

New tools for new times -

delivering a Nature Recovery Network in the White Peak: one year in



PEAK
DISTRICT
NATIONAL
PARK



The White Peak challenge



The White Peak plateau

The Lawton Report 'Making Space for Nature' concluded the White Peak National Character Area (NCA) has the highest levels of habitat fragmentation within any of England's National Parks - the areas of high wildlife value being confined to long, thin Dales separated by intensively managed agricultural land on the plateau.

If Defra's 25 Year Environment Plan and the challenges set out in the Glover Review are to be met in the White Peak, the future Environmental Land Management scheme will require new tools to link and extend habitats across the plateau.

Here, we are researching new ways of delivering the **better, bigger** and **joined** ambitions of the Lawton Report.

White Peak Land Management Trials

Natural England and the Peak District National Park Authority (PDNPA), working in partnership with National Trust and six White Peak farmers, have established a small-scale practical field trial to investigate a range of potential management interventions and techniques across a suite of typical White Peak farms. The trial is funded by the PDNPA for a period of five years, and began in 2019. Advisory input is provided by Natural England.

This summary draws out some of the initial key findings and lessons learned from the first full year of the trials.

Better - structural diversity within Priority Habitat



Green hay spreading, High Fields
September 2020

In 2018, National Trust purchased 80ha at High Fields Farm on the White Peak plateau. The land is important both for its existing special interest and potential to fulfil a key role in the future delivery of a Nature Recovery Network.

In partnership with Natural England and the PDNPA, a Higher Tier Countryside Stewardship agreement was developed, with the aim of pioneering management techniques to enhance the structural diversity of existing Priority Habitats without detracting from their quality or extent.

An extensive grazing system has been introduced, centred around a herd of hardy breed cattle, which range across the entire block of land and remain on site all year round. The aim is to mimic a naturalistic grazing regime, with cattle creating variation in sward characteristics across the site through their natural patterns of behaviour. Stock numbers are designed to achieve very light grazing during the summer season and self-sufficiency through the winter.

This approach has got off to a good start with cattle settled and a lightly grazed, tussocky, flowering sward observed throughout the summer. Species-rich green hay has been spread across 30 acres of former silage fields, whilst other capital works to diversify the sward, such as the addition of dwarf shrub and scrub seed, have unfortunately been delayed due to the Coronavirus pandemic.

Bigger - wildlife pasture

The vision - to expand high value sites onto adjacent productive soils.

The creation of structurally diverse grassland is being trialled, with the aim of achieving a tussocky sward containing a scatter of wildflowers and light scrub of value to invertebrates, small mammals and birds. Two fields of productive perennial ryegrass sward used for silage production immediately adjacent to the Wye Valley SSSI offered the opportunity to buffer and extend the SSSI.



Power harrowing and air-seeding into glyphosate treated sward, Beech Farm September 2019

In September 2019, a variety of techniques were used to introduce wildflowers, comparing the relative costs and benefits for species establishment and soil carbon release.

The sward was removed from all treatment areas in July 2020 to encourage rooting, tiller grasses and remove annual weeds. This resulted in good regrowth of sown grasses and herbs, whilst also stimulating herbs to flower.



Cattle grazing flower-rich sward
Beech Farm September 2020

Cattle were introduced for one month between mid September and mid October, quickly settling on the flower-rich sward and creating a tussocky structure going into the winter.

The first year monitoring survey suggests little obvious difference in the establishment of sown grass and herb species between areas treated with glyphosate and then surface power harrowed, and those ploughed and power harrowed with or without glyphosate pre-treatment. Establishment was notably worse in areas surface power harrowed that hadn't been pre-treated with glyphosate, suggesting that glyphosate

treatment followed by surface cultivation may be the best way to establish wildflowers whilst minimising soil carbon loss.

This is an encouraging start, suggesting some potential for the introduction of botanical and structural diversity on fertile and productive soils. The coming few years will be key to test whether introduced species persist and

Joined - grass margins as wildlife corridors

The vision - a network of structurally and species diverse wildlife margins.

3m wide margins containing native grass and herb species have been sown around silage fields on three farms. Once fully established, the margins will be managed without inputs and remain uncut but afterwards grazed with the rest of the field.

The margins were generally easy to prepare and sow, 3m being a width farmers were comfortable with and the road-legal width of a power harrow. Two ground preparation techniques were used - surface power harrowed and air-seeded, and ploughed, power harrowed and drilled. Both were trialled with and without glyphosate pre-treatment. All margins were cut and removed during the first year to encourage establishment of the sown mix and control growth of productive grasses; this is considered essential.

The establishment of wildflower species was typically scattered with low cover regardless of technique used. Ryegrass persistence and incursion from the adjacent silage crop presented an issue where established by surface seeding into untreated sward. Weed control, particularly docks, was an issue when established by ploughing, probably due to inversion of the soil and exposure of weed seeds to light.

Margins that were only cut once have already developed a tussocky structure for the winter, demonstrating their potential value for invertebrates, small mammals and their predators.



3m wildlife margin within silage field
Beech Farm June 2020



Tussocky 3m wildlife margin
Bent Farm October 2020

Joined - herbal leys as stepping stones

The vision - a scatter of herbal leys across the plateau, with some being allowed to flower at any given time.

Herbal leys have been established on five farms. The aims are to determine how best to establish and integrate these leys within intensive forage-based systems, how season-wide flowering might be achieved at the landscape scale, and the impact on forage quality. The first year has been largely about establishment, with management variations to be implemented from year two onwards.

Early indications are that establishment of the herbal ley by over-seeding, preceded by either power harrowing or tine cultivating into a sward treated with glyphosate may be just as effective for spring sowing as the preparation of a conventional seedbed. Over-seeding without prior application of glyphosate resulted in a poor take of legume and herb species and significant competition from the old sward.

Weed control has proved to be critical when ploughing or deeper cultivations are used, even if the old sward appears weed-free. This is an additional case for using shallow cultivation as an establishment technique. Early grazing five to six weeks after germination also appears to be helpful in encouraging the species to tiller and in consolidating the soil.

Considering that most soils were of similar character overlying the limestone, there were notable differences in the suite of species established at each site. However, the diverse seed mixes still resulted in a sufficiently varied sward capable of providing a flowering resource throughout the season, with nectar and pollen being available for invertebrates from June through to the autumn. Early English vetch was typically prominent in the early part of the season, with red clover being of greater significance later on. This suggests that setting prescriptive targets for the number or percentage of flowering species present in the established sward may not be particularly useful, provided that a diverse seed mix is used.



Herbal ley over-sown into a sprayed sward (left) and non-sprayed sward (right), Harley Grange



Dairy cows grazing before weed wiping spear thistle, Standhill Farm July 2020

coupled with a simplified approach to management requirements, could potentially result in a large increase in the flowering resource for pollinators across the White Peak plateau.

Perhaps the most important finding is how pleased participants have been with their herbal leys, with several aiming to establish additional areas without financial support. All reported grazing cattle to be very settled and actively choosing to graze the leys in preference to ryegrass when given the choice. It will be interesting to see if this is backed up by experience of feeding conserved forage over the winter. Such positive feedback supports the view that a change in eligibility criteria permitting the use of supported herbal ley options on land classified as Permanent Grassland (PG01),



Flowering red clover, Lower Cumberland Farm late August 2020

Join in...

We are currently looking to expand the trials across more White Peak farming systems. If you have ideas about how to support wildlife on your farm, or would be willing to try some of the approaches laid out here, please contact:

Rebekah Newman (Peak District National Park Authority) 07925927231 or Ben Rodgers (Natural England) 07799478817

The full first year report is available upon request.