

Legislation and Policy [in the UK]

Stephen Malcolm

Cefas

with thanks to the Environment Agency for
most of the material presented

- ISECA, 30 June 2014

UK Policy

“to have clean, safe, healthy, productive and biologically diverse seas and oceans” and
“to have made a difference within a generation” (2002)

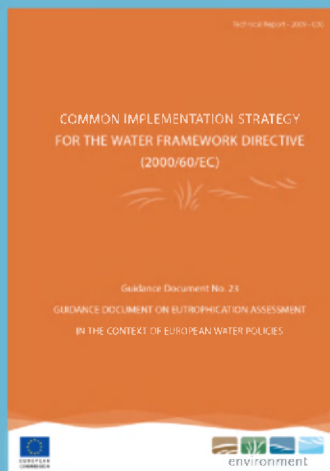
Marine Policy Statement

- enshrines the principles of sustainability
- promotes ‘sustainable use’

What is eutrophication?

- An ecological health issue - nutrient enrichment leading to adverse effects on the ecology, quality and uses of waters
- Definition given in Urban Waste Water Treatment (UWWT) and Nitrates Directives
 - Nutrient enrichment (phosphorus and/or nitrogen), causing
 - accelerated plant/algal growth, producing
 - an ***undesirable disturbance*** to the balance of organisms and water quality
- Adopted in EU WFD Eutrophication Guidance as a suitable basis for assessing eutrophication (all policies)
- So what is an ***undesirable disturbance***?

Undesirable Disturbance



EU Eutrophication Guidance - *A direct or indirect anthropogenic impact on an aquatic ecosystem that appreciably degrades the health or threatens the sustainable human use of that ecosystem*



ECJ (UWWTD)- ‘significant harmful effects’

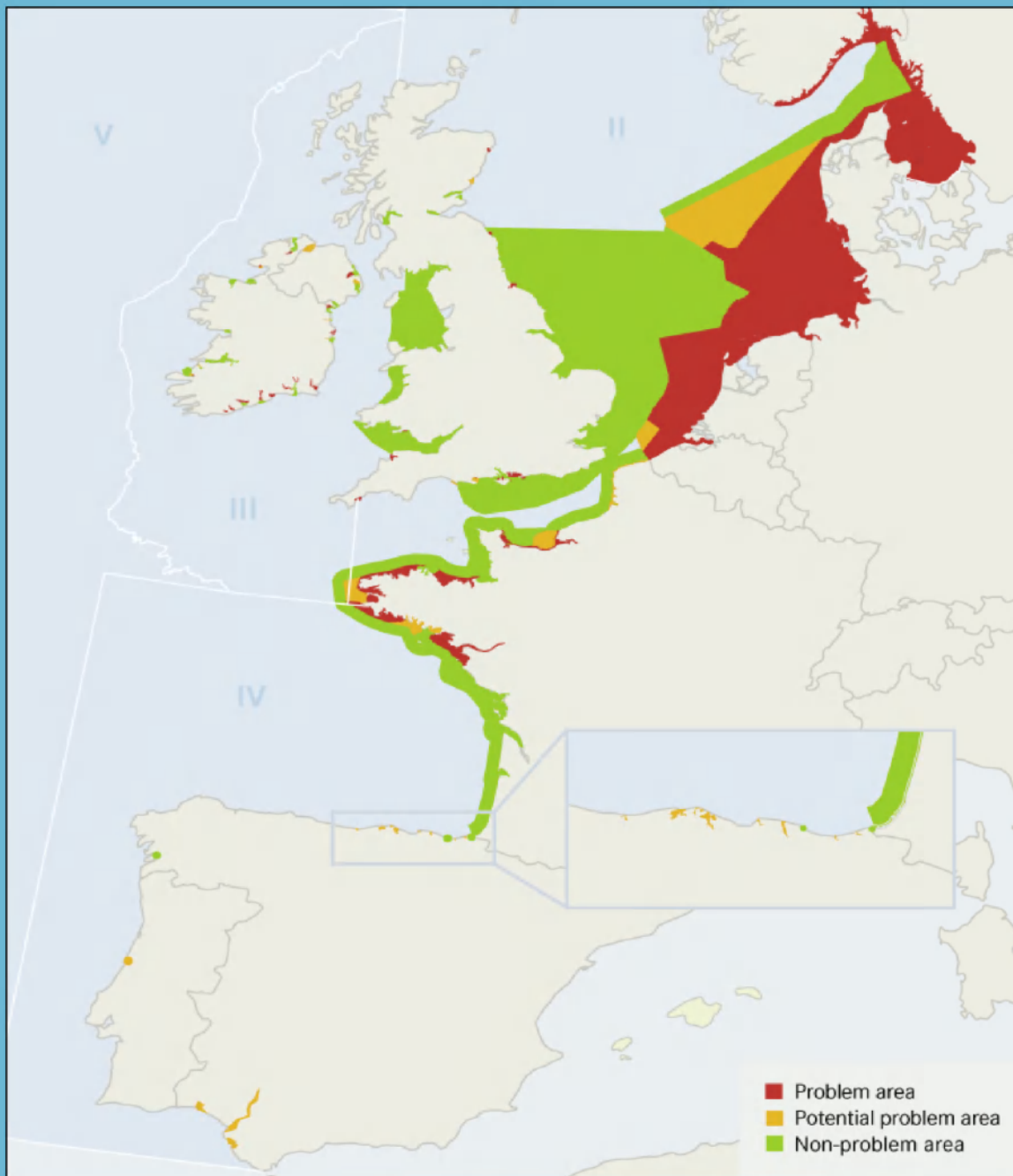
- ‘species changes involving loss of ecosystem biodiversity
- nuisances due to proliferation of opportunistic macroalgae
- severe outbreaks of toxic and harmful phytoplankton’
- equivalent water quality effects

OSPAR

OSPAR

- OSPAR Strategy to Combat Eutrophication
- Joint Assessment and Monitoring Programme
- Common Procedure
- [Programmes of Measures]





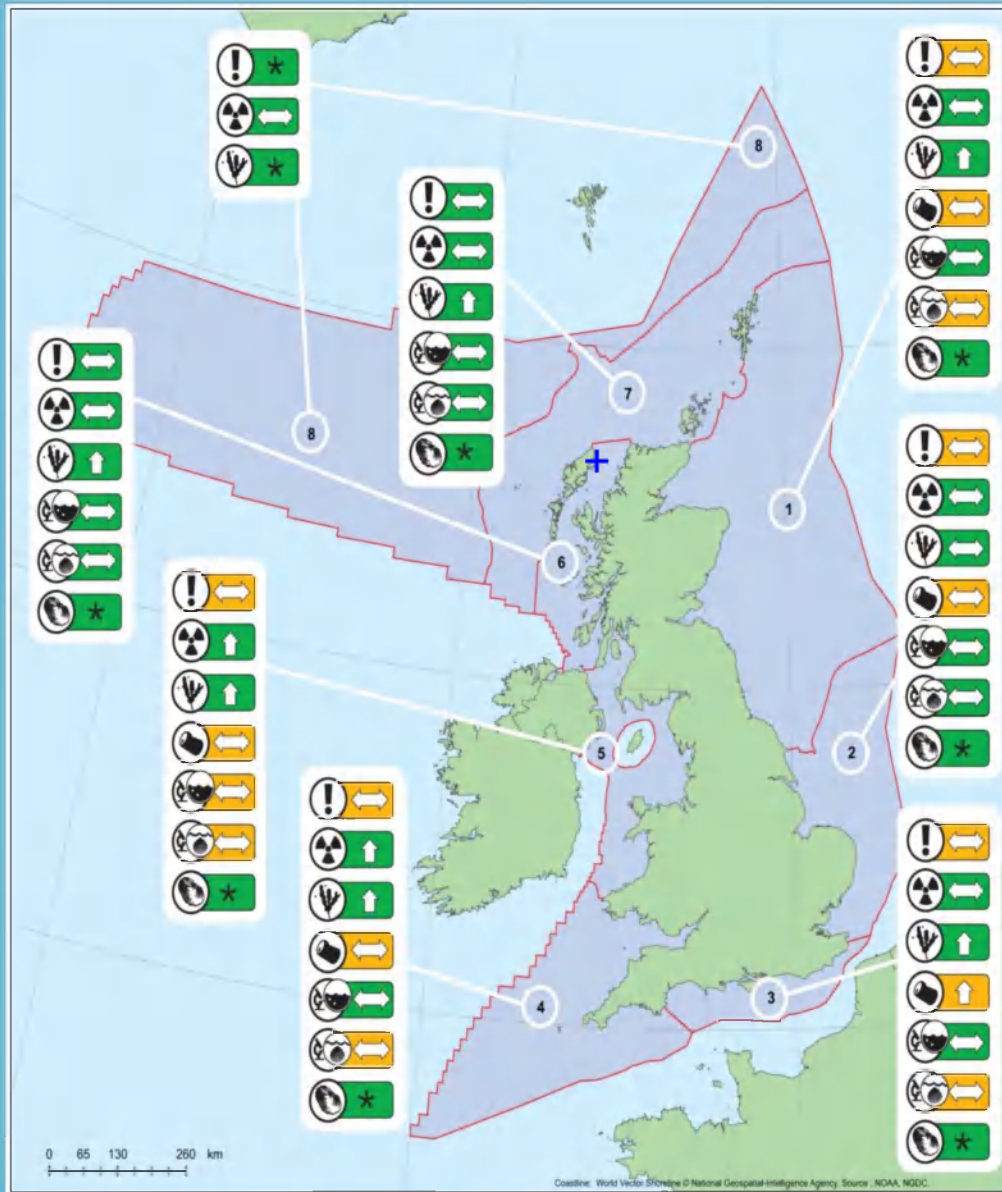
Eutrophication in the Directives

A vertical rectangular image showing a sunset or sunrise over a body of water. The sky is filled with clouds, and the sun is low on the horizon, creating a bright glow. The water reflects the light, and there are some rocks visible in the foreground.

Marine Strategy
Framework
Directive
2008/56/EC

- Human induced eutrophication is minimised, especially the adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algal blooms and oxygen deficiency in bottom waters.
- Interpretation supported by Commission Decision (2010) on indicators.
- Requirement to carry out assessment, monitoring and put in place measures to achieve GES by 2020.

Initial Assessment



	Hazardous substances		Few or no problems
	Radioactivity		Some problems
	Eutrophication		Many problems
	Beach litter		No overall trend discernable
	Microbiological quality of bathing waters		Improvement
	Microbiological quality of shellfish growing waters		Deterioration
	Algal toxins		No trend information available

Clean and Safe Seas

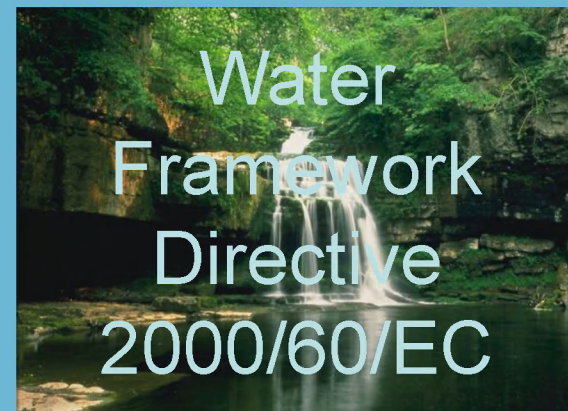
Eutrophication in the Directives



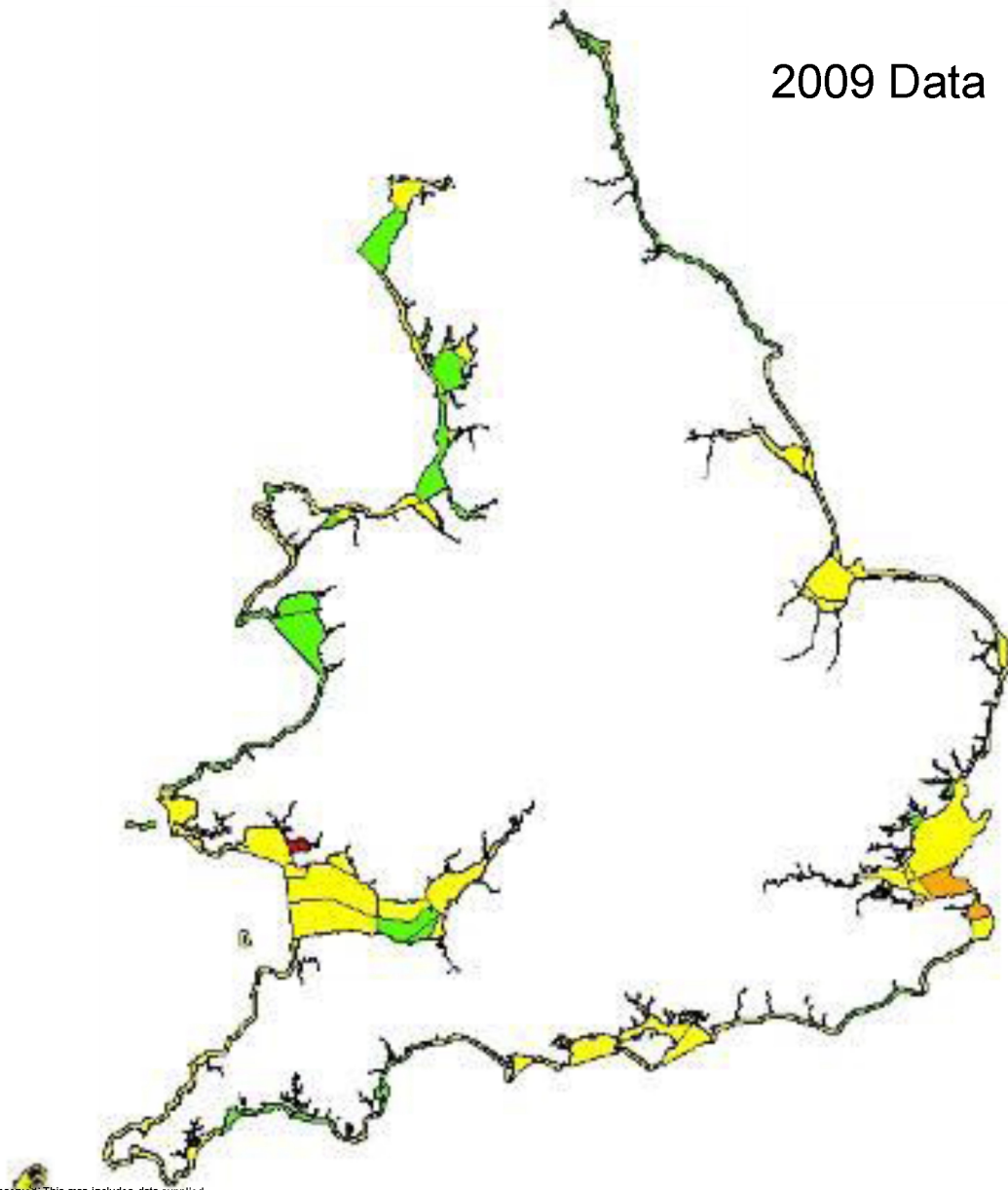
- Designation and control measures for waters found to be eutrophic or which in the near future may become so
 - Trigger point is presence or imminent likelihood of an *undesirable disturbance* due to nutrients

Eutrophication in the Directives

- Normative definitions for ecological status (A5)
- **Good status** (plants/algae, nutrients)
 - No eutrophication problem!
 - Changes to algal/plant biomass and composition should not indicate any *undesirable disturbance* to organisms and water quality
 - Nutrient concentrations do not exceed levels established to ensure ecosystem functioning and achievement of the biological values
- **Moderate status** (plants, algae and nutrients)
 - Moderate changes to algal/plant abundance evident. These changes “may be such as to produce a *significant undesirable disturbance*”.
 - Moderate changes to composition of algal/plant taxa, with communities significantly more distorted.
 - Moderate increase in frequency and intensity of algal blooms.
 - Nutrients consistent with values for biology
- **Poor/bad status** – infer undesirable disturbances common/severe
- As for UWWT/Nitrate Directive, the WFD trigger is present or imminent “undesirable disturbance” to the biology or water quality

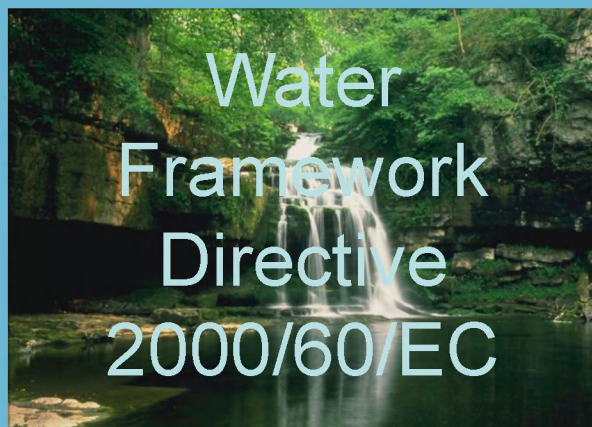


2009 Data



© Environment Agency copyright and / or database right 2009. All rights reserved. This map includes data supplied under licence from: © Crown Copyright and database right 2009. All rights reserved. Ordnance Survey licence number 100026380. Some river features of this map are based on digital spatial data licensed from the Centre for Ecology and Hydrology, © CEH, Licence number 198 version 2.

Harmonisation across.....



Harmonised way forward?

- EU Eutrophication Activity 2004-2009



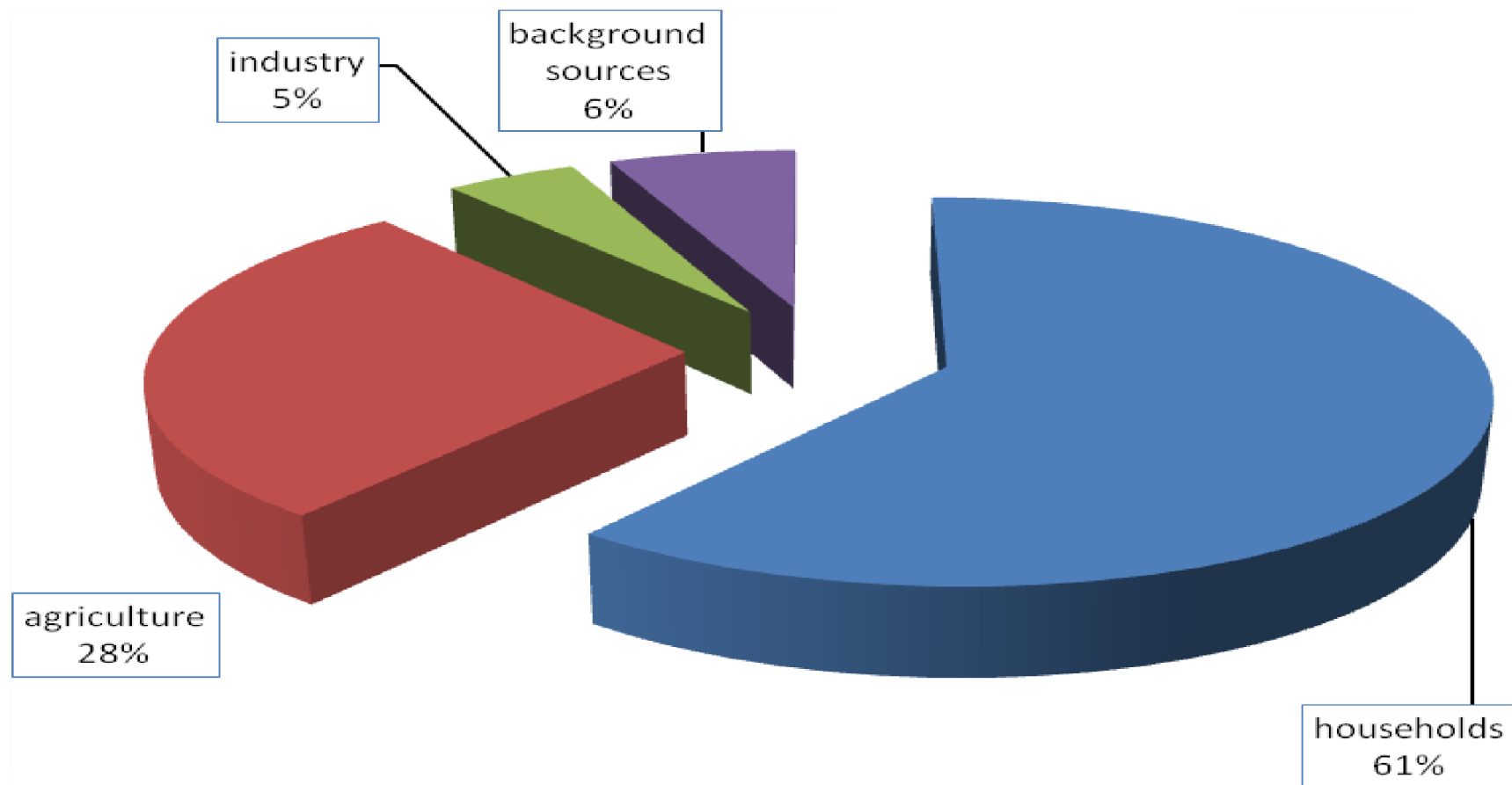
EU Eutrophication Guidance 2009

- Harmonised approach to assessing eutrophication across European water policies, rooted in concepts and methods of WFD
- Starting point - recognition that the links between nutrients and ecological response are complex; eutrophication a difficult issue!
- Same ecological trigger points across policies – particularly WFD and designations under UWWT/Nitrate Directives
 - Classify based on “one-out-all-out”, so failing nutrients means <Good, but account for uncertainty in deciding actions/designations
 - End of negotiations, nutrient standards not seen as EQSs
- Current challenge to build on this and ensure that MSFD/OSPAR links effectively

Eutrophication control - brief history

- Eutrophication identified as a major water quality issue in many parts of the world since 1980s
- Need to tackle it to move towards goals of Defra and Welsh Government environmental policy/strategies, our corporate strategy
- And to meet objectives of WFD, UWWT and Nitrates Directives, Habitats Directive, Marine Strategy Framework Directive, OSPAR
- Since early 1990s assessing waters, targeting eutrophication control measures - UWWT/Nitrate Directives and conservation policies
- OSPAR strategy to combat eutrophication 1998
- Our Eutrophication Strategy (2000)

Total Phosphorus E, W & Scotland



P.J. White and J.P. Hammond, 2006 - Updating the Estimate of the Source of Phosphorus in UK Waters. Report to Defra.

Progress on P control

- 2000-2010, £0.9bn capital on P reduction at STWs in E&W
- Agricultural P losses - little attention until CoGAPs 1997, some local initiatives, then Catchment Sensitive Farming 2006
- Improvements to river quality
- New WFD P standards, December 2009
- PR09 further STW P controls committed (UWWTD with some WFD and conservation drivers), so total £1.3bn capex
- Extension of Catchment Sensitive Farming in England
- Restrictions on P in laundry detergents from 2015
- Preliminary modelling for WFD pCEA indicated major challenges in significantly improving compliance with the P standards

Nitrogen apportionment (national)

England

- Sewage & industrial effluents 30%
- Agriculture, woodland & natural areas 59%
- Urban runoff 6%
- Particulates 4%

Wales

- Sewage & industrial effluents 17%
- Agriculture, woodland & natural areas 72%
- Urban runoff 3%
- Particulates 6%

Lord, E.I., Hughes, G.O., Wilson, L., Gooday, R., Anthony, S.A., Curtis, C. and Simpson, G., 2008.
Updating Previous Estimates of the Load and Source Apportionment of Nitrogen to Waters in the UK.
Final Report for Defra Project WQ0111, 104pp.

Progress on N control

- 17 estuaries designated on grounds of eutrophication under Nitrates/UWWT Directives with N control measures in place
- 62% of England and about 3% of Wales designated as NVZ under Nitrates Directive
- N standards to support ecological status in saline waters introduced for WFD in Dec 2009
- Some evidence of improving trends in nitrate in surface and ground waters in England
- NVZ reviews, periodic

We have the tools...
...and are using them