



Flood Risk Management (Scotland) Bill

A vital step for Scotland

Flooding is a big issue in Scotland and is predicted to become worse. In the past, our approach to flooding has been very reactive. It was dominated by hard engineering such as the building of floodwalls and embankments. Climate change predictions suggest that Scotland is set to get wetter and stormier, increasing the risk of flooding both inland and along the coast. For example, sudden heavy storms will become more frequent in the summer months, resulting in an increased risk of flash flooding, and overwhelmed drains.

It is clear that building ever-higher flood defences in response to this changing situation is unsustainable. If we do not act now, we will not be able to adapt to the increased flood risk resulting from climate change, and many of our communities will suffer as a result.

The new Flood Risk Management (Scotland) Bill represents a major opportunity to introduce and implement a modern, more sustainable approach towards the management of flood risk that works with nature rather than against it.

Richard Lochhead MSP, Cabinet Secretary for Rural Affairs & Environment (Flooding and Flood management debate, 26/06/2008)

We must remember that flooding is a natural process that has been made more problematic by human activity. Historically we have constructed dams, straightened rivers, built on floodplains, constructed artificial drainage systems and removed natural vegetation. Now we must assess how we can deal with those man-made problems in the most sustainable way in the decades ahead.



River Tay estuary: a dynamic and naturally functioning system



New legislation – new opportunity

The new legislation represents a new opportunity to introduce sustainable management of flood risk. However, it will only be achieved if the following three key principles are placed at the heart of the new legislation.

1. Set out clear intentions to deliver sustainable flood risk management

The purpose of the Bill must be the introduction of a framework for the sustainable management of flood risk, aiming to provide, as defined by the Flooding Issues Advisory Committee (FIAC):

‘The maximum social and economic resilience against flooding by protecting and working with the environment, in a way that is fair and affordable for now and in the future.’

The term ‘sustainable’ is crucial as it sets out clear intentions and clarifies the purpose of the Bill. Sustainable flood risk management is about planning at a catchment scale (from source to the sea) and managing the risk of flooding in an integrated way. It provides a framework within which maximum possible resilience against flooding can be achieved. Within this framework a variety of measures can be used in combination, including natural flood risk management, hard engineering or abandonment and relocation where essential, flood risk mapping, flood warning, planning, preparedness, education and emergency response. These measures together aim to reduce the risk of flooding to communities, businesses, infrastructure and the environment.

The new framework enables Scotland to make a substantial change in the way we manage flooding: away from the current fragmented approach and towards a catchment based management; less hard engineering and more natural flood management. Sustainability is the purpose of the new approach, and its achievement will be a driving force behind this change on the ground. The Bill must make these intentions clear.

Examples of natural flood management techniques from the River Devon demonstration site (from the top):
Channel restoration;
Sediment control;
Tree planting;
Wetland restoration.

2. Getting the best out of nature...

A large part of the solution to the problem of flooding lies in the way that we manage catchments. Rivers throughout Scotland have been straightened and deepened, wetlands drained to allow for farming, urban development and transport and rivers have been isolated from their flood plains. Many important freshwater and upland habitats have been lost or degraded and natural river processes diminished. The result is that rivers flow faster than they would under natural conditions.

Natural flood risk management aims to work with natural river and coastal processes to restore the functionality and connectivity of natural systems, with the aim of slowing down the flow of water and storing water along catchments. By restoring natural water and land processes, natural flood management techniques can then directly contribute to reducing flood risk to people and property further downstream, and provide additional benefits such as conservation of biodiversity, habitat protection, adaptation to climate change, and improved water quality and amenity. Such approach also helps to deliver the biodiversity duty in the Nature Conservation (Scotland) Act 2004. This can be done for relatively low cost and is largely self maintaining.

Natural flood management techniques must be recognised as an integral part of sustainable flood risk management. SEPA and responsible authorities should be required to undertake an assessment of the contribution of natural flood management in all catchments identified as being at risk from flooding. Such an assessment should be a key element of flood risk management plans and funding strategies.

3. Ensuring delivery on the ground...

Implementation of sustainable flood risk management will require a commitment from all those responsible for managing flood risk. In the past, local authorities dealt with flooding on a discretionary basis. However, without the ultimate responsibility to deliver action on the ground, there is no guarantee that measures identified through the planning process will be implemented. Whilst the primary responsibility should still lie with individual landowners, local authorities and responsible authorities should have an unquestionable duty to deliver measures agreed in the plans.

Scotland’s communities will only benefit from sustainable flood risk management if measures contained in the plans are implemented on the ground. Each responsible authority must therefore be required to deliver the measures specified in the flood risk management plans.

Peter Peacock MSP (Flooding and Flood management debate, 26/06/2008)

Over the centuries, rivers have been separated from their natural floodplains by the ingenuity of man, forcing water further downstream to where communities are located. That requires bigger engineering solutions downstream than might otherwise be the case. Engineering solutions will almost always be required, but we must do much more to use natural flood processes to mitigate downstream effects as well as for a variety of other reasons. Reconnecting rivers to their flood plains has implications for farming about which the committee made recommendations, but it also has ecological benefits for biodiversity, habitat restoration and recreation.

Other issues:

Ensuring appropriate assessment of costs and benefits

The cost-benefit analysis (CBA) will be of crucial importance in deciding whether a particular measure will be undertaken. The CBA traditionally only assesses monetary values as this provides for a direct comparison of costs and quantifiable benefits. As environmental and social benefits cannot be easily converted into monetary terms, these aspects are often underrepresented in such analysis. The Bill should ensure that non-monetary costs and benefits are given full consideration in the cost-benefit analysis.

Integrating funding streams and co-operating functions

Measures will not be delivered without appropriate funding and commitment from the responsible authorities. It is therefore essential that responsible authorities are required to co-ordinate with each other, and integrate funding streams with the aim of delivering measures contained in flood risk management plans. Scottish Ministers also have a role to play by ensuring that appropriate funding is made available to deliver measures on the ground, and an effective system is put in place to reward farmers and foresters for managing their land for the benefit of flood management.

Addressing flooding from drainage and sewerage

Local flooding from drainage systems can be devastating. Very little is currently known about the risks, as the current mapping and forecast tools are not sophisticated enough to predict this type of flooding. The responsibilities for dealing with surface water flooding are just as unclear. The Flooding Bill must ensure that responsibilities for dealing with surface water and sewerage flooding are clarified, and that the Bill provides for the proper assessment of the risks associated with these types of floods.

Natural flood management has many additional benefits, such as (from the top):
Climate change adaptation and good water quality;
Habitat protection;
Species conservation;
Recreation.



A naturally functioning floodplain

John Scott MSP (Flooding and Flood management debate, 26/06/2008)

In the past the emphasis tended to be on hard flood defences. There is no doubt that those will continue to be needed, but they are only one element of the toolkit that flood managers will need to draw on to achieve sustainable flood management in the future ... Similarly, incentives, perhaps through land management grants, to reduce land drainage, recreate former wetlands and reinstate natural meandering river channels might need to be considered, too. The progressive spread of hard surfaces, in the form of roads, driveways, car parks or whatever, has an impact on hydrological behaviour, resulting in more rapid run-off. That must be addressed...

In summary, the Flood Risk Management (Scotland) Bill must aim to:

- Set out clear provisions for sustainable flood risk management;
- Promote natural flood risk management, supported by the production of 'opportunities maps' at both national and local scale by SEPA and responsible authorities;
- Set out clear duties on local authorities and responsible authorities to deliver measures on the ground.

We further recommend that the Bill:

- Introduces strong requirements on responsible authorities to co-operate with each other and to integrate funds, and to introduce effective means of rewarding farmers to manage land for flooding beyond simply relying on mechanisms such as compulsory purchase;
- Ensures that cost-benefit analysis takes full consideration of both monetary and non-monetary costs and benefits, such as environmental and social costs and benefits;
- Clarifies and strengthens the responsibilities for surface water flooding, and ensures appropriate assessment of flood risks from drainage systems.

This leaflet is supported by the following organisations:

- Buglife – The Invertebrate Conservation Trust
- Friends of the Earth Scotland
- National Trust for Scotland
- Plantlife
- RSPB Scotland
- Scottish Council for National Parks
- Scottish Native Woods
- Scottish Wildlife Trust
- Woodland Trust Scotland
- WWF Scotland



Scottish Environment LINK is an umbrella organisation for Scotland's voluntary sector environmental organisations. Operating primarily through its Taskforces – groups formed to address particular policy issue – it is concerned with influencing national policies to ensure sustainable development underpins the government's agenda.

A copy of this leaflet and further information about LINK's work on flooding can be obtained from the LINK website: www.scotlink.org.

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