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**BRIEFING PAPER**

Number CBP 7246, 26 July 2018

# Water quality

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# Summary

Water is a key part of the natural environment which provide valuable goods and services to people. It is important for many reasons, including human health, farming and food, healthy wildlife and habitats, bathing, fishing and other leisure activities. The Office for National Statistics estimated the asset value of freshwater services (including water abstraction, recreation, fishing and pollution removal) for the whole of the UK at £39.5 billion.

Efforts to improve the quality of water bodies in the UK have been underway for a number of years. Most work in managing and protecting water bodies in the UK is currently governed by the EU's Water Framework Directive (WFD) which was adopted in 2000. This is complemented by a number of more specific EU Directives including those relating to bathing water, drinking water and nitrates.

The overall aim of the WFD is for member states to achieve 'good' status of all water bodies by certain deadlines. In accordance with the WFD, surface waters are assessed against their ecological and chemical status; groundwater is measured by its quantitative and chemical status. The key source of information on the measures being taken to improve water quality in a particular area is the relevant River Basin Management Plan. Monitoring of water quality is a devolved issue so separate approaches are taken in England, Wales, Scotland and Northern Ireland. However, compliance with European requirements is measured by the UK's overall status classification. In 2016, 35% of surface waters across the UK were classified as 'good' or better. There has been very little change in this overall status classification since 2008. There are no UK-wide data available for overall groundwater status.

The Defra Secretary of State confirmed in May 2018 that "around one quarter" of water bodies in England will not meet 'good' status and have been set lower objectives. He also noted that most EU Member States will realistically find it a challenge to meet the ambition of the WFD. Latest available EU-wide data on progress by other Member States showed that 43% of surface water bodies (which make up the vast majority of water bodies across Europe) were in good or better ecological status in 2009, expected to rise to 53% in 2015.

In the context of Brexit, the Government has stated that it "will not weaken environmental protections when we leave the EU" and the *EU (Withdrawal) Act 2018* aims to provide the framework to convert EU requirements into domestic law from exit day. The Government's 25-year environment plan (published in January 2018) sets out the Government long-term approach to the environment, including a goal for England to achieve clean and plentiful water by improving at least 75% of waters "to be close to their natural state as soon as is practicable". The Secretary of State confirmed this is intended as "a direct translation of the commitments of the WFD". The plan states this will be achieved by:

- Reducing damaging abstraction of water from rivers and groundwater;
- Reaching or exceeding objectives for rivers, lakes, coastal and groundwaters that are specially protected for biodiversity or drinking water;
- Supporting Ofwat's (the water industry regulator) ambitions on leakage in the water industry;
- Minimising by 2030 the harmful bacteria in designated bathing waters and continuing to support the cleanliness of our waters.

Unless otherwise stated, this note focuses on England. Information on Wales, Scotland and Northern Ireland is included where possible. Further information is available for MPs and their staff by getting in touch with the Library.

# 1. Improving water quality in the UK

## 1.1 Background

Efforts to improve the quality of freshwater bodies (including rivers, streams, lakes, estuaries, coastal waters and groundwater) in the UK have been underway for a number of years. Water quality affects, and is affected by, many sectors, including health, energy, environment, agriculture, leisure and food. Water is a key part of the natural environment which provides valuable goods and services to people. The Office for National Statistics estimated the asset value of freshwater services (including water abstraction, recreation, fishing and pollution removal) for the whole of the UK at £39.5 billion.[1]

Under previous standards, improving water quality was largely achieved through tackling point sources of pollution (such as discharges from sewage treatment works or from industrial processes). The approach has since developed into a catchment-based approach whereby activities and issues within a water catchment area are looked at and addressed as a whole. Most work in managing and protecting water bodies in the UK is currently governed by the EU's Water Framework Directive which was adopted in 2000. This is complemented by a number of more specific Directives including those relating to bathing water, drinking water and nitrates.

### The Natural Environment White Paper

In June 2011, the Coalition Government published *The Natural Choice: Securing the Value of Nature*[2] which was the first White Paper on the natural environment for twenty years. The Natural Environment White Paper noted that a sustainable supply of good-quality freshwater for our economy, society and environment depended on functioning water ecosystems.[3]

The White Paper set out a long-term goal of all water bodies in England to be in excellent health by 2050.

### The Water for Life White Paper

In December 2011, the *Water for Life* White Paper[4] was published and described a reform of water management and the water industry, which included valuing water as a precious resource. It noted that the benefits of a clean, healthy aquatic environment were significant and undervalued and explained that clean water:

- reduces the need for water companies to carry out costly and carbon intensive treatment processes to make it fit to drink;
- improves habitats that support greater biodiversity;

1 Office for National Statistics, UK natural capital: ecosystem accounts for freshwater, farmland and woodland, 2017, Table 5
2 Defra, *The Natural Choice: Securing the Value of Nature*, Cm 8082, June 2011 [accessed 06.07.15]
3 Ibid. para 2.68
4 Defra, *Water for life*, Cm 8230, December 2011 [accessed 15.07.15]

- improves the quality of waters for bathing, angling and other leisure activities; and
- improves the quality of supplies of fish and shellfish.[5]

The Water Act 2014 put in place a legislative framework for the reform of the water industry to tackle some of the challenges identified by the *Water for Life* White Paper. In relation to water quality, the Water Act 2014 placed impetus on the reform of the water abstraction regime in England by requiring the Secretary of State to lay a report setting out progress on this by 2020.[6] More information on the progress towards reform of water abstraction can be found in section 3.2 below.

More information on the reform of the water industry can be found in the Library Briefing Paper: *Increasing competition in the water industry in England and Wales*.[7]

## Possible impact of Brexit

Environmental issues, including water quality, have been the subject of much debate in Parliament in relation to Brexit and the UK's post-exit position. In response to concerns raised, the Government has stated that it "will not weaken environmental protections when we leave the EU" and committed to "upholding all our obligations under international environmental treaties".[8]

The *European Union (Withdrawal) Act 2018* is designed to provide legal continuity by copying over the entire body of EU law onto the UK's post-exit statute book. In broad terms, this means that the EU requirements relating to water quality will be converted into domestic law from exit day. However, concerns have been raised in relation to the future of environmental protections in the UK. The specific details of how water quality requirements will be continued, monitored and enforced are not yet available as Brexit negotiations continue (see also Box 1).

Further discussion of Brexit and environmental law and policy, including the *European Union (Withdrawal) Act 2018* is available in the Library Briefing Paper on Brexit and the environment.

### Box 1: Environmental Principles and Governance Bill

In May 2018, the Government announced that it would introduce a new Environmental Principles and Governance Bill as part of its commitment to ensure that environmental protections will not be weakened as the UK leaves the EU.

The Bill would create a new body to provide independent scrutiny and advice on environmental law and policy; to respond to complaints about the Government's delivery of environmental law; and to hold Government to account over delivery of environmental law, including potential enforcement powers (including legal proceedings if necessary).

The consultation on the contents of the Bill was launched on 10 May 2018 and will close on 2 August 2018. In accordance with the *EU (Withdrawal) Act 2018* the Government must publish a draft Environmental

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5 Defra, *Water for Life,* Cm 8230, December 2011, para 3.2 [accessed 06.07.15]
6 Water Act 2014, section 57
7 House of Commons Library Briefing Paper CBP 7259 November 2016
8 Department for Exiting the European Union, EU (Withdrawal) Bill, Factsheet 8: Environmental principles

Principles and Governance Bill by 26 December 2018. It aims to introduce a Bill early in the second session of this Parliament.

This applies to England only, but the Government stated: "However, we are exploring with the devolved administrations whether they wish to take a similar approach. We would welcome the opportunity to co-design proposals with them to ensure they work across the whole UK, taking account of the different government and legal systems in the individual nations."[9]

9 Gov.uk, New environment law to deliver a Green Brexit, 10 May 2018

# 2. Policy and legislation

## 2.1 EU Water Framework Directive

The Water Framework Directive (2006/60/EC)[10] (WFD) was adopted in 2000 and provided a common framework for water management and protection in Europe.

The WFD drew together what had previously been a fragmented policy area and introduced a new integrated approach to the management of water quality. It established a river basin management system for the protection and improvement of all aspects of the water environment, including rivers, lakes, estuaries, coastal waters and groundwater.

The WFD required all member states to achieve 'good' status of all water bodies (see Box 2) by 2015, provided that no deadline extension or exception was invoked. Relying on certain waivers allowed member states to extend the deadline to the end of the second or third management cycles (2021 and 2027 respectively) (see further below).[11] The 2015 deadline was not met as many member states (including the UK) relied on waivers to extend the deadlines or meet less stringent objectives. Further explanation of this is provided below.

**Box 2: Types of water body**

The WFD categorises water bodies into the following types:

- **Surface water:** include estuaries, lakes, ponds, rivers, reservoirs and coastal waters (up to one nautical mile from the point it meets a river mouth)
- **Groundwater:** all water which is below the surface of the ground and in direct contact with the ground or subsoil.
- **Artificial water bodies:** such as canals and reservoirs
- **Heavily modified water bodies:** natural water bodies modified by human activity

The European Commission is carrying out an Evaluation and Fitness Check Roadmap on the WFD and its daughter Directives,[12] due to conclude in 2019.[13]

### Extended deadlines and less stringent objectives

The WFD recognised that under specific and limited circumstances, it was not realistic to meet the 2015 deadline for achieving 'good' status for all water bodies. Articles 4 and 5 allow a derogation (or waiver) in the following circumstances:

1 **The 2015 time limit can be extended** if to achieve 'good' status would be disproportionately expensive or the magnitude of

[10] Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for Community action in the field of water policy (2000/60/EC), 23 October 2000 (as amended)

[11] Ibid., Article 4

[12] The Groundwater Directive (2006/118/EC) and the Environmental Quality Standards Directive (2008/105/EC) are the so-called "daughter-directives" of the WFD

[13] European Commission, Fitness check of the Water Framework Directive and the Floods Directive [accessed 18 May 2018]

improvement needed is only achievable in a timeframe exceeding the 2015 target for reasons of technical feasibility or the natural conditions do not allow timely improvement in the status of the water body.[14]

2 **Less stringent environmental objectives can be met** if a water body is so affected by human activity or its natural condition is such that achieving 'good' status would be infeasible or disproportionately expensive and the environmental and socioeconomic needs served by the human activity cannot be achieved by other means which are a better environmental option and not entailing disproportionate costs.[15]

3 **A temporary derogation can be granted** if the water body is affected by an exceptional natural cause or force majeure which could not reasonable have been foreseen. In particular, extreme flooding or prolonged drought or the result of circumstances due to accidents which could not reasonably have been foreseen.[16]

In each case, specific conditions must be met for the derogation to be granted. No further deterioration can occur in the status of the affected body and the use of the derogation, and the reasons for it, must be specifically set out and explained in the relevant river basin management plan.

If the time limit is extended it must be for the purposes of phased achievement of the objectives for bodies of water. Extensions of the 2015 time limit are restricted to a maximum of two further updates (or cycles) of the river basin management plan except in cases where the natural conditions are such that the objectives cannot be achieved within this period. Therefore, subject to the limited exceptions, 2027 is the maximum derogation for water bodies to reach 'good' status in the UK.

The UK has relied on a number of derogations, which are set out in appropriate River Basin Management Plans for relevant water bodies. See section 2.7 below for further comment.

**Possible penalties for non-compliance**

The WFD is legally binding on all Member States. Fines for non-compliance are not automatic but follow a set process that is described in detail in a House of Commons Library Briefing Paper: How the EU fines Member States.[17]

See Box 1 for information on how this is expected to change after Brexit.

## 2.2 Regulation in the UK

In the UK, water quality is a devolved matter. This means that while the overall EU requirements of the WFD must be met by the UK, each devolved

[14] Article 4(4)
[15] Article 4(5)
[16] Article 4(6)
[17] Library Briefing, How the EU fines Member States, SN/IA/3958

Administration has implemented the requirements separately, and monitors and regulates requirements separately.

The UK Water Framework Directive Technical Advisory Group (UKTAG) is a partnership of conservation and environmental groups that has been set up by the Government and is currently chaired by the Environment Agency. The group provides advice on the scientific and technical elements of the Water Framework Directive, such as setting objectives, classification and monitoring.

The following table provides a quick overview on how the WFD is implemented and regulated in the UK, along with some links to further information:

| | **Principal legislation** | **Regulator** | **Further information** |
|---|---|---|---|
| **England** | Water Environment (Water Framework Directive (England and Wales) Regulations 2017 (as amended) | Environment Agency | Gov.uk pages on Water<br>2018 Environment Agency Reports on the state of the environment: water resources and water quality. |
| **Wales** | Water Environment (Water Framework Directive (England and Wales) Regulations 2017 (as amended) | Natural Resources Wales | The Welsh Government Water Strategy for Wales (2015) sets out a strategic direction for water policy over 20 years. The Welsh Assembly Research service has published a short guide to water quality in Wales. |
| **Scotland** | Water Environment and Water Services (Scotland) Act 2003 (as amended) | Scottish Environment Protection Agency | The Scottish Government page on Water environment and Protected waters (including bathing waters and drinking water). The Scottish Environmental Protection Agency (SEPA) webpage on water sets out further information. |

| | | | |
|---|---|---|---|
| **Northern Ireland** | Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2003 (Statutory Rule 2003 No. 544) (as amended) | Department of Agriculture, Environment and Rural Affairs (DAERA) | DAERA pages on water pollution |

## 2.3 How is 'good' status of surface water bodies assessed?

Surface water status is measured by both its ecological and chemical status. It is assessed against the scale of high, good, moderate, poor and bad.

The **ecological status** of surface waters is assessed according to the following criteria:[18]

- Biological quality: measured by composition and abundance of specified elements such as fish, benthic invertebrates, aquatic flora;
- Hydromorphological quality: measured by reference to elements such as river continuity, channel patterns, dynamics of flow or substrate of the river bed; and
- Physico-chemical quality: measured by reference to elements such as temperature, oxygenation, pH, nutrient conditions and the concentrations of specific pollutants (synthetic and non-synthetic).

The **chemical status** of surface waters is assessed according to the following criteria:

- Chemical quality: measured by reference to environmental quality standards for chemical substances at European level (otherwise known as priority substances). These standards specify maximum annual average concentrations for specific water pollutants.

The specific requirements differ depending on which type of surface water body is being monitored. Chemical status is measured as either good or fail. If part of a water body fails on any one of the criteria monitored, it will fail to achieve or lose good status. This is described as the "**one out all out**" approach.

### Priority substances

The WFD aims to improve water quality by reducing specified 'priority substances' and eventually eliminating 'priority hazardous substances' altogether. The European Commission is required to review the adopted list of priority substances every 6 years. A review in 2012[19] led to a proposal for a new Directive amending the list of priority substances by adding

18 Water Framework Directive 2000/60/EC, Annex V
19 See COM/2011/876

additional substances and introducing stricter environmental quality standards for some existing priority substances.[20]

The new Priority Substances Directive (2013/39/EU)[21] (also known as the Environmental Quality Standards Directive) sets out a list of 45 'priority substances' for surface waters which must stay below specified levels that are safe for water-bodies and human health.[22] This compares to a list of 33 priority substances in the previous Directive.[23] The list includes several possible or known carcinogens, such as benzene, lead and naphthalene. This Directive had a transposition deadline of September 2015 in order that the updated standards would apply for the second cycle of river basin management plans (2015-2021).[24]

There is also a sub-set of 'priority' substances called the 'priority hazardous substances' list which are identified in the legislative list. Priority hazardous substances include cadmium and its compounds and mercury and its compounds. All member states must stop any discharge of priority hazardous substances by 2020.

## 2.4 How is 'good' status of groundwater bodies assessed?

Good groundwater status is measured by both its quantitative status and its chemical status. Its overall status is measured as 'good' or 'fail' and is determined by the poorer of the two measures.

**Quantitative status** measures the degree to which a body of groundwater is affected by direct and indirect abstractions. In simple terms, to achieve 'good' groundwater quantitative status, the available groundwater resource must not be exceeded by the long-term annual average rate of abstraction. Groundwater abstraction must not cause failure of 'good' ecological status in dependent surface waters either (see above).

**Chemical status** is measured by reference to the concentration of specified pollutants and electrical conductivity. To achieve 'good' groundwater chemical status, the chemical composition of the groundwater body must be such that the concentrations of pollutants:

- do not exhibit effects of saline or other intrusions and changes in conductivity are not indicative of this;
- do not exceed the quality standards for chemical substances set by EU legislation;[25] and

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20 See European Commission webpage on Priority substances under the WFD for further information [accessed 21 May 2018]

21 Directive 2013/39/EU amending Directives 2000/60/EC and 2009/105/EC as regards priority substances in the field of water policy

22 Note that this replaces the original list in Annex X of the WFD and the second list in the Environmental Quality Standards Directive (2008/105/EC). See Annex I of the Priority Substances Directive for a full list of priority substances.

23 Priority Substances Directive (2008/105/EC)

24 Defra, Water Framework Directive implementation in England and Wales, May 2014, para 2.5

25 In accordance with Article 17 of the Water Framework Directive

- are not such that would result in failure to achieve the environmental objectives in associated surface waters or terrestrial ecosystems which depend directly on the groundwater body.[26]

Groundwater status is also subject to the "**one out all out**" approach i.e. if part of a groundwater body fails on any one of the criteria monitored, it will fail to achieve or lose good status.

The Groundwater Directive (2006/118/EC) complements the WFD and requires measures to prevent or limit inputs of pollutants into groundwater to be operational so that WFD environmental objectives can be achieved by 2015.[27] In 2013, the European Commission consulted on Annexes I and II of the Groundwater Directive (which provide Europe-wide environmental groundwater quality standards for pollutants, a minimum list of pollutants and indicators which member states should consider when establishing threshold values) and the results of the review were reflected in Directive (2014/80/EU) amending Annex II of the Groundwater Directive.[28]

## 2.5 River Basin Management Plans

The WFD requires River Basin Management Plans (RBMPs) to be produced for each river basin district lying within member states. River basins are the natural geographical and hydrological area relating to a river, rather than an administrative or political area.

RBMPs set statutory objectives to be achieved for water bodies and summarise the measures needed to achieve them. There are 16 river basin districts wholly or partly within the UK with corresponding RBMPs:

- England: Anglian; Humber; Northumbria; North West; Severn (cross-border with Wales); South East; South West; and Thames.
- Wales: the Dee (cross border with England) and Western Wales river basin districts.
- Scotland: the Scotland river basin district. The Solway Tweed river basin district (cross border with England) is jointly managed by the Environment Agency and SEPA.
- Northern Ireland: North Eastern (wholly in NI), North Western and Neagh Bann (cross-border with the Republic of Ireland) and Shannon (cross-border with the Republic of Ireland but almost entirely within RoI and therefore managed by authorities in RoI).

The RBMPs for each river basin district are the key source of information on the water environment, setting objectives for every water body and summarising the measures which will be taken to achieve the relevant outcomes. River Basin Management Plans are publicly available and can be found on the relevant authority's website.

RBMPs must be updated every 6 years. The first cycle of RBMPs covered the period from 2009-14. The current RBMPs were published in 2015 and set out planned improvements for the second cycle (up to 2021).

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26 Water Framework Directive, Annex V, Table 2.3.2

27 For further information see: http://ec.europa.eu/environment/water/water-framework/groundwater/framework.htm

28 Directive 2014/80/EU amending Annex II to Directive 2006/118/EC

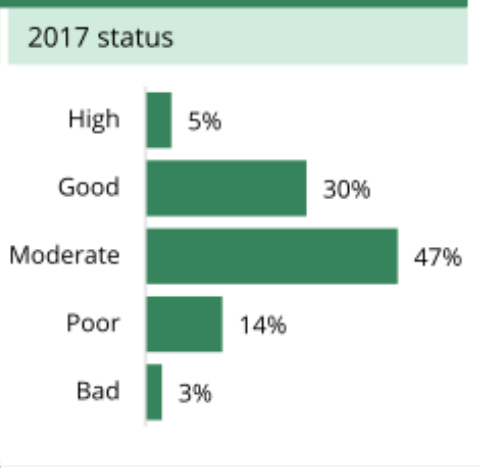
## 2.6 Meeting the WFD targets: status of UK water bodies

Because regulation of water quality is devolved, each nation has its own regulator that reports on water quality differently. Nations also report on different timescales. Wales and Northern Ireland last reported in 2015, which means that their data relates to cycle 1 requirements, while England and Scotland are now reporting on cycle 2 (see section 2.5, above, for more on RBMP cycles).

The Joint Nature Conservation Committee (JNCC) reports on the ecological status of UK surface waters as part of their *UK Biodiversity Indicators* by bringing together reporting from each nation. The 2018 indicators report that 35% of surface water bodies had high or good status in 2017, down from 36% in 2012. The JNCC therefore assess the indicator as 'declining in the short term'. It is worth noting that there has been little change in each category since 2008, and that the proportion at high or good status has been the same since 2015. The table and chart below show trends for surface water in more detail:

**STATUS OF UK SURFACE WATER BODIES UNDER THE WATER FRAMEWORK DIRECTIVE, 2008-2017**

| | High | Good | Moderate | Poor | Bad |
|---|---|---|---|---|---|
| 2008 | 4% | 32% | 48% | 13% | 3% |
| 2009 | 4% | 32% | 48% | 13% | 3% |
| 2010 | 4% | 32% | 47% | 13% | 3% |
| 2011 | 4% | 33% | 45% | 15% | 3% |
| 2012 | 4% | 33% | 45% | 15% | 3% |
| 2013 | 4% | 32% | 44% | 16% | 3% |
| 2014 | 3% | 32% | 45% | 17% | 3% |
| 2015 | 5% | 30% | 47% | 15% | 3% |
| 2016 | 5% | 30% | 47% | 15% | 3% |
| 2017 | 5% | 30% | 47% | 14% | 3% |




**Source:** JNCC, *UK Biodiversity Indicators 2018,* B7. Surface water status

**Notes:** The percentage of water bodies in each status class is based on the number assessed in each year; the number assessed varies slightly from year to year.
This indicator includes both natural water bodies and heavily modified or artificial water bodies (HMAWBs).
The indicator combines data for the UK nations, which are currently reporting on different time-scales. Wales and Northern Ireland last reported in 2015, and this data has been carried forward.

Surface water bodies in the UK are less likely to have good ecological status than the European average. Across Europe, 43% of surface water bodies were in good or better ecological status in 2009 and 53% were expected to reach this level in 2015. In the UK, 36% of surface water bodies were in good ecological status in 2009 and 35% in 2015. The European Environment Agency have published a map showing the percentage of water bodies in less than good ecological status or potential across Europe. Quality tends to

be higher in Scandinavia and southern Europe and lower in northern and central Europe. [29]

The table below summarises the most recent reporting for each nation. As discussed above, the regulatory bodies report headline figures on water quality somewhat differently and on different time-scales.

**STATUS OF WATER BODIES UNDER THE WFD: UK NATIONS**

| | Number of water bodies | Status |
|---|---|---|
| England, 2017[30] | **4,656** surface water bodies | **16%** of surface water bodies have good or better overall status.<br>In 2016, **53%** of groundwater bodies had good chemical status[31] and in 2017, **72%** had good quantitative status. [32] |
| Wales, 2015[33] | **1,216** water bodies (1,178 surface water and 38 groundwater) | **39%** of all water bodies have good or better overall status. **39%** of surface water bodies have good or better ecological status and **16%** have good or better chemical status. **100%** of groundwater bodies have good quantitative status and **58%** have good chemical status. |
| Scotland, 2016[34] | **3,651** water bodies (3,248 surface water and 403 groundwater) | **62%** of surface water bodies have good or better overall status and **79%** of groundwater bodies have good status. |
| Northern Ireland, 2015[35] | **571** water bodies (496 surface water and 75 groundwater) | **32%** of surface water bodies have good or better overall status and **65%** of groundwater bodies have good overall status. |

29 European Environment Agency, *Surface waters (2017)*, Figure 2
30 Defra, *England biodiversity indicators (2018)*, Chapter 21: surface water status
31 Environment Agency (2018). *The state of the environment: water quality*
32 Environment Agency (2018). *The state of the environment: water resources*
33 Natural Resources Wales, *River basin planning progress report for Wales 2009-2015*, December 2015
34 Scottish Environment Protection Agency, *Water classification hub*, accessed 15 May 2018
35 Department of Agriculture, Environment and Rural Affairs, *Northern Ireland water body status 2015 summarised*, 7 November 2017

## 2.7 Meeting the WFD targets: Commentary on progress

The 2012 Lords Sub-Committee on Agriculture, Fisheries and Environment Report An Indispensable Resource: EU Freshwater Policy[36] quoted Richard Benyon (then Parliamentary Under Secretary of State for Defra) and his officials who made it clear that 100% of UK waters would not reach good status by 2027, and that the provisions in the WFD on disproportionate cost and technical feasibility meant that a lower level than 100% was in keeping with the Directive. According to his officials:

> the impact assessment we did at the start of the first cycle said, rather tentatively, that by projecting forward and taking account of where we thought we could foresee the benefits outweighing the costs of what might emerge as needing to be done, we would probably get to something like 75% good status by 2027.[37]

More recently, in correspondence to the Environmental Audit Select Committee, the Defra Secretary of State confirmed that "around one quarter" of water bodies in England will not meet 'good' status and have been set lower objectives. This is consistent with the 2012 predictions provided by Defra above. He also noted that most member states will realistically find it a challenge to meet the ambition of the Directive:

> It has become clear over the course of the implementation of WFD that it will be very challenging for most Member States to achieve 'good status' for all waters (one of the Directive's key objectives). This is due to sheer pressure from human populations, industry and agriculture. When the Directive was introduced, it was accepted that some water bodies which have been modified for industrial or social purposes would never reach good status. These water bodies, which are set lower objectives based on technical feasibility or disproportionate costs, account for around one quarter of England's waters. Mechanisms were built into the WFD to take a proportionate and flexible approach, making it one of the most progressive pieces of European legislation. The UK has applied the flexibilities as the Directive was designed to be used.
>
> Even with these mechanisms recognised in WFD, we know that most EU Member States, including the UK, will realistically find it a challenge to meet the ambition of the Directive. It is likely that Member States and the EU Commission will need to consider extending the WFD deadline in some way or revising water quality objectives looking beyond 2027. [38]

The 2018 Environment Agency Report on the state of the environment: water quality provided the following commentary on the status of rivers in England, pointing to phosphorus (a nutrient) and algae as the most common reason for rivers not achieving good status in 2016:

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36 House of Lords European Union Select Committee, Thirty-Third Report, An Indispensable Resource: EU Freshwater Policy, 25 April 2012

37 House of Lords European Union Select Committee, Thirty-Third Report, An Indispensable Resource: EU Freshwater Policy, 25 April 2012, para 39

38 Environmental Audit Committee, Correspondence from the Secretary of State to the Chair on 25 year environment plan, 17 May 2018 [accessed 11 July 2018]

> Water quality can be assessed directly by measuring the concentrations of pollutants such as nutrients and chemicals. Monitoring shows that phosphorus (a nutrient) was the most common reason for rivers not achieving good status in 2016. Of all assessed river water bodies in England, 55% were at less than good status for phosphorus.
>
> Water quality can also be assessed indirectly by looking at the condition of aquatic plant and animal communities. Their health depends greatly on the quality of the water. For example, high levels of phosphorus can lead to excessive growth of algae and plants, choking river channels, using up oxygen at night and adversely affecting the plants, fish and invertebrates. Of all assessed river water bodies, 56% were at less than good status for water plants and algae in 2016 and phosphorus was considered the prime cause. Of all assessed rivers, 59% were at less than good status for fish, and 26% at less than good for invertebrates. Water quality issues were the cause of 38% of all fish test failures, and 61% of invertebrate test failures in rivers in 2015.[39]

On the chemical status of groundwater in England, the Environment Agency Report on the state of the environment: water quality highlighted the presence of nitrates as an issue:

> Groundwater quality is currently deteriorating. This vital source of drinking water is often heavily polluted with nitrates, mainly from agriculture.
>
> […]
>
> Nearly half of groundwater bodies will not reach good chemical status by 2021. For groundwaters protected for drinking water, nitrate levels were responsible for 65% of failures to achieve good chemical status[40]

On quantitative status of groundwater in England, the Environment Agency Report on water resources explained that between a quarter and a third of groundwater resources were not at a sustainable level:

> Groundwater is a major component of ecologically vital flows to certain rivers and wetlands. Groundwater makes up around 30% of England's drinking water supply. Different regions have different proportions of groundwater in the supply. This varies from around 4% in some regions to 100% in others. In 2017, abstraction in around 28% of groundwater bodies were not at a sustainable level (known as 'good quantitative status'). There has been little change in this figure in recent years. Around 15% of groundwater bodies are at risk of deterioration if abstraction continues to increase within licensed quantities.[41]

## 2.8 Bathing Water

There have been EU-wide requirements in place since the 1970s to safeguard public health and clean bathing waters. A bathing water is a beach or inland site used by a large number of bathers. Bathing water

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39 Environment Agency, State of the environment: water quality report, February 2018
40 Environment Agency, State of the environment: water quality report, February 2018
41 Environment Agency, State of the environment: water resources report, May 2018

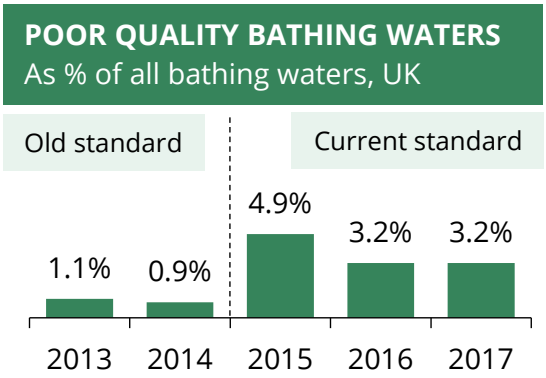
quality is monitored throughout the bathing season. In England and Wales, this means from 15 May to 30 September each year.[42] Water quality information for bathers is available online from the relevant regulator (see section 4 below). Bathing waters are classed as protected areas under Annex IV of the Water Framework Directive and therefore require special protection because of their sensitivity to pollution or their economic, social or environmental importance. Protected areas must comply with the standards and objectives specified by the Directive under which they were established.

Bathing water requirements were revised and updated in 2006 by the Bathing Water Directive 2006/7/EC (replacing Directive 76/160/EEC). The new Directive introduced a new classification system (either 'excellent', 'good', 'sufficient' or 'poor'). Member states are required to monitor and assess bathing water for at least two parameters of faecal bacteria and were required to achieve at least a 'sufficient' classification by end of the 2015 bathing season.

The first classifications under the new Directive were completed at the end of the bathing water season in 2015. A complete list of all bathing waters (along with their classifications) must be published annually. Defra published the list of bathing waters in England for the 2018 bathing season on 2 May 2018.

Classification data is available for each nation for their most recent reporting year – see the table overleaf.

Data for 2013 to 2017 for UK bathing waters classified as "poor" quality is shown in the chart on the right. The increase in 2015 reflects the first year of reporting under the new stricter standards of the updated Bathing Water Directive (2006/7/EC). In 2016, 96.4% of UK bathing waters were of sufficient quality or better, while 3.2% were of poor quality. [43] Data for 2017 can also be inferred based on reporting from individual UK countries: again, 3.2% of bathing waters were of poor quality.




Bathing water quality in the UK is similar to the figure for bathing waters across Europe: 96.3% of bathing waters were of at least sufficient quality in Europe in 2016.[44]

42 Bathing Water Regulations 2013 (SI 2013/1675) (as amended) Regulation 4
43 European Environment Agency, *UK bathing water quality in 2016*, 23 May 2017
44 European Environment Agency, *European bathing water quality in 2016*, 5 May 2017

**BATHING WATER QUALITY, UK COUNTRIES 2017**

| | Sufficient or better | Poor | *% sufficient or better* |
|---|---|---|---|
| England | 406 | 7 | *98%* |
| Wales | 103 | 1 | *99%* |
| Scotland | 75 | 11 | *87%* |
| Northern Ireland | 22 | 1 | *96%* |

**Notes**
The percentage for England includes 2 bathing waters that were not classified.
Figures for Northern Ireland are provisional.

**Sources**
England: Defra, *Bathing waters in England: 2017 compliance report*
Wales: Natural Resources Wales, *Bathing water in Wales 2017*
Scotland: Scottish Environment Protection Agency, *Season 2017/2018: classifications*, accessed 15 May 2018
Northern Ireland: Department of Agriculture, Environment and Rural Affairs, *Bathing water data 2017*, accessed 15 May 2018

A discussion of Brexit and bathing waters is available in the House of Commons Library Insight: *What does Brexit mean for the UK's beaches?* (September 2017).

**Local information**

Since the 2016 bathing season, every local authority which controls a bathing water must display the new bathing water classifications provided by the relevant regulator. This must be in the form of a classification symbol and should include advice against bathing, where appropriate.

More information on the classification symbols used can be found on the EU website on bathing water quality.

## 2.9 Drinking Water

In accordance with the Water Framework Directive, all bodies of water used for abstraction of water intended for human consumption must be identified within each river basin district, with the exception of those providing less than 10m³ a day (on average) or those serving less than 50 persons. Bodies of water providing more than 100m³ per day (on average) must also be monitored in accordance with additional requirements set out in the WFD.[45]

In addition to achieving 'good' status under the WFD, the resulting drinking water must also meet the requirements of the Drinking Water Directive (98/83/EC) (as amended). These standards are based on advice from the World Health Organisation (WHO) and are regularly reviewed. UK

[45] See Water Framework Directive, Annex V

regulations implement the Directive,[46] but some aspects are stricter than, or in addition to, those defined by the directive, reflecting the high standards of water supplies in the UK.[47]

For further information on drinking water quality requirements, refer to the Drinking Water Inspectorate guidance: *Drinking water safety*.

Water quality is checked and regulated by independent drinking water inspectorates in England and Wales, Scotland and Northern Ireland. Compliance rates for drinking water are reported in the Regulators' annual reports each year. In 2016, compliance rates were:

- 99.96% in England[48]
- 99.87% in Wales[49]
- 99.92% in Scotland[50] and
- 99.86% in Northern Ireland. [51]

## Review of the Drinking Water Directive

On 1 February 2018, the European Commission adopted a proposal for a revised Drinking Water Directive. The main elements of the proposal are summarised by the Commission as follows:

- The proposal updates existing safety standards in line with latest recommendations of the World Health Organisation (WHO) and ensure our drinking water is safe to use for the decades to come.
- It will empower authorities to better deal with risks to water supply and engage with polluters.
- It will empower consumers by giving them much more information and oversight over the efficiency and effectiveness of water suppliers.
- It contributes to the transition to a circular economy. It will help EU countries to manage drinking water in a resource-efficient and sustainable manner so as to reduce energy use and unnecessary water loss. It will also help reduce the number of plastic bottles following increased confidence in

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46 Pursuant to section 68 of the Water Industry Act 1991, drinking water must be wholesome at the time of supply. Wholesomeness is defined in accordance with requirements set out in the Water Supply (Water Quality) Regulations 2016 (as amended) and the Private Water Supplies (England) Regulations 2016 (as amended) in England; the Water Supply (Water Quality) Regulations 2001 (as amended) in Wales; and the Water Supply (Water Quality) (Scotland) Regulations 2001 in Scotland.

47 In England, the Government updated relevant drinking water regulations to reflect updated WHO principles for risk based sampling and analysis of drinking water supply. Amended regulations were passed in June 2018. More information is available on Gov.uk Water quality: updating the public and private drinking water regulations, 24 May 2018 [accessed 25 May 2018]

48 Drinking Water Inspectorate, *Drinking water 2016: summary of the Chief Inspector's report for drinking water in England*, July 2017

49 Drinking Water Inspectorate, *Drinking water 2016: summary of the Chief Inspector's report for drinking water in Wales*, July 2017

50 Drinking Water Quality Regulator for Scotland, *Drinking water quality in Scotland 2016*, September 2017

51 Drinking Water Inspectorate for Northern Ireland, *Drinking water quality in Northern Ireland 2016*, August 2017

tap water, improved access and promotion of use of drinking water.

- The proposal is a direct reply to the European Citizens' Initiative 'Right2Water'. The Commission had committed to evaluate the Drinking Water Directive and to launch an EU-wide public consultation on the quality of drinking water in order to assess the need for improvements and how they could be achieved. Following this consultation and in line with the principles of the new European pillar of social rights, the proposal contains an obligation for EU countries to improve access to safe drinking water for all and to ensure access for vulnerable and marginalised groups.[52]

The proposal is subject to negotiation and adoption by the European Council and European Parliament before it becomes applicable.

## 2.10 Protected Areas

The Water Framework Directive sets a target that all water dependent protected areas under the Habitats Directive (92/43/EEC) or the Birds Directive (2009/147/EC) (known as Natura 2000 sites) need to meet their specific conservation objectives.[53] The implementation of these Directives was reviewed at UK level and the subject of an EU 'Fitness Check' as part of the EU Commission's deregulation process.

The River Basin Management Plans for each river basin district include a summary of the measures needed for water dependent Natura 2000 sites to meet their conservation objectives and by which date (2015, 2021 or 2027). For the second round of RBMPs, site improvement plans (known as SIPs) were used to capture the priorities and new measures required for water dependent habitats on Natura 2000 sites. Site improvement plans by region are listed on Natural England's website.[54]

## 2.11 Nitrates Directive

The Nitrates Directive 1991 (91/676/EEC) aims to improve water quality by preventing nitrates from diffuse agricultural sources.[55] Although it predates the WFD, it supports its wider aims.

Some of the key provisions of the Nitrates Directive include:

- a requirement for member states to designate nitrate vulnerable zones (NVZs). These are areas of land that drain into waters with polluted by nitrates or that would potentially be polluted if no action was taken (known as vulnerable waters). NVZs currently include about 58% of land in England.[56] For information and interactive maps

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52 European Commission, Environment: Review of the drinking water directive [accessed 21 May 2018]

53 See: http://jncc.defra.gov.uk/page-1483 for further information on UK Natura 2000 sites.

54 Natural England, Site improvement plans by region [accessed 21.07.15]

55 Implemented by the Nitrate Pollution Prevention Regulations 2015 in England; and the Nitrate Pollution Prevention (Wales) Regulations 2013 in Wales.

56 Gov.uk guidance on nutrient management: Nitrate Vulnerable Zones [accessed 14 June 2018]

on NVZs in England, see the Gov.uk guidance on nutrient management: Nitrate Vulnerable Zones.

- a requirement for members states to draw up action programmes for NVZs. Compliance with the action programme is mandatory.
- a requirement for member states to establish codes of good agricultural practice to be implemented by all farmers on a voluntary basis.

In December 2017, the House of Commons Environmental Audit Committee (EAC) launched an inquiry into the nature, scale and impacts of nitrate pollution and the Government's approach to the regulation. The inquiry is still open and accepting written evidence. More information is available on the EAC Nitrates inquiry webpage.

For more information on farming practices and Nitrate Vulnerable Zones see section 3.4 below.

## 2.12 Water pollution as an offence

In England and Wales, the principal water pollution offences are set out in the *Environmental Permitting (England and Wales) Regulations 2016* (as amended).[57] It is an offence to cause or knowingly permit a water discharge activity or groundwater activity, except under and to the extent authorised by, an environmental permit.[58] This would include the discharge of any poisonous, noxious, polluting or waste matter or any trade or sewage effluent into water bodies.[59]

A person guilty of this offence is liable on conviction in a magistrates court to a fine of up to £50,000 or a sentence of up to 12 months (or both); or on conviction in a crown court to an unlimited fine or imprisonment of up to 5 years (or both).[60]

Following the introduction of new environmental sentencing guidelines,[61] large companies who cause serious environmental damage can now face very large fines (up to 100% of a company's pre-tax net profits for a year).

Information on sewer flooding, including the regulation of unlicensed sewage discharges, is set out in the Library Briefing Paper on Sewer Flooding.

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57 Regulations 38(1) and 12(1)
58 *Environmental Permitting (England and Wales) Regulations 2016*, Regulation 12
59 Ibid., Schedule 21, para 3
60 Ibid., Regulation 38 and 39
61 Sentencing Council, Definitive Guideline for Environmental Offences, July 2014 [accessed 21.07.15]

# 3. Taking action to improve water quality

## 3.1 UK Government objectives and goals

Defra's Single Departmental Plan (updated May 2018) included an objective to "ensure clean and plentiful water" and set out that the Government will:

- Safeguard and improve the quality of surface and ground waters through an effective and modern framework of protection and tools
- Reach or exceed objectives in our river basin management plans for rivers, lakes coastal and ground waters that are specially protected
- Protect bathing waters, shellfisheries, protected sites for wildlife and marine water quality
- Ensure sustainable levels of abstraction through our regulation and action
- Ensure resilient, sustainable, affordable water and sewerage services to homes and businesses in England, through a strategic framework for water sector planning and investment, strengthened regulatory framework and development of further market reforms.

### The 25-year environment plan: long term aims

The Government published its 25-year plan to improve the environment on 11 January 2018. Launching the Plan, the Prime Minister identified the protection and enhancement of the natural environment as a "central priority" for the Government as part of delivering its manifesto pledge to "be the first generation to leave the environment in a better state than we inherited it".[62] Aspects of the Plan relate to England only, whereas others relate to the UK as a whole.

One of the goals set out in the plan is to achieve clean and plentiful water by improving at least 75% of waters "to be close to their natural state as soon as is practicable":

> We will achieve clean and plentiful water by improving at least three quarters of our waters to be close to their natural state as soon as is practicable by:
>
> - reducing the damaging abstraction of water from rivers and groundwater, ensuring that by 2021 the proportion of water bodies with enough water to support environmental standards increases from 82% to 90% for surface water bodies and from 72% to 77% for groundwater bodies
> - reaching or exceeding objectives for rivers, lakes, coastal and ground waters that are specially protected, whether for biodiversity or drinking water as per our River Basin Management Plans

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- supporting OFWAT's ambitions on leakage, minimising the amount of water lost through leakage year on year, with water companies expected to reduce leakage by at least an average of 15% by 2025
- minimising by 2030 the harmful bacteria in our designated bathing waters and continuing to improve the cleanliness of our waters; we will make sure that potential bathers are warned of any short-term pollution risks

During its inquiry on the 25-year environment plan, the Environmental Audit Committee raised concerns that the wording in the Plan was not as strong as the EU Water Framework Directive. The Secretary of State for Defra (Michael Gove) addressed this point stating that he did not want to have any "dilution":

> Someone else raised the question about whether or not the wording in the plan on the Water Frameworks Directive was as strong as the Water Frameworks Directive is. I do not want to have any dilution. If it is the case that the wording that we have used is not as strong, that is simply a slip of the pen rather than a deliberate desire to dilute. Doing that audit exercise, making sure that every existing commitment we keep to—if you think that there is a commitment that we need to express in a different way for whatever reason, then we must make clear why we think we should take a different approach so that we flag up that fact, rather than trying to smuggle through a change.[63]

In follow up correspondence, the Secretary of State confirmed that the targets for water in the 25-year plan were intended as "a direct translation of the commitments of the WFD. For example, waters "close to their natural condition" is a reference to the criteria used to define what "Good Status" for water means in the Directive".[64] In its subsequent Report on the the Government's 25 year plan for the environment[65], the Committee called on the Government to publish an "audit" of national, EU and international targets, including an explanation of any international changes where targets are weaker than those they replace.[66]

The EAC made a number of additional recommendations to the Government, including that the Government should include both long-term and interim legally binding targets on water (stress and quality) as part of its upcoming environmental legislation.[67] The Government Response has not yet been published.

Further background, commentary and initial reactions to the plan is set out in the Library Briefing Paper on the 25-year environment plan.

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63 Environmental Audit Committee, oral evidence: 25-year environment plan, HC 803, 19 April 2018, Q86

64 Environmental Audit Committee, Correspondence from the Secretary of State to the Chair on 25 year environment plan, 17 May 2018 [accessed 11 July 2018]

65 Environmental Audit Committee, Eight Report of Session 2017-19, The Government's 25 Year Plan for the Environment, HC 803, 24 July 2018

66 Environmental Audit Committee, Eight Report of Session 2017-19, The Government's 25 Year Plan for the Environment, HC 803, 24 July 2018, para 43

67 Environmental Audit Committee, Eight Report of Session 2017-19, The Government's 25 Year Plan for the Environment, HC 803, 24 July 2018, paras 33-34

### RBMP aims for water quality: 2021

The 2015 River Basin Management Plans set out predictions for the status of water bodies in 2021 as well as justifications for meeting alternative objectives for water bodies in the UK. For England, these are also summarised in the Environment Agency's State of the environment: water quality (February 2018) Report as follows:

- Good groundwater body status will be reached by 2021 in 75% of water bodies for quantitative status and 56% of water bodies for chemical status
- Good or better ecological status will be reached by 2021 for the following percentage of surface water bodies (2016 status in brackets):
  - Rivers: 21% by 2021 (14% in 2016)
  - Lakes: 19% in 2021 (16% in 2016)
  - Coastal waters: 53% in 2021 (45% in 2016)
  - Estuaries: 25% in 2021 (20% in 2016).[68]

The Environment Agency's report on water quality explained that the main reasons for water quality issues were agriculture and rural land management (31%), the water industry (28%), and urban and transport pressures (13%). It also identified the following future threats to water quality: population growth, climate change, emerging chemicals, plastic pollution, nano-particles and fracking.

## 3.2 Abstraction reform

The Water Act 2014 puts in place a legislative framework for the reform of the water industry to tackle some of the challenges identified by the *Water for Life* White Paper. In relation to water quality, the Act places impetus on the reform of the water abstraction regime in England by requiring the Secretary of State to lay a report setting out progress on this by 2020.[69]

Water abstraction is regulated through a system of licences. These are issued to anybody that wishes to abstract (remove) water from water-bodies (sources of water). The current abstraction regime has been identified as not being flexible enough to cope with expected future challenges: for example, changing weather means some areas will have less water; others will see increased demand as the population grows.

Defra set out its plans for long-term reform of the abstraction system in the *Water for Life* White Paper. These plans were supported by Ofwat and the Environment Agency's 'Case for change' which set out the evidence for the reform.

Defra consulted on the abstraction reform proposals from December 2013 to March 2014 and published a summary of responses in July 2014. The Government's response was published on 15 January 2016, alongside two

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68 Environment Agency (2018) *The state of the environment: water quality*

69 Water Act 2014, section 57

impact assessments and an explanatory document *What would reform mean for abstractors?*

The Government published its Water Abstraction Plan in December 2017 which set out how the Government plans to reform water abstraction, protect the environment and improve access to water. The approach is summarised as follows:

- making full use of existing regulatory powers and approaches to address unsustainable abstraction and move around 90% of surface water bodies and 77% of groundwater bodies to the required standards by 2021
- developing a stronger catchment focus – bringing together the Environment Agency, abstractors and catchment groups to develop local solutions to existing pressures and to prepare for the future. These local solutions will:
  - protect the environment by changing licences to better reflect water availability in catchments and reduce the impact of abstraction
  - improve access to water by introducing more flexible conditions that support water storage, water trading and efficient use
- supporting these reforms by modernising the abstraction service, making sure all significant abstraction is regulated and bringing regulations in line with other environmental permitting regimes.[70]

The Government committed to report to Parliament by May 2019 on progress made on abstraction reform.[71]

## 3.3 Managing catchments

In 2011, the Government introduced a catchment-based approach, whereby water is managed within areas defined by the flow of rainfall. In England and Wales water bodies are grouped into 100 management catchments (which are in turn grouped into the river basin districts). The specific pressures on a catchment vary depending on the geology, climate and environmental sensitivity of the catchment as well as the type of land and water uses in the catchment (for example, farming practices, water supply, recreation and industrial activity). As water bodies within a catchment are connected, the different uses and activities can affect the quality and quantity of water in other parts of the catchment.

The Government's objectives for its catchment-based approach were to deliver better outcomes by promoting a better understanding of the environment at a local level; and to encourage local collaboration and more transparent decision-making. An integrated approach from all relevant sectors, organisations and individuals is needed in order to address the relevant pressures on a catchment. More information on the policy framework to encourage an integrated catchment based approach can be

70 Gov.uk, Water abstraction plan 2017
71 Gov.uk, Water abstraction plan 2017

found in the Defra policy paper: *Catchment Based Approach: Improving the quality of our water environment*.[72]

### Catchment restoration fund

In general, catchment management measures are adopted on a plan by plan basis, if partner organisations (such as charities or water companies) have the resources to undertake the measures.

In 2011, Defra launched a £92 million fund to clean up England's rivers over a four year period.[73] Part of the funding (up to £24.55 million) was available as a catchment restoration fund to not-for-profit community groups and charities to restore natural features in and around watercourses; reduce the impact of man-made structures on wildlife in watercourses; and reduce the impact of diffuse pollution from rural and urban land use. The funding ended in March 2015 and the final Annual Report (2014-15) from the Environment Agency contained a list and locations of all funded projects and confirmed that 42 projects were approved with a combined value of £24.5 million. As a result of these projects, the Environment Agency reported that over 300 water bodies received improvements and made a contribution towards improving ecological status.[74]

## 3.4 Reducing agricultural pollution

### Farming rules for water

The *Reduction and Prevention of Agricultural Diffuse Pollution (England) Regulations 2018* came into effect on 2 April 2018. In general terms, the new rules require good farming practice, such as taking steps to prevent manure and fertiliser getting into water bodies, so that farmers manage their land to avoid water pollution. The rules apply to farming and horticultural practices, including: planting and harvesting, managing livestock, and using and storing organic manure or manufactured fertiliser. These are in addition to any Nitrate Vulnerable Zone requirements (see paragraph 2.11 above).

Further information is available in the Government's guidance on the rules[75] and the Government's policy paper: Farming rules for water – getting full value from fertiliser.[76]

Defra consulted on the rules between 30 September-24 November 2015.[77]

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72 Defra policy paper: *Catchment Based Approach: Improving the quality of our water environment* May 2013 [accessed 21.07.15]

73 Defra press release, £110 million revamp for England's rivers, 13 April 2011 [accessed 21.07.15]

74 Catchment restoration fund: Environment Agency Final Annual Report 2014-15, July 2015, p3 [accessed 20.07.15]

75 Gov.uk, Rules for farmers and land managers to prevent water pollution, 2 April 2018 [accessed 23 May 2018]

76 Gov.uk, Farming rules for water from April 2018, 2 April 2018 [accessed 23 May 2018]

77 Defra consultation, New basic rules for farmers to tackle diffuse water pollution from agriculture in England [accessed 9 October 2015]

## Agricultural diffuse pollution

Diffuse pollution arises from many different sources and is therefore more difficult to monitor than pollution from a single source. Farming is one of the main sources of diffuse water pollution and contributes a range of pollutants into water bodies, including nutrients (such as nitrogen and phosphorus), sheep dip, pesticides and sediment. The Environment Agency reported that 31% of reasons for water bodies not achieving good status are attributed to agriculture and rural land management contributes. The Report also stated that in rural areas of the UK more than 80% of nitrates in groundwater comes from agriculture.[78]

Defra provides advice and some financial assistance to farmers with reducing pollution on their land. As part of this, Natural England runs the catchment sensitive funding programme in partnership with the Environment Agency and Defra which aims to reduce the level of diffuse pollution that farming can cause. This programme gives free advice and training to farmers in selected priority catchment areas in England.

In addition, the cross-compliance part of the Common Agricultural Policy (CAP) sets a baseline of requirements on environmental protection including protection of groundwater against pollution) that farmers must meet in order to qualify for their direct payments. If they do not meet these requirements they can have their payments reduced according to set penalties by the Rural Payments Agency.

Background information on CAP can be found in the Library Briefing Paper: CAP reform 2014-20: EU Agreement and Implementation in the UK and in Ireland. Information on the possible impact of Brexit can be found in the Library Briefing on Brexit: UK agriculture policy.

## Mandatory water protection zones?

In September 2015, the High Court granted WWF-UK, the Angling Trust and Fish Legal permission to bring a judicial review of the Environment Agency and Defra's implementation of the Water Framework Directive. The case focused on four protected Natura 2000 sites where it was claimed that agricultural pollution has been particularly harmful: Poole Harbour in Dorset, the river Eden in Cumbria, Marazion Marsh in Cornwall and the river Lugg in Herefordshire.

In a court settlement on 19 November 2015, Defra agreed to consider introducing mandatory water protection zones (see Box 3) alongside voluntary measures by farmers.

The WWF, Angling Trust and the Rivers Trust published a Report Saving the Earth (May 2018)[79] making a number of recommendations to the Government in relating to farming and land management practices, and governance reform, in order to better protect soils and water.

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78 Environment Agency Report on the state of the environment: water quality, February 2018

79 WWF, Angling Trust and the Rivers Trust, Saving the Earth Report (May 2018)

**Box 3: Water Protection Zones**

Section 93 of the Water Resources Act 1991 (as amended) enables the Secretary of State to make an order designating a water protection zone. This is one of a number of measures that can be used to protect and improve the water environment.

If an area is designated as a WPZ, the regulator can apply additional measures to manage the area and/or stop activities that cause or could cause further damage or pollution to water. [80]

Only one WPZ has been designated: in the river Dee catchment in England and Wales in 1999 following a series of accidental chemical pollution incidents.[81]

Groundwater source protection zones are defined by the Environment Agency for groundwater sources in order to apply a general level of protection for all drinking water sources. Pollution prevention measures can be set up in area which are at higher risk and to monitor the activities of potential polluters nearby.

## 3.5 Reducing urban pollution

Defra held a consultation on tackling urban diffuse water pollution in 2012/13. Urban diffuse water pollution comes from a wide range of sources including, transport, construction work, run-off activities (such as car washing), discharges from contaminated land and misconnections (i.e. waste water draining to the wrong place). The consultation highlighted that understanding and resolving this problem is complicated for a number of reasons, including the fact that it is variable in its nature and can be low level and chronic. It may also be exacerbated by impacts of climate change and heavy rainfall. The consultation also highlighted that there is no established planning methodology for agreeing who needs to do what, where and when (and who should pay) to clean up water bodies suffering from urban diffuse water pollution.[82]

The responses to the consultation were taken into account as part of the river basin planning consultations, but a separate strategy to tackle urban diffuse water pollution has not been published to date.

The Environmental Audit Committee is carrying out an inquiry on Hand car washes, including the environmental impact and regulatory controls around these activities. More information is available on the Committee inquiry page on Hand car washes.

## 3.6 Role of water companies

Services such as sewage disposal provided by water and sewerage companies can have an impact on the water environment. In 2018, the Environment Agency reported that 28% of reasons for water bodies not

80 Gov.uk guidance, Protect groundwater and prevent groundwater pollution, 14 March 2017 [accessed 25 May 2018]

81 ENDS Report, *Defra agrees water pollution measure in High Court settlement,* Isabella Kaminski, 20 November 2015 [subscription only] [accessed 27 November 2015]

82 Defra, Tackling water pollution from the urban environment, November 2012 , p17 [accessed 21.07.15]

achieving good status were attributed to the water industry.[83] The Environment Agency also reported the following headlines in relating to the water industry:

> Pollutant loads to rivers from water industry discharges have declined in recent years, with reductions of up to 70% since 1995.
>
> Over the last decade the number of serious water pollution incidents from water companies has remained broadly the same, with about 60 incidents each year. That is more than one a week.[84]

Water companies in England and Wales are required to take certain environmental improvement actions to contribute towards environmental objectives. These are set out in the Water Industry National Environment Programme (WINEP) (overseen by the Environment Agency).

On 15 June 2018 the Secretary of State for Defra (Michael Gove) challenged water companies to increase investment and improve environmental outcomes by 2025. This forms part of delivering the Government's aims for improving water quality set out in the 25-year environment plan. The WINEP includes measures which would see up to £5 billion of investment by water companies in the natural environment between 2020-25. The Government press release stated:

> Water companies have a duty to protect and enhance the natural water environment. The government expects water companies to meet the obligations set out in the Environment Programme (WINEP) by 2025.
>
> The investment will:
>
> Protect and improve at least 6000km of our waters
>
> Protect and improve 24 Bathing Waters and 10 Shellfish sites
>
> Protect and improve 1800 hectares of protected nature conservation sites
>
> Enhance nearly 900km of river and 4276 hectares through wider biodiversity improvements[85]

The extent of water companies' expenditure is agreed with Ofwat (the water services regulator) through the price review process. Information on the environmental performance of water companies, including in relation to pollution incidents, is available on the Discover Water website. For a discussion of the environmental performance of water companies in England, see the Environment Agency Report on Water and Sewerage companies performance (July 2018).

Water UK (the industry body) state that water companies will have invested around £25 billion into environmental work by 2020.[86] In response to the

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83 Environment Agency Report on the state of the environment: water quality, February 2018

84 Environment Agency Report on the state of the environment: water quality, February 2018

85 Gov.uk, £5 billion investment by water companies to benefit the natural environment, 15 June 2018 [accessed 15 Junes 2018]

86 Water UK press release, Improving the environment, increasing trust, 18 April 2018 [accessed 23 May 2018]

Environment Agency's July 2018 Report, Water UK stated that "companies are looking to go further and plans for substantial investment in the environment are currently being finalised".[87]

Further information about the water industry is available in the House of Commons Library briefing paper on Water bills: affordability and support for household customers.

The Environment, Food and Rural Affairs Committee launched an inquiry into the Regulation of the Water Industry in May 2018 which will consider how well the water industry serves consumers and the environment. More information is available on the Committee webpage for the inquiry.

87 Water UK press release, Response to Environmental Performance Assessment, 11 July 2018 [accessed 11 July 2018]

# 4. Useful resources for local areas

| Type of resource | Source | Area | Website / phone no. |
|---|---|---|---|
| Online search for quality of bathing water | Environment Agency | England, by name, district or postcode | http://environment.data.gov.uk/bwq/profiles/ |
| Water pollution hotline | Environment Agency, NRW, SEPA, DAERA | England, Wales, Scotland, Northern Ireland | 0800 80 70 60 |
| Online search for quality of bathing water | Natural Resources Wales | Wales | http://environment.data.gov.uk/wales/bathing-waters/profiles/ |
| Online search for quality of drinking water | Scottish Water | Scotland, by local authority, catchment, water body name or category | http://www.scottishwater.co.uk/you-and-your-home/water-quality/waterqualitysearch |
| Online search for quality of all water bodies | Scottish Environmental Protection Agency | Scotland, by water body category, local authority, catchment or water body name | https://www.sepa.org.uk/data-visualisation/water-classification-hub |
| Online search for bathing water quality | SEPA | Scotland | http://apps.sepa.org.uk/bathingwaters/ |
| Online search for drinking water quality | Northern Ireland Water | Northern Ireland, by postcode | https://www.niwater.com/water-quality-results/ |
| Reporting water pollution | DAERA | Northern Ireland | https://www.daera-ni.gov.uk/articles/niea-and-water-pollution |

**BRIEFING PAPER**
Number CBP 7246, 26 July 2018

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