Farm Visit Report: Ings Farm Biohub – 19th April 2025

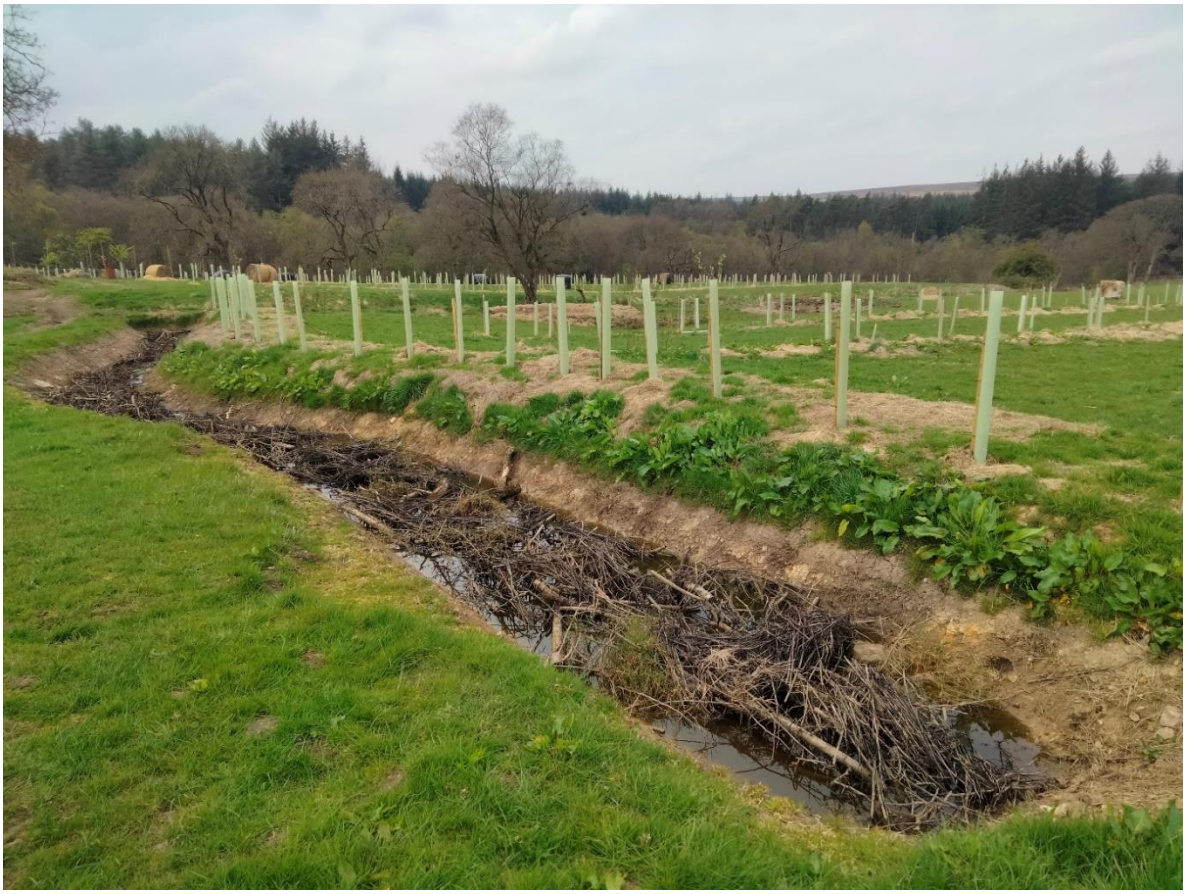
On the 19th of April 2025, the Organic Research Centre's Senior Agroforestry Researcher Dr Colin Tosh visited the Biohub at Ings Farm to observe recent developments and the ongoing landscape transformation led by Dr. Vincent Walsh. Having visited the site on several previous occasions, this visit marked a turning point: for the first time, the coherence and integration of the farm's design - particularly its hydrological strategy - have become fully evident. What was once a set of promising experiments has now evolved into a system where every element contributes to a broader ecological and functional goal.

Farm Zoning and Planting Progress

Dr. Walsh has now completed the primary phase of planting across all designated areas of the farm, which is organised into four distinct and carefully planned zones:

1. Agroforestry Area

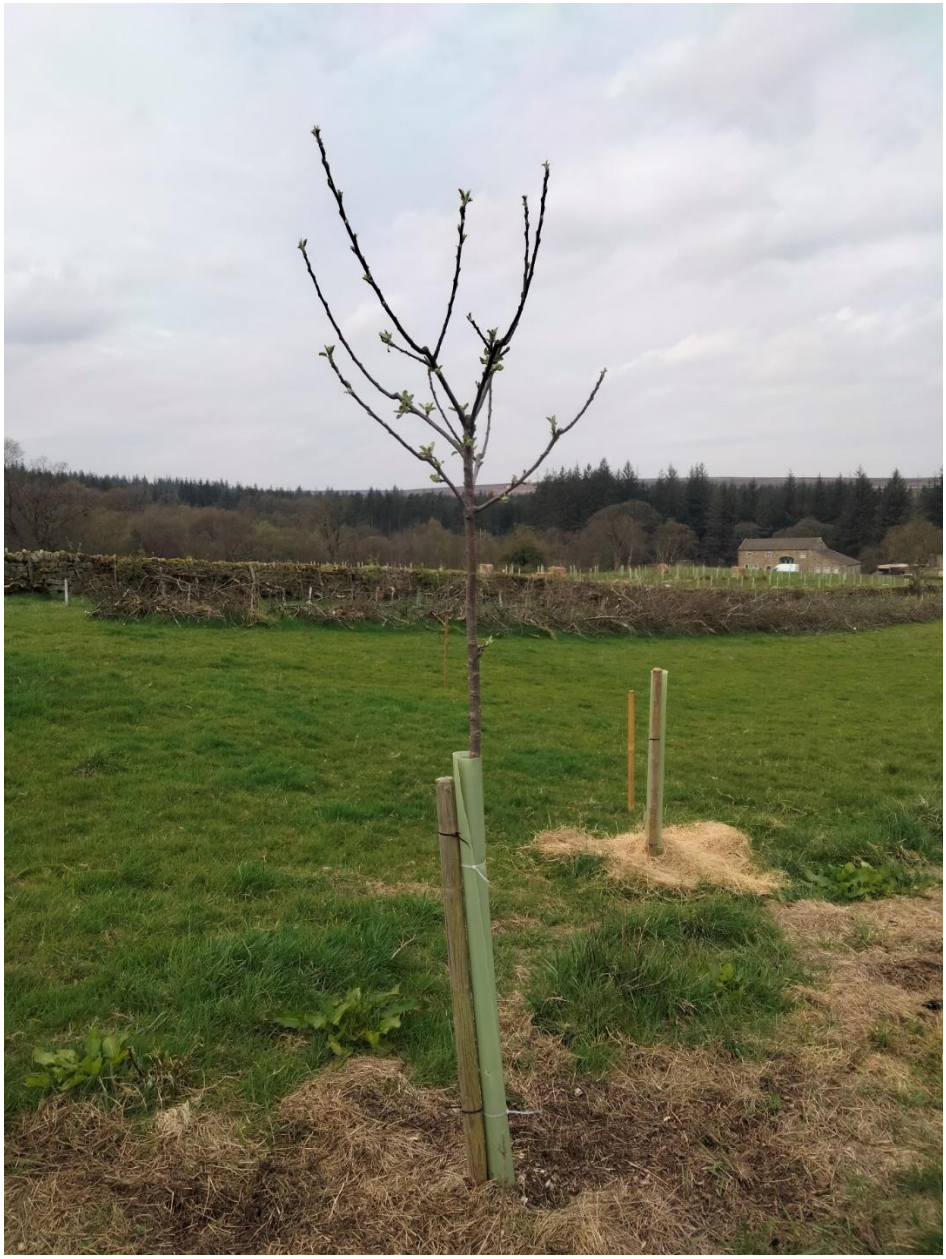
This area includes three fields dedicated to fruit and nut agroforestry. After several years of trials, Dr. Walsh has begun to draw well-founded conclusions about what is viable in this upland environment, where soil, climate, and grazing pressures all pose challenges.



An in-field swale that will be used to irrigate the agroforestry

The agroforestry area is periodically grazed by sheep, which helps manage the understory vegetation and contributes to a mixed-use system. This grazing regime requires careful planning to avoid damage to young trees, particularly edible crop species growing under the agroforestry trees.

Protecting young trees has been a significant issue due to pressure from wildlife. The solution that has worked best is the use of 1.2-meter transparent plastic tree guards, supported by a single stake. These guards successfully prevent grazing from deer, hares, and rabbits - animals that had previously caused considerable damage. Notably, the M25 apple rootstock has proven to be most resilient. This is not necessarily because of its biological superiority, but rather because it grows a long, straight stem that remains fully enclosed within the guard, ensuring no part of the plant is exposed to potential grazers.



The perfect specimen for upland agroforestry. I long M25 rootstock with no lateral growth encased in a 1.2m plastic guard, steadied by a single wooden stake

In terms of species selection, Dr. Walsh has found success with apple, pear, medlar, and gage trees, while the understory has seen modest results from blackcurrant, apple mint, and rhubarb. However, the harsh upland environment has limited the success of many other species. These findings are invaluable for future agroforestry projects in similar conditions and provide a clearer understanding of what resilience looks like in practice.

2. Wildflower Meadows

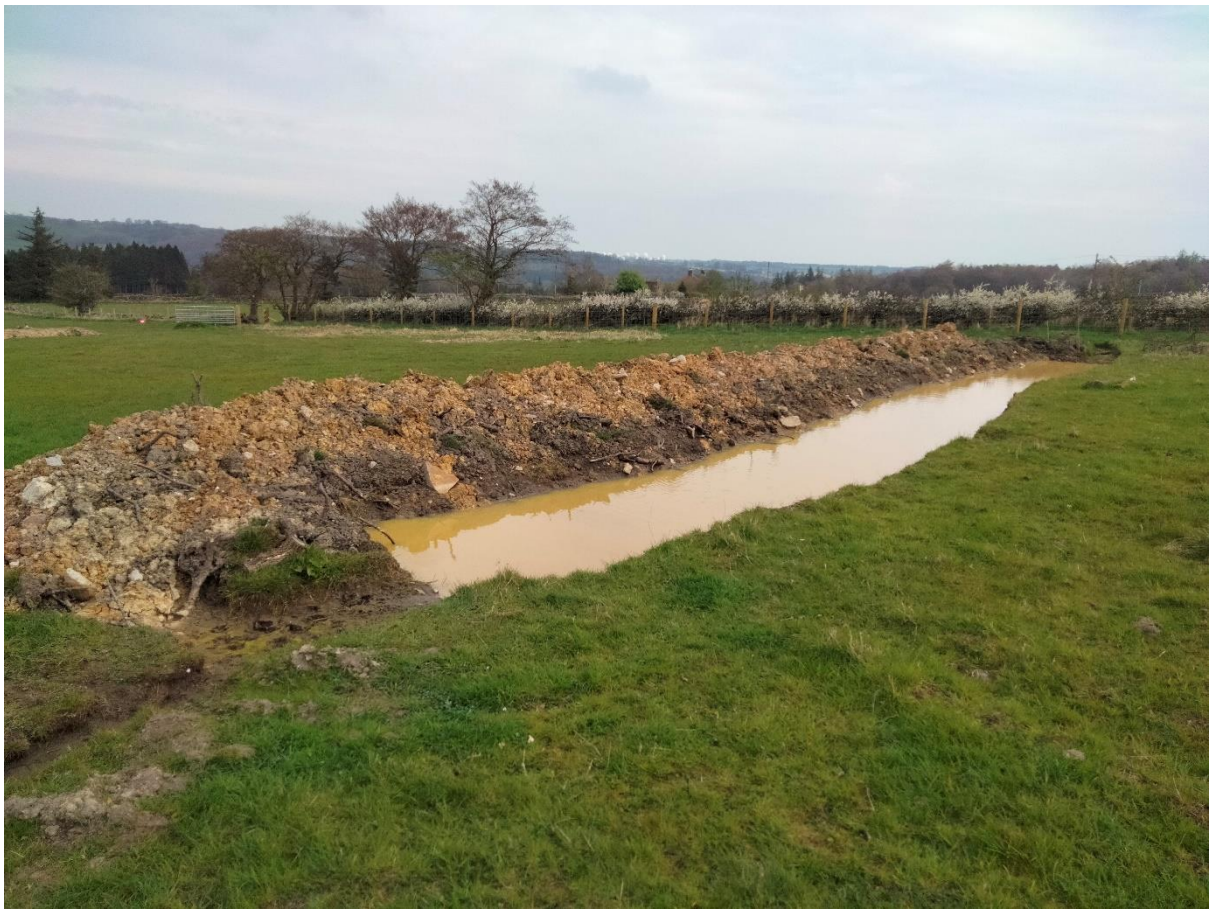
This zone consists of relatively flat fields designated for wildflower cultivation. These meadows are especially important for biodiversity and have been managed with sensitivity to local wildlife. Notably, the area is currently home to nesting lapwings, a ground-nesting bird species of conservation concern.

Importantly, planting wildflowers is not disruptive to the lapwings - in fact, it supports their habitat. However, Dr. Walsh has made the deliberate decision not to plant trees in this area, as tree cover could deter lapwings from nesting or returning in the future. Lapwings prefer open landscapes with low vegetation, and maintaining this type of environment is essential for their ongoing protection.

This decision reflects a thoughtful balancing of ecological priorities - enhancing the land's value for wildlife while supporting the overall vision of the farm. The wildflower meadows, therefore, serve as a biodiversity-rich zone within the farm's broader agroecological mosaic, designed to support native species and maintain habitat integrity.

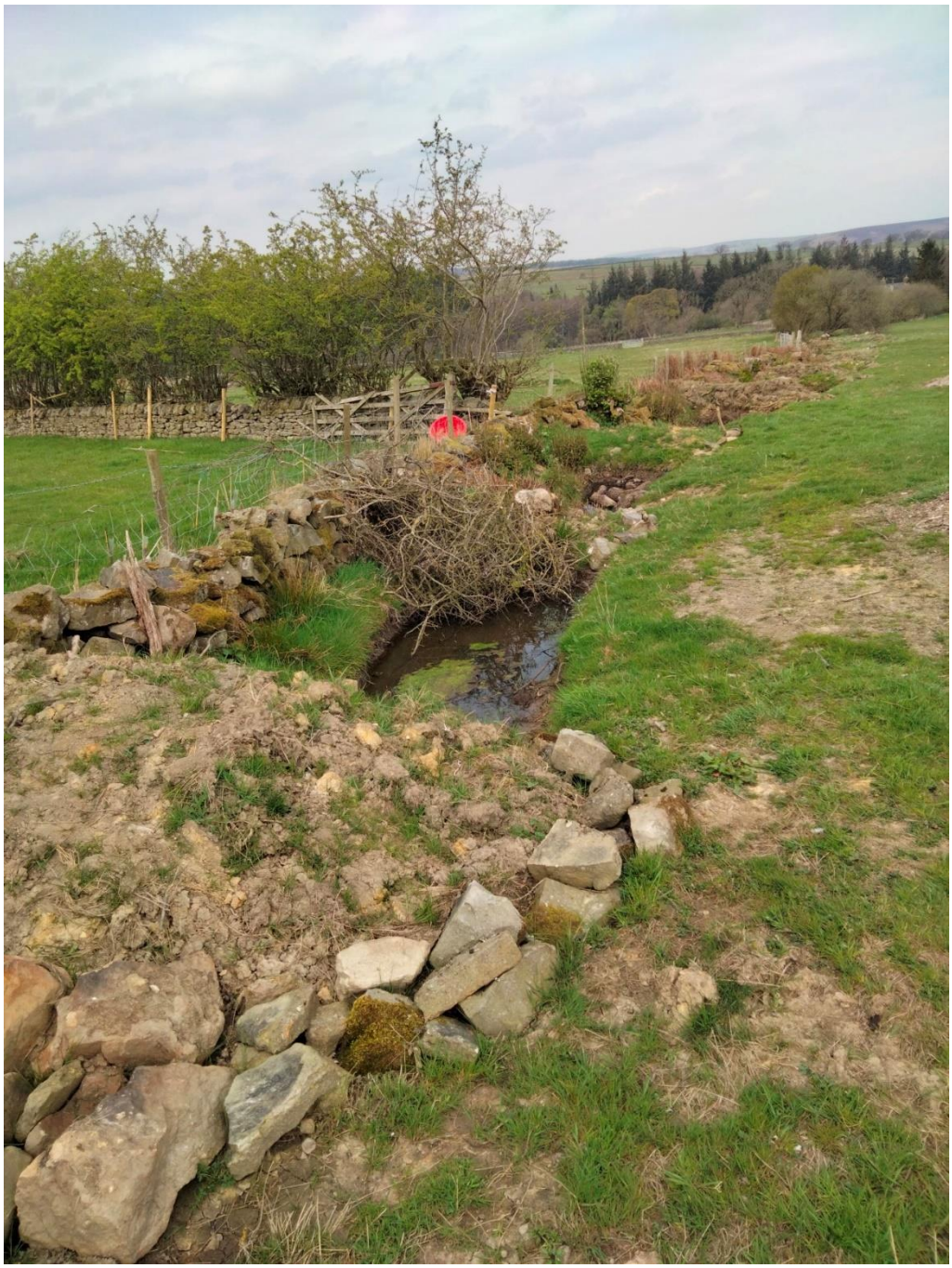
3. Hydrological and Wetland Features

One of the most transformative aspects of the site is its evolving hydrological system. Ings Farm is situated on a pronounced slope with heavy, compacted soils. During rain events, water has historically flowed rapidly down the terrain, with no natural impediment. This runoff not only carries soil and nutrients away from the land but also enters a tributary feeding the local drinking water canal, raising concerns for Yorkshire Water, who ultimately own the land.



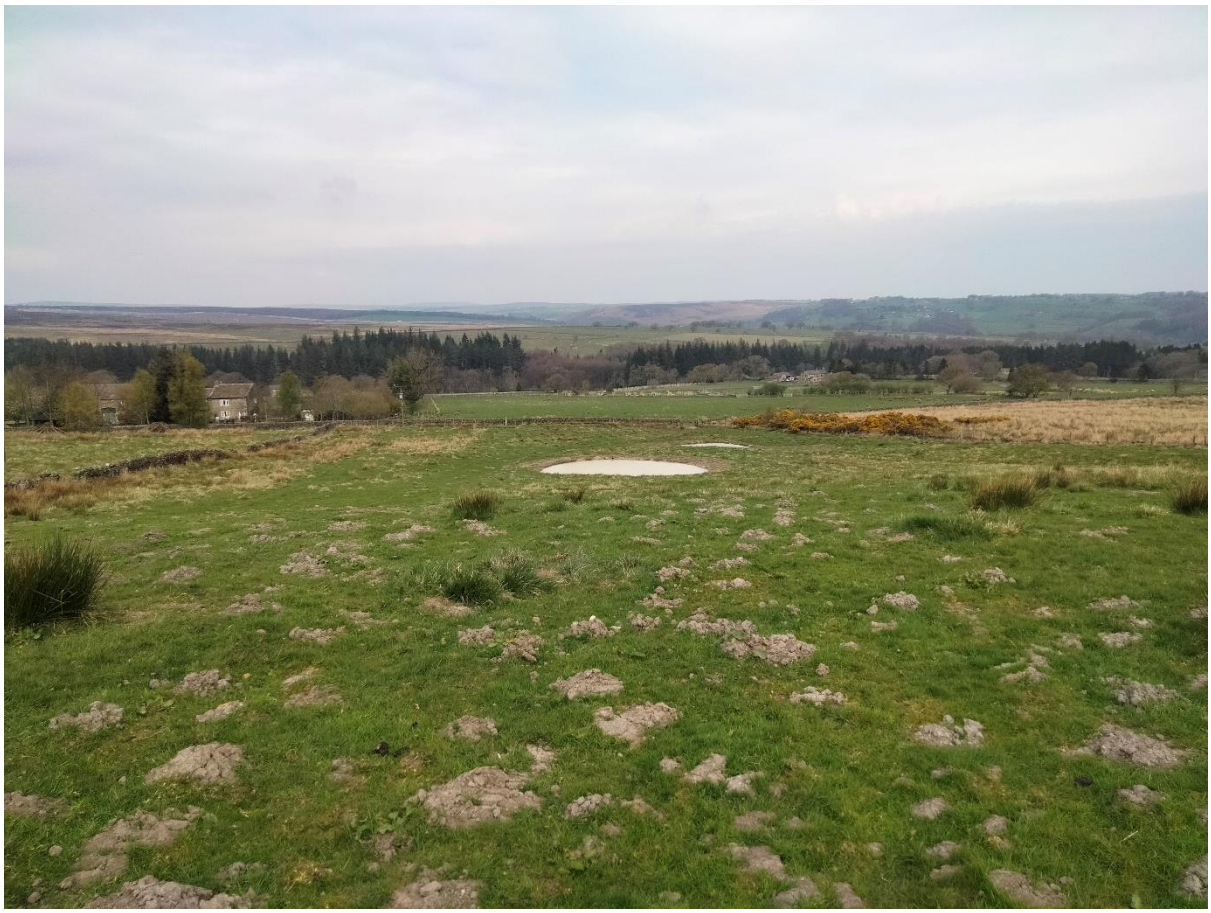
An in-field swale

To counter this, Dr. Walsh has initiated a landscape-level water management strategy involving swales, ponds, small dams, and flow-diverting features. In critical runoff areas that previously funnelled water directly into the tributary, a network of water-retention systems has been installed. These features create a zigzag pattern of movement across the landscape, forcing water to slow down and spread out. Some water is now held temporarily in swales and ponds; this reduction in flow velocity has the additional benefit of minimising soil erosion and sediment loss.



Ditch dams

Like the agroforestry area, this zone is periodically grazed by sheep, which helps manage vegetation without the need for mechanical cutting. Sheep are seen to drink from the new shallow water features.



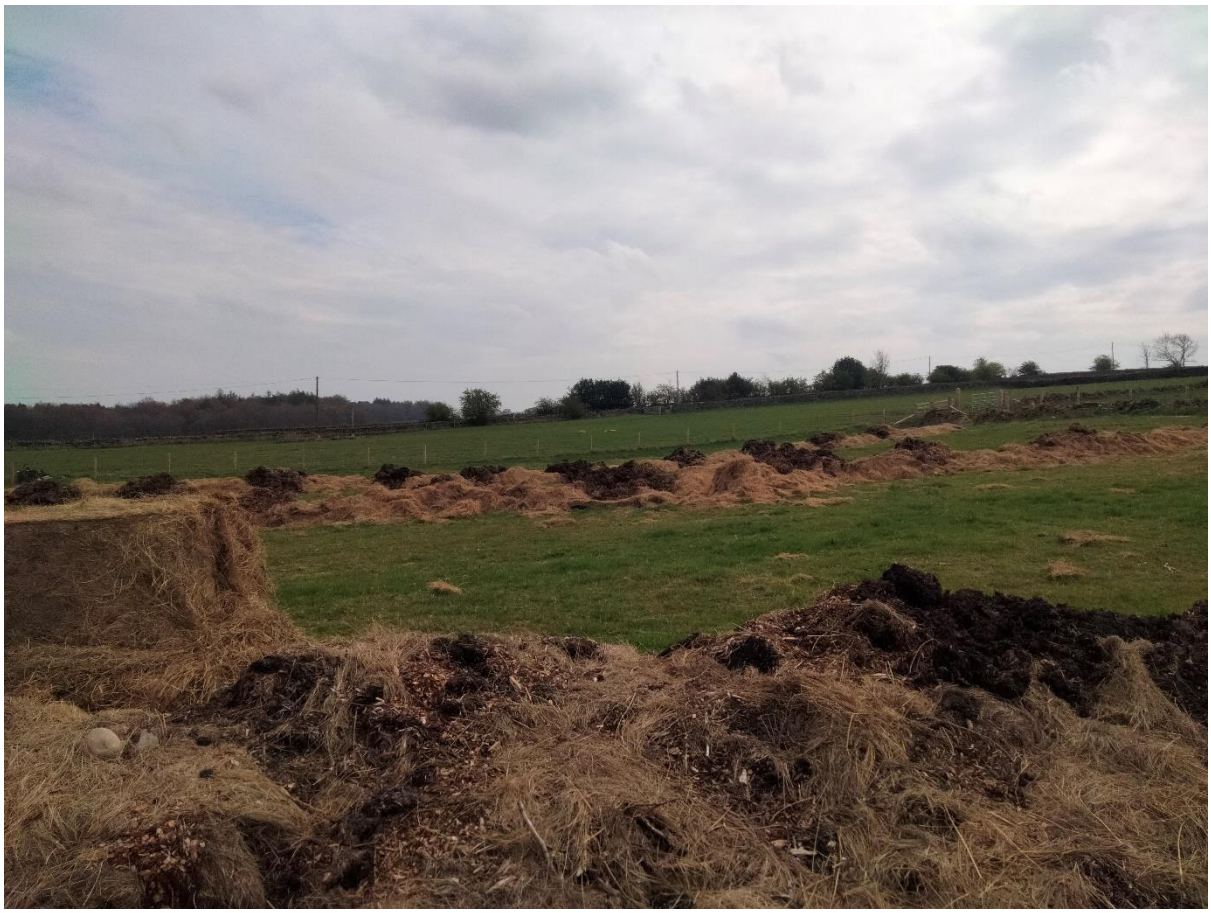
An in-field pond capturing rainwater in a sheep grazing area

Eventually, these water features will be populated with aquatic plants, which are expected to contribute to the natural filtration and purification of the water. The goal is to ensure that water exiting the farm is not only slowed but cleaner and more ecologically beneficial than before. This marks a shift from traditional land drainage approaches to a regenerative, closed-loop water management system.

4. Coppiced Area

Situated at the base of the farm, just before water exits the property and enters the drinking water tributary, lies a coppiced area - a key element of the farm's long-term ecological infrastructure. This zone has two primary functions.

Firstly, it is being developed as a biomass production zone. Plant matter grown here will be harvested to produce compost, which can then be used to enrich soils across the farm -reducing dependency on external inputs.



The composting operation

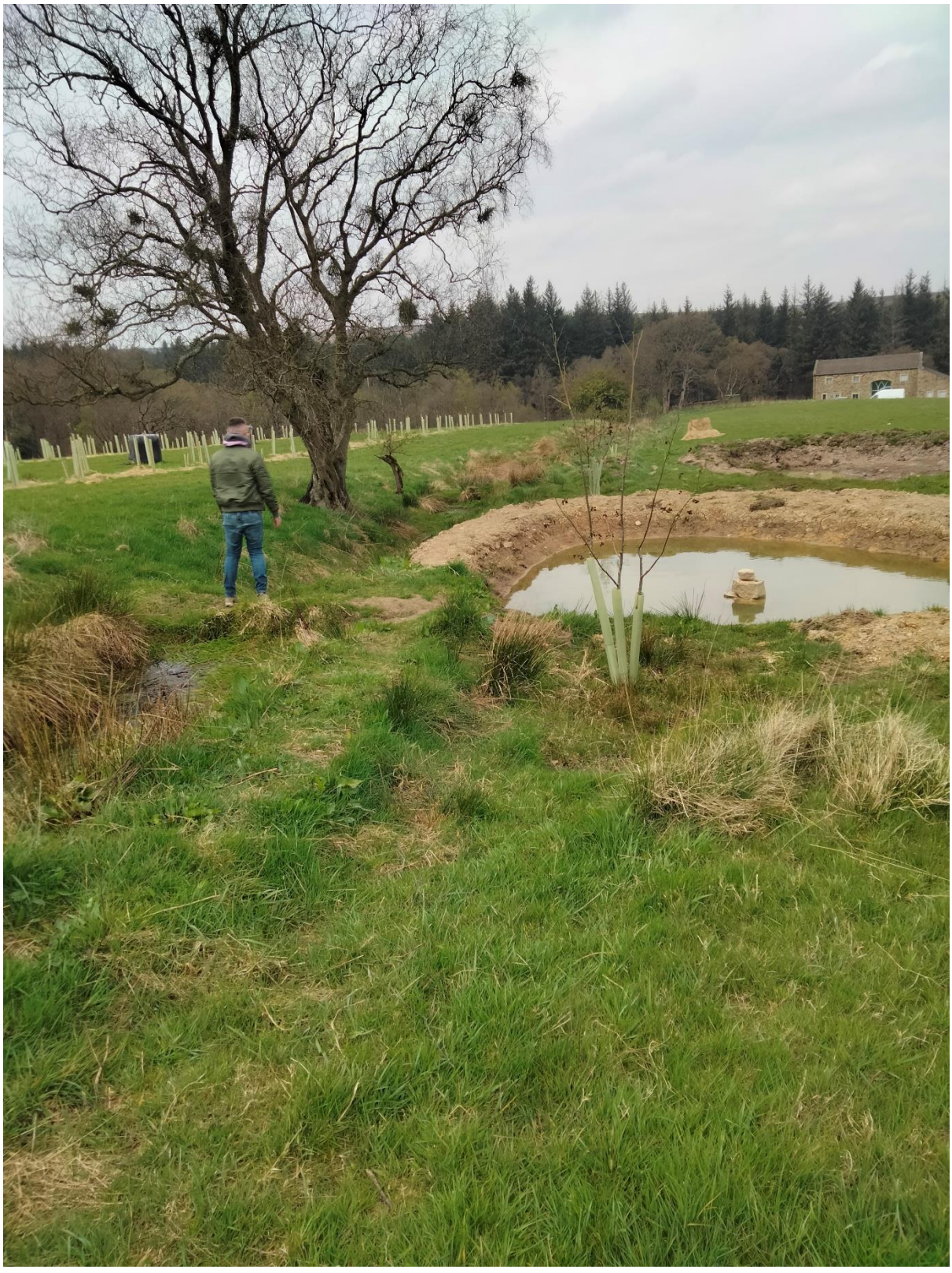
Second, the area is densely planted with a mix of hardwood trees to create a sponge-like root zone that absorbs and filters water while stabilizing the soil. This is particularly important given the slope of the land. There has already been some subsidence observed around an old farm wall - likely the result of soil being loosened and moved by fast-flowing water. The root networks and improved soil structure in the coppiced area are designed to address this issue by slowing water movement, anchoring soil particles, and increasing water infiltration.

A new coppiced area consisting of mixed hardwoods

Integrated Water and Soil Stewardship

The overall approach Dr. Walsh is taking - especially regarding water and soil - represents a landscape-wide solution to climate-resilient farming. The new water features are not isolated additions but are designed to interact with each of the farm's four main zones, feeding water where it is needed (especially during drier periods) and buffering the landscape against intense rainfall.

In the agroforestry area for example, rainwater stored in swales may be used to irrigate trees and understory crops during dry spells. Meanwhile, across the entire slope, the movement of water is increasingly managed through natural hydrological mimicry - a design that works with the terrain, not against it.

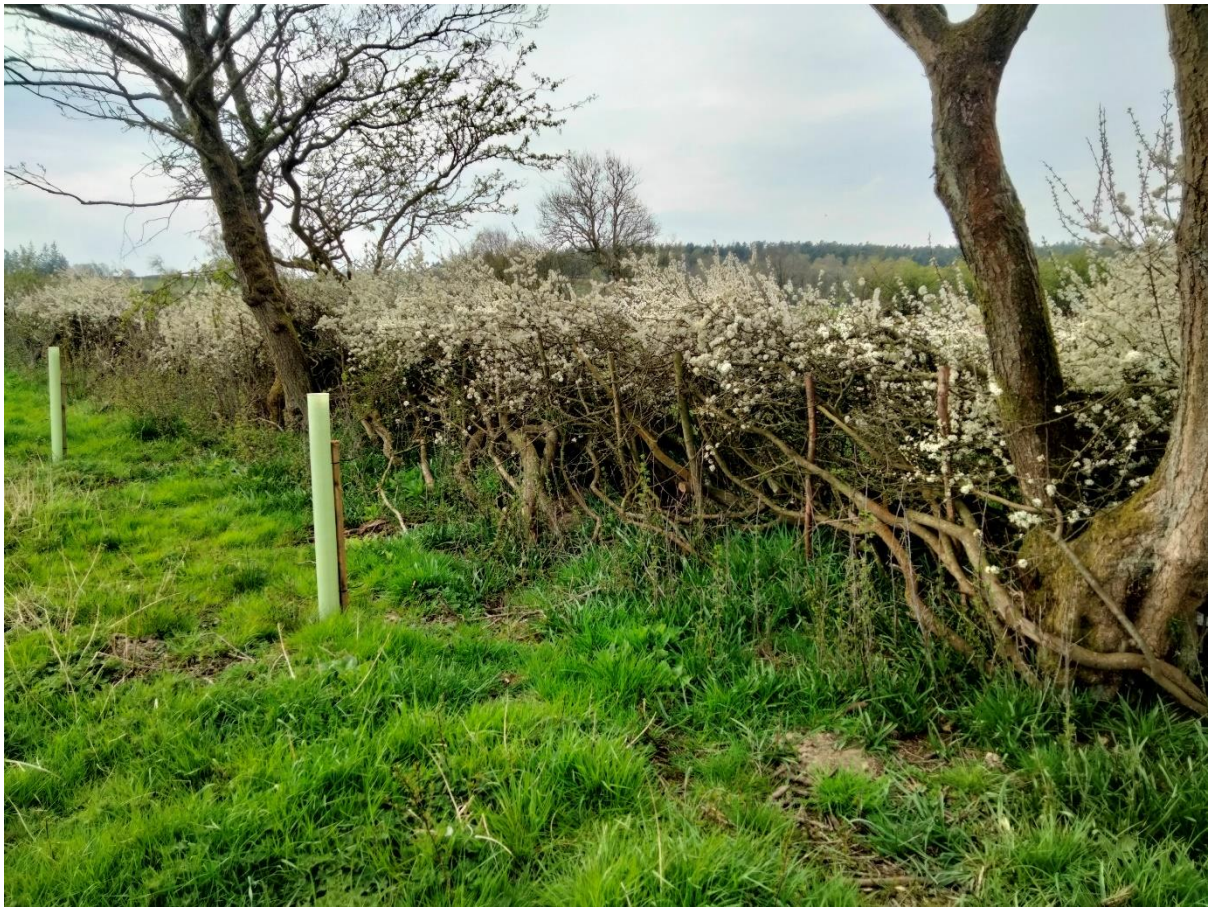


A ditch dam with lateral flow feeds into a pond

Dr. Walsh's strategy is not just about production. It's about designing systems that are self-reinforcing, ecologically sound, and regenerative. His work at Ings Farm Biohub is a living demonstration of how degraded or difficult land can be transformed into a productive, diverse, and water-sensitive farm landscape.

Ings Farm Biohub stands as a model of agroecological design in action. Dr. Vincent Walsh has blended practical innovation, ecological restoration, and scientific observation to shape a site that is both productive and deeply rooted in environmental stewardship. His hydrological interventions, agroforestry experiments, and biodiversity protections collectively create a vision of farming that is resilient, research-driven, and respectful of nature.

As the site continues to develop, it will no doubt offer valuable lessons not only for other upland farms in the UK but also for regenerative practitioners worldwide.



A traditionally laid hedge