



Abstract

The Course of Natural Colonization of the Toadfish *Halobatrachus didactylus* (Batrachoididae) in Galician Waters (NW Spain) [†]

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Abstract: Climate change is causing a northward shift of fish species and the tropicalisation of temperate zones. In this context, the toadfish *Halobatrachus didactylus* was found for the first time in 2018 in Galician waters (NW Spain), where a total of 39 specimens have been recorded so far in the southernmost part of those known as Rías Baixas. Preliminary analyses of the specimens showed a diet based mainly on crustaceans and molluscs. The length composition varied between 17 and 40 cm TL, and the estimated ages of seven individuals, with sizes ranging from 18 to 35 cm TL, ranged from 3 to 7 years. Histological reproductive analysis of 17 specimens showed an unbalanced sex ratio 2.4:1, favourable to males. Out of 12 males found, 2 (17%) were immature, ranging in size between 18 and 26.6 cm TL, whereas the other 10 (83%) were mature and greater than 25.8 cm TL. Furthermore, six of them were in the active spawning phase. Only five females were found, one (20%) being in the developing phase, and the remaining four (80%) in the spawning capable phase, with oocytes in the advanced vitellogenesis stage but without evidence of imminent spawning. These results suggest that this species is reproductively active in Galician waters. From a molecular point of view, this population has been compared with others along the Portuguese coast using the nucleotide sequences of a putative fragment of the mitochondrial control region and of the first intron of the ribosomal protein S7 gene. In the first case, a single haplotype is detected, which is the same as that occurring in all individuals captured further south in the Tagus and Sado estuaries. In the case of the S7 intron, no trend towards lower genetic diversity that could indicate lineage selection was detected. These data seem to support a very recent colonisation event.

Keywords: non-native species; toadfish; range extension; invasion process; fish biology

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