Budget of reactive nitrogen in forests and wetlands

One of the main surface water quality problems is their contamination with nutrients, causing eutrophication, and nitrogen (N) is one of the main elements accelerating this process. Even though the input from forests and wetlands in the total amount of diffuse pollution is relatively small, considering the share of this land cover in the region (nearly 50% of the total Baltic Sea drainage basin) it may still be significant for the total nutrient export.

In a study conducted within the framework of Interreg Est-Lat programme project ‘Integrated Nitrogen Management System for the Gulf of Riga’ (GURINIMAS) the best available data on the N flows from statistics and monitoring, research results and information from various data bases and literature were compiled for different sectors, including forest lands and wetlands. Within the framework of LIFE GOODWATER IP, the data were used to prepare a scientific paper ‘A reactive nitrogen budget for forest land and wetlands in Latvia and Estonia’, [https://doi.org/10.1080/02827581.2020.1825788], published in an international peer-reviewed journal Scandinavian Journal of Forest Research.

In the paper the main ingoing and outgoing flows of reactive nitrogen (Nr) in forest and wetland ecosystems have been identified and, where possible, quantified. One of the main flows of Nr from forest ecosystems is its leaching to waterbodies, which can directly influence the quality of surface waters in the catchment. In general, it was concluded that forest and wetland ecosystems in Latvia are reactive nitrogen sinks – the total input in the ecosystem slightly exceeds the total output. The results of the publication will be useful for calculations within LIFE GOODWATER IP, and also applicable on a wider scale for planning processes on national and international level.