Leading from the front

The Role of the Public Sector in Delivering Nature Recovery

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With Foreword by Mariana Mazzucato

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Research commissioned by the Woodland Trust.
Front cover image: Ben Lee/WTML.

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Foreword

Governments should make sure they have the tools to solve the most pressing tasks facing society.

The UK Government was one of nearly 190 countries that signed up to the United Nations Global Biodiversity Framework in 2022 and has set important and challenging targets for nature's recovery domestically to 2030.

This is a major commitment, requiring a reverse of trends that have been decades in the making. Not only does it imply significant alterations to the way land is managed, it requires that this change happens fast. Such transformation is possible but requires clear leadership from Government with policy, targets, funding and regulation all pulling in the same direction.

Too often, the state can view its own role in dealing with big problems as a largely passive one. At best it tries to 'fix' market failures, patching things up once they go wrong. This report highlights the risks in such an approach. It can create a dislocation between policy commitments made by government and what is actually delivered, damaging public trust and reinforcing negative views about the competency of the public sector. What is needed is a more proactive shaping of our economy to be inclusive and sustainable.

Both public and private sectors can innovate and direct investment. The public sector also has a unique role as the arbiter of public benefit, with a central role in deciding what that benefit looks like. It also has the ability to think big and to think long-term – crucial factors in addressing the environmental challenges our society faces.

To achieve nature's recovery, governments must work to change how we manage the land and how we value the things that come from it. That will require purposeful, dynamic, confident and well-resourced institutions.

The point here is not that the public sector should compete with the private sector, but that it recognise and embrace its strengths in leadership, direction and delivery. Rather than limiting itself to being a market regulator, governments should throw off timidity and act with purpose. In doing this, governments can crowd in business investment and stimulate innovation in a mission-oriented way. Indeed, that is what got us to the moon and back!

Professor Mariana Mazzucato

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Introduction

The condition of the natural environment is widely recognised as one of the most pressing issues facing society. The measures needed to address and resolve the nature crisis are much less clear.

This report sets out an expert opinion on how Government should approach the issues of funding and financing nature recovery in England.

The research takes as its starting point the essential importance of nature recovery and the headwinds so far experienced in achieving it. Taking account of the growing expectation that new nature markets will play a leading role in financing nature recovery, it then looks in detail at the risks and opportunities market mechanisms present and the steps the UK Government will need to take to oversee and regulate their use. Subsequent sections consider the essential and ongoing role of the public sector in supporting nature recovery and its underutilised potential to drive change.

Commissioned by the Woodland Trust, the research is intended to draw out key issues for policy makers and to stimulate thinking and debate. It considers a mission-oriented approach to nature conservation policy drawing on academic literature, case studies and insight from nature conservation policy experts. In doing so, it examines how innovation and investment from the private sector can be married with leadership and direction from the public sector. It looks critically at what the Government's role should be in striking an effective balance between the two.

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Summary

Financing and delivering the Government's objectives for nature recovery is dependent on an ambitious, joined-up approach across public and private sectors.

For the public sector, it will require proactive institutions and well-resourced policy implementation to fulfil multiple roles:

- Strong governance with a clear and balanced view on the respective strengths of public and private sectors, particularly between public and private finance.
- Public institutions with the skills and resources to guide private finance to the right places and to regulate existing and proposed nature markets to ensure good ecological and social outcomes.
- Direct delivery of conservation projects and outcomes where this is the most effective option, for example, where the desired objective can only be measured over the very long term or where outcomes are difficult to monetise meaningfully.
- Collectively, these essential functions require a larger role for the public sector than current UK Government resourcing allows.
- Steps are needed to make sure nature markets and private financing work. Currently, a strong role for private sector involvement and funding is expected through newly constructed private nature markets, specifically:
- Compliance markets such as Biodiversity Net Gain (BNG) where there is a legal responsibility in England for developers to fund the creation or improvement of habitat to replace losses resulting from new development.
- Voluntary markets such as the Woodland Carbon Code (WCC) where a government agency oversees verification of the amount of carbon a woodland creation project is expected to sequester, with the subsequent units being used by business to offset emissions.
- In some cases, investment in the markets will also be underpinned by blended finance initiatives such as the Natural Environment Investment Readiness Fund (NEIRF) where public money is used to support nature projects with the aim of attracting private investment.

Such markets and other private funding mechanisms carry the potential for much needed investment, but evidence shows that they deliver good nature outcomes only under certain conditions. The state must take actions to mitigate risks from nature markets, including:

- All nature markets need to be governed by principles ensuring high integrity from both buyers and sellers. The Nature Market Principles developed as part of the Big Nature Impact Fund are an attempt to do this.
- Robust and properly resourced oversight is needed from public bodies to ensure market mechanisms improve nature and do not result in negative and unintended outcomes. This is not a given. Public spending on nature has fallen by 16% in the last 15 years creating a skills gap with, for example, local authorities expected to provide oversight of BNG when many do not employ a qualified ecologist.
- Carefully calibrated metrics and regulations so the habitats created as offsets for development are driven by local need and deliver the highest conservation gain, rather than being simply the cheapest and easiest habitat to create.
- Income from market approaches should not replace existing public spending or be used to deliver objectives which are already legally mandated, for example maintaining Sites of Special Scientific Interest (SSSI) condition.

Despite the attention paid to new nature markets, they are likely to remain a small but important part of the overall solution, and public sector action will remain a key tool in developing a sustainable economy and achieving overarching nature conservation goals.

1. The need for nature recovery

Trends in nature conservation policy and spending

The UK has a long and proud tradition of proactive, ambitious environmental policy, for example as the world's first country to adopt legally binding targets for reducing national carbon emissions. The UK Government elected in 2019 promised to be the first to leave the environment better off than they inherited it[1] while its 2024 success has promised to restore and protect the natural world.[2] Leaving the European Union has led to an explosion in environmental policy innovation as the Government seeks to replace EU legislation, rethinking its approaches to environmental policy in domains such as development, agriculture, and fisheries, as well as founding the new environmental watchdog the Office for Environmental Protection (OEP).

Despite this level of ambition, the condition of nature in the UK is broadly continuing its long-term trajectories of decline. Many biodiversity indicators which are explicitly linked to changes in wildlife populations, or the conditions of valuable habitats continue to fall precipitously.[3] For example, there have been long- and short-term declines in farmland and woodland bird species, and a recent worsening in the condition of SSSIs. England's waterways have received much media attention for containing high levels of pollution which are affecting human health and wildlife (Box 1).

The success of measures intended to enhance ecosystem condition depends above all on effective and well-resourced management. However, indicators of public resourcing of management actions give cause for concern. Public spending on nature conservation in England has fallen by approximately 16% in real terms since 2008, even as the size of England economy has grown by over 20% in the same period. England stands out as an international outlier with regards to this specific trend.[4/5]

In England, local authority spending on environmental services and compliance has also declined by 31% in real terms since 2009, mirroring national trends.[6] Over the same time period, the complexity of the policy landscape governing biodiversity at local levels in England has increased. Local authorities now have increased responsibilities for navigating potential trade-offs between development and biodiversity through their role approving new developments via the planning system. Local authorities are also afflicted by critical capacity shortages. Expertise at the local level will be required to play a key role in determining whether local developments satisfy the ecological requirements of national policy frameworks. Yet, less than half of English local authorities have any inhouse ecological expertise.[7]

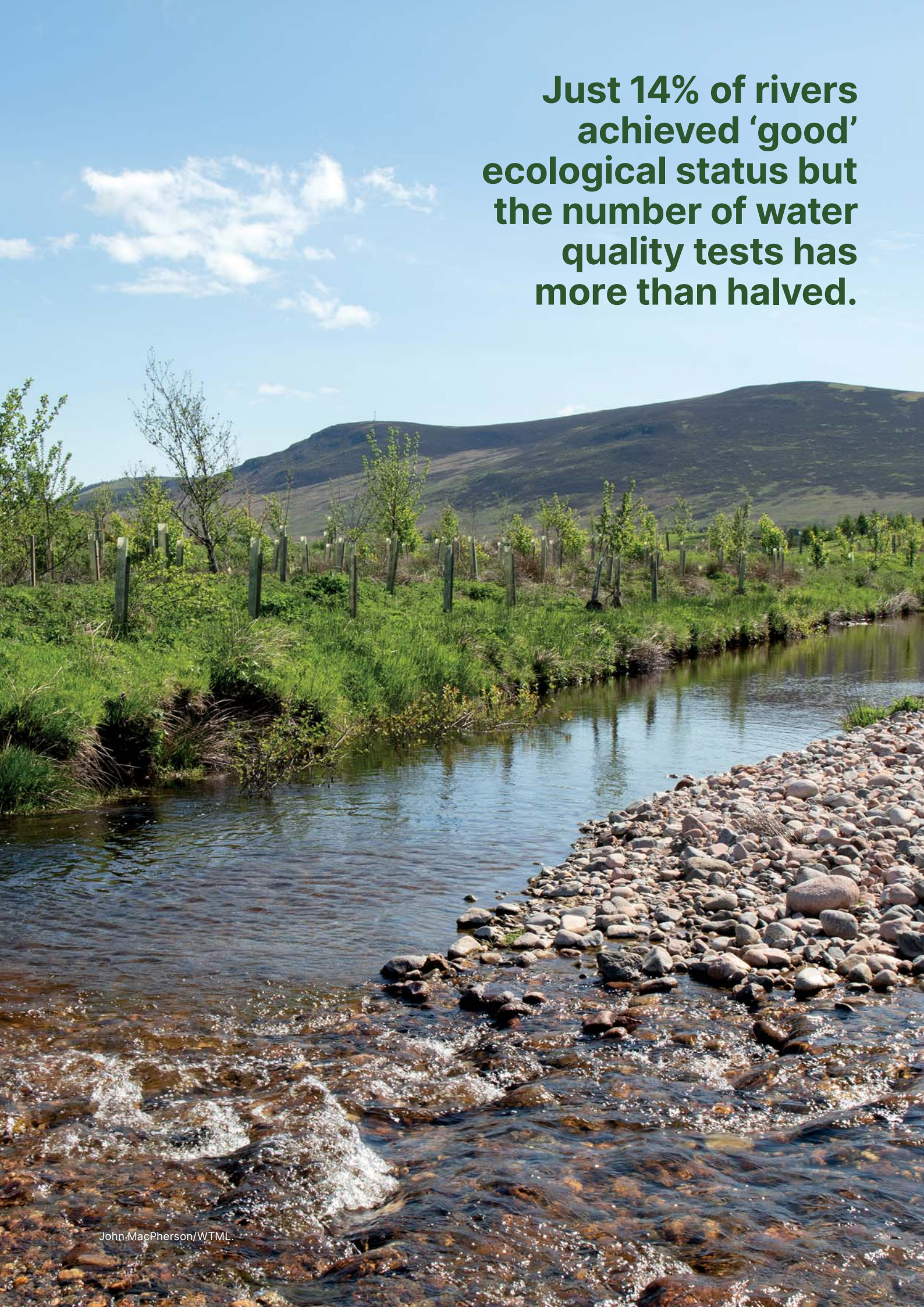
BOX 1. THE STATE OF ENGLAND'S RIVERS

The ecological condition of England's rivers is currently at the forefront of public attention. While in neighbouring Western European countries, high levels of water quality mean that recreational swimming in public water bodies is a widely accepted social norm, in England there are increasing concerns that the pollution load in waterways is unsafe to human health and is negatively impacting wildlife. Increasing levels of water pollution are considered one of the most important drivers of wildlife loss in the UK.[8]

The most recent nationwide evaluation of England's rivers, carried out in 2019, found that no rivers passed all of water quality tests associated with the EU water framework directive, with just 14% of rivers achieving 'good' ecological status.[9] At the same time, the number of water quality tests has more than halved from 2012-2021 coinciding with cuts to the Environment Agency's budget.[10]

1. DEFRA, 'Environmental Improvement Plan 2023 - First revision of the 25 Year Environment Plan', 2023. https://www.gov.uk/government/publications/environmental-improvement-plan
2. Labour Party, 'Change. Labour Party Manifesto 2024' https://labour.org.uk/change/make-britain-a-clean-energy-superpower/#nature [accessed 02/09/2024]
3. JNCC, 'UK Biodiversity Indicators 2023', https://jncc.gov.uk/our-work/uk-biodiversity-indicators-2023/
4. zu Ermgassen, S.O.S.E., Bull, J.W., Groom, B. 'UK biodiversity: close gap between reality and rhetoric', Nature 595, 172, 2021.
5. Seidl, A., Mulungu, K., Arlaud, M. et al, 'The effectiveness of national biodiversity investments to protect the wealth of nature'. Nat Ecol Evol 5, 530–539, 2021. https://doi.org/10.1038/s41559-020-01372-1
6. Rose, E, 'The UK's Enforcement Gap', 2020. https://www.unchecked.uk/wp-content/uploads/2020/11/The-UKs-Enforcement-Gap-2020.pdf
7. Robertson M, 'The State of No Net Loss/Net Gain and Biodiversity Offsetting Policy in English Local Planning Authorities: Full Report', University of Wisconsin, Madison, USA, 2021.
8. Hayhow et al, 'The State of Nature 2019', The State of Nature Partnership, 2019. https://nbn.org.uk/wp-content/uploads/2019/09/State-of-Nature-2019-UK-full-report.pdf
9. 5 Laville, S, 'Shocking state of English rivers revealed as all of them fail pollution tests', The Guardian, 2020. https://www.theguardian.com/environment/2020/sep/17/rivers-in-england-fail-pollution-tests-due-to-sewage-and-chemicals
10. 6 Laville, S, 'River pollution goes unchecked as testing in England falls to 10-year low', The Guardian, 2022. https://www.theguardian.com/environment/2022/sep/02/river-testing-england-fallen-sharply-decade-data

Just 14% of rivers achieved 'good' ecological status but the number of water quality tests has more than halved.



John MacPherson/WTML.

The current ambition of nature recovery goals.

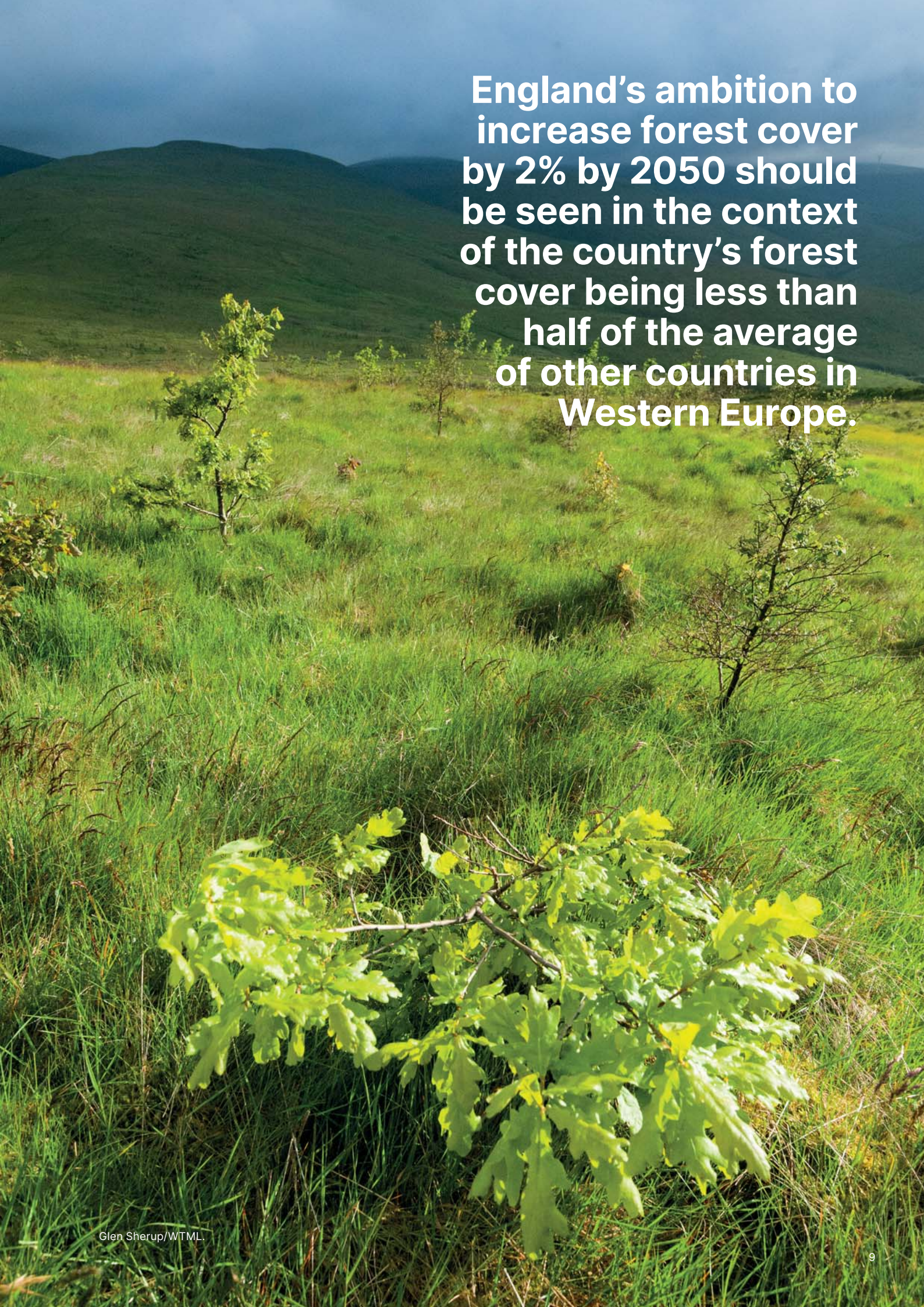
England has a strong potential for nature recovery, with a low baseline for nature quality[11] and wide public demand for improvements in the extent and quality of our nature.[12] Defra's Environmental Improvement Plan (EIP) outlines measures to meet several high-level targets for nature recovery.[13] Key targets and commitments include:

1. Halt the decline in species abundance by 2030, and then increase abundance by at least 10% to exceed 2022 levels by 2042.
2. Restore or create more than 500,000 hectares of wildlife-rich habitat by 2042.
3. Protect 30% of UK land and seas by 2030.
4. For 50% of SSSIs to have actions on track to achieve favourable condition by 31 January 2028.
5. Increase tree canopy and woodland cover by 2% by 2050 (from 14.5% to 16.5% of total land area in England).
6. To mobilise at least £500 million of private finance per year into nature recovery by 2027, rising to more than £1 billion per year by 2030.

While the objective of nature recovery remains laudable, achievement of such targets may in practice constitute only limited steps toward it. For example, the species abundance target for England would be achieved through only marginal improvement on the current position by the early 2040s. Efforts to protect 30% of UK land and ocean by 2030 is in line with international ambitions but the decision to include National Parks in the calculation is questionable given recent research highlighting their designation primarily for landscape value rather than for biodiversity. The Government already has a statutory obligation to manage SSSI's in favourable condition. It is uncertain whether the Government's chosen measure of actions to achieve favourable condition is strong enough, and may only require the existence of a suitable management plan, rather than evidence that such a plan is being implemented and that the quality of nature on the site is improving in real terms.[14] England's ambition to increase forest cover by 2% by 2050 should be seen in the context of the UK's forest cover (14.5%) being less than half of the average of other countries in Western Europe (32.2%).[15]

Setting meaningful targets is an important part of efforts to improve the state of nature. As currently written, there is substantial room for improvements in ambition given England's low biodiversity baseline and public demand for improvements in nature.

11. Sanchez-Ortiz et al, 'Landuse and related pressures have reduced biotic integrity more on islands than on mainlands', 2019. https://www.biorxiv.org/content/10.1101/576546v1.full.pdf
12. Laville, S, 'Most UK adults think nature is in urgent need of protection – poll'', The Guardian, 2022 https://www.theguardian.com/environment/2022/sep/30/most-uk-adults-think-nature-is-in-urgent-need-of-protection-poll
13. DEFRA, 'Environmental Improvement Plan 2023 - First revision of the 25 Year Environment Plan', 2023. https://www.gov.uk/government/publications/environmental-improvement-plan
14. Wildlife and Countryside Link, 'Nature 2030 - Five urgent reforms to meet natural environment targets in the next Parliament', 2023. https://www.wcl.org.uk/assets/uploads/img/files/Nature_2030_Report_18.07.2023.pdf
15. Our World in Data, 'Deforestation and Forest Loss', https://ourworldindata.org/deforestation [accessed 08/07/2024]



England's ambition to increase forest cover by 2% by 2050 should be seen in the context of the country's forest cover being less than half of the average of other countries in Western Europe.

Glen Sherup/WTML.

2. Nature recovery and market mechanisms

Achieving England's statutory and international policy commitments will require ambitious domestic policy and strategic coordination between both public and private sectors. Government's approach to environmental policy in England predicts an increasing role for market-based mechanisms to deliver on its nature restoration targets (Box 2) alongside private finance and agricultural subsidy regimes. This can be interpreted as a view that the private sector is well placed to efficiently allocate resources and spearhead innovation, that market-mechanisms are preferable to additional regulatory action in reducing harmful activities and that private financial flows are essential to funding conservation projects. Correspondingly, the role of government and other public sector bodies is focused on constructing and enabling markets and ensuring that nature-related financial investments are attractive to private investors.

The UK Government is one of a number who have embraced private finance as tools in pursuing nature protection and restoration. These themes are embodied in the Kunming-Montreal Global Biodiversity Framework (GBF), which committed all signatories to aligning both public and private flows with the biodiversity goals (Target 19), but by proposing far more ambitious plans for private than for public financing. As part of the final agreement, high-income countries committed to increase public biodiversity-related spending in low-income countries to US $30 billion per year by 2030, while 'mobilising' at least US $200 billion per year primarily through 'leveraging private finance, promoting blended finance… [and] stimulating innovative schemes such as… green bonds, biodiversity offsets and credits'.

The logic underpinning the commodification of biodiversity in order to create investment opportunities is relatively simple: that ecologically harmful activities persist because the cost of damaging the environment is not borne by anyone. These costs, referred to as 'negative externalities' by economists, have to be paid by society as a whole through knock-on effects on e.g. public health, productivity, food provision, and damaged natural infrastructure. The solution commonly called for to address these problems is to internalise the costs of damages into market transactions, effectively forcing polluters to pay for the costs of their actions. Such costs in turn create incentives for polluters to invest in actions and innovation to reduce their impacts. As well as disincentivising harms, such mechanisms can also raise funds to finance nature conservation actions as a market arises to deliver the compensation for harms in the most economically efficient way.

While this mechanism is theoretically elegant, historically, efforts to mobilise private finance into biodiversity conservation and establish nature markets have often fallen short on their goals. For example, evaluations of a range of market-like mechanisms for attracting private finance into nature conservation have shown that the investments did not generate additional[16/17] conservation gains (i.e. delivered conservation that would not have happened anyway), or did not deliver the degree of conservation gains that were required to achieve their stated aims.[18] Investigating the reasons for these outcomes gives useful insights into the limitations of the Government's market-led approach to addressing nature loss in England. It also illuminates how nature markets could be used to ensure positive ecological outcomes, and the nature recovery aspired to.

Lessons from previous use of market mechanisms for nature

For nature markets to effectively deliver for conservation, lessons must be learned from previous attempts to address conservation funding shortfalls through the creation of such mechanisms. This section summarises shortcomings which have emerged from such approaches.

16. zu Ermgassen et al, 'Evaluating the Impact of Biodiversity Offsetting on Native Vegetation', Global Change Biology, 2023. https://onlinelibrary.wiley.com/doi/10.1111/gcb.16801
17. Philip Gibbons et al, 'Outcomes from 10 Years of Biodiversity Offsetting', Global Change Biology, 24.2, e643–54, 2018.
18. Ville Inkinen et al , 'Using Markets for Environmental Offsetting: Evaluation of Wetland Area Gains and Losses under the US Clean Water Act', 2022. https://www.gu.se/sites/default/files/2022-11/JMP_Ville_Inkinen.pdf.
19. Deutz et al, 'Financing Nature: Closing the Global Biodiversity Financing Gap', Paulson Institute, 2020. https://www.paulsoninstitute.org/wp-content/uploads/2020/10/FINANCING-NATURE_Full-Report_Final-with-endorsements_101420.pdf
20. Lankes, H-P, 'Blended finance for scaling up climate and nature investments. London School of Economics', 2021. https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2021/11/Blended-Finance-for-Scaling-Up-Climate-and-Nature-Investments-1.pdf

BOX 2. KEY MARKET AND PRIVATE FINANCE INITIATIVES FOR NATURE

As presented in its Nature Markets Framework (2023) and updated Green Finance Strategy (2023), several of the flagship policies underpinning England's nature recovery ambitions can be summarised as follows:

1. **Compliance markets:** markets that emerge out of there being a regulatory cap on the damage to nature imposed by a particular set of actions (e.g. no net loss/ net gain of biodiversity), allowing buyers to purchase compensatory gains in order to meet their regulatory obligations.
   a. **Biodiversity Net Gain (BNG):** Since February 2024 nearly all new developments in England now need to demonstrate that they will deliver at least a 10% increase in biodiversity relative to its baseline state in order to receive planning permission, with biodiversity measured by the Biodiversity Metric.
   b. **Nutrient Neutrality:** where new developments are expected to have significant pollution impacts on sites of important habitats, they can purchase mitigation measures to draw nutrients out of the catchment as compensation.
2. **Voluntary offsetting markets:** markets where private companies can voluntarily purchase compensatory environmental improvements to offset the environmental damages caused by their activities, often as a mechanism for achieving an organisational 'net zero' target.
   a. **Woodland Carbon Code:** England's domestic voluntary woodland-based carbon offsetting market, where landowners can plant new woodland and receive independently accredited carbon credits to sell to buyers looking to compensate for their emissions.
   b. **Peatland Carbon Code:** an emerging certification scheme for UK projects aiming to restore and improve degraded peatlands for the generation of carbon credits.
3. **Blended finance for nature:** public-private investment vehicles where public funds are used to 'de-risk' investments either through absorbing losses, guaranteeing returns to investors, or using other incentives such as tax breaks.[19/20]
   a. **Big Nature Impact Fund (BNIF)**: a blended finance impact fund managed by Federated Hermes and Finance Earth which aims to use £30 million of public funds to mobilise private capital investment in high-integrity nature markets generating revenue from carbon sequestration and habitat restoration.
   b. **Local Investment in Natural Capital Programme:** £1 million public funding to four local authorities for them to mobilise local private investment in support of local environmental priorities.
   c. **Natural Environment Investment Readiness Fund (NEIRF):** supports the development of 86 nature projects across England with the ambition "to generate revenue from nature markets and operate on repayable private sector investment".
4. **Greening existing financial flows to align with government targets**
   a. **UK Green Taxonomy:** this is expected to include a Land, Nature, and Adapted Systems Advisory group (LNAS) to define nature-based business activities that can receive a 'green' investment label.
   a. **Enhanced environmental risk disclosures:** improved transparency of information regarding nature-related financial risks and transition plans aims to inform investors and support nature-aligned capital reallocation.
   a. **High-integrity Environmental Social and Governance (ESG) ratings:** the UK Government is consulting on the potential regulation of ratings providers to ensure ESG ratings remain robust, transparent, and consistent with UK policy ambitions.

Nature markets performance against stated ecological objectives

In order to isolate whether a market-based ecological intervention has been effective or not, it is necessary to compare the outcomes of test sites to similar 'control' locations, whilst controlling for other factors that might affect results. To date, there have been few high-quality empirical studies of such outcomes in contexts similar to England.

The few studies using robust methodologies have demonstrated that nature markets often under-deliver on their stated ecological aims.[21] An evaluation of one of the longest standing biodiversity offsetting markets in Victoria, Australia showed that 30% of offsets funded through the market did deliver improvements in biodiversity relative to carefully-chosen control sites. However, a further 22% of offsets delivered worse outcomes for nature than those of control sites. Thus, some individual landowners did use the proceeds of nature markets to successfully improve nature locally but there was little or no benefit to the ecological system as a whole.[21]

Ability of 'offset' markets to deliver additional ecological gains.

According to a detailed analysis of spending on biodiversity conservation, biodiversity and carbon offsets combined are the single-largest category of private financial instruments for funding nature conservation.[22] Many such markets are not designed to deliver additional improvements in biodiversity.[23/24] Instead, they focus on offsetting, whereby project proponents are obliged to compensate for the damages to nature from actions in specific sectors.

England's flagship Biodiversity Net Gain (BNG) policy aims to offset damage to nature caused by future infrastructure development. It has no explicit aims to compensate for historic damage. The intention to deliver additional increases in biodiversity beyond the harms of ongoing ecologically-degrading activities is also questionable. The government's assessment of the policy's likely impact made clear that the 10% increase in biodiversity mandated under BNG is there to allow for a margin of error to attempt to ensure the system achieves "at least no net loss".[25] Additional finance and policy support is still likely to be required to incentivise and scale up conservation projects and initiatives that go beyond offsetting losses.

Alignment of market-like mechanisms with biodiversity goals.

Markets are assumed to direct resources and innovation towards activities that are most profitable. However, the same mechanism that leads nature markets to optimise for profitable activities can conflict with the on-the-ground requirements of ecosystems and local communities.

As biodiversity is a multi-dimensional quality of nature, the conventional way that markets select for better products needs to function differently in nature markets. For example, instead of competition and consumer choice, the quality of a biodiversity unit is instead largely determined by the specifics of the measurement method, and the governance underpinning it. This means that the ecological outcomes of nature markets are largely determined by measurement and governance. Imperfect metrics can result in perverse incentives where underlying conservation projects focus on minimising costs, and deliver habitats that offer the most 'biodiversity' as measured by the requirement of policy, rather than what is intrinsically most suited to the ecosystem and its surrounding social context.

There is preliminary evidence that such patterns are emerging in England's BNG system. Around one quarter of all biodiversity units tracked by early adopter local authorities are being delivered by developers promising to deliver a single habitat type of a single condition level: moderate condition 'other neutral grassland' (a type of wildflower grassland).[26] Whilst in many cases these may well be better for biodiversity than the habitats they have replaced (for example if the development they are associated with was built on cropland), biodiversity is maximised when landscapes are diverse and heterogenous. Such trends indicate that these markets might not be on track to deliver the forms of habitat management and habitat enhancements that are best

21. zu Ermgassen and others; Gibbons and others; Grayson Badgley and others, 'Systematic Over-crediting in California's Forest Carbon Offsets Program', Global Change Biology, 28.4, 1433–45, 2022.
22. zu Ermgassen et al, 'Evaluating the impact of biodiversity offsetting on native vegetation', Global Change Biology, 2023 https://doi.org/10.1111/gcb.16801
23. A Deutz and others, 'Financing Nature: Closing the Global Biodiversity Financing Gap', The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability, 2020) https://www.paulsoninstitute.org/wp-content/uploads/2020/10/Updated-10.23.20-FINANCING-NATURE_Exec.-Summary_Final-with-endorsements_101420.pdf [accessed 7/02/2021].
24. Spash C, 'Bulldozing biodiversity: The economics of offsets and trading-in Nature' Biological Conservation 192 December: 541-551, 2016. https://www.clivespash.org/wp-content/uploads/2015/04/2015_Spash_Bulldozing_Biodiversity.pdf
25. 25 Hawkins et al., 'The potential contribution of revenue from Biodiversity Net Gain offsets towards nature recovery ambitions in Oxfordshire' University of Oxford and the Oxfordshire Local Nature Partnership, 2023. https://www.naturerecovery.ox.ac.uk/wp-content/uploads/2023/08/BNG-report-final-29-June-2023.pdf
26. DEFRA, 'Impact Assessment - Biodiversity net gain and local nature recovery strategies', 2019. https:/assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/839610/net-gain-ia.pdf

for England's nature recovery, but rather those that optimise what can be delivered at least cost according to the way the policy measures nature.

Elsewhere, other evidence indicates that some schemes for drawing private finance into nature conservation are undermined by weaknesses in the measurement system. Separate studies of 'blue' ocean conservation bonds and biodiversity impact funds show that impacts are reported as easy-to-measure metrics, such as area under management, rather than actual ecological outcomes, such as changes in species abundance or diversity.[27/28] A Bloomberg investigation into over 100 sustainability-linked bonds worth almost €70 billion found that most of these instruments were linked to targets that are 'weak, irrelevant, or even already achieved'.[29]

'Cost shifting' and the relationship between public and private investment in nature

'Cost-shifting' is the observed trend for the creation of new nature markets to coincide with reductions in public sector financial support for pre-existing government obligations to nature. An example of cost-shifting is the initiation a forest offsetting fund by the Indian government. This raised over $5.7 billion for compensatory forest offsetting, but government later changed the terms of the fund to enable its use to support central environmental expenditures and pre-existing obligations. The consequence was that all of the damages that the initial fund was intended to offset went uncompensated.[30] Elsewhere, in the Australian Capital Territory, a government conservation target for designating newly created protected areas has fallen at the same time as areas protected through offsetting has increased.[31]

In England, BNG carries risks of cost shifting. For example, specific enhancements in SSSIs count towards a developer's BNG obligations despite the existing statutory duty to maintain SSSIs in favourable condition.

Leakage and export of environmental impacts

Changing land management practices in one location to deliver increases in biodiversity have the potential to induce unintended negative impacts at another location ('leakage'). This is a particular risk for nature markets operating in policy areas where there is significant regulatory divergence between jurisdictions. Whilst aiming to create biodiversity improvements at a regional or national scale, nature markets can effectively displace biodiversity impacts elsewhere. For example, the EU's biodiversity strategy has increased the amount of forest-set-aside in the EU, whilst potentially shifting demand for timber products into jurisdictions with less stringent forest management policies.[32]

Spillover effects, particularly those relating to export markets, can be managed through regulatory policy, coupled with a reduction in the demand of damaging products. For instance, new EU legislation adopted in 2023 obliges companies to ensure that products imported into the EU for sale are not linked to deforestation. Whilst England has a similar due diligence law in the pipeline, it has been criticised by NGOs for its weaker ambition - in particular for only covering 'illegal deforestation'. It remains to be seen whether the new Government will have greater ambitions for the regulations

Overall, the evidence so far available shows nature markets do not automatically deliver their intended outcomes for nature and local communities. Restoring biodiversity and achieving high-integrity ecological and social outcomes from these schemes requires a substantial ongoing role for public bodies.

'Blended finance' for nature conservation

Alongside the creation of new nature markets, the UK Government aims to mobilise private finance from banks, pension funds, asset managers and others for nature conservation and restoration. Such an approach has growing popularity within environmental policy and sustainable finance circles. For example, former US Treasury Secretary Hank Paulson called for the creation of 'a new asset class for nature', in which revenue-generating conservation projects can effectively become part of conventional financial portfolio choices.[33]

27. Rampling, E and others, 'Improving the Ecological Outcomes of Compensatory Conservation by Addressing Governance Gaps: A Case Study of Biodiversity Net Gain in England', SocArXiv, 2023.
28. Flammer, C and others, 'Biodiversity Finance'. Working Paper. Working Paper Series. National Bureau of Economic Research, March 2023. https://doi.org/10.3386/w31022.
29. Thompson, B., 'Impact Investing in Biodiversity Conservation with Bonds: An Analysis of Financial and Environmental Risk'. Business Strategy and the Environment, 2022.
30. Rocha, P, Rathi A, and Gillespie T, 'Empty ESG Pledges Ensure Bonds Benefit Companies, Not the Planet'. Bloomberg Markets, 4 October 2022. https://www.bloomberg.com/news/features/2022-10-04/greenwashing-enters-a-22-trillion-debt-market-derailing-climate-goals#xj4y7vzkg.
31. Narain, N and Maron, M, 'Cost shifting and other perverse incentives in biodiversity offsetting in India', Conservation Biology 772-288, 2018. https://conbio.onlinelibrary.wiley.com/doi/abs/10.1111/cobi.13100
32. 32 Connors, B, 'A review of biodiversity offsets implemented in the Australian Capital Territory under the Environment Protection and Biodiversity Conservation Act 1999', University of Australia, 2020. https://openresearch-repository.anu.edu.au/server/api/core/bitstreams/55dbdbf2-8b71-4b16-99f0-e44b95aab5c4/content
33. Cerullo, G and others, 'The Global Impact of EU Forest Protection Policies', Science, 381.6659, 740–740, 2023.
34. Paulson, H, 'We need a new asset class of healthy soils and pollinators', 2020. https://www.paulsoninstitute.org/wp-content/uploads/2021/05/Asset-Class-HPs-FT-op-ed.pdf

Scaling up financial flows from large private investors, however, presents practical challenges. Institutional investors (e.g. pension funds, insurers, asset managers) typically require competitive investment returns, solid credit ratings, large transaction sizes, and liquidity (the ability to sell assets easily when needed).[34] By comparison, conservation projects are typically small-scale and localised with high due diligence and management costs. These factors explain why nature-related asset classes, despite being spoken of for over twenty years, have so far remained confined to the portfolios of niche 'impact-focused' investors.[35/36]

Given the fundamental mismatch between the needs of private finance and the realities of on-the-ground nature conservation, blended finance is commonly advocated for as a solution to mobilise private sector interest. These instruments use public funds to 'de-risk' nature investments, either through absorbing losses on investments or through providing guaranteed or upfront returns to investors or using other incentives such as tax breaks and lower regulatory requirements.[37] For instance, Defra's flagship Big Nature Impact Fund (BNIF) aims to support land and habitat restoration using £30m of public funding to attract private sector investment with annual returns of up to 12%.[38]

England's Green Finance Strategy argues that blended finance offers a more efficient means of funding nature conservation, able to "crowd in significant levels of private capital" whilst "providing value for money for the taxpayer".[39]

Blended finance is positioned in the UK's Green Finance Strategy (2023) as a crucial means of funding nature conservation and restoration. To satisfy the strategy's objective, it must deliver ecological outcomes at scale and in a cost-effective manner. The challenges to achieving this are set out below.

Value for money and blended finance

Blended finance strategies should embed a full assessment of costs and risks associated with their operation. Over the past two decades, blended finance has been employed by multilateral development banks and high-income governments to finance infrastructure, development projects, and the Sustainable Development Goals (SDGs),[40] especially in the global South. Projects funded by this means have often failed to anticipate the large legal, technical, and consultancy fees they generate – reaching up to 10% of total project costs in infrastructure, for example.[41] Similarly, reported cost savings often do not account for the significant contingent liabilities governments have to take on, such as compensating for currency fluctuations or the effects of future government regulation. In response, the International Monetary Fund (IMF) has highlighted that blended finance should be 'generally considered to carry higher fiscal risks than budget financing'.[42] The European Court of Auditors has similarly recognised that blended financing arrangements can be more costly over the long run.[43]

The complexity of nature markets has the potential to further increase costs and downside risks for governments. In some conservation bond financing mechanisms, governments are expected to pay in the event of failure to achieve ecological outcomes, which for very complex projects may see them taking on large amounts of risk.[44] Emerging reports of debt-for-nature swaps – instruments which use public funds to attract private investors into conservation-linked public debt restructuring deals – give some indications of this challenge. For instance, Belize agreed a US$364 million debt-for-nature swap in 2021. Whilst cutting national debt by an estimated 12% of GDP, the deal cost the country's Government an estimated US$84 million in transaction costs paid mostly to banks and brokers in the global North, plus an additional $10 million dollars in fees relating to closing the deal - amounting to 23% of the total deal size.[45] Moreover, with the deal committing the Belize Government to $4.2 million per year for twenty years on ocean conservation ($84 million total), public funds have effectively been front-loaded into financial transaction fees rather than immediate conservation or social development projects.

35. Lankes, H-P, 'Blended Finance for Scaling up Climate and Nature Investments'. One Planet Lab and Grantham Research Institute on Climate Change and the Environment, 2021 https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2021/11/Blended-Finance-for-Scaling-Up-Climate-and-Nature-Investments-1.pdf.
36. Dempsey, J and Suarez, D, 'Arrested Development? The Promises and Paradoxes of "Selling Nature to Save It"', Annals of the American Association of Geographers, 106.3, 653–71, 2016.
37. Löfqvist, S, Garrett R, and Ghazoul, J, 'Incentives and Barriers to Private Finance for Forest and Landscape Restoration', Nature Ecology & Evolution, 7.5, 707–15, 2023.
38. Deutz, A., G. Heal, R. Niu, E Swanson, T Townshend, Li Zhu, and A Delmar. 'Financing Nature: Closing the Global Biodiversity Financing Gap'. The Paulson Institute, The Nature Conservancy, Cornnell Atkinson Center for Sustainability, 2020. https://www.paulsoninstitute.org/key-initiatives/financing-nature-report/.
39. Jeffries, E, 'New Fund Aims to Boost Biodiversity on England's Farms'. Financial Times, 13 July 2023. https://www.ft.com/content/8a2211e7-bde2-42b1-8a17-dcb59766c209.
40. HM Government, 'Mobilising Green Investment - 2023 Green Finance Strategy', p.89, 2023. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1149690/mobilising-green-investment-2023-green-finance-strategy.pdf.
41. Gabor, D, 'The Wall Street Consensus', Development and Change, 52.3, 429–59, 2021.
42. Engel, E, Fischer, R, and Galetovic, A, 'The Economics of Infrastructure Finance: Public-Private Partnerships versus Public Provision', EIB Papers, 15.1, 40–69, 2010.
43. IMF, 'Making Public Investment More Efficient', International Monetary Fund, 5 January 2015, p30 https://www.elibrary.imf.org/view/journals/007/2015/003/007.2015.issue-003-en.xml [accessed 15 September 2022].

Uncertainty over the amount of private finance that can be mobilised

The Green Finance Strategy positions blended finance as a key funding source for nature recovery. As is understandable given the early stage, the ability to mobilise finance for nature at scale has yet to be demonstrated. During its existence, the formerly public Green Investment Bank raised £3 of private finance for every £1 of public funding of low carbon technologies.[46] However, unlike projects related to infrastructure or climate mitigation, revenue generation for nature instruments is dependent on the creation of credible mechanisms to 'monetise' biodiversity. The unproven profit potential of these investments is likely to be a factor in the limited public funds so far committed (see Defra's BNIF designed to demonstrate the commercial viability of blended finance for nature conservation at scale).

An underacknowledged concern is that private finance mobilised by blended finance initiatives may be skewed towards conservation projects which are easiest to commercialise, and may neglect the full diversity of initiatives needed to reverse England's nature loss. A first-of-its-kind review of an unnamed sustainable private equity fund found that blended finance biodiversity projects need to meet a threshold of over 10% in terms of financial return in order to attract private sector interest.[47] Accordingly, a large portion of blended finance transactions reviewed involve commercial uses (i.e., sustainable agriculture, forestry, fisheries). These findings suggest that blended finance has potential as a vehicle for scaling up private finance for sustainable transitions within the corporate sector. Yet, many types of nature projects (for example, habitat restoration projects), may be fundamentally unable to meet the required financial threshold.[48]

Blended finance for nature is a new and largely unproven strategy for both delivering on ecological outcomes and mobilising private financing of conservation. It is the UK Government's ambition that significant and growing funding for nature conservation will be derived from this source in the period to 2030. Whilst this approach has a clear ability to finance projects that generate revenue streams, it is less obvious how blended finance can support less or non-monetizable activities such as habitat restoration. For offsetting approaches to fill this gap will require significant prior attention from government on the regulation and effective governance of offset based approaches.

44. European Court of Auditors, 'EU Public Private Partnerships suffer from widespread shortcomings and limited benefits, say Auditors', European Court of Auditors, 20 March 2018 https://www.eca.europa.eu/Lists/ECADocuments/INSR18_09/INSR_PPP_EN.pdf
45. Thompson, B. 'Blue Bonds for Marine Conservation and a Sustainable Ocean Economy: Status, Trends, and Insights from Green Bonds'. Marine Policy 144: 105219, 2022. https://doi.org/10.1016/j.marpol.2022.105219.
46. White, N. 'How Wall Street's New ESG Money-Maker Promises Nature Conservation in Emerging Markets' Bloomberg Línea, 2023. https://www.bloomberglinea.com/english/how-wall-streets-new-esg-money-maker-promises-nature-conservation-in-emerging-markets/.
47. 47 Department for Business, Innovation and Skills, 'Future of the UK Green Investment Bank Plc', 2015 https://assets.publishing.service.gov.uk/media/5a75a7c7ed915d6faf2b4ab1/BIS-15-630-future-of-the-uk-green-investment-bank.pdf
48. Flammer, C et al 'Biodiversity Finance', Working Paper Series (National Bureau of Economic Research), 2023. https://doi.org/10.3386/w31022.
49. ib id

3. The role of public investment and institutions

Government has a critical role in accelerating progress towards nature recovery. Unlike other players, it has a responsibility to the public interest. In its decision-making, it can maximise public value, and it can take a long-term view, investing in conservation actions that enhance natural heritage across generations. This section summarises the key areas where the public sector should take an active role in supporting nature recovery.

Public investment in non-monetisable nature conservation projects.

Not all successful nature conservation projects produce tangible gains in biodiversity and ecosystem services. For example, preserving the condition of existing local wildlife sites which are already well managed for nature delivers significant environmental, economic and social benefits in the form of essential public goods such as recreation, the promotion of good mental health and pollinator habitats. There are more than 40,000 local wildlife sites in England, 43% of which are in positive conservation management.[49] With the percentage of sites in good condition falling, there is a strong case for direct public funding to support management.

A further example is natural woodland colonisation. Such colonisation can deliver high levels of ecological benefit at relatively low cost, and in some circumstances can bring greater ecological benefits than tree planting.[50] The uncertainty of predicting the outcomes of natural colonisation means it does not readily lend itself to revenue raising, for example, natural colonisation is not currently supported by the Woodland Carbon Code[51] although it is supported by grants through the England Woodland Creation Offer. Direct public funding is likely to be essential in furthering the uptake of natural colonisation as an approach.

Spending on nature protection and restoration is often assumed to be a sunk cost for public budgets. Yet the broader societal benefits found by the above studies point to compelling economic reasons for governments to reconsider direct spending on nature. When conservation projects are 'shovel-ready', geographically well-distributed, and targeting job creation in under-employed regions, they may offer high economic multipliers.[52] One analysis estimated that every $1 of public spending in biodiversity conservation generates $6.67 dollars in economic benefits over a 5-year horizon.[53] Another case study focusing on the US found that the nature restoration economy directly employed over 126,000 workers and generated $9.5 billion in annual output, with an additional 95,000 jobs and $15 billion output resulting on an indirect basis.[54] In addition to these effects, biodiversity spending has significant co-benefits in terms of avoided costs and damages from climate change, flooding, soil erosion, and natural hazards that are all exacerbated by the loss and degradation of natural ecosystems. Waldron et al. (2020) put a conservative value of these avoided losses, focusing on forests and mangroves only, at $170-$534 billion per year globally by 2050.[55]

Investing in acquisition and management

To contribute equitably to the UK Government target of protecting 30% of the land for nature by 2030, more areas in England need to be designated and managed for nature. Moreover, these sites will need to be selected and managed with care to also meet the Environment Act species abundance and wildlife-rich habitat targets. To meet this challenge, there is a strong case for the Government to develop a conservation land acquisition and management policy for England, complementing approaches that incentivise landowners to manage their land for biodiversity.

50. DEFRA, 'Nature conservation: Local Sites in positive conservation management in England, 2008-09 to 2021-22', DEFRA, 2023. https://www.gov.uk/government/statistics/local-sites-in-positive-conservation-management--2/nature-conservation-local-sites-in-positive-conservation-management-in-england-2008-09-to-2021-22
51. Di Sacco, A and others, 'Ten Golden Rules for Reforestation to Optimize Carbon Sequestration, Biodiversity Recovery and Livelihood Benefits', Global Change Biology, 27.7, 1328–48, 2021.
52. Stanley, T 'Carbon Finance: Does It Streamline Scottish Woodland Creation?', Reforesting Scotland, 2023.
53. Hepburn, C, O'Callaghan, B, Stern, N, Stiglitz, J, and Zenghelis, D 'Will COVID-19 Fiscal Recovery Packages Accelerate or Retard Progress on Climate Change?' Oxford Review of Economic Policy 36, no. Supplement_1, S359–81, 2020 https://doi.org/10.1093/oxrep/graa015.
54. Batini, N and others, 'Building Back Better: How Big Are Green Spending Multipliers?', Ecological Economics, 193, 107305, 2022. https://doi.org/10.1016/j.ecolecon.2021.107305.
55. BenDor, T and others, 'Estimating the Size and Impact of the Ecological Restoration Economy', PloS One, 10.6, e0128339, 2015.
56. Waldron, A and others,.'Protecting 30% of the planet for nature: costs, benefits and economic implications - Working paper analysing the economic implications of the proposed 30% target for areal protection in the draft post-2020 Global Biodiversity Framework', 2020. https://www.conservation.cam.ac.uk/files/waldron_report_30_by_30_publish.pdf

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Spending on nature is often assumed to be a sunk cost for public budgets. Yet the broader societal benefits point to compelling economic reasons for governments to reconsider direct spending on nature.

Globally, national parks and nature reserves are a key tool in protecting habitats[56]. Combined with other protected areas, they extend to 16% of land and in most cases are publicly owned and managed. This is overwhelmingly not the case in England. For example, of the 221 National Nature Reserves (NNRs) around one third are publicly managed.

By some measures, only 4.9% of England's land area is effectively protected and managed for nature.[57] To increase this, the key component of the Government's approach will be through Environmental Land Management (ELM) schemes. Ensuring good outcomes for nature will depend on such schemes being well targeted and well-resourced to improve England's protected areas and add to the amount of land managed for conservation.

The major potential advantages of land purchase over land rental (for example, via land management subsidies) concern the high level of control it gives over site management, and the significantly increased likelihood that such management will be permanent. In contrast, agri-environment schemes are based on fixed-term contracts, making it likely that at some point conservation management will be paused or halted.[58]

There are, however, factors that make the benefits of purchasing land for conservation less clear-cut. Most land parcels are not for sale and landowners often have strong emotional and cultural ties to their land and want an active role in its management. This is one reason why agri-environment schemes are so widely used throughout Europe. This is a particularly important issue in England where 68% of land is under agriculture compared with a European Union average of 48%.[59] Willingness to sell is likely to vary over time, especially during economic shocks or when land passes to a new generation. However, adopting a long-term acquisition strategy can still lead to the steady accumulation of land purchased to safeguard our natural heritage.

In designing an acquisition and management strategy, the interplay between management effectiveness and costs is also important. Management effectiveness is regarded as the major element in explaining successful conservation outcomes [see footnote 7]. Thus, one of the key considerations when deciding whether to buy or rent land for conservation is how it effects the total area of land under effective management. Agri-environment schemes are often generic, prevent tailored management and focus on short-term conservation inputs and outputs. Conservation management on purchased land requires dedicated staff and funding but can take a more long-term approach and focus on conservation outcomes. Agri-environment schemes can be effective[60] and some landowners do more than is stipulated in their agri-environment contracts, using their expertise and knowledge of the land to produce large benefits for nature. Moreover, there are many examples where designated sites on land owned by government or NGOs are poorly funded and managed.

Successful conservation management on both bought and rented land depends on adequate governance and funding. Where agri-environment schemes are well designed, funded, supported, monitored and enforced, and underpinned by effective legislation, then conservation on rented land will likely be a success. Maintaining agri-environment payments for landowners who achieve good conservation outcomes is important, to support success and maintain the amount of land under conservation management at the beginning of any land acquisition process. However, problems arise in maintaining these enabling conditions over the long-term.

A successful land acquisition strategy would focus on land parcels with the highest conservation value. The value of a site should be assessed in terms of what it adds to a network, not its value in isolation. Therefore, the valuing process should account for local, regional and national objectives and work towards developing nature recovery networks that are connected, ecologically viable and representative of broader biodiversity.[61] This value should also account for the purchase price, predicted management costs, along with local knowledge of the site and the likely future availability of other, similar parcels. Such work should be informed by Local Nature Recovery Strategies, which are currently

57. Geldmann, J and others, 'A global-level assessment of the effectiveness of protected areas at resisting anthropogenic pressures' PNAS, 2019 https://doi.org/10.1073/pnas.1908221116
58. Starnes, T and others, 'The Extent and Effectiveness of Protected Areas in the UK', Global Ecology and Conservation, e01745, 2021.
59. Smith RJ and others, Comparing Conservation Land Acquisition Strategies Using Agent-Based Models, unpublished report, Durrell Institute of Conservation and Ecology, 2023.
60. Food and Agriculture Organization of the United Nations, 'The Future of Food and Farming', 2017. https://www.fao.org/family-farming/detail/en/c/1070487/
61. 61 Batáry, P and others, 'The Role of Agri-environment Schemes in Conservation and Environmental Management', Conservation Biology, 29.4, 1006–16, 2015.
62. 62 Smith, RJ and others, 'Developing a Nature Recovery Network Using Systematic Conservation Planning', Conservation Science and Practice, 4.1, e578, 2022.
63. 63 Armsworth, P and Sanchirico, J, 'The Effectiveness of Buying Easements as a Conservation Strategy', Conservation Letters, 1.4, 182–89, 2008.

being developed across England at the county and combined authority level.

Taking account of the above, an acquisition and management policy has the potential to contribute significantly to nature recovery in England and safeguard it for the future. Acquisition policies have clear benefits by ensuring that land parcels can be managed in perpetuity to maintain and enhance their biodiversity, allowing managers to make long term decisions based on achieving conservation outcomes. Such a policy should be designed to complement existing approaches, including agri-environment schemes. Land purchase should only be considered strategically, avoiding crowding out different innovative policies such as those successfully applied in other countries.[62] It should also be recognised that purchasing land for conservation has high upfront and ongoing management costs. An acquisition policy should be underpinned by robust methods for identifying the sites with the highest potential public value and processes to ensure that every site within an ecological network has sufficient funding for effective management.

4. The role of public policy in delivering nature recovery

There is an emerging body of evidence in conservation science and environmental economics demonstrating that ambitious public policies can be effective in reducing biodiversity loss. In this, government policy can be seen to have four distinct roles in delivering nature recovery:

- Directly funding to beneficial activities, for example, public agricultural subsidies to private landowners.
- Diverting public finance flows and subsidies toward ecologically beneficial activities and away from damaging ones.
- Overseeing private investments in nature through markets to ensure public transparency, to enable public accountability, and to safeguard additionality.
- Investing in high quality monitoring to ensure the delivery of promised outcomes.

A recent global analysis tracking the conservation spending of countries around the world found that increased domestic conservation spending is associated with reductions in biodiversity loss and the number of threatened species.[63] Another cost-benefit analysis found that increasing protected areas to 30% of land and seas, as per the post-2020 Global Biodiversity Framework target, would not only enable effective conservation but also increase global economic output, challenging the common narrative of a trade-off between social and environmental outcomes.[64] Similarly, in their 'Earth-Economy Model' (a macroeconomic model that accounts for the importance of ecosystem functioning), Johnson concluded that reforming public agricultural subsidies coupled with public investment in agricultural research and development would avoid 21% of global ecosystem destruction and increase global GDP by US$150 billion, relative to a no-action scenario.[65]

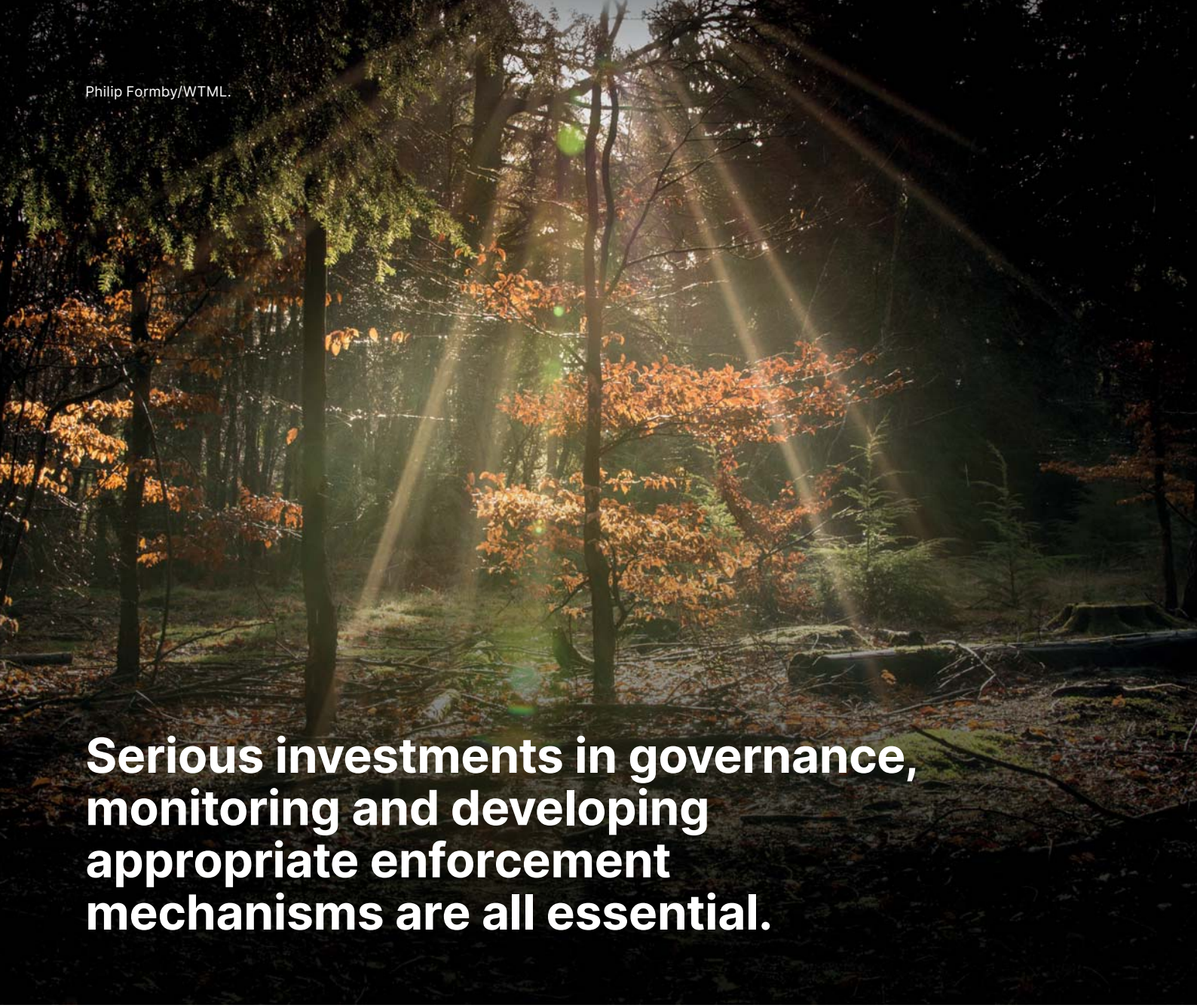
The most critical role of governments is arguably in redefining the subsidy and incentive schemes that shape the flow of finance into ecologically damaging activities, and ecologically regenerative ones. Globally, public funds supporting business activities that are harmful to biodiversity, estimated at around US$ 500 billion per year, dwarf public funds supporting nature recovery. Reorientating public subsidies to support broader nature recovery targets is not only a 'low hanging-fruit' source of public finance, but also a critical lever to encourage a transition within the most implicated business sectors.

Harnessing market mechanisms for nature recovery will create additional roles for public bodies. Environmental regulatory agencies will need appropriate capacity and resources to oversee the outcomes associated with investments in nature, and access to enforcement mechanisms. This is not limited to national government. Other institutions such as local authorities, also need to be adequately empowered and resourced to shape high-integrity markets. For example, although local authorities are the regulatory body which oversees of the implementation of BNG, a recent assessment found only 39% of local authorities had in-house ecological expertise.[66]

Nature markets, especially compliance markets like BNG, can be an important policy tool for achieving conservation outcomes. The main power of compliance markets is their ability to internalise the ecological costs of business practices into the development process. This can incentivise less damage to biodiversity and operationalise the polluter-pays principle thus potentially raising revenue from polluting sectors to address biodiversity loss.

The main dangers of nature markets are if they are used to legitimise reductions in action elsewhere. Examples of this could include if government uses the ecological compensation efforts to achieve existing statutory goals,[67] if they are used to justify damaging developments that cause harm to particularly valuable components of nature under the guise that the harms are being made up for elsewhere, or if there is so little investment in monitoring and enforcement, or the calculation methods used to estimate biodiversity gains are flawed (i.e. if

64. Seidl, A and others, 'The Effectiveness of National Biodiversity Investments to Protect the Wealth of Nature', Nature Ecology & Evolution, 5.4, 530–39, 2021.
65. Waldron, A and others,.'Protecting 30% of the planet for nature: costs, benefits and economic implications - Working paper analysing the economic implications of the proposed 30% target for areal protection in the draft post-2020 Global Biodiversity Framework', 2020. https://www.conservation.cam.ac.uk/files/waldron_report_30_by_30_publish.pdf.
66. Johnson, JA and others, 'The Economic Case for Nature: A Global Earth-Economy Model to Assess Development Policy Pathways' Washington, DC: World Bank, 2020. https://openknowledge.worldbank.org/handle/10986/35882 [accessed 5/10/2022].
67. Robertson, M 'The State of No Net Loss/Net Gain and Biodiversity Offsetting Policy in English Local Planning Authorities: Full Report', 2021.
68. Narain, N and Maron, M, 'Cost shifting and other perverse incentives in biodiversity offsetting in India', Conservation Biology 772-288, 2018. https://conbio.onlinelibrary.wiley.com/doi/abs/10.1111/cobi.13100.
69. 69 zu Ermgassen, S.O.S.E., Bull, J.W., Groom, B. 'UK biodiversity: close gap between reality and rhetoric', Nature 595, 172, 2021.
70. Rampling, E and others, 'Improving the Ecological Outcomes of Compensatory Conservation by Addressing Governance Gaps: A Case Study of Biodiversity Net Gain in England', SocArXiv, 2023.



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Serious investments in governance, monitoring and developing appropriate enforcement mechanisms are all essential.

they inaccurately assume additionality)[68] that they do not deliver the ecological gains that they are supposed to.[69] Despite widespread attention, nature markets remain a limited part of the overall solution. They are currently dwarfed by grants and direct actions by the public sector which remain the key tool available to develop a sustainable economy and achieve overarching wildlife conservation goals.

Harnessing the power of nature markets therefore requires a symbiotic relationship with government. Serious investments in governance, monitoring (including for example, public-sector ecological auditors conducting randomised auditing of the outcomes of projects selling into nature markets), and developing appropriate enforcement mechanisms are all essential investments, as is resolving a design flaw of capacity and skills shortages in local authorities as the front-facing public institutions governing the day-to-day realities of nature markets such as BNG.

5. Conclusion and recommendations

This report has documented long-term changes in the level of public spending on nature conservation, and a shift in focus towards creating the institutions for private finance to invest in biodiversity conservation as a key component of nature recovery.

We highlight that:

- Whilst private finance has the potential to be an important policy tool, directing it towards positive ecological outcomes will require an innovative, high-capacity and ambitious government sector.
- Presently, private nature markets can at most be a limited component of the overall solution for delivering England's high level conservation policy goals. This is because most existing nature markets rely on offsets which present limited opportunities for delivering biodiversity recovery, as they make up for losses elsewhere.
- An increase in public funding for nature recovery therefore remains the key component of efforts to address biodiversity declines.
- The public sector has the power and capabilities to drive England's nature recovery, through guiding and overseeing nature markets, and directly investing in the nature recovery that benefits us all.

Nature markets carry the potential for much needed investment, but evidence shows they deliver good nature outcomes only under particular conditions.

Government must take actions to maximise benefits and mitigate risks from nature markets, including:

- All nature markets should be governed by principles ensuring high integrity from both buyers and sellers.
- Robust and properly resourced oversight is needed from public bodies to ensure market mechanisms improve nature and do not result in negative and unintended outcomes.
- Carefully calibrated metrics and regulations so the habitats created as offsets for development are driven by local need and deliver the highest conservation gain, rather than being simply the cheapest and easiest habitat to create.
- Income from market approaches should not replace existing public spending or be used to deliver objectives which are already legally mandated, for example maintaining SSSI condition.

i. European Environment Agency, 2022 https://www.eea.europa.eu/publications/european-bathing-water-quality-in-2022