Biospectra : ISSN: 0973-7057, Vol. 20(1), March, 2025, pp. 73-80

An International Biannual Refereed Journal of Life Sciences

Animal Science

ISSN : 0973-7057

Evaluation of conservation status of reported Indian Odonates (Insecta: Odonata)

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Received : 15th January, 2025 ; Revised : 16th February, 2025

DOI:-https://doi.org/10.5281/zenodo.15978691

Abstract- This study assesses the conservation status of all dragonflies and damselflies reported from India. 3 suborders, 17 families and 504 species of odonates are reported from India till now. IUCN has done excellent work on assessing status of conservation, population trends, and distribution of odonates. IUCN Red List provides a comprehensive catalogue and framework for evaluating the conservation status of odonates. However no consolidated and annotated list of Indian odonates with their conservation status is present, so this study fills this research gap and provides a complete list of reported Indian odonates along with their conservation status. Maximum odonate species were reported under Least Concern and Data Deficient Categories.

Keywords: IUCN Red List, Odonata, DD, LC, NE, NT, VU, EN, CR, CITES

INTRODUCTION

Odonates are cosmopolitan, aquatic, carnivorous, diurnal, primitive group of flying insects. Being predator and prey, both in larval and adult stage, they play a significant role in the food web in freshwater ecosystem. Study of odonates is called Odonatology, which is a branch of Entomology. It includes three orders viz. Anisoptera, Anisozygoptera and Zygoptera.[1,2] There are total 6453 species of odonates are reported globally. In India total 504 species under 157 genera and 17 families of odonates are reported with exclusion of 23 subspecies, out of which 175 odonate species are reported endemic to India.[3,4] IUCN (International Union of Conservation of Nature) was founded in 1964, since then it is working on conservation of plants, fungi and animals. It accumulates and provides critical data for conservation, monitoring and policy making. IUCN Red List also known as Red Data Book and Red List of Threatened Species provides the world's most comprehensive catalogue of the conservation status of biological species. IUCN Red List is prepared scientifically on basis of following five criteria system. viz. **Criterion A:** population size reductions, which evaluates suspected population size reductions over the longer of 10 years or three generations; **Criterion B:** Geographic Range, which assesses species with small geographic ranges that are experiencing continuing decline or extreme fluctuations; **Criterion C:** Small Population Size and Decline, which applies to species with small populations that are experiencing continuing decline; **Criterion D:** Very Small or Restricted Population, which addresses species with very small populations or very restricted areas of occupancy; **Criterion E:** Quantitative Analysis, which involves formal population viability analysis or other quantitative methods to estimate extinction probability; The IUCN Red List classifies species into nine categories based on their extinction risk.

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viz. Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC), Data Deficient (DD) and Not Evaluated (NE).[5]

MATERIALS & METHODS

Comprehensive checklist of Indian Odonates is parsimony examined using Red Data Book to assess conservation status of each species.

RESULTS & DISCUSSION

India has 7.81 % biodiversity of world. The Himalayan Relict Dragonfly (*Epiophlebia laidlawi*) is listed under Schedule-1 Part-J of Wildlife Protection Act (2022). Odonates are not listed under any appendices of CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). No odonate species are reported to be invasive in India. *Sympetrum dilatatum* (Family Libellulidae) is the only extinct odonate species of world. In India all 3 suborders (Anisoptera, Anisozygoptera and Zygoptera) of odonates are reported. 17 families of odonata were reported from India, out of which 7 families (Aeshnidae, Chlorogomphidae, Cordulegasteridae, Cordulidae, Gomphidae, Libellulidae and Macromiidae,) belonged to Suborder Anisoptera, while 9 families (Calopterygidae, Chlorocyphidae, Coenagrionidae, Euphaeidae, Lestidae, Philogangidae, Platynecmididae, Platystictidae and Synlestidae) belonged to suborder Zygoptera. Only single family (Epiophlebiidae) with single species (*Epiophlebia laidlawi*) belonged to suborder Anisozygoptera reported from India. We provide a complete annotated list of 504 Indian odonate species with their conservation status listed against them (Table 1). Out of 504 Indian odonate species, no species was reported in EX and EW category. Only single species *Protosticta myristicaensis* (Family Platystictidae) was reported under CR. Three species *viz. Orthetrum andamanicum* (Family Libellulidae), *Idionyx galeata* (Family Macromiidae) and *Libellago balus* (Family Chlorocyphidae) were reported under EN. 31 Indian odonate species are not evaluated for their conservation status (Table 2 and Graph 1).

Table 1. List of Indian Odonate Species with their Conservation Status

Species			Conservation Status
Suborder Anisoptera	Family Aeshnidae	*Aeshna juncea*	LC
		Aeshna mixta	LC
		Aeshna petalura	LC
		Anaciaeschna jaspidea	LC
		Anaciaeschna martini	LC
		Anax ephippiger	LC
		Anax guttatus	LC
		Anax immaculifrons	LC
		Anax imperator	LC
		Anax indicus	LC
		Anax nigrofasciatus	LC
		Anax panybeus	LC
		Anax parthenope	LC
		Cephalaeschna acanthifrons	DD
		Cephalaeschna acutifrons	DD
		Cephalaeschna klapperichi	DD
		Cephalaeschna masoni	DD
		Cephalaeschna orbifrons	LC
		Cephalaeschna patrai	NE
		Cephalaeschna triadica	DD
		Cephalaeschna viridifrons	LC
		Gynacantha albistyla	DD
		Gynacantha andamanae	NE
		Gynacantha anandmati	NE
		Gynacantha arnaudi	DD
		Gynacantha bainbriggei	DD
		Gynacantha bayadera	LC
		Gynacantha biharica	DD
		Gynacantha dravida	DD
		Gynacantha khasiaca	DD
		Gynacantha millardi	LC
		Gynacantha odoneli	DD
		Gynacantha pallampurica	DD
		Gynacantha rammohani	DD
		Gynacantha rotundata	DD
		Gynacantha subinterrupta	LC
		Gynacanthaeschna sikkima	LC
		Oligoaeschna andamani	DD
		Periaeschna flinti	LC
		Periaeschna magdalena	LC
		Periaeschna nocturnalis	LC
		Periaeschna unifasciata	DD
		Petaliaeschna fletcheri	DD
		Planaeschna intersedens	NT
		Planaeschna poumai	NE
		Polycanthagyna erythromelas	LC
		Polycanthagyna ornithocephala	LC
		Sarasaeschna decorata	DD
		Sarasaeschna khasiana	DD
		Sarasaeschna martini	DD
		Sarasaeschna speciosa	DD
		Tetracanthagyna waterhousei	LC
	Family Chlorogomphidae	*Chlorogomphus campioni*	LC
		Chlorogomphus fraseri	DD
		Chlorogomphus mortoni	DD
		Chlorogomphus preciosus	DD
		Chlorogomphus schmidti	DD
		Chlorogomphus xanthoptera	V
		Chloropetalia selysi	V
		Watanabeopetalia atkinsoni	LC
	Family Cordulegasteridae	*Anotogaster basilis*	NE
		Anotogaster gregoryi	LC
		Gynacantha rotundata	DD
		Gynacantha subinterrupta	LC

		Gynacanthaeschna sikkima	LC
		Oligoaeschna andamani	DD
		Periaeschna flinti	LC
		Periaeschna magdalena	LC
		Periaeschna nocturnalis	LC
		Periaeschna unifasciata	DD
		Petaliaeschna fletcheri	DD
		Planaeschna intersedens	NT
		Planaeschna poumai	NE
		Polycanthagyna erythromelas	LC
		Polycanthagyna ornithocephala	LC
		Sarasaeschna decorata	DD
		Sarasaeschna khasiana	DD
		Sarasaeschna martini	DD
		Sarasaeschna speciosa	DD
		Tetracanthagyna waterhousei	LC
	Family Chlorogomphidae	*Chlorogomphus campioni*	LC
		Chlorogomphus fraseri	DD
		Chlorogomphus mortoni	DD
		Chlorogomphus preciosus	DD
		Chlorogomphus schmidti	DD
		Chlorogomphus xanthoptera	V
		Chloropetalia selysi	V
		Watanabeopetalia atkinsoni	LC
	Family Cordulegasteridae	*Anotogaster basilis*	NE
		Anotogaster gregoryi	LC
		Anotogaster nipalensis	LC
		Cordulegaster brevistigma	LC
		Cordulegaster parvistigma	DD
		Neallogaster hermionae	LC
		Neallogaster latifrons	LC
		Neallogaster ornata	NT
		Neallogaster schmidti	DD
	Family Corduliidae	*Hemicordulia asiatica*	LC
		Somatochlora daviesi	DD
	Family Gomphidae	*Acrogomphus fraseri*	DD
		Anisogomphus bivittatus	LC
		Anisogomphus caudalis	DD
		Anisogomphus occipitalis	LC
		Anisogomphus orites	DD
		Anormogomphus heteropterus	LC
		Anormogomphus kiritschenkoi	NT
		Asiagomphus nilgiricus	DD
		Asiagomphus odoneli	DD
		Asiagomphus personatus	NT
		Burmagomphus cauvericus	DD
		Burmagomphus chaukulensis	NE
		Burmagomphus divaricatus	LC
		Burmagomphus hasimaricus	DD
		Burmagomphus laidlawi	DD
		Burmagomphus pyramidalis	LC
		Burmagomphus sivalikensis	LC
		Cyclogomphus flavoannulatus	DD
		Cyclogomphus heterostylus	DD
		Cyclogomphus wilkinsi	DD
		Cyclogomphus ypsilon	V
		Davidioides martini	DD
		Davidius aberrans	LC
		Davidius davidii	LC
		Davidius delineatus	NE
		Davidius kumaonensis	DD
		Davidius malloryi	DD
		Dubitogomphus bidentatus	DD

		Euthygomphus martini	NE
		Gomphidia fletcheri	DD
		Gomphidia ganeshi	DD
		Gomphidia kodaguensis	DD
		Gomphidia leonorae	DD
		Gomphidia platyceps	DD
		Gomphidia podhigai	DD
		Gomphidia t-nigrum	LC
		Gomphidia williamsoni	DD
		Heliogomphus kalarensis	DD
		Heliogomphus promelas	NT
		Heliogomphus selysi	LC
		Heliogomphus spirillus	DD
		Ictinogomphus angulosus	LC
		Ictinogomphus decoratus	LC
		Ictinogomphus distinctus	DD
		Ictinogomphus kishori	DD
		Ictinogomphus pertinax	LC
		Ictinogomphus rapax	LC
		Lamelligomphus biforceps	LC
		Lamelligomphus nilgiriensis	NE
		Lamelligomphus risi	DD
		Macrogomphus annulatus	DD
		Macrogomphus montanus	DD
		Macrogomphus robustus	DD
		Macrogomphus seductus	DD
		Macrogomphus wynaadicus	DD
		Megalogomphus bicornutus	DD
		Megalogomphus flavicolor	DD
		Megalogomphus hannyngtoni	NT
		Megalogomphus smithii	DD
		Megalogomphus superbus	DD
		Melligomphus acinaces	DD
		Merogomphus longistigma	DD
		Merogomphus tamaracherriensis	NE
		Microgomphus souteri	LC
		Microgomphus torquatus	DD
		Microgomphus verticalis	DD
		Nepogomphus modestus	LC
		Nepogomphus walli	LC
		Nihonogomphus pulcherrimus	DD
		Nychogomphus duaricus	LC
		Nychogomphus saundersii	NE
		Nychogomphus striatus	DD
		Onychogomphus cacharicus	DD
		Onychogomphus cerastis	DD
		Onychogomphus grammicus	DD
		Onychogomphus malabarensis	DD
		Onychogomphus meghalayanus	DD
		Ophiogomphus reductus	LC
		Orientogomphus indicus	DD
		Paragomphus echinoccipitalis	DD
		Paragomphus lindgreni	DD
		Paragomphus lineatus	LC
		Perissogomphus stevensi	LC
		Phaenandrogomphus aureus	DD
		Platygomphus benritarum	NE
		Platygomphus dolabratus	LC
		Scalmogomphus bistrigatus	LC
		Scalmogomphus schmidti	NE
		Stylogomphus inglisi	LC
	Family Libellulidae	*Acisoma panorpoides*	LC
		Aethriamanta brevipennis	LC
		Agrionoptera insignis	LC
		Amphithemis vacillans	DD

		Atratothemis reelsi	DD
		Brachydiplax chalybea	LC
		Brachydiplax farinosa	LC
		Brachydiplax sobrina	LC
		Brachythemis contaminata	LC
		Bradinopyga geminata	LC
		Bradinopyga konkanensis	NE
		Camacinia gigantea	LC
		Camacinia harterti	DD
		Cratilla lineata	LC
		Cratilla metallica	LC
		Crocothemis erythraea	LC
		Crocothemis servilia	LC
		Diplacodes lefebvrii	LC
		Diplacodes nebulosa	LC
		Diplacodes trivialis	LC
		Epithemis mariae	LC
		Epithemis wayanadensis	NE
		Hydrobasileus croceus	LC
		Hylaeothemis apicalis	DD
		Hylaeothemis gardeneri	DD
		Indothemis carnatica	LC
		Indothemis limbata	LC
		Lathrecista asiatica	LC
		Libellula quadrimaculata	LC
		Lyriothemis acigastra	DD
		Lyriothemis bivittata	LC
		Lyriothemis cleis	LC
		Lyriothemis flava	LC
		Lyriothemis mortoni	DD
		Macrodiplax cora	LC
		Nannophya pygmaea	LC
		Nannophyopsis clara	LC
		Nesoxenia lineata	LC
		Neurothemis degener	NE
		Neurothemis fluctuans	LC
		Neurothemis fulvia	LC
		Neurothemis intermedia	LC
		Neurothemis ramburi	LC
		Neurothemis tullia	LC
		Onychothemis testacea	LC
		Orthetrum andamanicum	E
		Orthetrum brunneum	LC
		Orthetrum cancellatum	LC
		Orthetrum chrysis	LC
		Orthetrum coerulescens	LC
		Orthetrum erythronigrum	NE
		Orthetrum glaucum	LC
		Orthetrum internum	NE
		Orthetrum luzonicum	LC
		Orthetrum martensi	DD
		Orthetrum pruinosum	LC
		Orthetrum sabina	LC
		Orthetrum taeniolatum	LC
		Orthetrum testaceaum	NE
		Orthetrum triangulare	LC
		Palpopleura sexmaculata	LC
		Pantala flavescens	LC
		Phyllothemis eltoni	DD
		Potamarcha congener	LC
		Pseudothemis zonata	LC
		Pseudotramea prateri	DD
		Rhodothemis rufa	LC
		Rhyothemis phyllis	LC
		Rhyothemis plutonia	LC
		Rhyothemis triangularis	LC
		Rhyothemis variegata	LC
		Selysiothemis nigra	LC
		Sympetrum arenicolor	LC
		Sympetrum fonscolombii	LC
		Sympetrum haritonovi	LC
		Sympetrum hypomelas	LC
		Sympetrum meridionale	LC
		Sympetrum orientale	DD
		Sympetrum speciosum	NE
		Sympetrum striolatum	LC
		Tetrathemis platyptera	LC
		Tholymis tillarga	LC
		Tramea basilari	LC
		Tramea eurybia	LC
		Tramea limbata	LC
		Tramea transmarina	LC
		Tramea virginia	LC
		Trithemis aurora	LC
		Trithemis festiva	LC
		Trithemis kirbyi	LC
		Trithemis pallidinervis	LC
		Urothemis signata	LC
		Zygonyx iris	LC
		Zygonyx torridus	LC
		Zyxomma obtusum	LC
		Zyxomma breviventre	DD
		Zyxomma petiolatum	LC
	Family Macromiidae	*Epophthalmia frontalis*	LC
		Epophthalmia vittata	LC
		Epophthalmia vittigera	LC
		Macromia annaimallaiensis	LC
		Macromia bellicosa	LC
		Macromia cingulata	LC
		Macromia cupricincta	LC
		Macromia ellisoni	LC
		Macromia flavicincta	DD
		Macromia flavocolorata	LC
		Macromia flavovittata	DD
		Macromia ida	LC
		Macromia indica	DD
		Macromia irata	LC
		Macromia moorei	LC
		Macromia pallida	DD
		Macromia whitei	DD
		Idionyx corona	DD
		Idionyx galeata	E
		Idionyx gomantakensis	DD
		Idionyx imbricata	DD
		Idionyx intricata	LC
		Idionyx minima	DD
		Idionyx nadganiensis	DD
		Idionyx nilgiriensis	DD
		Idionyx optata	NT
		Idionyx periyashola	DD
		Idionyx rhinoceroides	LC
		Idionyx saffronata	DD
		Idionyx stevensi	LC
		Idionyx travancorensis	DD
		Macromidia donaldi	LC
Suborder Anisozygoptera	Family Epiophlebiidae	*Epiophlebia laidlawi*	NT
Suborder Zygoptera	Family Calopterygidae	*Caliphaea confusa*	LC
		Echo margarita	LC
		Echo perornata	DD
		Matrona nigripectus	LC

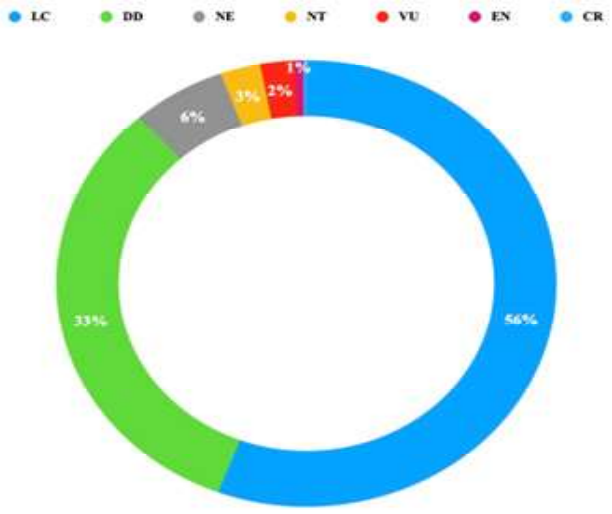
		Neurobasis chinensis	LC
		Vestalaria smaragdina	LC
		Vestalis apicalis	LC
		Vestalis gracilis	LC
		Vestalis submontana	LC
	Family Chlorocyphidae	*Aristocypha cuneata*	DD
		Aristocypha fenestrella	LC
		Aristocypha hilaryae	DD
		Aristocypha immaculata	LC
		Aristocypha quadrimaculata	LC
		Aristocypha spuria	LC
		Aristocypha trifasciata	LC
		Calocypha laidlawi	DD
		Heliocypha biforata	LC
		Heliocypha bisignata	LC
		Heliocypha perforata	LC
		Heterocypha vitrinella	DD
		Indocypha vittata	NT
		Libellago andamanensis	V
		Libellago aurantiaca	LC
		Libellago balus	E
		Libellago blanda	V
		Libellago indica	LC
		Libellago lineata	LC
		Paracypha unimaculata	LC
		Rhinocypha ignipennis	LC
		Rhinocypha trimaculata	DD
	Family Coenagrionidae	*Aciagrion approximans*	LC
		Aciagrion azureum	LC
		Aciagrion borneense	LC
		Aciagrion hisopa	LC
		Aciagrion occidentale	LC
		Aciagrion olympicum	LC
		Aciagrion pallidum	LC
		Agriocnemis clauseni	LC
		Agriocnemis corbeti	LC
		Agriocnemis dabreui	LC
		Agriocnemis femina	LC
		Agriocnemis kalinga	LC
		Agriocnemis keralensis	LC
		Agriocnemis lacteola	LC
		Agriocnemis nana	LC
		Agriocnemis pieris	LC
		Agriocnemis pygmaea	LC
		Agriocnemis splendidissima	LC
		Amphiallagma parvum	LC
		Archibasis oscillans	LC
		Argiocnemis rubescens	LC
		Ceriagrion aeruginosum	LC
		Ceriagrion auranticum	LC
		Ceriagrion azureum	LC
		Ceriagrion calamineum	LC
		Ceriagrion cerinorubellum	LC
		Ceriagrion chromothorax	DD
		Ceriagrion coromandelianum	LC
		Ceriagrion fallax	LC
		Ceriagrion olivaceum	LC
		Ceriagrion pratermissum	NE
		Ceriagrion rubiae	LC
		Coenagrion exclamationis	DD
		Enallagma cyathigerum	LC
		Ischnura elegans	LC
		Ischnura forcipata	LC
		Ischnura inarmata	DD
		Ischnura nursei	LC
		Ischnura pumilio	LC
		Ischnura rubilio	LC
		Ischnura rufostigma	LC
		Ischnura senegalensis	LC
		Mortonagrion aborense	LC
		Mortonagrion varralli	DD
		Paracercion calamorum	LC
		Paracercion malayanum	LC
		Pseudagrion andamanicum	DD
		Pseudagrion australasiae	LC
		Pseudagrion bidentatum	DD
		Pseudagrion decorum	LC
		Pseudagrion hypermelas	LC
		Pseudagrion indicum	LC
		Pseudagrion laidlawi	LC
		Pseudagrion malabaricum	LC
		Pseudagrion microcephalum	LC
		Pseudagrion pilidorsum	LC
		Pseudagrion pruinosum	LC
		Pseudagrion rubriceps	LC
		Pseudagrion spencei	LC
		Pseudagrion williamsoni	LC
	Family Euphaeidae	*Anisopleura comes*	LC
		Anisopleura lestoides	LC
		Anisopleura subplatystyla	LC
		Anisopleura vallei	V
		Bayadera hyalina	LC
		Bayadera indica	LC
		Bayadera kali	DD
		Bayadera longicauda	DD
		Dysphaea ethela	LC
		Dysphaea gloriosa	LC
		Euphaea cardinalis	LC
		Euphaea dispar	LC
		Euphaea fraseri	LC
		Euphaea masoni	LC
		Euphaea ochracea	LC
		Euphaea pseudodispar	NE
		Euphaea thosegharensis	NE
		Schmidtiphaea schmidi	DD
		Schmidtiphaea chittaranjani	DD
	Family Lestidae	*Indolestes assamicus*	DD
		Indolestes cyaneus	LC
		Indolestes gracilis	LC
		Indolestes indicus	NT
		Indolestes pulcherrimus	DD
		Lestes barbarus	LC
		Lestes concinnus	LC
		Lestes dorothea	LC
		Lestes elatus	LC
		Lestes garoensis	DD
		Lestes malabaricus	LC
		Lestes nigriceps	DD
		Lestes nodalis	LC
		Lestes patricia	DD
		Lestes praemorsus	LC
		Lestes viridulus	LC
		Orolestes durga	DD
		Orolestes selysi	LC
		Platylestes kirani	NE
		Platylestes platystylus	LC
		Sympecma paedisca	LC
	Family Philogangidae	*Philoganga montana*	LC
		Burmargiolestes laidlawi	DD

	Family Platystictidae	*Drepanosticta annandalei*	DD
		Drepanosticta carmichaeli	LC
		Drepanosticta polychromatica	DD
		Indosticta deccanensis	V
		Protosticta anamalaica	NE
		Protosticta armageddonia	NE
		Protosticta antelopoides	DD
		Protosticta cyanofemora	NE
		Protosticta damacornu	DD
		Protosticta davenporti	LC
		Protosticta francyi	NE
		Protosticta fraseri	DD
		Protosticta gravelyi	LC
		Protosticta hearseyi	DD
		Protosticta himalaica	DD
		Protosticta monticola	DD
		Protosticta mortoni	NE
		Protosticta myristicaensis	CE
		Protosticta ponmudiensis	DD
		Protosticta rufostigma	DD
		Protosticta sanguinostigma	V
		Protosticta sholai	NE
	Family Platycnemididae	*Caconeura gomphoides*	DD
		Caconeura obscura	DD
		Caconeura ramburi	DD
		Caconeura risi	DD
		Caconeura t-coerulea	DD
		Calicnemia doonensis	LC
		Calicnemia erythromelas	LC
		Calicnemia eximia	LC
		Calicnemia imitans	LC
		Calicnemia miles	LC
		Calicnemia miniata	LC
		Calicnemia mortoni	LC
		Calicnemia mukherjeei	DD
		Calicnemia nipalica	V
		Calicnemia pulverulans	LC
		Coeliccia bimaculata	LC
		Coeliccia didyma	LC
		Coeliccia dorothea	DD
		Coeliccia fraseri	V
		Coeliccia loogali	LC
		Coeliccia prakritiae	NE
		Coeliccia renifera	LC
		Coeliccia rossi	DD
		Coeliccia rotundata	DD
		Coeliccia sarbottama	DD
		Coeliccia schmidti	DD
		Coeliccia svihleri	LC
		Coeliccia vacca	DD
		Copera marginipes	LC
		Copera vittata	LC
		Disparoneura apicalis	V
		Disparoneura quadrimaculata	LC
		Elattoneura atkinsoni	NT
		Elattoneura campioni	DD
		Elattoneura nigerrima	DD
		Elattoneura nihari	DD
		Elattoneura souteri	DD
		Elattoneura tetrica	LC
		Esme cyaneovittata	DD
		Esme longistyla	LC
		Esme mudiensis	DD
		Indocnemis orang	LC
		Melanoneura bilineata	NT
		Nosticta nancowra	DD
		Nosticta nicobarica	DD
		Onychargia atrocyana	LC
		Phylloneura westermanni	NT
		Platycnemis dealbata	LC
		Prodasineura autumnalis	LC
		Prodasineura odoneli	DD
		Prodasineura verticalis	LC
		Pseudocopera ciliata	LC
		Pseudocopera superplatypes	DD
	Family Synlestidae	*Megalestes gyalsey*	DD
		Megalestes irma	DD
		Megalestes kurahashii	LC
		Megalestes lieftincki	DD
		Megalestes major	LC
		Megalestes micans	LC
Total 3	**17**	**504**	

Least Concern (LC), Near Threatened (NT), Not Evaluated (NE), Endangered (E), Data Deficient (DD), Critically Endangered (CR),

Table 2. Comparison of Conservation Data of World and Indian Odonates.

Red List Categories	World Odonates	Indian Odonates	Indian Odonates %
EX	1	0	0
EW	0	0	0
CR	97	1	1.03
EN	310	3	0.96
VU	303	11	3.63
NT	236	13	5.5
LC	3447	281	8.15
DD	1829	164	0.08
NE	230	31	13.47
Total	**6453**	**504**	**7.81**



Graph 1. Relative Proportion of Listed Conservation Categories of Indian Odonates.

CONCLUSION

Maximum odonate species have conservation status of LC (n=281) and DD (N=164). List of Threatened species is negligible in India. Threat of extinction is almost null. However, yet many species listed under NE category create a gap in biodiversity data. Tremendous and excellent work on conservation of organism is done globally by IUCN and scientists. Despite of their pivotal role in aquatic ecosystem, odonates are ignored by most conservationists. Odonatologists must focus and assess NE odonate species. Although odonates have aesthetic value, they are biocontrol agent and bioindicators of aquatic ecosystem, they are ignored because they are not much economically important for humans. Further study on taxonomy and distribution of adult stages are relatively more done than larvae. There is most unexplored area in India, where no study is done on odonates. Many species need to be explored and discovered. More comprehensive work and data on odonates is required for assessing their true biodi

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