Draft Strategy to Mitigate Rural Diffuse Pollution

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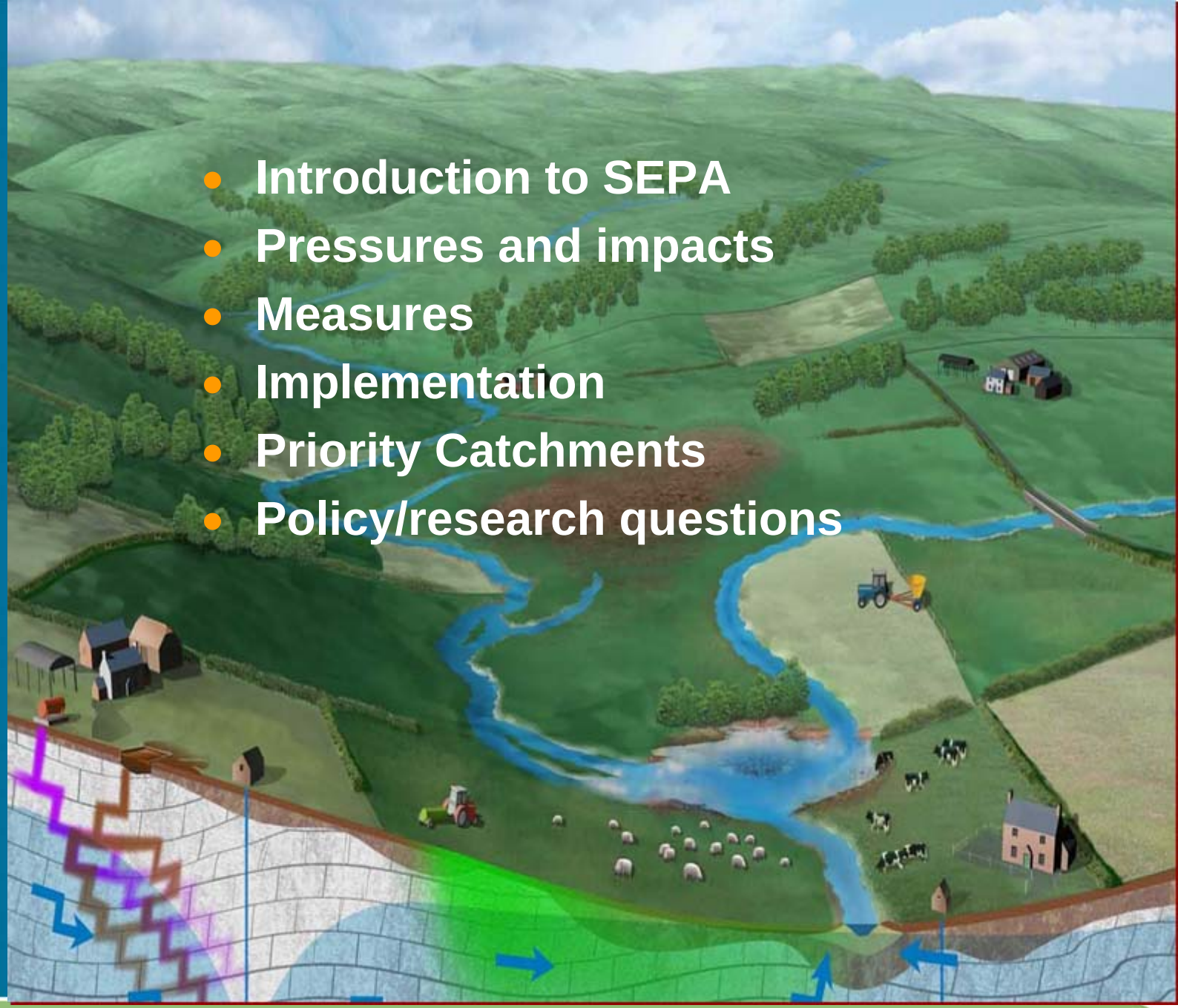


- Introduction to SEPA
- Pressures and impacts
- Measures
- Implementation
- Priority Catchments
- Policy/research questions

Who are SEPA and what do we do?

- SEPA is the public body responsible for environmental protection in Scotland. Its main aim is to:

  "…provide an efficient and integrated environmental protection system for Scotland that will both improve the environment and contribute to the Scottish Ministers' goal of sustainable development.."

- In broad terms, SEPA monitors, provides advice and guidance on and regulates:
  - activities that may pollute **water, air and land**
  - storage, transport and disposal of **waste**
  - keeping and disposal of **radioactive materials**.

Resources

- 1,286 staff in 22 local offices across Scotland;
- Total budget of approx. £73.5 million;
- Approx. 52% funded by grant-in-aid and 45% from charging schemes
- £1.1m from agricultural sector (1.8% of total income)
- Approximately 30-40 staff (2-3% of total staff) routinely deal with farmers

Environmental Science

- Monitoring
  - Land, air & water
  - 50,000 samples, 700,000 determinations
  - 418 gauging stations

Diffuse Pollution Impacts

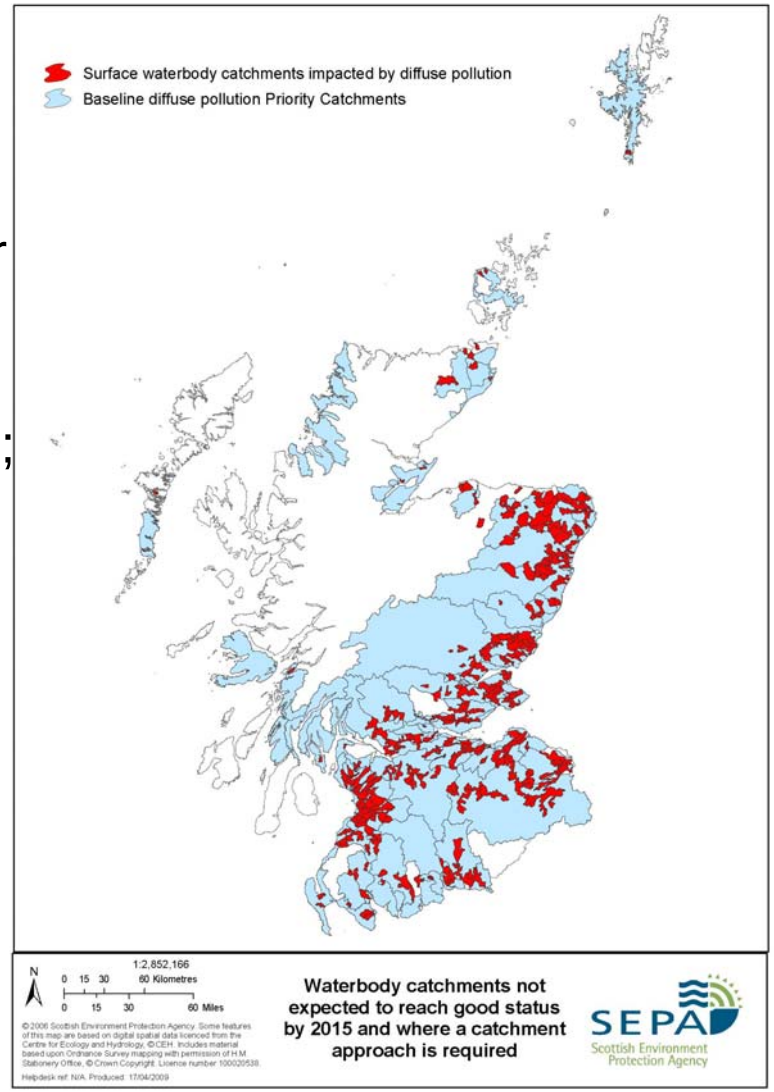
Scotland's water quality is generally good!

Diffuse pollution is the largest pollution pressure causing water bodies to fail WFD objectives.

Impacts also on protected areas; Bathing Waters, Shellfish Waters, Drinking Water Protected Areas, Nitrate Vulnerable Zones and Natura 2000 sites

Main pollutants; Nutrients N and P, faecal bacteria, (eroded soil, pesticides)

Main Sources; Agriculture, Urban run-off, Forestry



Socio-economic Impacts

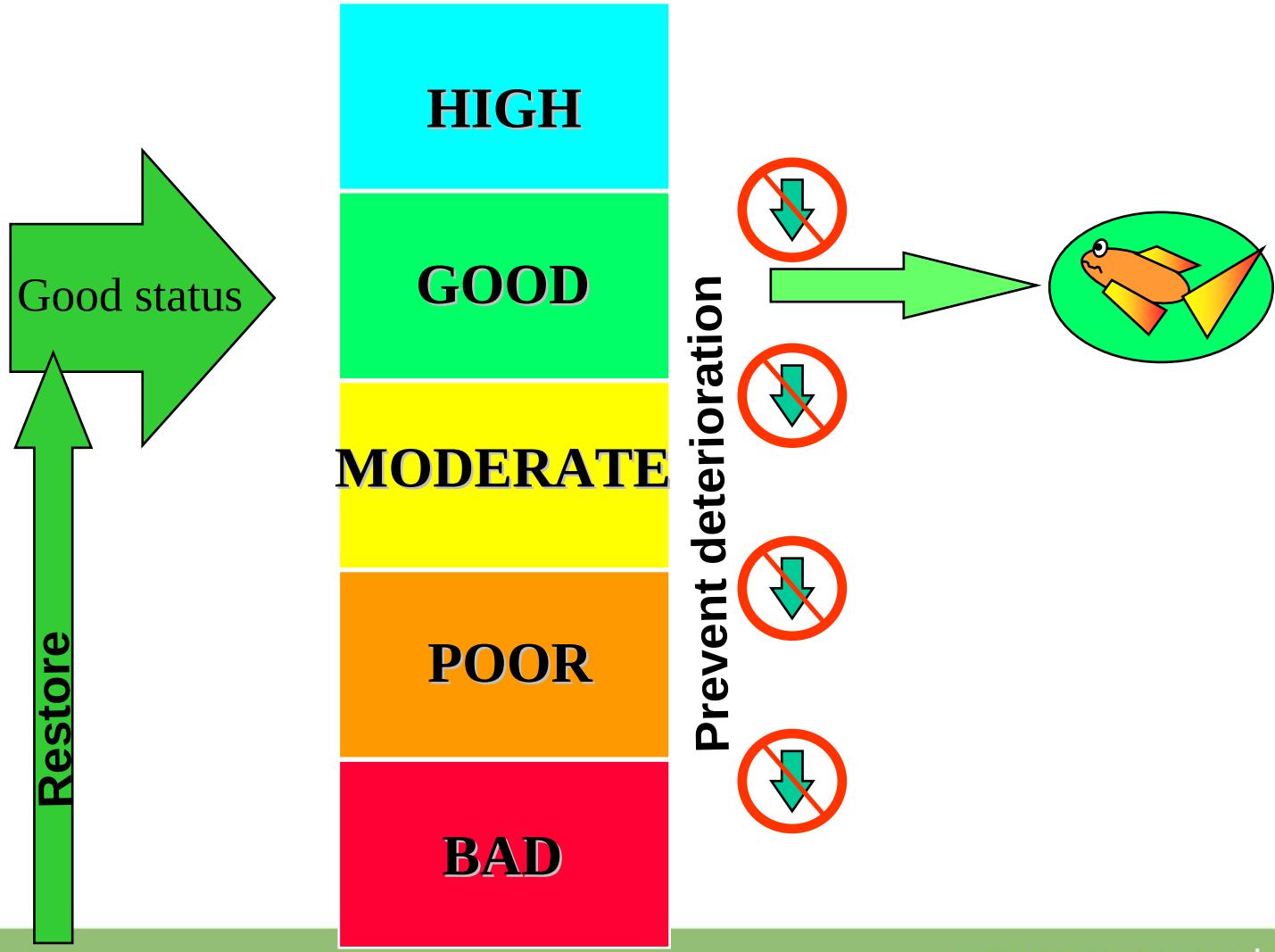
- Recreational use and tourism eg Loch Leven algal bloom is estimated to have cost £1million to local economy
- Drinking water supply e.g. estimated £15 million for additional treatment stage at Ugie, Glenfarg £7 million….
- Freshwater Fisheries worth £113 million to economy
- Shellfish production ~ £15 million

And drivers

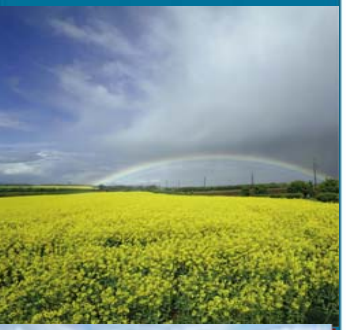
- Agricultural production significantly increased since 1950s
- New opportunities and challenges - local, high quality food, climate change, food security
- Land Use Strategy
- Changes to CAP and market forces - fertiliser prices, for example

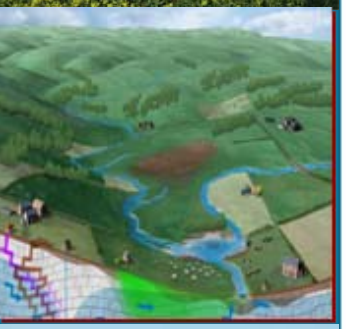
Measures to control diffuse pollution

Water Framework Directive Aims; prevent deterioration and enhance status, promote sustainable water use, reduce pollution, contribute to the mitigation of floods and droughts.
<u>Requires</u> the control of diffuse pollution



Measures to mitigate diffuse pollution





The Water Environment (Controlled Activities) (Scotland) Regulations 2005, The Water Environment (Diffuse Pollution) (Scotland) Regulations 2008

The Action programme for Nitrate Vulnerable Zones (Scotland) Regulations 2008

Scotland's Environmental And Rural Services

Scotland Rural Development Programme

Cross-compliance

Guidance materials eg PEPFAA and FWG

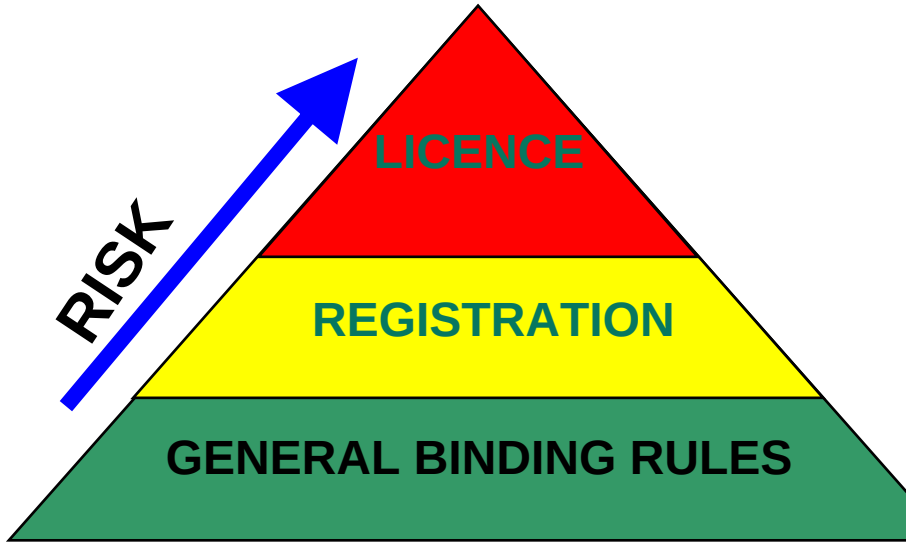
Diffuse Pollution Management Advisory Group

River Basin Management Planning

Other eg Restoration fund, Climate Change Bill, Flooding Bill, Soil Frameworks

The Water Environment (Controlled Activities) (Scotland) Regulations 2005

- Point Source
- Abstractions
- Impoundments
- Engineering
- Diffuse Pollution



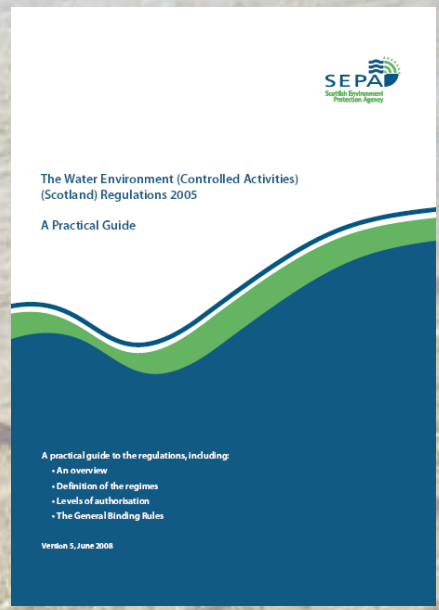
Diffuse Pollution Regulations - General Binding Rules, effective April 08

Based primarily on accepted standards of good practice -establish statutory baseline, level playing field

Good example of ‘Better Regulation’ ie risk based.

Activities

- Storage and application of “fertiliser”
- Keeping of livestock
- Cultivation of land
- Discharge of water
- Construction of roads
- Handling and use of pesticides
- Dipping of sheep



Guidance - CAR A Practical Guide

http://www.sepa.org.uk/water/water_regulation.aspx

GBR 18 Storage and Application of Fertiliser (includes manures and slurries)

- Controls over storage and application next to watercourses, drinking water supplies and in conditions likely to cause pollution

- Apply fertilisers within the needs of the crop and in such a way that the risk of pollution is minimised

GBR 19 The keeping of livestock

- Controls over erosion and poaching next to watercourses and drinking waters

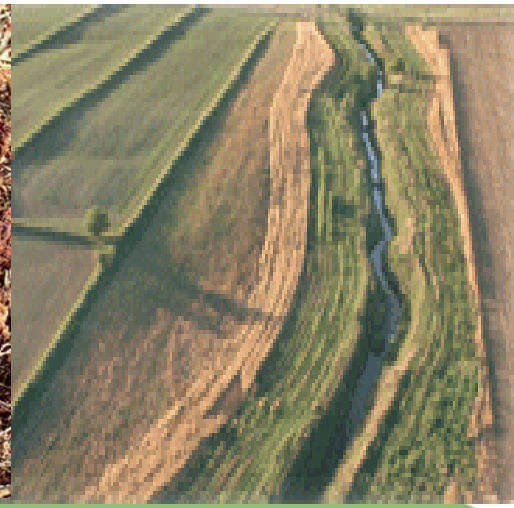
- Controls over positioning of livestock feeders

GBR20 Cultivation of land

- Controls over cultivation of land in proximity to watercourses, water and water supplies.

- Cultivate land to minimise the risk of pollution to the water environment



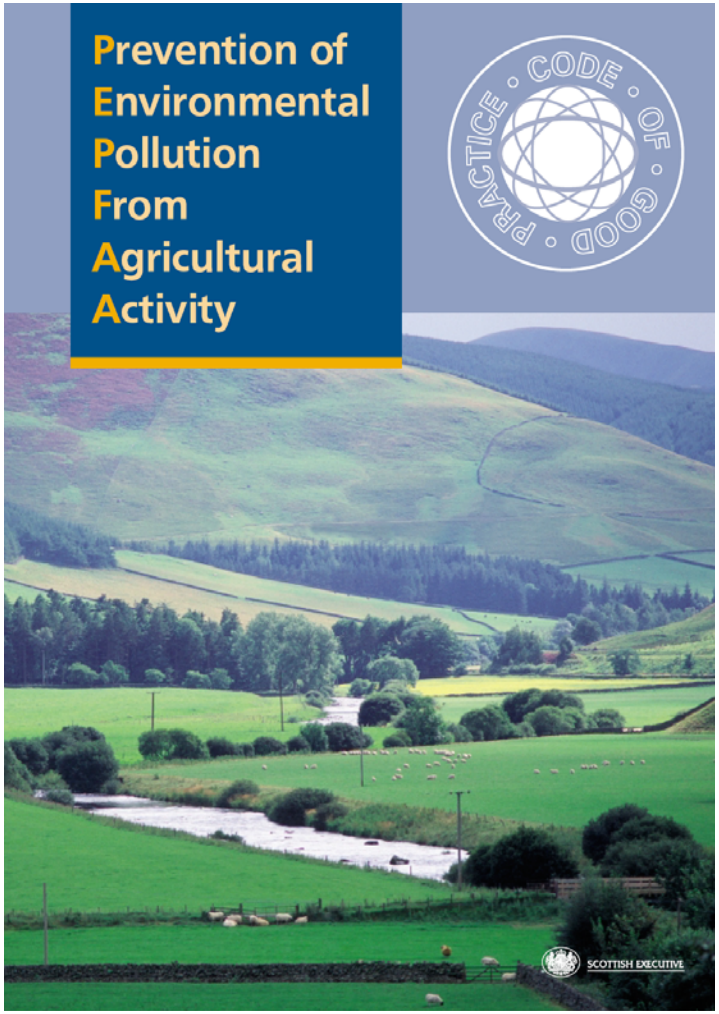


Scotland Rural Development Programme

- WFD is a priority
- New water quality measures including Constructed Farm Wetlands, biobeds, arable reversion to grass etc
- Rural Priorities for targeting
- Collaborative applications encouraged

- £125 million spent to date (£500 million available) on rural priorities

Guidance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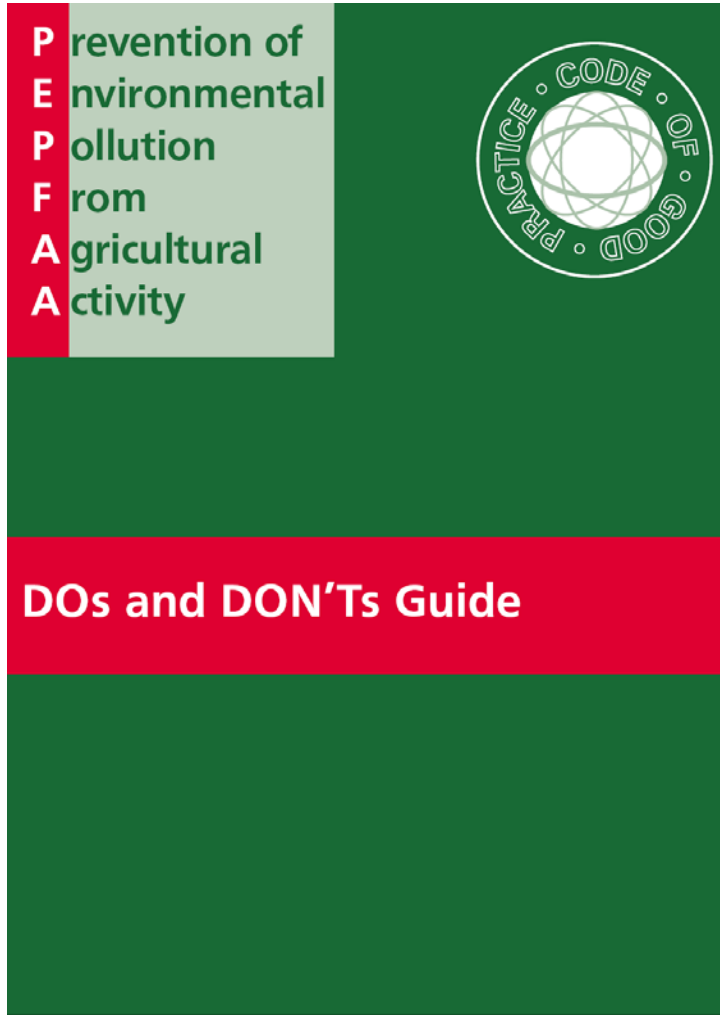
CODE OF GOOD PRACTICE
SCOTTISH EXECUTIVE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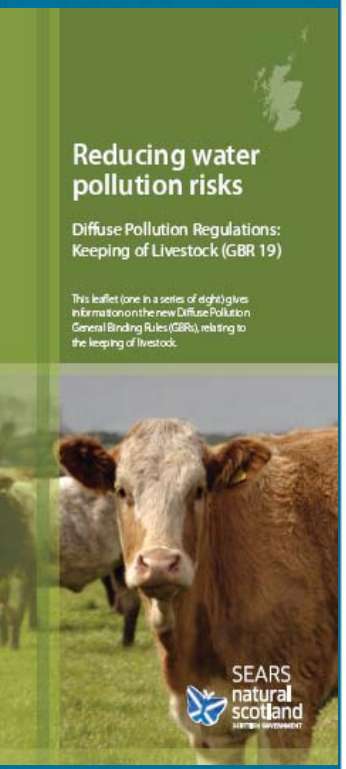
DOs and DON'Ts Guide

Scotland's Environmental and Rural Services



Aims

- Co-ordinating inspections and visits, removing duplication;
- Providing flexible access to service through any door;
- Sharing and using information more effectively,

Implementation

- Diffuse Pollution Regulations– launched RHS 2008
- Checklists and guidance training delivered
- 2000 rural land use inspections per year; 1000 SGRPID farm visits as part of existing inspection regime, 1000 FC and SNH

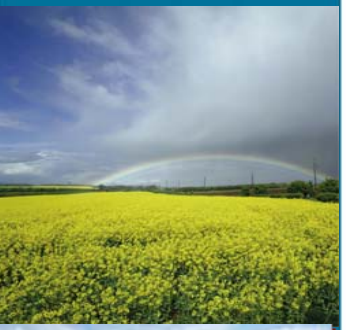
- http://www.sears.scotland.gov.uk/PublicInfo.aspx

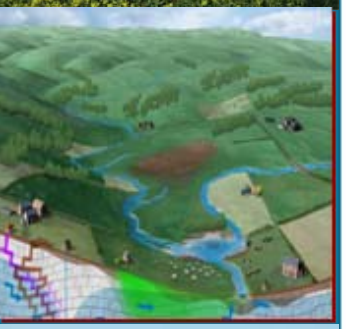
Diffuse Pollution Management Advisory Group

- Help create a robust governance, decision-making and coordination framework for the effective delivery of rural diffuse pollution RBMP actions in Scotland.
- Ensure input from a cross section of rural, environmental and biodiversity interests.
- Members include NFUS, SRPBA, FCS, CONFOR, SNH, S Govt, ASFB…….
- Advise on and support the preparation, delivery and implementation of a Diffuse Pollution Implementation Plan for Scotland

Strategy

Strategy purpose

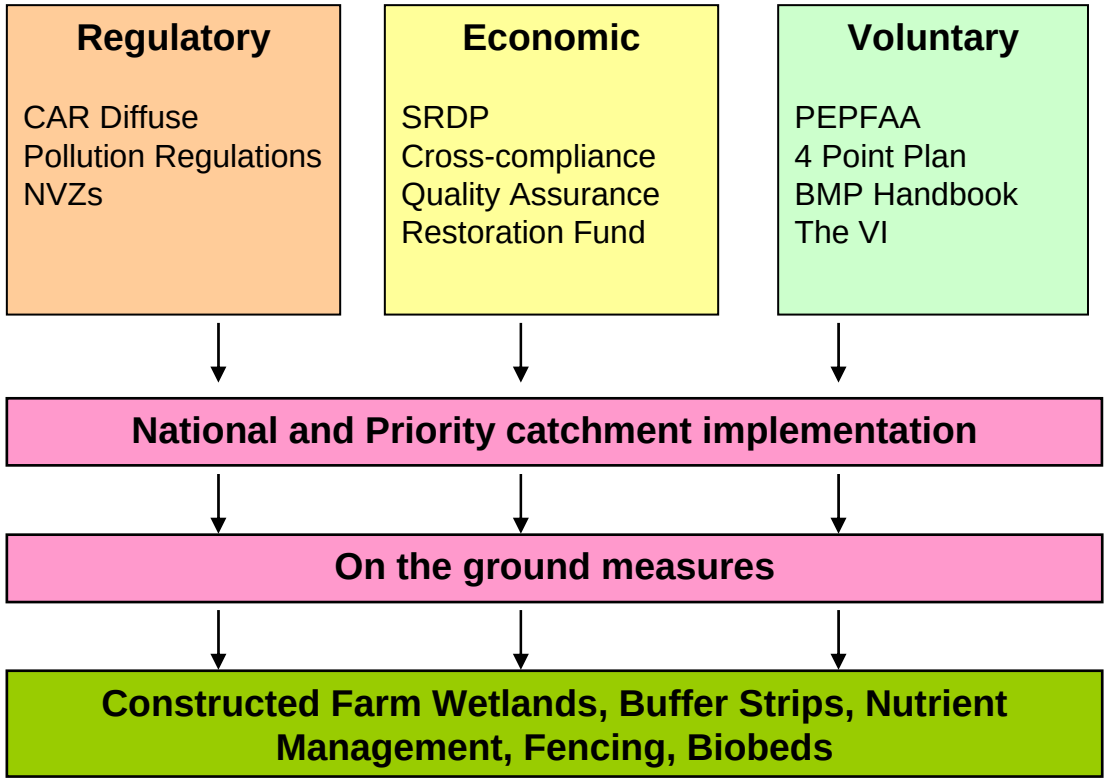




- to describe a national strategic approach to mitigating diffuse pollution, following the principles of Better Regulation.
- to build on and add detail to the approach described in the draft RBMPs and form the basis of the Diffuse Pollution Implementation Plan for Scotland.
- Gather contributions from other organisations to the plan

Diffuse Pollution Mitigation

Measures need to be implemented so that a clear and consistent message can be delivered to land managers and multiple benefits can be realised.



Examples – Loch Leven, Lunan Lochs, Brighouse Bay, Bathing Water Action Plan…….

Mitigation Strategy – 2 tiers

National Campaign - A national campaign of raising awareness, guidance, training and SEARS inspections in relation to the impacts of diffuse pollution, the Diffuse Pollution Regulations and other measures.

Priority Catchment Approach - a catchment management type approach where a sequential approach of awareness raising, evidence gathering, farm visits to identify hotspots, target measures and deliver one to one advice will be implemented via SEARS

Priority Catchment Selection and supporting science to demonstrate impact, pollutant source and pathways and to target resource to ensure the cost-effective delivery of measures.

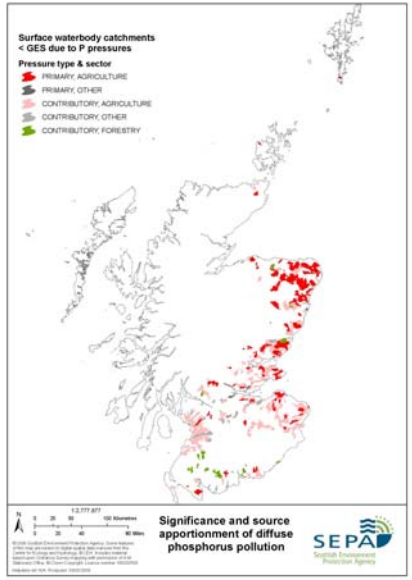
NATIONAL CAMPAIGN

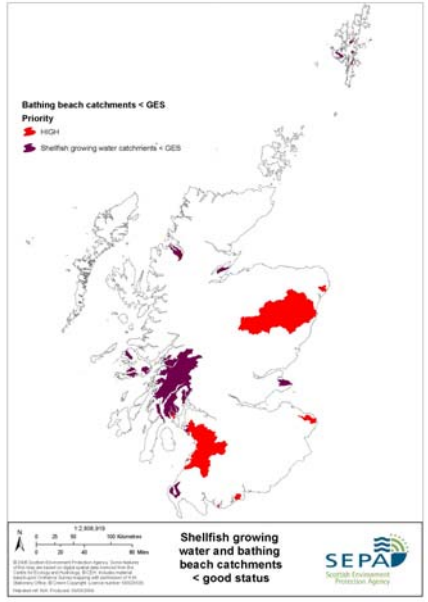
Implementation - main work areas to support the 'National' campaign

Awareness raising	National awareness raising via press, www, leaflets. Including development and delivery of a programme of pollutant/measure/catchment specific awareness raising campaigns, workshops, press articles/adverts.
Guidance and Training	Guidance materials and training development and delivery for SEPA, SEARS partners and external advisors.
SEARS	Delivery of national compliance assessment for the DP Regulations for agriculture and forestry.
Measures	Review and development of SRDP, GAEC and other measures
Stakeholders	DPMAG to develop a Diffuse Pollution Implementation Plan for Scotland.
Science	Evidence base; risk, pressures and impact per pollutant and sector and assessment of effectiveness of measures.

Targeted Awareness Raising

- Impacts vary spatially – topography, climate, soil, land use.
- Work outside priority catchments eg requirement for no deterioration and catchments expected to reach good status
- Role of industry and other organisations – DPMAG, AAGs, SEARS partners - essential
- Monitor effectiveness

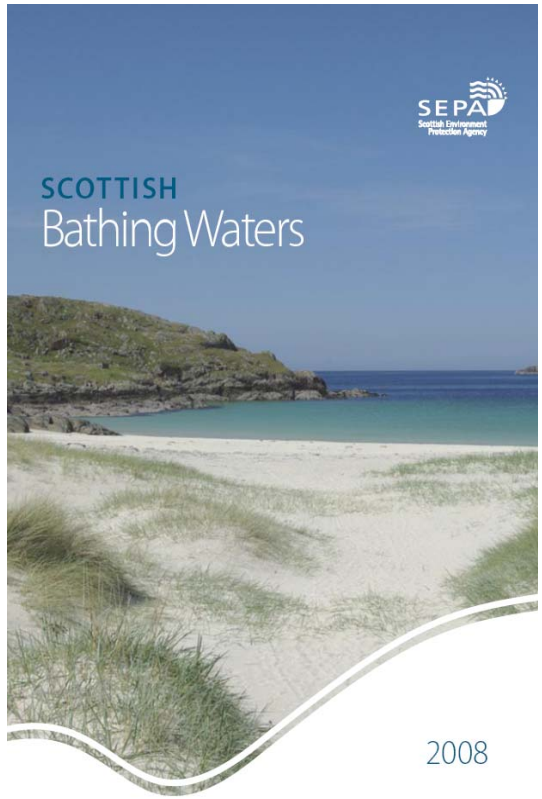




CATCHMENT APPROACH

Targeted Campaigns - SEPA Bathing Water Action Plan for Agriculture

- Established in 2002 after publication of Scottish Executive Bathing Water Strategy;
- Focus on 25 river catchments draining to 23 failing bathing waters;
- Partnership approach with NFU Scotland;
- Compliance and good practice advice



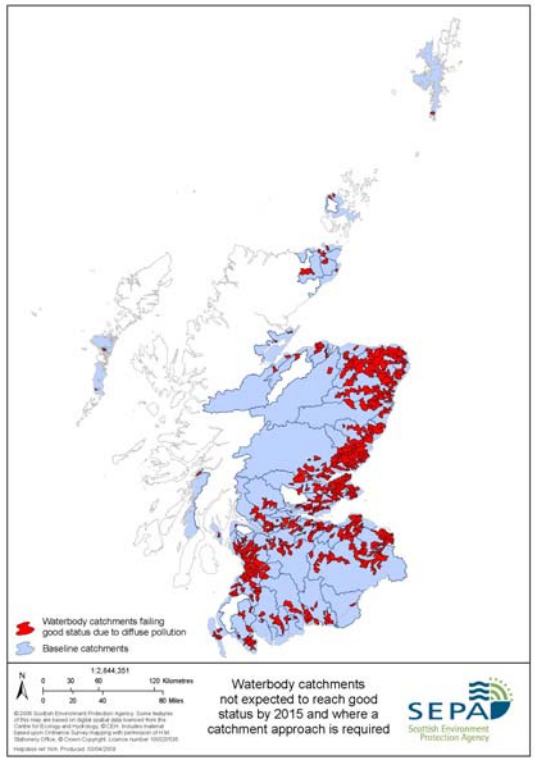
Overall findings 2002-2005

- 2171 livestock farms audited in total;
- 1479 (**68%**) 'non-compliant' at 1st visit;
- 1119 (**52%**) causing pollution;
- Middens, high-level slatted buildings, byres, dirty yards, dairy drainage were a particular problem initially;

- 1877 re-visits undertaken;
- **86%** had initiated or completed remedial work after 2nd visit;
- Approximately 1200 stores/tanks installed for middens, soiled yards and dairy wash water;
- 1676 farms (**77%**) compliant by April 2005;
- 230 farms (**11%**) had taken no action to achieve compliance, revisits continue
- 3 notices served, remedial works completed

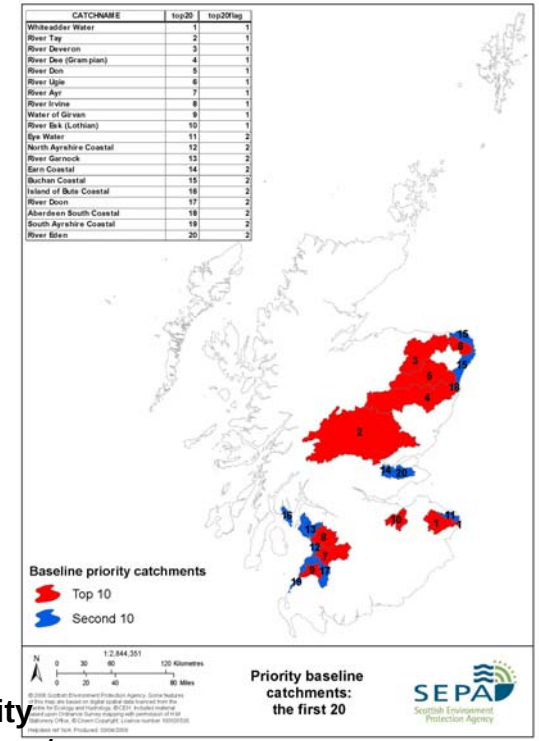
- Bathing water compliance improved

Implementation – Catchment Approach



Identify catchment and DP/other issue(s)

Inform communities



EIAPs/ Measures Delivery Plans

Priority catchment selection process

Local teams

AAGs

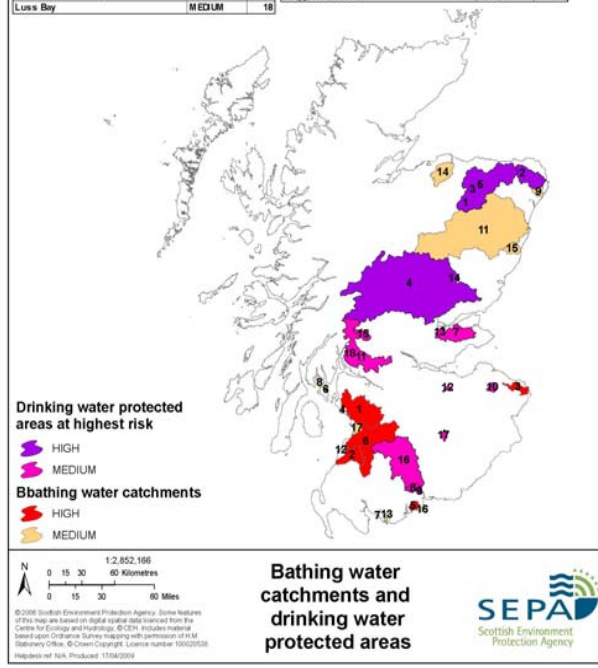
DPMAG

Priority catchment selection

- Confidence in impact
- Protected Areas given highest priority
- Prioritisation within protected areas - risk and status assessments;
  - (i) Drinking Water Protected Areas, Shellfish Waters and Bathing Waters;
  - (ii) Natura 2000, SSSI, NVZ, NSA
- Scoring and sensitivity analyses
- Multiple benefit
- Subjective assessment of the ease of delivering improvements
- Ensure geographical spread
- Consultation

Bathing water catchment	Priority	Ref
Irvine	HIGH	1
Girvan	HIGH	2
Eyemouth	HIGH	3
Saltcoats and Ardrossan	HIGH	4
Sandyhills - Stewarty Coastal	HIGH	5
Ayr (South Beach)	HIGH	6
Carrick - Galloway Coastal	MEDIUM	7
Ettrick Bay	MEDIUM	8
Cruden Bay	MEDIUM	9
Brighouse Bay	MEDIUM	10
Aberdeen	MEDIUM	11
Maidens - South Ayreshire Coastal	MEDIUM	12
Dhoon Bay / Goat Well Bay	MEDIUM	13
Lossiemouth (East)	MEDIUM	14
Stonehaven	MEDIUM	15
Southerness - Stewartry Coastal	MEDIUM	16
Prestwick - North Ayreshire Coastal	MEDIUM	17
Luss Bay	MEDIUM	18

DWPA	Priority	Ref
River Deveron - Black Water to Huntly	HIGH	1
River Ugie - North/South confl to tidal limit	HIGH	2
River Deveron - Huntly to Turriff	HIGH	3
River Tay	HIGH	4
River Deveron - Turriff to tidal limit	HIGH	5
Loch Ascog	MEDIUM	6
River Eden - GWB	MEDIUM	7
Nith Trib - GWB	MEDIUM	8
Nith Trib - GWB	MEDIUM	9
Whiteadder Reservoir	MEDIUM	10
Loch Lomond	MEDIUM	11
Glencorse Burn	MEDIUM	12
River Farg	MEDIUM	13
Loch of Lintrathen	MEDIUM	14
Loch Katrine	MEDIUM	15
River Nith - GWB	MEDIUM	16
Megget Reservoir	MEDIUM	17



Provisional Priority and Candidate Priority Catchments

River Ugie

River Doon

River Ayr

River Dee

Buchan Coastal

River South Esk

River Tay

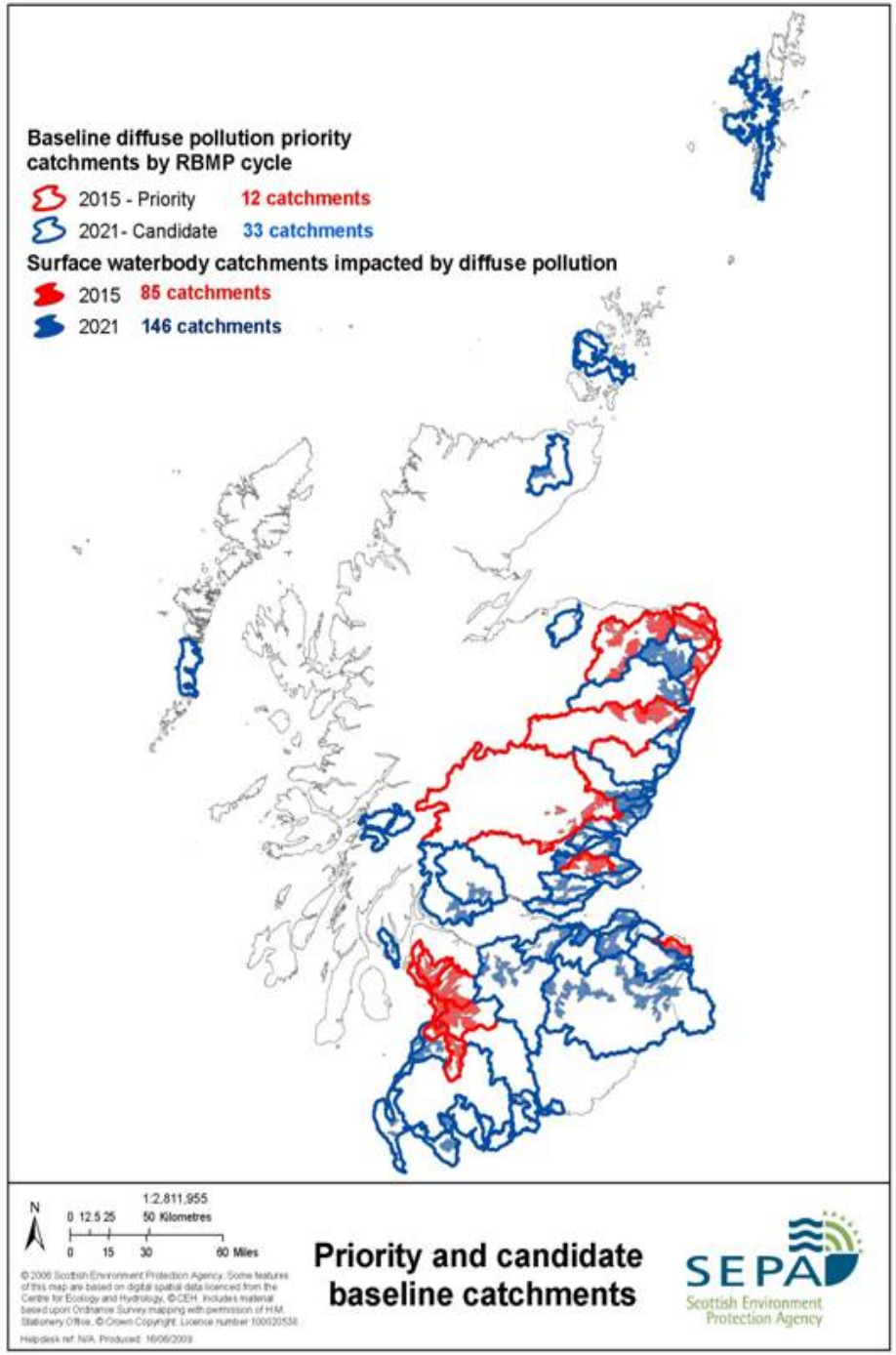
Eye Water

North Ayrshire Coastal

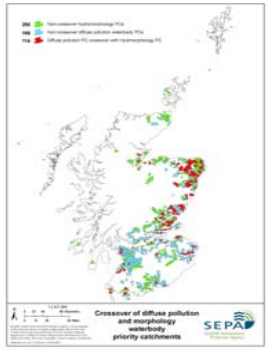
River Deveron

River Garnock

River Irvine



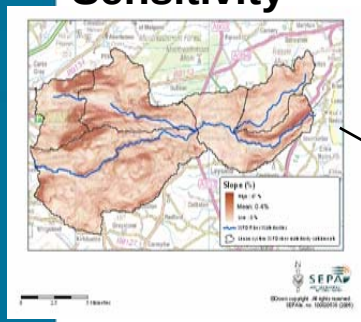
Implementation – Catchment Approach



Identify catchment and DP/other Issue(s) Inform communities

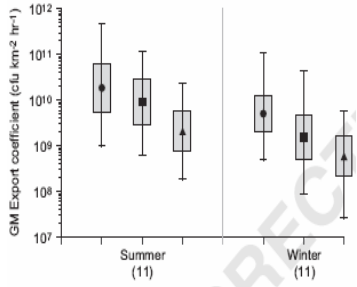
Catchment Characterisation Report

Catchment Sensitivity

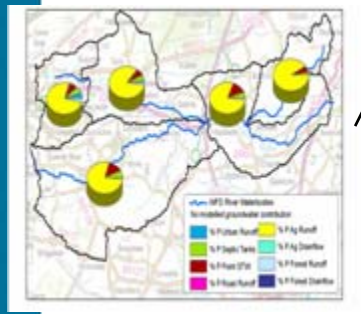


Other Pressures; abstraction morphology, flood risk

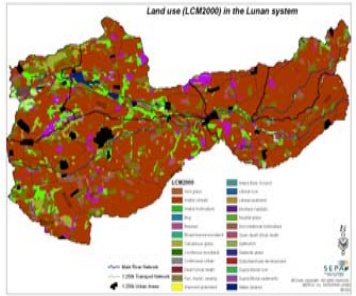
Historical data



Source Apportionment

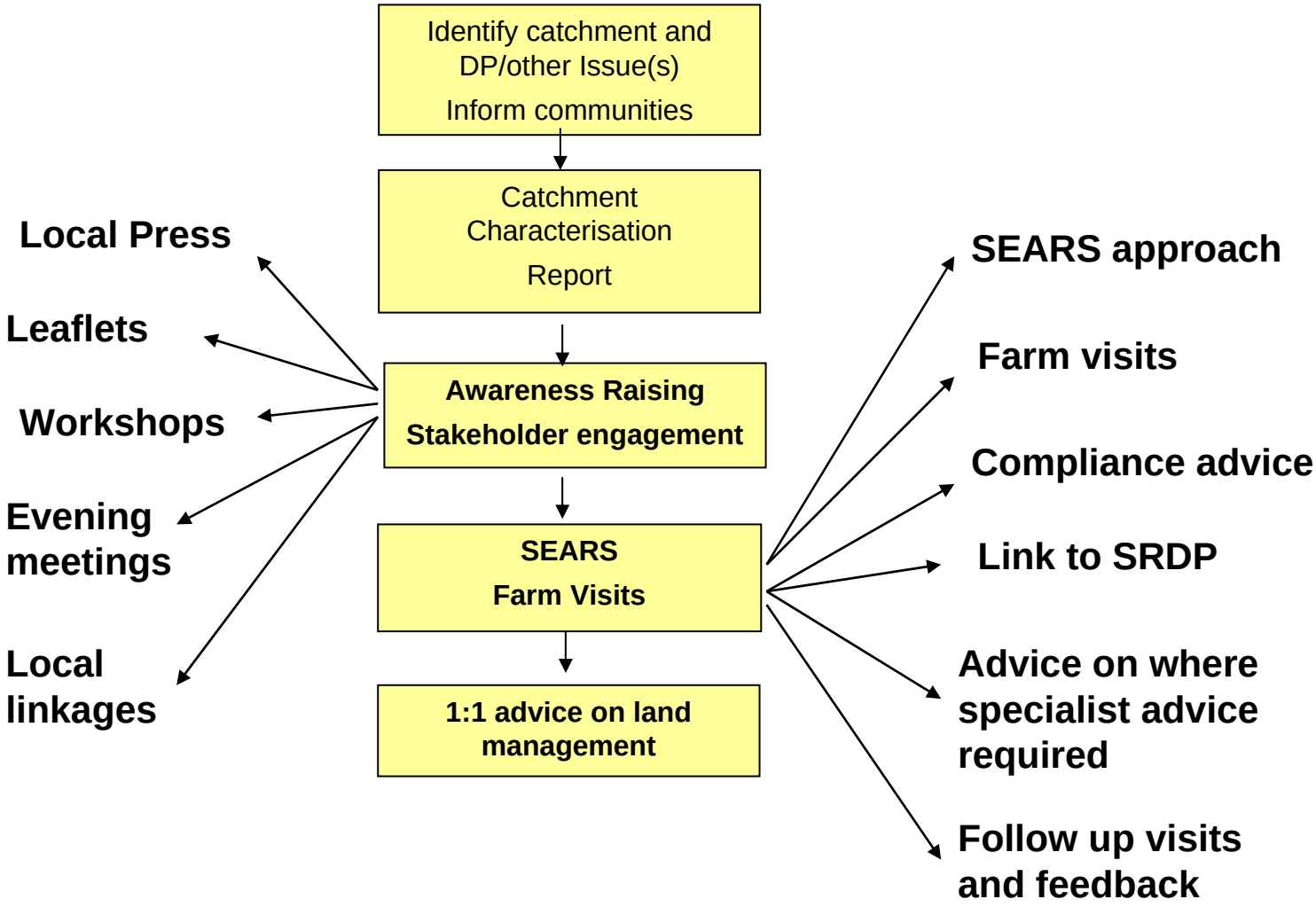


Land Use Impacts



Catchment Surveys

Implementation – Catchment Approach



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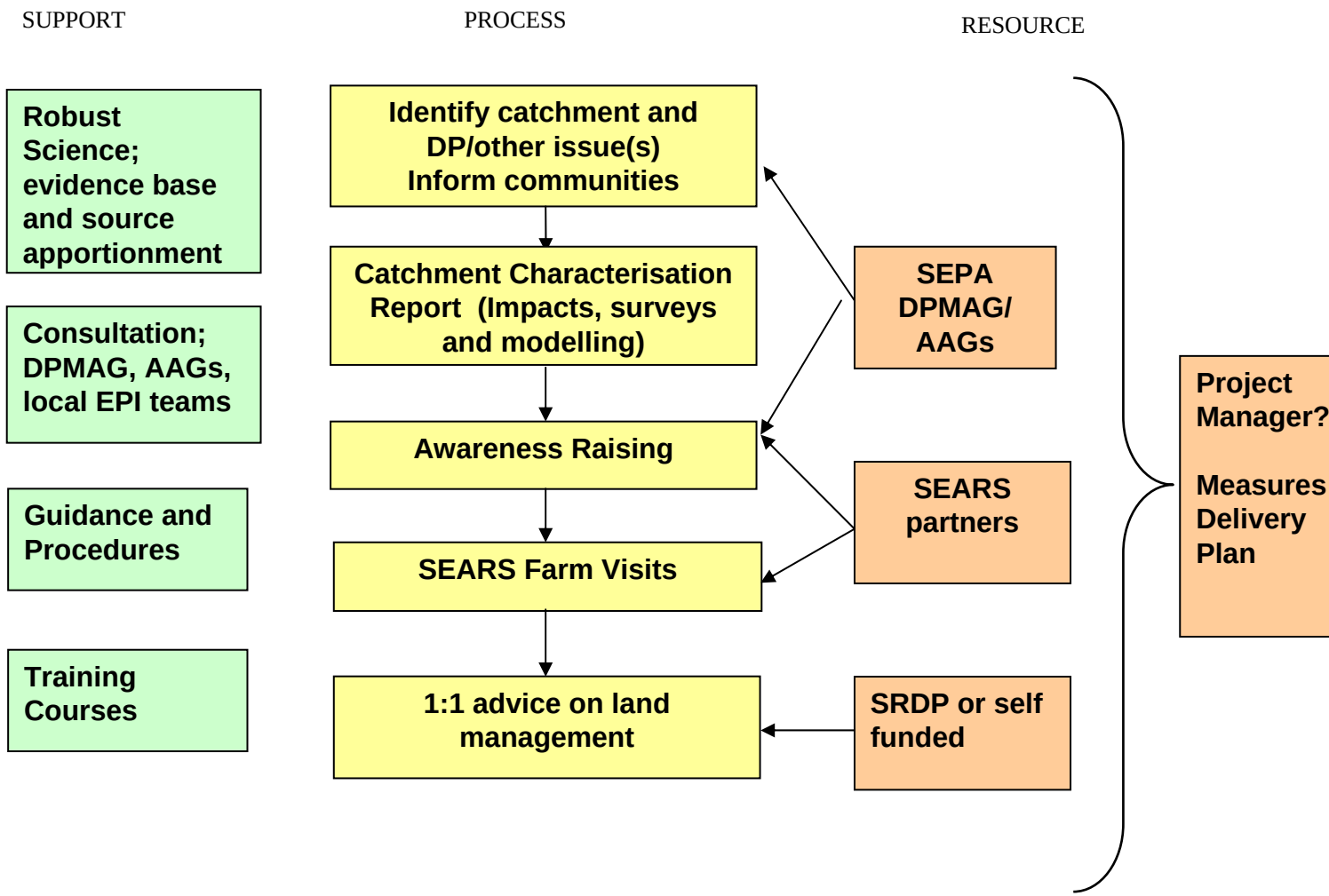


Multiple benefits

… cumulatively at the catchment/ landscape scale…

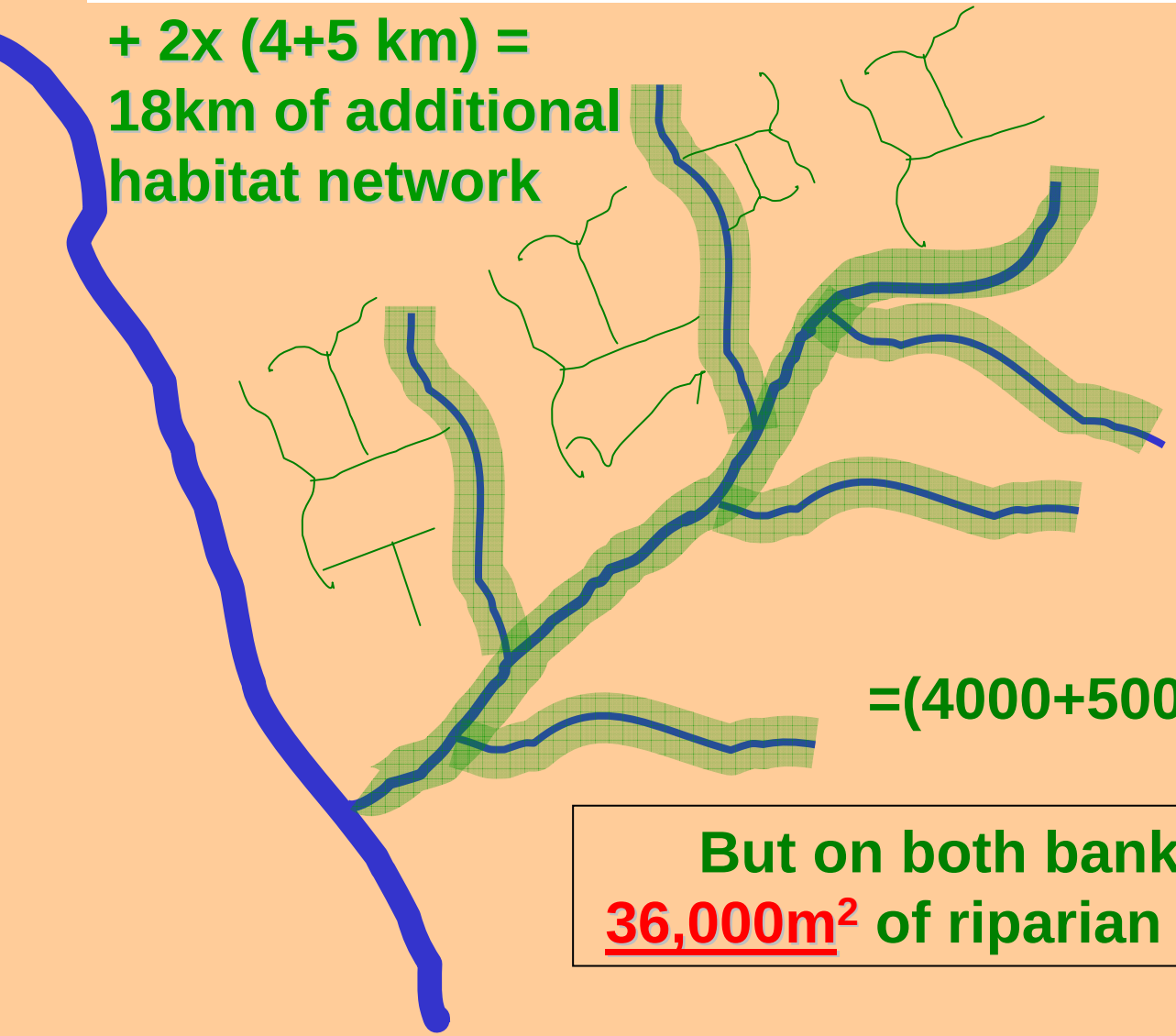
Water quality improvement and farm business benefit – resource use.

Climate change, flooding and soil quality. Add-on benefits for Scotland plc

Biodiversity, habitat connectivity, landscape

Addition of 2m wide uncultivated strips = riparian habitat enhancement?

+ 2x (4+5 km) = 18km of additional habitat network



Sub-catchment – 4km main stem + 5x 1km tributaries

Add 2m uncultivated strip to all banks

=(4000+5000)x2 = 18,000m^2

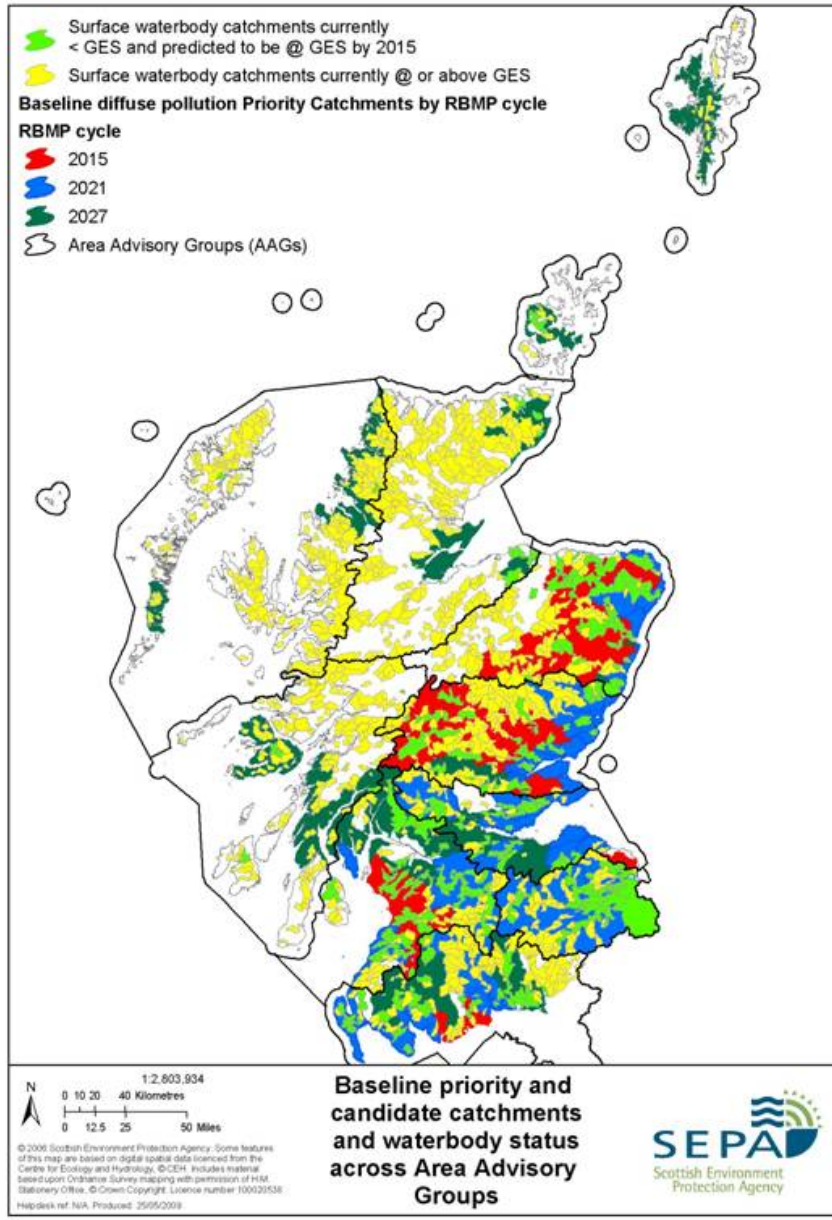
But on both banks, so 18,000x2 = 36,000m^2 of riparian habitat "enhanced"

Effectiveness of Mitigation Strategy

- Currently at good status – risk assessment and monitoring of high risk factors

- Currently less than good status but predicted to be good by 2015 due to national campaign – monitor factors to understand change or lack of

- Priority catchments 2015, candidate catchments 2021 – monitor factors to understand change or lack of



Key Questions

- Cost-effectiveness of measures at the catchment scale.
- What is the lifespan of measures and how should they be managed?
- What is the effectiveness of the Diffuse Pollution Regulations and how far will they take us to good status?
- What additional regulatory controls may be required in the future?
- What is the effectiveness of measures in the SRDP both individually and when implemented at a catchment scale?
- Are there any measures that should be included in future reviews of measures?
- To what extent is lack of implementation of regulations, rather than the effect of the regulations themselves, to blame? E.g. NVZs?
- Tools for targeting measures; source apportionment, flow pathways.

Thank You

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