

## 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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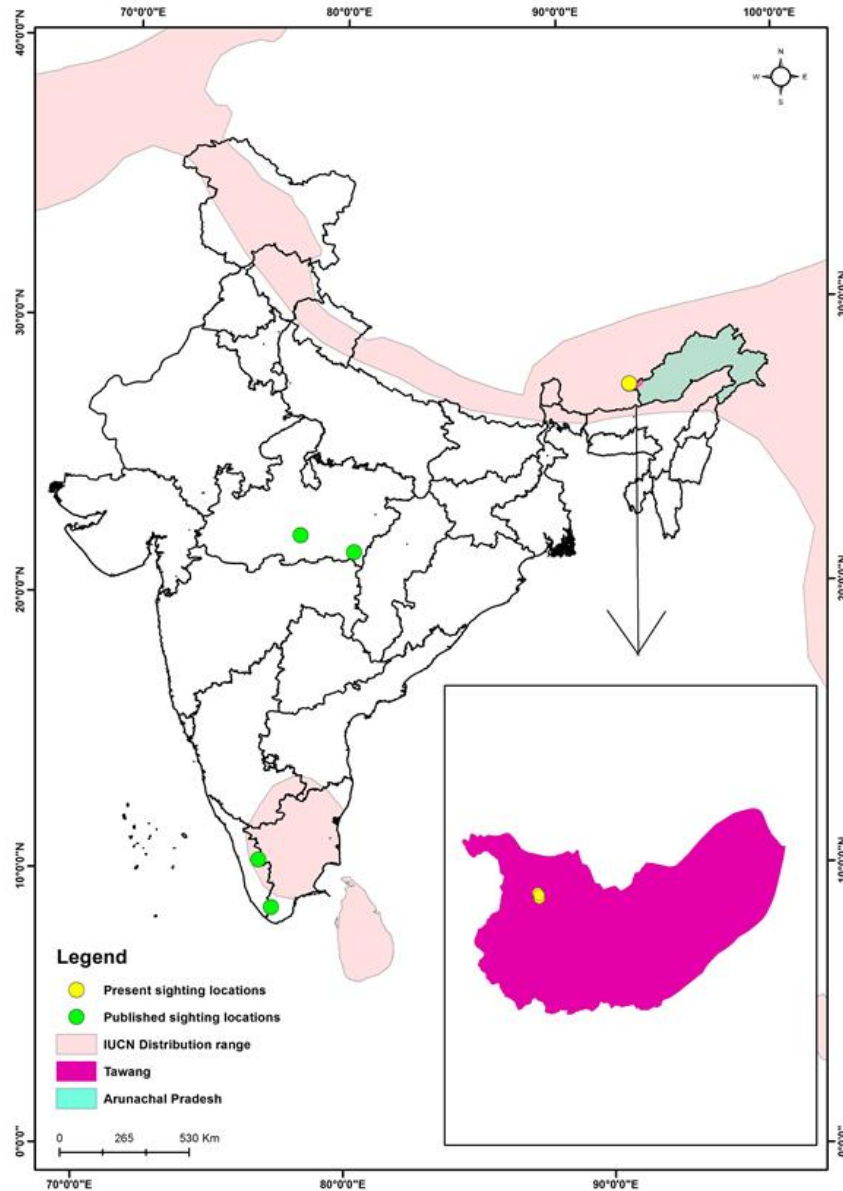
**Abstract:** A few individuals of Eurasian otters were sighted in the Nyamjang Chu river, Tawang district, Arunachal Pradesh during three months fieldwork between December 2017 and February 2018. The individuals were filmed and photographed swimming in the Nymjang Chu river. Previous records have listed 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

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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 ( $27^{\circ}43'16.39''\text{N}$ ,  $91^{\circ}.43'32.07''\text{E}$ ). 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

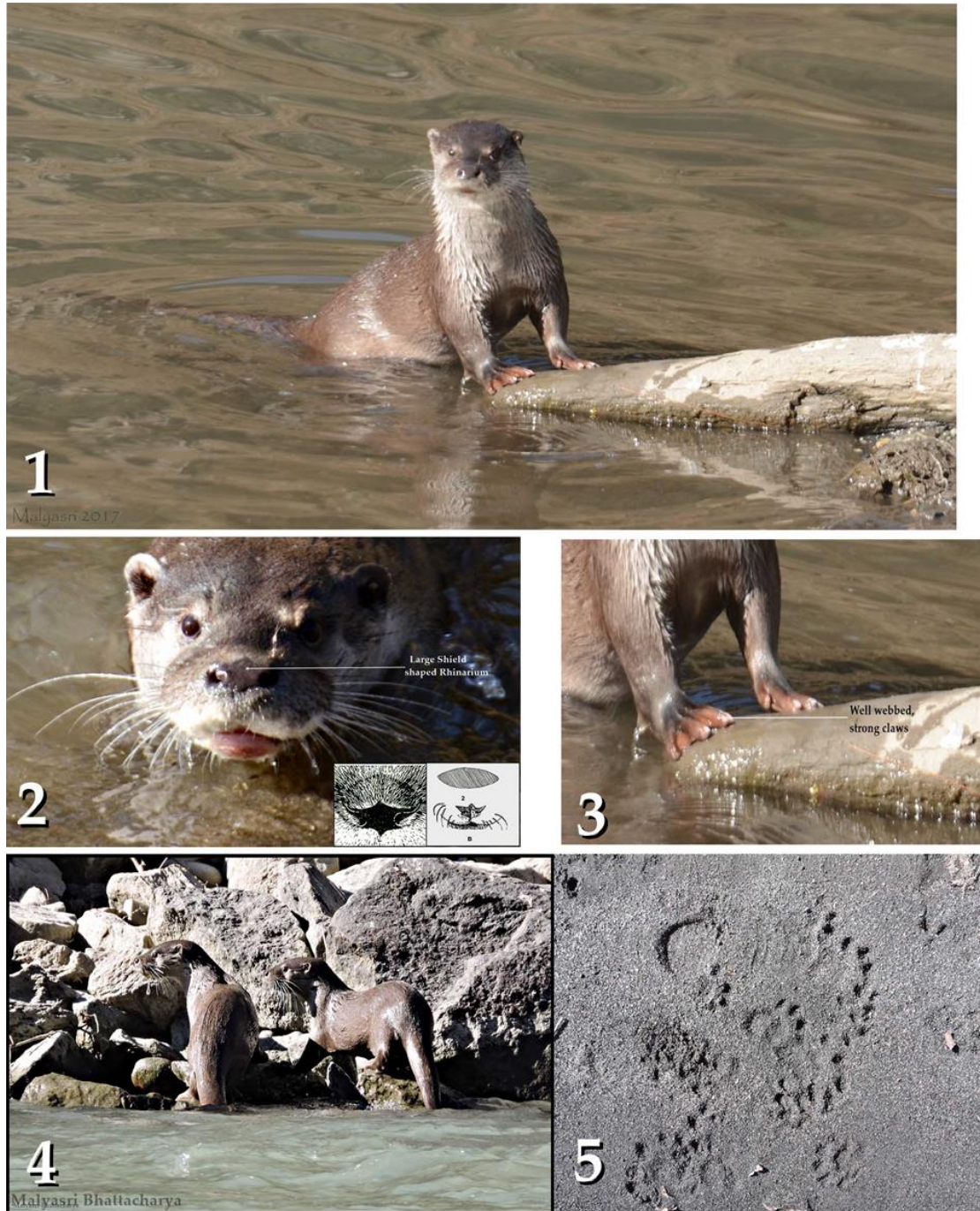
Date	Coordinates	Habitat characteristics	Record Details	Anthropogenic activities	Remarks
14.12.2017	27°43'16.39"N 91°43'32.07"E	Nyamjang Chu River with water depth 0.43-1.33m. Medium rocky bank substrate.	Direct sighting	Sand mining activities near the river bank.	One, feeding on fishes and swimming 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.</i> dominated found along the bank.	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 (Pacifi 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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## RESUME

### ENREGISTREMENTS PHOTOGRAPHIQUES DE LA LOUTRE EURASIENNE (*Lutra lutra* LINNAEUS, 1758) SUR LA RIVIÈRE NYAMJANG CHU, SITUEE DANS L'ETAT 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.