CLIMATE READY
DUMFRIES AND GALLOWAY

Climate Ready Dumfries and Galloway

Understanding our climate risks and opportunities

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GALLOWAY AND SOUTHERN AYRSHIRE BIOSPHERE

Dumfries and Galloway COUNCIL

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Climate Ready Dumfries and Galloway

Climate change is already affecting Dumfries and Galloway – through more flooding, coastal erosion, storms, and pressures on farming, nature and local services. Climate Ready Dumfries and Galloway brings together local organisations and communities to understand these changes and plan for a more resilient future.

The partnership is being developed by Dumfries and Galloway Council, the Galloway & Southern Ayrshire UNESCO Biosphere, the Dumfries & Galloway Climate Hub, Solway Firth Partnership, Community Planning Partnership, South of Scotland Enterprise and other local agencies, with support from the Scottish Government's Climate Ready Regions programme. It aims to coordinate and support practical climate adaptation across the region, building on existing strengths rather than creating new layers of bureaucracy.

Assessing our climate risks

In 2025 - 26 we carried out a high-level climate risk assessment for Dumfries and Galloway, looking ahead to around 2080. This drew on national climate evidence, regional plans and more than 400 local reports and studies to describe 40 climate-related risks and opportunities across five themes: Health, Built Environment, Infrastructure, Natural Environment and Economy.

For each issue, we looked at three simple questions:

- **Exposure** – how much of Dumfries and Galloway is affected? (Such as homes, roads, farms or habitats in flood-prone or coastal areas.)
- **Sensitivity** – how badly are those people, places and systems likely to be affected? (For example where older housing, small rural businesses or vulnerable communities could be hit hardest.)
- **Adaptive capacity** – what is already in place to manage the risk? (Including flood protection schemes, emergency planning, land management projects and community resilience work.)

By looking at exposure, sensitivity and adaptive capacity together, we can see which risks need the most urgent attention as the partnership develops.

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Our highest priority climate risks

The assessment identified a group of highest-ranking risks for Dumfries and Galloway – where the combination of exposure, sensitivity and current capacity suggests we need to focus early action.

Theme	Code	Risk
Built environment	BE3	Buildings and communities at risk from coastal change
Built environment	BE6	Cultural heritage and landscapes at risk from climate impacts
Economy	E4	Impacts on productivity and availability of labour
Economy	E7	Impacts on household finances
Health & wellbeing	H2	Risks to people from extreme weather (excluding heat)
Infrastructure	I4	Risks to fuel supply systems
Land, nature & food	N1	Risks to terrestrial and coastal ecosystems
Land, nature & food	N2	Risks to freshwater ecosystems
Land, nature & food	N3	Risks to marine ecosystems
Land, nature & food	N4	Risks to soil ecosystems
Land, nature & food	N6	Risks to agriculture
Land, nature & food	N8	Risks to forestry
Land, nature & food	N9	Opportunities for agriculture, fisheries, aquaculture and forestry

Below is a short explanation of each:

- **BE3 – Buildings and communities from coastal change**

Sea-level rise, stronger storms and coastal erosion are already affecting parts of the Solway coast and will increase pressures on homes, businesses, roads and community facilities in coastal settlements. In some locations, there are limited options for traditional engineering solutions, so long-term, place-based planning with communities will be essential.

- **BE6 – Cultural heritage and landscapes**

Historic buildings, archaeological sites and distinctive landscapes across Dumfries and Galloway are exposed to flooding, coastal change, storms and shifting ground conditions. Many of these assets are irreplaceable, so even moderate damage can mean permanent loss of heritage, identity and tourism value.

- **E4 – Productivity and availability of labour**

Extreme weather, disrupted transport and energy supplies, and impacts on health can reduce working hours, affect commuting and caring responsibilities, and make it harder for local businesses to operate smoothly. Rural sectors like farming, forestry and tourism are particularly sensitive because they rely heavily on outdoor work, seasonal labour and long, sometimes fragile, supply chains.

- **E7 – Household finances**

Floods, storms and other climate-related events can increase household costs (repairs, insurance, heating, temporary accommodation) and reduce income, especially for lower-paid workers and those in exposed jobs. With an older-than-average population and areas of fuel poverty and deprivation, repeated events may seriously weaken some households' financial resilience.

- **H2 – People and extreme weather (excluding heat)**

River, surface water and coastal flooding, storms, strong winds, landslides, snow and ice already pose risks to physical safety, mental health and wellbeing in the region. Older people, those with health conditions and residents of isolated rural communities are especially vulnerable when access to services and support is disrupted.

- **I4 – Fuel supply systems**

Fuel supplies, including deliveries to rural petrol stations and domestic fuels, can be disrupted by flooding, landslides and storm damage on key roads, as well as by wider shocks to energy systems. Many communities rely on a limited number of routes and suppliers, so outages or delays can quickly affect daily life, emergency response and local businesses.

- **N1 – Terrestrial and coastal ecosystems**
  Upland habitats, farmland, woodlands, coastlines and dune systems are vulnerable to changing rainfall, storms, erosion and sea-level rise, which can damage vegetation and wildlife and reduce the benefits nature provides. Existing pressures such as land use change and habitat degradation mean some ecosystems have limited ability to absorb additional climate stress.

- **N2 – Freshwater ecosystems**
  Rivers, lochs and wetlands face risks from more intense rainfall, drought, changing flows and water quality problems, affecting fish and other freshwater species. These ecosystems support drinking water, fisheries and recreation, so ecological impacts can have knock-on effects for people and the local economy.

- **N3 – Marine ecosystems**
  The Solway Firth, Loch Ryan and nearby coastal waters are exposed to warming seas, ocean acidification, changing currents and extreme events that can alter species patterns and habitats. This matters for fisheries, aquaculture, wildlife tourism and the long-term health of the region's marine environment.

- **N4 – Soil ecosystems**
  Soils, including agricultural land and peatlands, are at risk from waterlogging, erosion, drought, compaction and changing biological activity as the climate changes. Damaged soils reduce productivity, increase runoff and flooding, and can release stored carbon, undermining both farm resilience and wider climate goals.

- **N6 – Agriculture**
  Dairy, sheep and mixed farming are already seeing impacts from wetter winters, heavier rain, summer droughts, new pests and diseases, and heat stress on livestock and crops. Farm businesses can face higher costs, lower yields and more volatile conditions, but also opportunities to adapt through climate-smart farming, new crops and better soil and water management.

- **N8 – Forestry**
  Extensive forests in Dumfries and Galloway are vulnerable to windthrow, drought, wildfire, pests and diseases, especially in large, uniform plantations. The sector is investing in more diverse, climate-resilient planting and better tree-health monitoring, yet a changing climate still poses major risks to timber supply, carbon storage and forest-based jobs.

- **N9 – Opportunities for land-based sectors**

  Alongside risks, there are opportunities: longer growing seasons, new crop varieties, regenerative farming, peatland and woodland restoration, and nature-based solutions can support livelihoods and resilience. With the right support, agriculture, fisheries, aquaculture and forestry can help build a climate-smart regional economy.

What happens next and how you can get involved

This assessment is a starting point to guide future work rather than a final answer. Over 2026 - 27 the partnership will host themed workshops (for example on coastal and flood risk, health and communities, land and nature, and the economy and infrastructure) and community events to test and refine these findings with local knowledge and lived experience.

More information, including the full report and future publications, will be available on the Climate Ready Dumfries and Galloway website at https://climatereadydg.org.uk. We encourage residents, community groups and environmental organisations to take part in events and conversations across the region, helping to shape adaptation plans that work for Dumfries and Galloway's diverse places and communities.