

The SLU Water HUB – competence center for agricultural nutrient management and water quality

SLU Water HUB is a new center coordinating SLU departments involved in catchment scale modelling and assessment of water quality. The purpose of the center is to make it easy to access SLU competence on developing, managing and applying models for calculation of leaching, transport, retention, and source apportionment of nitrogen and phosphorus.

Examples of how our models are used:

SLU Water HUB models are used to provide calculations of nutrient losses from arable land for the **Swedish Environmental Protection Agency** and the **Swedish Board of Agriculture**. The commissioned results are used for following up the national environmental goal of “Zero Eutrophication” and for reporting Swedish data to European and international institutions: including HELCOM, PARCOM and the EU (for the Nitrates Directive and for evaluation of the cost effectiveness of EU Rural Development Program agri-environmental support programs).

SLU Water HUB models are also used for performing national environmental accounts within the **Swedish Environmental Emissions Data (SMED)** consortium under commissions from the **Swedish Agency for Marine and Water Management (HaV)**.

At the regional and local level the SLU Water HUB models are used to perform source apportionment of nitrogen and phosphorus loading in catchment areas. Generally, this type of work has been commissioned by county administrative boards, water management associations and local authorities to provide data for local environmental protection work in connection with the **EU Water Framework Directive**.

The new SLU Water HUB decision support system **FyrisCOST** supports **water management** work by providing data for studying the cost effectiveness of nutrient abatement measures.

Our models have also been applied in **collaborative work on the Baltic Sea** and are used in the **EU Baltic COMPASS** project (www.balticcompass.org).



You can find us in the new MVM building on the SLU Uppsala campus.

Street address

Lennart Hjelm's väg 9, Uppsala

Mailing address

SLU Water HUB
Department of Soil and Environment
Box 7014
SE-750 07 Uppsala, Sweden

Acting director: Karin Blombäck
Karin.Blomback@slu.se
+46(0)18671263

Assistant director: Faruk Djodjic
Faruk.Djodjic@slu.se
+46(0)18673136

www.slu.se/vattennav

The SLU Water HUB

– competence center for agricultural nutrient management and water quality

The SLU Water HUB

– competence center for agricultural nutrient management and water quality

The SLU Water HUB is a resource for everyone working professionally with water quality management. We are an interdisciplinary network of researchers at SLU working with modelling and analysis of nutrients in water at the catchment scale. In particular, we perform work to calculate leaching, transport, retention and source apportionment of nitrogen and phosphorus. The main activity of the SLU Water HUB is to produce basic data that can be used to reduce eutrophication.



Multidisciplinary competence

Currently the SLU Water HUB is a multi-disciplinary team of over 20 people with experience in hydrology, soil science, limnology, environmental economics, system development and communication.

Support for water quality management

Our models can be divided into two types: models that calculate nitrogen and phosphorus leaching from agricultural land, and catchment-scale models that calculate water balances, nutrient transport, turnover and source apportionment of nitrogen and phosphorus in catchments. The results from both types of models can provide important information for management of nutrients in water resources. However, advanced tools and complex issues require competence to interpret and use the data generated to achieve environmental targets. At the SLU Water HUB we see it as our job to not only provide data for management of nutrients but also to make this work by offering users management support, performing studies and by developing new management tools.

Our models

More information available at
www.slu.se/vattenNAV



Overview of the SLU Water HUB models that are currently in use at national, regional and local levels:

SOILNDB calculates field-scale nitrogen leaching losses from arable land.

ICECREAMDB calculates field-scale phosphorus leaching losses from arable land.

SOILNDB and **ICECREAMDB** are part of the **NLeCCS** system that calculates normal leaching of nitrogen and phosphorus from arable land for 22 regions covering the whole country.

FyrisNP calculates transport, retention and source apportionment of nitrogen and phosphorus at the catchment scale.

FyrisCOST is a decision support system that uses input data from all of the above models/systems to evaluate the costs of abatement measures for effective nutrient management in water quality programs.