EDITORIAL

Macronutrient cycles: themed issue

Jill Crossman and Paul G. Whitehead*

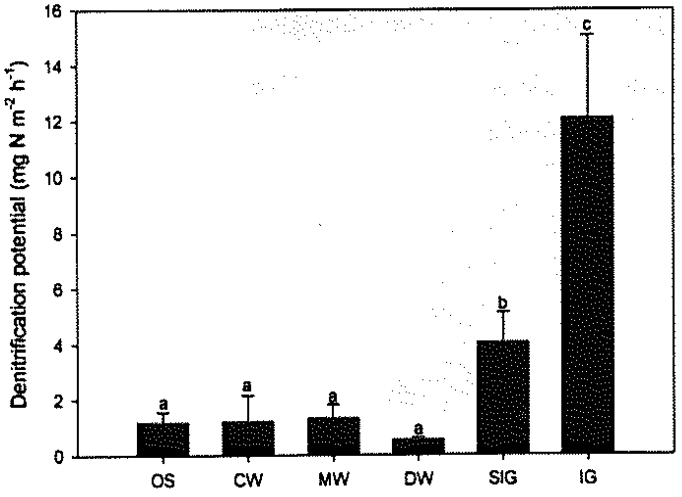
Guest editors Jill Crossman and Paul G. Whitehead introduce this themed issue on macronutrient cycles.

PAPERS

Denitrification potential of organic, forest and grassland soils in the Ribble-Wyre and Conwy River catchments, UK

Fotis Sgouridis and Sami Ullah*

Denitrification potential was significantly influenced by land use type where it was lower in organic and forest than in semi-improved and improved grassland soils.



1563

Personal nitrogen footprint tool for the United Kingdom

Carly J. Stevens,* Allison M. Leach, Sarah Dale and James N. Galloway

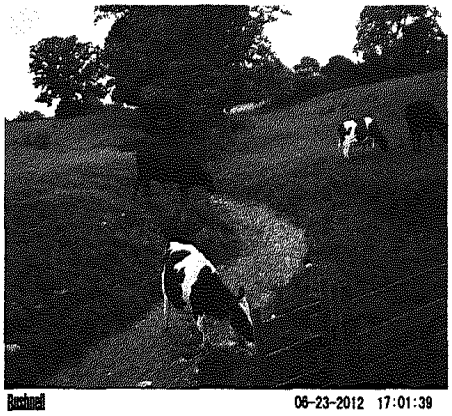
A nitrogen footprint calculator tool for the UK is described together with a historical and international comparison of N footprints. Scenarios show how reductions in individual footprints can be made.

1570

Temporal dynamics between cattle in-stream presence and suspended solids in a headwater catchment

Julie A. Terry,* Clare McW.H. Benskin, Emma F. Eastoe and Philip M. Haygarth

High-resolution monitoring of cattle in-stream activity to quantify the impact on suspended solid concentrations, and contribution to water pollution from agriculture.

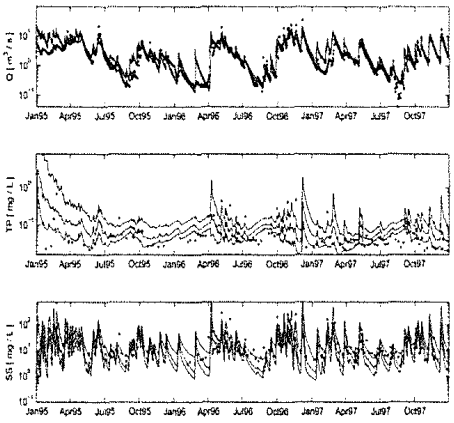


1578

Bayesian uncertainty assessment of a semi-distributed integrated catchment model of phosphorus transport

Jostein Starrfelt* and Øyvind Kaste

Bayesian parameter estimation on INCA-P highlights the importance of parameter uncertainty in simulating future scenarios.

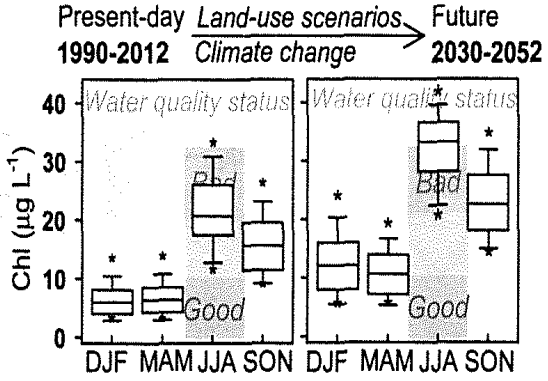


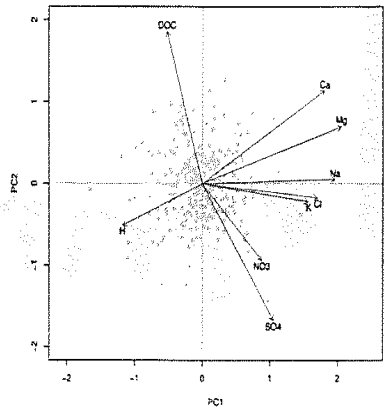
1588

Modelling phosphorus loading and algal blooms in a Nordic agricultural catchment-lake system under changing land-use and climate

Raoul-Marie Couture,* Koji Tominaga, Jostein Starrfelt, S. Jannicke Moe, Øyvind Kaste and Richard F. Wright

A network of process-based mass-balance models for phosphorus dynamics in catchments and lakes provides a new approach to simulate the effect of land-use and climate change on water quality.

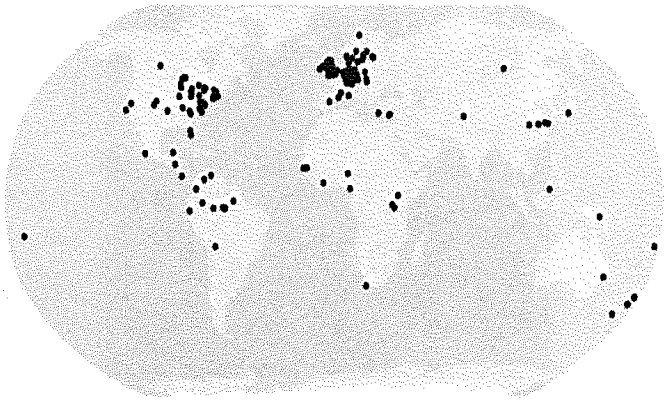




Application of a simple multiplicative spatio-temporal stream water quality model to the river Conwy, North Wales

D. M. Cooper,* C. D. Evans, D. Norris, S. Thacker and M. Glória Pereira

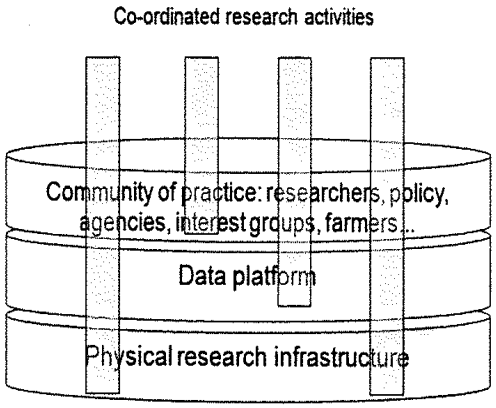
A simple multiplicative spatio-temporal mixing model is used to simulate headwater catchment water quality data in the Conwy catchment.



Atmospheric deposition of phosphorus to land and freshwater

E. Tipping,* S. Benham, J. F. Boyle, P. Crow, J. Davies, U. Fischer, H. Guyatt, R. Helliwell, L. Jackson-Blake, A. J. Lawlor, D. T. Monteith, E. C. Rowe and H. Toberman

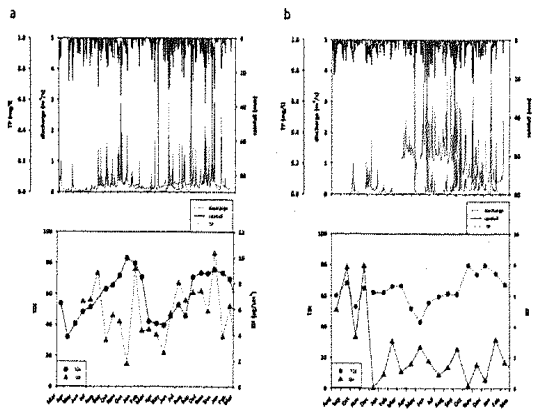
Newly-obtained and published data on phosphorus deposition were evaluated to make a global budget, assess bioavailability and spatial and temporal variation, and consider which ecosystems might depend upon atmospheric inputs.



Developing Demonstration Test Catchments as a platform for transdisciplinary land management research in England and Wales

D. F. McGonigle,* S. P. Burke, A. L. Collins, R. Gartner, M. R. Haft, R. C. Harris, P. M. Haygarth, M. C. Hedges, K. M. Hiscock and A. A. Lovett

This paper describes a research platform approach that has been developed in England to bring together researchers and stakeholders from a wide range of institutions to undertake multi-disciplinary, catchment-scale research on approaches to tackle agricultural water pollution.



High frequency variability of environmental drivers determining benthic community dynamics in headwater streams

M. A. Snell,* P. A. Barker, B. W. J. Surridge, A. R. G. Large, J. Jonczyk, C. McW. H. Benskin, S. Reaney, M. T. Perks, G. J. Owen, W. Cleasby, C. Deasy, S. Burke and P. M. Haygarth

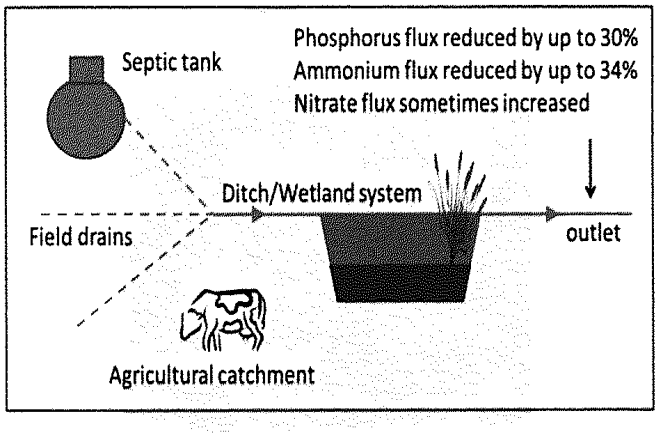
Headwater streams are an important feature of the landscape, with their diversity in chlorophyll-a and community structure a function of mean antecedent conditions.

1637

Reduced nutrient pollution in a rural stream following septic tank upgrade and installation of runoff retention measures

M. C. Ockenden,* J. N. Quinton, N. Favaretto, C. Deasy and B. Surridge

Combined measures for tackling micro-point source and diffuse pollution in rural landscapes show the potential for considerable improvements in surface water quality.

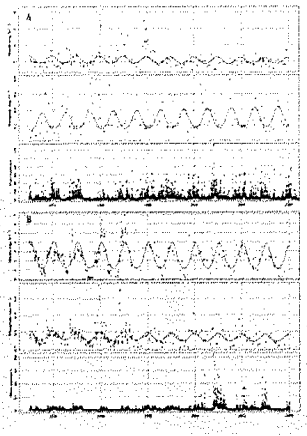


1646

UK catchment nutrient loads 1993–2003, a new approach using harmonised monitoring scheme data: temporal changes, geographical distribution, limiting nutrients and loads to coastal waters

Timothy J. Earl, Graham J. G. Upton and David B. Nedwell*

The work provides robust estimates of nutrient loads (nitrate and phosphate) from all UK catchments: as required by the Water Framework Directive to monitor catchments' health, and to inform management of these environments.

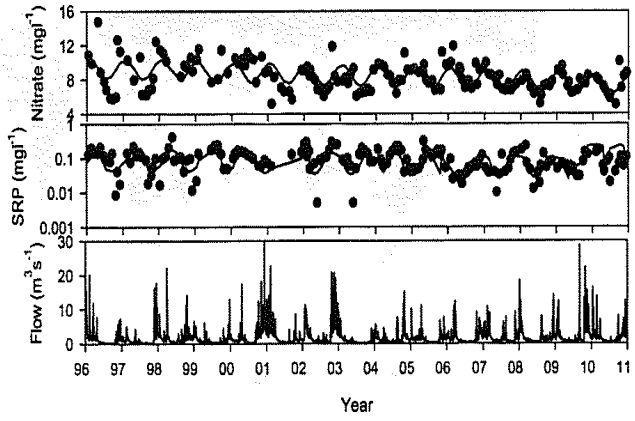


1659

Recent trends in water quality in an agricultural catchment in Eastern Scotland: elucidating the roles of hydrology and land use

S. M. Dunn,* J. Sample, J. Potts, C. Abel, Y. Cook, C. Taylor and A. J. A. Vinten

Lags in diffuse pollution response have been found to be important for trends in water quality in an agricultural catchment.

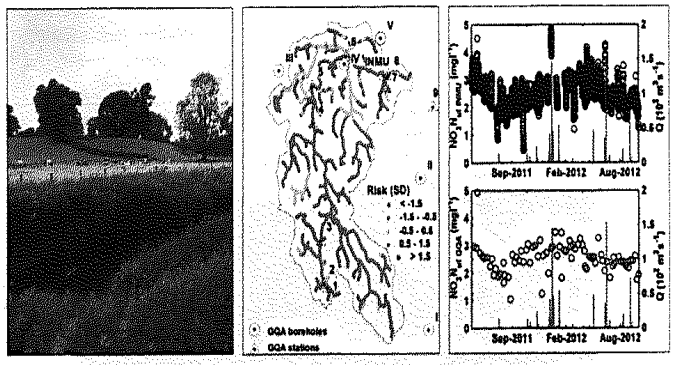


1676

Understanding nutrient biogeochemistry in agricultural catchments: the challenge of appropriate monitoring frequencies

M. Z. Bieroza,* A. L. Heathwaite, N. J. Mullinger and P. O. Keenan

We evaluate different frequencies of riverine nutrient concentration measurement to interpret diffuse pollution in agricultural catchments.



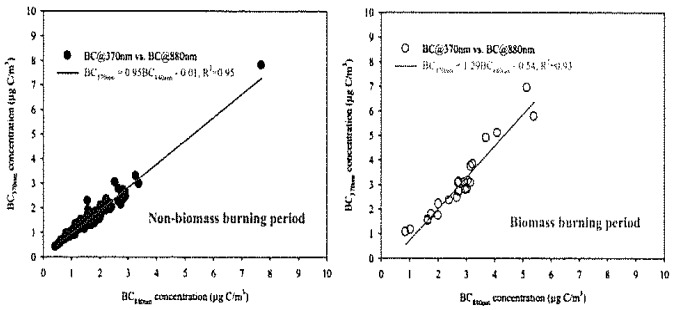
Diffuse P and N sources | Diffuse pollution risk | Hourly vs. Monthly data

1726

Difference in production routes of water-soluble organic carbon in $PM_{2.5}$ observed during non-biomass and biomass burning periods in Gwangju, Korea

Geun-Hye Yu, Sung-Yong Cho, Min-Suk Bae and Seung-Shik Park*

Water-soluble organic carbon observed during the non-biomass burning period was mainly attributed to secondary organic aerosol.

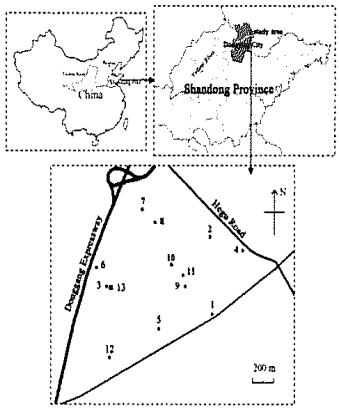


1737

Migration, speciation and distribution of heavy metals in an oil-polluted soil affected by crude oil extraction processes

Xiaowen Fu, Zhaojie Cui* and Guolong Zang

We present the migration, speciation and temporal distribution characteristics of heavy metals in the soils of an oil field in China.



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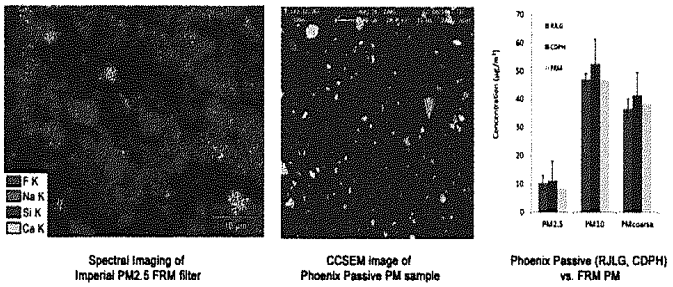
Spectral imaging and passive sampling to investigate particle sources in urban desert regions

Jeff Wagner* and Gary Casuccio

Two types of electron microscopy analyses were combined with passive sampling and geographic information system mapping to investigate airborne particle sources in desert cities.

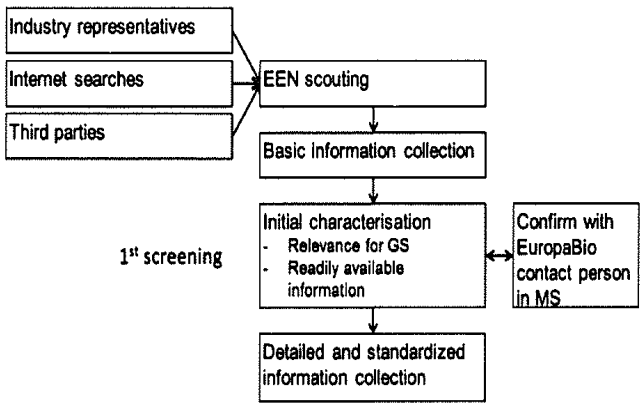


1754

The use of existing environmental networks for the post-market monitoring of GM crop cultivation in the EU

G. Smets,* E. Alcalde, D. Andres, D. Carron, P. Delzenne, A. Heise, G. Legris, M. Martinez Parrilla, J. Verhaert, C. Wandelt, M. Ilegems and P. Rüdelsheim

An approach was developed to describe the process and criteria to select and evaluate existing environmental monitoring networks to be used in post-market environmental monitoring (PMEM) in line with European Union (EU) Directive 2001/18/EC.



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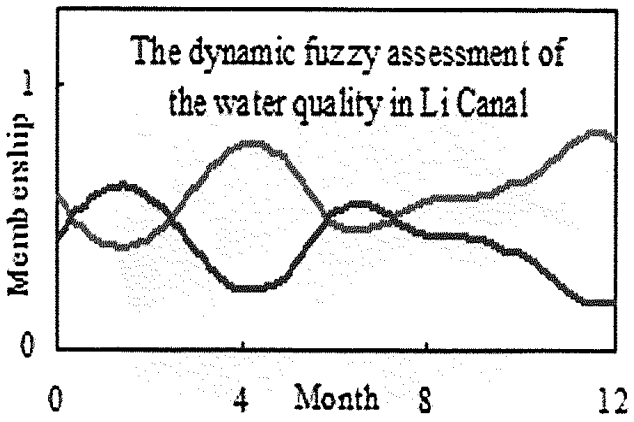

Water quality assessment of the Li Canal using a functional fuzzy synthetic evaluation model

Yan Feng and Liu Ling*

This study initially establishes a functional fuzzy synthetic evaluation (FFSE) method to make dynamic fuzzy assessment of water quality.

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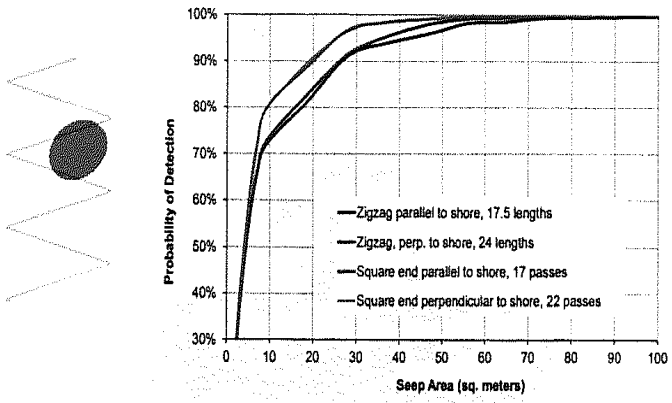

Practical strategies for identifying groundwater discharges into sediment and surface water with fiber optic temperature measurement

John Selker, Frank Selker, Julie Huff, Russ Short, Deborah Edwards, Peter Nicholson and Arthur Chin

Identifying or ruling out groundwater discharges into sediment and surface waters is often critical for evaluating impacts and for planning remedial actions.

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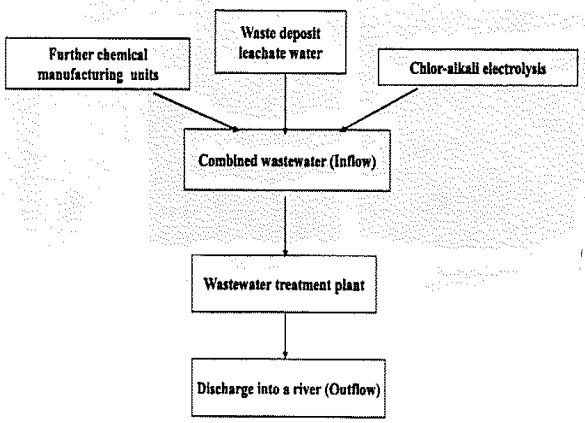

Identification of specific organic contaminants in different units of a chemical production site

L. Dsikowitzky,* O. Botalova, N. A. al Sandouk-Lincke and J. Schwarzbauer

An inside view of a chemical complex and identification of organic contaminants corresponding to specific and widely applied industrial production processes.

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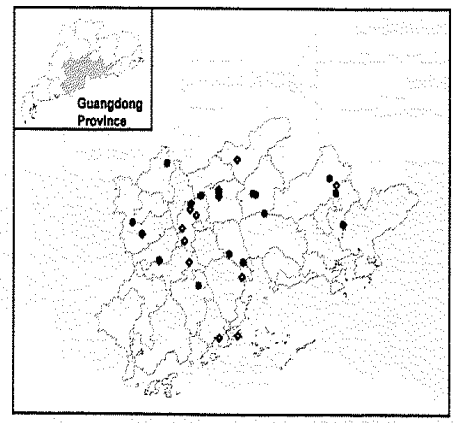

Heavy metal accumulation in balsam pear and cowpea related to the geochemical factors of variable-charge soils in the Pearl River Delta, South China

Chun-Ying Chang, Xiang-Hua Xu, Chuan-Ping Liu, Shu-Yi Li, Xin-Rong Liao, Jun Dong and Fang-Bai Li*

Variable-charge (v-c) soils in subtropical areas contain considerable amounts of iron/aluminum (Fe/Al) oxides that can strongly influence the fate of heavy metals in agricultural ecosystems.

Application of diffusive gel-type probes for assessing redox zonation and mercury methylation in the Mekong Delta sediment

Yongseok Hong, Nguyen Phuoc Dan, Eunhee Kim, Hyo-Jung Choi and Seunghee Han*

Combination of DGT and DET can assess redox zonation and *mercury methylation in sediments.*

Comment on "Radioactive fallout in the United States due to the Fukushima nuclear plant accident" by P. Thakur, S. Ballard and R. Nelson, *J. Environ. Monit.*, 2012, 14, 1317–1324

Paula S. Rose*

The May 2012 paper "Radioactive fallout in the United States due to the Fukushima nuclear plant accident" (P. Thakur, S. Ballard and R. Nelson, *J. Environ. Monit.*, 2012, **14**, 1317–1324), does not address medical patient excreta as a source of ^{131}I to the environment.