

## Gloucestershire NFM Partnership

### Principles of Good NFM Delivery for Gloucestershire

#### INTRODUCTION

As the twin crises of climate change and the loss of nature increasingly impact the world around us, we know we must do everything we can to find solutions that will help our communities adapt whilst restoring our ecosystems to their fullest potential.

Over time our river catchments have been heavily modified through infrastructure development, industry, agriculture and land management so that they no longer provide as much protection from heavy rainfall. They drain faster and do not store as much water in healthy rivers, wetlands and soils. The same catchments have also seen a corresponding decline in natural habitats and biodiversity, leaving our ecosystems less well equipped to cope with shocks and to provide the services we need from them, like water storage and purification, food production and supporting human health and wellbeing.

One of the most effective tools we have to tackle these issues is to harness natural systems to restore the natural function of our river catchments. This includes working to renaturalise river channels and floodplains, increasing the surface roughness of a catchment with vegetation, restoring wetland areas and increasing the capacity of the soil to hold water – a collection of approaches we call Natural Flood Management (NFM).

In Gloucestershire we believe that for NFM to provide the best outcomes for people and nature, we need local flood authorities, environmental NGOs, land managers, farmers, businesses and communities to work together, and that NFM should aim to achieve flood risk reduction alongside climate adaptation and nature recovery,

To help define how we should do that, partners involved in the Gloucestershire NFM Project have collectively set out the following ‘Principles for Effective NFM’. These Principles draw on our collective knowledge of delivering successful NFM projects in Gloucestershire, the latest evidence and our ambitions for the type of NFM work we know will deliver the best results in our local catchments. Alongside the Principles is a Project Checklist and other resources that will help anyone involved in delivering NFM projects to ensure their work is likely to deliver the best outcomes possible for local communities and nature.

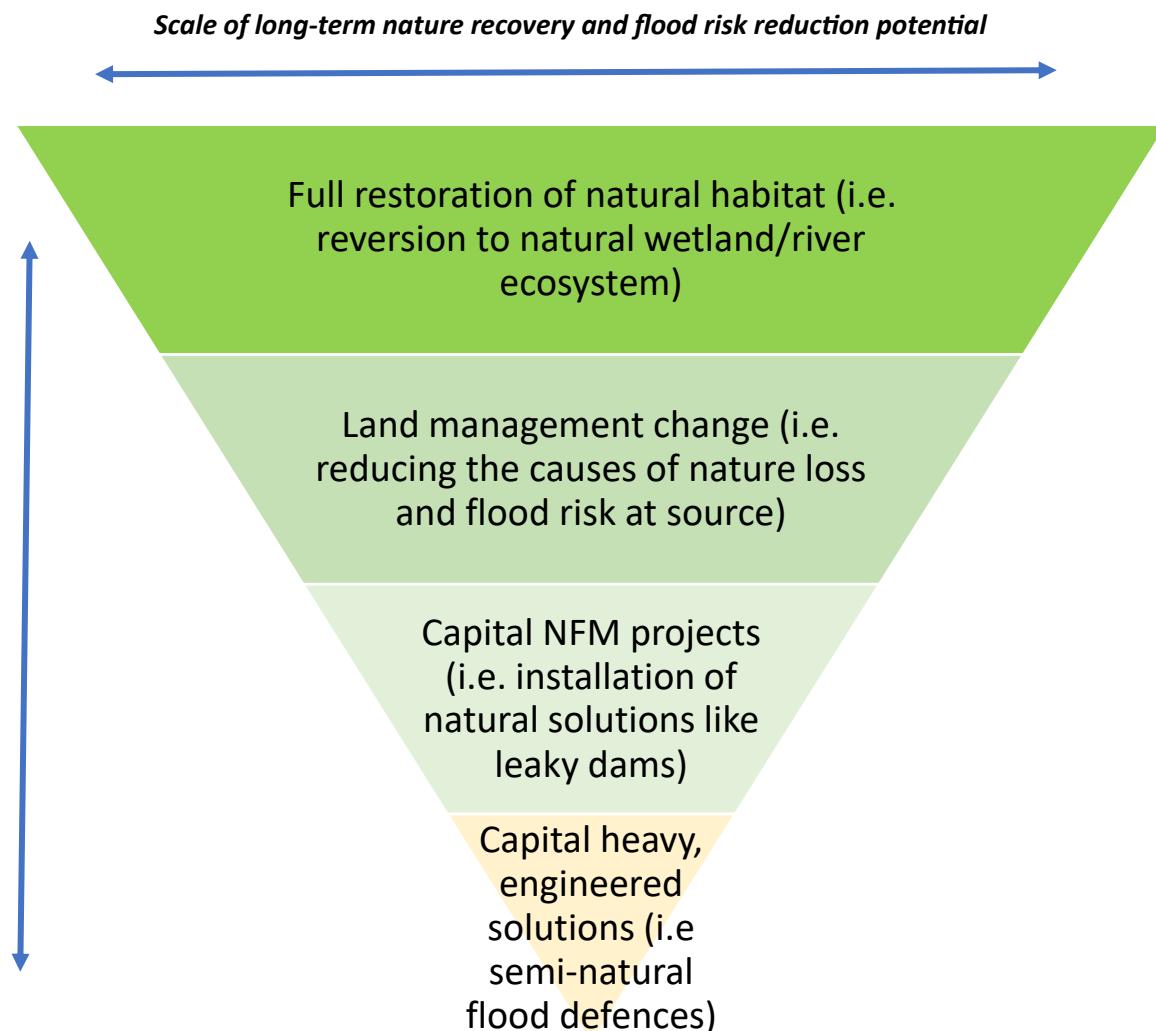
## PRINCIPLES

Key principles for successful NFM project delivery in Gloucestershire.

1. **Restore nature.** NFM project designs should be ‘nature-rich’, maximising enhancements to the natural environment, as well as the potential for downstream flood risk reduction.
2. **Start at source or above and work down.** The closer an NFM intervention is to a community at risk of flooding, the less flood risk benefit it is likely to have, so we encourage prioritising efforts in upper catchment areas.
3. **Work where you can.** NFM projects depend on positive engagement and appetite from landowners and farmers. We will have more success if we focus our efforts on working with the most engaged landowners – whilst continuing to identify opportunities with less engaged landowners.
4. **Small is beautiful.** NFM is a catchment scale solution, dependant on multiple small interventions working collectively across a catchment to deliver best results. It can be tempting to focus on larger ‘natural flood defence’ schemes that may deliver a more tangible flood risk benefit. But larger schemes – albeit with a ‘natural’ element to them – tend to be more costly and may not deliver the same level of flood resilience or benefits to nature as multiple smaller schemes throughout a catchment.
5. **Let the land be your guide.** By delivering multiple small-scale, lower risk projects, guided by targeted desktop analysis, local topography, habitat and hydrology, the need for costly modelling and engineering advice can be reduced.
6. **Be led by the evidence.** There is lots of evidence available showing what sorts of NFM measures work best, and in what context. Use the Gloucestershire NFM project resource library for examples of best practice and existing evidence.
7. **Work together.** Gloucestershire is blessed with many leading examples of NFM delivery; its own county-level NFM resource; a successful monitoring approach; and many partners with skills in different aspects of NFM from species expertise to farmer engagement. By drawing on one another’s knowledge, skills and experience we will deliver better outcomes for nature and communities.
8. **Oversee delivery.** Whether you are delivering your project’s NFM interventions through a landowner, a preferred contractor or another third party, you should oversee and guide as much of the work as possible to ensure it is high quality enough to meet your project objectives safely and reliably. If you are a private landowner, you may wish to seek free delivery advice from the NFM Partnership.
9. **Measure what matters.** The flood risk benefits of NFM are hard to quantify precisely, and there is already plenty of evidence showing that NFM does reduce downstream peak flow rates, improving downstream communities’ resilience to flooding. So, we should focus monitoring resources on gaps in evidence, particularly on the associated benefits of NFM such as habitat creation, water quality, water resources, carbon and social benefits.
10. **Design to avoid maintenance.** Prioritise intervention types that require little or no maintenance.

## NFM PRIORITISATION

To illustrate the Principles, particularly 1, 2, 4 and 5, this basic prioritisation hierarchy may help guide thinking when considering where and how to implement NFM projects.



## PROJECT STAGES & CHECKLIST

Alongside the guiding principles, Gloucestershire NFM Project Partners have also helped to create the following Project Checklist to help delivery partners follow a tried and tested process when delivering NFM projects.

### Project identification and scoping

- Is the landowner engaged and supportive of the project?
- In your designs, have you followed the 'Nature-rich Design Guidelines' (below), or another recognised NFM evidence base (i.e. CIRIA NFM Guide)?
- Which communities at risk from flooding will benefit from the project?
- Have local nature recovery opportunities been checked (i.e. through LNRS) and what impact might this have on project design?
- What evidence does the mapping provide to support the interventions you are considering (i.e. significant flow pathways; existing wetland features; topography)?
- Have you considered protected species or habitats in your assessments?

### Working with partners

- Have you registered your project with the Gloucestershire NFM Project Pipeline (i.e. for support with funding; for monitoring; potential links to other partners)?
- Are there gaps in your capabilities that other partners might be able to provide support with (e.g. scoping interventions; identifying contractors; specialist habitat advice; monitoring)?
- Are there other projects in the catchment that could be linked up with?
- Do you need consents from the Environment Agency, Gloucestershire County Council, District Councils, Forestry Commission or Natural England for your project?

### Working with landowners

- Has the landowner(s) been regularly consulted during the project development phase?
- Do they understand the implications of the work for themselves and their land (i.e. impacts on farm productivity; ongoing maintenance)?
- Is there a written agreement in place with the landowner setting out the terms of the project (i.e. how the project will be funded; who will carry out the work)?
- Has the landowner been offered the chance to deliver the work themselves or via their own preferred contractor?
- Can the landowner refer you to neighbours or contacts who may also be interested in NFM projects?

### Working with contractors

- Does the contractor have prior knowledge and experience of NFM? Have you checked the Gloucestershire NFM Contractor list?
- Would your contractor benefit from visiting an established project to understand the design of different NFM interventions?
- A tried and tested approach to ensuring cost effective, small scale delivery, as well as positively engaging landowners, is:
  - to first offer the delivery work to the farmer/landowner to deliver themselves (with guidance)

- failing that, to ask whether the landowner has a preferred contractor they'd like us to work with
  - finally, to go out to tender with local contractors known to Gloucestershire NFM
- Have you agreed to supervise the contractor as they get going with the project, to ensure they fully understand the designs?

## Funding

- Have you shared your project with the Gloucestershire NFM Partnership to be included in the Project Pipeline? Including your project in the pipeline helps us to promote it to funders.
- Consider checking whether the Gloucestershire NFM Partnership could help fund your project.
- Have you checked whether you could use Environmental Land Management Scheme (ELMS) options to help progress your project?
- Have you budgeted for ancillary items (e.g. fencing; drinking troughs; gates) that may be needed to adapt the project to a landowner/farmer's wider needs?

## Maintenance

- Have interventions been designed to minimise the need for maintenance (i.e. high enough number of leaky dams in a reach to prevent the need for pinning; desilting of bunds/storage features)
- Is the landowner aware of the maintenance requirements of the NFM interventions on their land?
- Have you made a record of the interventions that have been installed? Would you be happy to share that with the county project for monitoring purposes?

## Monitoring

- Has your project got any characteristics that make it unusual, or that will lead to significant secondary benefits (e.g. water quality improvements; amenity value)? Are these things you could measure to help build the evidence base?
- What pre-existing data sources could you make use of to measure your impact (e.g. EA flow level data; habitat survey data; HLS agreement information)?
- Which project partners might be well-placed to support your monitoring? This could be with expertise or equipment (e.g. time-lapse cameras)
- Have you considered the NFM Laboratory Partnership as a possible provider?
- How will you feed back your data to the county project and more broadly? Would the project make a good case study?

## TOOLS AND SUPPORT

### Nature-rich Design Guidelines

- Use clues in the local landscape, geology, soil type, flow pathways, vegetation, cultural markers and other relevant features to shape your decision making – over and above preconceptions from mapping.
- Ensure your designs use only natural materials and prioritise using what is available on or as close as possible to the project site.
- Follow biosecurity protocols and try to minimise the amount of material brought onto or away from the site.

- Steer clear of processed timber, which does not provide the same habitat benefits and may introduce harmful chemicals to the catchment.
- Ensure that a proportion of leaky woody dams in a project are built to maximise habitat creation rather than purely for flood water attenuation.
- If in any doubt, consult with a specialist to assess risks and opportunities relating to rare or endangered species or habitats.