

Differences in abiotic water conditions between fluvial reaches and crayfish fauna in some northern rivers of the Iberian Peninsula



We studied the distribution patterns of the native European white-clawed crayfish (*Austropotamobius pallipes*) and the introduced signal crayfish (*Pacifastacus leniusculus*), and looked at the water chemistry in several streams in the north of the Iberian Peninsula (Cantabrian watershed). Fifty fluvial reaches which were currently or previously inhabited by crayfish and had physical attributes similar to the known habitat requirements of crayfish were sampled. *P. leniusculus* was the most common species encountered (54% of the samples), *A. pallipes* was found in 19% and neither species was recorded in the remaining reaches. In this paper we determine the relationship between crayfish presence and water chemistry. As neither species inhabits waters with the highest NO_2^- concentrations found, it seems both species are sensitive to NO_2^- . Mg^{+2} and SO_4^{-2} concentrations are the factors separating sites with and without crayfish (crayfish inhabit water with higher concentrations of both cations). The main differences between reaches inhabited by native and signal crayfish lies in SO_4^{-2} concentration: higher concentrations favour signal crayfish. Applications to

management based on the river water chemistry are proposed.

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