

Flood & Coastal Risk Management

Trialling soft-engineering solutions

Trialling soft-engineering solutions to help protect a small community from flooding

The small rural community of Belford in Northumbria has a population of about one thousand. It is at high risk of flash-flooding from the Belford Burn which runs through the town. As expenditure could not be justified for a traditionally-engineered scheme, our Regional Flood Defence Committee allocated £650,000 for an effective yet economically-viable approach.

Working with Newcastle University and local landowners, we have designed a scheme dubbed *"a pond in every field"* which will reduce the risk to around 35 properties. Construction of this scheme is under way, involving the creation of forty ponds, wetlands and forest wetlands as well as encouraging different land management practices. The scheme will slow the progress of rainwater runoff from the fields into the Burn when it is in spate by providing temporary natural storage and a slower path to the Burn.

Although only 10 per cent of the scheme has been constructed so far it has already made a significant difference. An event on 6 September 2008 which caused significant flooding in Morpeth (about 30 miles away) had a much smaller impact on homes in Belford than previously. Similar events had led to damage in many homes, but on this occasion only one property in the town was flooded. The picture here shows a "leaky" pond at work that day. The day after the event this pond had completely drained and reverted to pasture.

"The early signs are that this scheme is going to make a huge difference to our lives. The improvement it has made already, with just a handful of the planned ponds in place, is remarkable. If this is an indication of what is possible, I hope our experience can benefit other communities... like Cumbria, the south west and Humberside, devastated by the floods of recent years."

Councillor Geoff O'Connell, Berwick-upon-Tweed Borough Council.

As well as protecting properties this scheme will create new natural habitats. The ponds and wetlands will also trap fertiliser running off the land before it reaches the Burn, reducing the chance of pollution.

Construction of a scheme like this can be much quicker than traditional approaches as long as the landowners are willing. The nature of the catchment and the level of



A pond that temporarily stores storm water before leaking it slowly back to the Belford Burn

flood risk in Belford were suited to local solutions involving temporary natural storage upstream of Belford. Consequently, there is no need for long-winded feasibility, modelling, design and approvals. *“You simply need to agree what will be done with the farmer, check with utility providers, consider the environmental constraints, ensure the work can be done safely, then hire a man with a digger,”* comments Peter Kerr, Local Levy Programme Manager.