# Determination of trophic level of the dam with the use of localized scaling in order to improvement of water efficiency

**Hassan Nasrollahzadeh Saravi[1*], Asieh Makhlough[2], Hassan Fazli[3], Hamid Hosseinpour[4], Ahad Ahmadnezhad[5]**

**1, 2, 3, 5- Caspian Sea Ecology Research Center (CSERC), Iranian Fisheries Science Research Institute (IFSRI), Agricultural Research, Education and Extension Organization (AREEO), P.O. Box: 961, Sari**
**4-Fisheries of Sanandaj Affair, Jihad-e-Agriculture of Kurdistan**
* **Corresponding author:** hnsaravi@gmail.com

## Abstract:

Determination of water quality indices and trophic states in the reservoirs are necessary. The two reasons are, firstly, to determine the type of water resource uses. The secondly, with the proper forecasting and good decides, it is possible to limit the economic and social harms caused by the damage and mortality of living organisms, including fish. There are several single-parameter and multi-parameter methods for determining the trophic level. Each method has some advantages and disadvantages. However, the molti-parameters assessments are more complete and single-parameters methods are easier and faster. The aim of this article is to present the local scale in order to determine the trophic level and water quality to improvement of water efficiency in Azad Dam (Kordestan Province). In this study, the trophic levels obtained from the Carlson formula have been used as reference values. Then, the percentile of 25-75 of the values of nutrient, chlorophyll-a and transparency parameters were determined during the sampling period as threshold values in the region. The ranges of parameters in the region were similar to the values presented in other literatures, however, the use of local threshold values has more logic and valid results in the region.

**Keywords:** Trophic state, water quality, water uses, local scale, Azad Dam (Kordestan)