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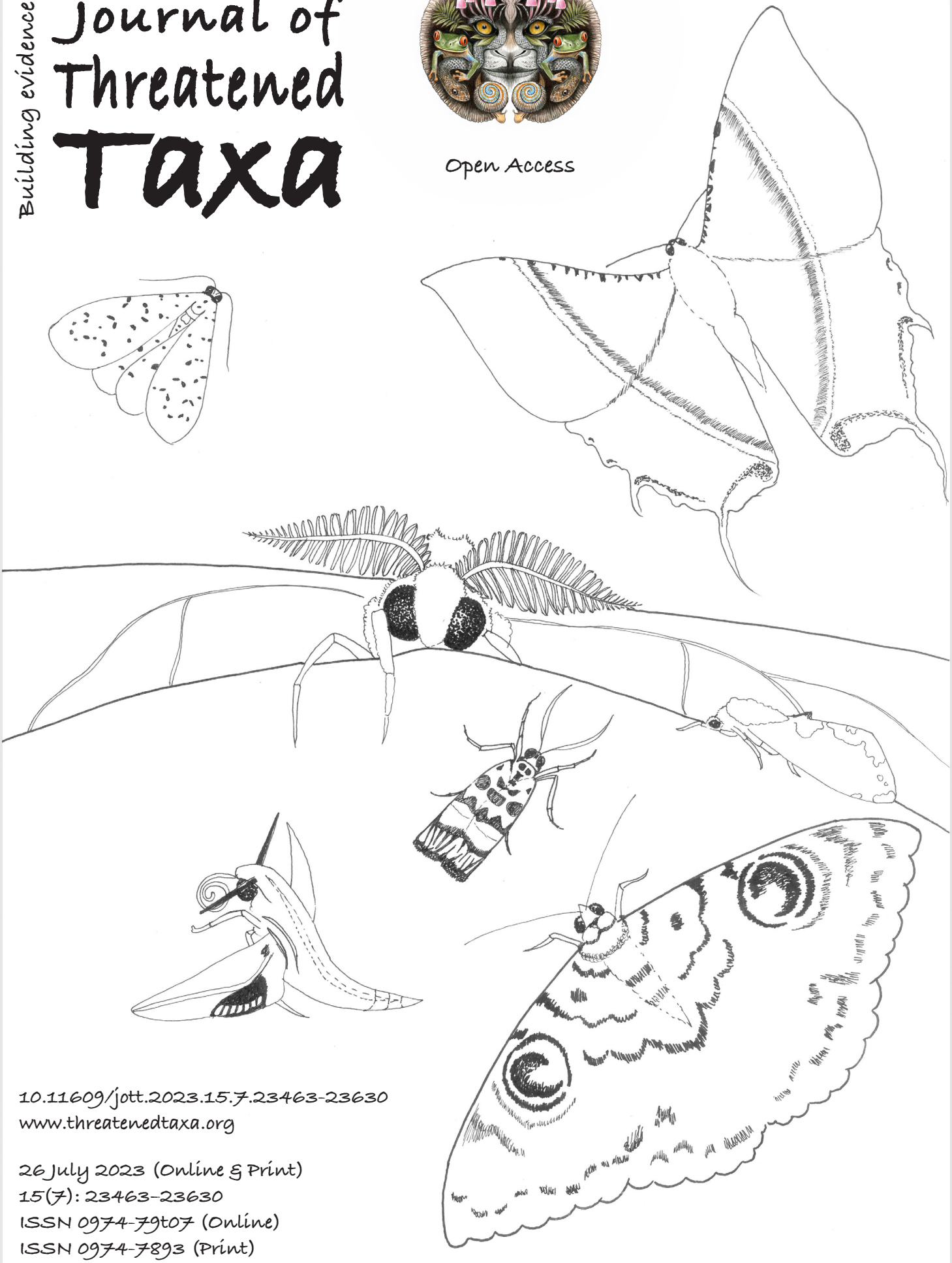

10.11609/jott.2023.15.7.23463-23630
www.threatenedtaxa.org

26 July 2023 (Online & Print)
15(7): 23463–23630
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

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continued on the back inside cover

Cover: Celebrating the unsung heroes—moths, our nocturnal pollinators. © Priyanka Iyer.

Journal of Threatened Taxa | www.threatenedtaxa.org | 26 July 2023 | 15(7): 23621–23626
ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)
https://doi.org/10.11609/jott.8344.15.7.23621-23626
#8344 | Received 28 December 2022 | Final received 19 May 2023 | Finally accepted 31 May 2023
OPEN ACCESS

NOTE

Preliminary observations of moth fauna of Purna Wildlife Sanctuary, Gujarat, India

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Gujarat is the fifth largest state of India and is situated on the western coast with a coastline of 1,600 km under the Kathiawar peninsula. There are 33 districts in Gujarat. Purna Wildlife Sanctuary (Dang District, Gujarat), known as a hotspot for its biodiversity, is situated on the extreme northern side of the Western Ghats. It has tropical moist deciduous forests with various flora and fauna in it. It comprises two protected areas — Purna Wildlife Sanctuary (WS) and Vansda National Park. They are known to protect the precious fauna of the area but limited information is available on the invertebrate fauna from the sanctuary. Purna WS is rich in its fauna because of its different terrain, landscapes, and forest.

Purna Wildlife Sanctuary is located at Dang District of Gujarat under the coordinates 20.91793°N, 73.7007°E with an area of 160.84 km^2. It has southern moist deciduous forests and southern dry deciduous forests (Champion & Seth 1968; Singh et al. 2000), with a normal rainfall of 1,600 mm annually. The topography of the WS is undulant with an altitude range of 130–1100 m. Thus, the WS has a varied range of flora and fauna. Moths play an important role as an indicator of the environmental health of an ecosystem (Bachanda et al. 2014). Moth larvae are herbivores, pests of vegetables, and crops, thus playing ecological roles throughout the life cycle (Scriber & Feeny 1979) while adults and larval stages are food sources for other animals and some are night pollinators (Holt 2002; Hahn & Bruhl 2016).

In class Insecta, moths are among the most varied groups (Soggard 2009). There are almost 1,65,000 species of moths throughout the world (Khan 2018), out of which about 12,000 species are described from India (Chandra & Nema 2007; Bell & Scott 1937; Cotes & Swinhoe 1887–1889; Hampson 1892, 1894, 1895, 1896; Chandra 2007; Gurule & Nikam 2013; Smetacek 2011; Uniyal et al. 2013; Sondhi & Sondhi 2016). Four-hundred-and-one species of moths have been recorded from Gujarat (Nurse 1899; Mosse 1929; Gupta & Thakur 1990). Further, no information is available on the moths from the Purna WS and therefore the present study was conducted for the first time.

The survey of Purna WS was carried out from 2019 to 2022. Various localities were visited—Bardipada range, Bheskatri range, Kalibel range, and Singhana range of Dang & Ahwa districts of Gujarat (Table 1)—and for the collection, night traps for about 5–6 hours was used for trapping moths at night.

Observation and collection of moths was done using a mercury vapour bulb of 200W on a white sheet. A collection permit for moths was received from the Gujarat Forest Department vide letter no. WLP/RES/28/C/119-120/2020-21 dated 01/09/2020.

Editor: Sanjay Sondhi, Titli Trust, Dehradun, India.

Date of publication: 26 July 2023 (online & print)

Citation: Choudhary, P. & I. Sharma (2023). Preliminary observations of moth fauna of Purna Wildlife Sanctuary, Gujarat, India. *Journal of Threatened Taxa* 15(7): 23621–23626. https://doi.org/10.11609/jott.8344.15.7.23621-23626

Funding: Ministry of Environment, Forest & Climate Change (MoEF & CC), Zoological Survey of India.

Competing interests: The authors declare no competing interests.

Acknowledgements: Authors are thankful to the director Dr. Dhriti Banerjee, Zoological Survey of India for providing the necessary facilities and encouragement.

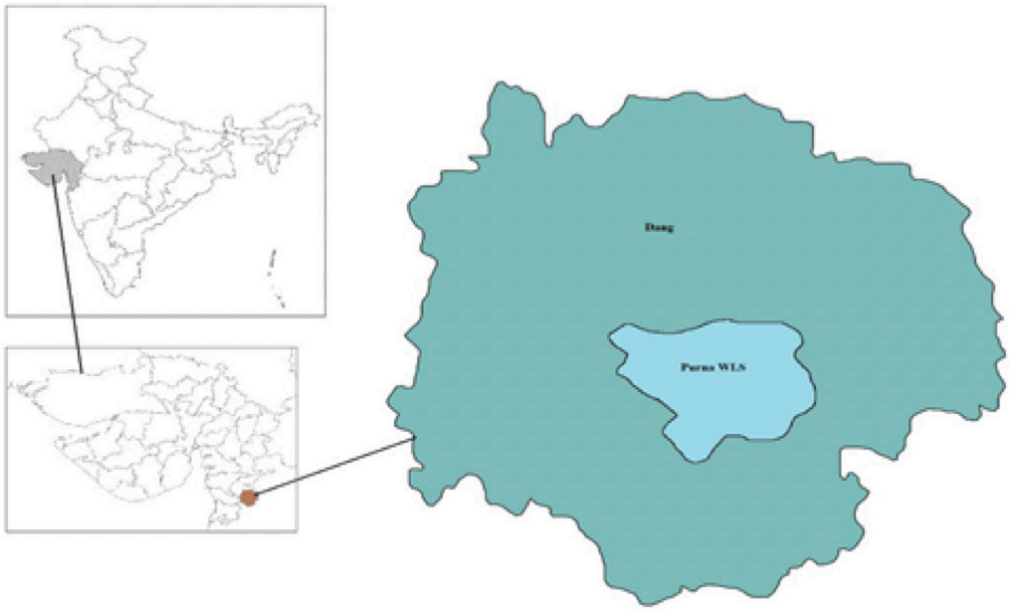

Figure 1. The surveyed area of Dangs District, Gujarat.

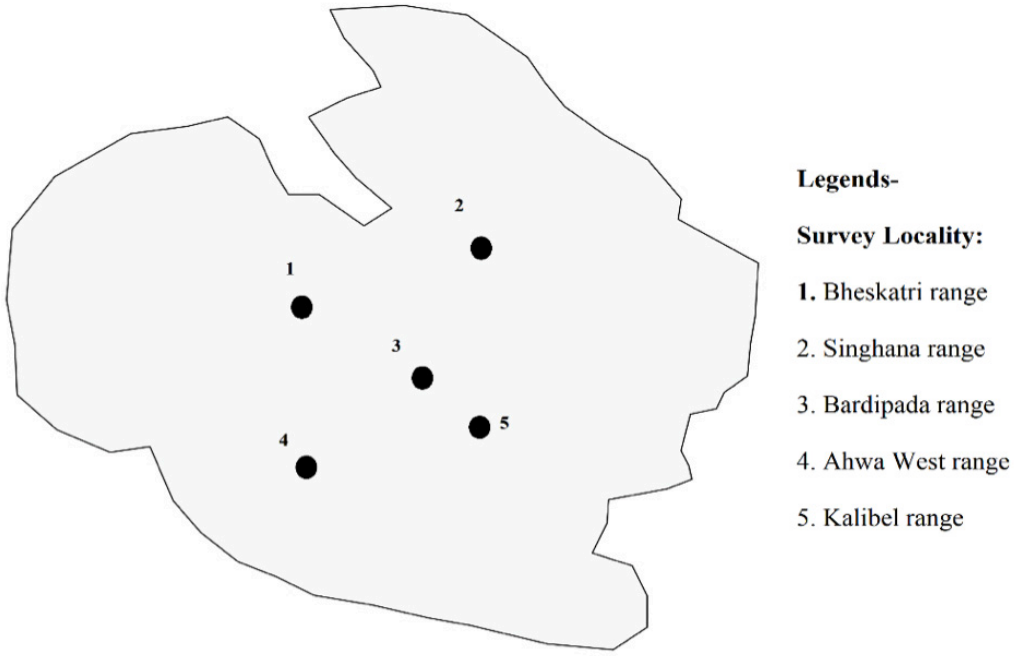

Figure 2. The survey localities of Purna Wildlife Sanctuary.

Collected specimens were labeled with locality labels in the field. Later on, they were sorted, relaxed, pinned, identified up to the species level, and labelled. Their identification was done with the help of identification keys, standard reference books, and available literature. Further specimens are deposited at the National Zoological Collection of Desert Regional Centre, Jodhpur. Four-hundred-and-seven moth specimens were

Table 1. Collection of data from various localities of the study area.

	District	Sites surveyed	Exs. collected
1.	Dang	Bardipada range	153
2.		Bheskatri range	26
3.		Kalibel range	141
4.		Singhana range	48
5.	Ahwa	Ahwa West range	39
		Total	**407**

Table 2. List of preliminary observation moth fauna from Purna Wildlife Sanctuary.

	Scientific name	Status
Super family: Pyraloidea **Family:** Crambidae		
1	*Botyodes asialis* Guenée , 1854	Common
2	*Conogethes punctiferalis* (Guenée , 1854)	Rare
3	*Cydalima laticostalis* (Guenée , 1854)	Common
4	*Diaphania indica* (Saunders, 1851)	Common
5	*Parotis marginata* (Hampson, 1893)	Rare
Super family: Noctuoidea **Family:** Erebidae		
6	*Achaea janata* (Linnaeus, 1758)	Common
7	*Amata cyssea* (Stoll, [1782])	Rare
8	*Anomis flava* Fabricius, 1775	Rare
9	*Argina astrea* (Drury, 1773)	Common
10	*Arna bipunctapex* (Hampson, 1891)	Rare
11	*Asota caricae* (Fabricius, 1775)	Common
12	*Asota ficus* (Fabricius, 1775)	Common
13	*Chalciope mygdon* (Cramer, [1777])	Common
14	*Creatonotos gangis* (Linnaeus, 1763)	Common
15	*Eudocima phalonia* (Linnaeus, 1763)	Common
16	*Lymantria serva* (Fabricius, 1793)	Rare
17	*Lyncestis amphix* (Cramer, 1777)	Rare
18	*Nepita conferta* (Walker, 1854)	Rare
19	*Orvasca subnotata* Walker, 1865	Rare
20	*Perina nuda* (Fabricius, 1787)	Common
21	*Spilarctia* sp.	Rare
22	*Spirama helicina* (Hubner, 1824)	Common
23	*Sphrageidus similis* (Fuessly, 1775)	Common
24	*Syntomoides imaon* (Cramer, [1779])	Common
25	*Thyas coronata* Fabricius (1775)	Common
26	*Thyas honesta* Hübner, [1824]	Common
27	*Trigonodes disjuncta* (Moore, 1882)	Common
28	*Utetheisa lotrix* (Cramer, 1779)	Common
Family: Noctuidae		
29	*Spodoptera litura* (Fabricius, 1775)	Common
Super family: Geometroidea **Family:** Geometridae		
30	*Biston suppressaria* (Guenée, [1858])	Rare
31	*Hypomecis* sp.	Rare
Super family: Lasiocampoidea **Family:** Lasiocampidae		
32	*Trabala ganesha* Roepke, 1951	Rare
33	*Trabala vishnou* Lefebvre, 1827	Rare
Super family: Pyraloidea **Family:** Pyralidae		
34	*Cadra cautella* (Walker, 1863)	Rare
Super family: Bombycoidea **Family:** Saturniidae		
35	*Actias selene* (Hübner, [1807])	Rare
36	*Antheraea paphia* (Linnaeus, 1758)	Rare
Super family: Bombycoidea **Family:** Sphingidae		
37	*Daphnis nerii* (Linnaeus, 1758)	Common
38	*Marumba dyras* (Walker, 1856)	Common
39	*Nephele hespera* (Fabricius, 1775)	Common
40	*Psilogramma* sp.	Common
41	*Theretra nessus* (Drury, 1773)	Rare
Super family: Zygaenoidea **Family:** Limacodidae		
42	*Parasa lepida* (Cramer, 1799)	Rare

collected and identified to 42 species under 39 genera and nine families. During the study, it was found that Erebidae is a dominant family of moths followed by Sphingidae, Crambidae, Saturniidae, Geometridae, Lasiocampidae, Noctuidae, Limacodidae, and Pyralidae in Purna Wildlife Sanctuary.

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1. *Botyodes asialis* Guenee, 1854

2. *Conogethes punctiferalis* (Guenee, 1854)

3. *Cydalima laticostalis* (Guenee, 1854)

4. *Diaphania indica* (Saunders, 1851)

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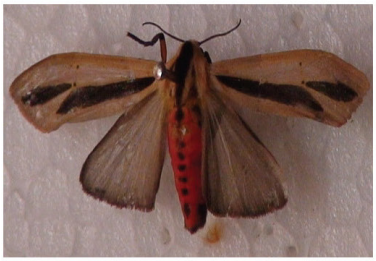

14. *Creatonotos gangis* (Linnaeus, 1763)

15. *Eudocima phalonia* (Linnaeus, 1763)

16. *Lymantria* sp.

17. *Lyncestis amphix* (Cramer, 1777)

18. *Nepita conferta* (Walker, 1854)

Image 1–18. Some moths of Purna Wildlife Sanctuary.

19. *Orvasca subnotata* Walker, 1865

20. *Perina nuda* Fabricius, 1787

21. *Spilosoma* sp.

22. *Spirama helicina* (Hubner, 1824)

23. *Sphrageidus similis* (Fussli, 1775)

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28. *Utethesia lotrix* Cramer, 1779

29. *Biston suppressaria* (Guenee, 1857)

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32. *Trabala vishnou* Lefebvre, 1827

33. *Cadra cautella* (Walker, 1863)

34. *Actias selene* (Hübner, 1807)

35. *Antheraea paphia* Linnaeus, 1758

36. *Daphnis nerii* (Linnaeus,1758)

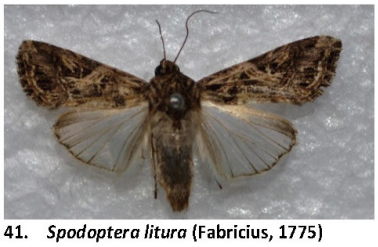
Image 19–36. Some moths of Purna Wildlife Sanctuary.

37. *Marumba dyras* Walker, 1856

38. *Nephele hespera* (Fabricius,1775)

39. *Psilogramma* sp.

40. *Theretra nessus* (Drury, 1773)



41. *Spodoptera litura* (Fabricius, 1775)

42. *Parasa lepida* Cramer, 1799

Image 37–42. Some moths of Purna Wildlife Sanctuary.

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NAAS rating (India) 5.64

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Journal of Threatened Taxa

www.threatenedtaxa.org

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

July 2023 | Vol. 15 | No. 7 | Pages: 23463–23630
Date of Publication: 26 July 2023 (Online & Print)
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