Use of the condition of Mediterranean barbel (*Barbus meridionalis*) to assess habitat quality in stream ecosystems

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With 1 figure and 5 tables

**Abstract:** Weight-length relationships were used as a simple method to test differences in condition between several populations of Mediterranean barbel and to examine possible correlations between fish condition and ecological factors. We analysed 14 populations of Mediterranean barbel from two basins with different ecological conditions. Statistical analysis (ANCOVA) showed that there were significant differences ($P < 0.05$) in condition between populations, which could imply differences in habitat characteristics. Oxygen availability and riparian cover seem to be the main ecological factors affecting the condition of this species in the area studied. Therefore, the condition of the Mediterranean barbel may be a good indicator of habitat quality in stream ecosystems.

**Introduction**

Fish condition usually describes physiological well-being in terms of externally measured characters. Although fish condition is suspected to be largely influenced by environmental components of the habitat such as temperature, food supply, flow regime, abundance or competition, only limited information exists on possible correlations between fish condition and environmental factors (NEUMANN & MURPHY 1991, PATTERSON 1992, WINTERS & WHEELER 1994, GUY & WILLIS 1995, TORRALVA et al. 1997) and more research is needed in this field (MURPHY et al. 1990). Few studies (COPP & BENNETTS 1996, TORRALVA et al. 1997) deal with the effects of removing riparian cover and of river regulation on barbel condition, and no published research has examined Mediterranean barbel condition. In addition, LE CREN (1951) and more recently...