



PR09, River Basin District Planning and Land Use – lessons into practice

Water industry planning and wetland biodiversity

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Drivers for wetland conservation

Planning in the water sector

Sustainable outcomes

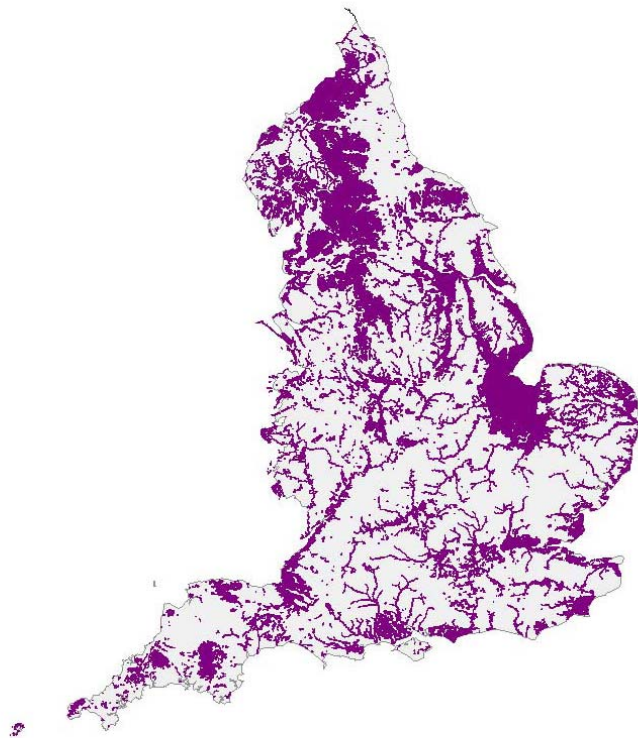
Delivery through PR09 and Water Framework Directive

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Pressures on wetlands and freshwater habitats:

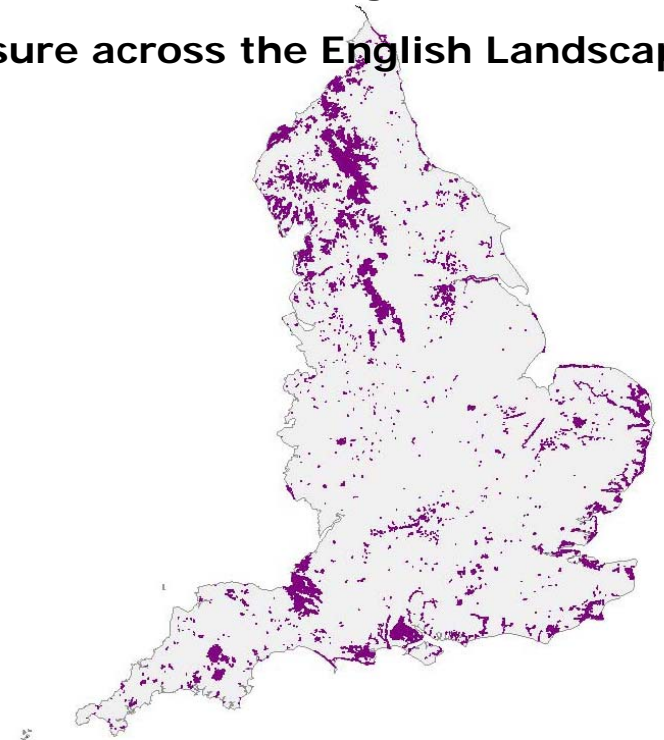
Wetland once covered vast areas of England




Vision Message - Wetlands once covered vast areas of England
Theoretical extent (before modern changes to the wetland landscape through drainage regimes)

 Landscapes of large and expansive wetlands

Wetlands are now small, fragmented and under pressure across the English Landscape



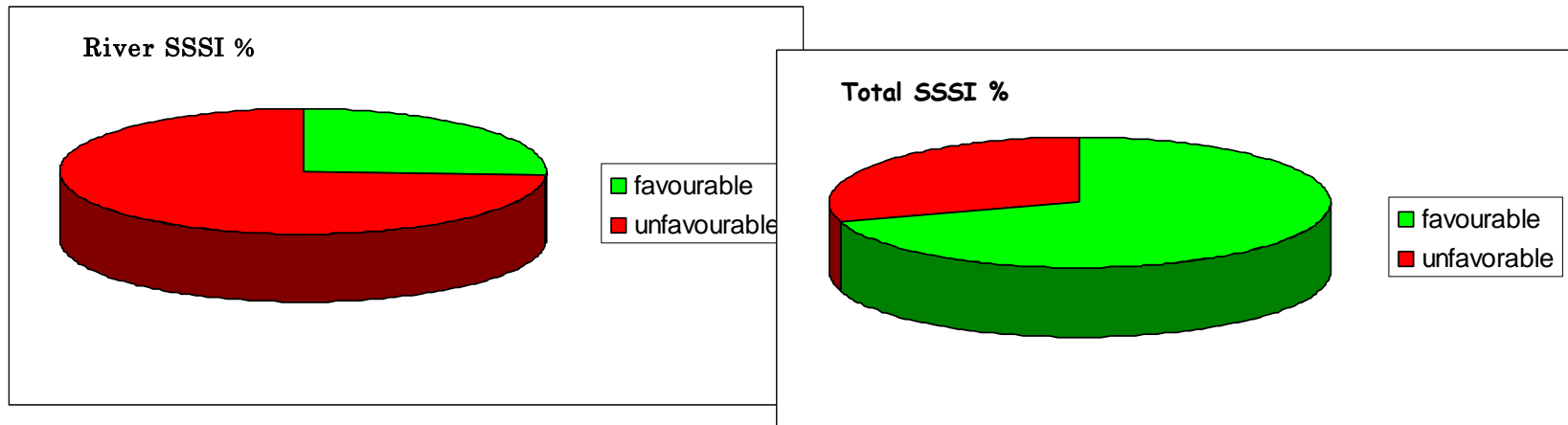
Vision message - Wetlands are now small and exist in a fragmented state across the English landscape

 Wetland sites and landscapes

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Condition of freshwater habitats in England:



Conservation status of habitats (UK):

Ranunculus rivers: 91 -97% unfavourable
Eutrophic lakes: 44-59% unfavourable
Fens: 47-95% unfavourable

Progress against biodiversity indicators:

Wetland breeding birds 11% decrease
BAP wetland habitats 50% declining, though +ve trend
% river length with high P greater in 2004 than in 1995



Causes of unfavourable condition



Causes of unfavourable condition in SSSIs in England (2006)	Rivers	Lakes	Fen marsh and swamp
Point source pollution	36.3%	17.7%	7.8%
Diffuse pollution	51.6%	12.8%	7.6%
Abstraction	21.3%	8.6%	8.8%

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Drivers for action on freshwater and wetland biodiversity

- Designated sites:

- SSSI PSA target
- Natura 2000 condition

- Biodiversity Action Plan priority habitats and species

- Achievement of Good Ecological Status under WFD



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Biodiversity targets - 1

Requirements to achieve SSSI and Natura 2000 site condition - JNCC Common Standards:

SSSI habitat	CSM nutrient targets	Other non-biological attributes
Rivers	<20 – 100µg/l SRP	SS, GQA, ammonia, Hydrological regime: ±10% flow
Lakes	10-35 µg/l TP	pH, ANC, sedimentation, Hydrological targets
Estuaries	Site specific targets	EQS failure

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Ecological responses to water quality improvements:

- P levels need to drop below threshold
- Other factors interact
- Routine macroinvert monitoring poor indicator
- Diatom assessment sensitive, but won't indicate filamentous algae

Control of ag sources of P, and small point sources, becomes more critical as target for P levels in rivers is approached following action on stw



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Biodiversity targets – 1

Comparing water quality objectives for designated sites and GES/HES under WFD:

Lake P targets ($\mu\text{g/l}$)

Type of Lake	High ecol status	Good ecol status	Habitats Directive
High alkalinity shallow	25	35	35
High alkalinity very shallow	35	49	35
Mod alkalinity shallow	11	16	15
Mod alkalinity v shallow	15	22	20
Low alkalinity shallow	7	10	10
Low alkalinity v shallow	9	14	10
Marl v shallow	10	24	20

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UK Biodiversity targets - 2

BAP revised wetland targets and new Habitat Action Plans:

Maintain extent:

Grazing marsh (sea level rise); fens (diversity of types); reedbeds (>2ha); raised bog

Restore habitat:

25,000ha "relict" grazing marsh by 2020;
2,800ha former fen by 2020;
raised bog to former range

Expand habitat:

3,200ha new grazing marsh; 3,000 ha reedbed;
8 new landscape scale wetlands by 2020

New HAPs:

Rivers; standing open waters; ponds

Upland raised mires:

Restore 30% by 2005, 55% by 2010 and 75% by 2015



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Responsibilities of water industry:

Designated sites:

Public bodies duty under CRow Act 2000: to *take reasonable steps, consistent with the proper exercise of their functions, to further conservation and enhancement of SSSIs*

Biodiversity Action Plans:

Duty under NERC Act 2006: Public bodies (including statutory undertakers) *must, in exercising their functions, have regard to conserving biodiversity.* This includes restoring or enhancing a population or habitat.

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Natural England's objectives for PR09:

Principles:

- A long-term focus, to secure environmental outcomes 15 years hence, as well as within the current 5 year programme;
- A shift towards more demand-side and catchment scale solutions for protection of water at source;
- Reductions in greenhouse gas emissions from the industry over time;
- Secure good land management on a catchment scale.

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Natural England's objectives for PR09:

- Schemes to deliver objectives for Natura 2000 sites and SSSIs, in water companies' programmes.
- A "climate proofing" approach to schemes to:
 - ensure that water quality and water resources improvements remain robust to climate change;
 - promote less energy intensive water and sewerage treatment options;
 - contribute to the requirements for climate change adaptation at the landscape-scale
- Schemes to meet wider Biodiversity Action Plan objectives;
- Schemes to tackle a range of water quality and water resources problems at source.

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Water company planning under PR09:

Water quality programme:

- Strategic Direction Statements
- PR09 Business Plans
- Water Safety Plans

Water resources planning:

- Water resource strategies
- PR09 Business plans

Defra guidance:

- Statement of Obligations
- Social and environmental guidance
- Water Strategy

Ofwat guidance:

- Methodology and info requirements



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Water resources planning:

PR09 will include only Natura 2000 schemes:

- how to deal with SSSIs, BAP other abstractors

Outcomes from water resource investigations:

- timing mismatch with water resource strategies



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Water quality planning:

- c. 300 schemes and investigations in AMP4 – mostly P removal schemes
- Further removal to achieve conservation objectives
- Action on diffuse as well as point sources
- Small point sources:
 - Need for sustainable solutions
 - Lack of experience of technological solutions
 - Concerns over compliance



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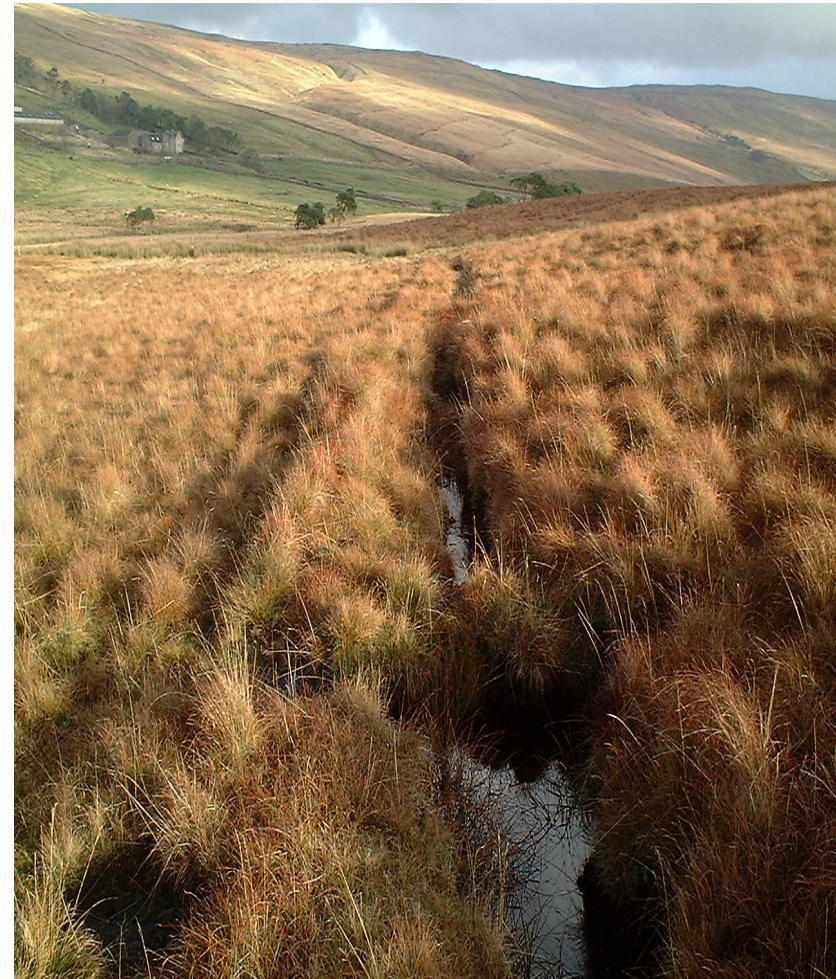
Land management and water industry planning:

AMP4: UU SCaMP (20,000ha) and Northumbrian water upper Teesdale

Other water company initiatives: catchment advice to farmers

Potential under PR09:

- BAP and SSSI and other natural environment objectives in uplands (and lowlands)
- DWI Drinking Water Safety Plans
- Catchment Sensitive Farming
- WFD actions on diffuse sources
- Climate Change Bill
- Ofwat SD duty



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Water Framework Directive RBMPs:

- Added driver for Habitats Directive: limited application of derogations to Natura sites;
- 31% of river length and 432 lakes identified as water bodies (2005);
- Will include biological and physico-chemical monitoring, non-native spp;
- Groundwater Dependent Terrestrial Ecosystems: Significantly Damaged SSSI GWDTES will be included in PoMs



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Water industry shorter and longer term planning offers significant opportunities

Further action on point sources and abstraction affecting water and wetland sites needed in PR09

Emphasis should be on sustainable solutions, but challenges here:

- On water resources – need to deal with action beyond Natura 2000 and outside Water Resource Strategies**
- On point sources – need to deal with smaller discharges and implement more sustainable solutions: r&d; consenting**
- On catchment scale work – need to integrate delivery of BAP objectives alongside carbon management and water management solutions**

WFD benefits yet to be fully understood – full potential for integration yet to be realised; but broad range of impacts included.