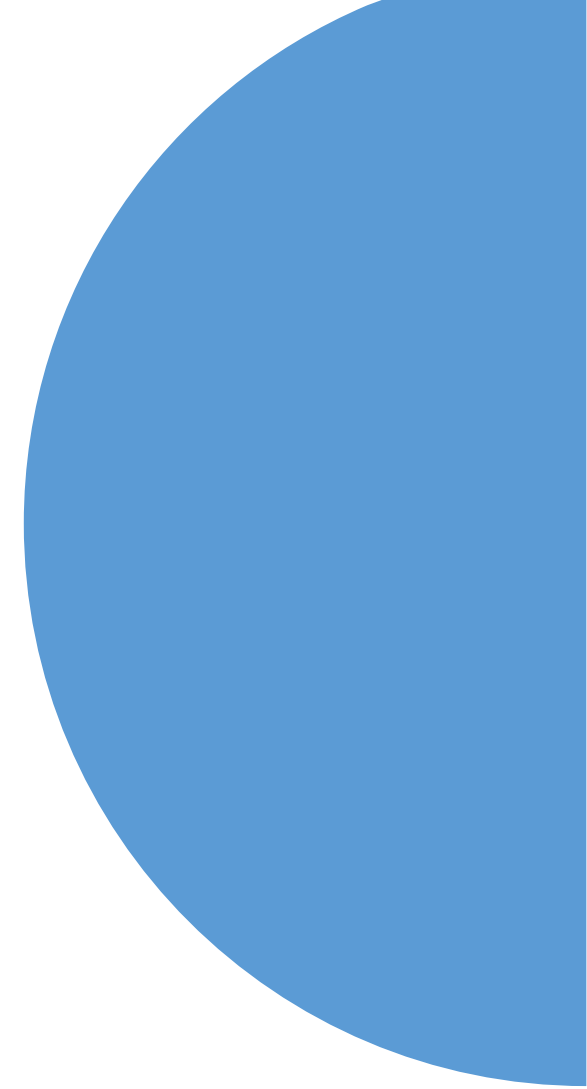
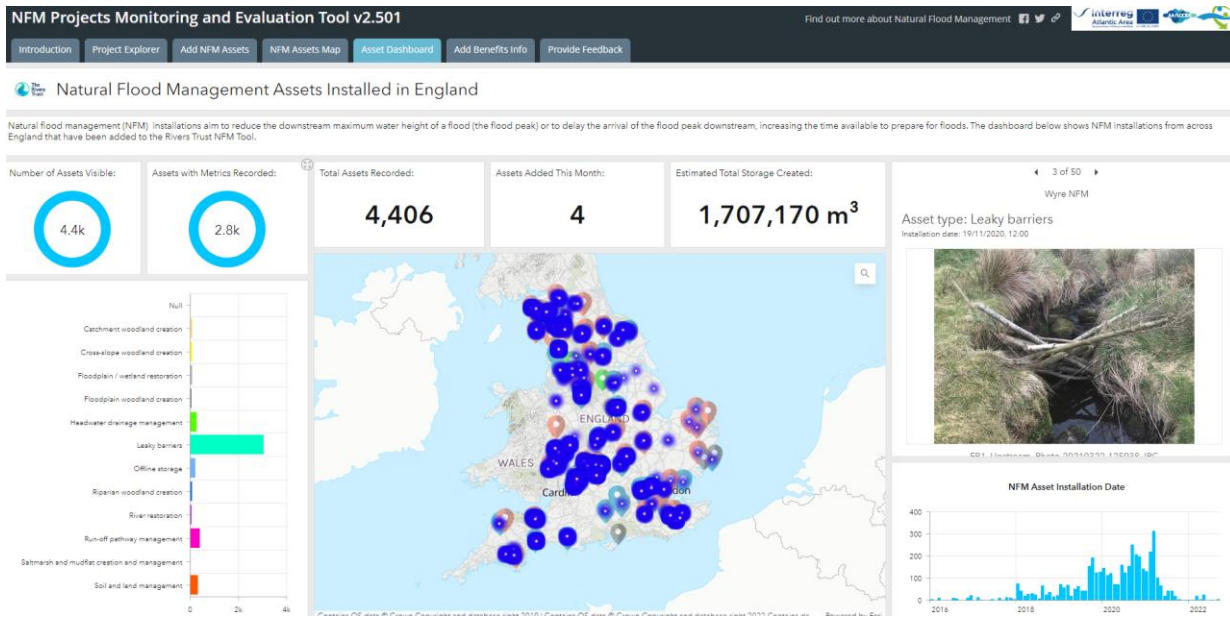


*Workshop -
Designing NFM*

Michael Norbury

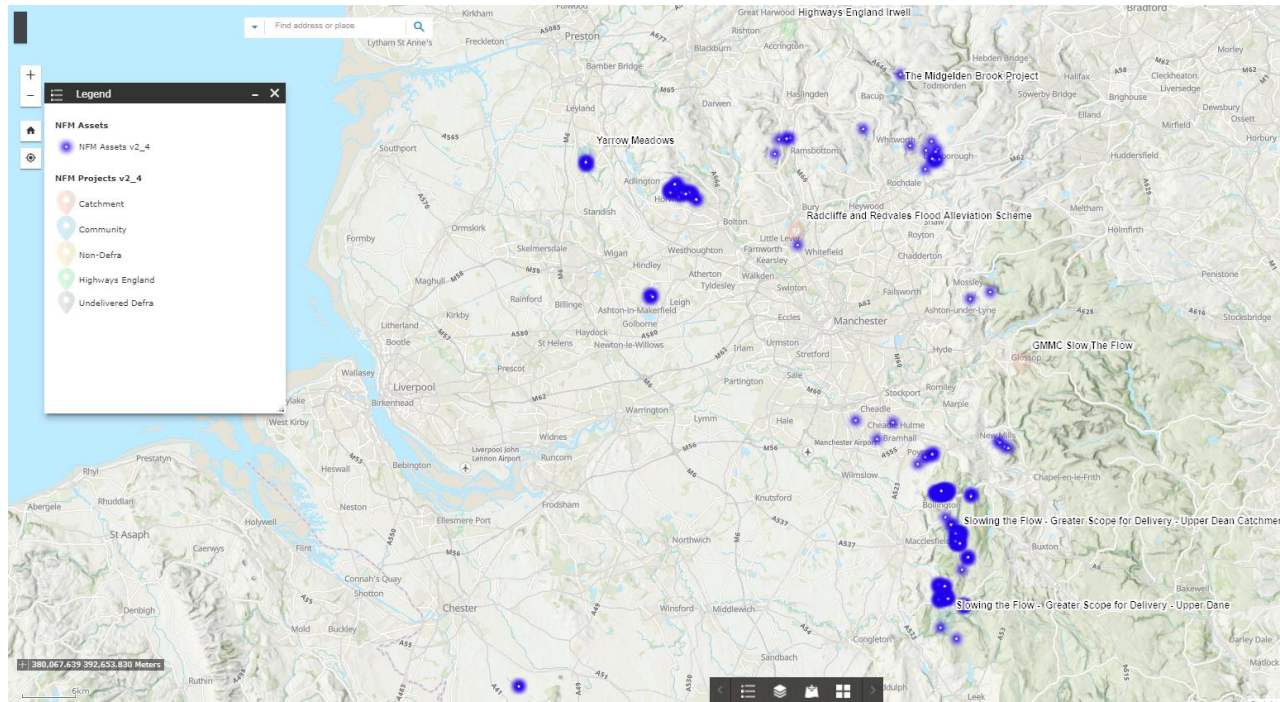


A view over the Pennines: NFM in the NW



- 387 m³ attenuated per measure (1,707,170/4,406)
- £8.70 per m³ of water attenuated (15,000,000/1,707,170)
- > 3,000 are leaky barriers, if softwood significant decay in 10 years.

[NFM Projects Monitoring and Evaluation Tool v2.501 \(arcgis.com\)](https://arcgis.com)



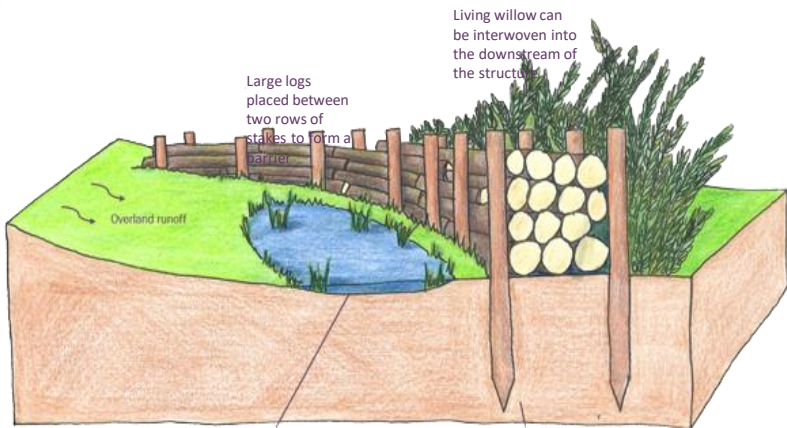
NFM in Cumbria: Leaky barrier examples



NFM in Greater Manchester: Leaky barrier examples



Smithills, 12,000 m³ volume, 66 Ha Habitat



Small permanent or temporary pond feature may be created (when not filled with flood water)

Posts dug into ground in two parallel rows perpendicular to the flow path

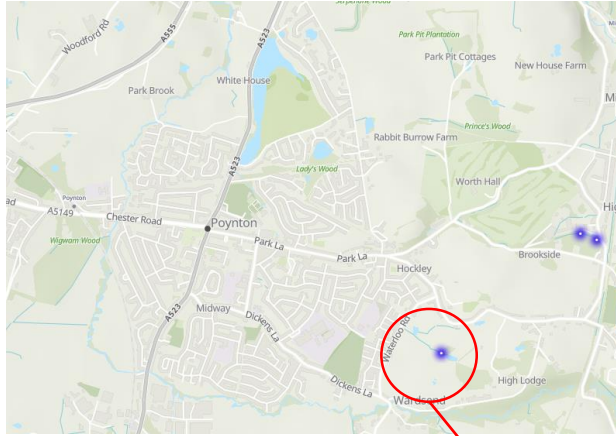


Two willowed leaky barrier on the Woodland Trust Smithills Estate
Source: Mike Norbury



NFM in Greater Manchester: Bund and basin examples

Poynton: Cheshire East



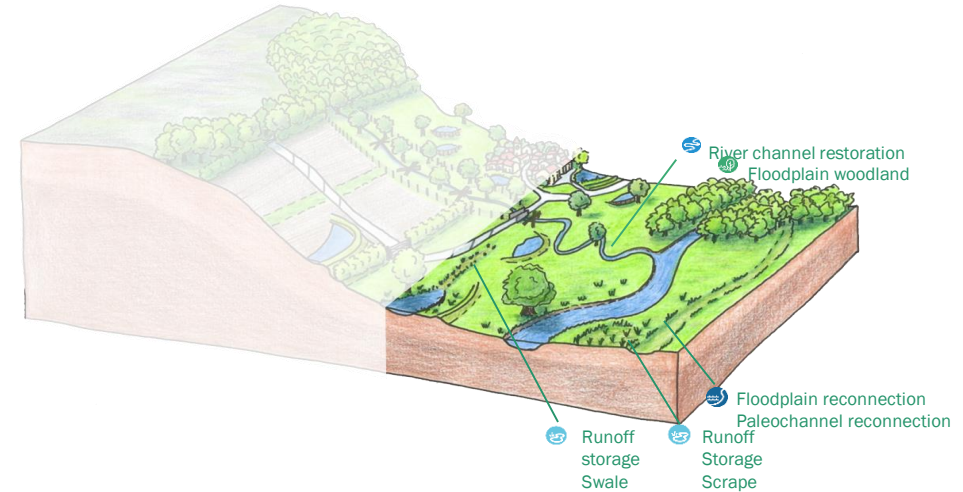
Poynton, 1,500 m³ vol, 1.5 Ha habitat

NFM in Cheshire: Bund and basin examples

[ELM Associates on Twitter](#): "Thanks to Tattenhall Wildlife Group for footage of the Natural Flood Management project at @Tattenhall_org. Three earthwork bunds retain flood water from Mill Brook after heavy rain, returning it through the wet woodland and reed bed. Geese and lapwing pretty happy as well 😊 <https://t.co/GZwCV3r7hv>" / Twitter

[Tattenhall Online - Slowing the Flow - Phase 2a Working Well!](#)

<https://photos.app.goo.gl/TiU1sP95c51MzKBD8>



Tattenhall (Cheshire West) floodplain reconnection by construction of a relief channel, land drain, 3 piped bunds and basins (A) aerial looking downstream (B) looking upstream and (C) a photo within the middle feature.

Source: Tattenhall Wildlife Group, ELM Associates, Mike Norbury

NFM in Greater Manchester: De-Culverting Stream Daylighting Example

