

## NOTE FROM THE EDITOR

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Dear Friends, Colleagues and Otter Enthusiasts!

This is the first editorial after coming home from the very successful 14<sup>th</sup> International Otter Colloquium. I am sure that all participants of the meeting in Tangjiahe had overweight in their mental suitcase! We had very interesting presentations from all continents with otters on a variety of topics. The Red List authorities had their meeting and so had the Management Team an evening meeting. The nature around the conference site is magnificent and we saw many animals from otters (*Lutra lutra*) to takins (*Budorcas taxicolor*) and golden pheasants (*Chrysolophus pictus*). We also learned that takins are ready to defend themselves which resulted that one participant and three rangers were chased by a takin into the river while being on a hike during day time.



We experienced excellent Chinese food and Chinese hospitality and I want to express my sincere thanks to the whole organising team lead by Bosco Chan for their efforts to make it a perfect experience. We had local music at one evening and a conference dinner in a local community. It was very nice to meet many old friends again and make new ones. Especially the enthusiasm of the younger scientists for their was infectious.

As already announced on site a special issue of the IUCN Otter Specialist Group Bulletin 36A is foreseen and information was send out to all participants. Bosco Chan, Nicole Duplaix, Syed Ainul Hussain and N. Sivasothi will serve as guest editors. Manuscripts will go online as soon as they are reviewed, revised and finally accepted.

My sincere thanks to Lesley as the increasing number of manuscripts is also leading to an increase of last minute requests by authors and thereby to an increase of work.

## SHORT NOTE

### IMPROVED LEGISLATION AND STRONGER ENFORCEMENT ACTIONS NEEDED AS THE ONLINE OTTER TRADE IN INDONESIA CONTINUES

Lalita GOMEZ\*, Chris R. SHEPHERD and John MORGAN

Monitor Conservation Research Society, PO Box 200, Big Lake Ranch, BC, V0L 1G0, Canada

\*Corresponding author: e-mail: <mailto:lalita.gomez@mcrsociety.org>

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**Abstract:** Indonesia is home to four species of otters i.e. Small-clawed Otter, Smooth-coated Otter, Hairy-nosed Otter and the Eurasian Otter. The latter three are protected by law in Indonesia. However, recent studies have shown that it is the Small-clawed Otter that is currently being coveted for the pet trade. Indonesia has been recently flagged as a hotspot in the trade of the Small-clawed Otter as pets. Online monitoring has shown hundreds of juveniles for sale, and anecdotal evidence suggests that much of this trade involves otters taken from the wild. This is concerning as the Small-clawed Otter is generally considered to be in decline across its range and listed as Vulnerable on the IUCN Red List of Threatened Species. This study shows that there is an urgent need for Indonesia to protect its Small-clawed Otter from over-exploitation. There is also an urgent need to stronger legislation in Indonesia concerning the regulation of wildlife trade occurring on online platforms.

**Keywords:** Indonesia, online wildlife trade, otters

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#### INTRODUCTION

Indonesia is well known as a major hub of illegal and unsustainable wildlife trade: as a source, transit and consumer country, that involves a long and growing list of species (Shepherd 2000, Soehartono and Mardiasuti, 2002; Sodhi et al., 2004; Stengel et al., 2011; Eaton et al., 2015). Recently, Indonesia has been implicated as a key player in the growing illegal trade of otters for the pet industry, both as a country of demand and a source of otters destined to international markets (Aadrean, 2013; Gomez et al., 2016; Gomez and Bouhuys, 2018; Kitade and Naruse, 2018). Hunting for trade is considered to be one of the key reasons for the depletion of otter species throughout much of Asia (Duckworth and Hills, 2008; Duplaix and Savage, 2018).

Indonesia is home to four species of otters - the Eurasian Otter *Lutra lutra*, Hairy-nosed Otter *L. sumatrana*, Small-clawed Otter *Aonyx cinereus* and the Smooth-coated Otter *Lutrogale perspicillata*. Of the four, the Eurasian and Hairy-nosed otters have been protected in Indonesia at least since 1999 under the *Government Regulation No.7, 1999, Concerning the preservation of flora and fauna*. In July 2018, the Indonesian government launched a revised list of protected species, which now includes the Smooth-coated Otter (Gomez and Shepherd, 2018). As protected species, they are protected from harvest or trade unless it involves second generation (F2) captive-bred individuals, which may only be bred by traders under special permit. Violation of the law can result in a five-year prison sentence and a fine of

IDR100 million (USD7 200) under the *Act of the Republic of Indonesia No.5 of 1990 concerning conservation of living resources and their ecosystem*. The only otter not protected by law is the Small-clawed Otter. Nevertheless, no harvest quotas currently exist for this species which should, in essence, protect it from being harvested from the wild. Unfortunately, it is currently the most frequently encountered otter species in the pet trade due to its desirability as a pet (Gomez et al. 2016; Gomez and Bouhuys, 2018).

The pet trade has emerged as one of the most pressing threats to the survival of otters, particularly in Indonesia (Duplaix and Savage, 2018; Gomez and Bouhuys, 2018). Furthermore, studies show that much of this trade is being conducted online within the country (Aadrean, 2013; Gomez et al., 2016; Gomez and Bouhuys, 2018). A four-month online survey between January and April 2018, revealed a minimum of 504 and a maximum of 917 otters observed for sale in Indonesia with just a survey effort of one hour per week (Gomez and Bouhuys, 2018). All published reports of otter trade in Indonesia have been made publicly available, and information regarding the illegal otter trade has been sent directly to the Government of Indonesia, however, enforcement efforts do not yet seem to be effective, as the trade continues to escalate. Recent anecdotal reports claim that otters are now being bred in Indonesia for commercial trade, but at present, the existence of a legitimate breeding centre in Indonesia cannot be verified. Surveys of wildlife pet markets in Indonesia revealed few otters for sale despite their popularity. In fact, there were more otters being sold on social media than were found in the wildlife pet markets across Java. Yet there appears to be little information available on the legislation regulating the online trade in otters or any other wildlife. Understanding the levels of online trade is therefore essential to inform and support policy, enforcement and conservation interventions, and as such this review of trade has been carried out to assess current levels of online trade in otters.

## **METHODS**

Online surveys were conducted between 1 November 2018 and 31 January 2019. Only advertisements posted between August 2018 and January 2019 were recorded along with screenshots of each post. Online surveys were focussed on Indonesian Facebook wildlife trade groups (n = 48) and consisted of four hours of research per week, gathering as many advertisements on otters as possible. Facebook search filters were used to narrow down searches by year and month, and by trade group. While otters have various names in Indonesian language (*berang-berang*, *anjing air* and *anjing sungai*), the most commonly used was ‘otter’, which is why this was used as the key word for locating advertisements. Researchers collecting data were fluent in both Indonesian and English. Where possible, data was extracted from each advertisement and included location/base of operation of seller (if available), the species, quantity, age, price of otters on sale, name of the Facebook group, date of advertisement, etc. No personal data about the sellers were collected and no interaction with sellers took place. The number of otters being offered for sale were extracted directly from the posts when provided or were estimated based on the pictures provided or otherwise estimated to involve at minimum one individual. To avoid inflation of numbers, each post was cross-checked to remove duplicate records. The identification of otter

species were based on the pictures provided where available and were verified by experts in the IUCN Otter Specialist Group.

## RESULTS

From November 2018 to January 2019, a total of 216 advertisements offering an estimated 297 otters were recorded for sale on Facebook in Indonesia. This involved at least 19 Facebook Groups, of which there were eight Closed Groups, 11 Public Groups and one Secret Group, and involved 187 individual sellers. A Public Group and its posts can be viewed by everybody. A Closed Group can be found by anyone on Facebook, but only members of the Closed Group can see the Group's posts. A Secret Group is invisible: only members of the Secret Group can find the Group on Facebook and see the Group's posts.

Information on location of seller was available in 208 advertisements and all of these originated from the island of Java. The Province of West Java had the highest number with 106 posts, followed by Jakarta (n=50 posts), East Java (n=42 posts), Banten (n=6 posts) and Central Java (n=3 posts). These were mostly concentrated in the main cities of Jakarta (n=50 posts), Bogor (n=31 posts), Bandung (n=26 posts), Surabaya (n=19 posts) and Depok (n=18 posts).

At least two species of otter were observed for sale (Figs 1-3). The Small-clawed Otter was the most frequently observed, with an estimated 268 individuals for sale and at least one Hairy-nosed Otter was observed for sale. In 22 of the posts representing an estimated 28 individuals, the species was unidentifiable. This was either due to the otters being too young to distinguish between species, the pictures provided were not clear, or in some cases no picture was provided at all.

Of the 297 otters observed for sale, the majority ranged from new-borns to below 6-months of age (Table 1). In 68 of the adverts representing 85 individuals, the age of the otter was not provided, but most appeared to be of juveniles based on pictures provided (i.e. <1 year of age).



**Figure 1.** New born otters posted for sale (a) for IDR250K each; (b) for IDR350K each.



**Figure 2.** Juvenile Small-clawed Otters posted for sale (a) 2-month old; (b) 2.5 month old selling for IDR430K.



**Figure 3.** A Hairy-nosed Otter pup posted for sale. No age or price was provided

The price data for otters was available in 159 adverts and ranged from IDR170K to IDR900K (~USD12-USD64) with an average of approximately IDR566K (~USD40). It is unclear how prices are determined as the range varies and overlaps between the different age groups. Nevertheless, in general, the average price for new-born otters, IDR413K (~USD29) were slightly lower in comparison to other age groups with

average prices ranging between >IDR500K and IDR700K (~USD35 and USD50) (Table 1).

**Table 1. The age and price range of otters offered for sale on Facebook in Indonesia recorded between November 2018 and January 2019**

Age (months)	# Adverts	# Animals	Price Range (IDR)	Average Price (IDR)	Average Price (USD*)
New-born<1	26	64	170K-600K	413,824	29.82
1	2	4	800K	800,000	56.60
1.5	4	4	400K-650K	515,500	36.47
2	21	37	300K-900K	546,667	38.68
2.5	7	10	350K-650K	490,000	34.67
3	25	26	350K-750K	558,333	39.50
3.5	1	1	650K	650,000	45.99
4	9	9	450K-750K	625,000	44.22
4.5	3	3	650K	650,000	45.99
5	13	14	450K-850K	645,455	45.67
6	10	10	500K-850K	675,000	47.76
7	8	9	400K-700K	540,000	38.21
8	9	9	300K-850K	708,333	50.10
9	3	4	650K-700K	675,000	47.76
10	1	1	500K	500,000	35.38
11	1	1	500K	500,000	35.38
12	2	2	700K	700,000	49.53
15	1	1	-	-	-
24	1	1	800K	800,000	56.60
Not Stated	68	85	250K-900K	568,113	40.20

\*exchange rate as per <https://www.oanda.com/currency/converter/> on 5 March 2019. It should be noted that the number of adverts and number of animals for sale is based on 219 adverts representing 297 otters for sale; the price range is based on 159 adverts that provided price data; and the ages presented here are based on data extracted from Facebook posts/adverts.

## DISCUSSION AND CONCLUSION

According to the IUCN Red List of Threatened Species, the Small-clawed Otter is currently assessed as being Vulnerable (Wright et al., 2015), the Smooth-coated Otter as Vulnerable (de Silva et al., 2015), the Hairy-nosed Otter as Endangered (Aadrean et al., 2015) and the Eurasian Otter as Near Threatened (Roos et al., 2015). Populations of all four species are considered to be in decline. Illegal and unsustainable trade is increasingly a threat to these species and in Indonesia, despite evidence of illegal trade in otters being highlighted increasingly often in the media and in published papers, the trade appears to be growing and enforcement efforts do not.

Otters, especially young animals, continue to be collected illegally from the wild, in violation of national legislation, and in the case of the Small-clawed Otter in

violation of the zero-harvest quota, and sold locally and internationally. Outside of Indonesia, Japan continues to be a major consumer country of otters for the booming exotic pet trade there with many of these being sourced in Southeast Asia (Kitade and Naruse, 2018). More investigation into the trafficking of otters from Indonesia to Japan is required to map routes, identify smuggling methods and ultimately put an end to this crime. Anecdotal information indicates an increased number of businesses selling otters claimed to be bred in captivity, with at least some of these apparently destined for buyers in Japan. It is highly likely that these otters are in fact taken from the wild and fraudulently sold as being captive-bred. Indonesia's legislation stipulates that animals sold as captive-bred must be second-generation (F2) under *Government Regulation No.8 (1999), Concerning the utilization of wild plants and animals*, and it is even less likely that these 'breeders' are breeding animals to the second generation. As has been shown to be the case with so many other species in Indonesia, unscrupulous traders are ignoring national laws and getting away with it, and as such, Indonesia's wildlife, including otters, will continue to decline in the wild.

Currently, cybercrime in Indonesia is governed under *Act No. 11 (2008), Concerning electronic information and transactions*, and to a lesser extent, *Act No.7 (2014) about Trade*, and covers online trade transactions. However, none of these laws specifically address measures to regulate online wildlife trade and related crimes. The need for strong legislation in Indonesia to effectively tackle the trade in wildlife online has been raised in the past, and clearly is becoming more urgently needed. There is also an urgent need for Indonesia to protect its Small-clawed Otter from over-exploitation under *Government Regulation No.7 (1999), Concerning the preservation of flora and fauna*. Strong penalties must also be meted out for violating legislation preventing the illegal harvest, trade, purchasing and keeping otters and other illegally-sourced wildlife to serve as a strong deterrent. Further, the Government of Indonesia should investigate operations claiming to breed otters and take strong action against any found to be laundering otters from the wild or selling animals as captive-bred that are not in fact second generation bred in captivity. The government should also initiate dialogue with the Government of Japan, as the main international consumer of Southeast Asia's otters for the pet trade, to jointly tackle this issue. Finally, otters should be included in campaigns to reduce the purchase and keeping of illegally and unsustainably sourced wildlife as pets.

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**RÉSUMÉ : UNE LÉGISLATION ADAPTÉE ET DES MESURES PLUS STRICTES SONT NÉCESSAIRES ÉTANT DONNÉ QUE LE COMMERCE DES LOUTRES EN LIGNE SE POURSUIT EN INDONÉSIE**

L'Indonésie accueille quatre espèces de loutres, à savoir la loutre cendrée, la loutre à pelage lisse, la loutre de Sumatra et la loutre eurasienne. Les trois dernières sont protégées par la loi en Indonésie. Cependant, des études récentes ont montré que c'est la loutre cendrée qui est actuellement recherchée pour le commerce des animaux de compagnie. L'Indonésie a récemment été désignée région stratégique du commerce de la loutre cendrée comme animal de compagnie. La surveillance en ligne a révélé la vente de centaines de juvéniles et des preuves inédites suggèrent qu'une grande partie de ce commerce concerne des loutres prélevées dans la nature. C'est préoccupant, car la loutre cendrée est généralement considérée comme en déclin dans son aire de répartition et classée comme vulnérable sur la liste rouge des espèces menacées de l'UICN. Cette étude montre que l'Indonésie a un besoin urgent de protéger la loutre cendrée contre la surexploitation. Il est également urgent de renforcer la législation indonésienne en matière de réglementation du commerce des espèces sauvages sur les plateformes en ligne.

**RESUMEN: SE NECESITA MEJOR LEGISLACIÓN Y CONTROL MÁS FUERTE ANTE LA CONTINUACIÓN DEL COMERCIO ONLINE DE NUTRIAS EN INDONESIA**

Indonesia alberga cuatro especies de nutria: la de Uñas Pequeñas asiática, la Lisa, la de Sumatra y la Euroasiática. Las últimas tres están protegidas por ley en Indonesia. Sin embargo, estudios recientes han mostrado que es la de Uñas Pequeñas la que es actualmente buscada para el tráfico de mascotas. Indonesia ha sido recientemente señalada como un "hotspot" en el comercio de nutrias de Uñas Pequeñas como mascotas. El monitoreo online ha mostrado centenares de juveniles a la venta, y la evidencia anecdótica sugiere que mucho de este tráfico involucra nutrias capturadas en la naturaleza. Esto es preocupante, ya que la nutria de Uñas Pequeñas está considerada en declinación en toda su distribución, y está listada como Vulnerable en la Lista Roja de Especies Amenazadas de UICN. Este estudio muestra que hay una urgente necesidad de que Indonesia proteja sus nutrias de Uñas Pequeñas de la sobre-explotación. También hay una urgente necesidad de legislación más fuerte en Indonesia, concerniente a la regulación del comercio de fauna en plataformas online.

## REPORT

# STRONGER INTERNATIONAL REGULATIONS AND INCREASED ENFORCEMENT EFFORT IS NEEDED TO END THE ILLEGAL TRADE IN OTTERS IN ASIA

Lalita GOMEZ\* and Chris R. SHEPHERD

Monitor Conservation Research Society, PO Box 200, Big Lake Ranch, BC, V0L 1G0, Canada

\*Corresponding author: e-mail: <mailto:lalita.gomez@mcrsociety.org>

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**Abstract:** The international trade in otters to supply a growing demand from the pet industry is an increasing threat to the conservation of Asia's wild otters. Current use of CITES II is proving inadequate and as such, listing Asian otter species in Appendix I is considered as a solution to allow CITES Parties to more effectively combat this illegal trade. Indonesia and Thailand, as important source countries of otters are urged to increase efforts to crack down on illegal trade. Japan as a major market for otters and other wildlife is encouraged to amend current legislation to prevent illicit trade in illegally-sourced species listed in Appendix II.

**Keywords:** Indonesia, Japan, Thailand, otters, international trade

**Citation:** Gomez, L and Shepherd, CR (2019). Stronger International Regulations and Increased Enforcement Effort is needed to end the Illegal Trade in Otters in Asia. *IUCN Otter Spec. Group Bull.* 36 (2): 71 - 76

## INTRODUCTION

Asia is home to five species of otters, Eurasian Otter *Lutra lutra*, Hairy-nosed Otter *Lutra sumatrana*, Small-clawed Otter *Aonyx cinereus*, Smooth-coated Otter *Lutragale perspicillata* and the Sea Otter *Enhydra lutris* (although this species occurrence in Asia is limited, found only in some of the eastern coastal areas of the Russian Federation and northern Japan based on incidental observations and as such excluded from further mention in this paper). The four remaining Asian otter species are facing a perilous future due to the increasing loss of suitable habitat, the impact of pesticides on their wetland biomes and human–otter conflicts. This is exacerbated by an even more pressing and growing threat, the illegal wildlife trade. Hunting for commercial trade is considered to be one of the key reasons for the depletion of otter species across much of Asia (Duckworth and Hills, 2008; Duplaix and Savage, 2018). In the Asian region, otters are primarily traded live for the rapidly growing pet trade, for their skins coveted for a variety of reasons i.e. made into fur coats and hats and as embellishments on traditional garments, and their parts are used in traditional medicines.

Wild populations of the four above mentioned Asian otter species are in decline across their range. The IUCN Red List has assessed the Eurasian Otter listed as Near-threatened, the Hairy-nosed Otter as Endangered and the Small-clawed and Smooth-coated Otters as Vulnerable (Aadreaan et al., 2015; De Silva et al., 2015; Roos et al., 2015; Wright et al., 2015). All four species are also listed in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendices which regulates international commercial trade. Currently, only the

Eurasian Otter is listed in CITES Appendix I, prohibiting international commercial trade in wild-caught animals and the remaining three species are listed in CITES Appendix II which allows for international commercial trade of wild animals with a valid permit, and providing the trade is carried out, or not, in accordance with national legislation. Proposals to up-list the Small-clawed Otter and Smooth-coated Otter to Appendix I are currently up for consideration at the next CITES Conference of the Parties P (CoP18) in Sri Lanka in May 2019, as recent studies have shown that commercial exploitation in Asia is on the rise, in violation of national laws and CITES regulations.

The recent emergence of the illegal trade in otters as pets in Asia has become a major cause for concern, with Indonesia, Japan and Thailand standing out as key players in this trade (Aadreaan, 2013; Shepherd and Tansom, 2013; Gomez et al., 2016; Gomez and Bouhuys, 2018; Kitade and Naruse, 2018; Siriwat and Nijman, 2018). To assess the current status of the trade, in light of the coming CITES CoP 18, an online survey spanning a four-month period was initiated and revealed approximately 710 otters for sale in Indonesia and 202 otters for sale in Thailand. While much of the trade in otters, especially in Indonesia, serves a domestic demand, there was also plenty of evidence linking these two countries in the trafficking of otters to Japan. Trafficking was found to be enabled by well-known loopholes in national legislation and poor law enforcement action. The Small-clawed Otter is particularly coveted for the pet trade, but the Smooth-coated Otter has also been observed in trade and in one case, even the little-known Hairy-nosed Otter.

On numerous occasions, Japanese nationals have been apprehended at Thailand's international airports trying to smuggle otter pups in their luggage to Japan (Table 1). Currently there are no legal captive-breeding facilities in Thailand and only zoos are permitted to keep otters (Gomez and Bouhuys, 2018) and therefore such smuggling attempts are a concern for wild populations of otters in Thailand. Additionally, seizures of live otters near the Malaysian-Thai border suggests a potential link between these two countries in the smuggling of otters but this as yet unverified and requires further investigation. Similarly, Thailand is also linked to the smuggling of live otters into Viet Nam for the pet trade with one seizure record that took place in 2015. All four otter species are completely protected in Malaysia and Thailand and cannot be hunted, traded, owned, bred, imported or exported.

**Table 1** International trade in Asian otter species, particularly involving Indonesia, Japan and Thailand based on known seizure records

Date	Seizure Location	Destination (Origin)	Species (#)	Source	Description
Oct 2018	Thailand	Thailand (Malaysian/Thai Border)	<i>Aonyx cinereus</i> (2)	<a href="http://www.nationmultimedia.com/detail/breakingnews/30357139">http://www.nationmultimedia.com/detail/breakingnews/30357139</a>	Thai officials seized otters from a tour company, Asia Travel, in Phatthalung province. Suspect arrested admitted that all wildlife were sourced from the southern provinces of Thailand to be traded in the central Thailand region.
Oct 2018	Japan	Japan (unknown)	<i>Aonyx cinereus</i> (5)	<a href="https://headlines.yahoo.co.jp/videonews/jnn?a=20181128-00000078-jnn-soci">https://headlines.yahoo.co.jp/videonews/jnn?a=20181128-00000078-jnn-soci</a>	Otter pups seized in Haneda airport, Tokyo. Two were dead and two other died soon after being found by custom officers. Origin of otters not known.
Oct 2018	Japan	Japan (Thailand)	<i>Aonyx cinereus</i> (3)	<a href="https://www.asahi.com/articles/ASLCW4TY">https://www.asahi.com/articles/ASLCW4TY</a>	Two men arrested for smuggling otters into Japan i.e. from Thailand into Narita airport

				DLCWUTIL003.html?ir ef=pc_extlink	and trying to sell them to an otter café owner in Tokyo. The otter café owner thought it was illegal and called the police, then they were arrested after half-year investigation.
<b>Jan 2018</b>	Thailand	Thailand (Malaysian/Thai Border)	<i>Aonyx cinereus</i> (3)	The Wild Hawk Unit	A suspect was arrested during a Wild Hawk Unit sting operation and charged with illegal trading and illegal possession of protected wildlife including three otters. It was reported that the otters were received from wildlife traders near the Malaysian - Thai border in Narathiwat and Yala provinces.
<b>Feb 2017</b>	Thailand	Japan (Thailand)	<i>Aonyx cinereus</i> (12)	<a href="https://www.facebook.com/permalink.php?story_fbid=720294961485016&amp;id=379162215598294">https://www.facebook.com/permalink.php?story_fbid=720294961485016&amp;id=379162215598294</a>	On February 26, 2017 the Don Mueang Airport Animal Quarantine Station officials at the Departure Building of Don Mueang Airport, along with officers from Don Mueang Wildlife Checkpoint (Department of National Parks, Plant and Conservation: DNP), were successful in rescuing and seizing 12 otters, five owls, and three falcons from passenger bags bound for Japan.
<b>Jun 2017</b>	Thailand	Japan (Thailand)	<i>Unknown</i> (10)	<a href="https://coconuts.co/bangkok/news/japanese-man-arrested-smuggling-10-baby-otters-suvarnabhumi/">https://coconuts.co/bangkok/news/japanese-man-arrested-smuggling-10-baby-otters-suvarnabhumi/</a>	Suvarnabhumi Airport officials arrested a Japanese man for attempting to depart Bangkok with 10 live baby otters in his suitcase and charged with illegally exporting a protected species without permission as well as avoiding the Custom procedures to declare the pups.
<b>Oct 2017</b>	Thailand	Japan (Thailand)	<i>Aonyx cinereus</i> (10)	<a href="https://www.thepuketnews.com/japanese-woman-arrested-for-baby-otter-smuggling-64534.php#yZDxylmFmlwwhLA2.97">https://www.thepuketnews.com/japanese-woman-arrested-for-baby-otter-smuggling-64534.php#yZDxylmFmlwwhLA2.97</a>	Don Muang Police arrested a Japanese woman with the animals in her suitcase in the departure terminal of Don Mueang airport. The arrest followed her request at an AirAsia X check-in counter to load a black suitcase aboard flight XJ600 destined for Narita. Wildlife officials at the airport found the 10 otters in a basket hidden in the suitcase.
<b>Dec 2015</b>	Viet Nam	Viet Nam (Thailand)	<i>Aonyx cinereus</i> (9)	<a href="http://www.thanhnie news.com/society/h o-chi-minh-city-pet-shop-owner-arrested-for-wildlife-smuggling-55571.html">http://www.thanhnie news.com/society/h o-chi-minh-city-pet-shop-owner-arrested-for-wildlife-smuggling-55571.html</a>	Police arrested a 22-year-old man in Ho Chi Minh City for smuggling wild animals including otters from Thailand for sale in Vietnam. He confessed to buying the wild animals in Thailand to sell as pets in Vietnam.
<b>Jan 2013</b>	Thailand	Japan (Thailand)	<i>Lutrogale perspicillata</i> (6) <i>Aonyx cinereus</i> (5)	Shepherd and Tansom 2013	This was the first known case of international smuggling of otters from Thailand. The Royal Thai Customs officers working at the Wildlife Checkpoint of Bangkok's Suvarnabhumi International Airport discovered 11 live otters when they scanned a bag that had been left at the oversized luggage area of the airport. The otters were all juveniles and are suspected to have been smuggled out of Thailand, bound for Japan to be sold as exotic pets.
<b>Jun 2007</b>	Japan	Japan (Indonesia)	<i>Unknown</i> (2)	Kitade and Naruse 2018	No details on species, location, arrests, etc

There has been a significant boom in the otter pet trade in Japan (Kitade and Naruse, 2018). A pet café in Tokyo claimed to import otter pups from Indonesia and it is unknown whether these pups are bred in captivity or taken from the wild. In any event, all otter species are protected in Indonesia with the exception of the Small-clawed Otter, for which harvest and trade is only regulated by a quota system (Gomez and Shepherd, 2018). No harvest quotas currently exist for this species which in essence protects it from being hunted, owned, bred or traded, etc. That said, the law makes no provisions (i.e. penalties or fines, etc) related to transgressions of the quota system. This leaves the Small-clawed Otter particularly vulnerable to over-exploitation. Claims of commercial captive-breeding in Indonesia are unverified, and as Indonesia has a history of laundering wild-caught animals through captive-breeding facilities (e.g. Nijman and Shepherd, 2009; Nijman and Shepherd, 2015; Janssen and Chng, 2018), such claims should be treated with suspicion. Furthermore, successful breeding and husbandry of otters requires suitable facilities and expertise, especially to second generation (F2), and therefore again, claims of captive-breeding should be further investigated.

Despite protections in place for otters, both Indonesia and Thailand have a thriving trade in otters, and both continue to be a key source of otters to Japan. This is not surprising considering an otter pup in Japan can be sold for as much as USD7200 and a pair of adults for USD13,000 in comparison to an average price of USD40/otter pup in Indonesia and US120/otter pup in Thailand. Currently there is little local authorities in Japan can do to curb the trade within the country due to loopholes in Japan's wildlife law i.e. there are no provisions to take action against traders who illegally import and subsequently trade in CITES Appendix II species once in the country. There are, however, provisions to take action against traders illegally importing species listed in CITES Appendix I.

Given the rapidly increasing demand for otters in the pet trade, despite protection at national levels in Indonesia and Thailand, stronger regulation is required if the ongoing decline in wild otter populations is to be halted, and if national efforts to protect otters are to be effective. Listing all species of Asian otters in Appendix I of CITES would provide such a tool, raising the profile and priority of the issue amongst enforcement agencies, and assisting in closing loopholes that currently enable the trade. As incidents of illegal trade in CITES I species are treated as priority in Japan, an up-listing would enable collaboration from Japan in the overall effort to prevent illegal trade in these species. Furthermore, commercial breeding of species listed in Appendix I for international trade must be registered with the national CITES authorities as well as with the CITES Secretariat, which would result in further scrutiny from both exporting and importing countries to ensure otters are obtained from certified captive-breeding facilities in accordance with national legislation and with CITES requirements.

As such, we recommend CITES Parties support the up-listing of the Small-clawed Otter from Appendix II to Appendix I. We also urge Japan to amend current legislation to ensure trade in CITES II listed species is adequately regulated. Finally, we encourage the Governments of Indonesia and Thailand to increase efforts to investigate individuals and trade networks involved in the illegal capture, trade and

keeping of otters and to prosecute those found violating national legislation to the full extent of the law.

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**RÉSUMÉ : DES RÈGLEMENTS INTERNATIONAUX PLUS CONTRAIGNANTS ET UN RENFORCEMENT DES MESURES D'APPLICATION SONT INDISPENSABLES POUR METTRE FIN AU COMMERCE ILLÉGAL DES LOUTRES EN ASIE**

Le commerce international des loutres pour répondre à la demande croissante du commerce des animaux de compagnie constitue une menace croissante pour la conservation des loutres sauvages d'Asie. L'utilisation actuelle de l'annexe II de la CITES s'avère inadéquate et l'inscription des espèces de loutres d'Asie à l'Annexe I est donc considérée comme une solution permettant aux «Parties de la CITES» de lutter plus efficacement contre ce commerce illicite. L'Indonésie et la Thaïlande, en tant que pays d'origine des loutres, sont instamment priées d'intensifier leurs efforts pour lutter contre le commerce illégal. Le Japon, important marché de loutres et d'autres espèces sauvages, est exhorté à modifier sa législation en vigueur afin de prévenir le commerce illicite des espèces illégales énumérées à l'Annexe II.

**RESUMEN**

**SE NECESITAN REGULACIONES INTERNACIONALES MÁS FUERTES Y MÁS ESFUERZO DE CONTROL PARA TERMINAR CON EL COMERCIO ILEGAL DE NUTRIAS EN ASIA**

El comercio internacional en nutrias para abastecer a una demanda creciente de la industria de mascotas, es una creciente amenaza a la conservación de las nutrias silvestres de Asia. El uso actual de CITES II está probando ser inadecuado y, por lo tanto, se considera una solución para permitir a las Partes de CITES combatir más efectivamente este comercio ilegal, listar las especies de nutrias de Asia en el Apéndice I. Es urgente que Indonesia y Tailandia, como importantes países fuente de nutrias, incrementen los esfuerzos para desactivar el comercio ilegal. Japón, siendo un gran mercado para nutrias y otra fauna, debería corregir su legislación, para prevenir el comercio ilícito en especies obtenidas ilegalmente, y que están listadas en el Apéndice II.

## REPORT

### OBSERVATION ON MATING OF SMOOTH-COATED OTTER, *Lutrogale perspicillata*, AT PUTRAJAYA LAKE & WETLAND, MALAYSIA

Mike H.N. CHONG

Ph. 5, Taman Melawati, 53100 Kuala Lumpur, Selangor, Malaysia  
e-mail: mike.chong8@gmail.com



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**Abstract:** Few detailed observations have been carried out of Smooth-coated otter and the other otter species in Malaysia. What are even scarcer are studies on the biology of the four species of otter found in Malaysia. A pair of Smooth-coated otters was observed mating at the Putrajaya Lake & Wetland, Peninsular Malaysia in June 2011. Mating occurred when both the otters were semi submerged in the water in a vertical position. This took place at a shallow and secluded area of the wetland, near a grove of aquatic plants. Apparent copulation occurred with both otters facing each other in a frontal position with the male grasping the female on its flanks with its front feet. Four episodes of mating were recorded during the observation period lasting 10-15 seconds for each episode. The secluded nature of the area where the mating was observed probably contributes to the fact that mating by Smooth-coated otters has not been recorded in Malaysia before. It also provides an indication on the timing of the breeding season and an insight into the breeding biology of this species in Southeast Asia.

**Keywords:** *Lutrogale perspicillata*, Putrajaya Lake & Wetland, man-made wetlands, aquatic mating, breeding season, breeding biology

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#### INTRODUCTION

The Smooth-coated otter *Lutrogale perspicillata* is a widely distributed species in Iraq, South Asia, South-east Asia and, marginally, China, and is listed by the IUCN Red List of Threatened Species as a globally vulnerable species (IUCN 2017, de Silva et al. 2015). In Peninsular Malaysia, it is widespread but somewhat localised and has been found in various wetland habitats including mangrove swamps, large estuaries,



inland rivers, lakes, man-made wetlands, dams and even mature ex-mining pools. Although it is a widespread species the breeding biology of Smooth-coated otter has not been recorded in Malaysia.

### DETAILS OF OBSERVATION

The Putrajaya Lake and Wetland is a man-made (constructed) wetland located within the Government Administrative Centre in Putrajaya, Malaysia. The lake and wetlands cover a total area of approximately 400 ha and are spread throughout the Administrative Centre via a network of six wetland cells, canals and the large Putrajaya Lake. Filtered water from the wetland and lake eventually flows and is collected in the Putrajaya dam and finally clean water is released into the Langat River. One otter species, Smooth-coated Otter *Lutrogale perspicillata*, occurs and was recorded regularly at Putrajaya Lake and Wetland by the author during surveys and observations of wildlife in this area in 2011.

On 21 June 2011, the author was surveying birds, mammals and other wildlife at the Putrajaya Lake and Wetland. At ca. 15h10, he spotted a pair of adult Smooth-coated Otters swimming very close together at a relatively shallow area of the wetland near a large patch of aquatic Hanguana (*Hanguana malayana*) plants and other aquatic plants (Figures 1 and 4). During the observation period it was raining with a steady light drizzle. While swimming together, there were a few initial physical contacts between the otters that the author first thought was routine interaction.

At one point, both otters dived underwater and after a while, one was seen making close physical contact with the other otter. However, at this point it was not clear if the positioning was a front-to-front or front-to-back nature as the other otter was not visible. Upon closer observations with binoculars and a spotting scope, it was apparent that the otters were mating.



**Figure 1.** Smooth-coated Otter pair swimming closely together at a shallow area with aquatic plants prior to mating activity. Putrajaya Lake and Wetland, Malaysia, 21 June 2011. Photo: Mike H.N. Chong

After observing the interactions by the otters, the author managed to photograph and record two episodes to confirm the mating activity. In the first episode, both otters were seen partly out of the water in a vertical position, with the female having almost three-quarters of her body visible. The male was observed closely embracing the female in a face-to-face frontal position and the right forefoot of the male was seen tightly grasping the left flank of the female in a close embrace position (Figure 2). The left forefoot of the male was not clear in the photo, but presumably it held the lower part of the female's right flank due to the male's lower position. It was assumed that copulation occurred during this intimate physical embrace. This mating episode lasted for approximately 10-15 seconds. In the second mating episode the male and female were again seen in the same embracing position with only their heads and necks above water (Figure 3). This mating episode also lasted less than a minute. The evidence of mating and copulation was also supported by churning water around the pair during the mating episodes (Figures 2 and 3). In total, there were four episodes of mating by the two otters during the approximately five-minute observation period.



**Figure 2.** Smooth-coated Otter mating. Note male (at rear) embracing female (in front) by the flanks. Putrajaya Lake and Wetland, Malaysia, 21 June 2011. Photo: Mike H.N. Chong



**Figure 3.** Smooth-coated Otter male (left) and female (right) during the second mating episode recorded. Putrajaya Lake and Wetland, Malaysia, 21 June 2011. Photo: Mike H.N. Chong



**Figure 4.** General view of one of the areas at Putrajaya Lake and Wetland, Malaysia. The similar area with Hanguana groves where Smooth-coated otters were observed mating, is shown in the background. Water birds in the foreground are Painted Storks *Mycteria leucocephala* a resident species at the wetlands. Photo: Mike H.N. Chong

## DISCUSSION

This is presumably the first recorded observation on mating by Smooth-coated otters in the wild in Malaysia. Extensive research for literature on mating activities by this otter species in Malaysia or elsewhere in South-east Asia did not produce any result. The author was confident that the otters were not fighting or displaying aggressive behaviour towards each other. Although at one point the female was seen

opening her mouth (Figure 3), this was more likely a reaction towards the mating activity rather than aggression. The method of mating by the otters in Malaysia is compared with mating observed on captive Smooth-coated Otters in Bangladesh. However, in Bangladesh it was noted that the male embraced the female's back (Feeroz et al., 2011), whereas in this observation, the male embraced the female on the flanks from a frontal face-to-face position (Figures 2 and 3). It was also not clear if male otters embraced the females from the front or from the back, during other mating observations on captive otters in Bangladesh (Feeroz et al., 2011). In this mating observation by the author, each period of actual copulation activity was c.10-15 seconds. Of a captive breeding pair of Smooth-coated Otter in Great Britain, placed in an enclosure at the end of July, mating was observed in the pool (Badham 1973). However, the actual period (month/day) where mating took place and how mating occurred, were not mentioned by Badham (1973).

For this observation, the otters chose a shallow area near the *Hanguana malayana* aquatic plant groves for the mating activity (Figures 1 and 4). This area was probably conducive for the activity as the otters are able to stand on their hind legs or tread water more efficiently just above the bottom substrate during mating, compared with being suspended in deeper water; the latter could be a more difficult situation for copulation/mating. A preference of secluded areas during mating activities, would contribute to explaining the absence of previous documentations of Smooth-coated otter or any other otter species mating in Malaysia, before this observation.

There is indeed a dearth of information on the biology, notably breeding, of Smooth-coated otter in the wild or otherwise, in Malaysia. It is very encouraging to note that Smooth-coated otters regularly occur at the Putrajaya Lake & Wetland area and that breeding of this species also occurs here. This is heartening to note as the population of this species is expected to increase with breeding. The regular occurrence of Smooth-coated otter and its healthy population (pers obsv.) at Putrajaya Lake & Wetland is somewhat similar and is comparable to the same species found at other man-made wetlands in Singapore. Conservation of its habitat including best practice management of suitable man-made wetlands and further studies on its habitat needs, biology (including breeding biology), will greatly assist in the conservation of Smooth-coated otters in Malaysia.

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## RÉSUMÉ

### **OBSERVATION DE LA COPULATION CHEZ LA LOUTRE À PELAGE LISSE *Lutrogale perspicillata* DANS LE LAC ET LES MILIEUX HUMIDES DE PUTRAJAYA, EN MALAISIE**

Peu d'observations détaillées ont été réalisées sur la loutre à pelage lisse et les autres espèces de loutres en Malaisie. Ce qui est encore plus rare, ce sont les études sur la biologie des quatre espèces de loutres trouvées en Malaisie. Un couple de loutre à pelage lisse a été observé, en juin 2011, en train de s'accoupler dans le lac et les milieux humides de Putrajaya, situé en péninsule de Malaisie. L'accouplement a eu lieu alors que les deux loutres étaient à moitié submergées dans l'eau en position verticale. Cela s'est déroulé dans une zone peu profonde et isolée de la zone humide, près d'un massif de plantes aquatiques. Une copulation évidente a eu lieu, les deux loutres se faisant face dans une position frontale, le mâle tenant la femelle sur ses flancs avec ses pattes antérieures. Quatre phases d'accouplement ont été remarquées au cours de la période d'observation, avec une durée de 10 à 15 secondes pour chaque phase. Le caractère isolé de la zone, où l'accouplement a eu lieu, contribue probablement au fait que l'accouplement de la loutre à pelage lisse n'a pas été signalé en Malaisie auparavant. Il fournit également une indication sur la période de la saison de reproduction et un aperçu de la biologie de reproduction de cette espèce en Asie du Sud-Est.

## RESUMEN

### **OBSERVACIÓN DE APAREAMIENTO EN LA NUTRIA LISA *Lutrogale perspicillata* EN EL LAGO Y HUMEDAL PUTRAJAYA, MALASIA**

Se han llevado a cabo pocas observaciones detalladas de la nutria lisa y las demás especies de nutrias en Malasia. Aún más escasos son los estudios sobre la biología de las cuatro especies de nutria que viven en Malasia. Observamos una pareja de nutrias lisas, apareándose en el Lago y Humedal Putrajaya, Malasia Peninsular, en Junio de 2011. El apareamiento ocurrió mientras ambas nutrias estaban semi-sumergidas en el agua, en posición vertical. Esto tuvo lugar en un área poco profunda y remota del humedal, cerca de un núcleo de plantas acuáticas. La aparente cópula ocurrió con ambas nutrias frente a frente, el macho sosteniendo a la hembra por sus flancos con sus patas delanteras. Registramos cuatro episodios de apareamiento durante el período de nuestras observaciones, y cada episodio duró 10-15 segundos. La naturaleza remota y aislada del área donde observamos el apareamiento, probablemente contribuye al hecho de que no se haya registrado apareamiento por nutrias lisas en Malasia anteriormente. También proporciona una indicación sobre el período del año en que ocurre la estación reproductiva, y nos acerca a la comprensión de la biología reproductiva de esta especie en el Sudeste de Asia.

## SHORT NOTE

### THE NECESSITY OF MONITORING AND CONSERVATION OF SMOOTH-COATED OTTERS (*LUTROGALE PERSPICILLATA*) IN NON-PERENNIAL RIVERS OF SOUTH INDIA

Sampath Deepan CHACKARAVARTHY\*, Balasubramanian KAMALAKANNAN,  
Natarajan LAKSHMINARAYANAN

Wildlife Institute of India, Post Box # 18, Chandrabani, Dehradun 248001, India,  
[smdeepan84@gmail.com](mailto:smdeepan84@gmail.com); \*Corresponding author



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**Abstract:** Perceptions of Smooth-Coated Otters are different in the various areas of their distribution. In some parts of the world, the species is regarded as deities, while in others parts they have been loathed as vermin. Smooth-coated Otters have the widest distribution of otter species in the Indian sub-continent, but face both lack of information and lack of attention for conservation. As the distribution of this top carnivore species depends on semi-aquatic habitat, it faces immense threats. In particular, groups or families that inhabit non-perennial river systems face severe threats and are currently data deficient. We have recorded one such active family of Smooth-coated Otter on a non-perennial river system: the River Cauvery in south India. There is a strong need to take steps to study and conserve for the population inhabiting areas like this. The IUCN Otter Specialist Group also emphasize the need for good fundamental ecological research for every single species of otter.

**Citation:** Chackaravathy, SD, Kamalakannan, B and Lakshminarayanan, N (2019). The Necessity of Monitoring and Conservation of Smooth-Coated Otters (*Lutrogale perspicillata*) in Non-Perennial Rivers of South India. *IUCN Otter Spec. Group Bull.* 36 (2):83 – 87

## INTRODUCTION

Otters are semi-aquatic mammals belonging to sub-family Lutrinae within the family Mustelidae. They are often closely associated with riparian habitats and marine systems (Prakash et al, 2012). Otters occur in five out of seven continents of the world excluding Australia and Antarctica (citation). Otters play a significant role in the ecosystems as both carnivores and meso-carnivores occupying important positions in foodwebs (Roemer et al, 2009). In systems where top carnivores are scarce, such as the riparian ecosystems, meso-carnivores like otters play a crucial role in the food web and community stability by exerting top-down control on their prey species (Roemer et al, 2009). Loss of meso-carnivores like otters could lead to trophic cascade and other devastating effects on the ecological communities (Estes et al, 2011). Notwithstanding their crucial role in the ecosystem, ironically, many species of

otters have been witnessing massive range and population declines (Gomez and Bouhuys, 2018). The IUCN has categorized seven out of 13 extant species of otters in the globe as endangered. The overarching threats facing otters are habitat loss, depletion of fish and other prey (Anoop & Hussain, 2004) and direct hunting for their pelts (Duckworth & Hill 2008, Shepherd and Nijman 2014).

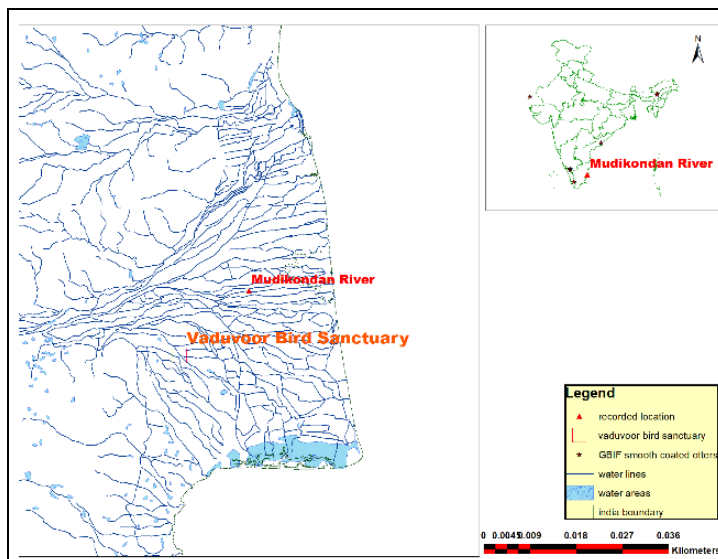
Considering their endangered status, there is an urgent need to formulate conservation strategies to secure remnant otter populations across their range (Hussain and Choudhury, 1997). Even simple indices such as occupancy and distribution of otters would be hugely helpful in conservation planning. While systematic distribution surveys are crucial, it is also important to report verified presence of otters in “new” areas from observations etc. from ‘new’ areas, and for these to be followed up with proper surveys. This approach is particularly relevant in the case of species such as the smooth-coated otter (*Lutrogale perspicillata*), whose range falls largely outside designated protected areas in India.

The smooth-coated otter is one amongst the many otter species listed as vulnerable, as their populations have reportedly suffered over 30% decline during the last 30 years (Pacifici et al., 2013; Shenoy et al., 2006). Smooth-coated otters are highly social and form large family parties to feed on fishes, shrimps, crustaceans, oysters, invertebrates and even birds (Duplaix and Savage, 2018). They occur in a range of habitats that include placid waters, even paddy fields, and floodplains along large river systems, lakes, peat swamp forests, mangroves and estuaries (Melisch and Foster-Turley, 1996). Smooth-coated otters have a wide distribution in India. However, systematic assessment of their habitat and populations is scarce (Hussain and Choudhury, 2007). Natural history observations suggest that smooth-coated otters require thick riverine vegetation to hide, make dens and raise their young, so their habitat occupancy depends on such dense riverine vegetation, protection from disturbance and prey availability.

Recently, in January 2019, we recorded a group of smooth coated otters in the River Mudikondan (Fig. 1 and 2), which is a non-perennial distributary of the River Cauvery flowing for about 50 km from its source to the coast.

Like the River Mudikondan, there are many other distributaries of River Cauvery, most of which are non-perennial and flow only during the release of water from the major reservoirs built upstream in the large river, during the period from June to January. The flow in these distributaries is highly regulated by dams and weirs. In addition to the sighting record that we report here, there is also a plethora of secondary information on sightings of smooth-coated otters reported from other distributaries in the region. For example, quite recently, Kolappan (2018) reported the presence of smooth-coated otters in the Vaduvor Bird Sanctuary (a Protected Area), which is around 30 km from the site that we report on in this article.

It is noteworthy that according to the Global Biodiversity Information Facility (GBIF), smooth-coated otters were not reported from any of the distributaries of the River Cauvery, and our reporting thus assumes significance. The site where we recorded the presence of smooth-coated otters in this article is unprotected, as is the case for most of the distributaries of the Cauvery river system. There is, therefore, an urgent to study, monitor and conserve these fragile populations, before these habitats further shrink and fish stocks deplete (Duplaix and Savage, 2018) making the river unsuitable for supporting otters. It is widely believed by the scientific community that the decline of otter species may be occurring more rapidly than it is generally perceived and thus, ex-situ conservation strategies are increasingly being recommended (IUCN Otter Specialist Group).



**Figure 1.** Map showing Location of smooth-coated otter sighting in the River Mudikondan, a distributary of the River Cauvery in South India.



**Figure 2.** Smooth-coated otter photographed in River Mudikondan in South India.

Being large mammalian predators, otters are generally considered to be tolerant of a wide range of habitat conditions (Chanin, 2003). However, identifying existing habitats and securing them is a pre-requisite for the long-term conservation of species like smooth-coated otters. Generally otters have wide linear home ranges. Their occurrence in human-dominated areas adds to all sorts of complexities to their conservation. Based on authentic sighting locations, it is possible use robust, intensive and flexible sampling techniques such as adaptive-cluster sampling to generate an informative distribution map.

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## RÉSUMÉ

### NÉCESSITÉ DE MONITORER ET PROTÉGER LES LOUTRES À PELAGE LISSE (*Lutrogale perspicillata*) DANS LES RIVIÈRES INTERMITTENTES DU SUD DE L'INDE

La perception des loutres à pelage lisse est différente selon les zones de répartition. Dans certaines parties du monde, l'espèce est considérée comme une divinité, alors que dans d'autres, elles ont été détestées comme la vermine. Les loutres à pelage lisse ont la plus large distribution dans l'aire de répartition du sous-continent indien, mais elles font face à la fois au manque d'informations et au manque d'attention porté à leur conservation. Étant donné que la distribution de cette espèce top carnivore dépend d'un habitat semi-aquatique, elle fait face à des menaces immenses. En particulier, le groupe ou famille qui habite les systèmes fluviaux intermittents est confronté à une menace grave et au manque de données. Nous avons observé une telle famille active de loutre à pelage lisse issue d'un système fluvial intermittent de la rivière Cauvery, dans le Sud de l'Inde. Il est urgent de prendre des mesures pour étudier et protéger la population vivant dans cet habitat. Le groupe de spécialistes des loutres de l'UICN souligne également la nécessité d'une bonne recherche écologique fondamentale sur chaque espèce de loutre.

## RESUMEN

### NECESIDAD DE MONITOREAR Y CONSERVAR LA NUTRIA LISA (*Lutrogale perspicillata*) EN RÍOS NO-PERMANENTES DEL SUR DE INDIA

Las percepciones sobre las Nutrias Lisas son diferentes en distintas áreas de su distribución. En algunas partes del mundo, la especie es una deidad, mientras que en otras han sido detestadas como plagas. Las Nutrias Lisas tienen su distribución más amplia en el sub-continente Indio, pero se enfrentan tanto a una falta de información como de atención para su conservación. Como la distribución de este carnívoro tope depende de hábitats semi-acuáticos, enfrenta inmensas amenazas. En especial, los grupos o familias que habitan los sistemas de ríos no-permanentes enfrentan severas amenazas, y son deficientes en datos. Hemos registrado una de tales familias activas en un sistema de ríos no-permanentes vinculado al río Cauvery, sur de India. Hay una necesidad extrema de dar pasos para estudiar y conservar la población que vive en este hábitat. El grupo de especialistas de la UICN, también, enfatiza la necesidad de buena investigación ecológica básica en todas las especies de nutria.

## SHORT NOTE

### SEA OTTERS (*Enhydra lutris*) FROM THE NORTHERN AND SOUTHERN POPULATIONS MAY FIND EACH OTHER IN HUMBOLDT COUNTY, CALIFORNIA

Maximilian L. ALLEN<sup>1\*</sup>, Shawn M. CRIMMINS<sup>2</sup>

<sup>1</sup>Illinois Natural History Survey, 1816 S. Oak Street, Champaign, IL 61820, U.S.A.

<sup>2</sup>College of Natural Resources, University of Wisconsin–Stevens Point, 800 Reserve Street, Stevens Point, WI 54481, USA

\*Corresponding Author: maxallen@illinois.edu

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**Abstract:** Sea otters (*Enhydra lutris*) are an apex carnivore and a keystone species, whose range contracted with population declines in last few centuries. But due to direct conservation efforts, both the northern sea otter (*E. lutris kenyoni*) and southern sea otter (*E. lutris nereis*) populations shown increases in the last few decades. The two populations are not connected, however, and southern sea otters in California are still threatened and endangered on the state level. The Humboldt County coast is situated between the southern sea otters in central California and the northern sea otters found between Oregon and Alaska. In 2015 a sea otter was seen in Humboldt Bay, the first sighting in Humboldt County since 2005. Although most sea otters found in Humboldt County are assumed to be from the southern sea otter population, genetic testing of a dead sea otter found in 2014 determined that it was from the northern sea otter population. The continued documentation of southern sea otters and the recent documentation of dead northern sea otter in Humboldt County suggests the Humboldt County coast may be an important area for linking the two populations in the future.

**Keywords:** *Enhydra lutris*, California, Humboldt County, locality record, population, range expansion, sea otter

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Sea otters (*Enhydra lutris*) are an apex carnivore and a keystone species due to their role in structuring marine ecosystems by maintaining kelp forests through top-down control of their herbivore prey (Estes and Palmisano, 1974; Ripple et al., 2014). In fact, sea otter top-down control is so strong that much of our foundational understanding of trophic cascades comes from early studies in the sea otter-urchin-kelp system (Estes and Palmisano, 1974), although this pattern can be highly variable (Carter et al., 2007, VanBlaricom and Estes, 2012). The range of sea otters formerly extended from Japan through the Aleutian Islands in Alaska down the coast of the Pacific Ocean to the Baja Peninsula in Mexico (Kenyon, 1969). The range of the northern subspecies (*E. lutris kenyoni*) currently extends from Russia through Alaska down the coast of the Pacific Ocean to Oregon. Sea otter populations began a large decline in the 1700s due to overexploitation through the fur trade (Kenyon, 1969; Jameson et al., 1982). Northern sea otter populations began a slow recovery in the 1900s after a halt of hunting in 1911 (Murie, 1940; Kenyon, 1969), with greater increases in the last five decades due to direct conservation efforts, including

reintroductions in Washington and Oregon (Jameson et al., 1982; Estes et al., 1996), although the reintroductions in Oregon were unsuccessful.

Sea otters were extirpated from much of California, but a small population persisted in central California centered around Big Sur (Kenyon, 1969; Lafferty and Tinker, 2014). This southern subspecies (*E. lutris nereis*) has expanded in the past few decades and now extends from south of Point Conception northward to Half Moon Bay (Figure 1). The southern sea otters in California are still threatened and endangered on the state level, and potential expansions of their range are therefore of interest to conservation biologists.

On 5 October, 2015 a sea otter was seen by a biologist while birdwatching off the North Jetty at the mouth of Humboldt Bay (Figure 1, Cresswell, 2015). During this observation, the sea otter was spending its time grooming and diving for food. The otter had a dead common murre (*Uria aalge*) in its possession, potentially the result of a large-scale seabird die-off that occurred in 2015 (Gibble et al., 2015). The sea otter appeared to be playing with the murre, and the otter would take the bird with it when it dove for food. Seabirds are a very infrequent part of sea otter diet (Kenyon, 1969; VanWagenen et al., 1981; Riedman and Estes, 1988), but it is unclear if the sea otter was feeding on it.



**Figure 1.** Map of the current distribution of sea otters (*Enhydra lutris*) in California, based on California Department of Fish and Wildlife (2015). The current distribution is marked in red, while the recent observation in Humboldt County is noted as a green dot.

Sightings of sea otters are made every few years in Humboldt County, but only rarely do these sightings make it into the scientific record (Brown and Elias, 2008). To our knowledge this sighting that we report represents the first documented sighting of any live sea otter in Humboldt County since 2005. Other recent observations of note include two dead male sea otters that were documented in Humboldt County. Although most sea otters found in Humboldt County are assumed to be from the southern sea otter population, genetic testing of a dead sea otter found in 2014 determined that it was from the northern sea otter population (Miller et al., 2015).

The Humboldt County coast is situated between the southern sea otters in central California and the northern sea otters between Oregon and Alaska. The continued documentation of southern sea otters and the recent documentation of dead northern sea otter in Humboldt County suggests the Humboldt County coast may be an important area for linking the two populations in the future. Recolonizations often take place in fits and starts (Lafferty and Tinker, 2014), and this is especially true of populations in linear habitats such as the coastal habitat along the Pacific Ocean. Although the exact reason for the gap between Humboldt County and established sea otter range is unknown, factors such as shark predation (California Department of Fish and Wildlife, 2015) may contribute to the lack of an established population. The two recent dead sea otters in Humboldt County were males, likely either extralimital wandering or dispersing into a new area. The extralimital wanderings of southern sea otters are generally noted south of the southern population (Tinker and Hatfield, 2016, 2017), and sightings north of the population are rare (Brown and Elias, 2008). In southern California, expansion of the range has been driven by male sea otters expanding into new areas in search of resources during winter and spring before returning to breeding grounds during summer and autumn (Lafferty and Tinker, 2014).

There is a strong professional and amateur biologist community in Humboldt County (e.g., Black et al., 2016), thanks in part to Humboldt State University and its Wildlife program, and this has led to the discovery of live and dead sea otters that may have gone undiscovered in other areas. We encourage biologists and interested citizens to report important sightings of rare wildlife to the California Natural Diversity Database (California Department of Fish and Wildlife, 2015). These reports have helped document potential range expansion and range reoccupation of other wildlife in California (Allen et al., 2015) and are an important step to including observations in the scientific record.

**Acknowledgements** - We thank K. Burton for information on his sighting, and E. Burkett and two anonymous reviewers for their comments on earlier versions of the manuscript.

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## RÉSUMÉ

### LES POPULATIONS DE LOUTRE DE MER (*Enhydra lutris*) DU NORD ET DU SUD PEUVENT SE RETROUVER CHACUNE DANS LE COMTE DE HUMBOLDT EN CALIFORNIE

La loutre de mer (*Enhydra lutris*) est un top carnivore et une espèce clé de voûte dont l'aire de répartition a diminué avec le déclin de la population au cours des derniers siècles. Mais grâce aux efforts de conservation directs, les populations de loutre de mer du Nord (*E. lutris kenyoni*) et du Sud (*E. lutris nereis*) ont toutes deux augmenté au cours des dernières décennies. Les deux populations ne sont pas connectées, et cependant, les loutres de mer du Sud de la Californie sont toujours menacées et en voie de disparition au niveau de l'État. La côte du comté de Humboldt est située entre les loutres de mer du Sud du centre de la Californie et les loutres de mer du Nord qui se trouvent entre l'Oregon et l'Alaska. En 2015, une loutre de mer a été observée dans la baie de Humboldt, la première observation dans le comté de Humboldt depuis 2005. Bien que la plupart des loutres de mer trouvées dans le comté de Humboldt soient présumées appartenir à la population des loutres de mer du Sud, des analyses génétiques, sur une loutre de mer morte découverte en 2014, ont montré qu'il s'agissait d'une loutre de mer de la population du Nord. La recherche continue sur les loutres de mer du Sud et récente sur la loutre de mer morte dans le comté de Humboldt suggèrent que la côte du comté de Humboldt pourrait être une zone importante pour relier les deux populations à l'avenir.

## RESUMEN

### **LAS NUTRIAS MARINAS (*Enhydra lutris*) DE LAS POBLACIONES NORTE Y SUR PUEDEN ENCONTRARSE ENTRE SÍ EL CONDADO DE HUMBOLDT, CALIFORNIA**

La nutria marina (*Enhydra lutris*) es un carnívoro tope y una especie clave, cuya distribución se contrajo junto a las declinaciones poblacionales en los últimos siglos. Pero debido a esfuerzos directos de conservación, tanto las poblaciones de la nutria marina del norte (*E. lutris kenyoni*) como de la del sur (*E. lutris nereis*) muestran incrementos en las últimas décadas. Ambas poblaciones, sin embargo, no están conectadas, y las nutrias marinas del sur, en California, están aún amenazadas y en peligro de extinción a nivel del estado. La costa del Condado de Humboldt está situada entre las nutrias marinas del sur (California central) y las del norte que se encuentran entre Oregon y Alaska. En 2015 fue vista una nutria marina en la Bahía Humboldt, el primer avistaje en el Condado de Humboldt desde 2005. Aunque la mayoría de las nutrias marinas que se encuentran en el Condado de Humboldt, se asume que son de la población de nutrias marinas del sur, el examen genético de una nutria marina muerta, encontrada en 2014, determinó que era de la población de nutrias marinas del norte. El registro continuado de nutrias del sur y el reciente registro de una nutria del norte muerta en el Condado de Humboldt, sugiere que su costa puede ser un área de importancia para conectar ambas poblaciones en el futuro.

## SHORT NOTE

### FIRST PHOTOGRAPHIC RECORD OF SMOOTH COATED OTTER (*Lutrogale perspicillata*) IN BANDHAVGARH TIGER RESERVE, MADHYA PRADESH, INDIA

Tahir Ali RATHER\*<sup>1,2</sup>, Shaizah TAJDAR<sup>1</sup>, Sharad KUMAR<sup>2</sup> and Jamal A.KHAN<sup>1</sup>

<sup>1</sup>Department of Wildlife Sciences, Aligarh Muslim University, Aligarh, Uttar Pradesh, India, 202002

<sup>2</sup>The Corbett Foundation

\*murtuzatahiri@gmail.com



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**Abstract:** The smooth-coated otter (*Lutrogale perspicillata*) is one of the three species of otters found in India. It occurs throughout the country from the Himalayas downward to the south. Smooth-coated otter is listed as Vulnerable in the IUCN Red List of threatened species and is legally protected in India under schedule II of the Indian Wildlife (Protection) Act, 1972. Being previously unreported in Bandhavgarh Tiger Reserve, we present the first record of smooth-coated otter in Bandhavgarh Tiger Reserve. The species was recorded in camera trap survey aimed to monitor large carnivores in the buffer zone of the reserve. No further record of the species was found during the subsequent camera trap survey, suggesting the very scanty distribution of the species in the area.

**Citation:** Rather, T.A., Tajdar, S., Kumar, S. and Khan, J.A. (2019). First Photographic Record of Smooth Coated Otter (*Lutrogale perspicillata*) in Bandhavgarh Tiger Reserve, Madhya Pradesh, India. *IUCN Otter Spec. Group Bull.* **36** (2): 93 – 97

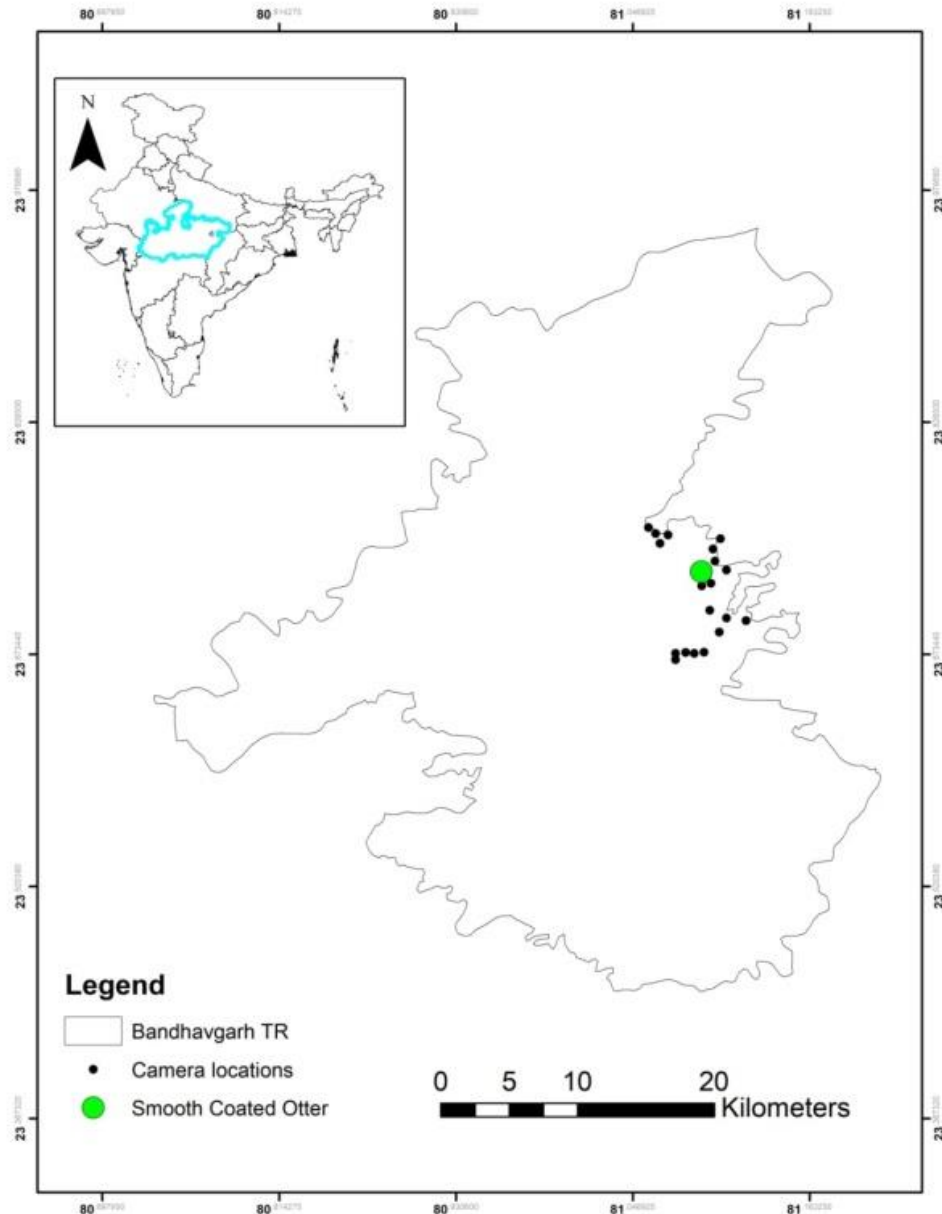
**Keywords:** Smooth-coated otter, Camera trapping, Central India, Bandhavgarh

#### INTRODUCTION

The smooth coated otter is semi-aquatic and essentially an otter of plains, well adapted to live in semi-arid regions of the northwestern and Deccan plateau of India (Prater 1971). Smooth-coated otter generally occurs in large rivers, lakes, mangroves and swamp forests. In Southeast Asia, the smooth-coated otter is known to use rice fields for foraging activities (Melisch & Foster-Turly, 1996). It is distributed throughout South and Southeast Asia, including South China, India, and Pakistan, with small isolated sub-population occurring in Iraq (Pocock 1949; Mason and Macdonald 1986; Hussain 1993). Habitat loss due to the construction of dams, reclamation of wetlands for agricultural and habitation purposes, poaching and water contamination with pesticides are some of the major threats to the smooth-coated otter throughout its range (Hussain et al. 2008). Information regarding population estimates is lacking; however, a decreasing population trend by a factor of 30% over the past 30 years has been suggested (Nawab and Hussain 2012).

## MATERIAL AND METHODS

The study was carried in Bandhavgarh Tiger Reserve which lies between latitude 23° 27' 00" to 23° 59' 50" North and longitude 80° 47' 75" to 81° 15' 45" East (Fig. 1), having an area of 1536.93 km<sup>2</sup>. The reserve is characterized by well-defined winter (November-February), summer (March- June) and monsoon-post monsoon (July- October). The average rainfall is 1,173 mm, most of which occurs during the monsoon. The vegetation of the reserve comprises of moist peninsular low-level Sal (*Shorea robusta*) forest, northern dry mixed deciduous forest, dry deciduous scrub, dry grassland and West Gangetic moist mixed deciduous forest (Champion and Seth, 1968).



**Figure 1.** Location of the study area and camera trap stations

The species was detected in camera trap surveying. We used extensive camera trapping for one year in the study area. The camera traps were installed along the roads, trails and around water bodies. Each camera trap station consisted of two camera units mounted on tree trunks on either side of road or trails. Cameras



remained active only during the night. We used 35 pairs of Cuddeback© camera traps. The main purpose of the camera trapping was to monitor the tigers and other co-predators in the buffer zone of Bandhavgarh Tiger Reserve and thus the study was designed accordingly.

## RESULTS

The smooth coated otter was first recorded in a camera trap on February 27, 2016 (Figure 2). The camera traps were installed along the roads and trails. The species was captured in one of the camera traps (Figure 1) set along the road. The trap location exists near a perennial stream that originates from the Bandhavgarh Fort, locally known as *Charan Ganga*. The stream flows through the forested area and finally makes its way into the villages. The locals use the stream for irrigation, fishing and washing purposes. Jamun (*Syzygium cumini*) and sal (*Shorea robusta*) are the dominant vegetation forms along the stream and provide suitable habitat for other large carnivores during summers.



**Figure 2.** The camera trap image of the smooth-coated otter in BTR

## DISCUSSION

Smooth-coated otters are known to live in groups with seasonal variations in group size (Hussain 2009). To our surprise, only a single individual was captured during the one-year camera trap survey. Camera trapping was carried in an area of 680 km<sup>2</sup> encompassing all major habitat types including riverine patches and areas adjacent to the streams. Two major River systems, Son and Juhila run through the reserve. Son River flows in the eastern part of the reserve and Juhila flows along the southern border of the reserve. Camera traps were installed in adjacent areas to these rivers but no further captures of the smooth-coated otter were recorded.

The distribution of smooth-coated otter in Bandhavgarh seems very scanty. No further camera trap captures or indirect signs were recorded. A comprehensive study in and around Bandhavgarh Tiger Reserve is required to understand the distribution patterns of the smooth-coated otter.

**Acknowledgements** - We are thankful to The Corbett Foundation for funding this study. We wish our thanks to the Madhya Pradesh, Forest Department for permitting us to carry this study in Bandhavgarh Tiger Reserve. We wish to thank Shri Mirdul Kumar Pathak, Field Director, BTR for his support during the study.

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## RÉSUMÉ

### PREMIER ENREGISTREMENT PHOTOGRAPHIQUE DE LOUTRE À PELAGE LISSE (*Lutrogale perspicillata*) DANS LA RÉSERVE DE BANDHAVGARH TIGER, MADHYA PRADESH, EN INDE

La loutre à pelage lisse (*Lutrogale perspicillata*) est l'une des trois espèces de loutres présente en Inde. On la trouve dans tout le pays, de l'Himalaya jusque dans le sud de l'Inde. La loutre à pelage lisse est classée comme vulnérable dans la liste rouge des espèces menacées de l'UICN. Elle est légalement protégée en Inde en vertu de l'annexe II de la loi de 1972 sur la protection de la vie sauvage en Inde. Alors qu'elle n'a jamais été observée au préalable dans la réserve de Bandhavgarh Tiger, nous présentons la première observation de loutre à pelage lisse dans cette réserve. L'espèce a été prise par un piège-photo destiné à surveiller les grands carnivores dans la zone tampon de la réserve. Aucun autre enregistrement de l'espèce n'a été réalisé lors de relevés ultérieurs à l'aide de pièges photo, ce qui suggère la très faible densité de l'espèce dans la région.

## RESUMEN

### **PRIMER REGISTRO FOTOGRÁFICO DE NUTRIA LISA (*Lutrogale perspicillata*) EN LA RESERVA DE TIGRES BANDHAVGARH, MADHYA PRADESH, INDIA**

La nutria lisa (*Lutrogale perspicillata*) es una de las tres especies de nutria que se encuentran en India. Se distribuye por todo el país, desde los Himalayas hasta el sur. La nutria lisa está listada como Vulnerable en la Lista Roja de especies amenazadas de UICN, y está legalmente protegida en la India bajo el esquema II de la ley de Protección de Fauna en India, 1972. Siendo que no estaba previamente reportada en la Reserva de Tigres Bandhavgarh, presentamos el primer registro de nutria lisa en la misma. La especie fue registrada en un relevamiento con cámaras-trampa dirigido a monitorear grandes carnívoros en la zona buffer de la reserva. En el relevamiento con cámaras-trampa sucesivo, no volvió a aparecer ningún registro de la especie, sugiriendo una distribución muy escasa en el área.

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## SHORT NOTE

### FIRST RECORD OF HAIRY-NOSED OTTER (*Lutra sumatrana*) IN SOUTHERN CENTRAL KALIMANTAN, INDONESIA

Mahfud Huda<sup>1</sup>, Aldino F. Fauzil<sup>1</sup>, Ali I. Amran<sup>1</sup>, Carl Traeholt<sup>2\*</sup>, Muhammad Silmi<sup>1</sup>

<sup>1</sup>Biodiversity Division, United Plantations - PT Surya Sawit Sejati, Kalimantan Tengah, Indonesia

<sup>2</sup>Copenhagen Zoo, Research and Conservation Division, Southeast Asia Programme, Malaysia

\*Corresponding author Address: Email: [ctraeholt@gmail.com](mailto:ctraeholt@gmail.com)

(Received 19<sup>th</sup> April 2019, accepted 3<sup>rd</sup> June 2019)

**Abstract:** The Hairy-nosed otter (*Lutra sumatrana*) has never been recorded in Borneo's far south. Here we present evidence of the first records of Hairy-nosed otter in the southern parts of Central Kalimantan, Indonesia.

**Keywords:** Hairy-nosed otter, Kalimantan, Borneo, Indonesia

#### INTRODUCTION

The Hairy-nosed otter (*Lutra sumatrana*) is one of Indonesia's four species of otter (Phillipps and Phillips, 2016) and one of the rarest of the world's 13 otter species. It can be difficult to find and identify in the field, due to its elusive nature. It is listed as Endangered on the IUCN Red List (Aadreaan et al., 2015) and is threatened by habitat loss and hunting (Wright et al., 2008; IUCN, 2018).

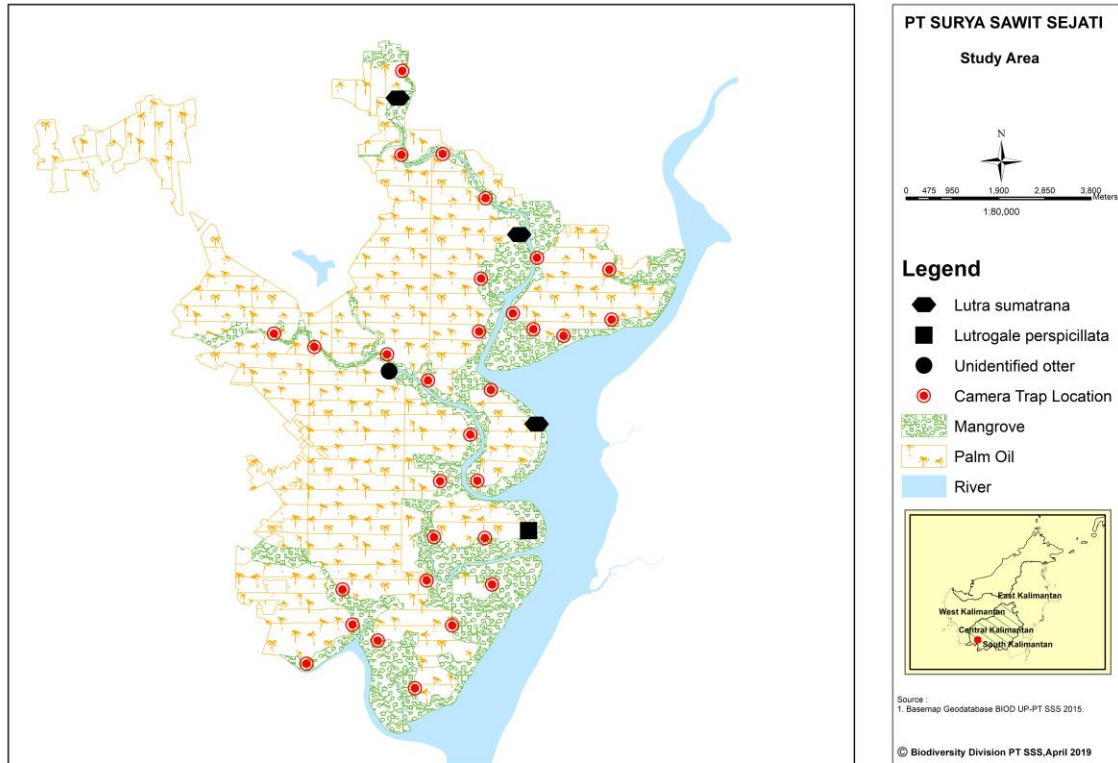
The Hairy-nosed otter has been recorded in scattered localities in Thailand, Indonesia, Vietnam, Cambodia, Singapore and Malaysia (Fernandez et al., 2018; IUCN, 2018; Theng and Sivasothi, 2016). In Indonesia, it is recorded from Tamling in Bukit Barisan Selatan National Park, Sumatra (Latifiana, 2013) and Borneo (Payne et al., 1985, Sasaki et al., 2009) up to an altitude of 1,200 meters asl in Pa Umur in the Kelabit highlands (Davis, 1958). It was also captured on camera traps in Sabah's Deramakot Forest Reserve in 2010 (Wilting et al., 2010) and another individual was photographed in the Lower Segama area in 2016 (Ishigami et al., 2017). To date, there have only been two records (skins and skulls) from the Indonesian part of Borneo, Kalimantan, at the Sama River and Pulo Saparo River near Pontianak (Sasaki et al., 2009).

On Borneo, the species is recorded mainly in the northern part of Borneo, especially in Sabah (Wilting et al., 2010; Wright et al., 2008) and Brunei (Ishigami et al., 2017; Phillipps and Phillips, 2016). To date, there has been no record of this species in the southern part of Borneo, south of the 01°15'00.00"S line.

#### METHODS AND RESULTS

##### Study site

This study took place in Lada Estate, Central Kalimantan Province, Indonesia (02°34'53" S, 111°46'21" E) (Fig. 1). The habitat consists of 5000 ha palm oil estate, surrounded by approx. 1179 ha mangroves, small patches of peat-swamp and lowland dry dipterocarp forests. The landscape contains several small rivers and streams that run into the large Kumai River. The area experiences a wet season (November to April) and a dry season (May to October) with temperatures ranging from 26-34 °C and a mean annual precipitation 2123 mm.



**Figure 1.** Map of study site, locations of camera traps and locations of camera traps that recorded Hairy-nosed and other otter species.

**Camera-trap survey**

A total of 35 camera traps (Scout Guard DTC-565V-8M Series) were deployed in grids with cells of 800 m x 800 m. Each camera trap was set to take two pictures per trigger event. Camera-traps were setup approx. 50 cm above ground on man-made bunds in the transition zone between areas planted with oil palm and mangrove forest. If there was no bush/tree available, a wooden pole was used as anchor point for the camera.

A total of 1304 trap nights produced 760 notionally independent pictures representing 26 species. A total of 7 photos were of otters, of which four were identified as hairy-nosed otters (Fig. 2) and two were that of smooth-coated otters, *Lutrogale perspicillata* (Fig. 3) with one of an unidentified species. The Hairy-nosed otters were recorded on camera traps from three different locations (Fig. 1).

On the 1<sup>st</sup> June, 2018, patrolling conservation officers found a recently road-killed Hairy-nosed otter (Fig. 4-6). It was discovered on the main estate road adjacent to a mangrove conservation area (02°31'07.2" S; 111°49'19.1" E). The specimen was an adult male (Table 1).

**Table 1.** Morphometric measurements of an adult male hairy-nosed otter

Category	Size
Body Length	63 cm
Tail Length	43 cm
Total Length	122 cm
Weight	8.5 kg



Figure 2. Four pictures of otters identified as *Lutra sumatrana*



Figure 3. Two records of otters identified as *Lutra perspicillata*



Figure 4. *Lutra sumatrana* was found dead in the palm oil plantation road



**Figure 5.** White under the lips and neck pattern of *Lutra sumatrana*



**Figure 6.** Hair on the Rhinarium of *Lutra sumatrana*

## DISCUSSION

Mangrove habitat forms an important habitat for the conservation of otters in Southeast Asia (Foster-Turley, 1992). However, our recent find adds more information to suggest that the species is adaptable to a variety of climate scenarios. Whereas our study areas are always water-logged (mangrove, wetlands), there is a significant seasonal variation between wet and dry season, with the latter often extending 5-6 months.

The hairy-nosed otter is the rarest of the tropical Asian otter species. It is not yet known whether the limited number of records is due to very few dedicated surveys, because of its tendency to inhabit remote and difficult to access areas. With the recent large scale agricultural development in Sumatra and Borneo, more habitats have become accessible to biodiversity survey. Consequently, in Sumatra, hairy-nosed

otters have been found in a landscape consisting of swamp forests, mangroves and palm oil plantations (Latifiana, 2013). Our recent finding in a similar habitat in the southern part of Central Kalimantan suggests that, while hairy-nosed otters remain uncommon, the species' dispersal area may be much larger than previously expected. The absence of previous records from this area is likely to have been due to lack of surveys and, with more dedicated surveys across Kalimantan, the species will likely appear in many other places with suitable habitat in southern Kalimantan.

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## RÉSUMÉ

### PREMIER ENREGISTREMENT DE LA LOUTRE DE SUMATRA (*Lutra sumatrana*) DANS LE SUD DU KALIMANTAN CENTRAL EN INDONÉSIE

La loutre de Sumatra (*Lutra sumatrana*) n'a jamais été photographiée dans l'extrême Sud de Bornéo. Nous présentons ici les preuves des premiers enregistrements de loutre de Sumatra dans le sud de la province du Kalimantan central, en Indonésie.

## RESUMEN

### PRIMER REGISTRO DE NUTRIA DE SUMATRA (*Lutra sumatrana*) EN KALIMANTAN SUD-CENTRAL, INDONESIA

La nutria de Sumatra (*Lutra sumatrana*) nunca fue registrada en la parte sur de Borneo. Aquí presentamos evidencia de los primeros registros de esta especie en las porciones sur de Kalimantan Central, Indonesia.



## SHORT NOTE

### PHOTOGRAPHIC RECORDS OF EURASIAN OTTER (*Lutra lutra* LINNAEUS, 1758) FROM NYAMJANG CHU RIVER, ARUNACHAL PRADESH, INDIA

Malyasri BHATTACHARYA<sup>1</sup>, Taibangba WATHAM<sup>2</sup>, G.V. GOPI<sup>1,3\*</sup>

<sup>1</sup>Department of Endangered Species Management, Wildlife Institute of India,  
P.O. Box # Chandrabani, Dehradun, Uttarakhand 248001.

<sup>2</sup>Indian Institute of Remote Sensing, 4, Kalidas Rd, Hathibarkala, Dehradun, Uttarakhand 248001

<sup>3\*</sup>[gopigv@wii.gov.in](mailto:gopigv@wii.gov.in) (corresponding author)



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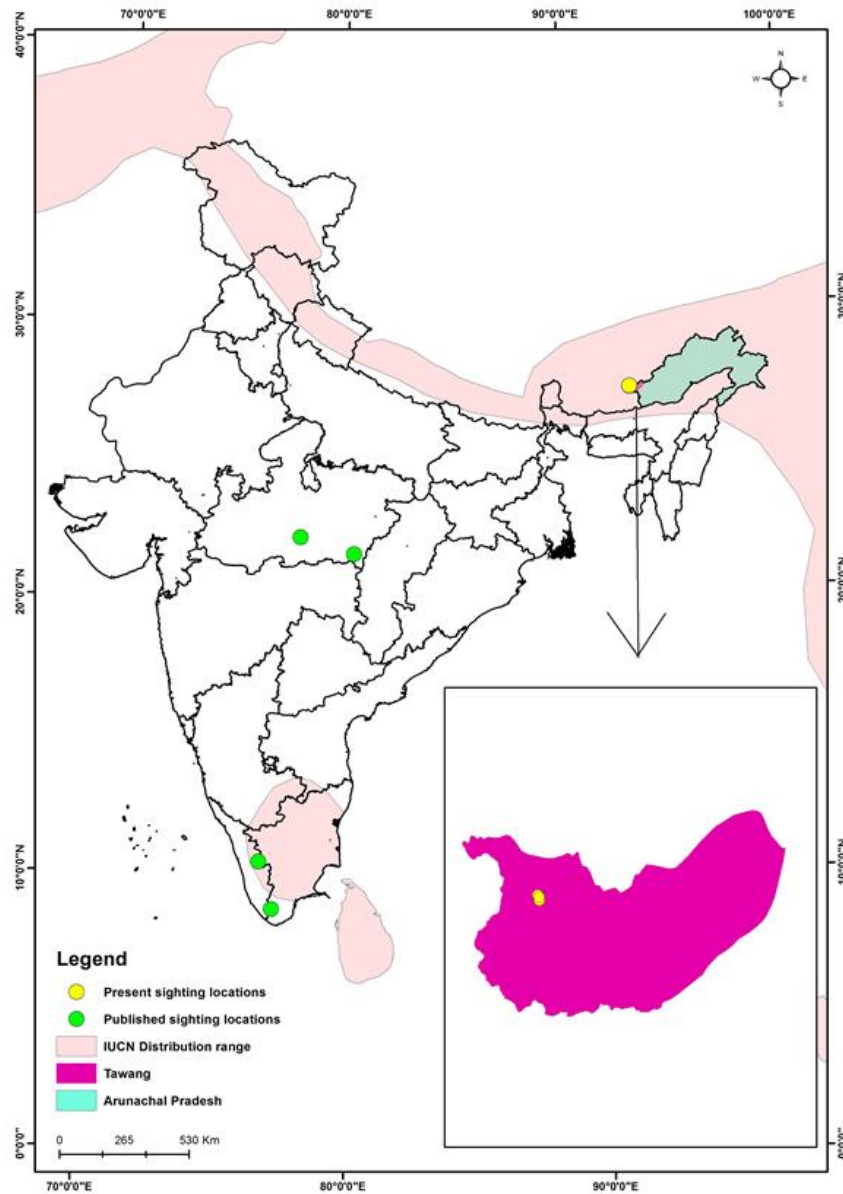
**Abstract:** A few individuals of Eurasian otters were sighted in the Nyamjang Chu river, Tawang district, Arunachal Pradesh during three months fieldwork between December 2017 and February 2018. The individuals were filmed and photographed swimming in the Nymjang Chu river. Previous records have listed the occurrence of smooth-coated otter and Asian small-clawed otter from Arunachal Pradesh. The present sighting is the first photographic evidence from the North-East Indian state of Arunachal Pradesh. The record shows the importance of the habitat of Nyamjang Chu River valley currently facing a threat of submergence from an upcoming hydroelectric power project.

**Keywords:** Eurasian Otter, *Lutra lutra*, Zemithang Valley, Tawang District, Nyamjang Chu River

**Citation:** Bhattacharya, M, Watham, T and Gopi, GV (2019). Photographic Records of Eurasian Otter (*Lutra lutra* Linnaeus, 1758) from Nyamjang Chu River, Arunachal Pradesh, India. *IUCN Otter Spec. Group Bull.* **36** (2): 103 - 109

The Eurasian otter *Lutra lutra* (Linnaeus, 1758) has the widest distribution among the old world mammals (Corbet, 1966). It ranges from Western Europe to Eastern Asia as well as Africa, in Asia, it inhabits almost all Himalayan river systems up to far south in Sumatra, Indonesia (Corbet and Hill, 1992). There are seven subspecies of the Eurasian otter (Pocock 1941) including *L. l. nair*, (Cuvier, 1823) in southern India, Sri Lanka, Nepal, Bhutan and Myanmar, *L. l. kutab* (Schinz, 1844) in northern India – Kashmir, *L. l. aurobrunneus* (Hodgson, 1839) in Garhwal Himalayas in north India and higher altitudes in Nepal, *L. l. monticolus* (Hodgson, 1839) in India from Himachal Pradesh, Sikkim, and Assam, *L. l. barang* (Cuvier, 1823) in southeast Asia (Thailand, Indonesia, and Malaysia), *L. l. chinensis* (Gray, 1837) in southern China and Taiwan and *L. l. lutra* (Linnaeus, 1758) in Europe and northern Africa. The Eurasian otter has been recently reported from the forests of Madhya Pradesh including Balaghat forest circle (Jena et al, 2016) and Satpura tiger reserve (Joshi et al 2016). It has also been observed in Periyar tiger reserve in Kerala and Kalakkad Mundanthurai Tiger Reserve in Tamil Nadu (Raha and Hussain 2016) (Fig. 1).

However, in spite of its shown range as per IUCN, little published information is available on the occurrence of Eurasian otter from North-eastern states of India. The lack of accessibility in many parts of the Himalayan ranges in Northeast India has resulted in distribution gaps in published records.



**Figure 1.** Eurasian otter IUCN generalized distribution with previously recorded sighting and current sighting locations

So far, there are no records of this species from Arunachal Pradesh. The present sighting from Tawang, Arunachal Pradesh is, therefore, the first photographic record of the species from North-east India.

During 2017-2018, while undertaking fieldwork on the project “Assessment of habitat use by Black-necked Crane and e-flows of Nyamjang Chu hydroelectric project, Tawang”, we encountered direct sightings as well as indirect evidence (footprints) of Eurasian otter in different locations along the Nyamjang Chu River. There were direct sightings both at upstream locations and the downstream locations of the proposed dam in the Nyamjang Chu River.

On December 14, 2017, the first sighting of a Eurasian otter was confirmed in the Nyamjang Chu River, Zemithang (27°43'16.39"N, 91°43'32.07"E). It was

photographed and filmed using handheld camera Nikon D5100 with 70-300VR. The well-webbed feet with strong claws with webs between the toes extending to the last bone of each digit (Pocock 1941) and the shield-shaped 'W' like rhinarium (Foster-Turley 1992) confirmed its identification as an Eurasian otter (Figure II,1-4). It was continuously followed from the downstream to the upstream of the river for an hour and was observed feeding on medium sized fishes. The animal allowed proximity of 1 m and continuously searched for food from one river bank to another bank. Eventually, it dived from a nearby sand mining area and disappeared in the waters of the river. Subsequently, on January 9<sup>th</sup>, two otters were seen together in the Nyamjang Chu River. They played and groomed each other for about 20 minutes and were seen hunting fishes, and subsequently moved towards the upstream.

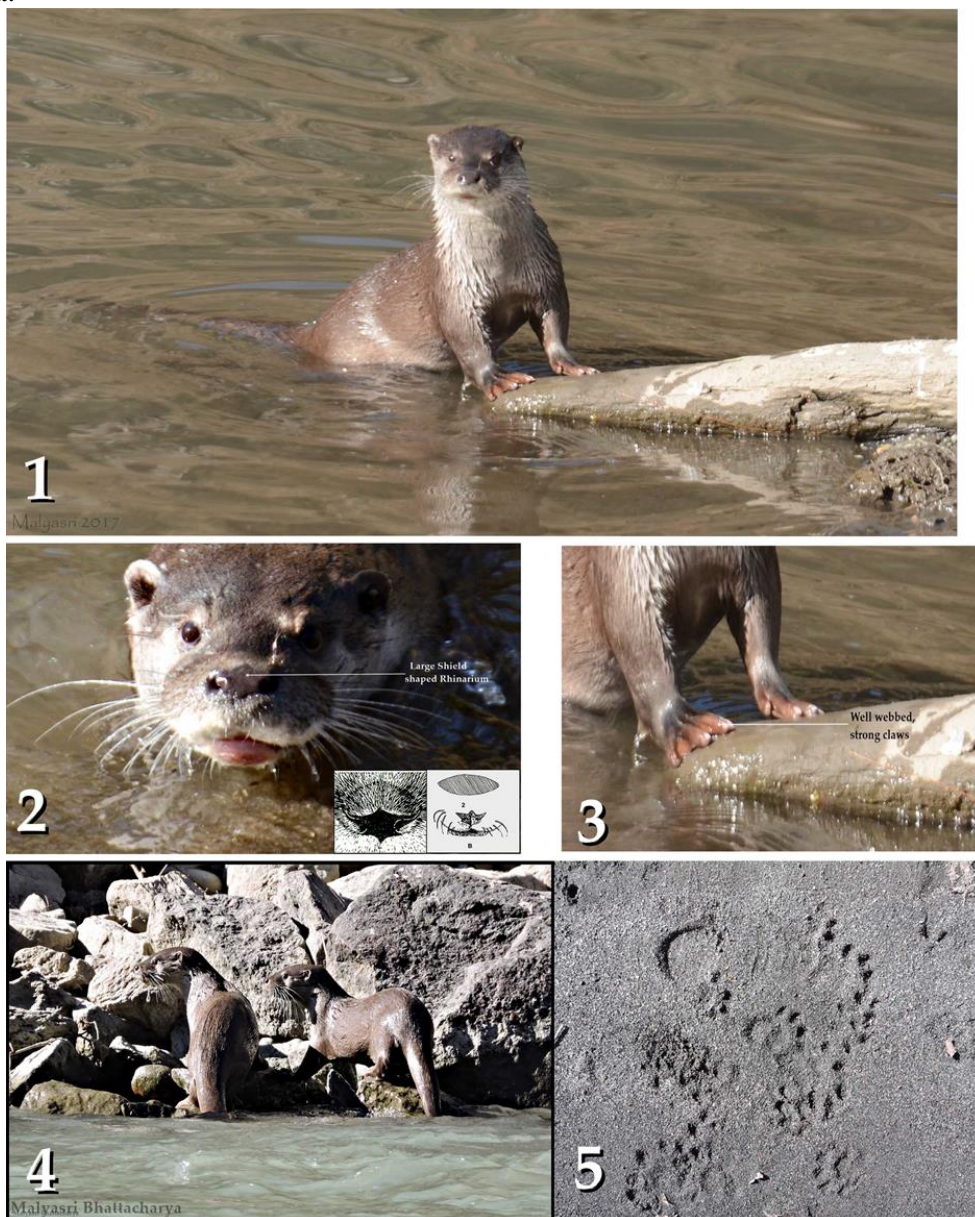
**Table 1.** Location and characteristics of Eurasian otter found in the Zemithang valley of Tawang district, Arunachal Pradesh

Date	Coordinates	Habitat characteristics	Record Details	Anthropogenic activities	Remarks
14.12.2017	27°43'16.39"N 91°43'32.07"E	Nyamjang Chu River with water depth 0.43-1.33m. Medium rocky bank substrate.	Direct sighting	Sand mining activities near the river bank.	One, feeding on fishes and swimming through the river
09.01.2018	27°43'32.57"N 91°43'23.43"E	Nyamjang Chu River bank with rocky substrate. <i>Hippophae rhamnoides</i> , <i>Artemesia sp.</i> , <i>Pteridium aquilinum</i> , <i>Elaeagnus sp. domnated found along the bank.</i>	Direct sighting	Sand mining activities as well as waste disposal by locals.	Two, Playing and grooming each other as well as feeding.
11.01.2018	27°42'53.95"N 91°43'33.49"E	Stream near Nyamjang Chu River with water depth between 0.3-1.5m.	Direct Sighting	Logging and sand collection activities by local communities	Two, feeding.
17.02.2018	27°.43'16.13"N 91°43'32.25"E	Nyamjang Chu River with water depth between 0.3-1.4m.	Direct Sighting	Waste disposal and death ritual activities including disposal of dead body in the river by local Monpa Tribes.	One seen swimming upstream

Furthermore, there were several sightings of the Eurasian otter during December 2017 to February 2018 across that particular river stretch. Photographic records of its footprints were collected from along the river bank (Figure 2, 5). Discussion with locals revealed they frequently see the otters for quite sometime in this stretch of the river. Three fish species, viz. *Mystus vittatus*, *Amblyceps mangois*, and *Exostoma berdmorei* have been recorded at the barrage site (Barik et al. 2015), which the Otter perhaps preys on.

Our study showed the terrain is mostly rocky along with dispersed vegetation on each side of the river. The depth of the River in this part varies from 0.43-1.5 m. Some of the riparian vegetation types are *Hippophae rhamnoides*, *Artemesia sp.*, *Pteridium aquilinum*, *Elaeagnus sp.* (Table 1).

In the Indian sub-continent, the Eurasian otter usually prefer to stay in the high altitude Himalayan mountains and cold streams with attitude as high as 3660 m (Prater 1971). During summer they move towards high elevation probably to harmonize with the upward migration of the fishes for spawning. In winters they again come down to lower altitudes (Prater 1971). Though Eurasian otter inhabits a variety of habitats such as lakes, rivers, streams, rivers, swamps, coastal area and estuaries, their distribution in India was recorded from lower Himalayas, Western Ghats and also from the parts of North-east India. In India, otter research is restricted to limited studies on Smooth-coated (*Lutra perspicillata*) and Small-clawed (*Aonyx cinerea*) otters (Sanyal 1991, Hussain 1999) and to Southern India (Nagulu 1996, Raha and Hussain 2016). Some of the sightings suggested that the otters are confined within the protected areas, and only a few occur outside the protected areas. (Hussain 1999). Very little information is available on the status of Eurasian otters found in India.



**Figure 2.** 1,4: Eurasian otter, *Lutra lutra* near Nyamjang Chu River, 2: Large shield shaped Rhinarium of the species, 3: An Eurasian otter with the well-webbed claws, 5: Tracks of the species from Nyamjang Chu River bank, Arunachal Pradesh, India. Photo: Malyasri Bhattacharya

The otters found in India are all protected under the Indian Wild Life (Protection) Act, 1972, which forbids both trapping and killing. The Eurasian Otter is listed in the Schedule II of the Indian Wildlife (Protection) Act, 1972. The continuous decrease in the otter populations of India is mainly due to habitat degradation, continuous deforestation, construction of hydroelectric power projects, overexploitation, poaching, and trading, as well as human-induced contamination of the water bodies, poses an extreme threat to the otters in India. As per our study, the proposed construction of the dam on Nyamjang Chu River will submerge the area, thereby directly affecting the Eurasian otter habitat.

During our study, we have evidenced continuous sand mining in the Nyamjang Chu River river valley and deforestation, which are altering the habitat by affecting the natural riparian vegetation otherwise essential for the otter. The disposal of varieties of waste (including plastic bags) left by the workers creates absolute waste pollution in the riverbed of otter's habitat. At the same time due to the road accessibility in the riverbed for sand mining practices, constant vehicle traffic affects the natural habitat of the valley. Zemithang is situated 11km away from China border, a large number of plastic bags coming downstream the river from China creates plastic pollution in the Nyamjang Chu River bed which is a severe threat to the river-dependent Eurasian otter.

During our survey, it was observed that the people of Zemithang valley, Monpa tribe in general, have strong compassion toward wildlife. Hunting or fishing are strictly prohibited in Zemithang area mostly by the locals themselves. Local communities serve as a critical element for the conservation of wildlife in the region. But only the exemption of hunting or fishing has not decreased the threat for the otter in the Nyamjang Chu valley.

The Eurasian otter is categorized as Near Threatened by the IUCN Red List of Threatened Species and it is listed in 'Appendix I' of CITES due to its continuous population decline which is at a rate no longer exceeding 30% over the past three generations (Pacifci et al. 2013). The report confirms the distribution of Eurasian otter in the extreme west of Arunachal Pradesh outside the protected area. However, it falls under two adjoining Community Conserved Areas Pangchen Lumpo Muchat Community Conserved Area and Pangchen Lakhar Community Conserved Area, in two sides of the valley where it can be given importance for conservation. Continuous monitoring of this species is required to know the range of the species in the area in association with the local communities. Effective planning for decreasing the threats affecting its habitat is necessary to conserve the species. Association of local communities along with the help of the forest department by organizing awareness programmes and campaigns may create awareness about the conservation of Eurasian otter.

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## RÉSUMÉ

### **ENREGISTREMENTS PHOTOGRAPHIQUES DE LA LOUTRE EURASIENNE (*Lutra lutra* LINNAEUS, 1758) SUR LA RIVIÈRE NYAMJANG CHU, SITUEE DANS L'ÉTAT D'ARUNACHAL PRADESH, EN INDE**

Durant trois mois de travaux de terrain entre décembre 2017 et février 2018, quelques loutres eurasiennes ont été aperçues sur la rivière Nyamjang Chu dans le district du Tawang de l'état d'Arunachal Pradesh,. Les individus, nageant dans la rivière Nymjang Chu, ont été filmés et photographiés. Des enregistrements antérieurs mentionnent la présence de loutre à pelage lisse et de loutre cendrée dans l'état d'Arunachal Pradesh. Cette observation récente de loutre eurasienne est la première preuve photographique de la présence de l'espèce dans l'état d'Arunachal Pradesh, au nord-est de l'Inde. L'enregistrement montre l'importance de ce type d'habitat (vallée de la rivière Nyamjang Chu) actuellement menacé d'immersion par un projet de centrale hydroélectrique.

## RESUMEN

### **REGISTROS FOTOGRÁFICOS DE LA NUTRIA EURASIÁTICA (*Lutra lutra* LINNAEUS, 1758) DEL RÍO NYAMJANG CHU, ARUNACHAL PRADESH, INDIA**

Durante tres meses de trabajo de terreno entre Diciembre de 2017 y Febrero de 2018, avistamos unos pocos individuos de nutria eurasiática en el Río Nyamjang Chu, distrito de Tawang, Arunachal Pradesh. Los individuos fueron filmados y fotografiados mientras nadaban en el Río Nyamjang Chu. Registros anteriores han detectado la ocurrencia de nutria lisa y nutria de uñas pequeñas asiática, en Arunachal Pradesh. Los avistamientos aquí reportados son la primer evidencia fotográfica del estado de Arunachal Pradesh, India. El registro muestra la importancia del hábitat del valle del Río Nyamjang Chu, que actualmente enfrenta una amenaza de ser sumergido por un proyecto de energía hidroeléctrica.

## OSG MEMBER NEWS

Since the last issue, we have welcomed 17 new members to the OSG: you can read more about them on the [Members-Only pages](#).

**Mari-Lisa Allson, UK:** I recently graduated from the University of Exeter with a First Class Master in Science with Honours in Animal Behaviour. I fell in love with otters while conducting my fourth year research project where I looked at their rock juggling behaviour and am excited to contribute to otter conservation and study their behaviour further.

**Aditya Banerjee, India:** For my Master's dissertation, I worked on the effect of invasive water hyacinth on smooth-coated otter habitat use in the Tungabhadra River, Karnataka, India. I am now a research assistant, currently working on a project looking at the ecological impact on fish and fish-eaters of river damming in the Western Ghats. I will soon begin looking at the distribution, status and habitat use of *Lutra lutra*, *Lutrogale perspicillata* and *Aonyx cinereus* in the north-east Indian state of Meghalaya, funded by Wildlife Reserves Singapore following the 2019 International Otter Congress.

**Jeric Gonzalez, Philippines:** I am an instructor at Romblon State University. I conducted the first and only study on the illegal trade of otters in the Philippines and have extensive experience in the local traffic routes and trade flow of the small-clawed otter in Palawan and Luzon. My local knowledge of the trade and wildlife hunting in Palawan and contribution to the understanding of the IWT and the implementation of possible mitigation action in relation to CITES has helped significantly in planning conservation of otters in the Philippines.

**Xuesong Han, China:** I am from ShanShui Conservation Center, China, and now by serving as the leader of the wetland project in the Sanjiangyuan Office, I am in charge of the investigation, research and conservation of the Eurasian Otter *Lutra lutra*, the Black-necked Crane *Grus nigricollis* and the Chinese Mountain Cat *Felis bieti*, among which the status of the Eurasian Otter is our major concern.

**Vanessa Herrenz Muñoz, Cambodia:** My childhood dream was to study rare cat species in Southeast Asia. I studied Zoology at the University of Bristol (UK), and during my MSc, as well as working at zoos and rescue centers in Spain, I also developed an interest for other small carnivores and their inter-specific relationships. I founded a conservation NGO in Spain and later on I learned about legislation working as technical writer for the European Commission. Since 2016 I run an independent project focused on fishing cat in Cambodia (Kla trey Cambodian Fishing Cat Project). Sharing habitat and threats, otters have now become integral part of our project, and I am extending our work to cover Smooth-Coated and Hairy-Nosed Otters.

**Xuesong Han, China:** I am from ShanShui Conservation Center, China, and now by serving as the leader of the wetland project in the Sanjiangyuan Office, I am in charge of the investigation, research and conservation of the Eurasian Otter *Lutra lutra*, the



Black-necked Crane *Grus nigricollis* and the Chinese Mountain Cat *Felis bieti*, among which the status of the Eurasian Otter is our major concern.

**Jordan Martinez-Smith, USA:** I recently graduated in Zoology, and am starting a career in otter conservation. I have interned with Instituto Ekko Brasil, looking after captive otters as well as helping with field work. I then interned with Monterey Bay Aquarium in their animal care department, working with sea otters.

**Karen McDonald, USA:** After a Masters in Biology, and working as a Nature Center Manager and Park Naturalist, I have been Education Program Coordinator at the Smithsonian Environmental Research Center for the last twelve years. Over the last year, I have been focusing educational programs at the Center around otters.

**Wayne McFee, USA:** I am a research wildlife biologist with 26 years of experience working for the NOAA National Ocean Service in Charleston, SC USA. We would like to add otters to our portfolio of Key Species as indicators of coastal ocean health, and will continue to focus on contaminants and pathogens for all key species.

**Trevor McIntyre, South Africa:** I have been undertaking and facilitating research on the ecology and conservation of otters in South Africa over the past few years, supervising many students and junior researchers. I also participated in the OSG conference in China, am a part of the African Otter Network, and intend on hosting an AON workshop early in 2020.

**Madeleine Nedelcu, Austria:** I am a biology student at University of Vienna. While interning with Bottlenose Dolphin Research Institute in O Grove, Spain, I did the first study ever done on the diet and ecology of *Lutra lutra* in O Grove. I am particularly interested in wild otters of Southeast Asia, particularly their social behaviors and management of habitat in proximity to humans.

**Annabel Pianzin, Malaysia:** As part of the SAFE Project in Sabah (one of the largest ecological projects in the world), I am working on the distribution and occupancy of Eurasian and Hairy-Nosed Otters across human-modified landscapes (oil palm plantations), focussing on otter use of different habitats in reserve areas. This will also provide a baseline when the experimental area of SAFE is converted to oil palm plantation. I also work for the Malaysia Nature Society, and hope to create an Otter Team as well as starting education and outreach activities.

**Victoria Priestley, United Kingdom:** All living things shed DNA into the environment and this can be sampled and used to detect species presence, infer abundance and profile entire communities. Environmental DNA (eDNA) is particularly useful when looking for rare, elusive or hard-to-reach species as it does not rely on 'seeing' them, but instead looking for genetic clues to their presence. Victoria is a PhD student at Imperial College, researching how environmental DNA can be used to survey and monitor otters. Her focus has to-date been on the Eurasian otter, but her plan is to develop the method for giant river otters and potentially Asian otter species too.

**Simon Rohner, Germany:** I am a vet at the Institute for Terrestrial and Aquatic Wildlife Research, University of Veterinary Medicine Hanover, Northern Germany,

working on otter necroscopy for population health monitoring. I am also a volunteer otter surveyor and involved in education and outreach activity.

**Amanda Suzzi, USA:** I am a geography student at the University of Massachusetts, about to start my doctorate on habitat suitability and biogeographical range of North American River Otters in Massachusetts. I am also interested in creating GIS maps to support otter research.

**Anna Wong, Malaysia:** I am a senior lecturer at the Institute for Tropical Biology and Conservation, Universiti Malaysia Sabah, supervising a masters student working on otter distribution in Sabah, and collaborating with international researchers in the SAFE Project area, Kalabakan, Sabah. I chair the Sabah branch of the Malaysia Nature Society, and hope to be part of the upcoming Malaysia/South East Asia Otter Group.

**Woo Chee Yoong, Malaysia:** Currently, I am working as Wildlife Research Assistant in Malaysian Nature Society, MNS, on niche overlap and partitioning between the Hairy-nosed otter (*Lutra sumatrana*), Smooth-coated otter (*Lutrogale perspicillata*) and Asian small-clawed otter (*Aonyx cinereus*) in the Kuala Selangor Nature Park, Selangor, Malaysia. I also hope to train a cadre of local people to be otter spotters. It is the plight of the Hairy-Nosed Otter that first got me into conservation, and I fear it could quietly go extinct without being noticed.

**Lu Zhang, China:** An associate researcher from Sun Yat-sen University, I started to work on otters since 2016. With colleagues and students I conduct field work at three sites in China, including the Tangjiahe Nature Reserve in Sichuan, the Sangjiangyuan National Park in Qinghai, and the Pearl River Delta in Guangdong. Currently we focus on collecting basic information on otter populations, including distribution range, population size, diet, and habitat selection. We determine otter distribution through transect survey, camera trapping, and environmental DNA. We collect fecal samples to conduct genetic mark-recapture analysis to determine otter population size, and to investigate the diet of otters using fecal DNA and a metabarcoding approach.

## **C O N F E R E N C E**

### **PATHWAYS EUROPE 2020: HUMAN DIMENSIONS OF WILDLIFE CONFERENCE AND TRAINING**

It is a pleasure to invite you to the Pathways Europe 2020: Human Dimensions of Wildlife Conference and Training, organized by Wageningen University and Research's Cultural Geography, Forest and Nature Conservation Policy and Sociology of Development and Change Groups and The Department of Human Dimensions of Natural Resources at Colorado State University! The conference will take place at the Wageningen International Congress Centre in Wageningen, The Netherlands from September 20th-23rd, 2020.

Pathways Europe is a part of the Pathways: Human Dimensions of Wildlife Conference and Training. Founded by Prof. Michael J. Manfredo and Prof. Jerry Vaske (Colorado State University), the program is designed to address the myriad issues that arise as people and wildlife struggle to coexist in a sustainable and healthy manner.

Since its inaugural launch in the U.S. in 2008, Pathways has gained a reputation as being one of the leading conferences on the human dimensions of wildlife management in the world, regularly attracting researchers and practitioners from both agencies and NGOs from across +30 different countries. After a successful inaugural launch in Goslar, Germany in September 2018, Pathways Europe returns for another year of international collaboration and conversations critical to wildlife conservation around the globe.

As human pressures and wildlife populations increase in many regions in Europe and around the world, nature reserves are not sufficient for successful conservation. The need to share landscapes between humans and wildlife presents a major societal challenge. This calls for understanding human-wildlife interactions in complex spatial contexts to attune societal land use needs and wildlife habitat needs. The urgency to make this work has again been emphasized with the emergence of new dynamic social movements, such as the climate action marches of European youth, or the extinction rebellion movement. These movements are gaining attention and momentum and are requesting drastic transformation of policy and governance guiding our relationships with the natural world. For Pathways Europe 2020, we will explore the crucial question: how can we share landscapes in ways that are beneficial for both humans and wildlife, while social representation in decision making is increasingly dynamic and unpredictable?

<https://sites.warnercnr.colostate.edu/pathways/pathways-europe-2020/>