



Open Access

10.11609/jott.2025.17.9.27407-27550

www.threatenedtaxa.org

26 September 2025 (Online & Print)

17(9): 27407-27550

ISSN 0974-7907 (Online)

ISSN 0974-7893 (Print)





ISSN 0974-7907 (Online); ISSN 0974-7893 (Print)

Publisher
Wildlife Information Liaison Development Society
www.wild.zooreach.org

Host
Zoo Outreach Organization
www.zooreach.org

Srivari Illam, No. 61, Karthik Nagar, 10th Street, Saravanampatti, Coimbatore, Tamil Nadu 641035, India
Registered Office: 3A2 Varadarajulu Nagar, FCI Road, Ganapathy, Coimbatore, Tamil Nadu 641006, India
Ph: +91 9385339863 | www.threatenedtaxa.org
Email: sanjay@threatenedtaxa.org

EDITORS

Founder & Chief Editor

Dr. Sanjay Molur

Wildlife Information Liaison Development (WILD) Society & Zoo Outreach Organization (ZOO),
Coimbatore, Tamil Nadu 641006, India

Assistant Editor

Dr. Chaithra Shree J., WILD/ZOO, Coimbatore, Tamil Nadu 641006, India

Managing Editor

Mr. B. Ravichandran, WILD/ZOO, Coimbatore, Tamil Nadu 641006, India

Associate Editors

Dr. Mandar Paingankar, Government Science College Gadchiroli, Maharashtra 442605, India

Dr. Ulrike Streicher, Wildlife Veterinarian, Eugene, Oregon, USA

Ms. Priyanka Iyer, ZOO/WILD, Coimbatore, Tamil Nadu 641006, India

Board of Editors

Dr. Russel Mittermeier

Executive Vice Chair, Conservation International, Arlington, Virginia 22202, USA

Prof. Mewa Singh Ph.D., FASc, FNA, FNAsc, FNAPsy

Ramanna Fellow and Life-Long Distinguished Professor, Biopsychology Laboratory, and
Institute of Excellence, University of Mysore, Mysuru, Karnataka 570006, India; Honorary
Professor, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore; and Adjunct
Professor, National Institute of Advanced Studies, Bangalore

Stephen D. Nash

Scientific Illustrator, Conservation International, Dept. of Anatomical Sciences, Health Sciences
Center, T-8, Room 045, Stony Brook University, Stony Brook, NY 11794-8081, USA

Dr. Fred Pluthero

Toronto, Canada

Dr. Priya Davidar

Sigur Nature Trust, Chadapatti, Mavinahalla PO, Nilgiris, Tamil Nadu 643223, India

Dr. John Fellowes

Honorary Assistant Professor, The Kadoorie Institute, 8/F, T.T. Tsui Building, The University of
Hong Kong, Pokfulam Road, Hong Kong

Prof. Dr. Mirco Solé

Universidade Estadual de Santa Cruz, Departamento de Ciências Biológicas, Vice-coordenador
do Programa de Pós-Graduação em Zoologia, Rodovia Ilhéus/Itabuna, Km 16 (45662-000)
Salobrinho, Ilhéus - Bahia - Brasil

Dr. Rajeev Raghavan

Professor of Taxonomy, Kerala University of Fisheries & Ocean Studies, Kochi, Kerala, India

English Editors

Mrs. Mira Bhojwani, Pune, India

Dr. Fred Pluthero, Toronto, Canada

Copy Editors

Ms. Usha Madgunaki, Zooreach, Coimbatore, India

Ms. Trisa Bhattacharjee, Zooreach, Coimbatore, India

Ms. Paloma Noronha, Daman & Diu, India

Web Development

Mrs. Latha G. Ravikumar, ZOO/WILD, Coimbatore, India

Typesetting

Mrs. Radhika, Zooreach, Coimbatore, India

Mrs. Geetha, Zooreach, Coimbatore, India

Fundraising/Communications

Mrs. Payal B. Molur, Coimbatore, India

Subject Editors 2021–2023

Fungi

Dr. B. Shivaraju, Bengaluru, Karnataka, India

Dr. R.K. Verma, Tropical Forest Research Institute, Jabalpur, India

Dr. Vatsavaya S. Raju, Kakatiya University, Warangal, Andhra Pradesh, India

Dr. M. Krishnappa, Jnana Sahyadri, Kuvempu University, Shimoga, Karnataka, India

Dr. K.R. Sridhar, Mangalore University, Mangalagangothri, Mangalore, Karnataka, India

Dr. Gunjan Biswas, Vidyasagar University, Midnapore, West Bengal, India

Dr. Kiran Ramchandra Ranadive, Annasaheb Magar Mahavidyalaya, Maharashtra, India

Plants

Dr. G.P. Sinha, Botanical Survey of India, Allahabad, India

Dr. N.P. Balakrishnan, Ret. Joint Director, BSI, Coimbatore, India

Dr. Shonil Bhagwat, Open University and University of Oxford, UK

Prof. D.J. Bhat, Retd. Professor, Goa University, Goa, India

Dr. Ferdinando Boero, Università del Salento, Lecce, Italy

Dr. Dale R. Calder, Royal Ontario Museum, Toronto, Ontario, Canada

Dr. Cleofas Cervancia, Univ. of Philippines Los Baños College Laguna, Philippines

Dr. F.B. Vincent Florens, University of Mauritius, Mauritius

Dr. Merlin Franco, Curtin University, Malaysia

Dr. V. Irudayaraj, St. Xavier's College, Palayamkottai, Tamil Nadu, India

Dr. B.S. Kholia, Botanical Survey of India, Gangtok, Sikkim, India

Dr. Pankaj Kumar, Department of Plant and Soil Science, Texas Tech University, Lubbock, Texas, USA.

Dr. V. Sampath Kumar, Botanical Survey of India, Howrah, West Bengal, India

Dr. A.J. Solomon Raju, Andhra University, Visakhapatnam, India

Dr. Vijayasankar Raman, University of Mississippi, USA

Dr. B. Ravi Prasad Rao, Sri Krishnadevaraya University, Anantpur, India

Dr. K. Ravikumar, FRLHT, Bengaluru, Karnataka, India

Dr. Aparna Watve, Pune, Maharashtra, India

Dr. Qiang Liu, Xishuangbanna Tropical Botanical Garden, Yunnan, China

Dr. Noor Azhar Mohamed Shazili, Universiti Malaysia Terengganu, Kuala Terengganu, Malaysia

Dr. M.K. Vasudeva Rao, Shiv Ranjani Housing Society, Pune, Maharashtra, India

Prof. A.J. Solomon Raju, Andhra University, Visakhapatnam, India

Dr. Mandar Datar, Agharkar Research Institute, Pune, Maharashtra, India

Dr. M.K. Janarthanam, Goa University, Goa, India

Dr. K. Karthikeyan, Botanical Survey of India, India

Dr. Errol Vela, University of Montpellier, Montpellier, France

Dr. P. Lakshminarasimhan, Botanical Survey of India, Howrah, India

Dr. Larry R. Noblick, Montgomery Botanical Center, Miami, USA

Dr. K. Haridasan, Pallavur, Palakkad District, Kerala, India

Dr. Analinda Manila-Fajard, University of the Philippines Los Baños, Laguna, Philippines

Dr. P.A. Sinu, Central University of Kerala, Kasaragod, Kerala, India

Dr. Afroz Alam, Banasthali Vidyapith (accredited A grade by NAAC), Rajasthan, India

Dr. K.P. Rajesh, Zamorin's Guruvayurappan College, GA College PO, Kozhikode, Kerala, India

Dr. David E. Boufford, Harvard University Herbaria, Cambridge, MA 02138-2020, USA

Dr. Ritesh Kumar Choudhary, Agharkar Research Institute, Pune, Maharashtra, India

Dr. A.G. Pandurangan, Thiruvananthapuram, Kerala, India

Dr. Navendu Page, Wildlife Institute of India, Chandrabani, Dehradun, Uttarakhand, India

Dr. Kannan C.S. Warriar, Institute of Forest Genetics and Tree Breeding, Tamil Nadu, India

Invertebrates

Dr. R.K. Avasthi, Rohtak University, Haryana, India

Dr. D.B. Bastawade, Maharashtra, India

Dr. Partha Pratim Bhattacharjee, Tripura University, Suryamaninagar, India

Dr. Kailash Chandra, Zoological Survey of India, Jabalpur, Madhya Pradesh, India

Dr. Ansie Dippenaar-Schoeman, University of Pretoria, Queenswood, South Africa

Dr. Rory Dow, National Museum of Natural History Naturalis, The Netherlands

Dr. Brian Fisher, California Academy of Sciences, USA

Dr. Richard Gallon, Llandudno, North Wales, LL30 1UP

Dr. Hemant V. Ghate, Modern College, Pune, India

Dr. M. Monwar Hossain, Jahangirnagar University, Dhaka, Bangladesh

For Focus, Scope, Aims, and Policies, visit https://threatenedtaxa.org/index.php/JoTT/aims_scope

For Article Submission Guidelines, visit <https://threatenedtaxa.org/index.php/JoTT/about/submissions>

For Policies against Scientific Misconduct, visit https://threatenedtaxa.org/index.php/JoTT/policies_various

continued on the back inside cover

Cover: The nine vultures of India, digital art made on Krita by Dupati Poojitha.



First photographic record of the Smooth-coated Otter *Lutra perspicillata* in Polavaram Forest Range, Andhra Pradesh, India

Arun Kumar Gorati¹ , Ritesh Vishwakarma² , Anukul Nath³ & Parag Nigam⁴

¹⁻⁴ Wildlife Institute of India, Chandrabani, Dehradun, Uttarakhand 248001, India.

¹arunkumargorati@gmail.com, ²ritesh.mammals@gmail.com, ³anukul@wii.gov.in, ⁴nigamp@wii.gov.in (corresponding author)

The Godavari is the largest river in Peninsular India, flows eastwards from Maharashtra to Andhra Pradesh before finally entering the Bay of Bengal (Babar & Kaplay 2018). The river basin covers nearly 9.5% of India's total land area, falling between 73.43°–83.12° E and 16.27°–23.72° N, extending over an area of approximately 312,812 km² (Hussain et al. 2017; Babar & Kaplay 2018). Along its stretch, the Godavari River supports diverse riparian and aquatic habitats that could potentially be suitable for *Lutra perspicillata* (Nagulu et al. 1998; Sivakumar et al. 2014; Hussain et al. 2017). The study documents photographic evidence of the Smooth-coated Otter in Polavaram Range of Eluru Division of Papikonda National Park, Andhra Pradesh.

The Smooth-coated Otter *Lutra perspicillata* inhabits a wide range of aquatic ecosystems across the Oriental region, including paddy fields, lakes, rivers, perennial water bodies, and mangroves (Khoo et al. 2021; de Ferran et al. 2022). India is home to three otter species: The Asian small-clawed Otter *Aonyx cinereus*, the Eurasian Otter *Lutra lutra*, and the Smooth-coated Otter

Lutra perspicillata (Rath et al. 2023). The Smooth-coated Otter is distributed across the Indian states of Assam, Arunachal Pradesh, Andhra Pradesh, Bihar, Gujarat, Himachal Pradesh, Kerala, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Uttar Pradesh, Tamil Nadu, and West Bengal (Nagulu et al. 1998; Hussain 1999; Anoop & Hussain 2005; Baskaran et al. 2022; Trivadi & Patel 2022; Narasimmarajan et al. 2024). In Andhra Pradesh, its occurrence is recorded in areas such as East Godavari, West Godavari, Visakhapatnam, and the Krishna Wildlife Sanctuary (Nagulu et al. 1998; Kantimahanti & Allaparthi 2017; Tamarapalli et al. 2022).

The Smooth-coated Otter is facing significant threats due to habitat loss, poaching, pollution, and eutrophication, which may lead to population declines exceeding 30% (Rath et al. 2023). This species holds significant conservation importance as a key ecological indicator of freshwater ecosystem health (Ali et al. 2010; Baskaran et al. 2022). It is currently listed as 'Vulnerable' on the IUCN Red List and receives legal protection under Schedule I of the Indian Wildlife (Protection) Act, 1972

Editor: S.S. Talmale, Zoological Survey of India, Pune, India.

Date of publication: 26 September 2025 (online & print)

Citation: Gorati, A.K., R. Vishwakarma, A. Nath & P. Nigam (2025). First photographic record of the Smooth-coated Otter *Lutra perspicillata* in Polavaram Forest Range, Andhra Pradesh, India. *Journal of Threatened Taxa* 17(9): 27548–27550. <https://doi.org/10.11609/jott.9921.17.9.27548-27550>

Copyright: © Gorati et al. 2025. Creative Commons Attribution 4.0 International License. JoTT allows unrestricted use, reproduction, and distribution of this article in any medium by providing adequate credit to the author(s) and the source of publication.

Funding: Andhra Pradesh Forest Department (APFD).

Competing interests: The authors declare no competing interests.

Ethics statement: The authors declare that this research was conducted following all applicable ethical standards, and the authors abided by the Code of Conduct for contributors to the journal. No animals were captured, handled, or harmed during the study. The observation and photographic documentation of the Smooth-coated Otter were made opportunistically and non-invasively during an ecological field survey. The study did not involve any experimental intervention or manipulation of wildlife. All necessary permissions were obtained from the Andhra Pradesh Forest Department, and due acknowledgement is given for their support. The authors affirm their commitment to the ethical principles of transparency, responsibility, and respect for biodiversity conservation.

Acknowledgments: We thank Mr. B.N.N. Murthy, CCF & FD, Project Tiger; Mr. G. Vignesh Appavu, DFO, Markapur Division; Mr. Anurag Meena, DFO, Nandyal Division; Mr. V. Saibaba, DFO, Atmakur Division; Mr. Y.V. Narsimha Rao, DFO, Giddlur Division; Mr. Ravindra Dhama, DFO, Eluru Forest Division; Mr. Daveedu Raju, FRO, Polavaram, Eluru Forest Division, all from the Andhra Pradesh Forest Department for their help and support.



(amended 2022) and Appendix II of CITES (Nagulu et al. 1998; Gautam & Kaur 2023; Narasimmarajan et al. 2024).

On 12 June 2024, a team from Wildlife Institute of India (WII) recorded a sighting of one individual of Smooth-coated Otter in the Polavaram Forest Range, within the boundaries of Papikonda National Park, Andhra Pradesh. This opportunistic yet significant sighting occurred during a field survey at Papikonda National Park. The otter was photographed using a Sony Alpha 6100 camera in the Kothuru Beat of Polavaram Forest Range, Eluru Forest Division in close proximity to the Godavari River; the river separates the Eluru Forest Division from the Alluri Sitharama Raju District Forest Division (Daveedu Raju pers. comm. 2024). The coordinates of the sighting were 17.330° N, 81.620° E (Figure 1). The sighting was noted at 1754 h IST and lasted for less than a minute. The otter was seen resting on an exposed sandbank (Image 1), most likely because of the low water in the summer season (Image 1). This observation took place in the southern portion of Papikonda National Park, along the Godavari River, about five kilometres from the Indira Sagar Multipurpose Project (Polavaram Project).

While anecdotal accounts and local reports have suggested the presence of otters in this area, no visual or photographic documentation had previously confirmed their existence. During field assessments, consultations were conducted with forest officials, and local fishing communities, both of whom were familiar with the species but reported infrequent sightings, indicating its rarity in the area (Nagulu et al. 1998). Although prior research has found Smooth-coated Otters in the Godavari River (Nagulu et al. 1998; Tamarapalli et al. 2022), this is the first photographic record in the Polavaram Range of Eluru Division.

Otters, which mostly feed on fish, have a big impact on aquatic ecosystems, particularly in places where the availability of prey is impacted by human expansion (Khoo et al. 2021; Narasimmarajan et al. 2024). With 89 fish species from 26 families, the Godavari River is an essential feeding environment that is encircled by the Eluru and Alluri Sitharama Raju Forest Divisions (Sivakumar et al. 2014). The ichthyofauna that otter populations consume includes species like *Wallago attu*, *Labeo rohita*, and *Catla catla*, highlighting the ecological significance of otter

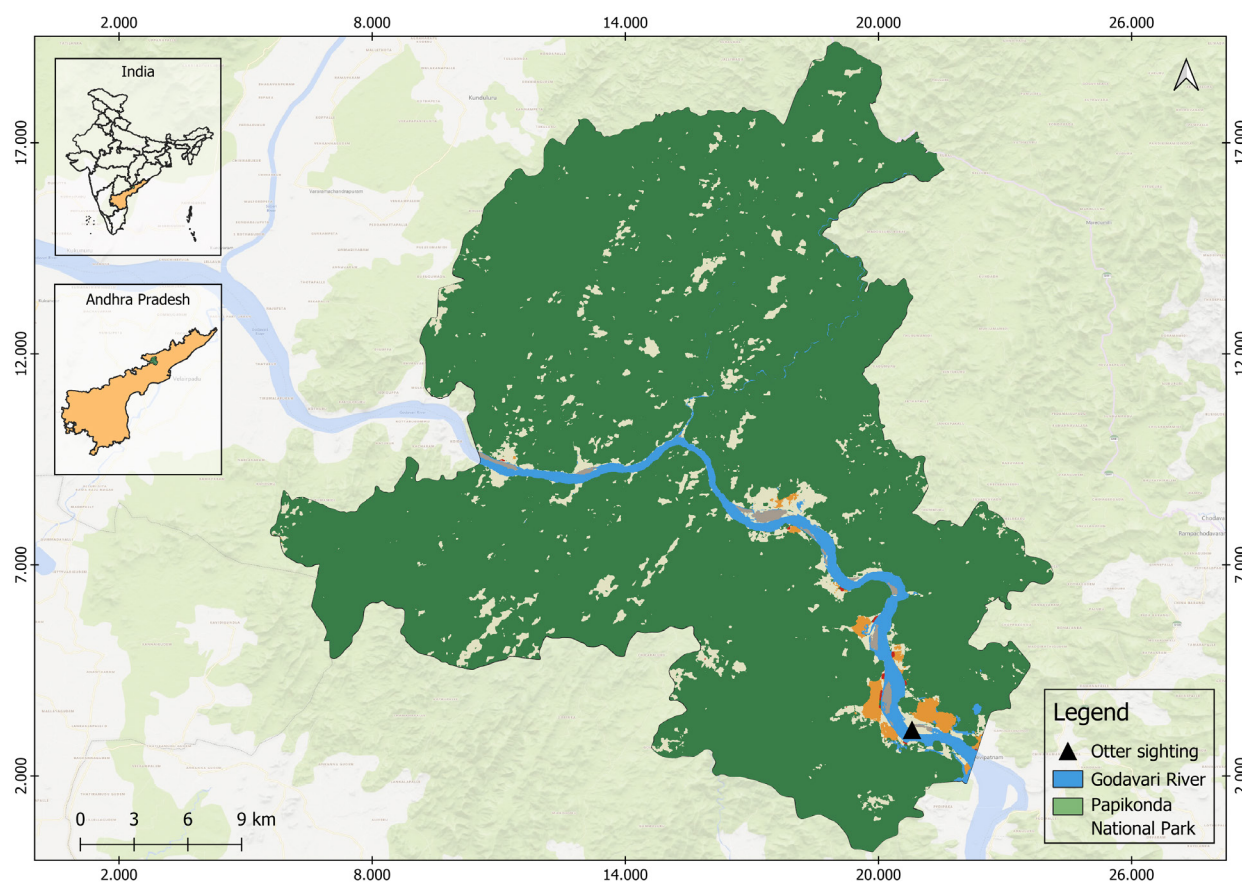


Figure 1. Sighting location of the Smooth-coated Otter *Lutra perspicillata*.



Image 1. Smooth-coated Otter *Lutra perspicillata* in Polavaram Forest Range of Eluru Division. © Arun Kumar Gorati.

populations in maintaining fish community structures (Anoop & Hussain 2005; Narasimmarajan et al. 2024).

This observation not only confirms the presence of this elusive and ecologically sensitive species in the Polavaram Forest Range of Papikonda National Park but may also extend the known geographic distribution range of this species in this stretch of Godavari River (Nagulu et al. 1998). The sighting underscores the significant gap in our understanding of freshwater biodiversity in this region. Also, the record serves as a baseline for initiating systematic ecological studies on otters' habitat suitability, occupancy trends, and potential anthropogenic threats. The detection of this apex aquatic predator highlights the need for increased freshwater biodiversity research and long-term monitoring to comprehend the ecology and population viability in this dynamic landscape (Nagulu et al. 1998; Sivakumar et al. 2014; Narasimmarajan et al. 2024).

References

- Ali, H., R. Saleem, F.M. Qamer, W.A. Khan, S. Abbas, K. Gunasekara, M. Hazarika, M.S. Ahmed & M. Akhtar (2010). Habitat evaluation of Smooth-coated Otter (*Lutrogale perspicillata*) in Indus Plains of Pakistan using remote sensing and GIS. *International Archives of the Photometry, Remote Sensing and Spatial Information Science* XXXVII(8): 127–132.
- Anoop, K.R. & S.A. Hussain (2005). Food and feeding habits of Smooth-coated Otters (*Lutra perspicillata*) and their significance to the fish population of Kerala, India. *Journal of Zoology* (London) 266: 15–23. <https://doi.org/10.1017/S0952836905006540>
- Babar, M. & R.D. Kaplay (2018). Godavari River: Geomorphology and Socio-economic Characteristics, pp. 379–396. In: Singh, D. (ed.). *The Indian Rivers*. Springer Hydrogeology. Springer, Singapore. https://doi.org/10.1007/978-981-10-2984-4_26
- Baskaran, N., R.S. Sundarraj & R. Sanil (2022). Population, distribution and diet composition of Smooth-coated Otter *Lutrogale perspicillata* Geoffroy, 1826 in Hosur and Dharmapuri Forest Divisions, India. *Journal of Threatened Taxa* 14(1): 20469–20477. <https://doi.org/10.11609/jott.7477.14.1.20469-20477>
- de Ferran, V., H.V. Figueiro, F. de Jesus Trindade, O. Smith, M.H.S. Sinding, C.S. Trinca, G.Z. Lazzari, G. Veron, J.A. Vianna, F. Barbanera, S. Kliver, N. Serdyukova, T. Bulyonkova, O.A. Ryder, M.T.P. Gilbert, K-P. Koepfli & E. Eizirik (2022). Phylogenomics of the world's otters. *Current Biology* 32(16): 3650–3658.
- Gautam, A. & S. Kaur (2023). Management and Conservation of Wildlife in India: With Special Reference to Wildlife Protection (Amendment) Act, 2022. *Indian Journal of Integrated Research in Law* 3(III): 1–13.
- Hussain, J., I. Husain, M. Arif & N. Gupta (2017). Studies on heavy metal contamination in Godavari River Basin. *Applied Water Science* 7: 4539–4548. <https://doi.org/10.1007/s13201-017-0607-4>
- Hussain, S.A. (1999). Mustelids, viverrids and herpestids of India: species profile and conservation status. *Environmental Information System (ENVIS) Bulletin* 2(2): 1–38.
- Kantimahanti, M. & A.R. Allaparthi (2017). Records of Smooth-coated Otter *Lutrogale perspicillata* (Geoffroy, 1826) from the Krishna River Delta of South India. *IUCN Otter Specialist Group Bulletin* 34(1): 58–63.
- Kho, M., S. Basak, N. Sivasothi, P.K. de Silva & I.R. Lubis (2021). *Lutrogale perspicillata*. The IUCN Red List of Threatened Species 2021: e.T12427A164579961. <https://doi.org/10.2305/IUCN.UK.2021-3.RLTS.T12427A164579961.en>
- Nagulu, V., V.V. Rao, D. Satyanarayana & C. Srinivasulu (1998). Otter records and otter conservation perspectives in Andhra Pradesh, India. *IUCN Otter Specialist Group Bulletin* 15(1): 31–37.
- Narasimmarajan, K., M.T. Mathai, M.W. Hayward & S. Palanivel (2024). Diet of smooth-coated otter *Lutrogale perspicillata* (Geoffroy, 1826) in the Moyar River, Western Ghats, South India. *Academia Biology* 2024(2): 1–11. <https://doi.org/10.20935/AcadBiol6223>
- Rath, L.P., K. Ashaharaza & S.K. Dash (2023). A Rare Sighting of Smooth-coated Otter (*Lutrogale perspicillata*) in the Mahanadi River, Odisha, India. *IUCN Otter Specialist Group Bulletin* 40(2): 90–95.
- Sivakumar, K., J.A. Johnson, N. Gokulakannan, P. Ray, G. Katlam & P. Bagaria (2014). Assessment of ecological settings and biodiversity values of Papikonda National Park and Indira Sagar (Polavaram) Multipurpose Project Impact Zone in Andhra Pradesh for development of mitigatory measures. *Wildlife Institute of India, Dehradun*.
- Tamarapalli, S.C.P. & S. Kolipaka (2022). Smooth-coated Otter *Lutrogale perspicillata* (Geoffroy, 1826) in the urban landscape of Visakhapatnam, Andhra Pradesh, India. *IUCN Otter Specialist Group Bulletin* 39(1): 22–28.
- Trivadi, K. & A. Patel (2022). Smooth-coated Otter Distribution and Report on Illegal Otter Trafficking in Valsad, India. *IUCN Otter Specialist Group Bulletin* 39(4): 196–201.

Mr. Jatishwor Singh Irungbam, Biology Centre CAS, Branišovská, Czech Republic.
Dr. Ian J. Kitching, Natural History Museum, Cromwell Road, UK
Dr. George Mathew, Kerala Forest Research Institute, Peechi, India
Dr. John Noyes, Natural History Museum, London, UK
Dr. Albert G. Orr, Griffith University, Nathan, Australia
Dr. Sameer Padhye, Katholieke Universiteit Leuven, Belgium
Dr. Nancy van der Poorten, Toronto, Canada
Dr. Kareen Schnabel, NIWA, Wellington, New Zealand
Dr. R.M. Sharma, (Retd.) Scientist, Zoological Survey of India, Pune, India
Dr. Manju Siliwal, WILD, Coimbatore, Tamil Nadu, India
Dr. G.P. Sinha, Botanical Survey of India, Allahabad, India
Dr. K.A. Subramanian, Zoological Survey of India, New Alipore, Kolkata, India
Dr. P.M. Sureshan, Zoological Survey of India, Kozhikode, Kerala, India
Dr. R. Varatharajan, Manipur University, Imphal, Manipur, India
Dr. Eduard Vives, Museu de Ciències Naturals de Barcelona, Terrassa, Spain
Dr. James Young, Hong Kong Lepidopterists' Society, Hong Kong
Dr. R. Sundararaj, Institute of Wood Science & Technology, Bengaluru, India
Dr. M. Nithyanandan, Environmental Department, La Ala Al Kuwait Real Estate. Co. K.S.C., Kuwait
Dr. Himender Bharti, Punjabi University, Punjab, India
Mr. Purnendu Roy, London, UK
Mr. Saito Motoki, The Butterfly Society of Japan, Tokyo, Japan
Dr. Sanjay Sondhi, TITLI TRUST, Kalpavriksh, Dehradun, India
Dr. Nguyen Thi Phuong Lien, Vietnam Academy of Science and Technology, Hanoi, Vietnam
Dr. Nitin Kulkarni, Tropical Research Institute, Jabalpur, India
Dr. Robin Wen Jiang Ngiam, National Parks Board, Singapore
Dr. Lionel Monod, Natural History Museum of Geneva, Genève, Switzerland.
Dr. Asheesh Shivam, Nehru Gram Bharti University, Allahabad, India
Dr. Rosana Moreira da Rocha, Universidade Federal do Paraná, Curitiba, Brasil
Dr. Kurt R. Arnold, North Dakota State University, Saxony, Germany
Dr. James M. Carpenter, American Museum of Natural History, New York, USA
Dr. David M. Claborn, Missouri State University, Springfield, USA
Dr. Kareen Schnabel, Marine Biologist, Wellington, New Zealand
Dr. Amazonas Chagas Júnior, Universidade Federal de Mato Grosso, Cuiabá, Brasil
Mr. Monsoon Jyoti Gogoi, Assam University, Silchar, Assam, India
Dr. Heo Chong Chin, Universiti Teknologi MARA (UiTM), Selangor, Malaysia
Dr. R.J. Shiel, University of Adelaide, SA 5005, Australia
Dr. Siddharth Kulkarni, The George Washington University, Washington, USA
Dr. Priyadarsanan Dharma Rajan, ATREE, Bengaluru, India
Dr. Phil Alderslade, CSIRO Marine And Atmospheric Research, Hobart, Australia
Dr. John E.N. Veron, Coral Reef Research, Townsville, Australia
Dr. Daniel Whitmore, State Museum of Natural History Stuttgart, Rosenstein, Germany.
Dr. Yu-Feng Hsu, National Taiwan Normal University, Taipei City, Taiwan
Dr. Keith V. Wolfe, Antioch, California, USA
Dr. Siddharth Kulkarni, The Hormiga Lab, The George Washington University, Washington, D.C., USA
Dr. Tomas Ditrich, Faculty of Education, University of South Bohemia in Ceske Budejovice, Czech Republic
Dr. Mihaly Foldvari, Natural History Museum, University of Oslo, Norway
Dr. V.P. Uniyal, Wildlife Institute of India, Dehradun, Uttarakhand 248001, India
Dr. John D.D. Caleb, Zoological Survey of India, Kolkata, West Bengal, India
Dr. Priyadarsanan Dharma Rajan, Ashoka Trust for Research in Ecology and the Environment (ATREE), Royal Enclave, Bangalore, Karnataka, India

Fishes

Dr. Topiltzin Contreras MacBeath, Universidad Autónoma del estado de Morelos, México
Dr. Heok Hee Ng, National University of Singapore, Science Drive, Singapore
Dr. Rajeev Raghavan, St. Albert's College, Kochi, Kerala, India
Dr. Robert D. Sluka, Chiltern Gateway Project, A Rocha UK, Southall, Middlesex, UK
Dr. E. Vivekanandan, Central Marine Fisheries Research Institute, Chennai, India
Dr. Davor Zanella, University of Zagreb, Zagreb, Croatia
Dr. A. Biju Kumar, University of Kerala, Thiruvananthapuram, Kerala, India
Dr. Akhilesh K.V., ICAR-Central Marine Fisheries Research Institute, Mumbai Research Centre, Mumbai, Maharashtra, India
Dr. J.A. Johnson, Wildlife Institute of India, Dehradun, Uttarakhand, India
Dr. R. Ravinesh, Gujarat Institute of Desert Ecology, Gujarat, India

Amphibians

Dr. Sushil K. Dutta, Indian Institute of Science, Bengaluru, Karnataka, India
Dr. Annemarie Ohler, Muséum national d'Histoire naturelle, Paris, France

Reptiles

Dr. Gernot Vogel, Heidelberg, Germany
Dr. Raju Vyas, Vadodara, Gujarat, India
Dr. Pritpal S. Soorae, Environment Agency, Abu Dubai, UAE.
Prof. Dr. Wayne J. Fuller, Near East University, Mersin, Turkey
Prof. Chandrashekhar U. Rivonker, Goa University, Taleigao Plateau, Goa. India
Dr. S.R. Ganesh, Chennai Snake Park, Chennai, Tamil Nadu, India
Dr. Himansu Sekhar Das, Terrestrial & Marine Biodiversity, Abu Dhabi, UAE

Birds

Dr. Hem Sagar Baral, Charles Sturt University, NSW Australia
Mr. H. Byju, Coimbatore, Tamil Nadu, India
Dr. Chris Bowden, Royal Society for the Protection of Birds, Sandy, UK
Dr. Priya Davidar, Pondicherry University, Kalapet, Puducherry, India
Dr. J.W. Duckworth, IUCN SSC, Bath, UK
Dr. Rajah Jayapal, SAGON, Coimbatore, Tamil Nadu, India
Dr. Rajiv S. Kalsi, M.L.N. College, Yamuna Nagar, Haryana, India
Dr. V. Santharam, Rishi Valley Education Centre, Chittoor Dt., Andhra Pradesh, India
Dr. S. Balachandran, Bombay Natural History Society, Mumbai, India
Mr. J. Praveen, Bengaluru, India
Dr. C. Srinivasulu, Osmania University, Hyderabad, India
Dr. K.S. Gopi Sundar, International Crane Foundation, Baraboo, USA
Dr. Gombobaatar Sunde, Professor of Ornithology, Ulaanbaatar, Mongolia
Prof. Reuven Yosef, International Birding & Research Centre, Eilat, Israel
Dr. Taej Mundkur, Wetlands International, Wageningen, The Netherlands
Dr. Carol Inskipp, Bishop Auckland Co., Durham, UK
Dr. Tim Inskipp, Bishop Auckland Co., Durham, UK
Dr. V. Gokula, National College, Tiruchirappalli, Tamil Nadu, India
Dr. Arkady Lelej, Russian Academy of Sciences, Vladivostok, Russia
Dr. Simon Dowell, Science Director, Chester Zoo, UK
Dr. Mário Gabriel Santiago dos Santos, Universidade de Trás-os-Montes e Alto Douro, Quinta de Prados, Vila Real, Portugal
Dr. Grant Connette, Smithsonian Institution, Royal, VA, USA
Dr. P.A. Azeez, Coimbatore, Tamil Nadu, India

Mammals

Dr. Giovanni Amori, CNR - Institute of Ecosystem Studies, Rome, Italy
Dr. Anwaruddin Chowdhury, Guwahati, India
Dr. David Mallon, Zoological Society of London, UK
Dr. Shomita Mukherjee, SAGON, Coimbatore, Tamil Nadu, India
Dr. Angie Appel, Wild Cat Network, Germany
Dr. P.O. Nameer, Kerala Agricultural University, Thrissur, Kerala, India
Dr. Ian Redmond, UNEP Convention on Migratory Species, Lansdown, UK
Dr. Heidi S. Riddle, Riddle's Elephant and Wildlife Sanctuary, Arkansas, USA
Dr. Karin Schwartz, George Mason University, Fairfax, Virginia.
Dr. Lala A.K. Singh, Bhubaneswar, Orissa, India
Dr. Mewa Singh, Mysore University, Mysore, India
Dr. Paul Racey, University of Exeter, Devon, UK
Dr. Honnavalli N. Kumara, SAGON, Anaikatty P.O., Coimbatore, Tamil Nadu, India
Dr. Nishith Dharaiya, HNG University, Patan, Gujarat, India
Dr. Spartaco Gippoliti, Socio Onorario Società Italiana per la Storia della Fauna "Giuseppe Altobello", Rome, Italy
Dr. Justus Joshua, Green Future Foundation, Tiruchirappalli, Tamil Nadu, India
Dr. H. Raghuram, The American College, Madurai, Tamil Nadu, India
Dr. Paul Bates, Harison Institute, Kent, UK
Dr. Jim Sanderson, Small Wild Cat Conservation Foundation, Hartford, USA
Dr. Dan Challender, University of Kent, Canterbury, UK
Dr. David Mallon, Manchester Metropolitan University, Derbyshire, UK
Dr. Brian L. Cypher, California State University-Stanislaus, Bakersfield, CA
Dr. S.S. Talmale, Zoological Survey of India, Pune, Maharashtra, India
Prof. Karan Bahadur Shah, Budhanilakantha Municipality, Kathmandu, Nepal
Dr. Susan Cheyne, Borneo Nature Foundation International, Palangkaraja, Indonesia
Dr. Hemanta Kafley, Wildlife Sciences, Tarleton State University, Texas, USA

Other Disciplines

Dr. Aniruddha Belsare, Columbia MO 65203, USA (Veterinary)
Dr. Mandar S. Paingankar, University of Pune, Pune, Maharashtra, India (Molecular)
Dr. Jack Tordoff, Critical Ecosystem Partnership Fund, Arlington, USA (Communities)
Dr. Ulrike Streicher, University of Oregon, Eugene, USA (Veterinary)
Dr. Hari Balasubramanian, EcoAdvisors, Nova Scotia, Canada (Communities)
Dr. Rayanna Hellem Santos Bezerra, Universidade Federal de Sergipe, São Cristóvão, Brazil
Dr. Jamie R. Wood, Landcare Research, Canterbury, New Zealand
Dr. Wendy Collinson-Jonker, Endangered Wildlife Trust, Gauteng, South Africa
Dr. Rajeshkumar G. Jani, Anand Agricultural University, Anand, Gujarat, India
Dr. O.N. Tiwari, Senior Scientist, ICAR-Indian Agricultural Research Institute (IARI), New Delhi, India
Dr. L.D. Singla, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, India
Dr. Rupika S. Rajakaruna, University of Peradeniya, Peradeniya, Sri Lanka
Dr. Bahar Baviskar, Wild-CER, Nagpur, Maharashtra 440013, India

Reviewers 2021–2023

Due to pausity of space, the list of reviewers for 2021–2023 is available online.

The opinions expressed by the authors do not reflect the views of the Journal of Threatened Taxa, Wildlife Information Liaison Development Society, Zoo Outreach Organization, or any of the partners. The journal, the publisher, the host, and the partners are not responsible for the accuracy of the political boundaries shown in the maps by the authors.

Print copies of the Journal are available at cost. Write to:
The Managing Editor, JoTT,
c/o Wildlife Information Liaison Development Society,
3A2 Varadarajulu Nagar, FCI Road, Ganapathy, Coimbatore,
Tamil Nadu 641006, India
ravi@threatenedtaxa.org & ravi@zooreach.org

Journal of Threatened Taxa is indexed/abstracted in Bibliography of Systematic Mycology, Biological Abstracts, BIOSIS Previews, CAB Abstracts, EBSCO, Google Scholar, Index Copernicus, Index Fungorum, JournalSeek, National Academy of Agricultural Sciences, NewJour, OCLC WorldCat, SCOPUS, Stanford University Libraries, Virtual Library of Biology, Zoological Records.

NAAS rating (India) 5.64



OPEN ACCESS



The Journal of Threatened Taxa (JoTT) is dedicated to building evidence for conservation globally by publishing peer-reviewed articles online every month at a reasonably rapid rate at www.threatenedtaxa.org. All articles published in JoTT are registered under [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/) unless otherwise mentioned. JoTT allows unrestricted use, reproduction, and distribution of articles in any medium by providing adequate credit to the author(s) and the source of publication.

ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)

September 2025 | Vol. 17 | No. 9 | Pages: 27407–27550

Date of Publication: 26 September 2025 (Online & Print)

DOI: 10.11609/jott.2025.17.9.27407-27550

www.threatenedtaxa.org

Articles

Floral inventory and habitat significance of riparian ecosystem along the banks of Chithari River, Kasaragod, Kerala, India

– Sreehari K. Mohan, Shyamkumar Puravankara & P. Biju, Pp. 27407–27425

Propagation through stem cutting and air layering of a Critically Endangered tree *Humboldtia unijuga* Bedd. var. *trijuga* J. Joseph & V. Chandras. (Magnoliopsida: Fabales: Fabaceae)

– Scaria Shintu & P.S. Jothish, Pp. 27426–27432

Niche characterization and distribution of Sikkim Himalayan *Begonia* (Begoniaceae), India: a niche modeling approach

– Aditya Pradhan, Dibyendu Adhikari & Arun Chettri, Pp. 27433–27443

Diversity of snakes (Reptilia: Serpentes) in the Tezpur University Campus, Assam, India

– Mahari Jiumin Basumatary, Anubhav Bhuyan & Robin Doley, Pp. 27444–27455

Diversity and status of shorebirds in the estuaries of Algiers, northern Algeria

– Imad Eddine Rezouani, Belkacem Aimene Boulaouad, Selmane Chabani, Khalil Draidi & Badis Bakhouch, Pp. 27456–27463

Communities attitudes and conservation strategies for flying foxes *Pteropus* spp. (Mammalia: Chiroptera: Pteropodidae): a case study from Sabah, Malaysia Borneo

– Lawrence Alan Bansa, Marcela Pimid, Liesbeth Frias, Sergio Guerrero-Sánchez & Noor Haliza Hasan, Pp. 27464–27487

Communications

Leaf architecture of threatened *Aquilaria cumingiana* (Decne.) Ridley and *Aquilaria malaccensis* Lam. (Thymelaeales: Thymelaeaceae) using morphometrics analysis

– Rhea Lou R. Germa, Christian C. Estrologo & Gindol Rey A. Limbaro, Pp. 27488–27495

First record of *Euclimacia nodosa* (Westwood, 1847) and two species of the genus *Mantispilla* Enderlein, 1910 (Neuroptera: Mantispidae) from the sub-Himalayan foothills of West Bengal, India

– Abhirup Saha, Ratnadeep Sarkar, Subhajit Das, Prapti Das & Dhiraj Saha, Pp. 27496–27505

Butterfly diversity in Jitpur Simara Sub-metropolitan City, Bara District, Nepal: a preliminary checklist

– Alisha Mulmi, Prakriti Chataut & Mahamad Sayab Miya, Pp. 27506–27516

First documented case of flunixin residue in a Himalayan Vulture *Gyps himalayensis* Hume, 1869 (Aves: Accipitriformes: Accipitridae) in India: conservation and veterinary implications

– Soumya Sundar Chakraborty, Debal Ray, Apurba Sen, P.J. Harikrishnan, Nabi Kanta Jha & Rounaq Ghosh, Pp. 27517–27522

Review

MaxENT tool for species modelling in India: an overview

– S. Suresh Ramanan, A. Arunachalam, U.K. Sahoo & Kalidas Upadhyaya, Pp. 27523–27534

Short Communications

Vocalisations of Rusty-spotted Cats *Prionailurus rubiginosus* (I. Geoffroy Saint-Hilaire, 1831) (Mammalia: Carnivora: Felidae) in Frankfurt Zoo

– Vera Pfannerstill, Johannes Köhler & Sabrina Linn, Pp. 27535–27539

Effect of schistosomiasis on captive elephants in Madhya Pradesh, India

– Onkar Anchal & K.P. Singh, Pp. 27540–27543

Notes

Recent additions and taxonomic changes in the liverwort and hornwort flora of India

– Shuvadeep Majumdar & Monalisa Dey, Pp. 27544–27547

First photographic record of the Smooth-coated Otter *Lutra perspicillata* in Polavaram Forest Range, Andhra Pradesh, India

– Arun Kumar Gorati, Ritesh Vishwakarma, Anukul Nath & Parag Nigam, Pp. 27548–27550

Publisher & Host



Threatened Taxa