# BARRIERS AND ENABLERS FOR WATER, NATURE AND CLIMATE-FRIENDLY FARMING

## EXECUTIVE SUMMARY

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**Front cover:** Farmer Stuart checks hay bales. Whitriggs Farm, the Scottish Borders. © David Bebber / WWF-UK

**This page:** A field of winter oats on Whitriggs Farm, the Scottish Borders. © David Bebber / WWF-UK

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# INTRODUCTION

Farmers are on the frontline of climate change, biodiversity loss, market volatility, domestic policy change and wider geopolitical shocks. They are also central to safeguarding food production through more water, nature and climate-friendly farming practices. But protecting and enhancing the natural environment while sustaining a viable farm business remains a difficult balance.

WWF Scotland, working with RSPB Scotland, commissioned SAC Consulting and Grounded Insight to identify the barriers and enablers to integrating Nature-based Solutions into farming in the Forth Basin.

Nature-based Solutions (NbS) protect, enhance and restore natural resources while supporting the ecosystem services that underpin production. In agriculture, NbS are typically delivered through water, nature and climate-friendly farming practices, combining in-field actions with the protection and restoration of semi-natural habitats. Throughout this report, we refer to these practices as 'NbS'.

The findings speak directly to the successful delivery of several key policies that rely on the widespread uptake of NbS practices. These include the Agricultural Reform Programme, Scottish Biodiversity Strategy to 2045, River Basin Management Planning, Scottish National Adaptation Plan (SNAP3), Net Zero Nation Framework, The Good Food Nation (Scotland) Act and the National Strategy for Economic Transformation (NSET).

The research identifies gaps in policy, funding and support, and changes needed to increase the uptake of NbS practices. It highlights how policy and support can help deliver sustained, long-term action including through catchment- and landscape-scale land management initiatives.

It sets out practical recommendations to bridge the gap between policy ambition and delivery on the ground to help make agricultural support, funding and policy fit for purpose to support the uptake of NbS practices.

**Nature-based Solutions (NbS)**
Actions to protect, sustainably manage and restore managed and natural ecosystems targeted to address societal challenges whilst providing well-being and biodiversity benefits (IUCN 2020).

Infield actions (e.g. regenerative agriculture) targeted to protect and restore crop/sward diversity and soil health.

Reduced tillage, cover cropping, livestock integration, crop or sward diversification, agroforestry and adaptive multi-paddock grazing.

Habitat actions targeted to protect, restore and enhance semi-natural habitats.

Hedgerows, buffer strips, field margins, farm woodlands, wetlands and ponds.

A wildflower buffer strip on the margin of farmland. © FSalter

# PURPOSE AND METHODOLOGY

The purpose of the report is to provide evidence to help advocate for policies, funding and mechanisms to overcome barriers and support farmers to adopt NbS practices at the scale required for landscape-scale benefits.

The work was targeted in the Forth Basin and on arable, mixed and productive grassland farming systems. These farming systems are the predominant ones in the area and offer the greatest opportunity to deliver measurable improvements for nature, climate resilience and water management at scale. Water availability in the Forth Basin in 2025 was impacted by the driest hydrological year in eastern Scotland since 1976[1]. The impact of this drought varied, and mitigation measures and farm resilience were key to adapting to the extreme weather event. The scope and impact of extreme weather events were discussed, alongside their impact on agricultural businesses.

The key objectives of the work were to:

- Identify common barriers, enablers and opportunities for uptake
- Identify practical policy recommendations to support greater uptake of NbS practices

This was achieved through a combined analysis of data recorded through a questionnaire, workshops with farm advisors and farmers, and one-to-one interviews.

[1] SEPA (2025) Autumn water situation report 2025 https://beta.sepa.scot/water-scarcity/water-scarcity-seasonal-reports/autumn-water-situation-report-2025/

# KEY FINDINGS

### 1 Even the most environmentally engaged farmers experience barriers to uptake

Over half of farmers involved in this research were participating in an agri-environment scheme and most were in one or more knowledge exchange groups. Even these relatively engaged farmers reported financial, practical implementation and policy-related barriers to adopting NbS. This indicates that challenges to adoption may be even greater across the broader farming population. Despite these challenges, farmers recognised the benefits that NbS deliver for soil health, farm resilience and biodiversity.

### 2 Business viability first: the costs and risks of changing practices

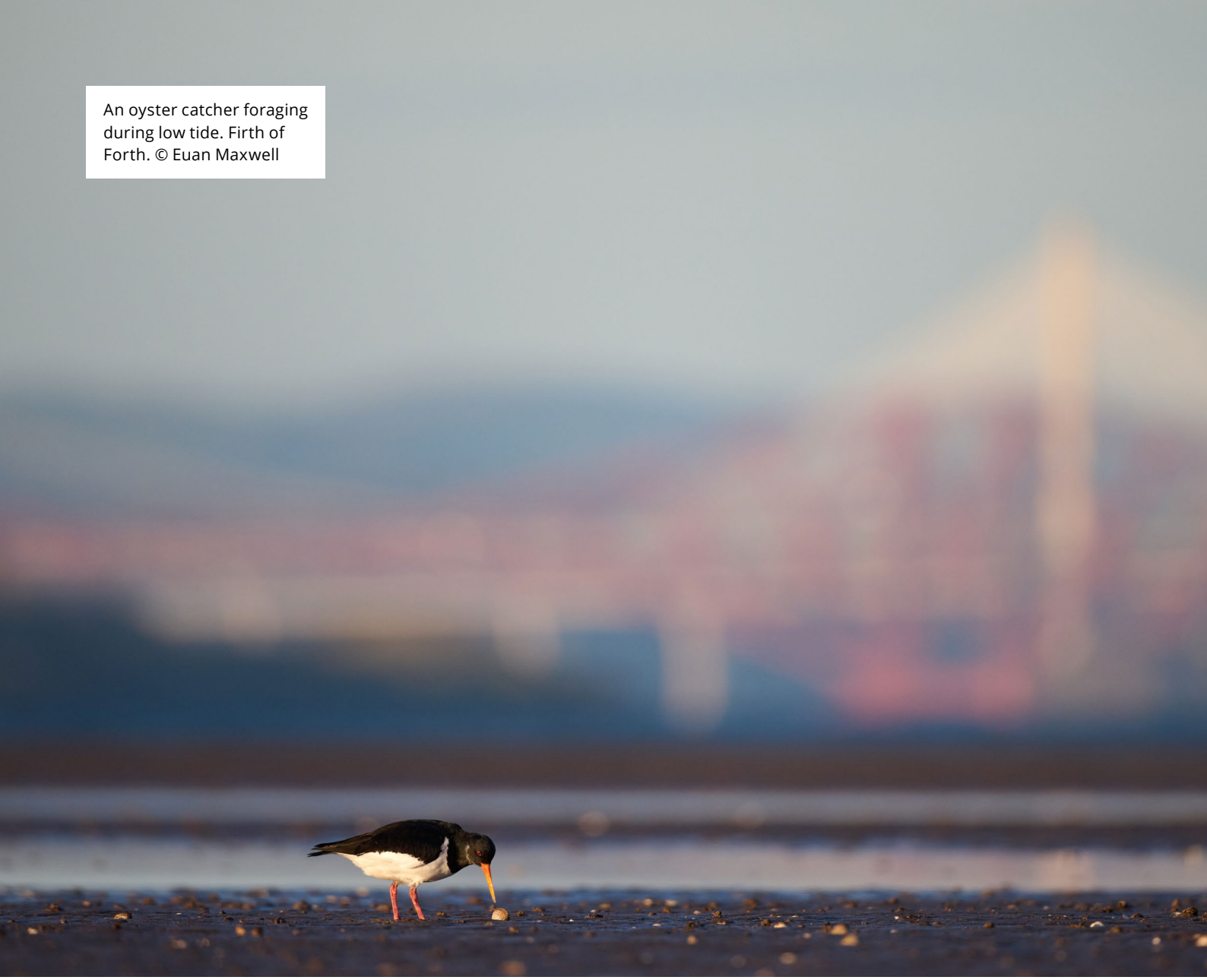
Maintaining a viable farm business was the overriding priority for participants. Farmers highlighted business risks associated with adopting NbS, including impacts on productivity, difficulty integrating them with current farming practices, and the costs of both establishment and transition. Consequently, the most commonly identified enablers related to financial incentives to mitigate these risks: capital grants to cover upfront costs and payments during the transition period. The perceived risks associated with changing established practices were especially evident for more permanent landscape features, such as agroforestry, wetlands and ponds.

### 3 Ineffective incentivisation of NbS in scheme design and policy

Current agricultural schemes and policy frameworks are insufficient to incentivise widespread NbS adoption. Farmers highlighted concerns around policy uncertainty, which heightens the risks associated with long-term land-use change, particularly where benefits may take years to materialise. Existing funding mechanisms tend to focus on implementation costs, giving insufficient consideration to income foregone, transition risks and the long-term commitment required to deliver environmental outcomes. Opportunities for blended finance are not being harnessed effectively through policy, for example through supply-chain initiatives.

### 4 A clear role for evidence, knowledge, peer-to-peer learning, and knowledge transfer and exchange

While most of the farmers in this research are already adopting positive practices, they identified challenges regarding having sufficient knowledge to adopt and establish NbS measures and ways to address this, from long-term studies and support with peer-to-peer learning to landscape-scale incentives and expert advice.



An oyster catcher foraging during low tide. Firth of Forth. © Euan Maxwell

# CONCLUSIONS

To meet targets on reversing nature's decline, achieving net zero and improving the ecological status of waterbodies, the Scottish Government needs to better incentivise NbS across Scotland's farmland and unlock private investment. By better understanding the barriers and enablers, the research, focused on the Forth Basin, helps to build the evidence base to inform and influence the direction of future policy at a national level. Our recommendations focus on bridging the gap between policy ambition and delivery on the ground to help ensure that the appropriate package of policy, funding and support is fit for purpose to support the greater uptake of water, nature and climate-friendly practices. These recommendations are timely as the Scottish Government is implementing the Agriculture and Rural Communities (Scotland) Act 2024, revising funding options and developing a new, fit-for-purpose advisory service.

# PRIORITY RECOMMENDATIONS

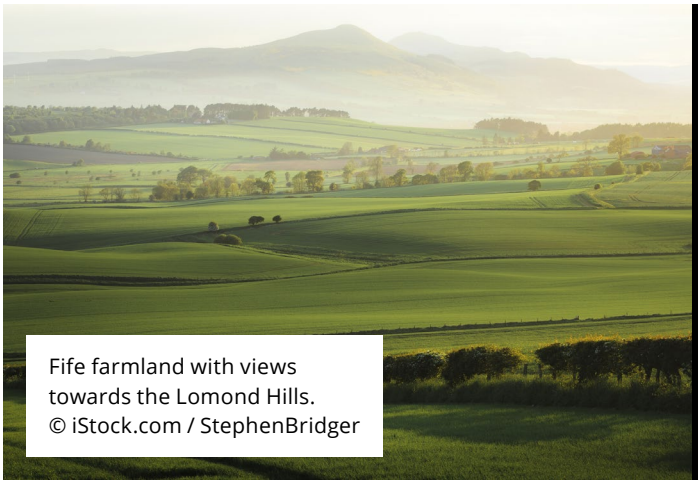
- **Provide more flexible and accessible funding:** Funding schemes should provide greater flexibility in both the range and combination of supported actions to incentivise NbS practices.

- **Share transition risks and reward long-term commitment:** Funding is needed to minimise risk to farms and crofts looking to alter their farming practice, helping to manage the time lag before environmental benefits are realised. WWF Scotland and RSPB Scotland call for an Agricultural Transformation Fund to be spent over the duration of the parliament.

- **Invest in advice, research and knowledge transfer and exchange:** Increased investment in independent advice, demonstration farms and peer-to-peer learning is critical to improve knowledge and reduce risks associated with adopting NbS. As NbS play an important role in building resilience to environmental, geopolitical and climate-related shocks, greater efforts are needed to raise awareness of their benefits and opportunities across the agricultural supply chain.

- **Strengthen mechanisms to blend private and public investment:** The Scottish Government should support the development of natural capital markets and other payment mechanisms that complement agricultural support schemes and attract private investment into NbS. This would enable farmers and crofters to blend public and private revenue streams, improving the long-term economic viability of adopting NbS.

- **Support landscape-scale delivery:** Landscape-scale change depends on effective collaboration, facilitation and advice. Uneven capacity across Scotland risks inconsistent uptake of NbS and should be addressed through Tiers 3 and 4 of the Agricultural Reform Programme and full rollout of Regional Land Use Partnerships.



Fife farmland with views towards the Lomond Hills.
© iStock.com / StephenBridger

**Implemented collectively, these recommendations will help to create the policy, funding and support framework needed to accelerate the uptake of water, nature and climate-friendly farming across the Forth Basin, and Scotland as a whole.**

Herbal ley. Whitriggs Farm, the Scottish Borders.
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