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### RESEARCH ARTICLE

#### CHECKLIST OF ODONATA SPECIES IN PENCH TIGER RESERVE, NAGPUR, MAHARASHTRA, CENTRAL INDIA

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#### Abstract

Pench tiger reserve, Maharashtra is located in central Indian landscape and is a rich biodiverse area with good habitat for flora and fauna. The dragonflies and damselflies were recorded and photographed by author during regular field patrolling in area. This was the first attempt of recording odonata diversity from the area where 44 species were documented. Sub order Anisoptera represented by 3 families and 28 species while Sub order Zygoptera with 3 families and 16 species. (Pench Tiger reserve, Maharashtra, Central Indian landscape, Odonata, Dragonflies, Damselflies).

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#### Introduction:-

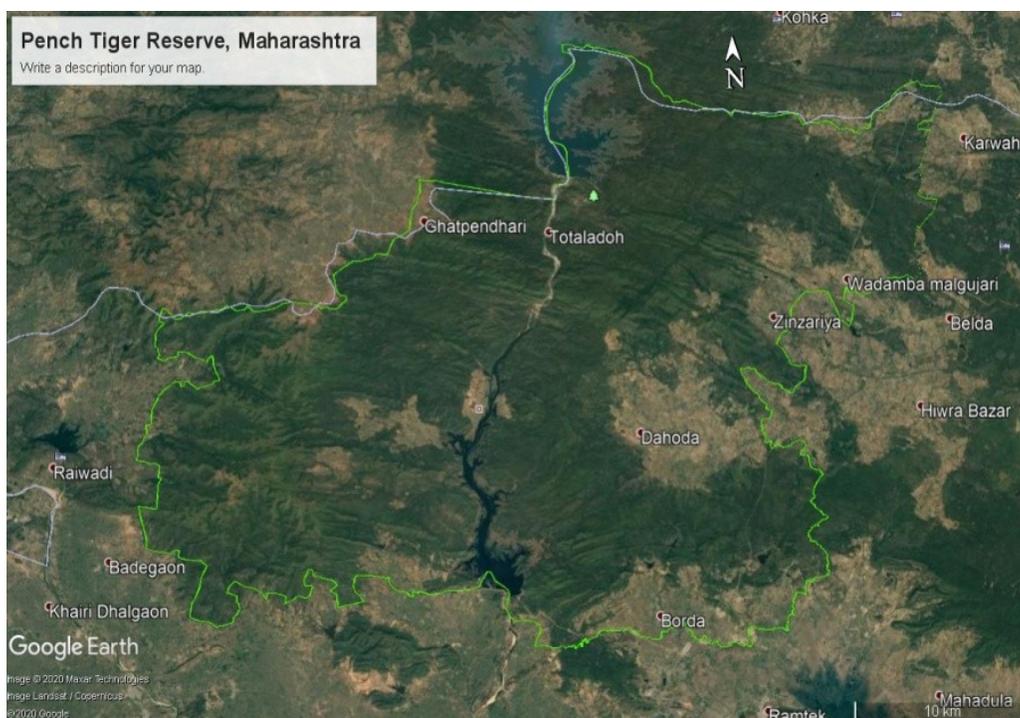
India has a unique and exceptionally rich and wide-ranging flora and fauna, and Central India is known for its distinctive and varied geographical features like topography, soil, climate and vegetation. Almost, the whole of Central India lies on the Peninsular Plateau. Hill ranges like Vindhya, Satpura, Maikal and river basins of Pench, Narmada, Wainganga located in the region and support a unique and varied flora and fauna. From wildlife conservation viewpoint the area is mainly known for large mammalian fauna such as tiger, leopard and their prey animals followed by the avian community. Insects belonging to the Odonata order have been studied from the perspective of ecological indicators, and many studies show that certain species exhibit high association with particular habitats (Smith et al. 2007, Gomez-Anaya and Novelo-Gutiérrez 2010). About 6,000 species of Odonata and subspecies belonging to 652 genera have been documented world-wide (Schorr and Paulson 2014). India harbors 474 species and 50 subspecies belonging to 142 genera spread across 18 families (Subramanian 2014) while in Maharashtra state 267 species of 87 Genera and 8 families are reported (Subramanian, 2009).

Pench Tiger reserve, Maharashtra, Nagpur is declared in 1999, encompassing Pench National park declared in 1975. Currently Pench tiger reserve is extended upto an area of 741.22 sq.Km with core area of 430.12 sq.km with Pench National Park and Mansighdeo Wildlife sanctuary and the buffer area of 311.10 sq.Km with 48 villages of Ramtek, Parshivani and Saoner tahsil of Nagpur district. The Park is located in the southern lower reaches of the Satpuda hill ranges, which form the catchments for river Pench. The Pench river flows almost through the centre of the Park in North - South direction. The folding and upheavals in the past resulted in formation of a series of hills and have many annual and seasonal flowing streams.

The main objective of this study has been conduct preliminary observations of odonata diversity and carried out the checklist, occurrence and richness inhabiting the Pench tiger reserve, Maharashtra.

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(Fig 1):-

### Material And Methods:-

The observations recording and photographing of odonata species has been done for a period of 5 years from June, 2015 to July, 2020 in irregular manner with visual encounter method. The odonata species were noticed and recorded during the regular patrolling of the area. The area is regularly surveyed for odonota in all the major habitats in all seasons. On the basis of the frequency of sighting, the species were assigned categories of abundance as rare when encountered less than 10% of visits, Not Rare when encountered 10 to 25% of visits, common when encountered 25 to 50% of visits and the others were as Very common.

### Result:-

This is the first attempt to document the odonata diversity of the pench tiger reserve, Maharashtra where a total of 40 species were documented during the study period where Sub order Anisoptera represented by 3 families and 24 species while Sub order Zygoptera with 3 families and 16 species. (Table No. -1)

Among families of Anisoptera sub-order, Libellulidae is dominant with 22 species belonging to 15 genera while family Aeshnidae was represented by only one genus and 2 species. In Zygoptera sub-order, Family Coenagrionidae was dominant with 6 genera while family Lestidae represented by only species *Lestus umbrinus*.

Table No. 1:-

Family wise Genera and Species representation			
Sub Order	Family	Genus	Species
Anisoptera	Aeshnidae	1	2
	Gomphidae	2	2
	Libellulidae	15	24
Zygoptera	Coenagrionidae	6	11
	Lestidae	1	1
	Platycnemididae	3	4
		28	44

The checklist of dragonflies and their occurrence is as follows:

Table No. 2:-

Sr.No	Scientific name	Common Name	Occurance (VC, C, NR, R)
1	<i>Acisoma panorpoides</i> (Rambur 1842)	Trumpet Tail	C
2	<i>Aethriamanta brevipennis</i> (Rambur 1842)	Scarlet Marsh Hawk	C
3	<i>Anax guttatus</i> (Burmeister, 1839)	Blue-tailed Green Darner	NR
4	<i>Anax immaculifrons</i> (Rambur 1842)	Blue darner	NR
5	<i>Brachythemis contaminata</i> (Fabricius, 1793)	Ditch Jewel	VC
6	<i>Bradinopyga geminata</i> (Rambur 1842)	Granite Ghost	C
7	<i>Burmagomphus pyramidalis</i> , Laidlaw, 1922	Sinuate cludtail	NR
8	<i>Cratilla lineata</i> (Brauer, 1878)	Emerald branded skimmer	R
9	<i>Crocothemis cervilia</i> (Drury, 1770)	Ruddy Marsh Skimmer	VC
10	<i>Diplacodes lefebvreii</i> Rambur, 1842	Black ground skimmer	NR
11	<i>Diplacodes trivalis</i> (Rambur 1842)	Ground Skimmer	VC
12	<i>Ictinogomphus rapax</i> (Rambur 1842)	Common Clubtail	VC
13	<i>Lathrecista asiatica</i> , Fabricius, 1798	Asiatic blood tail	R
14	<i>Neurothemis fulvia</i> (Drury, 1773)	Fulvous Forest skimmer	C
15	<i>Neurothemis intermedia</i> , Rambur, 1842		C
16	<i>Neurothemis tullia</i> (Drury, 1773)	Paddy skimmer	C
17	<i>Orthetrum chrysis</i> , Selys, 1891	Brown-backed Red Marsh Hawk	C
18	<i>Orthetrum glaucum</i> (Brauer, 1865)	Blue Marsh Hawk	C
19	<i>Orthetrum luzonicum</i> (Brauer, 1868)	Tricoloured Marsh Hawk	NR
20	<i>Orthetrum pruinosum</i> (Rambur 1842)	Crimson-tailed Marsh Hawk	VC
21	<i>Orthetrum sabina</i> (Drury, 1770)	Green Marsh Hawk	VC
22	<i>Pantala flavescens</i> (Fabricius, 1798)	Wandering Glider	VC
23	<i>Potamarcha congener</i> (Rambur 1842)	Yellow-tailed Ashy Skimmer	C
24	<i>Rhyothemis variegata</i> Linnaeus, 1763	Common Picture Wing	NR
25	<i>Tholymis tillarga</i> , (Fabricius, 1798)	Coral-tailed Cloud Wing	NR
26	<i>Trithemis festiva</i> (Rambur 1842)	Black stream glider	C
27	<i>Trithemis pallidinervis</i> Selys, 1889	Long-legged Marsh Skimmer	C
28	<i>Trithemis aurora</i> (Burmeister, 1839)	Crimson Marsh Skimmer	VC

Table No. 3:- Occurrence of Damselflies in Pench Tiger reserve, Maharashtra.

Sr.No	Scientific name	Common Name	Occurrence (VC, C, NR, R)
1	<i>Aciagrion pallidum</i> Selys, 1891	Pale slender dartlet	C
2	<i>Agriocnemis pygmaea</i> (Rambur 1842)	Pigmy Dartlet	VC
3	<i>Caconeura ramburi</i> , Fraser, 1922	Indian Blue bambootail	R
4	<i>Ceriagrion coromandelianum</i> , Fabricius, 1798	Coromandel Marsh Dart	VC
5	<i>Ceriagrion olivaceum</i> , Laidlaw, 1914	Rusty Marsh Dart	R
6	<i>Copera marginipes</i> (Rambur 1842)	Yellow Bush Dart	VC
7	<i>Copera vittata</i> , Selys, 1863	Blue bush dart	NR
8	<i>Disparoneura quadrimaculata</i> (Rambur 1842)	Black winged Bambootail	NR
9	<i>Amphiallagma parvum</i> , Selys, 1876	Azure dartlet	NR
10	<i>Ischnura aurora</i> (Brauer, 1865)	Golden Dartlet	VC
11	<i>Ischnura nursei</i> , Morton, 1907	Pixie Dartlet	NR
12	<i>Ischnura rubilio</i> , Selys, 1876	Western Golden Dartlet	C
13	<i>Ischnura senegalensis</i> (Rambur 1842)	Senegal Golden Dartlet	C
14	<i>Lestes umrinus</i> , Selys, 1891	Brown Spreadwing	VC
15	<i>Pseudagrion decorum</i> , Rambur, 1842	Three-lined dart	VC
16	<i>Pseudagrion rubriceps</i> , Selys, 1876	Saffron faced blue dart	VC

**Conclusion:-**

In the current study altogether 44 species of dragonflies and damselflies were reported from the Pench Tiger reserve area of Maharashtra. The survey was mainly conducted in eastern side of Pench tiger reserve and in Forested area. As per study 4 species, 2 from each sub order are found rare while 11 as Not Rare, 13 as Common while 15 species were Very common in area. The paddy fields and non-forest area may have some more species which needs to be studied further.

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