

# Impact of cage fish culture on plankton of the south-western Caspian Sea

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## Abstract

The Caspian Sea ecosystem has been suffered with many problems since 1980s. Anthropogenic pollution by rivers, are significant threats to biodiversity and biological resources such as plankton structure in the Caspian Sea. According to the significant of plankton community and nutrient levels in marine system, the state of the fluctuations of plankton communities and relationship with cage fish culture of the southern Caspian Sea was investigated. A total of 12 zooplankton belonging to 9 taxa were identified at the study area. Only one species of Cladocera (*Pleopis polyphemoides*), was present in our study. *Acartia tonsa* and *Balanus improvisus* were the most dominant species. Bivalvia larvae, *P. polyphemoides* (Cladocera) and *Synchaeta* sp. (Rotifera) occurred only in January. The findings confirmed the impact of fish cage culture on the zooplankton population structure from the prominent abundance of *A. tonsa*, *B. improvisus*, *P. polyphemoides*, and Bivalvia larvae at the fish cage site as compared with the reference site. The finding showed the abundance of exotic species as diatoms were dominated at beside of the fish cage culture stations as compared with the reference stations. The

reasons of high plankton abundance and exotic species at beside of the fish cage culture stations could be related to the high nutrients concentrations due to fish nutrition and fecal.

**Keywords:** Fish culture, cage, plankton, Caspian Sea