International Journal of Leading Research Publication (IJLRP)

E-ISSN: 2582-8010 ● Website: www.ijlrp.com ● Email: editor@ijlrp.com

Study of Odonata Diversity in the Campus of Jagadamba Mahavidyalaya, Achalpur City

Daulat M. Raut

Assistant Professor
Department of Zoology
Jagadamba Mahavidyalaya, Achalpur City.

Abstract:
This study was conducted in the college campus of Jagadamba Mahavidyalaya, Achalpur City, District Amravati, Maharashtra to documentation of diversity and abundance of Odonata species. The data was collected by camera photography, and visual encounter survey (VES) methods from the year of July 2024 to September 2025. We record 5 dragonflies (Anisoptera) species belongs to family Libellulidae and 2 species of damselflies (Zygoptera) belongs to the family Coenagrionidae. In the whole species, the *Pantala flavescens* is found as most dominating species in survey. monsoon season was more species diversities were counted in field as compare to other seasons. The aims of study are assessment of Odonata diversity in college campus to provides important insight to helps for conservation.

Keyword: Achalpur City, Odonata, Diversity, Anisoptera, Zygoptera Damselfly, Dragonfly Libellulidae, Coenagrionidae.

1. INTRODUCTION

The dragonflies and damselflies are belonging to order odonata. They are hemimetabolous and carnivorous winged insects. Adult is terrestrial mode of life while an eggs and Nymphs stages are developed in aquatic (Stoks & Córdoba-Aguilar, 2012; Gain et al., 2008; Koneri et al.,2022). Worldwide, 5740 of odonates species are identified, and in India, 474 species in 142 genera and 18 families exist (Gain & Kulkarni, 2024). The adult dragonfly's predation on different types of Dipteran flies like housefly, mosquitoes, bees, wasps and small beetles and nymphs of odonates are mainly feed on larvae of mosquitoes and other small animals and insects (Andrew et al., 2008; Saha et al., 2022). In previous study exhibit high odonata diversity in India including Southern Western Ghats, Eastern Himalayas, Western Himalayas, and the Andaman and Nicobar and endemic (Krishnan et al., 2024). In college campus, diversity of other animals had been studied but odonates remains yet unexplored. Despite their major role in pest control and a key bioindicator of water pollution (Gain & Kulkarni, 2008)., therefore the aims present study is to documented dragonflies and damselflies species.

2. MATERIALS AND METHODS

2.1 Study Area

The study was conducted in the college campus including Botanical Graden and grassland near B-wing buildings of Jagadamba Mahavidyalaya, Achalpur City is located near Melghat foothill in Amravati district, Maharashtra (India). The campus is riche in different types of plants, grass species and animal species, the water reservoirs of 2 Hydrilla tanks in Botanical Garden.

2.2 Sampling Methods and Identification

The methods employed to record Odonates species by using camera photography and visual encounter survey (VES) during Junly 2024 to September 2025 in Botanical Graden (including 2 Hydrilla water tanks) and grassland near B-wing buildings of Jagadamba Mahavidyalaya, Achalpur City between 9.00 am to

11.30 noon and 4.15 pm to 6 pm after every10 day interval. Every species was recorded by capturing photograph with Redmi Note 9 Pro Max, Samsung Galaxy S24 Ultra and note down by visual survey. During survey, no odonata species was capture and not harmed. The species were identified by key features provided in A handbook on common odonates of Central India (Andrew et al., 2008) and website of Odonata of India (https://www.indianodonata.org/) using their morphological characters like body shape, size, length, colour, head structure, tail length and Wing venation, patterns, abdominal patterns and appendages.

3. RESULT

The species survey carried out at different sites of college campus of Jagadamba Mahavidyalaya, Achalpur City and a total 07 odonata species was documented and a list presented in table 1& 2. The 05 dragonflies (Anisoptera) species belong to family Libellulidae and 02 species of damselflies (Zygoptera) belongs to the family Coenagrionidae. The *Pantala flavescens* was recorded as most dominating species throughout odonata in survey.

Table 1 List of dragonfly (Anisoptera) species reported in study areas.

Serial No.	Family Name	Common Name	Scientific Name
1	Libellulidae	Konkan Rockdweller	*Bradinopyga konkanensis*
2		Wandering glider	*Pantala flavescens*
3		Granite ghost	*Bradinopyga geminata*
4		Chalky percher or Ground skimmer	*Diplacodes trivialis*
5		Ditch jewel	*Brachythemis contaminata*

Table 2 List of damselflies (Zygoptera)species reported in study areas.

Serial No.	Family Name	Common Name	Scientific Name
1	Coenagrionidae	Coromandel marsh dart	Ceriagrion coromandelianum
2		Variable dancer	*Argia fumipennis*

Ceriagrion coromandelianum

Bradinopyga konkanensis

Pantala flavescens

Diplacodes trivialis

Figure 1 Some Photographs from study sites

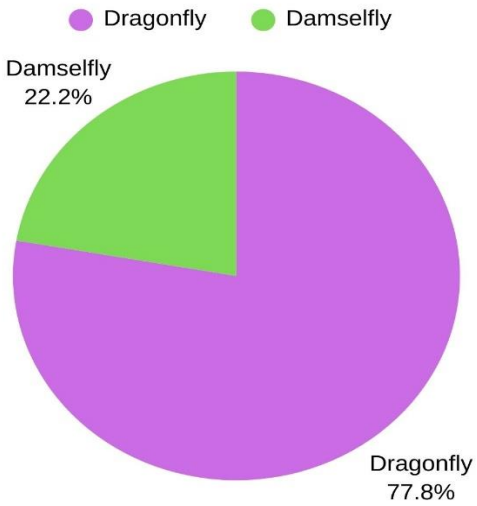

Figure 2 Comparison between Dragonflies and damselflies abundance.

4. DISCUSSION

Increase in urbanization, industrialization, fragmentation of habitats and anthropogenic activities are main cause for declining the odonata diversity. We record 07 species of odonata, 05 dragonflies (Anisoptera) species belong to family Libellulidae and 02 species of damselflies (Zygoptera) belongs to the family Coenagrionidae. In previous research same Anisoptera domination was observed by (Sharma, 2020; Koneri et al.,2022; Gain & Kulkarni, 2024). The study clearly exhibits dragonflies are dominating over damselflies. *Pantala flavescens* was more encounter during survey was shows more diversity and the *Ceriagrion coromandelianum* was restricted at Hydrilla water tank in Botanical Garden. The study area represented high population that indicates good habitat quality. (Zilpe et al.,2023) record 19 species of dragonfly at Anjangaon Surji and Takarkheda region. The fragmentation of habitats and rising of major factors for declining odonata species. The dragonfly is swiftly flying insects therefore is difficult to observe and study. The odonata has not yet been studied in college campus.

5. CONCLUSION

The study sites record a total 7 odonata species in small campus of college, it shows a suitable healthy living habitat for odonata species. This investigation helps researcher and conservators for further research. Continous monitoring of odonata species is required to identify species at risk.

REFERENCES:

1. Stoks, R., & Córdoba-Aguilar, A. (2012). Evolutionary ecology of Odonata: a complex life cycle perspective. *Annual review of entomology*, *57*(1), 249-265.
2. Andrew, R. J., Subramaniam, K. A., & Tiple, A. D. (2008, November). Common odonates of central India. In *E-book for The 18th International Symposium of Odonatology, Hislop College, Nagpur, India* (Vol. 55).
3. Gain, B. I., & Kulkarni, R. R. (2024). Study on diversity of Odonata (Dragonflies and Damselflies) fauna of Lohara Lake, District-Chandrapur (MS), India. *Environment Conservation Journal*, *25*(2), 384-387.
4. Koneri, R., Nangoy, M. J., & Elfidasari, D. (2022). Odonata diversity in the Laine Waterfall Area, Sangihe Islands, North Sulawesi, Indonesia. *Aquaculture,*
5. *Aquarium, Conservation & Legislation (AACL) Bioflux*, *15*(3), 1083-1095.
6. Krishnan, N., Harikuttan, N., Vijay, N., & Syamala1, V.,(2024). An Ecological Inquiry Into The Taxonomic Diversity And Spatial Distribution Patterns Of
7. Odonata Within The Meenachil And Pampa River Basins In Kerala, India.
8. International Journal of Creative Research Thoughts (IJCRT),12(9),a798-a808.
9. Andrew, R. J., Subramanian, K. A., & Tiple, A. D. (2008). *A handbook on commonodonates of Central India*. Nagpur, India: Hislop College.
10. Ganeswari, C., & Rajendran, P. (2025). Diversity and Seasonal Variation of
11. Odonates in Selected Wetlands of Madurai District. *International Journal of Ecology and Environmental Sciences*, *51*(5), 531-542.
12. Saha, I., Dey, S., & Palit, S. (2022). Diversity Study of Odonata in Chintamani Kar Bird Sanctuary, Kolkata, West Bengal, India. *Development (IJASTRD)*, *2*(1).
13. Gaurav Sharma (2020). Studies on the Species Diversity of Damselflies and Dragonflies (Odonata: Insecta) around the Tributary of Tons River, Dehradun,Uttarakhand, India, 12(2), 09-10.
14. Zilpe, S. K., Badhe, V. G., & SG, S. (2023). Dragonfly Diversity Around Anjangaon Surji Region of Maharashtra, India. *Journal of Emerging Technologies and Innovative Research*, *10*(9), 831-835.
15. Odonata of India https://www.indianodonata.org/