

# Woodland Creation at Brownhill

## Overview:

In March 2021 the First Minister announced an intention to create new woodlands to commemorate those who have lost their lives to Covid-19. Initially two new woodlands will be created, one in North and one in South Wales, although more may be announced in the future.

NRW are leading this project in partnership with the National Trust, it forms part of Welsh Government's National Forest Programme.

The new woodland at Brownhill will be dedicated as a commemorative woodland, to act as a memorial to all of those who have lost their lives in the Covid 19 pandemic, and the way society in Wales has coped with the threat of Covid 19. The National Trust are creating a commemorative wood in North Wales.

The new woodlands will have a theme of 'resilience' and designed to be resilient to the threats of pests and diseases and a changing climate and will be managed to provide wellbeing, environmental and economic benefits to the people of Wales in perpetuity.

Inviting public engagement with the planning and the creation of the new woodland is central to the project. Over the coming weeks and months we will be engaging with local stakeholders and communities on our plans, in order to refine them and incorporate their feedback and ideas.

This new woodland creation supports our wider work to expand the Welsh Government Woodland Estate, we are identifying land for the creation of new woodland. This is to compensate for woodland lost from the estate for example to make way for windfarms or the restoration for valuable open habitats, to tackle the climate and nature emergencies and to contribute to Wales' woodland creation targets.

As with all woodland on the Welsh Government Woodland Estate it will be managed to meet the UK Forestry Standard and UK Woodland Assurance Standard.

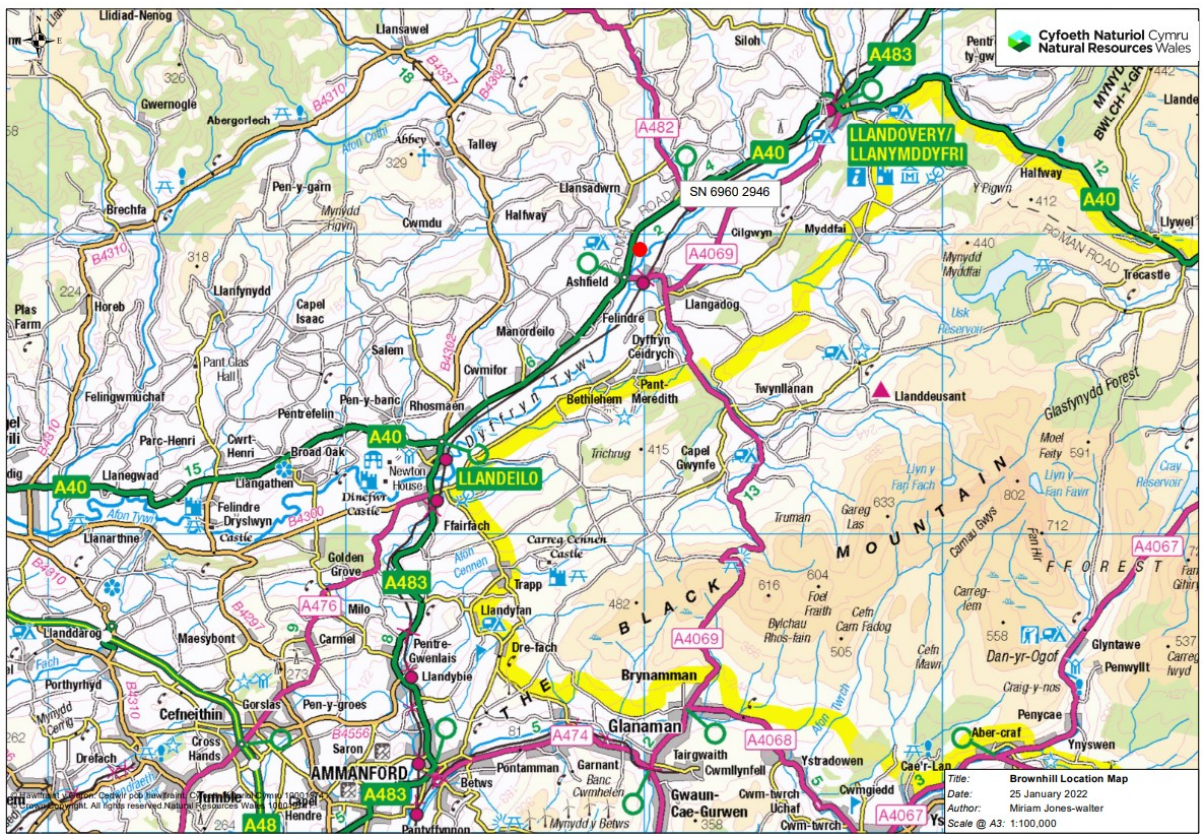
## Timeline

21/01/2022 – 01/03/2022	Planning and phase 1 stakeholder consultation
01/03/2022 – 31/03/2022	Initial planting events on site
01/04/2022 – 01/11/2022	Further detailed planning and phase 2 stakeholder consultation Begin work on infrastructure (access) Feasibility study for river restoration work
01/11/2022 – 31-03/2023	Planting remainder of site
01/04/2023 – 31/03/2024	Complete infrastructure work Ongoing establishment work (beating up, weeding etc) Ongoing river restoration work
01/04/2023- 31/03/2027	Ongoing establishment work to five years (Potentially) Ongoing river restoration work

## The site

The site is situated close to the A40 in Carmarthenshire between the villages of Manordelio and Llanwrda. Figure One shows the location.

Figure One: Brownhill Location (red dot) SN69602946



The site at is 94ha and consists mainly of agricultural land, ranging in quality. It is predominantly flat floodplain land. There is little higher ground nearby from which the full site can be viewed.

The better ground to the North of the site has been used for silage/hay and grazing, while the remainder tends to be wetter ground and has been used for grazing and includes permanent pasture some of which is rushy. The fields are divided by hedgerows, some of which are mature and some more recently planted, with mature and veteran hedgerow and in-field trees (mainly Oak). The hedgerows have not been recently managed.

There are features of an active floodplain such as oxbow lakes and river channels which support Alder Carr and standing water. The site straddles the Tywi (SSSI and SAC designated). To the East of the main river and larger channels access is poor, the land has been left fallow and is regenerating riparian woodland.

To note, the land was sold as five lots of which we secured three. The remining two consisted of a higher proportion of ‘better’ agricultural land. The three we secured all included a proportion of rougher and/or less accessible ground, less attractive for agricultural purposes.

Climatic zone: Warm and moist (Warm, sheltered, moist) > Warm dry in high emissions scenarios. Table one shows a summary of the climatic conditions on site (taken from the Ecological Site Classification decision support tool).

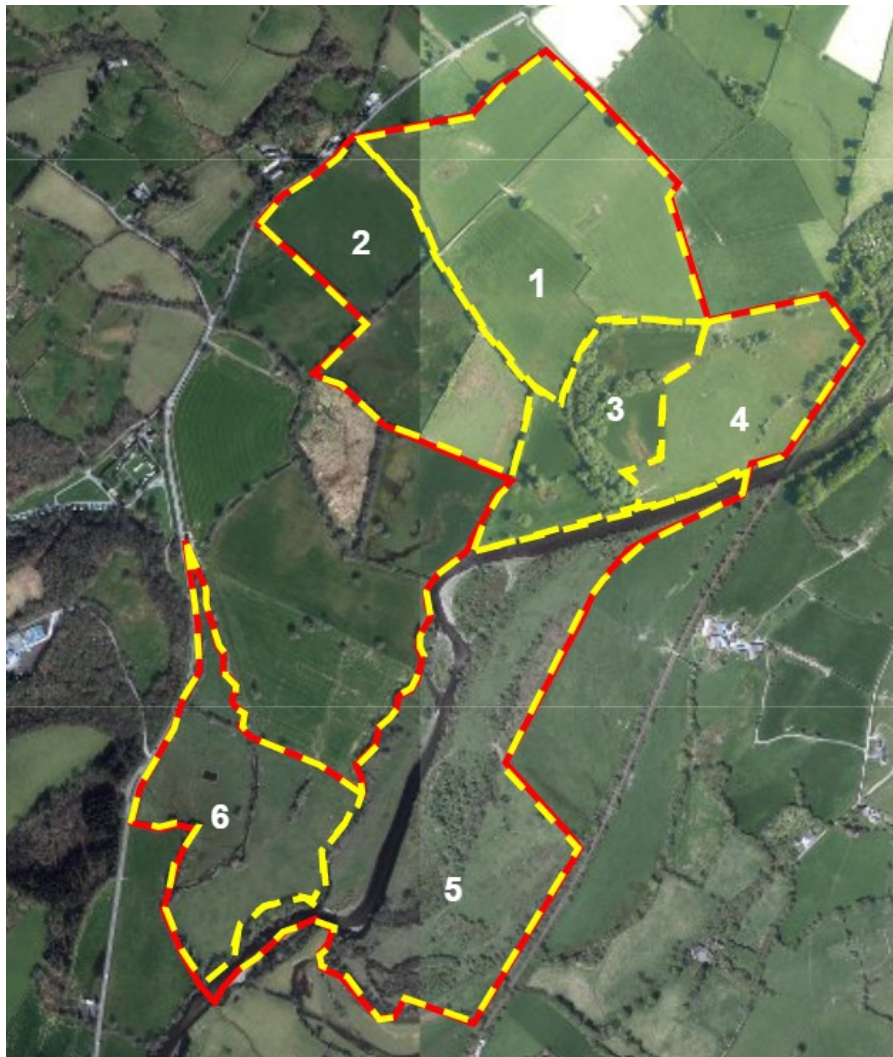
Table One:

Modifications	Accumulated Temperature (AT)	Continentality (CT)	Exposure (DAMS)	Moisture Deficit (MD)	Soil Moisture Regime (SMR)	Soil Nutrient Regime (SNR)
---------------	------------------------------	---------------------	-----------------	-----------------------	----------------------------	----------------------------

None	1855	8	12 (sheltered)	157	4(Moist) - fresh	4(Rich) - medium
------	------	---	-------------------	-----	---------------------	---------------------

Figure Two shows a short description of the site broken down by field boundaries.

Figure Two: The Site



1. Highly improved grassland fields previously used for grazing and silage. Three separate fields very similar in character, hedge boundaries of predominantly Hawthorne, some of which are recently planted (Northern boundary).
2. Three fields of similar character; improved pasture used for grazing with a high proportion of dense rush. A slight depression runs through the centre of the three fields creating wet ground.
3. An area of improved grassland with mature trees creating a wood pasture character. This area surrounds an oxbow lake, which has largely in-filled with Alder Carr type wet woodland. Some shrubs along the riverbank.
4. A large field with a less improved character and greater diversity of grassland observed than the rest of the site, including some in-field trees, some of which are mature surrounding remnants of previous river channels, and others recently planted (in the past 20 years). The riverbank is open where it borders this field.
5. A large area that seems to have been left fallow due to little access across river channels (bordered by the train line to the East, with no right of access). The area has developed riparian woodland/scrub and includes a past(?) river channel to the west of the main channel. The Tywi has been artificially straightened in the past in this stretch.
6. Three fields of improved permanent grassland. The land has been previously drained but remains wet in some areas and is crossed by the Marlais, a tributary to the Tywi, surrounding which is some Alder Carr. There is a man-made pond in the centre which supports diverse flora. The southern-most field is more elevated and therefore slightly drier. The hedgerows are more mature than the North of the site of Hazel and some Elm. Veteran in-field oaks.

## Objectives:

- People: Community Engagement & Recreation
  - Create an area of the woodland dedicated to commemoration, a contemplative space
  - Establish a safe, accessible outdoor space for recreation
  - Encourage community involvement in the planning and management of the woodland
  - Generate a sense of ownership, a woodland that is for the people of Wales
  - Take opportunities to provide economic benefits locally, in keeping with other objectives
  - Take opportunities for research and education, particularly linked to creating new resilient woodlands
- Biodiversity
  - Increase the connectivity of existing habitats in the landscape
  - Retain and enhance existing habitat features, such as wet woodland, hedgerows and hedgerow/ in field trees and remnants of high habitat value semi natural grassland
  - Establish and maintain open space and edge habitat within the woodland, to increase habitat diversity
  - Increase habitat resilience through use of tree species well suited to the site, reflecting what is already present locally, and by introducing greater diversity of species suited to future site conditions
  - Carefully design public access infrastructure on the site in such a way that areas of high sensitivity for biodiversity are undisturbed
- Landscape and historic environment
  - Create a woodland that is visually appealing and in keeping with the Tywi Valley landscape character and the Tywi valley historic landscape character area, notably that is in keeping with the enclosure pattern, distinctive hedgerow trees (mature oaks) and wood pasture
  - Identify historic features and ensure they are sensitively incorporated into the woodland design
- Timber
  - Allow for future forest management for soft and hardwood timber to maintain the future supply of homegrown timber in Wales
  - Utilise a broad species diversity, focussing particularly on lesser used/emerging species that will suit the future climate of Wales
- Water Management
  - Work with the Tywi restoration project and take opportunities for restoring natural processes in the river channel, flood plain and surrounding vegetation
  - Develop riparian corridors
  - Enhance the Tywi River SSSI/SAC through reduced runoff and pollution and taking advantage of opportunities to restore natural processes in the floodplain that will have beneficial effects on the SAC/SSSI status
  - Take opportunities to enhance water quality, and use good forestry practice to avoid any negative impacts on water quality in creating the woodland and in future forest management

## Woodland Plan

The following table (Table 2) is a summary of the plan for future land use, linked to the objectives listed above and how they will be achieved and sets out the parameters. These totals will be subject to adjustment following detailed stakeholder consultation (phase 2).

*Table Two: Summary of land uses*

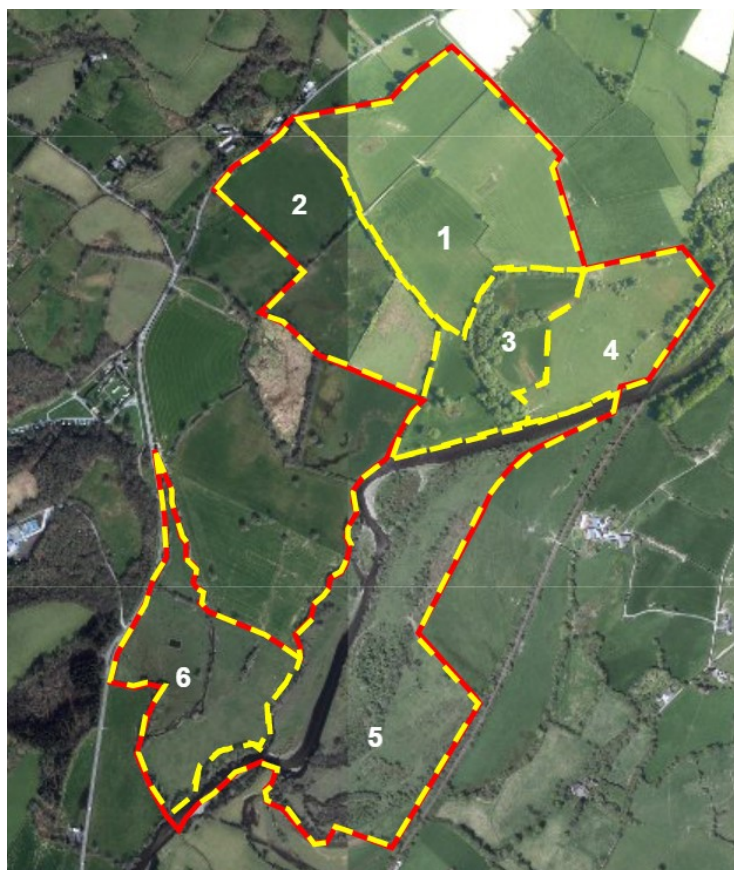
Land use	Description	Total area (ha) (% of 94ha total)
Broadleaf Woodland	<ul style="list-style-type: none"> <li>- Broadleaves; Cherry, Oak, Hornbeam, Wych Elm, Hazel, Hawthorne, Blackthorne, Alder</li> <li>- Densities ranging from 2700 stems/ha to 1600 and 1100 and lower in riparian/wood pasture areas.</li> </ul>	Up to 32ha (34%)
Mixed Woodland	<ul style="list-style-type: none"> <li>- Scots Pine, Coastal Redwood, Weymouth Pine planted as part of mixtures with the broadleaves mentioned above.</li> <li>- Planted as a mixture with broadleaves (see figure 3 below) at 2700 stems/ha.</li> </ul>	Up to a maximum of 20ha (21%) of which a maximum of 70% would be conifer (equivalent to 25% of all woodland planting on the site)
Open Space	<ul style="list-style-type: none"> <li>- 20m buffer around watercourses of &gt;2m channel; Afon Tywi (major and secondary channels) and Afon Marlais</li> <li>- 10m Buffer around other smaller (&lt;2m) watercourses and pond present on site</li> <li>- 10m Buffer around significant veteran trees</li> <li>- 5m buffer along mature hedgerows</li> <li>- 5m rides for recreational routes and future access routes</li> <li>- Along A40 road to create a 'soft' edge and soften view for overlooking properties.</li> <li>- 10 m Buffer surrounding heritage features</li> <li>- 10 m buffer either side of gas pipeline and electricity pylon.</li> </ul>	A <i>minimum</i> of 18ha (19%)
Existing woodland	<ul style="list-style-type: none"> <li>- Existing woodland is predominantly wet woodland</li> <li>- Area measurement includes developing scrub to East of main river channel</li> </ul>	23.7 (25%)

Ground preparation: Areas of longer grass to be mowed/topped. Direct planting with hand screefing in areas of denser sward.

Tree protection: No Individual tree protection. Site investigation indicates grazing pressure from deer and rabbits is low. Where possible trees will be protected from vegetation competition by hand screefing when planting and motor-manual weeding until they are established.

Figure Three shows a high-level overview of the proposed long-term objectives for each area of the site.

Figure Three: Proposed long term objectives.



1. C.21 ha. Mixed woodland area (2700 stems/ha), with open space to preserve hedgerow trees. Potential to plant lesser used or emerging conifer species to trial their potential, to include redwoods and pine sp. In a mixture with broadleaf species such as Oak, Cherry, Hornbeam. (Nest planting for hardwood timber?) to a maximum of 70% conifer.
2. C.14.3 ha. Mixed broadleaf planting on drier areas (around edges) and wet woodland in the wetter areas. To include Oak, cherry, hazel, hawthorne and alder.
3. & 4. C.18ha. Low density (maximum of 1100 stems/ha) broadleaf planting to create wood pasture type woodland and creation of wet woodland and wetland habitat and continue riparian corridor. A feasibility study will be carried out to identify and plan river restoration opportunities\*. Wood pasture has potential for continued grazing or mowing to develop grassland diversity in the open space. Fencing/ guarding trees would need to be considered along with practicality of ongoing management.
5. C.28ha. Continue natural regeneration for riparian corridor and (as 3&4) Identify opportunities for river restoration\* to re-establish natural processes on the floodplain.
6. C.12ha. Community and amenity focussed woodland area. Mixed broadleaf planting at 1600 stems/ha with low density riparian planting (1100 stems/ha) around watercourses. 20m buffer for planting around the Afon Marlais and Afon Tywi and larger (>2m) channels and 10m buffer surrounding the pond and smaller watercourses. Open space to be maintained around veteran trees. Planting of a 'Resilient' species mixture, to introduce diversity, to include oak, cherry, hornbeam, wych elm(?), and shrubs; hazel, hawthorne, holly. Potential for orchard (fruit and nut trees) for blossom and to create a sense of place. Focus to establish all ability recreational access and infrastructure such as benches and signage. Create opportunities for involvement, e.g. coppicing etc. in future.

\*To be carried out as part of Afon Tywi SAC River restoration plan and related projects (such as the 'Rivers 4 LIFE project'), if and when work is planned separate impact assessments will be included as part of the work.

## Indicative forest Types

Figure four shows (potential) indicative forest types for the site.

To be added.

### Useful Links

Landscape character: [nlca41-tywi-valley-description.pdf \(cyfoethnaturiol.cymru\)](#)

[Archaeology in Wales - Ymddiriedolaeth Archaeolegol Dyfed - Dyfed Archaeological Trust \(dyfedarchaeology.org.uk\)](#)

[Archaeology in Wales - Ymddiriedolaeth Archaeolegol Dyfed - Dyfed Archaeological Trust \(dyfedarchaeology.org.uk\)](#)