The overall goal of this project is to build a meta-database which identifies and documents forest research sites in Fennoscandia and the Baltic states where water chemistry data have been measured. The meta-database locates and catalogues studies where nitrogen (N), phosphorus (P) and dissolved organic carbon (DOC) have been measured in soil and stream water from intact and harvested forests.

More than 600 unique sites
So far, the project is running according to plan with no major significant exceptions as yet. We have found that there might not be enough sites where treatments where data have been collected to facilitate the analyses we had originally proposed. However, this lack of treatment sites is in itself an important result. A prototype version of the meta-database is completed, a graphic overview of sites included, in total 630 entries is shown above. During the remainder of 2014 we will continue running quality checks on the meta-database and start to publish the summaries in relevant media format (e.g. fact sheets, reports and/or the internet).

New Insights
Nitrogen leaching from intact forests probably plays a minor role in Baltic Sea eutrophication. Intact forests in the northern part of the Baltic Sea catchment are generally N-limited and usually leach low amounts of dissolved inorganic nitrogen (DIN). A preliminary analysis of data from Sweden shows that more productive sites (with a higher site index) generally leach more DIN. Productivity co-vari with N deposition: more productive in the South are also subjected to higher N deposition. We hope that the data on site conditions, climate, N deposition, soil and stand management assembled in the meta-database will help us to understand the site specific factors controlling N leaching from intact forests in the Baltic Sea catchment, and how these factors varies across the Baltic Sea Catchment area.
Next Steps
Work is on-going to expand the geographic coverage of the database. Efforts are being made to identify additional sites elsewhere in the Baltic Sea catchment area. After quality control checks are complete, further analyses will be performed so as to better understand the relationship between forest lands and Baltic Sea nutrient problems.

Plot showing N concentration in soil solution versus site index for a selection of Swedish sites.

Plot showing N concentration in brook water in foreted ecosystems as a function on N deposition, for a selection of Finish and Swedish sites.

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