

# Comparison of changes in trophic level in temperate (Mazandaran) and cold (Kurdistan) regions

Asieh Makhloogh<sup>1\*</sup>, Hassan Nasrollahzadeh Saravi<sup>2</sup>, Mohammadali Afraei<sup>3</sup>, Rahman Mirzaei<sup>4</sup>, Alireza Keyhansani<sup>5</sup>

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: asieh\_makhloogh@yahoo.com

## Abstract

Accelerating the phenomenon of reservoirs eutrophication is usually caused by excessive nutrient entrances, which results in the loss of water quality and, consequently, damage to desirable uses of reservoirs such as aquatic life, drinking water supply. The present study compares the trophic level in Shahid Rajaei Dam and Azad Dam, which are located in temperate and cold geographical areas. The results of Carlson's trophic index showed that the Shahid Rajaei Dam in June and August was in oligotrophic and eutrophic condition respectively, and mesotrophic state recorded in the other months. In the Azad Dam, the maximum trophic index was recorded in May (after heavy rainfall) and August, and the mean of trophic index indicated the mesotrophic status of the dam. In conclusion the increasing of temperature, water stratification, heavy rainfall and basin washings and human activities, including using agricultural fertilizers, have been factors influencing the trophic level increase in water body. Especially in the part of the reservoir which is near the river entrance, due to the severe impact of human activities, it has the potential to increase the trophic level in most times of the year. Therefore, in order to ensure the water quality of the dam for various uses, including aquaculture, the above managerial points should be considered.

**Keywords:** Eutrophication, Shahid Rajaei DAM, Azad Dam, water quality, aquaculture