Delivering Landscape-Scale Conservation in the Meres & Mosses

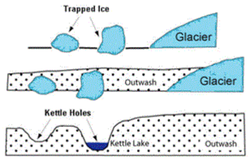
meres & mosses

Landscape Partnership Scheme and Nature Improvement Area

A Glacial Landscape

The Meres and Mosses is a unique and internationally important wetland landscape.

At the end of the last Ice Age, as the glaciers retreated, massive blocks of ice fell into the outwash from the glaciers. In time these melted, leaving behind water-filled basins known as 'kettle holes'.



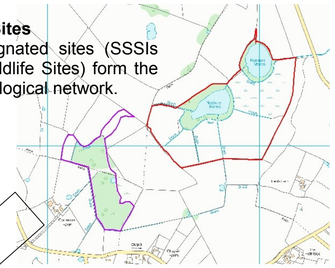
The meres are the deepest of these, surviving even today as open waterbodies. The mosses formed in shallower basins where successional processes and peat formation led to the creation of lowland raised bogs.

A New Ambition for the Meres and Mosses

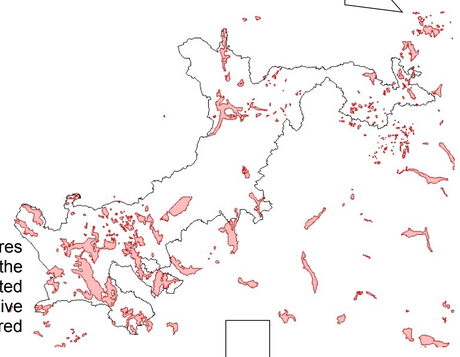
The proposed step change in nature conservation for the Meres and Mosses revolves around the re-definition of sites – what we are calling "functional ecological units". Defined by topography, hydrology and peat soils, these will comprise a high quality wetland mosaic with a mere or moss at its heart. Delineating the catchments for these units will allow interventions to be targeted to safeguard the unit at the core.

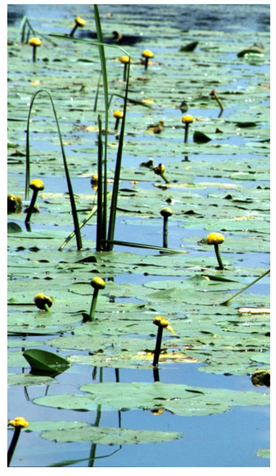
The maps below set out how the units and their catchments have been defined.

1) Designated Sites
Necessarily, designated sites (SSSIs and County Wildlife Sites) form the core of any ecological network.

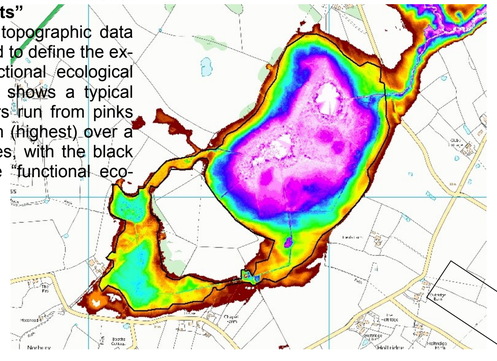


2) Peat Soils
The peat soils map for the Meres and Mosses indicates the location of relict, undesignated mosses (noting that extensive river valley peats were ignored for this exercise).

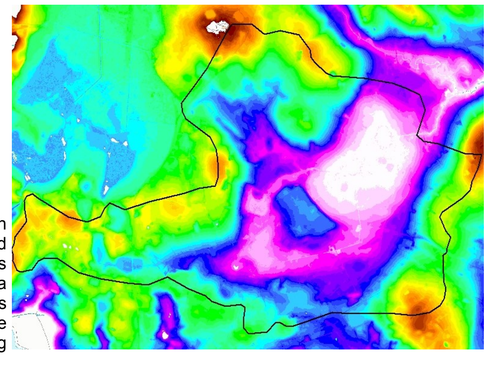




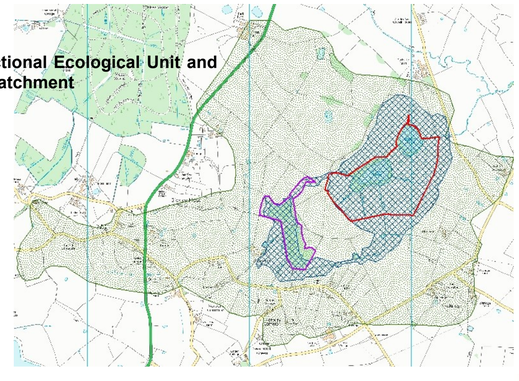
3) Topography – "Functional Ecological Units"
For each location, topographic data was manipulated to define the extent of the "functional ecological unit" The image shows a typical site – the colours run from pinks (lowest) to brown (highest) over a range of 3 metres, with the black line outlining the "functional ecological unit".

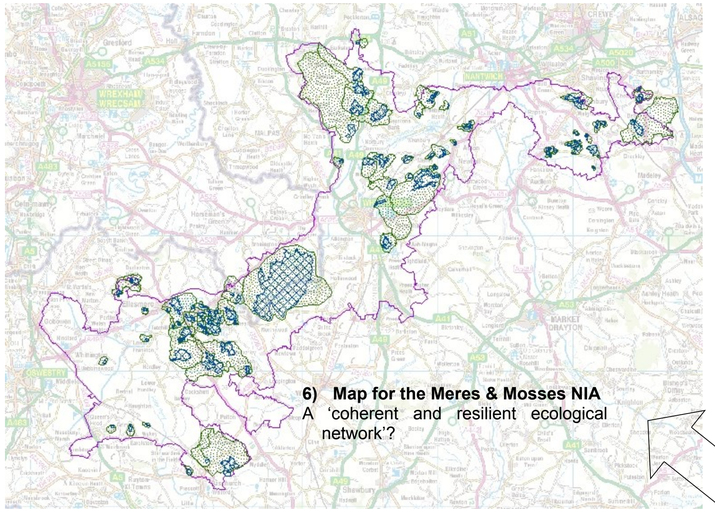


4) Topography – Catchment
Re-analysing the topographic data for each unit at a broader scale then allowed identification of the catchment that feeds the core wetland. The image shows a typical site – the colours run from pinks (lowest) to brown (highest) over a range of 18 metres, with the black line outlining the catchment.



5) Functional Ecological Unit and its Catchment





6) Map for the Meres & Mosses NIA
A 'coherent and resilient ecological network'?

Developing the Concept

As ambition is up-scaled and a new concept for the Meres and Mosses landscape is taken forward, some key questions are raised:

⇒ How do we provide a clearer visualisation of what we are trying to achieve, replacing largely generic vision statements with meaningful communication that will engage a wider range of people, organisations and sectors?

⇒ What tools can be developed to effectively prioritise activity to maximise the connectedness of the landscape?

⇒ Necessarily working at timescales of decades rather than years, how might we need to alter our aspirations in the face of climate change (particularly given that the mosses already lie at the edge of the 'climate envelope' for lowland raised bog formation)?

⇒ Is the ecosystem services agenda a useful tool in the Meres and Mosses context and, if so, how do we effectively and realistically value what is delivered to society by the landscape?

Implications for Connectivity

The meres and mosses have been geologically 'fixed' and hydrologically isolated from one another for millennia. However they have been degraded by drainage, inappropriate management and the impacts of poor water quality. Thus in terms of Lawton's key principles for landscape-scale conservation, the focus in the Meres and Mosses will be on 'bigger' and 'better', rather then 'more' and 'joined'.

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