Shapwick Heath Restoration Project

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How did we get here….

Shapwick Heath is part of the Somerset Wetlands NNR, but it was not always so. Prior to the 1990's buy out by NE, this site was part of a wide network of peat extraction sites across Somerset. As a result, a lot of the peat soils on site are gone, creating lakes and reed beds that are now home to nesting Bittern and Great White Egret. The landscape as a whole has been drained for agriculture for hundreds of years, further impacting the peatland hydrological function. However, not all was lost, as a few areas of the site were only partially extracted, with remaining peat soils 1.5-4m in depth. These areas are where this restoration story starts, in some scrubby fields with tiny patches of sphagnum clinging on for dear life in the crumbling peat soils…..

Left: before, dominated by bog myrtle and birch scrub Right: Immediately after trench bunding works completed

Left: Reed fragment found in the test pits, probably neolithic age.

Right: subsurface seepage line – why we need deep trench bunds!

Archaeological investigations – ancient trackways and neolithic reedbeds

The Somerset Levels holds an impressive history of archaeological finds, mostly from the era when peat was being hand cut and the diggers would find things whilst cutting turfs. This record means our trusty local archaeologist could easily see the route of trackways that might pass through our restoration areas. To make sure we wouldn't be causing damage to the tracks, we dug a trench across the length of the site, perpendicular to the route of the trackway. No trackways were found, possibly because the trackway sat within the layer of peat that has been oxidised and therefore the wooden structures eroded away. Rewetting the peat will create better conditions for preserving any archaeology that does still remain in the peat body.

First steps – how to fix the bog, and bringing people along on the journey

Once the idea of restoring these areas to their full boggy potential had taken root, there was the question of what techniques to employ. We'd tried blocking ditch ends, holding sluices higher, volunteers cutting scrub for weeks at a time, all to no avail. Learning from projects up in Cumbria, deep trench bunding was decided on as the best way to fix the leaky hydrology. Those who had worked on the Somerset Levels were sceptical at first, as these techniques seem very disruptive, but after a field trip up north to see the successes, everyone was on board! We dug test pits to investigate peat condition and to identify the depths of cracks and peat pipes. This then informed the depth of the trench bunds.

Protected species - wrangling Adders and Great Crested Newts

Because the Somerset Levels have been drained and extracted for so very many years, any semblance of natural, or even near natural bog habitat is no where to be seen. As a result of this, many species of flora and fauna have made their homes in the various not-bog habitats. Now it isn't to say these creatures and plant assemblages aren't valuable, it's just that they shouldn't necessarily be living where they are. Luckily for us, the SSSI designation at Shapwick was on our side which was a good start, with lowland mire being a key feature (and in unfavourable condition). The Great Crested Newts happily mostly live in a pond outside of the restoration area, plus our works will create a whole load more wetland for them to thrive in. The problems began to creep up, or should I say slither up, with the discovery that one of our restoration plots was is the local Adder hot spot.

Although Adders do live in functioning bogs, we did not want to risk an adder massacre from tree mulchers and excavators. So, the Shapwick Heath Adder Hotel opened for business, and as we speak translocation is underway to move the adders (and other reptiles/amphibians) to safety for the winter. We put reptile fencing up to prevent the adders sneaking back round and will have a watching brief on the vegetation phase of works to catch any stragglers.

Trench bunding and tree mulching in action!

Restoration works – deep trench bunding, and deep water…

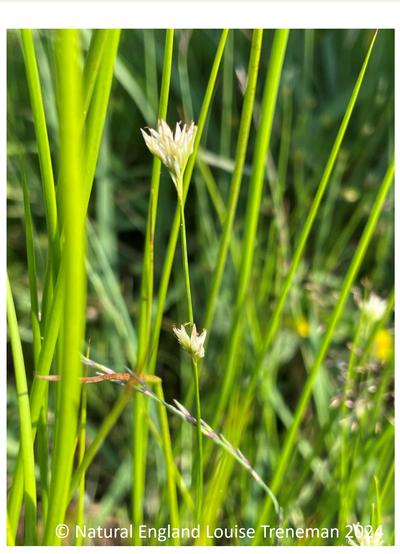
It is worth mentioning this work took place over 3 winters, with only the final phase (to be completed this winter) having the added complication of scaley creatures… The first phase of works was completed in February 2023, during a very dry post-Christmas period which made for very easy work. Trees and scrub were mulching with an excavator mounted mulching head, and then deep trench bunds were installed to seal up subsurface cracks in the peat using low ground pressure diggers. Phase 2, completed February 2024, was not to be so easy. It rained and rained and rained some more, a digger went down in the bog, and gate ways became impassable…. But all was not lost, and our trusty contractors Open Space persevered and got the works done despite all the set backs.

Left: Adder for translocation. Right: Oblong leaved Sundew (*Drosera intermedia*)

How's it looking now…

With phase 3 successfully underway, we've had a chance to reflect on the success of the project so far. It's been a struggle at times but early signs from phase 1/2 are positive, with some highlights below.

- Breeding lapwing moved in almost as soon as the diggers left both phase 1 and 2 sites
- Oblong-leaved Sundew has returned to the site - last seen 20 years ago in one corner, 2024 has seen hundreds of plants counted!
- White-beaked sedge found after a 14 year absence (a positive indicator species for bog habitat)
- Sphagnum is naturally expanding across the phase 1 site faster than we ever dreamed it would (as well as plug plants establishing well to boost species diversity)
- Dipwells showed that in that in the summer months following restoration water did not drop below 30cm below the surface, a HUGE improvement from pre-restoration



Left *Sphagnum cuspidatum* colonising part of the first restored area. Right: White-beaked Sedge (*Rhyncospora alba)*

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