

SANA RESPONSE TO CONSULTATION

Implementing the Water Environment and Water Services (Scotland) Act 2003:

Updating environmental standards for the water environment

The following questions are posed in the form for making our response. The questions are shown in italics and the draft reply is shown in plain type.

1. Do you agree with the proposal in Section 4 to update the river fish statistical assessment method?

No. The basis of the proposed assessment may be valid in some river systems but in others it would be partial. Species other than trout and salmon should be considered. As a game fish, grayling is an obvious omission. We would also draw attention to freshwater mussels which have a symbiotic dependence on stocks of trout and salmon and thereby provide an indicator of abundance. Our colleagues in the coarse fishing sector would be expected to draw attention to other species.

2. Do you agree with the proposal in Section 5 to update the river phytobenthos assessment method?

No. At a local level, concentrations of phytobenthos are indicative of sites afflicted by poor waste water treatment (WWT) and pollution by Combined Sewage Outfalls (CSOs). It follows that there are considerable regulatory implications. The method of measurement may not in itself have regulatory implications but the measurement itself should enable identification of sites within rivers that are affected by point source pollution, such as the sources we cite. The ambition should be to categorise parts of water bodies as well as whole water bodies.

3. Do you agree with the proposal in Section 6 for a new loch fish (eDNA) assessment method?

No. In particular, this section raises our criticism that the consultation as a whole is not written in plain English. Few of our members are likely to be familiar with the concept of eDNA. Deoxyribonucleic acid (DNA) is a molecule composed of two polynucleotide chains that coil around each other to form a double helix carrying genetic instructions for the development, functioning, growth and reproduction of all known organisms and many viruses. As such, it has become known to the general public through its use in identifying individuals as a key part of forensic science. Thus, eDNA could have been introduced in the context of this consultation as, for example: Environmental DNA (eDNA) is nuclear or mitochondrial DNA that is released from an organism into the environment. Sources of eDNA include secreted faeces, mucous, gametes, shed skin, hair and carcasses. Recent research has shown that the DNA of a range of aquatic organisms can be detected in water samples at very low concentrations.*

On the substance of the question, we have answered “no” because we see no reason to restrict the methodology to lochs.

This fairly new genetic sampling technique may be a very cost-effective means of monitoring the presence/absence of a full range of fish and crustacean species, including pink salmon, in our river catchments. It might also be used to show relative annual abundance of pinks etc at monitored river sampling stations. Perhaps, other government departments and agencies might be involved in this subject. It is very relevant to our response below on the subject of invasive species.

* Source: Freshwater Habitats Trust

4. Do you agree with the proposal in Section 7 to update the loch morphology bank protection assessment method?

Yes. The text of this section seemed to be entirely remote from the practicality of accessing the banks of many/most lochs in Scotland.

If the question relates solely to those lochs that have been heavily engineered in some way, and classified as such in terms of the Water Framework Directive, or are subject to the influence of man-made intrusions, that narrows the field of discussion.

Concerning fisheries, engineering for bank and boat access is generally non-intrusive and we know of no case where bank erosion has resulted from fishing related works at lochs.

A more positive attitude to improving access to lochs would contribute to creating viable sporting fisheries which would contribute to local economies and as potential food resources for future generations.

5. Do you agree with the proposal in Section 8 to the introduction of spatial standards for fish barrier assessment?

No. There are situations where a small length of unavailable habitat would be of disproportionate significance if it offers good spawning territory and/or good juvenile habitat. The proposed arithmetical approach to assessment is unsatisfactory. Instead, District Salmon Fishery Boards and/or Fishery Trusts should be consulted on fish barrier assessment and their proposals should be enacted with financial support.

6. Do you agree with the proposal in Section 9.1 to update river flow standards to include artificially increased flows in high hydrological status waterbodies?

No. This subject seems to be primarily about hydro-ised rivers. In that case, short term compensation flows should not be taken into account because the habitat norm will be the lower flow.

Abstraction for water supply and other persistent pressures of water flow seems to have been glossed over. It is identified as an issue in the introductory paragraphs of section 9 but taken no further. Perhaps there should have been a question about artificially reduced flows.

There is another problem with flow standards, viz. old power stations which do not have minimum flow requirements. The Clyde has two hydro power stations – Stonebyres and Bonnington which have no minimum flow requirement because they were built in 1926/27 before the minimum flow legislation was introduced. They appear to be exempt from any requirement. A SANA committee member has witnessed the flow being reduced to the extent that fish were stranded. This omission must be addressed.

7. Do you agree with the proposal in Section 9.2 to update river flow standards to allow for short term flow deviation?

No. Short-term artificial droughts are a problem which must not be ignored. If they coincide with natural droughts and high water temperatures, they can be disastrous for fish.

8. Do you agree with the proposal in Section 10 for a new nitrogen standards (sic) for lochs?

No. It is loch phosphate that causes most eutrophication. Nitrogen only has that role in the salt water environment. Accepting that nitrogen does have a role in freshwater enrichment should not blind us to the lack of action on phosphates. We still have no phosphate scrubbers at WWTs and they discharge to both rivers and lochs. Perhaps the most notable discharge is to Loch Leven but it's also very evident on rivers.

9. Do you agree with the proposal in Section 11 to update the invasive non-native species list?

Yes. However, we find the proposal to be incomplete. Pink salmon (*Oncorhynchus gorbuscha*) and emerging/potential crustacean imports, e.g. killer shrimps (*Dikerogammarus villosus*), should be added to the list.

Craig Campbell, 7/12/20

