

## CLADOCERA AND COPEPODA (CRUSTACEA) FAUNA OF SELİ STREAM (ELAZIĞ-TURKEY)

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**Abstract:** In this study Cladocera and Copepoda (Crustacea) fauna of Seli Stream has been investigated monthly between March 2006-February 2007. In Seli Stream, 4 species of cladocerans and 2 species of copepods have been identified. All of the identified species are the first records for Seli Stream.

**Keywords:** Cladocera, Copepoda, Seli Stream, Elazığ

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## Introduction

The two groups of zooplankton, cladocerans and copepods are found in almost kind of aquatic habitats such as rivers, lakes, ponds, streams and other bodies of water. These organisms are known as essential components of the food chain for freshwater ecosystems, because they are the most important grazers of phytoplankton and thus herbaceous material is diverted to animal material through these zooplanktons. They are also used as biological indicator for determination of water quality, pollution and eutrophication (Güher, 2000; Altındağ and Yiğit, 2002).

A number of studies of Cladocera and Copepoda fauna of Turkey have been previously conducted by Gündüz (1986, 1991, 1997); Güher (1999, 2000, 2002); Telliöglu and Şen (2001); Bekleyen (2003, 2006); Ustaöglu (2004); Ustaöglu et al (2001 a, b); Telliöglu and Yılmaztürk (2005); Aladağ et al (2006); Saler and Arslan (2008). As indicated above, in Turkish Thrace, Cladocera and Copepoda fauna have generally surveyed in lentic habitats, but there are a few studies in lotic habitats as Temel (1996); Göksu et al (1997).

The present study was carried out to determine the Cladocera and Copepoda fauna of Seli Stream.

## Material and Methods

Seli Stream is one of the important inland water of Elazığ province and is benefited for irrigation. It is situated in the west of Elazığ (38° 34' 39" N, 39° 02' 33" E) 12 km far away from city center (Figure 1).

Sampling was made monthly between March 2006 - February 2007 in order to determine Cladocera and Copepoda fauna of Seli Stream. Sampling could not be made due to drying of stream in August.

Samples were collected from three stations with 55 pore sized Hydro-Bios plankton net by horizontal hauls and the specimens were preserved in 4% formaldehyde solution and examined under Leitz inverted microscope. Relevant literatures (Edmondson, 1959; Flössner, 1972; Harding and Smith, 1974; Kiefer, 1978; Reedy, 1994) were used for the identification and classification of the species.



**Figure 1.** The location of Seli Stream and sampling stations.

## Results and Discussion

A total of four species of Cladocera belonging to three families and two species of Copepoda belonging to two families were determined in Seli Stream.

**Phylum: Arthropoda Latreille, 1829**

**Subphylum: Crustacea Brünnich, 1772**

**Class: Branchiopoda Latreille, 1817**

**Order: Cladocera Latreille, 1829**

Family: Bosminidae Baird, 1846

*Bosmina longirostris* (O.F. Müller, 1785)

Family: Daphniidae Straus, 1820

*Daphnia longispina* (O.F. Müller, 1785)

*Ceriodaphnia reticulata* (Jurine, 1820)

Family: Leptodoridae Lilljeborg, 1900

*Leptodora kindtii* (Focke, 1844)

**Subclass: Copepoda H. Milne-Edwards, 18406**

**Order: Cyclopoida G. O. Sars, 1918**

Family: Cyclopinae Kiefer, 1927

*Cyclops vicinus* Uljanin, 1875

Family: Diaptomidae G.O. Sars, 1903

*Acanthodiaptomus denticornis* (Wierzejski, 1887)

The monthly distributions of species are given in Table 1. Among the identified species *Cyclops vicinus* and *Acanthodiaptomus denticornis* were recorded virtually throughout the sampling period. In contrast, *Ceriodaphnia reticulata*, *Leptodora kindtii*, *Daphnia longispina* were rarely found in the stream.

The ecological features of the recorded species show that most of them are cosmopolitan and littoral inhabiting. Additionally, among the recorded species, *B. longirostris* and *C. vicinus* species are well known indicators of eutrophy (Ryding and Rast, 1989). The dominant species of Cladocera, *B. longirostris* was occurred in seven months which is also reported as an indicator of eutrophic lakes (Kiefer, 1978). According to Blancher (1984), in eutrophic lakes, cladocerans and cyclopoids in comparison to calanoids, can be more abundant. This phenomenon was observed in Seli stream. The cyclopoid species *Cyclops vicinus* was the most abundant species demonstrating the eutrophic status of the stream. All of these species are recorded for the first time in Seli Stream. In terms of species composition, cladocerans have a high species number in the stream. All of these species are recorded for the first time in Seli Stream, although they have previously reported (Ustaoğlu, 2004).

**Table 1.** Monthly distribution of Cladocera and Copepoda in Seli Stream

	Species	Months											
		2006					2007						
		Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
<b>Cladocera</b>	<i>B longirostris</i>	+	-	-	+	-	*	+	+	+	+	+	-
	<i>D longispina</i>	+	+	+	-	+	*	-	-	-	-	-	-
	<i>C. reticulata</i>	-	+	-	-	-	*	-	-	-	-	-	-
	<i>L. kindtii</i>	-	-	+	+	+	*	-	-	-	-	-	-
<b>Copepoda</b>	<i>C. vicinus</i>	+	+	+	+	+	*	+	+	+	+	-	+
	<i>A denticornis</i>	+	+	+	+	+	*	+	+	-	-	-	-

- : not observed    + : observed    \* : samples could'nt be taken

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