

## HYDROMORPHOLOGICAL QUALITY OF SURFACE WATER BODIES

## WATER 9

The hydromorphological component of aquatic ecosystems is a major focus of work in the implementation of the Water Framework Directive (WFD) 2000/60/EC. It is an element that is relevant in characterising surface water bodies, but also in diagnosing their ecological status (natural water bodies) or their ecological potential (artificial and highly modified water bodies).

The hydromorphological quality of Walloon water courses has been assessed using the simplified French method, QUALPHY<sup>1</sup>. This method provides an overall index of the physical quality of water courses, including criteria related to the hydrological regime (flows, etc.), the continuity of the water course and its morphology (bed and bank structure, etc.).

### Different types of water bodies

Of the 354 surface water bodies (WBs) in Wallonia, almost 77% are classified as natural, 18% are considered to be highly modified (HMWB) (i.e. penalised by major obstacles to the movement of fish, the artificialisation of banks, excessive reservoirs or catchments, etc.) and 5% are artificial WBs (channels). These HMWBs are mainly located in the sub-basins of the Scheldt-Lys, the Dendre, the Haine, the Sambre and the Meuse downstream.

### Better monitoring for better action

The WFD requires the establishment of a network for monitoring the hydromorphological quality of water courses. The Walloon network has been operational since 2009. In practice, river sections 500 m long (or at least 20 times the width of the river) are inventoried and analysed by a field approach using the QUALPHY method. The first field inventory, which was completed in 2012 and coupled to a cartographic method, was qualified by expert opinion. All WBs combined, hydromorphological quality was considered good to high for 55% of WBs and bad to moderate for 40%<sup>2</sup>.

Of the natural WBs, 71% were of good to high quality and 27% were of moderate quality.

This work led to the identification of priority WBs for hydromorphological restoration work. The main measures envisaged in the second River Basin Management Plans (RBMPs)<sup>3</sup> aim at restoring river functionality by concentrating efforts on the removal of major and impassable obstacles to the free movement of fish<sup>4</sup>, putting in place appropriate management measures to achieve good or high ecological status in the WBs in question, via Natura 2000<sup>5</sup> habitats and species (e.g. pearl mussels, graylings, barbels, etc.), and initiating actions to redirect water courses, and manage and restore riparian forest areas. For example, the work carried out on the Bocq and Eau Blanche<sup>6</sup> (Meuse upstream) has led to an improvement in hydromorphological quality and consequently in biological quality<sup>7</sup>. Interventions are currently underway on the Eau Noire, the Vesdre, the Our, the Strange, etc. The RBMPs 2016-2021 projects anticipate investments of €78 million between now and 2027, including €24 million by 2021 (€5 million in 15 highly modified WBs and €19 million in 65 other surface WBs).

[1] Guyon *et al.*, 2006 | [2] → Map 31 | [3] RBMPs 2016-2021 adopted by the Walloon Government on 28/04/2016: see the programme of measures at <http://eau.wallonie.be>; → WATER 21 | [4] → FFH Focus 2 | [5] See the various designation orders for Natura 2000 areas | [6] LIFE+ WALPHY project (2009-2013): [www.walphy.eu](http://www.walphy.eu) | [7] → WATER 3

Fig. WATER 9-1 Hydromorphological quality of surface water bodies in Wallonia (2009 - 2013)

