



REVIEW OF RESEARCH

ISSN: 2249-894X

IMPACT FACTOR : 5.7631 (UIF)

VOLUME - 9 | ISSUE - 12 | SEPTEMBER - 2020



DRAGONFLIES OF SOLAPUR CITY (MS), INDIA

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ABSTRACT

Solapur city provides a moderate habitat for diversity of dragonflies. Its geographical location is 17°4'48" N.75°55'12" E. The city has two historical lakes, namely Shri. Siddheshwar Lake and Sambhaji Lake. Both lakes are visited weekly for observing Dragonflies from January 2019 to December 2019. During the 2 genera and three families. Most species were represented by Libellulidae, followed by Gomphidae and Aeshnidae. Present study documents the current status of occurrence of Dragonflies species in the study region that will be helpful for formulation of strategies regarding conservation planning of Dragonflies from the region under study.

KEYWORDS: Dragonflies, Solapur city, Diversity, Siddheshwar lake, Sambhaji lake, Conservation.

INTRODUCTION

Odonata is an order of carnivorous insects including two infraorder namely anisoptera which includes dragonflies and infraorder zygoptera which includes damselflies. Dragonflies are commonly found near ponds, pools, rivers, streams, marshy places etc. They are reported from sea levels to over 3,600 M and from brackish marshy areas to deserts land from all over the world. Out of 6000 species reported from the world, 500 species belonging to 139 genera of 17 families have been reported from India. (Kulkarni and Prasad 2002)⁵.

Odonates are primarily aquatic insects and their life history is closely linked to specific aquatic habitats. This habitat specificity makes them a good indicators of wetland health. Thanks to the work of Fraser, the fauna of British India-Odonata (1933,34,36)^{2,3,4}. He described 536 species within Indian region. Though the Indian Odonata fauna is well known taxonomically, Natural history and ecology is documented only of few species. Even basic facts such as geographic and seasonal distribution of most of the species are barely known (Subramanian 2005)⁸. In temperate region of the world, Dragonflies are frequently used as indicators of environment health. Their aquatic larvae and thus help to control several epidemic disease like malaria, dengue, filaria etc. (Mitra 2002)⁶. Dragonflies are among the dominant invertebrate predators in any eco-system, Dragonflies being predators both at larval stage and adult stages, They play an important role in food chain of the forest eco-system (Vashisht et.al,2002)⁹. Dragonflies can be seen on flowing as well as standing water bodies (Corbet 1962)¹. There is, however no report on occurrence and conservation of Dragonflies of Siddheshwar Lake and Sambhaji Lake of Solapur city, therefore, the present study was undertaken.



STUDY AREA:**Siddheshwar Lake**

The Siddheshwar Lake ($17^{\circ}40'22''\text{N}$ $75^{\circ}54'16''\text{E}$). The temple located on an island within the large lake measured about 36 acres. The lake was developed by Shri. Siddheshwar in 1180 A.D. Today it is looked on as a 'Tirthkshetra'. This tirth also provide 'Jeevan' to the people of solapur for almost 700 years. It also provides a good habitat for flora and fauna.

**Sambhaji Lake**

The sambhaji Lake ($17^{\circ}40'22''\text{N}$ $75^{\circ}54'16''\text{E}$). The lake about 2500 acres of area but the water spread of lake is about 42 acres. The annual rainfall of the area is 617mm. The lake provides a good habitat for diverse aquatic flora and fauna. It also attracts many birds species of local and migratory.

**MATERIALS AND METHODS-**

The study of Dragonfly species was made by visiting Siddheshwar Lake and Sambhaji Lake of Solapur city at monthly intervals from January-2019 to December-2019. The study was carried out twice during morning and evening for monthly intervals. The observation was made by using binoculars and photography done by using Canon SX 60 HS camera. Very rarely Dragonfly species were collected with the help of specially designed insect nets. After detailing the characteristics, live Dragonfly Specimens were released in their natural habitat. Standard methods were used for collection and observation of Dragonfly specimens.

The Dragonfly specimens were identified with the help of fauna of British India by Fraser (1933,'34,'36), Silsby (2001)⁷, Field guide of Subramanian and available literature.

Table no.1 showing occurrence of Dragonflies at study area.

Sr.no	Scientific name	Common name	Family
1	<i>Brachythemis contaminata</i> (Fabricus,1793)	Ditch jewel	<i>Libellulidae</i>
2	<i>Acisoma panorpoides</i> (Rambur,1842)	Trumpet tail	<i>Libellulidae</i>
3	<i>Bradinopyga geminata</i> (Rambur,1842)	Granite ghost	<i>Libellulidae</i>
4	<i>Crocothemis servilia</i> (Drury,1770)	Scarlet skimmer	<i>Libellulidae</i>
5	<i>Neurothemis tullia</i> (Drury,1773)	Pied paddy skimmer	<i>Libellulidae</i>
6	<i>Orthetrum sabina</i> (Drury,1770)	Green marsh hawk	<i>Libellulidae</i>
7	<i>Pantala flavescens</i> (Fabricus,1798)	Wandering glider	<i>Libellulidae</i>
8	<i>Rhyothemis variegata</i> (Linnaeus,1763)	Common picture wing	<i>Libellulidae</i>
9	<i>Orthetrum pruinosa neglectum</i> (Rambur,1842)	Crimson tailed marsh hawk	<i>Libellulidae</i>
10	<i>Orthetrum glaucum</i> (Brauer,1865)	Blue marsh hawk	<i>Libellulidae</i>
11	<i>Ictinogomphus rapax</i> (Rambur,1842)	Common clubtail	<i>Gomphidae</i>
12	<i>Anax immaculifrons</i> (Rambur,1842)	Magnificent emperor	<i>Aeshnidae</i>

Photographs of some Dragonfly species occurred at study area.



- 1) Ditch jewel *Brachythemis contaminate*, 2)Trumpet tail *Acisoma panorpoides*, 3) Granite ghost *Bradinopyga geminate*, 4) Scarlet skimmer *Crocothemis sevilia*, 5) Pied paddy skimmer *Neurothemis tullia* ,6) Green marsh hawk *Orthetrum Sabina*.

RESULT AND DISCUSSION-

In the present study, during January-2019 to December-2019. The total twelve (12) species of Dragonflies were recorded belonging to eleven genera and three (3) families. *Libellulidae* family was consisting of maximum number of genera and species followed by the family *Gomphidae* and *Aeshnidae*.(Table no.1)

Dragonflies are a predators, hemi-metabolous and amphibiotic insects, which inhabits all kind of freshwater habitat either permanent or temporary (silsby, 2001).Subramanian (2009) reported 11 Dragonfly

families, of which *Libellulide* (972) and *Gomphidae* (958) are major families containing maximum species throughout the world followed by *Aeshnidae*(436), *Corduliidae* (249) and *macromiidae* (123). In India, out of 7 families, *Libellulidae* and *Gomphidae* are major families consisting 85 species each. These are followed by *Aeshnidae* (45), *Micromiidae* (17), and *Corduliidae* (16). A very less number of species are reported in family-*Chlorogomphidae* (10) and *Cordulegastridae* (9). In Indian peninsula, major species are studied under family-*Libellulidae* (50) followed by *Gomphidae* (27), *Micromiidae* (17) and *Aeshnidae* (8).

The above observations are similar to the present observations where family-*Libellulidae* is largest family carrying maximum number of genera and species followed by family *Gomphidae* and *Aeshnidae*.

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