The distribution and relative abundance of the oriental river prawn, *Macrobrachium nipponense* (De Haan, 1849) in Anzali Lagoon and its relationship with certain environment factors

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Received date: 2017/03/01
Reception date: 2017/04/05

Abstract

The present research aimed at examining the distribution and relative abundance of fresh water shrimp, *Macrobrachium nipponense* during April 2014 to April 2015 involving the use of 13958 pieces of shrimp including 7170 male, 6115 female and 673 premature ones. Samplings were carried out on 12 different sites located in four parts of the Anzali lagoon along with two rivers (Siahdarvishan and Hendekhaleh) that enter into the lagoon. The shrimps were caught by fyke net having a $2\times2_{mm}$ mesh size. The male/female sex ratio was estimated to be 1.17:1. Males abundance were dominant in April, May, June, September, October, November, December and February and females abundance during July and August. There were significantly different in abundance of males and females in different areas ($P<0.05$). Males abundance were dominant in western part of the lagoon and Seiahdarvishan and Hendekhaleh rivers but females abundance in eastern part of the lagoon. The relative abundance and biomass of shrimps were also significantly different in various months of the year. The maximum and minimum values for relative abundance were observed in August (202±71) and March (11±6) and the relative biomass recorded in August and January were (377±115) and (5±1/3) respectively. There were no major observable difference in terms of the above parameters in different areas ($P>0.05$). However, the lowest and highest rates were detected in eastern part of the lagoon, whereas the central and western areas accounted for the least rate. While, a positive correlation seemed to exist between physic- chemical characteristics of water (i.e. temperature, salinity, hardness and electric conductivity) and shrimps' population, it showed a significantly negative correlation with dissolved oxygen (DO), water transparency and depth ($P<0.05$). In addition, an almost favorable correlation was found between shrimps 'abundance and the bottom soil type of the lagoon($r=0.4$).

Keywords: *Macrobrachium nipponense*, Distribution, Relative abundance, Environment factors, Anzali Lagoon.

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