Joint Links response to UKTAG consultation: Updated Recommendations on Environmental Standards River Basin Management (2015-21) Draft (SR3 – 2012)

About the Joint Links

The Joint Links (representing Wildlife and Countryside Link[1], Scottish Environment LINK[2], Wales Environment Link[3] and Northern Ireland Environment Link[4]) work together to achieve better protection for wildlife and the countryside across the UK. Each one is a coalition of environmental voluntary organisations, united by their common interest in the conservation and enjoyment of the natural and historic environment.

This response is supported by the following nine Joint Links organisations:

- Angling Trust
- Buglife - The Invertebrate Conservation Trust
- Froglife
- Pond Conservation
- Royal Society for the Protection of Birds
- Salmon & Trout Association
- The Rivers Trust
- Wildfowl and Wetlands Trust
- WWF-UK

Summary

In terms of standards:

- **Specific pollutants -** Given the monitoring for many of the priority substances has been minimal, it is less than precautionary to assume that an annual mean is the best method of compliance to adopt; especially as many of the substances listed are pesticides and will only be applied at specific times of the year and mobilised in extreme weather events.

- **Wetlands –** The Joint Links are concerned that the status classification set out on p. 38 of the consultation document is not sufficiently precautionary, especially where breach of a threshold is modelled rather than actually monitored. A more precautionary stance to setting standards and compliance is necessary, given the importance of many of these sites (Sites of Special Scientific Interest (SSSIs) and Nature 2000 sites) and the need to demonstrate compliance with the Water Framework Directive (WFD).

[1] WCL - http://www.wcl.org.uk/
[2] SEL - http://www.scotlink.org/
[3] WEL - http://www.waleslink.org/
[4] NIEL - http://www.nienvironmentlink.org/

- **River flows** - We are very concerned that this analysis suggests that UKTAG is proposing to relax standards for all river types. Given emerging science and the absence of certainty, UKTAG must adopt a precautionary approach and at the very least maintain current levels of protection.

- **Natura 2000 sites -** we are disappointed that the development of Common Standards has not been successfully completed in time for inclusion in this document (p.10). We seek confirmation of the exact timetable for this work.

Concerns with the consultation content:

- The Joint Links are concerned that the consultation document **over-emphasises the potential of reporting more failures than are actually occurring**. This ignores well documented evidence of a positive bias in classification, due to the approach taken to standard setting, compliance regimes, inaccuracy of risk assessments and the limited biological monitoring.
- We are concerned that **despite being a consultation on environmental standards this consultation continually strays into questions about the risk of wasted investment** on measures. Questions of economics do not feature in the WFD process of standard setting but are captured elsewhere, through: the measures appraisal process; investigations into failure and cause of failure; the disproportionate cost test; and the technical feasibility test.
- **We welcome the revision of standards on the basis of improved scientific understanding**. However, this effectively 'shifts the goalposts' and brings changes in classification of status which may distort overall trends status and whether or not a specific water body classification is changing due to improvements/deterioration in underlying chemistry/biology, or as the result of new standards. The agencies must, therefore, clarify how baselines have shifted in order to produce a representative picture of water body health over time.
- Throughout the consultation there appears to be an assumption that standards should be set in a way that minimises risk of failure rather than maximises environmental protection; this means that the consultation **lacks an appropriately precautionary approach**.

Detailed comments

1) Pessimism bias

We are concerned that the consultation document as a whole over-emphasises the potential of reporting more failures than are actually occurring; in other words it has a pessimistic bias. This ignores the other biases in the network, such as the inaccuracy of the risk assessments and the limited biological monitoring, which mean that results are in fact likely to be overly optimistic, with more failures occurring than reported by the classification.

The Joint Links are extremely disappointed with the following extracts from the consultation:

> *"The use of the one-out all-out rule means that numbers expressed in terms of the percentage of water bodies in good or better status have a strong pessimistic bias. This error is caused by the largely unavoidable uncertainties in monitoring. These generate a risk of declaring wrongly that a standard is passed or failed."* p.8
>
> *"The rules for the Water Framework Directive state that a water body cannot be in good status if a standard for a Specific Pollutant is failed. Where such failures are at "face-value", there is a*

risk (up to 50 per cent) that the failure is not true, but reflects uncertainties in monitoring. There is a similar risk that failed sites are wrongly reported to have passed. Nonetheless, for a single substance and standard, the proportions of failed waters can lead to a precise measure of the national position in terms of "percentage of failed sites." p.34

"*Where good status is declared as an integrated result across lots of standards (under the Directive's "one-out all-out" rule), the estimate of the national proportion of failed sites is heavily biased in a pessimistic direction. This bias rises with increase in the number of standards. This fact must be taken into account in the framing of national targets, and in assessing whether such targets are met. For Specific Pollutants, this is best done through separate targets for each substance. Statements such as "40 per cent of waters fail for Specific Pollutants" should be avoided."* p.35

These statements are not factually accurate, as **the pessimism bias caused by the use of 'one-out all-out' is a theoretical one. In reality, it is far outweighed by optimism bias** introduce by risk assessment, inadequacies in biological monitoring etc. We find it strange that this sentence was included, given that the Environment Agency had commissioned independent research by WRC which demonstrated that – when taking other variables into account, such as the amount of the network covered for biological elements due to risk based monitoring – classification results are likely to be "optimistic", with waters being reported as better than they actually are. The WRC document and an RSPB paper on the issue are attached with our response.

We seek clarification regarding the following:

"To help minimise this bias, UKTAG recommends that in cases where a pressure can be measured in several ways, only the single most sensitive indicator is used in classification. It also recommends that, in reporting results, emphasis is given to reports of the separate assessments of each type of impact on water bodies (for example, the effect of abstractions; impact of pollution by nutrients; etc) rather than to summaries that combine all assessments across all the impacts." p.8

Is this suggesting that not all monitored elements that are failing are actually reported? Any action being taken to minimise bias should take into consideration the WRC paper attached, which suggests that the overall bias is optimistic rather than pessimistic, as it is described here.

2) Conflating standards and the potential adoption of measures

Although this consultation purports to be on environmental standards there are many references to the costs of measures. We seek assurances from UKTAG that such considerations have not been taken into account when setting the standards themselves.

"*...the advice of the UKTAG is often that that standard be used in a way that demands more statistical confidence than might have been used to assess the reported failure in the first place. "For some standards action may also be deemed to require extra corroboration such as that provided by biological and chemical evidence that both point to the same damage or risk. Lack of such corroboration may indicate that action should be postponed."* p.8

"The net result is that initial assessments of compliance can indicate more failure than will justify eventual action." p.8

Firstly, the WRC paper attached, shows (at least for England and Wales) that the **overall basin classification and monitoring means that there is a systematic under-reporting of failure. So, in reality, it is likely that an initial assessment of compliance can indicate fewer failures than will justify eventual action, not more.**

Secondly, the Joint Link seek clear advice from UKTAG that where corroboration might be needed information should be gathered as a matter of course. If it is not, the standards, compliance and monitoring regime will remain heavily biased against taking action and so fail to comply with the requirements of the WFD.

There are multiple stages in place to safeguard against wasted investment and the standards themselves should be based purely on scientific understanding of the environmental impacts. We remind UKTAG that investigative monitoring to increase confidence and the disproportionate cost/technical feasibility tests exist as safeguards in order to ensure that investment is not wasted. We do not feel that these economic considerations should be included in this consultation on standards.

3) Protected areas

We are disappointed that the development of Common Standards has not been successfully completed in time for inclusion in this document (p.10). We seek confirmation of the exact timetable for this work.

As a general point, it is clear that the Birds and Habitats Directives were put in place to offer the highest level of protection to habitats and species of highest conservation importance in Europe. The construction of the WFD seeks to compliment and reinforce these directives and, by setting the "whichever is more stringent" test in Article 4.7(d), clearly envisages that certain standards for those sites may be higher than those set under the WFD; not least because the level of precaution required in protecting Natura 2000 sites is very high.

We therefore hope that in resolving whatever issues exist between experts and administrations, the standards set do not undermine the huge amount of evidence gathered in the process of setting favourable conservation status objectives for sites.

4) Specific pollutants

We seek further information about how the issue of Silver and Aluminium is being pursued by UKTAG. Even if there is not currently sufficient data to propose a standard this does not mean that they do not represent a risk to the environment. What further evidence is being gathered on these pollutants and what is the timeline for action?

At the stakeholder meeting for this consultation in Birmingham it was stated that only very limited, or in some case no monitoring at all, had been taken for these substances. The consultation document states, however, that no specific pollutant "*has been identified in significant concentrations by programmes of monitoring."* We question whether further monitoring may be required before the decision to take no action is adopted.

Page 17 of the consultation document states, "*the proposals of the UKTAG represent the consensus of the reviewers. Any differences are discussed in the technical reports."* Is it possible to obtain information on which proposals do not represent a consensus viewpoint?

Page 22 of the consultation document states:

> *"For most substances, the annual mean is well correlated with the probability that higher and lower concentrations occur within a year. Also, for many types of risk, measures taken to comply with an annual mean act in parallel on the risks associated with the full spread of concentrations that make up the annual mean."*

Given that the monitoring for many of the priority substances has been minimal, it is less than precautionary to assume that an annual mean is the best method of compliance to adopt. Especially as many of the substances listed are pesticides and will only be applied at specific times of the year and mobilised in extreme weather events.

Page 23 states:

> *"For a short-term standard, the PNEC is usually presented as a "Maximum Allowable Concentration (MAC)". If the MAC is used as an absolute "maximum", serious and arbitrary errors will result. These lead to a biased classification of water bodies, and wrong decisions on action to secure compliance. Any proposed short-term standard is therefore defined by the UKTAG as an annual 95-percentile."*

Where a maximum allowable concentration is based on precautionary eco-toxicological assessment it would be inappropriate to substitute this with an annualised percentile. To reiterate points we have made above, there are numerous safeguards that preclude expensive investment without further evidence. It is therefore worrying to see this factored into standard setting. We seek further justification from UKTAG about how appropriate the adoption of annual 95 - percentile is for each substance.

We strongly support the need to ensure that measures are in place to prevent accidents and dramatic events ("*Generally, any protection that achieves an annual mean or an annual 95-percentile must be backed up with measures to control the risks from accidents and dramatic events"*, p.23) However, as we note above, there may be significant weather-dependent or seasonality to losses even when products are used legitimately; it is vital that monitoring and compliance regimes explicitly take this into account.

We seek assurances from UKTAG that monitoring of sites affected by substances for which there are few or no monitoring data (because there is currently no requirement for monitoring) will be adequate to confirm status with 95% confidence or to suggest that a different level of confidence may be more appropriate.

We would also like to take this opportunity to highlight the need for monitoring of upland watercourses for e.g. suspended solids, fish and metals.

Page 24 states:

> *"For substances such as pesticides, it may be useful to do additional monitoring during parts of the year when applications are most likely to occur. In such instances, it is important to avoid bias when determining compliance with a standard that is expressed as an annual mean or an annual percentile. For example, if we normally take 12 samples per year, but include an additional ten samples in a given month, all the data from that month would be used to provide an estimate of the monthly mean. This, in turn, would be used to calculate that month's contribution to the annual mean."*

If the substance is only used during one or two months there will be an opposite bias by including all the other months where the substance is not being used. It is for this reason we do not feel that the annual mean is an appropriate mechanism for all priority substances.

We do not believe it is appropriate to use table 3, page 24, with substances that are not present all year round. For example, a pesticide may only be applied for 2 months a year of the 12 samples. This means the trigger for action is harder to achieve even though the distribution of the chemical concentration is not even throughout the year.

We question whether UKTAG should be making recommendations on the triggers for action in this, a document on standards ("*The UKTAG recommends that there should be at least 95% confidence that the standard is failed2 before serious and expensive action to improve a site is sought"*, p.24). Notwithstanding this, we do not feel that there is sufficient monitoring in place to adopt the 95% confidence strategy. Specifically, regarding table 3, the confidence needed to indicate failure should be based on the power of the available monitoring, rather than being set at an arbitrary threshold of 95%. If the current table with only four samples was used, half of them would have to exceed the standard in order to trigger a failure.

We are glad that the issue of accumulated concentration through intermittent discharges of specific pollutants has been raised, but would welcome further detail on how agencies will "follow up" such events (p.26).

Finally, page 34 states:

> *"The environment agencies may use biological data to inform their advice and decisions. For example, certain pesticides can give rise to particular changes in biological diversity. If such changes are confirmed, the agencies have a good idea on which substances are responsible."*

Given the limited amount of biological monitoring being undertaken it is unlikely this method will be sufficient to identify the presence of pollutants on many sites.

5) Risk to wetlands

We are concerned that the status classification set out on p. 38 is not sufficiently precautionary, especially where breach of a threshold is modelled rather than actually monitored.

We are concerned that investigation is only triggered where both (a) and (b) are met. This ignores:

1. the potential for more than one pressure to be causing damage to a wetland;
2. the likely time-lag between breach of the standard and ecological impacts, which means that, by definition, UKTAG will be recommending deterioration is allowed to occur before triggering exceedance;
3. a lack of monitoring of wetland condition outside of the network of SSSIs.

A more precautionary stance to setting standards and compliance is necessary, given the importance of many of these sites (SSSI/ Natura 2000) and the need to demonstrate compliance with the Directive.

Page 38 states:

> *"If the investigation confirms that the damage to a wetland is significant and that it is being caused by inputs of nitrate from the groundwater, the groundwater body should be classed as*

poor status. Otherwise, it should be classed as good status with respect to the effect of its nitrate content on wetlands."

We are concerned that this approach ignores potential in-combination impacts on wetlands. It may be that nitrate is a contributing factor to significant wetland damage without being the sole cause.

Also on page 38, we seek clarification about whether (ii) ("*for good status… (ii) one or more wetlands is identified as significantly damaged but no relevant threshold value is breached")* applies when the threshold is modelled rather than derived from actual monitoring data. And what confidence must be ascribed to such an assessment before evidence of ecological damage can be dismissed? For example, even if compliance is monitored, what protocols should be followed to ensure water quality results are both spatially and temporally representative?

Page 40 states:

"Where a wetland is found to be significantly damaged, action to reduce groundwater nitrate concentration is only required where it would not be disproportionately expensive. The action might typically consist of adopting best practices, including those designed to reduce losses of nutrients from farmland. The threshold values help in determining the magnitude of the reduction in concentration needed to improve the condition of the wetland. Where action is necessary, it can be designed to target the specific sources of pollution of the groundwater on which the wetland depends. A breach of the threshold value has no relevance to decisions on the designation of Nitrate Vulnerable Zones under the Nitrate Directive."

We believe this statement misrepresents the special protection offered to Natura 2000 sites by the WFD and the UK position on those provisions, which states that measures to meet Favourable Conservation Status may only be deferred where those sites are themselves water bodies. We are also concerned that the statement strays into defining what measures might be adopted, an approach which presupposes the outcome of a series of legal and economic tests.

6) Alien species

The Joint Links feel that the UKTAG is right to take an approach that considers the risk assessments (RA) carried out by the Great Britain Non-native Species Secretariat (GBNNSS). However, we remind UKTAG that it is not possible to predict with accuracy which alien species will become invasive, and where or when. No RA process for Invasive Non-Native Species (INNS) will ever approach perfection and RA should, as is explicitly recommended, be applied and utilised with caution. The list of species with a UK RA is absolutely not intended to be a comprehensive list of invasive alien species threatening this country – it is a pragmatic list with RAs being commissioned as issues arise.

We urge UKTAG to have regard to the assessment of levels of 'uncertainty' included in the RAs. As freshwater bodies and catchments are known to be particularly vulnerable to INNS, we feel an appropriate precautionary step would be to adopt the following approach: any species which has Medium response conclusion but with an uncertainty level higher than Low should be given High listing under the UKTAG process.

For example, for Pacific Oyster, on which the RA concludes a Medium overall response, the RA also concludes: "*Environmental impacts are largely associated with loss of intertidal habitats, including mudflats and bivalve beds. Such impacts may affect habitats of high conservation value, including mudflats, estuaries, eelgrass beds and biogenic reefs. The loss of bird feeding grounds may also result in impacts on native bird populations*." Furthermore, the RA classifies Uncertainty levels as Medium.

Therefore, in this instance, a High UKTAG listing seems the most appropriate. Furthermore, we believe that guidance needs to be given to the GBNNSS to ensure all aquatic pressures are fully examined in the context of impacts on WFD status.

The consultation states that listings are intended to prioritise efforts to monitor and assess risks. The UK RA process is explicitly designed to underpin a precautionary approach to INNS and we wish to stress that Medium, or even Low, listing does not negate a requirement for effective monitoring programmes.

We note that Table 13 seems to incorporate some inconsistencies. For example, it is proposed to downgrade *Sargassum muticum* from High to Low listing yet the RA for that species actually concludes overall response as Medium rather than Low.

The Joint Links strongly welcome the proposal to develop an 'alert' list covering "*species that are not yet present in Great Britain but have the potential to be introduced"*, p.50. We seek further information about how such a list will be kept up to date and the process involved in moving species from one list to another.

In relation to "locally absent" freshwater fish species, we feel that the approach detailed on page 52 is a positive step forward. We suggest that exploration of whether there is sufficient information on locally absent species should be undertaken as soon as possible, as it is a critical element of a satisfactory approach to tackling INNS. We would like to know the timetable for this work and discuss how we can best provide assistance.

7) River flows

Page 56 states:

> *"Recent work has noted a difference in the response of macro-invertebrates between upland and lowland rivers, with bigger effects caused by extended low flows in lowland rivers [8]. However, at this time, the UKTAG considers the scientific understanding to be insufficient to differentiate the relative sensitivity of different types of river to extended low flows. Consequently, the UKTAG's proposals for revised standards apply to all river types."*

We are very concerned that this analysis suggests that UKTAG is proposing to relax standards for all river types. Given emerging science and the absence of certainty UKTAG must adopt a precautionary approach and at the very least maintain current levels of protection.

Furthermore, the Joint Links are concerned that a significant number of rivers and wetlands are impacted by low flows which do not trigger action or investigation under the WFD ("*the UKTAG proposes no changes to its current recommendations on standards for low flows"*, p.54). The absence of new quantitative information points to an abject failure on behalf of the statutory agencies to get to grips with this important issue.

The Joint Links seek more clarity and information as to how the proposed revised standards would take into account some of the following factors (listed in UKTAG guidance[5] on Heavily Modified Water Bodies):

- impacts on the movement of salmon and sea trout;

[5]UKTAG Guidance (2008) *Guidance on the Classification of Ecological Potential for Heavily Modified Water Bodies and Artificial Water Bodies*. Report by Royal Haskoning.

- impacts on downstream river flows necessary to maintain river habitats and their associated aquatic plants or animals;
- impacts on the morphological characteristics of the downstream river;
- impacts on the level regime necessary to maintain habitats and their associated aquatic plants and animals.

Page 55 states:

> *"Published studies show that effects on aquatic organisms can result from changes to mid and higher flows [5,7,8]. However, the available evidence does not suggest that these effects can be sufficiently severe on their own to lead to bad ecological status."*

There will be circumstances where other pressures acting on a waterbody will mean that this change in flow is a significant in-combination impact, causing a waterbody already in bad status to deteriorate to poor status. In this circumstance flow on its own will not have caused poor status but conversely poor status would never have occurred without a change in flow. The standards should be more precautionary to allow for this issue.

8) Water levels in lakes

It is unsatisfactory that the peer review (p.62) identified a number of other factors to be taken into account which have not been considered by UKTAG. We would like further information on how this information will be taken into account when finalising this standard. There is a serious potential issue with fluctuating levels negatively affecting divers nesting and feeding on lochs.

9) Standards on lake acidification

Pages 69-71 indicate that separate standards will exist for clear and humic waters, which will be defined according to Dissolved Organic Carbon (DOC) level. We question whether DOC monitoring is undertaken at sufficiently regular frequencies to ensure that the standard is still relevant. This is in view of the fact that DOC levels in Scottish rivers have approximately doubled in the last 20 years.[6]

Joint Links
June 2012

[6] SEPA and Natural Scotland. *Trends in organic carbon in Scottish rivers and lochs*.