National Flood Forum Bulletin

@NatFloodForum #action4floods **Nov 2016**

Editor's note: The Environment Food and Rural Affairs (EFRA) Select Committee's report, *Future Flood Prevention,* recently recommended a complete overhaul of how we tackle flooding. Amongst the recommendations was that we should take a more holistic approach to managing flood risk, including incorporating natural flood management (NFM) into the toolkit.

NFM is about how we delay and speed up water flow through a catchment to reduce the peaks of water that often cause flooding. We are seeing growing interest in it amongst our flood action groups because it is often more affordable than hard-engineered defences and it gives people a sense of ownership, purpose and practical involvement in reducing their flood risk.

We are working with many communities to assess the viability of these schemes for their catchments and in this edition, we take a more in depth look at what has worked, how communities are getting involved and new tools that are being developed to help map catchments.

We also take a closer look at some of the figures that have been reported about the impact NFM can have and recognise that, on its own, it won't solve a communities' flooding problems, but that it can make up one part of the flood risk management jigsaw.

We're pleased to be supporting a new, independent film that looks at the importance of community involvement with natural flood management techniques. *High Water Common Ground* will premiere in 2017 and is a must-see for anyone interested in finding out how community collaboration on natural defence schemes can pay dividends for all concerned. Watch the trailer and look out for screenings next year.

In other news, we're pleased to announce our forthcoming conference on 1 February 2017, which will focus on planning and development. People tell us that the threat of flooding from development is a major concern, which is why we're bringing developers, planners and communities together to discuss the issues and start a sensible debate about how we can make sure we're building safe places for people to live now and in the future.

Are we planning to flood? is a one day conference and evening reception with Dr Therese Coffey MP, Minister for flooding, delivering the key note speech. Book now to secure your place.

Finally, may we take this opportunity to thank you for your continued support. We're a small charity covering a lot of ground and we rely on donations to be able to reach out to communities who need our help. If you can donate to help us continue our work as we head into winter, it would be very much appreciated. Just click to donate on our website, call the office on 01299 403055 or by post to The National Flood Forum, Old Snuff Mill Warehouse, Park Lane, Bewdley, Worcestershire, DY12 2EL. **Thank you.**

Natural Flood Management: Shipston, Warwickshire

Working in partnership with Shipston-Area Flood Action Group, Tom Lavers, PhD Student, Coventry University

Flooding and the risk of flooding are of increasing concern nationally. Ever since 2007 - and more recently the 2015 winter events in Cumbria - political, practical and academic response has recognised the importance of considering catchment based approaches, including novel techniques such as Natural Flood Management (NFM), to manage our environments much more sustainably with natural processes. Historically, flooding and managing flood water have been 'out of sight, out of mind', conveying water in the system downstream through heavily engineered solutions. Increasingly, research has identified this form of water management alone as a short-term solution, based on the expected climate change scenarios we are likely to face, as well as the changes we have made to our catchments surfaces.

Since 2015, I have been working with the Shipston-Area Flood Action Group (SAFAG) on a large catchment based NFM approach in the headwaters of the Warwickshire-Avon. This project has been in partnership with the National Flood Forum, Environment Agency, Warwickshire County Council and most importantly the farming community. My experiences in the Warwickshire-Avon have highlighted some benefits and challenges that should be considered for anyone looking to pursue NFM, as the SAFAG has done full-heartedly and with great success.

March 2016, saw four properties flood in the lower catchment which was by no means a large event, but large enough to cause devastation to those affected. When the flood waters began to rise, a local farmer called me to say unbelievable amounts of water was rushing into the brook over his land. He is a particularly supportive farmer, who is by no means farming in a way to increase levels of water entering the brook at a faster rate, but someone who is interested in how water moves and how land responds to rainfall. This highlights the importance of working with your farming community to better understand how water moves across the landscape, farm holding to farm holding, and cumulatively across the catchment.

A common concern for many farmers is the idea of 'accusation' when it comes to NFM, insinuating that measures to slow the flow, such as leaky dams and ponds, are a means of accusing farmers of not being able to manage their land sensitively. Of course, there are bad agricultural practices such as hedgerow removal, extensive ditch clearing and soil compaction through grazing numbers, which enhance the volumes and speeds of water that enter the river network that would otherwise be infiltrated and/or released more slowly. However, many of these practices reflect the policy and funding context the farmers and landowners had to meet, including war time agricultural intensification, and my experience shows farmers are keen on working with the community to help where they can. The success of this project to date has been due to the ability of the SAFAG to recognise the farmers and landowners as part of the 'catchment community', who need to make a living from the land. The approach I developed utilised mapping and modelling software in conjunction with farmer knowledge to devise methods to provide multiple benefits, including wildlife and habitat conservation and provision, and water quality improvement.

There are a variety of funding schemes available to farmers to change their holding for NFM purposes, principally this involves Countryside Stewardship. One farmer in the catchment managed to apply for such funds for increased floodplain roughness to slow flood flows, but a key challenge that faces the practical application of catchment change for flood alleviation is the competitive nature of the scheme and the complexity of the application process. This is likely to be the case until policy and funding changes are more adaptable to managing local flooding problems at the larger scale through joined-up, long-term thinking, which brings me to my next point… partnership.

This project has been driven by the support and contribution of a variety of stakeholders, not just the experts in flood risk from the Environment Agency and Lead Local Flood Authorities, but those who have an active interest in environmental betterment, such as wildlife trusts and local interest groups. The National Flood Forum has given an unrivalled platform to this sort of thinking that is crucial in devising a catchment-based NFM scheme, incorporating input from all relevant stakeholders. Therefore, whilst the community of residents is a source of invaluable local knowledge, so are those agencies and interest groups. For this reason, the ability to listen is crucial to getting a better understanding of the scale of the problem that is impacting vulnerable communities.

In conclusion, I believe it is important to not recognise NFM as the answer to all flood risk problems, but an ethos that increases resilience to the growing threats posed by flooding, requiring an approach that deals with all evidence (technical and local understanding). NFM is by no means a 'quick fix', but a recognition of how local perseverance can proactively seek change.

Images provided by Tom Lavers, PhD Student, Coventry University

Floods are commonly enhanced through a process called propagation. Slowing, storing and filtering flow in the headwaters (where possible) can alter this process. This image indicates a conduit of land that is commonly dry, but in spate conditions water runs freely. Being underlain by Cotswold Brash allows this area to be suitable for an NFM scheme that can encourage infiltration (clay bunds and increased floodplain planting) that breaks through the clay surface to the free draining limestone.

Figure 2. Existing debris dam in Sutton Brook, NFM already exists naturally

River networks and catchments are complex interactions of water from different sources moving at different rates. It is important to recognise that these are already influenced by 'natural' NFM-like features, which in the case of the image above, slow flow and encourage damning. It is important to understand how effective these existing features are, i.e. in heavy rainfall events look at: how they respond; if there are any gullies the water is re-directing to; and assess if they can be altered/mimicked elsewhere along the river network to encourage a cascade effect.

Natural Flood Management: Environment Agency

Managing flood risk, naturally Duncan Huggett, Environment Agency (EA)

The challenge

By all accounts, December 2015 was a recording breaking month for all the wrong reasons. A succession of storms – Desmond, Eva and Frank – dumped a record amount of rain on already saturated catchments in northern England. A new 24-hour rainfall record for Honister Pass was set at 341.4mm. The largest flows ever were recorded on English rivers. At one point, around 1700 cubic meters of water a second was recorded in the Tyne (compare this with an average day for the Thames at Westminster with 60 cubic meters a second).

With such rainfall came flooding, loss of property and damage to local businesses. Although flood defences successfully protected over 23,000 properties from flooding during storm Desmond and Eva, 13,000 houses and 4000 businesses flooded.

The recently published *National Flood Resilience Review* concluded that engineered hard defences can only ever be part of the solution. It highlights that there are benefits of managing water in a way that reduces both flood risk and water stress, and achieves wider environmental benefits by slowing the flow of water from the land into our rivers.

What is natural flood management?

The EU call them 'natural water retention measures'. In the US, they are referred to as nature based features for sustainable engineering! We call it natural flood management (NFM). And it is becoming an increasingly important part of how we manage flood and coastal erosion risk by protecting, restoring and emulating the natural regulating function of catchments, rivers, floodplains and coasts.

Working with natural processes often means slowing down the flow of water and holding it back until volumes have declined. This helps to reduce the depth and/or duration of flooding. At a local scale, this can involve installing 'leaky dams' in upland streams, or re-planting hedges on farms to slow water flow. At a larger scale, it can involve reinstating seasonally flooded grassland to store flood water away from high risk areas, or restoring meandering rivers to delay flood peaks.

There are a wide range of NFM techniques that can be deployed throughout a catchment, involving a varying degree of engineering and interventions. All should be planned in the context of the whole catchment. Just like other types of flood risk management, the effectiveness of NFM will depend on local circumstances. How much effort we invest in them should be based on what the evidence tells us will work.

Conclusions

A key feature of many successful NFM projects is that they are community led and draw on the experience of local organisations. Whilst knowing the likely outcome of the measures is clearly important, the standard of evidence and data required before work can begin should be proportionate to the interventions.

Natural flood management in action (EA)

There are literally hundreds of examples of NFM in action, and we can learn a lot from these to help us better plan NFM in the future.

Pickering

Pickering has a long history of flooding with four significant floods in the last 15 years. After the 2007 flood when at least £7 million of damage was caused, a new approach to reducing flood risk was taken.

A range of upstream measures have been implemented, designed to slow the flow and reduce river levels. More than 160 woody dams have been built and 185 heather bale 'dams' installed. Almost 30 hectares of riparian woodland has been planted. A 120,000m^3 online storage area was constructed.

During the December 2015 storms, these features performed as designed and reduced flood flows in Pickering by an estimated 2m^3 per second compared to what would have been expected from the 44.6mm of rain that fell in 24 hours.

Natural Flood Management: High Water Common Ground film

Managing flood risk, naturally *continued…*

Some NFM works involve costly heavy engineering. However, many are low cost and are most effective when deployed as high up in the catchment as possible.

There are still many challenges. Public perception of NFM is important. NFM interventions alone may provide a lower standard of protection than a local community would like, through measures that may be many kilometres away. Our understanding of the design and performance of NFM measures must improve, along with clearer engineering standards.

Finally, whilst experience in Stroud suggests that funding can be found to make a real difference, in many cases, land managers will need appropriate payment for long-term changes to land use. The current funding framework and the way we apply it needs to adapt to better support NFM. Better recognition of the wider benefits that are intrinsic in many NFM schemes may help with this, as partners work together to find ways to reduce flood risk and make wider improvements to the environment at the same time.

High Water Common Ground, Andy Clark, Producer

Trailer: https://thetopofthetree.uk/film/highwater/

Film synopsis: Extreme flooding events in recent years have devastated countless communities throughout the whole of the UK, and it is only a matter of time before such destructive waters are seen again.

Beyond the immediate, obvious loss of livelihood and business, the impacts of these floods have permeated much deeper, affecting communities both physically and psychologically, and affecting the relationships between the people and the agencies charged with alleviating the damage. Flood gates fail, levees break. But from amidst this chaos, communities have pulled together more strongly than ever, and opportunity has emerged to find new and innovative solutions to the threat of flooding. These are solutions that have the potential to satisfy every stakeholder, and benefit this land on every level. Such 'natural' flood defences are in no way a universal or absolute solution, but their potential for significant contribution to flood pressure alleviation is widely accepted.

In a documentary-meets-toolkit, this film will meet the communities most affected by flooding, learn the needs of the parties involved, and explore some of the most innovative methods of flood defence using real examples from around the country, including NFF groups in Brompton, Shipston, Culmington and Diddlebury.

Screenings: The film is still in production but once it premieres, members of Flood Action Groups affiliated to the National Flood Forum will be able to view the film via a free link and then have the opportunity to take part in local screenings to extend the reach of the film even further.

For more information, contact lucy.scarborough@floodforum.org.uk or andyclark@thetopofthetree.uk

Lustrum Beck, Stockton on Tees

Homes in Stockton on Tees have suffered repeated flooding from Lustrum Beck over the last 50 years. Following extensive flooding in 2012, steps are being taken to reduce the risk of flooding to more than 150 properties. The innovative scheme combines traditional engineered flood defences with upstream NFM measures.

The plan is to create around 100,000m^3 of additional water storage in the upper catchment by – amongst other things – developing an offline storage 'cascade' within Forestry Commission Coatham Woods. This will help increase the standard of protection that can be achieved by the engineered defences downstream in the town.

Stroud rural sustainable drainage (SuDS)

Established in 2014, the Stroud rural SuDS project aims to help reduce the risk of flooding to around 112 properties in the Frome catchment, by introducing a large number of small-scale measures in the upper catchment aimed at slowing peak flood flows. Over 250 structures have been built so far, including leaky woody dams, culverts with soak-aways, dry ponds and field bunds.

Comparing similar rainfall events (more than 30mm in 12 hours) suggests that these measures reduced river levels by up to 1m.

Natural Flood Management: Brompton, North Yorks

Brompton Flood Prevention Group celebrate their first leaky dams, Sue Butler, Chair

Brompton Flood Prevention Group formed in April 2013 and our first priority was to desilt the beck as this hadn't been done for several years due to the cost. The Environment Agency (EA) said it would cost in the region of £27,000. We had won £450 in a community action competition so after a lot of permissions and phone calls we managed to get an EA approved contractor to desilt the beck for £350 and we gave the farmer £100 for helping to take the silt away. Then the next year we desilted the other side, which helped the water flow away from the village more easily.

After a while we became affiliated to the National Flood Forum, which meant that all the major agencies were invited to attend and over one and a half years we managed to whittle down our 18-point action plan down to two:

1) more funding 2) getting the farmers on board

Both are still our main aims, but we could add getting the Internal Drainage Board (IDB) and other parties such as Network Rail to understand natural flood defences.

After one and a half years and lots of fundraising, we were able to desilt the beck again and employ a surveyor who was studying for a PhD in Hydrology. Since we formed, we have visited Belford in Northumberland and Pickering in North Yorkshire to study their natural flood defences and we have attended meetings with Dales River Trust. Through this we gained a knowledge of what we wanted to achieve at Brompton.

After many months of debate with a local farmer and the IDB, not to mention the excellent support from Rishi Sunak, MP for Richmond, we showcased our three leaky dams on an upstream tributary.

Even at the eleventh hour there were problems because the IDB wanted to double check the construction, despite us having the appropriate permission in place. We were also reliant on the weather and kept everything crossed for sunshine – thankfully it was the driest month of the year.

The cost of building the dams was in the region of £4,500 which is pretty much all our funding and as we have organised everything ourselves, without EA involvement, and we are responsible for maintaining the dams in future.

We do have permission to build a storage area in another farmer's field which will help alleviate the flow of water into Brompton Village but this time the IDB won't give permission until Network Rail do, even though the railway embankment is 15 feet high and water has been flooding near it for 51 years! This is our next big challenge but we have the MP on our side.

Rishi Sunak MP officially opened the leaky dams and we made sure we had a lot of local publicity. We hope that funding will be more forthcoming as a result. Like many flood action groups, funding is a major obstacle. The EA said they would help with funding when we got a surveyor but we got nothing. We were then told if more houses flooded we could have more funding – still nothing. But when the headline in the paper was 'Group fund their own defences', we received an email saying the EA were putting forward a case – we'll wait and see.

Our motto is don't give up, keep on their backs so in the end they have to do something!

Natural Flood Management, Brompton

Brompton Flood Prevention Group celebrate the opening of their first leaky dams by local MP, Rishi Sunak

Natural Flood Management: Coalbrookdale & Ironbridge

The National Flood Forum is supporting people in Coalbrookdale and Ironbridge and listening to their thoughts about managing flood risk in the area. We want to get more people involved to ensure we are gathering the views of all those affected. If you live in the area and would like to have a say, please contact us.

Natural Flood Management in one of the most complex catchments in the UK, *Russell Rowley, Severn Gorge Countryside Trust*

It is encouraging to see a revival in interest in Natural Flood Management (NFM). Nearly twenty years ago I co-wrote an article for Ecos Magazine[(1)] on work we were carrying out using NFM on the River Cole in Wiltshire, successfully persuading farmers to let parts of their land flood. I established a group of experts and brought in an advisor on floodplain forestry including the use of native Black poplar *Populus nigra*. What we were doing wasn't new. Nearby was one of the UK's oldest flood meadows at Cricklade where farmers had let the meadows flood with nutrient rich silt, then stripped the nutrients off again through a hay cut leading to the famously biodiverse MG4 grassland including Snake's Head Fritillary.

For the past ten years, I have with an excellent team been managing the landscape of the Ironbridge Gorge World Heritage Site in Shropshire. This includes the Lydebrook, classified as Rapid Response Catchment, prone to flash flooding which is both a threat to life and cultural heritage. The flood zone includes Abraham Darby's original furnace where the iron for the world famous Iron Bridge was smelted.

This catchment has been described as the most complicated in the UK by the Environment Agency and with good reason. Mid catchment there are a series of incredibly steep sided valleys on unstable geology prone to landslip.

Natural Flood Management: Coalbrookdale & Ironbridge

Several hundred cubic metres of silt, coal and pulverised fuel ash (pfa) can come down during one flood event into a silt trap before the water ends up in the very small Coal Brook and then flows into the River Severn in Ironbridge.

Perhaps uniquely in the UK the Central Electricity Generating Board tipped 250,000 tonnes of pfa and furnace clinker into the river valley (from the nearby power station which is now closed) in the 1950s and 60s which is now wooded but prone to serious erosion. The Lydebrook includes a Site of Special Scientific Interest (SSSI) which we manage and is very important for invertebrates including the internationally rare Cranefly *Lipsothrix nobilis.*

Lydebrook in spate 2007, 700 cubic metres of silt came down the catchment in one day

A couple of years ago we were asked to consider installing natural woody 'leaky' debris dams all the way up the Lydebrook and catchment tree planting to 'slow the flow' which seemed to have had success elsewhere. My intuition and daily work in the catchment with our team told me this may not be right for the Lydebrook and dams could potentially cause more landslips and silt deposition.

The then chief geotechnical engineer at Telford & Wrekin Council shared my concerns about inserting dams. Having stuck my head above the parapet, even though Severn Gorge Countryside Trust is only 'Riparian Owner', rather than the Flood Authority, I felt I should thoroughly research the issue in case I was wrong. To be clear, debris dams and tree planting are only two solutions in the NFM toolkit, but other solutions such as attenuation ponds are equally challenging in a very steep catchment.

The figures being quoted for reductions in flooding in the national media over Christmas/New Year 2015 and by respected journalists like George Montbiot were up to 40% following NFM measures. Others including Friends of the Earth repeated these figures. The Pontbren Project[(2)] was widely quoted as showing an increase in soil water infiltration rates 67 times faster under young planted trees with surface runoff volumes reduced by 78%. More recently Rewilding Britain have been quoting a figure[(3)] that planting only 5% of an upland catchment can reduce flooding by up to 29%. These figures seemed incredibly high. Following these press reports local people in Ironbridge and Coalbrookdale with whom we work closely began to ask us about debris dams. They were also confused about the media coverage.

Coalbrookdale flooding

What have I therefore gleaned from my literature review, visits and conversations with experts?

Defra and the Environment Agency have published an appraisal[4] of their three funded trial NFM projects in North Yorkshire, Somerset and Derbyshire which concluded that 'flood peak heights can be reduced by between 4% and 25%'. However, I discovered that the 25% figure was 'predictive modelling', whereas the actual reduction was estimated closer to 10% [5].

Dr Miles Marshall of the Centre for Ecology and Hydrology put out a statement on 16 February 2016 about his work as a scientist on the Pontbren project that: 'The UK's landscape has a very complex structure and one cannot simply upscale the results measured in plot scales like ours (12 x 12 metres) to the catchment scale to predict the impacts that planted trees might have on flooding.'

Further 'when soils are saturated …the positive contribution that trees may have in terms of providing additional water storage space in the soil below will be greatly diminished. Planting trees is only one option amongst a suite of measures we should consider'.

Following a very useful site visit with the National Trust to Holnicote in Somerset we were pointed towards Dr Simon Dixon's research work[6] on debris dams and their effects on river flow in Lymington. Interestingly, his modelling work found that putting debris dams into rivers in some locations can actually *increase* the depth of flooding downstream and changes can have a very variable magnitude and be highly unpredictable.

He concludes that: 'We need to do a lot more work in this area and in the meantime, the insertion of logjams and dead wood into rivers for flood control should be used with caution and extensive site analysis'. He does say however that the modelling predicts that 'the restoration of floodplain forests to entire 'sub catchments …always decreases flood height after 25 years' growth …if this is done for areas of 20-25% of the catchment, reduction in flood peak height of 10-15% are modelled after 25 years' growth.'

We have concluded from all this research that for the Lydebrook catchment we need a very long term approach and have established a Partnership we have called 'Farm the Flow' including many partners from Telford & Wrekin Council (as Flood Authority as the Lydebrook is not main river) the Environment Agency, Natural England and Wolverhampton and Harper Adams Universities, to the Ironbridge Gorge Museums Trust. As many partnerships around the UK are doing, we are taking a catchment wide approach but are focussing less on slowing the flow instead looking to work with farmers, to see if this water can be used more sustainably. We aim to work together to first find where the flows and high volumes of silt are coming from to aim for a long term 10% reduction in flood peak and silt deposition, through looking at existing and new NFM solutions that we may have to develop ourselves in such a complicated catchment.

We are also working with Telford & Wrekin Council and the Environment Agency to set up an improved early warning system for residents based on monitoring equipment throughout the catchment. We have not discounted using debris dams completely but have found as we predicted that natural debris dams high up in the catchment are leading to landslides exacerbating the serious siltation problems.

We have worked closely with the local community with fifty members involved as volunteers, have given them a presentation on NFM and been to an open community evening organised by the National Flood Forum as well as sit on their local community flood group.

If NFM is to gain wider acceptance there is a need for both longer-term research and larger scale practical projects, as well as longer term funding. We should also acknowledge that, at the moment, whilst flood reductions of between 4 and 10% are possible through NFM, local communities would be wise to install individual property protection if they are in a flood zone.

Natural Flood Management: Coalbrookdale & Ironbridge

Severn Gorge Countryside Trust Volunteers celebrate completing a flood bypass path funded by Veolia

References:

1. Rowley R and Bryant G (1997) Floodplain Forestry: progress in the Great Western Community Forest. ECOS 18 (2)
2. The Pontbren Project (2013) A Farmer led approach to sustainable land management in the uplands. Coed Cymru and Coed Cadw
3. Rewilding Britain (2016) How Rewilding Reduces Flood Risk.
4. Moors For the Future Partnership (2016) Natural Flood Management: An appraisal of current evidence from the DEFRA funded multi-objective demonstration projects. Environment Agency
5. Nigel Hester Holnicote Estate 2016 Pers communication
6. Dixon Dr S. (2016) How wood in rivers affects flood risk – revisited. The River Management Blog

Natural Flood Management: Mapping your catchment

Tools for designing natural flood risk management schemes, Dr. Sim Reaney, Durham University

Recently, there has been an increase in the in the use of NFM approaches to reduce the size of floods effecting properties and communities. These approaches include changes to how the land upstream of a town is managed, such as the creation of woodlands or soil aeration to slow water runoff, and the building of features, such as storage ponds and woody debris dams in the channels to store and slow the water. There are a range of examples where these approaches have been applied, such as Pickering in North Yorkshire, Holnicote in Devon and the River Eden catchment in Cumbria.

Following the success of these projects, many local communities are looking to apply the approaches to their catchments but are often faced with two key questions:

1. Where within the catchment do I need to implement natural flood risk management?
2. How effective is the scheme likely to be at reducing the flood hazard?

These are the questions that were faced by the Roe Catchment Community Water Management Group after their formation following the flooding of the Cumbrian villages of Stockdalewath and Ivegill in 2005 and 2013. The group worked with the local Eden Rivers Trust, the Environment Agency and Durham University to address the key questions and this partnership working enabled the needs of both the EA and local community to be considered. The approach used by the group was developed so that it can be applied to similar at-risk rural UK catchments and two tools were used to address these questions: SCIMAP-Flood and CRUM3.

Continued…

Natural Flood Management: Mapping your catchment

SCIMAP-Flood: a risk mapping framework that enables risk-based analysis of where in the catchment the flood water may be originating, on a sub-field scale but at a catchment extent, using limited input data. It identifies key sources of flood waters using a relative topographic network within the catchment. It was developed to gain an understanding into the surface runoff regime at a catchment scale. For more information visit www.scimap.org.uk

CRUM3: a detailed hydrological simulation model which operates at a catchment scale; it is able to predict the effects of the proposed mitigation features on the flood peaks. It predicts time series of river flows including the magnitude of the flood peaks. For more information visit www.crum3.co.uk

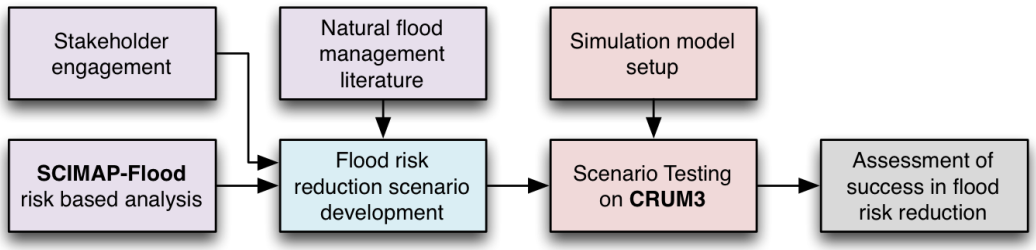

Figure 2: Workflow of the analysis and modelling tools used to assess flood risk reduction scenarios

Key Project Findings

- The community valued the detail and spatial targeting information from the SCIMAP-Flood results but the Environment Agency needed the detailed predicted flows from the catchment simulation model.
- The more land treated with soil aeration, the greater the reduction in flood magnitude.
- The most effective land cover changes were changing to deciduous woodland or natural grassland.
- Woody debris dams in the Roe catchment required concentrating exclusively on the slightly larger and more connected channels for the most efficient flood peak flow reduction.

Applying these tools to your catchment

We are applying for research funding to develop, refine and apply these tools to a wider set of catchments and communities. We hope to be able to start this work in 2017 and hence if you would like to work with us to apply these tools to your catchment, then please get in touch - sim.reaney@durham.ac.uk twitter @simreaney

		
Small Woody Debris Dam, Pickering, North Yorkshire	Wet Woodland Planting, River Eden, Cumbria	Soil aeration, River Eden, Cumbria

Figure 1: Some natural flood risk management options.

Conference 2017: Are we planning to flood?

Are we planning to flood? How can planners, developers and communities work together to build safer places for the future?

Wednesday 1 February 2017, one day conference & evening reception

Every year thousands of homes, businesses and people are affected by flooding. At the National Flood Forum, we support people living with flood risk and they tell us that one of their main concerns is proposals for development that will increase their flood risk.

Whether it's new, planned or permitted development, or the threat of flooding from existing new builds, people are worried that their lives will be placed at risk.

Yet with a growing population, an increasing demand for housing, an ageing infrastructure and the effects of climate change, the impact of flooding is likely to increase and with it the human and economic costs.

So, what can we do now to make sure we're planning and building flood resilient communities for the future? How can planners, developers and local people work together to ensure that existing and new developments are sustainable – not just today, but in 30 years-time?

Are we planning to flood? will be an opportunity to address these issues. Dr Thérèse Coffey MP, Defra Parliamentary Under Secretary with responsibility for flooding, is confirmed as the keynote speaker alongside Graham Brogden (Flood Resilience Action Plan), Daniel Johns (Committee on Climate Change) and community representatives from Flood Action Groups, with more to be confirmed. They will consider:

- How do we know that current development will result in flood resilient communities in future?
- What is the evidence our planning system is helping to reduce our flood risk?
- How can planners and developers work with communities to reduce flood risk?
- What do we need to do to create a society that is willing and wants to adapt?

Join us on 1 February 2017 to:

- Discuss the development challenge from the community, developer and planner perspective.
- Hear about successful partnerships where developers and communities are working together.
- Learn about innovative projects where flood resilience measures have been built-in retrospectively to reduce flood risk.
- Address how more people can adapt their homes and businesses to be flood resilient

Evening Reception

Following the conference, the Mayor of London, Sadiq Khan, has been invited to speak at an evening reception to specifically consider the impact of development on flooding in the capital. Conference delegates are invited to stay and continue the discussion as part of an informal networking event with drinks and canapes.

For more information, bookings and ticket prices (including concessions for community group members) please visit the conference page on our website.

Changes to our Board of Trustees

Reflections from the outgoing chair, John Pegg (trustee of National Flood Forum)

At the recent quarterly meeting of the National Flood Forum Trustees there was a changeover of chairmanship. After three years at the helm I stepped down - though still personally staying a very active board member. During my time as chairman lots has been happening, in particular several episodes of devastating flooding of communities and businesses from all around Great Britain. Proving the continuing need to have a body like the National Flood Forum dealing with the enormous number of enquiries, help and support required during and after flooding.

During my time as chairman, the charity was successful in obtaining funding to manage the Defra-backed 'Pathfinder' projects in certain areas with the aim to support communities in being resilient to the future risks of flooding. It has been a joy to occasionally meet with our enthusiastic and self-motivated staff that are employed to enable us in completing these tasks. What swiftly becomes quite apparent is that there is an ever-increasing demand for help from all aspects of society to aid understanding of the increasing risk of flooding and how to be resilient.

I had the misfortune to suffer flooding to my property in November 2010, so have considerable empathy for those who suffer similar misfortune.

One of the great things about the town and strong community that I live in is that those affected back then could swiftly pick themselves up. From that devastation, a plan was hatched to become more resilient to flooding. Hence the Lostwithiel Town Council management flood action plan was written. This plan has been tested and held good in subsequent flooding episodes. Even when there are no incidents the wardens regularly do practical exercises so that we continue to bond together as a team. Residents within flood risk areas are more confident that we are able to react and resist further flooding risks in the future.

As a charity wishing to continue and expand our free service role we must evolve and seek further opportunities in obtaining appropriate income. To this effect I'm glad to report we have been fortunate in getting approval to access European funding through an Interreg project. Hopefully this application will continue to successful fruition. Our new chair Andy Johnston will lead the NFF onto further success in providing communities & small businesses with assistance.

Introducing our new chairman, Andy Johnston

Andy Johnston is Chief Operating Officer at the Local Government Information Unit (LGIU). He is responsible for maintaining services to the LGIU's 200 local authority members as well as expanding the LGIU's reach into Scotland and Ireland. Andy is also Chief Executive of Local Energy a green deal provider company which is part of the LGIU group.

Andy ran the LGIU contribution to the Interreg funded Raingain project and convenes the Local Government Flood Forum.

In the past he has led programmes on sustainability in higher education for Forum for the Future and the OECD.

He ran the ground-breaking Masters in Leadership for Sustainable Development and was a lecturer in Business for Sustainable Development at the University of Hertfordshire. For eight years he was a councillor on Chelmsford Borough Council.

Changes to our Board of Trustees

Welcome our new trustee Mike McCarthy

Before retiring last year, Mike enjoyed a career of 34 years within the Fire Service. Firstly, as an operational officer for 17 years with the West Midlands Fire Service and then with the National Fire Service College as a rescue instructor/tutor for 19 years. He taught a wide range of rescue skills including water/flooding rescue to delegates from across the UK and the world. Before this he spent 10 years in the military with numerous postings around the globe.

Mike was first flooded in 2007 and had over 4 feet of water throughout the whole of the ground floor. There have been numerous other smaller floods since then almost on a yearly basis

He lives in a low-lying cottage is part of an old mill complex in Tredington, South Warwickshire. There is a mill pond and mill race in the garden which form part of the main River Stour. The Stour joins the River Avon eight miles north at Stratford upon Avon.

Mike has been a very active member of the Shipston Area Flood Action Group (SAFAG) since it was formed under the NFF Pathfinder Group three years ago. SAFAG is very dynamic and they are attempting to utilise natural flood management interventions to slow the flow of the Stour to reduce its very flashy peak on the rivers hydrograph. (See Tom Laver's earlier piece in the bulletin).

Mike says he is honoured to be appointed a trustee of the National Flood Forum. He hopes to bring his life experiences and skills to the existing expertise of the board and support the aims of the charity. This, he says, will hopefully assist communities to be better prepared for flooding and to offer all available advice and support should they suffer the devastating effects that flooding can bring to families and homes across the UK.

We welcome any feedback, comments or questions about the bulletin. Please email them to lucy.scarborough@floodforum.org.uk

Disclaimer: The views expressed in the bulletin are those of the writers and not necessarily of the National Flood Forum

National Flood Forum

Supporting and representing flood risk communities