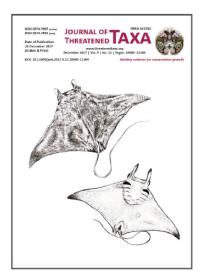
OPEN ACCESS



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 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

ICHTHYOFAUNA OF UDAYASAMUDRAM RESERVOIR IN NALGONDA DISTRICT, TELANGANA STATE, INDIA

Rachamalla Shyamsundar, Kante Krishna Prasad & Chelmala Srinivasulu

26 December 2017 | Vol. 9 | No. 12 | Pp. 11087–11094 10.11609/jott.3417.9.12.11087-11094



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>

Partner



Publisher/Host



ICHTHYOFAUNA OF UDAYASAMUDRAM RESERVOIR IN NALGONDA DISTRICT, TELANGANA STATE, INDIA

Rachamalla Shyamsundar¹, Kante Krishna Prasad² & Chelmala Srinivasulu³

1-2-3 Natural History Museum and Wildlife Biology & Taxonomy Lab, Department of Zoology, University College of Science, Osmania University, Hyderabad, Telangana 500007, India

³ Systematics, Ecology & Conservation Laboratory, Zoo Outreach Organization (ZOO), No 12, Thiruvannamalai Nagar, Saravanampatti-Kalapatti Road, Saravanampatti, Coimbatore, Tamil Nadu 641035, India

¹rachamalla.shyam@gmail.com, ²kpanatheist@gmail.com,

India has rich ichthyofaunal diversity in streams, rivers, reservoirs, subterranean systems, traditional lakes and domestic ponds, represented by about 2,486 species (including 937 species of freshwater fish and 1624 species of marine fish, of which 194 are endemic; Froese & Pauly 2017). Telangana State is located in the basin of two major rivers—Godavari and Krishna. These rivers with their major tributaries form the chief perennial river systems. Besides these there are a large number of seasonal streams, several man-made reservoirs, backwaters, and tanks in Telangana.

Very few studies have been conducted on the diversity of freshwater fishes in water bodies and reservoirs of both Andhra Pradesh (David 1963; Barman 1993) and Telangana (Rahimullah 1944; Mahmood & Rahimullah 1947; Chandrasekhar 2003; Rao et al. 2011). Till date,

there are no studies available on the fish fauna of the reservoirs in Nalgonda District, Telangana.

To fill this lacuna, we conducted surveys on the ichthyofaunal diversity of Udayasamudram Reservoir, also known as Panagal Reservoir (17.07777778 N & 79.30277778 E), located on the eastern side of Panagal Village,



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

OPEN ACCESS



near the town of Nalgonda, the district headquarters (Image 1). The main source of water in the reservoir is the inflow from the Krishna River through open-canal systems constructed for drinking and irrigation water supply, as well as from seasonal rains. The ayacut area is about 1,287 acres with a total catchment area of about 29.50km².

The study was conducted from March 2013 to February 2016. Four sites were selected, and fish samples were collected using cast nets, gill nets, and other traditional methods with the help of local Specimens were collected, photographed, fishers. labelled, and preserved in 4% formalin solution. The voucher specimens (NHM.OU.F-K.01-2015 to 20-2015) and photo vouchers (NHM.OU.F-K-PV 01-2015 to 20-2015) are deposited in the Natural History Museum of Osmania University, Department of Zoology, Osmania University, Hyderabad. The fishes were identified up to species level using standard literature (Jayaram & Sanyal 2003; Talwar & Jhingran 1991; Jayaram 2010), and threat status of the fish was retrieved from the IUCN Red List of Threatened Species 2016 (IUCN 2016). Nomenclature

DOI: http://doi.org/10.11609/jott.3417.9.12.11087-11094 | ZooBank: urn:lsid:zoobank.org:pub:66700EE3-7776-43A0-9EDA-27C8D41C46CF

Editor: Rajeev Raghavan, Kerala University of Fisheries and Ocean Studies (KUFOS), Kochi, India.

Date of publication: 26 December 2017 (online & print)

Manuscript details: Ms # 3417 | Received 18 March 2017 | Final received 08 December 2017 | Finally accepted 11 December 2017

Citation: Shyamsundar, R., K.K. Prasad & C. Srinivasulu (2017). Ichthyofauna of Udayasamudram Reservoir in Nalgonda District, Telangana State, India. *Journal of Threatened Taxa* 9(12): 11087–11094; http://doi.org/10.11609/jott.3417.9.12.11087-11094

Copyright: © Shyamsundar 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: DST-SERB, Govt. of India, and UGC, Govt. of India.

Competing interests: The authors declare no competing interests.

Acknowledgements: We thank the Head, Department of Zoology, Osmania University, for the necessary facilities. KKP acknowledges UGC, New Delhi for Research Fellowship. CS acknowledges DST-SERB, New Delhi for the research grant, and UGC-SAP II (DSA - I) Programme in Zoology.











³ chelmalasrinivasulu@gmail.com (corresponding author)

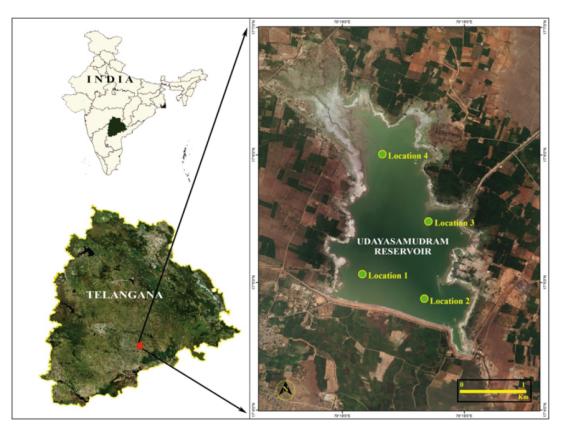


Image 1. Location of Udayasamudram Reservoir, Nalgonda District, Telangana State, India. [Maps of India and Telangana State are indicative and are not to scale; map of Udayasamudram Reservoir is sourced from Google Earth, and is scaled as indicated]

of fishes follows Eschmeyer et al. (2016). The relative abundance of fishes observed during the present study has been represented in four different categories viz., (i) abundant (>75% of the total catch), (ii) common (>50% and <75% of the total catch), (iii) moderate (>25% and <50% of the total catch), and (iv) rare (>0% and <25% of the total catch).

A total of 38 species belonging to 15 families and 32 genera were recorded. Of the total, nine species were abundant, 12 species were common, 11 species were moderate and six species were rare in occurrence (Table 1; Images 2–36). No threatened species were observed while four species belonged to Near Threatened, and 34 to Least Concern categories of the IUCN Red List of Threatened Species.

Order Cypriniformes dominated with 14 species (representing 36.84% of the total fish diversity of the reservoir) followed by Perciformes with 10 species (26.31%), Siluriformes with nine species (22.50%), Beloniformes withtwo species (5.0%), Osteoglossiformes, Synbranchiformes and Anguilliformes with one species each (2.50% each). The maximum number of families were in the orders Siluriformes (Bagridae, Siluridae, Clariidae, Pangasiidae, and Heteropneustidae) and

Perciformes (Channidae, Gobiidae, Cichlidae, and Ambassidae) followed by Beloniformes (Belonidae and Hemiramphidae). The rest of the orders had one family each.

The ichthyofaunal diversity of the Udayasamudram Reservoir is represented by species such as *Gibelion catla, Labeo rohita, Cyprinus carpio, Cirrhinus mrigala, Mystus cavasius, Mystus vittatus, Channa striata,* and *Channa marulius,* which were also reported as common species in the Krishna River system in Telangana and Andhra Pradesh (Jayaram 2010).

Recent publications on fish fauna of Telangana are mostly in grey and predatory literature and have contributed to more confusion; therefore we do not have quality comparative studies to discuss our results with. Similarly, although Krishna River and its tributaries are known for their rich ichthyofaunal diversity (Jadhav et al. 2011; Dahanukar et al. 2012; Kharat et al. 2012), we refrain from comparing our results with those from the upper reaches of Krishna River due to geographical distance and the presence of only common species at Udayasamudram Reservoir.

As the Reservoir is meant for the supply of drinking water to Nalgonda Township and surrounding villages,

Table 1. List of fish species recorded in Udayasamudram Reservoir, Nalgonda District, Telangana State, India.

	Order	Family	Scientific name	Common name	Abundance	IUCN status	Voucher No.
1	Cypriniformes	Cyprinidae	Gibelion catla (Hamilton 1822)	Catla M LC		LC	NHM.OU.F-K-PV.01.2015
2			Cirrhinus mrigala (Hamilton, 1822)	Mrigal Carp	М	LC	NHM.OU.F-K-PV.02.2015
3			Cirrhinus reba (Hamilton, 1822)	Reba Carp	М	LC	NHM.OU.F-K-PV.03.2015
4			Amblypharyngodon mola (Hamilton, 1822)	Mola Carplet	А	LC	NHM.OU.F-K.13.2015
5			Cyprinus carpio Linnaeus, 1758*	Common Carp	R		NHM.OU.F-K-PV.05.2015
6			Laubuka laubuca (Hamilton, 1822)	Indian Glass Barb	М	LC	NHM.OU.F-K.16-2015
7			Garra gotyla (Jerdon, 1849)	Garra	М	LC	NHM.OU.F-K.20-2015
8			Systomus subnasutus (Valenciennes, 1842)	Olive Barb	М	LC	NHM.OU.F-K-PV. 06.2015
9			Puntius sophore (Hamilton, 1822)	Pool Barb	С	LC	NHM.OU.F-K.14-2015
10			Pethia ticto (Hamilton, 1822)	Ticto Barb	А	LC	NHM.OU.F-K-PV.07.2015
11			Rasbora daniconius (Hamilton, 1822)	Slender Rasbora	А	LC	NHM.OU.F-K-PV.08.2015
12			Salmophasia balookee (Sykes, 1839)	Bloch Razorbelly Minnow	А	LC	NHM.OU.F-K.15-2015
13			Labeo rohita (Hamilton, 1822)	Rohu	С	LC	NHM.OU.F-K-PV.09.2015
14			Devario devario (Hamilton, 1822)	Sind Danio	М	LC	NHM.OU.F-K-PV.10.2015
15	Siluriformes	Bagridae	Mystus cavasius (Hamilton, 1822)	Gangetic Mystus	С	LC	NHM.OU.F-K.17-2015
16			Mystus bleekeri (Day, 1877)	Day's Mystus	С	LC	NHM.OU.F-K.18-2015
17			Mystus vittatus (Bloch, 1794)	Striped Dwarf Catfish	С	LC	NHM.OU.F-K.19-2015
18			Sperata seenghala (Sykes, 1839)	Giant River- Catfish	С	LC	NHM.OU.F-K.07-2015
19		Siluridae	Ompok bimaculatus (Bloch, 1794)	Butter Catfish	R	NT	NHM.OU.F-K.04-2015
20			Wallago attu (Bloch & Schneider, 1801)	Wallago	R	NT	NHM.OU.F-K-PV.11.2015
21		Clariidae	Clarias magur (Hamilton, 1822)	Indian Catfish	R	LC	NHM.OU.F-K-PV.12.2015
22		Pangasiidae	Pangasius pangasius (Hamilton, 1822)	Batchwavacha	А	LC	NHM.OU.F-K-PV.13.2015
23		Heteropneustidae	Heteropneustes fossilis (Bloch, 1794)	Stinging Catfish	М	LC	NHM.OU.F-K.09-2015
24	Osteoglossiformes	Notopteridae	Notopterus notopterus (Pallas, 1769)	Bronze Featherback	А	LC	NHM.OU.F-K.06-2015
25	Perciformes	Channidae	Channa marulius (Hamilton, 1822)	Great/Giant Snakehead	М	LC	NHM.OU.F-K-PV.14.2015
26			Channa punctata (Bloch, 1793)	Spotted M Snakehead		LC	NHM.OU.F-K-PV.15.2015
27			Channa striata (Bloch, 1793)	Striped Snakehead	С	LC	NHM.OU.F-K-PV.16.2015
28		Gobiidae	Glossogobius giuris (Hamilton, 1822)	Tank Goby	С	LC	NHM.OU.F-K.11-2015
29		Cichlidae	Pseudetroplus maculatus (Bloch, 1795)	Orange Chromide	R	LC	NHM.OU.F-K.10-2015
30			Etroplus suratensis (Bloch, 1790)	Green Chromide	С	LC	NHM.OU.F-K.02-2015
31			Oreochromis mossambicus (Peters, 1852)*	Mozambique A			NHM.OU.F-K.05-2015
32		Ambassidae	Chanda nama (Hamilton, 1822)	Elongate Glass- Perchlet	А	LC	NHM.OU.F-K.12-2015
33			Parambassis ranga (Hamilton, 1822)	Indian Glassy Fish	М	LC	NHM.OU.F-K-PV.18.2015

	Order	Family	Scientific name	Common name	Abundance	IUCN status	Voucher No.
34			Parambassis lala (Hamilton, 1822)	Highfin Glassy Perchlet	С	NT	NHM.OU.F-K-PV.19.2015
35	Beloniformes	Belonidae	Xenentodon cancila (Hamilton, 1822)	Freshwater Garfish	С	LC	NHM.OU.F-K.01-2015
36		Hemiramphidae	Hyporhamphus limbatus (Valenciennes, 1847)	Congaturi Halfbeak	А	LC	NHM.OU.F-K.08-2015
37	Synbranchiformes	Mastacembelidae	Mastacembelus armatus (Lacepède, 1800)	Zig-Zag Eel	С	LC	NHM.OU.F-K.03-2015
38	Anguilliformes	Anguillidae	Anguilla bengalensis (Gray, 1831)	Indian Mottled Eel	R	NT	NHM.OU.F-K-PV.20.2015

Abbreviations: A - Abundant; M - Moderate; C - Common; R - Rare; LC - Least Concern; NT - Near Threatened; DD - Data Deficient; NHM.OU.F-K - Natural History Museum Osmania University Fishes Krishna River System; NHM.OU.F-K-PV - Natural History Museum Osmania University Fishes Krishna River System Photo Voucher. * Exotic species

culture of fish through cooperative societies are not allowed. There is no aquaculture practiced either by the State Fisheries Department or other private parties. However, some farmed fish species find their way to the reservoir through inlet canals connected to other lakes and the Alimineti Madhav Reddy Left Bank Canal of the Krishna River. Local communities and the State Fisheries Department need to take into cognizance the negative impact of such exotic fishes, and should avoid introducing them in to natural waters. We have detected the presence of *Rhinomugil corsula* in one of the lakes near the reservoir.

The reservoir is dependent on the water from the tributaries of the River Krishna and inundation due to monsoon rains. The surrounding area of the reservoir is used for agricultural purposes. The fish fauna of the Udayasamudram Reservoir is relatively less threatened by human activities, even though the use of agricultural chemicals, such as fertilizers and pesticides, may affect the fish population through monsoonal runoff. Hence, there is a need to take conservation management steps to prevent pollutants, by regular water quality checks. A holistic approach targeting conservation awareness activities, pollution mitigation measures and monitoring active or passive introduction of exotic species into the reservoir will help in the long-term retention of the ichthyofaunal diversity.

Although no commercial fishing activity is allowed, subsistence fishing by locals as well as natural causes keeps the fish population under check. It is also imperative to educate the locals and policy makers about the importance of freshwater fishes, the negative impacts of pollution and agriculture run-off. Educating the local people will help not only in conserving the fish diversity but also provide employment and livelihood.

References

Barman, R.P. (1993). Pisces: freshwater fishes, pp. 89–334. In: Director, ZSI (ed.). State Fauna Series 5, Fauna of Andhra Pradesh, Part-I. Zoological Survey of India, Calcutta.

Chandrasekhar, S.V.A. (2003). Ichthyo Fauna of Kondakarla Lake, Andhra Pradesh. *Records of the Zoological Survey of India* 101(1–2): 179–187.

Dahanukar, N., M. Paingankar, R.N. Raut & S.S. Kharat (2012). Fish fauna of Indrayani River, northern Western Ghats, India. *Journal of Threatened Taxa* 4(1): 2310–2317; http://doi.org/10.11609/JoTT. 02771.2310-7

David, A. (1963). Studies on fish and fisheries of the Godavari and Krishna River systems. In Part - I. Proceeding of the National Academy of Science India 33(2): 263–293.

Eschmeyer, W.N., R. Fricke & R. van der Laan (2016). Catalog of fishes: genera, species, references. (http://researcharchive.calacademy. org/research/ichthyology/catalog/fishcatmain.asp) Electronic version accessed 26/06/2017.

Froese, R. & D. Pauly (eds.) (2017). FishBase. World Wide Web electronic publication.www.fishbase.org (02/2017).

IUCN (2016). The IUCN Red List of Threatened Species. Version 2016-3. http://www.iucnredlist.ogr. Downloaded on 07 December 2016.

Jadhav, B.V., S.S. Kharat, R.N. Raut, M. Paingankar & N. Dahanukar (2011). Freshwater fish fauna of Koyna River, northern Western Ghats, India. *Journal of Threatened Taxa* 3(1): 1449–1455; http://doi.org/10.11609/JoTT.o2613.1449-55

Jayaram, K.C. & A. Sanyal (2003). A Taxonomic Revision of the Fishes of the Genus Mystus Scopoli (Family: Bagridae). Occasional Paper No. 207. Records of the Zoological Survey of India. Zoological Survey of India, Kolkata. 136 pp.

Jayaram, K.C. (2010). The Freshwater Fishes of the Indian Region. Revised - 2nd Edition. Narendra Publishing House, Delhi, 616pp+39pls.

Kharat S.S., M. Paingankar & N. Dahanukar (2012). Freshwater fish fauna of Krishna River at Wai, northern Western Ghats, India. *Journal of Threatened Taxa* 4(6): 2644–2652; http://doi.org/10.11609/JoTT. o2796.2644-52

Mahmood, S. & M. Rahimullah (1947). Fish survey of Hyderabad State. Part IV: Fishes of the Medak District. *Journal of the Bombay Natural History Society* 47: 102–111.

Rahimullah, M. (1944). Fish Survey of Hyderabad State. Part III: Fishes of the Medak District. *Journal of the Bombay Natural History Society* 45: 73–77.

Rao, C.A.N., J. Deepa & M. Hakeel (2011). Comparative account on icthyofauna of Pocharam and Wyra lakes of Andhra Pradesh, India. *Journal of Threatened Taxa* 3(2): 1564–1566; http://doi. org/10.11609/JoTT.o1933.1564-6

Talwar, P.K. & A.G. Jhingran (1991). Inland Fishes of India and Adjacent Countries. Oxford-IBH Publishing Co. Pvt. Ltd., New Delhi, 1158pp.



Image 2. Gibelion catla



Image 4. Laubuka laubuca



Image 7. Systomus subnasutus



Image 9. Pethia ticto



Image 11. Hyporhamphus limbatus



Image 3. Cirrhinus mrigala



Image 5. Amblypharyngodon mola



Image 6. Cyprinus carpio



Image 8. Garra gotyla



Image 10. Puntius sophore



Image 12. Rasbora daniconius



Image 13. Salmophasia balookee



Image 14. Labeo rohita



Image 15. Devario devario



Image 16. Mystus cavasius



Image 17. Sperata seenghala



Image 18. Mystus vittatus



Image 19. Wallago attu



Image 20. Ompok bimaculatus



Image 21. Pangasius pangasius



Image 22. Clarias magur



Image 23. Notopterus notopterus



Image 24. Heteropneustes fossilis



Image 25. Channa punctata



Image 26. Channa marulius



Image 27. Glossogobius giuris



Image 28. Channa striata



Image 29. Etroplus suratensis



Image 30. Pseudetroplus maculatus



Image 31. Chanda nama



Image 32. Oreochromis mossambicus



Image 33. Parambassis lala



Image 34. Parambassis ranga



Image 35. Mastacembelus armatus



Image 36. Anguilla bengalensis







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 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-

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,

-- 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, Thiruppathi 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-

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 Agriocnemis 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 Dhanda, 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



