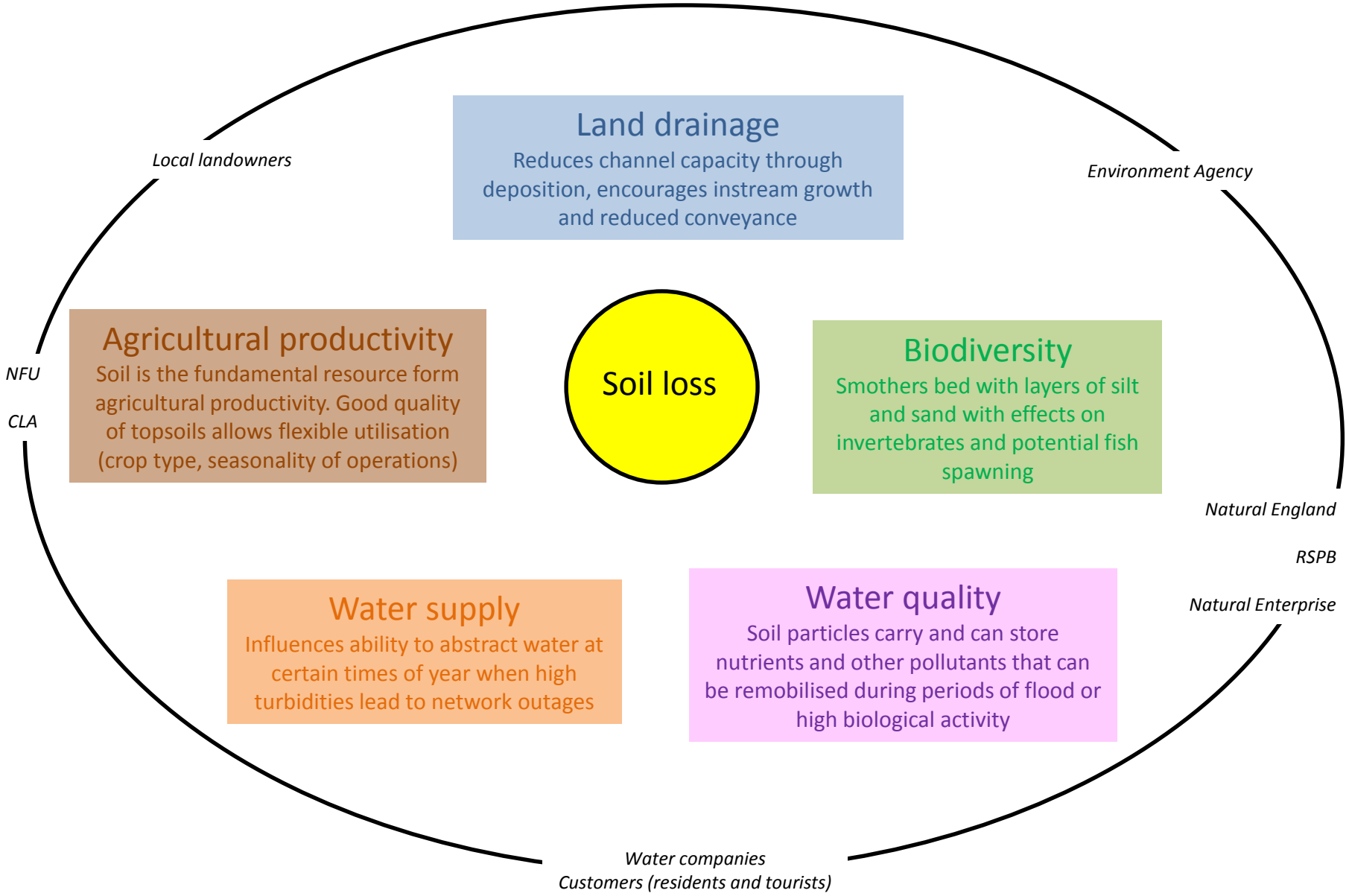
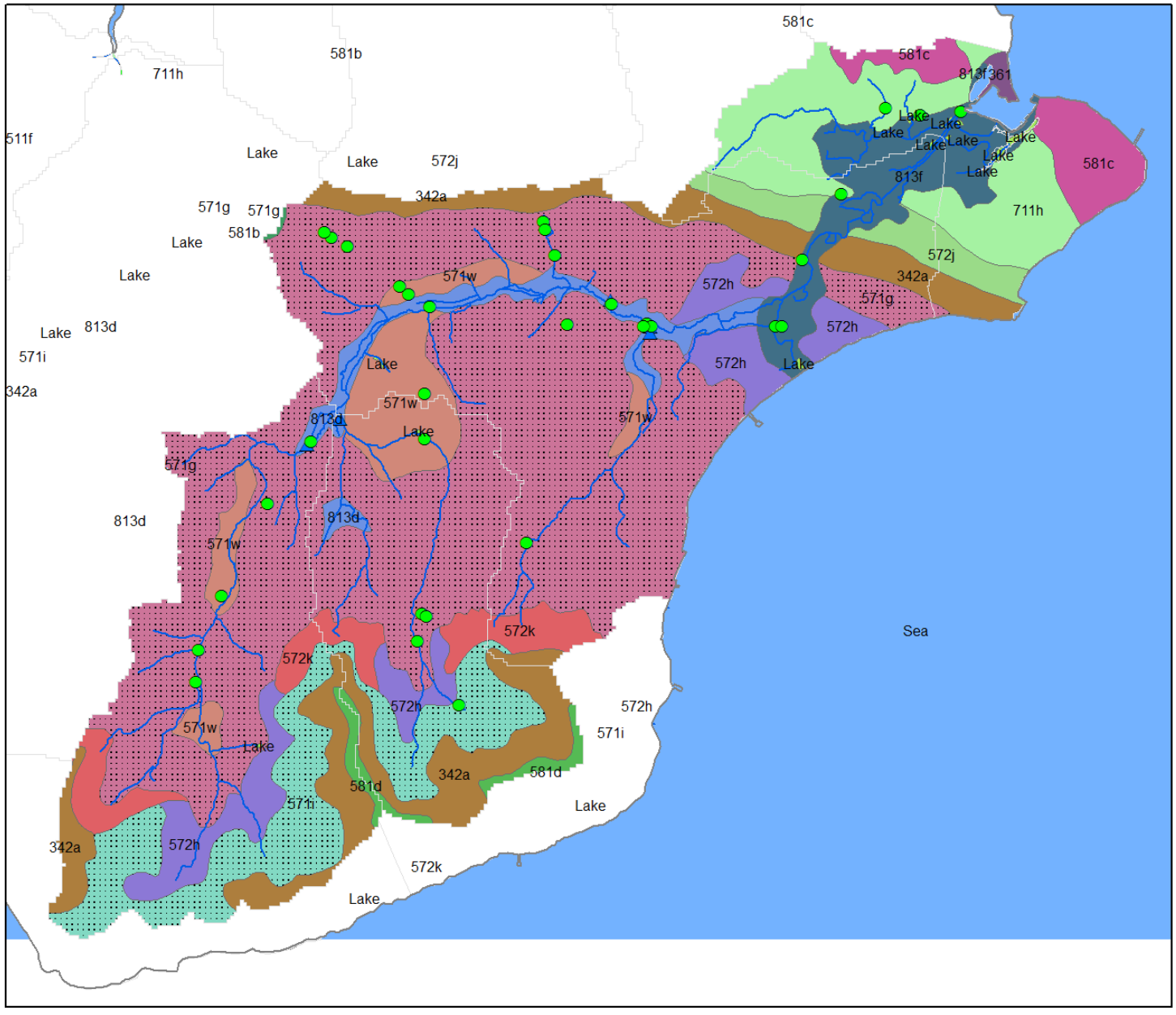
Working together to tackle common issues



Understanding catchment characteristics



ATKINS

Chilbrook
Oasis Business Park
Eynsham,
Oxford, OX29 4AH
+44 (0)1865 882828
www.atkinsglobal.com

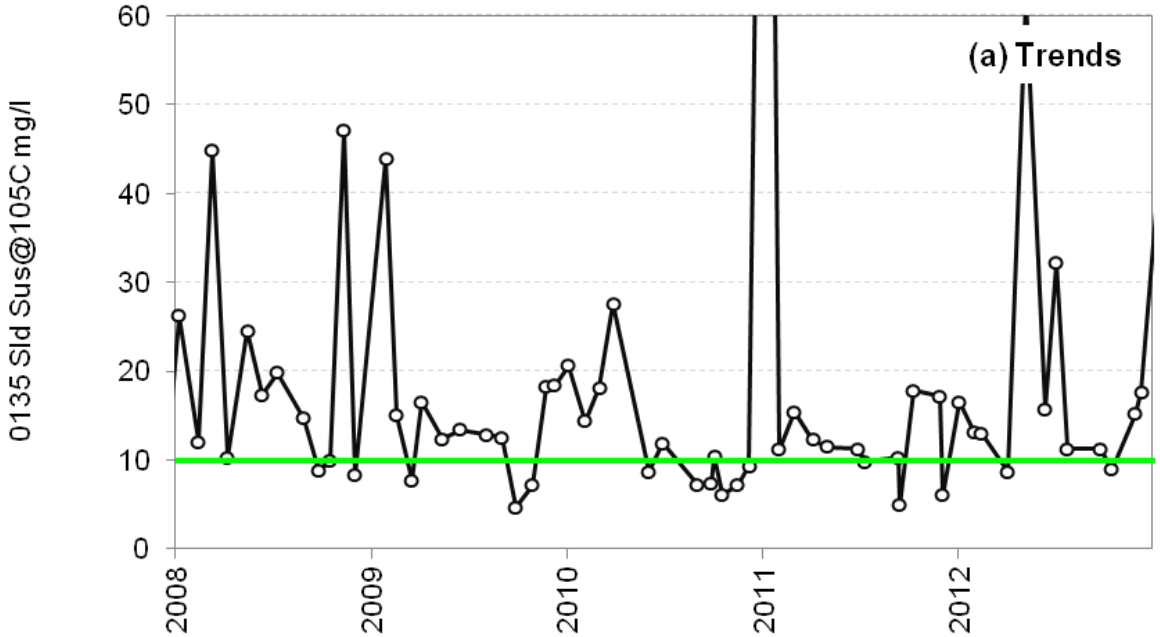
CLIENT
Eastern Yar Catchment Group

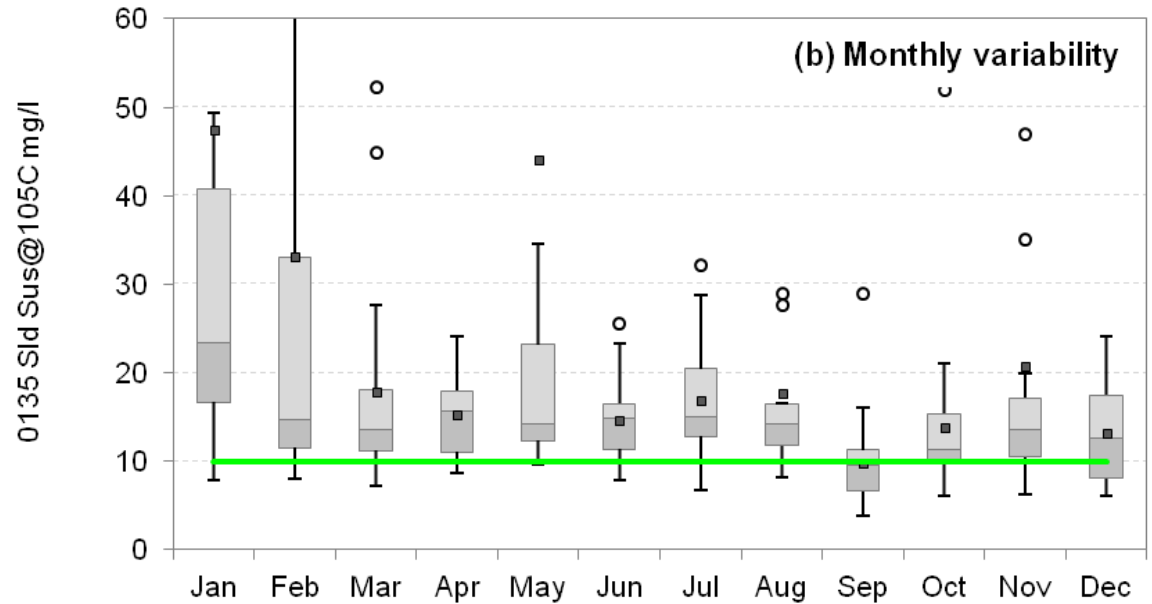
PROJECT TITLE
Eastern Yar catchment

TITLE
Geology

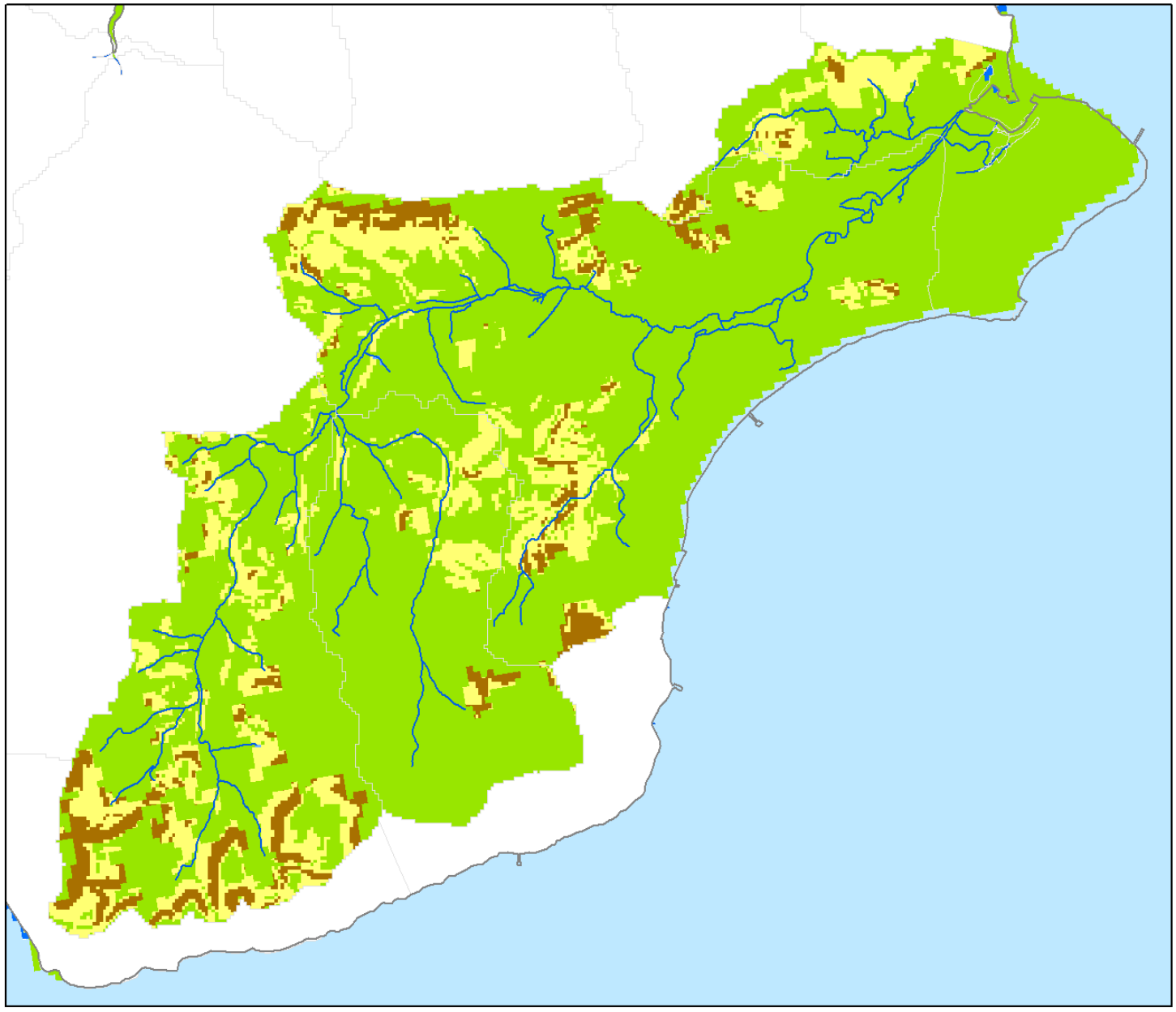
SCALE	DRAWN	CHECKED	AUTHORISED
at A3	JW		
REF NUMBER	DATE	DATE	DATE
50xxxx	11/12/12		

When are sediment concentrations greatest?





What areas are most at risk? How can we focus our efforts?



ATKINS

Chilbrook
Oasis Business Park
Elsfield,
Oxford, OX29 4AH
+44 (0)1865 882828
www.atkinsglobal.com

CLIENT
Eastern Yar Catchment Group

PROJECT TITLE
Eastern Yar catchment

TITLE
Geology

SCALE	DRAWN	CHECKED	AUTHORISED
at A3	JW		
REF NUMBER	DATE	DATE	DATE
50xxxx	11/12/12		

Identifying resources and other similar catchments

Controlling soil erosion

Incorporating former advisory leaflets on grazing livestock, wind, outdoor pigs and the uplands

Revised: September 2005

defra
Department for Environment Food and Rural Affairs

Tools | Sign

odification.

ARTICLE IN PRESS

Click on Sign to and place signa PDF file.

Journal of Environmental Management xxx (2009) 1–11

Contents lists available at ScienceDirect

Journal of Environmental Management

journal homepage: www.elsevier.com/locate/jenvman

- The Rother Valley
- Erosion in the Rother valley
- Assessment of risk
  - The (Defra, 2005a) scheme: context and approach
  - How successful is the Defra risk-assessment scheme?
  - Can the Defra risk-assessment scheme be improved?
  - What is the role of rainfall?
- Control of runoff and erosion
- Discussion
- Conclusion
- Acknowledgements
- References

Soil erosion and risk-assessment for on- and off-farm impacts: A test case usi the Midhurst area, West Sussex, UK

John Boardman [a,b,*], Mark L. Shepheard [a], Edward Walker [a], Ian D.L. Foster [c,d]

[a] Environmental Change Institute, Oxford University Centre for the Environment, Dyson Perrins Building, South Parks Road, Oxford OX1 3QY, UK
[b] Department of Environmental and Geographical Science, University of Cape Town, Rondebosch 7701, South Africa
[c] Department of Molecular and Applied Biosciences, School of Biosciences, University of Westminster, Cavendish Campus, 115 New Cavendish Street, London W1W 6UW, UK
[d] Department of Geography, Rhodes University, PO Box 94, Grahamstown 6140, Eastern Cape, South Africa

ARTICLE INFO

Article history:
Received 12 June 2008
Received in revised form
23 December 2008
Accepted 21 January 2009
Available online xxx

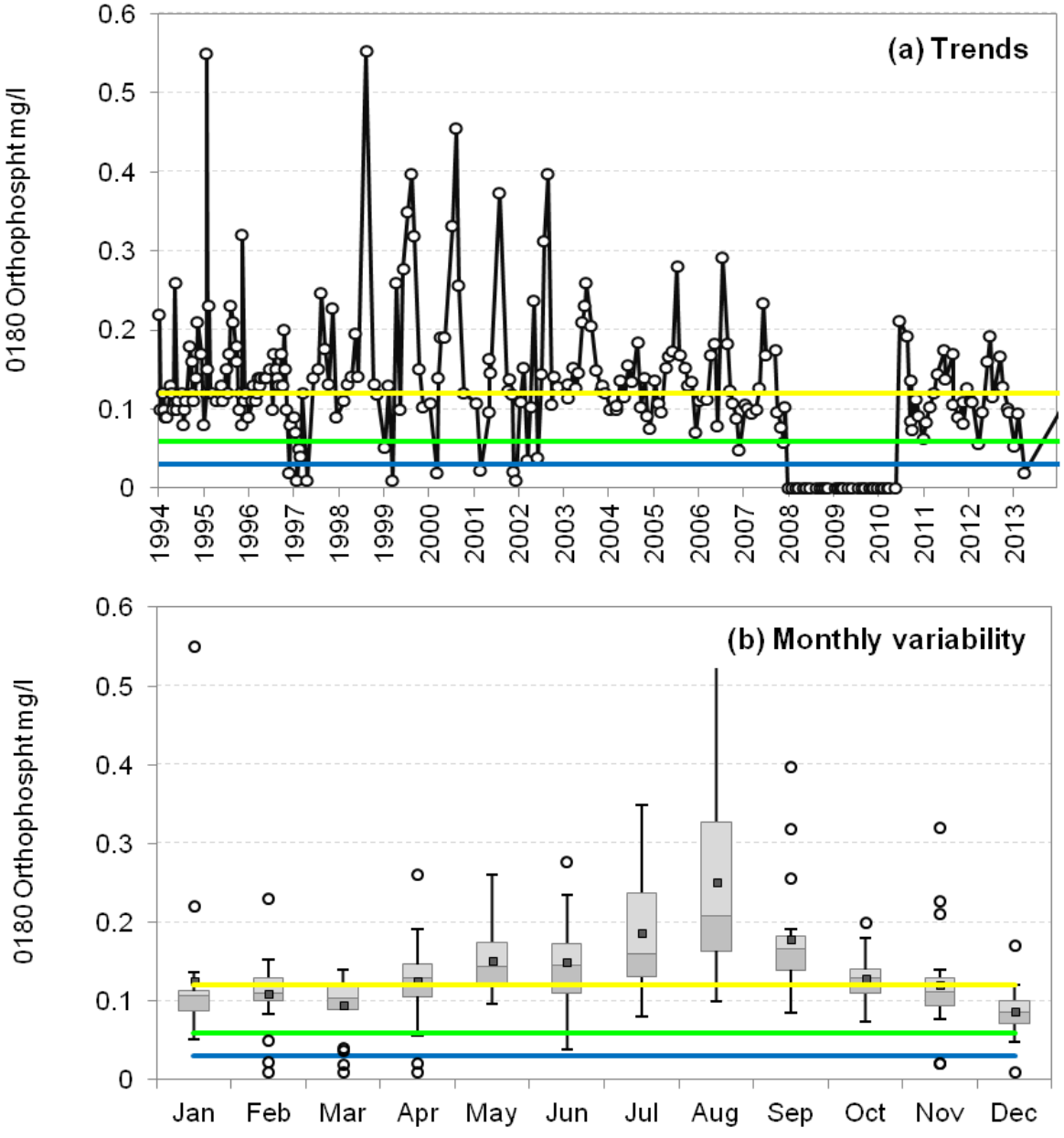
Keywords:
Erosion
Risk-assessment
Off-site impacts
Climate change
Agricultural change
Land-use change
Muddy floods

ABSTRACT

Soil erosion on agricultural land is a growing problem in Western Europe and constitutes a threat t quality and to the ability of soils to provide environmental services. The off-site impacts of runof eroded soil, principally eutrophication of water bodies, sedimentation of gravel-bedded rivers, l reservoir capacity, muddy flooding of roads and communities, are increasingly recognised and c The shift of funding in the European Union (EU) from production-related to avoidance of pollutio landscape protection, raises issues of cross-compliance: public support for agriculture has to be se give value-for-money. In this context risk-assessment procedures have been introduced to help fa recognise sites where either certain crops should not be grown or anti-erosion measures are requir England, Defra [Defra, 2005a. Controlling Soil Erosion: a Manual for the Assessment and Manage Agricultural Land at Risk of Water Erosion in Lowland England. Revised September 2005. Departme Environment, Food and Rural Affairs, London] sets out a system of risk-assessment, including ranki crops susceptible to erosion and anti-erosion measures, that may be selected. We assess this s using field data for an area of erodible soils in the Rother valley, Sussex. The Defra approach con identifies most at-risk fields and, taken together with land-use maps, allows non-compliance with advice to be highlighted. We suggest a simple extension to the system which would further identify at-risk fields in terms of possible damage to roads and rivers from muddy runoff. The increased risk of erosion in the study area is associated with certain crops: potatoes, winter cereals, maize and grazed turnips and seems unlikely to be the result of changes in rainfall which over the last 130 years are minimal. We have not evaluated proposed anti-erosion measures in the area because few have been put into practice. The European Water Framework Directive will increasingly focus attention on agricultural fields as a source of river pollution. Assessing the risk of erosion and the need for field testing of suggested approaches, are not simply issues for the EU, but for the management of global agricultural systems.

Soil erosi... | Lync | NE_Cole_... | Agenda ... | Eastern Y... | Inbox - ... | UK base... | boardma... | 17:41 02/12/2014

When are phosphate concentrations greatest?



Summary

- The Eastern Yar suffers from an elevated sediment load. Sediment influences all the river stakeholders in one way or another

- Most of the sediment moves during individual large flood events – 90% of the sediment moving in 5% of the time

- The main soil types of the Eastern Yar catchment are at risk of water erosion

- The highest sediment loads in the Eastern Yar are in winter (January and February)

- In contrast, the highest concentrations of phosphate in the river are recorded during the summer months, when the flows are lowest