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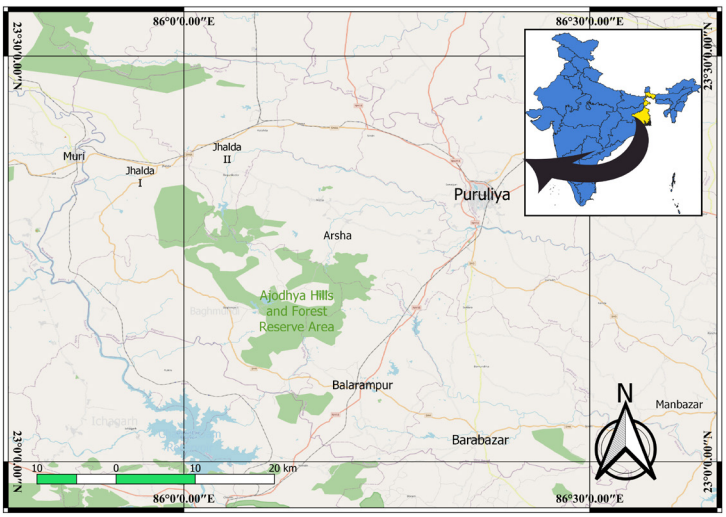
Odonata diversity of Ajodhya Hills, West Bengal, India

Odonates (dragonflies and damselflies) are considered as bioindicators of aquatic ecosystem and associated habitats (Golfieri et al. 2016). They play important ecological role as predators in aquatic food chain (Robinson & Wellborn 1987). Odonata larva feed on mosquito larva thus controlling the mosquito population (Saha et al. 2012); 488 species of Odonata are present in India (Subramanian & Babu 2017). In West Bengal, there are 239 species (Dawn 2022).

We surveyed the Odonata diversity of Ajodhya Hills (23.165^{0}N, 86.126^{0}E) of Purulia district, West Bengal, India by using opportunistic sighting method between October 2017 to September 2021. Ajodhya Hills is situated in the easternmost part of Chotanagpur plateau with highest elevation of 699m. It is a tropical dry deciduous forest with temperature ranging from 2.8 deg in winter and 52 deg in summer and average annual rainfall varying from 1,100 mm to 1,500 mm (Samanta et al 2017). It has many streams and irrigation dams that make it perfect habitat for odonates.

This study reports 61 species of Odonata including 35 species from suborder Anisoptera or dragonflies and 26 species from suborder Zygoptera or damselflies. Family Libellulidae is the most abundant family with 29 species followed by family Coenagrionidae with 15 species, family Platycnemididae with five species, families Aeshnidae & Gomphidae with three species each, and family Calopterygidae, Chlorocyphidae & Lestidae with two species each. The odonate diversity of Ajodhya Hills is 12.5% of the Indian odonate diversity and 25.52%of West Bengal state. *Anax immaculifrons*, *Heliocypha bisignata*, and *Caconeura ramburi* are being reported for the first time from West Bengal.

The identification of odonates was based on Nair (2011).



Map of Ajodhya Hills, Purulia, West Bengal.

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Anax guttatus[2].

Anax immaculifrons[2].

Gynacantha dravida[2].

Ictinogomphus rapax[1].

Macrogomphus annulatus[1].

Paragomphus lineatus[1].

Acisoma panorpoides[2].

Brachydiplax farinosa[2].

Bradinopyga geminata[1].

Crocothemis servilia[1].

Diplacodes nebulosa[2].

Lathrecista asiatica[1].

Lestes umbrinus[1].

Caconeura ramburi[1].

Copera marginipes[1].

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Neurothemis fulvia[1].

Neurothemis tullia[2].

Orthetrum glaucum[2].

Orthetrum pruinosum[1].

Orthetrum sabina[1].

Tholymis tillarga[2].

Pantala flavescens[1].

Rhyothemis variegata[1].

Orthetrum taeniolatum[2].

Disparoneura quadrimaculata[1].

Trithemis festiva[1].

Trithemis pallidinervis[2].

Ischnura senegalensis[1].

Pseudagrion decorum[2].

Pseudagrion rubriceps[1].

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Vestalis apicalis[2].

Vestalis gracilis[1].

Heliocypha bisignata[1].

Libellago lineata[1].

Agriocnemis kalinga[2].

Agriocnemis lacteola[1].

Amphiallagma parvum[2].

Ceriagrion coromandelianum[1].

Ischnura nursei[1].

Pseudocopera ciliata[2].

Ischnura rubilio[1].

Onychargia atrocyana[1].

Trithemis aurora[1].

Lestes viridulus[1].

Photo credits: [1] Supriya Samanta, [2] Adarsha Mukherjee

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List of dragonflies and damselflies of Ajodhya Hills.

	Scientific name	Common name	IUCN Status
Suborder: Anisoptera			
Family: Aeshnidae			
1.	*Anax guttatus* (Burmeister, 1839)	Lesser Green Emperor	LC
2.	*Anax immaculifrons* (Rambur, 1842)	Magnificent Emperor	LC
3.	*Gynacantha dravida* (Lieftinck, 1960)	Brown Darner	DD
Family: Gomphidae			
4.	*Ictinogomphus rapax* (Rambur, 1842)	Indian Common Clubtail	LC
5.	*Macrogomphus annulatus* (Selys, 1854)	Deccan Bowtail	DD
6.	*Paragomphus lineatus* (Selys, 1850)	Lined Hooktail	LC
Family: Libellulidae			
7.	*Acisoma panorpoides* (Rambur, 1842)	Trumpet-Tail	LC
8.	*Aethriamanta brevipennis* (Rambur, 1842)	Scarlet Marsh Hawk	LC
9.	*Brachydiplax farinosa* (Krüger, 1902)	Black-Tailed Dasher	LC
10.	*Brachythemis contaminata* (Fabricius, 1793)	Ditch Jewel	LC
11.	*Bradinopyga geminata* (Rambur, 1842)	Granite Ghost	LC
12.	*Crocothemis servilia* (Drury, 1770)	Scarlet Skimmer	LC
13.	*Diplacodes nebulosa* (Fabricius, 1793)	Black-tipped Grounnd Skimmer	LC
14.	*Diplacodes trivialis* (Rambur, 1842)	Blue Ground Skimmer	LC
15.	*Lathrecista asiatica* (Fabricius, 1798)	Asiatic Blood-Tail	LC
16.	*Macrodiplax cora* (Brauer, 1867)	Estuarine Skimmer	LC
17.	*Neurothemis fulvia* (Drury, 1773)	Fulvous Forest Skimmer	LC
18.	*Neurothemis intermedia* (Rambur, 1842)	Ruddy Meadow Skimmer	
19.	*Neurothemis tullia* (Drury, 1773)	Pied Paddy Skimmer	LC
20.	*Orthetrum glaucum* (Brauer, 1865)	Blue Marsh Hawk	LC
21.	*Orthetrum luzonicum* (Brauer, 1868)	Tri-coloured Marsh Hawk	LC
22.	*Orthetrum pruinosum* (Burmeister, 1839)	Crimson-tailed Marsh Hawk	LC
23.	*Orthetrum sabina* (Drury, 1770)	Green Marsh Hawk	LC
24.	*Orthetrum taeniolatum* (Schneider, 1845)	Taeniolate Marsh Hawk	LC
25.	*Pantala flavescens* (Fabricius, 1798)	Wandering Glider	LC
26.	*Potamarcha congener* (Rambur, 1842)	Yellow-tailed Ashy Skimmer	LC

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	Scientific name	Common name	IUCN Status
27.	*Rhodothemis rufa* (Rambur, 1842)	Rufous Marsh Glider	LC
Family: Libellulidae			
28.	*Rhyothemis variegata* (Linnaeus, 1763)	Common Picturewing	LC
29.	*Tholymis tillarga* (Fabricius, 1798)	Coral-Tailed Cloudwing	LC
30.	*Tramea basilaris* (Palisot de Beauvois, 1805)	Red Marsh Trotter	LC
31.	*Tramea limbata* (Desjardins, 1832)	Black Marsh Trotter	LC
32.	*Trithemis aurora* (Burmeister, 1839)	Crimson Marsh Glider	LC
33.	*Trithemis festiva* (Rambur, 1842)	Black Stream Glider	LC
34.	*Trithemis pallidinervis* (Kirby, 1889)	Long-legged Marsh Glider	LC
35.	*Urothemis signata* (Rambur, 1842)	Greater Crimson Glider	LC
Suborder: Zygoptera			
Family: Calopterygidae			
36.	*Vestalis apicalis* (Selys, 1873)	Black-tipped Forest Glory	LC
37.	Vestalis gracilis (Rambur, 1842)	Clear-winged Forest Glory	LC
Family: Chlorocyphidae			
38.	*Heliocypha bisignata* (Hagen in Selys,1853)	Stream Ruby	LC
39.	*Libellago lineata* (Burmeister, 1839)	River Heliodor	LC
Family: Coenagrionidae			
40.	*Aciagrion hisopa* (Selys, 1876)	Violet-striped Slender Dartlet	LC
41.	*Agriocnemis femina* (Brauer, 1868)	Pruinosed Dartlet	LC
42.	*Agriocnemis kalinga* (Nair & Subramanian 2015)	Indian Hooded Dartlet	LC
43.	*Agriocnemis lacteola* (Selys, 1877)	Milky Dartlet	LC
44.	*Agriocnemis pygmaea* (Rambur, 1842)	Pygmy Dartlet	LC
45.	*Amphiallagma parvum* (Selys, 1876)	Azure Dartlet	LC
46.	*Ceriagrion coromandelianum* (Fabricius, 1798)	Coromandel Marsh Dart	LC
47.	*Ischnura nursei* (Morton, 1907)	Pixie Dartlet	LC
48.	*Ischnura rubilio* (Selys, 1876)	Western Golden Dartlet	
49.	*Ischnura senegalensis* (Rambur, 1842)	Senegal Golden Dartlet	LC
50.	*Paracercion malayanum* (Selys, 1876)	Malayan Lilly-Squatter	LC
51.	*Pseudagrion decorum* (Rambur, 1842)	Three-lined Sprite	LC
52.	*Pseudagrion microcephalum* (Rambur, 1842)	Blue Sprite	LC
53.	*Pseudagrion rubriceps* (Selys, 1876)	Saffron-faced Blue Sprite	LC

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	Scientific name	Common name	IUCN Status
54.	*Pseudagrion spencei* (Fraser, 1922)	Brook Sprite	LC
Family: Lestidae			
55.	*Lestes umbrinus* (Selys,1891)	Brown Spreadwing	DD
56.	*Lestes viridulus* (Rambur, 1842)	Emerald-striped Spreadwing	LC
Family: Platycnemididae			
57.	*Caconeura ramburi* (Fraser, 1922)	Indian Blue Bambootail	DD
58.	*Copera marginipes* (Rambur, 1842)	Yellow Bush Dart	LC
59.	*Disparoneura quadrimaculata* (Rambur, 1842)	Black-winged Bambootail	LC
60.	*Onychargia atrocyana* (Selys, 1865)	Black Marsh Dart	LC
61.	*Pseudocopera ciliata* (Selys, 1863)	Pied Bush Dart	LC

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