The effect of climate change on sharks stocks in the Iranian waters of the Persian Gulf and Gulf of Oman

Mahnaz Rabbaniha[۱*]
Nassir Niamaimandi[۲]
Nima Pourang[۳]
Sabah Khorshidi Nargi[٤]
Reza Abbaspour Naderi[٥]
Fereidoon Owfi[٦]

۱.*Associate Professor, Iranian Fisheries Science Research Institute (IFSRI), Agricultural Research Education and Extension Organization (AREEO), Tehran, Iran.*
۲.*Associate Professor, Iran Shrimp Research Center,Iranian Fisheries Science Research Institute (IFSRI), Agricultural Research Education and Extension Organization (AREEO), Bushehr, Iran.*
۳. *Associate Professor, Iranian Fisheries Science Research Institute (IFSRI), Agricultural Research Education and Extension Organization (AREEO), Tehran.Iran.*
٤. *Master of Fisheries, Deputy of Fisheries and Fishermen Affairs, Iran Fisheries Organization, Tehran, Iran.*
٥.*PhD of Fisheries, Deputy of Fisheries and Fishermen Affairs, Iran Fisheries Organization, Tehran, Iran.*
٦. *Assistant Professor, Iranian Fisheries Science Research Institute (IFSRI), Agricultural Research Education and Extension Organization (AREEO), Tehran, Iran*.

***Corresponding author:**
rab.mahnaz@gmail.com

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Abstract

Global warming and climate change affect aquatic stocks´s growth, biological activity and physiological behaviors because aquatic CPUE is influenced by physical and chemical factors such as temperature, salinity, wind speed and its direction and sea current. In this research, the relation between the time series shark CPUE data in the Iranian waters of Persian Gulf and Gulf of Oman with the environmental effective data including sea surface and air temperature, chlorophyll a, evaporation rate, rainfall and wind speed as parameters of climate change indicators have been studied monthly during (۲۰۰۷–۲۰۱۸). GLM and GAM regression, neural network, and decision tree models were used for data analysis. The results showed a significant decrease in sharks species groups and stocks in Iranian waters. In this regard, the two factors of SST and air temperature have had an increasing trend in four southern provinces coastal waters. So that, SST and air temperature in the whole area, wind speed in the Bushehr province waters (Persian Gulf) and evaporation in the Sistan - Baluchestan province waters (Gulf of Oman) show a significant relationship with the sharks CPUE (p-value< ۰,۰٥). Finally, it seems that in order to preserve the shark reserves due to their biological importance and their valnurability to climatic factors, in exploitation management more detailed control and conservation planning is needed to reduce the destructive effect of illegal fishings and climate change.

Keywords: Climate change, Sharks, Persian Gulf, Gulf of Oman.

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