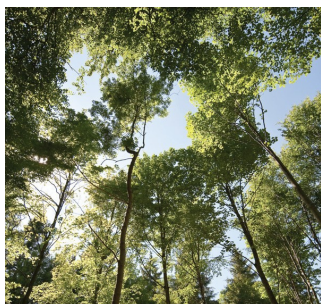


Adapting to Climate Change in the Ullswater Valley

May 2013

Climate change will have a significant impact on the Lake District. Thinking through what changes could occur, and how we can respond, will help communities become more resilient and able to respond.

This guide illustrates the best ways that a rural community like Ullswater can adapt to climate change. It is based on research undertaken by ACTion with Communities in Cumbria, and the Lake District National Park Authority, funded by the Department for Environment, Food and Rural Affairs. The full report is available at www.cumbriaaction.co.uk

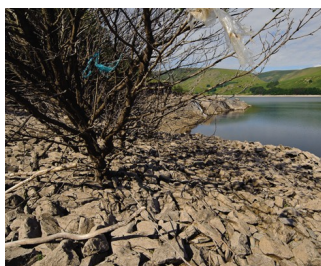


Tree planting can reduce soil erosion, flood risk and pollution, and sequesters carbon.

Trees and other vegetation help to bind the soil, and so reduce the amount of water, sediment and nutrient pollution reaching rivers and lakes. They slow the rate of water run-off compared with most other vegetation types. This helps to prevent flooding and water pollution, including algal blooms like blue-green algae, all of which are expected to worsen with climate change. Trees also absorb carbon dioxide, so they help to limit climate change. Landowners can earn an income from woodland creation, as there are grants available, and it is possible to sell the carbon which the new woodland will store.

Restoring damaged peat bogs improves their capacity to regulate and purify water, and store carbon

Peat bogs in the northern uplands have traditionally been drained for agriculture and sporting interests. The drying out of these bogs has led to loss of vegetation and increased soil erosion, which in turn can reduce water quality and increase the risk of flash flooding. Their carbon storage potential and habitat value is also affected. Blocking drainage ditches can help restore the natural functions of peatlands.



Improving water storage and distribution and minimising water use can help summer droughts.

Droughts are expected to become more common over coming decades. This could lead to competition between locals, tourists, agriculture and the natural environment for increasingly scarce water resources. Water consumption can be minimised through maintaining farm water storage and distribution systems, installing low-flow devices in showers and taps, placing a brick in toilet cisterns and reducing water wastage.

Maintaining farm drainage, and keeping drains clear of debris, can help reduce flood risk

Landowners can help alleviate flooding and waterlogging by maintaining their drainage infrastructure. Local people can also help to keep drains in their area free of leaves and other debris, thereby reducing the risk of surface water flooding.



Reducing surface water run-off into rivers and lakes helps prevent water pollution

If water containing silt and nutrients runs into watercourses, it poses a threat to freshwater species and can lead to algal blooms. Planting trees, restoring peat bogs, avoiding soil compaction and over-grazing and maintaining footpaths can all help to reduce soil erosion and run-off. Optimising the application of fertilisers and using phosphate-free laundry detergents can also help reduce pollution.

Improving habitats can enhance biodiversity and increase the resilience of the natural environment to climate change

Climate change is likely to result in the earlier timing of spring events (e.g. egg-laying), the northward and upslope migration of species and habitats, an increase in non-native species and habitat damage. Protecting, expanding and linking existing habitats, and maintaining a diverse landscape, could enhance biodiversity and increase the ability of natural systems to adapt to a rapidly changing climate.



Improving public transport system, and providing work spaces in the valley, could reduce disruption during extreme weather

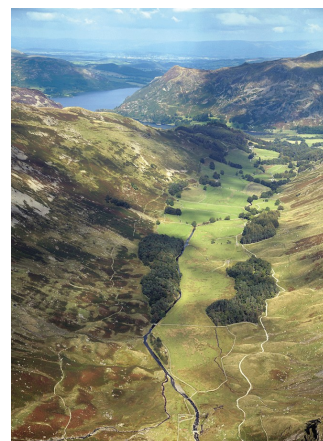
Climate change is likely to increase disruption to transport, supply chains, emergency services and communications networks from flooding and other extreme weather events. An improved and integrated public transport system, which makes use, when possible, of boat transport, could reduce reliance on road access, improve the visitor experience and reduce transport-related carbon emissions. Providing local communal work spaces would reduce the need to leave the valley to work.

Flood-proofing properties

Flooding events will continue to become more common over coming decades. Floods can damage properties and businesses, increase insurance premiums and pose a risk to people's physical and mental health. Installing flood-protection measures in at-risk properties during renovations – for example, solid flooring, durable kitchen units, and high-level electrical wiring, sockets – can reduce the impact and help in the recovery.

The use of natural insulation in traditional buildings can prevent condensation, reducing the risk of respiratory illness

Installing conventional insulation in traditional buildings designed to 'breathe' can cause condensation and mould build-up, which can lead to respiratory illness. This is likely to worsen with the projected increase in prolonged periods of wet weather. The use of natural, breathable insulation materials can improve air quality, health and building integrity and generally have lower carbon footprints than their conventional counterparts.



Preserving key local services helps to maintain strong communities

Successful adaptation to climate change will require strong community cooperation, which in turn requires good social links between community members. Local services, such as schools, post offices and pubs, form an important part of the social fabric of any community, and so preserving these is critical.



Sourcing of local food and drink can support local producers, increase resilience and reduce carbon emissions

Climate change, particularly global water shortage, is likely to disrupt global food production and result in food price volatility, resulting in an increasing need for local food production. Developing a market for local produce by supporting local producers could help to increase self-reliance within the valley and reduce emissions associated with food transport.

For more information please contact us at ACTion with Communities in Cumbria on Tel: 01768 840827 or visit our website: www.cumbriaaction.org.uk

ACT champions community and rural issues

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This publication has been funded by the Department for Environment, Food and Rural Affairs

