

OVIDIO., M., CAPRA, H., ORBAN, P., PHILIPPART, J.C. (2006). Regulated discharge produces important changes of fish community in the grayling zone of a small salmonid stream. EIFAC Conference, Mondsee, 14-21 June 2006.

ABSTRACT

A hydroelectric power plant (HPP) started up its exploitation in December 2002 in the Lhomme, (mean flow: $1,78 \text{ m}^3 \cdot \text{s}^{-1}$; mean water temperature: 9.9°C). The new HPP exploitation bypasses the river over a length of 1.2-km. The minimum flow allowed in the bypassed section is currently fixed at $0.220 \text{ m}^3 \cdot \text{s}^{-1}$. Before the construction of the HPP, two contrasted 150 m-long reaches of the Lhomme were selected to estimate their total fish population abundance. A-first electric removal fishing was carried out into each of both reaches on 23 April 2002 in natural flow situation. The others inventories were carried-out in late April or early May in 2003, 2004 and 2005 in by-pass flow conditions. The population biomass largely decreased in 2003 (mean reduction of 33%) and 2004 (mean reduction of 52% in comparison with 2002) and finally stabilised in 2005 (-56%). The effects of the flow reduction varied considerably depending on the size of the individuals, the species concerned and the availability of their habitats, causing an important variation of the fish population structure.