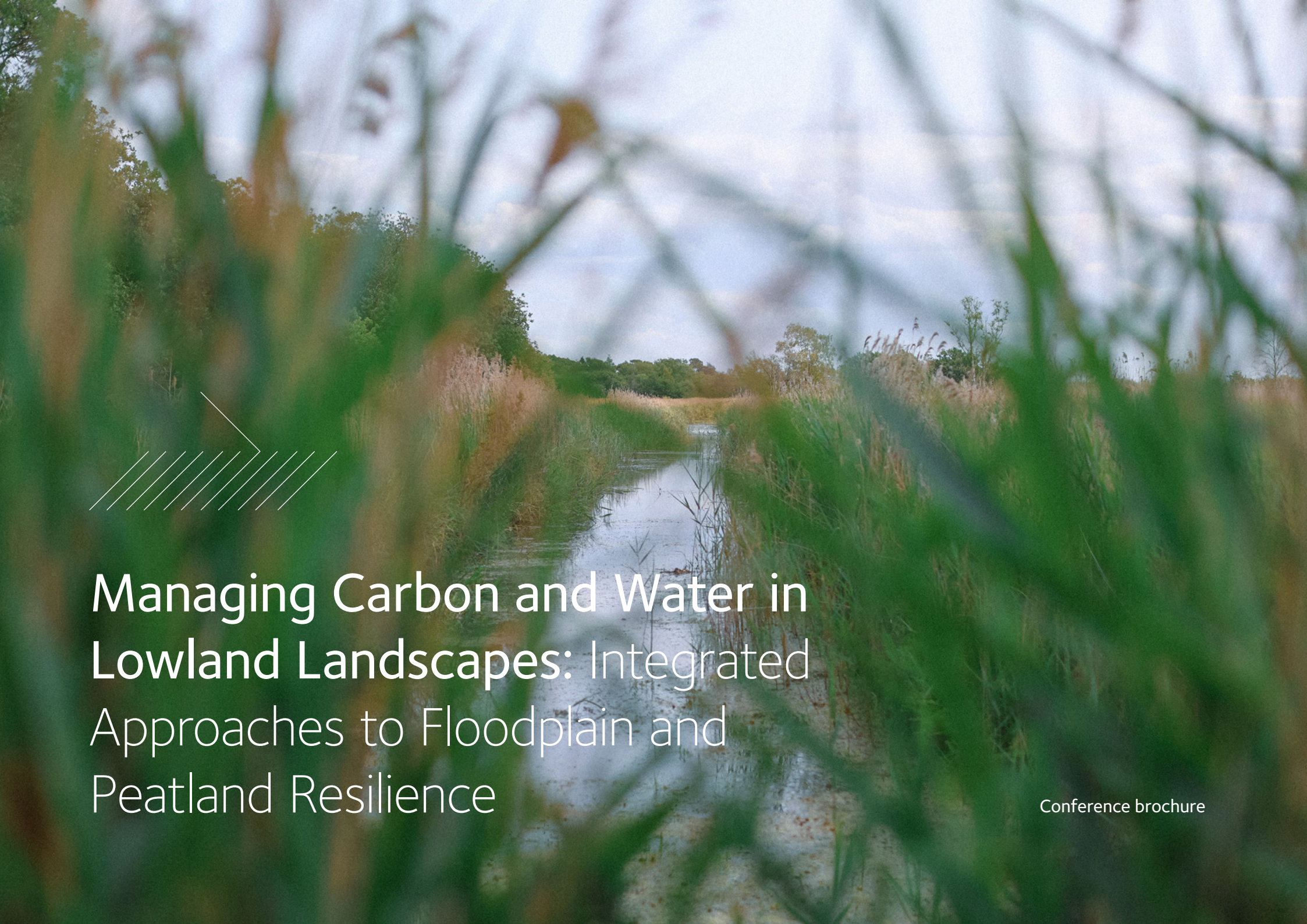

Managing Carbon and Water in Lowland Landscapes: Integrated Approaches to Floodplain and Peatland Resilience

Conference brochure

Contents

Organised by the Broads Authority, Norfolk FWAG, Norfolk Environment Food and Farming and Cranfield University

A conference on “Managing carbon and water in lowland landscapes: integrated approaches to floodplainand peatland resilience” *20/01/2026*

Managing water and soil carbon is fast becoming a priority across lowland UK and is crucial for climate action, farm resilience, biodiversity, and productivity.

This cross-sector forum at the University of East Anglia brings together experts in farming, conservation, water, and policy to explore practical, joined-up approaches across peat and mineral soils in floodplains.

Expect tools, funding insights, and real-world case studies to support action at both farm and catchment scale.

Funded by
UK Government

"This is a valuable opportunity to connect with others in the sector, share experiences, and shape the future of peatland restoration."

What you'll gain from attending the conference:

- Strategic direction: Understand the national ambition and potential funding to help us get there.
- Practical knowledge: Hear about the latest technologies and techniques supporting lowland peat restoration.
- Real-world examples: Hear case studies showcasing funded peatland restoration projects.
- Local influence: Come together to with local landowners to contribute to ideas and projects

Agenda

09:30 am - Registration and networking.

10:00 am - Welcome from organisers and UEA.

Andrea Kelly, Broads Authority, Professor Nicola Hancock Associate Pro-Vice-Chancellor for Innovation.

10:15 am - The Lowland Peat Opportunity and Challenge.

Minister Mary Creagh, Minister for Nature.

10:35 am - Planning for sustainable land and water use.

Tony Grayling, Environment Agency.

10:55 am - Broads Water availability, Opportunity for Multi-Benefit Systems Approach.

Steve Moncaster, Norfolk Environment Food and Farming.

11:15 am - Coffee/Tea.

11:30 am - Integrated Water Management Panel.

Environment Agency, Matt Philpott - Water Management Alliance, Rob Wise - National Farmers Union , Steve Moncaster - Norfolk Environment Food & Farming.

12:30 pm - Lunch, networking and visiting trade stands

01:30 pm - Innovative Watertable Modelling Supporting Water and Carbon Management.

Ian Holman, Cranfield University

01:50 pm - Peat Cameras: Land Subsidence and Watertable Assessment.

Jonay Jovani, UKCEH.

02:05 pm - Pump Investment and Benefits for Peat Restoration.

Matt Philpott, Water Management Alliance.

02:20 pm - Agri-environment options for lowland peat and wetlands.

Evan Burdett, Norfolk FWAG.

02:35 pm - Three decades of surface water quality change in the River Thurne catchment.

Jeremiah Quartey & Professor Kevin Hiscock, UEA.

02:55 pm - Coffee/Tea.

03:15 pm - Reed For Thatching, The Crop Economics.

Andrea Kelly, Broads Authority.

03:30 pm - Great Fen: Challenges & Opportunities a Lottery Funded Project.

Lorna Parker, Great Fen Project Manager.

03:45 pm - Brecks to Broads: Landscape Recovery in the Valley Fens.

Daniel Wade, Suffolk Wildlife Trust.

04:00 pm - Netherlands - Constructed & Harvested Wetland – Monetising Nutrient Uptake.

Aldert van Weeren, Wetland Products.

04:20 pm - Closing Remarks & Networking.

Speakers

Mary Creagh
Parliamentary
Under-Secretary of State
(Minister for Nature)

The Lowland Peat Opportunity and Challenge

Mary Creagh was appointed Parliamentary Under-Secretary of State at the Department for Environment, Food and Rural Affairs on 18 July 2024. She was elected as the MP for Coventry East in July 2024.

Responsible for:

- circular economy
- planning and land use framework
- domestic biodiversity
- tree planting and forestry
- international nature and wildlife
- environmental targets and EIP
- Official Development Assistance (ODA) programme
- green finance
- Protected Landscapes (National Landscapes and National Parks)
- lead for Office for Environmental Protection
- lead for Natural England
- lead for Forestry Commission
- lead for Joint Nature Conservation Committee
- lead for Kew

Tony Grayling
Director for Nature and Place, Environment Agency

Planning for sustainable land and water use

Setting the Context for Whole System Planning. An update on the government's latest thinking around the delivery of the Cunliffe recommendations, with a focus on equipping system planners to make the complex trade-offs needed for sustainable land use and environmental resilience. The talk will explore how priorities such as water management and peat conservation can be balanced in sensitive landscapes like the Broads. It will also touch on the importance of cross-sector collaboration, robust data, and long-term frameworks all in the context of anticipated policy developments, including the Water White Paper, the revised Environmental Improvement Plan, and the Land Use Framework.

Steve Moncaster
Managing Director, Norfolk Environment Food and Farming

Enough to go round? Water availability in the Broads

While drainage authorities worry about too much water in the Broads, abstractors and others worry about there not being enough. The water needed for managing peat is in the middle, requiring changes to drainage systems as well as an increase in water demand. To help understand how best to manage water resources in the Broads, Norfolk Environment Food and Farming is working with abstractors to map their future needs, explore how best these can be managed and identify where there are opportunities for a more integrated approach to water management. This paper discusses preliminary results and questions where next?

Ian Holman
Professor of Integrated Land and Water Management, Cranfield University

Innovative Water Table Modelling Supporting Water and Carbon Management

Water table depth is an important driver of greenhouse gas emissions from peat. This talk will briefly explain the controls on water table depth, and then present two aspects of Cranfield University's work to support land managers in water table and carbon management. Firstly, the University combined analysis of Lidar and spatial datasets with water balance modelling to simulate the daily water table depth and water requirements for every peat field across the Broads under current and raised drainage regimes. Secondly, a user-friendly Excel tool was developed to explore how water table depth and water requirements respond to changes in drain spacing and/or drain water level and surface irrigation. It is hoped that when combined, these will support a more strategic and joined-up approach to peatland management supporting and empowering landowners.

Jonay Jovani
Greenhouse Gas Flux Field and Data Scientist, UKCEH

Peat Cameras: Land Subsidence and Watertable Assessment

UKCEH have developed a low-cost Raspberry Pi-based time-lapse camera to monitor peat subsidence and water table depth. The peat cameras can monitor small changes (less than 1 mm) in peat surface elevation. They take photos at 2-hour intervals and upload the data to a cloud service where the photos are automatically processed on a daily basis. Over 100 peat cameras have been installed in England and they cover a large range of peatlands, land-use classes and environmental conditions. In the Broads National Park, 24 peat cameras have been installed as part of several projects. The presentation will focus on data from these cameras.

Kevin Hiscock
Professor of Environmental Sciences, and Jeremiah Quartey -Environmental Scientist, UEA, Norwich

Three decades of surface water quality change in the River Thurne catchment: links to land use and water management practices

The Thurne catchment within the Broads National Park has been influenced by decades of intensive arable farming and land drainage, resulting in elevated nutrient concentrations and saline intrusion in surface waters. Recent land management initiatives, however, have sought to mitigate these pressures. This study investigates long-term changes in surface water quality in relation to land use and water management practices, with the aim of improving understanding of aquatic ecosystem health in the catchment.

Land use change between 1990-2023 was evaluated, and a long-term dataset (n = 5958) of nitrate, total phosphorus and chloride concentrations was compiled across eight sites monitored at weekly to monthly frequency between 2000-2025. Spatial and temporal trends were assessed in relation to land and water level management and their compliance with Water Framework Directive (WFD) objectives. In addition, chloride and water stable isotope analyses were conducted at 11 sites in May 2025 to identify salinity sources. Results showed a significant decline in nitrate concentrations and a gradual decline in total phosphorus, corresponding to improvements in WFD status from mostly 'good–high' (nitrate) and 'moderate–good' (phosphorus).

These improvements are linked to a reduction in arable land (–9.2%) and increases in improved grassland (+7.1%) and woodland (+1.9%), particularly in the north of the catchment. Chloride exhibited only weak evidence of decline, reflecting limited change in water level management practices. Isotopic analysis indicates chloride sources are dominated by seawater mixing, further concentrated by surface evaporation. Overall, nitrate and phosphorus reductions are associated with land use change, whereas chloride remains largely unchanged, highlighting the need for further work on its relationship with water level management.

Matt Philpott
Chief Operating Officer/Deputy Chief Executive, Water Management Alliance

Pump Investment and Benefits for Peat Restoration

This talk offers a brief overview of the infrastructure challenges in the Broads, and the issues facing IDBs in replacing ageing assets that are critical to water-dependent habitats and the effective management of water levels, particularly in support of peat-based initiatives. We will examine the assets already in place and what will be required going forward to manage this area sustainably. The talk will outline projects currently underway, the funding already secured, the funding still required, and plans to navigate the future needs of the Broads against the realities of climate change, regulation, and a shifting industry.

Evan Burdett
Farm Environment
Advisor, Norfolk FWAG

Agri-environment options for lowland peat and wetlands

This talk explores the range of agri-environment options available for lowland peat soils and wetland habitats within the Broads National Park and surrounding valley wetlands. Focusing on Countryside Stewardship (CS) and Sustainable Farming Incentive (SFI) schemes, we will examine how different options can support habitat restoration, biodiversity, and water quality improvements. Attendees will gain insight into the eligibility criteria, typical management actions, and current payment rates, helping land managers make informed decisions. Practical examples from the Broads illustrate how these schemes can be applied effectively to maintain productive farmland while enhancing the unique wetland landscape.

Andrea Kelly
Environment Policy
Adviser, Broads Authority

**Reed For Thatching,
The Crop Economics**

The Broads supports one of the UK's most significant wetland economies, where reed and sedge harvesting underpins both conservation management and traditional thatching. With 97.4% of reed currently imported, understanding domestic production economics is critical for industry resilience. This project developed the Reed Economic Evaluation & Decision Support (REEDS) model to analyse harvesting costs across varied site, labour, and market conditions. Findings highlight the importance of cooperative investment, integrated conservation andcommercial approaches, and improved infrastructure. Despite challenges such as water control, high capital costs and land access constraints, domestic reed production remains viable and offers opportunities for sustainable rural growth and land use adaptation where water supplies allow.

Lorna Parker
Great Fen Project Manager,
Great Fen Project

Great Fen – Challenges & Opportunities a Lottery Funded Project

The Great Fen is a landscape scale transformation that has been running for 25 years. You will hear about our funding journey and plans for water management to create thriving wetlands in a fluctuating climate.

Daniel Wade
Waveney and Little Ouse Recovery Project Manager, Suffolk Wildlife Trust

Brecks to Broads: Landscape Recovery in the Valley Fens

Suffolk Wildlife Trust has worked alongside a pioneering group of landowners to create the Waveney and Little Ouse Recovery Project. Through DEFRA's Landscape Recovery Pilot, a landscape-scale vision for nature restoration, sustainability, and resilient rivers has been produced, receiving an offer of funding from DEFRA in the summer of 2025. This project looks to the nascent green finance markets to help bring private finance for ecosystem services into the rural economy, looking to provide the economic resilience that the farming community needs as it diversifies into the future.

Aldert van Weeren
Wetland Products

Netherlands - Constructed & Harvested Wetland – Monetising Nutrient Uptake

The Dutch Fenlands are facing increasing environmental and economic pressures. Continuous drainage has led to severe soil subsidence, resulting in costly damage to infrastructure and buildings, while deeper soils are becoming progressively saltier. Biodiversity remains low, and water quality is poor due to high nutrient and nitrogen loads,often exceeding 150% of acceptable levels in nature reserves. Dairy farmers are under growing stress, with milk prices currently around €0.47 per litre and production costs close to €0.42, leaving little margin to invest in sustainable practices.

Rewetting and the introduction of paludiculture crops offer practical solutions, combining productive land use with ecosystem restoration. To ensure viable business models, the value of ecosystem services such as water purification must be recognised. At De Burkmeer, a consortium has begun intensive water-quality monitoring. Early results are promising and may enable the monetisation of nutrient uptake, rewarding farmers for cleaner water and resilient landscapes.

Partners

Broads Authority

The Broads Authority supports peat restoration by providing strategic leadership, technical expertise, and coordination across partners working in the Broads' peatland landscapes. It identifies priority sites, shares ecological and hydrological data, and ensures restoration aligns with statutory conservation and farming needs. The Authority engages landowners, communities and stakeholders to promote sustainable water and land management, and contributes to project development, funding bids and long-term monitoring. Find out how you can get involved with the Broads Peat Partnership and learn about our key projects such as the peatland restoration at Buttle Marsh and the paludiculture and water-treatment demonstration site at Horsey, and see our permissions guide to support wetland creation and restoration.

Cranfield University

Cranfield University is supporting peat restoration efforts through specialist research, technical guidance, and modelling expertise. Their work includes assessing peat condition, carbon storage, and hydrological function to identify priority areas for restoration. The University contributes soil analysis and water-management modelling to help design effective interventions that reduce emissions, improve water retention, and enhance biodiversity. They have developed a tool kit for advisors and land managers in the Broads to calculate their water needs. By combining academic research with practical fieldwork, Cranfield University strengthens the partnership's ability to deliver long-term, landscape-scale peatland restoration.

Norfolk Environment Food and Farming (NEFF)

Norfolk Environment, Food and Farming (NEFF) supports peat restoration by bringing together abstractors, farmers and environmental organisations to promote sustainable water and land management across Norfolk's peat landscapes. NEFF helps raise awareness of the importance of integrated and multi-benefit water management for climate resilience and encourages the adoption of on-farm water monitoring and technical solutions. Through membership and collaborative projects, NEFF supports landowners to explore the enhancement and protection of water environments. It also helps connect restoration objectives with local food and farming priorities, ensuring that peatland recovery is integrated with viable, long-term agriculture.

Exhibition stands

Norfolk FWAG

Norfolk FWAG supports peat restoration by working directly with landowners and farmers to promote sustainable land management across priority peatland areas. They provide on-the-ground advice on water management, soil health, and practices that reduce peat loss and carbon emissions. Norfolk FWAG helps identify suitable sites for restoration, supports habitat improvements, and encourages uptake of agri-environment funding. Their local knowledge and trusted relationships enable practical implementation of rewetting and low-impact farming approaches. Norfolk FWAG also assists with monitoring and data collection, ensuring restoration actions are effective and integrated with wider landscape and catchment objectives.

Wetland Products: A foundation promoting sustainable use of wetland crops, such as typha (reedmace), to deliver ecosystem services. It researches peatland-based agriculture for insulation, water storage, nutrient uptake and biodiversity, aiming to restore degraded wetlands while reducing CO_2 emissions and building a sustainable market.

Oxwillow: Oxwillow works hand-in-hand with farmers and supply chain partners to 'Do Well' for nature, farming and climate. Through transparent carbon auditing, practical farm and agrifood research, and production of high-quality natural capital assets, they go beyond compliance to enable farms to stay productive, ecosystems to recover, and supply chains to invest in a climate-positive future. Oxwillow is restoring peat through creation of biodiversity net gain habitats and trialling more sustainable ways of farming on wet and dry demonstration fields.

Great Fen (Wildlife Trust BCN): A 50-year, 3,700-hectare fenland restoration led by the Wildlife Trust for Bedfordshire, Cambridgeshire & Northamptonshire. It reconnects nature reserves, reinvigorates wetland habitats, combats carbon loss from peat, and supports both biodiversity and community engagement. Their peatland restoration work involves paludiculture (wet-farming) with other crops.

KISTERS: A global environmental-data company delivering software, hardware and IT solutions across water, weather, energy and environment sectors. With 750 experts, it helps organisations collect, process and interpret environmental information to support sustainable decision-making.

Broadland Futures Initiative (BFI): A partnership working across the Broadland area to improve the resilience of people, homes, businesses, nature, and heritage to flooding. BFI is developing a long-term strategy to manage and adapt to flood risk through to the year 2130 for the Broads river network, the adjacent low-lying coast, and Great Yarmouth, incorporating climate change and sea level rise projections.