The dragonflies and damselflies (Insecta: Odonata) of Shendurney Wildlife Sanctuary, southern Western Ghats, India

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Abstract: The odonate diversity of Shendurney Wildlife Sanctuary, southern Western Ghats (WG) of Kerala state, is discussed in this paper. A total of 181 species belonging to 87 genera and 14 families have been compiled for Kerala and this includes 68 Western Ghats endemics. A total of 116 species of odonates including 33 endemics were recorded for the sanctuary. Shendurney thus harbours 56.04 % of WG and 64.08 % of the odonate diversity of Kerala. In addition, this includes 48.52% of WG and 41.25 % of endemic odonates of Western Ghats. About 29% of all the species recorded for the Shendurney are endemic to WG. With respect to IUCN Red List of Threatened Species, one species is ‘Endangered’, three ‘Vulnerable’, two ‘Near Threatened’, 84 ‘Least Concern’, 20 ‘Data Deficient’, and six species whose IUCN Red List status was not assessed. Family Libellulidae (41 species) dominated the odonate diversity, followed by Coenagrionidae (15 species) and Gomphidae (13 species). Regarding the occurrence status, we found that 11 species were Very Common, 42 species were found to be Common, 34 species Not Rare, 10 species were Rare, and 19 species were Very Rare inside the sanctuary. None of the species listed is protected under the Indian Wildlife Protection Act 1972.

Keywords: Anisoptera, checklist, endemicity, IUCN Red List, Kerala, Zygoptera.

Abbreviations: IUCN—The International Union for Conservation of Nature | RF—Reserve Forest | TIES—Tropical Institute of Ecological Sciences | TNHS—Travancore Nature History Society | TORG—TNHS Odonate Research Group | TR—Tiger Reserve | WG—Western Ghats | WS—Wildlife Sanctuary.
INTRODUCTION

The Shendurney Wildlife Sanctuary (8.80–8.95 N, 77.07–77.27 E), with an area of 171 km² is located in the northern aspect of the Agasthyamalai hills of the southern Western Ghats and lies in the catchment of the Parappar Dam (Thennalai) constructed across the west-flowing Kallada River (Image 1). The Achankovil gap separates this region from the Pandalam hills, which is the southernmost extension of the Anamalai Hills Complex. The Kuttalam (Courtallam) reserve forest lies to the north-east of the sanctuary. The state boundary of Kerala with Tamil Nadu delineates its eastern border. On the southeastern side lies the Papanasam RF and Mundanthurai region of the Kalakkad-Mundanthurai TR in Tamil Nadu. The southern boundary lies along the border of the Thiruvananthapuram Forest Division where Kulathupuzha and Yeur RPs lie in contiguity with the sanctuary. A narrow stretch of reserved forest tract of the Paruthipally range separates it from Peppara WS in the south (Nair 1991). Much of the terrain of the region is undulating, with valleys and high hills. The altitude ranges from 100 m at the base of the hill to 1,550 m on top of Alwarkurichi, the highest peak. The weather is hot and humid with 2,500–5,000 mm of rainfall received during both the monsoons (Nair 1991). The temperature varies from 16 °C to 35 °C (Mathew et al. 2004). Most of the region is accessible from strategically located base camps for biodiversity assessments. The Shendurney WS has good floral diversity (Subramanian 1995). The vegetation types found here are the west-coast tropical evergreen, southern hilltop tropical evergreen, west-coast tropical semi-evergreen, and southern subtropical hill forests, southern moist mixed deciduous forests, Ochlandra reed brakes, myristica swamp forest, and grasslands (Chandrashekaran 1962). Shendurney was relatively unexplored as far as odonates were concerned. There are no published papers on the odonate fauna of the sanctuary and the only available literature are the survey reports submitted by the TNHS to Shendurney WS from 2011 to 2021.

MATERIALS AND METHODS

Eight basecamps at different elevations and habitats were used to assess the odonate diversity of the 171 km² sanctuary (Image 1). The entire sanctuary was systematically covered by using six base camps; located at Darbhakulam, Idimuzhangan, Kallar, Kattalapara, Pandimotta, Rockwood, Rosemala, and Umayar. Transects were laid considering the location of water bodies at the basecamps. A standard transect length of 3 km, 3 m wide was covered in 3 hours and odonates were documented by a three-member team. Each station was covered using 30 such transects that were analysed for presence or absence data. The paper is based majorly on the field data from monthly visits to Shendurney WS since the year 2000. In addition, the consolidated report of systematic surveys done twice a year (May and December) in the sanctuary from 2010 to 2022 by TNHS, Trivandrum submitted to Shendurney WS, Kerala Forest Department (Sadasivan et al. 2021), was also consulted.

The odonates were field-observed and photographed as far as possible with special consideration to the prothorax and anal appendages. With a valid research permit, few of the confusing species were caught, field-observed under loupe magnification (ZEISS EyeMag Pro 5x450 mm Carl Zeiss Meditec Inc.) and released. Photographs of interesting odonates and dead specimens in the field were taken with Canon EOS 70D DSLR fitted with a 180 mm macro lens and MPE 65 f 2.8 1–5x Lens (Canon Inc., Japan). Photographs of interesting odonates are included (Images 3–6).

The basic taxonomy of odonates follows Fraser (1933,
A total of 116 species of odonates including 32 endemics were recorded from Shendurney WS. Rao & Lahiri (1982) recorded 23 species from Silent Valley and New Amarambalam RF; Emiliyamma & Radhakrishnan (2000, 2014) reported 39 species from Parambikulam WS; Mathavan & Miller (1989) had reported 36 species from Periyar TR; Gnanakumar et al. (2012) had reported 55 species from Chimmony WS; Adarsh et al. (2015) gave a checklist of 48 species from Chinnar, and 82 species were observed from Thattaekkad bird sanctuary and its environs by Varghese et al. (2014). Palot & Kiran (2016) reported 93 species from Aaralam WS. Thus, it is to be noted that Shendurney WS has the highest species diversity of odonates amongst protected areas in Kerala state known as of present.

RESULTS AND DISCUSSION

A total of 116 species of odonates including 32 endemics were recorded for the Shendurney region, while the current checklist of odonates of WG is at 207 species with 80 endemics and that of Kerala state is 181 species (87 genera, 14 families) and 68 WG (Nair et al. 2021) (see Appendix 1). We observed 41 damselflies (Zygoptera) and 75 dragonflies (Anisoptera) from the sanctuary (Figure 1B).

Family Libellulidae dominated the odonate diversity with 41 species, followed by Coenagrionidae (15 species) and Gomphidae (13 species) (Figure 1B). The species diversity was highest at Kattalapara (88 species), followed by Darbhakulam (72) and then Umayar (69 species) (Figure 2A). The lowest numbers were at Pandimotta (35 species), but this station had some rare and endemic species (see Appendix 1).
sanctuary has a good number of interesting records as stated below. *Elattoneura tetrica* (Laidlaw, 1917) was recorded from Kattalapara. *Vestolis submontana* Fraser, 1934, was locally common in the higher reaches of the mountains above 800 m (Image 3F), and *Euphaea fraseri* (Laidlaw, 1920) was generally restricted to low elevations (Image 3E); though they are occasionally found together after monsoons in low altitudes. *Chlorogomphus xanthoptera* (Fraser, 1919) is the sole member of Chlorogomphidae and was recorded only at high elevations at Pandimotta (Image 5B). The notable gomphids that were seen in the high elevations were *Asiagomphus nilgiricus* Laidlaw, 1917 and *Heliogomphus promelas* (Selys, 1873), while *Acrogomphus fraseri* Laidlaw, 1925 (Image 5D), *Burmacromia pyramidalis* Laidlaw, 1922, *Burmacromia laidlawi* Fraser, 1924 (Image 5E), and *Macromidia donaldi donaldi* (Fraser, 1924) (Image 3B). A notable species, *Idionyx saffronata* Fraser, 1924 (Image 5D), was usually seen confined to small streams and was recorded only at high elevations at Pandimotta (Image 5B). The notable gomphids that were seen in the high elevations were *Asiagomphus nilgiricus* Laidlaw, 1917 and *Heliogomphus promelas* (Selys, 1873), while *Acrogomphus fraseri* Laidlaw, 1925 (Image 5D), *Burmacromia pyramidalis* Laidlaw, 1922, *Burmacromia laidlawi* Fraser, 1924 (Image 5E), and *Macromidia donaldi donaldi* (Fraser, 1924) (Image 5B).

Melligomphus acinaces (Laidlaw, 1922) (Image 5C) were generally seen in mid-elevations (500–1,000 m). *Orthetrum triangulare triangulare* (Selys, 1878) is a locally Common species above 800 m. Three species, *Calocypha laidlawi* (Fraser, 1924) (Image 3B). *Epithemis mariae* (Laidlaw, 1915) (Image 6D), and *Lyriothemis
tricolor Ris, 1919 (Image 6B) were seen in lower elevations. *Epithemis mariae* and *Lyriothemis tricolor* were mostly seen around Myristica swamps while the latter was a tree-hole breeder. *Lyriothemis* males were seen guarding the water-filled tree holes at Kattalapara, Umayar, and Rosemala. *Cyclogomphus flavoannulatus* Rangnekar, Dharwadkar, Kalesh & Subramanian, 2019 (Image 5H), and *Cyclogomphus heterostylus* Selys, 1854 were generally seen in the foothills. *Pantala flavescens* (Fabricius, 1798) was the commonest migratory species, while *Anax ephippiger* (Burmeister, 1839) was not uncommon at Umayar during the first half of the year, before the south-west monsoon. We observed that the species in the genera *Macromia* and *Idionyx* found in Shendurney WS were forest insects. While the former preferred large streams, the latter and *Macromidia* were confined to smaller streams and rocky edges of large streams. *Macromia* was represented by *M. cingulata* Rambur, 1842, *M. ellisoni* Fraser, 1924 (Image 6F), *M. flavocolorata* Fraser, 1924 (Image 6E), and *M. irata* Fraser, 1924 (Image 6C). The distribution of *M. irata* was interesting in the fact that it was observed foraging on the edges of Myristica swamps, while others were riverine insects preferring open waters. Six species of *Idionyx* are seen in the sanctuary. Of them, *I. saffronata* Fraser, 1924 and *I. travancorensis* Fraser, 1931, are the commonest and seen in huge swarms in clearings on hills hawking insects at dusk. *I. galeata* Fraser, 1924, *I. corona* Fraser, 1921 (Image 6G), and *I. minima* Fraser, 1931 are much rarer compared to the others in our observation. *I. gomantakensis* Subramanian et al., 2013 (Image 6H), was seen in the vicinity of Myristica swamps at Kattalapara. *Macromidia donaldi donaldi* (Fraser, 1924) is a low to mid-elevation species seen at the edges of large streams. *Lestes concinnus* Hagen in Selys, 1862 is occasionally seen in the low elevations of Umayar and Kattalapara. *Protosticta cyanofemora* Joshi et al., 2020 (Image 4E), and *Protosticta rufostigma* Kimmins, 1958 (Image 4C) were recorded above 800 m from Pandimotta. *Indosticta deccanensis* Laidlaw, 1915 (Image 4B), was recorded from Darbhakulam and Rockwood.

### Occurrence Status
Regarding the occurrence status, we found that according to our working definition, 11 species were Very Common, 42 species were found to be Common, 34 species Not Rare, 10 species were Rare and 19 species were Very Rare (Figure 2A). The most common species seen in the region with respect to numbers were *Pantala flavescens* (Fabricius, 1798), *Brachythemis contaminata* (Fabricius, 1793), *Ceriagrion coromandelianum* (Fabricius, 1793), *Pantala flavescens* (Fabricius, 1798), *Brachythemis contaminata* (Fabricius, 1793), *Ceriagrion coromandelianum* (Fabricius, 1798), and *Diplacodes trivialis* (Rambur, 1842). The rarest of the species were *Idionyx galeata*, *Protosticta cyanofemora*, *Cyclogomphus flavoannulatus*, *Eopalthalmia frontalis binocellata* Fraser, 1936, and *Idionyx gomantakensis*.

### Endemic Status
We found 33 species from the Shendurney region which were strictly endemic to Western Ghats (Table 2). Thus, about 29 percent of the odonates of the Shendurney are Western Ghats endemics (Figure 12C).

Status as per IUCN Red List of Threatened Species
With respect to the IUCN Red List of Threatened Species, there was one ‘Endangered’ species, three ‘Vulnerable’, two ‘Near Threatened’, 84 ‘Least Concern’, 20 ‘Data Deficient’, and six species whose IUCN status was not available (Figure 2C). *Idionyx galeata*, reported from...
Pandimotta is an Endangered and very rare dragonfly. *Heliogomphus promelas* is a Near Threatened and rare gomphid that was recorded in the montane swamps of subtropical jungles at 1,200 m from Pandimotta. *Indothemis carnatica* another Near Threatened species was seen at Kattalapara. Three species are under the Vulnerable category – *Indosticta deccanensis*, *Protosticta sanguinostigma* Fraser, 1922 (Image 4F), and *Chlorogomphus xanthoptera*. Six species whose status needs to be assessed are *Protosticta cyanofemora*, *Paplopleura sexmaculata* (Fabricius, 1787), *Idionyx gomantakensis*, *Vestalis submontana*, *Cyclogomphus flavoannulatus*, and *Merogomphus tamaracheriensis* Fraser, 1931 (Image 5G).
Image 3. A—Vestalis submontana Fraser, 1934 © Kalesh Sadasivan | B—Calocypha laidlawi (Fraser, 1924) © K. Baiju | C—Agriocnemis keralensis Peters, 1981 © Vinayan P. Nair | D—Aciagrion approximans krishna Fraser, 1921 © Kalesh Sadasivan | E—Euphaea fraseri (Laidlaw, 1920) © Kalesh Sadasivan | F—Euphaea cardinalis (Fraser, 1924) © Kalesh Sadasivan | G—Caconeura risi (Fraser, 1931) © Kalesh Sadasivan | H—Esme mudiensis Fraser, 1931 © Kalesh Sadasivan.
Image 4. A—Pseudagrion indicum Fraser, 1924 © Vinayan P. Nair | B—Indosticta deccanensis Laidlaw, 1915 © Abraham Samuel | C—Protosticta rufostigma Kimmins 1958 © Kalesh Sadasivan | D—Protosticta graveyi Laidlaw, 1915 © Kalesh Sadasivan | E—Protosticta cyanofemora Joshi et al., 2020 © Kalesh Sadasivan | F—Protosticta sanguinostigma Fraser, 1922 © Kalesh Sadasivan | G—Onychargia atrocyana (Selys, 1865) © Abraham Samuel | H—Prodasineura verticalis annandalei (Fraser, 1921) © Kalesh Sadasivan.
Image 5. A—Macrogomphus wynaadicus Fraser, 1924 © Kalesh Sadasivan | B—Chlorogomphus xanthoptera (Fraser, 1919) © Kalesh Sadasivan | C—Melligomphus acinaces (Laidlaw, 1922) © Kalesh Sadasivan | D—Acrogonphus fraseri Laidlaw, 1925 © Toms Augustine | E—Burmagomphus laidlawi Fraser, 1924 © Kalesh Sadasivan | F—Asiagomphus nilgiricus Laidlaw, 1922 © Kalesh Sadasivan | G—Merogomphus tamaracherriensis Fraser, 1931 © Vinayan P. Nair | H—Cyclogomphus flavoannulatus Rangnekar, Dharwadkar, Kalesh & Subramanian, 2019 © Kalesh Sadasivan.
Image 6. A—Rhyothemis triangularis Kirby, 1889 © Vinayan P. Nair | B—Lyriothemis tricolor Ris, 1919 © Kalesh Sadasivan | C—Macromia irata Fraser, 1924 © Kalesh Sadasivan | D—Epithemis mariae (Laidlaw, 1915) © Kalesh Sadasivan | E—Macromia flavocolorata Fraser, 1924 © Kalesh Sadasivan | F—Macromia ellisoni Fraser, 1924 © Kalesh Sadasivan | G—Idionyx corona Fraser, 1921 © Kalesh Sadasivan | H—Idionyx gomantakensis Subramanian, Rangnekar & Nayak, 2013 © Kalesh Sadasivan.
CONCLUSION

Shendurney WS has the highest number of species reported for any protected area in Kerala especially considering the small area of 171 km². The odonate fauna of Shendurney is rich and harbours 56.04% of WG and 64.08% of the odonate diversity of Kerala. In addition, this includes 48.52% of Kerala and 41.25% of endemic odonates of Western Ghats. About 29% of all the odonates recorded from Shendurney are endemic to WG. None of the species is protected under the Indian Wildlife Protection Act 1972. Myristica swamps of Pandimotta are unique habitats harbouring endemic and rare odonates. Seasonal changes in odonate diversity and population dynamics with respect to the monsoons need to be elucidated with further studies.

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# Appendix I. List of Odonates of Shendurney Wildlife Sanctuary.

| Sub-Order Zygoptera | Scientific name | ST | EN | RL | DR | ID | KL | KT | PM | RK | RM | UM |
|----------------------|-----------------|----|----|----|----|----|----|----|----|----|----|----|
| **Family Calopterygidae** | | | | | | | | | | | | | |
| 1 | Neurobasis chinensis (Linnaeus, 1758) | C | – | LC | √ | √ | √ | – | √ | √ | √ | |
| 2 | Vestalis apiculus Selys, 1873 | C | – | LC | √ | √ | √ | – | √ | √ | √ | |
| 3 | Vestalis gracilis (Rambur, 1842) | C | – | LC | √ | √ | √ | – | √ | √ | √ | |
| 4 | Vestalis submontana Fraser, 1934 | NR | – | NA | – | – | – | – | √ | – | – | – |
| **Family Chlorocyphidae** | | | | | | | | | | | | | |
| 5 | Calocypha laidlawi (Fraser, 1924) | NR | √ | DD | – | – | – | √ | – | √ | – | – |
| 6 | Helioocypha bisignata (Hagen in Selys, 1853) | C | – | LC | √ | √ | √ | √ | – | √ | √ | √ |
| 7 | Libellago indica (Fraser, 1928) | C | – | LC | √ | √ | √ | – | √ | √ | √ | √ |
| **Family Coenagrionidae** | | | | | | | | | | | | | |
| 8 | Aciagrion approximans krishna Fraser, 1921* | NR | √ | LC | – | – | – | – | √ | – | – | – |
| 9 | Aciagrion occidentale Laidlaw, 1919 | C | – | LC | √ | √ | √ | – | √ | – | √ | √ |
| 10 | Agriocnemis koralaensis Peters, 1981 | C | √ | LC | – | – | – | √ | – | √ | √ | √ |
| 11 | Agriocnemis piers Laidlaw, 1919 | C | – | LC | √ | √ | – | √ | – | – | – | – |
| 12 | Agriocnemis pygmaea (Rambur, 1842) | C | – | LC | √ | √ | – | √ | – | – | √ | √ |
| 13 | Agriocnemis splendissima Laidlaw, 1919 | VR | – | LC | – | – | – | √ | – | – | √ | – |
| 14 | Ceriagrion cinnorubellum (Brauer, 1865) | C | – | LC | – | √ | √ | – | √ | √ | √ | √ |
| 15 | Ceriagrion coromandelianum (Fabricius, 1798) | VC | – | LC | √ | √ | √ | √ | – | √ | √ | √ |
| 16 | Ischnura rubilio Selys, 1876 | C | – | LC | √ | √ | √ | √ | √ | √ | √ | √ |
| 17 | Ischnura senegalensis (Rambur, 1842) | NR | – | LC | √ | √ | – | √ | – | √ | √ | √ |
| 18 | Pseudagrion decorum (Rambur, 1842) | R | – | LC | – | – | – | √ | – | √ | – | √ |
| 19 | Pseudagrion indicum Fraser, 1924 | NR | √ | LC | – | – | – | √ | – | – | – | – |
| 20 | Pseudagrion malabaricum Fraser, 1924 | C | – | LC | – | – | – | √ | – | – | – | – |
| 21 | Pseudagrion microcephalum (Rambur, 1872) | C | – | LC | – | – | – | √ | – | – | – | – |
| 22 | Pseudagrion rubriceps (Selys, 1876) | C | – | LC | √ | – | – | √ | – | – | √ | √ |
| **Family Euphaeidae** | | | | | | | | | | | | | |
| 23 | Dysphaea ethelo Fraser, 1924 | R | – | DD | – | – | – | √ | – | – | √ | √ |
| 24 | Euphaea cardinalis (Fraser, 1924) | R | √ | LC | – | – | – | √ | – | – | – | – |
| 25 | Euphaea fraseri (Laidlaw,1920) | C | √ | LC | – | √ | – | √ | – | √ | – | – |
| **Family Lestidae** | | | | | | | | | | | | | |
| 26 | Lestes concinnus Hagen in Selys, 1862 | NR | – | DD | √ | √ | √ | √ | – | – | – | √ |
| 27 | Lestes elatus Hagen in Selys, 1862 | VC | – | LC | √ | √ | √ | √ | √ | √ | √ | √ |
| 28 | Lestes praemorsus decipiens Kirby, 1893 | R | – | LC | √ | – | – | √ | – | √ | – | – |
| **Family Platycnemididae** | | | | | | | | | | | | | |
| 29 | Caconeura ramburi (Fraser, 1922) | C | – | DD | √ | – | √ | – | √ | √ | – | – |
| 30 | Caconeura risi (Fraser, 1931) | VC | √ | DD | √ | √ | √ | – | – | √ | √ | √ |
| 31 | Copera marginipes (Rambur, 1842) | VC | – | LC | √ | – | – | √ | – | – | √ | √ |
| 32 | Copera vitatta (Selys, 1863) | VC | – | LC | √ | √ | √ | – | √ | – | – | √ |
| 33 | Eptonotus tetricus (Laidlaw, 1917) | R | √ | LC | – | – | – | √ | – | – | – | – |
| 34 | Eume muedensis Fraser, 1931 | NR | √ | DD | – | – | – | – | √ | – | – | – |
| 35 | Ongycheria atrocyana (Selys, 1865) | NR | – | LC | – | – | – | √ | – | – | – | – |
| 36 | Prionacneura verticalis annandalei (Fraser, 1921) | C | – | LC | √ | √ | – | – | √ | – | √ | √ |
| **Family Platystictidae** | | | | | | | | | | | | | |
| 37 | Indosticta deccanensis Laidlaw, 1915 | VR | √ | VL | √ | – | – | – | √ | – | – | – |
| Scientific name | ST | EN | RL | DR | ID | KL | KT | PM | RK | RM | UM |
|-----------------|----|----|----|----|----|----|----|----|----|----|----|
| 38 Prosticta cyanofemora Joshi, Subramanian, Babu & Kunte, 2020 | VR | √ | NA | – | – | – | – | √ | – | – | – |
| 39 Prosticta griseyi Laidlaw, 1915 | C | √ | LC | √ | √ | √ | √ | – | √ | √ | √ |
| 40 Prosticta rufostigma Kimmens, 1958 | NR | √ | DD | – | – | – | – | √ | – | – | – |
| 41 Prosticta sanguinostigma Fraser, 1922 | C | √ | VL | √ | – | – | – | √ | √ | – | – |

**Sub-Order Anisoptera**

**Family Aeshnidae**

| 42 Anaxiaschna martini Selys, 1897 | VR | – | LC | – | – | – | – | √ | – | – | – |
| 43 Anax ephippiger (Burmeister, 1839) | C | – | LC | √ | – | – | – | √ | – | – | √ |
| 44 Anax guttatus (Burmeister, 1839) | VR | – | LC | √ | √ | √ | √ | – | √ | – | – |
| 45 Anax immaculifrons (Rambur,1842) | C | – | LC | √ | √ | √ | √ | √ | √ | √ | √ |
| 46 Gynacantha millardi Fraser,1920 | R | – | LC | √ | – | – | – | √ | – | √ | √ |
| 47 Gynacantha dravidica Liefnick,1960 | C | – | DD | √ | √ | √ | √ | – | – | √ | √ |

**Family Chlorogomphidae**

| 48 Chlorogomphus xanthopterus (Fraser, 1919) | R | √ | VL | – | – | – | – | √ | – | – | – |

**Family Corduliidae**

| 49 Hemicordulia asiatica (Selys, 1878) | C | – | LC | – | – | – | – | √ | – | – | – |

**Family Gomphidae**

| 50 Acrogonomphas fracta Laidlaw, 1925 | NR | √ | DD | √ | – | – | √ | – | √ | – | √ |
| 51 Asiaconomphus nilgiricus Laidlaw, 1922 | NR | √ | DD | – | – | √ | √ | – | – | √ | – |
| 52 Burmogomphus laotiai Fraser, 1924 | NR | – | DD | – | – | – | – | √ | – | – | – |
| 53 Burmogomphus pyramidalis Laidlaw, 1922 | NR | √ | LC | – | – | – | – | √ | – | – | – |
| 54 Cyclogomphus flavoannulatus Rangekar, Dhawadkar, Kalesh & Subramanian, 2019 | VR | √ | NA | – | – | – | √ | – | – | √ | – |
| 55 Cyclogomphus heterostylus Selys,1854 | VR | – | DD | – | – | – | √ | – | – | – | – |
| 56 Dumphidia kaduguensis Fraser, 1923 | NR | √ | DD | – | – | √ | – | √ | – | – | √ |
| 57 Heligomphus promelas (Selys, 1873) | R | – | NT | – | – | – | – | √ | – | – | – |
| 58 Ictinogomphus rapax (Rambur, 1842) | C | – | LC | √ | √ | √ | √ | – | – | √ | √ |
| 59 Macrogomphus wynaedicus Fraser, 1924 | NR | √ | DD | √ | – | √ | – | – | – | – | – |
| 60 Menogomphus tamarameriensis Fraser, 1931 | NR | √ | NA | – | – | – | – | √ | – | – | – |
| 61 Mellogomphus acinoces (Laidlaw, 1922) | R | √ | DD | – | – | √ | √ | – | – | – | – |
| 62 Paragomphus lineatus (Selys,1850) | C | – | LC | √ | √ | – | – | √ | √ | – | √ |

**Family Libellulidae**

| 63 Azisoma panopoides Rambur, 1842 | C | – | LC | √ | √ | – | √ | √ | – | – | – |
| 64 Aethriamanta brevispinus (Rambur, 1842) | NR | – | LC | √ | √ | – | √ | – | – | – | √ |
| 65 Brachydiplax chalybea Brauer, 1868 | C | – | LC | √ | √ | √ | – | – | – | – | √ |
| 66 Brachydiplax sobrina (Rambur, 1842) | NR | – | LC | √ | – | – | – | √ | – | – | – |
| 67 Brachythemis contaminata (Fabricius, 1793) | VC | – | LC | √ | √ | – | – | – | – | – | – |
| 68 Bradinogomphus kemini (Rambur, 1842) | VC | – | LC | – | – | √ | √ | – | √ | – | √ |
| 69 Cretillo lineata calveri (Forster, 1903) | C | – | LC | √ | √ | √ | √ | – | – | – | – |
| 70 Crocophaea verlarsi (Drury, 1770) | NR | – | LC | – | – | – | – | √ | – | – | – |
| 71 Diplacodes nebulosa (Fabricius, 1793) | VR | – | LC | – | – | – | – | √ | – | – | – |
| 72 Diplacodes trivialis (Rambur, 1842) | VC | – | LC | √ | √ | – | √ | √ | √ | – | √ |
| 73 Epithemis mariae (Laidlaw, 1915) | NR | √ | LC | √ | √ | – | – | – | √ | – | – |
| 74 Hydrobasileus croceus (Brauer, 1867) | NR | – | LC | √ | √ | √ | √ | – | – | – | – |
| 75 Hydrothemis apicalis Fraser, 1924 | NR | – | DD | √ | √ | – | √ | √ | √ | √ | √ |
| 76 Indothemis canarica (Fabricius, 1798) | VR | – | NT | √ | – | – | – | – | – | – | – |
| 77 Lathreciota asiatica (Fabricius, 1798) | C | – | LC | √ | √ | √ | √ | – | – | √ | √ |
| Scientific name | ST | EN | RL | DR | ID | KL | KT | PM | RK | RM | UM |
|-----------------|----|----|----|----|----|----|----|----|----|----|----|
| Lyriothemis tricolor Ris, 1919 | VR | – | LC | – | – | √ | – | – | √ | – | – | √ |
| Neurothemis fulvia (Druyr, 1773) | C | – | LC | √ | – | – | √ | – | – | √ | – | √ |
| Neurothemis tullia (Druyr, 1773) | NR | – | LC | √ | √ | √ | √ | – | – | √ | – | √ |
| Onycholoma testaceo ceylanica Ris, 1912 | NR | – | LC | √ | – | √ | √ | – | – | – | √ |
| Orthetrum chrys (Selys, 1891) | C | – | LC | √ | √ | √ | √ | – | – | √ | – | √ |
| Orthetrum triangulare triangulare (Selys, 1878) | NR | – | LC | √ | √ | √ | √ | – | – | √ | – | √ |
| Orthetrum glaucum (Brauer, 1865) | C | – | LC | √ | √ | √ | √ | – | – | √ | – | √ |
| Orthetrum luzonicum (Brauer, 1868) | C | – | LC | √ | √ | √ | √ | – | – | √ | – | √ |
| Orthetrum pruinosum neglectum (Rambur, 1842) | C | – | LC | √ | √ | √ | √ | – | – | √ | – | √ |
| Orthetrum sabina sabina (Druyr, 1770) | VC | – | LC | √ | √ | √ | √ | – | – | √ | – | √ |
| Papalopeurom sexmaculatum (Fabricius, 1787) | NR | – | NA | √ | √ | √ | √ | – | – | – | √ | – |
| Pantala flavescens (Fabricius, 1798) | VC | – | LC | √ | √ | √ | √ | – | – | √ | – | √ |
| Potamarcha congner (Rambur, 1842) | NR | – | LC | √ | √ | √ | √ | – | – | – | – | √ |
| Rhodothermis rufa (Rambur, 1842) | C | – | LC | √ | – | – | √ | – | – | – | √ |
| Rhodothermis triangulirius Kirby, 1889 | R | – | LC | – | – | – | √ | – | – | – | – | – |
| Rhodothermis variegata variegata (Linnaeus, 1763) | C | – | LC | √ | √ | √ | √ | – | – | – | √ | – |
| Tetrathemis platyptera Selys, 1878 | NR | – | LC | √ | √ | – | – | – | – | √ | – | √ |
| Tholymis tillarge (Fabricius, 1798) | C | – | LC | √ | √ | √ | √ | – | – | √ | – | √ |
| Tramea basilaris (Palisot de Beauvois, 1805) | C | – | LC | √ | √ | √ | √ | – | – | – | √ | – |
| Tramea limbata (Desjardins, 1832) | NR | – | LC | √ | – | – | √ | – | – | √ | – | √ |
| Trithemis aurora (Burmeister, 1839) | VC | – | LC | √ | – | √ | √ | – | – | √ | – | √ |
| Trithemis pallidinervis (Kirby, 1889) | C | – | LC | – | √ | – | √ | – | – | √ | – | √ |
| Trithemis festivo (Rambur, 1842) | C | – | LC | √ | √ | √ | √ | – | √ | – | – | √ |
| Urothemis signata (Rambur, 1842) | VR | – | LC | – | – | – | √ | – | – | – | – | √ |
| Zygonyx iris malabarica Fraser, 1926 | NR | – | LC | √ | √ | √ | √ | – | – | √ | – | √ |
| Zygonyx petiolatum Rambur, 1842 | C | – | LC | – | √ | – | – | – | – | √ | – | √ |

**Family Macromiidae**

| Scientific name | ST | EN | RL | DR | ID | KL | KT | PM | RK | RM | UM |
|-----------------|----|----|----|----|----|----|----|----|----|----|----|
| Epophthalmia vittata vittata Burmeister, 1839 | C | – | LC | √ | – | – | √ | – | – | – | – | √ |
| Epophthalmia frontalis binacellata Fraser, 1936 | VR | – | LC | √ | – | – | – | – | – | – | – | √ |
| Macromia cingulata Rambur, 1842 | VR | – | LC | √ | – | – | √ | – | – | √ | – | √ |
| Macromia ellisoni Fraser, 1924 | VR | √ | LC | √ | – | – | – | – | – | √ | – | √ |
| Macromia flavocolorata Fraser, 1924 | VR | – | LC | – | √ | – | – | – | – | √ | √ | √ |
| Macromia irata Fraser, 1924 | NR | √ | LC | – | – | – | √ | – | – | – | – | √ |

**Genera Insertae Sedis**

| Scientific name | ST | EN | RL | DR | ID | KL | KT | PM | RK | RM | UM |
|-----------------|----|----|----|----|----|----|----|----|----|----|----|
| Idionyx corona Fraser, 1921 | VR | √ | DD | – | – | – | – | – | √ | – | – | – |
| Idionyx galeata Fraser, 1924 | VR | √ | EN | – | – | – | – | – | – | – | – | – |
| Idionyx minima Fraser, 1931 | NR | √ | DD | – | – | – | – | – | – | – | – | – |
| Idionyx saffronata Fraser, 1924 | NR | √ | DD | – | – | – | – | – | – | – | – | – |
| Idionyx travancorensis Fraser, 1931 | NR | √ | DD | – | – | – | – | – | – | – | – | – |
| Idionyx gomantakensis Subramanian, Rangnekar & Nayak, 2013 | VR | √ | NA | – | – | – | – | – | – | – | – | – |
| Macromia donaldi donaldi (Fraser, 1924) | VR | √ | LC | – | – | – | – | – | – | – | – | – |

**TOTAL 116 species**

|   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|
|   | 33 | 72 | 48 | 46 | 88 | 35 | 46 | 61 | 69 |   |   |

*The subspecies is endemic to WG (Kalkman et al. 2020). ST—Occurrence status | EN—Taxonomy endemic status with respect to WG | RL—IUCN Red List Data | DR—Darbhakulam | ID—Idimuzhangan | KL—Kallar | KT—Kattalapara | PM—Pandimotta | RK—Rockwood | RM—Rosemala | UM—Umayar.*
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A checklist of herpetofauna of Telangana state, India

Chelmala Srinivasulu & Gandla Chethan Kumar, Pp. 21266–21281