



Abstract

Impact of Fisheries on Allis Shad's (*Alosa alosa* L.) Spawning Population Structure in the Mondego River [†]

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Abstract: Allis shad (*Alosa alosa* L.) populations have suffered declines and even regional extinction across their distribution range, mainly due to river impoundment, overexploitation, and pollution. In Portugal, the species is classified as Endangered (EN). This fish is regarded as a valuable delicacy, and commercial fisheries dedicated to this species in Portugal are found in rivers in Minho, Lima, Cávado, Douro, Vouga, Mondego, Tagus, and Guadiana. Official landings state that, in the last 10 years, around 10 t of allis shad were sold annually at the Figueira da Foz fish market. Fisheries are selective since the allowed mesh size for the nets employed does not capture smaller fish. Moreover, larger fish are more desirable, attaining higher prices per kg at fish auctions and thus generating higher revenue for the fishermen. The fishing pressure on this threatened resource in the Mondego is significant and bound to impact its population structure. With the present work, we assess the impact of fishing pressure and gear selectivity on the dimensional structure of the Mondego's shad spawning population, one of the last strongholds for allis shads, and identify possible consequences for the future of the species. The dimensional structure and gender proportion of over 800 shads sampled at Figueira da Foz fish auction from 2015 to 2019 was analyzed. All shads sampled were between 400 mm and 745 mm in total length, with an average of 592 mm. Simultaneously, we used images recorded in the monitoring window at Açude-Ponte Dam's fishway in Coimbra to study the shads reaching the upstream spawning areas in order to check for differences in the dimensional structure possibly related to fishing pressure. The results obtained aim to increase the existing biological knowledge of this population and the human pressure it is subjected to, thus contributing to future management efforts.

Keywords: fishing pressure; dimensional structure; conservation; monitoring



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