



# **WATER QUALITY IN RIVERS**

## **ENVIRONMENTAL AUDIT COMMITTEE INQUIRY**

### **Evidence submitted by Smart Growth UK**

**20 January 2021**

#### **Executive summary**

- Water quality is dependent, in part, on water quantity and we believe the Committee needs to widen its inquiry into issues of over-abstraction and over-development.
- We are unconvinced that a combination of water efficiencies, leakage control and water transfer will meet future demand as such solutions have not worked after decades of trying.
- Current failures of strategic planning in England propose accelerated development in areas already under acute water-stress, particularly those that rely on groundwater.
- For decades central government has refused to countenance the cost of large-scale water transfer, so over-abstraction must be viewed as a constraint on major development.
- There should be “flags” for the planning system over river flows where ecological status is affected by over-abstraction.
- National, regional, sub-regional and local planning policy should require refusals of large-scale development on water supply grounds and the water environment’s capacity to handle wastewater, in the same way they are supposed to be refused over flood considerations.
- The development industry should be required to meet the full cost of additional water supply and wastewater measures necessitated by their developments before they are in place (up to and including the cost of a national water grid), without which development should be rethought and refused.
- DEFRA has failed to give local authorities the backing and finance they need to tackle diffuse pollution from contaminated land.
- A pair of priority habitats on contaminated land are deterring remediation because of biodiversity considerations even where they are causing serious pollution of the water environment.

- Regulators must be given effective powers to prevent over-development from further damage to the water environment.

## 1. Introduction

1.1 This evidence is submitted on behalf of the Smart Growth UK coalition, an informal coalition of organisations and individuals committed to promoting the Smart Growth approach in the United Kingdom

1.2 Smart Growth is an internationally recognised holistic approach to spatial, transport and community planning. It emphasises efficient and sustainable use of land through appropriate densities, brownfield-first, urbanism, protection of biodiversity and opposition to sprawl. It also promotes sustainable transport through sustainable modes like public transport and active travel, together with transit-oriented development and protection of traditional communities through protection of high streets and conservation of the built environment. In the round, of course, these things are what policy theoretically tries to promote, but it is clear that often current policies actually militate against such sustainable outcomes.

1.3 We share the Committee's concerns about water quality in rivers and the particular areas of focus reflected in the questions on which it is inviting written submissions. However, water quality is also dependent on water quantity, which is under increasing stress in parts of the country. We believe, therefore, the Committee needs to widen its area of inquiry into other areas which are increasingly important:-

- Over-abstraction
- Development beyond the ability of an area's water environment to provide the necessary level of supply
- Development overloading water bodies' ability to handle wastewater volumes.

1.4 We believe there is a need to question whether major developments – and strategies involving major regional development in some regions – should be agreed where there is serious water stress and/or a significant lack of wastewater capacity, in parallel with the way they are supposed to be refused in areas or regions of serious flood risk.

1.5 Environment Agency chief executive Sir James Bevan set out the problem in a 2019 speech<sup>1</sup>: “In all the water companies' business plans is a chart in the form of a graph, also known by some as the jaws of death (though that's not what they call it in the glossy business plans),” he said. “This chart draws two lines across the X/Y axis. The first line shows predicted water demand over the next several decades in the region the water company serves: and in all the water company plans this line goes up, as more people, homes, and businesses appear over time. The second line shows the water that will be available to supply those needs: and in all the water company plans this line goes down, as the effects of climate change kick in. And somewhere out along the timeline, usually around the 20/25 years from now mark, those

lines cross. And that, ladies and gentlemen, is the jaws of death – the point at which, unless we take action to change things, we will not have enough water to supply our needs.”

1.6 His solution was a combination of demand reduction and increased supply. We should indeed recognise that measures such as leakage control, water transfer and domestic/industrial/agricultural water efficiencies can help. Water companies’ business plans and regulatory bodies have long advocated such policies. But while these have been pursued for decades and some progress has been made, the big benefits promised remain stubbornly out of reach. Even if further progress is made, as it should be, we do not believe that would be sufficient to address both current shortfalls and the big increases in demand threatened by failures of strategic and local planning involving over-development in water-stressed areas.

1.7 We are becoming acutely concerned that such failures of strategic planning in England threaten to overwhelm the water environment in large areas. Notwithstanding changes to the proposed “mutant algorithm” setting out the targets for house building that central government imposes on local planning authorities, it is clear that large areas already under serious water stress face further unsustainable development levels.

1.10 Particularly under stress are those served by chalk and limestone aquifers and surface watercourses. Already, areas like the Chilterns and the Cambridge area are seeing water courses which have traditionally enjoyed substantial flows throughout the year effectively drying up in summer. Yet huge rates of development are planned in areas like the so-called “Oxford-Cambridge Arc” (actually five whole counties), south Hampshire and elsewhere, substantial parts of both of which are already under acute water stress.

1.11 From the 1930s up to the 1980s, successive governments discussed the possibility of a “national water grid” to bring water from areas of relative abundance to areas of shortage, but cost prevented it happening and the proposal disappeared from view. Some large-scale regional water transfer does occur, but it is on a relatively small scale and rather gimcrack in nature. Yet without a national grid, major development in water-stressed areas ought to be unthinkable.

1.12 Despite this, national planning policy in England is desperately weak. The *National Planning Policy Framework*<sup>2</sup> makes only a number of vague statements in this direction:-

- “Strategic policies should set out an overall strategy for the pattern, scale and quality of development, and make sufficient provision for... infrastructure for transport, telecommunications, security, waste management, water supply, wastewater, flood risk and coastal change management, and the provision of minerals and energy (including heat)” (paragraph 20);
- “Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures” (paragraph 149);

- “Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans” (paragraph 170).

1.13 The *Framework* does also say (paragraph 34) that: “plans should set out the contributions expected from development. This should include... other infrastructure such as that for... flood and water management...” There is no sign whatsoever of the Government requiring, say, the house building industry to pay for the level of infrastructure like a national water grid necessitated by massive over-development in water-stressed areas such as the “Oxford-Cambridge Arc”. Nor do we believe there would be any likelihood of the development industry being ready to meet such costs. Yet ministers, Whitehall, water companies and the development industry continue to claim the measures they propose will be sufficient to meet the stresses of climate change and accelerated development.

1.14 We remain unconvinced that there is any prospect of major greenfield developments like the Arc being supplied with water. We urge the Committee to recommend that water and wastewater infrastructure need to be in place *before* development gets underway. We have long been supporters of the concept of transit-oriented-development; perhaps it’s now also time to demand water-oriented-development. Without that, and without the development industry being prepared to pay the billions of pounds necessitated, we believe major accelerated development remains a major threat to the quality of the water environment. No water, no development.

1.15 We therefore urge the Committee to accept that over-abstraction is the most pressing challenge to the water environment, although there are obviously serious concerns over diffuse pollution.

## **2. Diffuse Pollution**

2.1 Although the questions to which the Committee is seeking answers lie, for the most part, outside the concerns of Smart Growth, there are still points we would like to make in response to some of them.

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

2.2 A key issue is river flow and we believe indicators of quality should include standards for levels of flow and “flags” for when flows fall below levels necessary to sustain good ecological status at current demand levels.

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

2.3 National, regional, sub-regional and local planning authorities should be given a statutory duty to include consideration of development on flows and levels in both surface and groundwater, over and above the weak requirements of the *NPPF*. There should be a statutory requirement for development plans at all levels to reject development which does not sustain sufficient flows and protect good ecological status in water bodies. Development should only be possible when supplies have been made available to meet at least “worst historic drought” levels without damaging the ecological status of water bodies.

- *How effective are the planning policy and standards around sustainable drainage systems to reduce urban diffuse pollution in England?*

2.4 Although outside a strict focus on sustainable drainage systems, there is nevertheless a significant concern about diffuse pollution that appears not to be covered by the Committee’s specific questions.

2.5 We are referring to the issue of water pollution caused by land contamination. In theory this is covered by Part 2A of the Environmental Protection Act 1990, but local authorities, fearful of costs and of deterring redevelopment of derelict sites have been extremely reluctant to use it. DEFRA has been equally reluctant to fund it.

2.6 Beyond that, however, lies an extremely sensitive issue, namely that of priority habitats designated under Section 41 of the Natural Environment and Rural Communities Act 2006. The original UK Biodiversity Action Plan priority habitats were designated between 1995 and 1999, but a revised list was published in 2007 following a review which increased the UK list of habitats from 49 to 65. In 2012, the lists were made specific to the four home nations.

2.7 Among the new habitats were two which significantly involve contaminated land: “calaminarian grasslands” and “open mosaic habitats on previously developed land”. Both have proved obstacles to remediation of land contamination which can, in some cases, cause serious contamination of rivers and groundwater.

2.8 Particularly concerning from the river pollution point of view is calaminarian grassland. This is defined<sup>3</sup> as: “a range of semi-natural and anthropogenic sparsely vegetated habitats on substrates characterised by high levels of heavy metals such as lead, chromium and copper, or other unusual minerals”. A few calaminarian grasslands are a result of natural outcropping, but most are spoil from former metal extractive industries and seriously contaminated with toxic metals. They include:-

- Mine spoil, in situations where naturally occurring metalliferous outcrops have been quarried away;
- Metalliferous river gravels, sometimes derived from washed-out mine workings. In many localities the metalliferous outcrops which would have been the natural habitat for the species referred to above have been quarried away but the mine spoil still provides suitable habitat.

2.9 Such land is concentrated in former metal mining areas, particularly the Pennines, north Wales and parts of Scotland, Northern Ireland and Cornwall. They are associated with some species of lichens, bryophytes and vascular plants, some of which are rare.

2.10 Serious efforts have been made by the Coal Authority and the national environment agencies to tackle point-source pollution from former metal mines and these have been very successful in reducing the heavy metal contamination load on rivers, though much remains to be done. But very little has been done to tackle the serious diffuse pollution of water bodies from calaminarian grasslands.

2.11 Privately, regulators from both the Authority and the agencies are aghast at the thought of objections from campaigners were they to propose remediating such mining waste. Yet it is clear that such campaigns are far more focused on the botanical effects of contamination on dry land than on the whole ecology of rivers.

2.12 The River Nent in Cumbria, for instance, is “the second most metal polluted river in England”. It is heavily contaminated by historic lead mining activities which also pollute the River Tyne<sup>4</sup> into which it flows. “The effect on water quality and aquatic life can be seen for 60km along the River South Tyne through Cumbria and Northumberland, with the metals ultimately accumulating in the River Tyne estuary sediments,” says the Coal Authority. It has been involved in recent work to set up treatment plants for water discharges from two former Nentdale mines. The Authority and Agency are also working with the local rivers trust on “green engineering interventions to reduce contaminated waste around disused metal mines from being eroded into, and polluting, rivers”, but this can at best be a palliative when such polluting sites are statutorily protected as environmental assets.

2.13 We would urge the Committee to consider whether greater consideration needs to be given to river pollution when considering the effects of land contamination, even where there is some ecological value in sustaining that contamination in situ.

- *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?*

2.14 OFWAT has recently admitted that the water sector faces serious challenges from, *inter alia*, climate change and population growth. Yet while there is work going on to relate regional plans for population growth to water supply, there is no certainty of such work bearing fruit. Whether OFWAT is the appropriate body to deliver such recommendations, or whether the new Office for Environmental Protection (in England) or the environment agencies are the appropriate bodies to enforce such necessities in local plans is unclear. Both HM Treasury and the Ministry of Housing, Communities and Local Government are extremely resistant to anything that smacks of control on the number of houses built and both continue to enforce entirely unsustainable levels of planning consent for house

building in many parts of England. The ecological status of water bodies will never improve while this remains the case.

### 3. Conclusions

3.1 The Committee's present inquiry addresses important and serious concerns about water quality. However, we believe there are other major areas which pose serious threats to the quality of both ground and surface water which lie outside the inquiry's specific remit. We would, therefore, strongly recommend the Committee to pursue a subsequent inquiry with the issue of the effects of development on water quality, as a matter of great urgency.

### References

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<sup>1</sup> Sir James Bevan: *Escaping the Jaws of Death: Ensuring Enough Water in 2050* [Speech at the Environment Agency Waterwise conference, 19 March 2019] [Escaping the jaws of death: ensuring enough water in 2050 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/speeches/escaping-the-jaws-of-death-ensuring-enough-water-in-2050)

<sup>2</sup> *National Planning Policy Framework* [London: Ministry of Housing, Communities and Local Government, February 2019] [National Planning Policy Framework - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/400122/nppf-2019.pdf)

<sup>3</sup> *UK Biodiversity Action Plan Priority Habitat Descriptions: Calaminarian Grasslands* [London: JNCC, 2008] [Calaminarian Grasslands \(UK BAP Priority Habitat description\) \(jncc.gov.uk\)](https://jncc.gov.uk/biodiversity-action-plan/priority-habitat-descriptions/calaminarian-grasslands)

<sup>4</sup> *Work Starts on £6m River Clean Up Project* [Mansfield: Coal Authority press release, July 2020] [Work starts on £6m river clean-up project - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/work-starts-on-6m-river-clean-up-project)