

SEDIMENTS IN WATER COURSES AND WATERWAYS

Accumulation of sediments at the bottom of water courses and waterways can interfere with navigation, increase the risk of flooding, and modify and eliminate certain aquatic biotopes. Depending on the concentration and availability of the pollutants they transport, sediments can also affect water quality and aquatic bed quality.

Unhindered navigation but low margin of safety

Between 2010 and 2015, major dredging work made it possible to lift the restrictions on navigation due to silting¹. The safety margin remains low: the next dredging contracts for 2017 - 2020 target the extraction of approximately 150,000 m³/year of sediments while the annual maintenance deposit is estimated to reach 600,000 m³ according to available estimates². For non-navigable water courses, the deposit of sediments has not been assessed. Dredging is seldom carried out in these waterways. If it is done, it is primarily to combat flooding³.

Sectors to be cleaned up

The quality of sediments depends on the quality of suspended matter deposited in water courses⁴, possible spills of substances and the movements of suspended sediments during high-water levels, e.g. In inland waterways, around 2/3 of extracted sediments are polluted. Quality varies widely geographically⁵. The sectors which were historically subject to the influence of a highly industrialised environment are characterised by pronounced pollution. The pollutants most commonly found are Cd, Pb, Zn, fluorides, cyanides, hydrocarbons, PAHs and PCBs. These areas need to be remediated to avoid polluted sediments being in suspension again, the contamination of more extensive areas and increased management costs for future dredging. In non-navigable water courses, the quality of sediments is monitored at 90 monitoring sites, where it has been sampled

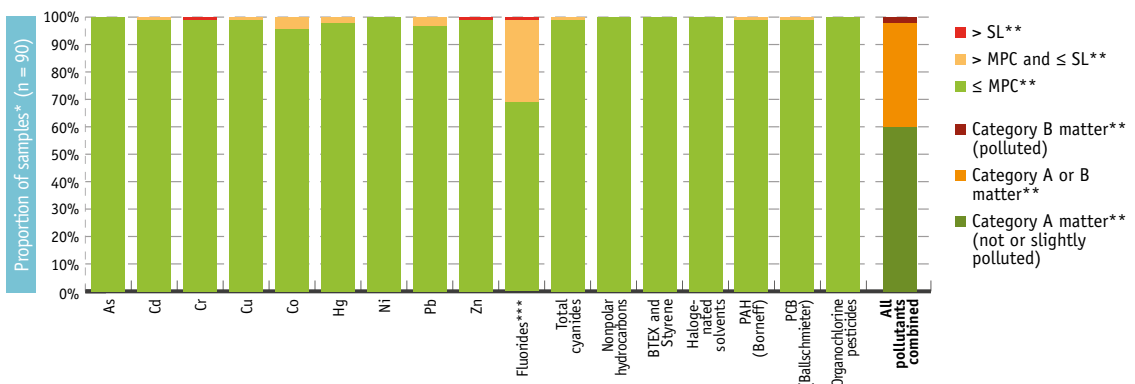
over three years⁵. Over the period 2014-2016, pollution was rare except for fluorides⁶. It should be noted that the quality referred to here⁷ is only considered from the perspective of *ex situ*¹ management of sediments. It is not directly interpretable in terms of risk to aquatic ecosystems.

Towards a better quality of recent sediments

The quality of sediments for their *in situ* impact is nevertheless monitored for certain substances. Directive 2008/105/EC⁸ requires a long-term trend analysis of concentrations of certain substances (so-called priority substances) accumulable in sediments (surface layer) and/or biota, aiming to reduce their concentrations without setting a quantified target. The first trends will only be established at the end of 2019 (three cycles of investigation of the network over the period 2010-2019). In the meantime, recent unpolluted or low-polluted deposits on older beds⁹ suggest that quality is improving. This highlights the value of remediating older deposits to prevent them from contaminating newer ones.

[1] → WASTE 9 | [2] MET, 2004, 2006 | [3] → TRANSV 1 | [4] → WATER 11 | [5] → Map 34 | [6] The fluoride analysis method used tends to overestimate its concentration. The leaching tests carried out on a number of samples led to the classification in category A (not or slightly polluted, Walloon Government Decree of 30/11/1995) of a very large majority of them. | [7] Comparison with the standards of the Walloon Government Decree of 30/11/1995 | [8] → WATER 8 | [9] Observations of the SPW - DG02 - DEAG in the context of monitoring dredging contracts.

Fig. WATER 12-1 Quality of sediments of non-navigable water courses in Wallonia (2014 - 2016)



* Composite samples of sediments taken at the 90 sites of the monitoring network (period 2014-2016, fraction < 2 mm)

** Comparison with the criteria of the Walloon Government Decree of 30/11/1995: MPC ("maximum permissible content") and SL ("safety level"). Matter is classified as category A (not or slightly polluted) if the MPCs are met. Matter is category B (polluted) if the SL of a pollutant is exceeded. A or B categorisation is done on the basis of leaching tests if the pollutant content is between MPC and SL. These tests are not carried out as part of the monitoring of the 90 non-navigable water course monitoring sites.

*** The fluoride analysis method used tends to overestimate its concentration. The leaching tests carried out on a large number of samples led to the classification of a very large majority of them in category A (not polluted, or slightly polluted).

SOERW 2017 - Source: SPW - DG03 - DRCE