

OPEN ACCESS



The Journal of Threatened Taxa 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 of articles in any medium, reproduction, and distribution by providing adequate credit to the authors and the source of publication.



Journal of Threatened Taxa

Building evidence for conservation globally

www.threatenedtaxa.org

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

NOTE

**NEW DISTRIBUTION RECORDS OF ELEGANT WATER SHREW
NECTOGALE ELEGANS MILNE-EDWARDS, 1870 (MAMMALIA:
EULIPOTYPHILA: SORICIDAE) FROM THE WESTERN HIMALAYA,
UTTARAKHAND, INDIA**

Aashna Sharma, Vandana Rajput, Vineet K. Dubey,
Aavika Dhanda, Shagun Thakur, J.A. Johnson, S. Sathyakumar &
K. Sivakumar

26 December 2017 | Vol. 9 | No. 12 | Pp. 11097–11099
10.11609/jott.3392.9.12.11097-11099



For Focus, Scope, Aims, Policies and Guidelines visit http://threatenedtaxa.org/About_JoTT

For Article Submission Guidelines visit http://threatenedtaxa.org/Submission_Guidelines

For Policies against Scientific Misconduct visit http://threatenedtaxa.org/JoTT_Policy_against_Scientific_Misconduct

For reprints contact [<info@threatenedtaxa.org>](mailto:info@threatenedtaxa.org)

Partner



Publisher/Host



NEW DISTRIBUTION RECORDS OF ELEGANT WATER SHREW *NECTOGALE ELEGANS* MILNE-EDWARDS, 1870 (MAMMALIA: EULIPOTYPHILA: SORICIDAE) FROM THE WESTERN HIMALAYA, UTTARAKHAND, INDIA

Aashna Sharma¹, Vandana Rajput², Vineet K. Dubey³, Aavika Dhanda⁴, Shagun Thakur⁵, J.A. Johnson⁶, S. Sathyakumar⁷ & K. Sivakumar⁸

^{1,2,3,5,6,7,8} Wildlife Institute of India, P.O. Box 18, Chandrabani, Mehu Wala Mafi, Dehradun, Uttarakhand 248001, India
⁴ Bharati Vidyapeeth Institute of Environment Education and Research, Katraj - Dhankawadi Campus, Satara Road, Pune, Maharashtra 411043, India
¹ aashna@wii.gov.in, ² vandana@wii.gov.in, ³ vineet@wii.gov.in, ⁴ aavikadhanda@gmail.com, ⁵ shagun@wii.gov.in, ⁶ jaj@wii.gov.in, ⁷ ssk@wii.gov.in, ⁸ ksivakumar@wii.gov.in (corresponding author)

The smallest of amphibious mammals, the water shrew has currently 13 known species in the world (Churchfield 1998). They belong to four genera, viz.: *Sorex*, *Neomys*, *Chimmarogale*, and *Nectogale* (Hutterer 1993). Of these, Himalaya is abode to two species of *Chimmarogale* and one species of *Nectogale* but the Indian Himalayan region harbours one species each of genus *Chimmarogale* and *Nectogale*. Distribution records, habitat and population status of all known water shrews are presented in Table 1. The Elegant Water Shrew *Nectogale elegans*, which is monotypic to its genera, has been reported in the northern part of South Asia, central and southern part of China, and the north of Southeast Asia. In South Asia, it has been recorded in India (North Sikkim and Arunachal Pradesh)

and eastern Nepal (Mitchell 1975; Choudhury 2003; Molur et al. 2005; Srinivasulu & Srinivasulu 2012; Menon 2014). Rarely caught in the fishing nets, whenever reported, these elusive shrews are even tougher to be captured on cameras or visually encountered due to their tendency to hide underwater or river bank vegetation and debris while foraging (IUCN 1995; Menon 2014). Although there have been many surveys conducted by various ichthyologists and naturalists in the western Himalaya, there have been no scientific reports of this species till date, which might be due to lesser interest in its distribution and rare sightings of the same.

During our investigations on the streams for fish and other aquatic fauna, the Elegant Water Shrews were recorded at three different locations in the Uttarakhand State of the western Himalayan region of India for three consecutive years (Fig. 1). The first observation was made in September 2014, at Jari Stream near Jarajibli Village of Askot (29.91819 N & 80.34419 E) at an altitude of 1,627m (Image 1). The depth of the stream ranged from 10–30 cm. The shrew was observed diving into the water under the submerged rocks and boulders in search of food. Another individual, in November 2015, was recorded in Jamak Stream, near Maneri Village, Uttarkashi District, Uttarakhand (30.73193 N & 78.52813 E) at an altitude of 1,345m and water depth of 20cm (Image 2). This shrew was observed moving underwater between submerged boulders interspersed with short bouts of 5–10 seconds



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

OPEN ACCESS



DOI: <http://doi.org/10.11609/jott.3392.9.12.11097-11099> | **ZooBank:** urn:lsid:zoobank.org:pub:2A6D8F52-0E2A-459D-BA8D-48EA961E1EA1

Editor: Anwaruddin Choudhury, The Rhino Foundation for nature in North East India, Guwahati, India. **Date of publication:** 26 December 2017 (online & print)

Manuscript details: Ms # 3392 | Received 03 March 2017 | Final received 20 November 2017 | Finally accepted 28 November 2017

Citation: Sharma, A., V. Rajput, V.K. Dubey, A. Dhanda, S. Thakur, J.A. Johnson, S. Sathyakumar & K. Sivakumar (2017). New distribution records of Elegant Water Shrew *Nectogale elegans* Milne-Edwards, 1870 (Mammalia: Eulipotyphla: Soricidae) from the western Himalaya, Uttarakhand, India. *Journal of Threatened Taxa* 9(12): 11097–11099; <http://doi.org/10.11609/jott.3392.9.12.11097-11099>

Copyright: © Sharma et al. 2017. Creative Commons Attribution 4.0 International License. JoTT allows unrestricted use of this article in any medium, reproduction and distribution by providing adequate credit to the authors and the source of publication.

Funding: Department of Science and Technology (DST), Government of India; the World Bank.

Competing interests: The authors declare no competing interests.

Acknowledgements: As this finding is a part of the ongoing projects namely, NMSHE (DST Grant Number: DST/SPLICE/CCP/NMSHE/TF-2/WII/2014[G]) and BCLRIP, we thank the Department of Science and Technology (DST), Govt. of India and the World Bank for providing financial assistance. We also thank Dr. Tapajit Bhattacharya for his constructive comments on the earlier version of the note.



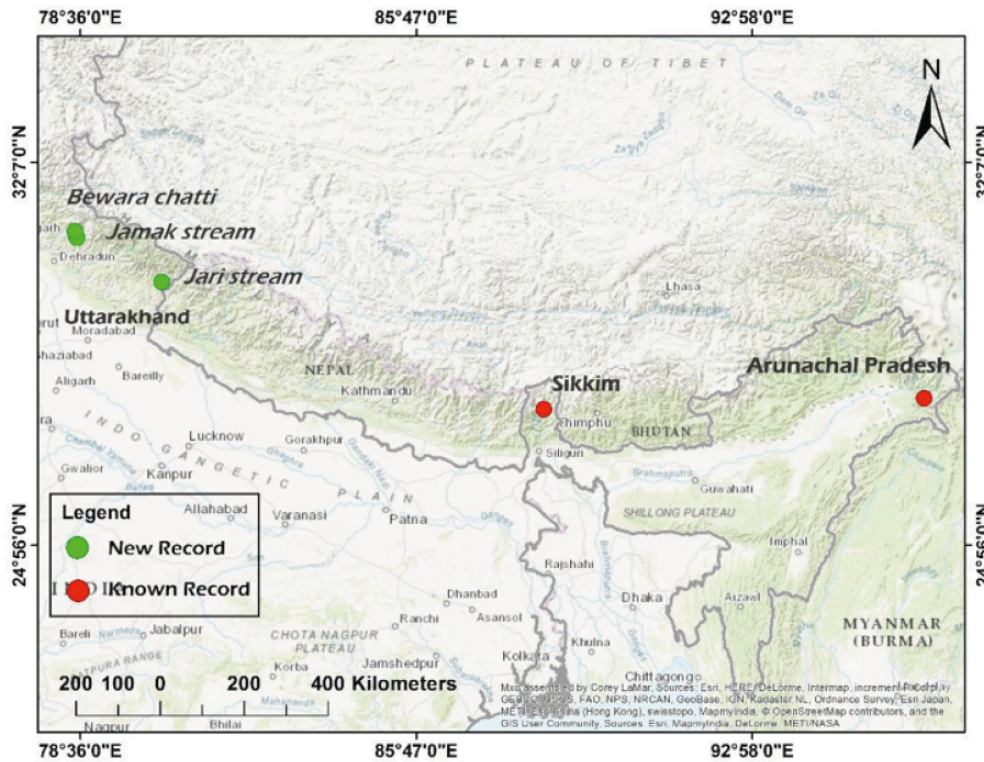


Figure 1. Distribution records of *Nectogale elegans* in the Indian Himalayan region

Table 1. Distribution, habitat and population status of the water shrews in the Himalayan region.

Species	Distribution	Habitat	Population Status	Source
Elegant Water Shrew or Web-footed Shrew <i>Nectogale elegans</i>	Bhutan: central and west; India: Sikkim, Arunachal Pradesh; Nepal: eastern Nepal	High altitude cold mountain streams. Dives and feeds on aquatic invertebrates and small fish. Rests under burrows in stream banks	Susceptible to pollution and degradation of stream habitats, currently not at risk	Mitchell (1975), Choudhury (2003), Molur et al. (2005), Francis (2008), Molur (2008), Srinivasulu & Srinivasulu (2012), Menon (2014), Molur (2016)
Styan’s Water Shrew <i>Chimmarogale styani</i>	Southeast Asia: Northeastern Myanmar, southwestern & southeastern China	Small forest streams at an altitude between 1,500–3,100 m	Poorly known ecology and distribution, currently not at risk	Francis (2008), Johnsingh & Manjrekar (2013)
Himalayan Water Shrew <i>Chimmarogale himalayica</i>	South East Asia: Northern Myanmar, northern Laos, northern Vietnam, Nepal, India (Kashmir, Himachal Pradesh, Assam, Sikkim, West Bengal), China and Taiwan	Small forest streams, feeds on aquatic insects and other invertebrates	Thrive in relatively clean mountain streams, vulnerable to forest loss and pollution, currently not at risk	Molur et al. (2005), Francis (2008), Johnsingh & Manjrekar (2013)

of foraging for snow trout fingerlings. The third record was made in June 2016, at a stream near Bewara Chatti, Uttarakhand (30.85427 N and 78.49019 E) at an altitude of 2,220m (Images 3, 4). This shrew was observed to be foraging against the flow of the water current at water depth of 40cm. Its activities were video recorded for future studies.

The Elegant Water Shrew, also called the Tibetan Water Shrew, has been listed as Least Concern by the IUCN (Molur 2016). In comparison to other shrews, *N. elegans* is larger in size with its length ranging from 90–128 mm and weight ranging from 25–45 g (Parker 1990). It is diurnal and aquatic, with a streamlined body, reduced pinna and webbed feet adapted to aid in swimming and

underwater foraging. The shrew inhabits creeks and turbulent cold waters of rivers from altitudes between 900–2,270 m (Molur et al. 2005). It is known to swim upstream, against the current, and often forages under sticks, rocks and stream bank vegetation before swimming downstream with the current (Molur 2008), which is its diagnostic behavioural feature vis-à-vis *Chimmarogale* which does not forage against the water current.

The present study is the first distribution record of this species in the western Himalayan region. Prior to this, the species in India has been reported only from Sikkim and Arunachal Pradesh, (Choudhury 2003) with no individual records elsewhere in the country (IUCN 1995; Choudhury 2003; Menon 2014). In addition, no



Image 1. Sampling site at Jari Stream



Image 2. Sampling site at Jamak Stream



Image 3. Sampling site at Bewra Chatti



Image 4. Sampling site at Bewra Chatti

record of this species has been reported from this area in the Indian Himalaya since 1841 till date (Pal et al. 2016). These new range extension records would be of immense use in refining the distribution range of this lesser-known species. Nevertheless, more work needs to be done to better explore the habitat and current distribution of this species. This would also aid in investigating and justifying its current conservation status. As such, efforts need to be put for better field studies and devising methodologies to capture their activities and study in vivo, which would also provide a better insight into the ecology and population, which is not clearly known to science.

References

- Choudhury, A.U. (2003). *The Mammals of Arunachal Pradesh*. Regency Publications, New Delhi, 15pp.
- Churchfield, S. (1998). Habitat use by water shrews, the smallest of amphibious mammals, pp. 49–68. In: Nigel Dunstone & Martyn L. Gorman (eds.). *Behaviour and Ecology of Riparian Mammals* [Online]. Symposia of the Zoological Society of London. (No. 71). Cambridge University Press, Cambridge.
- Francis, C. (2008). *A Field Guide to the Mammals of South-East Asia*. New Holland Publishers Ltd, 183–184pp.
- Hutterer, R. (1993). Order Insectivora, pp. 69–130. In: Wilson, D.E. & D.M. Reeder (eds.). *Mammals of the World: A Taxonomic and Geographic Reference. Second Edition*. Smithsonian Institution Press, Washington and London.
- Johnsingh A.J.T. & N. Manjrekar (2013). *Mammals of South Asia: Volume 1*. Orient Blackswan, 766pp.
- IUCN (1995). *Eurasian Insectivores and Tree Shrews: Status survey and Conservation Action Plan*. (Compiled and Edited by R. Davidstone). IUCN, Gland, Switzerland, 164pp+vii.
- Menon, V. (2014). *Indian Mammals: A Field Guide*. Hachette, UK, 587pp.
- Mitchell, R.M. (1975). A checklist of Nepalese mammals (excluding bats). *Saugetierkundliche Mitteilungen* 23: 152–157
- Molur, S. (2008). *Nectogale elegans*. In IUCN 2008: 2008 IUCN Red List of Threatened Species: Downloaded on 22 August 2016.
- Molur, S. (2016). *Nectogale elegans*. In IUCN 2016: 2016 IUCN Red List of Threatened Species: Downloaded on 06 November 2017.
- Molur, S., C. Srinivasulu, B. Srinivasulu, S. Walker, P.O. Nameer & L. Ravikumar (2005). *Status of South Asian Non Volant Small Mammals: Conservation Assessment and Management Plan (C.A.M.P) Workshop Report*. Zoo Outreach Organization/ CBSG-South Asia, Coimbatore, India, 618pp.
- Parker, S. (1990). *Grzimek's Encyclopedia of Mammals, Vol. I*. McGraw-Hill Publishing Company, New York, 492pp.
- Pal, R., S. Arya, S. Thakur, K. Mondal, T. Bhattacharya & S. Sathyakumar (2016). Bibliography on the Mammals of the Indian Himalayan Region, pp. 10-52. In: Bibliography on the Fauna and Microflora of the Indian Himalayan Region S. Sathyakumar (ed.) *ENVIS Bulletin: Wildlife and Protected Areas*. Vol 17. Wildlife Institute of India, Dehradun, India.
- Srinivasulu, C. & B. Srinivasulu (2012). *South Asian Mammals: Their Diversity, Distribution, and Status*. Springer, New York, 231pp.



OPEN ACCESS



The Journal of Threatened Taxa 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 of articles in any medium, reproduction, and distribution by providing adequate credit to the authors and the source of publication.

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

December 2017 | Vol. 9 | No. 12 | Pages: 10985–11104

Date of Publication: 26 December 2017 (Online & Print)

DOI: 10.11609/jott.2017.9.12.10985-11104

www.threatenedtaxa.org

Communications

***Nyctibatrachus mewasinghi*, a new species of night frog (Amphibia: Nyctibatrachidae) from Western Ghats of Kerala, India**
-- Keerthi Krutha, Neelesh Dahanukar & Sanjay Molur, Pp. 10985–10997

An interview-based survey to determine the conservation status of Softshell Turtles (Reptilia: Trionychidae) in the Irrawaddy Dolphin Protected Area, Myanmar
-- Steven G. Platt, Tint Lwin, Naing Win, Htay Lin Aung, Kalyar Platt & Thomas R. Rainwater, Pp. 10998–11008

Notes on taxonomy and captive development of the *Rattus andamanensis* (Blyth, 1860) (Rodentia: Muridae) from southern Andamans, India
-- S.S. Talmale & T. Bharathimeena, Pp. 11009–11015

Review and analysis of human and Mugger Crocodile conflict in Gujarat, India from 1960 to 2013
-- Raju Vyas & Colin Stevenson, Pp. 11016–11024

Status of conflict mitigation measures in Nilambur, Western Ghats of Kerala, India
-- C.K. Rohini, T. Aravindan, K.S. Anoop Das & P.A. Vinayan, Pp. 11025–11032

Short Communications

Notes on the taxonomy and distribution of two endemic and threatened dipterocarp trees from the Western Ghats of Kerala, India
-- M.S. Sanil, V.B. Sreekumar, K.A. Sreejith, A.J. Robi & T.K. Nirmesh, Pp. 11033–11039

Phenology and seed germination of the Indian Screw Tree *Helicteres isora* L. (Malvales: Malvaceae)
-- Mariappan Muthukumar, Thirupathi Senthil Kumar & Mandali Venkateswara Rao, Pp. 11040–11044

Additions to the sea snail fauna (Mollusca: Gastropoda: Opisthobranchia) of Lakshadweep Islands, India
-- B.K. Sneha Chandran, R. Ravinesh & A. Biju Kumar, Pp. 11045–11053

Preliminary checklist of springtails (Arthropoda: Collembola) of Uttar Pradesh, India
-- Ramesh Singh Yadav, Pp. 11054–11059

A new species of zygaenid moth *Elcysma ziroensis* (Lepidoptera: Zygaenidae: Chalcosiinae) from India
-- Punyo Chada, Monsoon Jyoti Gogoi & James John Young, Pp. 11060–11066

Dragonflies and damselflies of University of North Bengal campus, West Bengal, India with new distribution record of *Agrionemis kalinga* Nair & Subramanian, 2014
-- Aaratrik Pal, Pp. 11067–11073

A first record of the Bentfin Devil Ray *Mobula thurstoni* (Lloyd, 1908) (Myliobatiformes: Mobulidae) from the Indian EEZ of the Andaman Sea
-- Swapnil Shivdas Shirke, M. Nashad, Monalisha Devi Sukham & H.D. Pradeep, Pp. 11074–11080

First records of the Indo-Pacific Finless Porpoise *Neophocaena phocaenoides* (G. Cuvier, 1829) (Cetartiodactyla: Phocoenidae) from Sri Lanka
-- Ranil P. Nanayakkara, Thomas A. Jefferson & Sandaruwan Abayaratne, Pp. 11081–11084

Notes

Largest fungal fruit body from India
-- Manoj Kumar, Prahlad Singh Mehra, N.S.K. Harsh, Amit Pandey & Vijay Vardhan Pandey, Pp. 11085–11086

Ichthyofauna of Udayasamudram Reservoir in Nalgonda District, Telangana State, India
-- Rachamalla Shyamsundar, Kante Krishna Prasad & Chelmala Srinivasulu, Pp. 11087–11094

First record of migratory Grey-necked Bunting *Emberiza buchanani* Blyth, 1844 (Aves: Passeriformes: Emberizidae) as a winter visitor in Tiruchirappalli District, Tamil Nadu, India
-- T. Siva & P. Neelanarayanan, Pp. 11095–11096

New distribution records of Elegant Water Shrew *Nectogale elegans* Milne-Edwards, 1870 (Mammalia: Eulipotyphla: Soricidae) from the western Himalaya, Uttarakhand, India
-- Aashna Sharma, Vandana Rajput, Vineet K. Dubey, Aavika Dhand, Shagun Thakur, J.A. Johnson, S. Sathyakumar & K. Sivakumar, Pp. 11097–11099

The persistence of the Striped Hyena *Hyaena hyaena* Linnaeus, 1758 (Mammalia: Carnivora: Hyaenidae) as a predator of Olive Ridley Sea Turtle *Lepidochelys olivacea* Eschscholtz, 1829 (Reptilia: Testudines: Cheloniidae) eggs
-- Divya Karnad, Pp. 11100–11102

Book Review

Book review: A Photographic Guide -- Endemic Woody Plants of The Western Ghats
-- Jis Sebastian, Pp. 11103–11104

zoo!
Z Ü R I C H

**WILD
ZOO**
Threatened Taxa