



DIVERSITY OF AQUATIC INSECTS IN BAKARI RIVER, DIST. WARDHA

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ABSTRACT:

Bakari river in District Wardha is a river rich in nutrients and is selected to analyze the seasonal abundance and population variation of aquatic insects from March 2023 to February 2024. The study showed that the insect population was higher during the months of June, September and October. The maximum in June, when an average of seven insects were discovered in one ml. of sample. The population density was found to be lower in the remaining months, being lowest in February, March, when in an average only one insect /ml of sample were encountered.

Keywords:- Aquatic, Insects, Bakari river, Diversity.

INTRODUCTION :

Aquatic biodiversity is the rich and wonderful variety of plants and animals that live in water habitats. Among aquatic animals, aquatic insects are dominant macroinvertebrates present in all aquatic environments because they can easily adapt to varied conditions and are enable to survive and grow in all seasons. Water resources are the main source that support biodiversity. Without sufficient water there is stress on species thereby causing biodiversity loss. Fresh water habitats being widely recognized as the most threatened on Earth (Vorosmarty et.al.2010). Estimates on global number of aquatic insect species derived from the fauna of North America, Australia and Europe is about 45,000, of this about 5,000 species are estimated to inhabit inland wetlands of India (Amaravathi et.al.2018; Rao et.al.2020).

Bakari river in Ashti Tahasil, Di.-Wardha is having suitable environment for growth and survival of many insects because water of this river is highly productive and support a large number of aquatic plants which provide food ,shelter and protection of the aquatic insects (Bath,1996). 2

The present study describes the seasonal distribution and population abundance of aquatic insects in Bakari river of Wardha District.

MATERIAL & METHODS :

For the study of aquatic insects, surface water samples were collected periodically from March 2023 to February 2024 in a wide mouthed plastic bottle (250 ml) tied to a planktonic net. Approximately 50 litres of water was allowed to pass through the net to collect one sample. Benthic insects were collected by using 'Ekman's dredge'. Insects were also collected from under the stones, gravels and vegetation by hand picking. The collected insects were preserved in 5% formalin solution and brought to the laboratory for macro and microscopic study.

The insect fauna was identified using standard references (Ward and Whipple,1959, Pennak,1978, Tonapi,1980, Willians and Feltmate,1992).

RESULT & DISCUSSION:

In Bakari river population density and species diversity of insects were found to be high as river water is highly productive and nutrient rich (Bath,1996; Nandi, 2003; Gyllstrom and Hansson,2004; Sharma et.al.2007; Chavan and

Lonkar,2012). These belonged to orders Lepidoptera(Larvae), Trichoptera (Larvae), Diptera Larvae and adults), Neuroptera (Larvae), Hymenoptera (Adults), Plecoptera, Ephemeroptera (Larvae), Odonata (Nymphs),Coleoptera (Adults), Hemiptera (Adults).

Discussion:

The order Lepidoptera was represented by only Nymphula larvae while order Trichoptera was represented by two genera Leptocercus and ceraclea, Order Diptera was represented by adults and larvae of 4 genera. These were larvae and adults of Culex sp.,Chironomous sp., Anopheles sp., Anthroix sp. Larvae of Culex and Chironomous sp. Were abundant during January, June ,August to November.

Order Neuroptera was represented by larvae of Corydalus sp., Chauliodes sp., Corydalis sp. And they were found in the month of June and July. Only one species of order Hymenoptera was found in Bakari river and it was Polynemanatans sp. which was found in the month of February and October.

Order Plecoptera was represented by three species, Nemoura sp.,Chloroperla sp. and Capnia sp. Order Ephemeroptera was represented by only larvae of Ephemerella sp. and Caenis sp. Order Odonata was represented by Nymphs of Aeshna sp. And Anax sp. Order Coleoptera was represented by only adults of Dytiscus sp. And Hydrophilus sp. Order Hemiptera was represented by adults of Deronectes sp. And Nep asp.

CONCLUSION:

The available data reveal that in Bakari river population density of insects was higher during the period May to October. Density was higher in the month of June while because of heavy rains it was lower in the month of July and August. Benthic population was more in the months of January and November. Abundance of insects during the Summer was also observed by

Munawar (1970), Rai and Datta (1970), Das (1979) and Kaushik et.al. (1991). According to Elliot (1967) and Hynes (1970), temperature is the most 4

important factor affecting the seasonal cycle of insects. Reduced population density during heavy rains was due to drifting of aquatic insects and their larvae along with strong water current. Similar reasons for low insect population desity during rains was given by Kaushik et.al. (1991).

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Table 1: Aquatic insects fauna of Bakari river (March 2023 to February 2024).

S.No.	Order	Identified genera/species
1	Lepidoptera	Larvae of Nymphula
2.	Trichoptera	Larvae of Ceraclea sp.and Leptocerus sp.
3.	Diptera	Larvae and Adults of Chironomous sp., Anopheles sp., Culex sp.& Anthorix sp.
4.	Neuroptera	Larvae of Corydalis sp., Chauliodes.
5.	Hymenoptera	Adults of Polynemanatans.
6.	Plecoptera	Chloroperla, Capnia, Nemoura.
7.	Ephemeroptera	Larvae of Ephemerella sp., Caenis.
8.	Odonata	Nymphs of Anax sp & Aeshna sp.
9.	Coleoptera	Adults of Dytiscus sp & Hydrophilus sp.
10.	Hemiptera	Adults of Deronectes sp., Nepa