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JULY 2016

ILLEGAL OTTER TRADE

An analysis of seizures in selected Asian countries (1980–2015)

Lalita Gomez, Boyd T. C. Leupen, Meryl Theng, Katrina Fernandez and Melissa Savage



Otter Specialist Group



TRAFFIC REPORT

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Front cover photograph: Small-clawed Otter
Aonyx cinereus
Credit: N. Duplaix

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Small-clawed Otter *Aonyx cinereus*



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Small-clawed Otter

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EXECUTIVE SUMMARY

This study is focused on four otter species in Asia; the Eurasian Otter *Lutra lutra*, the Hairy-nosed Otter *Lutra sumatrana*, the Small-clawed Otter *Aonyx cinereus* and the Smooth-coated Otter *Lutrogale perspicillata*. The illegal wildlife trade poses a direct threat to all four species as they are popular for their fur and increasingly for their supposed qualities as pets. This study is an analysis of otter seizure data during the period 1980 to July 2015 inclusive. This study was born out of a desire to understand the extent and scale of the trade involving all four Asian otter species, effectively facilitating future research and action plans. However, otter seizure data for the region were scarce and more often than not, non-existent. Nevertheless, based on the seizure records acquired, it can be concluded that the illegal otter trade is persistent and largely unchecked, despite otter species being protected across their ranges.

Overall, a total of 161 otter seizures were recorded across 15 countries in Asia between 1980 and 2015 involving a total of 5881 individuals. The majority (99%) of these cases was associated with the hunting of otters for their skins in countries like China, India and Nepal. This trade seems mostly to involve the Eurasian Otter and Smooth-coated Otter. It must be noted however, that in general a large number (82%) of seized skins were not identified down to species level owing to the difficulty of distinguishing between the skins of the different species. This clearly obstructs the ability to estimate the impacts of the otter trade on specific species and complicates the task of prioritizing species of concern. While the seizures of otter skins has increased over the years in terms of frequency, the quantities seized have decreased. This could be attributed to an increase in undetected trade; or more worryingly to declining otter populations.

In countries like Indonesia, Malaysia, Thailand and Viet Nam, otters are hunted to supply a growing pet trade that appears to be mostly domestic, in which the Small-clawed Otter and the Smooth-coated Otter are evidently popular. The emerging trend of otters being used as pets was further hinted at through preliminary scans of social media websites (in both English and local languages) and trade fora in which a flourishing online pet trade was discovered (e.g. Indonesia and Viet Nam), in addition to an increasing number of seizures involving live individuals since the early 2000s.

The Hairy-nosed Otter was by far the least encountered species in this study, with only six individuals seized between 2002 and 2008 in five separate incidents. All the seizures of this species, three of which involved skins and three of which involved live individuals, occurred in Cambodia. Considering that this species is already under severe pressure, any level of trade is likely to pose a significant risk to its survival.

Overall seizure data for otters were scarce across the region preventing us from drawing any firm conclusions on the extent of the trade. Nevertheless, it is clear that the illegal otter trade is ongoing and most likely poses a significant threat to all four otter species in Asia assessed in this study. Further investigation is urgently required to establish a more complete overview of the live otter trade, including extensive assessments of the online trade to enhance protection of otters across their range. Based on this preliminary assessment of otter seizure data the following recommendations are made:

RECOMMENDATIONS

CITES and other legislation

- A study should be carried out to assess whether the up-listing of the three Asian otter species assessed (Smooth-coated Otter, Small-clawed Otter and Hairy-nosed Otter) from Appendix II to Appendix I is merited against the criteria under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
- All countries not already assessed as Category I of the CITES National Legislation Project (i.e. India, Lao PDR, Myanmar, Nepal and Philippines) should improve respective national legislations to meet requirements of CITES implementation, particularly in India and Nepal where otter populations are in decline and where the international trade in otter skins is still very much apparent.
- All countries should submit reports of otter seizures to the Secretariat including a comprehensive report of actions and outcomes as they relate to the seizures e.g. criminal prosecutions, fines, etc. as this information is crucial in analysing levels and trends in the illegal trade.
- National legislation protecting wildlife in Cambodia, Indonesia, Nepal and Myanmar should be amended to include all otter species as protected species since distinguishing between the skins of the different otter species is difficult.
- In Indonesia, steps need to be taken to address the growing pet trade in otters, beginning with the inclusion of the Smooth-coated Otter and Small-clawed Otter as protected species within the legislation that would effectively ban the capture and possession of these wild animals.
- Legislation in otter range countries should be assessed to determine loopholes in the law that can be exploited to include otters in the illegal trade chain. For instance in Nepal and Singapore wildlife clauses allow the harming, hunting and/or killing of otters on private land. Furthermore human-otter conflicts put high pressure on wild otter populations. Instead of legalizing lethal action against protected species on private land, alternative measures for combating “pest” otters should be first investigated.

Law enforcement

- Improved regulatory systems and their implementation in Asia are essential to curb the illegal wildlife trade. This requires law enforcement agencies proactively to investigate and convict those engaging in such activities appropriately. The IUCN Otter Specialist Group and TRAFFIC are available to assist the relevant enforcement agencies in providing enforcement support and training with regards to identification of otter species and body parts, including distinguishing between the skins of the different otter species. Increasing the capacity of local law enforcement has been shown to be one of the most effective pathways to curbing illegal wildlife trade.
- In Malaysia, the Philippines, Thailand and Viet Nam, while all otters are protected by legislation, enforcement efforts need to be enhanced to protect otters from a seemingly growing domestic pet market.

Future research

- Further research by organizations such as NGOs and Academic Institutions into the status of the four Asian otter species assessed in this study should be conducted in each country so as to understand better the consequences for wild populations of the illegal trade.
- Continued monitoring of the illegal otter trade by organizations such as TRAFFIC is needed to build and expand on the current seizure database, including market and trade route surveys in key areas to identify and analyse trafficking hot spots, the level of trade, weaknesses in law enforcement, targeted otter species and key uses (e.g. pets, skin, traditional medicine, food). This should include Afghanistan, Bangladesh, India, Nepal and Pakistan and between these countries and China; and in Southeast Asia where seizure data have been scarce but where otter trade appears to be increasing i.e. Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Thailand and Viet Nam.
- Research into the online trade of otters as exotic pets in particular, but also for other uses, should be undertaken by organisations such as TRAFFIC to better understand these new trading platforms and their potential effects on otter populations.
- Research by organisations such as NGOs and academic institutions is needed into the stimulation of the trade in otters as exotic pets and of otters displayed in shows by ill-governed zoos and aquaria and travelling menageries.
- Research by organisations such as NGOs and academic institutions is needed into retaliatory killings stemming from human-otter conflicts and to what extent otter parts from such incidences subsequently enter local and international trade.

Public awareness

- Governments and non-governmental organizations (NGOs) are encouraged to raise awareness in otter range States amongst enforcement agencies, local villages and fishing communities of the plight of wild otters, as a measure to curb illegal trade. This should include provision of information about declining otter populations, the role of otters in wetland ecosystems — and hence wetland conservation; and otters' protection status, which often prohibits their hunting, trapping or poisoning.
- Governments and NGOs, alongside agriculture and aquaculture extension services and development agencies are encouraged to raise awareness about the non-lethal options available to mitigate human-otter conflicts.

INTRODUCTION

Background

Otters are amphibious mammals (Order: Carnivora; Family: Mustelidae) that occur in both freshwater and marine habitats. They are characterized by a coat of extremely densely-haired water-protecting fur, long sinuous bodies, flattened heads and small ears. Considered top predators in their habitats, otters are indicators of a flourishing aquatic ecosystem as they rely on high water quality, healthy and unpolluted aquatic prey, as well as undisturbed, clean wetland habitat (Sivasothi *et al.*, 1994; Kruuk, 2006). Otters can be found throughout North America, Central and South America, Europe, Asia and Africa. There are 13 species of otters in the world and Asia is home to five: the Smooth-coated Otter *Lutrogale perspicillata*, Small-clawed Otter *Aonyx cinereus*, Hairy-nosed Otter *Lutra sumatrana*, Eurasian Otter *Lutra lutra* and the Sea Otter *Enhydra lutris*. The latter occurs in some of the eastern coastal areas of the Russian Federation and has incidentally been observed in northern Japan. However the species has been excluded from this study due to its northern Pacific coastal distribution and for reasons of its very different past use and trade dynamics.

Historically, the otter trade has had a global occurrence, with the Sea Otter skin trade in North America starting in the 18th century and lasting until the beginning of the 20th century (by which time reintroduction programmes were required to save the species from extinction) (Carlson, 2002; Kruuk, 2006). It was the dense and durable properties of otter furs that made them so valuable in the then flourishing fur business. The historical demand for otter fur has resulted in the hunting of different otter species around the world, and has caused the deaths of hundreds of thousands of animals, driving several species to near extinction in many range States (Foster-Turley and Santiapillai, 1990; Kruuk, 2006; Nawab and Gautam, 2008; Duckworth, 2013).

In South Asia, particularly in Afghanistan (Melisch and Rietschel, 1996), Bangladesh, India and Nepal, illegal hunting of otters for their skin is ongoing and poses a severe threat to regional otter populations. In addition, the killing of otters due to real or purported conflict with fisheries and pond aquaculture has been reported from several countries in Asia (Melisch and Rietschel, 1996; Melisch and Lubis, 1998). Early 21st century seizure data suggest that 20–30 percent of the Indian fur trade then involved otter skins (Meena, 2002). Otter poaching on the Indian subcontinent is largely aimed at meeting the high demand in the Chinese market (WWF, 2015). It has been found that at least 50 percent of otter skins in China originate from India (Ghosh, 2005; Duckworth, 2013). Reports of otter furs being popular for sale in the Tibetan Autonomous Region (TAR) and other provinces of China have further been confirmed by Tsering (2005) and WWF (2007). Other important markets are found in Japan, South Korea and the Russian Federation (Kruuk, 2006). While little information exists on otter populations in India, it is known that intensive trapping has resulted in severely fragmented otter populations that are now largely restricted to protected areas (Khan *et al.*, 2014).

A discussion group on the use of and trade in otters in Asia evolved in the margins of the 7th IUCN International Otter Colloquium in Trebon, Czech Republic, in 1998 (Melisch, 1998). However, the magnitude of the illegal Asian otter trade has only recently come to light when remarkable quantities of otter skins were discovered during a joint study by the Environmental Investigation Agency (EIA) and the Wildlife Protection Society of India (WPSI) into the big cat skin trade in China (EIA/WPSI, 2006). Openly for sale in local markets, otter skins were often found alongside Tiger *Panthera tigris* and Leopard *P. pardus* skins (in two years, no fewer than 1800 otter skins were recorded on a single market). In China, these skins are used as outer linings of coats, to make hats, to embellish traditional garments like the Tibetan Chupa, or as trophies for display during festivals and sporting events.

The popularity of otters, captured when young from the wild for the commercial pet trade seems to be a recent development. In Indonesia there are at least 800 private otter owners (IOSE, 2014) and observations of live otters for sale in wildlife markets in Jakarta have increased from incidental observations in the late 1980s and early 1990s (R. Melisch, pers. observation from West Java) to become more widespread over the past decade (Chris R. Shepherd, pers. comm.). Overall, records of illegal live otter trade, including seizures of live otters in the region are becoming more frequent. In 2013, 11 juveniles (six Smooth-coated Otters and five Small-clawed Otters) were seized at Bangkok's Suvarnabhumi International Airport (Thailand), allegedly on route to Japan where they were to be sold as pets (Shepherd and Tansom, 2013). This case represented the first of its kind in Thailand. More recently, in December 2015, nine juvenile Small-clawed Otters from Thailand were seized in Ho Chi Minh City, Viet Nam (An, 2015).

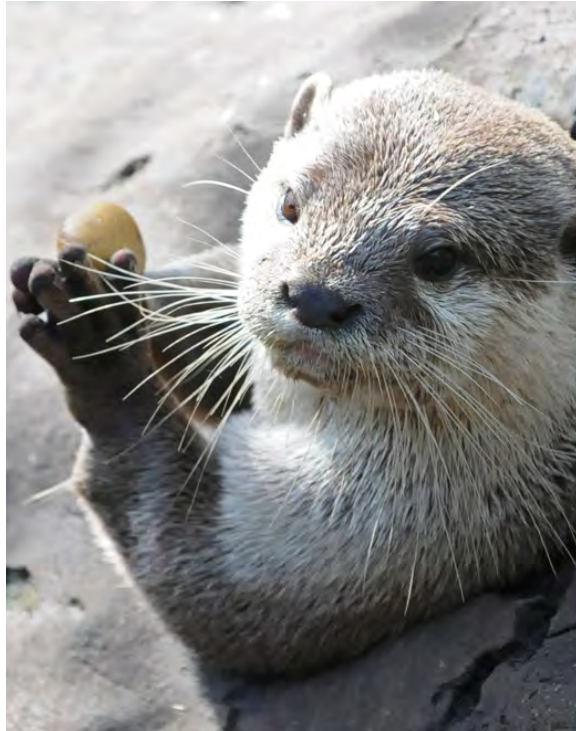
While these seizures mark a new development in international trade dynamics, the full extent of the trade in live otters cannot be determined without including online transactions. For example, a study of Indonesian online markets from January to May 2012 recorded 63 advertisements by 46 sellers with each advert involving one to four cubs (average 1.58) (Aadreaan, 2013). In a recent study assessing the trade of wildlife through Facebook in Peninsular Malaysia, otters were highlighted as being particularly popular as pets with regular turnover rates (Krishnasamy and Stoner, 2016). Internet offers have also occurred recently in Brunei Darussalam (Anon, 2014).

Occasionally, otter parts have been used for traditional medicinal purposes. Certain body parts are believed to have therapeutic properties. For instance in India, otter blood is used to treat epilepsy (Kruuk, 2006) and oil extracted from their fat is used to treat joint pains and pneumonia (Meena, 2002). In Cambodia, an otter's baculum (penis bone), crushed and mixed with coconut milk, is prescribed as an aphrodisiac (Dong *et al.*, 2010).



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Smooth-coated Otter *Lutrogale perspicillata*



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Small-clawed Otter *Aonyx cinereus*



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Hairy-nosed Otter *Lutra sumatrana*



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Eurasian Otter *Lutra lutra*

Asian Otter Species

Smooth-coated Otter *Lutrogale perspicillata*

The Smooth-coated Otter occurs throughout South and Southeast Asia, including Bangladesh, Bhutan, China, India, Indonesia, Lao PDR, Malaysia, Myanmar, Nepal, Pakistan, Thailand and Viet Nam (Khan *et al.*, 2010; de Silva *et al.*, 2015) (Figure 1). Isolated populations of the species have also been documented in the Middle East i.e. Iraq and Iran (Hayman, 1957; Khan *et al.*, 2010). The species has been found to be largely diurnal, group-living animals that occur in the lowlands, mangroves, rivers, freshwater habitats (lakes, streams, reservoirs, canals, flooded fields) and even rice fields (Osman and Shariff, 1988; Nor, 1989; Foster-Turley, 1992). Its large size (up to 1.3m in total length) makes it conspicuous and thus likely more vulnerable to human interference than other species (Kruuk, 2006). Threats to the Smooth-coated Otter include extensive habitat loss, contamination of waterways and human over-exploitation of the species's prey biomass (Rudyanto and Melisch, 1994; Melisch *et al.*, 1996; de Silva *et al.*, 2015). Furthermore, the species is considered a "conflict animal" in those areas where it hinders the activities of local fishermen and farmers (Kruuk, 2006) thus "legitimizing" its extermination. Unquestionably, poaching only exacerbates the impacts these threats already have on wild populations. The Smooth-coated Otter is particularly popular among poachers for its pelt and meat. The Smooth-coated Otter is currently classified as Vulnerable on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species and is listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). This means that all international trade in the species is regulated and can only take place after the issuance of (re-)export permits by the relevant authorities.

Small-clawed Otter *Aonyx cinereus*

The Small-clawed Otter occurs across most of the tropical regions of Asia, ranging from Pakistan and India in South Asia eastwards through Southeast Asia to Java (Indonesia), Palawan (Philippines), Taiwan and southern mainland China (Wright *et al.*, 2015) (Figure 1). This gregarious species occurs in a wide range of habitats associated with the presence of a crab and mollusc prey base, in small streams and rivers of forests, marshes and rice paddies and in mangroves and coastal areas (Melisch *et al.*, 1996; Wright *et al.*, 2015). Small-clawed Otters face similar threats to the ones Smooth-coated Otters face (PHPA and AWB-Indonesia 1994; Rudyanto and Melisch, 1994; Melisch *et al.*, 1996; Wright *et al.*, 2015). Small-clawed Otters as well as hybrids (Small-clawed Otter x Smooth-coated Otter) have been observed in popular shows in commercial aquaria and travelling menageries in Indonesia (Melisch and Foster-Turley, 1996), likely adding to the popularity of the species on the pet market nationally and beyond. The species is currently classified as Vulnerable on the IUCN Red List of Threatened Species and is listed in Appendix II of CITES.

Hairy-nosed Otter *Lutra sumatrana*

The Hairy-nosed Otter is the rarest and least known of the Asian otter species. Once thought to be extinct, it has been rediscovered in parts of Cambodia, Indonesia, Malaysia, Thailand and Viet Nam (Baker, 2013; Aadrean *et al.*, 2015) (Figure 1). A recent observation of a skin for sale in a market in Myanmar may indicate its persistence there as well (Shepherd and Nijman, 2014). It predominantly occurs in undisturbed habitats such as peat swamps, flooded forests, lowland dipterocarp forests, Melaleuca forests and mangroves and coastal estuaries (Sasaki *et al.*, 2009; Baker, 2013; Aadrean *et al.*, 2015). Due to the Hairy-nosed Otter's geographical isolation and its nocturnal lifestyle, it is rarely encountered by humans. Populations are currently under immense pressure because of its restricted range and continuing habitat loss (Aadrean *et al.*, 2015). Other threats include habitat pollution, prey-depletion and accidental hunting (as bycatch). Due to its scarcity, the Hairy-nosed Otter is less frequently encountered in trade. However, whenever a specimen is poached, the consequences for the species as a whole are naturally greater than with other, more common, otter species. The Hairy-nosed Otter is currently classified as Endangered on the IUCN Red List of Threatened Species and is listed in Appendix II of CITES.

Eurasian Otter *Lutra lutra*

The Eurasian Otter is the most widely distributed otter species in the world. It naturally occurs in Europe, northern Africa and throughout parts of Asia, with the exception of certain islands in the southeast (Kruuk, 2006) (Figure 1). Apart from its extensive range, relatively little is known about the Eurasian Otter's overall population size. Although regional subpopulations in Western Europe and the former USSR are either recovering or currently stable, there is concern that habitat loss and poaching are threatening Asian populations (Roos *et al.*, 2015). Nevertheless, scientific authorities have agreed that conservation actions for this species need to be sustained. It is currently classified as Near Threatened on the IUCN Red List of Threatened Species (IUCN, 2016) and is listed in Appendix I of CITES, prohibiting all commercial international trade.

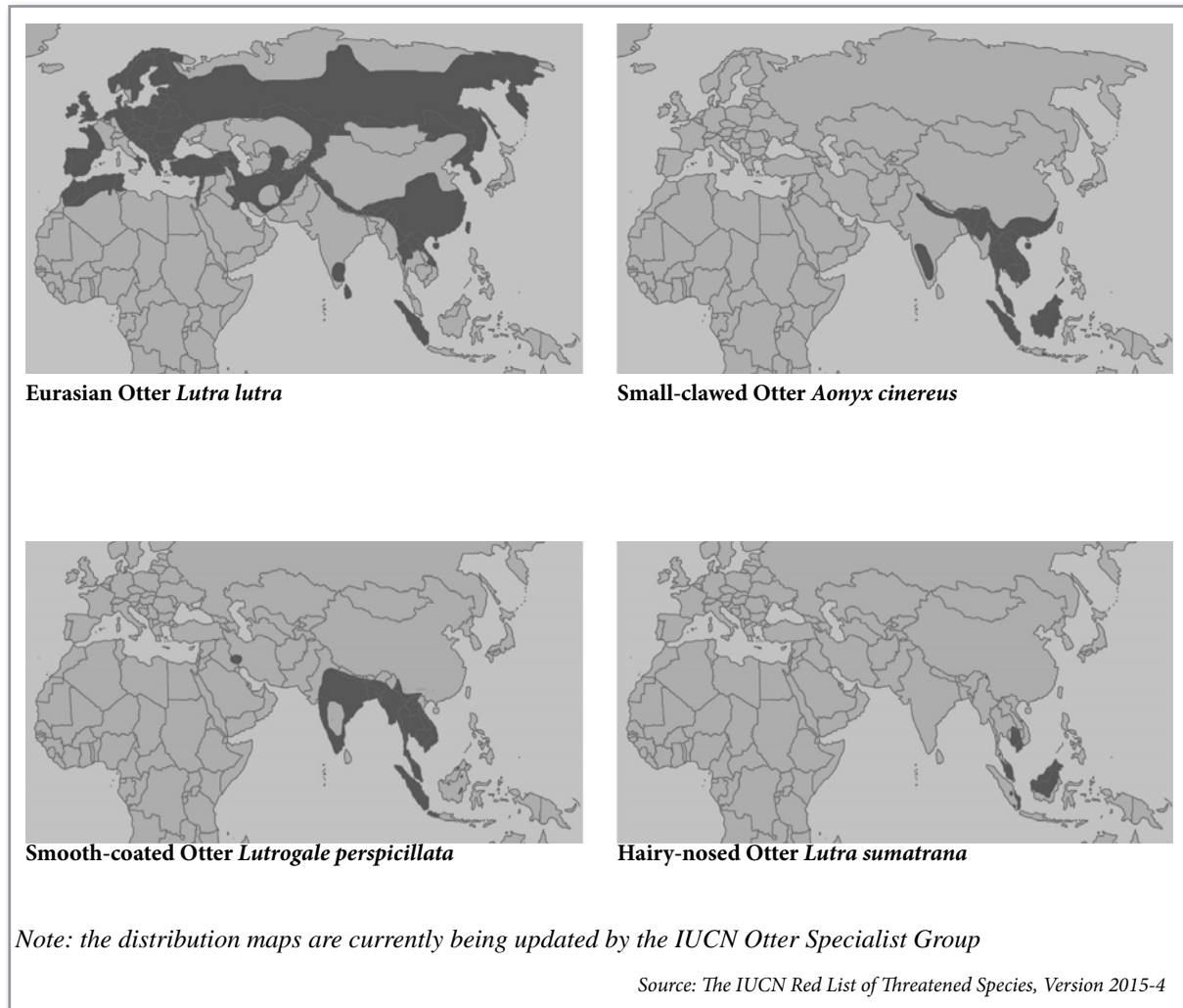


Figure 1: Distribution of the Four Asian Otter Species Assessed

Legislation

Otters are fully protected against hunting, killing, capture and selling in most range States with a few notable exceptions (Table 1). They are protected either by a nationally accorded protection status as a threatened native species (i.e. the case in most range States) or by a law that prohibits the hunting, killing, capturing and selling of any wild animal (e.g. Singapore).

Most range States have legislations that are believed generally to meet the requirements for implementation of CITES (assessed as Category I by the CITES National Legislation Project). The few exceptions include India, the Philippines (Category II), Lao PDR, Myanmar and Nepal (Category III), meaning that national laws in these countries do not meet the requirements necessary to implement CITES properly. Additionally, in some cases, national legislation does not take into account non-native species. For instance, the respective legislations that implement CITES in Hong Kong, South Korea and Taiwan, make it illegal to sell or trade non-native otter species. However, it is not illegal to do so in Japan where domestic trade in “Internationally Endangered Species” (Appendix I species) is prohibited but not for Appendix II species. This leaves species like the Smooth-coated, Small-clawed and Hairy-nosed Otters, all of which are non-native to Japan, unprotected once they have entered the country, as there is no regulation concerning their trade within the domestic market.

The following table provides an overview of legal otter protection under national laws in selected countries/territories in Asia i.e. those countries/territories in which otter seizures have occurred between 1980 and 2014 (Table 1).

<i>Country/territory</i>	<i>Otter Species Present</i>	<i>Protection Status</i>	<i>Legislation</i>	<i>Notes</i>
<i>Cambodia</i>	Eurasian Otter	Protected	Forestry Law (2002)	The Hairy-nosed and Eurasian Otters are both listed as Rare Species that are protected by the Forestry Law (2002)
	Hairy-nosed Otter	Protected		
	Small-clawed Otter	Not protected		
	Smooth-coated Otter	Not protected		
<i>China</i>	Eurasian Otter	Protected	Law of the People’s Republic of China on the Protection of Wildlife (1989) – Class II	
	Small-clawed Otter	Protected		
	Smooth-coated Otter	Protected		
<i>Hong Kong</i>	Eurasian Otter	Protected	Wild Animals Protection Ordinance (1976)	
<i>India</i>	Eurasian Otter	Protected	The Indian Wildlife (Protection) Act 1972 – Schedule I & II	
	Small-clawed Otter	Protected		
	Smooth-coated Otter	Protected		
<i>Indonesia</i>	Eurasian Otter	Protected	Government Regulation No 5/1990 on Conservation of Natural Resources and the Ecosystem, Government Regulation No 7/1999 on Preservation of Flora and Fauna.	Government Regulation No 5/1990 – wildlife falls into two categories i.e. protected or unprotected. Protected has been defined as wildlife that is considered endangered or rare (uncertain how this is defined). Government Regulation No 7/1999 lists species that are protected in the country in which the only otter species included are the Eurasian and Hairy-nosed Otters.
	Hairy-nosed Otter	Protected		
	Small-clawed Otter	Not protected		
	Smooth-coated Otter	Not protected		

<i>Country/territory</i>	<i>Otter Species Present</i>	<i>Protection Status</i>	<i>Legislation</i>	<i>Notes</i>
<i>Japan</i>	Eurasian Otter	Protected	Act on Conservation of Endangered Species of Wild Fauna and Flora (1992)	
<i>Korea R.</i>	Eurasian Otter	Protected	Protection of Wild Fauna and Flora Act (2004)	
<i>Lao PDR</i>	Eurasian Otter	Protected	Wildlife and Aquatic Law (2007)	
	Hairy-nosed Otter	Protected		
	Small-clawed Otter	Protected		
	Smooth-coated Otter	Protected		
<i>Nepal</i>	Eurasian Otter	Protected	Aquatic Life Protection Act 1961, National Parks and Wildlife Conservation Act (1973)	The Aquatic Life Protection Act 1961 makes provisions for the legal protection of two otter species i.e. Eurasian Otter and Smooth-coated Otter (Acharya and Rajbhandari, 2011). Under the National Parks and Wildlife Conservation Act, otters within protected areas are afforded protection.
	Small-clawed Otter	Not protected		
	Smooth-coated Otter	Protected		
<i>Malaysia</i>	Eurasian Otter	Protected	Wildlife Conservation Act (2010); Wild Life Protection Ordinance (1998); Wildlife Conservation Enactment (1997).	Eurasian Otter (Southeast Asian subspecies <i>L. lutra barang</i>) is not listed as a protected species in Sabah, thus only receiving protection in gazetted wildlife sanctuaries along with all other wildlife.
	Hairy-nosed Otter	Protected		
	Small-clawed Otter	Protected		
	Smooth-coated Otter	Protected		
<i>Myanmar</i>	Eurasian Otter	Protected	Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law (1994).	The Hairy-nosed Otter is not listed as a protected species as it is not recognized as occurring in Myanmar (Zaw <i>et al.</i> , 2008). Recently though the skin of this species was observed in a market in Mong La although its origin, whether local or otherwise, is unclear (Shepherd and Nijman, 2014).
	Hairy-nosed Otter	Not protected		
	Small-clawed Otter	Protected		
	Smooth-coated Otter	Protected		
<i>Philippines (Palawan)</i>	Small-clawed Otter	Protected	Wildlife Resources Conservation and Protection Act RA9147 (2001)	
<i>Singapore</i>	Small-clawed Otter	Protected	Wild Animals and birds Act (1965)	
	Smooth-coated Otter	Protected		
<i>Taiwan</i>	Eurasian Otter	Protected	Wildlife Conservation Law (1989)	
<i>Thailand</i>	Eurasian Otter	Protected	Wild Animals Preservation and Protection Act (1992)	
	Hairy-nosed Otter	Protected		
	Small-clawed Otter	Protected		
	Smooth-coated Otter	Protected		
<i>Viet Nam</i>	Eurasian Otter	Protected	Decree No.32/2006/ND-CP, Decree No.59/2005/ND-CP, Decree 157/2013/ND-CP	
	Hairy-nosed Otter	Protected		
	Small-clawed Otter	Protected		
	Smooth-coated Otter	Protected		

Table 1: Protection Status of Otters in Selected Countries and Territories

METHODOLOGY

Data acquisition

Records of seizures of live or dead otters, their parts and derivatives in selected countries and territories in Asia between 1980 and July 2015 (a 35-year period) were collected and compiled. Where available, information on otter seizures included date of seizure, country/territory or countries/territories, location of seizure, origin and destination of products, seized item type, quantity, and enforcement agencies involved.

Formal requests for otter seizures were sent to all relevant CITES Management Authorities in the following countries/territories across Asia: Bangladesh, Bhutan, Cambodia, mainland China, Hong Kong, India, Indonesia, Lao PDR, Malaysia, Myanmar, Nepal, Pakistan, Singapore, Sri Lanka, Thailand, and Viet Nam (refer to Appendix A for details). These countries/territories were selected on the basis of their previous involvement in illegal wildlife trade and/or their proximity to known fur-trade hubs (such as India). Not all countries contacted however responded to our request for data and those that did, not all provided data (Appendix A). Data on seizures were also obtained from other sources, including TRAFFIC seizure records, various NGOs and open access sources such as the Internet and other media. Any additional Asian countries¹ where seizure data were encountered during these searches (i.e. Japan, South Korea, Kuwait, the Philippines and the United Arab Emirates) were also included in this study.

General trade data, including seizure data, were also extracted from the UNEP-WCMC CITES trade database which is a collection of all records of import, export and re-export of listed species as reported by Parties to the CITES Secretariat, required under Article VIII, 1979. Available data on global trade in Smooth-coated Otters, Small-clawed Otters, Hairy-nosed Otters, Eurasian Otters and unspecified *Lutra* spp. between 1980 and 2014 (as 2015 data were not available at the time of this study) were downloaded from the CITES trade database (<http://trade.cites.org>). For analysis of commodity types, the following labels were grouped as “skins”: “garments”, “hair”, “leather items”, “leather products (large)”, “leather products (small)”, “skin pieces” and “skins”. The following labels were grouped as “body parts”: “bodies”, “bone pieces”, “bones”, “carvings”, “derivatives”, “heads”, “plates”, “shoes”, “skeletons”, “skulls”, “tails”, “teeth” and “trophies”. The following labels were grouped as “unspecified”: “specimens”, “unspecified” and “(blank)”. When counting recorded individuals in trade, the exporting country’s numbers were used, except when such numbers were absent, in which case the importing country’s numbers were used. It should be noted that only recently (i.e. February 2016) has it been made mandatory for countries to report illegal wildlife trade to the CITES Secretariat. Therefore prior to this, data are limited only to incidents directly reported by Parties, which is unfortunately not always consistent or in some cases completely lacking.

All seizure data gathered from the various sources were compiled into one dataset and analysed to understand better the extensive trade dynamics across the study area. Seizure locations were mapped to help identify geographic points of interest for trade in the study area, and to inform the need for targeted action to address illegal trade.

This report should be considered a precautionary analysis of the illegal otter trade across selected countries/territories in Asia, as it is assumed that seizures analysed herein represent only a portion of the actual trade since not all illegal trade is intercepted and seized and/or reported. To avoid overlap between the various sources of data analysed, all seizures compiled during this study were rigorously crosschecked to prevent duplication within the dataset. Seizure data were also omitted where a credible source could not be verified or in cases where details were lacking or vague.

¹ Asian countries” includes all those regarded as part of the Asian region under CITES (https://cites.org/sites/default/files/eng/news/meetings/asia2004/Asian_Parties.pdf)

Scope of data

It must be noted that this study's dataset is far from comprehensive. For nearly all countries/territories included in this study, annual seizure records (national or CITES) are absent throughout most of the 1980–2015 period. For some years (1982, 1983, 1985 and 1991), no seizure data were found at all. These data deficits may be explained by several factors. Firstly, countries/territories may lack sufficient enforcement efforts, resulting in a small number of seizures and a higher percentage of undetected trade. Secondly, enforcement agencies may neglect to report seizures, causing national seizure data to be incomplete and/or absent. Thirdly, in some cases, national governing bodies may be unwilling to share seizure data with third parties. Finally, because of the trade's inherently secretive nature, large parts of it are bound to go undetected, rendering it impossible to determine its full extent on the basis of seizure data only.

The dataset shows that seizure records for the earlier years of the studied timeframe are scarcer than more recent records. Besides the above-mentioned factors, this scarcity may be explained by the unavailability of older documents and their absence from more modern open source facilities such as the Internet. Other gaps in older records may be explained by the CITES-membership status of the country in question. Some of the analysed countries only became signatories to CITES after 1980. Prior to their CITES-membership, these countries were not obligated to report seizures to the CITES Secretariat. The countries include Bangladesh (CITES signatory in 1982), Cambodia (1997), China (1981), India (1976), Lao PDR (2004), Myanmar (1997), the Philippines (1981), Thailand (1983) and Viet Nam (1994).

The data gaps in this study lead to an underrepresentation of illegal trade records and stand in the way of a comprehensive overview of the illegal otter trade, which is likely to be much larger than the data suggest. Additionally, other potentially important illegal trade channels must be taken into account. Casual browsing of trading websites has hinted at the importance of the Internet in the illegal otter trade although a study of this was outside the scope of the current study.

RESULTS

Otter trade and seizures

CITES data

In total there were 1110 registered trade incidents involving the four Asian otter species in the UNEP-WCMC CITES trade database between 1980 and 2014. After checking for double- and erroneous entries, the total of registered trade records was found to be at least 964, involving at least 43 692 otters. Of the 964 records, 6.7% (65 records) involved seizures, which were mostly reported by North American and European countries (Appendix B). There were only six seizures reported in Asia i.e. Hong Kong (1), Japan (1), Kuwait (2), South Korea (1) and United Arab Emirates (1), at least three of which involved Asian export countries (Table 2). Almost all of these seizures involved small quantities of Eurasian Otter skins (averaging 1–2 skins per seizure). One notable exception was a seizure of 100 skins, only identified as *Lutra* spp., which was reported in Hong Kong in 1981 and for which the country of export was not specified.

There were an additional eight seizures where the reported origin of the shipment was an Asian country (Table 2), most of which occurred in the USA and Denmark. These seizures involved three different species i.e. Eurasian Otter, Small-clawed Otter and Hairy-nosed Otter. In most cases, the number of seized individuals was small; usually just one skin or body. The only exception being a seizure of four Hairy-nosed Otter skins in the USA, which had originated from Thailand.

Year	Country of Seizure (Importer)	Country of Export	Species	Commodity	Quantity
1981	Hong Kong	unknown	<i>Lutra</i> spp.	skins	100
1985	USA	Singapore	<i>Lutra lutra</i>	skin	1
1990	USA	South Korea	<i>Lutra</i> spp.	skin	1
1992	USA	Thailand	<i>Lutra sumatrana</i>	skins	4
1993	USA	Viet Nam	<i>Aonyx cinereus</i>	body	1
2002	Japan	South Korea	<i>Lutra lutra</i>	skin	1
2002	South Korea	Japan	<i>Lutra lutra</i>	specimen	1
2004	United Arab Emirates	Afghanistan	<i>Lutra lutra</i>	skins	13
2005	Denmark	Kuwait	<i>Lutra lutra</i>	skin	1
2005	Kuwait	Denmark	<i>Lutra lutra</i>	skin	1
2005	USA	China	<i>Lutra lutra</i>	hair (skins)	3
2006	Denmark	Kuwait	<i>Lutra lutra</i>	skin	1
2006	Kuwait	Denmark	<i>Lutra lutra</i>	skin	1
2010	Czech Republic	Viet Nam	<i>Aonyx cinereus</i>	skin	1

Table 2: Reported seizures involving an Asian country in the UNEP-WCMC CITES Trade Database for otters from 1980–2014.

In general, little international trade whether legal or illegal has been reported within the Asian region i.e. the majority of the records in the CITES trade database were reported in Europe and the USA. Nevertheless, while not reported as seizures, there were several records classified as commercial and therefore legal trade involving Asian countries that stood out in terms of the quantities of individuals, origin of the shipments and species of otter (Table 3). One remarkable case is a supposed shipment involving 1000 skins of the rare Hairy-nosed Otter from Germany to Austria in 1987, which originated from China. However, the scarcity of this species makes a transaction of this magnitude highly unlikely and indicates a possible reporting-error. For this reason, this particular case has been omitted from further analysis. In 1992, there was a large shipment of Eurasian Otters (2656 skins also of unknown and therefore questionable origin) from Hong Kong to mainland China.

Year	Country of Import	Country of Export	Species	Commodity	Quantity	Notes
1980	Germany	Bangladesh	<i>Lutrogale perspicillata</i>	skins	350	
1980	Germany	China	<i>Lutrogale perspicillata</i>	skins	1000	origin Bangladesh
1980	Germany	United Kingdom	<i>Lutrogale perspicillata</i>	skins	2208	origin Bangladesh
1980	Hong Kong	Germany	<i>Lutra sumatrana</i>	skins	329	origin Thailand
1980	China	Canada	<i>Lutra spp.</i>	skins	250	
1981	Germany	China	<i>Lutra lutra</i>	skins	500	
1981	Austria	Germany	<i>Lutrogale perspicillata</i>	skins	210	origin China
1982	Germany	United Kingdom	<i>Lutrogale perspicillata</i>	skins	427	origin Bangladesh
1983	Belgium	Germany	<i>Lutrogale perspicillata</i>	skins	349	origin India
1983	Germany	India	<i>Lutrogale perspicillata</i>	skins	1100	
1987	Austria	Germany	<i>Lutra sumatrana</i>	skins	1000	Origin China Omitted from analysis
1989	Hong Kong	China	<i>Lutra lutra</i>	garments	300	
1992	China	Hong Kong	<i>Lutra lutra</i>	skins	2656	
1993	China	Germany	<i>Lutrogale perspicillata</i>	skins	3058	origin China
1997	Hong Kong	USA	<i>Lutra spp.</i>	skins	246	
1998	Hong Kong	USA	<i>Lutra spp.</i>	skins	2923	
1999	Hong Kong	USA	<i>Lutra spp.</i>	skins	221	
1999	Hong Kong	USA	<i>Lutra spp.</i>	skins	5080	
2003	USA	India	<i>Lutra spp.</i>	skins	901	

Table 3: Reported commercial trade of otters (over 100 in quantity) involving an Asian country/territory in the UNEP-WCMC CITES Trade Database from 1980–2014.

Of the 964 trade records in the UNEP-WCMC CITES trade database, a large proportion involved live otters (62.1% of all cases). However each of these transactions generally involved a small number of animals (ranging between 1 and 10 individuals per record in most cases) which amounted to 1568 live otters traded (~3.6% of the total quantity of otters traded dead or live). The species most traded live were the Small-clawed Otter (49.7%) and Eurasian Otter (45.4%). These were reportedly mostly for zoos and captive breeding programmes and commercial trade. Transactions involving otter skins made up 18.3% of the UNEP-WCMC CITES trade database records. However, these transactions often involved large product quantities; no fewer than 38 473 skins were traded, accounting for 88% of all traded products. The trade in otter body parts was found to be comparatively small (14.5% of records). Both the skin and the body part trade predominantly involved Eurasian Otters (in 64.2% of the cases). A small number of records (5.1%) involved unspecified commodities (not labeled or merely labeled as “specimens” or “unspecified”).



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Small-clawed Otter pups seized at the Suvarnabhumi International airport in Bangkok in 2013

Seizure data

Overall, a total of 161 otter seizures (which includes seizures recorded in the UNEP-WCMC CITES trade database and one 2005 record of several illicit otter transactions in India) were recorded in 15 countries in Asia between 1980 and 2015 involving a total of 5881 specimens (Table 4), an average of approximately 4.5 seizures per year with an average of 36.5 otters per seizure (and 163 individuals per year).

Seizure records for earlier years were fewer, with only 38 recorded seizures between 1980 and 1999 (with an average of 1.9 recorded seizures per year and an average of 95 individuals per year (~50 per seizure)). The number of seizures increases slightly between 2000 and 2015 with a total of 123 recorded seizures (with an average of 7.7 recorded seizures per year and an average of 249 individuals per year) although the number of individuals per seizure decreases i.e. from 50 to 32 individuals per seizure. However it should be noted that both the number of seizures and volumes involved spiked in 2003, 2004 and 2005, with the annual confiscation of 939, 739 and 1124 individuals respectively (Table 5).

YEAR	COUNTRY															TOTAL
	KH	CN	IN	ID	JP	KR	KU	LA	MY	MN	NE	PH	TH	AE	VN	
1980			1													1
1981		1														1
1984			2													2
1986			3													3
1987								1								1
1988			3													3
1989			1								1					2
1990			1													1
1992			3													3
1993			9													9
1994			4													4
1995			2													2
1996			1													1
1997			1													1
1998			1													1
1999			2					1								3
2000			4													4
2001		1	2													3
2002	3		1		1	1			1							7
2003	3	2	6						1		1		1			14
2004	10	1							1		3			1		16
2005	1	4	6*				1			1	1					16
2006		1	5				1									8
2007	1		5						2		1					9
2008													1			1
2009	1		6						1							8
2010			1						1						1	3
2011	3	1	4												1	9
2012	1															1
2013	2	2	1								1	2	1			9
2014	1	1	6								1				1	10
2015		2	2	1												5
TOTAL	26	16	83	1	1	1	2	2	7	1	9	2	3	1	3	161**
% of total in the region	16.1	9.9	51.6	0.6	0.6	0.6	1.2	1.2	4.3	0.6	5.6	1.2	1.9	0.6	1.9	

*Includes one account of several illicit otter trade transactions which have taken place between 1980 and 2005.

**Included in the total but not shown in the table are a further three seizures reported by the Wildlife Alliance although the place of seizure was unknown. These were reported in 2005 (2) and 2006 (1) involving 10 skins of the Smooth-coated Otter.

Table 4: Total recorded seizures 1980–2015

YEAR	COUNTRY															TOTAL
	KH	CN	IN	ID	JP	KR	KU	LA	MY	MN	NE	PH	TH	AE	VN	
1980			59													59
1981		100														100
1984			144													144
1986			505													505
1987							20									20
1988			192													192
1989			100								85					185
1990			170													170
1992			5													5
1993			234													234
1994			112													112
1995			50													50
1996			94													94
1997			13													13
1998			1													1
1999			12				3									15
2000			326													326
2001		134	5													139
2002	3		5		1	1			1							11
2003	3	818	99						3		14		2			939
2004	18	665							1		42			13		739
2005	1	267	612*				1			2	238					1124
2006		4	17				1									29
2007	1		111						4		2					118
2008													1			1
2009	1		16						4							21
2010			1						1						6	8
2011	6	398	33												2	439
2012	1															1
2013	2	8	1								1	6	11			29
2014	10	1	22								1				5	39
2015		8	10	1												19
TOTAL	46	2403	2949	1	1	1	2	23	14	2	383	6	14	13	13	5881**
% of total in the region	0.8	40.9	50.1	0.0	0.0	0.0	0.0	0.4	0.2	0.0	6.5	0.1	0.2	0.2	0.3	

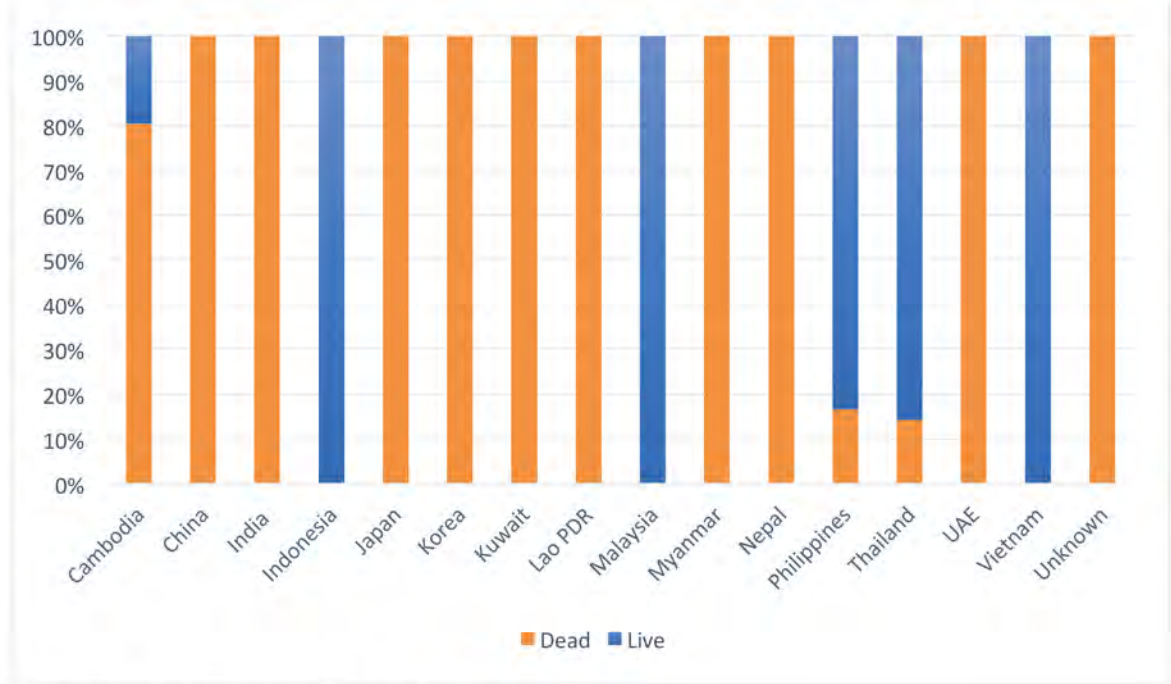
*Includes one account of several illicit otter trade transactions which have taken place between 1980 and 2005.

**Included in the total but not shown in the table are a further three seizures reported by the Wildlife Alliance although the place of seizure was unknown. These were reported in 2005(2) and 2006(1) involving a total of 10 skins of the Smooth-coated Otter.

Table 5: Total number of otters seized 1980–2015

India had by far the most reported otter seizures, with a total of 83 between 1980 and 2015, representing 51.6% of all recorded seizures. Cambodia was the only other country with a large number of seizures (26) representing 16.1% of all those recorded. Regarding the quantities of seized individuals, however, India remained the leading country, with 2949 seized individuals (50.1% of total), but Cambodia, with only 46 seized individuals (<1% of the total), was far less prominent, with an average of just 1.8 individuals per seizure. Conversely China, which only had 16 recorded seizures (9.9% of total seizures), reported a total of 2403 seized individuals (40.9% of the total) between 1980 and 2015, an average of 150 individuals per seizure. China was followed by Nepal (9 seizures / 383 individuals) and Lao PDR (2 seizures / 23 individuals). Recorded seizures were low with few individuals seized in the remaining countries (Table 4 and Table 5).

Neither India nor China (both of which topped the list in terms of recorded seizures and volumes seized) reported seizures of live individuals, rather most of the seized contraband consisted of otter skins (Figure 2). This was also the case in Myanmar, Nepal and Lao PDR, although the quantities seized were considerably lower. Countries in which all seizures exclusively involved live animals (reportedly destined for the pet trade) were Indonesia, Malaysia and Viet Nam with 1, 14 and 13 individuals seized respectively. Cambodia, the Philippines and Thailand reported a mix of live and dead otters seized. Both the Philippines and Thailand reported more seizures of live otters (i.e. 5 live; 1 dead and 12 live; 2 dead respectively) than Cambodia, where the majority of seizures were of dead individuals (i.e. nine live; 37 dead). Only 4 seizures were reported in Japan, South Korea and Kuwait and in each case only one individual was seized.



Note: dead = 5827 individuals; live = 54 individuals

Figure 2: Percentage of dead vs live individuals seized per country

The collected data show that the number of seizures increased slightly over the years, peaking between 2002 and 2007 (Figure 3). There was an average 53 individuals per seizure from 1980-2005, while in the last decade this dropped to approximately 11 individuals per seizure. The trade in live otters seems to have begun in the early 2000s (Figure 4). While the quantities of live individuals seized are relatively small, they increased particularly in the last four years (2011-2014), averaging six individuals per seizure whereas in previous years it was three to four individuals per seizure. Seizures of live otters spiked in 2013 with 16 individuals.



Figure 3: Total number of seizures recorded annually and quantities of otters seized

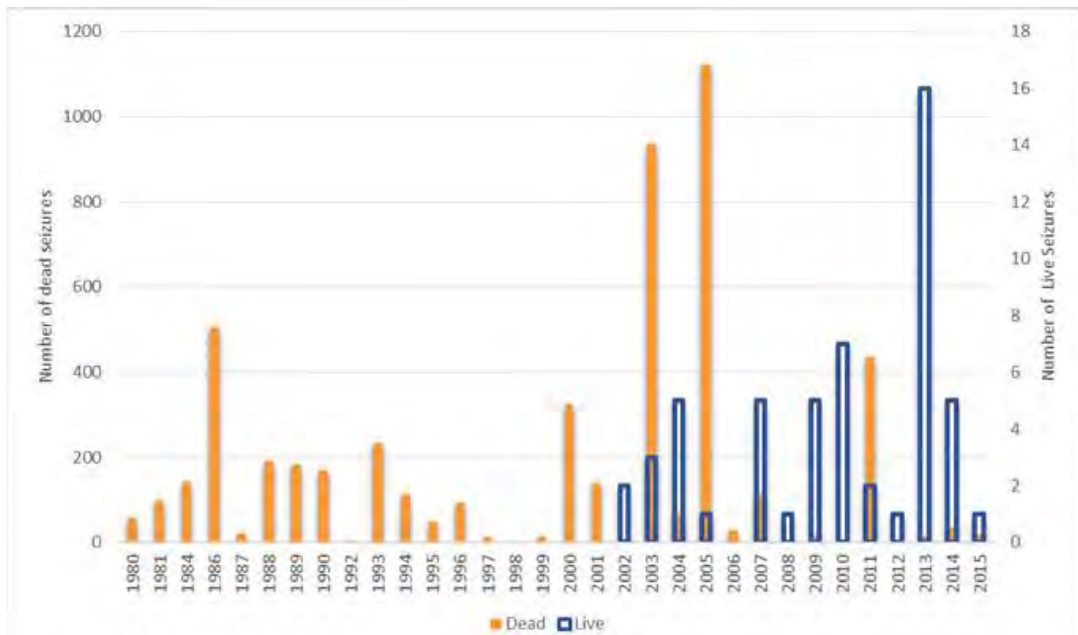
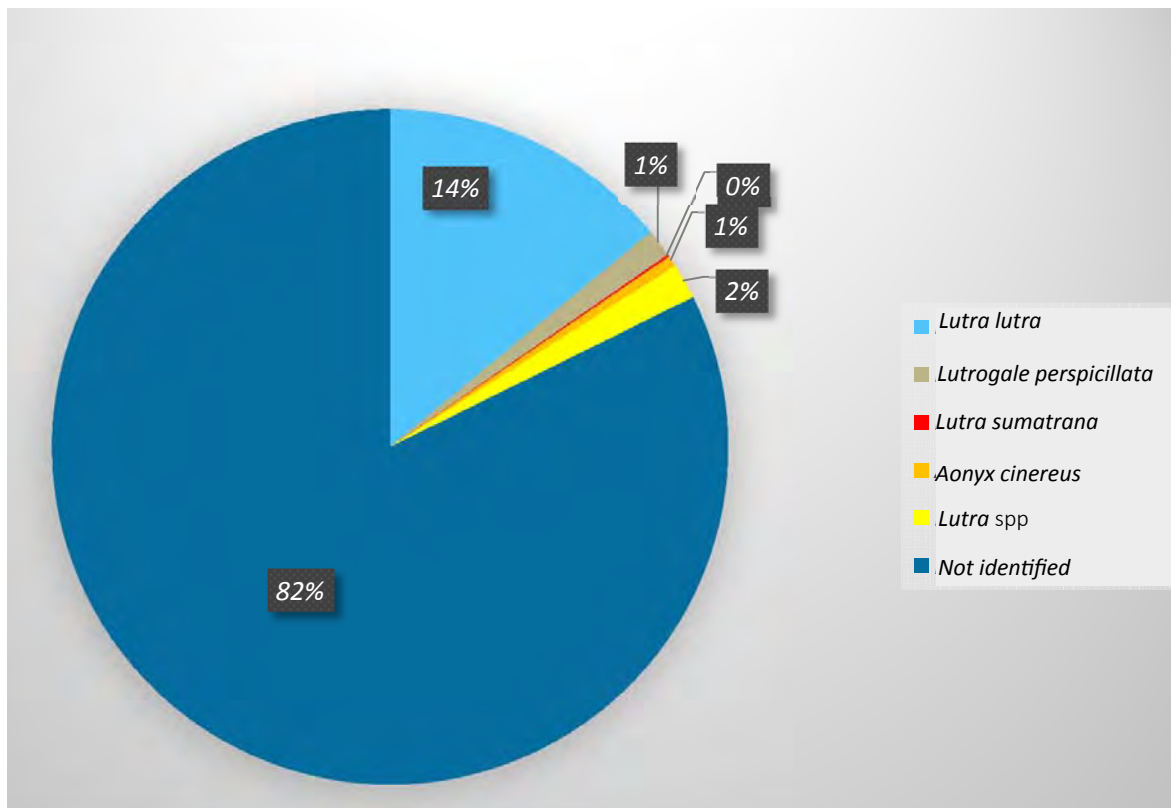


Figure 4: Percentage of dead vs live individuals seized per year

Species in trade

In most of the recorded seizures, the otters in question were not identified or specified to the species level (no less than 82% of all confiscated individuals remains unidentified) with a further 1.7% identified simply as *Lutra* spp. Of the individuals that were identified, most were Eurasian Otter (824 individuals, 14% of total), followed by Smooth-coated Otter (79 individuals, 1.3%), Small-clawed Otter (31 individuals, 0.5%) and Hairy-nosed Otter (6 individuals, 0%) (Figure 5).



Note = total number of individuals = 5881

Figure 5: Species distribution

Specimens in trade

An overwhelming majority of the seized contraband consisted of otter skins i.e. 5810 individuals (98.7% of total). This was followed by live animals, 53 individuals (0.9%) and carcasses and body parts with 18 individuals (0.2%). Sometimes shipments of skins included other body parts such as tails and bones, but overall such commodities were rarely encountered. The Eurasian Otter was predominantly encountered in the form of skins, whereas the Small-clawed Otter was frequently found to be live (Figure 6). Of the 161 reported seizures, there were about 15 cases where otter products were seized alongside contraband stemming from other animal species. The majority of such contraband were the skins of Tigers (~ 40), Leopard (~700), and rhino (~ 185) as well as the skins of small cats, civets, foxes, wolves and antelopes although the quantity of these were not specified. These mixed skin seizures were mostly reported for India (8), China (4) and Nepal (3). Cambodia (1) and Thailand (2) also reported mixed shipments but these mostly concerned the bodies or parts of a variety of animals including birds, turtles, corals, etc. and included live animals such as Long-tailed Macaques *Macaca fascicularis* and turtles which were confiscated from local markets.

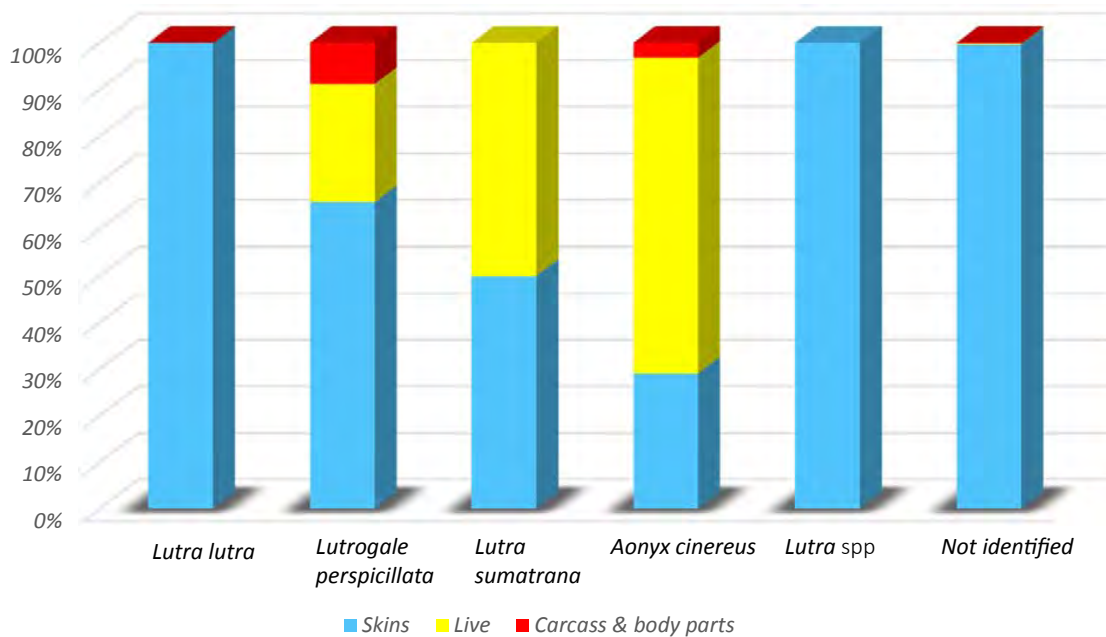


Figure 6: Types of contraband per species

DISCUSSION

There is a paucity of information on the illegal trade of otters in the Asian region. This is due to the fact that wildlife crime is still a low priority for governments and furthermore, otters are a low priority species for most conservation organizations. Seizure data were scarce for most countries assessed in this study with the exception of India. This comes as no surprise considering that otter poaching in India is known to be intense to supply a demand for otter skin/fur fuelled largely by China (Ghosh, 2005; Duckworth, 2013; WWF, 2015). The real scale and scope of the Asian illegal trade in otters is therefore difficult to determine. The inherently secretive nature of the trade means that most illegal shipments go undetected. Additionally, the incompleteness of seizure data (due to poor enforcement and/or reporting) stands in the way of any conclusive measurement of the true extent of the issue. Wherever trade records are scarce, it is difficult to establish whether this is due to actual low trade levels or due to a lack of reporting. Either way, the 161 recorded seizures in this study are likely to represent a fraction of the actual illegal otter trade.

Otter species in trade

Identification of otters to the species level can be a difficult task. Untrained officials may have a hard time distinguishing between otter species, especially when dealing with skins and body parts. It is therefore unsurprising that 82% of seized otters in this study were not identified to the species level. Many of these were from seizures in India and China. This lack of information should be considered problematic and obstructive to conservation efforts for several reasons, the most important one being that whenever illegally traded otters remain unidentified, it becomes impossible for researchers to determine which otter species should be prioritized in conservation plans. In a similar vein, it becomes impossible to identify trends regarding the use of various species for different purposes and the demand for the different species in particular countries. Nevertheless, certain trends can be discerned from the individuals that were identified. All four Asian otter species assessed in this study were found in trade.

The Eurasian Otter was the species with the highest number of seized individuals (824 individuals; 87.6% of all identified individuals). However, this was mostly attributed to one large seizure of 778 skins in China in 2003. The skins had originated from India and were in transit to the TAR along with 31 Tiger skins and 581 Leopard skins. The CITES trade data confirm the Eurasian Otter's popularity, with the species being involved in most recorded trade and seizures. No live Eurasian Otters were encountered in any of the seizures. Rather, all recorded seizures of the species almost exclusively involved skins, confirming the species's popularity in the fur trade. Given this species has the broadest habitat range of all otter species, it will always remain difficult confidently to establish any seized specimen's exact origin whenever such information is lacking from the seizure data. Nevertheless, India and China's well-established fur trade means that these countries are likely to play an important role in the Eurasian Otter trade.

The Smooth-coated Otter is similarly traded for its fur. A large proportion of the seizures were of skins and to a much lesser extent the carcass and tail. There were also several seizures of live individuals over the study period that were reportedly destined for the pet trade. Many of the seizures involving this species were reported in Cambodia (70%), where they are coveted by locals for use in traditional medicine (Poole, 2003). Such medicinal uses include the use of otter skins to assist women during pregnancy and childbirth. These practices may still occur in Cambodia, which would mean that the traditional medicine industry, and increasingly the pet trade, pose significant threats to the Smooth-coated Otter and the Hairy-nosed Otter, the only other otter species seized there.

The Hairy-nosed Otter was by far the least encountered species in this study, with only six individuals seized between 2002 and 2008 in five separate incidents. This is not surprising considering that it

is the rarest otter species and was once even considered extinct (Aadreaan *et al.*, 2015). However, remnant populations have been found in Cambodia, Indonesia, Malaysia, Thailand and Viet Nam. All the seizures of this species occurred exclusively in Cambodia. Of the six individuals seized, three were live and three were skins. It is impossible to draw any conclusions with regards to their trade and use with such a scarcity of seizure data. Nevertheless, given this species is already under severe pressure, any level of trade is likely to pose a significant risk to its survival.

The Small-clawed Otter appears to be a popular species in the pet trade. CITES trade records show that nearly all legally traded Small-clawed Otters were live and destined for the commercial trade. More than half of all seizures reported for the species were of live individuals, although in small quantities (67.7%). These seizures occurred in Indonesia, Malaysia, Philippines, Thailand and Viet Nam. In India, the species is hunted for its fur and numbers have reportedly reduced drastically over the last decade (IOSEF, 2014). There was one reported seizure of nine Small-clawed Otter skins in India in 2014.

The fur and pet trade

A large majority of the recorded seizures took place in India, suggesting both a well-established Indian otter trade, and comparatively effective local law enforcement (Figure 7). The remaining seizures occurred in China and Cambodia and to a lesser extent Nepal and suggests that the illegal otter trade is particularly persistent in these countries. All otter seizures made in this region exclusively involved skins (Figure 8) and significant quantities, suggesting that otters are specifically targeted by poachers to meet the market demand for otter fur.

Traditionally, the fur trade between Afghanistan and China (Melisch and Rietschel, 1996) as well as between India, China and Myanmar, Viet Nam, Cambodia, Lao PDR and Thailand has been extensive. Generally, otter skins are smuggled from India to China through Nepal. Past research has illuminated important trade routes throughout India, Nepal and China (EIA, 2004; EIA/WPSI, 2006; Verheij *et al.*, 2010; Stoner and Pervushina, 2013). In a 2004 survey, researchers found large quantities of wild animal skins (including those of otters) for sale in Chinese markets (EIA/WPSI, 2006). More recent reports confirm the scale of this region's animal skin trade, with more than 1100 Tiger skins seized in the region between 2000 and 2012 (Stoner and Pervushina, 2013).



Figure 7: Distribution of seizures across selected countries in Asia

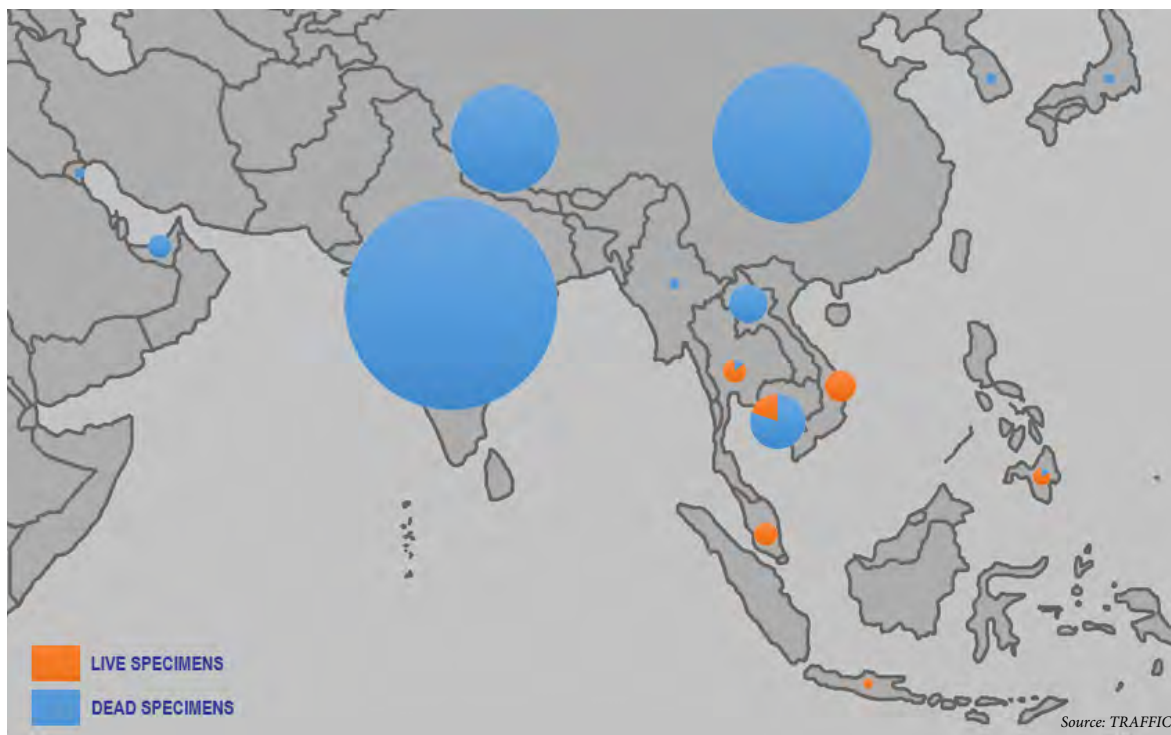


Figure 8: Seizures of live and dead individuals across selected countries in Asia

Nevertheless, a sudden decline in the number of recorded otter skin seizures can be observed from 2005 onwards, suggesting waning trade levels. However, such a drop in seizure numbers may simply reflect weakened enforcement efforts and an increase in undetected trade. Similar lows in seizure data have occurred before, most notably between 1996 and 2000, after which seizure levels rose again, reaching a peak between 2003 and 2005. Furthermore, recent reports have shown the continuing extent of the trade in wild animal fur in the region (Verheij *et al.*, 2010; Stoner and Pervushina, 2013). It would therefore be too early to hint at a declining demand for otter furs and continued vigilance is essential.

A greater concern would be if this drop in recent seizures is a sign of declining otter populations. The illegal otter trade has already been attributed as one of the key factors that led to the extinction of otters in parts of India (IOSE, 2014). Some authors suggest that their distribution in India may now be restricted to protected areas (Meena, 2002). The same has been reported for otter population in China where they were once widespread. The demand for fur and live otters resulted in the near extirpation of the Eurasian Otter (Lau *et al.*, 2010). Population levels of the species are still considered very low in southern China, and populations are thought to be present only in well protected areas (Lau *et al.*, 2010). Poaching activities have also resulted in the depletion of otter populations in Myanmar where they have been hunted not just for their fur but also for their gall bladder and penis (Zaw *et al.*, 2008).

In Indonesia, Malaysia, Thailand and Viet Nam, otters are hunted to meet demand for pets, traditional medicine, meat, trophies, etc. However, the quantities of otters traded are small in comparison, which could possibly mean that otter hunting is opportunistic in these areas. The seizure data in this study suggest that the illegal international trade in live otters is relatively small, with no more than 0.9% of all seized contraband comprising live animals. It would, however, be premature to conclude that there is no demand for pet otters. Indeed, CITES trade records

show that such demand exists (see Appendix B). According to these records, a large part of the international trade concerned shipments of captive-bred live Small-clawed Otters. These animals were all reportedly destined for commercial trade. Based on the collected seizure data, both Small-clawed Otters and Smooth-coated Otters are poached to meet demand for pet otters.

The recent spike in shipments of live animals suggests that the trade in live otters for use as pets may now be increasing. This apparent increase is also evident in illegal trade records. The seizure data show that the number of live individuals in illegal trade has been on the rise since 2000s. However, as mentioned, the number of live otter seizures remains relatively small. This may be an indication that the illegal otter pet trade is mainly domestic. Of all the seizures involving live otters, there was only one incident where international trade was actually known i.e. the seizure of five Small-clawed Otter and six Smooth-coated Otter pups at Bangkok's Suvarnabhumi International Airport, reportedly headed for Japan's exotic pet market (Shepherd and Tansom, 2013).

Additionally, there has been a noticeable shift in the trade of wildlife from physical markets to online markets in recent years (Anon, 2014; Krishnasamy and Stoner, 2016). Trading and social networking sites like Facebook are used to advertise the wares of legal and illegal wildlife traders such as Tigers, Leopards, pangolins, marine turtles and otters. More than 7000 wildlife products from threatened species have been discovered for sale on online auctions, fora and classified advertisements (IFAW, 2012). In 2015, ivory worth GBP500,000 was being advertised on 43 online sites in the UK, France, Germany, Spain and Portugal (Krishnasamy and Stoner, 2016).

Preliminary scans of social media websites and trade fora have given us a glimpse at what seems to be a flourishing online wild otter pet trade. While actual transactions may only involve small numbers of otters, the frequency of such transactions appears to be high. A brief glance at the online trade of otters in Viet Nam revealed at least 10 websites advertising otters as pets. In Viet Nam otter seizures exclusively involved live individuals. This was the same in Malaysia. In a recent study assessing the trade of wildlife through Facebook in Peninsular Malaysia over a five month period (November 2014–April 2015) otters were highlighted as one of the popular pet-species, recording regular turnover (Krishnasamy and Stoner, 2016). The same was also found in Indonesia (Aadrean, 2013) and Brunei (Anon, 2014).

The online illegal otter trade is therefore likely to be substantial in both scale and scope. The lack of online otter trade records forms perhaps the greatest gap in this study's dataset. In order to establish a more complete overview of the live otter trade, comprehensive assessments of the online trade are urgently needed.

Legislation

Generally the Asian otter species assessed are nominally protected by legislation across most range States. However, this legal protection does not always extend to all otter species that may occur in a particular country. This is evident in Cambodia, Indonesia and Myanmar where all four otter species are present but not all are protected. For instance, neither Small-clawed or Smooth-coated Otters are protected in Cambodia and Indonesia. This is particularly worrying as both species are exploited for the pet and fur trade in this countries. The lack of legal protection in place to regulate trade of both species could exacerbate the threats to the species already in decline throughout their ranges due to habitat loss and conversion.

In Myanmar, the Hairy-nosed Otter is currently unprotected by national legislation. This is mainly attributed to the fact that this species is not recognized as occurring there (Zaw *et al.*, 2008). However, during recent surveys of wildlife markets in Mong La, a skin of this species was observed

for sale (Shepherd and Nijman, 2014). While the origin of the skin is uncertain, the authors believe it to be locally sourced as wildlife found in these markets are usually brought in by local hunters on a daily basis. Nevertheless, skins, parts and carcasses of other otter species were also observed for sale in the markets (Shepherd and Nijman, 2014) despite them being protected species in the country, indicating a weakness in law enforcement efforts or effectiveness (DLA Piper, 2015). Myanmar's CITES implementing legislation is classified as Category 3, which means that national wildlife laws do not meet the requirements for effective implementation of the Convention.

In Nepal, three of the four otter species occur i.e. Eurasian Otter, Small-clawed Otter and Smooth-coated Otter. The Small-clawed Otter is not protected but both the Eurasian and Smooth-coated Otters are protected under the Aquatic Life Protection Act, 1961 which prohibits the capture, killing or harming of wildlife listed as protected (Acharya and Rajbhandari, unpublished). However, the Act does not apply to incidents that occur on private land. In the case of otters this may be problematic because of the impact human-otter conflicts can have on wild populations. Many of these conflicts are likely to occur on private agricultural estates. In such cases, the land owners are free to do as they please with the animals, which may have serious consequences for otter conservation. The Small-clawed Otter is afforded some level of protection in gazetted national parks and other protected areas where the hunting and harming of wildlife is prohibited under the National Parks and Wildlife Conservation Act, 1973. Despite this, otters are considered to be declining across Nepal (Foster-Turley and Santiapillai, 1990; de Silva, 2011) and based on the seizure data collected, otters are still being poached for their skins. Furthermore, none of the 383 individuals reported in seizures included species identity. This leaves an unprotected species like the Small-clawed Otter especially vulnerable.

Similar human-otter conflicts have been reported elsewhere in Asia, such as Indonesia, mostly in relation to inland fisheries conflicts and perceived competition between humans and otter for fish and other aquaculture species (Melisch and Lubis, 1998). Retaliatory killing of wildlife and the entry of their parts into subsequent local and international trade chain has been reported for other species (e.g. Snow Leopard in Theile, 2003) although a potential comparative situation for otters is likely, this hasn't been further assessed in Asia.

The demand for otters from India persists despite its three native otter species being protected by national law. This is part of a larger illegal wildlife trade problem, a result of laws being poorly communicated, implemented and enforced (WWF India; Joshi, 2015). Moreover, the relatively lenient punishments for these crimes (minimum fine: one year in prison and/or fine of USD75) fail to act as deterrents, leaving otters and other wildlife vulnerable to poaching.



Small-clawed Otter found in Mong La market in Myanmar

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CONCLUSION

There has been very little research into the illegal otter trade in Asia. With all Asian otter species at least classified as Vulnerable on the IUCN Red List, an inquiry into this illegal trade (its scale, scope, and dynamics) remains a high priority. This report has provided a regional overview of the illegal otter trade as a first step towards an enhanced understanding of the issues. However, the significance of the impact of illegal trade on wild otter populations remains unknown for three reasons. First of all, the true extent of the trade remains unknown; due to its inherently secretive nature the estimates in this report are likely under-representative of the actual magnitude of trade. Second, little remains known about the status of the Asian otter species. Uncertainty about their population sizes, reproduction rates, and in some cases their distribution, makes it difficult to determine each species's resilience in the face of exploitation. Third, a large majority (more than 80%) of the seized otters in this study were not identified to the species level. This clearly obstructs the ability to estimate the impacts of the otter trade on individual species and complicates the task of prioritizing species of concern.

All four Asian otter species assessed in this study were encountered in trade, albeit in varying degrees and apparently for different purposes. The otter fur trade appears to be particularly extensive in India, Nepal and China, where, judging by the large numbers of individuals involved in some of the recorded seizures, it is likely to be taking a toll on wild otter populations. Even though otter seizures seem to involve smaller numbers of skins in recent years than previously, they are still frequent and there are no indications that the skin trade is waning. It remains unclear to what extent otter parts enter the illegal trade chain following retaliatory killings nor how big is their use in traditional medicine. Records of such practices are scarce, however, implying that they do not frequently occur.

The live otter trade seems to occur mostly in Indonesia, Japan, Malaysia, Thailand and Viet Nam. The popularity of otters in the domestic and exotic pet trade appears to be on the increase. This could potentially be stimulated by display shows in aquaria and travelling menageries. The Small-clawed Otter and the Smooth-coated Otter seem to be particularly desirable. Nevertheless, seizure data suggest that the illegal international trade in live otters is still relatively small, indicating that pet otters are predominantly sourced domestically. Additionally, the exotic pet trade seems to be largely internet-based. Preliminary browsing of e-commerce websites hints at a blooming online otter trade. More research into these new trade platforms is urgently needed.

RECOMMENDATIONS

CITES and other legislation

- A study should be carried out to assess whether the up-listing of the three Asian otter species assessed (Smooth-coated Otter, Small-clawed Otter and Hairy-nosed Otter) from Appendix II to Appendix I is merited against the criteria under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
- All countries not already assessed as Category I of the CITES National Legislation Project (i.e. India, Lao PDR, Myanmar, Nepal and Philippines) should improve respective national legislations to meet requirements of CITES implementation, particularly in India and Nepal where otter populations are in decline and where the international trade in otter skins is still very much apparent.
- All countries should submit reports of otter seizures to the Secretariat including a comprehensive report of actions and outcomes as they relate to the seizures e.g. criminal prosecutions, fines, etc. as this information is crucial in analysing levels and trends in the illegal trade.
- National legislation protecting wildlife in Cambodia, Indonesia, Nepal and Myanmar should be amended to include all otter species as protected species since distinguishing between the skins of the different otter species is difficult.
- In Indonesia, steps need to be taken to address the growing pet trade in otters, beginning with the inclusion of the Smooth-coated Otter and Small-clawed Otter as protected species within the legislation that would effectively ban the capture and possession of these wild animals.
- Legislation in otter range countries should be assessed to determine loopholes in the law that can be exploited to include otters in the illegal trade chain. For instance in Nepal and Singapore wildlife clauses allow the harming, hunting and/or killing of otters on private land. Furthermore human-otter conflicts put high pressure on wild otter populations. Instead of legalizing lethal action against protected species on private land, alternative measures for combating “pest” otters should be first investigated.

Law enforcement

- Improved regulatory systems and their implementation in Asia are essential to curb the illegal wildlife trade. This requires law enforcement agencies proactively to investigate and convict those engaging in such activities appropriately. The IUCN Otter Specialist Group and TRAFFIC are available to assist the relevant enforcement agencies in providing enforcement support and training with regards to identification of otter species and body parts, including distinguishing between the skins of the different otter species. Increasing the capacity of local law enforcement has been shown to be one of the most effective pathways to curbing illegal wildlife trade.
- In Malaysia, the Philippines, Thailand and Viet Nam, while all otters are protected by legislation, enforcement efforts need to be enhanced to protect otters from a seemingly growing domestic pet market.

Future research

- Further research by organizations such as NGOs and Academic Institutions into the status of the four Asian otter species assessed in this study should be conducted in each country so as to understand better the consequences for wild populations of the illegal trade.
- Continued monitoring of the illegal otter trade by organizations such as TRAFFIC is needed to build and expand on the current seizure database, including market and trade route surveys in key areas to identify and analyse trafficking hot spots, the level of trade, weaknesses in law enforcement, targeted otter species and key uses (e.g. pets, skin, traditional medicine, food). This should include Afghanistan, Bangladesh, India, Nepal and Pakistan and between these countries and China; and in Southeast Asia where seizure data have been scarce but where otter trade appears to be increasing i.e. Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Thailand and Viet Nam.
- Research into the online trade of otters as exotic pets in particular, but also for other uses, should be undertaken by organisations such as TRAFFIC to better understand these new trading platforms and their potential effects on otter populations.
- Research by organisations such as NGOs and academic institutions is needed into the stimulation of the trade in otters as exotic pets and of otters displayed in shows by ill-governed zoos and aquaria and travelling menageries.
- Research by organisations such as NGOs and academic institutions is needed into retaliatory killings stemming from human-otter conflicts and to what extent otter parts from such incidences subsequently enter local and international trade.

Public awareness

- Governments and non-governmental organizations (NGOs) are encouraged to raise awareness in otter range States amongst enforcement agencies, local villages and fishing communities of the plight of wild otters, as a measure to curb illegal trade. This should include provision of information about declining otter populations, the role of otters in wetland ecosystems — and hence wetland conservation; and otters' protection status, which often prohibits their hunting, trapping or poisoning.
- Governments and NGOs, alongside agriculture and aquaculture extension services and development agencies are encouraged to raise awareness about the non-lethal options available to mitigate human-otter conflicts.

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APPENDIX A

List of Institutions/Organisations Formally Contacted For Seizure Data

<i>Institution</i>	<i>Type</i>	<i>Responded</i>	<i>Records</i>
Bangladesh			
<i>Bangladesh Forest Department</i>	CITES	N	-
<i>Wildlife Crime Control Unit</i>	Government Body	N	-
<i>Wild Team</i>	NGO	N	-
<i>Wildlife and Nature Conservation Society of Bangladesh</i>	NGO	N	-
Bhutan			
<i>Wildlife Conservation Division (WCD)</i>	CITES	Y	None
Cambodia			
<i>Wildlife Alliance</i>	NGO	Y	Yes
<i>CITES Management Authority of Cambodia</i>	CITES	N	-
<i>WildAid</i>	NGO	N	-
<i>Coalition against wildlife trafficking</i>	NGO	N	-
<i>Conservation International</i>	NGO	N	-
<i>Wildlife Conservation Society Cambodia</i>	NGO	N	-
China			
<i>The Endangered Species Import and Export Management Office of the People's Republic of China</i>	CITES	Y	Yes
<i>Agriculture, Fisheries and Conservation Department, Hong Kong</i>	CITES	Y	None
India			
<i>Environmental Investigation Agency</i>	NGO	Y	None
<i>TRAFFIC office</i>	NGO	N	-
<i>Wildlife Institute of India</i>	Academic	Y	Yes
<i>Ministry of Environment and Forests</i>	CITES	N	-
<i>Wildlife Crime Control Bureau</i>	Government Body	N	-
<i>Wildlife Research and Conservation Society</i>	NGO	Y	None
<i>The Mountain Institute India</i>	NGO	N	-
<i>Wildlife Protection Society of India</i>	NGO	Y	Yes
Indonesia			
<i>Ministry of Agriculture</i>	CITES	N	-
<i>Fauna & Flora International Sumatra</i>	NGO		
Lao PDR			
<i>Laos Wildlife Rescue Center</i>	NGO	N	-
<i>Ministry of Agriculture and Forestry</i>	CITES	N	-

Institution	Type	Responded	Records
Malaysia			
ASEAN-WEN and Biodiversity and Forest Management Department	CITES	Y	Yes
Department of Wildlife and National Parks Peninsular Malaysia	Government Body	N	-
Sabah Wildlife Department	Government Body	N	-
Forest Department Sarawak	Government Body	N	-
NCB / Interpol Malaysia	Government Body	N	-
Royal Malaysian Customs	Customs	Y	None
Myanmar			
Forest Department, Ministry of Environmental Conservation and Forestry	CITES	Y	None
Nature and Wildlife Conservation Division	Government Body	N	-
Nepal			
Wildlife Conservation Nepal	NGO	Y	Yes
Department of National Parks and Wildlife Conservation	CITES	N	-
The Mountain Institute - Himalayan Program in Nepal	NGO	Y	None
Pakistan			
Ministry of Climate Change - Government of Pakistan	CITES	Y	None
Singapore			
Agri-Food & Veterinary Authority	CITES	Y	None
Sri Lanka			
Department of Wildlife Conservation	CITES	N	None
Thailand			
Freeland - Bangkok-based counter-trafficking organization	NGO	Y	None
Customs	Government Body	N	-
Thailand's Department of National Parks, Wildlife and Plant Conservation	CITES	N	-
Vietnam			
Wildlife Viet Nam CITES Management Authority	CITES	N	-
Other sources			
Asia's Regional Response to Endangered Species Trafficking (ARREST) Program	A programme by a US Government Body	N	-
ASEAN Centre for Biodiversity Wildlife Asia	Inter-governmental Body	N	-
Wildlife Asia	NGO	Y	None
South Asia Wildlife Enforcement Network	Inter-governmental Body	N	-
Tibet Natural Environment Conservation Network	NGO	N	-
ASEAN-WEN Program Coordination Unit	Inter-governmental Body	N	-
Perth Zoo, Australia	Zoo	Y	None
Environmental Investigation Agency International	NGO	Y	Yes
TRAFFIC East Asia	NGO	Y	Yes

APPENDIX B

CITES Trade Data – Otter Seizures, Global (1980–2014)

<i>Year</i>	<i>Country of Seizure (Importer)</i>	<i>Country of Export</i>	<i>Species</i>	<i>Commodity</i>	<i>Quantity</i>
1981	Hong Kong	Unknown	<i>Lutra spp.</i>	skins	100
1985	USA	Singapore	<i>Lutra lutra</i>	skin	1
1988	Canada	USA	<i>Lutra spp.</i>	skin	1
1989	USA	Bolivia	<i>Lutra lutra</i>	skin	1
1990	USA	R. Korea	<i>Lutra spp.</i>	skin	1
1991	USA	Mexico	<i>Lutra spp.</i>	skins	3
1992	USA	D.R. Congo	<i>Lutra spp.</i>	skin	1
1992	USA	Thailand	<i>Lutra sumatrana</i>	skins	4
1992	USA	Former Soviet Union (Europe)	<i>Lutra lutra</i>	skins	150
1993	Austria	Czech Republic	<i>Lutra lutra</i>	body	1
1993	USA	Viet Nam	<i>Aonyx cinerea</i>	body	1
1993	USA	Unknown	<i>Lutra spp.</i>	skins	6
1994	USA	Argentina	<i>Lutra spp.</i>	garments	3
1994	USA	Ecuador	<i>Lutra spp.</i>	skins	6
1995	USA	Greece	<i>Lutra spp.</i>	skin	1
1997	USA	Russian Federation	<i>Lutra lutra</i>	bodies	2
1998	Austria	Czech Republic	<i>Lutra lutra</i>	live	1
1998	Netherlands	Greece	<i>Lutra lutra</i>	skin	1
1999	USA	Canada	<i>Lutra spp.</i>	body	1
1999	USA	Canada	<i>Lutra spp.</i>	garments	2
1999	USA	Canada	<i>Lutra spp.</i>	not specified	1
2000	USA	Russian Federation	<i>Lutra lutra</i>	garment	1
2001	Denmark	Estonia	<i>Lutra lutra</i>	skin	1
2001	Denmark	Estonia	<i>Lutra lutra</i>	trophies	3
2001	Estonia	Denmark	<i>Lutra lutra</i>	skins	2
2001	Estonia	Denmark	<i>Lutra lutra</i>	trophies	6
2001	Estonia	Latvia	<i>Lutra lutra</i>	skin	1
2001	Latvia	Denmark	<i>Lutra lutra</i>	skin	1
2001	USA	Unknown	<i>Lutra spp.</i>	body	1
2002	Denmark	Estonia	<i>Lutra lutra</i>	skin	1
2002	Estonia	Denmark	<i>Lutra lutra</i>	skins	2
2002	Estonia	Latvia	<i>Lutra lutra</i>	skin	1
2002	Japan	R. Korea	<i>Lutra lutra</i>	skin	1
2002	R. Korea	Japan	<i>Lutra lutra</i>	specimen	1
2002	Latvia	Denmark	<i>Lutra lutra</i>	skins	2
2002	Latvia	Estonia	<i>Lutra lutra</i>	skins	2

Year	Country of Seizure (Importer)	Country of Export	Species	Commodity	Quantity
2002	Latvia	Estonia	<i>Lutra lutra</i>	trophies	3
2002	Slovakia	Denmark	<i>Lutra lutra</i>	skin	1
2002	Slovakia	Denmark	<i>Lutra lutra</i>	skin	1
2002	USA	Netherlands Antilles	<i>Lutra lutra</i>	garment	1
2002	Canada	USA	<i>Lutra</i> spp.	skull	1
2003	Denmark	Croatia	<i>Lutra lutra</i>	skin	1
2003	Denmark	Slovakia	<i>Lutra lutra</i>	skin	1
2003	Croatia	Denmark	<i>Lutra lutra</i>	skin	1
2003	Hungary	Slovakia	<i>Lutra lutra</i>	skin	1
2003	Slovakia	Hungary	<i>Lutra lutra</i>	skin	1
2003	USA	Russian Federation	<i>Lutra lutra</i>	skin	1
2004	USA	Russian Federation	<i>Lutra</i> spp.	garment	1
2004	United Arab Emirates	Afghanistan	<i>Lutra lutra</i>	skins	13
2004	Denmark	Croatia	<i>Lutra lutra</i>	skin	1
2004	Denmark	United Arab Emirates	<i>Lutra lutra</i>	skin	1
2004	Croatia	Denmark	<i>Lutra lutra</i>	skins	2
2004	United Arab Emirates	Denmark	<i>Lutra lutra</i>	skin	1
2004	USA	Great Britain	<i>Lutra lutra</i>	body	1
2005	Denmark	Kuwait	<i>Lutra lutra</i>	skin	1
2005	Kuwait	Denmark	<i>Lutra lutra</i>	skin	1
2005	USA	China	<i>Lutra lutra</i>	hair (skins)	3
2006	Denmark	Kuwait	<i>Lutra lutra</i>	skin	1
2006	Kuwait	Denmark	<i>Lutra lutra</i>	skin	1
2006	USA	United Arab Emirates	<i>Lutra lutra</i>	skin	1
2010	USA	Italy	<i>Lutra lutra</i>	teeth	8
2010	Poland	United Arab Emirates	<i>Lutra lutra</i>	body	1
2010	Czech Republic	Viet Nam	<i>Aonyx cinerea</i> *	skin	1
2011	USA	Denmark	<i>Lutra</i> spp	hair/ skin?	1
2014	USA	Canada	<i>Lutra lutra</i>	Skin	1

* *Aonyx cinerea* is a synonym to *Aonyx cinereus*, see taxonomic reference under <http://www.iucnredlist.org/details/44166/0>

TRAFFIC, the wildlife trade monitoring network, is the leading non-governmental organization working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development.

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