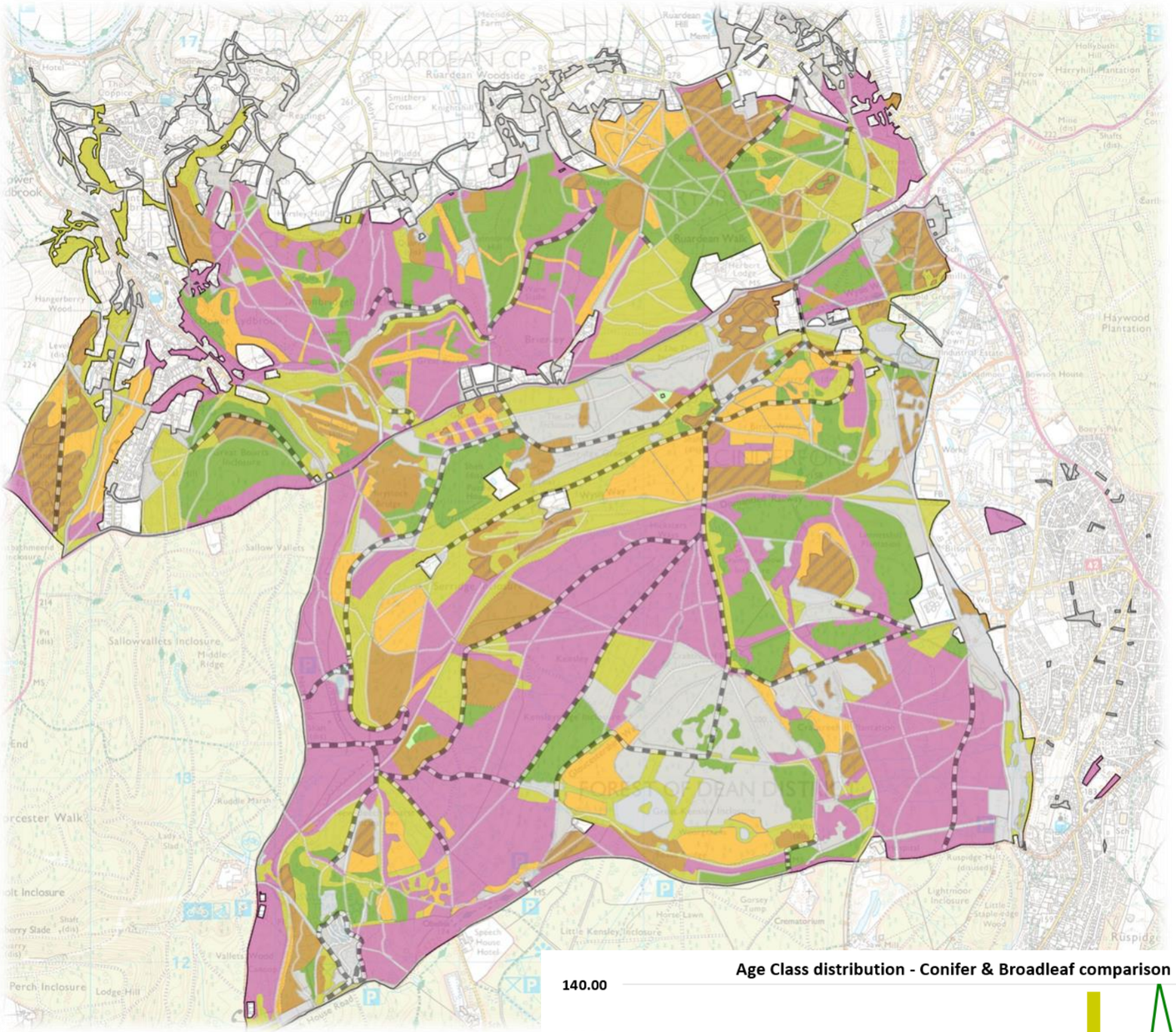


Woodland Composition

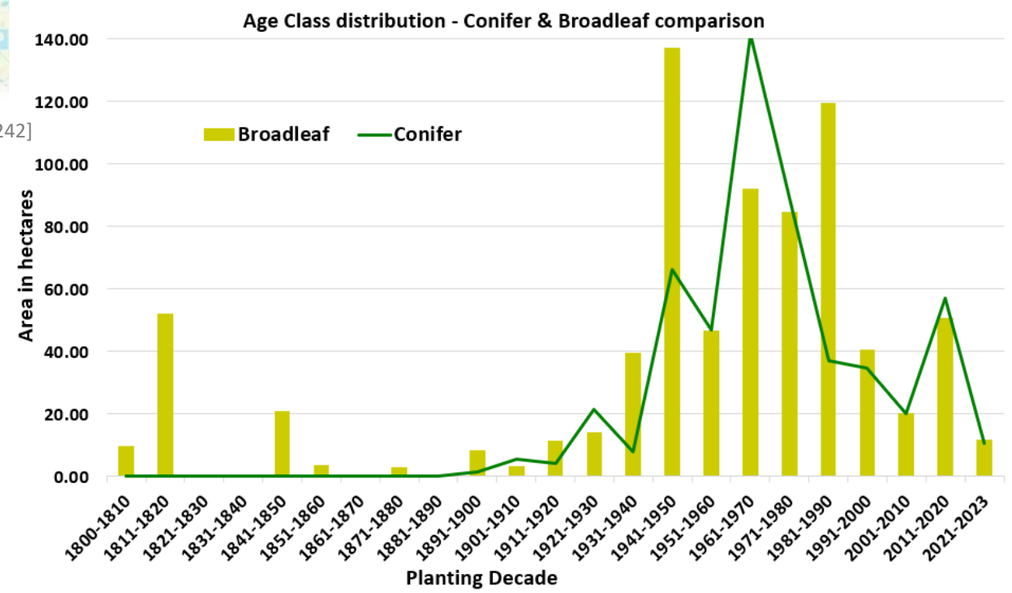
The forests structural diversity is modest, benefiting from the varied landform that adds complexity to the structural texture of the forest (Especially the case in Astonbridge). Meanwhile, the range of species is relatively limited. Broadleaves total 772Ha, and notably, Oak constitutes a third of all broadleaf species and is dominant in the landscape, with a quarter of the Oak planted prior to 1850, and a further quarter planted over the period of WW1 and 2. Yet from 1960 onwards planting of Oak slowed to almost nothing. The proportion of Oak is also surprisingly within 1% of matching that of the total evergreen conifer content, which spans 298Ha. However, the majority of broadleaf planting took place between the decades of 1940 through to 2000, peaking in the 1950s.

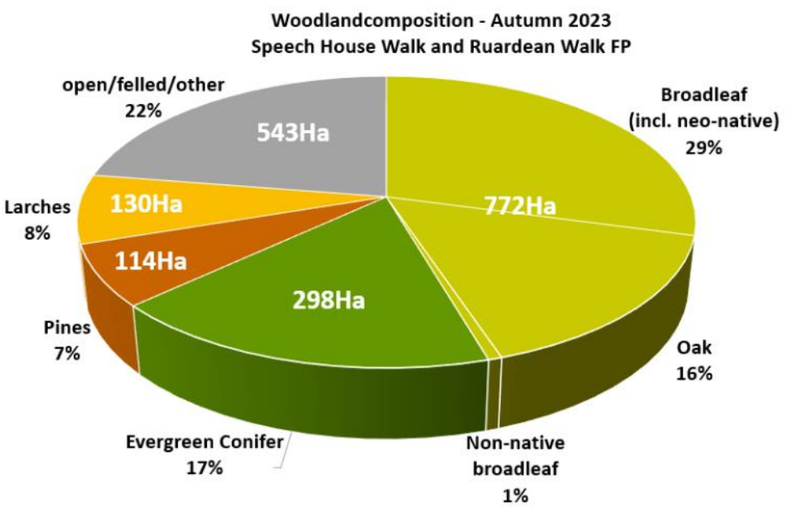
Total conifer accounts for 543Ha, occurring typically north to south along the west and eastern sides of the plan area. Planting started as early as 1900 with a few hectares of Larch, in mixture with Oak, in the vicinity of the Bledisloe Obelisk area of Speech House. Figures climb rapidly to around 60-70Ha in the 1950s when Norway Spruce accounted for a quarter of conifer planted. Conifer peaked at 140Ha in 1960s with Western Hemlock, Norway Spruce and Douglas Fir accounting for two thirds. Since then, planting of conifer has reduced to around 10Ha, with diversity of newer planting including species such as Coastal Redwood, Wellingtonia and Japanese Red cedar.

Restructuring of conifer crops began in the early 1990s with the planting of Douglas fir, Larches and Corsican Pine. It was the start of breaking up the monocultures, adding structure and evening out timber streams from the maturer crops, although there still remains a prevalence of stands planted in the 1960s and 1980s. Old coal tips were planted with Corsican and Scots Pine, that remain features of the landscape to this day. Indeed, a lot of the Larch, Corsican Pine and Norway Spruce was established at Woorgreens, reinstating the open cast that finished in 1983. Now felled, the site is managed for open habitats, including Lowland Heath and Wet Woodland. Open habitats also occur along the eastern edge of the plan area, including an old canal system that fed old Cinderford iron works. Closing in 1894, the old canal system, now known as Linear Park, has both a huge conservation value and is also enjoyed and well frequented for recreational purposes.

Legend

- Evergreen Conifer
- Other conifer
- Pines
- Other Pines
- Larches
- Oak
- Native and naturalised broadleaves
- Non-native broadleaves
- Open/other





Class 4 – Plantation Woodland

p1965 Norway Spruce - Great Bourts

Class 3 – Plantation Woodland

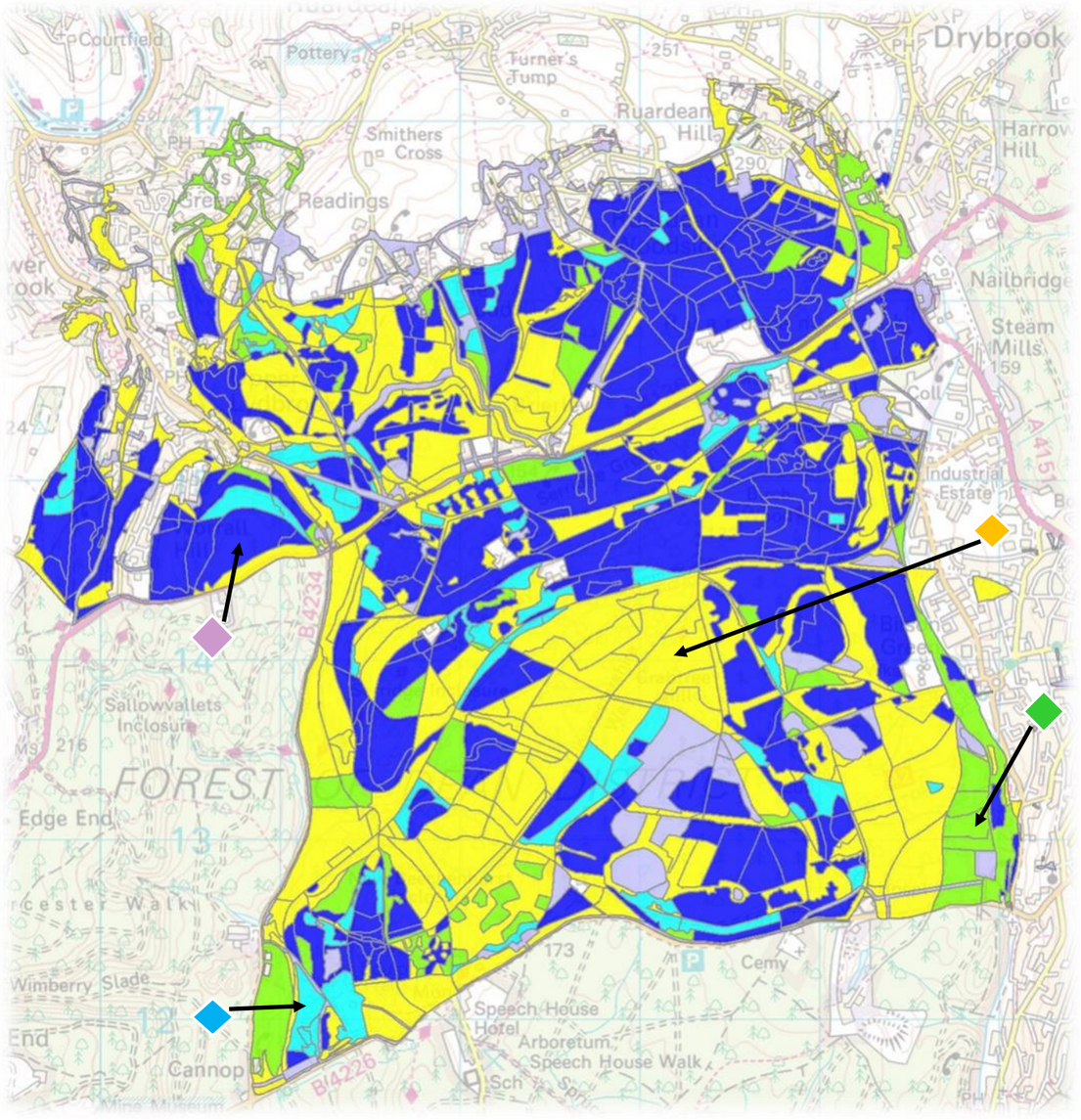
4360b p63 NS/SP & p1812 Oak - Beechenhurst

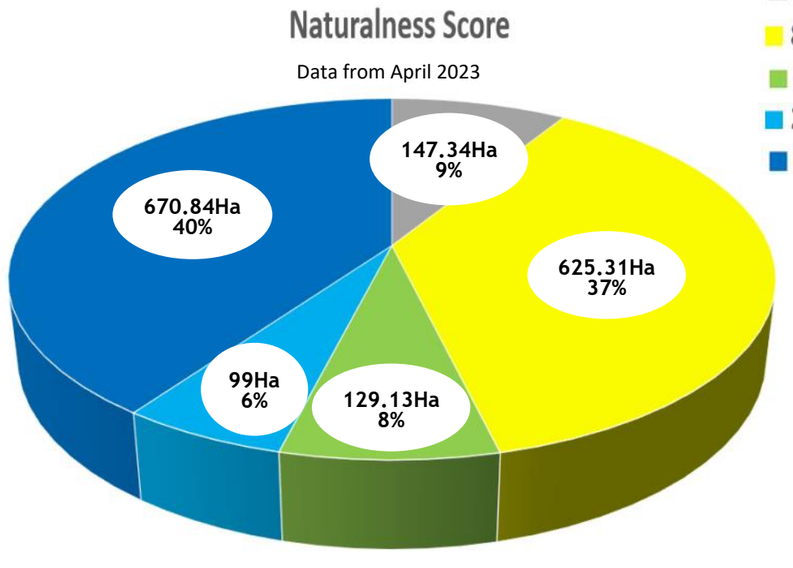
Class 2 – Plantation Woodland

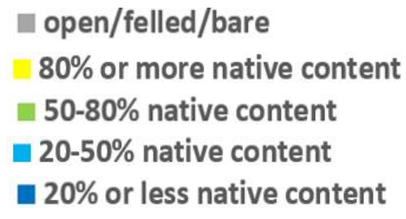
4344a p1953 OK & SP - Sammies Wood

Class 1 – Semi-Natural Woodland

4335a p1910 Oak - Hicksters Way







Woodland Naturalness

Naturalness is a measure to show native canopy cover of a woodland or forest. It is given as the percentage of site native tree species in a given area, and can be used to record and monitor the condition and restoration of Ancient Woodland Sites previously planted with non-native species.

The Forest of Dean is one of England's oldest forests having a rich industrial history. In past times this saw The Forest's timber and mineral resources utilised and exploited to the extreme, with clearfelling and open space[1] being common place. It is the subsequent replanting and habitat management undertaken, coupled with the interplay of the Forests hugely diverse topography and soils, that has given the Forest of Dean the rich diversity of tree species and habitats we enjoy today.

The Ancient character of the Dean is recognised as an important aspect of the Forest. Past Forest Planning has sought to increase the ratio of broadleaf to conifer within the Forest of Dean as a whole. This Plan will continue to honour that commitment[2], working towards an initial aspiration of 60:40 broadleaf to conifer. This would include an increase from 22% open space to around 25%. Linked with Our Shared Forest, plan proposals will work to improve and enhance other features associated with semi natural woodland, such as wet woodland, priority riparian areas and areas of heathland/open forest, creating better connectivity of habitats and native species. In doing so, this will offer a much more holistic consideration to the restoration of semi natural woodland, rather than just considering native tree species, i.e. naturalness condition or scoring.

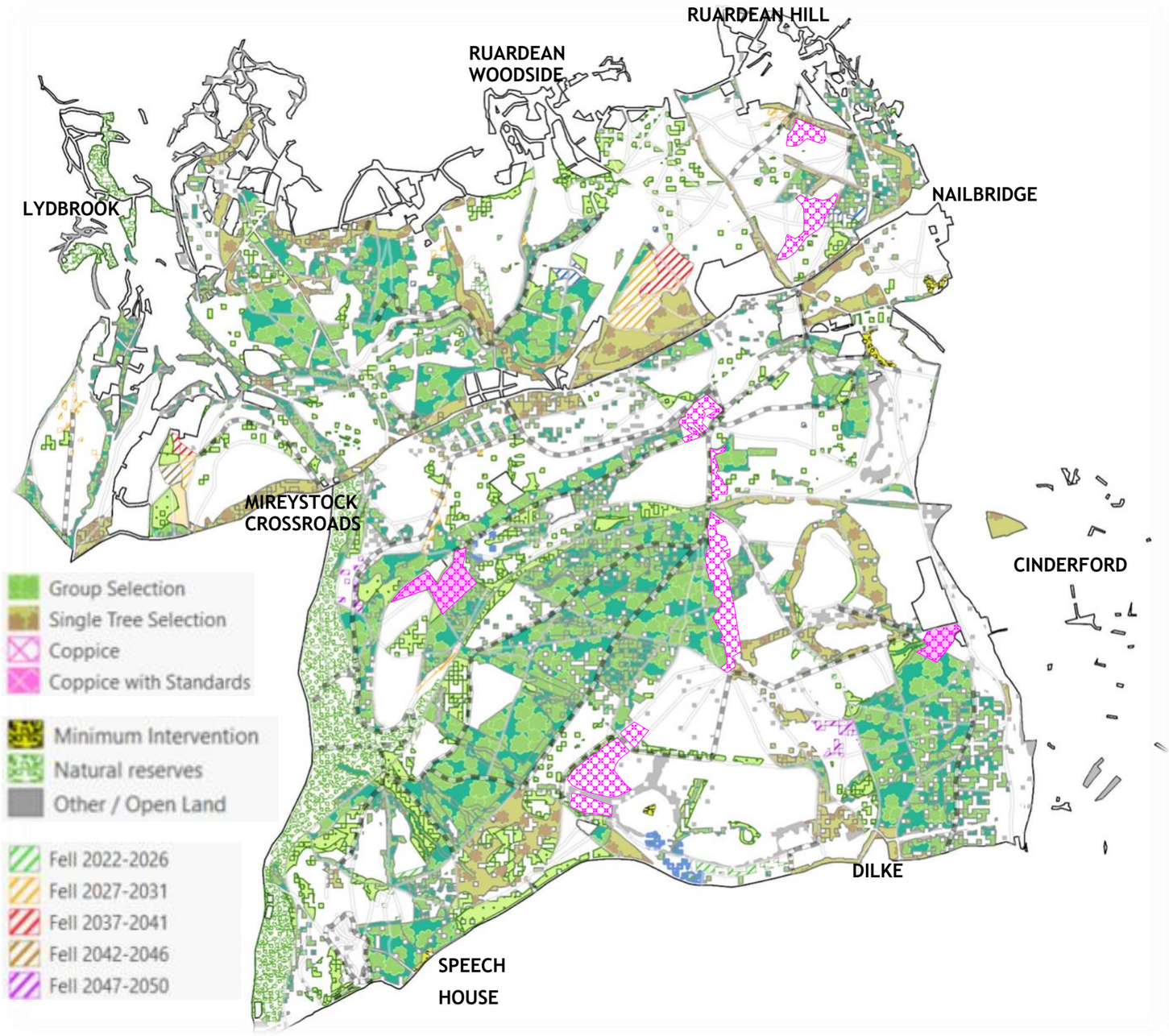
It is recognised that, in the current climbs of climate change, the rise and increasing threats to tree health, this is a challenge, and therefore a long term objective. The balance to a more native and natural forest will therefore be a gradual one, achieved through targeted thinning, under planting, group felling with group planting, and the clearfell with restocking approach still playing its part. Natural regeneration will be encouraged, but planting may still utilised to ensure that future species composition is diverse and resilient[3].

Left is a breakdown of the current naturalness for this Forest Plan.

[1] E.g. Forest Waste/Quarrying & mining/Heathland/Wood Pasture and extensive felling and restocking programmes especially post war time.

[2] within the bounds of other management considerations e.g. pest and disease management and the management and enhancement of forest resilience to future biotic and abiotic threats.

[3] to pests, disease, prolonged periods of wet or drought and to fire.



Broadleaf Management

Regeneration of broadleaf woodland has historically been achieved mainly through the use of natural regeneration, that will continue to be encouraged, except for where semi-natural woodland is so fragmented and or where windthrow has been a threat, making clearfelling with restock the preferred option.

Most Broadleaf areas are to be managed through some form of Low Impact Silviculture (LIS), usually this will be a Selection System, Longterm Retention, or Minimum Intervention, which will help ensure that stands remain as robust and resilient as possible towards future threats from climate, pests and disease. With this in mind, rather than planting or recruiting just a single species, the use of mixtures will be more prevalent and, where regeneration is recruited, underplanting to enrich species composition will be considered. This will ensure a diverse and robust crop is established for the future. Should enrichment or group planting be considered, then selection of species origin/provenance will follow current guidance on climate change and disease resistance, meaning future stands will contain a varying mix of site native species, species from four degrees south of latitude, improved growing stock and non-native species maybe considered too.

Where Broadleaf will replace conifer using LIS, it is difficult to quantify the speed of reversion, since most conifer crops identified for LIS have historically been managed utilising the clearfell and restock regime. Therefore, thinning interventions are likely not to have been optimised for natural regeneration of native species, so will likely attract a higher probability that underplanting, group planting or enrichment planting will be needed to ensure the desired future species composition is achievable. This objective is therefore very much for the long-term and so beyond the duration of this plan.

Light levels and grazing pressure will be managed through thinning intensity, fencing and culling, helping minimise weed encroachment and predation on both regeneration and planted stock. Whilst the reintroduction of Pine Marten is one step in helping to reestablish control over the grey squirrel, there is hope that it will ultimately safeguard the production of quality timber, along with other control measures, within younger generations of broadleaf woodland.

Thinning will look to develop final crop trees across all age classes, and Irregular Thinning will target the breakup of even-aged crops, whilst the matrix should remain well thinned to promote canopy development. This approach will help in developing a permanent Irregular structure. Thinning and partial harvesting of final crop trees (developed in cohorts over time), will help in the delivery of quality timber to market that is sustainable, offering opportunity for underplanting, group planting or recruitment of natural regeneration.

Generally speaking, south facing slopes traditionally fair better for broadleaf growth, however, might it be suggested that, with a warming climate, those sites with less favourable topology, e.g. northerly or easterly facing slopes, may in fact, become better in terms of productivity and growth rates. Species such as Oak that may currently struggle on such sites, or are on more impoverished soils, could well fair better, meaning the choice of provenance should be carefully considered, rather than just have Oak written off as being unsuitable. This approach will help Oak remain one of the prime broadleaf species for future generations to enjoy. On some Oak sites enrichment planting with other native species maybe considered to bolster stand resilience.

Deadwood Habitat will be managed to enhance the quality of both standing and fallen deadwood, maintaining the amount in line with UKWAS recommendations. The percentage of crowns left in situ following harvesting operations will depend on the quality and condition of existing deadwood. Consider retaining wind damaged broadleaves, fallen limbs, or fully windblown trees to add diversity to the types of deadwood present. Care must be taken to ensure that benefits of retention are not outweighed by increasing the risks to plant health, e.g. species of Ips that can affect Spruces and Larch.

Below is a fairly typical list of operations one may expect in managing broadleaf crops.

Broadleaves upto 50 years old Predominantly establishment operations such as planting, beating up, weeding, cleaning. Potential first thinning, respacing, enrichment planting and pruning etc will all ensure correct stocking density is achieved and quality promoted. Early identification of potential final crop trees.

Broadleaves from 50 to 100 years old Identification of final crop trees. Thinning of main crop. Respacing of natural regeneration with enrichment planting for future diversity, along with pruning and thinning to help raise the quality of timber.

Broadleaves over 100 years old Identification of final crop trees. Thinning of main crop and possibly some prep work for regeneration, enrichment planting, along with thinning.

Mature Habitat Some areas might be thinned and others not. Thinning will be light, considered, and sensitive to site conditions, unless work is needed for public safety reasons e.g. in Chalara infected crops. Recruitment of Deadwood is likely to be high in these areas and most managed with Single Tree Selection system.