

Use and habitat selection of the Colmilleja (*Cobitis paludica*) in the Jarama river, Spain. (Final degree project).

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Abstract

The Southern Iberian spined-loach *Cobitis paludica* is a small benthic fish that inhabits the lower-middle river reaches. It is an endangered species, being highly threatened by habitat modification and destruction. The main objective of this work was the investigation of spine-loach habitat selection patterns in a section of the Jarama River. To carry out this objective, a habitat assessment was performed and spine-loach habitat use was characterized by means of electric fishing techniques. For each captured individual, the main habitat variables were measured at the exact capture location: water velocity (cm/s), depth (cm), distance to the river bank (cm) and percentages of bottom vegetation, clay, sand, gravel, and stones. To determine whether the species uses selectively certain characteristics of the available habitat, uni- and multivariate statistical analyses were performed, and a logistic regression model was fitted to predict its presence in the different areas of the reach. The results obtained confirmed that: (1) the spined-loach makes selective use of the habitat, and (2) selects positions characterized by well-defined physical characteristics of the available habitat, which are required by the species to inhabit a certain river reach. These habitat requirements must be taken into account when developing management, protection and conservation plans for the species.

Keywords: microhabitat; Iberian Peninsula; Cobitidae; river conservation and management.

Study of the diet of the otter (*Lutra lutra*) in the upper Tormes and its selection with respect to the ichthyological community. (Final Master Thesis).

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Abstract

Otter (*Lutra lutra*) is one of the main predators in European and peninsular river ecosystems. In the central peninsula, and in the Tormes river as a whole, and in the upper Tormes valley (Sierra de Gredos, Ávila) in particular, they have one of the best preserved populations in the whole Duero basin, in a natural and well-preserved environment. The main objective was to detect a possible selectivity with respect to the fish community in the diet of this animal, during the summer season, along 16 km of river, divided into sub-sections. A study was carried out to check the composition and proportions of the diet, analysing 127 excrements collected. At the same time, indirect censuses were carried out by diving along the studied stretch to determine the structure and composition of the fish community. In both data sets, variables such as numbers, relative and total densities, and distance of each sub-stream were recorded. The diet at this time was very varied, fish (Osteichthyes) (52%) was the most consumed group, other important taxa in the diet at this season were: invertebrates (17%) mostly insects and decapods, reptiles (10%) with *Natrix* sp. as the main component, amphibians (6%) with *Bufo* sp. as the main component, and occasional prey such as birds and mammals. Significant presence and consumption of the signal crayfish (*Pascifastacus leniusculus*) has been detected. The fish fauna in this stretch of the river was dominated by cyprinids, mostly Douro nase (*Pseudochondrostoma duriense*) and chub (*Squalius carolitertii*) to a lesser extent, as well as brown trout (*Salmo trutta*). The analyses showed selection patterns with respect to the fish community: chub (*Squalius carolitertii*) was highly positively selected, there was significant rejection towards nase (*Pseudochondrostoma duriense*), and a slight positive selection towards brown trout (*Salmo trutta*). Otter can play the role of an umbrella species and should be taken into account in river management and conservation plans.

Key words: trophic ecology; ; fish community; valley of the upper Tormes; Ávila; management and conservation of rivers.