Written evidence – Environment Audit Committee: Inquiry on Climate Adaptation

The Rivers Trust provides national representation and supports the Rivers Trust Movement, a network of 60+ independent organisations across the UK and Ireland; united by our shared vision for wild, healthy, natural rivers valued by all. We are river and catchment conservation experts with a wealth of data and expertise at our fingertips, working at the local regional and national scales to make our shared vision a reality.

The Rivers Trust welcomes the opportunity to provide evidence to the Environment Audit Committee's inquiry on climate adaptation. This response mainly focusses on the water environment and the resilience of rivers, catchments and the communities and businesses that depend on them. We draw on our experience of catchment partnerships, river restoration, natural flood management and collaboration with farmers, landowners, water companies, local authorities and regulators.

Climate adaptation must be planned and delivered at catchment scale, treating flood risk, drought, water supply, water quantity, biodiversity and land management as connected challenges. The same catchment will have to manage too much water in winter and too little in summer, and when catchments are not resilient to such pressures there are consequent impacts on transport and energy infrastructure, supply chains, industrial production, food production, water supply, recreation, the natural environment and quality of life. Addressing catchment challenges separately, through disconnected projects and short-term funding, will not deliver the resilience required.

Healthy rivers and catchments are essential infrastructure. Restored wetlands, floodplains, soils, headwaters and river corridors help retain water, reduce flood peaks, support water supplies, moderate river temperatures and improve ecological health. These measures reduce climate-related risks to properties, businesses, food production, economic growth and infrastructure, and must be delivered alongside sustainable abstraction, effective regulation and necessary conventional infrastructure.

We recommend establishing a national framework for catchment resilience, supported by clearer cross-government accountability, empowered regional and catchment-level coordination, sustained public investment and mechanisms that enable responsible private co-investment.

The Rivers Trust would welcome the opportunity to provide further evidence, including through oral evidence to the Committee.

Inquiry questions

1. UK preparedness for climate change

c) What lessons should be drawn from recent extreme weather, including heatwaves, drought, flooding and wildfires?

Recent extreme weather demonstrates that flooding, drought, heat and wildfire should not be treated as isolated emergencies. These risks are connected and shaped by the degraded condition of our landscapes and catchments, and the way land and water are managed. Landscapes and infrastructure must cope with both periods of excess water as well as prolonged scarcity.

August saw 71% of England enter drought status. Our September 2026 Big River Watch, supported by 1,973 participants, provided a valuable picture of how the exceptionally dry summer affected rivers: low river levels featured prominently in participants' photographs, alongside rivers covered in algae and duckweed. Warm weather and reduced flows concentrated pollutants, including nitrates and phosphates, encouraging excessive plant growth and algal blooms, reducing oxygen levels and damaging already stressed habitats. Images from volunteers also showed blue-green algal blooms which can produce harmful toxins for people and animals. High water temperatures also push some species, like salmon population, to the edge of their viable temperature range and into danger of extinction.

These impacts are shocking considering that the preceding winter was England's eighth wettest since records began, demonstrating the inability of our degraded water catchments to absorb and retain water effectively in the long-term. Rather than being absorbed and stored, intense rainfall often runs rapidly off the land and down modified rivers and on through built environments, which increases flood peaks and transfers flood and pollution risk downstream. As a result, and despite extremely wet conditions in winter 2025/6, the lack of retained water in landscapes meant there was not enough to sustain river flows, wildlife, farming and water supplies during prolonged dry weather. In turn, this created the conditions for wildfire and soil less able to absorb rainfall when it returned.

The principal lessons learnt are as follows:

- **Adaptation must be anticipatory.** We should expect much harsher weather featuring water extremes every year. Government should prepare for increasingly challenging combinations of heat, drought and intense rainfall rather than repeatedly responding after damage has occurred.
- **Adaptation must address the condition of rivers and catchments.** Our landscapes and catchments should be treated as critical infrastructure. When restored, they provide protection against weather extremes. Healthy soils, wetlands, floodplains, headwaters and connected river corridors can help address challenges of drought and flooding. By slowing runoff and retaining water within the landscape, appropriately located and designed interventions can reduce flood peaks and support water availability during dry periods, aiding natural recharge, which our new water infrastructure under development, such as reservoirs and water transfer systems, ultimately relies on. Restored riparian habitats on riversides provide effective ways of moderating water temperatures, softening the effects of heat on the water environment.

- **Isolated interventions are insufficient.** Individual projects can deliver valuable local benefits, but their effectiveness depends on how they integrate with other measures and whether they are maintained over time. Water needs to be managed at scale: coordinated portfolios of interventions across whole catchments are more likely to address the combined causes of flood risk, water scarcity and ecological decline.

We cannot build resilience of the water environment while allowing natural systems that regulate water to remain under pressure. We desperately need timely restoration of the capacity of our catchments to absorb, store, release and clean water.

4. Leadership and governance

a) Does DEFRA, supported by the Environment Agency, have sufficient authority and resources to coordinate climate adaptation across Government?

No. Although DEFRA has a central role in adaptation, there is a need for stronger cross-government authority, increased delivery capacity and sustained resources to coordinate climate adaptation effectively.

Catchment resilience depends on decisions made across multiple sectors, many of which sit outside of DEFRA's remit, such as planning, housing, transport, trade, infrastructure. Decisions made by other departments and regulators can have cumulative effects on water availability, runoff, flood risk, pollution and the conditions of rivers. Responsibilities, funding arrangements and investment cycles remain divided across departments and organisations, with no real tie-in.

Further lack of coordination exists at regional and local government levels. While the English Devolution and Community Empowerment Act[1] gives Strategic Authorities competency for climate and the environment, the published Integrated Settlement Outcomes Frameworks[2] do not have measures directly relevant to climate adaptation and climate resilient catchments. There are examples of regional coordination by authorities, such as the Greater Manchester Integrated Water Management Plan, but in many places, coordination occurs through catchment partnerships with minimal engagement with those actors that benefit from flood or drought reduction.

This fragmentation makes it difficult to deliver interventions that depend on coordinated action across an entire catchment, such as managing water quantity. For example, a local authority may wish to reduce surface-water flooding through urban greening and permeable surfaces, while the wider benefits depend on planning decisions, land management, drainage infrastructure and the actions of neighbouring authorities.

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[1] https://www.legislation.gov.uk/ukpga/2026/23/contents

[2] https://www.gov.uk/government/publications/integrated-settlements-outcomes-frameworks-for-202627-to-202829

b) Are responsibilities for adaptation sufficiently clear across Government departments, local authorities, regulators and public bodies?

No. Responsibilities are not sufficiently clear or aligned around the outcomes required for climate-resilient catchments, with adaptation requiring consideration not just of climate change but other changing pressures such as housing development, agricultural management and industrial abstraction. Individual bodies may understand their own statutory duties, but the responsibilities and risk allocation for delivering integrated adaptation can be complex when outcomes depend on several organisations acting together. In addition, the economic, social and wellbeing benefits of climate adaptation and resilient catchments do not necessarily translate into clear decision-making routes because benefits can be distributed across sectors, with the value to each alone insufficient to justify intervention. Climate resilient catchments can only be achieved through shared responsibility, and there is no consistent mechanism to ensure that all relevant organisations agree on priorities, contribute appropriately and remain accountable for delivery.

Lack of clarity is particularly evident where interventions cross administrative boundaries, affect land owned by different parties or generate benefits for organisations that are not directly responsible for delivering the work. For example, an intervention on farmland may reduce downstream flood risk, improve water quality and benefit a water company's water supply, yet the farmer may bear the entire cost of changing land management with little public help or responsibility, whilst much of the benefit accrues to others. Without clear arrangements for funding, delivery and maintenance, an intervention with strong adaptation benefits may not proceed.

5. Local government and devolved administrations

b) What obstacles do councils face in preparing for and responding to risks from flooding, extreme heat, drought and wildfire?

Councils face a combination of limited and fragmented funding, limited specialist expertise and capacity, unclear or overlapping responsibilities, insufficient powers, and difficulty coordinating action across administrative boundaries. Interventions with long term benefits may require additional time and resource in terms of awareness raising and building public acceptance, particularly in the context of the national political debate. Financial constraints on authorities can lead to resistance to any spending that is not within core responsibilities, and the long-term benefits of climate resilient catchments may not translate into cash savings required for a viable business case when facing short term balance sheet pressures. Councils can also face significant challenges in planning in an integrated way. Different council teams frequently develop separate strategies and plans, but the connections between them are not always fully recognised, limiting coordination for climate adaptation and resilience.

These barriers are particularly significant for water-related adaptation because runoff, river flows, flood risk and water quality do not follow authority boundaries. An intervention (or lack of intervention) in one council area may affect the risks or benefits experienced by neighbouring communities. Additionally, the costs of maintaining features such as wetlands, in the long-term, are problematic. Working in collaboration, for example, with catchment partnerships, can help address some of these challenges and support delivery of small-scale SUDS schemes that provide for climate resilience. Emerging examples from Mayoral Combined Authorities show the benefits of a more integrated approach. For example, Liverpool City Region's vision for Sustainable Water Management and Greater Manchester's Integrated Water Management Plan bring together partners around shared priorities, recognising that water challenges are interconnected. These approaches help align stakeholders, coordinate investment from different funding streams, and provide a clear, long-term direction, enabling more strategic action on climate resilience.

6. Agriculture, water and the natural environment

a) Is the UK's water supply sufficiently resilient to increasing drought risk?

No. Water supplies remain vulnerable to increasing drought risk, and resilience depends on addressing both demand and the condition of the catchments from which water is sourced. A particular challenge is the growing spatial mismatch between areas of high-water demand and areas experiencing the greatest water stress. Intensive agriculture and horticulture, especially sectors that rely heavily on irrigation, are often concentrated in some of the driest parts of the country, such as eastern and south-eastern England. As climate change increases the frequency and severity of droughts, pressure on water resources in these regions is expected to intensify.

Improving resilience therefore requires a combination of measures. Alongside reducing demand and improving water efficiency, there is a need to restore and manage catchments to enhance water retention, improve groundwater recharge, and maintain river flows during dry periods. Better alignment of water availability with agricultural production, supported by strategic water resource planning, storage infrastructure, and nature-based solutions, will be essential to ensure both public water supply and food production remain resilient in the face of increasing drought risk.

b) How should climate adaptation be integrated with agricultural policy and food security?

As demonstrated this year, agricultural production is extremely vulnerable to extreme weather events - climate resilient catchments need to be recognised as a pre-requisite for climate resilient farming, not a trade-off. Climate adaptation should be embedded across agricultural policy, with safeguards to ensure that farmers are the beneficiaries of interventions (both through payments and reduced risk of disruption) as well as the deliverers. By ensuring that

schemes such as the Sustainable Farming Incentive and Environmental Land Management Schemes are more spatially targeted, the right actions can be delivered in the right places to address local and catchment-scale risks and resilience challenges. Greater strategic planning would improve outcomes for both food production and environmental resilience.

Landscape Recovery also has an important role to play as a locally owned and collaborative model for delivering adaptation at scale. However, projects need to move from development into delivery more quickly if they are to realise their full potential and provide benefits on the ground.

Adaptation objectives should be better aligned with food supply chains. Processors, retailers and other buyers have a vested interest in resilient agricultural production and should integrate climate resilience into procurement decisions, incentives and investment. This would help create consistent signals for farmers and support the adoption of practices that strengthen both long-term food security and environmental resilience. Mandating the requirements of the Task Force on Nature-Related Financial Disclosures would be a step in this direction.

Leveraging tax incentives, such as by increasing the Annual Investment Allowance specifically for slurry and water storage infrastructure, would be an effective mechanism to encourage farm business investment in infrastructure adapted for the future climate. Similarly, expanding the scope of permitted development rights (PDRs) for agriculture specifically for slurry and water storage infrastructure could ease the planning process and accelerate implementation.

c) What support do farmers need to adapt to changing temperatures, rainfall and growing conditions?

Farmers have a significant role to play in adapting land to changing temperatures and rainfall as landowners and managers. Government should recognise farmers as essential partners in delivering food security, water resilience, climate adaptation and nature recovery. They are managing increasingly variable weather whilst trying to hold their businesses afloat. Adaptation measures may add more pressure: they may require upfront expenditure, changes to established practices and land taken out of production entirely.

Farmers therefore need:

- **Predictable and accessible financial support, alongside confidence that schemes and funding mechanisms will remain available long enough to justify changes in land management and investment.** Adaptation often involves costs today for benefits that may take years to materialise, and many measures require farmers to take on risk before returns are realised. As a result, there is a strong case for transition funding that helps bridge the gap between existing farming systems and more resilient land management approaches, providing farmers with the financial certainty needed to adopt new practices, invest in infrastructure and adjust business models.

Some adaptation measures can reduce productive land or alter how it can be farmed. Farmers therefore need a stable, multi-year framework that combines reliable payments for environmental land management, transition funding to support the adoption of new approaches, and capital grants for adaptation infrastructure. This should be underpinned by clear eligibility criteria, proportionate application processes and long-term policy certainty. The distribution of funds should also be considered strategically: the sudden closure of Window 2 of the Sustainable Farming Incentive 2026 due to a first-come, first-served allocation process highlighted shortcomings in the current system. Farmers need clear forward plans and transparent communication, rather than uncertainty over whether support will be available when key investment decisions need to be made.

- **Support for on-farm water storage.** It should be easier for farmers to invest in well-designed, sustainable water storage, helping them manage increasingly variable rainfall and reduce reliance on abstraction during dry periods. This should include targeted capital support for farm reservoirs, rainwater harvesting, winter water storage, ponds and shared storage schemes, alongside measures to improve soil structure, infiltration and water retention. Infrastructure must be planned at catchment scale. Capturing water when it is abundant can be beneficial, but poorly located storage or additional abstraction can reduce river flows and damage aquatic ecosystems. Grants should be combined with clearer, joined-up advice on planning, abstraction licensing and environmental requirements, whilst supporting collaborative schemes where neighbouring farms can share infrastructure and costs. The aim should be to help farmers make better use of water when it is available without undermining the water availability of other users or the environment.

  There is also an opportunity to develop mechanisms that reward land managers for actions which improve water availability and resilience at a catchment scale. Emerging approaches such as Water Net Gain are exploring how water stewardship outcomes, including reduced demand, improved infiltration, enhanced storage and more efficient water use, could be recognised and incentivised through investment and development funding. Over time, such approaches could help direct private and public finance towards activities that deliver measurable improvements in water resilience, creating additional revenue opportunities for farmers while helping address growing pressures on water resources.

- **Trusted, independent advice** is critical to helping farmers and land managers navigate the increasingly complex range of adaptation measures, funding opportunities and environmental requirements. Many decisions relating to water management, soil health, habitat creation and climate resilience involve long-term commitments and significant business implications. Farmers therefore need access to advisers they trust, who can provide impartial guidance tailored to local conditions rather than advice linked to the sale of specific products or services.

The Rivers Trust Movement is well placed to provide this support through its network of experienced farm and catchment advisers working directly with land managers across the country. With expertise spanning water quality, natural flood management, soil health, habitat restoration and farm business resilience, Rivers Trust advisers can help translate policy and technical guidance into practical, farm-scale actions. As trusted intermediaries, they can also play an important role in connecting farmers to funding opportunities, facilitating collaborative catchment-scale approaches and ensuring that adaptation measures deliver benefits for both agricultural businesses and the wider environment. Investing in independent advisory services can therefore accelerate uptake of adaptation measures, reduce uncertainty for farmers and improve the effectiveness of public and private investment in climate resilience.

d) How can nature-based solutions contribute to adaptation, including flood management, water security and urban cooling?

Infrastructure assets, housing, businesses and industry are physically located within catchments, and therefore at direct risk if the catchments are not resilient to climate change. Engineering solutions may not be sufficient, or the most cost-effective approach, particularly for catchment levels threats, such as flooding and water supply. For example, Resilient Glenderamackin is an ambitious catchment-wide flood mitigation project that will deliver nature-based solutions to reduce flooding in Keswick. It aims to reduce flood peak by a modelled 10% in a one in 30-year present day event. The Aire Resilience Company, led by Leeds City Council, is applying Natural Flood Management interventions in areas upstream of Leeds to future-proof the Leeds Flood Alleviation Scheme against the increased flooding risk caused by climate change.

Landscape scale climate threats, such as wildfire, flooding and water security, require catchment scale, nature-based solutions. For example, the poor condition of peat moorlands across the Pennines reduces water storage and puts them at increasing risk of flooding and wildfire due to climate change, leading to incidents and closures where the M62 crosses the Pennines. To address this, National Highways is funding landscape-scale peatland restoration by Moors for the Future across several areas in West Yorkshire and Lancashire to reduce flooding and wildfire risks to the M62 and A628. This cost-effective solution to dual climate risks is expected to lead to similar interventions elsewhere along the national road network.

Research by the Wildlife Trusts shows that every £1 of investment in nature-based solutions could provide up to £7 of benefits. For natural flood management, the Environment Agency recognises that for every £1 in investment in flood schemes, at least £8 of economic damage is avoided. By working with natural processes, nature-based solutions can help manage both too much and too little water, reduce pressure on conventional infrastructure, improve water quality and deliver wider benefits for biodiversity and communities. They should not be seen as a complete substitute for all engineered grey infrastructure, but as complementary assets that can make resilience more effective and cost-efficient when designed at the right scale. An example of nature-based solutions being used as a hybrid solution with grey infrastructure is the Aire Resilience Company's Natural Flood Management interventions in Leeds, which are

reducing the flood peak to lengthen the lifetime and give more headroom for the Leeds Flood Alleviation Scheme.

A call for evidence as part of the Ofwat-funded Mainstreaming Nature-based Solutions showed the following benefits of nature-based solutions for:

- **Flood management:** Restoring natural processes can slow the movement of water through catchments, create additional storage and reduce peak flows. Measures include reconnecting rivers with their floodplains, restoring wetlands, creating ponds and temporary storage areas, planting appropriate woodland, installing leaky barriers and using sustainable drainage systems. Effectiveness depends on local conditions, including soils, geology, topography and the scale and distribution of measures. Floodplain reconnection, for example, can allow more water to be stored and reduce flood risk downstream, even when flooding is deliberately allowed in designated areas.
- **Drought resilience:** Nature-based solutions can help improve infiltration support groundwater recharge, retain water in soils and landscapes and protect water quality. Healthy soils, wetlands, ponds, riparian habitats and appropriately located storage features can contribute to more resilient catchments, while buffer strips and other land-management measures can reduce sediment and nutrient pollution entering rivers. However, these interventions are not a replacement for sustainable abstraction and demand management: retaining water in a catchment does not automatically mean more water will be directly available for people and ecosystems, and the effects depend on local hydrology and the intervention chosen.
- **Urban runoff and cooling:** In towns and cities, nature-based measures such as trees, parks, green roods, green corridors and rain gardens can help reduce heat exposure by providing shade and cooling through evapotranspiration, while also absorbing and slowing rainfall. Integrating green and blue infrastructure into urban planning can help address heat and surface-water flooding together, particularly in densely built areas where impermeable surfaces increase runoff.

Nature-based solutions can contribute to climate adaptation well beyond individual sites or projects. To realise these benefits at scale, Government should support a coordinated, catchment-based approach, with regulatory frameworks which enable nature-based solutions to be considered alongside conventional grey solutions. This must be backed by evidence-led design and monitoring, with decisions based on solutions' full range of benefits over time.

9. Funding and investment

a) Is current public investment in climate adaptation sufficient?

No. Current public investment and the arrangements through which it is allocated are not sufficient to deliver the scale of adaptation required. Additionally, Government's role must extend beyond funding projects directly (although direct funding is essential). It should provide

long-term certainty through public investment, but also enable regulated industries to invest in resilience, and show leadership in mobilising private sector co-investment. This is particularly important for catchment-scale and nature-based solutions, which will benefit a variety of organisations, including businesses through avoided risks and safeguarded supply chains.

Government should provide more sustained public investment and a clear long-term plan. Restoring river corridors, reconnecting rivers with their floodplains, improving soils and wetlands, and slowing and storing water across catchments require coordinated action over many years. Short-term or fragmented funding makes it difficult to deliver these measures at the scale required. A funded River Corridor Restoration Plan, coordinated at national scale, would give farmers, landowners, business and investors greater assurance and certainty about where action is needed, what outcomes are expected and how delivery will be supported. Public funding should fairly reward farmers and land managers for delivering the wider public benefits that the market does not adequately pay for.

Government and regulators must also enable regulated industries providing to invest in resilience, rather than inadvertently favouring conventional, asset-by-asset engineering. For example, water companies and transport infrastructure operators all depend on healthy, functioning landscapes. Yet, existing regulatory frameworks, cost-benefit approaches and short investment cycles can make it difficult to invest in natural infrastructure whose benefits accrue across sectors and over longer periods. Current regulatory frameworks do not allow these industries the appropriate flexibility to meet their obligations through effective combinations of engineered and nature-based measures. Investment and planning horizons should recognise the time needed for natural systems to mature and deliver benefits, and regulatory decisions should account for wider catchment outcomes rather than only the performance of individual assets.

In addition to public investment, Government must provide the leadership required to unlock private sector co-investment. Businesses benefit from climate adaptation through reduced damages and more reliable water supplies. However, these benefits are often shared, leaving individual organisations with insufficient incentive or clarity to fund measures whose value extends beyond their own operations. Green finance is incredibly new, and it is incumbent on the Government to provide leadership in this space to unlock private funding for catchment-scale adaptation. Government should establish clear mechanisms for organisations that benefit from greater resilience to contribute to its delivery, including through payments for ecosystem services and blended public-private finance. This would require setting up arrangements for identifying beneficiaries, sharing costs, agreeing responsibilities and monitoring outcomes. We strongly believe that Defra should play a leading role in the development of a 'King's Chain', a scalable, privately investible programme to create a network of interconnected riparian habitat units along the UK's rivers designed to slow water, break pollution pathways, cool rivers, restore habitat connectivity and strengthen farm and community resilience.