

# **Heavy metal mercury measurement in Mahshahr creeks for Risk assessment of cage culture site selection**

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## **Abstract**

Persian Gulf is one of the most important ecosystems for cage culture because of its abundant food supplies, proper ecosystems and the existence of various facilities along its coast. One of the most important Persian Gulf ecosystems is Mahshahr creeks, which, despite the proper ecosystem, is extremely exposed to the presence of various oil and petrochemical installations, especially in the case of heavy metals and especially mercury. The aim of this study was to provide basic information on mercury contamination risk within water, sediment and muscle of fish in five different creeks (Zangi, Jafari, Ghazaleh, Majidieh and Petroshimi) and finally, introducing the least mercury contaminated areas as suitable creeks for cage culture. The average concentration of mercury in water was between 3-11  $\mu\text{g/l}$  and mercury in sediments was 0.3-0.7  $\mu\text{g/kg}$  dry weight, which was much higher than the marine environment standards, and only Zangi creek had global standards for mercury, so it is recommended for cage aquaculture.

**Keywords:** aquaculture, cages, ecological risk assessment, Mahshahr creeks, Persian Gulf