

**WORSHIPFUL COMPANY OF WATER CONSERVATORS
RESPONSE TO THE DEFRA CONSULTATION ON
REFORM OF THE BATHING WATER REGULATIONS 2013
DECEMBER 2024**

PROLOGUE

1The Worshipful Company of Water Conservators ('WCWC') is a City of London Livery Company focussed on the long-term health of our water resources and the broader environment. Our members include senior professionals from water, environmental and related industries and regulators, along with others who share our concern for water and the environment. Our experience and knowledge ranges from the complexities of environmental sciences, through the application of engineering to deliver the goals identified by those sciences, and the subsequent management of the assets created. The WCWC's purpose is *promoting a diverse and sustainable environment*.

2. As part of that purpose, the WCWC has been responding to relevant consultations particularly on matters relating to water conservation. These are archived on its website. It has produced several responses and think pieces relevant to the management of bathing waters, as a contribution to the evolution of national water conservation policy and practice.

<https://waterconservators.org/policies-and-practices/>

This response follows those practices. It looks forward to being able to make further inputs as the opportunity arises in the future. This consultation raises some fundamental issues beyond its strict remit. In preparing this response, the WCWC provides a background explanation of those for the wider constituency of readers of its response, whilst recognising that this will not be essential in the response to Defra. So, much of this response constitutes a 'think piece' on the role of wild swimming in environmental water planning in future. The principal focus is on England, but many of the points apply equally to Wales.

SUMMARY

3 The Consultation is in two parts:

- the immediate specific revision of the regulations and
- the longer-term proposals for revision

4 The WCWC reiterates its concern about the piecemeal evolution of a national water strategic framework. Bathing is one of a number of legitimate uses of environmental waters (for the definition of these, see <https://www.lawinsider.com/dictionary/environmental-water> , but referred to in legislation as 'controlled waters').

5 It has decided to set out a comprehensive background to the subject of wild swimming (defined as swimming in controlled waters of which swimming in designated bathing waters is a subset).

6 The WCWC is concerned that there is a continuing line of causal responsibility being drawn between bathing water risks, water quality, sewage overflows, water companies, when the evidence from Defra shows that there are many sources which can increase risks for wild swimmers. Particular attention needs to be given to agriculture and to the control of highway drainage, which is the government's direct responsibility. The review of the Farming Rules for Water by the Office for Environmental Protection (OEP) is awaited with interest.

7 The WCWC recognises that society demands the right to immerse in controlled water, be it bathing, kayaking, canoeing etc. A system satisfying that right must be based on understanding the hazards involved and the practicalities and costs of risk mitigation. There is a difference between complete immersion in swimming and occasional immersion from canoeing, for example.

8 The WCWC draws an analogy with Health and Safety at Work legislation and practices and draws on all of the mechanisms, including the Bathing Water Regulations, to create the concept '**Health and Safety in Wild Swimming with Bathing Place Risk Assessment and Mitigation**'. The WCWC is not the first body to make this kind of suggestion. There is no overall integrated strategy at present.

9 There needs to be an articulation of understanding that all wild swimming and bathing comes with risk and of the circumstances and extent to which the risks can be mitigated by all parties. This is particularly relevant to inland water bathing, wherein the hazards are more diverse. There probably needs better articulation of what is common to coastal and inland swimming and what is different.

10 Given that sewage effluents can contribute to health hazards and risk mitigation of these, in designated places, is essential. The WCWC wishes to emphasise that disinfection of treated sewage effluents is not common practice and data on works provided with this technology are difficult to locate. The targets for which disinfection would be provided do not seem clear and the best information is provided by the Scottish Environmental Protection Agency (SEPA). If wild swimming became more commonplace, so would disinfection, and this would add significantly to costs.

11 The WCWC repeats that there is an ever more pressing need to develop an overall strategy for managing rivers, in particular, through the review of River Basin Management Plans and, hopefully, as a consequence of the ongoing review by the Independent Water Commission. Timing will be crucial in price review planning for 2030. A key part of this will be an evolution of an integrated approach to the management of health and safety risks in bathing waters. And this must have a better understanding of responsibilities of riparian owners outside of the formal responsibilities of those providing access to bathing waters proscribed under the Bathing Water Regulations.

12 Inland bathing only started in 2020, so the practice is still quite new and the impact on overall river basin management needs to be better understood. Water fit for the Water Framework Directive ecological targets is not necessarily free of risks to swim in. The relationship of uses of river waters for recreational sports, in addition to swimming, needs reconciling with other uses through a system of river quality

objectives, including different levels of amenity use, with appropriate standards. And the diversity of uses are not always compatible. The risks arising from occasional non-immersive exposure will be different to those arising from full immersion in swimming.

13 So with these insights, on the whole, the WCWC agrees with the core reforms with some reservation about the consequences of extension of the bathing season. The WCWC is most concerned in wider reform 1 that there needs to be agreement that the extension of the definition of bathers to include other water contact / immersion uses might lead to a wider demand that all controlled waters are fit to immerse in. This will lead to substantial practical and cost consequences for water management and agriculture. If this extension is just restricted to the designated areas, so be it; bathing, per se, is usually much more restricted (using Defra's own words) while other sports, like canoeing etc, tend to be wide ranging, and the words of welcome suggest that this wider extension is what will be expected. These were highlighted by the issues round the 2024 University Boat Race (River Thames) and the problems with the River Seine in the 2024 Olympic Triathlon evince ...

14 A major warning is that without an integrated approach, it is likely that even after substantial investment in sewage services, bathing waters might still fail due to the contributions of other sources.

15 The greater and wider the scope of designations, with reduced risk, the greater will be the costs to society at large. Affordable housing, cheap food and cheap water services have to be balanced with the demands for more extensive wild swimming.

16 The WCWC supports the extensive use of monitoring of all vectors. It has warned of the complexities of big data management and has advocated a new system of integrated monitoring governance within Water Companies. The Environment Agency must be properly resourced to deal with the additional monitoring and access to information. But who pays?

17 All the proposals must be tested against the Better Regulation Framework, how the contributions to bathing waters outside the control of water companies are going to be regulated and held to account, and the consequences for the water company PR24 programmes understood clearly. The WCWC does not agree with the 'de minimus' conclusion. The costs of dealing with sewage, so far, have been costed into PR24 (covering spending from 2025-30), which is already under challenge due to the extra demands of the extended housing programme which the WCWC highlighted in its response to the Planning Reforms. These proposals have the potential to add still further costs. This all needs sorting out for PR29 (2030-35 spending), the process of which will start fairly soon

18 The WCWC has avoided an extension of its submission to include the issues around overall river quality. But there are several sets of data which need to be reconciled .. bathing water compliance, river chemical status, river ecological status,, river quality trends , sewage treatment compliance and so on .

19 Any reviews of permits must be conducted with caution. The WCWC will be responding to the consultation on the technical guidance on combined sewer overflows.

PROLOGUE

20 First, what is the consultation about? Defra and the Welsh Government have proposed an immediate extension of the current bathing water regulations and a broadening of the scope of designation in the longer term:

https://consult.defra.gov.uk/water/bathing-water-reforms-consultation/supporting_documents/Bathing%20Waters%20Final%20Consultation%20document.pdf

<https://consult.defra.gov.uk/water/bathing-water-reforms-consultation/>
<https://www.gov.uk/government/news/bathing-water-reforms-to-consider-water-sports-and-water-quality>

<https://deframedia.blog.gov.uk/2024/11/12/coverage-following-launch-of-consultation-on-bathing-waters-reform/>

Bathing waters are currently managed under the Bathing Water Regulations 2013 (hereafter, 'the Regulations') which apply to both England and Wales. The Regulations transposed the 2006 EU Bathing Water Directive into domestic law and were assimilated into UK law under the Retained EU Law (Revocation and Reform) Act 2023.

Following final designation as bathing waters, coastal and inland waters are monitored by the Environment Agency (EA) in England and Natural Resources Wales (NRW) in Wales respectively. Water quality sampling and testing is used by local authorities to inform public health messaging on the health risks associated with bathing and identify where improvements are necessary.

There have been changes in how and where people use bathing waters since the Regulations were introduced. In their current form, the Regulations take a generally 'one-size-fits-all' approach to bathing water designations, water quality monitoring and the de-designation process. There may be advantages to reforming the Regulations to allow for greater consideration of site-specific factors in these processes. The purpose of the Regulations is to ensure the protection of public health through the use of monitoring and classifications. It is the government's intention to pursue an increase in the designation of safe bathing water sites.

For these reasons, DEFRA and the Welsh Government are consulting on potential reform measures to improve the current Regulations and increase flexibility. This consultation seeks views on 3 proposed reforms as well as 9 technical amendments to improve the use of EA and NRW resources and bring the Regulations in line with

modern sampling practices. It also seeks views on two wider reforms that may form part of future phases of regulatory reform. This is a joint consultation from Defra and the Welsh Government. The decisions on whether legislation should be made to introduce reforms will be taken independently by relevant Ministers with respect to their own national jurisdictions. Regulations are currently shared, but the EA & NRW independently manage bathing waters within their own national jurisdiction.

BACKGROUND PERSPECTIVE

Hazards and risks in wild swimming

21 Swimming in environmental, (now defined as controlled), waters is as old a practice as mankind itself for hygiene and recreation. And it has been understood that there are hazards and risks in doing so.

22 A hazard is something that could cause harm, whilst risk is the likelihood of that harm occurring. Formalized systems, like checklists or standardized procedures, can be used to help ensure that all potential hazards are considered. Risk can be avoided by removing the hazard, or reduced, by implementing control measures of the hazard or by providing warnings of the hazard. Road signs are a good example.

23 A practical example, often cited in the literature, is within the health and safety domain of 'slips and falls'; water slopped on a floor is a hazard, while the risk is slipping over. Risk mitigation would be to put a warning notice up and by clearing up the spill as quickly as possible. The quicker the availability of a cleaner, the less the risk but, in a commercial setting, the higher the costs of maintaining a rapid response cleaning team. This distinction is articulated well in health and safety legislation. Under the Management of Health and Safety at Work Regulations 1999, the minimum is:

- identify what could cause injury or illness in a business (hazards)
- decide how likely it is that someone could be harmed and how seriously (the risk)
- take action to eliminate the hazard, or if this isn't possible, control the risk
- Assessing risk is just one part of the overall process used to control risks in a workplace.

<https://www.hse.gov.uk/simple-health-safety/risk/index.htm>

24 The reason for dwelling on this is that there does not seem to be a similar articulation of this in the approaches to bathing waters, wherein the hazards cannot be removed, but the risks must be mitigated, although it may be implicit. A simple analogy using established language would be 'Health and Safety in Wild Swimming' with Hazard Analysis and Bathing Place Risk Assessment and Mitigation...The WCWC is not the first body to make this kind of suggestion

<https://www.ruddlesden.co.uk/contamination-assessment/groundwater-controlled-waters-risk-assessments>

<https://claire.co.uk/events-training?start=4>

Although this seems to be more focussed on contamination of ground waters.

25 There has been confusion in some media reports in references to wild swimming as something different to swimming in regulated environmental waters. In fact, 'wild swimming' refers to swimming in all controlled waters and regulated bathing waters are a subset in these:

<https://www.bbc.com/travel/article/20210603-why-wild-swimming-is-britains-new-craze>

Hazards and Risks in Coastal Waters

26 For a long time the hazards to swimming in controlled waters have been known; drowning by bathing in unsuitable places, competing with other legitimate users of environmental waters such as competing with other recreational users including anglers, canoers, jet-skiers, and with commercial users with shipping transport, livestock watering, effluent discharges, abstractions, land drainage. The hazards from and to wildlife are also taken into account; contamination of water and waterside environments by rats, birds, seals, jellyfish and weever fish, marine and freshwater algae, and by impacting on habitats, particularly designated habitats. There is also the issue of contamination by fellow bathers.

27 Tolerance of those hazards, particularly health hazards, has diminished and action demanded either by the provision of warning notices or by operational mitigation of the risks. Seaside holidays became popular and so the first objections were about the hazards of sewage pollution of coastal waters and beaches in the mid twentieth century and risk mitigation was demanded. The hazards in swimming in riverine waters continued to be accepted.

28 In 1976, the EU enacted the Bathing Water Directive, the progenitor of the current regulations, which were applied to limited number of heavily used UK Coastal Bathing Waters to reduce the risks from microbial hazards particularly from sewage discharges. This also drove the replacement of long sea outfalls by virtue of the 1991 Urban Wastewater Treatment Directive. Limited actions were taken to reduce the hazards from other sources of contamination. Risk mitigation, but not avoidance, arose from the clarity of site designation, monitoring, notice posting and some safety and access features. It gave focus to investments in sewage treatment and sewer overflows as set out in the framework of commitments in water service privatisation, later incorporated into river basin planning in the Water Framework Directive of 2000. The hyperlink below gives the current system of classification with standards but now includes inland waters. The UK did not apply the Directive to inland waters until 2020.

<https://environment.data.gov.uk/bwq/profiles/help-understanding-data.html#:~:text=Excellent%20%E2%80%93%20the%20highest%2C%20cleanest%20water,not%20met%20the%20minimum%20standard.>

29 Following a number of drowning incidents in hazardous coastal waters, it was clear that, in parallel, steps were needed to warn people of safety hazards with

public signs and beach safety services in designated sites, as steps to mitigate risks. This was introduced as a formal internationally recognised system in 2002.

<https://www.ilsf.org/library/international-signs-and-beach-safety-flags-is-it-possible-to-achieve-an-international-beach-safety-flag-system/>

<https://hmcoastguard.uk/on-the-beach>

<https://rnli.org/safety/beach-safety/flags-and-signs>

https://assets.publishing.service.gov.uk/media/5f9be3e08fa8f57f408068e3/Review_of_the_legal_responsibility_for_beach_safety.pdf

30 A fact often overlooked in the media is the difference between bathing waters and beaches. A designated bathing water has to meet a number of criteria. Beach safety is more than that and involves several parties; a safe beach becomes a tourism asset. The designation of Blue Flags started in 1985 in France and incorporates mitigation of safety and public health risks. They are awarded by Keep Britain Tidy on behalf of The Blue Flag Programme for beaches, marinas and tourism boats is run by the international, nongovernmental, non-profit organisation FEE (the Foundation for Environmental Education).

<https://www.keepbritaintidy.org/blue-flag#:~:text=They%20are%20only%20awarded%20to,safety%2C%20environmental%20education%20and%20management.&text=Over%20the%20years%2C%20the%20importance,the%20quality%20of%20their%20beaches.>

31 Blue Flags are usually awarded to beaches with large numbers of people expected to bathe at the site, and for which there are several criteria for award. The bathing water itself must meet the Bathing Water Directive standards and meet a wide range of access, facilities, including notice boards and safety criteria. The Seaside Award is presented to the excellent beaches in England and celebrate the quality and diversity of our coastline.

32 In some cases Green Flags may be awarded.

<https://www.greenflagaward.org/how-it-works/judging-criteria/green-flag-award/>
The Green Flag Award is an international quality award that can be given to beaches, parks, and green spaces. The main difference between a green flag and a Blue Flag on a beach is that a green flag indicates that swimming is permitted in calm conditions, while a Blue Flag is an international award that recognizes a beach's quality and safety. However, the International Life Saving Federation (ILS) did not officially adopt the green flag because they believe there is always a potential hazard. The Green Flag Award is managed by Keep Britain Tidy under license from the UK Government Ministry of Housing, Communities & Local Government.

33 There is a Green Coast Award which is aimed primarily at rural beaches which do not necessarily have major local infrastructure, but nonetheless have excellent environmental qualities. The Marine Conservation Society Recommended Beaches

are those which meet or exceed the criteria for the highest water quality rating. .And Keep Britain Tidy also runs the Seaside Awards.

https://www.thebeachguide.co.uk/best-beaches/green_coast_award.htm

<https://www.keepbritaintidy.org/the-seaside-award>

34 So to take stock, with the progress of time the criteria for bathing waters have become less demanding in terms of size of cadre of bathers, the criteria for risk mitigation have become more demanding.

<https://www.gov.uk/government/statistics/bathing-water-quality-statistics/2023-statistics-on-english-coastal-and-inland-bathing-waters-a-summary-of-compliance-with-the-2013-bathing-water-regulations#:~:text=Prior%20to%20the%20start%20of,unassessed%20due%20to%20access%20issues>

35 In 1989, there were 27 designated coastal bathing waters; 22 resorts in Britain were issued with Blue Flags. However, none of the waters passed the mandatory standard set out in the 76/160/EC Bathing Waters Directive. There are now over 400 in England alone, 85 with Blue Flags, 137 with Seaside Awards, and 1 Green coast Award. At the heart of these is the drive to mitigate the risks derived from the hazards by providing information. It is crucial to the tourism industry in coastal resort towns.

36 In December 2023, DEFRA reported that '*compliance to the European Bathing Water Directive by UK coastal (predominantly) and inland bathing waters showed that:*

- 95.4% of UK bathing waters met the minimum standard - that is 595 out of 624 bathing waters
- 60% of bathing waters met the Directive's excellent standard
- Only 29 bathing waters (4.6%) met the poor standard

96% of bathing waters in England have met minimum standards, with 90% of bathing waters in England being rated as 'good' or 'excellent', continuing to show an overall boost in water quality over the last decade. This compares with just 28% being rated as 'good' or 'excellent' in the 1990s and 76% in 2010.'

[96% of English bathing waters meet required quality standards - GOV.UK](#)

37 In November 2024 the [bathing water results](#) showing that now only 92% of English bathing waters meet water quality standards.

[Bathing water quality compliance reports - GOV.UK](#)

The number of monitored bathing waters in England rated as poor and unfit for swimming has more than doubled, from 18 to 37. Out of the 450 sites regularly tested this summer for bacteria related to sewage discharges, 92% reached the minimum standards for bathing, a slight fall from 96% last year .The Environment Agency –

which carried out the testing – says those figures are in part due to 27 new sites being monitored this year, of which 18 were rated poor.

The [headline results](#) showed that

- In 2024, measurements were taken at 450 bathing waters in England, up from 423 bathing waters in 2023.
- In 2024, out of the 450 bathing waters measured in England, 413 (91.8 per cent) met at least the minimum standard of the Bathing Water Regulations.
- In 2024, 289 bathing waters in England (64.2 per cent) met the Excellent standard of the Bathing Water Regulations.
- In 2024, 37 bathing waters in England (8.2 per cent) did not meet the minimum standard, and were classified as Poor.

Almost all the new failures are in inland bathing sites

38 The report refers to sewage related bacteria without actually blaming sewage discharges, leaving the innuendo that these were responsible. Even by the Environment Agency's own report in 2019, the sources of faecal bacteria are diverse. It stated that at that time *59 bathing waters are at risk of being 'poor', have shown deterioration, or are currently 'poor'. The source of the faecal bacteria is from a number of sources, including:*

- *agricultural sources contribute more than 10% of the total contamination at 22 waters*
- *sewage contributes more than 10% of the total contamination at 39 waters*
- *other sources (including urban and dogs and birds) contribute more than 10% of the total contamination at 42 waters*

[faecal-contamination-pressure-rbmp-2021.pdf](#)

39 This theme of the need to understand better where the sources of the hazards arise is explored in more detail later. The fact that newly designated bathing areas are rated as poor raises some issue about programming. Should there be a transition period between intention to designate and designation during which risk mitigations measure are put in place (this issue is more relevant to the recent designations of inland waters)? This is picked up in the proposed reforms

Reprise 1

40 It is suggested that the concept of Health and Safety in Wild Swimming with Bathing Place hazard analysis and risk assessment, analogous with that of Health and Safety at Work, regulation should be explored.

41 The hazards for costal bathing are drowning, beach contamination and contracting infection principally enteric infection. The system of risk mitigation is based on clear opportunities for information and warnings about infection risks and investment in the reduction of discharge contributions. In the case of coastal waters, principally combined storm sewage overflows. The greater the mitigations, the greater the costs. This need to balance hazards and risk

mitigation was given greater impetus by the drive for inland water bathing which is discussed subsequently.

42 It would be useful if there was place where all the information listed above was brought together. Could this be the Environment Agency? The EA must be properly resourced to deal with these matters.

43 The inclusion of this information in the response is to show the diversity and complexity of action around reduction of the risks in coastal bathing. This has placed a substantial extra responsibility for water companies, not envisaged at privatisation and have been added to the AMP programmes with consequent increases of cost.

44 Whilst no one wants to swim in any water and experience any hazard, the expectations of the warning and designation systems is that 'officialdom' has taken responsibility for reducing risks in designated areas, and hence risks in use of those waters are less.

45 Bathing in sea water has the benefit that the survival of infectious organisms is less in the saline environment of seawater.

<https://academic.oup.com/femsre/article/25/5/513/499961>

Extension of regulation to bathing in inland waters.

46 As explained earlier, concerns about the physical and public health hazards of swimming in inland waters, and the consequent costs, had inhibited inland water bathing water designation until 2020. Attitudes have changed, driven in part by a resurgence of interest in local opportunities during the pandemic and there are now of the order of 22 such designated sites. The challenges of mitigating risk by remedial operational and investment action rather than just by monitoring and warning are greater as the hazards from other sources and competition for use of the waters are more diverse as set out in para 25.

47 The focus of current debate is now on inland bathing waters. Whilst there are common issues and common regulations, the natures of the core hazards are similar, yet more diverse, and risk mitigation can be different. The statistics are often presented as a combined data set which can be difficult to unravel differences.

48 The risks arising from some hazards are very difficult to mitigate and some not at all, for example leptospirosis from river bank rats (as opposed to water rats, better known as water voles), wild birds and livestock watering, as set out in paras 25 and 52.

49 The selection of designated sites is, therefore, important in which the bathing public can have reassurance in risk mitigation. It does not preclude bathing elsewhere, subject to riparian permission, it does mean that it is at the bathers' own risk. And the liabilities for riparian owners are complex and need to be addressed better.

50 Any discussion on an open approach to hazards and risks gets constantly dragged back to the narrative relating bathing water compliance to the presence of sewage, which this paper returns to.

51 There does not appear to be any overall action plan on bathing waters. The nearest is a blog earlier this year by Helen Wakeham Director of Water at the Environment Agency provided an insight with the latest data:

Chief causes of Water Framework Directive (WFD) failure

Agricultural runoffs (slurry, fertilisers and pesticides)	40%
Sewage treatment plant discharges	29%
Urban sources (road run-off, etc)	18%
Combined sewer overflows	7%
Localised issues (e.g., abandoned mines)	3%

<https://environmentagency.blog.gov.uk/2024/09/22/world-rivers-day-what-are-the-biggest-causes-of-river-pollution-and-whats-being-done-about-them/>

<https://www.gov.uk/government/publications/state-of-the-water-environment-indicator-b3-supporting-evidence/state-of-the-water-environment-indicator-b3-supporting-evidence>

This system still does not address natural health hazards. Water which is assessed as being of Good Ecological status does not necessarily mean that the water is fit to swim in, it is an essential precursor. More of this topic of WFD compliance is discussed briefly later.

52 It is worth picking out some of the statements in the blog

The [latest figures](#) show that only 14% of rivers and lakes in England achieved 'good ecological status' – the criteria for good river health.

There are many factors that can impact the quality of rivers. Key contributors which meant waters didn't achieve good ecological status include:

- The water industry, affecting 36% of water bodies. This is the impact of the water sector as a whole, so pollution caused by sewage treatment works and wastewater, including storm overflows.*
- Diffuse farming pollution, which impacts 40% of water bodies. Farmers use nutrient rich materials to improve the quality of their soil for better growing. When it rains, these nutrients can be washed into our waterways.*
- Urban and transport run-off, polluting 18% of our water bodies. This is when surface water picks up pollutants from our urban environment. This could be anything from litter, to petrol, to common garden pesticides. Just looking at vehicles alone, pollutants from oil spills and tyre and brake wear can be washed into rivers by rain.*

And some of the consequent actions

- *Legislation has had a positive impact, such as the introduction of the Water Framework Directive in 2000 which enabled the setting of Environmental Quality Standards, and new permit limits for wastewater treatment. Pollutants that kill wildlife discharged by sewage treatment works, like ammonia – and toxic metals - copper, lead, cadmium, and mercury, are now greatly reduced, with 85% less ammonia discharged to the water environment than there was in 1990.*
- *We also regulate the agriculture sector by checking compliance with the Farming Rules for Water – we work alongside farmers to make sure they take reasonable precautions to minimise the risk of pollution from applications of nutrients to land and livestock management.*
- *Since 2021 we've undertaken more than 10,000 farm inspections and issued over 800 warning letters and site warnings, and 17,467 improvement actions to farmers.*

53 This complements the helpful analysis provided by the EA in 2019. The sources of agricultural hazards are many, for example faecal coliforms and cryptosporidium from infected grazing live stock. And incidents involving agriculture do sometimes attract news stories

[faecal-contamination-pressure-rbmp-2021.pdf](#)

[Ludlow: River Teme pollution near bathing site traced to farm - BBC News](#)

[The mucky business of intensive farming - Wicked Leeks](#)

54 Surfers against Sewage has a website focussing on sewage pollution. This states that of the 86% of inland water bodies which fail to meet targets in England, 36% have been identified as failing directly as a result of sewage and wastewater discharges for example

[Sewage pollution: facts & figures - Surfers Against Sewage](#)

55 This does not highlight the hazards, which come from wild sources, such as the impact of bird populations on the microbiological quality of bathing waters

<https://pubmed.ncbi.nlm.nih.gov/15850191/>

In Bridlington and Teignmouth, notices and bird scarers have been used (although this is in relation to coastal bathing):

<https://www.bbc.co.uk/news/articles/cly64p5qd7yo>

<https://www.gov.uk/government/news/robobird-sent-to-protect-teignmouths-bathing-water>

56 So far, only one inland water has achieved Green and Blue Flag status in 2024, Sykes Lane beach at Rutland Water:

<https://www.bbc.co.uk/news/uk-england-leicestershire-69027885>

57 It is certain that the extension of designated bathing waters to inland waters is making compliance more challenging as the data provided shows. The suggestions which the WCWC are putting forward are not to gainsay any action on sewage effluents and combined sewer overflows, rather to warn that there is a possibility that without any radical re-think on the overall system of bathing water designation and management, large sums of money could be spent on sewage systems but the risk on non-compliance with inland bathing waters, in particular, will still be high.

58 The WCWC repeats that there is no mention about how the hazards from agriculture will be mitigated. Or to confront that practical reality and cost of doing so' at a time when the whole issue of the survival of agriculture and cost of food is a matter of national focus. Where, in terms of national priorities, does the cost of mitigating the hazards to inland swimming sit? Nothing is planned to mitigate the risks arising from the hazards of highway drainage, whereas the draft guidance on storm overflows, out for consultation as well, has 45 pages.

[Draft information and guidance on storm overflows](#)

59 The principal focus on control of agricultural sources appears to be the Farming Rules for Water.

<https://www.gov.uk/government/publications/applying-the-farming-rules-for-water/applying-the-farming-rules-for-water>

This brings in a range of controls for the application of organic manures (including sewage derived biosolids) from the start of August to the end of February. There are many aspects of controversy about the application of these regulations, but there does not seem to be a clear analogous perceived 'line of sight' with bathing water compliance.

This is now the subject of examination by the Office of Environment Protection

[OEP launches investigation into lawfulness of government guidance on water pollution from agriculture | Office for Environmental Protection](#)

60 In this context, it is relevant to refer to the separate consultation on technical guidance on storm overflows, in which reference is made to the designation of moderate amenity areas, such as boating, recreation and contact sports (non-immersion), wherein the demands are less than for high amenity areas, wherein, for example bathing and water contact sport (immersion) is regularly practised (such as wind-surfing, sports canoeing) and includes designated bathing areas. This consultation on bathing waters seeks to include other forms of potential immersion in determining the designation of a bathing site. The challenge is that an increasing number of rivers users are now seeking to be included in an immersion category, and this can only be achieved in the current regulations by inclusion in designated bathing water sites (high amenity). The question at the heart of the debate is how much risk is acceptable in general and what should be the reasonable expectations of the public when bathing in designated waters.

61 Readily accessible information is a key part of risk mitigation, and the EA must be resourced properly to deal with monitoring and access to information. There are several monitoring programmes, including Event Duration Monitoring (EDM) of CSOs, sewage effluent monitoring and S82 Environment Act monitoring by Water Companies of waters receiving sewage discharges. This consultation also refers to more monitoring. All this needs to be integrated, which is an innovation long advocated by the WCWC. It has been the extension of monitoring which has provided the data which underpins the current debate; it needs better explanation.

Watershed have produced a map

[The Watershed Pollution Map - Watershed Investigations](#)

And the Rivers Trust

[Sewage Map | The Rivers Trust](#)

Reprise 2

62 Many of the points made in Reprise 1 with regard to coastal waters are relevant to inland waters

63 The extension of designated bathing waters has presented extra challenge of compliance. The sources of hazards are more diverse.

64 The WCWC suggests that whilst the risks from the hazards arising from sewage must be mitigated, not enough action is being taken on other hazards.

65 There is less public tolerance of risks in undesignated areas and this needs sorting out.

66 An integrated approach to monitoring is essential.

Focus on sewage discharges

67 It has been impossible to discuss the subject of wild swimming without reference to sewage. It may well be that the subject attracts more attention due to the psychology of faecal aversion to which the WCWC has referred a number of times. Nothing justifies sewage pollution of rivers, but the notion of faecal coliforms from sewage is more disgusting than those from farm wastes and highway drainage. There is constant assumption and innuendo.

68 Apart from the innuendo of the latest bathing water report referred to earlier, even this consultation has an implicit assumption in that the Defra has issued it under the following domains [Home>Environment>Water industry>Water quality](#). The Storm Overflow Discharge Reduction Plan states that it will address the harm to human health from storm overflows discharging near designated bathing waters, where people are most likely to use water bodies for recreation.

https://assets.publishing.service.gov.uk/media/6537e1c55e47a50014989910/Expanded_Storm_Overflows_Discharge_Reduction_Plan.pdf

69 The Whitty, Cox and Boyd report in 2022 focussed on sewage as the cause of health risks in rivers, but said nothing about other sources

<https://www.gov.uk/government/news/sewage-in-water-a-growing-public-health-problem>

There is an implied single connection between sewer overflows, river quality and health risks to water users

The OEP has taken a more balanced approach:

<https://www.theoep.org.uk/report/updating-bathing-water-regulations-could-better-protect-public>

70 The hazards from sewage are two fold; from continuous treated effluents, and from intermittent combined storm overflows. So the hazard profiles are not the same, and need to be dealt with differently. And the monitoring needs to reflect these differences.

71 As far as CSOs are concerned the current practices have their origins in guidance provided in 1970:

<https://wellcomecollection.org/works/s8xfk4kp>

72 What was acceptable then, is no longer so, and the guidance has been updated regularly; the latest guidance is under review and consultation as referred to earlier. This has driven extra investment and an antipathetic attitude in the media. This has been exacerbated by changes in rainfall patterns, increasing demands on sewers which outstrip practical ability to keep upsizing the sewer network, let alone the lack of provision of extra finance and management practices which have not ensured full compliance with permits.

This has resulted in the Storm Overflows Discharge Reduction Plan SORDP, this was the vehicle which promised a review which is the subject of this consultation, but something more substantial was expected.

https://assets.publishing.service.gov.uk/media/6537e1c55e47a50014989910/Expanded_Storm_Overflows_Discharge_Reduction_Plan.pdf

73 The WCWC will deal with the technical issues in the guidance in response to the consultation on that, and focusses here on risk reduction.

The SODRP includes targets to:

- *Reduce the frequency of discharges into bathing waters by 2035*
- *Eliminate ecological impacts by 2050*

- *Ensure overflows don't discharge more than 10 times per year by 2050*
- *Prioritize nature-based solutions*
- *Consider carbon reduction and biodiversity net gain*

The plan also includes:

- *Targets for reducing harmful pathogens in storm overflows*
- *Requirements for water companies to demonstrate that there's no adverse ecological impact*
- *A review of the plan in 2027 to consider how to go further*

The technical guidance for this is being updated and is out for consultation now:

<https://www.gov.uk/government/consultations/draft-information-and-guidance-on-storm-overflows>

74 Clearly, this will have an impact on the costs included in PR24. It is estimated that £10 billion will be included for 2025-30 and the total costs of £60 billion up to 2050. Much higher figures have been discussed.

<https://utilityweek.co.uk/cost-of-tackling-storm-overflow-spills-rises-to-60bn/>

https://www.water.org.uk/sites/default/files/2024-03/WEB_Water%20UK%20National%20Storm%20Overflows%20Plan%20for%20England_0.pdf

[Storm overflows evidence project](#)

<https://www.ofwat.gov.uk/wp-content/uploads/2024/07/PR24-draft-determinations-Expenditure-allowances-Enhancement-cost-modelling-appendix.pdf>

<https://www.gov.uk/government/news/all-storm-overflows-now-covered-by-plan-to-clean-up-waterways#:~:text=The%20expanded%20plan%20will%20result,56%20billion%20announced%20in%202022.>

<https://theriverstrust.org/about-us/news/the-full-cost-of-sewage-free-rivers>

<https://www.ice.org.uk/news-insight/news-and-blogs/ice-blogs/the-infrastructure-blog/how-to-fix-uk-sewage-overflow-problem>

Even then, risk mitigation by monitoring and public information will still play a key role.

75 The risk mitigation for the hazards arising from sewage effluents will be in the provision of additional disinfection equipment. The provision of this extra treatment and the changes to the sewer systems will be included in the WINEP (Water Industry Environment Programme) agreed with the EA. The WCWC emphasises that disinfection of sewage effluents is not common practice and data on works provided with this technology are difficult to locate. The targets for which disinfection would be

provided do not seem clear and the best information is provided by SEPA. If wild swimming became more commonplace, so would disinfection and this would add significantly to costs.

https://www.google.com/search?q=bacterial+standards+for+sewage+effluents&rlz=1C1FKPE_en-GBGB1092GB1092&oq=bacterial+standards+for+sewage+effluents+&gs_lcrp=EgZjaHJvbWUyBggAEEUYOTIJCAEQIRgKGKABMgkIAhAhGAoYoAEyCQgDECEYChigAdlBCTE3MDk3ajBqN6gCCLACAQ&sourceid=chrome&ie=UTF-8

76 It is difficult to find a clear correlation between all sets of data on bathing water failures and hazards from sources of pollution and even then, to correlate still further with other data such as sewage effluent compliance. Do permit compliant discharges cause problems? What are the roles of bacterial standards for sewage effluents?. The permitting regime may need attention. The WCWC has avoided the temptation to extend this discussion to include river ecological and chemical status. But it does note yet another dataset provided by Defra, which shows the very substantial improvements to river quality since 1986.

[State of the water environment: long-term trends in river quality in England - GOV.UK](#)

And it does note that the zero compliant chemical status is attributed to determinands outside the issues of bathing water risks as set out in the Defra Water Plan. The two issues of WFD status and bathing water compliance are interlinked, but must not be confused. To repeat WFD status compliant waters are not necessarily fit to swim in

<https://www.gov.uk/government/publications/plan-for-water-our-integrated-plan-for-delivering-clean-and-plentiful-water/plan-for-water-our-integrated-plan-for-delivering-clean-and-plentiful-water>

77 The EA performance report provides data on water company compliance with permits to discharge treated wastewater from STW and WTW (not storm overflows). As part of the EPA the EA assesses compliance with conditions in these permits that set numeric limits for pollutants in the discharges. The EA states that compliance for the sector is not improving. It is a statutory obligation to comply with permits. The WISER performance expectation for 2020 to 2025 sets out that water companies should have a plan in place to achieve 100% compliance. *In 2023:*

- *98.8% of STW and WTW were compliant, compared to 99.0% in 2022, 98.7% in 2021, 99.2% in 2020 and 98.7% in 2019*
- *out of 3,800 STW and WTW permitted discharge outlets there were 45 non-compliant sites compared to 38 in 2022, 49 in 2021, 31 in 2020 and 49 in 2019 – no water company achieved 100% compliance with their permits (the WCWC is not too sure about the 3800 number)*

<https://www.gov.uk/government/publications/water-and-sewerage-companies-in-england-environmental-performance-report-2023/water-and-sewerage-companies-in-england-environmental-performance-report->

[2023#:~:text=It%20is%20a%20statutory%20obligation,2020%20and%2098.7%25%20in%202019](#)

78 In some rivers, treated sewage effluent comprises a substantial proportion of flow, in others, the rivers are classified as 'heavily modified' under the WFD. So, the diversity of attention to selection of sites, even for the sewage vector alone is greater for inland than coastal waters. This iterates back to the classification of rivers into low, medium and high amenity uses.

https://www.google.com/search?q=how+many+designted+bathging+watersare+in+h+aevely+modified+waters&rlz=1C1FKPE_en-GBGB1092GB1092&oq=how+many+designted+bathging+watersare+in+h+aevely+modified+waters+&gs_lcrp=EgZjaHJvbWUyBggAEEUYOTIHCAEQIRiPAjIHCAIQIRiPatIBCTQ2Njg1ajBqN6gCALACAA&sourceid=chrome&ie=UTF-8

Reprise 3

79 There needs to be clear understanding about the differences in the hazards arising from intermittent storm overflows and continuous treated sewage effluent flows. Many of the English rivers are affected in some way by the presence of treated waste waters. Some are heavily modified.

80 The WCWC does not gainsay the need for focused, rigorous management of all sewage related discharges, but repeats that, by being focussed primarily on these in relation to risk mitigation for bathing waters, particularly inland bathing waters, it is a likely that once all the massive investments have been made, there will still be non-compliant bathing waters. As stated earlier, parallel action plans on other sources are need urgently.

81 The WCWC emphasises that any change of the legislation which requires more extensive implementation of disinfection will have serious consequences for permitting, investment and operating costs, which have not been accounted for yet.

82 Any review of permits must be executed with caution; the WCWC will be responding separately on the consultation on technical guidance for combined sewer overflows.

A WAY FORWARD

83 The WCWC has long advocated a more strategic approach to river quality management, which it repeats subsequently; a component of that strategy must be a more structured way of dealing with the hazards of wild swimming particularly in rivers.

84 A hierarchy could look like:

- Create an overall strategy for manging river waters, and separately coastal (including estuarial) waters) founded on the principles of quality objectives

(see Appendix 2) which recognises as legitimate uses of water for recreational purposes in defined areas.

- Bring together all of the elements of bathing water and beach hazard management into a single focussed strategy on wild swimming, which brings together all the issues of health and safety.
- Define better how the two strategies fit together.
- Create action plans to mitigate the risks identified arising from the hazards threatening those uses, one of which will be the SODRP, another will be WINEP. Others need developing for agriculture and highway drainage
- Recognize that monitoring programmes provided by water companies and regulators bring all information in a understandable integrated way to the public.

85 Resolution of all of these issues are most likely to be located in the concept of catchment management as envisaged by the 2023 Defra Water Plan.

<https://www.gov.uk/government/publications/plan-for-water-our-integrated-plan-for-delivering-clean-and-plentiful-water/plan-for-water-our-integrated-plan-for-delivering-clean-and-plentiful-water>

This is best located within the principles of WFD River Basin Management, which are also out for consultation.

<https://engageenvironmentagency.uk.engagementhq.com/river-basin-management-plans#:~:text=RBMP%20Working%20Together%20Public%20Consultation,the%20future%20of%20our%20rivers%20>

86 WCWC produced a think piece on this, which was updated in July 2024:

<https://waterconservators.org/thinkpieces/>

To assist readers, relevant parts are reiterated in Appendix 2, which has the document paragraph numbers left in place. This advocates the revival of river quality objectives.

87 The WCWC also produced a think piece for Defra on streamlining regulation in March 2023 which included suggestions as to how a streamlined river use / quality objective system could work, to help readers the relevant paragraphs of that are given in Appendix 3 with original paragraph numbers.

86 In a somewhat similar manner, the relevance and use of bathing water designations and marine protected zones for coastal and estuarial waters is set out in the WCWC response to the consultation on discharges of storm overflows to those waters in July 2023.

<https://waterconservators.org/consultation-responses/>

88 Whilst the WCWC has welcomed the appointment of an Independent Commission on Water, it has also urged Defra to consider this broad approach first, and from the strategic framework developed, the right course of action of water companies will form part of a 'bigger picture'. This will be essential for PR29 the process for which will start soon.

Reprise 4

90 It is essential that an overarching water strategy is produced to embrace an integrated approach to bathing water management, and to be incorporated in to PR29. The Government has stated that it does not expect the recommendations of the Water Commission to be embedded until the next Parliament .. de facto PR29, but enough of the change will have to be understood well before then, as PR29 will have started much earlier.

91 The WCWC supports the extensive use of monitoring of all vectors. In fact it is the extension of automatic monitoring in recent times which has warned of the complexities of big data management and has advocated a new system of integrated monitoring governance within Water Companies .The Environment Agency must be properly resourced to deal with the additional monitoring and access to information. But who pays?

THE RESPONSE

92 The WCWC repeats its previous submissions, including those to previous consultations on bathing water, that the use of controlled waters for bathing is just one part of a spectrum of interconnected uses. It has observed that consultations focus on individual 'pieces of a jigsaw' of water strategy, yet never on the overarching strategy itself. The WCWC has set out some ideas about what this might look like which is reiterated below.

93 There are some interconnected questions which must be addressed, probably of greater significance with the longer-term proposals:

- Will the planned investments in the water company PR24 plans and in particular the investments in storm overflows management, be sufficient to meet the new requirements?
- Are there sufficient resources in the Environment Agency / Natural Resources Wales to cope with the additional monitoring; if not, will these be included in the grants to the EA/NRW and if this is to be funded by recharge, how will this be levied bearing in mind that water company discharges are only responsible for a minority of failures (see below)
- If there are increases in costs, the proposals must be tested by the Better Regulation Framework. The WCWC suggests that core reform 1 and wider reform 1 will not be de minimus. It would seem appropriate that this should have been done first rather than leaving it to the respondents to the questions in the consultation.

<https://www.gov.uk/government/publications/better-regulation-framework>

- Is there universal understanding that, even if the water company investments are successful in halting sewage contributions, bathing particularly in inland waters is still at risk without other actions.
- Bearing in mind the national debate about the cost of living, there needs to be some hard searching questions as to where the cost of extending 'wild swimming' will sit in national priorities. If society wishes this to be a high priority, there will be consequential costs, and this iterates back to questions above.

Part 1 of the Proposals

94 Given the general concerns about the lack of an overall framework in which bathing is one of a number of legitimate uses of environmental waters, the WCWC has no comment on the technical content of the first part of the proposals:

- Proposed technical amendments: The WCWC accepts these as sensible
- Core reform 1 : Agreed that flexibility is needed
- Core reform 2 Agreed as the latest data demonstrates, there needs to be a transitional period between designation and 'fit to use'
- Core reform 3 The WCWC is concerned that this would impose longer term responsibilities on the riparian owners of designated site. More needs to be done to understand the impact on compliance profiles. The longer the site is 'open' the greater will be the annual cost of compliance. For example, the longer operation of disinfection of sewage effluents. Swimmers are at liberty to swim at other times at their own risk.

Part 2 of the Proposals

95 Wider Reform 1. The WCWC is concerned that there needs to be agreement that the extension of the definition of bathers to include other water contact uses might lead to a wider demand that all environmental waters are fit to immerse in. This will lead to substantial practical and cost consequences for water management and agriculture. If this extension is just restricted to the designated areas, so be it; bathing, per se, is usually much more restricted (using DEFRA's own words), while other sports, like canoeing etc, tend to be wide-ranging and the words of welcome suggest that this wider extension is what will be expected, as the issues around the 2024 University Boat Race and the problems with the River Seine in the 2024 Paris Olympics evince.

96 The WCWC is concerned that the cost of mitigating risks to all water sports in all rivers. The relationship of compliance with the requirements of 'high amenity' areas designated bathing water requirements need sorting out before there is a drift that bathing water criteria become de facto, those for other high amenity users. This places the burden of risk management on the wider community rather than leaving it to personal judgement based on available information. A useful analogy is made to mountaineering, where much of risk management is left to individual judgement. The

achievement of good ecological quality should be the target for all non-designated waters, or whatever system of target setting emerges from the review of River Basin Management Plans, which do not include bathing water standards for non-bathing designated waters.

97 Wider reform 2. The WCWC can understand why this information is proposed but suggests that there needs to be consolidation of all monitoring programmes to determine how the maximum amount of information can be provided with out over expenditure on resources or overwhelming data users. Attention needs to be given to big data management.

Appendix 1

Further information of Storm Overflow Reduction

A1.1 The SODRP states that it will address the harm to human health from storm overflows discharging near designated bathing waters, where people are most likely to use water bodies for recreation. This target applies to both inland, coastal and estuarine areas. It will require all storm overflows near existing, or any newly designated, bathing areas to comply with a rigorous standard for bathing, which sets a limit of 3 or fewer discharges per bathing season, with some bathing waters having tighter limits. 8% of storm overflows are close to designated bathing waters. We expect this target to reduce discharges from storm overflows close to designated bathing waters by over 70% during the bathing season and for reductions to also occur outside of the bathing season. These first two targets (ecology and public health) and their sub-targets will ensure that the storm overflows causing the most harm, to public health or the environment, are addressed first. This target will also be supported by the government's work to promote the designation of more bathing waters and rivers (Section 3.4), and to ensure that users are informed in near real time of any storm overflow activity or impacts on water quality in bathing waters (Section 3.1).

A1.2 In this Plan, Defra states that it is setting new targets which will revolutionise our sewer system and generate the most significant investment and delivery programme ever undertaken by water companies to protect people and the environment:

- By 2035, water companies will have: improved all storm overflows discharging near every designated bathing water; and improved 75% of storm overflows discharging into or near 'high priority sites' (as defined in Annex 1).
- By 2045, water companies will have improved all remaining storm overflows discharging into or near 'high priority sites'.
- By 2050, no storm overflows will be permitted to operate outside of unusually heavy rainfall or to cause any adverse ecological harm.

A1.3 The PR24 performance commitment for combined sewer overflows (CSOs) is based on a company's average annual spills, which is calculated by dividing the number of spills by the number of storm overflows. The spills are counted using the

12/24 method, which counts each spill that lasts longer than 12 hours as more than one spill. For example, a spill that lasts 60 hours would be counted as three spills. The PR24 performance commitment is intended to incentivize companies to reduce spills beyond any statutory obligations. The goal is to challenge companies to go beyond the proposed annual average target of 20 spills per overflow by 2025.

<https://www.ofwat.gov.uk/wp-content/uploads/2023/05/Updating-storm-overflows-performance-commitment-definition-for-PR24-our-decision-1.pdf>

<https://www.ofwat.gov.uk/wp-content/uploads/2024/07/PR24-DD-sector-summary.pdf>

Appendix 2

River Catchment Management taken from a WCWC 2024 thinkpiece and adhering to its numbering protocol for paragraphs These are included at length as it is vital to understand the complex system used at the moment and how it can be updated

River Quality Objectives

A2.1 The system of assessing river quality on a comparative basis started in 1958 and evolved into the current approach, which coalesces the need for a general comparative system of classification with a framework to ensure that river waters are fit to use for some, but not all purposes on a local basis. For some years after the formation of water authorities in 1974, the notion of Statutory Water Quality Objectives was developed by the National Water Council and then the National Rivers Authority (<http://www.environmentdata.org/archive/ealit:4095>). In 1994, Mark Everard of the NRA wrote an insightful paper ‘Water Quality Objectives for Sustainability’ (<https://core.ac.uk/reader/11020080>.) summarised in paragraphs A2.2-A2.6.

A2.2 ‘These Statutory Water Quality Objectives were introduced under the Water Resources Act, 1991. Their purpose is to establish clear quality targets in Controlled Waters, on a statutory basis, to provide a commonly-agreed planning framework for regulatory bodies and dischargers alike. The WQO scheme is use-related, based upon a suite of classification schemes defined by water quality standards appropriate to the requirements of various identified river uses. Within any one use, a range of tiered use classes may apply, representing a graduation of quality requirements. For rivers, five uses are envisaged: River Ecosystem; Special Ecosystem; Abstraction for Potable Supply; Agricultural/Industrial Abstraction; Water sports (DoE, 1992a). Whereas the last three of these uses are directly related to human exploitation of rivers, the River Ecosystem and Special Ecosystem uses are primarily based upon the needs of the ecosystem’.

A2.3 ‘Nevertheless, it is recognised that the protection of ecosystem health gives rise to a range of calculable human benefits, for example: general amenity, fisheries, conservation value, property value, etc. The River Ecosystem use is the backbone of the WQO scheme, and will be applied to virtually all stretches of river throughout England and Wales. The standards which define the River Ecosystem classification

are selected to provide protection to aquatic ecosystems, and are based upon seven of the most commonly encountered determinands known to result in toxic effects in fish and in the ecosystems that support fish populations. These determinands are: dissolved oxygen; biochemical oxygen demand (BOD); total ammonia; unionised ammonia; pH; zinc; copper.'

A2.4 'To date, River Ecosystem is the only WQO use for which the Government has produced Regulations (SI 1057, 1994). The NRA has proposed a classification scheme supporting the Special Ecosystem use, but Government has not yet consulted upon these recommendations. The purpose of the Special Ecosystem use is to provide protection for aquatic ecosystems of high conservation value, and focuses on nutrients implicated in ecosystem change rather than upon substances giving rise directly to toxic effects. The NRA's Special Ecosystem proposals are based on ortho-phosphate concentrations, as ortho-phosphate represents bio-available phosphorus, and is also strongly implicated in eutrophication processes in temperate freshwater ecosystems, as it is generally found to be the limiting nutrient (Hutchinson 1957; Ruttner 1963; DoE 1992b; Irving 1993). Direct inputs of ortho-phosphate are also largely controllable in terms of point source discharges, and ortho-phosphate is more amenable to control than nitrogen (Hayes & Greene 1984).'

A2.5 'Standards supporting the remaining river uses are still under development. WQO quality targets will comprise two parts: a target class, and a target date by which compliance should be achieved. On a stretch-by-stretch basis within whole river catchments, the NRA will propose target use classes based on current and desired river use, current water quality, and the investment available to improve water quality, also taking account of complicating factors such as acidification or complex industrial discharges. A target date will be proposed to reflect the completion of water quality improvement schemes by industry and/or agriculture. The NRA will then consult upon these proposals with the local population, including local interest groups and major dischargers within the river catchment'.

A2.6 'Following any necessary revision, the NRA will submit its proposals to Government, which will undertake a formal consultation process to further ensure that the views of all interested parties are represented. The Secretary of State will then formally set the WQOs by serving Notice upon the NRA, which will then be under a duty to use the pollution control powers at its disposal to ensure compliance with WQOs. The WQO scheme therefore builds upon the strengths of the NWC scheme in that it places the requirements of the receiving water at the centre of pollution control considerations. However, it goes further by recognising a broader range of uses to which river stretches are placed, that a range of different uses may apply to river stretches, and it also places the quality requirements upon a statutory footing. This identification of uses provides a framework for valuation of benefits.'

A2.7 In practice these standards were applied to river stretches and from them discharge standards were calculated using catchment simulation models like SIMCAT. Still in use today. In the early days at least, there were local consultation mechanisms to determine which objectives were applicable to what are now called water bodies.

Water Framework Directive and Water Environment Regulations

A2.8 The SWQOs were replaced by the concepts of Good Ecological Status and Good Chemical Status derived originally from the EU Water Framework Directive (WFD). These Status standards are linked in part to absolute standards and in part on use related standards. The concepts are expressed in Regulations, the last iteration being in 2017.

A2.9 The WFD Regulations work through a series of 6-year cycles of River Basin Management Plans. The Plans were updated in December 2022 with some modifications. Defra and the EA stated that these Plans over the next five years are backed by £5.3bn of funding

<https://www.gov.uk/guidance/river-basin-management-plans-updated-2022>

The Water Plan is a further evolution of original concepts.

A2.10 The primary objectives are to prevent deterioration and, where necessary, achieve 'Good Ecological Status' (GES) or 'Good Ecological Potential' (GEP) for surface water or 'Good Status' for groundwater and to achieve full compliance with chemical criteria defining 'Good Chemical Status'. The RBMPs embrace most relevant issues including the impact of abstractions on river flows

<https://www.data.gov.uk/dataset/41cb73a1-91b7-4a36-80f4-b4c6e102651a/wfd-classification-status-cycle-2>

Good Ecological Status

A2.11 *Good Ecological Status is the WFD default objective for all water bodies and is defined as a slight variation from undisturbed conditions. Key elements that make up Ecological Status include:*

- *biological elements (including fish, macro-invertebrates, macrophytes and diatoms);*

and

- *supporting elements (made up of hydromorphology, ammonia, pH, phosphates, dissolved oxygen and pollutants including some heavy metals and pesticides).*

A lowest common denominator rule is applied to the elements, so the lowest scoring element denotes the overall status of the water body. For example, if a biological quality element was at moderate and other quality elements were at good, it would be assumed that the water body as a whole is at moderate status.

A2.12 The complexities of the contributing factors make statistical compliance that much more challenging, and the headline figure does not represent an accurate description of river quality. It is also difficult to understand the connection between the ecological status of, say, fish populations and chemical status. The Water Plan

states that 795 of all underlying standards of 4,658 water bodies meet Good Ecological Status.

A2.13 As the data in paragraph 50 shows, there are a complexity of factors which contribute to the notion of Ecological Status and provide a framework which is predisposed to failure; whilst there is a need to condense these into simple statistics for communication, in so doing the accuracy of reporting has been distorted. And the reporting of metrics on Ecological (and Chemical) Status need reviewing as part of the regulatory streamlining process.

A2.14 The current system recognises, in part, the notion of defining water uses and associated quality criteria. It is notable, for example, that water use standards underpin the permitting of storm overflows from sewers, which have been the subject of much controversy

<https://www.gov.uk/government/publications/water-companies-environmental-permits-for-storm-overflows-and-emergency-overflows>.

In pursuance of the Regulations, the Environment Agency has prepared registers of protected areas where measures may have to be taken to meet the requirements of overlapping directives relating to the aquatic environment. The registers must include the following protected areas:

(a) a drinking water protected area;

(b) an area or body of water for the time being designated or otherwise identified as requiring special protection under any EU instrument providing for the protection of surface water and groundwater or for the conservation of habitats or species directly depending on water, or any enactment implementing such an EU instrument, including, in particular:

(i) areas designated for the protection of economically significant aquatic species (including shellfish water protected areas);

(ii) bodies of water designated as recreational waters;

(iii) nutrient-sensitive areas;

(iv) areas designated for the protection of habitats or species where the maintenance or improvement of the status of water is an important factor in the protection of the habitats or species such as Natura 2000 sites.

A2.15 *Some areas may require special protection under more than one set of regulations. In these cases, all the objectives and standards must be met. Where WFD water body boundaries overlap with areas protected under another directive, the most stringent objective applies — the requirements of one particular set will not undermine the requirements of another, for example those for Bathing Water and Protected Habitat sites.*

A2.16 Reporting on these measures is included in the Basin Plans. For example, the latest data on bathing water quality released by the Environment Agency in 2022 showed that out of the 419 bathing waters measured in England, 407 (97.1%) met at least the minimum standard of the Bathing Water Regulations, with 302 (72.1%) meeting the Excellent standard. This is a substantial improvement from 1995 when only 46% of bathing waters tested passed.

A2.17 The Status standards against which the assessments were made were set originally for the UK by the WFD UK Technical Advisory Group (WFD UKTAG) in 2008 drawing on EU limits but added to later. There are basic criteria for common indicators such as dissolved oxygen, ammonia, and acidity, but in addition, there are many relating to hazardous substances. As the Water Plan explain standards for each element (integral parts of the assessment, not chemical element) are specific to the sites and types of water bodies. The Consultation on implementation of S81 and S82 of the Environment Act.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1149922/Continuous_water_quality_monitoring_and_event_duration_monitoring_consultation_document_April_2023.1.pdf

This refers to the use of principally those standards in the Urban Pollution Management Fundamental Intermittent Standards (UPM FIS). This is preferred over less focused alternatives, such as the Water Framework Directive, because UPM FIS are specifically designed to measure the impact of storm overflows, which constitute around three quarters of statutory assets

<http://www.fwr.org/UPM3/>

A2.18 The Environment Agency and Defra published detailed data which give more revealing insights into the actual status of rivers.

<https://www.gov.uk/government/publications/state-of-the-water-environment-indicator-b3-supporting-evidence/state-of-the-water-environment-indicator-b3-supporting-evidence>

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/709493/State_of_the_environment_water_quality_report.pdf

A2.19 Left unchecked, DEFRA foresaw that there will be a deterioration from 14% of waters at good ecological status to 6% by 2027 unless current interventions are maintained and new interventions introduced to halt further decline.

<https://www.gov.uk/guidance/river-basin-management-plans-updated-2022>

The Water Plan being that further intervention.

A2.20 Under the headline of only 14% of English river waters being classified as Good Ecological Status, were the following data sets:

Biology

Fish: 42% at good status

Invertebrates: 76% at good status
Macrophytes and phytobenthos: 45% at good status

Physical modification
Morphology: 49% at good status
Flow regime: 88% at good status

Water quality
Dissolved oxygen: 82% at good status
Ammonia: 92% at good status
Phosphorus: 45% at good status

These are cited in the Water Plan. The Plan notes that of the 4,658 water bodies, 79% meet the requirements for Good Ecological Status.

A2.21 Compliance for drinking water protected zones (DrWPAs) is essential, and in many ways reflects the long-established principles of use protection advocated by the WCWC. There are 485 surface water DrWPAs and 234 are deemed to be risk of deterioration resulting in 144 surface water safeguard zones. These are catchment areas that influence the water quality for their respective DrWPAs. *They are identified where the protected area has been assigned as being “at risk” of failing the drinking water protection objectives of the 2017 Regulations (England & Wales). They are a non-statutory, joint initiative between the Environment Agency and water companies. Surface water safeguard zones define areas where actions and measures will be targeted to address water contamination and avoid or minimise extra treatment needed by water companies.*

<https://www.data.gov.uk/dataset/6ac22521-2e77-4dc8-ba90-6bb55d2ea3b8/drinking-water-safeguard-zones-surface-water>

Reasons for such designations were:

- pesticides: 43%
- sediment: 30%
- algae: 19%
- nitrate: 4%
- microbiology: 3%
- other: 1%

If the way forward is going to be by treatment, the principal challenges are in the complexities of the treatment technologies needed to be employed by Water Companies. It could involve N and P removal, activated carbon treatment and UV disinfection.

A2.22 As the data in paragraph A2.20 shows, there are a complexity of factors which contribute to the notion of Ecological Status and whilst there is a need to condense these into simple statistics for communication, in so doing the accuracy of reporting has been distorted.

<https://www.gov.uk/government/publications/river-basin-management-plans-updated-2022-current-condition-and-environmental-objectives>.

These metrics have become data of intense interest in politics, media and communities at large. There are so many criteria involved that the statistical chance of full compliance presents a challenge. The assessment of local Ecological Status underpins the actions taken with catchment planning, as discussed in Chapter 6.

A2.23 As the latest RBMP and Water Plan recognises there is also a problem with the Chemical Status metric, in particular, and this is discussed in following paragraphs.

Good Chemical Status

A2.24 Government Guidance states: *For surface waters, good chemical status means that no concentrations of priority substances exceed the relevant the Environmental Quality Standards (EQS) established in the Environmental Quality Standards Directive 2008/105/EC (as amended by the Priority Substances Directive 2013/39/EU). EQSs aim to protect the most sensitive species from direct toxicity, including predators and humans via secondary poisoning. A smaller group of priority hazardous substances were identified in the Priority Substances Directive as uPBT (ubiquitous, present, appearing or found everywhere), persistent, bioaccumulative and toxic). The uPBTs are mercury, brominated diphenyl ethers (pBDE), tributyltin and certain polyaromatic hydrocarbons (PAHs)'. The term uPBTs is one that is part of the established formal nomenclature." These are the cause of most failures. As the Water Plan sets out, the assessment in 2019, excluding these substances, revealed that 94% of all surface waters complied with Good Chemical Status.*

A2.25 Defra had already recognised the problem. It stated in the launch of the latest RBMPs that the WFD 'one out all out' rule *requires that water must be at Good for all elements and will fail overall if just one element fails. So, three uPBTs (Mercury, Perfluorooctane sulfonate (PFOS) and Polybrominated diphenyl ethers (PBDEs) are generally causing water body failure out of around 52 priority substances monitored. Compliance, including these will require broad action outside the control of catchment management planning, as the Water Plan concedes. So, the focus for Catchments is Ecological Status per se. This, which in part, has been a driver for action on the management of environmental water leading to the Water Plan. This think piece is focussed on that.*

Appendix 3

How Water Quality Objectives work in practice, taken from a WCWC 2023 Thinkpiece on Streamlining Regulation again adhering to the numbering protocol for paragraphs

A Framework based on Quality Objectives

A3.1 The WCWC supports any initiative to ensure that the rivers of England are not only fit for use but are havens for wildlife. It reiterates a suggestion, made previously in response to Defra Consultations, for a 'road map' of initiatives and a national

strategy in which there are agreed sets of quality criteria for recognisable uses. New standards need to take better account of biological conditions by setting ecological objectives for health, diversity and productivity as well as physical form which allow the creation of new and better environments. The heart of the suggested approach is to:

- a) Agree a national set of recognisable uses of rivers including the care of habitats;
- b) Agree the set of quality criteria for each of these uses;
- c) In individual river stretches, regulators consult and agree with local people on uses;
- d) The quality specification / objective of each stretch created by combining the national criteria for each of the agreed uses;
- e) These should then be used to determine catchment management strategies, including land management practices, discharge consents, abstractions and river flow regimes, using models such as SIMCAT or SimBasinQ based on Monte Carlo simulations; and
- f) That this exercise must incorporate the costs associated with delivering desired outcomes, which will fall to a number of organisations and sectors, not just the water sector.

A3.2 This would draw on the strengths of the river use objectives system, which preceded the introduction of the Water Framework Directive Regulations but reflect current attitudes, technologies and accountabilities. The WCWC suggests that ways could be found to speed up the reform and streamlining process. Compliance would then be judged against the river quality specifications which would include the sustainability of appropriate local ecosystems. This should lead to a greater focus on catchments. It would allow a much greater emphasis on impact mitigation and move away from the current focus on 'end of pipe' solutions. It would allow more relevant local solutions and would give a more logical basis to prioritise storm overflows and phosphate removal, the designation of bathing waters, and a better idea about abstractions particularly those new ones near the saline limit (See the WCWC think-piece on water resources and also here in paras A2.21-25).

A3.3 The WCWC think-piece on water resources focusses on the pivotal role of rivers in the context of an integrated approach, and in its further deliberations, it suggests there needs to be more emphasis on restoration of river flows, especially in chalk catchments where abstractions from aquifers have removed the source waters. This could involve pumping highly treated sewage effluents back into source areas (aquifer recharge as well as release to the river) to supplement river abstractions. Local water recycling must play a significant role in the overall plans for quality and quantity management.

