

BHS Response to NADWP : May 2007

General

The British Hydrological Society welcomes the opportunity to comment upon this useful and well-thought out document. Before responding to the specific questions itemised, there are two issues which we feel should be addressed:

1. There is no clear definition of what chemical or ecological status¹ is to be achieved; the set of issues and possible control measures presented make it difficult to assess the likely success of these since targets are not defined.
2. It is unclear how the effects of different pollutants on surface-, ground- and transitional-waters will be separated, both in terms of the effects of one non-agricultural pollutant from another, and in terms of separating the effects of non-agricultural and agricultural pollutants. To implement legislation it is necessary to be able to separate the effects of different pollutants so the correct polluter can be targeted.

Tackling the pollution sources listed in document will improve water quality but there is a need to balance socio-economic and environmental considerations. The results of the preliminary cost effectiveness analysis (pCEA) will be important. It is unclear how far this work will go and if it is a desk-based study only. One suggestion is to trial some of the measures in a pilot study, as in the case of Catchment Sensitive Farming, and monitor the response both in terms of chemical and ecological status and the costs to the economy.

Specific responses

Section 1.8

Are the five priority areas which we have identified correct? If not, why not?

The five priority areas seem a sensible selection on which to focus limited resources.

What, if any, are the other significant issues that are not covered by the first priority areas?

It is unclear if power generation is included under 'industry'. However, as emissions from power stations are already subject to protocols and directives then the five priorities listed are probably correct.

Are contaminated land and/or waste disposal/landfill sites included? As well as consideration of abandoned mines, then inputs of metals and micro-organic pollutants might be expected from former industrial areas. How much is known about leakage of pollutants from waste disposal and landfill sites?

Little is known about the contribution of septic tanks to the overall loading of nutrients to ground and surface waters. In section 2.4 Sewage, there should be some comment over septic tanks seeping to the unsaturated and saturated zones near to rivers. This might be significant for the more headwater areas of catchments where flows and dilution potential are low.

¹ We are nevertheless aware of the limitations of the Water Framework Directive's loose terminology concerning 'good status' by 2015

What about forestry? Is conifer plantation forestry classed under the heading of agriculture? There are issues of acidification reversal with felling (reduced atmospheric scavenging of SO_x) and potential acidification cycles with repeated forestry rotation cycles as base cations are removed from the catchment via the harvested timber. Also, there may be an issue of iron mobilisation as the forest soils wet up due to reduced transpiration of water both with felling and as the trees become old.

What are your views on our assessment of the effectiveness of existing legislative mechanisms?

We feel it is difficult to assess this due to insufficient data (see next item)

How might the effectiveness of existing legislative mechanisms be improved?

More data needs to be collected and more research done to determine the effectiveness. In order for the legislation to be effective, then the Competent Authority will need more resources to check compliance and prosecute if necessary. As with Catchment Sensitive Farming, it might be prudent to test new legislation or voluntary measures in a few pilot basins to begin.

What are your views on our assessment of the effectiveness of the existing voluntary mechanisms?

The assessment seems reasonable.

How might the effectiveness of existing voluntary mechanisms be improved?

Being seen to be green is in vogue at present. Perhaps it might be possible to introduce industry standards for effluent disposal and award an accreditation so that customers know the business is compliant. Different targets would be needed depending on the industry and size of business.

In your view, is it necessary to introduce further legislative mechanisms? Please state why you think it either is or is not necessary?

This is only useful if you have the resources to test compliance and enforce the legislation. It might be easier to begin with voluntary mechanisms and then introduce legislation if necessary.

How do you think the introduction of further voluntary mechanisms will help to mitigate non-agricultural diffuse pollution? What further evidence can you provide which suggests the need for new voluntary mechanisms? What support would be necessary to achieve voluntary action?

Education is required so that the polluters understand the consequences of their actions and will be more likely to use voluntary mechanisms. Such education might be achieved through a web-site, seminars, leaflets or advertisement.

What are your views on the suggested options for possible new mechanisms?

Codes of conduct, advice on best management practice, and some accreditation scheme to show compliance with voluntary standards.

How effective do you think the mix of control strategies proposed in this document might be?

It is difficult to estimate this. One suggestion is to trial some control measures in a pilot study and monitor the success in terms of an improvement in the water quality and ecology, and to estimate the costs of such measures.

Section 2.1 Industry

There needs to be a clear statement over how to deal with pollution from historically contaminated sites, rather as there is with regard to abandoned mines. Also, there needs to be an assessment of the relative levels of historical and contemporary pollution as in some cases there may be penalisation of current industry even though they provide relatively low flux contributions for specific pollutants.

Section 2.2 Transport

Why does pollution occur

An additional bullet point is:

- A major reason is that many sediment and pollutant traps built along highways are very rarely well maintained. If such traps become full of sediment then their trapping efficiency will obviously be very low.

Section 2.3 Abandoned Mines

We feel that there should be more emphasis on the problems arising from process waste: often the mines themselves may be contributing only a fraction of the contaminants compared with those emanating from mine spoil.

Section 2.4 Sewage

Which activities?

The contribution of sewage to water courses from combined sewer systems during high flow events is not mentioned – combined sewer overflows are designed to discharge sewage to river courses when the capacity of the sewer system is exceeded.

Section 2.5 Sediment

In considering the role of sediments, careful consideration needs to be given to the sister consultation *Mechanisms to deliver Water Framework Directive requirements on hydromorphology*, as there is considerable potential for overlap between the two. Part of the concern arises from the apparent attempt to determine suitable levels of sediment within waters but with no consideration to differentiating between sediment introduced through natural processes and sediment input linked to anthropogenic activities. There should be considerable variability included within any levels to take into account the spatial and temporal variability within river catchments.

Which activities?

Additional bullet points are:

- Spills of sewage from combined sewer overflows
- Intentional sediment flushing from mill side channels
- Channel maintenance or river restoration
- Upstream gravel cleaning or weed cutting
- Poorly maintained sediment traps associated with highway runoff

Section 3.1 Existing Mechanisms

SuDS

In considering the potential role of SuDS and the legislative mechanisms that are currently in place for future developments, they would do well to consider the approaches applied in Glasgow within the GSDP. A clear firm link between planning acceptance and SuDS incorporation at the planning stage can have a significant influence on the uptake and inclusion of SuDS in future developments, which can then be used if considered carefully by developers as a marketing tool on new estates. This approach has limited costs associated with it, if the planners and designers understand that this is expected of them at an early stage, which in the long term may prove to be more cost effective than a semi-voluntary approach to SuDS inclusion. Within developed urban areas the demands and opportunities for fitting SuDS are more limited, requiring greater co-operation at a regional level with a more holistic approach to catchment water management by the authorities/organisations involved.

Section 3.2 Effectiveness

A concern worth noting when proclaiming SuDS as a solution relates to the long term maintenance and management of SuDS, when incorporated within new or old developments who is responsible for them as they require periodic maintenance otherwise their effectiveness is significantly reduced over time.

Section 3.3 Key Areas for Consideration

- Is there a need to consider when pollution reduction for specific substances might **not** be a good idea, e.g. some contaminants may be suppressing eutrophication.
- Is there a need to consider brown-field sites that have become Sites of Special Scientific Interest? In such cases, a cleanup might destroy what we are trying to protect in some of our unique environments.