

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.



A rural natural flood management (NFM)
Replenish project, Cumbria
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REPLENISHING NATURE


HIGH LEVEL SUMMARY OF PROJECT



Habitat and geographical location

 Enclosed farmland
  Freshwaters and wetlands

 Semi-natural grassland

 Five river catchment pilot areas: Upper Medway catchment in Kent, Cam and Ely Ouse and Broadlands catchments in Norfolk, Wye and Usk cross-county catchment, Tamar catchment in Cornwall and Devon, River Thames and its tributaries



PROJECT OVERVIEW

Globally, the demand for water is expected to exceed supply by 40% by 2030.¹ In England, the quality of freshwater is a concern, with only 14% of England's rivers meeting the standard of good ecological health.²

As such, agricultural supply chains and other water-intensive industries and businesses are starting to reconsider their water usage. Many businesses want to offset or mitigate some of their water use within the catchments where their operations or supply chains are located, while supporting land use changes that will better protect rivers. Some international corporations already use Volumetric Water Benefit (VWBA) accounting methodologies to measure the amount of water they have offset or protected. However, there are a growing number of businesses with water stewardship commitments, and investors are increasingly seeking reassurances that companies are addressing water-related risks associated with their operations, reputation, and supply chain.

The Rivers Trust therefore used NEIRF funding to further develop their method of calculating volumetric water benefits (VWBs) by developing the Replenish toolbox. The main outcome that the Replenish toolbox measures is the volume of improved or stored water in m³ per year resulting from various water stewardship activities. These volumes, which are derived by establishing the most appropriate nature-based solution for the catchment, can be offered to businesses as an ecosystem service in the form of 'Replenish' credits. Businesses that support the creation of Replenish credits can then report on their mitigation activities in a consistent and meaningful way as the methodology can be used to measure outputs over time. Crucially, the project wanted to improve the robustness and comparability of Replenish VWB estimates by simplifying and enhancing the methodology, to channel revenue from businesses into nature-based projects.

EXAMPLE TRADE

The River Wyre catchment

The Trust has already completed a successful transaction as a result of its NEIRF work: Sainsbury's purchased Replenish storage credits (93,722m³). The Replenish credits will be generated from multiple natural flood management interventions in the Wyre which store water in the upper catchment. In turn this reduces peak flow, providing a reduction in flood risk to communities in the lower catchment. The interventions are being delivered under contract with a range of private landowners and tenant farmers over three years.

Specifically, the Rivers Trust used NEIRF funding to:

- Develop a new Rivers Trust Replenish toolbox based on the existing VWBA methodologies used to calculate Replenish credits from a range of environmental interventions in a standardised way.
- Work with expert organisations who also use a form of Replenish calculator (Water Plan and LimnoTech) to verify the toolbox's calculations and agree collaboration on buyer referrals.
- Test the toolbox in 5 pilot areas and develop a pipeline of 7 projects that want to use the Replenish methodology to support sales, including the Chambermead Wetlands, Amazon Web Services & Action for The River Kennet and Wyre natural flood management (NFM) Replenish projects.
- Develop the business case and commercial model to support the national implementation of the Replenish toolbox. This included producing a clear Replenish project lifecycle to use in communications with buyers and sellers.
- Create a user-friendly online interface for the toolbox, to make it more accessible for sellers i.e. farmers and landowners.

¹ From the International Resource Panel's Water Working Group report, accessible here [Options for Decoupling Economic Growth from Water Use and Water Pollution | Resource Panel](#)

² According to monitoring data, accessible here. [State of the water environment indicator B3: supporting evidence - GOV.UK \(www.gov.uk\)](#)

PROJECT OVERVIEW CONTINUED

The Trust matches potential buyers with local projects or catchment partnerships that can deliver the Replenish volumes required, while also delivering appropriate environmental outcomes for the catchment area. For example, a previous Replenish project in East Anglia and the South East constructed 93 silt traps/wetlands and disrupted 343ha of farming vehicle pathways compacted by machinery, which replenished 1.8 billion litres of water, led to 2,758ha of land being managed more sustainably and helped reduced flood risk to ~70 properties. The Replenish model then gives businesses three options: 1) to support whole projects i.e. to fund these in full and claim the entirety of the Replenish credits generated; 2) to partially fund projects and claim a % of Replenish volumes; or 3) to purchase Replenish volumes from projects whose capital works have been funded by an investor or funder seeking other outcomes with no interest in the replenish volumes.

Monitoring and maintenance will be delivered in partnership between buyers and sellers and built into contracts. Together, and initially with close support from the Trust, both parties will be responsible for maintaining and monitoring interventions over time, typically for around 10 years, or the length of time that buyers wish to claim Replenish values for.

Monitoring activities to validate the outcomes predicted by the toolbox may include flow and depth meters for runoff-focused measures and assessing wetland functionality; water quality testing for pollution reduction measures; the Trusts are looking to develop a standardised approach to monitoring utilising best practice citizen science approaches in order to provide rigour whilst keeping costs to a minimum. The Trust will jointly develop project reporting and communications with buyers, to help showcase the environmental benefits delivered.

The Rivers Trust plans to expand its Replenish project pipeline and to continue applying the toolbox to different types of nature based solutions to further validate its robustness. The Trust is also considering how other environmental services can be stacked with Replenish credits, for example carbon units.

In the future, the Trust may use an online platform to aggregate trading opportunities, connecting Replenish buyers and sellers. This would likely take the form of a wider Rivers Trust nature-based solutions hub connecting buyers and sellers of various ecosystem services, with Replenish being one option.



An urban wetland natural flood management (NFM)
Replenish project, Wyre Catchment, Lancashire
© Wyre Rivers Trust

GOVERNMENT ENVIRONMENTAL GOALS



Clean and plentiful water

Projects using the Replenish toolbox will **contribute to the creation or restoration of ponds and wetlands**, and the installation of rainwater harvesting features or floodplain inundation which will increase water storage. Constructed wetland treatment systems and Sustainable Drainage Systems may also **support water quality**.



Thriving plants and wildlife

Replenish projects will support local catchment partnerships' environmental needs by using and managing land to **protect rivers for biodiversity and restore aquatic habitats**.



Reducing the risks of harm from environmental hazards

Projects using the Replenish toolbox will implement land use changes that will reduce or avoid water run-off and store water. Replenish will also **promote land cover conservation or restoration** (e.g. creating woodland or converting arable land to rough grassland).



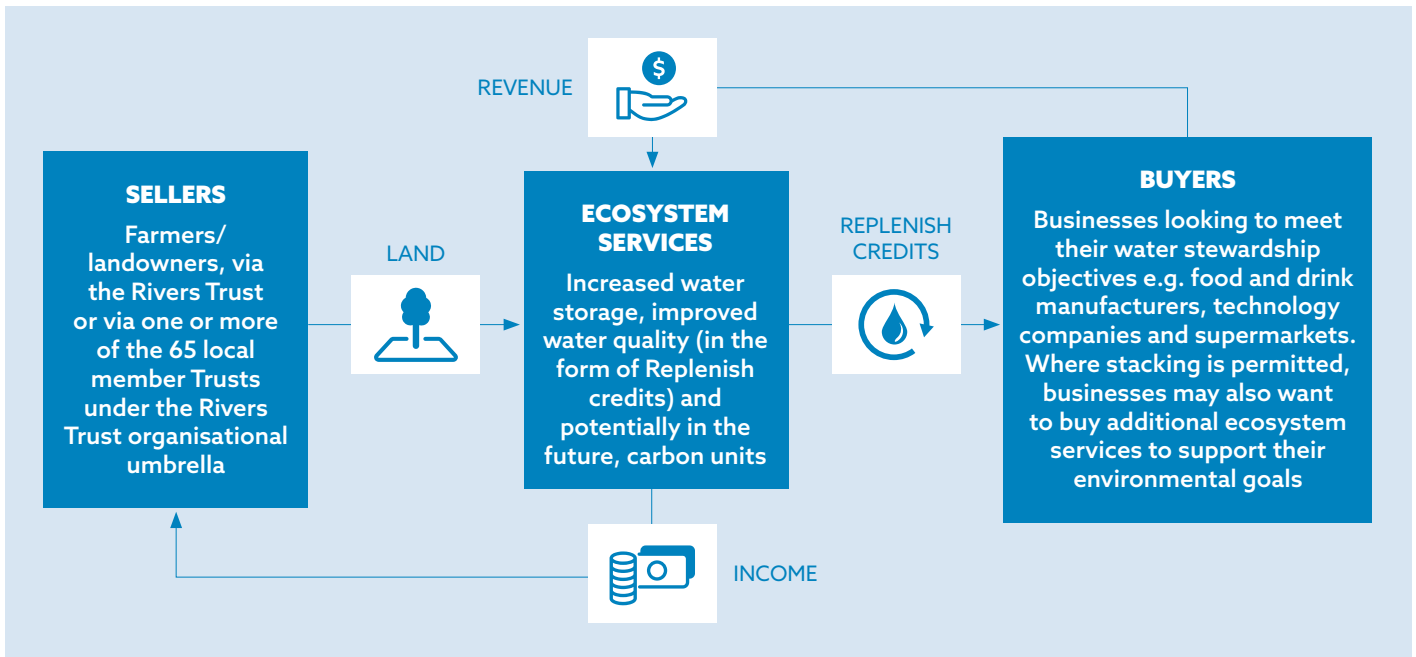
Mitigating and adapting to climate change

The Replenish toolbox will incentivise sustainable land use to reduce water usage and **minimise interruption to water supplies during drought**.



Amazon Web Services & Action for The River Kennet (ARK)
Replenish project, Kennet Valley, Wiltshire
© Pete Davies

REVENUE MODEL



In the first option that the Replenish model offers to businesses, a business may be approached (or approach a Rivers Trust) with a Replenish intervention that would support the business' water stewardship strategy. The full intervention will be costed and presented to the business, which can then purchase the entire project. This will pay for all surveys, capital costs, staff time and monitoring for a minimum of three years. The buyer can then claim the entirety of the Replenish credits generated and potentially other benefits where applicable, such as carbon units.

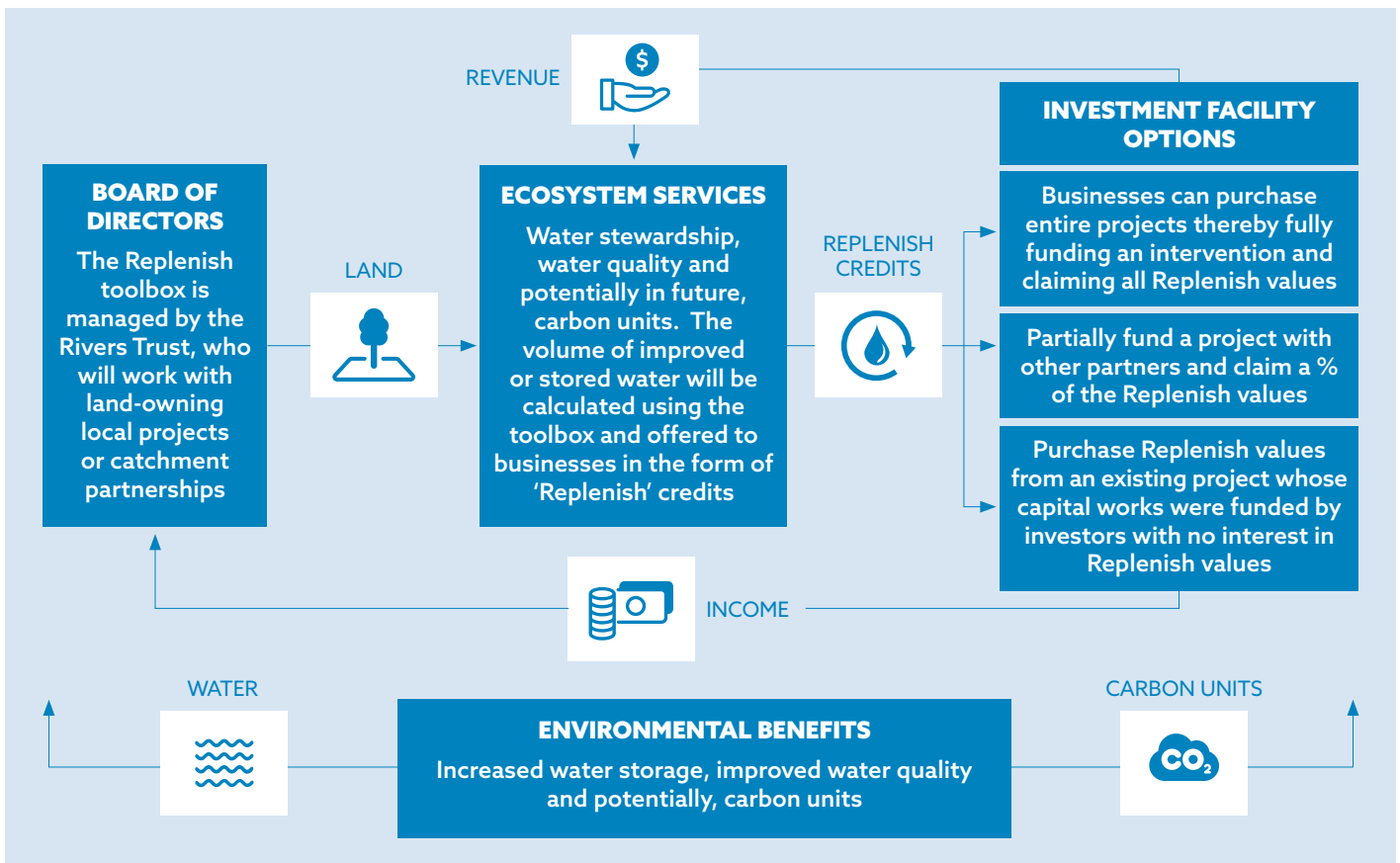
In the second option, a business may choose to partially fund a project in collaboration with other partners, with each partner claiming a % of the Replenish values (and potentially also a % of other environmental benefits). This can be particularly beneficial for large projects which require multiple sources of funding.

In the third option, a Replenish intervention will have already been developed and implemented with capital from an investor or funder (e.g. a grant) who is not interested in claiming any Replenish credits. The Replenish credits are therefore sold to businesses looking to offset their water usage. The completed Sainsbury's sale is an example of this option, which requires less capital from buyers. In this scenario, the buyer could consider purchasing additional environmental benefits as an 'add-on' if applicable. Where projects are funded by private investment, it is likely that Replenish credits would be stacked with other ecosystem services to ensure the viability of the project.

All interventions will be vetted by the Rivers Trust to ensure that they meet the environmental requirements of the catchment, costings are correct, appropriate timelines are in place, written consent has been obtained from the landowner and Replenish calculations are accurate. Buyers are then subject to due diligence processes to ensure the integrity of any sale and to mitigate any concerns around greenwashing. This includes examining the potential buyer's commitment to reducing water consumption and ensuring that they are in the same geographic region (ideally within operational catchment) as the relevant Replenish project. Once a buyer is approved, the Rivers Trust issues a contract with the project deliverer. The contract includes a maintenance plan whereby the Trust or another trusted local partner will carry out maintenance for 10 years. At the end of this period, a continuation plan (which the Trust is currently developing) will need to be set-up with the landowner/council.

It is hoped that as the market develops over time, there will be opportunities to utilise the corporate funding and match funding from water companies and others to stimulate wider collaborative action and further investment in Replenish projects to accelerate and scale the implementation of nature-based solutions across catchments.

OPERATING MODEL



The Replenish project is led by the water stewardship team within the Rivers Trust. Given the early stages of the toolbox, the Rivers Trust currently play a key role in project managing end-to-end processes, from engaging and matching sellers and buyers, overseeing and quality-controlling transactions, and supporting sellers' ongoing partnerships with buyers, including around monitoring and communications. The ambition is that in future, some of this work may be done by catchment partnerships or by local member Trusts whilst maintaining the integrity and quality of projects. The Rivers Trust Replenish work was steered by two working groups: a Seller Technical Advisory Group, and a Buyer Technical Advisory Group. These groups helped the Trust to assess the demand for Replenish credits. The Sellers Group consisted of five local Rivers Trusts involved in landowner and farmer engagement. The group fed into the toolbox to help develop the interventions and calculation methods, tested the toolbox, and developed the project pipeline with landowners. The Buyer Group consisted of 5 large businesses with existing water objectives (Coca-Cola, Britvic, Amazon Web Services, Belu and Sainsbury's). This group reviewed buyer and seller processes and provided guidance on respective industry needs.

Replenish projects, including those in the pipeline, are managed by the Rivers Trust, local member Trusts or wider catchment partnerships. This is because interventions will be informed by the environmental needs of local catchments and the Replenish volume requirements of buyers. The Rivers Trust plan to select interventions by working with relevant partners to:

- Complete environmental assessments to understand what areas have the highest water-related risks and needs.
- Contact landowners and/or local councils and catchment partnerships to understand potential project opportunities.
- Identify appropriate interventions (with the support of a local Rivers Trust agricultural or professional advisors) before communicating these to buyers and sellers to secure buy-in.
- Develop a standard for monitoring and maintaining interventions to ensure they continue to deliver replenish values.

Some project management activities carried out by the Rivers Trust may eventually be completed by projects or catchment partnerships.

INNOVATION

A key innovation of the project has been to work in partnership with businesses that are interested in water stewardship to deliver environmental benefits. Rather than engaging on a transaction-only basis, the Trust is working to assist corporations in their understanding of water stewardship and on their journeys to deliver water commitments. As part of developing this partnership approach, the Trust has looked at practices and approaches used by businesses in other sectors to establish how these can be scaled to support the needs of a catchment.

The project will help to make water stewardship projects more attractive to buyers thanks to the Replenish calculator providing easy-to-use, robust quantification of water benefits, while three options to purchase or claim Replenish volumes provide buyers with flexibility to suit their environmental goals and budget.

SCALABILITY AND REPLICABILITY

The indicators employed by the toolbox are taken from established, validated models which are driven by open data, making the methodology replicable and transparent. The Rivers Trust first iteration of the Replenish toolbox can now be used in a wide variety of geographical locations and intervention types, while the Trust plans to continue monitoring the implementation of the toolbox to inform further changes to strengthen its robustness. The Trust is also considering the interaction between catchment needs/priorities and Replenish values, to ensure integrity in the application of the toolbox and the interventions that it supports. Project types currently included in the toolbox are:

- Offline ponds, wetlands and bunded areas for water storage.
- Offline and online ponds, wetlands and bunded areas for water quality.
- Land use change.
- Rainwater harvesting for natural flood management.
- Peat restoration.
- Floodplain increase and restoration.
- Leaky woody debris dams.
- Fish barriers.





LEARNING POINTS

- **Include as many different geographic locations as possible when developing a metric.** This helps to ensure that the methodology is robust.
- **Aim to understand your buyers and their intentions from the outset** as this should inform your financial approach. If buyers are interested in purchasing nature-based services upfront, investment may not be needed.
- **Ensure that projects/interventions are led by the needs of the catchment** and the local environmental threats/opportunities, to achieve optimal outcomes. This also provides confidence to buyers.
- **Invest ample time in working with sellers to scope projects.** Don't underestimate how much time it takes to develop interventions to the point of sale. Consider building in funding for landowner engagement and site scoping if possible, as this is time and resource-intensive.
- **Ensure messaging around the ecosystem(s) being sold, and its purpose, is clear, to build buyers' confidence.** Events with buyers can be a useful engagement mechanism, though trust will require time to develop.



BSI NATURE INVESTMENT STANDARDS PROGRAMME

The British Standards Institution's (BSI) UK Nature Investment Standards Programme, sponsored by Defra, launched in March 2023. This programme aims to support UK markets for ecosystem services by creating a consensus-based standards framework for nature markets, and developing a suite of new investment standards, including an overarching principles standard with how-to methodologies for demonstrating high integrity. This draws on the Government's policy framework for Nature Markets. The programme covers the full range of nature solutions and will drive the application of principles to guard against greenwashing and apply consistent approaches to quantifying ecosystem services, providing a benchmark by which methodologies can be recognised as sufficiently robust and credible. The BSI are working with a wide spectrum of public body, land management, environmental and financial stakeholders, including NEIRF projects which are exploring the case for, or creating, new credit or unit issuing schemes. More information can be found here: [The Nature Investment Standards Programme](#).

Additionally, the International Organisation for Standardization (ISO) have recently published a new standard on water management 14002-2.

WOULD YOU LIKE TO KNOW MORE?

If you would like to learn more about the Replenish projects, please get in touch with the Water Stewardship team at info@theriverstrust.org. For questions regarding NEIRF, please contact NEIRF@environment-agency.gov.uk.

This case study was produced by Ecorys.