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R E V I E W

OTTERS IN NORTHEAST INDIA
A REVIEW OF THE SPARSE AVAILABLE INFORMATION

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Abstract: I review the status of our knowledge of three otter species *Lutra lutra*, *Lutrogale perspicillata*, and *Aonyx cinereus* (Mammalia: Carnivora: Mustelidae) reported to inhabit the Northeast region of India. I summarize the scant current documentation of otter distribution in eight Northeast states, and review human pressures on otters, which include a tradition of hunting and illegal trafficking. I searched publications that 1) record the confirmed presence of otters in states of the Northeast, and 2) report seizures of otters in the illegal wildlife trade in the states of the Northeast. I also consider the role of West Bengal, to the west of the region, in the illegal otter trade. The eight states that comprise Northeast India, are experiencing dramatic social shifts, increasing anthropogenic pressures, and decreasing regional isolation. A once highly remote and traditional region is being drawn slowly into the national and international economy, with marked consequences for wildlife. Confirmed records of otter species in the region are scarce, as are records of otter pelt seizure data.

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Keywords: Eurasian Otter, Smooth-coated Otter, Small-clawed Otter, Northeast India, hunting, illegal wildlife trade

INTRODUCTION

The Northeast region of India lies on three international borders: Myanmar to the east, Bangladesh to the west, and China to the north (Fig. 1). It encompasses the junction of two biodiversity hotspots: the paleo-arctic flora of the Tibetan highlands and the evergreen monsoon flora of Southeast Asia. Its diverse topography ranges from the snowy peaks of the Himalayas down to the deep gorges, tropical valleys, and abundant rivers in the south. While the Northeast constitutes only 8 % of the area of India, it hosts 60% of India's endangered species and the country's highest faunal diversity (Choudhury, 2006). There are many designated protected areas, including Kaziranga, Manas, Namdapha, Ntangki, Murlen, Sirohi, Manas and Nameri National Parks (NP), and numerous wildlife and forest reserves. Yet these reserves have often

experienced intense anthropogenic impacts from hunting, shifting agriculture, logging, and political turmoil.

There is very little research on otters in the region, even while an abundance of rivers and wetlands provide excellent habitat. Three species of otters have been documented, the Eurasian otter (*Lutra lutra* Linnaeus, 1758), Small-clawed otter (*Aonyx cinereus* Illiger, 1815) and Smooth-coated otter (*Lutrogale perspicillata* I. Geoffroy Saint-Hilaire 1826). The Red List of the International Union for the Conservation of Nature (IUCN) classifies the Smooth-coated otter and Small-clawed otter species as Vulnerable (Khoo et al., 2021; Wright et al., 2015) and the Eurasian otter as Near Threatened (Roos et al., 2021). All three species are decreasing across their range in Asia (Gomez and Shepherd, 2019).

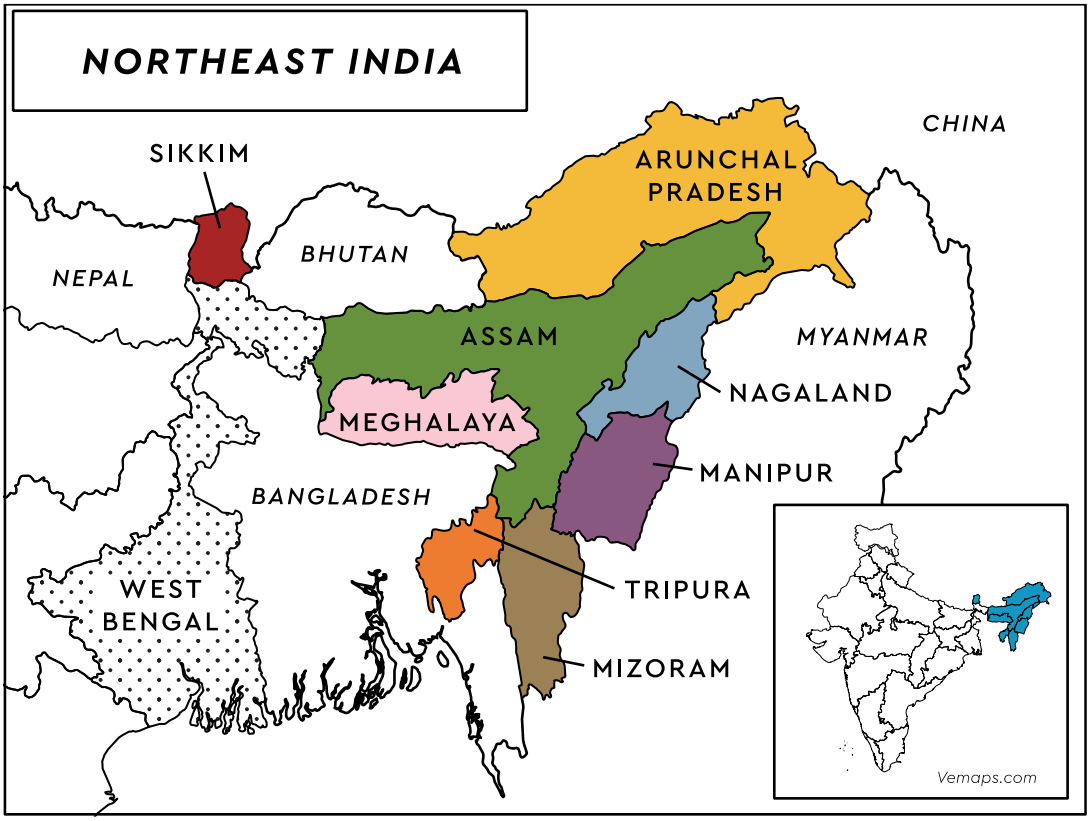


Figure 1. The eight states of Northeast India (color) and the adjacent state of West Bengal (dots).

The region, with a patchwork of 225 tribal groups, is an ethnically complex and sensitive area, with a tradition of local self-rule and historical resistance to national governance. In some states, such as Nagaland and Assam, there have been chronic separatist insurgencies. This has affected the management of wildlife, and protected reserves have sometimes been under the control of rebel groups and heavily hunted (Bhattacharya, 2017).

Hunting is deeply embedded in many tribal cultures of the Northeast. Much of the region bears a cultural affinity with Southeast Asia, where hunting is more traditional than in peninsular India (Aiyadurai et al., 2010). Guns are readily available and hunting is widespread, even within protected areas (Naniwadekar et al., 2013; Velho and Laurance, 2013). Animals, including otters, are killed for meat, medicine, retaliation, ceremonies and for the wildlife trade (Aiyadurai, 2007). Some tribes claim traditional management of the land and the right to hunt for subsistence and commerce (Velho and Laurance, 2013). Of 85 households surveyed in a village in Arunachal

Pradesh, for example, 54% reported hunting for subsistence, 25% for commercial trade, and 10% for medicinal purposes (Selvan et al., 2013). Hunting for consumption is slowly being replaced by hunting for income in Northeast India, that is, by the wildlife trade (Corlett, 2007).

Two features of the illegal wildlife trade in Northeast India are notable. First is the role of a history of insurgency and armed conflict in recent decades. Militant groups have been involved in hunting and poaching of wildlife, in Manipur and Assam for example, where wildlife products are sometimes traded for sophisticated arms (Guha, 2015). Secondly, international organized crime networks play a significant role in the illegal wildlife trade in parts of Northeast India (Levy and Scott-Clark, 2007). The presence in the region of organized crime syndicates based in China, Nepal and Thailand enables financial incentives, management of shipments across international borders, forgery of permits, and provision of weaponry associated with drug trafficking (Levy and Scott-Clark, 2007).

Traditional hunting in the region now takes place against a background of intensifying pressures on wildlife and while once sustainable, is now contributing to a steep decline in wildlife populations (Aiyadurai et al., 2010; Bupathy et al., 2013). Depletion of wildlife populations in Southeast Asia has increased demand from Northeast India. Prices for wild animal products have soared, as has demand in Southeast Asia and China (Niraj et al., 2012). Declines across many mammal populations near the border with Myanmar due to illegal hunting are documented in the Ziro Valley (Selvan et al., 2013) and Namdapha NP (Datta et al., 2008a) in Arunachal Pradesh, reflecting similar patterns of hunting and wildlife decline in northern Myanmar (Rao et al., 2011). Datta et al., (2008b) suggest that hunting in the area has created an “empty forest” phenomenon.

Otters are among the species hunted in the Northeast but the level of hunting pressure on otters is poorly documented. Hunting otters for the illegal trade, in contrast to traditional uses such as food or medicine, is increasing in the region because of the high value of their pelts (Datta et al., 2008b; Aiyadurai, 2011). Datta et al. (2008b) suggest that otters are highly threatened by commercial hunting in Namdapha NP, near the Myanmar border, where hunters from Myanmar and China poach otters for sale outside the region (Chetry and Medhi, 2006). The high value of otter pelts is reflected in their frequent bundling with other high value wildlife products such as tiger skins, ivory and rhino horn. Lucrative wildlife parts can also be packaged with narcotics and arms, and sent across porous international borders (Niraj et al., 2012). Despite a complete ban on trade and hunting of wildlife added to the 1972 Wildlife Protection Act of India, the conviction rate for wildlife crimes is only 2.5% (Goswami, 2016), probably much lower in the Northeast. Many of the region’s protected areas are remote and poorly staffed, and wildlife protection is weak.

Cross-border trade routes have existed for centuries in the Northeast: to the east into Myanmar and China and to the west through the states of West Bengal and Sikkim to Nepal and China. Myanmar shares a 1,643 km border with Arunachal Pradesh, Nagaland, Manipur and Mizoram, a long and porous border now considered a backdoor for wildlife trafficking to China through that country (Mitral 2006). The largest city in the Northeast, Guwahati in Assam, has become a major hub for international illegal trade, handling wildlife products transshipped, often by air, from other parts of India into China via Myanmar (Megalaya Times, 2010). Trading hubs trafficking into Myanmar include Imphal and Moreh in Manipur, near the Myanmar border (Sangai Express, 2016), Dimapur in Nagaland, due to its proximity to Kaziranga NP (Megalaya Times, 2010), Aizwal in Mizoram, and Shillong in Meghalaya (Bupathy 2013).

Poachers from Myanmar cross the border into Namdapha NP in Arunachal Pradesh to take otters for the China market (Datta et al., 2008b). Otter pelts from the Northeast are also reported to travel westward to smuggling gateway cities of Siliguri and Darjeeling in West Bengal (Martin, 1999), then north to Sikkim and onwards to the Tibet Autonomous Region through the ancient trade route of the Nathula Pass (Zeigler et al., 2010).

METHODS

Scholarly papers that included records of sightings or otter sign (tracks, scat, latrines) were searched in Google Scholar, and records of seizure of otter pelts were searched in online publications including regional newspapers and online reports (November 2021) using the search terms "otters","illegal otter trade","otter seizures","otter pelt" and "otter skin" for the Northeast states and West Bengal from 1994 to 2020. Records of otter pelt seizures were also searched for the adjacent state of West Bengal, because of its important role in trafficking wildlife north into China. Published papers and the database of the Wildlife Crime Database of the Wildlife Protection Society of India were also searched. Only reliable publications, survey data, or photographs from 1997 forward were included, given the rapidly shifting status of otters in South Asia. Species, origin and destination were not usually reported.

RESULTS

Documented otter presence

There are exceptionally few confirmed records of otter presence in the Indian Northeast. Most are from the two northern states, Assam and Arunachal Pradesh.

Das et al. (2007) and Sinha et al. (2020) reported Smooth-coated otters in Manas NP in Assam. Smooth-coated otters have been photographed numerous times in Kaziranga NP, Assam, (e.g., Bhattacharya, 2013). The release of a Small-clawed otter pup rescued from a flood in Kaziranga NP was recorded by The Assam Tribune (2015). Saikia and Saikia (2012) reported Eurasian otters observed by park staff in Nameri NP.

All three otter species have been documented in Arunachal Pradesh, a large, remote state bordering on China and Myanmar. Borker and Gogi (2019) conducted a rapid survey in Pakke Tiger Reserve, documenting 20 sign of Small-clawed otters and 23 sign of Eurasian Otters. The presence of Eurasian otters (Chetry and Madhi, 2006) in the Dibang Wildlife Sanctuary and Small-clawed otters in the Namdapha Tiger Reserve have been documented (Datta et al., 2008b; Naniwadekar et al., 2013), and Smooth-coated otters (Medhi et al., 2014) and Eurasian Otters (Bhattacharya et al., 2019) have been photographed in Nyamjang Chu Valley.

A survey by Khatiwara et al. (2020) found a meager amount of otter sign along the Teesta and Rangeet Rivers, the major rivers in Sikkim. In 2016, officers of the Forest Environment Management and Wildlife Department in Sikkim rescued, rehabilitated, and released a female Eurasian otter found in a small hill stream in northern Sikkim (Khatiwara et al., 2020). Beyond these few records, there are only unconfirmed, informal reports of otters elsewhere in the Northeastern states, in Manipur, Meghalaya, Tripura, Mizoram and Nagaland, where no systematic surveys or studies have been conducted.

Documented seizure incidents

Fifty otter pelts seized in 8 incidents were reported from the Northeast States from 1997 to 2017 (Table 1). Half of the incidents, 4, were reported in Assam, a state adjacent

to West Bengal. Three seizure incidents occurred in Arunachal Pradesh and one in Meghalaya.

Table 1. Seizures of otter pelts in Northeast India, 1997-2017

Date	State	Location	Number of Pelts	Source
1997	Meghalaya	Garo Hills	13	TRAFFIC Bulletin (2012)
1998	Assam	Sonitpur	1	WPSI (2015)
2001	Arunachal Pradesh	Lohit	3	Banks & Newman (2004)
2009	Assam	Barpeta	5	WPSI (2015)
2009	Assam	Barpeta	1	Robin de Bois # 2 (2013)
2011	Arunachal Pradesh	Dibang Wildlife Sanctuary	8	Pandey (2009)
2011	Arunachal Pradesh	Dibang Wildlife Sanctuary	15	Arunachal Times (2011)
2017	Assam	Dhemaji District	4	New Indian Express (2017)
Total			**50**	

The numbers of otter pelts seized in the adjacent state of West Bengal are greater than in the Northeast states, reflecting its role as a major hub for wildlife trafficking through Sikkim into Nepal and China. Many of these pelts likely originate in the Northeastern states. In 9 incidents in the West Bengal a total of 248 otters were seized, most in the large towns of Darjeeling and Siliguri (Table 2).

Table 2. Seizures of otter pelts in West Bengal, India, 1994-2014

Date	State	Location	Number of pelts	Source
1994	West Bengal	Darjeeling	9	WPSI (2015)
1995	West Bengal	Nadia	5	WPSI (2015)
1996	West Bengal	Darjeeling	94	WPSI (2015)
2000	West Bengal	Darjeeling	81	WPSI (2015)
2003	West Bengal	Siliguri	19	Chakravorty (2003)
2011	West Bengal	Siliguri	19	Wildlife Trust of India (2015)
2014	West Bengal	Baikunthapur Forest	1	Robin de Bois #5 (2014)
2014	West Bengal	Jalpaiguri	1	WPSI (2015)
2020	West Bengal	Siliguri	19	Wildlife Trust of India (2020)
Total			**248**	

DISCUSSION AND CONCLUSION

Otter species are presumed to inhabit Northeast India, but there is little information to confirm their distribution and status there. These three otter species deserve greater research attention in the region given the quality of habitat there and the decline of otter populations across South Asia. The documented record of otter pelt seizures is also very sparse, in contrast to the numerous illegal trade seizure records for otters in the rest of India (Gomez et al., 2016). Even records from the Northeast of trafficked high-profile species such as tiger, leopard, and rhinos are relatively sparse (Goswami, 2016). Declines in numbers of otter seizure records over time may reflect the success of trafficking suppression or the prevailing weak enforcement of regional

trafficking, but perhaps more likely, an increasing scarcity of otters. In any case, the vast majority of illegal wildlife trafficking likely goes undetected (Gomez et al., 2016).

The Indian Northeast is being rapidly reshaped through the development of commercial markets, road construction, communications, and hydroelectric generation projects. Cash is becoming a more necessary medium of exchange, for sending children to school or paying for medical treatment (Aiyadurai, 2011). Poaching is seen as a way to supplement income (Aiyadurai, 2007). Ever more fluid international trade patterns are changing social relationships. In some areas, otter hunting is a relatively new practice, using traps acquired in Myanmar (Aiyadurai and Velho, 2016). Hunting as an aspect of spiritual well-being of communities, including restraints such as taboos on hunting in certain seasons, appear to be eroding (Aiyadurai, 2011).

The entities in India working to reduce wildlife trafficking, including the Wildlife Control Bureau, as well as State Forest Departments, customs agents, and local police forces, need to focus more attention on the trafficking of otters in the Northeast States. Broad collaborations are useful, such as the recent formation of an interagency entity between enforcement agencies of Assam, Manipur and Nagaland to address the illegal trade.

The deep relationship of local people to their natural environment means that wildlife conservation is ultimately in the hands of the many indigenous communities of the Northeast. India has acknowledged this with the 2005 Recognition of Forest Rights legislation, which gave property and livelihood rights to tribal communities (Niraj et al., 2012), in principle strengthening local control. A large proportion of land in the region is community-managed, 62% for example in Arunachal Pradesh (Velho et al., 2016). One community-based resource success story is that of Manas NP in Assam. Bodo tribal communities felt their land rights threatened, when, in 1985, a 39,100 ha area was protected as a Natural World Heritage Site. Armed tribal rebels took control of the park in the 1990s, with negative impacts on wildlife populations, extirpating rhinos completely (Bhattacharya, 2017). A 2003 peace accord created a system of self-rule in the form of the Bodoland Territorial Council, and former guerillas now consider themselves protectors of the park and its wildlife and serve as an anti-poaching force (Bhattacharya, 2017). Indigenous communities of the Northeast must be partners in a collaborative solution if wildlife, including otters, in Northeast India is to be conserved.

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REFERENCES

Aiyadurai, A. (2007). Hunting in a biodiversity hotspot: a survey on hunting practices by indigenous communities in Arunachal Pradesh, North-east India. Technical Report to Rufford Small Grants Foundation, London, UK, 43pp.

Aiyadurai, A. (2011). Wildlife hunting and conservation in Northeast India: a need for an interdisciplinary understanding. *Int'l J. of Galliformes Cons*. **2**: 61-73.

Aiyadurai, A., N.J. Singh Milner-Gulland, E.J. (2010). Wildlife hunting by indigenous tribes: a case study from Arunachal Pradesh, north-east India. *Oryx* **44**: 564-572.

Aiyadurai, A., Velho, N. (2016). Wildlife hunting in the North East is much more complex than the simple act of killing. https://scroll.in/article/822350/wildlife-hunting-in-the-north-east-is-much-more-complex-than-the-simple-act-of-killing .

Assam Tribune. (2015). Small-clawed otter released in the wild. https://assamtribune.com/small-clawed-otter-released-in-the-wild

Banks, D., Newman, J. (2004). The Tiger Skin Trail. Environmental Investigation Agency, Bangkok. 24pp.

Bhattacharya, B.K. (2017). India's Manas National Park illustrates the human dimension of rhino conservation. *Mongabay Open Access J.* https://news.mongabay.com/2017/02/indias-manas-national-park-illustrates-the-human-dimension-of-rhino-conservation/

Bhattacharya, B.K. (2013). http://www.arindambhattacharya.com/blog/memories-2015-photographs/otter-kaziranga-arindam-bhattacharya-ab_9383/

Bhattacharya, B.K., Waltham, T., Gopi, G.V. (2019). Photographic Records of Eurasian Otter (*Lutra lutra* Linnaeus, 1758) from Nyamjang Chu River, Arunachal Pradesh, India. *IUCN Otter Spec. Group Bull*. **36**: 103-109. https://www.iucnosgbull.org/Volume36/Bhattacharya_et_al_2019.html

Borker, A., Gogi, K. (2019). Rapid Otter Survey in Arunachal Pradesh. Final Report to the IUCN Otter Specialist Group. https://www.himalayanotternetwork.org/research/

Bupathy, S., Kumar, S.R., Thirumalain, P., Paramanandham, J., Lemba, C. (2013). Wildlife exploitation: a market survey in Nagaland, North-eastern India. *Tropical Cons. Sci.* **6**: 241-253. https://doi.org/10.1177/194008291300600206

Chakravorty, K. (2003). Haul blows lid off animal parts trade - Police seize pelts worth Rs 50 lakh. The Telegraph Online. https://www.telegraphindia.com/west-bengal/haul-blows-lid-off-animal-parts-trade-police-seize-pelts-worth-rs-50-lakh/cid/842461

Chetry, D., Medhi, R. (2006). Primate survey in Dibang Wildlife Sanctuary in Arunachal Pradesh, India and its conservation perspectives. Report to the Rufford Small Grants Fnd., London, UK and Aaranyak, Guwahati, Assam, India, 20pp.

Choudhury, A. (2006). The status of endangered species in Northeast India. J. *Bombay Nat. Hist. Soc*. **103**: 157-167.

Corlett, R.T. (2007). The impact of hunting on the mammalian fauna of tropical Asian forests. *Biotropica* **39**: 292-303.

Das, C., Ahmed, M.F., Das, A., Singha, H. (2007). Status and distribution of otters in Western Assam, India. Aaranyak Rept. Assam, India. 30pp.

Datta, A., Anand, M.O., Naniwadekar, R. (2008a). Empty forests: large carnivore and prey abundance in Namdapha National Park, north-east India. *Biol. Cons*. **141**: 1429-1435.

Datta, A., Naniwadekar. R., Anand, M.O. (2008b). Occurrence and conservation status of small carnivores in two protected areas in Arunachal Pradesh, north-east India. *Small Carniv. Cons.* **39**: 1-10.

Gomez, L., Leupen, B.T.C., Theng, M., Fernandez, K, Savage, M. (2016). Illegal otter trade: an analysis of seizures in selected Asian countries (1980-2015). Kuala Lumpur: TRAFFIC. Petaling Jaya, Selangor, Malaysia. 44pp.

Gomez, L., Shepherd, C.R. (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**: 71-76. https://www.iucnosgbull.org/Volume36/Gomez_Shepherd_2019.html

Goswami, U. (30 July 2016). Lesser known species like Otter, Pangolin form a large part of wildlife trade. https://economictimes.indiatimes.com/news/politics-and-nation/lesser-known-species-like-otter-pangolin-form-a-large-part-of-wildlife-trade/articleshow/53458633.cms

Guha, N. (20 August 2015). The tale of the flourishing multi-million wildlife trade. https://nabarunspeaks.wordpress.com/2015/08/20/the-tale-of-the-flourishing-multi-million-wildlife-trade/

Khatiwara, S. and Bhutia, K.C. (2020). A Distribution Survey For Otters In Sikkim, India. *IUCN Otter Spec. Group Bull.* **37** (4): 212 - 218 https://www.iucnosgbull.org/Volume37/Khatiwara_Bhutia_2020.html

Khoo, M., Basak, S., Sivasothi, N., de Silva, P.K. & Reza Lubis, I. (2021). *Lutrogale perspicillata*. The IUCN Red List of Threatened Species 2021: e.T12427A164579961. https://dx.doi.org/10.2305/IUCN.UK.2021-3.RLTS.T12427A164579961.en

Levy, A., Scott-Clark, C. (2007). Poaching for Bin Laden. The Guardian, 4 May 2007. https://www.theguardian.com/world/2007/may/05/terrorism.animalwelfare

Martin, E. (1999). West Bengal - Committed to rhino conservation yet a major entrepot for endangered wildlife products. *Pachyderm* **27**: 105-112.

Medhi, K., Chakraborty, R., Upadhyay, J. (2014). Photographic record of smooth-coated otter (*Lutrogale perspicillata* Geoffroy 1826) in Nyamjang Chu Valley, Arunachal Pradesh, India. IUCN Otter Spec. Group Bull. **31**: 75-79. https://www.iucnosgbull.org/Volume31/Medhi_et_al_2014.html

Meghalaya Times (21 June 2010). Assam's international airport a hub for smuggling wildlife products? https://bigcatrescue.org/assams-international-airport-a-hub-for-smuggling-wildlife-products/

Mitral, N. (7 September 2006). Myanmar, not Nepal, is now the primary route for smuggling rhino horns from Assam. The Times of India. http://timesofindia.indiatimes.com/india/Myanmar-not-

Nepal-is-now-the-primary-route-for-smuggling-rhino-horns-from-Assam-Report/articleshow/54051431.cms

Naniwadekar, R., Shukla, U., Viswanathanv, A., Datta. (2013). Records of small carnivores from in and around Namdapha Tiger Reserve, Arunachal Pradesh, India. *Small Carniv. Cons.* **49**: 1-8.

New Indian Express. (2017). Massive seizure of animal parts in Assam. https://www.newindianexpress.com/nation/2017/aug/27/massive-seizure-of-animal-parts-in-assam-two-from-arunachal-pradesh-arrested-1648604.html

Niraj, S.K., Krausman, P.R., Dayal, V. (2012). A stakeholder perspective into wildlife policy in India. *J. of Wildl. Mgmt.* **76**: 10-18.

Pandey, R.K. (2009). Role of Bawaria gangs in poaching of tigers and leopards and their linkages in illegal trans-boundary wildlife trade. Wildlife Trust of India Archives. 21pp. http://docplayer.net/65412070-Role-of-bawaria-gangs-in-poaching-of-tigers-and-leopards-and-their-linkages-in-illegal-trans-boundary-wildlife-trade.html

Rao, M., Zaw, T., Htun, S, Myint, T. (2011). Hunting for a living: wildlife trade, rural livelihoods and declining wildlife in Hkakaborazi National Park, North Myanmar. *Envir. Mgmt.* **48**: 158-167.

Robin de Bois. (2013). On the Trail No. 2. https://www.robindesbois.org/wp-content/uploads/ON_THE_TRAIL_2.pdf

Robin de Bois. (2014). On the Trail No. 5. https://robindesbois.org/wp-content/uploads/ON_THE_TRAIL_5.pdf

Roos, A., Loy, A., Savage, M. & Kranz, A. (2021). *Lutra lutra*. The IUCN Red List of Threatened Species 2021: e.T12419A164578163. https://dx.doi.org/10.2305/IUCN.UK.2021-3.RLTS.T12419A164578163.en

Saikia, M.K., Saikia, P.K. (2012). Wildlife habitat evaluation and mammalian checklist of Nameri National Park, Assam, India. *Bioresearch Bull.* **4**: 185-199.

Sangai Express. (2016). Threats and obstacles in conservation of biodiversity in Manipur. http://e-pao.net/epSubPageExtractor.asp?src=education.Science_and_Technology.Threats_obstacles_in_conservation_of_biodiversity_in_Manipur_Part_1_By_Kh_Hitler

Selvan, K.M., Veeraswami, G.G., Habib, B., Lyngdoh, S. (2013). Losing threatened and rare wildlife to hunting in Ziro Valley, Arunachal Pradesh, India. *Current Sci.* **104**: 1492-1495.

Sinha, A., Devi, N., Potter, A.B. (2020). Sighting of a Smooth-coated Otter *Lutrogale perspicillata* in Manas National Park, Assam, India. IUCN Otter Spec. Group Bull. **37**: 136-139. https://www.iucnosgbull.org/Volume37/Sinha_et_al_2020.html

The Arunachal Times. (11 March 2011). Three poachers arrested, fifteen skins of endangered otters seized. http://www.arunachaltimes.in/archives/mar11%2011.html

TRAFFIC. (2012). TRAFFIC Bulletin Seizures and Prosecutions: **16**(3) (March 1997) to **24**(1) (April 2012).

Velho, N., Laurance, W.F. (2013). Hunting practices of an Indo-Tibetan Buddhist tribe in Arunachal Pradesh, north-east India. *Oryx* **47**: 389-392.

Velho, N., Sreekar, R., Laurance, W.F. (2016). Terrestrial species in protected areas and community-managed lands in Arunachal Pradesh, Northeast India. *Land* **5**: 35.

Wildlife Protection Society of India. (2015). Otter Skin Seizure Cases, 1980 to 2015. Wildlife Crime Database. Response to Request.

Wildlife Trust of India. (2020). Major seizure of wildlife articles made in Siliguri. https://www.wti.org.in/news/major-seizure-of-wildlife-articles-made-in-siliguri/

Wright, L., de Silva, P.K., Chan, B., Reza Lubis, I. & Basak, S. (2021). *Aonyx cinereus.* The IUCN Red List of Threatened Species 2021: e.T44166A164580923. https://dx.doi.org/10.2305/IUCN.UK.2021-3.RLTS.T44166A164580923.en

Zeigler, S., Gebauer, A., Melisch, R., Sharma, B.K., Ghose, P.S., Chakraborty, R., Shrestha, P., Ghose, D., Legshey, K., Pradhan, H., Bhutia, N.T., Tambe, S., Sinha, S. (2010). Sikkim - under the sign of the red panda, pp. 79-92. In: Zeitschrift des Kolner **53**. Jahrgang, Heft 2. Appendix 1. Data Sources

RESUME

LES LOUTRES DANS LE NORD-EST DE L'INDE, UN APERÇU DES INFORMATIONS EPARSES DISPONIBLES

Nous avons passé en revue l'état de nos connaissances sur trois espèces de loutres *Lutra lutra, Lutrogale perspicillata* et *Aonyx cinereus* (*Mammalia : Carnivora : Mustelidae*) signalées comme présentes dans la région du Nord-Est de l'Inde. Ce résumé mentionne le peu d'informations actuelles sur la distribution des loutres dans huit États du Nord-

Est et passe en revue les pressions humaines sur les loutres qui incluent une tradition de chasse et de trafic illégal. La recherche a été axée sur des publications qui 1) mentionnent la présence confirmée de loutres dans les États du Nord-Est, et 2) signalent des saisies de loutres dans le commerce illégal d'espèces sauvages dans les États du Nord-Est. Le rôle du Bengale occidental, à l'ouest de la région, dans le commerce illégal de loutre est également cité. Les huit États qui composent le Nord-Est de l'Inde connaissent des changements sociaux spectaculaires, des pressions anthropiques croissantes et une réduction de l'isolement régional. Cette région, autrefois très éloignée et traditionnelle, a lentement évolué vers l'économie nationale et internationale, avec des conséquences attestées pour la faune sauvage. Les observations confirmées d'espèces de loutres dans la région sont rares, tout comme les enregistrements de données sur les saisies de peaux de loutre.

RESUMEN

LAS NUTRIAS EN EL NORESTE DE INDIA – REVISIÓN DE LA INFORMACIÓN DISPERSA DISPONIBLE

Reviso el status de nuestro conocimiento de las tres especies de nutria *Lutra lutra*, *Lutrogale perspicillata* y *Aonyx cinereus* (Mammalia: Carnivora: Mustelidae), que se ha informado que habitan en la región Noreste de India. Resumo la escasa documentación actual sobre la distribución de nutrias en ocho estados del Noreste, y reviso las presiones humanas sobre las nutrias, que incluyen una tradición de caza y tráfico ilegal. Realicé una búsqueda en publicaciones que 1) registren la presencia confirmada de nutrias en los estados del Noreste, y 2) informen secuestros de nutrias en el comercio ilegal en los estados del Noreste. También considero el rol de Bengala Occidental, hacia el oeste de la región, en el comercio ilegal de nutrias. Los ocho estados que comprende el Noreste de India están experimentando cambios sociales dramáticos, presiones antropogénicas en aumento, y disminución del aislamiento regional. Una región anteriormente altamente remota y tradicional está siendo integrada lentamente en la economía nacional e internacional, con marcadas consecuencias sobre la fauna. Los registros confirmados de especies de nutrias en la región son escasos, como lo son también los registros de datos sobre secuestro de cueros de nutria.