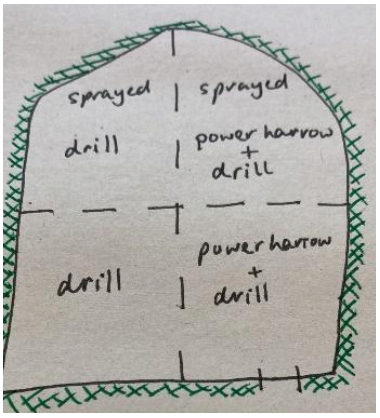
Event title: Overseeding permanent pastures with Herbal Leys – HELEN Project

Date of event: Tuesday 22nd October 2024

Host: FNZ Monitor farmers, Will and Kate Martin, Treway Farm

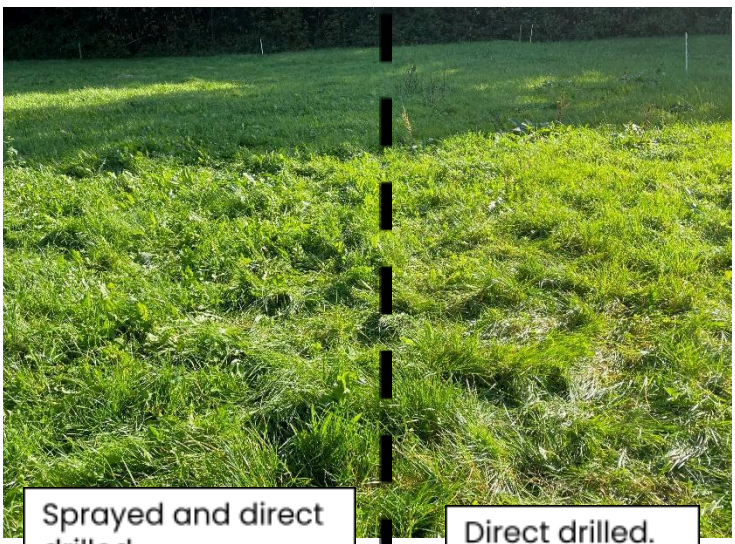
High quality permanent pastures can be agriculturally productive with good species diversity, well-structured soil and high soil carbon stocks. However, sometimes permanent pastures can have compaction issues, poor species diversity and low productivity. In these cases, overseeding with a herbal ley mix can be appropriate. To trial overseeding, the Herbal Ley Enhancement Network (HELEN) was set up with funding from Farming in Protected Landscapes (FiPL). Six farmers across the Cornwall National Landscape have trialled different methods of establishment, with assessments conducted by Cornwall Wildlife Trust and Farm Carbon Toolkit. Farm Net Zero Monitor farmers, Will and Kate Martin, were participants in the trial and hosted this meeting to discuss their findings. This event was made possible with thanks to the National Lottery Community Fund who fund the Farm Net Zero project.

Will and Kate Martin run a suckler herd of Beef Shorthorns in a Pasture for Life system, utilising herbal leys and rotational grazing. They also raise turkeys and geese for Christmas. Three fields were used in their overseeding trial, each split into four plots of different overseeding approaches as shown in the diagram to the right.



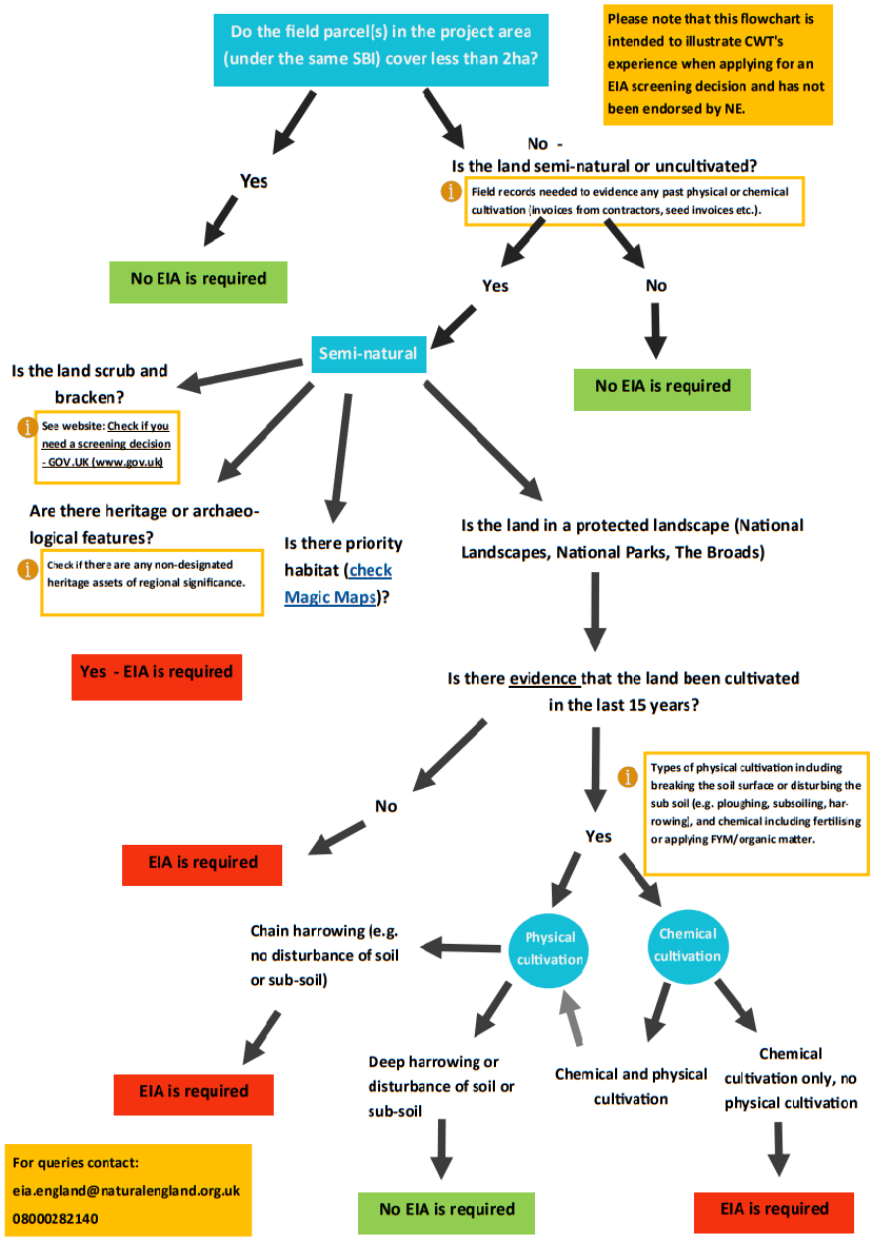
To prepare these fields for overseeding, they were grazed very tightly with the cows to reduce the amount of “trash” vegetation and expose some bare soil. Glyphosate was then applied to the sprayed plots in late July at a rate of 4 litres per hectare. The powerharrow was operated at a depth of two inches, and the herbal ley seed drilled in mid-August with a Simtech tine drill.

Species presence was then assessed later in August by counting the number of plants of each species in ten quadrats per plot. At Treway, significantly more species established in the power harrow and drilled plots, and in glyphosate-sprayed plots. This suggests that the level of competition that the new seeds will experience is the most important factor for deciding on the approach to overseeding. The species most likely to appear were ryegrass, chicory, white clover, red clover and bird’s-foot trefoil. Chicory performed particularly well when direct drilled, so is a good option for adding diversity to an existing permanent pasture without spraying with glyphosate.



Katie Bliss and Emma Bishop from Cornwall Wildlife Trust provided an important guide to the process of assessing when overseeding a permanent pasture is appropriate. Some permanent pastures may contain indicator species which suggest it is Species-Rich Grassland priority habitat (e.g. lowland meadow, culm pasture), or has the potential to be, and therefore will not be suitable for overseeding. It should be noted that the plant species present in these priority habitats can provide many of the benefits that the species in a herbal ley will offer (e.g. deep-rooting, nitrogen-fixing) and so can be considered agriculturally productive in their own right.

Even when a permanent pasture isn't a priority habitat, it may still require an Environmental Impact Assessment (EIA) before overseeding is permitted. This usually applies if the field is over two hectares, in a protected landscape, semi-natural, or hasn't been cultivated within the last 15 years (either mechanically or by applying fertiliser). Field records will be needed as evidence, otherwise an EIA will be required. The Cornwall Wildlife Trust have produced a flow chart detailing the EIA process (shown below) and this will be available online.



The impact on a farm's carbon footprint as a result of overseeding with herbal leys can be measured in several ways. Establishing a herbal ley through overseeding can protect soil carbon stocks that could be lost through cultivation. The deep-rooting species of a herbal ley can also enhance soil carbon stocks by improving soil quality and encouraging carbon capture deeper into the soil profile. Those deep roots, combined with other plant capabilities such as nitrogen-fixation, can improve pasture productivity without the use of emissions-intensive artificial fertilisers. Improved pasture productivity can also reduce the need for supplementing livestock with bought-in feed, which can have a high carbon footprint.

Key takeaways:

- Before overseeding, permanent pastures need to be assessed to ensure they don't contain any priority habitat plant species or require an Environmental Impact Assessment
- The amount of agriculturally productive grasses in the permanent pasture should influence the decision to spray it off – over 30% "useful" species and spraying should not be considered.
- Chicory is the herb species most likely to establish in an overseeding situation.