



Water Resource Associates

A network of consultants in hydraulics, hydrology, groundwater & environmental issues

Project title: SEALINK

Summary: Quantification of nutrient fluxes to the sea from atmospheric deposition and land-based sources.

Client: Norwegian Institute for Water Research	Financed by: Research Council of Norway
Period of assignment: 2008-2010	Location: Norway
Project Value: 2.4 million Nkr	WRA services: £9,500
In co-operation with: Norwegian Institute for Water Research, BIOFORSK, NVE, IFE, University of Virginia	Background The SEALINK project will examine scenarios of changes in nutrient fluxes to the sea from atmospheric deposition and land-based sources. Integrated studies will be conducted at two river basins draining to the Norwegian Skagerrak coast; the eutrophic system Vansjø/Hobøl and the oligotrophic system Tovdal River. The scenarios are linked to 'worst case, best case' possibilities with regard to changes in fluxes of atmospheric and land-based sources of nutrients in response to land-use change, management practices, and changes in emissions to the atmosphere. The project will draw extensively on results from earlier projects. New data will be collected on stable isotopes of N and C to quantify relative source strengths of nutrients. The data will be aggregated at the river basin scale by use of the models TEOTIL, INCA-P, INCA-N, HBV, MAGIC and MYLAKE. The Vansjø-Hobøl catchment [690 km ²] is part of the larger Moss river catchment located in the south-eastern part of Norway. More than 20.000 people live in the catchment area which is predominantly forested catchment with some arable land. Lake Vansjø provides drinking water and serves as a recreation area. The water quality has been affected by nutrient inputs during the 1970s and 80s.
 <p>The Hobøl river [photo: Marianne Bechmann, Bioforsk]</p>	Scope of work by Water Resource Associates Ltd WRA Director, Dr Andrew Wade and associate Dan Butterfield and Attila Lazar were responsible for further developing the INCA-N and INCA-P models to estimate nutrient inputs and simulate the nutrient cycling, transport and retention in the study catchments. Dr Wade also supported the application of the model by other colleagues in the consortium.
 <p>Tovdal river [photo: Jostein Blokhus]</p>	Results Paper in preparation

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