

Written evidence submitted by Salmon & Trout Conservation

Salmon & Trout Conservation (S&TC) is a wild fish charity specialising in campaign based, science-lead, lobbying. Wild salmon and trout are natural indicators of a happy and healthy water environment. Their wellbeing is a fundamental interest for everyone with a love of rivers, lakes and their wildlife. We fight to keep UK waters wild.

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

Salmon & Trout Conservation (S&TC) believes that the best indicators for river water quality are those that show the ecological health status of rivers rather than just indicating water quality per se. In May 2019, S&TC published its [Riverfly Census Report](#) which used professionally sampled and analysed species level invertebrate data to indicate the ecological health of 12 rivers across England. The Census results showed that pesticides and other toxic chemicals, excess fine sediments and excess nutrients were the major stressors on these rivers., and recent Environment Agency (EA) monitoring has shown that chemical signatures have been found in all sampled rivers in England. However, the Riverfly Census indicated that the greatest contribution to river water pollution came from agriculture and we believe that this industry remains the greatest threat to the future health of riverine ecology throughout England, albeit that pollution from sewage treatment works is still a major threat, especially in rural sites where infrastructure investment has been severely lacking.

S&TC believes that the Water Framework Directive (WFD) standards are an essential starting point to assess river water quality and should remain the basis for post-Brexit monitoring. While there seems to be a belief in some sections of the EA that the one out, all out principle of WFD river classification is too rigid a standard, S&TC believes that any deviation from this basic tenet would fail to indicate the fragile ecological health within many English rivers and would therefore be akin to moving the goalposts to achieve a better assessment than was actually the case. Riverfly Census and its subsequent results show the importance of monitoring the entire ecological state of a river system. Indeed, one of the major recommendations in the Census report is that WFD classification was not sufficiently stringent to evaluate the ecological health of chalkstreams. The clear implication is that chalk streams need enhanced protection and so any downgrading of indicator standards would have potentially very damaging implications for these extremely important and fragile river systems.

S&TC is currently rolling out its [SmartRivers](#) project, using citizen scientists to undertake river water quality sampling and analysis against a professional benchmark of ecological health, from which future trends can be traced. In a time of reduced EA resources available for water quality monitoring, we believe that the professionally overseen nature of the S&TC SmartRivers project, using the same species-level invertebrate basis which was proven to be so successful within the Riverfly Census, will be an extremely important component of any future monitoring system. Invertebrate sampling highlighted the poor performance of Bordon Sewage treatment Works on the River Wey and has led to Thames Water undertaking significant investment to improve the works' ecological performance. We would therefore welcome the opportunity to discuss further how SmartRivers could contribute towards official monitoring of river water quality standards in future.

2. How could drainage and sewage management plans, introduced by the Environment Bill, play a role in reduced sewer discharges?

S&TC believes that drainage and sewage management plans are vital to allow the water companies to present plans for investment to OFWAT in a formalised way, which should receive a more favourable response from OFWAT than has been the case in the past. In particular, we do not support the economic regulator's policy of forcing water companies to 'sweat the assets' – i.e. forcing companies to operate existing sewage works beyond their design capacity, with the result that CSO and other discharges of undertreated sewage outside of periods of heavy rainfall have become routine. This practice must end if the ecology of receiving water bodies is to be effectively protected 100% of the time (see answer to question 3 below).

In summary, we support the requirement of statutory plans, but there must be strong Ministerial steer to OFWAT that the regulator has to allow water companies sufficient resources so that they can invest in the changes that these plans will show are necessary, therefore offering the water environment greater protection.

Without such a steer, the requirement for such plans will not deliver the Government's policy objective.

3. How adequate are the monitoring and reporting requirements around water company discharges? How can technology improve and assist with transparency and enforcement?

S&TC has thoroughly researched this issue, looking as far back as the Kinnersley Report of 1989, a National Rivers Authority (NRA) report entitled "*Discharge Consent and Compliance Policy: A Blueprint for the Future*". The Kinnersley Report was produced by a policy group on discharge consent and compliance in the immediate aftermath of the privatisation of the water industry and the establishment of the NRA. The terms of reference were agreed with the Secretary of State for the Environment at the time and the group's aim was to produce a consent system working effectively and holding public respect. The report made a number of recommendations of which S&TC believes three are very much valid today:

- *Defining the acceptable discharge in sufficient technical detail for the receiving waters to be protected from damage **at all times**.*
- *Maintaining the clarity and precision of the legal obligations in the consent so that they can be **readily enforced**.*
- *Enabling dischargers to understand and remember their obligations and committing them in future to positive roles in sustaining full compliance with those obligations".*

Of particular concern when it comes to sewage discharges made from treatment works was the decision, pre-privatisation, that instead of requiring 100% compliance, by way of a General Variation Order the legal obligations in all relevant consents were changed to a requirement that the proportion of samples meeting the limits from sewage works should not be significantly lower than 95%. In other words, water companies could discharge any polluting substance in excess of their consents for 5% of the time and not face any regulatory action. This so-called '95 percentile' has become the norm ever since, despite Kinnersley, at the time, recommending that absolute limits should be tested by instantaneous spot sampling, and that any failure would be an offence.

S&TC's Riverfly Census has shown the potential damage caused by a build-up of pollutants in a river system - i.e., although individual discharges might be within the consented range, the accumulation of discharges within the receiving water could lead to ecologically damaging pollution over time. Kinnersley recommended that: *“for discharges where the effluent or their constituents may build up in the receiving waters, consents should include limits on loads. Conditions requiring dischargers to maintain records of the mass of a substance discharged over a given period and, in appropriate cases, to notify the NRA when a stated proportion of the total mass authorised for the relevant period has been discharged, may also be desirable.”* This was designed to avoid the build-up of constituents of a discharge that may accumulate in receiving waters and to avoid *“a risk of deliberate manipulation of the discharge”*.

This is exactly the issue S&TC has found in some water bodies, especially with the 'spikey' nature of discharges from such industries as watercress and trout farming. With the potential for sewage treatment works to discharge phosphate at differing levels, it would seem sensible to include them in this potentially hazardous category.

S&TC strongly recommends the use of continuous monitoring. Kinnersley stated that, wherever possible, equipment should be used to facilitate this recommendation and, of course, technology has progressed so markedly in the past 30 years that continuous monitoring should now be both practical and affordable for the EA to use widely, especially for potentially high-risk polluters such as sewage treatment works. It is also worth noting the Kinnersley recommendation that ***the scale of sampling effort and other monitoring should all be clear and robust so that no dischargers think that slackness or deliberate malpractice on their part may escape notice.*** S&TC believes it is evident today that EA monitoring and enforcement are not at the scale necessary to encourage would-be polluters to operate within their discharge consents for 100% of the time - basically because they do not believe there is a likelihood of being prosecuted for consent infringements.

S&TC therefore believes that current monitoring, reporting and enforcement are not sufficient to ensure pollution-free discharges at all times into watercourses and recommends:

- All discharge consents should be sufficiently stringent to protect the ecology of the receiving water body, based on the best available local evidence available.
- All dischargers should be legally bound to abide by their consent conditions 100% of the time
- Continuous monitoring equipment should be utilised, especially for potentially damaging discharges, paid for by the discharger under the polluter pays principle
- The regulator must have sufficient resources and ministerial guidance to enforce 100% compliance and prosecute persistent offenders

4. What is the impact of plastic pollution and other materials on drainage and water quality in rivers and what should be done to mitigate it?

There is increasing evidence that plastic is highly polluting in rivers. Recent publicity over plastics in the oceans following the Attenborough programme has certainly raised the public profile of this pollution source, but relatively little has been said about a significant proportion of marine plastic pollution originating in rivers and, in turn, from sewage works.

There is also mounting evidence of the uptake of plastics, often in microscopic form from such products as deodorant, shampoo, conditioner, moisturisers and many more, in freshwater life - i.e. as well as plastics being found to be ingested by freshwater fish species, S&TC Riverfly Census monitoring has shown cased caddis larvae using plastics within their gravel cocoons. Fibres from man-made fabrics have also been found ingested by coastal crabs, almost certainly originating from domestic washing.

The only way to mitigate plastic pollution is to continue to raise public awareness, particularly that there really is something every household can do to help solve the problem - stop buying products containing single-use plastics, and especially microplastics in cosmetics. Research amongst people locally has suggested that if products were clearly marked as containing microplastics, it would give the public the choice of whether or not they bought them, and the public voting with their feet would encourage manufacturers to phase out single use plastics in their products, thereby cutting off the pollution issue at source.

5. How can consumers be persuaded to change their behaviour to minimise pollution?

As above in the answer to question 4. However, as much as S&TC believes manufacturers and the public have a responsibility to minimise the manufacture and consuming of products that may pollute the water environment, this must not absolve the government from providing both the resources and ministerial direction for the EA to regulate and enforce potential polluters, such as water companies, as strongly as is necessary to protect the water environment and its dependent wildlife - see answer to question 3.

6. What is the required investment level needed to minimise storm overflows vs the scope for sustainable drainage and nature-based solutions?

S&TC does not have sufficient information to answer this question.

7. How effective are the planning policy and standards around sustainable drainage systems (SUDs) to reduce urban diffuse pollution in England?

Although this is outside the scope of S&TC's work, we consider that a great deal more should be done to encourage planning standards to insist on SUDs in urban areas wherever possible as current SUDs standards are not mandatory and therefore often ignored, and there are no policies to retro-fitting SUDs.

8. Should local authorities and highways agencies be given a duty to prevent pollution to watercourses without prior treatment?

Yes. However, local authorities must be properly briefed as to the effectiveness of treatment options for sewage - for instance, mini-treatment appliances, such as Klargest sewage systems, can be the source of significant phosphate pollution into receiving water bodies. Wherever possible, it should be the norm for new buildings to be connected to the mains sewer system, so that all wastewater is treated professionally at sewage works before entering water bodies and can be regulated as a single source discharge.

We are very concerned about highways as a pathway for chemicals to reach watercourses, and think this is definitely an area which requires greater attention.

9. 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?

Please see the answer to question 2. S&TC believes that Ofwat should have a greater role to play in environmental protection from potential pollution from sewage works, and also clear ministerial guidance to allow water companies greater investment in modern infrastructure that will help facilitate that protection.

Ofwat's needs to focus on long-term environmental sustainability and water security, rather than short-term wins.

10. Is adequate investment being made in adapting water treatment systems to future climate change?

As stated above in the answers to questions 2 and 9, S&TC does not believe that Ofwat allows water companies sufficient investment in modern infrastructure, particularly in rural areas, whether that be for combating climate change or more urgent, current pollution issues.

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

S&TC does not have sufficient knowledge to answer this question

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