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Journal of Threatened Taxa

10.11609/jott.2024.16.8.25639-25790

www.threatenedtaxa.org

26 August 2024 (Online & Print)

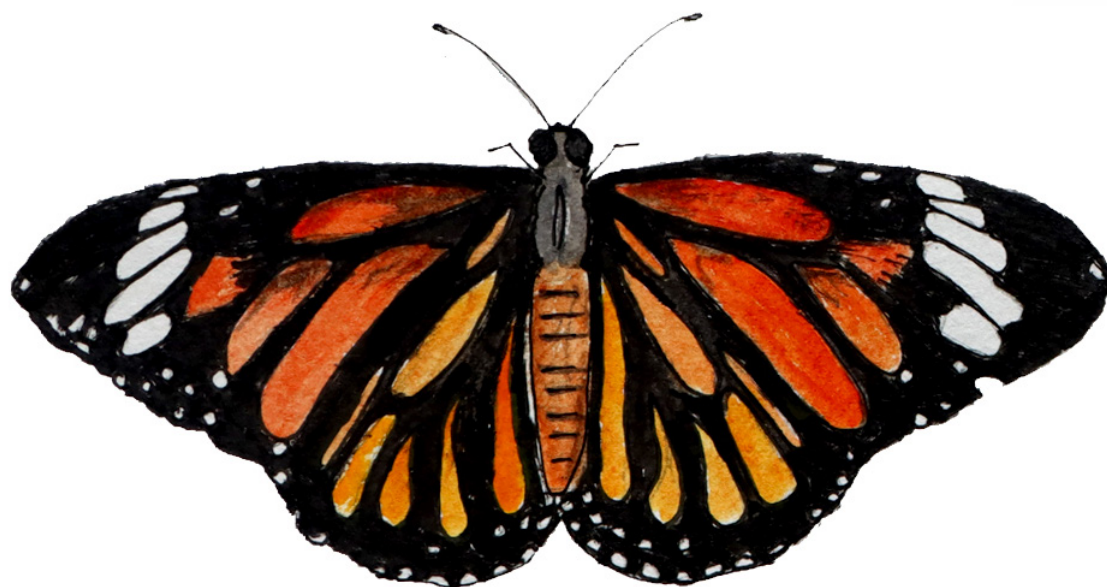
16(8): 25639-25790

ISSN 0974-7907 (Online)

ISSN 0974-7893 (Print)



Open Access





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

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Cover: Watercolour illustrations—Striped Tiger *Danaus genutia*, Common Silverline *Cigaritis vulcanus*, Tamil Lacewing *Cethosia mahratta*. © Mayur Nandikar.



Ophioglossum jaykrishnae S.M.Patil et al. (Pteridophyta: Polypodiophyta: Ophioglossaceae): a new distribution record from Kanha National Park, Madhya Pradesh, India

Tarun Nayi¹ , Mayurbhagwat² , Sanjay Saini³ , Soham Haldikar⁴ , Ishtayaque Patel⁵ , Shivaji Chavan⁶ , Nudrat Zawar Sayed⁷ & Sunil Kumar Singh⁸

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The fern genus *Ophioglossum* L. belongs to the primitive family Ophioglossaceae, is diverse, and has about 52 species worldwide. Among these species, 23 are documented from India (Patil et al. 2018; Fraser-Jenkins et al. 2020). The genus was first studied in India by Beddome (1883). Since then, it has received significant attention from researchers such as Hope (1903), Blatter & d'Almeida (1922), Mahabale (1962), Panigrahi & Dixit (1969), Khandelwal (1987), Khullar (1994), Goswami (2007), Patil & Dongare (2014), and Kachhiyapatel et al. (2018). Recently, four new species of *Ophioglossum* were reported and described in Gujarat, India by Patil et al. (2018), Patel & Reddy (2018, 2019), and Patel et al. (2018), respectively.

The Kanha Tiger Reserve (KTR) spans across the Mandla and Balaghat districts of Madhya Pradesh and is situated in the Maikal hills of the Satpura range (Kanha

Tiger Reserve 2024). During the floristic exploration of KTR, the authors collected an interesting specimen of *Ophioglossum* L. Upon critical examination, the specimen was identified as *O. jaykrishnae*. It was described by Patil et al. (2020) from Jambughoda Wildlife Sanctuary (WS), Gujarat. Currently, *O. jaykrishnae* is only known from Jambughoda Wildlife Sanctuary, Gujarat, and Koyna Wildlife Sanctuary, Maharashtra, India. Thus, the present collection from Kanha National Park accounts for a new addition to the flora of Madhya Pradesh, India. During the fieldwork, observations were made on species distribution, habitats, phenology, and the number of individuals in each population.

A floristic study was carried out for the Sondhar beat in the Kisli range of Kanha National Park, Madhya Pradesh, India during the months of October 2022 to December 2023. This area falls under the 22.366 N &

Editor: Afroz Alam, Banasthali Vidyapith, Rajasthan, India.

Date of publication: 26 August 2024 (online & print)

Citation: Nayi, T., M. Bhagwat, S. Saini, S. Haldikar, I. Patel, S. Chavan, N.Z. Sayed & S.K. Singh (2024). *Ophioglossum jaykrishnae* S.M.Patil et al. (Pteridophyta: Polypodiophyta: Ophioglossaceae): a new distribution record from Kanha National Park, Madhya Pradesh, India. *Journal of Threatened Taxa* 16(8): 25787–25790. <https://doi.org/10.11609/jott.8980.16.8.25787-25790>

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Funding: 1. Wildlife and We Protection Foundation, A-104, Madhuvan Co-operative Housing Society, Shimploi-Gorai Road, Off Link Road, Borivali West, Mumbai, Maharashtra 400092, India.
2. Kanha Tiger Reserve, Mandla, Madhya Pradesh 481661, India.

Competing interests: The authors declare no competing interests.

Acknowledgements: The authors express their gratitude to Dr. Sachin Patil of the Department of Botany at Shivaji University, Kolhapur, and professor Arvind Pareek of the Maharshi Dayanand Saraswati University Department of Botany, Ajmer for their essential assistance in verifying the species and reviewing the manuscript. The authors express their gratitude to Mr. Rounak Choudhary for his significant assistance in utilizing and understanding the QGIS system. We also thank the forest department and the Kanha National Park field director for enabling us to conduct fieldwork inside the protected forest area.



80.543 E. During this study, an interesting species of *Ophioglossum* was collected. Collected specimens were prepared following the method of Forman & Bridson (1992). After a critical examination of the specimens with relevant literature (Beddome 1883; Fraser-Jenkins et al. 2020; Patil et al. 2020) it was identified as *O. jaykrishnae* S.M.Patil et al. Also, the species was confirmed by matching with the isotypes deposited at SUK herbaria (SMP & KSR 1082). The voucher specimens (TRN 101) were deposited in the Government Science College Herbarium Gandhinagar, Gujarat. The GeoCAT tool was used to estimate the extent of occurrence (EOO) and area of occupancy (AOO) (Figure 1).

Ophioglossum jaykrishnae S.M.Patil et al. is a terricolous species with a height of 4–10 cm, featuring a dark brown and pink colour palette. Its subterranean elements include rhizomorphs, tuberoses – sub globose structures, and fibrous roots. Tropophylls with a brownish-pink hue emerge at a 30°–60° angle to the fertile stalk. The lanceolate lamina showcases an acute apex and nearly truncate base with a smooth margin, pseudo-costa, and absence of a sheathing leaf base. The venation is simple with parallel areoles. The fertile segment is 3–8.5 cm long, dark brownish, and abaxially grooved. Strobili, measuring 0.5–2 cm, reveals an acute-acuminate apex in a dark brown-pink color. Sporangia are arranged in two alternate rows, with 4–8 pairs, and spores are 20–35 µm in diameter, featuring a trilete exine with tuberculate-varicose patterns. Overall, this

plant exhibits intricate and unique characteristics in its morphology and reproductive structures (Image 1).

Reproductive period: July and August

Distribution: Jambughoda Wildlife Sanctuary, Gujarat (Patil et al. 2020), Koyna Wildlife Sanctuary, Maharashtra (Jadhav 2023), and Kanha Nation Park, Madhya Pradesh.

Ecology: *Ophioglossum jaykrishnae* grows in moist soil in open grasslands at altitudes up to 600 m. It is usually found in association with other species such as *Dimeria ornithopoda* Trin., *Cyperus triceps* (Rottb.) Endl., *Lindernia ciliata* (Colsm.) Pennell, *Lindernia crustacea* (L.) F. Muell., and other bryophyte species (Image 2).

Conservation status: The species was first recorded and described from Jambughoda WS located in Panchmahal district of Gujarat. It was subsequently reported from the Koyna WS in the Satara district of Maharashtra.

Recently, authors located this species in the Kanha Tiger Reserve. The population comprising 20–30 individuals is seen growing in a small area of roughly 1 km². The estimated extent of occurrence and area of occupancy of *Ophioglossum jaykrishnae* are 1,95,171.65 km² and 12 km², respectively (Figure 2).

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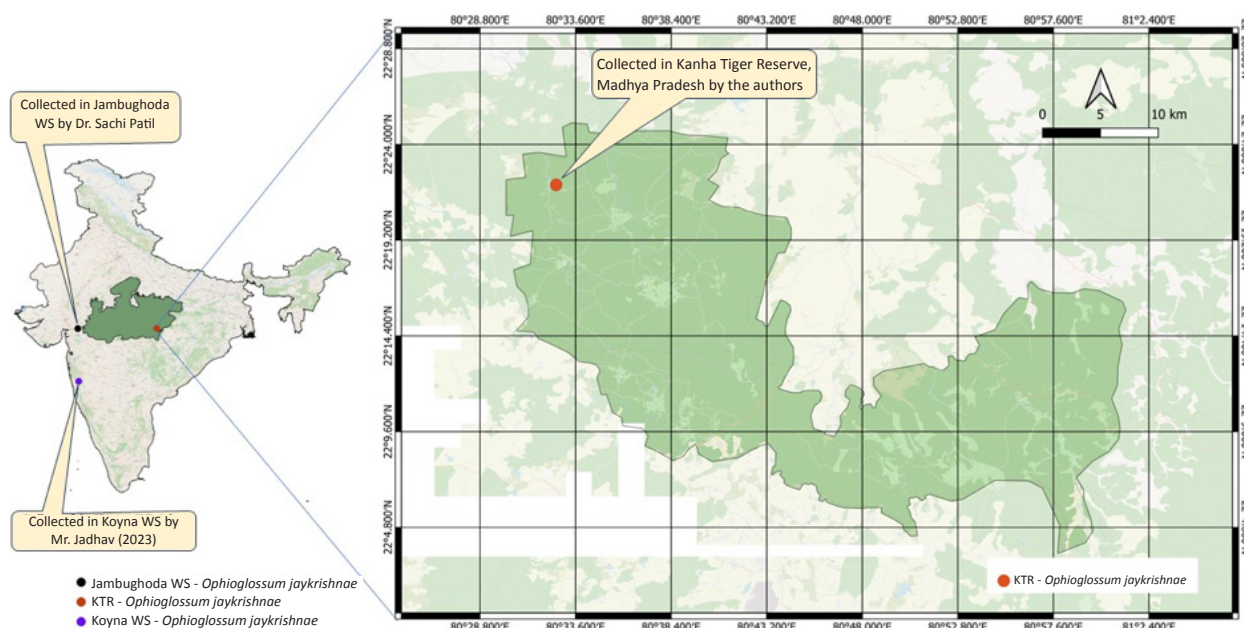


Figure 1. Depicting the location of *Ophioglossum jaykrishnae* S.M.Patil et al. (QGIS 2024)



Image 1. *Ophioglossum jaykrishnae* S.M.Patil, S.K.Patel, Raole & K.S.Rajput: a—habit | b—stem and leaves | c—fertile stalk-strobilus | d—fibrous root. © Tarun Nayi.



Image 2. Habitat of *Ophioglossum jaykrishnae*. © Tarun Nayi.

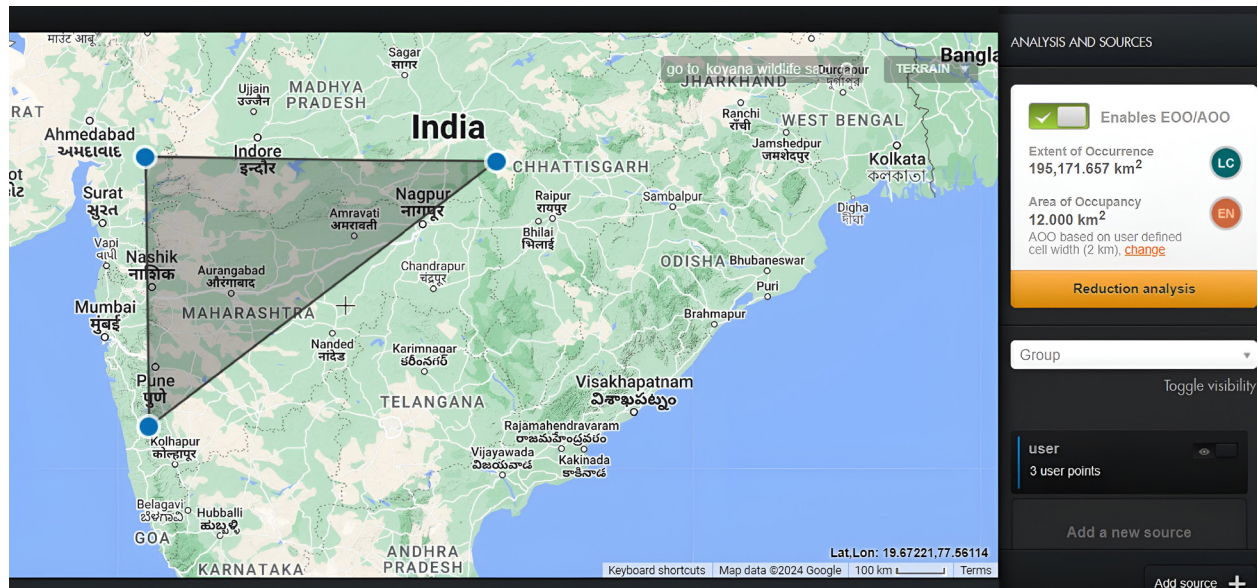


Figure 2. GeoCAT analysis showing distribution and analysis of extent of occurrence and area of occupancy (gsrid size 2km).

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Print copies of the Journal are available at cost. Write to:
The Managing Editor, JoTT,
c/o Wildlife Information Liaison Development Society,
43/2 Varadarajulu Nagar, 5th Street West, Ganapathy, Coimbatore,
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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



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

August 2024 | Vol. 16 | No. 8 | Pages: 25639–25790

Date of Publication: 26 August 2024 (Online & Print)

DOI: 10.11609/jott.2024.16.8.25639-25790

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