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Risk Assessment of Golani's round herring, *Etrumeus golanii* (DiBattista, Randall & Bowen, 2012) in Greece

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Abstract:

The waterway between the Indo-Pacific and the Mediterranean basins, through the Suez Canal, has altered the marine environment of the East Mediterranean. Climate change, coupled with the successive enlargement of the Suez Canal, has allowed the continuous invasion of non-indigenous species (NIS) in the Mediterranean Sea, resulting in its tropicalization. The invasion and establishment of NIS is impacting indigenous populations, habitats, and ecosystem services. In Greece, more than 270 aquatic NIS have been recorded, one of them being the Erythrean small pelagic fish Golani's round herring (*Etrumeus golanii*), first recorded in Greece in 2005. The species has already entered the Greek waters through natural dispersal from nearby countries and has been established in regions of central and southeast Greece e.g., the Cyclades, Crete, and the Dodecanese Islands. The limited knowledge of the species biology and its commercial importance for local fisheries were the trigger for its selection for a risk assessment (RA) and future management considerations. RAs are considered to provide useful information that indicate the potential inclusion of species in the list of Invasive Alien Species (IAS) of Union Concern, according to the Regulation (EU) 1143/2014 on the prevention and management of the introduction and spread of invasive alien species (the IAS Regulation). This work presents the results of the risk assessment of Golani's round herring and the possible commercial benefits that could occur under appropriate management schemes. For this purpose, the RA template previously used for the assessment of IAS was used. Based on the RA, although the species has not yet spread in the northern Aegean and the Ionian Seas, due to the region geomorphology and the winter isotherm, further spread in these areas related to the sea temperature increase can be expected in the near future. However, Golani's round herring is considered to have a moderate impact on the environment, raising minimum socio-economical concerns, and is not harmful to human health. The most effective way of controlling its population is the commercialization for human consumption, following the example of other countries in the Red Sea. This approach can turn bioinvasion into a good economic opportunity that would increase the income of local fishers.

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Keywords: *Etrumeus golanii*, risk assesment, alien species.

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