrachelys* (or *Dipsochelys*) *gigantea*	VU	II	-	10
Giant Asian Pond Turtle *Heosemys grandis*	VU	II	9	-
Hermann's Tortoise *Testudo hermanni*	NT	II	3	-
Hilaires Side-necked Turtle *Phrynops hilarii*	LC	-	-	2
Indian Peacock Softshell *Aspideretes* (or *Nilssonia*) *hurum*	VU	I	-	1
Indian Roofed Turtle *Pangshura tecta*	LC	I	63	-
Indian Softshell Turtle *Aspideretes* (or *Nilssonia*) *gangetica*	VU	I	-	2
Indian Star Tortoise *Geochelone elegans*	LC	II	238	97
Indian Tent Turtle *Pangshura tentoria*	LC	II	-	2
Indochinese Box Turtle *Cuora galbinifrons*	CR	II	-	1
Japanese Pond Turtle *Mauremys japonica*	NT	-	2	-
Leopard Tortoise *Stigmochelys pardalis*	NE	II	4	36
Malayan Flat Shell Turtle *Notochelys platynota*	VU	II[7]	110	-
Malayan Snail-eating Turtle *Malayemys subtrijuga*	VU	II	26	20
Malayan Softshell Turtle *Dogania subplanta*	LC	-	2	-
Malaysian Giant Turtle *Orlitia borneensis*	EN	II	61	15
Marginated Tortoise *Testudo marginata*	LC	II	-	8
Mata Mata Turtle *Chelus fimbriatus*	NE	-	20	20
Mississippi Map Turtle *Graptemys kohnii*	NE	III[8]	97	65
New Guinea Snapping Turtle *Elseya novaeguineae*	LC	-	39	1
Northern Snake-necked Turtle *Chelodina* (*Macrochelodina*) *rugosa*	NE	-	444	-
Painted Terrapin *Batagur borneoensis*	CR	II	6	-
Pancake Tortoise *Malacochersus tornieri*	VU	II	34	12
Parkers Snake-necked Turtle *Chelodina* (*Macrochelodina*) *parkeri*	VU	-	20	-
Pig-nosed Turtle *Carettochelys insculpta*	VU	II[9]	69	2

Ploughshare Tortoise *Astrochelys yniphora*	CR[10]	I	2	6
Radiated Tortoise *Astrochelys radiata*	CR[11]	I	22	125
Razorback Musk Turtle *Sternotherus carinatus*	NE	-	-	21
Red-bellied Short-necked Turtle *Emydura subglobosa*	LC	-	10	14
Red-footed Tortoise *Geochelone carbonaria*	NE	II	18	46
River Terrapin *Batagur affinis*[12]	CR	I	4	-
Schultz's Snapping Turtle *Elseya schultzei*[13]	-	-	58	-
Southeast Asian Narrow-headed Softshell Turtle *Chitra chitra*	CR	II	1	-
Siebenrocks Snake-necked Turtle *Chelodina* (*Macrochelodina*) *siebenrocki* (synonym of *rugosa*)	NT	-	-	1
Southeast Asian Box Turtle *Cuora amboinensis*	VU	II	395	125
Southeast Asian Softshell Turtle *Amyda cartilaginea*	VU	II[14]	10	1
Spider Tortoise *Pyxis arachnoides*	CR[15]	I	7	2
Spiny Turtle *Heosemys spinosa*	EN	II	63	21
Spotted Turtle *Clemmys guttata*	VU	-	-	10
Spur-thighed Tortoise *Testudo graeca*	VU	II	5	6
Sulawesi Forest Turtle *Leucocephalon yuwonoi*	CR	II	35	4
Sulawesi Tortoise *Indotestudo forstenii*	EN	II	70	-
Western Painted Turtle *Chrysemys picta*	NE	-	-	2
Yellow-footed Tortoise *Chelonoidis denticulata*	VU	II	5	-
Yellow-spotted River Turtle *Podocnemis unifilis*	VU	II	1	1

* not listed in 2010 Red List due to technical error

Additional notations and changes to the data between 2007 and 2010 are numbered in the table and are as follows:

1. The African Mud Turtle Pelusios subniger is unlisted on CITES although several *Pelusios* sp. (populations of Ghana) were listed CITES III at the time of Shepherd and Nijman's report.
2. There is a zero commercial trade quota for wild-caught African Spurred Tortoise *Geochelone sulcata*.
3. The previously unlisted Alligator Snapping Turtle *Macrochelys temminckii* was listed in Appendix III by the United States of America in 2006.
4. While most likely *Cyclemys dentata*, the taxonomy within this genus requires further clarification.
5. The previously listed Central African Mud Turtle *Pelusios gabonensis* was deleted from Appendix III by Ghana in 2007.
6. The previously unlisted Chinese Pond Turtle *Mauremys reevesii* was listed in Appendix III by China in 2005.
7. The previously unlisted Malayan Flat Shell Turtle *Notochelys platynota* was listed in Appendix II in 2005.
8. The previously unlisted Mississippi Map Turtle *Graptemys kohnii* was listed in Appendix III under *Graptemys* sp. by the United States of America in 2006.
9. The previously unlisted Pig-nosed Turtle *Carettochelys insculpta* was listed in Appendix II in 2005.
10. The Ploughshare Tortoise *Astrochelys yniphora* was up-listed on the IUCN Red List from Endangered to Critically Endangered in 2008.
11. The Radiated Tortoise *Astrochelys radiata* was up-listed on the IUCN Red List from Vulnerable to Critically Endangered in 2008.
12. The River Terrapin *Batagur affinis* was referred to as *Batagur baska* in the 2007 report, however this species taxonomy has been clarified since then and for the purposes of this report, refers to the same species.
13. Schultz's Snapping Turtle *Elseya schultzei* is not currently considered a valid species; may refer to *E. branderhorsti.*
14. The previously unlisted Southeast Asian Softshell Turtle *Amyda cartilaginea* was listed in Appendix II in 2005.
15. The Spider Tortoise *Pyxis arachnoids* was up-listed on the IUCN Red List from Vulnerable to Critically Endangered in 2008.

APPENDIX 2: 2004 and 2010 Quotas for Indonesian Species in Trade

Under Indonesian laws and regulations, non-protected species may be harvested for trade following a national harvest and export quota system. Indonesia has a national harvest and export quota for all species that may be traded, which is reviewed annually. Quotas are set per species, with sub-quotas for specific provinces or regions. Of the entire quota, 90% is allotted for export (amount in the below table) while the remainder is for local use. Many concerns have been voiced over Indonesia's quota setting process. Previous research has indicated that quotas are set quite arbitrarily (Newton and Soehartono, 2001; Soehartono and Mardiastuti, 2002), and are generally not based on sound science (Schoppe, 2009). Several loopholes exist due to the quota setting process, harvest and trade is not efficiently monitored and laws are seldom enforced (Shepherd and Nijman, 2007). However, despite these concerns, it is important to note that quotas have been universally lowered since Shepherd and Nijman conducted research in 2004.

Species Name	ID National Protection	CITES (2010)	2004 Quota	2010 Quota
Asian Brown Tortoise *Manouria emys*	-	II	475	-
Asian Giant Softshell *Pelochelys cantorii*	-	II	90	54
Asian Leaf Turtle *Cyclemys dentata*	-	-	18 000	4500
Black Marsh Turtle *Siebenrockiella crassicollis*	-	II	4500	4500
Malayan Flat-shelled Turtle *Notochelys platynota*	-	II	2700	450
Malayan Snail-eating Turtle *Malayemys subtrijuga*	-	II	2250	180
Malaysian Giant Turtle *Orlitia borneensis*	Totally Protected	II	-	-
Malaysian Softshell Turtle *Dogania subplana*	-	-	2700	2000
New Guinea Snapping Turtle *Elseya novaeguineae*	Totally Protected	-	-	-
Parker's Snake-necked Turtle *Macrochelodina parkeri*	-	II	450	270
Pig-nosed Turtle *Carettochelys insculpta*	Totally Protected	II	-	-
Red-bellied Short-necked Turtle *Emydura subglobosa*	-	-	2700	850
River Terrapin *Batagur affinis*	Totally Protected	I	-	-
Schultz's Snapping Turtle *Elseya schultzei*	-	II	1800	900
Siebenrocks Snake-necked Turtle *Chelodina siebenrocki*	-	-	4500	1 800
Southeast Asian Box Turtle *Cuora amboinensis*	-	II	18 000	18 000
Southeast Asian Narrow-headed Softshell Turtle *Chitra chitra*	Totally Protected	II	-	-
Southeast Asian Softshell Turtle *Amyda cartilaginea*	-	II	9000	3600
Spiny Turtle *Heosemys spinosa*	-	II	1800	450
Sulawesi Forest Turtle *Leucocephalon yuwonoi*	-	II	100	
Sulawesi Tortoise *Indotestudo forsteni*	-	II	500	270

APPENDIX 3: Selected media coverage of tortoise and freshwater turtle trade since 2007

1. Media Launch for Shepherd and Nijman's 2007 Report.

TRAFFIC website.

Link: http://www.traffic.org/home/2008/1/8/illegal-pet-trade-threatens-freshwater-turtles-and-tortoises.html

Illegal pet trade threatens freshwater turtles and tortoises

Kuala Lumpur, Malaysia, 8 January 2008— An increasing demand for non-native freshwater turtles and tortoises in Southeast Asia is fuelling rampant illegal trade in the pet markets of Indonesia, according to a report released today by TRAFFIC, the wildlife trade monitoring network.

TRAFFIC investigators undertook surveys of pet markets in Jakarta and found 48 species of freshwater turtles and tortoises for sale, the vast majority of them illegally obtained. They included all six of Indonesia's fully protected freshwater turtles and five non-native species listed in Appendix I of CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora), meaning that all commercial international trade is prohibited.

TRAFFIC found that CITES-listed species were more expensive than non-listed species, but noted they were no harder to obtain.

"The open trade in protected species indicates a lack of enforcement effort and blatant disregard for the law," says Chris R. Shepherd, Senior Programme Officer of TRAFFIC Southeast Asia and leading author of the new report, An overview of the regulation of the freshwater turtle and tortoise pet trade in Jakarta, Indonesia.

Enforcement of CITES and national regulations is challenging, as individuals involved in wildlife crime are often well organised, but dealers admitted to TRAFFIC that freshwater turtles and tortoises are smuggled in and out of Indonesia with ease.

"TRAFFIC encourages the Government of Indonesia to ensure combating wildlife crime is given high priority, and that every effort is made to clamp down on the criminals involved in it," Chris Shepherd, Senior Programme Officer of TRAFFIC Southeast Asia.

Shepherd adds that people buying illegally sourced animals should also be made fully aware they are contributing to the demise of wild populations.

Large numbers of freshwater turtles and tortoises are harvested in Indonesia, with no scientific research carried out to determine the impact on wild populations.

The report recommends the Indonesian authorities should reduce or even stop the freshwater turtle and tortoise trade, until scientifically sound harvest quotas can be determined and implemented.

2. Press release on Indonesia's response to Shepherd and Nijman's 2007 report.

TRAFFIC website.

Link: http://www.traffic.org/home/2008/2/14/indonesia-tightens-tortoise-trade-regulations.html

Indonesia tightens tortoise trade regulations

Cambridge, UK, 14 February 2008— In response to a TRAFFIC report, An overview of the regulation of the freshwater turtle and tortoise pet trade in Jakarta, Indonesia, launched last month, the Indonesian Government has acted swiftly to tighten up regulations on importing non-native species of tortoises and turtles into the country.

The report highlights the rampant illegal trade in tortoises and turtles in the pet markets of the nation's capital, Jakarta. TRAFFIC investigators found 48 species of freshwater turtles and tortoises for sale, more than half of them non-native species, and the vast majority illegally obtained, including five non-native species listed in Appendix I of CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora). CITES Appendix I listing prohibits commercial international trade in a species.

Following the revelations, Indonesia has written to the CITES Management Authorities (those government agencies responsible for implementing CITES regulations) in India, Madagascar, China, USA, Brazil, Peru, Chile, Equador, Guatemala and to the CITES Secretariat.

From 1 March 2008, all specimens of CITES-listed freshwater turtles and tortoises exported to Indonesia will require an import permit and those without will be disposed of. Under CITES, no import permit is needed for Appendix II-

listed species unless required by national law. Countries of origin will also need to notify Indonesia before issuing export permits.

"This is the kind of swift and decisive action that is needed to stamp out the illegal trade in threatened tortoise and turtle species," said Azrina Abdullah, Director of TRAFFIC Southeast Asia.

The government has also announced the introduction of a CITES Management Authority registration scheme for privately owned tortoises and turtles already in Indonesia.

The new regulations will benefit threatened species such as Radiated Tortoise Geochelone radiata and Indian Star Tortoise Geochelone elegans, which are amongst the most popular in trade, despite both being listed in the CITES Appendices (I and II respectively), and being protected in their native countries.

3. Press Release on the presence of illegal species at an expo surveyed in July, 2010.

TRAFFIC website.

Link: http://www.traffic.org/home/2010/8/2/tortoises-illegally-on-sale-in-indonesia.html

Tortoises illegally on sale in Indonesia

Jakarta, Indonesia, 1 August 2010— Ploughshares, the world's rarest tortoise species have been observed openly for sale at an exposition in the centre of Jakarta, Indonesia's capital.

Ploughshare Tortoises *Astrochelys yniphora* and other threatened reptile species were seen illegally on sale by TRAFFIC staff last week at the expo which ran from 2 July to 2 August.

In addition to Ploughshares, Radiated Tortoises *Astrochelys radiata*, Indian Star Tortoises *Geochelone elegans* and Pig-nose Turtles *Carettochelys insculpta* were also being offered for sale—none of which may be legally sold in Indonesia.

International trade in all these reptiles is also regulated under the Convention on International Trade on Endangered Species of Wild Fauna and Flora (CITES). Ploughshare Tortoises and Radiated Tortoises are listed in Appendix I of the Convention, which means no international commercial trade is permitted.

"Indonesia has sufficient legislative tools at their disposal to combat the illegal trade in tortoises and freshwater turtles, but recent surveys and this expo demonstrate that the trade in endangered species continues," said Chris Shepherd, Senior Programme Officer with TRAFFIC Southeast Asia

"Indonesia has been a positive supporter of the ASEAN-Wildlife Enforcement Network, and should lead by example in the war against illegal wildlife trade by stamping out this sort of blatant trade."

The Southeast Asian region has emerged as a major hub for illicit trade in threatened reptile species, including Indian Star Tortoises from South Asia and Ploughshare and Radiated Tortoises from Madagascar.

In the past two months, authorities in Malaysia have intercepted two shipments containing hundreds of Malagasy tortoises and other reptiles concealed in passengers' luggage at Kuala Lumpur airport, while a recent TRAFFIC investigation found many illegally traded reptiles on sale in Bangkok's Chatuchak market. A visit to Jakarta's markets also found many Radiated Tortoises and other species prohibited from trade.

TRAFFIC urges the Indonesian government to close down Jakarta's wildlife markets, which have long been centres of trade in illegal species, and a blemish to the country's reputation.

"Dealers in the region know full well that it is illegal to trade in these animals, but do so with little fear of prosecution." said Shepherd.

"It is now up to the authorities to change this."

4. 18/2/2011 'Rare birds and other wildlife seized at Jakarta Airport during busy month' TRAFFIC website. Link: http://www.traffic.org/home/2011/2/19/rare-birds-and-other-wildlife-seized-at-jakarta-airport-duri.html

5. 16/2/2011 'Would-be smuggler gets three bags full' TRAFFIC website. Link: http://www.traffic.org/home/2011/2/10/would-be-wildlife-smuggler-gets-three-bags-full.html

6. 17/1/2011 'Building wildlife law enforcement capacity to combat illegal wildlife trade in South-East Asia' TRAFFIC website. Link: http://www.traffic.org/home/2011/1/17/building-wildlife-law-enforcement-capacity-to-combat-illegal.html

7. 30/9/2010 'One thousand tortoises a week illegally gathered in south Madagascar' TRAFFIC website. Link: http://www.traffic.org/home/2010/9/30/one-thousand-tortoises-a-week-illegally-gathered-in-south-ma.html

8. 21/9/2010 'Enforcement agencies and port authorities aim to stop wildlife trafficking' TRAFFIC website. Link: http://www.traffic.org/home/2010/9/21/enforcement-agencies-and-port-authorities-aim-to-stop-wildli.html

9. 6/9/2010 'International wildlife trafficker sentenced to 6 months in Malaysia' TRAFFIC website. Link: http://www.traffic.org/home/2010/9/6/international-wildlife-trafficker-sentenced-to-6-months-in-m.html

10. 10/8/2010 'Viet Nam and Indonesia collaborate to tackle illegal wildlife trade' TRAFFIC website. Link: http://www.traffic.org/home/2010/8/10/viet-nam-and-indonesia-collaborate-to-tackle-illegal-wildlif.html

11. 30/7/2010 'Expo shows illegal pet trade rampant in Indonesia' The Jakarta Post. Link: http://www.thejakartapost.com/news/2010/07/30/expo-shows-illegal-pet-trade-rampant-indonesia.html

12. 24/2/2010 'Non-native wildlife trade leaves forests silent' NZ Herald. Link: http://www.nzherald.co.nz/gangs/news/article.cfm?c_id=217&objectid=10628059

13. 21/2/2010 'Monkeys, butterflies, turtles... how the pet trade's greed is emptying south-east Asia's forests' TRAFFIC website. Link: http://www.traffic.org/recent-coverage/monkeys-butterflies-turtles-how-the-pet-trades-greed-is-empt.html

14. 23/12/2009 'New study highlights scale of international wildlife trade in Southeast Asia' TRAFFIC website. Link: http://www.traffic.org/home/2009/12/23/new-study-highlights-scale-of-international-wildlife-trade-i.html

15. 19/11/2009 'Enforcement officers put in the picture' TRAFFIC website. Link: http://www.traffic.org/home/2009/11/18/enforcement-officers-put-in-the-picture.html

16. 14/9/2009 'Zoos linked to protected animal sales' The Jakarta Post. Link: http://www.thejakartapost.com/news/2009/09/14/zoos-linked-protected-animal-sales.html-0

17. 23/2/2009 'Illegal trade threatens Indonesia's box turtles: watchdog' AFP. Link: http://www.google.com/hostednews/afp/article/ALeqM5jNZDz2IHBGj801f-_B8FnjWffFwQ

18. 23/2/2009 'Box turtles knocked out by excessive trade' TRAFFIC website. Link: http://www.traffic.org/home/2009/2/23/box-turtles-knocked-out-by-excessive-trade.html

19. 5/8/2008 'Indonesian police smash one of country's largest illegal wildlife smuggling operations' TRAFFIC website. Link: http://www.traffic.org/home/2008/8/5/indonesian-police-smash-one-of-countrys-largest-illegal-wild.html

20. 9/5/2008 'Indonesia losing US$16 bln per year by natural resources theft' Antara News. Link: http://www.traffic.org/seizures-journal-legacy/2008/5/9/natural-resource-theft-costing-indonesia-dear.html

21. 20/3/2008 'Police on course to tackle wildlife crime' TRAFFIC website. Link: http://www.traffic.org/home/2008/3/20/police-on-course-to-tackle-wildlife-crime.html

22. 1/2/2008 'Turtle identification guide launched' TRAFFIC website. Link: http://www.traffic.org/home/2008/2/1/turtle-identification-guide-launched.html

TRAFFIC, the wildlife trade monitoring network, works to ensure that trade in wild plants and animals is not a threat to the conservation of nature.

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TRAFFIC
the wildlife trade monitoring network

is a joint programme of

WWF IUCN

ISBN 978-983-3393-34-3

AUGUST 2011