

Distribution of *Gambusia* (Mosquitofish) in Turkey and its potential impact on aquatic ecosystems

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The mosquitofish, *Gambusia sp.*, is one of the most widespread freshwater fish genera all over the world. Although it is native to America, the distribution area of *Gambusia sp.* has rapidly expanded since it has been intensively used for mosquito control. This species was introduced into the inland waters of Anatolia in the 1930s and has invaded almost all freshwater ecosystems in Turkey. The mosquitofish is highly tolerant to poor water quality, especially high turbidity, extreme ranges of temperature and salinity and low dissolved oxygen conditions. Today, the mosquitofish is considered as one of 'The World's Worst Invasive Species' (http://www.issg.org/worst100_species.html) due to its wider ecological and physiological tolerance in harsh environments, and to its negative ecological impact. The mosquitofish has a wide food preference; it can adversely affect phytoplankton, zooplankton, other invertebrate, fish, and amphibian populations, as well as mosquito larvae. Therefore, the small viviparous fish, *Gambusia sp.*, can disrupt the entire ecosystem function. The invasive characteristics of the mosquito fish are strongly related to its reproductive success due to high fecundity, multiple-spawning in a breeding season, live-bearing, short duration of both gestation and pre-adult periods, and sperm storing ability of females. The invasive mosquitofish is known to prefer similar habitats and even has similar niche with *Aphanius* species. Therefore, the presence of this introduced species should be regarded as a serious threat to populations of *Aphanius* due to its invasive characteristics and even direct predation on the fries

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and eggs. Our aim is to determine the relationship between *Gambusia sp.* and *Aphanius sp.* and to present a conservation strategy for *Aphanius*. In this study, we present the distribution of mosquitofish in Turkey and its possible effects on the endemic and endangered *Aphanius* species.

Keywords: Mosquitofish, biodiversity, Anatolia, invasive species.