

# Experience from implementing the Water Framework Directive



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# Outline

## Water Framework Directive

- **What's gone well**
- **Difficult issues remaining**
- **Where should we go from here?**

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## Water Framework Directive

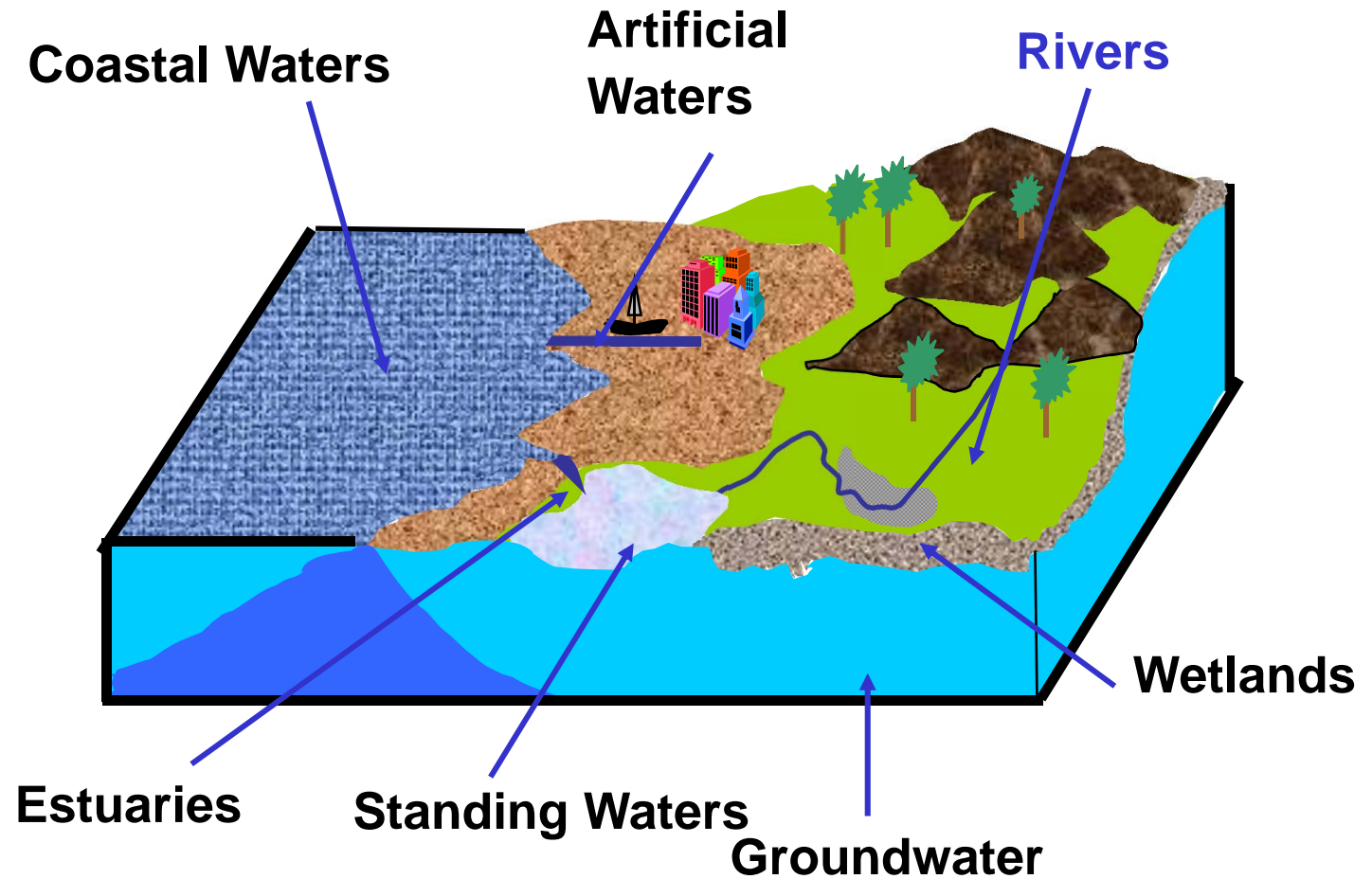
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# Water Framework Directive

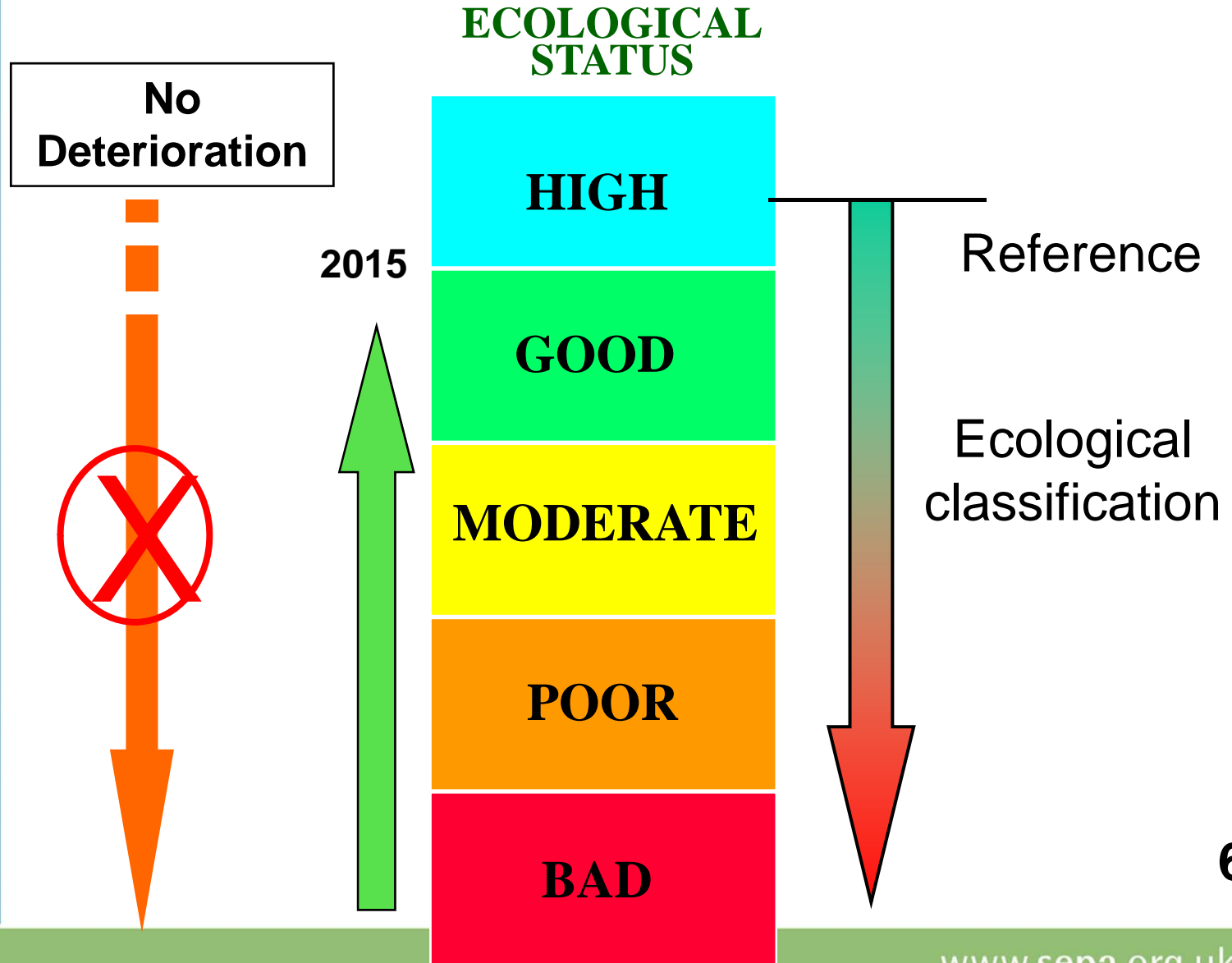
## EU Directive for Sustainable Management of Waters

- **Protect, enhance and restore surface water bodies to good ecological status**
- **Prevent deterioration of status**
- **Promote sustainable development**
- **Protect interests of other water users**
- **Manage flood risk**

# Scope of the WFD

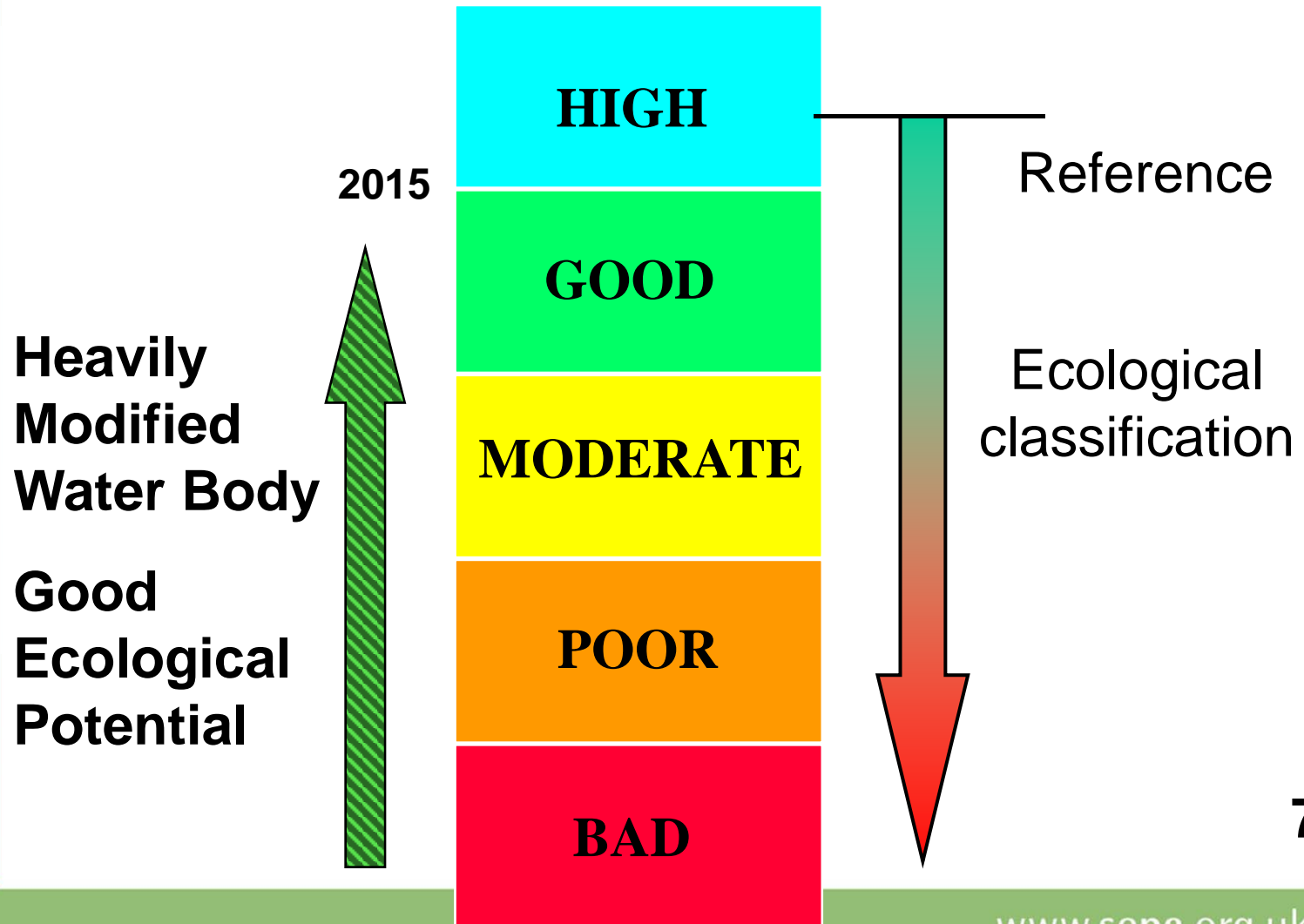


# Classification of Ecological Status All Surface Waters

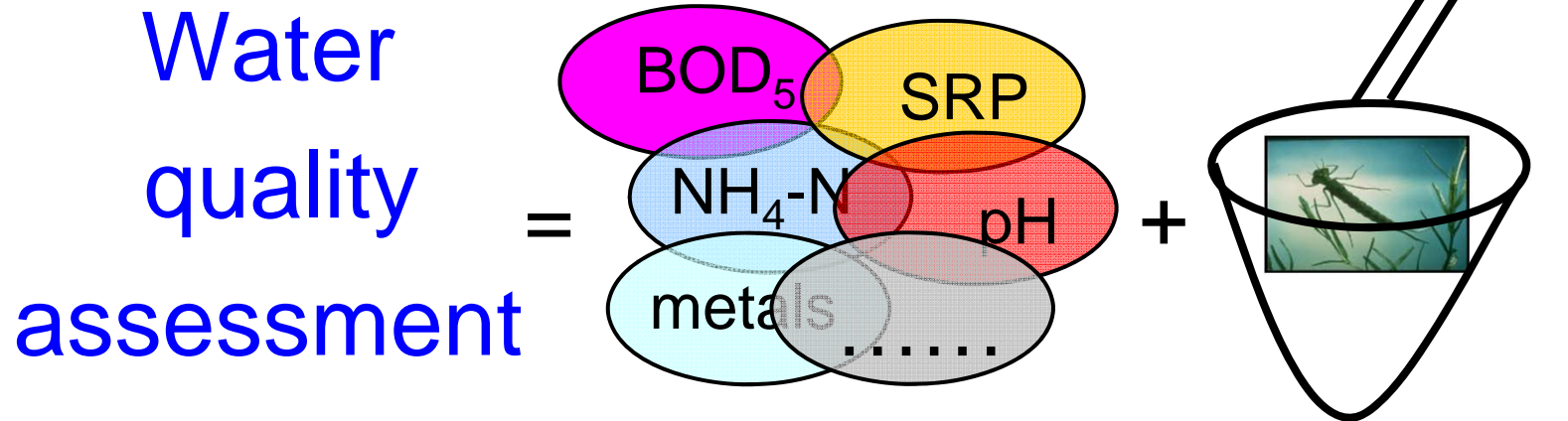


# Classification of Ecological Status All Surface Waters

## ECOLOGICAL STATUS



# Ecological Classification of Freshwaters Before WFD

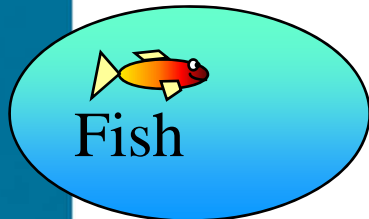


- Only rivers; lochs chemical class
- Limited impact/response to pressures
- Lack of a good ecological benchmark

So post-WFD?.....



## Biological Quality Elements



**Cost:  
2M euro  
in UK**

## UK R&D Methods Rivers and Lakes

LEAFPACS

DARLEQ

RICT + AWICS (rivers)

CPET + Littoral (lakes)

FCS2 (rivers)

Blooms/taxonomic  
composition (lakes)

## Pressures

Eutrophication  
Hydrological

Eutrophication

Organic/toxic  
Acidification  
(Hydrological)

Morphological  
Hydrological

Eutrophication

# What does good status mean?

## EU Intercalibration Work

### Geographical Intercalibration Groups

○  
North GIG

○  
Central Baltic  
GIG



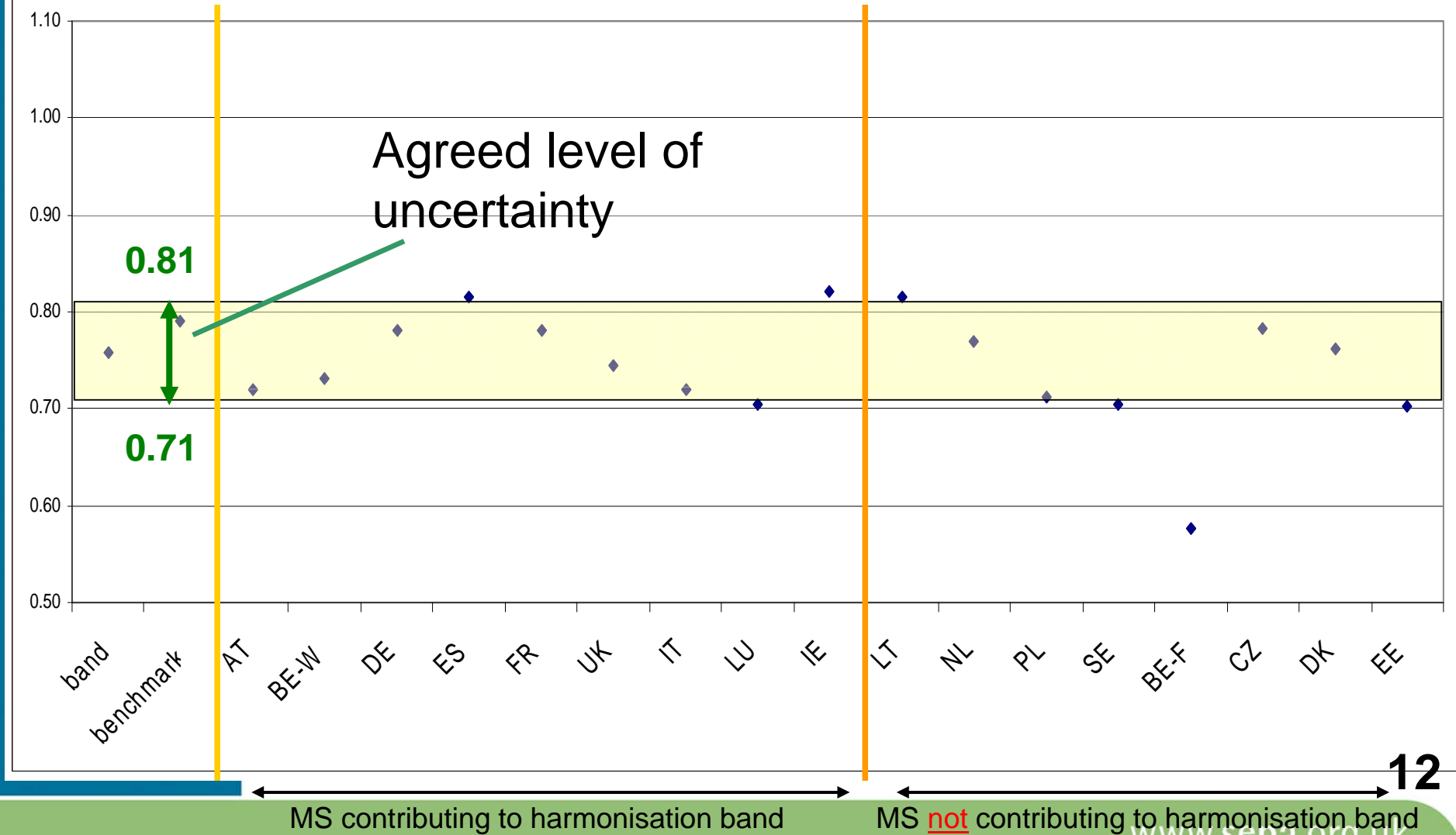
# Agreed pressure criteria for reference sites in rivers

- Point source pollution
- Diffuse source pollution
- Riparian Zone vegetation
- Morphological alteration
- Water abstraction
- Flow regulation
- Biological pressures



- 7 main pressure types
- 42 detailed criteria

# Harmonised Good Ecological Status for River Benthic Invertebrate Methods: 17 countries Common Scale



# ECOSTAT Intercalibration

## Reasons for success

- Need to meet WFD legal provisions
- Common scientific objectives
- Voluntary resources from Member States
- Good political direction from Water Directors and EC
- Technical support from DG ENV (JRC –Ispra)
- Independent review

## Scottish Successes from WFD: Control over engineering and abstraction



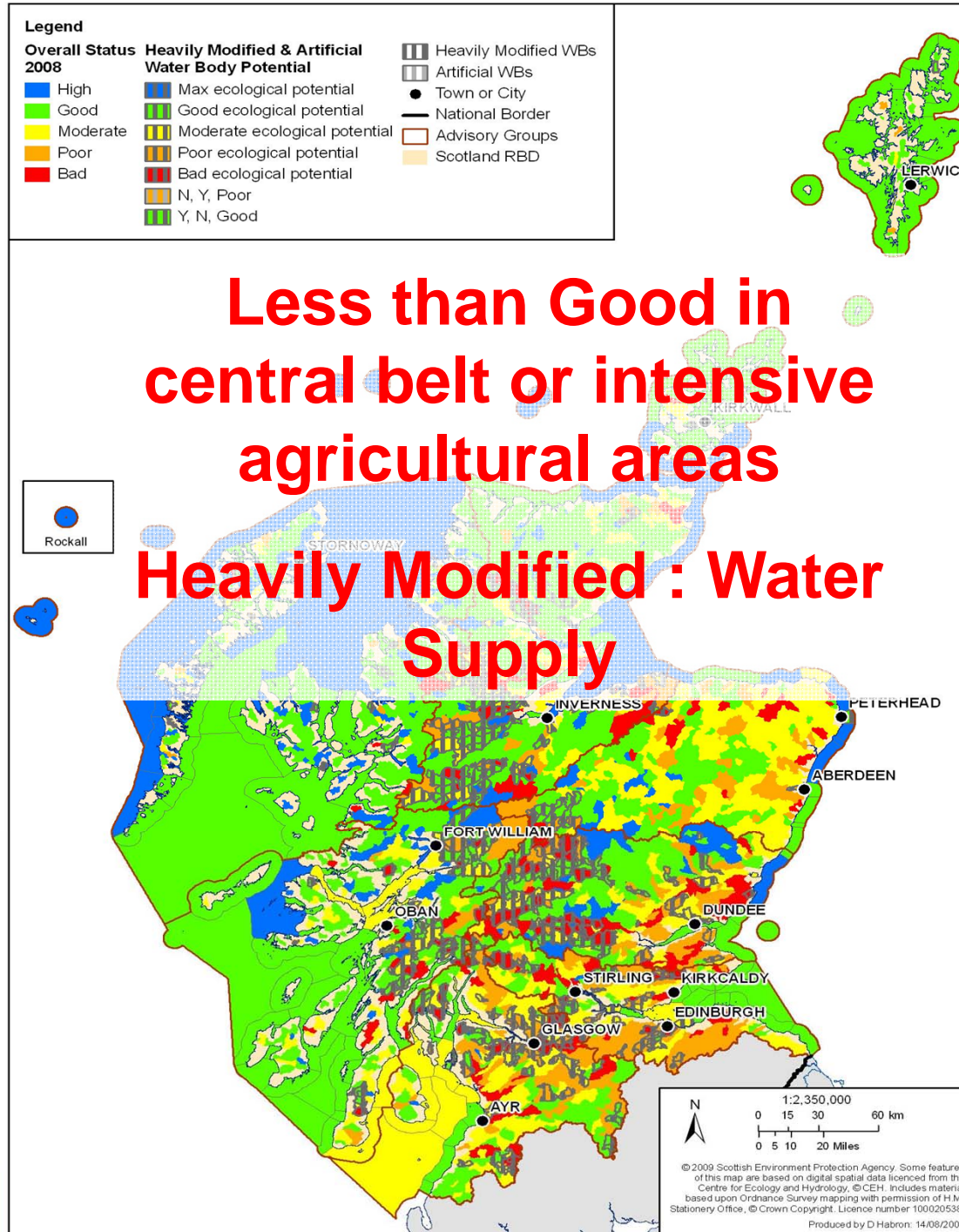
- ❑ New regulatory standards for flow and morphological modification
- ❑ Standards drive restoration measures

# Environmental Standards physical alteration

Zone	CAPACITY	
	Good/Good	Good/Moderate
Channel	5%	25%
Bank and	5%	25%

direction from government

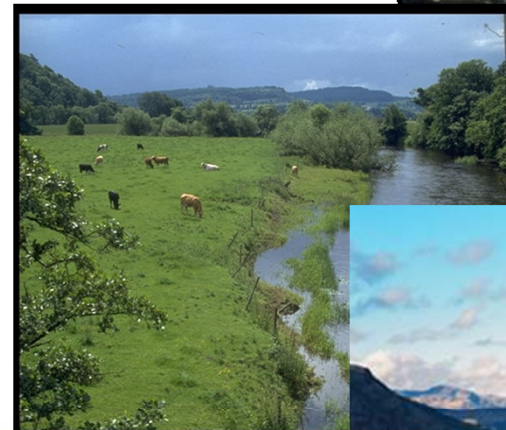
# First ecological classification of all surface waters in Scotland 2009





## What are the big issues for Scotland?

- Diffuse source pollution
- Abstraction and flow regulation
- Physical modification
- Non native invasive species



# Stakeholder Participation in River Basin Planning



Adapted from CSI WFD (2003)  
*Best practices in river basin planning,  
guidance on the planning process*

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# River Basin Planning – Stakeholder engagement

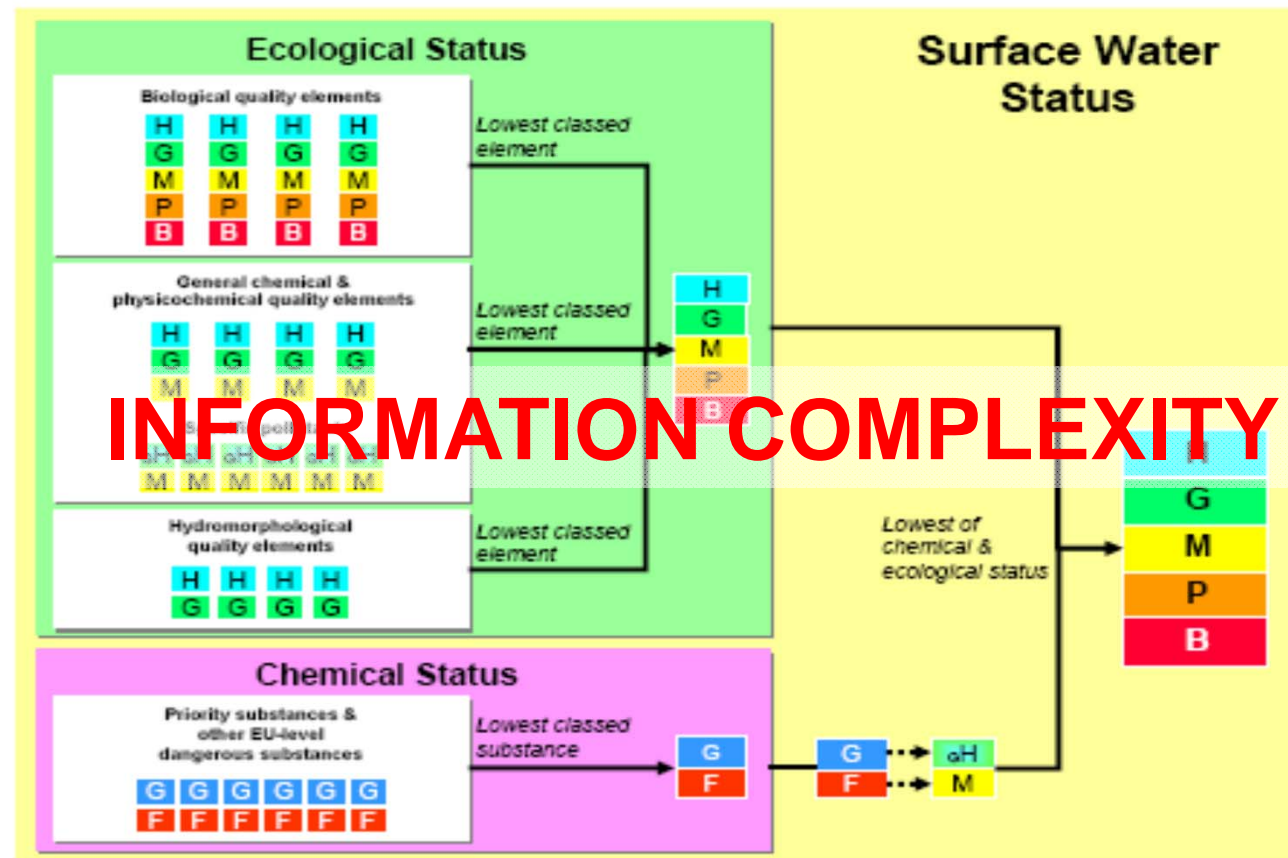
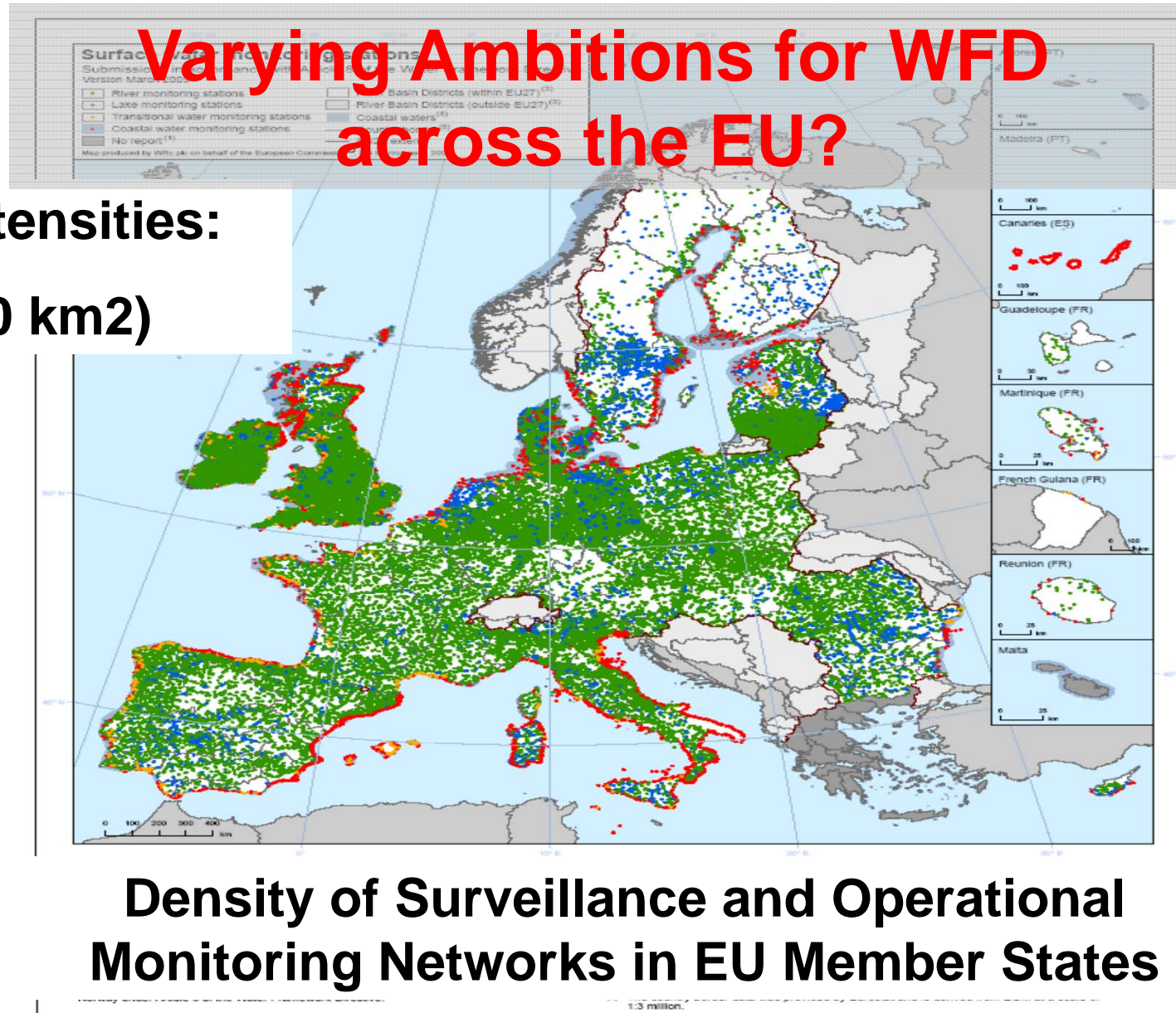


Figure 1b: Schematic representation of how results for different quality elements are combined to classify ecological status, chemical status and surface water status

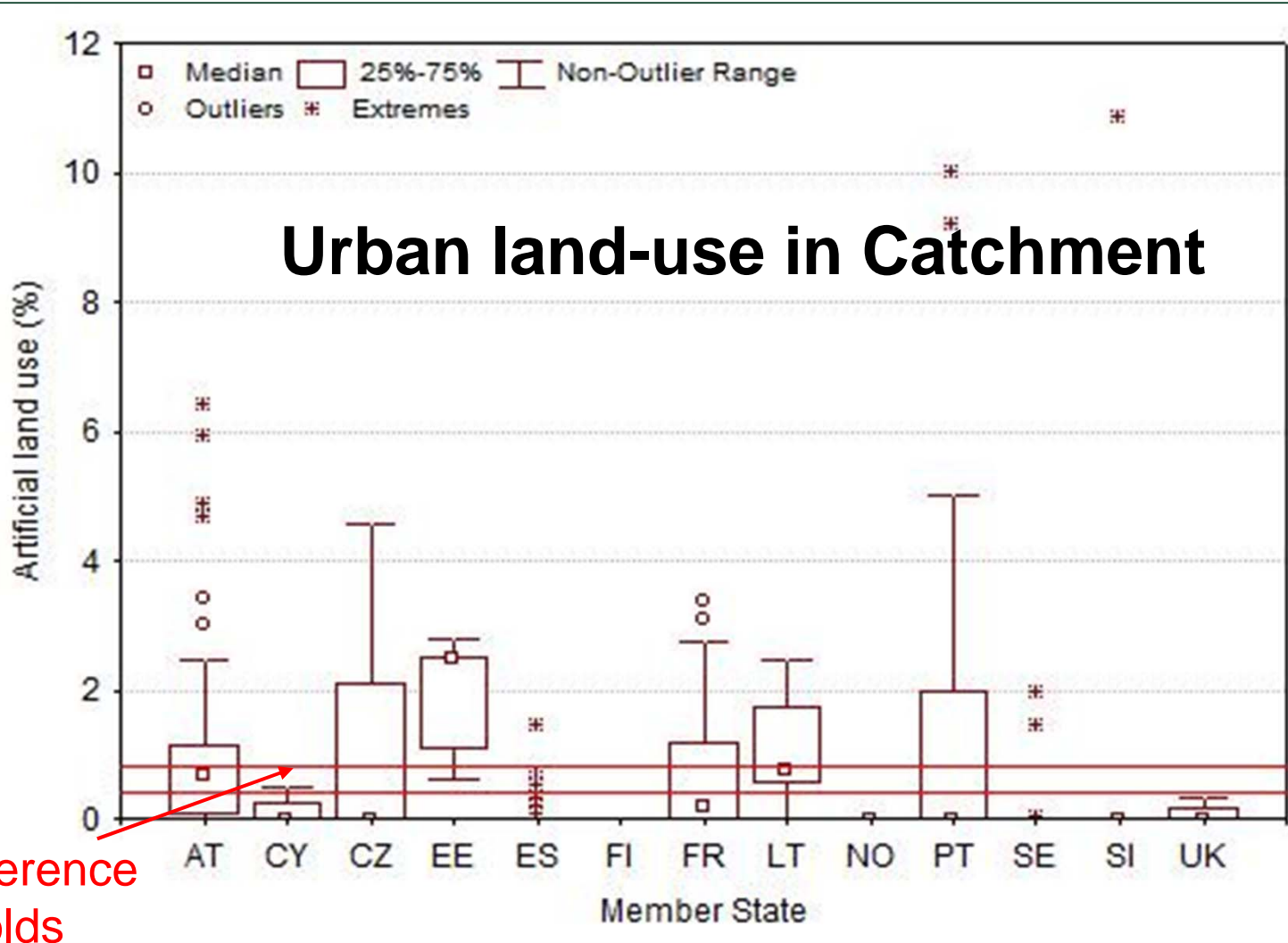
# Varying Ambitions for WFD across the EU?

**Network Intensities:**

**1 – 44 /1000 km<sup>2</sup>)**



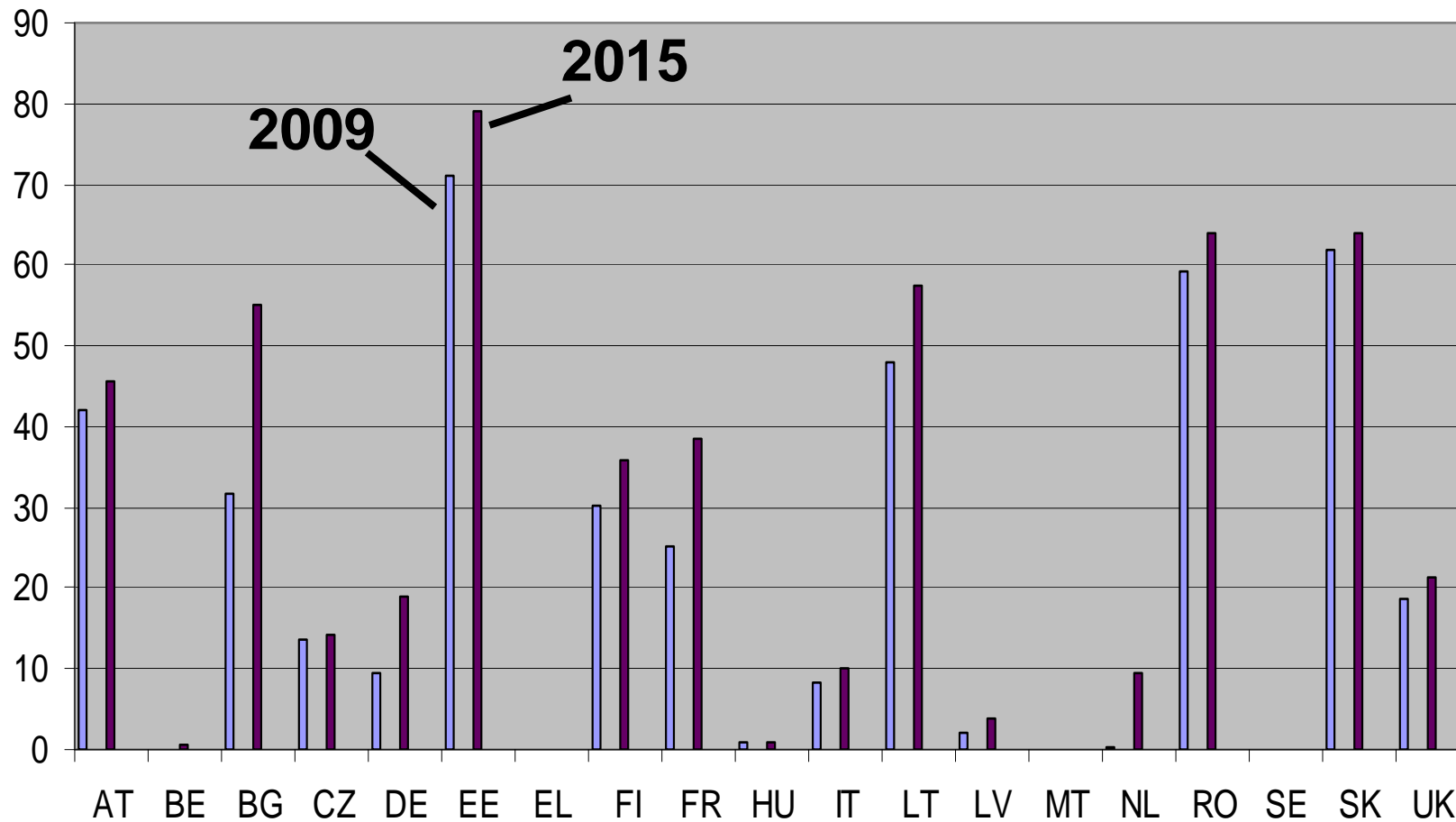
# Inconsistency in Application of Reference Conditions in EU



CBGIG reference thresholds

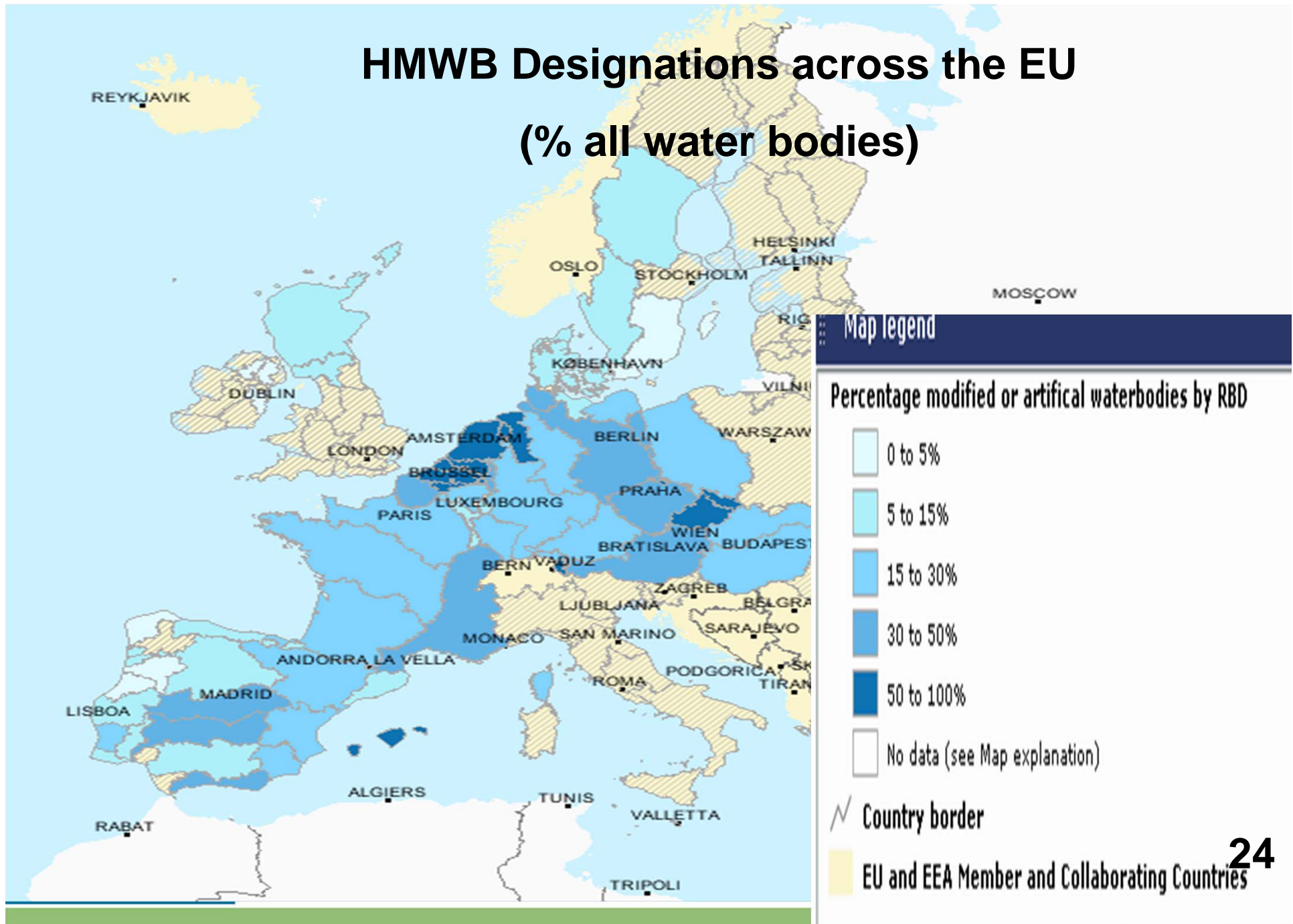
# Achievement of GES 2009-15

## % of all Water Bodies by Country



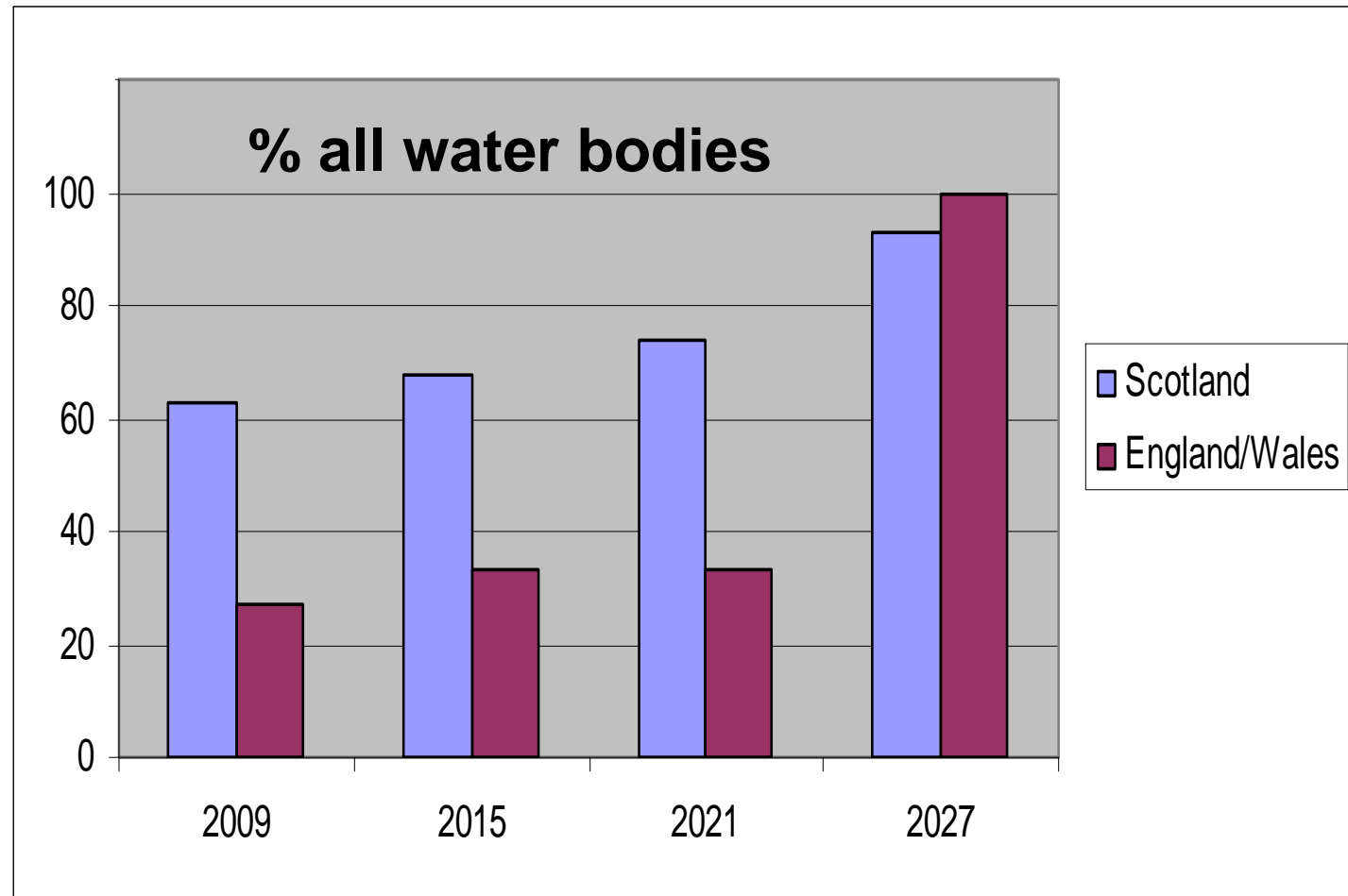
# HMWB Designations across the EU

## (% all water bodies)





# Parking Difficult Issues? Planned Good Ecological Status 2009 – 2027



# Agriculturally modified streams in Scotland: HMWB or restoration?



# Natural recovery: buffer strips

## General Binding Rules – 2m Buffer Strip



# Agricultural drainage in significant Rivers and Streams : Is 'No' the right answer?

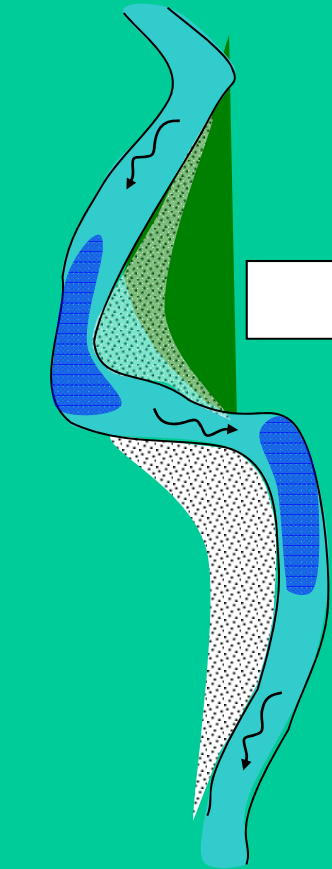
This is crazy – I'm telling this farmer that he will go out of business. That's not right.

I'd like to dig out this gravel please. I need to because my fields aren't draining.

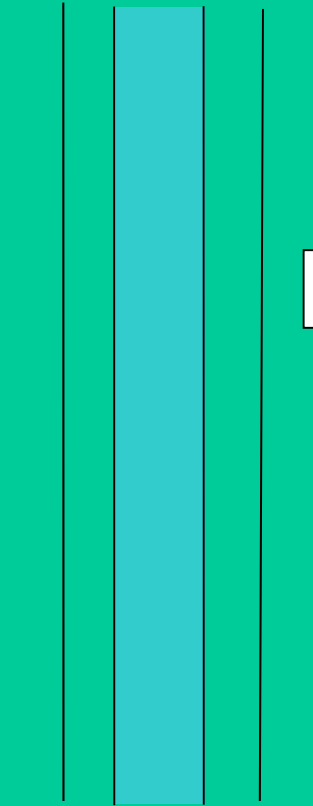
I'm sorry, but we can't let you dig up this section of river – the environmental impact would be too high

# Two-stage channel – assisted recovery / restoration

1- Pre realignment condition

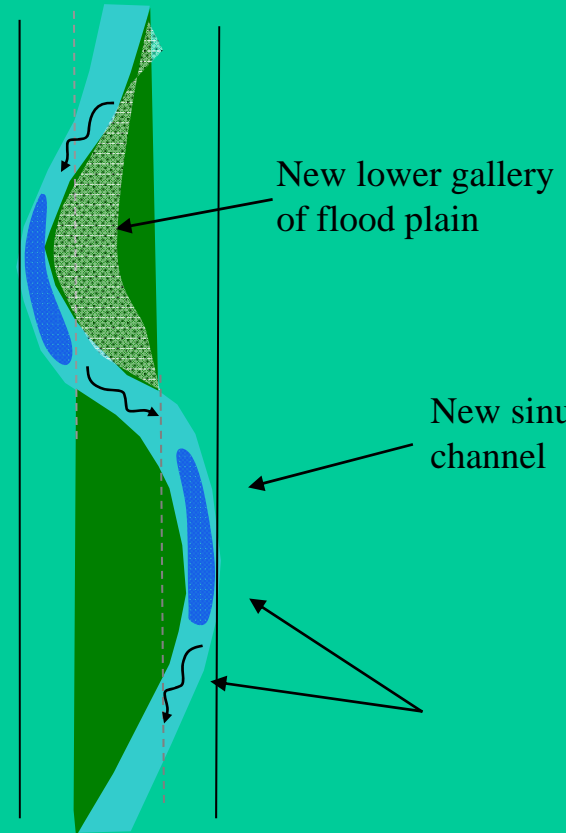


2- Realigned condition



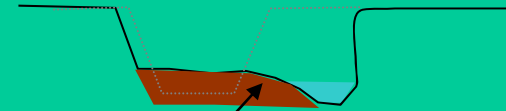
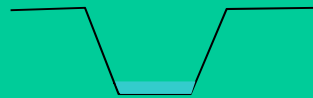
Reduced habitat variety

3- Restored condition



New lower gallery of flood plain

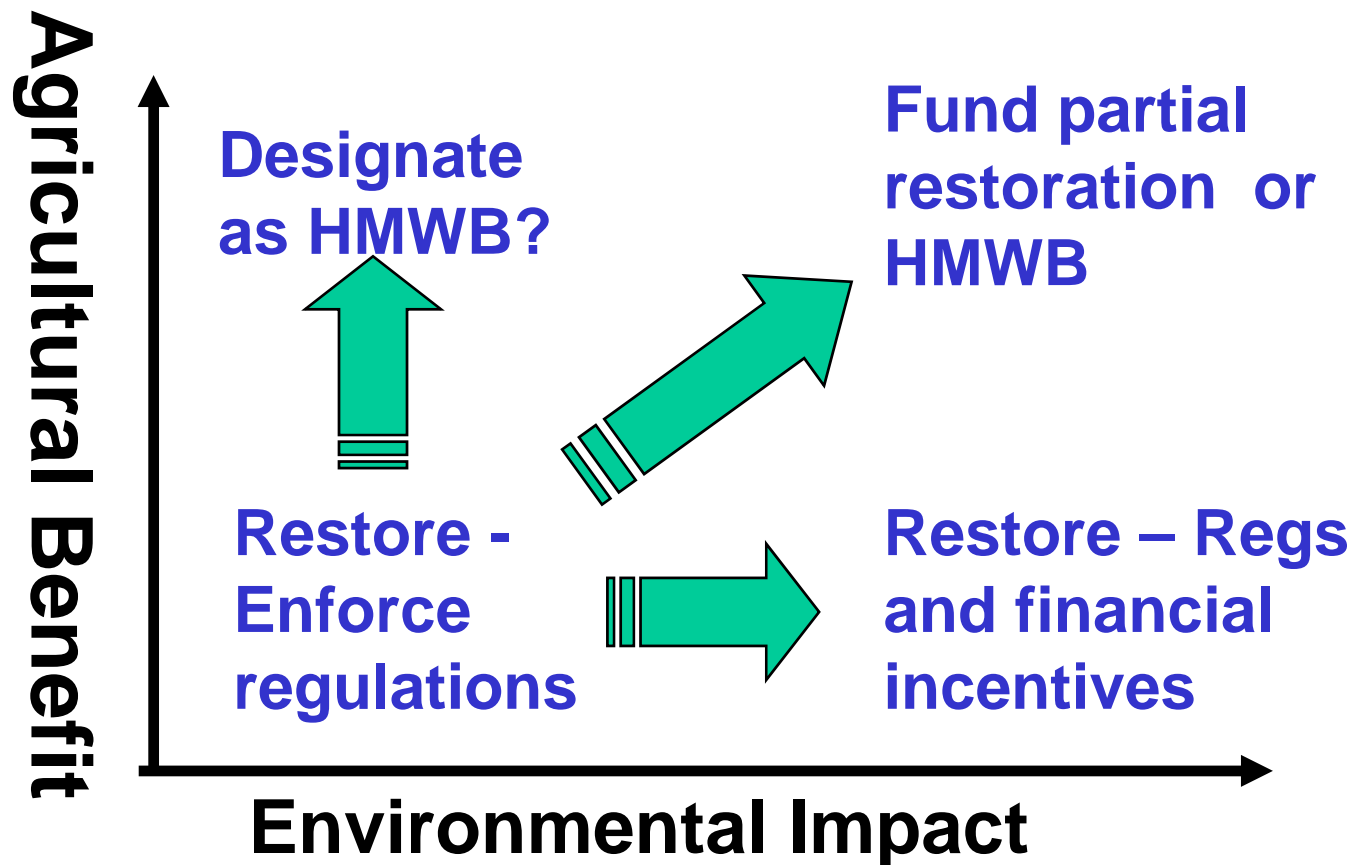
New sinuous channel



New lower gallery of flood plain

# Decisions on larger agriculturally modified streams

## Restore - Enforce regulations



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# Multiple objectives for catchment management

- WFD through RBPlanning
- Flood Management
- Habitats Directive
- EU Biodiversity Targets 2020
- Climate Change mitigation/adaptation
- Focus on renewable energy

Context: Economic growth and multiple benefits

- How do we prioritise objectives and restoration measures?



# Are we making the right decisions in catchment management?

## Monetary Benefits

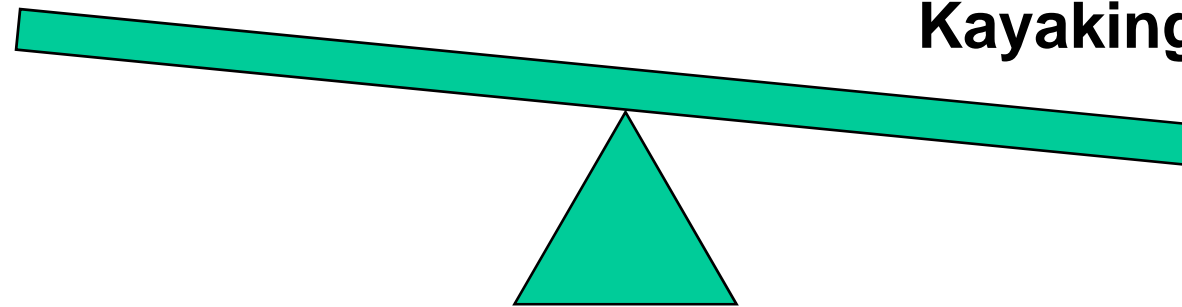


**Hydro-power Dam**

## Non-monetary Benefits



**Kayaking**



**Information required:**

**Environmental impacts – scientific evidence**

**Economic benefits – socio-economic valuations<sup>33</sup>**

# Lessons learned from WFD Implementation At EU Level

- Expert groups work well but technical support from EC (eg JRC) essential
- Political will by MS (affordability?) to enforce technical recommendations sometimes weak
- Level of ambition amongst MS widely variable but within flexibility allowed by Directive

**Q: Is this variable level of ambition OK?**

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## Lessons learned from WFD Implementation At Scottish Level

- **Effective communication with stakeholders requires innovative approaches to information**
- **Difficult to balance economic benefits v environmental impacts but need pragmatic approaches**
- **We should maximise multiple benefits in catchment management.**

**Q: is Good Ecological Status a sufficient proxy for sustainable catchment management?**

# Experience from implementing the Water Framework Directive



Thank you