



STOCK ASSESSMENT OF THE LESSEPSIAN MIGRANT PUFFERFISH *LAGOCEPHALUS SCELERATUS* FROM THE GULF OF SUEZ AND THE MEDITERRANEAN SEA

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Abstract

This study principally aims to assess the stock status of the most common invasive pufferfish species *Lagocephalus sceleratus* in two different habitats, the native one (Gulf of Suez) and the new one (Mediterranean Sea). Seasonal samples were collected from the two habitats during winter 2013 and autumn 2014. The morphometric analysis showed that the range and the average measurements for the most morphometric characters for Gulf of Suez population were higher than that from the Mediterranean population. The length-weight relationship for *L. sceleratus* from Gulf of Suez population was $W = 0.013TL^{2.959}$, while that from Mediterranean population was $W = 0.042TL^{2.651}$. The results revealed that the maximum recorded age estimated by length frequency distribution analysis was seven years old for Gulf of Suez population while it was six years old in Mediterranean Sea population. For Gulf of Suez population, age group II was the dominated in the catch, while age group I was the most abundant in the catch of Mediterranean Sea. The parameters of von Bertalanffy growth equation were ($L_{\infty} = 103.71$ cm, $K = 0.132$ for Gulf of Suez population and $L_{\infty} = 89.03$, $K = 0.2718$ for Egyptian Mediterranean population). The estimated total (Z), natural (M) and fishing (F) mortality coefficients for the Gulf of Suez were 1.01, 0.44 and $0.57 Y^{-1}$ respectively, the same parameters were estimated for the Mediterranean as $Z = 0.85$, $M = 0.49$ and $F = 0.41 Y^{-1}$. The present exploitation rate for the two populations of *L. sceleratus* was estimated at 0.56 and 0.48 for Gulf of Suez and Egyptian Mediterranean populations, respectively. These results show that the stock of *L. sceleratus* in the Gulf of Suez is slightly over exploited, while the stock of the same species in the Egyptian Mediterranean is underexploited.

Keywords: Age and growth, Mortalities, Exploitation rate, *Lagocephalus sceleratus*, Gulf of Suez, Mediterranean Sea.