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# Seasonal changes in depth position and temperature of European catfish (*Silurus glanis*) tracked by acoustic telemetry in the Danube River

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## Abstract

The giant European catfish, *Silurus glanis* (total length = 200 cm; total weight ≈ 80 kg) was caught downstream of Iron Gate II hydropower dam (Danube River, 863 rkm) and tagged with an ultrasonic transmitter (V16TP; Vemco Ltd.) equipped with depth and temperature sensors. Changes in catfish diving behavior and temperature exposure were monitored over a period of roughly 2 years. Transmitter detections were recorded by nine autonomous receivers (VR2W, installed in 2015 between Serbia and Romania, as well as near Romanian shiplock and upstream Romanian turbines). The first signals were recorded on April 28, 2015 and the last on February 13, 2017. Altogether 59,355 and 59,175 detections of the catfish depth and water temperature were recorded, respectively. The greatest number of signals were recorded by the two receivers closest to the location where the catfish was caught, 72.3% and 27.1%, while only 0.6% of signals were recorded by other receivers. The mean catfish depth was 8.4 m, while minimum and maximum depths were 1.2 and 16.2 m. Results obtained showed that this catfish exhibited high site fidelity, while changes in depth at certain periods are possibly related to its search for prey and upstream migration during the spawning period. Hydropower dam and shiplock were obstacles on its migration upstream and telemetry studies could ensure habitat requirements and meet the development of restoration and conservation strategies for the fish resources in the future.

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