

Study on Zooplankton community structure in the Iranian Coastal of Caspian Sea during 1996-97, 2008-2011

Hassan Narollahzadeh Saravi¹

Mozhgan Rowshantabari²

Abolghasem Roohi³

Fereshteh Eslami⁴

Asieh Makhloogh^{5*}

Norbakhsh Khodaparast⁶

1. Associate Professor, Academic Member, Caspian Sea Ecology Research Center (CSERC), Iranian Fisheries Science Research Institute (IFSRI), Agricultural Research, Education and Extension Organization (AREEO), Sari, Mazandaran

2, 3. Assistant Professor, Academic Member, Caspian Sea Ecology Research Center (CSERC), Iranian Fisheries Science Research Institute (IFSRI), Agricultural Research, Education and Extension Organization (AREEO), Tehran, Iran

4. M. Sc., Academic Member, Iranian Fisheries Science Research Institute (IFSRI), Agricultural Research, Education and Extension Organization (AREEO), Sari, Mazandaran, Iran

5, 6. M. Sc., Expert of plankton Lab, Caspian Sea Ecology Research Center (CSERC), Iranian Fisheries Science Research Institute (IFSRI), Agricultural Research, Education and Extension Organization (AREEO), Sari, Mazandaran, Iran

*Corresponding author:

asieh_makhloogh@yahoo.com

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Abstract

In the past two decades, the effects of stressors' factors such as biological and chemical pollution on biotic and abiotic components have increased in the Caspian Sea. The aim of the study is the survey on zooplankton structural pattern changes from 2008 to 2011 (nearly two decades after the introduction of biological stressor such as *Mnemiopsis leidyi*) and comparison with the data before the introduction of *M. leidyi* (1996-97) in the basin of Iranian coastal of Caspian Sea. Samples were collected from 5 to 100 m depths at eight transects (Astara, Sefidrud, Tonekabon, Nowshahr, Babolsar, Amirabad and Turkman) during four seasons (spring, summer, autumn and winter). The results showed that the total number of species in meroplankton and holoplankton groups were 67 which 62 species were belonged to holoplankton group. The number of species in 1996-97 which was considered as a stable ecosystem was 3.9, 2.3 and 3.4 more than in years of 2008-09, 2009-2010 and 2010-2011, respectively. The number of species in Cladocera group in years of 2008-09, 2009-2010 and 2010-2011 were 9.6, 3.6 and 7.2 less than in years 1996-97, respectively, which showed the most declined of species between other different groups (copepoda, rotifera, protozoa and meroplankton) of zooplankton. Abundance of zooplankton in years of 2008-09, 2009-2010 and 2010-2011 were 1 to 1.5 folds less than in years of 1996-97. Finally, it seems that there is little reasons on improving the ecosystem toward stability, although the Shannon index in 2010-2011 was increased compare to 2009-2010.

Keywords: Zooplankton, Structure pattern, Ctenophore invasion, Caspian Sea, Iranian coast