

# Link response: Public Accounts Committee Inquiry into ‘Government resilience: extreme weather’

7<sup>th</sup> February 2024

This response is on behalf of nature and animal welfare coalition Wildlife and Countryside Link ([Link](#)).

The response is supported by Angling Trust, British Canoeing, Froglife, Institute of Fisheries Management, National Trust, River Action, RSPB, Surfers Against Sewage, The Wildlife Trusts, WWT, and ZSL.

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## Summary

Wildlife and Countryside Link welcomes the opportunity to respond to this call for evidence from the Public Accounts Committee on ‘Government resilience: extreme weather’.

The risks presented to both people and nature from extreme weather events in the UK are well documented, both from modelled predictions for the future, and the recent events of 2022-23. A number of parliamentary committees have also identified the UK’s lack of preparedness to these risks.

The UK Government has shown that it recognises the significant damage to human and environmental health that extreme weather can cause in the UK. However, this understanding has failed to translate into meaningful action, with the third National Adaptation Programme (covering England only) released last year lacking sufficient actions and urgency to tackle the scale of the problem. Government responses to recent events have also demonstrated a far more reactive strategy than the proactive approach that is needed. This must include being clear with the public about the risks faced, and the action needed for management and mitigation.

Significant evidence illustrates how protecting and restoring natural ecosystems can support climate change adaptation efforts, at the same time as mitigating against further degrees of

warming. However, the UK's biodiversity has been in decline for decades, and barriers to the increased use and uptake of nature-based solutions persist.

Delaying action to build resilience to the effects of climate change is a false economy and will only worsen the consequences across the board. The need for urgent action is particularly important for building resilience for nature, where quick engineering fixes are not possible. Taking adaptation action sooner will not only lead to better outcomes for people and nature, but will also help reduce future costs and build economic resilience.

In order to effectively build resilience to the effects of a changing climate, including extreme weather, the UK Government must:

- Ensure that building resilience to climate change is a key priority across Government, through making this a Cabinet Office responsibility.
- Adopt the precautionary principle in building resilience and preparedness, to ensure that global warming levels of 2 - 4°C are considered in adaptation planning.
- Unlock barriers to the use and uptake of nature-based solutions across sectors, including through setting a clear, strategic regulatory framework and national guidance, adequately funding regulators and local authorities, and through greater provision of funding for nature-based solutions including natural flood management projects.

Further detail can be found in our briefing on '[Working with nature to build resilience to flooding and drought](#)'. We would be pleased to discuss any of the points in our response, or this briefing, further.

## Questions

### 1. What are the risks from extreme weather events?

1.1. Extreme weather events can bring devastation with lasting consequences for both people and nature. As climate changes, the risk and severity of these events is increasing. This is worsened by a lack of preparedness, insufficient resilience, and failures to apply lessons learnt thus far.

1.2. Recent years in particular exemplify the multiple risks and impacts of extreme weather. In 2022, temperatures in the UK topped 40°C for the first time, as record numbers of wildfires swept the nation, and the number of heat-related deaths in England reached a record 3,000. The prolonged dry weather and drought event resulted in millions facing water restrictions and

shortages, whilst [abnormally low flows](#) led to harmful algal blooms, fish kills due to a lack of oxygen in water bodies, and some ponds and river stretches drying out entirely. This included the source and first five miles of the River Thames drying up [for the first time](#). The ‘[false autumn](#)’ triggered by these conditions led to many trees shedding their leaves in August. Despite these indications, we still do not know the full ramifications of events such as this for natural systems.

1.3. Extreme conditions continued in 2023. The 2022 drought event did not end in some regions of the UK [until winter 2023](#), with ongoing impacts on the environment, agriculture, and public water supply. Extreme sea surface temperatures were recorded in the North Sea, creating marine heatwave conditions. Globally, land and sea temperatures broke all records for the second half of the year by a large margin, with 2023 becoming the [hottest year on record](#). Autumn 2023 saw the Met Office issue rare red weather warnings due to rain from Storm Babet, which resulted in seven deaths and over 1,000 flooded homes in England. The combined impacts of [Storm Babet](#) and [Storm Ciaran](#) resulted in hundreds of thousands of pounds worth of damage and environmental destruction. In January 2024, Storm Henk has brought similar impacts, with the storm [reported to](#) have caused around £150 million in insured losses and to have damaged around 2,000 properties. This was followed by consecutive storms Isha and Joceyln bringing further economic and environmental damage.

1.4. Crucially, the ongoing cycle of extreme weather events means that these events work in synergy to bring further risk and negative impacts. This can be seen, for example, in the cycling between - increasingly severe - flood and drought events. Flood waters wash excess nutrients, chemicals, sewage and plastics into the waterways; drought then lowers water flows, and increases the concentration of pollutants, heightening impacts for both wildlife and human health.

1.5. Successive [State of Nature reports](#) have shown that wild species and habitats within the UK are in serious decline, with climate change one of the biggest drivers of biodiversity loss. The UK is amongst the top ten most nature-depleted countries on the planet, with 15% of UK species at risk of extinction. This also means that the natural ecosystems we rely upon for water, food, and for protection from extreme events such as droughts, heat and flooding are being eroded and lost.

1.6. The risks and impacts of extreme weather may amplify or exacerbate these existing threats and pressures on biodiversity. For example, the Government’s own Plan for Water [reports that](#) 15% of all rivers and 27% of all groundwater sources in England are already over-abstracted,

leading to unnaturally low flows that harm wildlife and increase the concentration of pollutants. In times of drought, these pressures simply increase, and may in fact be worsened by short-term, reactive measures such as drought permits. We discuss the need for a more proactive approach to building resilience and managing extreme weather further throughout our response.

1.7. As discussed, these environmental risks also impact communities and the economy, through threats to human health, the loss of livelihoods, disruption to food production and water supply, and damage to infrastructure and assets. For example, the National Trust [reported in 2023](#) that 71% of national assets in its care - including landscapes, coastlines, historic estates and heritage collections - are facing medium or high risk from climate change and extreme weather, including due to prolonged drought and wildfires, severe storms and flooding, and erosion of soils and coastlines. Similarly, in 2022 [The Wildlife Trusts reported](#) that 94% of its 2,000+ reserves across the country would experience temperature increases of over 1°C by 2050, with similar increases in risk from wildfire and drought. It is already reporting significant damage to wildlife across the UK from extreme weather events including wetlands drying out, wildfires destroying rare heathland and peatland habitats and mammals suffering from dehydration in hot and dry weather.

1.8. The risk posed by changing climate and extreme weather to mental health and wellbeing is also becoming increasingly apparent. In 2021, the Office for National Statistics [reported that](#) 75% of adults in Great Britain were worried about the impact of climate change, and 2023 research from the Woodland Trust shows that young people in particular are experiencing an [‘epidemic of climate anxiety’](#). In October 2022, the [UK Health Security Agency reported](#) that climate change is a significant risk and growing threat to people’s health in the UK. A public dialogue commissioned by the Government, exploring people's responses to changing weather and climate effects, [shows that](#) the public feel concerned and scared about climate change and how to adapt to what is coming. The results also show that the public want to act, if the Government can provide the proper framework, information, and support.

1.9. In summary, the risks and impacts from extreme weather events include, but are not limited to:

- Impacts on nature, including through pollution, reduced availability of food and water, disruption of ecological functions and systems, and destruction of habitats.
- Impacts on communities, including loss of life and livelihoods, and impacts on both physical and mental health and wellbeing.

- Impacts on the economy and businesses, including through damage to infrastructure, disrupted production and supply chains, and loss of assets.
- Impacts on animal welfare, including dehydration and disruption of normal activity such as dog walking due to increasingly hotter days, or hygiene and health risks such as the spread of disease associated with floodwater.

## 2. What is the Government's understanding of risks and any gaps in its knowledge?

2.1. The Government does appear to understand the risks posed by extreme weather and climate change. In the [Third National Adaptation Programme](#) (NAP3), the Government references risks to “our national security and resilience, from producing food and securing water supplies to maintaining critical infrastructure and supply chains.”

2.2. In particular, the NAP3 acknowledges the economic risks due to extreme weather, and the importance of a safe and stable climate for economic success. The NAP3 also states that taking adaptation action early can help to reduce future costs and build economic resilience, and therefore that this presents good value for money.

2.3. However, this understanding and knowledge is not being afforded the necessary significance or being effectively put to use. This is evident in the UK's lack of preparedness for the impacts of climate change, and the risks of increasingly severe extreme weather events. For example, [analysis by The Wildlife Trusts](#) suggested that out of 65 adaptation action and policy gaps identified for the natural environment in the latest UK Climate Change Risk Assessment, 13 had been considered, but 52 have not.

2.4. Government must go further than simply acknowledging and understanding risks, and use this to drive policy action and sustained public engagement that will build resilience. We set out what this action must include in response to Q.4.

## 3. Does the UK Government have a clear vision and well-defined roles and responsibilities to manage national risks, such as extreme weather events, and the generic capabilities to deal with emergencies?

3.1. The UK Government does not have a sufficiently clear vision or well-defined roles and responsibilities to manage extreme weather events and the wider impacts of climate change. This contributes to a lack of preparedness and resilience. Indeed, the CCC as the Government's

own climate change advisors state that the UK is [‘strikingly unprepared’](#) for the effects of climate change and extreme weather.

3.2. For example, it is not clear that the Government has fully addressed the issues, gaps and failings identified in previous NAPs, meaning that the Third National Adaptation Programme (NAP3) continues to fall short in several aspects:

- It relies on further research being conducted, which will take time, and - as discussed - does not guarantee action.
- It depends on unreliable, voluntary approaches to action, and largely ignores the role of proper regulation for managing risks and building resilience.
- It fails to put in place sufficient new policy, funding and actions to address the adaptation gap, as highlighted in the latest UK Climate Change Risk Assessment (CCRA3).
- It is not straightforward with the UK public about what is happening, and why, and about their role and how that can complement and help government work whether as individuals, as communities, and across sectors to help themselves and to contribute to the national effort.

3.3. As such, NAP3 does not meet rising public concerns regarding the effects of a changing climate on lives and futures. These concerns were illustrated in detail in a Defra-funded [public dialogue on adaptation](#), published by ScienceWise in 2023. Furthermore, previous trends do not instil confidence that NAP3 will be taken seriously by decision makers in Government. The UK Government has been advised by [three national Climate Change Risk Assessments](#) (CCRAs), the first of which was published in January 2012; all have shown that the gap between risk and action continues to widen. The updated [2023 National Risk Register](#) identifies multiple natural and environmental hazards for which risk is being exacerbated by climate change. In October 2022, MPs and Peers from the parliamentary Joint Committee on the National Security Strategy [reported that](#) “poor adaptation to climate change is a major threat to the UK’s national security and prosperity”, and identified a “severe dereliction of duty on the part of the government” in failing to take these risks seriously.

3.4. A further example can be found in the UK’s lack of preparedness for and resilience to flooding. Despite the National Infrastructure Commission, Climate Change Committee and the National Flood Forum recommending that the Government sets long-term targets for flood resilience, Defra does not plan to introduce a quantified long-term target. In November 2023,

the National Audit Office [concluded that](#) “The government wants to achieve greater resilience to flooding in the long term but has no measure for resilience and no target for the level of flood resilience it expects to achieve.” Similarly, despite numerous reviews and reports all reaching the conclusion that Schedule 3 of the Flood and Water Management Act 2010 should be implemented in England (as it was in Wales in 2019) - including most recently Government’s own review, at the time of writing - we still await publication of a consultation on statutory standards for sustainable drainage. This was expected last year, and will need to be undertaken prior to Schedule 3 coming into effect - at least 14 years after the Act was introduced.

3.5. This is also apparent in the UK’s response to and management of drought. Currently, this relies on short-term, ‘reactive’ measures such as temporary use bans (TUBs) and water saving comms from water companies to customers once a drought has been declared. These measures are primarily focused on threats to public water supply, neglecting wider impacts on the environment and agriculture, and tend to be limited to hot, dry periods when the impacts of drought are already being felt - by which point it is far harder to rectify the issue. This is further undermined by recent interventions from Government, such as [the July 2023 steer](#) to the water industry from then-Secretary of State Thérèse Coffey, which required water companies to explore using more optimistic climate change scenarios in the industry’s Water Resources Management Plans in order to reduce costs. This [prompted significant concern](#) from both eNGOs and the water industry. A [longer-term, more proactive approach](#) to managing drought is required, including sustained engagement with consumers on the importance of water efficiency throughout the year, and updated drought plan guidance to allow more proactive use of TUBs.

3.6. Ensuring we tackle drought proactively will also be key in combatting the associated increased risk of wildfires. More frequent and intense periods of drought are causing drier vegetation, leading to higher susceptibility and severity of wildfires. The [2021 UK Climate Change Risk Assessment Evidence Report](#) states that the risk of wildfire could double in a 2°C global temperature-increase scenario, and quadruple in a 4°C scenario. These [devastating events](#) destroy precious habitats, emit vast amounts of stored carbon, have knock-on impacts on human health and communities - for example, due to increased air pollution - and cost enormous amounts of money. For example, [in summer 2018](#), wildfires cost UK farms approximately £32 million. A large wildfire at [Chobham Common in Surrey](#), England, in August 2020 destroyed 30 hectares of rare lowland heathland habitat, and led to over 100 residents being evacuated. It is estimated that it will take ten years for this habitat to fully recover.

Preventative action can help mitigate these consequences as well as being more cost-effective than reactive measures.

3.7. Additionally, UK agencies with responsibility for managing impacts such as extreme weather events are facing significant capacity and resourcing constraints. This undermines their capability to prepare for risks, and to manage and mitigate the impacts when these occur. In November 2023, the [National Audit Office reported](#) that there is a £34 million shortfall in funding required for the Environment Agency to maintain high consequence flood defence assets. 93.5% of these Environment Agency assets are being maintained at the required condition, falling below the 98% that the Agency regards as optimal, due to the funding shortfall. This means that 203,000 additional properties are at risk of flooding.

#### 4. How can the UK Government develop resilience?

4.1. The UK Government must build resilience and preparedness to the effects of our changing climate, including the risks and impacts from increasingly severe extreme weather events. This will require both protecting and changing how physical infrastructure and natural resources are managed, and should include improving the actions and urgency of delivering NAP3.

4.2. Efforts must be holistic, ensuring that all parts of Government are involved and collectively responsible, and engaged with the devolved nations to ensure a coordinated response across the UK. The Climate Resilience Board, as outlined in NAP3, should play a key role in this. Furthermore, the Government must explicitly set out how elements of developing policy areas - for example, agri-environment schemes - will contribute towards adaptation, and set ambitious and robust targets against which these contributions can be measured and monitored.

4.3. We need to work with nature to build resilience to climate change and to buffer the impacts of extreme weather events. This should include delivering nature-based solutions (NbS), including Natural Flood Management (NFM), to tackle specific threats, and protecting and enhancing nature generally. Healthy, thriving ecosystems are not only more resilient themselves to extreme weather events, but also increase the resilience of society and the economy. As [research has shown](#), the resilience of nature and the resilience of our industries and economy are interdependent.

4.4. As discussed, the UK is severely nature-depleted, and natural ecosystems are in decline. This means that the UK is in an extremely poor state to help nature to adapt to climate change.



Half of the most critical risks identified in the [2021 UK Climate Change Risk Assessment](#) relate to nature and land use, yet the natural environment and agriculture consistently score lowest in the Climate Change Committee's assessments of adaptation progress.

4.5. In order to build resilience, pressures on biodiversity generally must be addressed, through reducing pollution and excessive use of natural resources; creating bigger, better, more joined up habitats; creating micro-climates within landscapes to shield vulnerable species; and improving monitoring of impacts when they occur. Greater funding must be channelled into nature recovery actions to support this, and to address a [£45-90 billion funding gap](#) over the next seven years.

4.6. The UK Government must also drive greater uptake and use of NbS and NFM, unlocking barriers to their use across sectors. This should include:

- Using the evidence base from recent and current research and monitoring, including NERC-funded NFM programmes and Environment Agency grants, to inform appropriate consideration of NbS by Risk Management Authorities (for example, in considering costs and benefits) and to support best-practice design and delivery by practitioners.
- Setting a clear, strategic regulatory framework that will drive all regulators toward facilitating the uptake and use of NbS and NFM, and provide investors with the framework and incentives to invest in NbS and climate adaptation. This includes greater Government attention being paid to the valuation of NbS measures so that businesses can quantify returns on investment.
- Setting clear, comprehensive national guidance to ensure consistent, high quality NbS and NFM are delivered. To ensure these projects are consistently effective, specific standards and criteria should be followed to ensure projects maximise resilience and deliver co-benefits, such as the [IUCN Gold Standard](#) and [Nature-based Solutions Initiative guidelines](#) for implementing NbS.<sup>1</sup>
- Adequately funding regulators, local authorities, land managers and practitioners to ensure they have sufficient expertise, training and resources to facilitate NbS and NFM projects.
- Greater provision of funding for NbS and NFM projects, for example, through a ring-fenced pot within the flood defence grant-in-aid fund (FDGiA). In time, this should be mainstreamed, to avoid the risk that NbS is continually viewed as 'separate' to 'traditional' flood risk management.
- Developing a robust, evidence-informed Monitoring and Evaluation framework. This should help ensure more consistent reporting of co-benefits, and help to address

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<sup>1</sup> A further example of guidance and standards for replication can be found in WWT's work in the Thames catchment, providing advice on NFM: <https://www.wwt.org.uk/our-work/projects/thames-catchment-nfm-advice/>

evidence gaps where issues are currently under-researched - for example, the links between NFM measures and benefits for drought resilience.

4.7. Nature-based solutions are effective and efficient, often not only cheaper to implement and maintain than traditional concrete solutions, but also capable of delivering multiple wider benefits for people and wildlife. For example, [restoring wetland habitats](#) to a high quality in the right places to build resilience to flooding and drought will also help capture carbon, provide habitat for wildlife, improve water quality, increase access to quality natural spaces for communities, and support agro-ecological land management for productive agricultural land that is resilient to flooding and drought. The multiple benefits delivered by working with nature also creates opportunities for blended finance, by drawing in private investors or gaining income from buyers of ecosystem services. This further increases taxpayer value for money.<sup>2</sup>

4.8. In addition to working with and restoring nature, the Government must also increase the resilience of built infrastructure to climate change effects. Both the National Infrastructure Commission (NIC) and the UK Climate Change Committee (CCC) have [urged ministers to act](#) to improve the resilience of key infrastructure. This should include using NbS where these have a protective effect upon built infrastructure; for example in restoring coastal habitats which can help prolong the life of essential built sea defences. Credible planning for climate change was identified for only five of the 23 infrastructure and built environment adaptation outcomes examined. The CCC reported finding “very limited evidence of the implementation of adaptation at the scale needed to prepare fully for climate risks facing UK infrastructure, or more broadly for cities, communities, the economy and ecosystems.” The [2020 NIC Resilience Study](#) recommended that implementation of resilience standards should be a priority.

4.9. For example, historic underinvestment in water resources and sewerage infrastructure undermines resilience to water scarcity and extreme weather events such as drought. Ofwat’s [2022-2023 water company performance report](#) shows that the industry is falling behind on leakage reduction targets and other actions within Water Resources Management Plans, and that companies are continuing to underspend on their investment programmes. No new reservoirs have been built in water-stressed southern England since 1976, and we currently lose nearly 20% of water supply to leaks – equivalent to [2.4 billion litres per day](#) across England’s nine major water companies.

4.10. Similarly, insufficient investment into sewerage infrastructure means that capacity has failed to keep pace with population growth and changing climate. As such, the use of polluting storm overflows - emergency measures only intended for use during extreme rainfall events -

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<sup>2</sup> We provide further detail, including case studies, on the multiple benefits of working with nature and the action required of Government in our policy briefings here:

[https://www.wcl.org.uk/docs/WCL\\_Briefing\\_Building\\_Resilience\\_Floods\\_Drought\\_December\\_2023.pdf](https://www.wcl.org.uk/docs/WCL_Briefing_Building_Resilience_Floods_Drought_December_2023.pdf) and here: [https://www.wcl.org.uk/docs/WCL\\_Briefing\\_Nature\\_Based\\_Solutions\\_Water\\_December\\_2023.pdf](https://www.wcl.org.uk/docs/WCL_Briefing_Nature_Based_Solutions_Water_December_2023.pdf)

has now [become habitual](#), with implications for both water quality and the health of water users. As the Environmental Audit Committee [reported in 2021](#), there has been “insufficient emphasis on facilitating the investment necessary to ensure that the sewerage system in England is fit for the 21st century”. Government and Ofwat must direct the water industry to invest sufficiently in water and sewerage infrastructure, and must take enforcement action when these obligations are not met.

4.11. These trends are apparent across sectors. For example, [Network Rail has now](#) doubled its previous climate resilience plan, due to climate effects outstripping previous assumptions. Energy providers are also examining how the UK’s energy supplies can withstand storms such as Storm Arwen, the costs of which are still being calculated.

4.12. NbS should be delivered strategically and complementarily alongside traditional hard-engineered solutions. For example, in urban areas, NFM can be deployed upstream to alleviate stress on traditional flood defences downstream and to [increase their longevity](#). NFM will also reduce negative impacts of traditional infrastructure, for example if placed downstream to help slow the flow of diverted flood water from an engineered flood defence.

4.13. The Government must also build resilience through encouraging behavioural change with consumers and the public, for example, to reduce water demand and increase water efficiency in order to increase resilience to water scarcity and drought events. England currently faces a water deficit of [4 billion litres per day by 2050](#), yet has [one of the highest rates](#) of water usage in Europe. To address this, both businesses and domestic water use must be reduced through tighter efficiency requirements for new developments and water saving retrofits. Government must also remove remaining restrictions limiting water meter rollout, to enable universal metering across England, and should be more explicit in its direction to the sector on this matter.

4.14. The Government must be forthcoming with the public about the evidence, and empower and support communities to adapt at a local level, including support for increasing access to nature in urban areas. In January 2024, the Environment Audit Committee (EAC) highlighted nature-based solutions as one of the most important ways to achieve passive cooling in urban areas, such as through provision of trees, parks and water bodies. The EAC’s [report to Government](#) recommended that the Government adopt a range of NbS measures particularly in urban areas, carefully prioritising disadvantaged areas underserved by access to green space.

## 5. **What is the appropriate pace and scale of adaptation required to fully prepare the UK for climate risks?**

5.1. Action taken now to build resilience and adaptation to the effects of changing climate will determine how well the UK is able to cope with and adapt to changing climate whilst avoiding sudden shocks and costs. It is vital that the Government moves faster and with more ambition than has been demonstrated to date if the UK is to avoid the worst consequences of future extreme weather events. This is also essential if the Government is to meet legally-binding targets set under the Environment Act, including to halt the decline of nature by 2030.

5.2. This will mean adopting the precautionary principle, preparing for the worst and considering futures beyond those which have been assessed in plans to date. For example, it is crucial that [global warming levels of 2 - 4°C](#) are considered in adaptation planning in order to be fully prepared for a range of scenarios. Through the devastating impacts of flooding and drought that have been experienced across the UK in the last few years, there are plenty of examples of the most effective approaches to preparing and responding to extreme weather events that can be incorporated into national plans.

5.3. Taking adaptation action much earlier than the government currently is will not only lead to better outcomes for people and nature but also for the economy. The NAP3 states that taking action sooner can help to reduce future costs and build economic resilience, and therefore that this presents good value for money. Urgent action to protect our wildlife and natural resources is essential because we need healthy ecosystems but building resilience for nature takes time; unlike buildings and infrastructure, we cannot create quick engineering fixes that mean that nature will be shielded from the effects of climate change.

5.4. Building resilience to extreme weather events must be a key priority for Government rather than a side issue limited to the environmental policy arena. The impacts of climate change will be felt in all parts of the economy and society, and we recommend that this issue is given more prominence by existing as a Cabinet Office responsibility as opposed to one for Defra alone.

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Wildlife and Countryside Link (Link) is the largest nature coalition in England, bringing together 82 organisations to use their joint voice for the protection of the natural world and animals. Wildlife and Countryside Link is a registered charity number 1107460 and a company limited by guarantee registered in England and Wales number 3889519.

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This response is supported by the following organisations:

- Angling Trust
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- WWT
- ZSL