



DRAGONFLY DIVERSITY AROUND ANJANGAON SURJI REGION OF MAHARASHTRA, INDIA

Suwaran K Zilpe, V.G.Badhe and S.G.Sadar

Smt Radhabai Sarda Arts, Commerce & Science College , Anjangaon Surji. Dist Amravati.

ABSTRACT:

The present work is aimed to study diversity and abundance of dragonflies of Anjangaon Surji. This study has been carried out for one year from March 2022 to March 2023. We observed Nineteen families of Dragonflies (Order – Odonata) belonging to 4 families and 15 genera. Fifteen genera in family Libellulidae , two species belonging to Gomphidae and only one species belonging to Aeshnid and Petaluridae family were recorded. Odonates can help to control small insects like mosquitoes and hence their conservation is of importance. Odonata constitute a small, well known order of insects that are widely distributed all over the world. The adults are generally predacious insects and acting as an important bio-control agent of many harmful insects and playing a crucial role in controlling pest populations of agro as well as in the forest ecosystems. Their aquatic larvae constitute a natural biological control over mosquito larvae and thus help to control several epidemic diseases.

Key words: *Anjangaon Surji, Dragonflies, Diversity, Odonata*

INTRODUCTION:

Dragonflies play key roles in aquatic ecosystems, agroecosystems and forest ecosystems. Adult dragonflies are the most easily recognizable insect in the invertebrate fauna. They are the group of animals that attracts human being for their variety of colour, powerful flight and extra-ordinary sense of vision, they have elongated body and large eyes. They prefer to live in freshwater, non-polluted and well oxygenated environment. They are bioindicator of healthy ecosystem, and play important role in maintaining trophic status of particular habitat, and also play important role in the food web as herbivores and carnivores. The adult dragonflies are generally predacious insects and their larvae are carnivores and voracious feeders. They do not hunt during winter season and in some cold weather. Though dragonflies are predators, they themselves must be wary of many predators. Dragonflies are responsive to changes in ecosystems, atmospheric temperature, and weather conditions, making them strong indicators of environmental changes. (Tiple, 2012). they are widely recognized as indicator for monitoring wetland health. Dragonflies are ecologically important as both predators and prey. (Saha and Mondal,2018). Dragonflies are ancient insect groups that were the first to evolve wings and fly. They also actively used in controlling malarial

and filarial causative agents throughout the world and their aquatic larvae has a natural biological control over mosquito larvae and help to control several diseases like malaria, dengue, filaria etc. Their habitat is river, tanks, dams, lakes and also they are found around wetland areas. The main perspective of the present study was to record dragonflies in the agroecosystem of Anjangaon Surji taluka, Amravati district, Maharashtra. This will help to know the present day status of agroecosystem health and the changes in the crop management in India. The study and research of dragonflies is the very important and common fact that each one can study to know their social and environmental behaviours. Dragonflies and damselflies are becoming more widely recognized as valuable environmental indicators. Dragonfly research is also being conducted. Determine what they can tell us about the Diversity and Habitat in India (Aghade *et.al.*, 2022).

Manwar *et.al.*, (2012) observed diversity and abundance of Dragonflies and Damselflies Of Chatri Lake Region, in Pohara – Malkhed Reserve Forest. Manwar *et.al.*, (2014) studied diversity and abundance of Dragonflies and Damselflies of Pohara Range in Pohara – Malkhed Reserve Forest. Diversity of Dragonflies (Anisoptera) in District Baramulla and Bandipora of Kashmir Valley, Jammu and Kashmir was studied by Maqboola and Kant (2015). Bhandari *et. al.*, (2015) studied Diversity and Abundance of Odonata in catchments of Bansagar dam. Diversity of adult dragonflies in some part of Murtizapur taluka of Akola district was studied by Charjan *et. al.*, (2015). Raghuwanshi *et. al.*, (2016), observed, total of 13 species of odonates pertaining 12 genera and 3 families from Washim region of Maharashtra. Patil *et.al.*, (2018) studied Larvae of odonata are the predators of aquatic food chain and the adult odonates are the predators of various insects which act as the crop pests. Saha and Mondal (2018) studied Abundance and diversity of Odonata in and around Uttarpara, Hoogly, West Bengal. Kawade (2019) observed Odonata play key roles in aquatic ecosystems, agroecosystems and forest ecosystems. The Odonates have strong association with water because of their aquatic larvae, observed by Sanap (2020). Supenkar *et. al.*, (2021) studied, Odonates having long, slender abdomen; large globular eyes, often making up a large portion of the head; short antennae; and long wings, which have a conspicuous nodus and usually a pterostigma. Aghade *et. al.*, (2022) A review on odonate diversity and habitat in India. The adult dragonflies are generally predacious insects, while the larvae are carnivores and voracious feeders Tiple *et. al.*, (2022)

Materials and Methods:

Anjangaon is a city and a municipal council in Amravati district in the state of Maharashtra, India. Anjangaon City got the of Municipal Council in 1930. Anjangaon surji is located at 21.1641° N 77.3159° E. Anjangaon and Surji, on either side of Shahanur River. The various sites of Anjangaon Surji region was selected for the study, it is included Anjangaon surji city, shahapura, Takarkheda (More), Smt. Radhabai Sarda Arts, Commerce and Science College, Daryapur Road, anjangaon surji. The detail map of Anjangaon-surji region is given in **Figure I**. Dragonflies were surveyed in rivers, pond, temporary and permanent flowing or still water bodies and surrounding area, during the monsoon and post monsoon season. The Odonates were photographed and identified in different regions of the Anjangaon city from March 2022 to March 2023, Most of the sampling was done between 10 AM to 2 PM when insect are most active. Observations were carried out during morning and evening times in all Area. Species were

photographed and identified in their natural habitats. Photographs of the adults were taken in field. For identification, a key field guide of **Subramanian (2005)** was referred.



Figure I: Google map of Anjangaon surji region

Results and Discussion:

SN	COMMON NAME	CLASS	FAMILY	ORDER	GENUS	SPECIES
1	The gray petaltail	Insecta	Petaluridae	Odonata	<i>Tachopteryx</i>	<i>thoreyi</i>
2	The granite ghost	Insecta	Libellulidae	Odonata	<i>Bradinopyga</i>	<i>geminata</i>
3	The spot winged glider	Insecta	Libellulidae	Odonata	<i>Pantala</i>	<i>hymenaea</i>
4	Brown Dusk Hawk	Insecta	Libellulidae	Odonata	<i>Zygomma</i>	<i>petiolatum</i>
5	Pale-faced clubskimmer	Insecta	Libellulidae	Odonata	<i>Brechmorhoga</i>	<i>mendax</i>
6	Blue percher, green and blue skimmer	Insecta	Libellulidae	Odonata	<i>Diplacodes</i>	<i>trivialis</i>
7	English–Indigo Dropwing	Insecta	Libellulidae	Odonata	<i>Trithemis</i>	<i>Festiva</i>
8	Crimson Marsh Skimmer	Insecta	Libellulide	Odonata	<i>Trithemis</i>	<i>aurora</i>
9	Eastern pondhawk	Insecta	Libellulide	Odonata	<i>Erythemis</i>	<i>simplicicollis</i>
10	Scarlet skimmer (male)	Insecta	Libellulide	Odonata	<i>Crocothemis</i>	<i>servilia</i>
11	Scarlet skimmer (female)	Insecta	Libellulide	Odonata	<i>Crocothemis</i>	<i>servilia</i>
12	Ditch jewel, groundlings (female)	Insecta	Libellulide	Odonata	<i>Brachythemis</i>	<i>contaminate</i>
13	Ditch jewel, groundlings (male)	Insecta	Libellulide	Odonata	<i>Brachythemis</i>	<i>contaminate</i>
14	Broad-striped forceptail	Insecta	Gomphidae	Odonata	<i>Aphylla</i>	<i>angustifolia</i>
15	Common Clubtail	Insecta	Gomphidae	Odonata	<i>Ictinogomphus</i>	<i>raphax</i>
16	Taeniolate marsh hawk	Insecta	Libellulide	Odonata	<i>Orthetrum</i>	<i>taeniolaetum</i>

17	Trumpet tail	Insecta	Libellulide	Odonata	<i>Acisoma</i>	<i>panorpoides</i>
18	Ochretailed	Insecta	Aeshnidae	Odonata	<i>Anax</i>	<i>ephippiger</i>
19	Wandering glider	Insecta	Libellulide	Odonata	<i>Pantala</i>	<i>flavescens</i>

Odonates are highly specific to habitat. Dragonflies which are observed from Anjangaon Surji and Takarkheda region. The present study reveals a total of 19 species of dragonflies pertaining 15 genera and 4 families represented in consist of observation tables. Libullulidae was most dominant family represented by 15 species followed Gomphidae family consist of 2 species, Aeshnidae family consist of 1 species and Petaluridae family consist of 1 species. Libellulidae family is the largest family carrying maximum number of species of dragonflies around the fresh water bodies of Anjangaon Surji and Takarkheda region. . *Trithemis festiva* is the most common and most dominant species *Trithemis aurora*, *Brachythemis contaminate*, *Hemianax Ochre ephippiger* and *Bradinopyga geminata* are also observed in maximum number. while *Diplacodes trivialis*, *Pantala flavescens* and *Crocothemis servilia* were observed in very less number and very rare. *Ictinogomphus raphax* which was observed rarely. Recently IUCN declared it as an endangered species. Hence there is a great need for preservation of this species. The survey showed remarkable species diversity of dragonflies followed by one species Gomphidae Similar results were reported by **Sanap (2020)**. Generally dragonflies are predatory in nature. They are also a good source of energy and food to different group of animals, especially for birds and other insects such as spiders. The diversity of dragonflies, being dependent on freshwater habitats, corresponds broadly with humidity gradients, since the time of evolution. Anjangaon Surji is the well known Taluka in Amravati district of Vidarbha region. There is no data regarding the biodiversity of Dragonflies of this area. The rapid degradation and disturbance of the habitat considered to be crucial to the declining of population of common species. So there is need to have further study about the Odonata diversity.

References:

- Aghade J.B., S. A. Saraf and A. M. Shinde (2022):** A review on Odonate diversity and habitat in India. *Journal of Entomology and Zoology Studies*. Vol. 10 (2): 129-134.
- Charjan A. P., R.S. Virani and V.G. Thakare (2015):** Diversity of Dragonflies (Insecta: Odonata) in some Parts of Murtizapur Taluka of Akola District, Maharashtra, *Biological Forum – An International Journal* Vol. 7(1): 1499-1501.
- Deshmukh G.D., A.A. Dhamani and R.J. Rudey (2005):** Diversity of Dragonflies in the Agro-Forest Ecosystem of Nagbhid, Maharashtra (India), *International Journal of Applied Research*. : 259- 261.
- Kawade S. T. (2019) :** Diversity of Odonates in agricultural fields of Pandharkawada Taluka, Yavatmal District, Maharashtra, India, *International Journal Of Researches In Biosciences, Agriculture And Technology*. Vol. 03: 1-4
- Manwar N.A. , P.P. Rathod and I. A. Raja (2012):** Diversity and abundance of Dragonflies and Damselflies Of Chatri Lake Region, in Pohara – Malkhed Reserve Forest, Amravati, Maharashtra (India), *International Journal of Engineering Research and Applications (IJERA)*. : 521-524.

Maqboola and Kant (2015): Diversity of Dragonflies (Anisoptera) in District Baramulla and Bandipora of Kashmir Valley, Jammu And Kashmir, *Online International Interdisciplinary Research Journal*, {Bi-Monthly}, ISSN 2249-9598, Volume-5: 154- 161.

Patil R., Y. Patil and P. Salunkhe (2018): Diversity of Odonata (Dragon flies and Damsel flies) Fauna of Khanapur Tehsil, Dist. Sangli (M.S.) India, *International Journal of Creative Research Thoughts* Vol. 6: 1021 – 1030.

R. Bhandari, V. Choubey and A. Shukla (2015): Diversity and Abundance of Odonata In catchments of Bansagar dam, *International Journal of Current Research* Vol. 7: 24035 – 24037

Raghuwanshi A. R., P. S. Patil and S. G. Chhaba (2016): Study of Dragonfly diversity from Washim region of Vidherbha Maharashtra, India, *Golden Research Thoughts*, Vol. 6: 1-5.

Saha H. K., A. Mondal (2018): Abundance and diversity of Odonata in and around Uttarpa, Hoogly, West Bengal. *Abundance and diversity of Odonata*. Vol. 5: 120- 124.

Sanap N. P. (2020) : Odonata diversity in the campus area of Pt. Ravishankar Shukla University Raipur (C.G.) India. *Int. J. of Life Sciences*, 2020;Vol. 8 (4):751-756.

Subramanian K. A. (2005): A checklist of Odonata of India, Zoological survey of India, Kolkata

Supanekar S. P. , M. S. Naik, L. N. Meshram, A. G. Rokade & P. R. Pawar (2021) : Species Diversity and Abundance of Dragonflies and Damselflies (Odonata: Insecta) in and around Panvel, Navi Mumbai, Maharashtra (India), *International Journal of Scientific and Research Publications*, Vol. 11 : 368-374.

Tiple A. , Bhende R. and Parag Dandge (2022) : Dragonflies and damselflies (Odonata: Insecta) of the Seloo city, Wardha, Maharashtra, Central India, *Arthropods*, 2022, 11(1): 56-64

Tiple A. D. (2012): Dragonflies and Damselflies (Odonata: Insecta) of the Achanakmar Amarkantak Biosphere Reserve, in Chhattisgarh and Madhya Pradesh, with their status in Central India. *Int. J. Biotechnol. Bio. Sci.* Vol. 2(1): 97-102.