



the River Restoration Centre

Working to restore and enhance our rivers

Delivering River Restoration: Recipes for Success

13TH ANNUAL NETWORK CONFERENCE



Restoring Europe's Rivers

The RRRPCC project is made possible with the contribution of the LIFE+ financial instrument of the European Commission and works in partnership with 



ARUP



Penny Anderson Associates Ltd
CONSULTANT ECOLOGISTS



WILLOWBANK
Erosion & Conservation Services





It ain't all about 'the environment'!

Dr Mark Everard

Thursday 19th April 2012

River Restoration Centre, Annual Network Conference

A riverful of ecosystem services...



Spot the river...



Turning our backs...



- Ugly
- Litter
- Disease
 - Rats, Weil's disease, microbes
- Drowning
- Polluted
- Low biodiversity

- A drain, not a gain

• WE'VE DONE THAT TO IT!

Urban rivers can retain many services...



People benefit from rivers globally...



Downtown Durban,
Umgeni River,
South Africa



Sand mining,
Ramganga River,
Northern India



Washing and water,
Cauvery River,
Southern India

...but also suffer from their degradation



What value, beyond waste disposal?



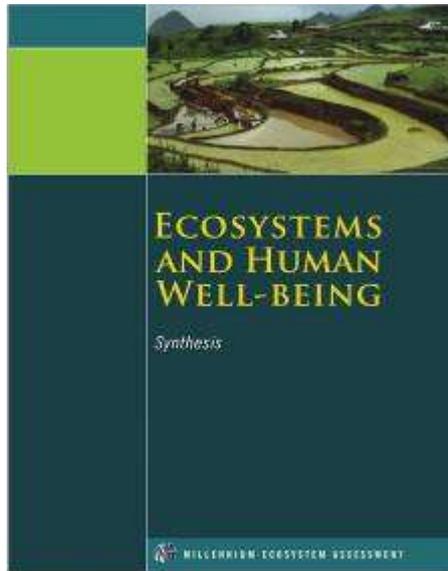
What costs, and to whom, from lost services?

- Health, aesthetic, food, amenity, etc...

Many urban rivers provide some services...

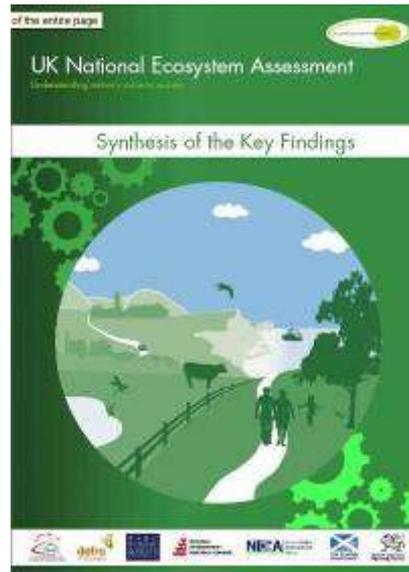


Real benefits for real people



2004/5

Multiple simultaneous ecosystem services



2nd June 2011

- Health
- Access and amenity
- Economic resources
- Healthier food
- Natural fertilisation of floodplains
- Recruitment to fisheries
- Improved air quality
- Breaking down 'heat islands'
- Climate regulation
- Habitat for wildlife
- Spiritual places
- Educational resources
- Etc...

Case studies valuing benefits and costs...

- TAMAR 2000 (catchment restoration)
 - ❑ <http://publications.environment-agency.gov.uk/pdf/SCHO0409BPVM-E-E.pdf>
- ALKBOROUGH FLATS (managed realignment)
 - ❑ <http://publications.environment-agency.gov.uk/pdf/SCHO0409BPVM-E-E.pdf>
- RIVER GLAVEN Sea Trout Restoration Project
 - ❑ <http://publications.environment-agency.gov.uk/pdf/SCHO0110BRTZ-e-e.pdf>
- Upper BRISTOL AVON Buffer Zone (just 330 metres)
 - ❑ <http://publications.environment-agency.gov.uk/pdf/SCHO0210BRXW-e-e.pdf>
- The MAYES BROOK RESTORATION in Mayesbrook Park, East London
 - ❑ <http://publications.environment-agency.gov.uk/pdf/SCHO0610BSOW-e-e.pdf>
- The proposed PANCHESHWAR DAM, India/Nepal
 - ❑ http://www.ies-uk.org.uk/resources/papers/pancheshwar_dam_report.pdf



Everard, M. (2012). 25. What have Rivers Ever Done for us? Ecosystem Services and River Systems. In: Boon, P.J. and Raven, P.J. (eds.) *River Conservation and Management*, Wiley, Chichester.

How 'real' are these benefits/costs?

- ➔ Ecosystem services are about DIFFERENT STAKEHOLDERS...
 - ➔ Do we care equally about all of them?
 - ➔ What are the ethics of favouring just the influential?
 - ➔ What are the wider costs of narrow benefit-taking?
 - ➔ How are costs and benefits distributed across society (and time)?
 - ➔ What is the legacy for everyone?

- ➔ How 'real' is an economy that doesn't recognise them?

Capturing the benefits #02



Health

- 'Green exercise' + therapy, greening the NHS estate
- Physical and mental health



Urban pollution

- Fall-out of particulates, breaking 'heat islands'



Flooding

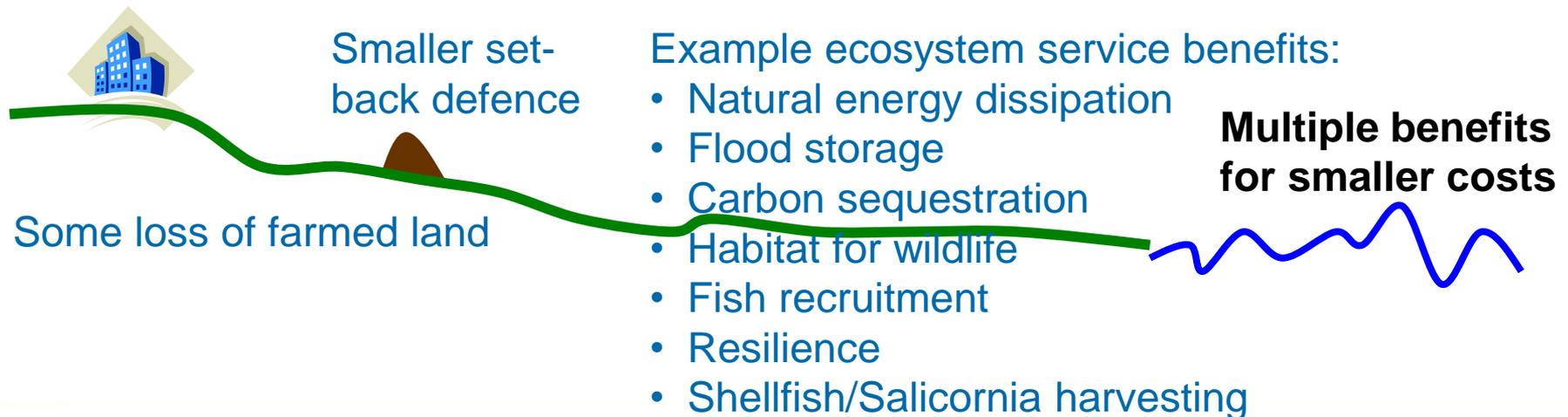
- Coastal, catchment-scale
- Local SuDS and 'green infrastructure'



Sense of place

- Real estate, tourism and community values

For example, managed realignment...



Planning for multiple benefits in MR...

Provisioning services

Fresh water



Ornamental resources (eg shells)

Cultural services

Cultural heritage



Social relations (eg fishing, grazing, CRO communities)

Regulatory services

Air quality regulation



Disease regulation

Erosion regulation

Water purification and waste treatment

Pollination

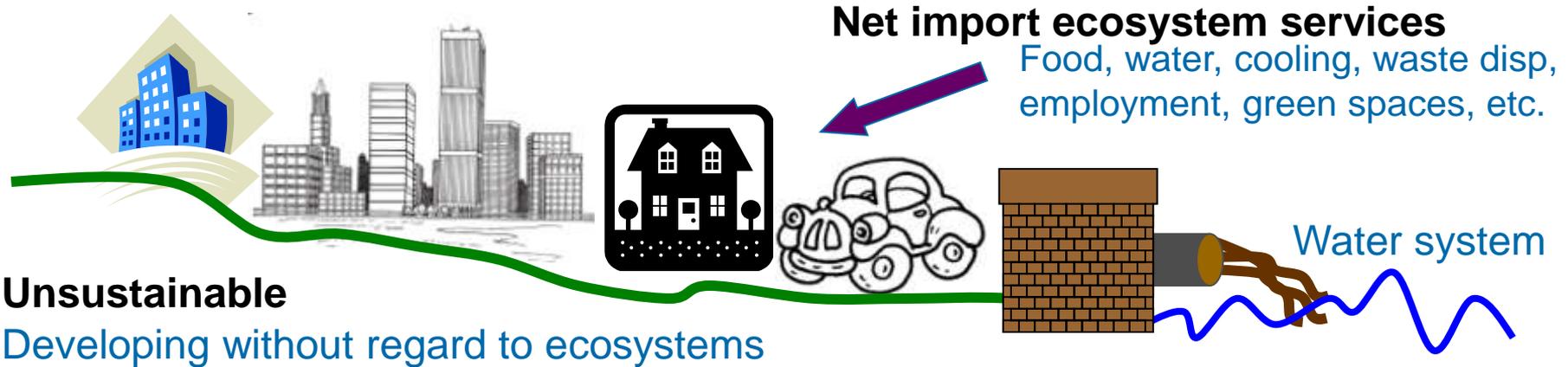
Supporting services

Soil formation



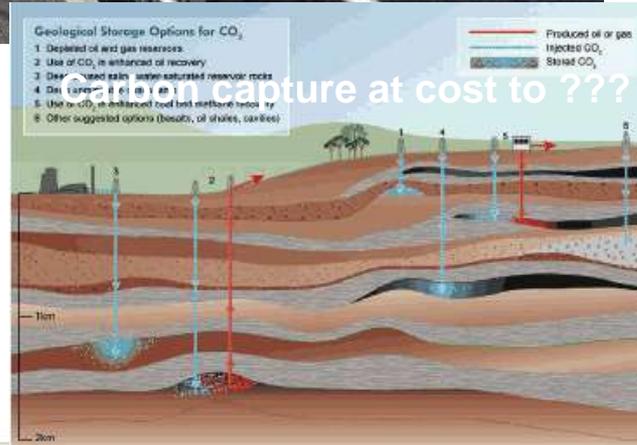
➔ Optimising public value

'Green infrastructure'...



'Systemic solutions'...

...for multiple benefits



- **Managed realignment**
- **Green Infrastructure**
- **SuDS**
- **Mixed use urban design**
- **Other systemic solutions...**

PES: 'Paying for ecosystem services'...

...capturing the value of ecosystem processes



- South Africa, Costa Rica, New Zealand, Germany, US, UK...

- OECD (2010) estimate 300+ PES or PES-like schemes in the world

- **MAJOR DEFRA PES PROGRAMME (White Paper commitment)**

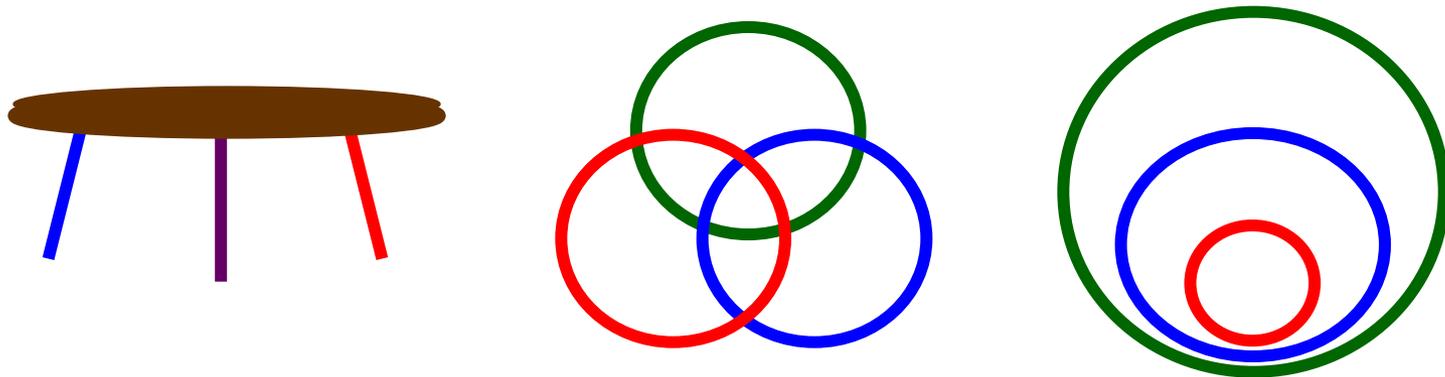
- Development of a Defra 'PES Guide' (led by URS)

'Environmental outcomes'

➔ The language of 'Nice to have'?

➔ 'Environment' still an external cost and constraint

➔ Connecting the rest of the 'triple bottom line'



Social dimension: environmental justice

➔ All services are about different stakeholder groups

➔ Who wins and who loses?

➔ Sectors, international, intergenerational

➔ From the proposed Pancheshwar Dam...

➔ ...to the neglected Chippenham stream

➔ Who is deemed to matter in decision-making?



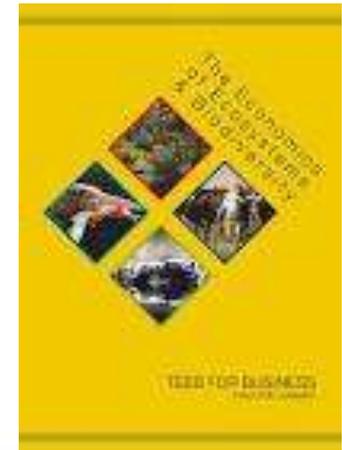
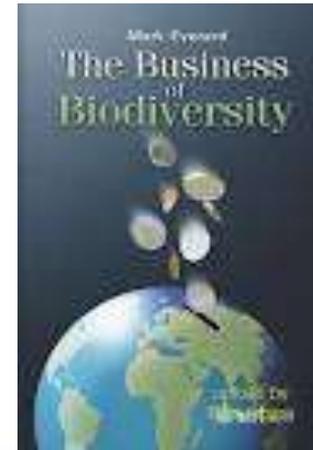
Economic dimension: markets



- ➔ Altruism perhaps the main historic driver
- ➔ Evidence of wider public benefits (and costs!)
 - ➔ Health, planning, drainage, resource security...

➔ The full armoury of economic tools:

- ➔ Self-beneficial action
- ➔ PES development of new markets
- ➔ Internalising wider costs into planning
- ➔ National accounts
- ➔ Corporate long-term stability
- ➔ Etc...



It ain't all about 'the environment'!

- ➔ Nature will be OK without us...
 - ➔ ...an unquenchable commitment to survive (if only cockroaches!)
- ➔ Ecosystem services/sustainability are ANTHROPOCENTRIC...
 - ➔ ...a decent future for all
- ➔ Breaking out of siloed 'environmental' thinking...
 - ➔ ...as narrow as other disciplinary thinking
- ➔ Championing diverse and real ecosystem beneficiaries...
 - ➔ ...for good economic reasons
 - ➔ ...as a social duty
 - ➔ ...because the natural world underpins future human wellbeing...
 - ➔ ...and also has inherent value

“Discuss!”

It ain't all about 'the environment'!

Dr Mark Everard

E: mark.everard@environment-agency.gov.uk

M: 07768-278429

