

*Update on research, publications
and guidance from the EA
and a look ahead*

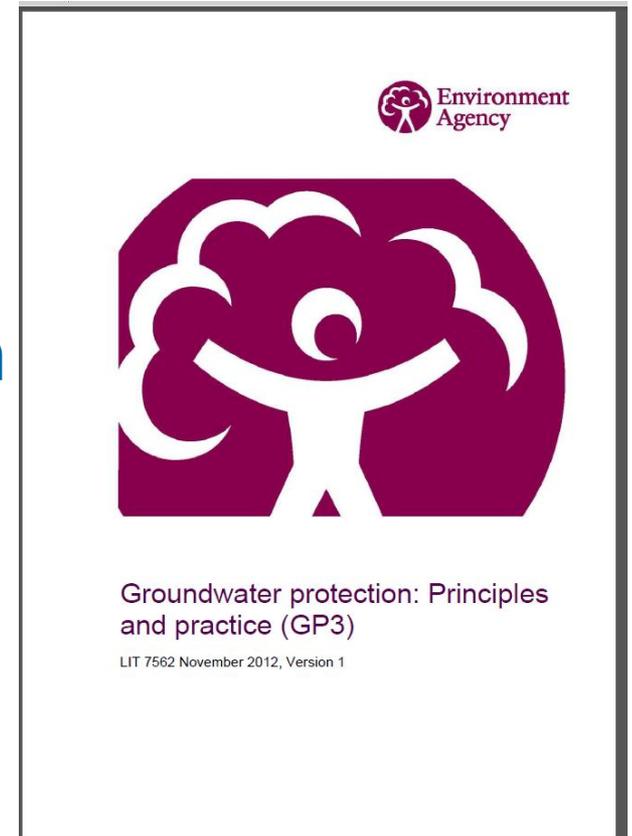
Trevor Howard

Content

- ⇒ Update on research publications and guidance from the EA
- ⇒ A look ahead

GP3

- ⇒ Groundwater protection: Principles and practice
- ⇒ Launched in November
- ⇒ Chpt 6 (j) Land contamination
- ⇒ Chpt 8
 - ⇒ Risk assessment
 - ⇒ Hydrogeological tools
 - ⇒ Compliance points



NPPF related guidance

➔ Internal quick guides

- ➔ National Planning Policy Framework
- ➔ Preventing unacceptable risks from pollution
- ➔ Planning and contaminated land
- ➔ Flood and Coastal Change Risk Management

➔ Building a better environment: Our role in development and how we can help (draft)

➔ Guidance on local plans (developing draft)

Significant pollution

- ➔ Supports the revised Part 2A statutory guidance (England and Wales)
- ➔ Aims to:
 - ➔ Interpret what the SG and Regs say
 - ➔ Describe an assessment method
- ➔ October 2012 – April 2013
- ➔ Consultation around January 2013

Other developments

➔ Defra led initiatives

- ➔ C4SL

- ➔ National panel

- ➔ Other R&D (skills, international regimes)

➔ Sector led initiatives

- ➔ CIRIA, EIC, BSI, CL:AIRE, AGS, SOBRA, SAGTA, CIWEM, EPUK etc

- ➔ International research (SNOWMAN, Greenland)

Changes and emerging issues

⇒ Changes to our work on land contamination

- ⇒ Legislative
- ⇒ Changing environment
- ⇒ Advances in science and technology

⇒ Timing



⇒ Small changes now or big ones, far away?

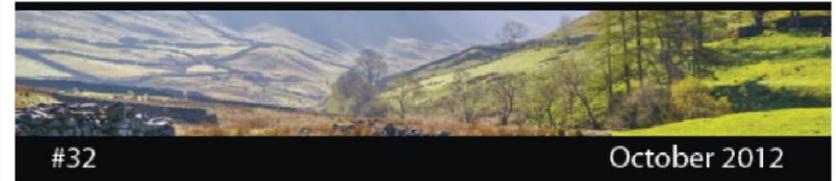
Horizon scanning

➔ “identify new science and technology trends and raise the profile of emerging environmental threats and opportunities”

➔ [Defra Horizon Scanning web site](#)

CERF Horizon Scan

Cranfield
UNIVERSITY



KEY FACTORS

(hover over for links to rest of document)

- Consumer attitudes and behaviour
- Health and well-being
- Science, technology and Innovation
- Energy supply and demand
- Natural resources and waste management
- Agriculture and rural communities
- Food production, processing and distribution
- Land use and land management
- Climate, environment and biodiversity
- Oceans, marine life and fisheries
- Economy and industry
- Globalisation, (geo)politics and national security
- Demographics and urbanisation



About CERF

The Centre for Environmental Risks and Futures (CERF) is based within Cranfield University's School of Applied Sciences. Our expertise spans the natural, technological, economic and political domains. Our horizon scanning activity is part of a £1.8m project within the Centre, funded by a partnership of 12 organisations.

Visit www.cranfield.ac.uk/sas/cerf for more details.

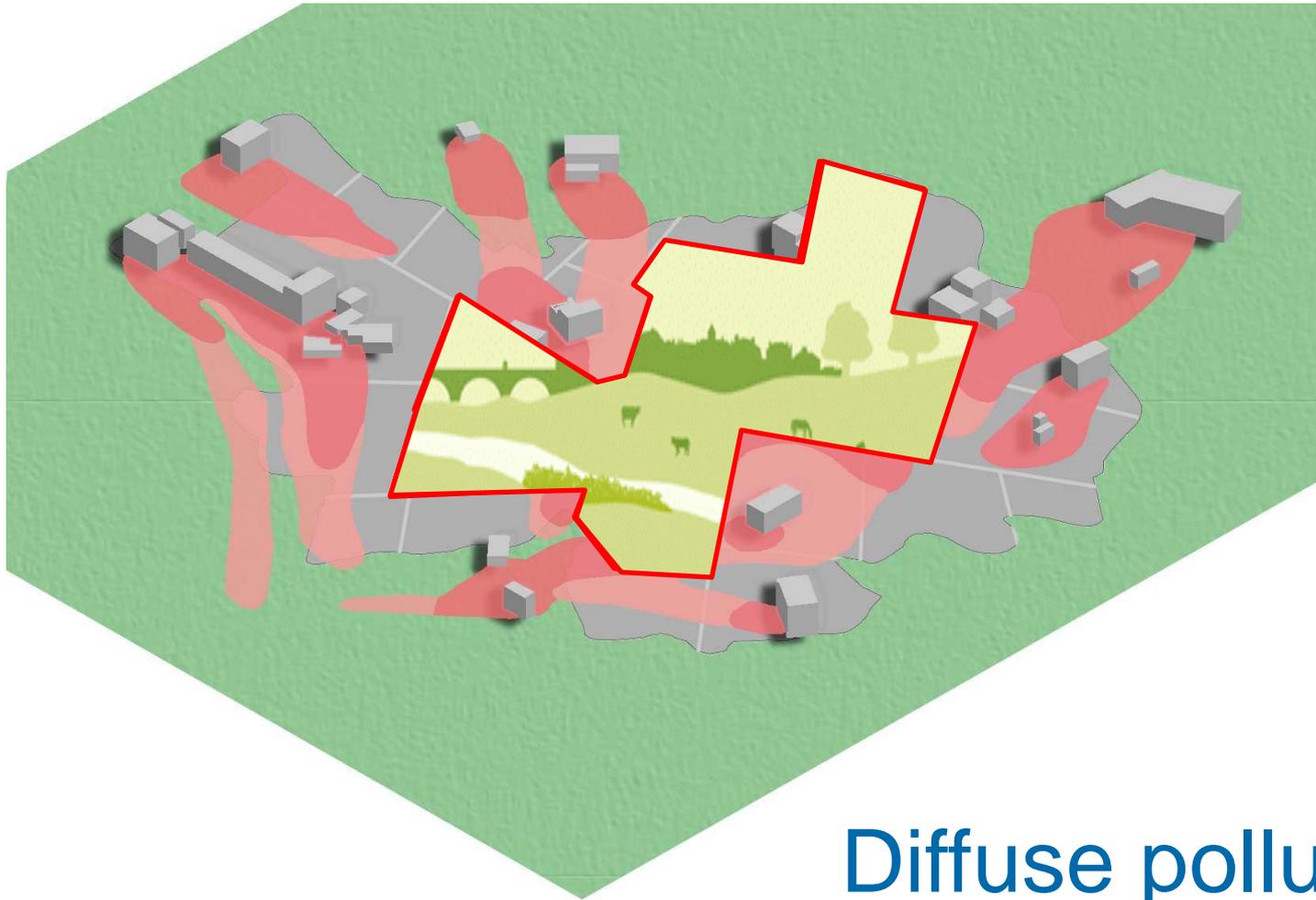
We value feedback - tell us what you think!

Send your thoughts and feedback to a.a.rathe@cranfield.ac.uk or follow us using twitter (@TheRiskExchange), or our blog (<https://theriskexchange.wordpress.com>).



Planning reform

- ➔ NPPF and withdrawal of the PPSs
- ➔ Meaning of sustainable development
- ➔ Lord Taylor's review of planning guidance
- ➔ How will it change what we do?



Diffuse pollution and the Water FD



Sites of industry



Pollution plumes

Estimated future extent of pollution plumes



Urban area

Materials management

- ⇒ Ongoing shift from 'dig and dump'
- ⇒ Further development of the CoP
 - ⇒ fixed soil treatment facilities
 - ⇒ reuse of small quantities of soil
 - ⇒ v3
- ⇒ Resource efficiency vs. increased risks?

Sustainability

- ➔ SuRF UK framework and indicators
- ➔ Case studies
- ➔ What's next?
 - ➔ Tools?
 - ➔ Regulatory acceptance?
 - ➔ How to get it genuinely embedded?

Climate change

- ➔ Considered under sustainability
- ➔ New pollutant linkages
- ➔ Changing pollutant linkages
- ➔ Climate proof remediation
- ➔ Climate friendly remediation

Diffuse contamination

- ➔ Extension of the diffuse pollution problem
- ➔ E.g. arsenic, lead, asbestos, BaP
- ➔ Are they a problem? Low probability of harm but widespread exposure?
- ➔ Many current tools (including legislation, assessment methodologies, remedial techniques) not well suited to diffuse problems

New or novel pollutants

- ⇒ Genuinely 'new' or has our understanding changed?
- ⇒ E.g. surfactants, pharmaceuticals, pesticides, proven or suspected endocrine disrupting compounds (EDCs)
- ⇒ And their degradation products



- ⇒ a network, of reference laboratories, research centres and related organisations for the monitoring and biomonitoring of emerging environmental substances

Nano materials

- ➔ “material with external dimensions...at nanometre (10^{-9} m) scales that exhibits additional or different properties and behaviour compared with coarser materials”
- ➔ In use already e.g. in healthcare, electronics and cosmetics
- ➔ Potential remediation applications
- ➔ Defra report “Risk/benefit approach to the application of iron nanoparticles for the remediation of contaminated sites in the environment”

Synthetic biology

⇒ Developed from genetic technology

“use a rigorous engineering approach to design and build new biological parts, devices and systems or to reconfigure existing ones to be more efficient or to carry out new functions”

⇒ Creating more efficient organisms for bioremediation

⇒ Enhanced phytoremediation

⇒ Creating new contaminants?

⇒ HSE document “Synthetic biology. A review of the technology, and current and future needs from the regulatory framework in Great Britain” (2012)

To conclude

- ➔ Major regime change this year
- ➔ Sector led approach to new guidance
- ➔ Lots of possible future developments



➔ We live in interesting times!