

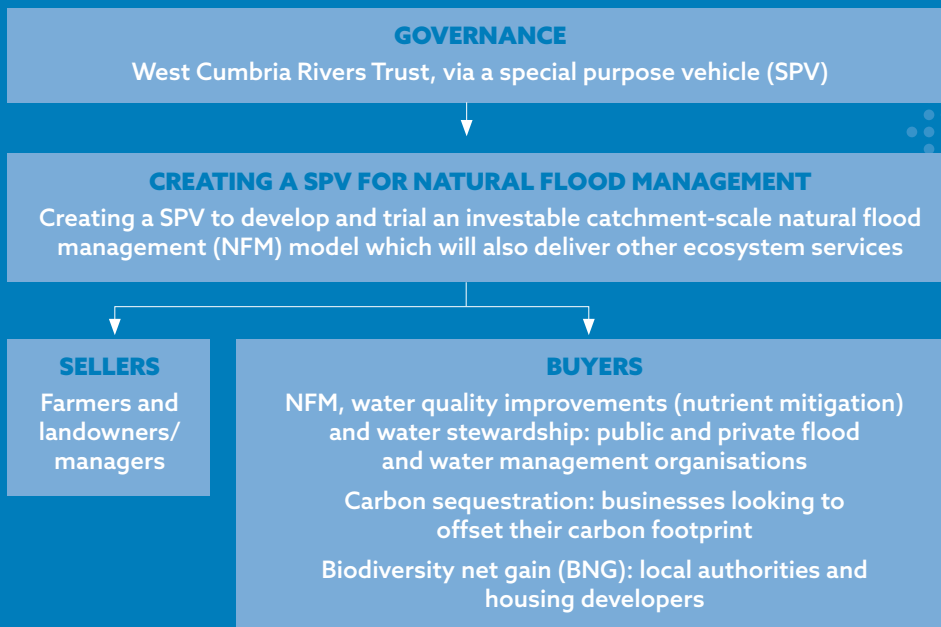
This is one of a suite of case studies of NEIRF funded projects, to highlight efforts to protect and enhance the natural environment, while generating revenue from ecosystem services.



Row End © Vikki Salas, West Cumbria Rivers Trust

RESILIENT GLENDERAMACKIN

HIGH LEVEL SUMMARY OF PROJECT



Habitat and geographical location

-  Enclosed farmland
-  Mountain, moor and heathland
-  Freshwaters and wetlands
-  Woodland and semi-natural grassland
-  The Glenderamackin River catchment near Keswick, Cumbria

PROJECT OVERVIEW

The 146km² Glenderamackin catchment in Cumbria has two urgent environmental challenges. The first is that Keswick has experienced three severe floods since 2005 and the area has an ongoing flood risk projected to worsen with climate change.

The second is a local and national challenge in supporting biodiversity. The Resilient Glenderamackin project, led by the West Cumbria Rivers Trust (WCRT) in collaboration with the Rivers Trust and Nature Finance, aims to create and restore habitats in the area with the purpose of providing natural flood management (NFM) and other ecosystem services.

The project used NEIRF funding to build on learnings from a similar [previous NFM project](#) delivered in the River Wyre catchment area and to develop an investible business model to fund NFM activities that will also enhance nature recovery in the Lake District National Park (LDNP). Specifically, NEIRF funding was used to:

- Commission and develop NFM modelling to calculate the project's flood risk reduction.
- Quantify the ecosystem service benefits that NFM interventions can deliver, to form the basis of discussions with potential buyers.
- Develop a detailed financial model that is scalable and replicable and begin to establish a SPV to facilitate delivery.
- Facilitate co-design with farmers/landowners to shape project deliverables and agree hosting and maintenance payments for NFM interventions.

The project aims to deliver a wide range of targeted NFM interventions throughout the catchment over 5 years, with farmers and land managers being offered payments for hosting and maintaining these interventions over an initial 12-year contract term, with the potential to extend to 25 years.¹ Each intervention host will receive a bespoke maintenance and adaptive management plan, as well as guidance around managing the intervention throughout its lifecycle. Upgrade investments are also factored into the business model. The ecosystem services that the interventions will provide (NFM, water stewardship, nutrient mitigation, and potentially carbon units via carbon sequestration and BNG) will then be sold to buyers through a SPV.

The suite of NFM features was based on extensive hydrological modelling by JBA Consulting, overseen by a modelling group which included the WCRT, the Environment Agency, the Rivers Trust and Lancaster University. The modelling identified NFM features and suitable locations to achieve the greatest reduction of downstream flood risk to Keswick. Delivery will be dependent upon consents for protected/designated land and landowner/ farmer appetite, as often interventions are located in profitable or useful places on farms like flat, fertile floodplain land. The activities the project may undertake as recommended by their modelling include:







- Creation of 45ha of wetland and ponds, and 200 leaky dams and woody debris features to provide temporary water storage.
- 4km of river restoration, including reconnecting watercourses with their floodplains.
- 26ha of grass/vegetation restoration and 30ha of peat restoration.
- Creation of 364ha of woodland (mixed native broadleaved woodland) and 10km of hedgerows suited to NFM (including banded hedgerows across surface flow routes).
- Establishing improved soil management across over 2000ha.

Going forward, the project is seeking to create memoranda of understanding and legal agreements with ecosystem service buyers who expressed interest; to identify an investor and to complete the set-up of the SPV to facilitate ecosystem service sales. WCRT will complete the next steps of its Resilient Glenderamackin project using funding from the [Landscape Recovery Scheme](#).

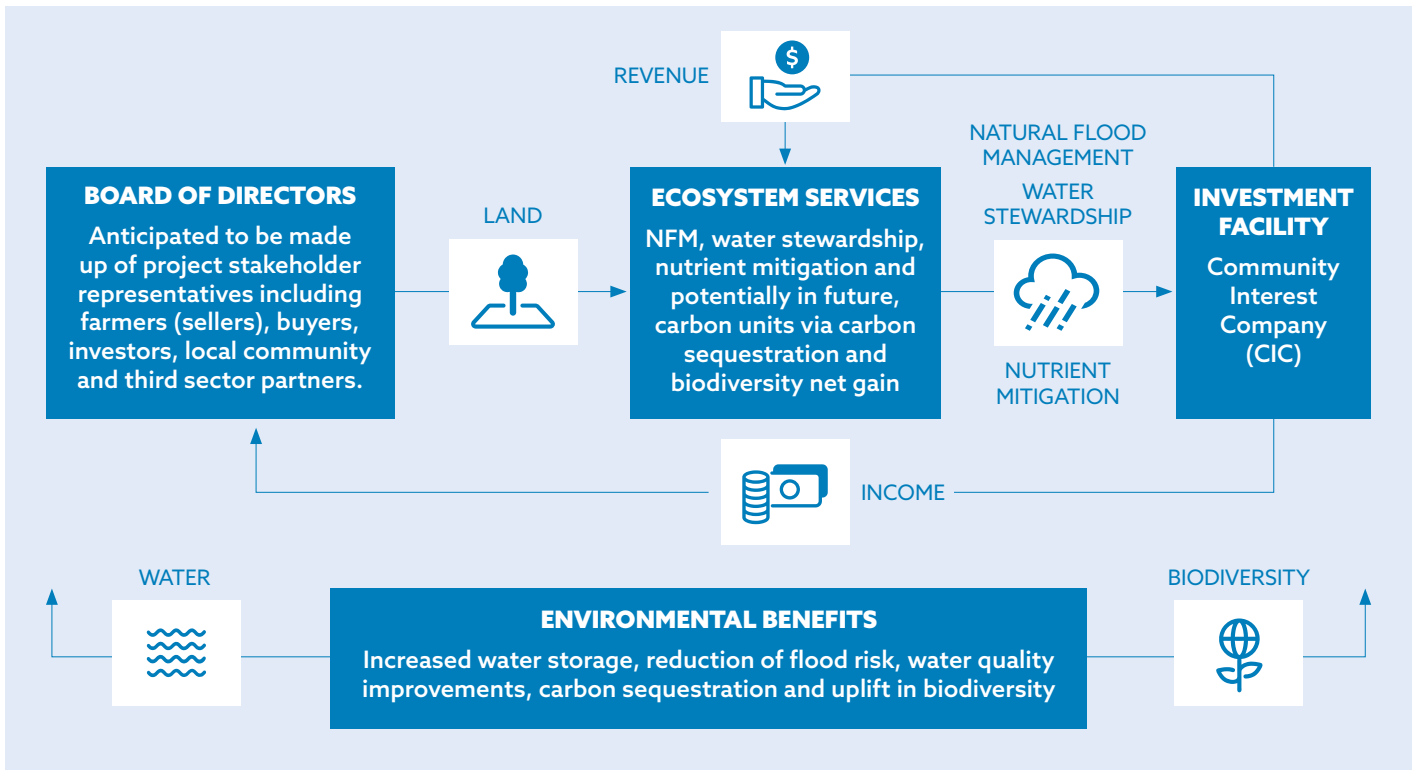
The project also received £50,000 of funding from Lloyds Banking Group through the [Projects for Nature platform](#). Projects for Nature connects businesses, and other donors, with nature recovery projects that have been screened by Defra, Natural England and the Environment Agency. This funding will help to build capacity in the project team to develop pathways to securing private investment into natural flood management through a sustainable financial model.

¹ These figures were relevant to the NEIRF project 2022/2023 timeframe. All contract lengths and financial figures within this document may change as the project develops further through Landscape Recovery Scheme funding.

GOVERNMENT ENVIRONMENTAL GOALS

 <p>Clean air</p>	<p>The creation of habitat such as broadleaf woodland removes carbon dioxide from the atmosphere to improve air quality.</p>
 <p>Clean and plentiful water</p>	<p>Establishing riparian buffer strips, hedges, wetlands and ponds among other interventions could prevent a total of 430kgs of phosphorus from entering the area's rivers and lakes.</p>
 <p>Thriving plants and wildlife</p>	<p>Habitat creation such as woodlands and ponds will increase abundance of local wildlife such as red squirrel, otter and various insect, amphibian & bird species. River restoration will create more favourable habitats for species such as salmon, trout and lamprey.</p>
 <p>Reducing the risks of harm from environmental hazards</p>	<p>Peak river flows in Keswick are expected to increase by 23% by the 2050s. Developing NFM features to store 800,000m³ of water could improve the area's resilience to extreme rainfall and reduce the flood peak in Keswick by 10%.</p>
 <p>Enhancing beauty, heritage, and engagement with the natural environment</p>	<p>NFM activities will be designed to complement and enhance the farmed landscape of the Lake District, a UNESCO World Heritage Site within which interventions require specific consents. The project is being co-designed with local farming communities and local communities will be engaged in NFM activities where possible.</p>
 <p>Mitigating and adapting to climate change</p>	<p>NFM activities on rivers, peatland, woodland and wetland will help to address climate change by providing carbon storage and sequestration, reducing greenhouse gases in the catchment area.</p>

OPERATING MODEL

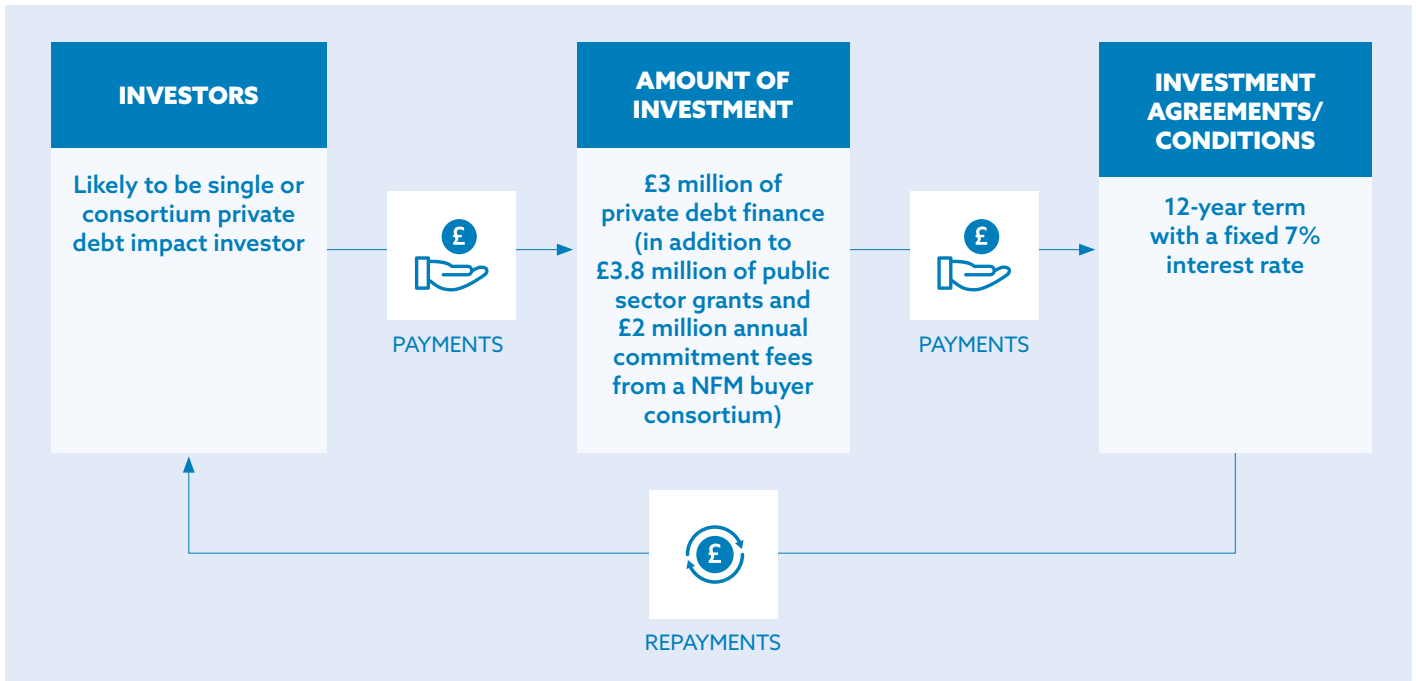


The project will set up a Community Interest Company (CIC) limited by guarantee as its SPV which will act as the financing, contracting and delivery vehicle for the project. The CIC will contain an asset lock to ensure that any retained profits are reinvested into social or environmental interventions which support the resilience of the catchment area. The CIC will not directly employ any staff, but will contract out its key delivery functions.

This may include contracting WCRT for the project's capital delivery (£8.6 million over five years) and project management (£1 million over 12 years), with the likelihood that WCRT would sub-contract significant elements of delivery to local contractors, farmers/landowners and potentially other environmental non-governmental organisations. Asset management (covering finance, administration and company secretarial) will also be contracted to a third-party organisation.



INVESTMENT MODEL



The initial funding for the project's five-year period of capital delivery, including for landowner/farmer hosting payments, will come from a combination of sources including £3 million of private debt finance (not secured during the NEIRF project timeframe, but likely to be from an impact investor). This loan will be drawn down over the first five years of the project and repaid over the next seven years. The project will also require £2.16 million of public sector capital grants for NFM interventions, £1.705 million of public sector grants through the [England Woodland Creation Offer \(EWCO\)](#) for the tree planting element and £2 million in the form of annual commitment fees over five years from a NFM buyer consortium. The consortium will be made up of local businesses who want to support the project in order to achieve their environmental targets.

Buyers of the project's ecosystem services will be offered 12-year contracts to mirror the contract length of landowners/farmers. After this period, new contractual arrangements could be put into place. Revenue from the first 12 years is anticipated to come from buyers of NFM, nutrient balancing, water stewardship (quantified using a volumetric water benefit accounting tool) and geomorphology mitigation services. Buyers will be permitted to submit one-off payments or capital contributions. Potential buyers include water companies, local authorities, National Highways, the insurance sector, and local businesses.



River Glenderamackin, Cumbria

INNOVATION

The project is innovative in how it has used a landscape-scale farm cluster group of over 45 landowners and farming tenants to drive interest in its catchment-scale ecosystem services mechanism, and how it has worked with this group to co-design aspects of the project such as hosting payments. The project has engaged with a large number of family-run, small livestock farms which gives confidence to potential buyers that the project can deliver at the scale required.

The project will be the first commercially viable large-scale NFM project within the LDNP and on a Special Area of Conservation with unfavourable status.

SCALABILITY AND REPLICABILITY

The project will build on the learnings from the Wyre NFM's debt finance model to scale up investment. The project's financial model is not unique to the Glenderamackin catchment and together these projects will form a learning base for other similar debt-based catchment NFM projects to replicate. The flood risk modelling can also be updated as techniques and datasets improve the accuracy of benefit projections and to account for any changes in scope or scale. The WCRT will continue its Resilient Glenderamackin project going forward, funded by the [Landscape Recovery Scheme](#).



LEARNING POINTS

- **Allow (and budget for) project staff to support specialist modelling.** Flood risk modelling was undertaken by specialists but required input by both the project team and modelling partners to agree the scope of the study and provide information about intervention locations. This takes project time and resource, but timely completion of modelling will also increase buyer confidence.
- **Buyer engagement early on is essential.** Engage with individual buyers early to understand the specific benefits of interventions that will be most relevant to them, and then take the time to quantify these to help build confidence. In some cases, buyer requirements can also help to confirm the best use of catchment land.
- **Develop a strong working relationship with farmers and landowners.** Holding meetings with farmer-groups, sharing learnings from previous similar projects in the catchment and building on any previous relationships can help to enhance trust.
- **Consider the co-design of hosting and maintenance payment rates for farmers/landowners to increase buy-in.** The project co-designed hosting and maintenance payment rates for interventions with farmers and landowners, with particular emphasis on larger hosting payments for significant interventions that farmers/landowners felt were harder to implement from a farm business perspective.
- **Build on existing literature and NFM delivery experiences.** Refer to both existing literature and organisational experience to avoid duplicating work, for example within NFM, around the way that water storage benefits can be quantified.

WOULD YOU LIKE TO KNOW MORE?

If you would like to learn more about the Resilient Glenderamackin project, please get in touch with Vikki Salas, West Cumbria Rivers Trust at vikki@westcumbriariverstrust.org. For questions regarding NEIRF, please contact NEIRF@environment-agency.gov.uk.

This case study was produced by Ecorys.