



«Actions to protect, conserve and promote biodiversity. Field studies of endemic, endangered and nationally important species of Greece». Funded by the Natural Environment and Climate Change Agency (NECCA)

TITLE

Living with the invader: Does alien mosquitofish presence influence native killifish behaviour?

(Project ID: 12632)

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ABSTRACT

ALIENized aims to implement an innovative in situ comparative study, examining behavioural differences between populations of the extremely vulnerable, range-restricted and threatened (critically endangered according to the IUCN Red List) Mediterranean killifish *Valencia letourneuxi*, that either co-exist with the alien invasive Eastern mosquitofish, *Gambusia holbrooki*, or they are naïve to their presence. Mosquitofish invasion is one of the leading causes of decline of *V. letourneuxi* populations inhabiting fragile spring-fed ecosystems. However, the specific underlying mechanism(s) of killifish displacement and particularly the effects of mosquitofish presence on killifish behaviour at the population level, remain largely unexplored. Applying the successful ethological paradigm for studying predator effects among wild guppy populations in Trinidad, ALIENized will utilize well-established behavioural tests to measure and compare killifish behaviour of naïve and alien-exposed populations, and the innovative eDNA method to confirm target species' presence/absence at the designated testing locations in the Sidari stream, Corfu, Greece. The project will be implemented by an experienced team of scientists from the Institute of Marine Biological Resources and Inland Waters of the Hellenic Centre for Marine Research, in collaboration with a freshwater fish conservation expert from Bristol Zoological Society in the UK. ALIENized is expected to have a significant positive impact both in terms of scientific knowledge accumulation but also in terms of direct applications to future biodiversity conservation plans (locally and globally). In the complete absence of such comparative studies in the literature, the project's findings and their associated theoretical and practical implications will be extremely novel and relevant to a wide scientific audience working in the research fields of ethology, conservation, ecology and ecosystem management.
