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ADAPTATION TO CLIMATE CHANGE



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Adapting the Highland Region of Scotland to Climate Change

A multi-stakeholder climate resilience partnership

Bringing together communities, businesses, land managers, and the public sector to facilitate transformational action towards a prosperous, climate-ready Highland.

Key Learnings

- **Partnership Requires Long-Term Commitment, Transparency, and Flexibility:** For a climate resilience partnership to succeed and endure, it must remain flexible, transparent, and financially viable to meet the evolving demands of climate adaptation.
- **Empowering Communities is Key to Long-Term Impact:** Supporting community-led projects and organisations such as the Highlands and Islands Climate Hub, has helped empower communities to take ownership of climate adaptation. Local solutions and leadership are critical to ensuring that climate resilience is embedded into everyday life across regions.
- **Local Knowledge and Stories Enhance Other Climate Data:** Combining scientific data with local knowledge is essential for describing climate impacts. Integrating real-life experiences through the Highland Weather and Climate Story Map demonstrates the power of storytelling in complementing other climate data, adding place-based perspectives and making information more relevant and easier to understand.

About the Region

The Highland region of Scotland accounts for one third of Scotland's land area and 11.4% of Great Britain's land area. The coastline at low water is 4,905 kilometres long, being more than a fifth of the Scottish total. The geography of the region includes farmland, seascapes, the highest mountain in the British Isles (Ben Nevis, Lochaber), and the largest blanket bog in Europe (Flow country, Sutherland). The population in the region is around 238,000 people, and the capital city, Inverness, is the largest settlement ([Highland Council, 2021](#)). Almost a quarter of the population lives in very remote rural areas ([Scottish Government, 2022](#)). Distinct weather conditions characterise the Highland region. The western half, exposed to rain-bearing westerly winds, receives over 1,700 mm of rainfall annually, while the eastern half, such as around the Moray Firth, gets only about 700 mm. Conditions also vary with altitude: mountainous areas see significant winter snowfall, though snow can also occur at lower levels. Temperatures are generally warmer at lower altitudes, with summer daily maxima around 19 °C in places like the Moray Firth, compared to about 16 °C over ground ([Met Office, 2024](#)).

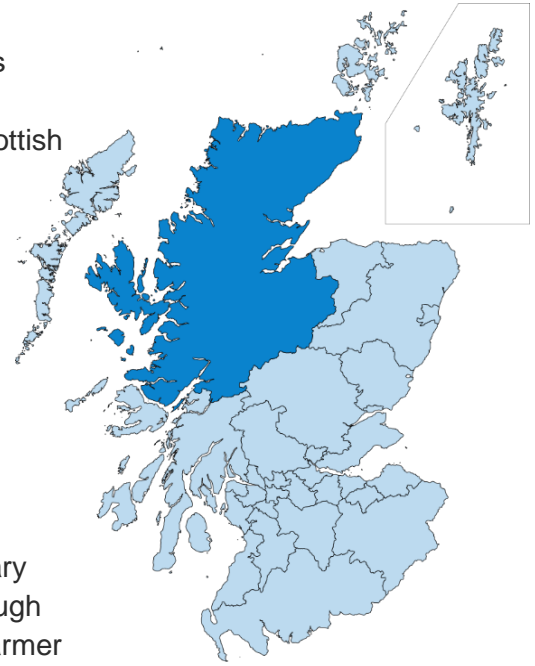


Figure 1: The Highland local authority area (dark blue) covers 33% of the land area of Scotland and 11.4% of Great Britain. Map credit: Wikimedia.

Climate Hazards

Flooding, Droughts, Storms, Wildfires

Sector

Non Specific, Financial

Key system

Local Economic System

Climate Threats

Climate change impacts are increasing, including storms disrupting transportation, droughts threatening water supplies, and coastal, river, and surface floods disrupting urban drainage systems and damaging energy infrastructure. In addition, climate change threatens the region's unique biodiversity. As with many remote and rural areas, parts of the Highland region are vulnerable to compounding risk factors such as depopulation, access to services, and high energy costs.

Establishing Highland Adapts

In response to the climate challenges the region is facing, nine partner organisations established the Highland Adapts regional climate change adaptation partnership. Recognising the region's unique geography and diverse communities, initial discussions to explore a collective approach to adaptation in

the Highland region began in 2018. By engaging key partners and community stakeholders, the partnership collaboratively developed a business case for a regional adaptation partnership with support from Adaptation Scotland.

The governance of Highland Adapts includes a Board with nine founding member organisations, each contributing expertise, resources, and strategic input. The governing partners are The Highland Council, NatureScot, NHS Highland, Highlands and Islands Enterprise, Zero Waste Scotland, Changeworks, Sniffer, Forestry and Land Scotland, and the Highlands and Islands Climate Hub. The close work relationship of the partners is one of the success factors.

"We see Highland Adapts as an important way of ensuring that we have a resilient environment in Highland and that we can meet climate challenges using nature-based solutions – all in a way that is inclusive, place-based and ambitious. We are committed to continuing our support for Highland Adapts into the future. Building on Highland Adapts' success going forward will be crucial if we are serious about recognising and understanding risks and planning for climate resilience and adaptation into the future."

Former Highland Adapts Board Member from NatureScot, Scotland's Nature Agency

The initiative initially focused on establishing a strong foundation by identifying guiding principles and objectives. The objectives identified during this foundational phase reflect the initiative's commitment to building a cohesive and actionable adaptation framework. They include:

- Developing a strong knowledge and evidence base, setting out the climate risks and opportunities affecting the region
- Facilitating information exchange through a range of resources
- Identifying opportunities to reduce and overcome climate risks
- Developing a shared adaptation strategy and action plans
- Supporting others to use plans as a project basis and for activities across the public sector, community, land management and business plans, strategies and investments
- Supporting the public sector to embed climate change adaptation throughout their operations
- Supporting community climate change action

The climate resilience partnership's flexibility, transparency, and financial viability meet evolving adaptation demands and contribute to its success and endurance.

Highland Climate Risk and Opportunity Assessment

Fundamental changes are necessary to achieve resilience against the current and future climate impacts. Effective action requires a shared, place-based understanding of common climate risks and opportunities. This is the motivation behind the first [Highland Climate Risk and Opportunity Assessment](#), including three parts. The first part of this assessment is an economic analysis of climate change impacts on the Highland region.



Figure 2: Highland Adapts' economic assessment launch event: Ian Freeman (Scottish Government), Keith Masson (Highlands and Islands Enterprise), Helen Lavery (Zero Waste Scotland), Harper Loonsk (Highland Adapts), Ben Connor (Sniffer), and Kit England (Paul Watkiss Associates). Image Credit: Gillian Frampton.

The analysis estimates:

- Annual losses totalling 1.5% of the Gross Domestic Product by the 2050s, rising to 3.3% a year by the 2080s.
- Flooding impacts rising from around currently £11 million (about €13.4 million) annual costs to £20 million (about €24.3 million) by mid-century and double that by the end of the century.
- Risks to salmon production associated with rising sea temperature and ocean acidification by the 2050s.
- Risks to whisky production from extreme events and climate conditions significantly increase in the next 20 years.
- Strong winds, droughts, climate-change-associated pests and diseases, and wildfires affecting forestry and the timber sector, with damage costs significantly rising between 2030 and 2090.

While climate data and scientific evidence are essential, they only tell part of the story. Highland Adapts created a platform where first-hand experiences can add vital context and humanity to these broader trends. Launched in March 2023, the interactive [Highland Weather and Climate Story Map](#) allows people to share their stories about how climate change has impacted their lives, livelihoods, and local landscapes. The contributors share personal observations of extreme weather events, such as storms, heavy rainfall,

drought, heatwaves, and coastal erosion, as well as long-term changes like shifting seasons, reduced snowfall, and changes in natural ecosystems. Combining scientific data with local knowledge, while integrating real-life experiences through the Highland Weather and Climate Story Map, has proven essential for describing climate impacts. The map demonstrates the power of storytelling while adding the place-based perspective and making the information more relevant and easier to understand.

Community Climate Action

Community-led climate initiatives across the region help to integrate climate change resilience into local projects and priorities. Recognising the critical role of grassroots action in tackling climate challenges, the activities have focused on empowering communities to take meaningful, locally driven steps towards climate resilience. [Highlands and Islands Climate Hub](#) – a support network of 24 climate action initiatives – offers practical advice, resources, funding support, and training opportunities. The Hub also provides platforms for local voices to widely share and integrate experiences and solutions of community-led groups into regional climate adaptation planning. It has helped to embed climate resilience into everyday life across the regions.



Figure 3: The Highland Charter for Climate, Nature, and Health was officially launched at the Inverness Botanical Gardens in May 2024. Image Credit: Highland Green Health Partnership.

Highland Adapts' Community Climate Advocates are a group of individuals embedded within their communities. They played a pivotal role in raising awareness, driving conversations, and supporting community-led solutions. The advocates identified the need for a unifying tool to inspire and mobilise climate action across the region, and created the Highland Charter for Climate, Nature, and Health. The charter is a call to action, encouraging individuals, organisations, and communities to commit to addressing the triple crises of climate change, biodiversity loss, and public health.

Next Steps

While the partnership has made significant progress in promoting climate resilience, enabling strategic assessments and fostering collaboration across sectors, it must evolve to achieve its long-term goals. Highland Adapts is reviewing its structure through an in-depth partnership evaluation. This process

includes assessing the current governance framework and exploring options to enable more effective collaborative decision-making and long-term financial viability.

Summary

Highland Adapts has demonstrated that building climate resilience in the Highland region requires long-term, flexible, and transparent partnerships supported by financial stability. Empowering communities through initiatives like the Highlands and Islands Climate Hub and the Community Climate Advocates has embedded locally led solutions into everyday life, ensuring adaptation is relevant and enduring. Combining scientific data with local knowledge, such as through the Highland Weather and Climate Story Map, has made climate impacts more relatable and accessible while enriching understanding with place-based perspectives. Together, these approaches have strengthened collaborative governance, enhanced strategic climate risk assessments, and inspired region-wide commitments like the Highland Charter for Climate, Nature, and Health – laying the foundation for a climate-ready, prosperous Highland. This structure and approach also support the implementation of concrete measures.

Further information

Highland Adapts invites you to follow along on the partnership's journey, including through social media accounts on <https://uk.linkedin.com/company/highland-adapts-linkedin> and [Instagram](#).

The work presented in this adaptation story is part of the [Highland Adapts](#) project.

Contact

You can email the partnership directly at hello@highlandadapts.scot.



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