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The impact of climate change on species and number of fish on Tigris river in Mosul Dam/Duhok, Kurdistan Region of Iraq

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This study is the only research that has been conducted on Tigris river in Mosul Damin Sumel District (Duhok Governorate, Kurdistan Region of Iraq). As this research is the only research that has been done on Tigris river, it needs more studies to be done on it because the climate change has already had its impact on it. A new species of fish which is locally called as *Shikhat* fish that impact negatively on balance of fish species, especially carp fish and *Shabout* fish in the selected part of the dam of the Tigris river that is located in Duhok Governorate for the safe, fresh and clean water. This part is considered as the best part for raising fish with cage fish culture because we used many square and circle cage fish cultures on it and also, we used Fish hatchery ponds (Indoor), all these reasons helped us to succeed our study in terms of environment, health and economic aspects. The main aspect is to know what the causes are for negative effects on fish species' balancing especially carp and *Shabout* fish in Tigris river in Mosul Dam. The fish survey was divided into two groups, one group includes carp and *Shabout* fish, and the other group includes *Shikhat* fish. Furthermore, water is supplied to Mosul Dam from Tigris river at Turkey. At the beginning, we thought that *Shikhat* fish comes from Turkey through Tigris river, but the results showed an opposite impact which is due to the impact of the global warming. It can tolerate bad circumstances such as low dissolved oxygen, high temperature, low nutrient value of water and other nutrients such as phytoplankton and zooplankton. There is an increase in the number of *Shikhat* fish alarmingly since 2010 to date. This indicates that the *Shikhat* fish is spreading very quickly in Mosul Dam in Tigris river and this can impact negatively on other species of fish. This ultimately affects the fishermen in Duhok Province in terms of decrease in their income, which leads to socio-economic problems. In our study there were significant differences in weight between *Shikhat* and carp fish and *Shabout* fish, and it has an obvious explanation because of difference in species of fish. It may get curious result that needs further investigation. Perhaps this reflects species of fish, level and source of water, natural food variety such as plankton to name but a few of the variables that could be investigated. It also led us to follow up the research, recording more data and continuing research for the future.

Biography

Shokri Omar Mustafa has his experience in Fish Resources sector in terms of fish nutrition, cage fish culture, Trout Salmon fish farm, poultry nutrition and biotechnology and animal production sector for more than 22 years. Currently, he is working as the Head of Fish Resources department and Nutritionist at the Ministry of Agriculture and Water Resources in Kurdistan Region of Iraq.

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