

Nutrient retention in surface water in 17 European catchments



One major research challenge in the 5th FP EUROHARP project is to develop an expert tool for quantification of nutrient retention in streams, rivers, lakes and reservoirs. The developed expert tool is a decision-support scheme that enables catchment managers to conduct a robust and quick assessment of nutrient retention in river basins. This could be a valuable support for the initial Pressure/Impact analysis under the EU Water Framework Directive that has to be conducted before 2005.

In this poster we present the first results of applying the retention tool in the 17 EUROHARP catchments that cover north-south and east-west gradients in European landscapes, climate, etc. The EUROHARP retention tool works with different Tiers and the results in this poster are mostly based on a simple calculation (Tier 1). The quantitative importance of nutrient retention processes in streams and lakes are exemplified by the EUROHARP catchments analysed. Moreover, the differences in catchment retention rates for nitrogen and phosphorus are shown.

Calculated retention of nitrogen and phosphorus in surface waters

Retention is estimated with the newly developed EUROHARP retention tool (www.euroharp.org).

Core catchments

Vansjø-Hobøl, Norway
 Yorkshire Ouse, England
 Enza, Italy

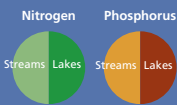
Non-core catchments

Eurajoki, Finland
 Rönne Å, Sweden
 Odense Å, Denmark
 Vechte, The Netherlands/Germany
 Uecker, Germany
 Susve, Lithuania
 Lough Derg and Ree, Ireland
 Attert, Luxembourg
 Gurk, Austria
 Zelivka, Czech Republic
 Kapos, Hungary
 Vilaine, France
 Guadiamar, Spain
 Pinios, Greece

Calculated nitrogen retention
 per catchment area
 (kg N ha⁻¹)

Calculated phosphorus retention
 per catchment area
 (kg P ha⁻¹)

Catchment	Calculated nitrogen retention per catchment area (kg N ha ⁻¹)	Calculated phosphorus retention per catchment area (kg P ha ⁻¹)
Vansjø-Hobøl, Norway	11.6	0.31
Yorkshire Ouse, England	0.5	0.02
Enza, Italy	1.3	0.003
Eurajoki, Finland	9.5	0.17
Rönne Å, Sweden	12.6	0.16
Odense Å, Denmark	7.0	0.07
Vechte, The Netherlands/Germany	2.3	0.06
Uecker, Germany	13.8	0.18
Susve, Lithuania	1.2	0.003
Lough Derg and Ree, Ireland	16.8	0.22
Attert, Luxembourg	2.6	0.004
Gurk, Austria	7.1	0.06
Zelivka, Czech Republic	10.0	0.10
Kapos, Hungary	4.0	0.04
Vilaine, France	1.08	0.01
Guadiamar, Spain	2.0	0.01
Pinios, Greece	1.9	0.004



Catchment Overview and Data Sources

Vansjø-Hobøl, Norway
 Norwegian Institute for Water Research, Oslo, Norway
 (www.vannforskning.no)
Yorkshire Ouse, England
 Yorkshire Water, Leeds, UK
 (www.yorkshirewater.co.uk)
Enza, Italy
 Istituto Nazionale per lo Studio e la Cura dei Tumori, Milan, Italy
 (www.istitutotumori.mi.it)
Eurajoki, Finland
 Finnish Environment Institute, Helsinki, Finland
 (www.ymparisto.fi)
Rönne Å, Sweden
 Swedish Meteorological and Hydrological Institute, Norrköping, Sweden
 (www.smhi.se)
Odense Å, Denmark
 National Environmental Research Institute, Department of Freshwater Ecology, Vejlsøvej 25, DK-8600 Silkeborg, Denmark (BKR@DMU.DK)
Vechte, The Netherlands/Germany
 Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany
 (www.ifl-berlin.de)
Uecker, Germany
 Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany
 (www.ifl-berlin.de)
Susve, Lithuania
 Institute of Hydrobiology, Vilnius, Lithuania
 (www.iva.lt)
Lough Derg and Ree, Ireland
 Environmental Protection Agency, Dublin, Ireland
 (www.epa.ie)
Attert, Luxembourg
 Institut National de Recherche Scientifique, Luxembourg
 (www.inra.lux)
Gurk, Austria
 Institute of Hydrology and Water Resources, Vienna, Austria
 (www.ihw.rwth-aachen.de)
Zelivka, Czech Republic
 Hydrobiological Institute, Academy of Sciences of the Czech Republic, Brno, Czech Republic
 (www.hydrobiologie.cz)
Kapos, Hungary
 Institute for Inland Water Management and Wastewater Treatment, Lelystad, The Netherlands
 (www.ivi.nl)
Vilaine, France
 Institut National de l'Environnement Industriel et des Risques, France
 (www.ineris.fr)
Guadiamar, Spain
 Spanish Institute for Water Research, Madrid, Spain
 (www.ciqa.csic.es)
Pinios, Greece
 Institute for Inland Water Management and Wastewater Treatment, Lelystad, The Netherlands
 (www.ivi.nl)

