

## SHORT NOTE

### EURASIAN OTTER (*Lutra lutra*) OCCURRENCE IN HIRAKUD RESERVOIR, INDIA: A RAMSAR SITE AND THE ONE OF THE LONGEST EARTH DAMS IN THE WORLD

Himanshu Shekhar PALEI<sup>1\*</sup>, Nimain Charan PALEI<sup>2</sup>, Bhakta Padarbinda RATH<sup>2</sup>,  
Lalit Kumar PATRA<sup>3</sup>

<sup>1</sup>Aranya Foundation, Plot No-625/12, Mars Villa, Panchasakha Nagar, Dumduma, Bhubaneswar,  
Odisha 751019, India

<sup>2</sup>Office of the Principal Chief Conservator of Forests (Wildlife) & Chief Wildlife Warden, Odisha,  
India

<sup>3</sup>Divisional Forest Office, Jharsuguda Forest Division, Jharsuguda, Odisha, India

\*Corresponding Author: <mailto:himanshu.palei@gmail.com>



(Received 23<sup>th</sup> November 2023, accepted 19<sup>th</sup> March 2024)

**ABSTRACT:** The Eurasian otter (*Lutra lutra*) is an apex predator in aquatic ecosystems. The species is found in the Himalayas along the northern part of India, extending from the northwest to the northeast, as well as in the Western Ghats and central India. Due to a lack of detailed information on its biology, the Eurasian otter is considered one of the lesser-known species in India. We report the occurrence of the Eurasian otter in the Hirakud reservoir of Odisha, India. Further research, monitoring, and awareness campaigns for local stakeholders are necessary to design effective conservation strategies for the species.

**Citation:** Palei, H.S., Palei, N.C., Rath, B.P., and Patra, L.K. (2024). Eurasian Otter (*Lutra lutra*) Occurrence in Hirakud Reservoir, India: A Ramsar Site and One of the Longest Earth Dams in The World. *IUCN Otter Spec. Group Bull.* **41** (4): 167 - 173

**Keyword:** Eurasian otter, rescue, Mahanadi River, Jharsuguda forest division, Odisha, central India

### OBSERVATION

Effective conservation of a species requires a sound understanding of its distribution, habitat preferences, and other ecological requirements (Lambeck, 1997). The Eurasian otter (*Lutra lutra*), classified as "Near threatened" by the IUCN, is one of the least studied otter species in India. It is one of the most widely distributed Palearctic mammals, with a geographical range from Ireland in Western Europe to the Kamchatka Peninsula in eastern Asia, and from the Arctic region to North Africa, as far south as Sumatra and Indonesia in Southeast Asia (Mason and Macdonald, 1986). The species is now recovering in many parts of its range after suffering a substantial decline in Europe (Roos et al., 2015; Duplax and Savage, 2018). The species is vulnerable to urbanization, pollution, poaching, and dam construction; and is also listed in Appendix I of CITES. The Eurasian otter lives in a wide range of freshwater habitats, including rivers, streams, canals, lakes, marshes, deltas, and artificial reservoirs.

The Eurasian otter in India is distributed north of the Ganges River, throughout the Himalayas and northeast region, and along the Odisha coast up to Madras and south India (Hussain, 1999). Historically, the species was considered absent from central India (Pocock, 1941; Prater, 1971). However, recent studies have recorded the Eurasian otter in various regions such as the Chenab catchment and Bhagirathi Basin in the western Himalayas (Pal et al. 2021; Singh et al. 2023), Tawang district and Pakke tiger reserve of East Kameng district in Arunachal Pradesh of the eastern Himalayas (Bhattacharya et al. 2019; Borker et al. 2022), Balaghat forest circle and Satpura tiger reserve in Madhya Pradesh, and Kathghora forest division of Chhattisgarh of central India (Jena et al., 2016; Joshi et al., 2016; Talegaonkar et al., 2021; Suraj et al. 2022), the Anamalai Hills in Tamil Nadu of the Western Ghats (Mudappa et al., 2018), Sundargarh district in western Odisha (Palei et al. 2022), and Chilika Lake on the eastern coast of Odisha (Adhya and Dey, 2020) (Table 1, Fig. 1).

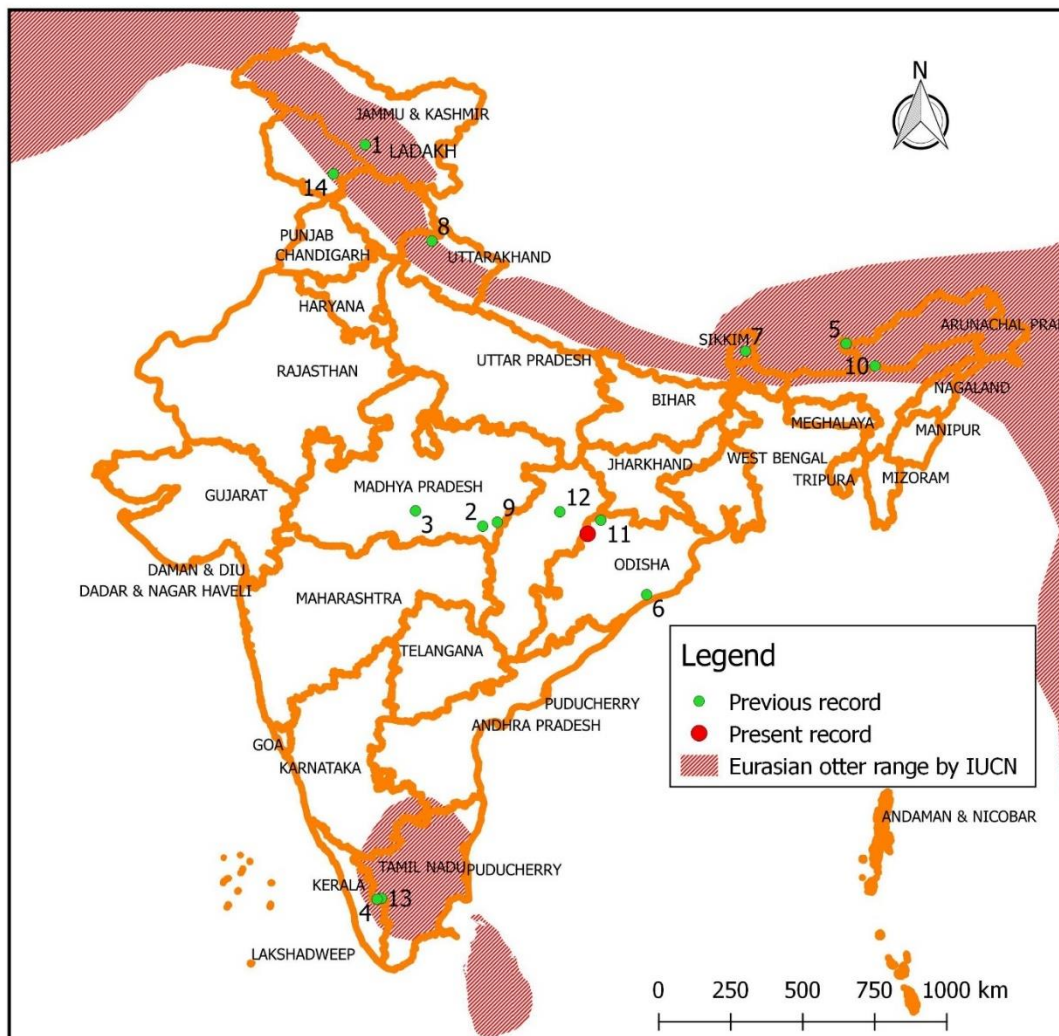
On March 5th, 2022, a Eurasian otter was rescued from Palasada village (21.768363° N, 83.602356° E, altitude 221 m) in the Jharsuguda forest division of Odisha, India (Fig. 1, 2 and 3). The otter was a sub-adult male. The otter was identified by its pronounced muzzle, zig-zag, or "W"-shaped naked rhinarium and cone-shaped tail. The animal appeared healthy with no observed internal or external injuries. The following day, the Eurasian otter was released back into the Hirakud reservoir, which is 4 km away from the village where it was rescued. Recently, Palei et al. (2022) reported the presence of Eurasian otters in the Sundargarh district of western Odisha, approximately 60 km from our current location, indicating an expansion from their previously documented geographic range. During the survey, we encountered several otter spraints and footprints along the reservoir bank. Informal discussions with villagers confirmed the presence of different species of otters of in the reservoir area. However, based on the otter signs observed, we were unable to confirm the presence of other otter species such as the Asian small-clawed otter (*Aonyx cinerea*) and smooth-coated otter (*Lutrogale perspicillata*), which have been reported in different parts of the state (Mohapatra et al., 2014; Debata and Palei, 2020; Palei et al., 2020; Palei et al., 2023a). It is worth noting that a recent study by Palei et al. (2023b) reported the presence of smooth-coated otters near the Hirakud reservoir.

The Hirakud reservoir is a major man-made lake constructed between 1948 and 1956 across the Mahanadi River, one of the largest rivers in India. The reservoir serves multiple purposes, including irrigation, hydropower generation, and flood control. The reservoir covers an area of 743 km<sup>2</sup>, with a length of approximately 55 km, and has a total storage capacity of 8.1 billion cubic meters, making it world's longest earthen dam. On October 12th, 2021, the reservoir was declared a Ramsar Site, and it has also been accorded the status of an Important Bird and Biodiversity Area (IBA) along with the Debrigarh wildlife sanctuary, supporting 112 water and water-dependent birds, including several threatened and endangered species (Nair et al. 2014). Therefore, the Hirakud reservoir is an important ecological site in the region. The habitat along the banks of the Hirakud reservoir comprises a mosaic of diverse ecological zones. These include forested areas adjacent to the Debrigarh Wildlife Sanctuary, open grasslands or scrublands in drier sections of the reservoir banks, and marshy areas found in low-lying or inundated zones. Aquatic vegetation and floating plants are observed in areas where water levels fluctuate.

**Table 1.** Recent records of Eurasian otter (*Lutra lutra*) in India

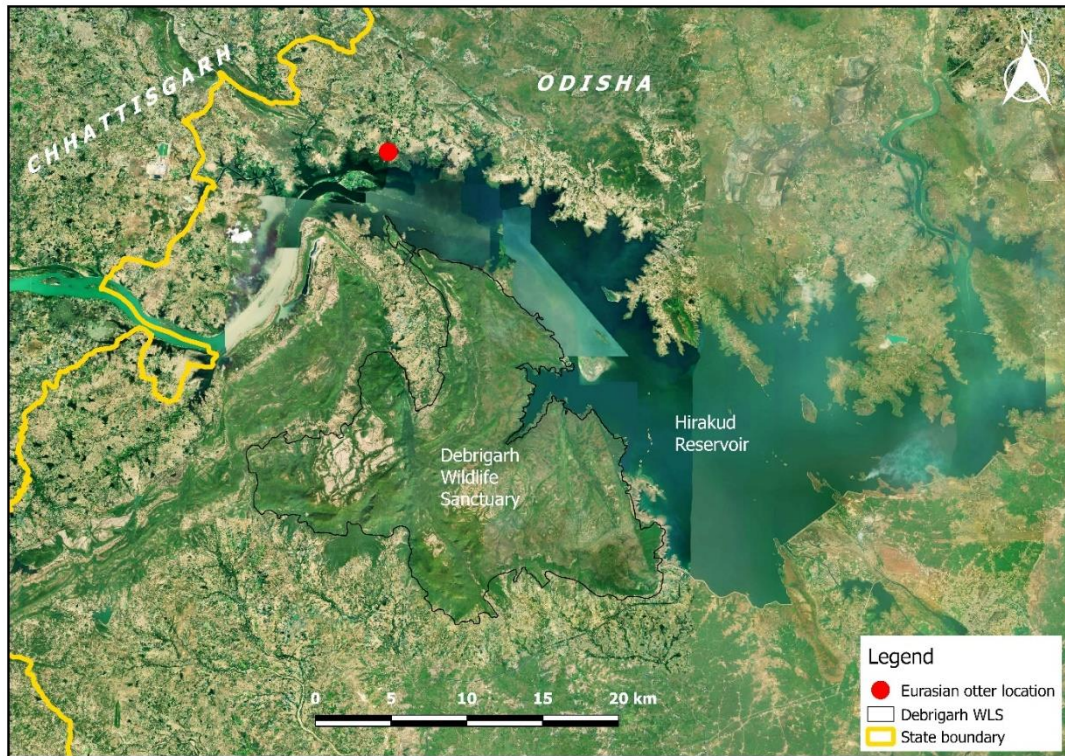
Sl. No.	Locations	References
1.	Upper Indus River, Ladakh	Jamwal et al. (2016)
2.	Balaghat, Madhya Pradesh	Jena et al. (2016)
3.	Satpura Tiger Reserve, Madhya Pradesh	Joshi et al. (2016)
4.	Anaimalai Hills, Tamil Nadu	Mudappa et al. (2018)
5.	Nyamjang Chu River, Arunachal Pradesh	Bhattacharya et al. (2019)
6.	Chilika Lake, Odisha	Adhya et al. (2020)
7.	Mangan, Sikkim	Khatiwara et al. (2020)
8.	Bhagirathi Basin, Uttarakhand	Pal et al. (2021)
9.	Kanha National Park, Madhya Pradesh	Uikey et al. (2021)
10.	Pakke Tiger Reserve, Arunachal Pradesh	Borker et al. (2022)
11.	Sundargarh Forest Division, Odisha	Palei et al. (2022)
12.	Korba & Kathagora Forest Division, Chhattisgarh	Suraj et al. (2022)
13.	Chinnar Wildlife Sanctuary, Kerala	Mohan et al. (2023)
14.	Chenab Catchment, Jammu & Kashmir	Singh et al. (2023)

note: Sl numbers of locations correspond with numbers in Figure 1.



**Figure 1.** Map showing the recent records of Eurasian otter (*Lutra lutra*) in India (numbers refer to Table 1)





**Figure 2.** Map showing the Hirkud Reservoir and Eurasian otter (*Lutra lutra*) rescued location in Odisha, India



**Figure 3.** Rescued individual of Eurasian otter (*Lutra lutra*) near Hirkud reservoir, Odisha, India

Systematic surveys are required to monitor the status and distribution of the Eurasian otter population and any other otter species in the Hirkud reservoir. This will provide valuable information for the management of interventions and targeted conservation actions. The recent increase in the occurrence of Eurasian otters in various parts of Odisha and India is concerning, and there is a need for awareness-raising programs, particularly for the local communities and forest departments, who may occasionally identify the species.

**Acknowledgments** - We are thankful to the Principal Chief Conservator of Forests (Wildlife) and Chief Wildlife Warden, Odisha Forest Department and Divisional Forest Officer, Jharsuguda Forest Division for supporting the study.

## REFERENCES

- Adhya, T., Dey, P. (2020).** First record of Eurasian otter (*Lutra lutra*) from Chilika lagoon: a Ramsar site situated on the East coast of India. *OTTER the Journal of the International Otter Survival Fund*, **6**: 49-55.
- Bhattacharya, M., Watham, T. and 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(2)**: 103-109.  
[https://www.iucnosgbull.org/Volume36/Bhattacharya\\_et\\_al\\_2019.html](https://www.iucnosgbull.org/Volume36/Bhattacharya_et_al_2019.html)
- Borker, A., Gogi, K., Krupa, H., Savage, M. and Bhardwaj, N. (2022).** Otter Survey in Pakke Tiger Reserve, Arunachal Pradesh, Eastern Himalayas of India. *IUCN Otter Spec. Group Bull.*, **39(1)**: 29-38. [https://iucnosgbull.org/Volume39/Borker\\_et\\_al\\_2022.html](https://iucnosgbull.org/Volume39/Borker_et_al_2022.html)
- Debata, S., Palei, H.S. (2020).** An updated checklist of mammals of Odisha, India. *Journal of Threatened Taxa*, **12(10)**: 16219-16229. <https://doi.org/10.11609/jott.6025.12.10.16219-16229>
- Duplaix, N., and Savage, M. (2018).** The Global Otter Conservation Strategy. IUCN/SSC Otter Specialist Group, Salem, Oregon, USA. <https://www.otterspecialistgroup.org/osg-newsite/wp-content/uploads/2019/02/IUCN-Otter-Report-On-Line-SP.pdf>
- Hussain, S.A. (1999).** Status of otter conservation in India, *ENVIS Bulletin on Wildlife & Protected Areas. Wildlife Institute of India*. **2(2)**: 92-97.
- Jamwal, P., Takpa, J., Chandan, P., Savage, M. (2016).** First systematic survey for otter (*Lutra lutra*) in Ladakh, Indian trans Himalayas. *IUCN/SSC Otter Spec. Group Bull.*, **33**: 79-85. [https://www.iucnosgbull.org/Volume33/Jamwal\\_et\\_al\\_2016.html](https://www.iucnosgbull.org/Volume33/Jamwal_et_al_2016.html)
- Jena, J., Bhargava, D., Borah, J., Dey, S. (2016).** Notes on the occurrence of the Eurasian otter (*Lutra lutra* L.) in the forest of Balaghat, Madhya Pradesh, India. *IUCN SCC Otter Spec. Group Bull.*, **33(2)**: 59-63. [https://www.iucnosgbull.org/Volume33/Jena\\_et\\_al\\_2016.html](https://www.iucnosgbull.org/Volume33/Jena_et_al_2016.html)
- Joshi, A.S, Tumsare, V.M, Nagar, A.K, Mishra, A.K, Pariwakam, M.P. (2016).** Photographic records of Eurasian otter *Lutra lutra* from the Central Indian Landscape. *IUCN Otter Spec. Group Bull.*, **33(2)**: 73-78. [https://www.iucnosgbull.org/Volume33/Joshi\\_et\\_al\\_2016.html](https://www.iucnosgbull.org/Volume33/Joshi_et_al_2016.html)
- Khatiwara, S., 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.pdf](https://www.iucnosgbull.org/Volume37/Khatiwara_Bhutia_2020.pdf)
- Lambeck R.J. (1997).** Focal Species: a multi-species umbrella for nature conservation. *Conserv. Biol.*, **11(4)**: 849–856. <https://doi.org/10.1046/j.1523-1739.1997.96319.x>
- Mason, C.F., Macdonald, S.M. (1986).** *Otters: Ecology and Conservation*. Cambridge University Press, Cambridge, UK.
- Mohan, S.K., Nath, L.R., Subin, K.S., Govindankutty, S.K., Nameer, P.O. (2023).** Recent record of Eurasian Otter *Lutra lutra* (Linnaeus, 1758) (Mammalia: Carnivora: Mustellidae) from Kerala part of the Western Ghats, India and an insight into the behaviour and habitat preferences. *Journal of Threatened Taxa*, **15(12)**: 24352–24356. <https://doi.org/10.11609/jott.8505.15.12.24352-24356>
- Mohapatra, P.M., Palei, H.S., Hussain, S.A. (2014).** Occurrence of Asian small-clawed otter *Aonyx cinereus* in Eastern India. *Current Science*, 107: 367-370.
- Mudappa, D., Prakash, N., Pawar, P., Srinivasan, K., Ram, M.S., Kittur, S., Umapathy, G. (2018).** First record of Eurasian Otter *Lutra lutra* in the Anamalai Hills, Southern Western Ghats, India. *IUCN Otter Spec. Group Bull.*, **35(1)**: 47-56. [https://www.iucnosgbull.org/Volume35/Mudappa\\_et\\_al\\_2018.html](https://www.iucnosgbull.org/Volume35/Mudappa_et_al_2018.html)
- Nair, M.V., Panda, S. and Pradhan, A.K. (2014).** Hirakud wetlands, Odisha: A little known refuge and potential IBA for wintering waterfowl, pp. 186-201. In: **Gopi, G.V. and Hussain, S.A. (eds.)**. *Waterbirds of India*. Wildlife Institute of India, Dehradun, p. 368.
- Pal, R., Sharma, A., Dubey, V.K., Bhattacharya, T., Johnson, J.A., Sivakumar, K., and Sathyakumar, S. (2021).** A rare photographic record of Eurasian Otter *Lutra lutra* with a note on its habitat from the Bhagirathi Basin, western Himalaya, India. *Journal of Threatened Taxa*, **13(13)**: 20072-20077. <https://doi.org/10.11609/jott.6937.13.13.20072-20077>
- Palei, H.S., Mohapatra, P.P., Hussain, S.A. (2023a).** Habitat selection and diet of the Asian small-clawed otter in Karlapat Wildlife Sanctuary, Odisha, India. *Écoscience*, **30(1)**: 17–26. <https://doi.org/10.1080/11956860.2023.2165020>



- Palei, N.C., Palei, H.S., Rath, S., Rath, B.P., Mishra, A.K. (2022).** Photographic record of Eurasian otter *Lutra lutra* (Linnaeus, 1758) in Odisha, India. *IUCN Otter Spec. Group Bull.*, **39(2)**: 102-109. [https://www.iucnosgbull.org/Volume39/Palei\\_et\\_al\\_2022.html](https://www.iucnosgbull.org/Volume39/Palei_et_al_2022.html)
- Palei, N.C., Rath, B.P., Palei, H.S., Acharya, B.P. (2020).** Population Status and Activity Pattern of Smooth-Coated Otter (*Lutrogale perspicillata*) in Bhitarkanika National Park, Odisha, Eastern India. *IUCN Otter Spec. Group Bull.*, **37(4)**: 205–211. [https://www.iucnosgbull.org/Volume37/Palei\\_et\\_al\\_2020.html](https://www.iucnosgbull.org/Volume37/Palei_et_al_2020.html)
- Palei, N.C., Rath, B.P., Patra, L.K., Ghosh, B. (2023b).** First Photographic Records of Smooth-Coated Otter (*Lutrogale perspicillata*) in Jharsuguda Forest Division, Odisha, India. *IUCN Otter Spec. Group Bull.*, **40(4)**: 176–182. [https://iucnosgbull.org/Volume40/Palei\\_et\\_al\\_2023.html](https://iucnosgbull.org/Volume40/Palei_et_al_2023.html)
- Pocock, R.I. (1941).** *The Fauna of British India including Ceylon and Burma*. Vol. II. Taylor and Francis, London. p. 503.
- Prater, S.H. (1971).** *The Book of Indian Animals*. 3rd edition. B. N. H. S., Bombay, India.
- Roos, A., Loy, A., de Silva, P., Hajkova, P., Zemanová, B. (2015).** *Lutra lutra*. The IUCN Red List of Threatened Species 2015: e.T12419A21935287. <https://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T12419A21935287.en> Downloaded on 28 Sept 2022.
- Singh, D., Thakar, A. and Sharma, N. (2023).** On the occurrence of Eurasian Otter *Lutra lutra* (Carnivora: Mustelidae) in Neeru stream of Chenab catchment, Jammu & Kashmir, India. *Journal of Threatened Taxa*, **15(2)**: 22567–22573. <https://doi.org/10.11609/jott.8082.15.2.22567-22573>
- Suraj, M., Ahmed, M., Basak, K., Sarathi, J., Pandey, P., and Khelwar, A. (2022).** First Record of Eurasian Otter (*Lutra lutra*) from Chhattisgarh, Central India. *IUCN Otter Spec. Group Bull.*, **39(4)**: 229 – 235. [https://www.iucnosgbull.org/Volume39/Suraj\\_et\\_al\\_2022.html](https://www.iucnosgbull.org/Volume39/Suraj_et_al_2022.html)
- Talegaonkar, R., Salaria, S., Bhargava, D., Jena, J., Rahul, S.K., Dhamorikar, A., and Chanchani, P. (2021).** Habitat use by the Eurasian Otter (*Lutra lutra* Linnaeus 1758) in a Non-Protected Area of Madhya Pradesh, India. *IUCN Otter Spec. Group Bull.*, **38(4)**: 217-227. [https://www.iucnosgbull.org/Volume38/Talegaonkar\\_et\\_al\\_2021.html](https://www.iucnosgbull.org/Volume38/Talegaonkar_et_al_2021.html)
- Uikey, S.K. 2021.** First Photographic Record of Eurasian Otter (*Lutra Lutra*) From Kanha National Park (M.P.) India. *International Journal of Innovative Research and Advanced Studies*, **8(9)**: 7-9. [https://www.ijiras.com/2021/Vol\\_8-Issue\\_9/paper\\_2.pdf](https://www.ijiras.com/2021/Vol_8-Issue_9/paper_2.pdf)

## **RÉSUMÉ: PRÉSENCE DE LA LOUTRE EURASIENNE (*Lutra lutra*) DANS LE RÉSERVOIR D’HIRAKUD EN INDE: UN SITE RAMSAR ET UN DES PLUS LONGS BARRAGES EN TERRE DU MONDE**

La loutre eurasiennne (*Lutra lutra*) est un prédateur au sommet des écosystèmes aquatiques. L’espèce se rencontre dans l’Himalaya, le long de la partie nord de l’Inde, s’étendant du nord-ouest au nord-est, ainsi que dans les Ghâts occidentaux et le centre de l’Inde. En raison d’un manque d’informations détaillées sur sa biologie, la loutre eurasiennne est considérée comme l’une des espèces les moins connues en Inde. Nous signalons la présence de la loutre eurasiennne dans le réservoir d’Hirakud à Odisha, en Inde. Des recherches, un suivi et des campagnes de sensibilisation supplémentaires auprès des acteurs locaux sont nécessaires afin de concevoir des stratégies de conservation efficaces pour l’espèce.

## **RESUMEN: OCURRENCIA DE LA NUTRIA EURASIÁTICA (*Lutra lutra*) EN EL RESERVORIO HIRAKUD, INDIA: UN SITIO RAMSAR Y UNA DE LAS REPRESAS DE TIERRA MÁS LARGAS DEL MUNDO**

La nutria Eurasiática (*Lutra lutra*) es un predador tope en los ecosistemas acuáticos. La especie se encuentra en los Himalayas, a lo largo de la porción norte de India, extendiéndose de noroeste a noreste, así como en los Ghats Occidentales y en India Central. Debido a la falta de información detallada sobre su biología, la nutria Eurasiática es considerada una de las especies menos conocidas de la India. Informamos de la ocurrencia de nutria Eurasiática en el reservorio Hirakud de Odisha, India. Son necesarias ulteriores investigaciones, monitoreo, y campañas de concientización de los actores locales, para diseñar estrategias efectivas de conservación de la especie.

**ସାରାଂଶ:**

**ହିରାକୁଦ ଜଳାଶୟରେ ୟୁରାସିଆନ ଓଧର (ଲୁଚା ଲୁଚା) ଉପସ୍ଥିତି: ଯାହାକି ଏକ ରାମସାର ସ୍ଥଳ ଏବଂ ବିଶ୍ୱର ଏକ ଦୀର୍ଘତମ ମୂଲ୍ୟାଙ୍କନ ବନ୍ଧ**

ୟୁରାସିଆନ ଓଧ (ଲୁଚା ଲୁଚା) ଜଳଜୀବ ପରିସଂସ୍କାର ଏକ ପ୍ରମୁଖ ଶିକାରୀ ଅଟେ। ଏହି ପ୍ରଜାତି ଭାରତର ଉତ୍ତର ଅଞ୍ଚଳରେ ହିମାଳୟ ପର୍ବତମାଳାରେ, ଉତ୍ତର ପଶ୍ଚିମରୁ ଆରମ୍ଭ କରି ଉତ୍ତର ପୂର୍ବ ଅଞ୍ଚଳ ପର୍ଯ୍ୟନ୍ତ ଏବଂ ଏହା ସହିତ ପଶ୍ଚିମଘାଟ ପର୍ବତମାଳା ଏବଂ ମଧ୍ୟ-ଭାରତରେ ମିଳେ। ଏହାର ଜୀବବିଜ୍ଞାନ ସମ୍ପନ୍ନୀୟ ସୂଚନାର ଅଭାବ ହେତୁ, ୟୁରାସିଆନ ଓଧ ଭାରତର ସବୁଠାରୁ କମ୍ ଜଣା ଯାଇଥିବା ପ୍ରଜାତିଗୁଡ଼ିକ ମଧ୍ୟରୁ ଗଣାଯାଏ। ଆମେ ଓଡ଼ିଶାର ହିରାକୁଦ ଜଳାଶୟରେ ଏଉରେସିଆନ୍ ଓଡ଼ର ସମ୍ପୂର୍ଣ୍ଣ ରହିବାର ସୂଚନା ଦେଇଛୁ। ପ୍ରଜାତିର ପ୍ରତିରକ୍ଷା ଯୋଜନା ଆକାର ଦେବା ପାଇଁ ଅଧିକ ଗବେଷଣା, ନିରୀକ୍ଷଣ ଏବଂ ସ୍ଥାନୀୟ ହିତଧାରୀମାନଙ୍କ ପାଇଁ ସଚେତନତା ଅଭିଯାନ ଆବଶ୍ୟକ।