

MIGRATORY PATTERNS OF POTAMODROMOUS FISH SPECIES ASSESSED THROUGH A VERTICAL-SLOT FISH PASS

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The loss of longitudinal continuity in rivers is one of the main threats to freshwater fishes, particularly to those performing migrations to complete their life cycles. This impediment may be overcome, or at least mitigated, by fishways. While anadromous fish have been considerably addressed in fish pass studies, information regarding potamodromous species behavior when facing such infrastructures, as well as the impact in their migratory movement, remains underexplored.

The movement of the Iberian barbel (*Luciobarbus bocagei* Steindachner, 1864) and the Tagus nase (*Pseudochondrostoma polylepis* Steindachner, 1865) through the vertical-slot fish pass of the Coimbra Açude-Ponte dam was monitored between 2013 and 2014. Continuous video recording was used to count every fish that used the fish pass, allowing to study the migratory patterns of the two target cyprinid species.

During the 2-year monitoring period, over 39 000 Iberian barbel and 101 000 Tagus nase have reached the upper stretch of river Mondego by successfully negotiating the Coimbra dam fish pass. Upstream migratory peaks were observed between April and June, for the barbel, and between November/December and April for the nase, which is probably associated with the reproductive season of the species. In 2014, a second upstream peak was observed for the barbel, during October and November. Downstream migration through the fish pass recorded approximately 5 500 barbel and 3 300 nase, with peaks in the Summer for *L. bocagei*, and in the Spring for *P. polylepis*. Statistical modelling with Boosted Regression Trees analysis (BRTs) allowed to identify the environmental predictors that seem to influence the migratory movement of the two potamodromous species.