FIRST RESULTS ON THE MATURITY OF THE LESSEPSIAN MIGRANT *LAGOCEPHALUS SCELERATUS* (GMELIN 1789) IN THE EASTERN MEDITERRANEAN SEA

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Abstract

Analysis of the gonadosomatic index (GSI) of 94 specimens of the lessepsian migrant *Lagocephalus sceleratus*, recently invated to the Mediterranean Sea, suggest that reproduction of the species in the Mediterranean occurs in summer. GSI values start increasing at a total length of about 30 cm.

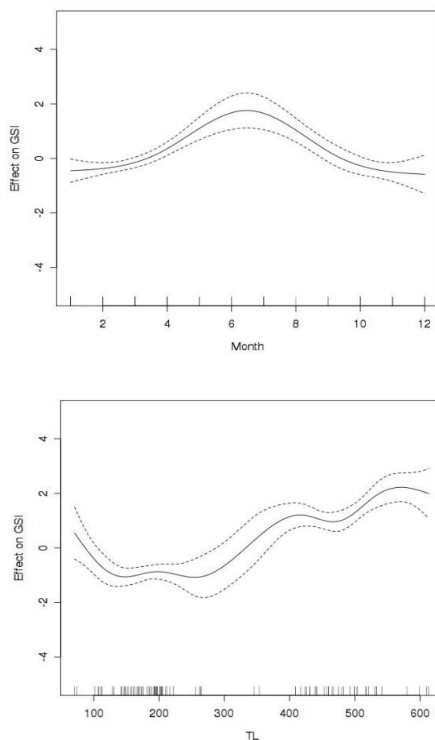*Keywords: Reproduction, Eastern Mediterranean, Suez Canal*

Introduction. The Lessepsian migrant *Lagocephalus sceleratus* (Gmelin, 1789), also known as silverstripe blaasop, is an Indo-Pacific originated pufferfish of the family Tetraodontidae. The species has been recently introduced in the Mediterranean Sea through the Suez Canal [1, 2, 3] and has established populations in the eastern Mediterranean [4, 5]. *L. sceleratus* maybe a source of food poisoning with a high associated risk of mortality, as it commonly contains tetrodotoxin (TTX). The toxicity of the fish specimens inhabiting the E. Mediterranean has been also confirmed by recent studies [6, 7].

Materials & Methods. In the present study monthly data on size and maturity for 94 samples of *L. sceleratus,* have been analysed. Generalized additive model techniques [8] were used to analyze variations in gonadosomatic index (GSI) and the relative importance of total length (TL) and month of capture, in explaining those variations. The choice of the most appropriate link function and error distribution was made on the basis of residual plots. A Gamma error structure model accompanied by a log-link function was found to be the most appropriate for the analysis of the data. Model fitting was accomplished by means of the "mgcv" package [9] under the R language environment [10].

Results & Discussion. Analysis of deviance demonstrated that the effects of both the examined variables were highly significant (p<0.01). Plots of the standardized effects of the variables indicated that GSI starts increasing at a TL of about 30cm and reaches its maximum value around middle summer (Fig. 1). Those findings suggest that reproduction of the species in the Mediterranean occurs
 in summer.

Fig. 1. GAM derived effects of total length (TL) and month on gonadosomatic index (GSI). Each plot represents the contribution of the corresponding variable to the fitted predictor. The fitted values are adjusted to average zero and the broken lines indicate two standard errors. The relative density of data points is shown by the "rug" on the x-axis

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