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Some morphological characteristics of three-spined stickleback *Gasterosteus aculeatus* Linnaeus, 1758 in Gorgan-rud and Qarah-su River estuaries, Golestan Province

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Abstract

Determining morphological characteristics of exotic species is one of the important aspects to ecological studies that can be used in ecosystem management. In this research, some morphological characteristics of three-spined stickleback *Gasterosteus aculeatus* Linnaeus, 1758 in Gorgan-rud and Qarah-su River estuaries are surveyed. 147 specimens were collected using beach-seine with 0.5 cm mesh since February 2014 to April 2014. Samples were been biometry and age determination was done by otolith. Results showed that maximum age were 2⁺ and 3⁺ in male and female, respectively. The maximum length and weight were observed 7.62 cm and 7.43 gr and 6.93 cm and 4.43 gr in female genus in Gorgan-rud and Qarah-Su River estuaries, respectively. The growth model was positive allo-metric in female and male in Gorgan-Rud and Qarah-su Rivers. It was indicated body that height and width, distance between initial dorsal fin and anal fin, eye diameter, distance between snout to end of dorsal fin and pectoral fin length showed more importance in distinguishing two populations from Gorgan-rud and Qarah-Su River estuaries. Additionally, it was observed that macroscopic *Corynoso mastrumasum* in inner organs. It seems, the three-spined stickleback, as a exotic fish, may be seriously dangerous for growth and survival of other fish species in the Caspian Sea basin due to the host of this parasite and transmission in the food cycle.

Keywords: *Gasterosteus aculeatus*, Gorgan-Rud River estuary, Morphological characteristics, Qarah-Su River estuary

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