Principles for protecting the water environment in water resources planning

Using Environmental Destination for Water Resources to plan for environmentally sustainable abstraction

July 2025

We are the Environment Agency. We protect and improve the environment.

We help people and wildlife adapt to climate change and reduce its impacts, including flooding, drought, sea level rise and coastal erosion.

We improve the quality of our water, land and air by tackling pollution. We work with businesses to help them comply with environmental regulations. A healthy and diverse environment enhances people's lives and contributes to economic growth.

We can’t do this alone. We work as part of the Defra group (Department for Environment, Food & Rural Affairs), with the rest of government, local councils, businesses, civil society groups and local communities to create a better place for people and wildlife.

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Executive summary

Water is a natural resource which is vital for people, the economy and for wildlife and provides multiple benefits to society including the water we drink, producing the food we eat and providing energy we use. To sustainably manage this resource the needs of the environment must be considered alongside the needs of society so that these needs can be met and sustained over the long-term. Action is required now to address abstractions which are currently damaging the environment. The impact of climate change (which could see summer flows in the 2050s reduced in England by up to 33%) and predicted increases in water use demands mean that additional action is likely to be required.

It makes economic sense to consider all these needs so that the best value solutions are chosen i.e. appropriate solutions which deliver wider benefits to society whilst improving the environment. Taking a proactive long-term approach to environmental water planning and forecasting where abstraction will need to change is much more cost effective than waiting until negative impacts happen. The National Infrastructure Commission's 2018 report suggests that the cost of inaction could be almost double that of building resilience over the next 30 years.

The Environment Agency terms this approach to assessing long-term environmental needs the **Environmental Destination for Water Resources** (referred to as the Environmental Destination). This approach identifies where, and by how much, water abstraction needs to change to achieve and maintain a healthy water environment, both now and in the future. The detailed technical methodology on how the Environmental Destination has been calculated is published as an appendix to the Water Resources National Framework 2025.

To support water planning the Environmental Destination sets out a range by which current abstraction may need to change to protect the environment. It is through the planning process that the range can be refined, solutions identified and the pace and extent to which these changes can be achieved. The Environment Agency intends to publish technical supporting guidance on how the Environmental Destination should be considered in Regional Water Resources Planning and in the planning guidelines provided to water companies for England. This guidance will be underpinned by five key planning principles. This document explains what these principles are and why the Environment Agency thinks they are important. In summary these are:

1. **Understand long-term environmental requirements for water resources**: Environment scenarios are used to understand where and by how much abstraction might need to change to meet the full range of environmental legislation (England) and government commitments for protecting the environment from over abstraction.

2. **Account for a changing climate**: A range of predicted climate change impacts are used to understand the potential effects on future water availability.

3. **Plan for the full range of environmental requirements**: Long term plans for water resource management consider how the full range of environmental legislation

(England) government commitments for the water environment, as described in Principle 1, can be achieved in a changing climate.

4. **Use best available evidence**: Planning for the environment is based on best available data and evidence using nationally derived datasets as a starting point, and subsequently improved with local information.

5. **Consider local priorities to inform the pace of delivery**: Delivery to meet environmental requirements can be informed by stakeholder priorities, where consistent with statutory requirements.

Please note that additional environmental requirements such as water quality or invasive non-native species (INNS) are not dealt with here but addressed separately as part integrated river basin planning.

We expect these principles to be embedded in the planning process (for example in the development of regional water resources plans). The planning process will inform the pace and extent to which water resilience for the environment might be achieved. More information on this can be found in the National Framework for Water Resources 2025.

1. Introduction

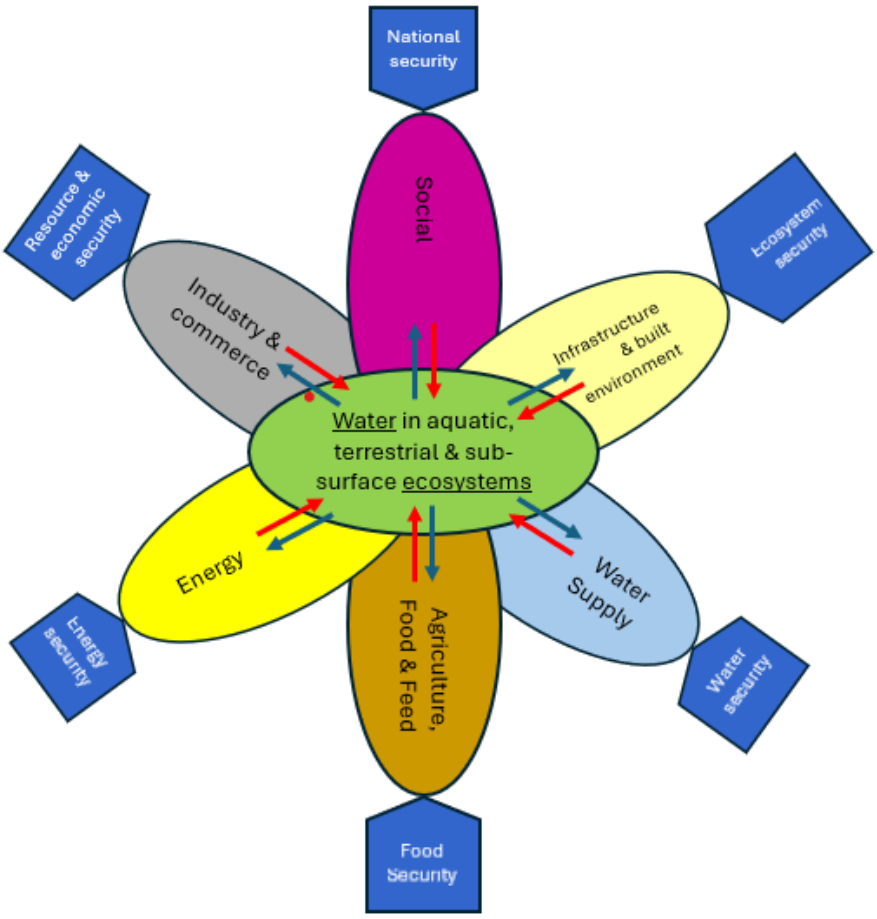
This document introduces our approach to use of the Environmental Destination in planning for environmentally sustainable abstraction. Section 2 explains why this approach is needed, section 3 describes what is meant by the term 'Environmental Destination', a key element in this approach, and section 4 details the principles which underpin this approach.

2. A long term approach to environmental water resource planning

Water keeps us alive, is vital for the economy and sustains plants and wildlife. Healthy rivers, lakes, wetlands and groundwater aquifers provide multiple benefits to society including the provision of water for households and businesses, for food production, for recreation and the production of energy. In managing water resources, environmental requirements must be considered alongside these uses so that the needs of society, the economy and wildlife can be met and maintained over the long-term. Figure 1 explains how interconnected the environment is in providing for the nation's needs. Although significant improvements have been made, the environment is still impacted by unsustainable abstraction. Approximately 15% of surface waterbodies and 27% of ground waterbodies have abstraction rates that are currently damaging the environment. A further 6% of waters that are currently classified as 'Good' under the Water Framework Directives could deteriorate unless action is taken to limit abstraction.

Climate change means this picture is likely to get worse. We are already starting to see the effect this might have – the summer of 2022 saw UK temperatures exceeding 40°C for the first time, with an average temperature of over 10°C recorded for the first time, and the driest summer in England since 1995. The UK's top 10 warmest years since records began have all occurred in the last 2 decades. The impact of climate change means that by the 2050s summer river flows may reduce in England by up to 33%.

Figure 1: The role of (water ecosystems) in ensuring all types of future 'security' from Watersystem 2100: A synthesis and reflection on some of the science, evidence and discourse for water and land strategy. Environment Agency (unpublished) 2023.



Demand for water is increasing. Population and housing growth, food production, energy production and new water demand from data centres are just some of the major challenges faced in managing water resources sustainably. In meeting these challenges, we must ensure that the natural environment is protected and enhanced and in doing so we need to plan for society's water needs with those of the environment, together.

The effects seen in recent summers is a stark warning of what the future is likely to hold if we don't act: more restrictions on water use, reduced crop yields impacting food security, and significant environmental impacts such as fish kills and algal blooms. Without a healthy and resilient environment there will be risks to water supplies, restricted economic

growth, reduced capacity to meet net zero targets and limited access to water to meet the needs of food production and energy security.

Taking a proactive long-term approach to environmental water planning is much more cost effective than waiting until negative impacts happen. Forecasting the need to change abstractions provides a longer lead-in time to implement “best value” solutions which deliver wider benefits to society. A 2018 report by the National Infrastructure Commission (NIC) suggests the cost of inaction would be almost double compared to the costs of building resilience over the next 30 years. Investing in improved water resource resilience makes sense; how quickly this investment will be called upon will depend on the pace of climate change and growth.

By considering future scenarios and government commitments to the environment, we can ensure that water resources are managed sustainably. Defining the long-term needs for water resource management to meet environmental requirements now and in the future means strategic, regional and local plans can take account of these needs when planning investment in new infrastructure, managing demand and reducing leakage. This approach will enable more informed investment decisions, choices and prioritisation of action

The Environment Agency terms the approach to assessing long-term environmental needs the Environmental Destination for Water Resources (referred to as the Environmental Destination). Section 4 outlines 5 key planning principles that underpin the Environment Agency’s approach to long-term environmental planning and development of the Environmental Destination.

3. What is the Environmental Destination for Water Resources?

The Environmental Destination for Water Resources identifies where, and by how much, water abstraction needs to change to achieve and maintain a healthy water environment, both now and in the future.

The Environmental Destination for Water Resources applies in England and is developed by:

- defining the long-term environmental outcomes to ensure abstraction from rivers, lakes, wetlands and estuaries is environmentally sustainable, both to address current unsustainable abstraction and future pressures – this includes future pressures from climate change impacts on river flows
- calculating ‘the gap’ to meet these long-term environmental outcomes (where and by how much abstraction may need to reduce) to enable environmentally sustainable abstraction

To learn more about how we have developed the Environmental Destination please refer to our Environmental Destination technical report 2025.

To support water planning the Environmental Destination sets out a range by which current abstraction may need to change to protect the environment. It is through the planning process (for example in the development of regional water resources plans) that this range can be refined, solutions identified and the pace and extent to which these changes can be achieved. More information on this can be found in the National Framework for Water Resources 2025.

4. Principles which underpin the approach to Environmental Destination in long-term planning

There are five key principles which the Environment Agency uses in its approach to developing the Environmental Destination in long term water resources planning. We expect these principles to be embedded in the planning process (for example in the development of regional water resources plans). The planning process will inform the pace and extent to which water resilience for the environment is achieved.

In summary these principles are:

1. **Understand long-term environmental requirements for water resources:** Environment scenarios are used to understand where and by how much abstraction might need to change to meet the full range of environmental legislation (England) and government commitments for protecting the environment from over abstraction

2. **Account for a changing climate**: A range of predicted climate change impacts are used to understand the potential effects on future water availability

3. **Plan for the full range of environmental requirements**: Long term plans for water resource management consider how the full range of government commitments for the water environment, as described in Principle 1, can be achieved in a changing climate

4. **Use best available evidence**: Planning for the environment is based on best available data and evidence using nationally derived datasets as a starting point and subsequently improved with local information

5. **Consider local priorities to inform the pace of delivery**: Delivery to meet environmental requirements can be informed by stakeholder priorities, where consistent with statutory requirements

The Environment Agency intends to publish technical supporting guidance on how the Environmental Destination is considered in Regional Water Resources (WR) Planning and in the planning guidelines provided to the water companies. The need for other sector specific guidance will be considered subsequently.

These principles will underpin this guidance, listed in the box above, are explained in more detail in sections 4.1 to 4.5.

4.1 Principle 1: Understand long-term environmental requirements for water resources

Environment scenarios are used to understand where and by how much abstraction might need to change to meet the full range of government commitments for protecting the environment from over abstraction.

In managing abstraction, the Environment Agency uses environmental legislation to determine how much water can be abstracted whilst protecting the environment. The government has also published other commitments for the environment. The Environment Agency believes that these published commitments should also be included in planning for the long term so that plans can take account of the full requirements for the environment when deciding what action is required. Taking account of the full range of government commitments on the environment should mean that the ambition for the environment is not restricted at the start of the planning process. Whilst planning for this ambition and the long term, the focus will be on meeting current regulatory requirements in the shorter term. Current unsustainable abstraction represents the biggest challenge in managing water resources for the environment in the long term: approximately 60% of the total challenge. Climate change pressures represent approximately 30% and meeting the full range of government commitments to the environment represent up to 10%.

The Environmental Destination integrates existing legislation and relevant policy requirements (including WFD and Habitats Regulations, Wildlife and Countryside Act, Environment Act, Environment Improvement Plan (EIP)) with other strategic government action plans (such as Chalk Stream Restoration and Salmon Five Point Action Plans) to identify the full range of government commitments on the environment relating to sustainable water abstraction. Legislative drivers often specify dates for delivery and how the legislation is written might affect how action is prioritised.

The section below provides more detail on each of these categories.

4.1.1 Legislative drivers

The Water Resources Planning Guideline (WRPG) provides the full detail of the legal obligations for water companies to take account of in developing their plans. The following regulations and policy drivers apply to all sectors:

4.1.1.1 Water Framework Directive (WFD) Regulations

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 provide the framework for achieving sustainable water management and establish environmental objectives, including preventing deterioration and aiming to achieve good

status in all water bodies. The Regulations require the production of river basin management plans (RBMPs) which include the legally binding environmental objectives set for each water body in a river basin district. The WFD Regulations allow for temporary exemptions to achieving good status, including the setting of extended deadlines or a less stringent objective. RBMPs are reviewed and updated every 6 years. This includes reviewing and, where appropriate, updating the environmental objectives set for all water bodies and the justifications for any exemptions. We must continue to strive for all water bodies to achieve good status, and the Environment Agency uses this to understand the full environment requirements.

4.1.1.2 Habitats Directive (HD) Regulations

The Conservation of Habitats and Species Regulations 2017, derived from the EU Habitats Directive, govern the protection of Special Areas of Conservation and Special Protection Areas, referred to as European Sites. In England, as a matter of policy, sites listed or proposed under the “Ramsar Convention on Wetlands of International Importance” receive the same level of protection as European Sites)

European sites are explicitly addressed within RBMPs under WFD regulations. Supplementary Advice on Conservation Objectives (SACO) provides detailed and site-specific information on the conservation objectives and the supporting processes on which qualifying natural habitats and the habitats of qualifying species rely.

4.1.1.3 The Environment Act 2021

The Environment Act 2021 establishes legally binding long-term environmental targets in 4 priority areas, one of which is water. It is designed to address pressing environmental challenges and drive long-term sustainability and establishes the requirement for the Secretary of State to prepare an environmental improvement plan. This includes measures to secure sustainable abstraction. The Environment Act 2021 mandates the creation of Environmental Improvement Plans (EIPs) for England – this is covered in section 4.1.2.1

Please note that the Wildlife and Countryside Act conveys wider conservation duties on statutory undertakers (such as the water industry and energy providers) and species-specific protections which are not covered here. For the water industry, these are specified in the Water industry strategic environmental requirements (WISER): technical document.

4.1.2 Policy drivers

4.1.2.1 The 25 Year Environment Plan (25YEP)

The 25YEP sets out the framework and vision to ‘help the natural world regain and retain good health’, outlining what the Government will do to improve the environment, within a generation. Within the Environment Act there is a commitment to refresh the 25YEP every 5 years.

4.1.2.2 Environmental Improvement Plan (EIP)

The Environmental Improvement Plan 2023 is the first ‘refresh’ of the 25YEP, as required by the Environment Act. It reinforces the intent of the 25YEP and sets out the plan to deliver. The EIP has interim and long-term targets covering species abundance and extinction; habitat restoration and creation; and protected sites (including SSSIs).

4.1.3 Government supported commitments

4.1.3.1 Chalk Stream Restoration Strategy

The Chalk Stream Restoration Strategy aims to protect these globally rare habitats through improved flow management, habitat restoration, and reduction of pollution. It sets the future direction needed to protect and enhance England’s chalk streams in addition to the requirements set out in the legislative framework.

4.1.3.2 Salmon Five Point Approach

The Salmon Five Point Approach describes the high-level commitments, the necessary actions and key measures to improve the future for salmon. This includes measures to safeguard water flows critical to salmon habitats. It emphasises the need to maintain minimum river flows to ensure the survival of salmon populations aligned with broader RBMP goals under WFD regulations.

4.2 Principle 2: Account for a changing climate

A range of predicted climate change impacts are used to understand the potential effects on future water availability**.**

The size and scale of the challenge facing water resources in this country is growing due to the increasing likelihood of higher temperatures and longer periods of below average rainfall. Climate change means we are likely to have hotter, drier summers in the UK, with more extreme events such as drought. All the top ten warmest years for the UK, in the series since 1884, have occurred since 2002 whereas none of the ten coldest years have occurred since 1963.

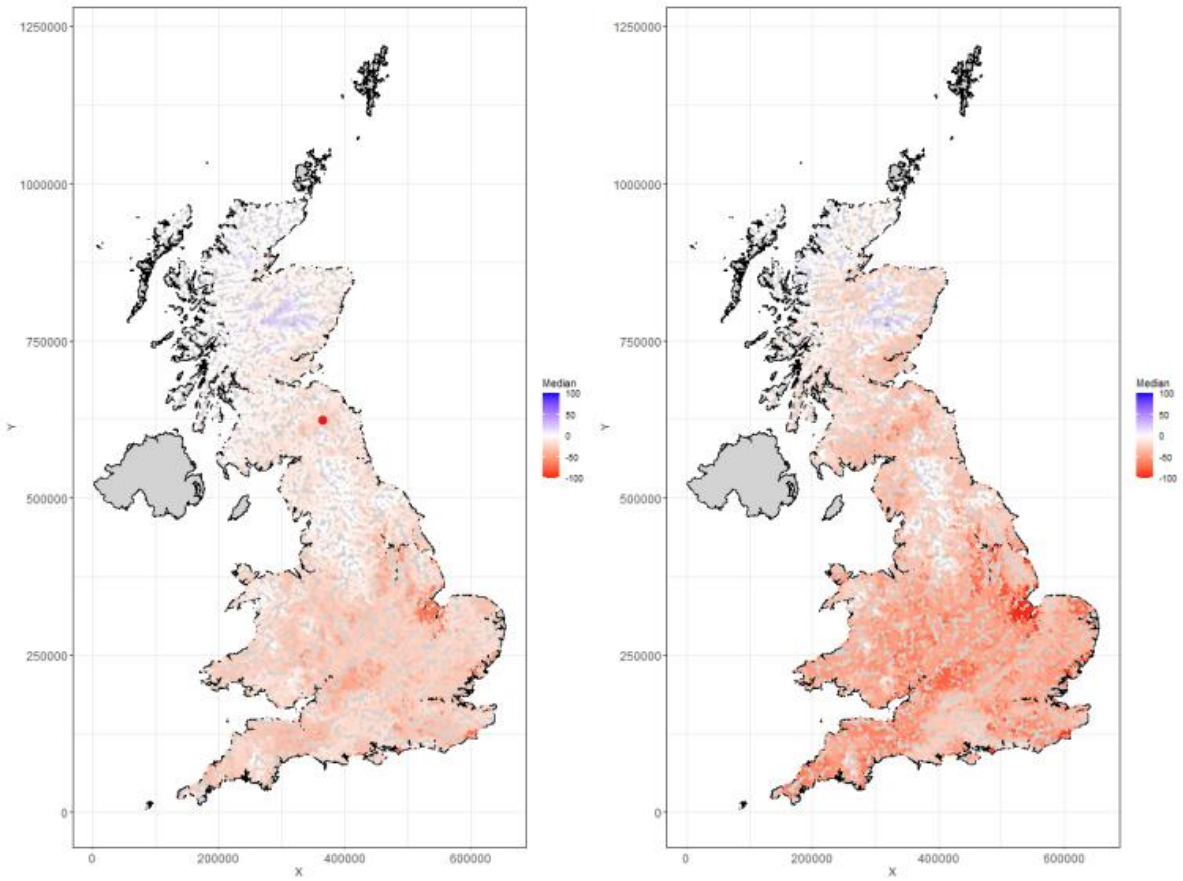
The impact of climate change (which could see summer flows in the 2050s reduced in England by up to 33%) and predicted increases in water use demands mean that

additional action is likely to be required. By the 2050s summer rainfall in England is expected to decline by roughly 15 percent and heatwaves like that seen in 2018 and 2022 are expected to happen every other year. By 2070 the Met Office projects that UK summers will be up to 60% drier and, conversely, winters will be up to 30% wetter. July 2022 was the driest July on record for parts of the country and these dry conditions are becoming more frequent and intense as the Earth's global temperature increases as predicted.

The effects of climate change are already being felt through the impacts of more extreme weather events, including floods and drought. Reduced rainfall will impact natural river flows in some areas. Average summer river flows may decrease leading to reduced water availability and changes to rainfall patterns may mean that there is a shorter window for groundwater aquifers to recharge. Climate change is likely to mean that natural low flows are much lower than they are under today's climate. This will mean that water available for both the environment and for abstraction will be reduced.

Figure 2 shows the potential change in natural flows in low flow conditions based on latest climate change data (UK Climate Projections 2018 (UKCP18)) using a high emissions pathway of Representative Concentration Pathway 8.5 (RCP 8.5). You can see that at low flows the percentage changes are generally negative throughout Great Britain with the southeast exhibiting the highest percentage changes. The percentage changes for the far future (2050s to the 2080s) follow similar patterns as the near future's (up to 2050) percentage changes but with a higher degree of change.

Figure 2: Median percentage changes at low flows (Q95) for the 2050s (left) and 2080s (right) – from Development of climate change adjusted flow statistics in Qube, WHS 2024.



As a consequence, it is important to understand to what extent climate change might affect water availability in the future and use this information to inform long term planning for the environment and water resource management. Climate change is uncertain though, so using a range of potential future climate predictions helps to understand how these might affect water availability, and the potential breadth of action required to protect the environment. Using this range of predictions will help business and sectors to plan and adapt accordingly.

4.3 Principle 3: Plan for the full range of environmental requirements

Long term plans for water resource management consider how the full range of government commitments for the water environment identified, as described in Principle 1, can be achieved in a changing climate.

Environmental needs are one of the biggest factors to consider when planning water resources management. To deliver long term environmental sustainability and environmental resilience, the Environment Agency wants regional groups, water industry

and abstractor groups to consider the full range of government commitments outlined in principle 1 when developing their long-term plans. This means they can take account of the full range of environmental improvements required and future environmental risk as part of the planning process to inform decision making, allocation of resources and investment decisions. Conversely, if long term plans only take account of the current regulatory requirements, options developed are unlikely to be sufficient in the long-term. The National Infrastructure Commission (2018) reported that the cost of inaction in water resources planning is much greater compared to pro-actively planning for and building resilience in the water sector (£40 billion versus £21 billion). So, proactively building this resilience into plans from the start is a sensible approach.

Plans should consider how this “full ask” might be achieved, for instance changing the pace at which improvements are delivered (where scope exists within the legislation) as part of a water resources plan which considers the best value mix of solutions within the context of legal requirements and wider benefits to society and the environment. Changing the pace can provide opportunities to deliver more for the environment, enable stakeholders’ priorities for abstraction reductions to be considered, and inform government affordability decisions on long term water planning. This should enable better long-term resilience for the environment to be achieved and enable future needs of society to be sustainably met.

Actions to achieve the Environmental Destination need to be agreed through the planning process (for example in the development of regional water resource plans). These plans will identify the solutions and determine the optimum pace and extent to which water resilience for the environment, people and the economy can be achieved. This may be informed by stakeholder feedback (see principle 5).

More information on planning can be found in the National Framework for Water Resources 2025.

In Figure 3, maps indicate the scale of the challenge for existing licences and the difference between using the current licensing approach compared to considering the full government commitments towards the environment. These do not consider the potential impact of future droughts on water availability, or additional requirements for water beyond full licensed quantities associated with existing licences. However, it will help in understanding where there is least pressure on the environment when developing new proposals.

Figure 3: Estimated percentage reduction required at a waterbody scale: (a) now using current legislation (b) in 2050 climate using current legislation and (c) in 2050 climate using full environmental commitments (Fully licensed Ml/d). From [Environmental Destination technical report 2025](#).

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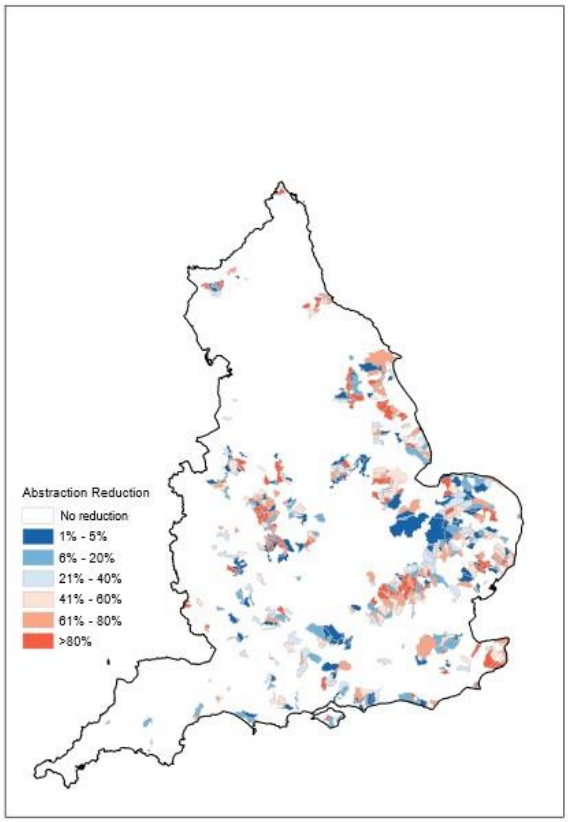

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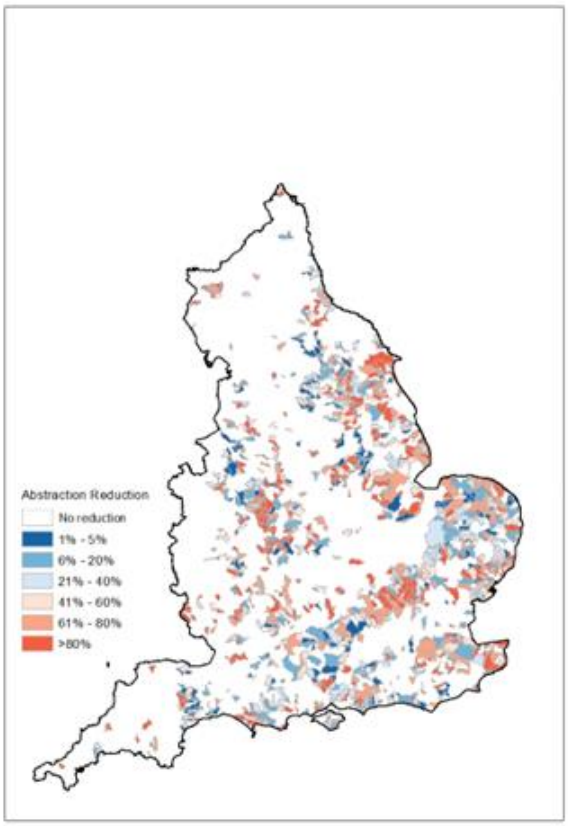

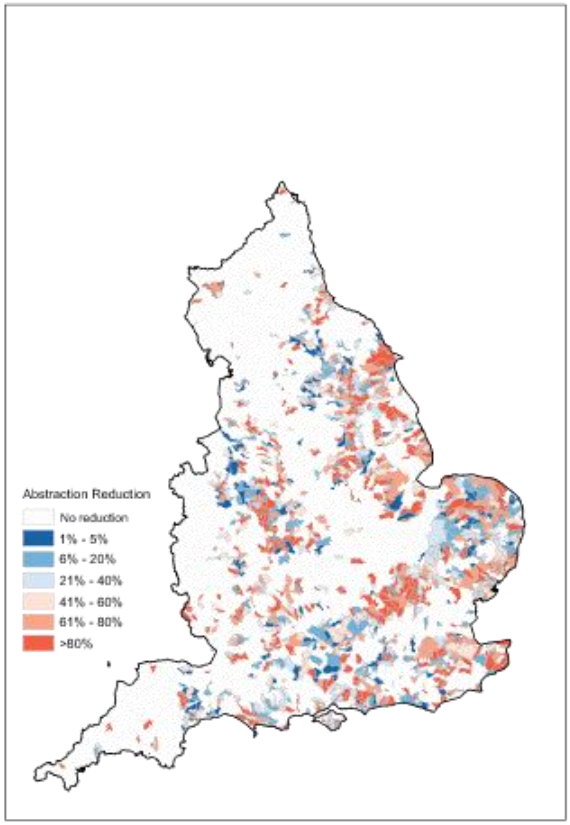

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4.4 Principle 4: Use best available evidence

Planning for the environment is based on best available data and evidence using nationally derived datasets as a starting point and subsequently improved with local information.

The Environment Agency's analysis of requirements to meet the Environmental Destination is based on national data sets. The direction of travel indicated by the scale of change from this analysis is clear and using this as the basis for estimating future abstraction changes will allow sensible and evidence-based decisions that benefit the environment and society.

However, good quality local data, detailed modelling and evidence may provide a more accurate picture of how much water needs to be recovered to meet environmental requirements. The Environment Agency wants regional groups, the water industry and abstractor groups to make a start using nationally derived datasets to develop their plans but use better local evidence where this is available, for example local groundwater models. By continuing to build on the existing evidence base with improved national and local data we can collectively reduce data uncertainties and adjust planning for the environment using adaptive planning principles.

4.5 Principle 5: Consider local priorities to inform the pace of delivery

Delivery to meet environmental requirements can be informed by local stakeholder priorities, where consistent with statutory requirements.

Whilst statutory environmental objectives may have set deadlines to be delivered there can be an opportunity to prioritise within these timescales. Developing an understanding of stakeholders' opinions and concerns can help shape how plans might prioritise actions identified to meet environmental requirements. The value of the different aspects of the environment might be perceived differently across England – regions might prioritise waterbodies differently depending on local circumstances and the value of that habitat to the region, for example salmon rivers prioritised before/after chalk streams. The pace of delivery is not set in stone and actions to meet different aspects of environmental protection may be prioritised especially where the scale of the challenge is large. This prioritisation might consider where environmental benefits are likely to be higher or what level of confidence exists in the data and evidence. Stakeholders can bring valuable knowledge on these issues, and as a minimum input from regional stakeholders should be particularly considered. This can highlight local priorities such as those identified in local nature recovery strategies (LNRS) or where joining up environmental improvements with other planned initiatives (for example, flood protection or natural flood management) means the planned pace for the delivery of environmental improvements could change for improved benefits to society.

Clear communication will be required so that stakeholders understand the potential benefits of protecting the different aspects of the environment through water resources planning and management, how their views might inform priorities and what the process for this is.