

5. Working Woodlands



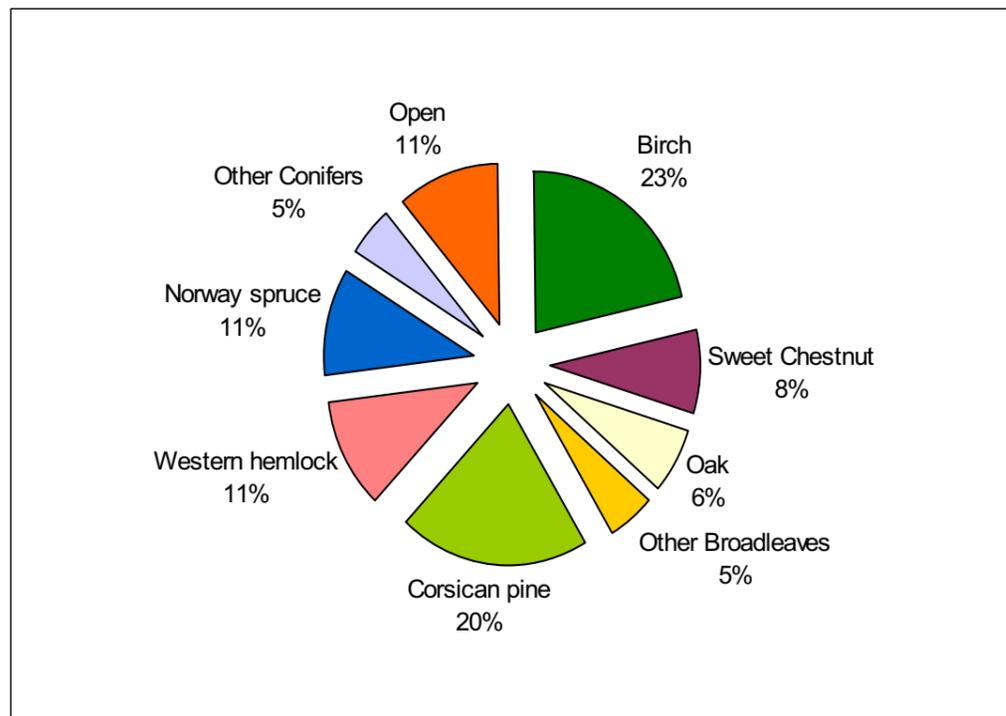
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5.1 Tree Species and Age Classes

At the time of purchase in 1956, Clowes Wood was made up of two blocks of woodland—Clowes and Spencers Woods of 164 and 172 hectares respectively, separated by a disused railway line. The standing woodland included one hectare of oak high forest, 31 hectares of Sweet chestnut coppice and 204 hectares of mixed native broadleaved coppice with oak standards. The 32 hectares above was considered as ‘acquired plantation’. The remaining 204 hectares was cleared and replanted with a mixture of Western hemlock, Norway spruce, Corsican pine, Scots pine, Hybrid larch and oak.

The present distribution of species is shown on the existing species map opposite. 21 years after the great gale of 1987, there is now approximately 15 hectares (6% by area) of native mixed broadleaves. This and the remaining species proportions are shown below.

The ten year period of clearance and replanting following acquisition has produced the current uneven age class distribution shown in the graph to the right.



Species Composition at the start of the Forest Design Plan (data from July 2008)



Tree age distribution at the start of the Forest Design Plan (data from July 2008)



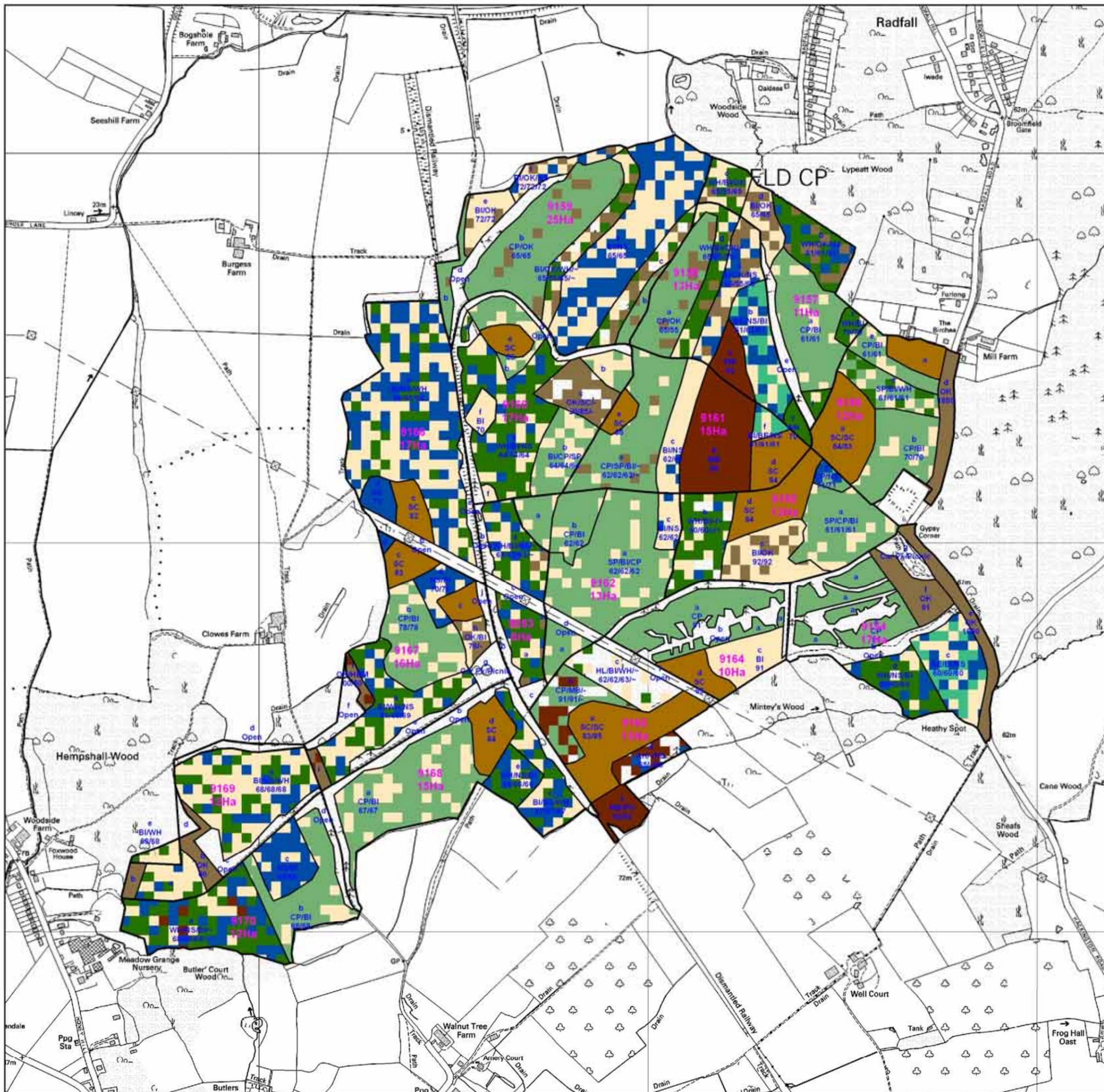
Forestry Commission
England

South East England Clowes Wood Forest Design Plan

Existing Species

*Schematic representation of existing species.
Indicates species content of subcompartments,
rather than exact distribution of species.*

-  Birch
-  Pines
-  Western Hemlock
-  Spruces
-  Sweet Chestnut
-  Oak
-  Other Broadleaves
-  Beech
-  Open



Produced by the Planning Team June 2008

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5.2 Delivering the Brief

There are five objectives stated in the brief that the plan should address.

- Approximately 50% of the wood is conifer. This area should be gradually restored to native species throughout the life of the plan.

Woodland design and the phasing of coupes, as shown in the Habitat restoration and Felling map and the Future Species proposals, together with the natural 5-10 year cycle of thinning, can deliver this transition in a measured way. A range of silvicultural systems will be employed to manage the different crop types and mixtures. Some veteran conifers and conifer groups will be retained to maintain habitat and landscape diversity.

- Western hemlock is an invasive conifer. It should be targeted for removal in a way that prevents it from regenerating.

Western hemlock can regenerate freely on AW sites and compromise restoration. It is being targeted for early removal as shown in the Habitat Restoration map. It will be replaced with naturally regenerated native broadleaves or planted broadleaves to increase the area of native woodland.

- A continuing sustainable harvest of timber is vital for the continuing maintenance of other programmes, which deliver an enhanced environment, secure the woods for the future and thus provide employment opportunities. Plans should reflect these underlying needs.

The ten year period of clearance and replanting following acquisition has produced the current uneven age class distribution shown in the earlier graph. Breaking up this age structure into one where a steady stream of harvestable timber can be produced will take time, unless total production is compromised by taking trees down before they are mature. The phasing of felling and the employment of silvicultural systems which maintain woodland cover will gradually smooth the peaks inherent in the current age structure. More gradual restructuring and the use of a wide range of techniques increases diversity in the wood producing an attractive woodland for visitors and a range of niche habitats for a wide range of species. And of course, a steady stream of utilisable timber provides security for those employed in the timber industry.

- In the absence of mature broadleaves, some mature conifers should be retained to maintain diversity and a wide age structure.

Some stands of pine, both Scots and Corsican, will increase in attractiveness and wildlife

value as they mature. Our stated policy in relation to restoration is to gradually move sites to a broadleaved character, with the aim of reaching at least 80 percent site-native broadleaves. Retaining some stands of mature pine complements and supports this objective.

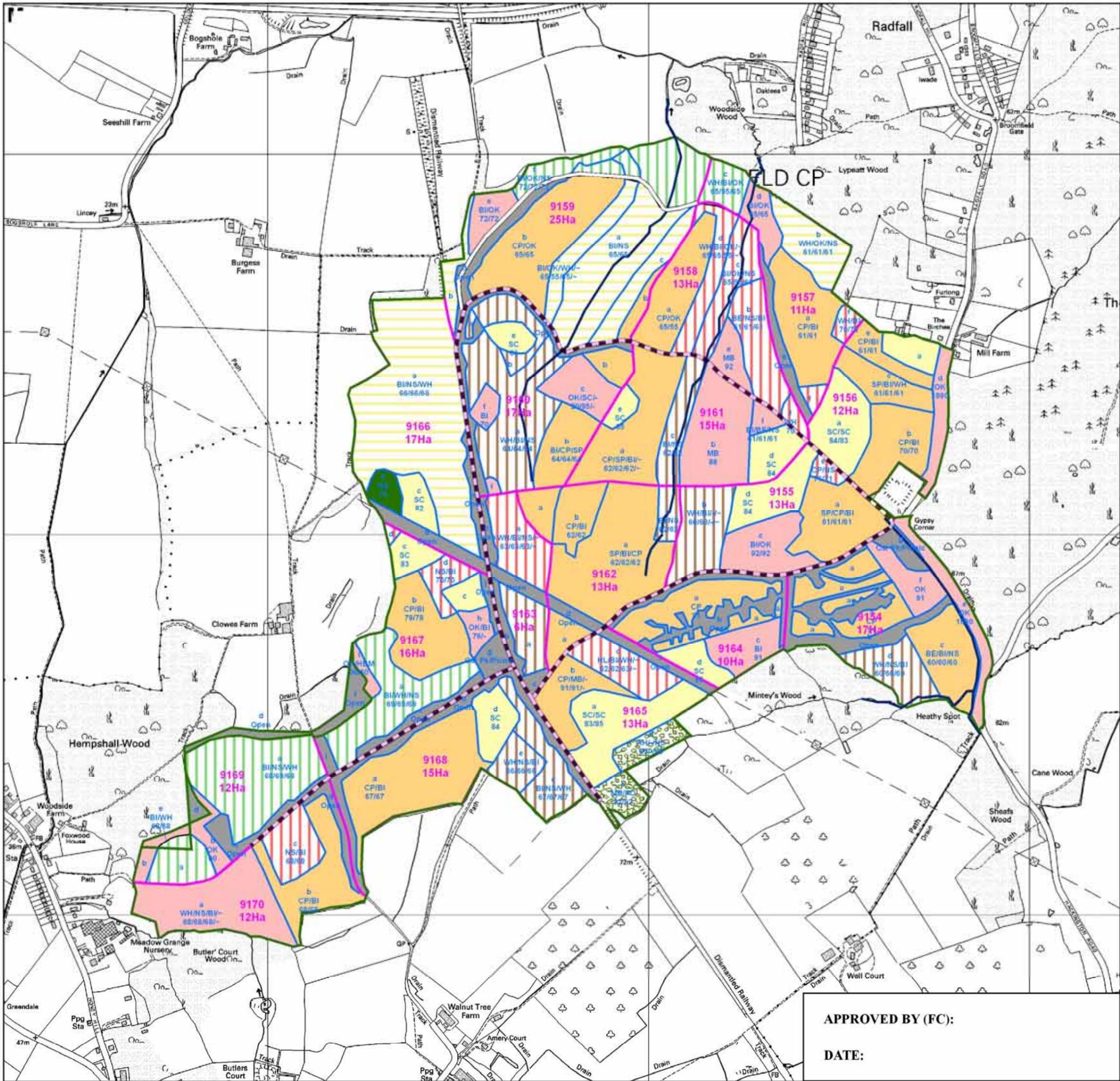
- Natural regeneration will rapidly colonise sites with native broadleaves but these may be of limited timber value. Some planting may be required to maintain the wood's productivity.

Natural regeneration produces a range of woodland types according to the availability of seed sources in the surrounding woodland and the underlying soil type. Cleared areas following the windblow of 1987/90 are dominated by birch with little sign of quality timber trees. Some planting of native broadleaves, either to assist natural regeneration or full planting on the most suitable sites will be pursued.



Natural regeneration of ash on an ancient woodland site managed under a low impact silvicultural system (LISS)

Clowes Wood
Habitat Restoration and Felling Map



- Manage native broadleaf woodland using a Shelterwood System to allow young native broadleaf trees to become established under the shelter of existing trees.
- Gradually remove conifer over the next 30-40 years in a series of operations using a Selection System. Leave selected conifer trees in groups or as scattered individuals where appropriate.
- Minimum intervention woodland (Natural Reserve).
- Retain conifer woodland in the long term.
- Coppice woodland on a rotation.
- Existing open space.

- | | |
|---|--|
| <p>Clearfell</p> <ul style="list-style-type: none"> 2007-2011 2012-2016 2017-2021 2022-2026 2027-2031 2032-2036 2037-2041 Beyond 2042 | <p>Remove most conifer in one operation to leave at least 40% broadleaf cover</p> <ul style="list-style-type: none"> 2007-2011 2012-2016 2017-2021 2022-2026 2027-2031 2032-2036 2037-2041 Beyond 2042 |
|---|--|

- Open water
- Compartments
- Sub-compartments
- Forest road
- Forest access tracks
- Watercourse

APPROVED BY (FC):
DATE:

5. Working Woodlands

5.3 Management Prescriptions

(Ref: Habitat Restoration and Felling Map)

Clearfelling

Only one small stand of Norway spruce will be clearfelled in the green phase (<2013). All windfirm native broadleaves will be retained; all other broadleaves will be coppiced and allowed to regenerate. Ground preparation in the form of lop and top removal and scarification will be necessary to encourage desirable species regeneration.

PAWS Restoration Felling

These are conifer plantations identified as being heavily intruded with native broadleaves, where more than 30% of the canopy is currently conifer. The aim in these compartments is for a predominantly broadleaf stand. The phases show when the conifer proportion will fall to below 20% and this will normally require a final felling of more than 30% of the canopy.

In stands containing Western hemlock, the aim will be to remove this conifer completely, unless it shows no propensity to regenerate. In stands containing Norway spruce or larch, up to 20% may remain as groups or feature trees. All non-windfirm broadleaves will be coppiced and allowed to regenerate. Areas along riparian zones will be managed in accordance with FC Forests and Water Guidelines.

Gradual removal of conifer

This prescription applies to mixed stands primarily containing pine. The pine proportion will be gradually reduced to less than 20%, with the aim of encouraging native broadleaf regeneration under an existing canopy. During thinning, Scots will be favoured over Corsican, but both will come second to windfirm native broadleaf timber trees. All non-windfirm broadleaves will be coppiced and allowed to regenerate.

Broadleaved management

Existing native broadleaved areas will be managed to develop into high forest by appropriate silvicultural systems, typically a shelterwood system.

Developing native broadleaved regeneration on clearfell sites will be allowed to grow on and become high forest. Retained native broadleaves on these clearfell sites will provide age class diversity.

All other existing PAWS will be managed to develop into native broadleaf high forest. Where beech is dominant, it will be gradually removed in favour of native broadleaves.

Sweet Chestnut coppice

Sweet chestnut coppice which is adjacent to or close to the main forest ride network will continue to be maintained on a 15 year economic rotation.

Sweet Chestnut and non-native broadleaf removal

There are two small sub-compartments where the originally planted Sweet chestnut and poplar have been superseded by heavy native broadleaved intrusion. The originally planted components will be removed in favour of the native broadleaved components.

Heathy woodland

Two sub-compartments of Corsican pine which have strong heathland characteristics will be managed as heathy woodland. The conifer element will be reduced at each visit and heather encouraged. Maiden native broadleaf regeneration will be retained and inappropriate broadleaf regeneration will be controlled. At the end of the FDP, 50 percent of the area will be open, with scattered conifers and native broadleaves making up the tree component.

Open space

Rotational open space is found along the road and ride network. A margin, varying in width from 15 - 30 metres comprising broadleaf coppice, scrub and a herb layer, will be managed on a 7 year rotation.

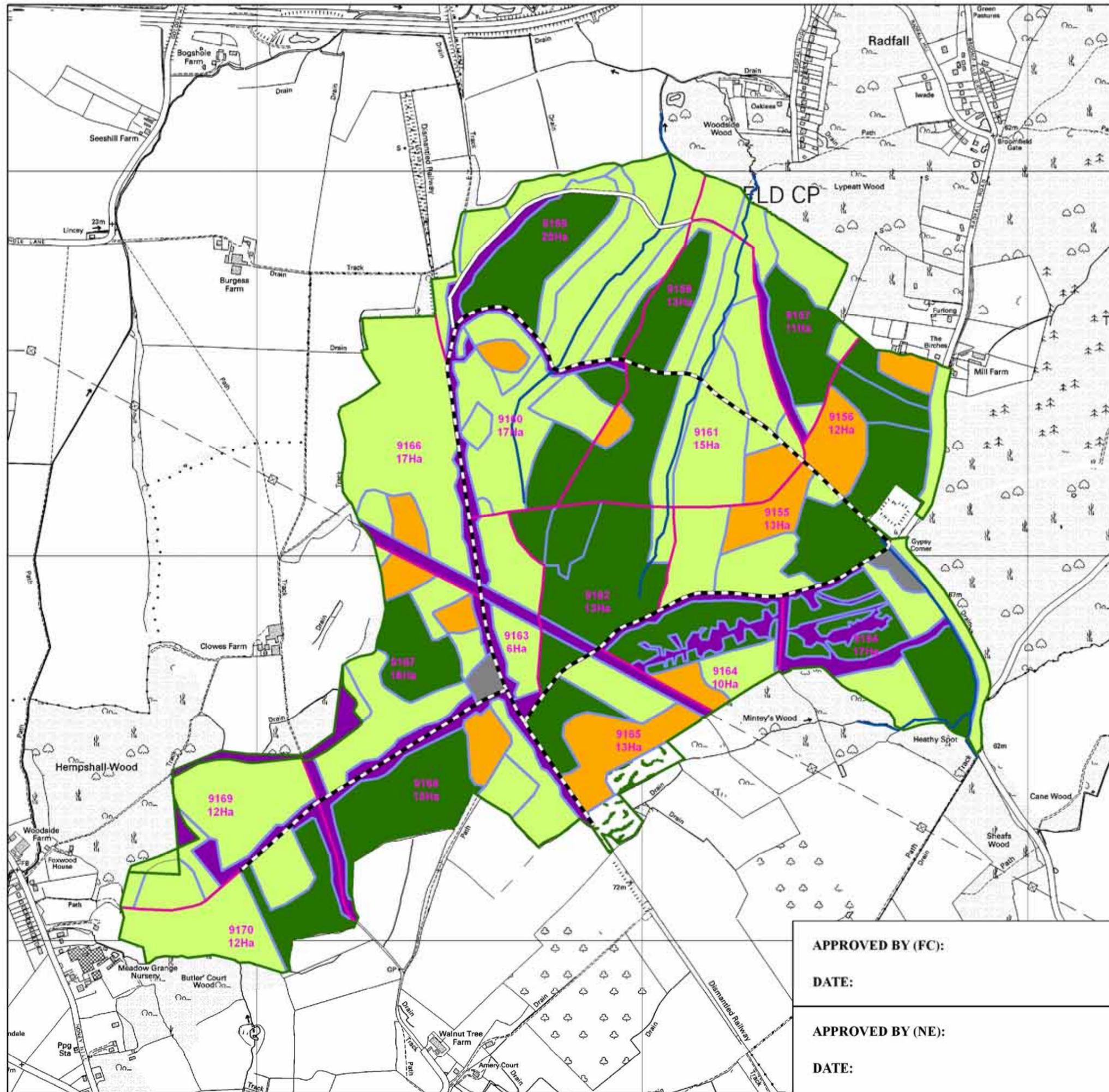
Temporary open space follows felling when the site is relatively open before the next stand of trees develops.

Permanent open space will be centred on the heathy woodland area and the heritage sites, amounting to about 7 hectares.

Natural Reserve - Wet Woodland

This is a small area of 2.4 hectares, and the only area of W8 wet woodland within Clowes wood. It contains minor components of poplar and Norway spruce. It is a rare habitat within SE England and will be managed under a non-intervention regime.


Forestry Commission
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South East England
Clowes Wood
Future Habitats Map



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 Predominantly native woodland with a small element of conifer (<20%). Small patches of open space support early successional vegetation during the establishment of young native trees. Shifting areas of wooded heath support 20-70% tree canopy cover & are located close to permanent network of environmental corridors.

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 Mixed woodland with native trees regenerating amongst & gradually replacing conifer woodland. Small patches of open space support successional vegetation during the establishment of young native trees. Shifting areas of wooded heath support 20-70% canopy cover and are located in close proximity to the permanent network of environmental corridors.

- 
 Native broadleaf wet woodland (Natural Reserve).

- 
 Sweet Chestnut Coppice on a rotation providing cyclical open space with early successional vegetation during the re-growth phase of the stools.

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 Permanent network of open habitat supports heather and associated species. These environmental corridors measure 10-40m in width and are integrated with patches of wooded heath. They also link up with patches of open habitat on both FC and neighbouring land.

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 Car Park/Pond/Recreation Area

-  Compartments
-  Sub-compartments
-  Forest road
-  Forest access tracks
-  Watercourse
-  Overhead powerline

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5.4 Working Woodlands Objectives

Forest Design Plan Objectives	Forest Design Plan Outputs At Year 10 (2018)	Monitoring
<p>Working Woodlands</p> 	Forestry Commission woodland continues to provide examples of best practice for appropriate and sustainable management and utilisation of England’s woodland resource.	FSC Certification. UKWAS audit.
	An output of sustainably produced wood products has been maintained for local and national markets.	Sales Recording Package (SRP). Production forecasts.
	Local contractors have been encouraged to tender/bid for forestry contracts.	Sales Recording Package (SRP).
	Timber products have been produced through sustainable thinning of the forest (except in ‘natural reserves’) and from clearfell and lower impact harvesting operations.	Sales Recording Package (SRP). Operational site assessments have prescribed sustainable thinning volumes.
	Gradual restoration to site native species has taken place, replanting and natural regeneration have been employed to replace the felled trees and heathy woodland, open space and the Natural Reserve have been appropriately managed.	Forest Design Plan review, OSA detail and site inspection.