Peatland Programme conference 2023 workshop summary:

Lowland agricultural peat and the water environment

Context and aims

Protecting carbon in peatland soils depends upon rethinking our options for the management of the water environment. Land and water managers, including the Environment Agency (EA), currently have an incomplete understanding of the ways in which we can best manage water to reduce greenhouse emissions, whilst providing a future for farming and associated land uses.

This EA-led workshop sought to draw out the big challenges for water management on a variety of scales, discuss delegate views on key unanswered research questions and invite examples of existing evidence-based programmes to help inform the debate.

Summary of discussions

Workshop discussion 1: Identify and highlight your challenges, issues and concerns in terms of water management and raising water tables in lowland peat

Theme	Discussion points
Funding	• **Reservoirs and other flood storage**: costly funding required. Alternative options to reservoirs, e.g., widening drains. • **Limitations of grant schemes**: difficulty in completing applications, short time frames both to apply and receive funding. • **Private finance**: value of carbon credits is low. • **Biodiversity net gain**: credit stacking, potential annual scheme like soil credit system. Recognition of peat soils as a habitat to enhance value of BNG. • Impact of climate change.
Policy	• **IDBs**: designed to remove water, costly, lack of consistency across different areas. Farmer-led and may have a different vision – conflict between drainage and restoring peatlands by raising water tables. Approach needs to change from drainage to water level management. • **Climate change**: too much uncertainty, insufficient financial incentives from government. Targets perceived as unrealistic – smaller interim targets required.
Water management	• **Smaller segmented management units.** • **Increased automation** of monitoring and pumps alongside data collection. • **Protection from seawater inundation.** • **Mosaic approach**: a multi-functional landscape which includes food production and wetland habitats. • **Landscape/hydrological unit-scale holistic approach**: include communities and natural capital. • **IDBs**: change approach to water level management. • **Education and community engagement**: include upstream areas. Engagement is essential to ensure community buy-in and support for how tax revenue is spent in this area.

Workshop discussion 2: What do we need to do to address the challenges?

Identify the research/knowledge gaps for challenges of the current water management regime/approach

Theme	Research/knowledge gaps
Water resources	• What would be effect of creating small reservoirs on farms? • How would this be funded? • What would the availability of water be in relation to this? • Water storage at different scales – farm reservoirs to rainwater gardens on new houses. • What is water resources situation for future populations?
Hydrology	• How do we develop a wider understanding of hydrology? Current mapping is at a localised scale. • Where are all the drainage and other hydrological features and how do they impact upstream and downstream partners? • How do we share data more widely, e.g., weather data? • How do we develop a standardised approach to modelling hydrology? Currently different projects use different approaches. • Paleoecology to understand historic hydrology. • Understanding soil hydrological function by mapping soils.
Water assets	• How responsive are our assets to flood and drought and are they fit for purpose for the future? Can we make them more so? • Understanding of renewable technologies, e.g., Netherlands. • What might an ideal asset management system look like to be more resilient?
Water quality	• Nutrient neutrality rules – can they have a bigger beneficial impact in the Fens? • Water quality impacts in relation to changes in water level management, e.g., inundation of cesspits and impacts on human health.
Housing and infrastructure	• What is the effect of large-scale housing on LAP on water availability? • How do we develop relationships with large builders to incorporate flood benefits and storage because of building houses? • How do we create wider thinking at catchment scale, e.g., quarrying materials locally to provide flood defences as part of house building? • How do we develop wider connections with different stakeholders on the land? • Identifying the point in the process where you can share co-benefits? • Gap analysis of infrastructures that might be impacted, e.g., roads, rail.
Rewetting	• Will it protect against flooding or not? Impact of water level change on flood risk. • Can we find an optimum water level for winter so we can react to flash flooding as well as keeping water levels higher? • Understanding of GHG balance, including methane.
Biodiversity	• How will biodiversity be affected by rewetting areas of lowland peat?
Policy	• Analysis of gaps, conflicts, synchronicities and opportunities between different policies at national and local scales, e.g., food, water, climate change, energy, housing, etc.
People	• Analysis of local communities and economies.