

# The Water Framework Directive



An introduction to the WFD and potential implications for upland catchment management.

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# What are we going to cover?

- Why do we need another Directive on water?
  1. What makes this Directive different?
  2. What are the most revolutionary aspects?
- Implications for upland management:
  1. Upland tributaries & lakes
  2. Land management implications e.g. agriculture, forestry
  3. Implications for Peatlands



# Why do we need another water Directive?

Surface Water for Drinking  
(75/440/EEC).

The Bathing Water Directive  
(76/160/EEC).

The Dangerous  
Substances Directive  
(76/464/EEC).

The Fish life Directive  
(78/659/EEC).

The Shellfish Directive  
(79/923/EEC).

- The Groundwater Directive  
(80/68/EEC).

The Drinking Water  
Directive (80/778/EEC).

- The Urban Waste Water  
Directive (91/271/EEC).

The Nitrates Directive  
(91/676/EEC).

Additional Legislation - Birds  
Directive, Habitats Directive,  
IPPC



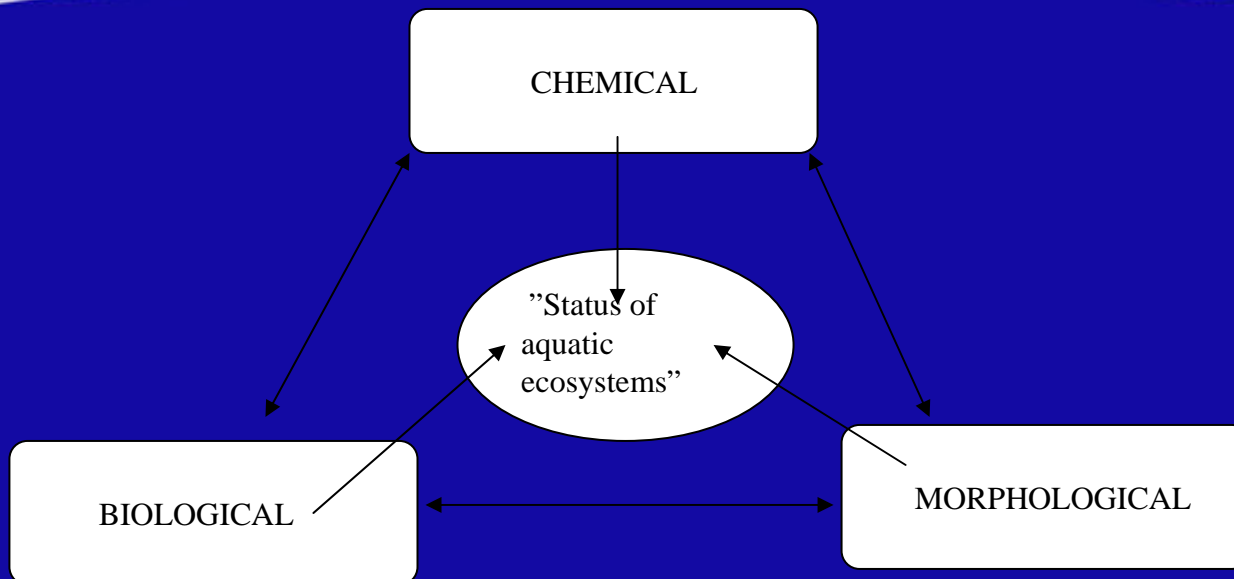


# Purpose of the WFD:



- To establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater which:
- “Prevents further deterioration and protects and enhances the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystem.”
- The WFD is not just about water Quality!







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H<sub>2</sub>O, P, N, K,  
Ca, BOD, DO

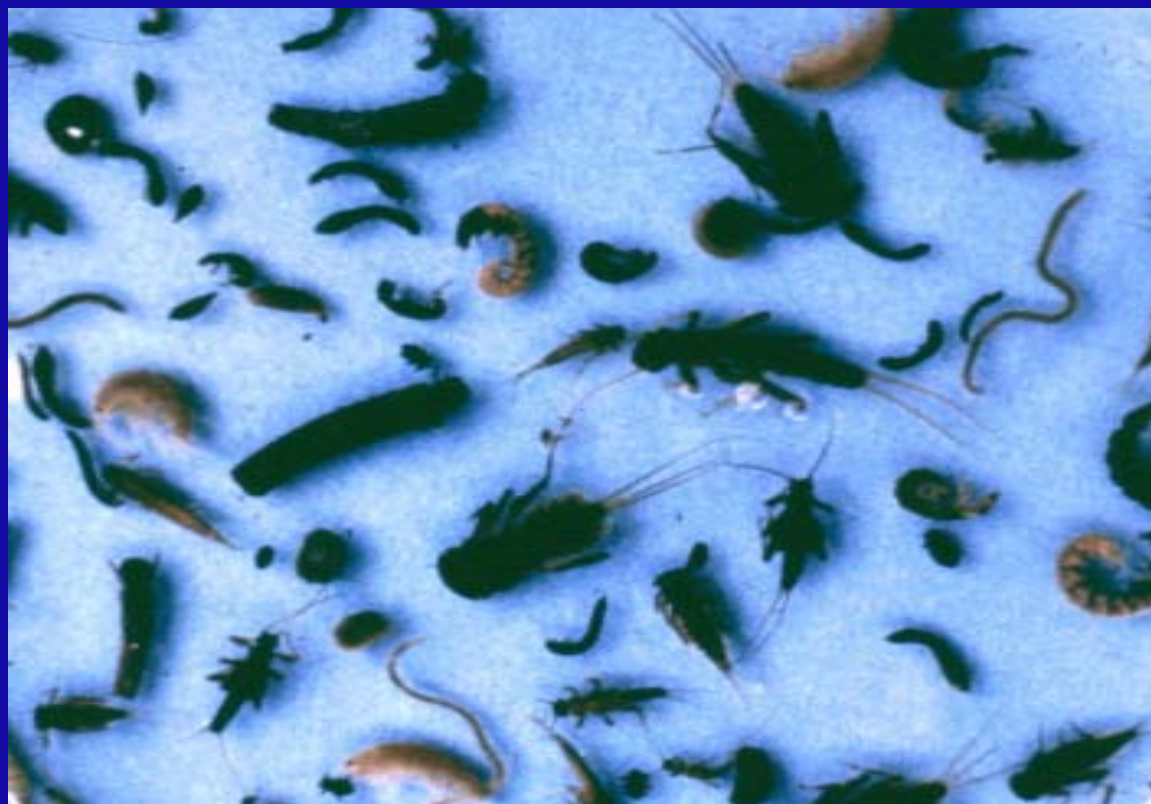


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# Biological + hydromorphological quality elements



- Biological:  
Phytoplankton  
Macrophytes  
Benthic Invertebrates  
Fish

- Hydromorphological:  
Hydrological Regime  
River Continuity  
Morphological conditions





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Element	High status	Good status
<b>Phytoplankton</b>	<p>The taxonomic composition of phytoplankton corresponds totally or nearly totally to undisturbed conditions.</p> <p>The average phytoplankton abundance is wholly consistent with the type-specific physicochemical conditions and is not such as to significantly alter the type specific transparency conditions.</p> <p>Planktonic blooms occur at a frequency and intensity which is consistent with the type specific physicochemical conditions.</p>	<p>There are slight changes in the composition and abundance of planktonic taxa compared to the type-specific communities. Such changes do not indicate any accelerated growth of algae resulting in undesirable disturbances to the balance of organisms present in the water body or to the physico-chemical quality of the water or sediment.</p> <p>A slight increase in the frequency and intensity of the type specific planktonic blooms may occur.</p>



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Element	High status	Good status
Hydrological regime	The quantity and dynamics of flow, and the resultant connection to groundwaters, reflect totally, or nearly totally, undisturbed conditions.	Conditions consistent with the achievement of the values specified above for the biological quality elements.
River continuity	The continuity of the river is not disturbed by anthropogenic activities and allows undisturbed migration of aquatic organisms and sediment transport.	Conditions consistent with the achievement of the values specified above for the biological quality elements.
Morphological conditions	Channel patterns, width and depth variations, flow velocities, substrate conditions and both the structure and condition of the riparian zones correspond totally or nearly totally to undisturbed conditions.	Conditions consistent with the achievement of the values specified above for the biological quality elements.



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# River Basin Management

## Planning

- Article 13 (1)

“Member States shall ensure that a river basin management plan is produced for each river basin district lying entirely within their own territory”





# Diffuse Pollution

- “Pollution by nutrients, pesticides or sediments/soils which does not originate from the end of a pipe”
- There are currently no legal instruments that require the control of pollutants sourced directly from land.
- The “Curry Report” describes farming as the number one polluter of water in the country.
- Agriculture contributes 43% of P and 75% of N to waters in the UK. (EN Report 455)



# Diffuse Pollution

## Article 11

### Programme of Measures

- (e) for diffuse sources liable to cause pollution, measures to prevent or control the input of pollutants. Controls may take the form of a requirement for prior regulation, such as a prohibition on the entry of pollutants into water, prior authorisation or registration based on general binding rules where such a requirement is not otherwise provided for under Community legislation. These controls shall be periodically reviewed and, where necessary, updated;



# Diffuse Pollution

Proposed new Regulatory regime:

- (DEFRA and WAG 2<sup>nd</sup> consultation paper)
- *The proposed power would enable legal obligations to be placed on owners or occupiers of land, or others undertaking activities that could give rise to diffuse pollution, to take action to prevent or control diffuse pollution of water to the extent necessary to comply with the Water Framework Directive.*

*e.g. Requirements to take specific action*

*Prohibition of specific activities*

*Conditions to be observed in conducting particular activities*

*Do you have any comments on this proposed new power to prevent and control diffuse pollution?*



# Protected Areas (N2K only)



- Article 4(1C) states “Member states shall achieve compliance with any standards and objectives at the latest 15 years after the date of entry into force of this Directive, unless otherwise specified.”



# Which N2K Sites?

- “Areas designated for the protection of habitats and species where the maintenance or improvement of the status of water is an important factor in their protection, including relevant Natura 2000 sites”
- CCW, EN and SNH water policy have developed criteria.



Natura 2000 SPECIES	Natura 2000 HABITATS
<p>1.a Aquatic species living in surface waters as defined in Article 2 of the Water Framework Directive (e.g. bottle-nose dolphin, freshwater pearl mussel)</p>	<p>2.a Habitats which consist of surface water or occur entirely within surface water, as defined in Article 2 of the Water Framework Directive (e.g. oligotrophic waters; estuaries; eelgrass beds)</p>
<p>1.b Species with at least one aquatic life stage dependent on surface water (i.e. species that use surface water for breeding; incubation, juvenile development; sexual maturation, feeding or roosting - including many Natura bird and invertebrate species)</p>	<p>2.b Habitats which depend on frequent inundation by surface water, or on the level of groundwater (e.g. alluvial alder wood, blanket bog, fens)</p>
<p>1.c Species that rely on the non-aquatic but water-dependent habitats relevant under 2.b and 2.c in the habitats column of this Table (e.g. Killarney fern).</p>	<p>2.c Non-aquatic habitats which depend on the influence of surface water - e.g. spray, humidity (bryophyte-rich gorges)</p>

# Water Framework Directive: Revolutionary aspects!



- Requires the setting of objectives and standards for the whole of the aquatic ecosystem, (biological, hydro-morphological and chemical)
- Requires the achievement of this through an integrated plan called a “River Basin Management Plan”
- Requires the control of Diffuse pollution and therefore requires control over elements of land management! (agri, forestry, land use planning)
- Integrates the standards and objectives for Water Dependent N2K Habitats and species







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# Implications for Land Management in the Uplands?

- Requirements for control of diffuse pollution will potentially change upland land management:
- To control erosion resulting in diffuse sediment pollution (sediments affect fish and morphology quality elements)
- Need to tackle acidification could potentially increase calls for liming of upland areas.
- Potential need to restore riparian woodlands.
- Potential need to restore wetlands or increase hydrological retention to prevent damaging floods.



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# WFD could drive new Agri- environment schemes.

- Existing schemes, (Tir Gofal) Habitats, Landscape, Access based, very few measures for water quality.
- New scheme will need a broad range of measures:
  1. Soil conservation planning
  2. Nutrient planning
  3. Riparian habitat creation
  4. Waste management measures
  5. Field based actions

# Detailed Measures

- A two or three tier approach may be required.
  - 1<sup>st</sup> tier – Basic soil plan production & limited implementation (Entry level Scheme)
  - 2<sup>nd</sup> tier – Detailed soil/nutrient plan production and implementation.
  - 3<sup>rd</sup> tier – Target “at risk” catchments. More than one farm benefits.

Will we need a different scheme for Upland land management?

# Implications for Peatlands



- A number of uncertainties regarding peatlands:
- If N2K sites, water requirements will need to be met through WFD RBMP e.g. abstraction of water reduced, drainage reduced.
- For non-N2K, WFD requires “no significant damage to groundwater dependent terrestrial ecosystems”
- So we need to ascertain which peatlands have groundwater/aquifer or surface water interactions. This will determine level of benefits from WFD.



# Where can I find out more detail?

- The Official journal of the European Communities: Directive 2000/60/EC
- The Environment Agencies Technical consultation on the Water Framework Directive:  
[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

Second consultation on the Implementation of the EC WFD

Available on:

[www.defra.gov.uk/environment/water/index.htm](http://www.defra.gov.uk/environment/water/index.htm)





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