



Department  
for Environment  
Food & Rural Affairs

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## **Tackling water pollution from the urban environment**

**Consultation on a strategy to address diffuse water pollution from the built environment**

**November 2012**

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# Foreword

England's lakes and rivers are valued in many different ways by all those who live in and visit this country. They perform a major role in water provision, our leisure, recreation, health and well-being. They are vital for wildlife habitats and great places to visit for anglers, walkers and cyclists amongst others.

Whilst much work has been done to reduce water pollution from agricultural sources, industry and sewage works, increased pressure has arisen from urban and other non-agricultural sources. As a result, many rivers and lakes are failing water quality targets. More importantly, improving urban rivers will enhance quality of life and contribute to growth as an improved water environment aids urban regeneration.

This consultation document sets out the current problem, including what we consider are the major sources of urban diffuse water pollution. The Government welcomes your views on how we should tackle this source of pollution, in order that we can improve the water environment for generations to come.

Richard Benyon

Parliamentary Under-Secretary for Natural Environment and Fisheries

## Executive summary

We are seeking views on developing our strategy for the management of urban diffuse water<sup>1</sup> pollution in England. This form of diffuse pollution in rivers and waterways is a typical characteristic of urban areas where road runoff, poorly plumbed drainage systems, old deposits of polluted sediment and runoff from industrial areas damage ecosystems in rivers, streams and ponds. The impacts may be individually small but when added together can be damaging, resulting in dirty and polluted water which makes our urban areas less pleasant places to live and work in. Normal measures to permit and control polluters often cannot be used, as it can be difficult to identify those responsible and difficult to be fair in deciding who should pay to resolve issues.

Currently, 27% of water bodies in England meet the standards necessary to support viable ecosystems. There are already plans and measures in place to address the cause of many water body failures which result from a range of problems from point source pollution (e.g. sewage treatment) to activities related to farming. However, many failures are due to urban and other non-agricultural diffuse pollution where we believe positive action is necessary to improve knowledge, encourage cooperation, perhaps refine regulations and plan investment. We believe cleaning-up our polluted urban rivers will deliver significant benefits by making our towns and cities more attractive, healthy places for people and wildlife and will contribute towards the Government's growth and localism agenda.

We are determined our strategy will enable communities to take the lead in identifying and reducing the impact of this pollution. We believe partnerships of communities, local authorities, water companies, the Environment Agency and businesses can make a significant difference here. Regulation in this area may be appropriate and supportive of sustainable development, benefiting local economies and the environment, but other measures may be equally or more effective. Our priority is to understand these sources of pollution better in order to improve the advice and information offered to those responsible for addressing urban diffuse water pollution. We also need to understand what incentives are necessary to alter behaviour and encourage community-driven improvements. Only where these approaches are unsuccessful will we consider strengthening legislation and enforcement powers. The strategy will cover England only as this is a devolved matter.

This consultation allows you to inform and influence development of the strategy that will be developed in 2013. It explains some background to the problem and our initial understanding of the types and importance of urban diffuse water pollution sources. We explain how a number of initiatives and policies are being deployed to tackle the problem. We welcome responses from interested individuals and organisations by 8 February 2013.

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<sup>1</sup> Non-agricultural diffuse pollution is sometimes referred to simply as urban diffuse pollution, even though some sources are technically not urban e.g. motorway runoff or minewaters. The term urban diffuse pollution is often used in this document as shorthand for all non-agricultural sources.

# Introduction

## Scope

We are seeking your views on developing a strategy for the management of urban diffuse water pollution in England. Set out below is our approach to address pollution of this nature. We would like to know if you think this is the correct approach and what can be done to achieve our aims.

Urban diffuse pollution damages water quality, especially in towns and cities where a healthy natural environment can make significant improvements to quality of life.

This consultation document explains the background to this problem and the efforts already underway to improve knowledge and influence change. We are seeking your views through a series of questions to be answered over a 12-week consultation period. We will develop the strategy in 2013, taking account of the feedback we receive now.

The commitment to developing a strategy was set out in two recent White Papers presented to Parliament:

1. The Natural Choice<sup>2</sup> (the June 2011 Natural Environment White Paper) committed the Government to develop a strategy to identify and address the most significant diffuse sources of pollution from urban sources
2. Water for Life<sup>3</sup> (the December 2011 Water White Paper) committed the Government to consult on a national strategy on urban diffuse pollution in 2012

The Natural Choice also recognises that a healthy, properly functioning natural environment is the foundation of sustained economic growth, prospering communities and personal wellbeing. Addressing urban diffuse water pollution is an important part of this aspiration.

The strategy will:

- Improve understanding of the issues which affect quality of life in relation to the urban water environment
- Help people to take action to improve this aspect of the places where they live or work

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<sup>2</sup> <http://www.official-documents.gov.uk/document/cm80/8082/8082.pdf>

<sup>3</sup> <http://www.official-documents.gov.uk/document/cm82/8230/8230.pdf>

- Explain the impact of urban pollution relative to other pollution sources and importance of acting quickly to achieve good water quality to enhance the environment
- Help the Government understand how to empower different groups to partner in sharing the burden
- Help bring together any separate initiatives currently underway to tackle this problem in the most efficient way possible
- Develop long-term thinking and resilience in the face of climate change

## Background

The quality of our water bodies is a vital component of the overall natural environment. In England there are thousands of kilometres of watercourses, hundreds of designated bathing waters and many ponds, canals and streams. Many of these water bodies are in good condition and enjoyed and valued by communities.

The quality of water bodies determines the types of animals and plants that can healthily live in them. Water bodies categorised with a high standard are able to support healthy ecosystems and are highly valued by the communities they pass through. Pollution mainly occurs as a result of human activity and, if not controlled, can damage the water ecosystem and devalue the condition of the natural environment. In England, 27% of water bodies meet the Good Ecological Status standard (an EU standard) and it is a priority for Defra and the Environment Agency to improve this situation by managing water resources, naturalising man-made channels and reducing the discharge of pollutants. Pollutants are the reason why a significant proportion of water bodies do not currently meet the required standards.

We must halt any decline and reverse the damage we have done over many decades to water ecosystems and minimise future risks in adapting to climate change. There is a legal imperative to do this (through the EU Water Framework Directive) but also compelling economic reasons. Everyone will benefit from this improvement but everyone (communities, local authorities, businesses, Government, third sector bodies) also has a role to play in making the improvements happen. We are aiming for all water bodies in England to be in excellent health, with reduced pollution by nutrients, sediments, chemicals and bacteria. Current policies will help increase the proportion of water bodies classified as having good ecological status.

Water pollution sources can be categorised as follows:

**Point source pollution.** Permitted discharges from factories and wastewater treatment. This type of pollution is currently responsible for about 36% of the pollution related to failing water bodies. It is relatively straightforward to identify polluters in this case.

**Pollution incidents.** One-off incidents like a tanker accident that can have acute serious impacts, they may be serious but short-term in terms of their impact.

**Unknown sources.** It has not been possible to clearly identify the cause of 14% but it is suspected that urban diffuse pollution plays a significant role in many of these too.

**Diffuse pollution<sup>4</sup>.** Unplanned and unlicensed pollution from farming, old mine workings, homes and roads. It includes urban and rural activity and arises from industry, commerce, agriculture, civil functions and the way we live our lives. This type of pollution is responsible for 49% of the pollution related to failing water bodies. It is much more difficult to identify who is responsible for this type of pollution and who is best placed to improve the situation.

Diffuse pollution can be categorised into 2 types: agricultural diffuse pollution (33% of failures) and non-agricultural diffuse pollution (14% of failures). The latter occurs mainly in towns and cities.

In highly urbanised areas the contribution of urban diffuse pollution towards the total number of failures is much higher. For example, in the heavily urbanised Thames river basin, road runoff accounts for the majority of water body pollution failures. Last year diffuse urban pollution also accounted for the major reason behind 23 bathing water failures. At least 1000 water bodies have a significant urban diffuse pollution problem. Historically, this type of problem has been given a lower priority compared to other sources because of prioritising resources in areas where the greatest impact can be made; there has also been complexities around responsibilities and a lack of evidence around effective interventions. However it is clear that improving this aspect of the urban environment will provide benefits in terms of well-being and economic development. The strategy will cover England only as this is a devolved matter.

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<sup>4</sup> Non-agricultural diffuse pollution is sometimes referred to simply as urban diffuse pollution, even though some sources are technically not urban e.g. motorway runoff or minewaters. The term urban diffuse pollution is often used in this document as shorthand for all non-agricultural sources.

# Themes, aims and principles of the strategy

The strategy for the improved management of urban diffuse water pollution is being developed and will be published following feedback from this consultation. We are considering the following as ways to approach the subject:

## Proposed themes

To show a rationale for why we are adopting a strategic approach to tackling urban water pollution we have structured the activity around three key themes:

- Join up the way we work to help communities help themselves in improving their quality of life and the value of their environment, especially in the places where the majority of people live and work.
- Make sure those who are responsible for creating these problems are aware of them and are able to meet their responsibilities. This will enable us to ensure taxpayers' money can be spent in the fairest, most effective way.
- Improve our understanding of the problem, including increased risks from climate change, so we can fix it more speedily and effectively, with clearly reasoned prioritisation and explanations of why actions will benefit everyone.

## Proposed aims

We would like the strategy to result in the following outcomes:

- Improved quality of our water environment, helping to maintain, improve and create healthy ecosystems that benefit society as a whole. The number of water bodies not achieving a high standard because of urban diffuse pollution will reduce and therefore the benefits of a cleaner water environment can be valued by all.
- Current initiatives and processes will be joined-up to achieve multiple benefits (e.g. reduced flooding, improved tourism, recreation, biodiversity) for communities, the natural environment and places where people live.
- As a nation we will have an improved understanding of the problem so that it can be fixed faster and more cost effectively through a focus on the right issues. The evidence base will be improved so we have a better understanding of: the scale, timeframes, likelihood and impact of urban sources of diffuse pollution; the effectiveness of current practices, regulations and controls to tackle the issue; and the impacts of climate change.

- Public bodies, organisations and communities will clearly understand their roles and responsibilities for the control of urban diffuse water pollution. They will understand how they can work in partnership to improve water quality and enhance their communities in a cost effective way, and a better understanding of the benefits that can arise as a result of improving water quality and the natural environment.
- We will be applying the ‘polluter pays’ principle when tackling sources of urban diffuse water pollution. Where the polluter cannot be identified or effectively regulated, we will look to the beneficiaries instead, applying ecosystem services principles to value benefits.<sup>5</sup>
- Communities will feel empowered to help themselves and lead in the clean-up of urban watercourses. They will have access to appropriate guidance, tools and demonstrations of good practice. Work will be part of the Government’s ‘catchment-based’ approach to land and water management that mobilises action at a local level, drawing on local knowledge and expertise and new sources of funding. This will develop integrated action plans within a catchment to bring about improvements to the environment. However it is recognised that nationally planned interventions may be more cost effective in certain cases.
- An improved understanding of how water quality improvements can be achieved through the delivery of multiple benefits when carrying out activities relating to urban regeneration, new development, flood risk management, biodiversity enhancement and climate change adaptation. Urban diffuse pollution will be tackled as we regenerate and improve our urban infrastructure.
- Government regulation in this area will be supportive of sustainable development benefiting local economies and the environment, ensuring development is resilient to climate change. Our priority is to improve the advice and information we provide to those responsible for urban diffuse water pollution. We will also understand what incentives are necessary to alter behaviour and promote community driven improvements. Only where these approaches are unsuccessful will we consider strengthening legislation and enforcement powers.
- Where possible we will first seek to reduce the source of pollutants (where this offers the most cost effective solution) before addressing the impacts.
- Improve the resilience of our water environment – i.e. diffuse pollution can be exacerbated by climate change risks e.g. runoff impacting on highways and onward impacts of water quality.

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<sup>5</sup> [http://www.hm-treasury.gov.uk/d/accounting\\_environmental\\_impacts.pdf](http://www.hm-treasury.gov.uk/d/accounting_environmental_impacts.pdf) - Accounting for

## Q1. Do you agree with the proposed aims?

### Proposed principles

We do not have the evidence on pollution sources necessary to make categorical statements regarding the scale, impact and remediation of the various sources; therefore we need to take a strategic approach enabling us to incorporate new understanding. So that our approach is transparent, we are considering the following principles:

1. Prioritise the reduction in sources of non-agricultural diffuse pollution that most cost effectively improves river ecosystems.
2. Encourage 'no regrets'<sup>6</sup> solutions, highlighting future risks to take possible preventative actions, and where possible seek to encourage actions which deliver multiple benefits e.g. surface water management actions for flood control which also improve water quality.
3. Follow the polluter pays principle when tackling sources of non-agricultural diffuse pollution. Where the polluter cannot be identified or effectively regulated look to the beneficiaries instead, applying ecosystem services principles to value benefits.
4. Seek to reduce the source of pollutants, where this offers the most cost effective solution, before addressing the where and how it travels or where it goes to.
5. Focus on a 'bottom-up', locally-driven, catchment-based approach to help identify and reduce non-agricultural diffuse pollution. Lessons learned from on-going catchment-based pilots with urban diffuse problems will be used to inform specific guidance and advice. However it is recognised that national interventions could be more cost effective in certain cases.
6. In order of priority we will offer advice, then look to incentivise action and only where there is a clear case take forward new regulatory measures

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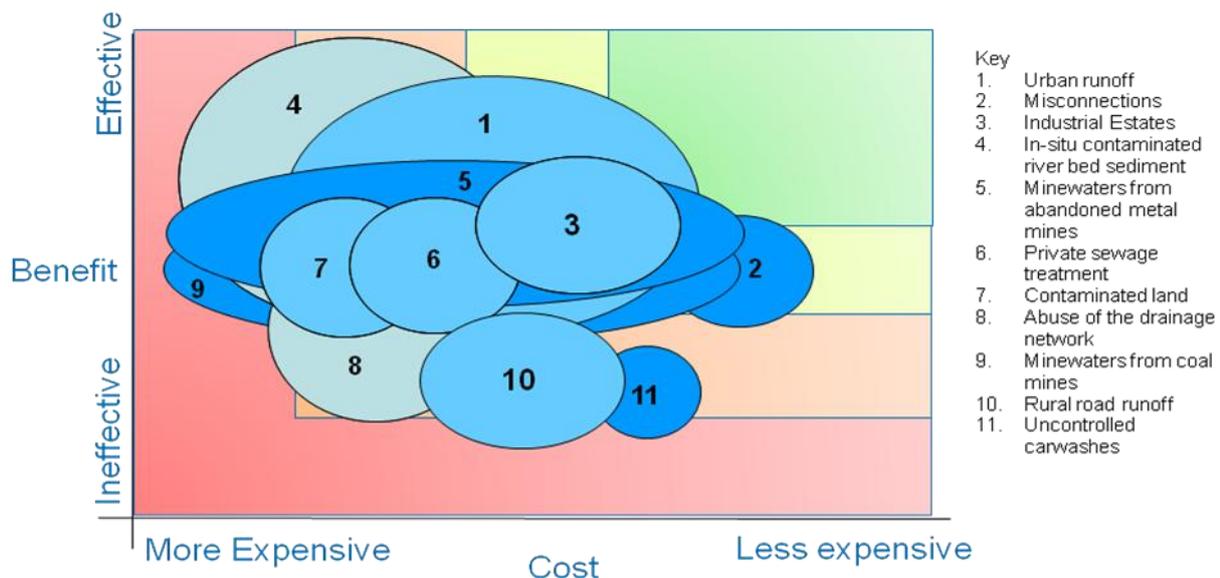
<sup>6</sup> No-regrets option/solution: cost-effective actions that bring net benefits whatever the extent of future change. These types of actions include those cost-effective under current conditions and are further justified when their introduction is consistent with addressing risks associated with projected changes e.g. associated with climate risk. For example promoting good practice in soil management in an urban park to limit the risks of diffuse pollution is a no regrets option; a low risk option.

## Our current understanding of the problem

The sources of non agricultural diffuse pollution are numerous and complex. We do not fully understand the relative importance of each source and the costs involved in reducing the impact of associated pollutants.

When tackling urban diffuse water pollution we need to focus our efforts and investment where we will achieve the greatest benefit for any costs. The figure below plots sources of non-agricultural diffuse pollution in a chart comparing the potential benefit of removal (vertical axis) with the cost or difficulty of achieving this (horizontal axis). The figure is illustrative and is aimed to reconcile different pieces of information. The size of each 'source' indicates the estimated scale and impact and the shade - the lighter, the more uncertainty or lack of data. It illustrates that, for example, targeting urban runoff will deliver greater benefits at lower cost than doing the same for abuse of the drainage network.

Figure: Comparing cost effectiveness of addressing non-agricultural diffuse pollution sources



As part of the strategy we will encourage actions which achieve the greatest benefit relative to investment. We will also encourage the use of 'quick wins' where appropriate. These will be beneficial actions which are inexpensive and easy to implement. The schematic above will develop as our evidence base of the cost and benefits of actions increase and the techniques themselves proliferate and become more cost effective.

We have undertaken an exercise to identify high, medium and low priority sources. This will help us develop the strategy and focus our attention in both the immediate future and longer-term with respect to climate risks. High priority sources of pollution are those currently understood to be widespread and significant; by addressing these we expect to make the biggest difference most cost effectively. We are less certain about the risks

posed by the medium priority sources and even more so for the low priority sources; further evidence is required to understand these further. However this is a dynamic process and we will adapt our course of action where the evidence is compelling.

This table describes each source of pollution by priority category. It also summarizes current initiatives to either improve understanding or directly address the pollution.

**Table: Priority of urban diffuse water pollution sources**

High Priority	What are we proposing to do?
<p><b>Urban runoff</b> – via roads &amp; urban public space. Most urban roads are maintained by local highway authorities. Includes metals and chemicals associated with road transport and faecal matter from animal fouling. It is also a significant source of sediment deposited in water bodies.</p>	<ul style="list-style-type: none"> <li>• Undertake research to confidently assess the risk presented by urban runoff nationally in England and how it can be identified locally. Include UK climate projections</li> <li>• Work with stakeholders, particularly local highway authorities, to develop science, guidance and promote measures and best practice which we know have a positive impact in reducing road runoff – such as Sustainable drainage systems (SuDS)</li> <li>• Work with Highways Agency to identify polluting outfalls on the Highway network</li> </ul>
<p><b>Misconnections</b> of foul drainage (e.g. from house extensions) into storm drainage systems. Contributes untreated sewage to water bodies.</p>	<ul style="list-style-type: none"> <li>• Work with academia, the Environment Agency and water companies to assess the extent of the risk of misconnections nationally</li> <li>• Work with the Environment Agency, local authorities and water companies to identify and repair misconnections cost effectively</li> <li>• Engage local and national stakeholders to raise the awareness of the problem to prevent future misconnections</li> </ul>
<p><b>Trading (light industrial) estates</b> – runoff from hard standings, vehicle</p>	<ul style="list-style-type: none"> <li>• Continue undertaking research to better understand the issues and assess the level of risk it poses</li> </ul>

<p>washing, chemical storage, misconnections and abuse of the drainage system. The estates contain multiple small businesses many of which use, store and re-formulate chemicals. Poor practice leads to contamination of storm runoff.</p>	<p>nationally</p> <ul style="list-style-type: none"> <li>• Establish ways to cost effectively engage and tackle the problem</li> </ul>
<p><b>In-situ contaminated river bed sediment</b> - Historic industrial and mining sediment and sediment from urban runoff which is deposited in water bodies and later re-suspended by storm events.</p>	<ul style="list-style-type: none"> <li>• Undertake research to understand the issue better and assess the risk it poses nationally</li> <li>• Investigate what potential measures there are to mitigate the problem</li> </ul>
<p><b>Mine waters (from abandoned metal mines)</b> – discharges associated with abandoned mine workings containing high concentrations of metals and other pollutants.</p>	<ul style="list-style-type: none"> <li>• Develop a strategy for post April 2015 work on remediating mine waters</li> </ul>
<p><b>Septic tanks &amp; non-mains sewage systems</b> – foul sewage from properties not connected to the main sewerage network. There are hundreds of thousands of non mains sewage discharges in England. Discharges are to water bodies or groundwater.</p>	<ul style="list-style-type: none"> <li>• With the Environment Agency, develop a strategy to reduce the environmental impact of poorly installed and maintained septic tanks. It is likely that different measures will be required depending on proximity to groundwater supplies.</li> </ul>
<p><b>Medium Priority</b></p>	
<p><b>Contaminated land</b> – seepage and runoff from brown-field sites with previous industrial uses and landfill sites. There are over 300,000 sites affected by land contamination which have the potential to contaminate runoff or infiltration.</p>	<ul style="list-style-type: none"> <li>• Establish the scale, impact and risk posed nationally to ground and surface waters, including current and longer term risks linked to climate and extreme weather.</li> </ul>
<p><b>Abuse of drainage systems</b> – addition of paint, car washing water, oil and other polluting materials unknowingly or deliberately ending up in the storm drainage systems.</p>	<ul style="list-style-type: none"> <li>• Establish whether community campaigns such as Yellow Fish are cost effective at dealing with the problem.</li> </ul>

<p><b>Mine waters (coal)</b> - run-off and seepage from abandoned coal mines which are no longer artificially drained or pumped.</p>	<ul style="list-style-type: none"> <li>• Department for Energy and Climate Change (DECC) and the Coal Authority undertake work in this area.</li> </ul>
<p><b>Rural road runoff</b> – similar to urban road runoff but in a rural setting where muddy water is laden with nutrients and pesticides from farm land.</p>	<ul style="list-style-type: none"> <li>• Understand the scale, impact and causes of the problem,</li> <li>• Establish what measures can be effectively introduced to tackle it</li> </ul>
<p>Transient commercial <b>car washing</b> discharging dirty and detergent laden water into storm drainage systems.</p>	<ul style="list-style-type: none"> <li>• Environment Agency to work with car wash stakeholders to reduce acute impacts of pollution from car washes where they have a local impact</li> </ul>
<b>Lower Priority</b>	
<p><b>Railways</b> – runoff from railway land including chemicals used for weed control.</p>	<ul style="list-style-type: none"> <li>• Work with Network Rail and the operating companies to establish what would be the most effective way of reducing pollution.</li> </ul>
<p><b>Airports</b> – runoff from runways including chemicals used in de-icing.</p>	<ul style="list-style-type: none"> <li>• Work with airport authorities to identify and remediate their impact</li> </ul>
<p><b>Pesticides and fertilisers</b> in the urban environment applied by householders and local authorities to gardens, parks, hard standings, golf courses, footpaths, roads and railways.</p>	<ul style="list-style-type: none"> <li>• Continue to engage with the Pesticide Voluntary Initiative in order to reduce pesticide impact in the urban environment. Encourage those carrying out procuring the services to adopt assurance schemes that demonstrate basic competence.</li> </ul>
<p>Discharges from <b>boats and other craft</b> in navigable waters (e.g. at marinas).</p>	<ul style="list-style-type: none"> <li>• Action will be established once significance has been established</li> </ul>

**Q2. Do you broadly agree with our prioritisation of pollution sources? If you disagree, what should the priorities be? Please provide the evidence you have to support this view.**

**Q3. Are you taking part in any initiatives where one of the principal objectives is reducing non-agricultural diffuse water pollution? If yes, please tell us briefly about the intended/realised outcomes, any barriers and costs/benefits.**

## What are the difficulties?

Understanding this problem and resolving it quickly is complicated for reasons which are technical, institutional, social and related to our ability to influence behaviour. For example:

- Urban diffuse water pollution is variable in its nature and thinly spread over large areas with no one major cause. It can be low level and chronic continuously and sometimes can have a major impact when it rains. Climate change may exacerbate risks in terms of the frequency and severity of diffuse pollution.
- Widespread chronic problems are expensive (relative to the benefits) to address with capital investment; a parallel with surface water flooding can be drawn.
- Behaviours can be influenced to limit the risk of pollution. An example is the Yellow Fish campaign<sup>7</sup>. But bad habits can reoccur if communications and incentives are not kept fresh resulting in benefits declining over time.
- Evidence and good data are patchy and difficult to compare. Therefore, gaining a robust understanding of the most effective approach is likely to take time and resources.
- There is no one organisation or group responsible to deliver improvements in urban diffuse water pollution. The polluter is not always easily identified, nor is it sometimes easy to identify those who would benefit from pollution reduction.
- The Environment Agency has responsibility to ensure water standards are met but only has limited powers to influence development and the management of urban areas.
- There is no established planning methodology for agreeing who needs to do what, where and when (and who should pay) to clean up water bodies suffering from urban diffuse water pollution.

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<sup>7</sup> The Yellow Fish campaign involves local, neighbourhood publicity combined with painting a Yellow Fish symbol beside drains as a reminder that any liquid entering the drain may go directly to the nearest stream or river, possibly causing pollution. Further information can be found here: <http://www.environment-agency.gov.uk/homeandleisure/pollution/water/120363.aspx>

## Current initiatives

A number of initiatives are already underway which directly or indirectly tackle urban diffuse water pollution. As part of the strategy we will assess the effectiveness of these ongoing initiatives with a view to building on their achievements, enhancing them and where appropriate drawing them together within the wider urban diffuse water pollution strategy to ensure a coherent and comprehensive framework for action.

Some examples of current good practice and new policy initiatives are outlined here:

### Catchment-based approach

Central to our strategy, to improve the natural water environment, is the policy to follow a 'catchment based' approach where stakeholders (e.g. rivers trusts, water companies, local authorities) in a river catchment collaborate to address difficult water and land management challenges. This new approach introduces a much more local level of detail in the planning and management of delivering environmental improvement which has been missing from previous planning processes.

The approach is currently being piloted in 66 catchments across England, with some locations already focussing on diffuse urban pollution. For example, the Irwell catchment pilot, in North West England, has set an objective to reduce urban diffuse water pollution by 2021. The Lower Lee catchment pilot, in London, is also aiming to reduce diffuse urban pollution by looking at measures such as targeting misconnections within the catchment. Both pilots have the involvement of local groups, the Environment Agency and the water and sewerage company.

### Empowering communities

The Catchment Restoration Fund for England<sup>8</sup> has been made available to support community-led groups make a difference by improving rivers through capital grants; £10m has been made available over three years from 2012/13 to 2014/15 and a number of the projects bidding for funding centre on tackling urban diffuse water pollution issues.

Another Government initiative is the recently launched 'Love your river'<sup>9</sup> campaign together with the Environment Agency, the National Trust, the Wildlife Trusts, Keep Britain Tidy, water companies and Waterwise. The campaign provides support to community

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<sup>8</sup> <http://www.environment-agency.gov.uk/research/planning/136182.aspx>

<sup>9</sup> <http://www.defra.gov.uk/loveyourriver/>

groups looking to organize and take local action to improve their river environment. Similar initiatives have been led by water and sewerage companies. For example, Anglian Water promotes RiverCare groups<sup>10</sup>.

## Local flood risk management

The measures employed when tackling flooding can often act to improve water quality and bring other benefits to the natural environment. The Flood and Water Management Act 2010<sup>11</sup> gives responsibility for the management of local flooding (from surface water, ordinary watercourses and groundwater) to Lead Local Flood Authorities: these authorities are operated by either County Councils or unitary authorities of England.

Lead Local Flood Authorities are responsible for understanding the risks posed by local types of flooding and to develop a strategy (Local Flood Risk Management Strategy including Surface Water Management Plans) aimed at managing and reducing these risks. They do this in partnership with other key stakeholders such as water companies, the Environment Agency, the highways department within an Authority, district authorities and community groups. Their role is one of coordination, recognising that success lies in the collaborative understanding, planning and improvement of urban drainage infrastructure. These partnerships involve the same organisations and groups that need to work together to tackle urban diffuse water pollution. Actions such as alterations to increase the permeability of paved areas, such as public spaces or roads so that rainwater soaks into the ground, can be beneficial in reducing flood risk and keeping pollutants out of rivers and streams.

## Engaging with local authorities to improve urban rivers

Local Authorities play a vital role in managing urban diffuse water pollution. The Environment Agency, working with Sustainability West Midlands and a number of Local Authorities, has been working on a project to help understand where the local authorities could contribute to improving water quality. This exercise is raising awareness of the information and policy needs to involve local authorities in reducing urban diffuse water pollution.

The project catalogued the many activities that local authorities are already undertaking to deliver improved water quality. These include: the development of planning policies, the development of green infrastructure plans, the consideration of water issues when determining planning applications, the operation of local authority estates and buildings, highways maintenance operations and the consideration of water quality whilst fulfilling their highways drainage and flood risk management roles.

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<sup>10</sup> <http://www.anglianwater.co.uk/environment/our-projects/rivercare/>

<sup>11</sup> <http://www.legislation.gov.uk/ukpga/2010/29/contents>

The feedback from the local authorities engaged in the consultation indicated that they would value greater clarity on local data and local priorities. They were unclear on their roles and responsibilities towards meeting statutory obligations under the Water Framework Directive. They were also unclear on how improving water quality could impact directly on local economic development. They would greatly value advice on how to write planning policy which would directly influence water quality and quantity.

Stage two of the project (2012/2013) is taking forward actions to: improve the quality of advice notes, provide training around how an improved water environment can contribute to economic development, and improve knowledge around local priorities and other activities to encourage capacity building.

## **Spatial planning - National Planning Policy Framework**

Considering the environment as part of the planning process can help to manage diffuse pollution. The Government has streamlined planning policy through a new National Planning Policy Framework<sup>12</sup> introduced in March 2012. To reduce red tape and promote growth, the Framework ensures there will be presumption in favour of sustainable development so the economy can flourish whilst we also protect and improve the natural environment. Communities and their local councils are placed at the centre of the planning process. The Framework sets out the policy approach for local planning authorities in drawing-up local plans and is a material consideration in determining planning applications. In particular it sets down a core planning principle, underpinning both plan-making and decision-taking, that planning should contribute to conserving and enhancing the natural environment and reducing pollution.

A number of the Framework's policies support the work of local planning authorities in influencing the control of urban diffuse pollution. The Framework says local planning authorities should:

- recognise the wider benefits of ecosystem services and prevent new and existing development from contributing to unacceptable levels of water pollution
- develop policies that take account of and manage flood risk from all sources and where development is necessary in areas where there is a flood risk, ensure it gives priority to the use of sustainable drainage systems, so that flood risk is not increased
- encourage the use of previously developed (brownfield) land
- set out a strategic approach towards the creation, protection, enhancement and management of networks of biodiversity and green infrastructure
- plan for biodiversity at a landscape scale across local authority boundaries

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<sup>12</sup> <http://www.communities.gov.uk/publications/planningandbuilding/nppf>

- map components of local ecological networks and then promote the preservation, restoration and re-creation of priority habitats and ecological networks.

## Valuing ecosystem goods and services

The Natural Environment White Paper (June 2011) made it clear that the Government recognises that economic growth and the natural environment are mutually compatible. Sustainable economic growth relies on the health of the natural environment (including water bodies) and the benefits it provides, often referred to as ecosystem services.

The links between an improved environment and economic growth are made clear and the future ways in which we can tackle urban pollution for lower cost and obtain more benefits, will enable new and innovative funding mechanisms to be developed.

Defra is planning to publish an action plan to expand payment for ecosystem services (PES) schemes in which the provider of nature's services is paid by the beneficiaries, after undertaking a full assessment of the challenges and barriers.

We have introduced a new research fund targeted at these schemes - including pilots specifically designed to tackle urban diffuse water pollution - and will publish a best practice guide for designing PESs.

<http://www.defra.gov.uk/environment/natural/ecosystems-services/>

## Misconnection programmes

Work to rectify misconnections has been going on for many years in different water company areas, often in partnership with the Environment Agency and the local authority.

ConnectRight<sup>13</sup> is a national advice initiative aimed at builders and homeowners with the aim to avoid or correct misconnections. The campaign brings together water and sewerage companies, the Environment Agency, the Consumer Council for Water, the Chartered Institute of Environmental Health, Defra, and CIPHE (a trade body for the UK plumbing industry).

Chronic misconnection issues are identified by the Environment Agency and will look to be included within the forthcoming Price Review. Partnership working has also achieved results. Birmingham's environmental partnership (Birmingham City Council, Severn Trent Water, the Environment Agency and CSV Environment [Community Service Volunteers]) took on the challenge of cleaning up Spark Brook, one of the polluted stretches of water in the city. Pollution from misconnections was aggravated by blockages caused by fly-tipping, litter and debris. This led not only to a poor ecosystem but also noxious smells and a heightened flood risk. The partnership organised a local campaign to raise awareness of

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<sup>13</sup> <http://www.connectright.org.uk/about-the-connectright-campaign/>

the issues which led directly to householders and businesses correcting their drainage connections. This, along with measures to reduce tipping, quickly resulted in the brook becoming healthier.

## **Pollution from major roads and motorways**

The Highways Agency (responsible for the management of the motorway and trunk-roads network in England) has a voluntary arrangement with the Environment Agency that it will undertake risk assessments of polluting highway drainage outfalls (across the national network) and implement a programme of improvements where the risks are high because of a combination of heavy traffic loading and sensitive receiving waters. The agreement ensures that knowledge is shared and risks are understood and addressed. The Highways Agency's design manual for roads and bridges<sup>14</sup> describes pollution control measures that can be used to mitigate the impact of road-runoff pollution in these circumstances.

The Highways Agency, Environment Agency and Defra continue to collaborate on improving scientific knowledge in this area and to practically identify the most polluting drainage outfalls.

## **Pollution from minewaters**

The Environment Agency has a significant programme in place, funded by Defra, to address poor water quality arising from abandoned metal mines. Through a joint endeavour between Defra, the Environment Agency and the Coal Authority there is now a prioritised programme to deal with wastewater from mines with an initial £10m programme of remediation works.

In Saltburn Gill, North east England, the long closed Longacres iron stone mine deposits 330kg of iron ochre every day turning the river bright orange. Over 100 tonnes of iron is subsequently discharged to the North Sea each year and over the bathing beach of Saltburn-by-Sea, impacting severely on the town's tourist trade. Defra, the Environment Agency and the Coal Authority have collaborated to provide a treatment plant to remedy the problem at a cost of £8m to £13m over 25 years. The treatment plant will be ready in 2015 and we expect the ecology within the Saltburn Gill will then recover within six months to a year. The net benefits to the local economy over 25 years are estimated to be between -£1m to £4m depending on the type of scheme needed, before non-monetised benefits are considered. This demonstrates an economic benefit of addressing urban diffuse water pollution.

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<sup>14</sup> <http://www.dft.gov.uk/ha/standards/dmrb/vol0/section1.htm>

## Nature Improvement Areas

Defra is part-funding 12 Nature Improvement Areas (NIA) which aim to deliver improved ecological networks that benefit wildlife and people over large areas. The 12 projects have been identified by local partnerships and the work is being driven by them. Amongst other benefits, several are seeking to improve water quality, including one project where the pollution is from non-agricultural sources. The Dearne Valley NIA project has a component which will protect Cudworth Dyke from industrial pollution and restore associated habitats making them suitable for wildlife. The project team are working in partnership with Yorkshire Water and local volunteers to conduct feasibility studies and carry out the subsequent habitat and engineering works.

## Love Your River

“Love Your River” is a campaign that aims to highlight the link between river health and water use, so that people understand and value water and take action to improve their local rivers and the environment around them.

Backed by Defra and a coalition of NGOs and water companies, the campaign celebrates the importance of rivers to local people – for their health, well-being, leisure and sport. Through this campaign we want to recognise the great work that local groups already do to look after their rivers. <http://www.defra.gov.uk/news/2012/03/28/'love-your-river'/>

## Current initiative questions

**Q4. Are you aware of guidance published (e.g. by the Environment Agency or local authorities) that advises about urban diffuse water pollution? If so, how useful is it and how could it be improved?**

**Q5. What would encourage you to contribute to a catchment-based initiative to tackle urban diffuse water pollution?**

## Actions being considered

This consultation sets out where we currently consider our priorities to be in terms of pollution sources. This is in terms of what we consider to be the greatest risk, but addressing these sources individually will not solve the problem.

Set out below is what might be needed, if we are to achieve our aims. The list may not be complete, additional actions may come from consultation responses. This list may also change with improvements in evidence and operational experience.

1. Improve the evidence base to gain a comprehensive understanding of the scale and impact of urban diffuse water pollution sources, focussing initially on urban runoff, trading estates, in-situ contaminated sediment and misconnections. Then prioritise other sources depending on their potential impact including climate change impacts. Research gathering will be reviewed regularly to take into account the latest evidence.
2. Build on the achievements from existing initiatives by organised sharing of best practice and embedding within the Catchment Based Approaches' tools and techniques.
3. Use a detailed monitored catchment(s) to establish a more comprehensive understanding of how urban diffuse water pollution sources impact ecosystems.
4. Gain an understanding of the physical ways in which urban diffuse water pollution could be controlled cost effectively, looking at ways to encourage uptake, gather data on long term effectiveness, find out what, if anything, stops organisations using them.
5. Review the regulatory framework which is used to control non-agricultural diffuse pollution, and set out what potential cost effective improvements, if any, could be made including any potential deregulation.
6. Establish roles and responsibilities for tackling individual sources and the level of responsibility that this entails.
7. Set out who has a role to play in making a difference, ensure they are aware of the problem, what their roles are and what they need to do.
8. Embed the work within subsequent cycles of River Basin Management Plans.
9. Set out where there are other opportunities (such as SuDS or Local Authority planning including Surface Water Management Plans) for multiple environmental benefits – e.g. biodiversity, flood risk management - and look to embed water quality improvements within them.

10. Understand which behavioural and community based work is the most effective for improvement of quality of life through improving urban watercourses and embed this within the catchment based approach.

**Q6. Are the suggested actions the right ones to achieve our aims? If you think there are gaps, what other action(s) should be taken to resolve the problem? Do you have costs/benefits for the actions?**

**Q7. 'Polluter pays' and 'Payment for Ecosystem Services' (beneficiary pays) are approaches used to drive environmental improvement. Do you have evidence on the degree to which either approach is more cost effective for the control of urban diffuse water pollution?**

## **Next steps**

The period for this urban diffuse water pollution consultation will run for 11 weeks, in order to synchronise with and inform the Environment Agency's river basin planning consultations: <http://www.environment-agency.gov.uk/research/planning/33248.aspx>

Once completed the comments from this urban diffuse water pollution consultation will be analysed and a summary published. The Government will work with stakeholders to develop a strategy with a view to publishing it in 2013.

## Consultation questions

In light of your experiences and knowledge we are seeking your views to assist in developing our strategy.

Please visit [www.surveymonkey.com/s/2HWVXCL](http://www.surveymonkey.com/s/2HWVXCL) to submit responses by Friday 8 February 2013

The questions are repeated here (the Survey Monkey questionnaire expands on these, asking for your rankings of the proposed aims, prioritisation of sources and proposed actions):

**Q1. Do you agree with the proposed aims?**

**Q2. Do you broadly agree with our prioritisation of pollution sources? If you disagree, what should the priorities be? Please provide the evidence you have to support this view.**

**Q3. Are you taking part in any initiatives where one of the principal objectives is reducing non-agricultural diffuse water pollution? If yes, please tell us briefly about the intended/realised outcomes, any barriers and costs/benefits.**

**Q4. Are you aware of guidance published (e.g. by the Environment Agency or local authorities) that advises about urban diffuse water pollution? If so, how useful is it and how could it be improved?**

**Q5. What would encourage you to contribute to a catchment-based initiative to tackle urban diffuse water pollution?**

**Q6. Are the suggested actions the right ones to achieve our aims? If you think there are gaps, what other action(s) should be taken to resolve the problem? Do you have costs/benefits for these actions?**

**Q7. 'Polluter pays' and 'Payment for Ecosystem Services' (beneficiary pays) are approaches used to drive environmental improvement. Do you have evidence on the degree to which either approach is more cost effective for the control of urban diffuse water pollution?**