

Stone crayfish in the Czech Republic: how does its population density depend on basic chemical and physical properties of water?



The stone crayfish (*Austropotamobius torrentium* Schrank) is one of the two native crayfish species in the Czech Republic. The populations as well as physical and chemical parameters of water (pH, conductivity, dissolved oxygen, undissolved particles, NH_3 , NH_4^+ , NO_2^- , NO_3^- , phosphorus, Ca^{2+} and SO_4^{2-}) of 33 streams were examined to find the ecological plasticity of this crayfish and some relations between these parameters and population densities. The mentioned parameters often significantly varied at the sites. Two approaches were applied to find relations between these parameters and observed abundance. At first, the observed streams were compared using RDA (streams $\times$ physical-chemical parameters). No significance was found while testing relationship between the streams grouped along the 1st axis of model and the observed abundances of stone crayfish. However, some correlations between abundance and conductivity, calcium, nitrates and sulphates were found using polynomial regression. These relationships are explicable in terms of mutual correlations, underlying geology and other factors which affect abundances. In conclusion,

A. torrentium is able to inhabit waters with a large range of physical and chemical parameters of the water without any fundamental influence on population densities. Water properties play an indisputable role as limiting ecological factors at uncommon concentrations, but population densities are probably influenced much more by the types of habitats, habitat features, predation and other ecological factors.

Auteurs du document : P. Vlach, J. Svobodová, D. Fischer

Obtenir le document : EDP Sciences

Mots clés : the stone crayfish, physical and chemical parameters of water, abundance, the Czech Republic, écrevisse des torrents, physico-chimie de l'eau, abondance, République Tchèque

Thème (issu du Text Mining) : PARAMETRES CARACTERISTIQUES DES EAUX ET DES BOUES, MILIEU NATUREL, SCIENCES EXACTES SCIENCES HUMAINES

Date : 2013-03-19

Format : text/xml

Source : <https://doi.org/10.1051/kmae/2012031>

Langue : Anglais

Télécharger les documents : <https://www.kmae-journal.org/10.1051/kmae/2012031/pdf>

Permalien : <https://www.documentation.eauetbiodiversite.fr/notice/stone-crayfish-in-the-czech-republic-how-does-its-population-density-depend-on-basic-chemical-and-ph0>

Evaluer cette notice: