

Financing nature-based solutions in Oxfordshire

A strategic plan to catalyse a framework of natural capital investment

Our Vision

Oxfordshire's natural capital investment framework will radically enhance nature, delivering natural solutions to climate change and wider benefits for communities, health, water and the environment. It will enable the development of a project pipeline and fund delivery of environmental enhancement projects by leveraging public, private, third sector and philanthropic funds. The market will function with high integrity and transparency and be guided by local evidence in alignment with the priorities of the forthcoming Local Nature Recovery Strategy.

Achieving our vision would bring a number of co-benefits, including:

- Enabling delivery of elements of the Local Nature Recovery Strategy, through the development of funding and income streams
- Contribute towards funding nature's role in mitigating and adapting to climate change, thereby increasing the resilience of Oxfordshire's wildlife, people and economy
- Enhance Oxfordshire's natural environment, maximising benefits for people's health and wellbeing
- Establish Oxfordshire's natural capital as a cornerstone of the economy whilst also supporting diversification of income streams for farmers and landowners and the development of green skills and green jobs
- Support delivery of the [Oxfordshire Strategic Vision](#) and [Pathways to Net Zero Carbon Oxfordshire](#)
- Contribute towards delivery of the UK Government's nature recovery, net zero and wider environmental targets

State of Nature in Oxfordshire

The UK is one of the most nature-depleted countries in the world, and the worst in the G7¹. Nationally, the government have set targets that 30% of England will be managed for nature by 2030², and that tree cover will be increased by 1 million hectares by 2050³. However, there exists a £6bn per annum gap in funding to achieve these targets nationally⁴.

¹ <https://www.nhm.ac.uk/our-science/data/biodiversity-indicators/what-is-the-biodiversity-intactness-index.html>

² DEFRA, Outcome Indicator Framework for the 25 Year Environment Plan: 2022 update (May 2022)

³ DEFRA, England Tree Action Plan 2021-2024 (May 2021)

⁴ <https://www.greenfinanceinstitute.co.uk/news-and-insights/finance-gap-for-uk-nature-report/>



Locally, the Oxfordshire State of Nature Review 2017⁵ shows a continuation of long term declines in farmland and woodland biodiversity, and continued fragmentation and loss of connectivity across the county’s landscapes, effecting the future viability of habitats and species.

Nature is vital not just for wildlife and biodiversity, but also provides a number of services, known as ecosystem services, that benefit society and the economy. Natural Capital is a frame through which these wider environmental benefits can be understood (see figure 1).

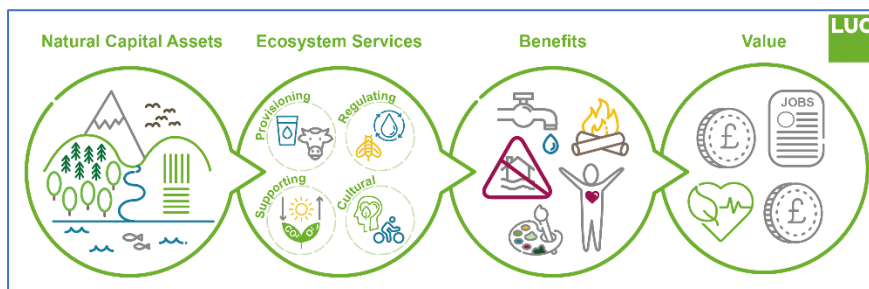


Figure 1 – About natural capital and Ecosystem Services (c/o Land Use Consultants)

Using the Environment Agency’s Natural Capital Register and Accounts Tool (NCRAT), we can attribute a partial value to the ecosystem services generated by Oxfordshire’s natural capital of at least £0.5bn per annum (see Figure 2).

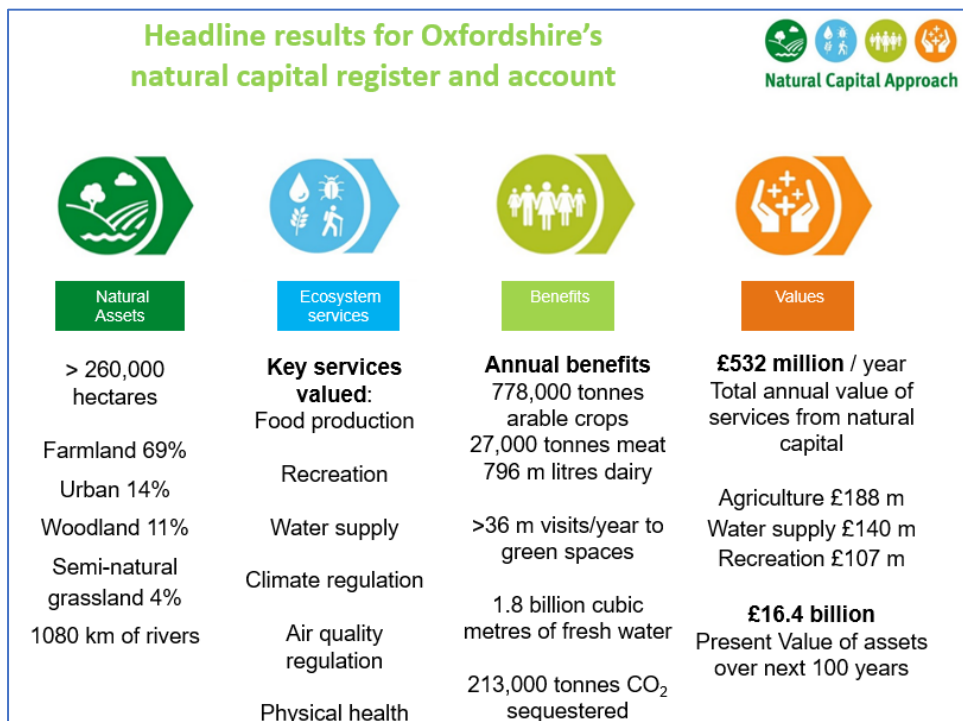


Figure 2 – Oxfordshire Natural Capital Register and Account

⁵ State of Nature in Oxfordshire 2017, Wild Oxfordshire, 2017

So Oxfordshire's nature is important, but in decline. The Oxfordshire Local Nature Partnership exists to radically enhance nature and the Local Nature Recovery Strategy will be a spatial strategy for nature and environmental improvement. Working with Oxford University, we have calculated the cost of delivering Oxfordshire's nature recovery ambitions at an estimated £800 million⁶ by 2030.

DEFRA's Environmental Land Management scheme (ELMs) is likely to continue to be the main source of environmental funding from government for farmers. As over 70% of the county is managed by farmers, this is a key method of delivering nature-related outcomes, but the methods for ensuring ELMs funds deliver local environmental priorities are as yet unclear.

Oxfordshire has a strong evidence base showing where environmental funding could best be targeted to deliver maximum benefits. TVERC's Draft Nature Recovery Network demonstrates the most important places for nature restoration in order to ensure habitat connectivity for biodiversity. The Environmental Change Institute's ecosystem service mapping shows where different habitat types are delivering ecosystem services currently, and to what extent, and they are currently extending this to create opportunity maps to show the best locations for nature-based solutions. This mapping, along with the local expertise within groups like the Biodiversity Advisory Group, HERO initiative and Local Nature Partnership, represents a wealth of understanding of the best places to take action for nature. It will be important to ensure that projects contribute to this strategy, with the right actions in the right place, as connected as possible, and with a good mix of large and small-scale projects.

Demand for nature-based solutions

More than half of UK businesses have net zero targets⁷, and many of these involve offsetting residual emissions. We want to provide local businesses with high quality, high integrity options to buy carbon credits locally (See **Box 1**).

Emissions in Oxfordshire are estimated to be in the region of 4.2Mte/year⁸. If 90% mitigation is achieved by emissions reduction, there could be up to 400Kte/year to be offset. Using the current EU ETS carbon price, this is a total of £27million per annum.

As laid out in the Environment Act, housing and infrastructure developers need to demonstrate to Local Planning Authorities (LPAs) that their projects will deliver at least a 10% biodiversity net gain⁹, and Oxfordshire Local Nature Partnership is supporting Oxfordshire LPAs to push for greater than 10%. In many cases this will involve offsetting, and this offsetting needs to be local and ready at the point of planning consent being sought

⁶ Hawkins et al. (2023) The potential contribution of revenue from Biodiversity Net Gain offsets towards nature recovery ambitions in Oxfordshire. Report by Oxfordshire Local Nature Partnership and University of Oxford.

⁷ <https://www.edie.net/more-than-half-of-uk-businesses-have-net-zero-plans-but-how-can-these-targets-be-reached/>

⁸ <https://www.eci.ox.ac.uk/publications/downloads/PazCo-final.pdf>

⁹ <https://www.local.gov.uk/pas/topics/environment/biodiversity-net-gain-local-authorities#:~:text=Resources-,What%20is%20biodiversity%20net%20gain%3F,the%20term%20'biological%20diversity'>



(See **Box 2**). It is estimated that the local demand for offsite biodiversity units could be worth up to £18.9million per annum over the next 10 years¹⁰. Based on existing offsets delivering biodiversity units, we estimate this could require 190ha across Oxfordshire to meet this annual demand¹¹.

Businesses are increasingly recognising both their reliance and their impact on the natural environment, with a growing number wanting to become 'Nature Positive'. This is catalysed by approaches like Taskforce on Nature-related Financial Disclosures (TNFD) which has developed a framework for businesses to identify their nature-related risks, enabling nature to be incorporated into decision-making. Approaches like Landscape Enterprise Networks enable businesses to invest directly into their local landscape to improve financial sustainability such as by reducing flood risk and improving soil and water quality.

As a result of these demand-side factors, there is an emerging market for credits, or offsets, resulting from environmental enhancement projects. Businesses want and need to pay for environmental enhancement. But on the supply side, there is a problem. The transaction cost of delivering projects that provide these credits is high, and the process is complicated and time consuming, requiring expertise which is in short supply.

Oxfordshire Local Nature Partnership is working to resolve this problem, by developing a framework and market for natural capital investment. This adaptive framework will attract upfront investment in landscape-scale nature recovery and natural capital projects, projects which will produce saleable 'credits', generating revenue to repay the investment.

The funding will be across two phases:

- 1) **Investment Readiness Funding.** This preliminary funding will support landowner engagement, baselining, management plans, business case development, matchmaking with potential buyers. This can also be characterised as 'developing the project pipeline', and will likely require the establishment of a revolving fund.
- 2) **Capital Investment.** This funding pays for delivery of on-the-ground works, with associated costs, delivering the actual environmental enhancement.

It is anticipated that not all projects will require both phases of funding.

About the markets – Carbon

Carbon credits are a way that a company can account for carbon that has been sequestered by others, offsetting it against their own emissions¹². Currently, the only verified standard that is applicable in Oxfordshire is the Woodland Carbon Code. There is currently a huge shortage of English credits available – this is due, in part, to the time lag between planting

¹⁰ Using the medium scenario from Hawkins et al. (2023) The potential contribution of revenue from Biodiversity Net Gain offsets towards nature recovery ambitions in Oxfordshire. Report by Oxfordshire Local Nature Partnership and University of Oxford.

¹¹ Figures from Trust for Oxfordshire's Environment's historic offsite biodiversity net gain projects = 4 biodiversity units/hectare

¹² Carbon offsetting should never be a substitute for emissions reduction, but a last case option for only those residual emissions which cannot be avoided.



and sequestration. Firstly, those schemes which have been planted are still not producing units. Secondly, because of the time lag between expenditure and income generation, there are very few landowners willing and able to take this long-term view of investment, leading to a lack of tree planting projects. Box 1 gives an example one of the very few large scale carbon credit projects in Oxfordshire.

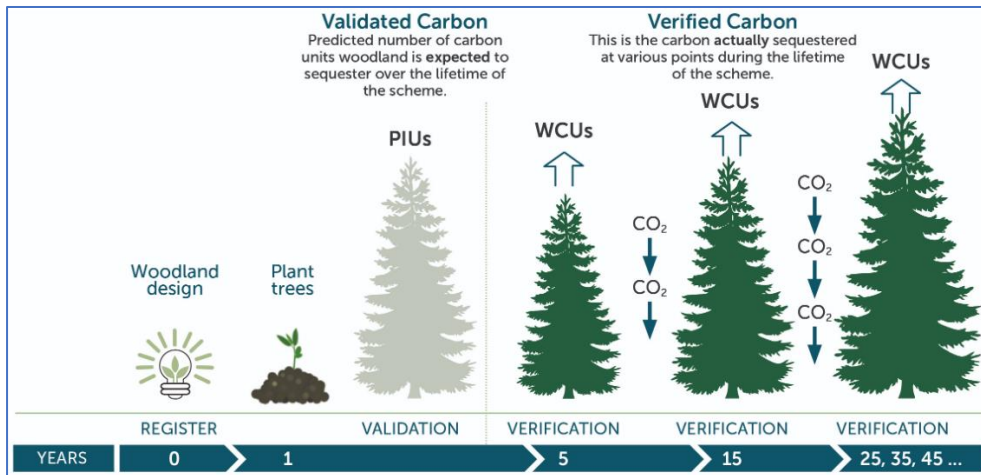


Figure 3 – The carbon credit process for Woodland Carbon Code

Box 1 – Tree Planting at Blenheim

A partnership between Morgan Sindall and Blenheim Estate planting more than a quarter of a million trees to transform the land as part of an ambitious series of sustainability initiatives. 22,000 tonnes of carbon will be sequestered over the next twenty five years. It is expected that an unregulated, unsupported market would generate carbon credits from woodlands that fail to maximise delivery of additional ecosystem services. The Blenheim project takes a different approach, creating a diverse and self-sustaining ecosystem that provides measurable, demonstrable gains in terms of soil, air and water quality, not to mention the wellbeing benefits for all those who can come and enjoy the forest as it grows. Oxfordshire’s natural capital investment framework will seek to support more projects like Blenheim, while supporting development of carbon credits from other habitat types, such as soil.

About the markets – Biodiversity Net Gain

Mandatory Biodiversity Net Gain (BNG) becomes law in late November 2023, and parts of Oxfordshire have a long history of delivering BNG through the planning system. Trust for Oxfordshire’s Environment (TOE) has been central in enabling this via facilitation of the offsite credits market.

TOE works with landowners to design and accredit projects that provide credits to be sold to developers. Previously, funds were collected, and projects then delivered using those funds. However, from November 2023, projects need to be prepared in advance of offering credits to developers. This creates a dilemma – funds are required to plan projects, but funds are

not available until credit sale. This dilemma has the potential to cause long delays to the planning system.

What is needed is a pipeline of projects ready to address developer demands for biodiversity units immediately. One type of site that will be important to include in a project pipeline will be habitat banks, for which up-front investment ensures projects are able to create habitat prior to developers requiring the credits. Box 2 provides an example of a habitat banking model that has been developed in Oxfordshire.

BOX 2 – Biodiversity Net Gain at Duxford (or habitat banking)

Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT) acquired Duxford Old River, a site adjacent to their existing Chimney Meadows nature reserve. The site had been managed previously as commercial pasture for cattle and so had a very low value of biodiversity. The opportunity for long term investment into this site to improve the biodiversity presented the ideal platform to achieve this through Biodiversity Net Gain as a new Habitat Bank.

Over 30 years of nature-led management, a mosaic of key floodplain habitats will be created, such as floodplain wetland mosaic, other neutral grassland, broad-leaved woodland, and mixed scrub. These habitats will support species of wildfowl, waders, songbirds and specialist wetland invertebrates. An Environment Benefits From Nature assessment revealed that in 30 years we predict to see increases in a range of services, such as flood regulation, erosion protection, carbon storage, and interaction with nature.

As part of a project funded by the Natural Environment Investment Readiness scheme (NEIRF) and in partnership with Finance Earth, a financial model was developed to evaluate the commercial viability of the habitat bank. The sales strategy employed will be to see some biodiversity units prior to habitat restoration work commencing, and some post-enhancement. BBOWT have now sold a first batch of units from the site to Trust for Oxfordshire's Environment.

Duxford Habitat Bank has a large volume of units still to sell, ready for the expansion of the local market when BNG becomes regulated in November. The creation of Duxford Old River as a habitat bank will generate over £1m of new incremental revenue for BBOWT with a positive gross operating margin which will be required to fund the management, monitoring and reporting requirements for the delivery of biodiversity net gain throughout remaining term of the 30 year project.

What will Oxfordshire's natural capital investment framework look like?

As demonstrated in Boxes 1 and 2, private finance is already being deployed in Oxfordshire to deliver environmental benefits. However, to achieve the scale and pace of activity needed to address our twin climate and ecological emergencies, we need a framework to facilitate the market in a fair, high-integrity, evidence-backed and consistent way. One way of doing this could be through the creation of an Oxfordshire Environment Fund.



Our natural capital investment framework will demonstrate the following characteristics:

Gold standard We aim to achieve excellence in all projects funded by private finance in Oxfordshire. This will require the creation of a set of ethics for project delivery, along the lines of the Lawton principles¹³ (bigger, better, more and joined) and including a set of criteria that investors and buyers of ecosystem services must meet. All projects will be designed to deliver measurable biodiversity benefits in line with Oxfordshire's Local Nature Recovery Strategy. It will be distributive by design, accessible to all farmers and landowners and with benefits to rural communities.

High integrity We are alive to the risks of greenwash associated with nature finance. Our framework will only accept investment and funding where it meets strict standards, including around transparency and monitoring, covering biodiversity and climate.

Flexible and sensitive, with multiple providers, but a central body providing degrees of service to a diversity of actors. For some, this may be a complete package from project conception to completion. For others, it may simply be verification and validation, or access to the Oxfordshire register.

County-wide Key to a successful roll out of mandatory biodiversity net gain is a spread of offset sites throughout the county, crucially with at least one in each Local Planning Authority area. The proposed framework will have this as a key consideration, to ensure that any biodiversity lost is compensated for in a proximate location.

Aggregation, including via habitat banking, is important to meet the scale demanded by investors. There should be facility for pooling credits offered by multiple projects. A central mechanism may also be required to aggregate funds from multiple sources (public, private and philanthropic).

Multiple ecosystem services, aspiring towards multi-functionality whilst ensuring additionality. For instance, Carbon Credit projects should also seek to maximise biodiversity, access and water management benefits (as in Box 1).

Market Design

Key to the success of the framework is that it meets the needs of the various actors, including those relating to integrity and ethics, whilst ensuring the market can operate as effectively and efficiently as possible. We are clear that a central environmental fund organisation is required in order to manage a variety of functions, but the model illustrated in Figure 4 will be deliberately flexible. In some instances, the operations performed by the market mechanism might all be managed by the central funding body, but in others a variety of actors (landowners, buyers, aggregators) may fulfil some of these roles.

¹³ Lawton et al. (2010) [Making Space for Nature: a review of England's wildlife sites and ecological network](#). Report to Defra.

Enabling such a dynamic market is crucial in driving competition and bringing down price, whilst the existence of a central validating body will ensure this is not at the expense of ecological integrity, or to the detriment of fairness for different types of landowner.

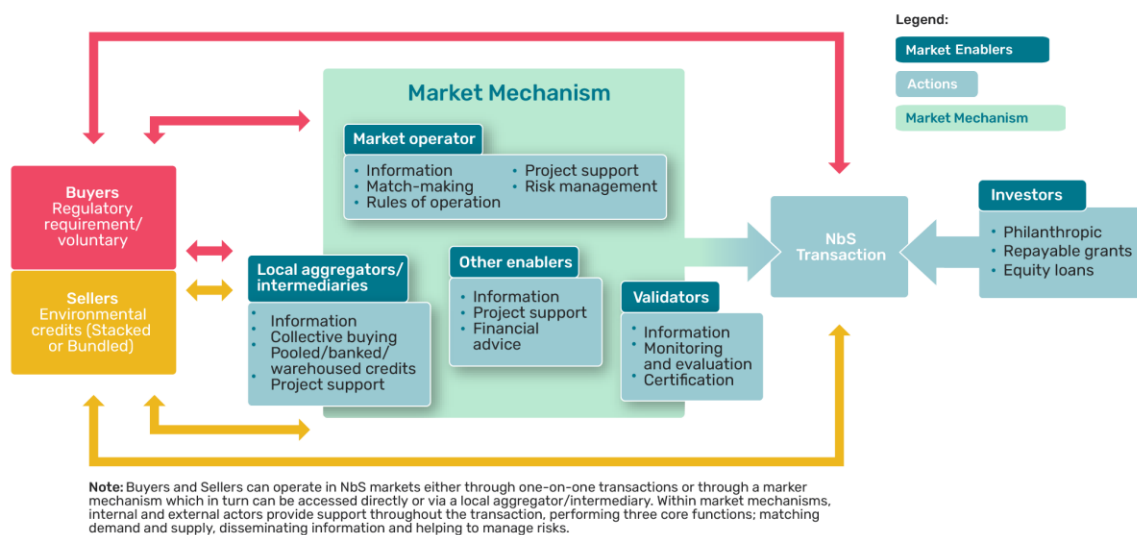


Figure 4 Proposed operating model for Oxfordshire's Carbon Market (credit – edited from Accelerating Nature Based Climate Solutions: Review of Market Enablers Report prepared for East Sussex County Council by EFTEC)

Funding the enablers

Although Oxfordshire is already in a great place to facilitate private investment in natural capital, OLNPN recognises the need for creating or enhancing the market enablers required to meet the aims outlined above. The following four points represent an opportunity for an individual, organisation, funder or anchor institution to demonstrate commitment to enabling this programme of natural capital investment. The level of funding required is estimated to be £1,000,000 over 2 years for this work.

- 1) Generate a **pipeline of projects** which are 'investment ready' (e.g. baseline, management plan, value calculation) using the Green Finance Initiative's Investment Readiness Toolkit¹⁴. This will include supporting coordinators/facilitators of landscape-scale delivery partnerships (such as farmer clusters and Catchment Partnerships) to develop projects, plus a quantitative assessment of Local Authority-owned sites. This would also include a comprehensive programme of community, land-owner and stakeholder **engagement and consultation**. The result would be a set of multiple investment ready projects across all LPAs that will meet the

¹⁴ <https://www.greenfinanceinstitute.co.uk/qfihive/toolkit/>

projected demand for biodiversity, carbon, and other emerging natural capital markets.

- 2) Develop a set of operating **ethics for buyers and investors** in the Oxfordshire market. This should include ensuring companies wishing to purchase carbon offsets have developed a verified pathway to net zero plan, and ideally a Taskforce for Nature-related Financial Disclosures (TNFD)-aligned nature positive plan.
- 3) Design and establish a **central environmental fund vehicle** and **self-sustaining operating model**, to manage aspects of the market to varying degrees depending on the needs of the actors (investors, buyers, landowners, other enablers/aggregators). This could include receipt and distribution of funds, supporting project developers (i.e. landowners), validation and verification of credits, data management, and monitoring and evaluation.
- 4) Attract **investment** in a revolving fund to finance delivery of projects, generating credits that repay investment.

The benefits of delivering this Strategy are enormous, and Oxfordshire already has a number of projects underway that are implementing various aspects of it, ready for investment. One of these is the North-East Cotswolds Farmer Cluster, where 100+ farmers are working together across 40,000 hectare on a Landscape Recovery Project. Tony Juniper noted the importance of leveraging private finance to deliver this project, linking to Oxfordshire's emerging Local Nature Recovery Strategy.

For more details, or to register your interest for supporting this strategy, please contact localnaturepartnershipoxfordshire@southandvale.gov.uk

