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Strategic Nature Network

This is one of 15 case studies informing the Infrastructure Systems Review.

System: UK natural infrastructure.

Systems contribution and value: Reframes nature as critical national infrastructure, strategically connected and managed to improve ecological resilience, reduce climate and environmental risks, and increase value from existing public and private investment.

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Summary

The primary challenge facing nature and biodiversity in the UK is not a lack of activity, investment or ecological knowledge, but the absence of a system that aligns them towards a shared national outcome.

This understanding led to the launch in June 2026 of the Strategic Nature Network (SNN) Version 1.

SNN establishes the vision and methodology for creating, for the first time, a functioning system of natural infrastructure capable of delivering the ecological services upon which the UK's economy, communities and public services depend.

The intended future state is one in which nature is planned, financed and stewarded with the same strategic intent as other forms of critical national infrastructure: supporting productivity, increasing resilience and sustaining prosperity over the long term, in addition to safeguarding our natural wealth for future generations.

Significant public and private investments are directed towards nature through agricultural support schemes, environmental programmes, flood and water management, infrastructure investment, planning requirements and emerging nature markets. However, these interventions are frequently designed and delivered independently. Policies and incentives owned by different parts of government can inadvertently pull in different directions, resulting in duplication, inefficiency and missed opportunities.

The SNN sets a shared national outcome around which existing expenditure can be aligned, increasing the value generated from every pound already invested.
It is an example amongst many others of where systems thinking based on what we want to achieve could deliver substantially better value for money – in this case mitigating an issue that the Joint Intelligence Committee classified as a threat to national security: the intertwined climate and nature crises.

Coordinated, landscape scale restoration of nature achieves more than fragmented delivery of isolated projects. Natural systems and processes are more robust, and provide increased services where habitat is in good condition, connected and at scale.

The SNN identifies where investment has the greatest potential to extend and join up habitat and increase the ecosystem services provided.

This includes those areas where nature-based flood management would deliver the greatest protection for economic infrastructure.

Building the SNN improves outcomes per unit of investment and shifts expenditure from reactive responses towards preventative resilience. It enables a more strategic approach to environmental regulation, framed around development proposals demonstrating how they deliver a net gain to the SNN. This would move the debate beyond a perceived trade-off between nature and development towards a model in which economic growth actively contributes to the resilience of the natural systems on which it depends.

A functioning full scale SNN offers the prospect of lower long-term public liabilities, reduced expenditure associated with climate-related disruption and environmental decline, improved returns on existing investment, and greater confidence for private capital to participate in nature recovery. The result is not simply an environmental recovery programme, but a national infrastructure strategy that strengthens resilience, improves productivity and leaves the UK's natural assets in a more robust condition.

Scope

This case study considers the development of a UK-wide Strategic Nature Network (SNN): a coherent ecological system designed, managed and financed as critical national infrastructure. Spanning England, Scotland, Wales and Northern Ireland, it recognises devolved responsibilities while providing the strategic coordination necessary to ensure that the UK's natural assets function as an integrated national network.

The SNN is both an outcome – a vision to be built into something real that provides resilience for UK plc – and a framework on which to hang changes in governance, planning and investment to achieve this goal. It is also an advocacy tool to get us to the point where decisionmakers and the public view nature as an enabler of economic growth, better health, and greater security.

The SNN would not replace existing conservation, restoration or land management initiatives. Rather, it would provide the infrastructure framework through which they can be aligned and optimised. It would coordinate the diverse policies, incentives and investment mechanisms that influence land use – including environmental land management schemes, planning policy, flood risk management, water investment, biodiversity net gain, private nature markets and infrastructure delivery – to realise a shared national outcome.

The terrestrial Strategic Nature Network v1 identifies approximately 7.4 million hectares of interconnected ecological assets across the UK, equivalent to around 30% of the UK's land area. Around 3.5 million hectares of this network is already protected through existing designations. A further 3.9 million hectares of strategically targeted restoration corridors would create a fully connected system capable of supporting ecological resilience and delivering long-term economic benefits.

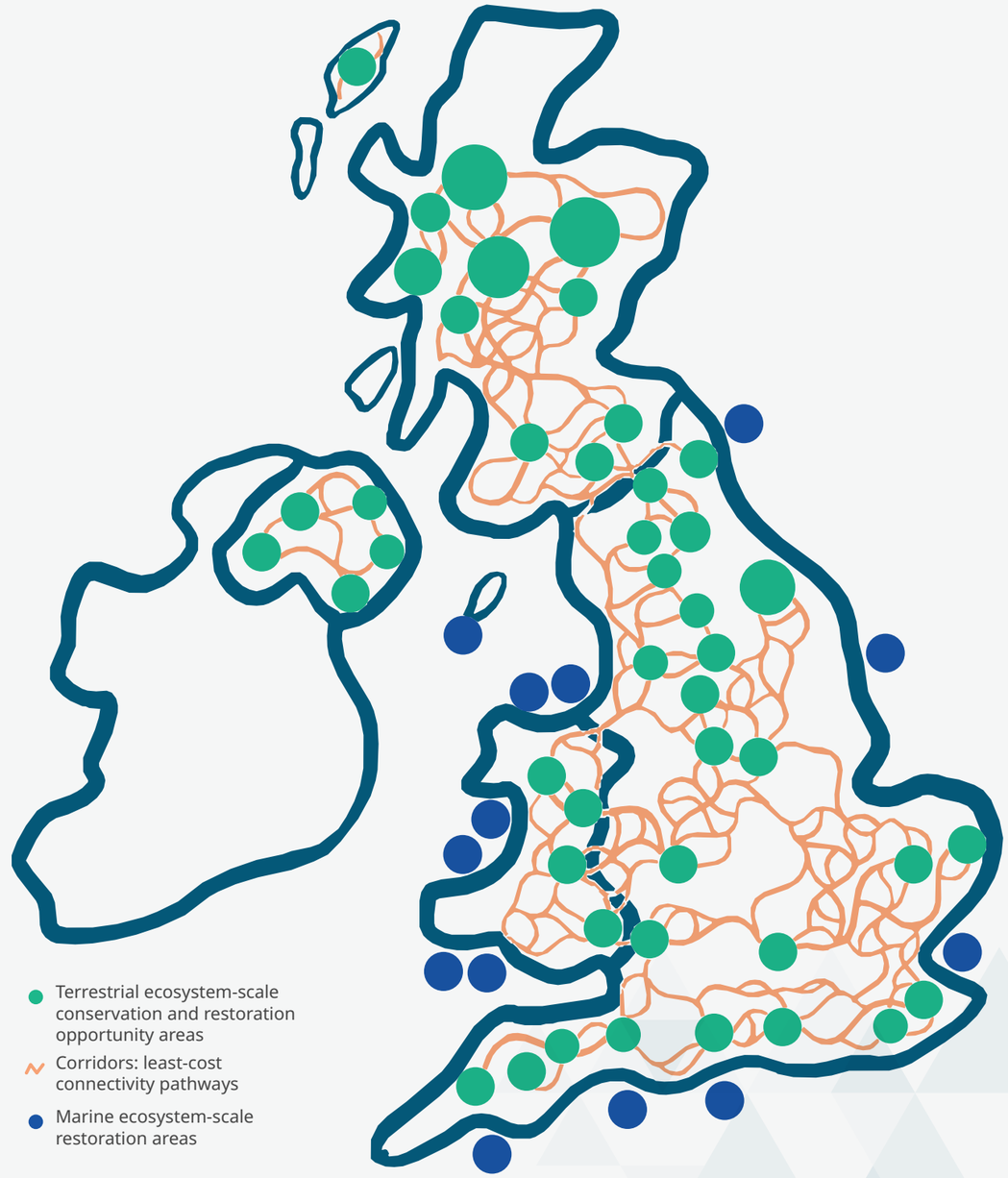
Other forms of critical infrastructure rely on institutions that oversee the functioning of the whole network, ensuring

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Figure 1. Strategic Nature Network Version 1.

The SNN is an essential counterpart to national energy transmission, road and rail networks, requiring equivalent strategy, investment and management.





A coherent ecological network will strengthen the UK's resilience to future shocks.

that individual investments contribute to overall system performance. The UK's natural infrastructure currently lacks an equivalent mechanism. The SNN provides the opportunity for a similar approach with coordinated planning, investment alignment and adaptive stewardship across national, regional, catchment and local scales.

Current barriers – including fragmented funding, siloed governance, short policy cycles and inconsistent incentives – make incremental reform insufficient. A systems-based infrastructure approach is required given the scale of the challenge we now face.

Outcomes

The full-scale SNN would establish, for the first time, a functioning system of natural infrastructure capable of delivering the ecological services upon which the UK's economy, communities and public services depend. The intended future state is one in which nature is planned, financed and stewarded with the same strategic intent as other forms of critical national infrastructure: providing resilience, supporting productivity and sustaining prosperity over the long term.

The outcome is not simply the restoration of habitats, but the creation of a coherent ecological network that strengthens the UK's capacity to withstand and adapt to shocks. The SNN would enhance resilience to flooding, drought, overheating and climate change; improve food and water security; support healthier communities; restore biodiversity and ecological function; and provide the environmental stability required for sustainable economic growth.

Importantly, this need not rely solely on new funding. Significant public and private investment are already directed towards nature through agricultural support schemes,

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environmental programmes, flood and water management, infrastructure investment, biodiversity requirements and emerging nature markets. However, these interventions are frequently designed and delivered independently of one another. In some cases, policies and incentives owned by different parts of government pull in different directions, resulting in duplication, inefficiency and missed opportunities. The SNN provides a shared national outcome around which existing expenditure can be aligned, increasing the value generated from every pound already invested.

This systems approach enables interventions to deliver multiple benefits simultaneously. Investments targeted through the SNN can improve biodiversity outcomes while also enhancing agricultural productivity, reducing flood risk, improving water quality, sequestering carbon, protecting

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infrastructure assets and supporting public health and wellbeing. By coordinating action spatially and institutionally, the network improves outcomes per unit of investment and shifts expenditure from reactive responses towards preventative resilience.

The SNN would also provide greater certainty for planning, regulation and investment. By establishing a nationally recognised ecological framework, it would enable a more strategic approach to environmental regulation, allowing development and infrastructure proposals to demonstrate how they contribute to the functioning of the wider network. This would move the debate beyond a perceived trade-off between nature and development towards a model in which economic growth actively contributes to the resilience of the natural systems on which it depends.

For HM Treasury, the outcomes are particularly significant. The SNN offers the prospect of lower long-term public liabilities, reduced expenditure associated with climate-related disruption and environmental decline, improved returns on existing investment, and greater confidence for private capital to participate in nature recovery. The result is not simply an environmental recovery programme, but a national infrastructure strategy that strengthens resilience, improves productivity and leaves the UK's natural assets in a more robust condition for future generations.

Systems

The SNN is fundamentally a systems intervention. Its purpose is not simply to create additional habitat or expand existing conservation programmes, but to enable the UK's natural infrastructure to function as a coherent national system whose performance can be planned, coordinated and improved over time.

Nature already operates as an interconnected system. Rivers influence flood risk far downstream; soils affect water quality and agricultural productivity; wetlands regulate water flows; urban green infrastructure moderates temperatures and supports public health; and ecological connectivity allows species and ecosystems to adapt to changing conditions. Yet the institutions responsible for influencing these outcomes frequently operate within sectoral boundaries, with different objectives, funding mechanisms and regulatory frameworks. The result is that interventions are often designed to optimise individual programmes rather than the performance of the wider system.

In the UK we have historically focused on optimizing individual 'conservation' programmes for assemblages of species. We need to shift to optimizing overall system performance at regional ecosystem level to benefit people. We need to distinguish local value and community, regional and national benefits. Outside the UK regional-scale natural parks protect multiple watersheds and influence rainfall that adds resilience to agriculture.

The central systems challenge is therefore not ecological capability, but shared institutional values and coordination. Decisions affecting the natural environment are currently distributed across multiple departments, regulators, infrastructure providers, land managers and investors. Without a shared framework and common outcomes, opportunities to generate multiple benefits are lost and, in some cases, incentives can work against one another.

The SNN provides the mechanism through which these interactions can be managed deliberately. Through shared spatial priorities, common evidence and coordinated investment, it enables public and private actors to direct activity towards outcomes that strengthen the functioning of the overall network. This allows interventions to be targeted where they generate the greatest system-wide value – for example, reducing downstream flood risk through upstream land management, improving infrastructure resilience through nature-based solutions, or aligning development with ecological recovery and adaptation priorities.

As with other forms of critical national infrastructure, effective stewardship depends upon reliable information and adaptive management. Monitoring, spatial data and performance assessment will enable the network to evolve in response to changing conditions and emerging evidence, ensuring that it remains effective over the long term.

The institutional fragmentation that holds back nature's contribution to national resilience requires new governance arrangements that promote ownership, accountability, coordination and trade-off resolution. These must be developed with input from multiple stakeholders across multiple sectors. They are going to have to consider factors like the local devolution agenda and learn from international thinking on bioregional development.

A cross-departmental body akin to National Highways is needed to coordinate this multi-decadal critical natural infrastructure programme. This body should build on locally-formulated strategies – for example, local nature recovery strategies. It needs to achieve both local buy-in and national political support, whilst enabling scaled financing, again potentially harnessing the existing structure of built infrastructure programmes.

This type of coordination is complicated but it is what has led to Version 1 of the SNN. We now need to move from concept to build. Its governance system has been guided by the vision of a shared national product, whilst being inclusive. It is designed to embrace parallel thinking about data collection, roles, responsibilities, and investment – aligned with shared outcomes, clearly defined benefits and transparent management of risk and reward.

The SNN shifts nature from being treated by siloed organisations as a collection of individual sites and projects, to being managed as a strategic national asset: a living infrastructure system that underpins the resilience and performance of the UK's economy, communities and other critical infrastructure networks.

Economic assessment

Consistent with HM Treasury's Green Book approach, the economic case for the SNN is based on comparing the expected outcomes of intervention against a business-as-usual counterfactual.

Under a 'do minimum' scenario, the UK would continue to invest significant public and private resources in nature-related outcomes through agricultural support, flood and

coastal management, environmental regulation, planning obligations, infrastructure mitigation, water company investment and emerging environmental markets. However, these investments would remain largely fragmented across sectors, institutions and geographies.

Environmental pressures associated with climate change, biodiversity decline and land-use change would continue to intensify. These are estimated to cost between 4.7% and 12% of GDP per annum by the 2030s, while opportunities to maximise the benefits arising from existing expenditure would be missed. In some cases, policies and incentives owned by different parts of government would operate in tension with one another, limiting the overall value generated from public investment and disincentivising private financing.

Creating the SNN would establish a national infrastructure framework through which activities are coordinated around shared system-level outcomes.

Rather than replacing existing programmes, the SNN provides the strategic architecture that enables them to work together more effectively, aligning investment, incentives and regulation towards the creation and stewardship of a functioning ecological network that supports long-term prosperity and resilience.

Compared with the counterfactual, delivery of the SNN would increase carbon sequestration and storage, improve ecological connectivity and biodiversity outcomes, strengthen flood and drought resilience, enhance water quality and availability, support healthier and more productive agricultural systems, and improve the resilience of communities and critical infrastructure to climate-related shocks. It would also provide greater certainty for investors, developers and infrastructure operators by establishing a clear strategic framework within which public and private investment decisions can be made.

Initial analysis also illustrates the scale of the opportunity. The restoration zones identified within the SNN delivered to a high ecological condition could generate around 30 million biodiversity units, demonstrating the substantial uplift in ecological functionality, connectivity and resilience that could be achieved through a coordinated national approach. Delivery of the English terrestrial restoration zones is estimated to remove an additional 300MtCO_2 over a 50-year period.

Beyond carbon and biodiversity, a nationally connected ecological network would also strengthen the delivery of a wide range of critical ecosystem services. Restored woodlands, wetlands, floodplains and peatlands slow the movement of water through catchments, helping to reduce downstream flood risk while improving water quality and increasing resilience to drought. The Environment Agency's Natural Flood Management Programme demonstrated that relatively modest investments in nature-based interventions slowed and stored 1.6Mm3 of floodwater upstream of 15,000 homes, while simultaneously improving over 610km of rivers and 4,000 hectares of habitat.

Healthy, connected ecosystems also underpin food security through pollination and healthy soils. Natural England estimates that insect pollination provides around £500 million of value to UK agriculture each year, illustrating

A connected ecological network would enhance flood regulation, improve water quality, support pollination and agricultural productivity, increase drought resilience, strengthen climate adaptation, and deliver significant benefits for public health and wellbeing.

that investment in ecological recovery delivers substantial economic as well as environmental returns.

A connected ecological network would enhance flood regulation, improve water quality, support pollination and agricultural productivity, increase drought resilience, strengthen climate adaptation, and deliver significant benefits for public health and wellbeing.

While these ecosystem services are often considered separately, the SNN provides the spatial framework through which they can be optimised simultaneously, maximising the return on both public and private investment in nature. This would help sustain and enhance the stock of natural capital that in England the ONS values at £1.4 trillion with annual benefits of service flows at over £35 billion.

The economic benefits arise from additional investment and improved coordination of existing activity. By taking a systems view of the outcomes required, the SNN enables interventions undertaken by different departments, regulators and market participants to become mutually reinforcing rather than operating in isolation. This increases the effectiveness of current expenditure, improves the return generated from public and private investment, and creates the conditions for more strategic regulation and planning.

The economic assessment suggests that the relevant question is not whether the UK can afford to invest in the SNN, but whether it can afford not to. Viewed through the lens of the Green Book, the SNN represents an option capable of improving value for money, supporting sustainable growth and enhancing the resilience of the national assets upon which future prosperity depends.

Systemic assessment

The SNN highlights that the UK's principal challenge is not an absence of ecological knowledge, local delivery capability or even investment in nature. Significant activity is already underway across government, regulators, infrastructure providers, environmental markets and civil society. However, these interventions are often shaped by institutional

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boundaries, short-term objectives and sector-specific mandates, rather than by a shared understanding of the system-level outcomes they collectively seek to achieve.

The consequence is that funding, regulation, planning and delivery mechanisms can operate in parallel, and occasionally in tension with one another. Opportunities to generate multiple benefits from a single intervention are missed, while investment is not consistently directed towards those places where returns are likely to be greatest, whether in terms of biodiversity recovery, flood resilience, carbon sequestration, water security or wider ecosystem services.

The value of the SNN is in beginning with a clear shared national outcome that enables alignment of the wider system of organisations, initiatives, projects and investments. It would support:

- integration of nature into infrastructure planning and growth strategies from the outset
- coordination of incentives, such as higher level agri-payments
- regulation and investment across departmental boundaries, for example by viewing regional adopted chunks of the SNN as nature investment zones; these would operate as sandboxes for trialling multi-sectoral collaborations outside national policy constraints, funded by specific public private partnerships and delivering scaled incomes, such as from re-naturalisation of major river systems to prevent flooding of cities
- national strategic direction with locally led delivery
- long-term stewardship through adaptive management and evidence-led decision-making.

These lessons extend beyond nature recovery. They suggest a broader model for public policy in which government focuses less on optimising individual programmes in isolation and more on improving the performance of the systems upon which national resilience and prosperity depend. In this respect, the SNN is both a proposal for natural infrastructure and a practical demonstration of systems-led national planning.

Recommendations

The analysis presented in this case study suggests that the UK's challenge is not simply to increase investment in nature, but to ensure that existing and future activity is organised around the delivery of a shared national outcome: a functioning Strategic Nature Network that strengthens resilience, supports prosperity and sustains the natural systems upon which society depends. The following actions would provide a practical route towards implementation:

- **Recognise nature as critical national infrastructure within appraisal, resilience and investment frameworks.** This would establish thriving natural systems as productive national assets essential to economic performance, public wellbeing and long-term prosperity.
- **Establish the Strategic Nature Network as a UK-wide programme**, working in partnership with devolved governments and regional delivery bodies to provide strategic direction while enabling locally led implementation.
- **Develop nature investment zones (NIZs) as multi-decadal masterplans for nature investment at scale.** Focused on places of strategic importance to the health and functioning of the SNN, NIZs would align public and private investment, aggregate projects into investable pipelines and provide confidence for long-term stewardship and blended finance. NIZs should be treated as financial, physical, and policy sandboxes, with Treasury backing to evolve policy and enable innovation, via guarantees to investors, with successes and emerging best practices shared and scaled.
- **Integrate the SNN into planning, infrastructure and economic development frameworks.** A nationally recognised ecological framework would enable a more strategic approach to regulation, whereby development proposals could demonstrate how they deliver a measurable net gain to the Strategic Nature Network. This would provide greater certainty for developers and regulators alike, enabling sustainable growth while strengthening natural infrastructure.
- **Establish cross-government governance arrangements**, supported by Cabinet-level ownership, to align policy, regulation and investment across departments responsible for environment, transport, housing, health, energy, infrastructure and regional growth.
- **Invest in the evidence base required for adaptive management**, including national spatial datasets, common outcome metrics and monitoring systems capable of tracking resilience, biodiversity, carbon, water, health and productivity outcomes over time.
- **Ensure that the benefits of the SNN are widely shared.** Delivery should support farmers and land managers through clear incentives and diversified income opportunities, create skilled employment in restoration and land stewardship, improve access to nature for communities, and contribute to better physical and mental health outcomes across the population.

The SNN provides a credible route through which the UK can strengthen national resilience, improve the value generated from existing public and private investment, support sustainable growth and restore the natural systems upon which future prosperity depends. In doing so, it offers not only a vision for nature recovery, but a practical model for systems-led infrastructure planning in an era increasingly defined by climate risk, ecological change and growing demands on public resources.

The overarching recommendation is to create a roadmap for development of the SNN, with an iteratively improved suite of NIZs. Targets should be set for before and after 2030: perhaps 10 officially recognised, financed, and in implementation by 2030, with a further 35 before 2040, together covering 75% of the Strategic Nature Network.

The political opportunity for adoption is huge, given regional devolution. The SNN and NIZs provide an opportunity to simplify a complex overlay of policies, and to realise synergies between them under one multi-decadal masterplan. Examples include biodiversity net gain, environmental delivery plans, and nature recovery plans.

The SNN creates the collective mechanism for implementing a critical system change – the treatment of nature as critical national infrastructure.

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