

OVIDIO, M., PHILIPPART J.C. A telemetry study on the clearing capacities of salmonids and rheophilic cyprinids facing small obstacles in Southern Belgian rivers and streams. Fourth European Conference on Fish Telemetry in Europe. Trondheim, Norway, 25-30 June 2001.

## **Abstract**

In the course of the 'Meuse Salmon 2000' programme, most weirs and dams (3-8 m in height) in the regulated River Meuse have been progressively equipped with new fishways in order to restore the free circulation of all amphibiotic fish species. Nevertheless, fish entering into major spawning tributaries would still be confronted with various kinds of physical obstacles of which the overall impact on fish migration has never been investigated. Furthermore, recent telemetry studies have largely demonstrated that fish like cyprinids, esocids and percids also migrate over long distances in the same river basin to reach their spawning grounds.

In order to test their capacity to clear these physical obstacles, 128 individuals of fish (*Salmo trutta*, *Thymallus thymallus*, *Salmo salar*, *Chondrostoma nasus*, *Barbus barbu* and *Esox lucius*) were captured several weeks before their spawning migrations and tagged with radio-transmitters. They were tracked in the River Ourthe and six spawning tributaries from October 1995 to mid 2001.

Radio-tracking studies indicated that most small dams in the River Ourthe and most streams (except the Aisne) are not as insignificant as thought at first sight and really can disrupt and/or obstruct the reproductive upstream migration of fish. Precise telemetry techniques usually allow to identify the main problems arising in each site and propose structural measures (destruction of small old dams, building of new fishways,) to enable a free access to the spawning grounds.

All weirs and small dams recorded in the study have been classified according to their type (height, length, slope, structure) and hydraulic characteristics (flow velocity, turbulence) and their degree of facility to be cleared by fish. Results are discussed within the context of harmony between the sustainable conservation of rheophilic fish populations and the development of small-scale hydropower generation and tourism.