

# UK Environmental Standards and Classification Schemes for WFD

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What are they?  
What do they cover?  
Why do we need them?



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# What is the current situation?

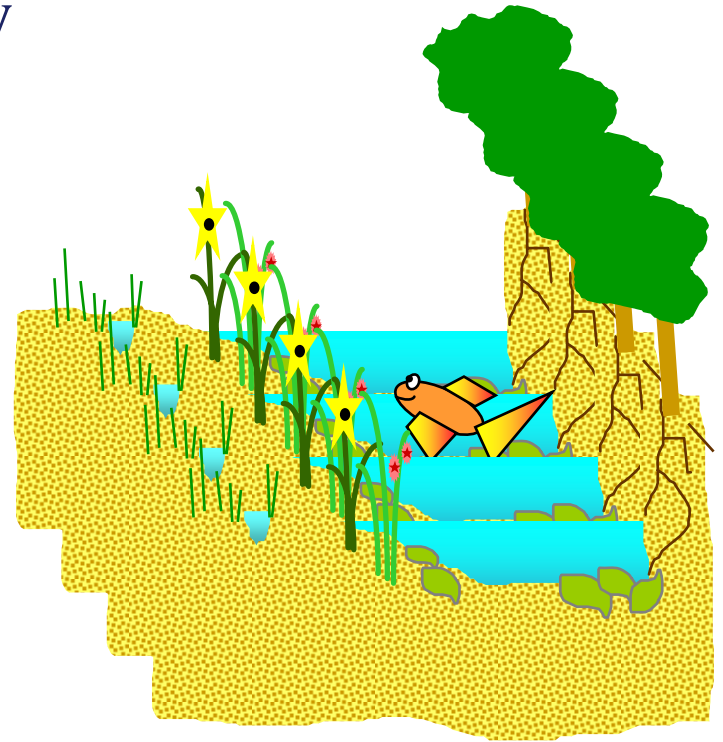
- Water quality currently classified and reported using chemical and biological data (invertebrate)
- Environmental standards:
- National standards for metals and organic compounds
- EC Directives – e.g. Freshwater Fish Directive
- Point discharge conditions set to meet environmental standards and class B quality
- Main focus is on water quality

# Classification - why change?

- Current range of chemical & biological indicators is limited
- UK consistency
- Look beyond rivers
- Integrate water quality, quantity and morphology to assess ecosystem health
- Develop more effective measures

# Ecology-based Directive

- Good ecology is determined by four key aspects of the environment;
  - biology
  - chemical water quality
  - morphology (physical structure)
  - hydrology (quantity)



**Managed through the WFD classification schemes  
and setting environmental standards**



# WFD Classification Framework

## Classification schemes

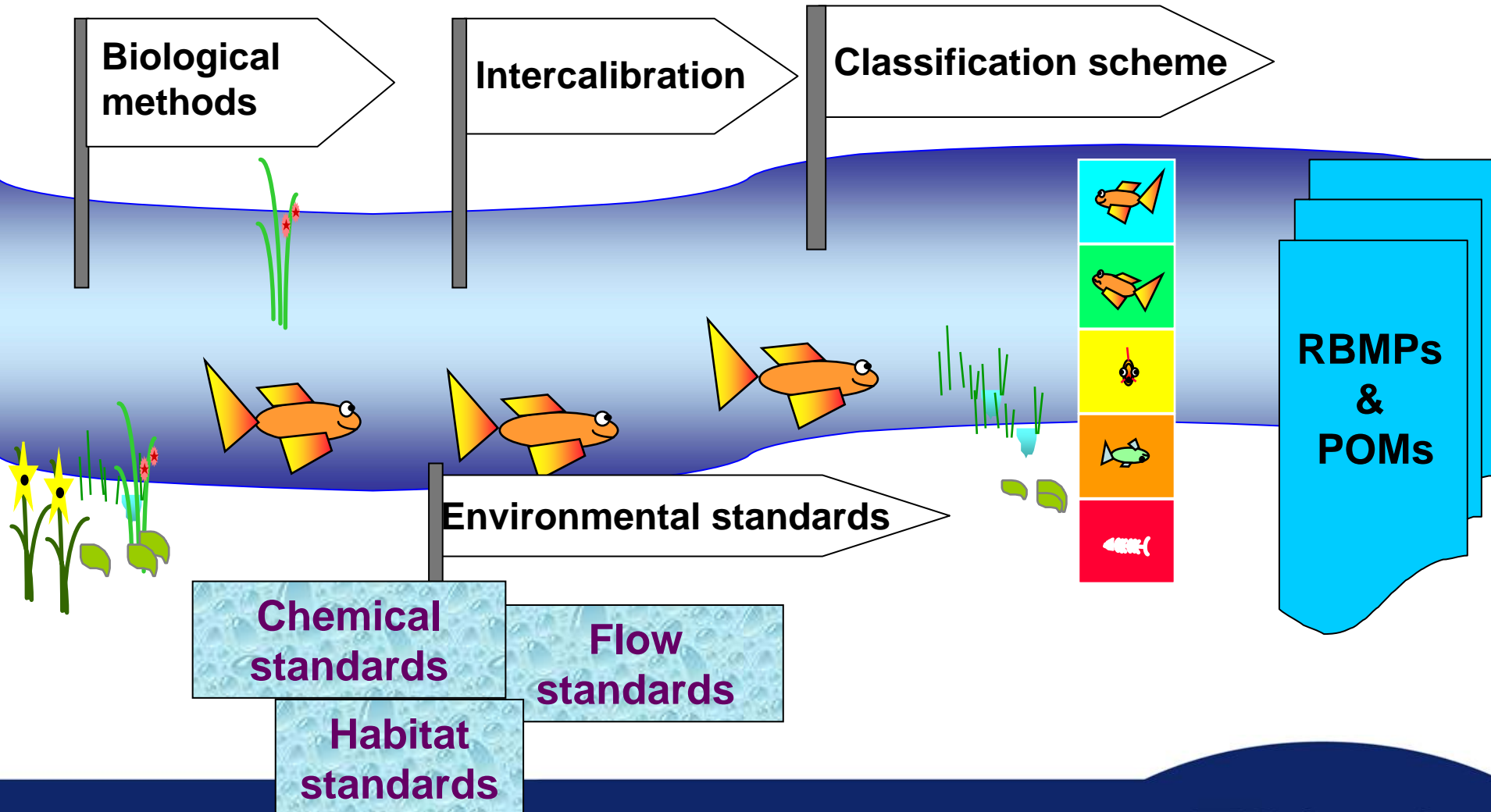
- Describe the state of the water environment
- Confirm effectiveness of measures

## Environmental Standards

- Define water quality, hydrology & morphology conditions needed to support biology
- Used to identify measures (e.g. licensing)
- Help to set objectives for water bodies

*Supported by data from monitoring and risk assessments*

# WFD classification and environmental standards



# Classification outcomes

- Ecological (surface waters) - high, good, mod, poor, bad
  - Biology
  - Supported by water quality, morphology and hydrology + UK standards for pollutants
- Chemical (surface waters) - pass, fail
  - European standards for priority list pollutants
- Groundwater Classification (Quantitative + Chemical)
  - good, poor
    - Water quality, quantity and significant damage to dependent ecosystems

# How will classification work?

## For example, surface waters



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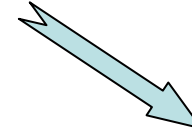
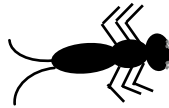


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# Biological Classification

## Schemes

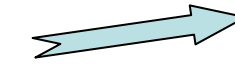
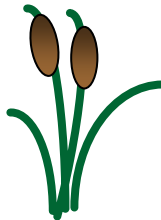
**Invertebrates**



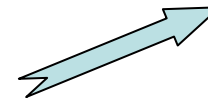
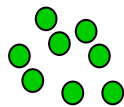
**Fish**



**Plants**

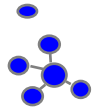


**Algae**



# Water Quality Classification

## General physico-chemical elements



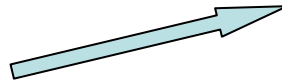
e.g. Phosphate



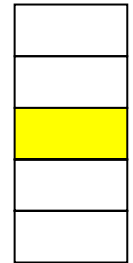
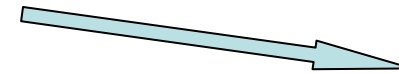
e.g. Nitrate



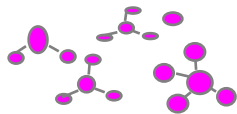
e.g. Temperature



**Hydromorphology  
only used to  
assess High Status**



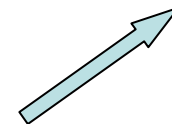
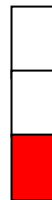
## Specific polluting substances (Annex VIII)



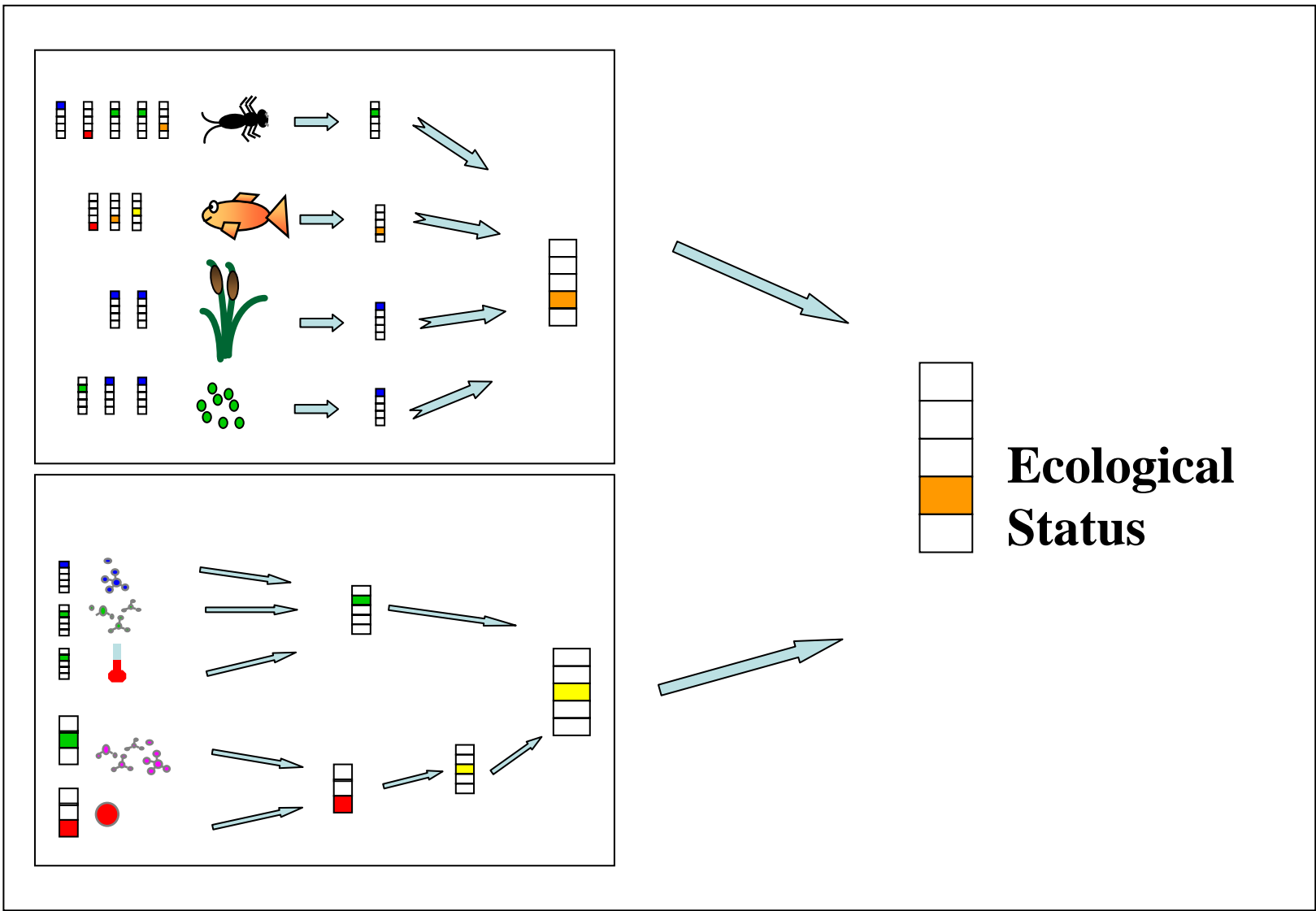
e.g. Permethrin



e.g. Manganese



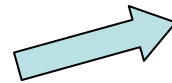
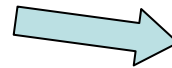
# Ecological Status Classification



# Chemical Status

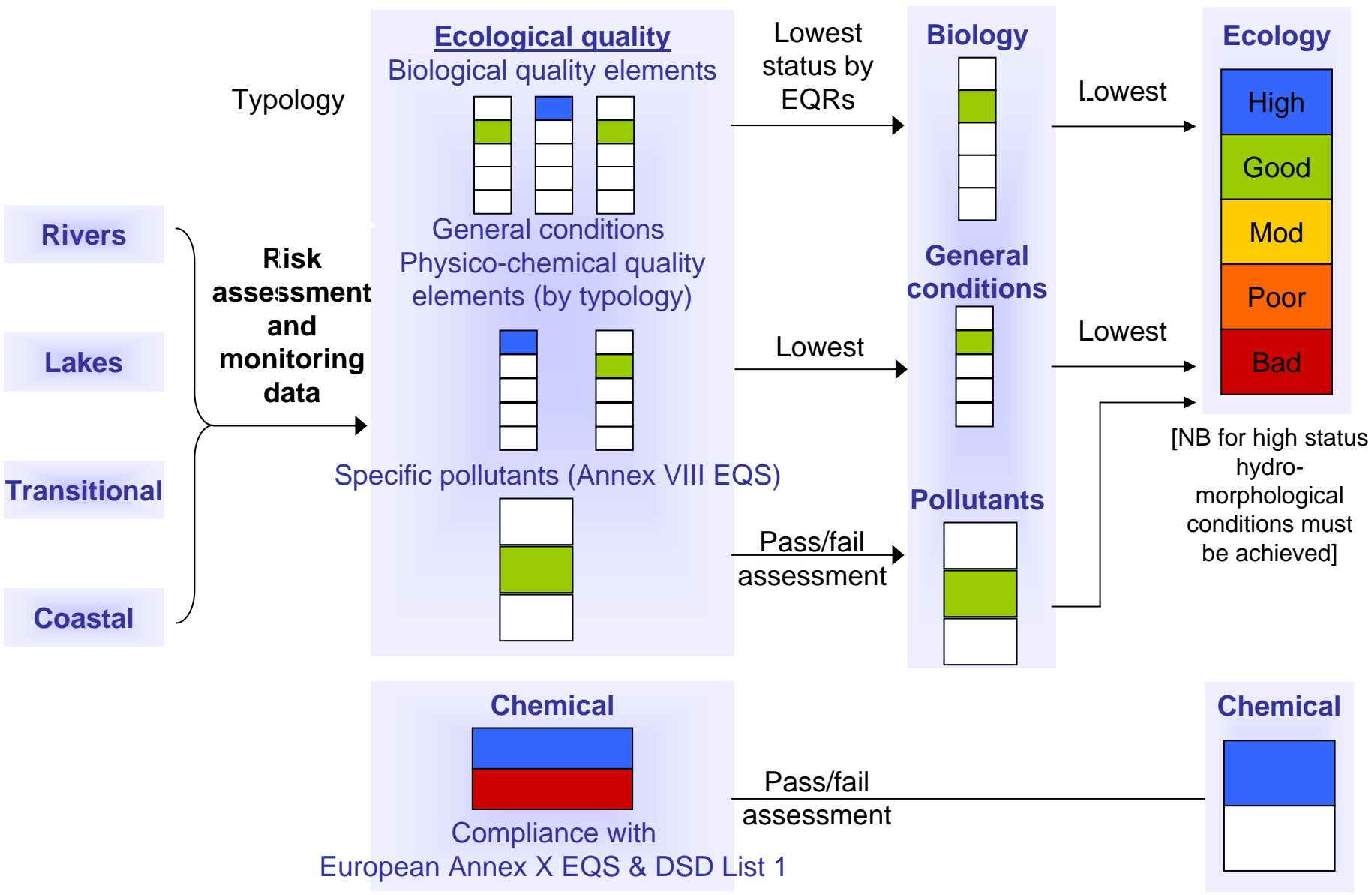
## Priority List Substances

(Including Priority Substances and Priority Hazardous Substances)



## Chemical Status





# Environmental Standards

## Ecological Classification;

- Define right environmental conditions for biology
  - > Water quality, morphology, hydrology

## Chemical Classification;

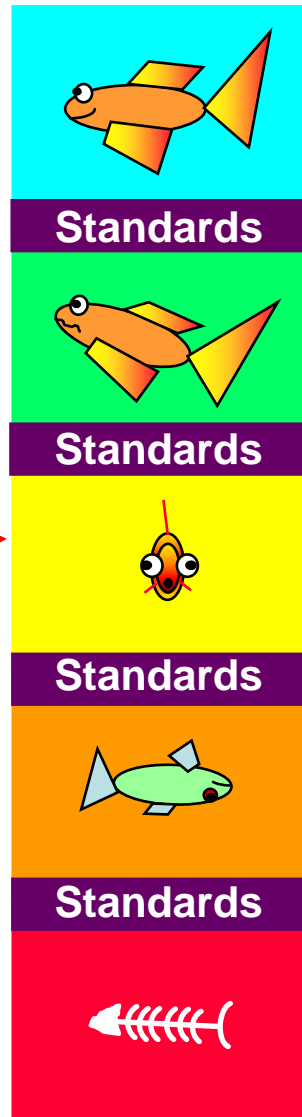
- EU standards for toxic pollutants including priority and priority hazardous substances

## Groundwater Classification;

- Quantitative (e.g. water body balance)
- Quality - EU Daughter Directive e.g. saline intrusions and chemical pollutants

# Environmental Standards

Establish measures



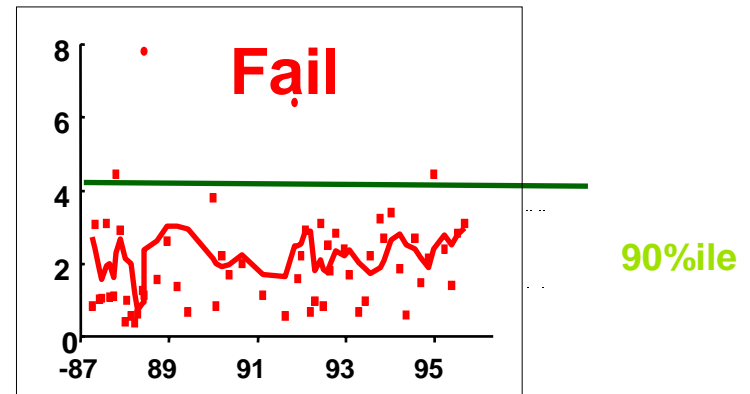
Establishing licensing on new and existing activities

*(take effect from 2009)*

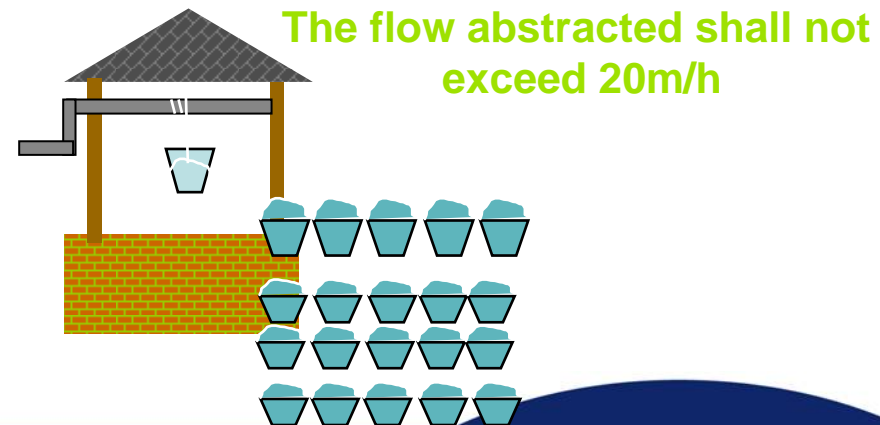
# Environmental Standards

- Exceeding these standards represents a risk to biology
- Currently use;
  - EQS for pollution control in rivers and tidal waters
  - CAMS for flow regimes in rivers

## Chemical standards



## Flow standards



# Will classification schemes and environmental standards change?



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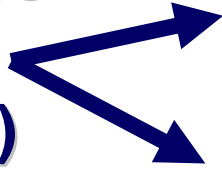
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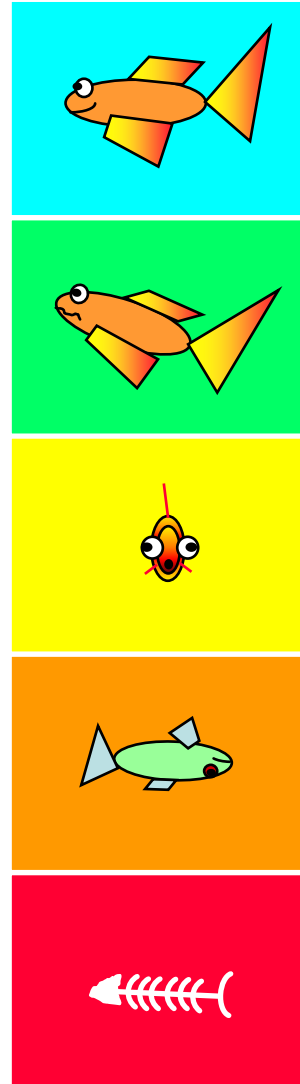
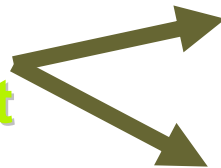
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# European Intercalibration Exercise

**Inform  
class boundaries  
(equal levels  
across Europe)**



**Identify how  
pressures (e.g.  
nutrients) affect  
biology**



Complete  
mid 2007

# UK working together

- UK agreed approach based on UKTAG advice
- Implementation may vary across administrations
- Build on existing systems where possible
- Schemes and standards based on best current science and knowledge
- Scientific and stakeholder reviews
- Refined over river basin planning cycles



# Development of environmental standards

## Phase One

Endorsed as best current science

Water Quality  
(rivers, lakes, TRAC)

Specific pollutants EQS  
Annex VIII

Morphology  
(rivers)

Groundwater quality-  
quantitative standards

Hydrology  
(rivers, lakes)

## Phase Two

More R&D required..... likely for:

Water Quality  
(TRAC-Transparency)

Morphology  
(TRAC, lakes)

Specific pollutants EQS  
Annex VIII

# How can you get involved?

- Proposed technical review in early 2006?
- Phase One environmental standards
- Enhance understanding of how the standards were derived
- Seek input on technical and scientific aspects
- Influence refinement of standards



# Further Information

- UKTAG website - technical guidance

[www.wfduk.org](http://www.wfduk.org)

- Environment Agency briefing note - with minutes of this meeting

- SNIFFER website - research & development

[www.sniffer.org.uk](http://www.sniffer.org.uk)

- EHS website - WFD info, Article 5 reports, economics research

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