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# Management Strategies for the Protection of High-Status water bodies in Ireland – Can the Ecosystem Services Approach support protection strategies?



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CIS Science meets Policy Event  
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# Project Introduction

- Irish Environmental Protection Agency  
STRIVE Programme 2007-2013 – Water Call  
2010
- Project title “Management Strategies for the  
Protection of High Status water bodies” (Ref:  
2010-W-DS-3)
- Desk Study. December 2010- October 2011

# Project Aims

- To review existing legislation relevant to the protection & management of High-Status water bodies & its interaction with other legislation (e.g. planning)
- To review best practices on the protection of High-Status sites, in other European States; and
- To suggest new approaches towards ensuring that High-Status water bodies remain at high status

# Critical Issues

- Principal pressures:
  - apart from obvious point sources or accidental releases of pollutants
  - relatively low intensity activities e.g. land use changes such as field drainage and fertilisation, one-off housing, forestry drainage or clear felling, road building, wind farms etc.
- River Basin Management Plans (July 2010) recognise that measures outlined in the Plans may not be able to fully deliver on the protection of high status sites (e.g. Nitrates Regulations may not be stringent enough)
- **The smallest pressure can impact on high status.** The input of a few grams of phosphorus, or small increases in silt, hydromorphological pressure or dangerous substances will have a disproportionate impact on a high status system relative to a degraded system. Difficult message to convey to the public and to public authorities.

# Link between this project and Ecosystem Services – a solution?

- Can the concept of ecosystem services help the implementation of the WFD? Or, in this projects case, help protect high status water bodies?
- Globally aquatic ecosystems are the most impacted by human activities and continue to decline at an alarming rate (Groombridge *et al.*, 1998; Millennium ecosystem report, 2005).
- This has been reflected in Ireland, through the decline in high ecological status water sites.
- The continued loss of these sites not only represents **non compliance with the Water Framework Directive**, but also a significant **loss in biodiversity** (“Habitat Services”), while also a **threat to human health** through the progressive deterioration of our drinking waters (“Provisioning Services”), bathing waters (“Cultural Services”) and shellfish growing areas (“Provisioning Services”).

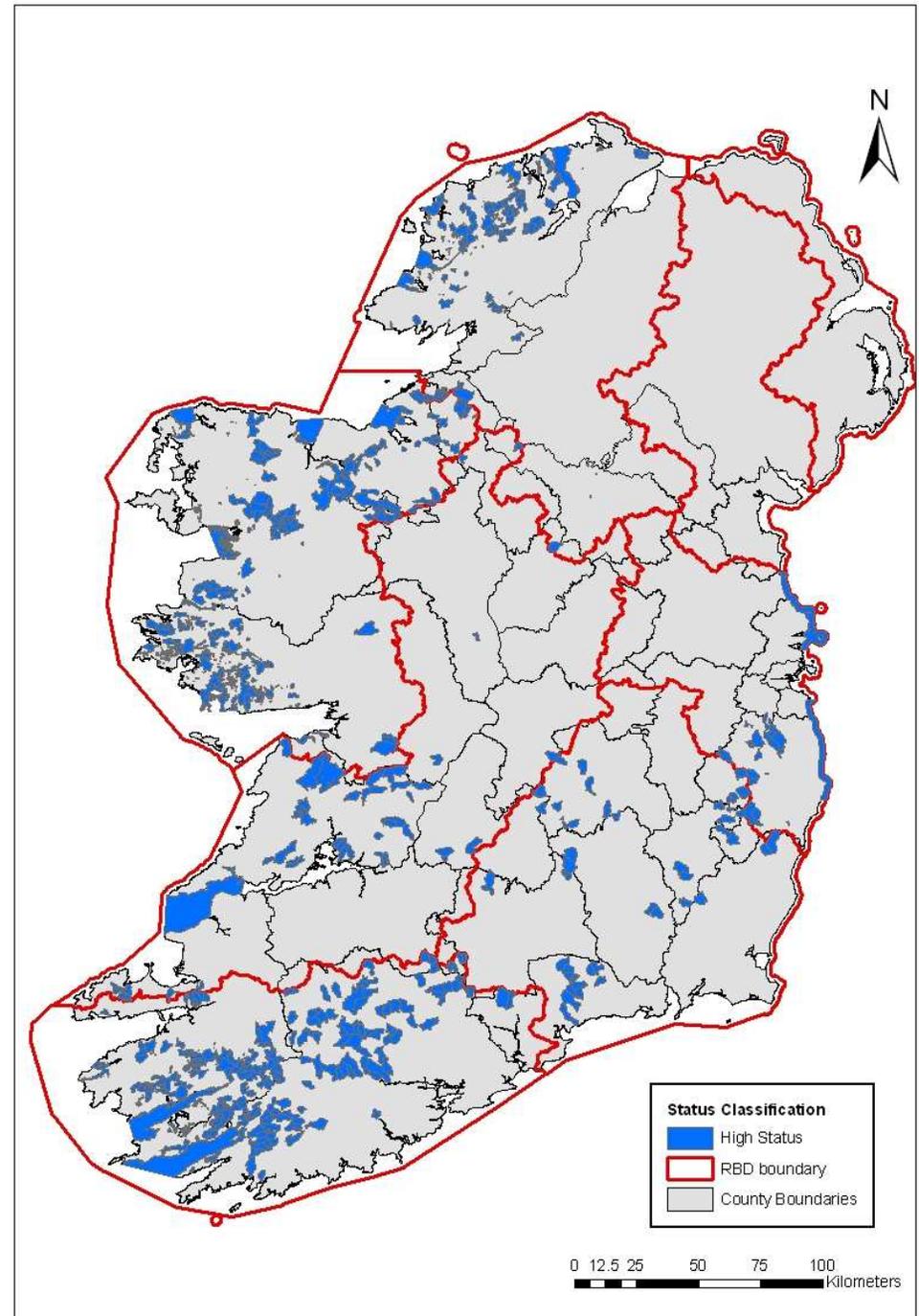
# High status sites in Ireland?

Number of High Status surface water bodies in each RBD as reported in the RBMPs (2010)

River Basin District	Rivers	Lakes	Transitional & Coastal
Eastern	23	4	3
Neagh Bann	0	0	0
North Western	98	61	11
South Eastern	53	0	0
Shannon	46	16	1
South West	284	51	9
Western	185	188	20
<b>No. Of water bodies at high status</b>	<b>689</b>	<b>320</b>	<b>44</b>
<b>Total No. of water bodies nationally</b>	<b>4585</b>	<b>817</b>	<b>309</b>
<b>Percentage</b>	<b>15%</b>	<b>39%</b>	<b>14%</b>

Only;

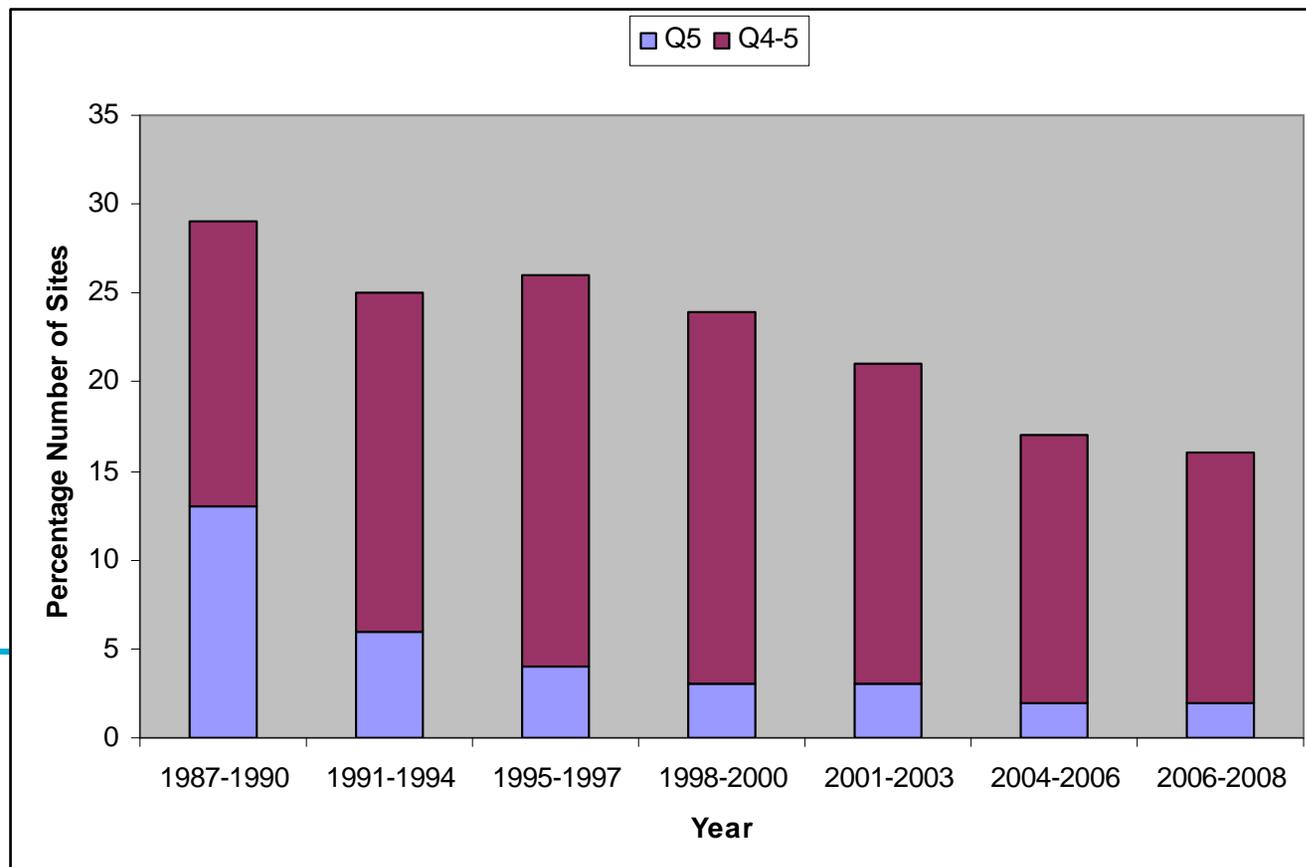
- 35% overlap with SACs
- 26% overlap with Shellfish growing areas
- 30% overlap with drinking waters
- 58% overlap with bathing areas



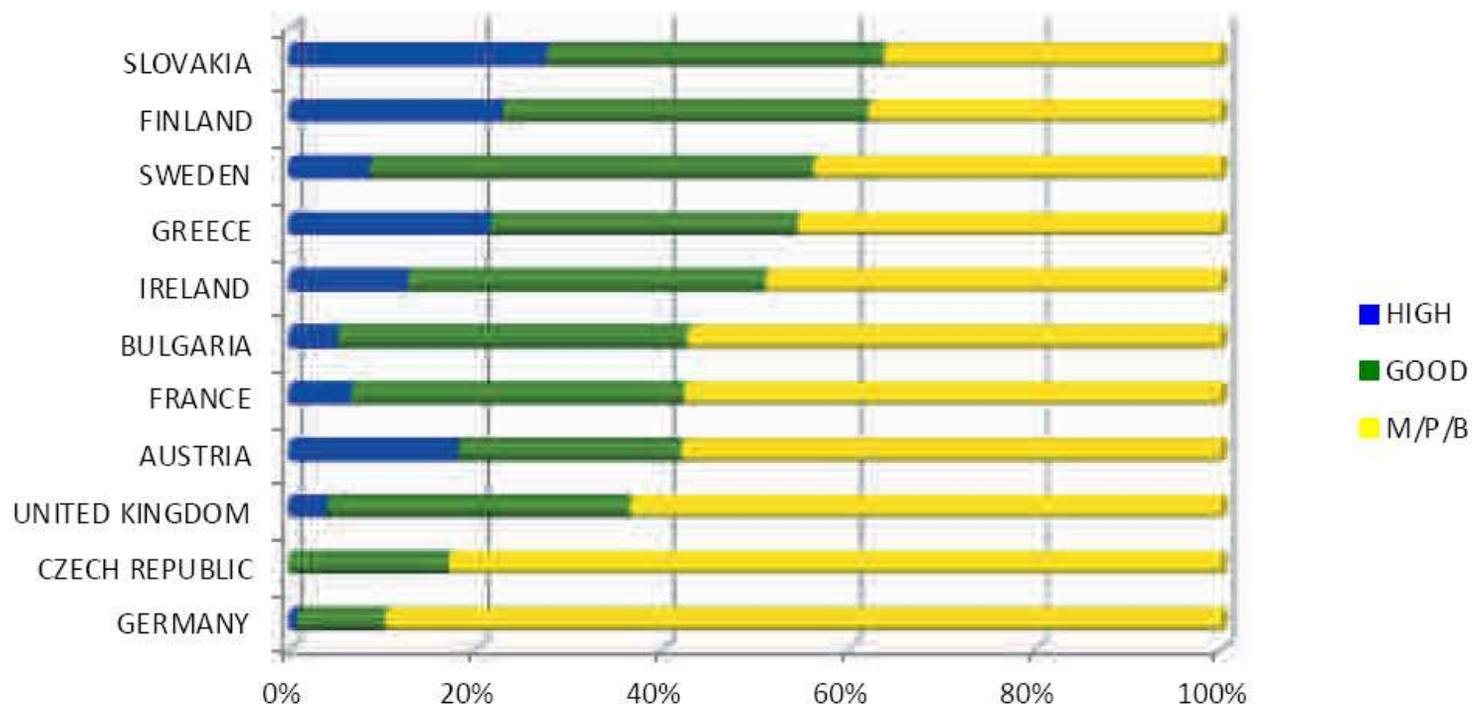
# Deterioration? – Rivers Quantified

EPA river monitoring network results 1998 to 2010 best illustrates loss  
-based of 3 year monitoring programme (1998-2001, 2002-2004, 2004-2006,  
2007-2009, 2010-2012)

High Ecological Quality River Sites Trend  
1987-2008 (30% → 17%)



# High status sites across Europe?



**Figure 6.2.** A comparison of Irish surface water bodies classified for Ecological Status with 10 other EU countries in terms of percentage of water bodies classified as High, Good and 'Less Than Good' (M/P/B) ecological status – the countries are ranked in terms of the proportion of less than good status water bodies classified (The graphic is based on the European Environment Agency's WISE map of WFD Surface Water Ecological Status and EPA data).

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# Literature Review findings



Acknowledgement: Dr Kenneth Irvine, TCD

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# Importance of high status sites

- Provides a network of best quality sites - uneven distribution across water body types and across the country.
- Provides a refuge for sensitive species
- Approximately 30% overlap with the SAC river network, which in any case has failed to provide adequate protection (See Habitats Directive Article 17 reports)

## International context

- WFD 2000
- Ramsar Convention 1975
- Convention for Biological Diversity 1992
- Millennium Development Goals 2009
- EU target for halt decline of biodiversity by 2010 (revised to 2020)
- European Landscape Directive 2002

# The eleven key Directives (Annex VI part A of the WFD) – ability to provide protection??

## ECJ attention

- Bathing Water Directive (2006/7/EC);
- Birds Directive (79/409/EEC); 
- Habitats Directive (92/43/EEC); 
- Drinking Water Directive (98/83/EC); ?
- Major Accidents (Seveso) Directive (96/82/EC);
- Environmental Impact Assessment Directive (85/337/EEC) as amended by Directive 2003/35/EC; 
- Sewage Sludge Directive (86/278/EEC); The Urban Waste-water Treatment Directive (91/271/EEC);
- Plant Protection Products Directive (EC No 1107/2009);
- Nitrates Directive (91/676/EEC);  [Currently resolved]
- Integrated Pollution Prevention Control Directive (2008/7/EC). 

# Nitrates Directive (91/676/EEC)

-Described by Flynn (2006) as a sorry saga, reflecting “*a lack of political will in the face of predictable and understandable opposition from the farming organisations*”. A Nitrates Action programme was only eventually enacted following legal proceedings and the threat of fines from the E.U,

**-The European Communities (Good Agricultural Practice for Protection of Waters) S.I . No 610 of 2010.**

Highly uncertain if these will achieve “good status”-and not focussed on high status waters (Agricultural Catchments Programme investigating effectiveness. No high status catchment included).

**Harvest 2020-target** to increase dairy production by 50%  
Failure of EPA to insist on SEA *prior* to adoption of policy

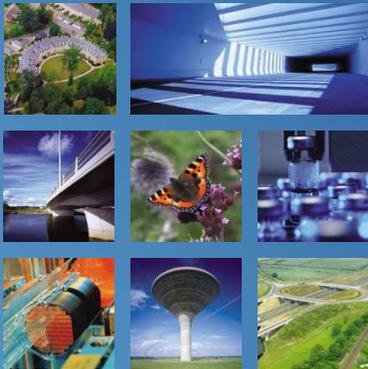
## Environmental Impact Assessment Directive (85/778/EEC) as amended by Directive 98/83/EC.

The Planning and Development (Amendment) Act (2010) provides for better integration between Planning and WFD objectives, but currently no focus on High Status sites

There is a need for much better integration of information among ALL agencies and their use of a common and possibly centralised Geographical Information Systems.

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## Case Study: Bundorragha Catchment – successes and failures

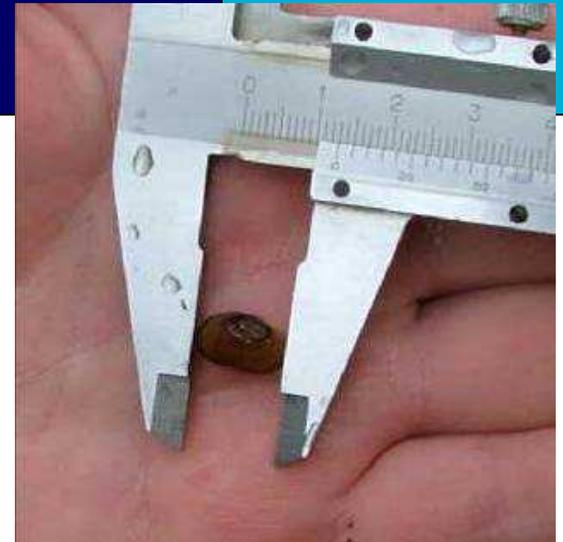


Acknowledgements: Dr Evelyn Moorkens &  
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# Freshwater Pearl Mussel

- Freshwater Pearl Mussel considered an *Ecosystem service provider?* (ESPs) – filter feeder
- Serious decline in Ireland – ECJ attention
- Freshwater Pearl Mussel Regulation S.I. 296 of 2009
- Sub-basin management plans developed, but never signed off by Minister for the Environment



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## Successes and failures of existing Policies for Protection?

- Successes – destocking of sheep under Commonage Framework Plans took sheep off the mountains and allowed re-vegetation of commonage areas, reduction in poaching along river banks and loss of soils from bare landscapes
- Failures – felling of forestry in upper catchment. Communications between Forest Service and NPWS. Felling contractor negligence. Lack of supervision of contractor.
- Further initiatives?
  - Interreg IV project “Practical Implementation of Measures in Freshwater Pearl Mussel Catchments”
- Current versus future costs of restoring these catchments could be significant, including fines from the ECJ

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**The solution? Mechanisms for protection, ecosystems services approach, and other approaches?**



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# Mechanisms for protection??

- Better integration and Liaison between Local Authorities and Planning Agencies e.g. Forest Service
- Fully interchangeable GIS and sharing of information among public bodies (EU INSPIRE Directive 2007/2/EC)
- Better dialogue and compatible goals between EPA and NPWS
- Revision of farming policy - CAP agri-environment schemes and Rural development
- Actions need to be at the local level. General prescriptions will NOT work.
- A shift in thinking from general prescriptions towards cumulative effects issues and carrying capacity of rivers on an individual catchment by catchment basis is required

## Science and Policy linkages need to be stronger

- A serious shift in the attitude across government to provide for better cross-compliance and opportunities for wider countryside protection is required
- Too often policy is generated, while ignoring key scientific advice i.e. shifting the requirement to scientists to prove impacts from pressures, rather than development illustrating there will not be an impact. This is slowly changing with stricter requirements for EIA, Appropriate Assessment etc in Ireland
- Will this shift in attitudes happen at a fast enough pace to halt the loss of high status water bodies in Ireland?

# Ecosystem Services Approach – part of the solution?

- Integration of ESA concepts required – to test suitability in the Irish context
- Better understanding of economic value of services provided by ecosystems in Ireland required. WFD economic analysis to date - unsatisfactory
- Currently not linked strongly enough to WFD objectives/goals – Ecosystem Services not specified in text of WFD therefore lack of knowledge among Public Authorities in Ireland. More awareness among academic institutions
- \*\*For high status water bodies – the costs associated with the loss of these sites needs to be evaluated in terms of loss of biodiversity and the failure to take protective measures versus the costs of effective conservation (TEEB study)

# Options for protection – Reform of CAP as key mechanism?

- Reform of the CAP could provide opportunities for wider countryside protection – but not a panacea for protection.
- ESA could work in tandem to provide protection
- Examples of successful initiatives to adopt and make Ireland specific?:
  - BurrenLIFE and Lough Melvin (Ireland)
  - U.K Env Sensitive Areas, Env Stewardship
  - U.K. Rivers Trusts
  - U.S. Outstanding Natural Resource Areas

## Practical guidelines for the 2<sup>nd</sup> round of implementation of the WFD?

- More emphasis on the value of biodiversity required in WFD implementation – use of terminology associated with ESA in guidance to policy makers
  - *“The invisibility of biodiversity values has often encouraged inefficient use or even destruction of the natural capital that is the foundation of our economies”* (TEEB synthesis)
- Clarify – Is the EC equally interested in protection/preventing deterioration as they are in restoration to good status? i.e. Will failure to protect high status water bodies incur the same penalties as failure to meet good status? Public authorities under the opinion that restoration is the focus.

# Acknowledgements

- Environmental Protection Agency in Ireland for funding
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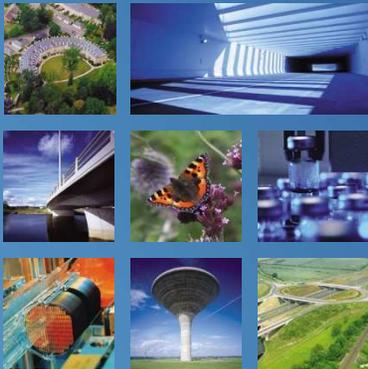
Grace Glasgow (Director), Fiona Murphy, & Stephen Henderson, RPS

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[www.highstatusireland.ie](http://www.highstatusireland.ie)



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