

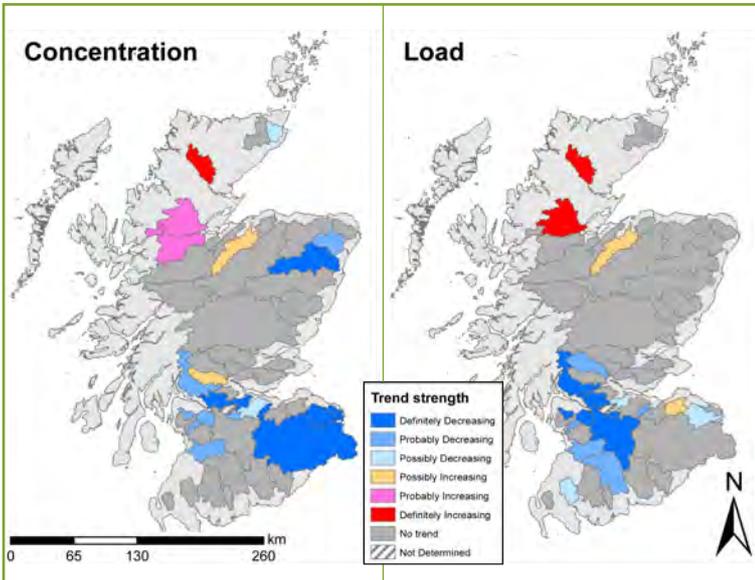
Martyn Futter: The Macaulay Land Use Research Institute, Craigiebuckler, Aberdeen AB15 8QH • m.futter@macaulay.ac.uk

The whole is greater than the sum of its parts. SEPA monitoring and MLURI modelling combine to give more insight into the health of Scottish surface waters than either organization could achieve on its own.

Excessive inputs of phosphorus (P) come from agricultural activity, sewage works and septic tanks. Understanding the relative contribution of different activities (source apportionment) and engagement with practitioners are key to controlling phosphorus pollution.

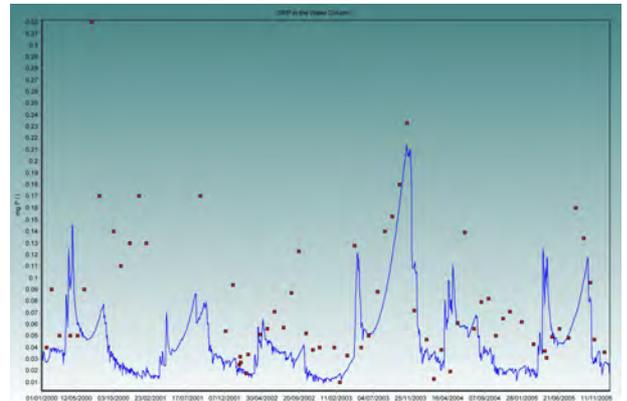
## TRENDS IN P IN SCOTTISH RIVERS

Total P and other water quality parameters have been measured on a monthly basis since the 1970's at major rivers by SEPA. Future collaborative work will produce a national water quality atlas and identify reasons for the observed trends.

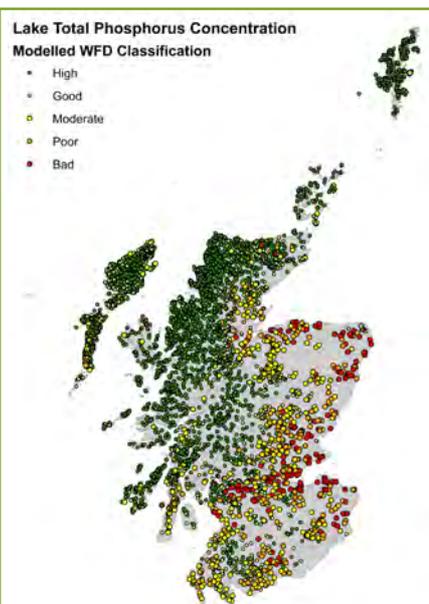


## PROCESS-BASED MODELLING IN MONITORED PRIORITY CATCHMENTS (MPC)

Process-based models can help to understand P sources in catchments. We are evaluating models to assess the temporal pattern of P inputs from agriculture and sewage treatment in the Lunan Water MPC. Future work will improve the P calibration for the Lunan Water and extend the modelling to simulate nitrogen and sediments in the Lunan Water and Ythan.



## WATER FRAMEWORK DIRECTIVE STATUS OF SCOTTISH LOCHS



There are in excess of 8000 lochs in Scotland. We simulated P as a function of catchment export, upstream inputs and in-loch retention for all lochs in Scotland. Modelled P values were compared to WFD target classification concentrations for high, good, moderate, poor and bad status. Future work will assign a "Red/Amber/Green" development capacity to each loch in Scotland.

## HEURISTICS: SIMPLE MODELS FOR EXPERIENTIAL LEARNING

Diffuse pollution in rural landscapes arise from many sources. We have developed a process that combines simple source apportionment models with experiential learning to develop a stakeholder dialogue about diffuse pollution in the rural landscape. This resulted in a public engagement programme about the need to properly maintain septic tanks which will be rolled out to a national audience.

