

Written evidence submitted by Professor Nigel Watson

Thank you for the opportunity to comment and to provide evidence regarding current and future approaches for restoring, protecting and enhancing water quality in our rivers.

I have spent the past 35 years conducting research and providing university-level education in relation to the management of water, land and related natural resources. I have been fortunate to observe and to conduct research on institutional arrangements for water in several countries. In Canada and the USA, for example, there are many similar water-related issues to the UK and also some quite different management and regulatory approaches.

I have published research on the development and implementation of the Water Framework Directive (WFD), and contributed research for the development of the 25 Year Environment Plan.

As Chair of the Ribble Life Catchment Management Board since 2012, I have also gained first-hand insights and experience regarding the implementation of the WFD and the development of the Catchment-based Approach in England.

Responses to some of the questions included in the call for evidence are provided below:

- 1) What are the best indicators for river water quality that could be used as targets being developed under the Environment Bill?

The best and most useful indicators are those which provide meaningful information regarding the functioning of our rivers, rather than those indicating the current condition of rivers relative to an assumed natural state. The WFD was founded more than twenty year ago with good overall intentions and ambitions regarding water quality.

However, the subsequent WFD monitoring and classification system is based on a false premise that there is a particular 'natural state' and associated condition for a river, and that efforts should be directed towards restoring our rivers to past natural states or conditions before humans made significant use of, and altered, the water environment. Our rivers are actually dynamic, constantly evolving, 'open' systems that continually change in terms of their character, shape and condition, and our approach to management and regulation should be founded on that principle.

As such, we need to develop a new system of indicators to fully reflect the ecological functioning of our rivers and their capacity to continue to provide the ecosystem services that are vital for nature and people - rather than the current indicators which report environmental conditions relative to a baseline of a modelled natural river system from the past. In this regard, I believe the emerging work in the UK on Natural Capital has the potential to identify the societal value of our rivers with regard to the ecosystem services they provide, and that future indicators should be used to show where those services are impaired, and where future public and private investment for improvement should be targeted.

- 2) How can consumers be persuaded to change their behaviour to minimise pollution?

Water pollution is a complex problem, often involving multiple diffuse and point sources linked to many different types of industrial, agricultural and domestic practices occurring within each catchment system. As a response to that complexity, a combined approach which integrates regulation, incentives and information is most likely to be effective in preventing the pollution of our rivers rather than, for example, a potential 'push' to greatly tighten pollution regulations alone.

More than anything, consumer awareness and consumer choice are fundamental to changing behaviours. Greater consumer understanding and awareness of pollution and associated source-pathway-receptor relationships can help to drive change at the individual and household level, avoiding harmful disposal of liquid and solid waste to the sewerage system and encouraging lifestyle changes towards greener and more sustainable products. New and better informed consumer preferences can drive changes within product supply chains, encouraging eco-innovation and the development of new markets for manufacturers and retailers. A quicker transition to more effective water pollution prevention and control could be achieved with additional incentives and regulations for manufacturers, producers and retailers.

Despite increasing environmental awareness generally, water citizenship is not as well developed in the UK. For many people, water remains much like the other key utilities such as gas and electricity and is not part of their everyday consciousness and decision making. There is both a need and a potential for organisations such as the Environment Agency, water companies, and environmental NGOs to promote a civics approach to water and pollution. The proposed Office for Environmental Protection (OEP) could play a very significant and valuable role in informing and educating consumers, and drawing greater public attention to the performance of water companies and other organisations and sectors that impact on the water environment.

- 3) Should local authorities and highways agencies be given a duty to prevent pollution to watercourses without prior treatment?

The UK has a clear problem with regards to non-permitted discharges from highway drainage systems, ditches and small streams/watercourses which flow into our rivers and estuaries. Historically, local authorities in England were very actively involved in maintaining, clearing and cleaning ditches and streams. While issues related to water quantity, particularly in relation to flooding, have gained much greater attention from local authorities in recent years, the same cannot be said with regard to water quality.

Similarly, available published evidence suggests that the Environment Agency has not been particularly pro-active in addressing the issue of pollution from highways even though this is known to be a significant contributor to poor river quality in many cases. Placing a statutory duty on local authorities and highways agencies to prevent the discharge of untreated runoff and waste water would be a very significant step towards reducing this problem. It is an obvious point, but local authorities and highways agencies would need the organisational and financial resources to implement any new statutory requirements. With regards to highways, the current debate around road pricing is interesting and that kind of mechanism is worth investigating further as a means of funding future action on water pollution.

- 4) How effective is Ofwat's remit and regulation of water companies? Does it facilitate sufficient investment in improvements to water quality, including sustainable drainage systems and nature-based solutions such as constructed wetlands?

Water pollution is fundamentally a water governance problem related to the institutional arrangements that are in place and their effectiveness in steering the behaviour of people, firms and other organisations. Ofwat is in the difficult position of having to balance economic and environmental considerations in the setting of water prices, based on information and future investment plans prepared by the water companies themselves. In my view, currently there is a lack of transparency and public/customer accountability with regard to Ofwat's regulatory process, the procedures for scrutinising water company plans, and the consideration of economic and

environmental needs in the final price determinations. The general lack of easily available public information makes it very difficult for water consumers to assess the efficiency, effectiveness and equitability of Ofwat and its approach to regulating the water services industry. In addition, the forward-looking nature of the price review process, geared to five-year cycles, has meant solutions requiring longer time horizons to deliver results have not received the same levels of support and investment as traditional water engineering-based solutions. As a consequence, nature-based solutions such as catchment-sensitive farming, woodland planting and wetland construction have not featured as heavily in water company plans and actions programmes as they should.

5) How could the designation of inland bathing waters by water companies affect the costs of achieving the associated water quality standards?

There is no doubt that the growing popularity of wild swimming in the UK is helping to focus attention on rivers and the human risks associated with water pollution. The previous policy focus on coastal bathing water quality did bring about significant investment from water companies and improvements to beaches, some of which now benefit from Blue Flag status. Designation of inland water for bathing, coupled with effective regulation of waste water discharges, would certainly create some significant new challenges for water companies. It should be anticipated that water prices would need to increase substantially in the same way that they did in the 1990s and early 2000s to provide the necessary investment, assuming the water industry structure remains as it is at present.

It is worth noting that water companies are not the only contributors to the bathing water quality problem in England and other parts of the UK. To achieve high standards of bathing water quality for inland and coastal waters, other sources of pollution such as agriculture and old and poorly maintained septic tanks must be simultaneously tackled.

I hope these observations and suggestions are of interest and value to the Committee.

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