



Scenario
DOCTORAL TRAINING PARTNERSHIP

NERC
SCIENCE OF THE
ENVIRONMENT

Developing a Multi-Pollutant Water Quality Model for Spatial Targeting of Land Management Interventions to Reduce Water Pollution.

Lead Supervisor: Andrew Wade, Department of Geography and Environmental Science, University of Reading, a.j.wade@reading.ac.uk

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This studentship, jointly funded by SCENARIO and the James Hutton Institute, aims to quantify the response of carbon, nitrogen, sediment and phosphorus in river-systems to small-scale pollution mitigation measures. The aim is to develop a process-based catchment-scale water quality model that simulates the response of carbon (C), nitrogen (N), sediment and phosphorous (P) to multiple stressors using new data from intensively monitored catchments in Scotland and England, and to use that model to understand which field and catchment-scale pollution reduction measures are most effective.



Water quality models are useful tools to understand how drivers of change, including policy instruments, will affect the chemical constituents in the water environment. A new model will be built for the River Kennet (shown above - left) and Tarland Burn (right) to begin, important exemplars of UK water quality issues.

Training opportunities:

The training will be split between the University of Reading and James Hutton Institute. Training will be given in environmental data analysis, Geographical Information Systems and statistical and process-based environmental modelling including programming. There will be opportunities to visit the field study sites and the student will be part of a large community of environmental scientists at Reading and James Hutton Institute.

Student profile:

This project is suitable for those curious about the natural world and interested in mathematical modelling with a background in environmental science, mathematics, physics, civil engineering or other numerate discipline. Flexibility to work between Aberdeen and Reading is expected and the details will be worked out together with the student.

<http://www.reading.ac.uk/nercdtp>