WOODLAND TRUST

Fingle Woods

Management Plan 2017-2022

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MAPS

THE WOODLAND TRUST

INTRODUCTION

The Trust's corporate aims and management approach guide the management of all the Trust's properties, and are described on Page 4. These determine basic management policies and methods, which apply to all sites unless specifically stated otherwise. Such policies include free public access; keeping local people informed of major proposed work; the retention of old trees and dead wood; and a desire for management to be as unobtrusive as possible. The Trust also has available Policy Statements covering a variety of woodland management issues.

The Trust's management plans are based on the identification of Key Features for the site and setting objectives for their management. A monitoring programme (not included in this plan) ensures that these objectives are met and any necessary management works are carried out.

Any legally confidential or sensitive species information about this site is not included in this version of the plan.

PLAN REVIEW AND UPDATING

The information presented in this Management plan is held in a database which is continuously being amended and updated on our website. Consequently this printed version may quickly become out of date, particularly in relation to the planned work programme and on-going monitoring observations.
Please either consult The Woodland Trust website www.woodlandtrust.org.uk or contact the Woodland Trust (wopsmail@woodlandtrust.org.uk) to confirm details of the current management programme.

There is a formal review of this plan every 5 years and a summary of monitoring results can be obtained on request.

WOODLAND MANAGEMENT APPROACH

The management of our woods is based on our charitable purposes, and is therefore focused on improving woodland biodiversity and increasing peoples' understanding and enjoyment of woodland.

Our strategic aims are to:

- Protect native woods, trees and their wildlife for the future
- Work with others to create more native woodlands and places rich in trees
- Inspire everyone to enjoy and value woods and trees

All our sites have a management plan which is freely accessible via our website www.woodlandtrust.org.uk. Our woods are managed to the UK Woodland Assurance Standard (UKWAS) and are certified with the Forest Stewardship Council® (FSC®) under licence FSC-C009406 and through independent audit.

In addition to the guidelines below we have specific guidance and policies on issues of woodland management which we review and update from time to time.

We recognise that all woods are different and that the management of our sites should also reflect their local landscape and where appropriate support local projects and initiatives. Guidelines like these provide a necessary overarching framework to guide the management of our sites but such management also requires decisions based on local circumstances and our Site Manager's intimate knowledge of each site.

The following guidelines help to direct our woodland management:

1. Our woods are managed to maintain their intrinsic key features of value and to reflect those of the surrounding landscape. We intervene when there is evidence that it is necessary to maintain or improve biodiversity and to further the development of more resilient woods and landscapes.
2. We establish new native woodland using both natural regeneration and tree planting, but largely the latter, particularly when there are opportunities for involving people.
3. We provide free public access to woods for quiet, informal recreation and our woods are managed to make them accessible, welcoming and safe.
4. The long term vision for our non-native plantations on ancient woodland sites is to restore them to predominantly native species composition and semi-natural structure, a vision that equally applies to our secondary woods.
5. Existing semi-natural open-ground and freshwater habitats are restored and maintained wherever their management can be sustained and new open ground habitats created where appropriate.
6. The heritage and cultural value of sites is taken into account in our management and, in particular, our ancient trees are retained for as long as possible.
7. Woods can offer the potential to generate income both from the sustainable harvesting of wood products and the delivery of other services. We will therefore consider the potential to generate income from our estate to help support our aims.
8. We work with neighbours, local people, organisations and other stakeholders in developing the management of our woods. We recognise the benefits of local community woodland ownership and management. Where appropriate we allow our woods to be used to support local woodland, conservation, education and access initiatives.
9. We use and offer the estate where appropriate, for the purpose of demonstration, evidence gathering and research associated with the conservation, recreational and sustainable management of woodlands. In particular we will develop and maintain a network of long-term monitoring sites across the estate.
10. Any activities we undertake will conform to sustainable forest management principles, be appropriate for the site and will be balanced with our primary objectives of enhancing the biodiversity and recreational value of our woods and the wider landscapes.

SUMMARY

This public management plan briefly describes the site, specifically mentions information on public access, sets out the long term policy and lists the Key Features which drive management actions. The Key Features are specific to this site – their significance is outlined together with their long (50 year+) and short (5 year) term objectives. The short term objectives are complemented by a detailed Work Programme for the period of this management plan. Detailed compartment descriptions are listed in the appendices which include any major management constraints and designations. A short glossary of technical terms is at the end. The Key Features and general woodland condition of this site are subject to a formal monitoring programme which is maintained in a central database. A summary of monitoring results is available on request.

1.0 SITE DETAILS

Site name:	Fingle Woods
Location:	Nr Dunsford, Devon
Grid reference:	SX762895, OS 1:50,000 Sheet No. 191
Area:	265.24 hectares (655.42 acres)
Designations:	National Park, Planted Ancient Woodland Site, Scheduled Ancient Monument, Site designated as Woodland of Conservation Importance

2.0 SITE DESCRIPTION

2.1 Summary Description

This amazing site is located on the southern side of the steep Teign Valley on the northern fringes of Dartmoor. Jointly owned by the Woodland Trust and the National Trust in the first venture of its kind between the two organisations, Fingle Woods is undergoing extensive restoration to repair the areas damaged by maturing conifer. Public access has already been improved with 45km of new footpaths which has opened up the area to provide a fantastic woodland landscape to explore.

2.2 Extended Description

Fingle Woods is a complex of three woodlands, Fingle, Halls Cleave and Cod Wood on the northern fringe of Dartmoor. The three sites were purchased in August 2013 following the formation of a partnership between the Woodland Trust who own Fingle Wood, and Halls Cleave Wood and National Trust who own Cod Wood.

Fingle is one of the largest areas of ancient woodland with restoration potential in England and it links at a landscape scale to woodland and wood pasture at both western and eastern ends of the Teign Valley Gorge. The whole area forms one of the largest contiguous areas of woodland in south west England. The adjoining woodlands are designated as a Sites of Special Scientific Interest (SSSI) Teign Valley Woods SSSI, Rushford Wood SSSI and Whiddon Deer Park SSSI , and the woods to the east are also designated as a Special Area Conservation Teign Valley Woodlands

(SAC) for the ancient upland oak wood, and heathland which is of international significance. Despite the lack of designations Fingle Woods retains a number of features associated with these important habitats.

The site is typical of the Dartmoor National Character area (NCA150/NE519) which states 'Dartmoor's extensive upland moorland core rises above the surrounding small-scale, enclosed, predominantly pastoral landscape. Granite unites and characterises the entire National Character Area. On the moors the distinctive tors create key landscape features, interrupting otherwise unbroken skylines and ridges, and provide focal points for visitors. Isolated farmsteads and scattered villages utilise granite for buildings and walls; and the area's strong time depth and rich cultural heritage are visually evident because of the granite, which includes the largest concentration of prehistoric stone rows in Britain.

The high moors are overlaid with thick deposits of peat and support internationally important blanket bogs surrounded by large expanses of upland heathland and grass moorland. The bogs and valley mires absorb and store significant amounts of water, as well as carbon, released into the 16 rivers and 8 reservoirs that supply the surrounding urban and rural populations and industry. As rivers leave the high moor they flow through deep-cut valleys steeped in woodland – both semi-natural broadleaved and coniferous plantation. The fast-flowing rivers, strewn with granite boulders, are popular for recreation, both passive and active'

Fingle Woods are to be managed in partnership as a single landscape unit; The Woodland Trust is responsible for woodland management and the National Trust the public access arrangements, as well as specialist elements such as Scheduled Ancient Monument the Iron Age Hill Fort.

Recent History

The First Edition Ordnance Survey of 1880 shows the vast majority of today's Fingle Wood comprising Hore Wood, Butterdon Ball, Houndsmoor Wood, Hitchcombe Wood, Seamans Borough, Langland Wood as an area of intact working woodland with numerous tracks, inferring the dominance of oak coppice. The area now known as Willingstone Plantation is shown as fields, much of Wooston Castle is rough grazing and the far eastern edge of the wood close to Clifford Bridge is a series of small fields.

The site was acquired by the Dartington Estate in the 1930s. The earliest plantings of larch and beech date from the 1930s much of which has been felled and restocked with Douglas fir. The plantings of the Dartington Estate followed in phases and during the Second World War there was an urgent need for mining timber and 300 acres of coppice was felled and replanted. This was followed in 1947, 1955 and 1960s when more coppice was cleared and conifer planted. Initially, this was larch but then a wider range of species such as Western Hemlock, Grand Fir, Coast Redwood but only more latterly Douglas fir. The farmland of Willingstone Plantation was planted with European Larch but this developed poorly and was cleared and replanted from about 1947 onwards.

The site was renowned for its high quality conifer and in particular Japanese Larch and Douglas fir but these mature crops have been clear felled or were windblown in the storms of the later 1980s and in 1990 when most of the remaining mature crops were cleared and restocked to Douglas fir.

The bulk of the commercial conifer is now Douglas fir (160ha) and this dates in the main from the

mid 1980s. These sub compartments are almost entirely un-thinned, and present the most significant economic silvicultural challenge. The older conifer crops contain an array of species with Japanese Larch (40ha) being dominant. Where economic these crops have been worked well but there remain poor mixed crops of Scots/lodgepole pine and less commercial species that require intervention to preserve their commerciality.

3.0 PUBLIC ACCESS INFORMATION

3.1 Getting there

Public transport
For up-to-date information on public transport, visit traveline.org.uk or phone 0871 200 2233.

By car:
From Exeter take the A30 westbound. At Woodleigh junction follow the signs to Crockernwell from where Fingle Bridge is signposted.
From the A30 west, at Whiddon Down junction, take the exit signposted to Crockernwell and Cheriton Bishop, from where Fingle Bridge is signed.
From Exeter, leave the A30 at the Exeter/Ide junction and head west on the B3212 towards Dunsford where a car park is on the right just beyond Steps Bridge.
From Moretonhampstead head east on the B3212 towards Dunsford, where a car park in on left a few hundred yards before Steps Bridge.
Steps Bridge (SX 802883) car park provides access to the far eastern end of the Fingle complex.

3.2 Access / Walks

The Fingle Bridge Inn (EX6 6PW) provides an excellent starting point from which to explore Fingle Wood. There is ample parking on both sides of Fingle Bridge, including a National Trust car park with free public conveniences. We are currently assessing the footpaths within the woods and exploring opportunities for waymarking some of the extensive path network.

Walking east from the car park at Fingle Bridge along the riverside walk, you meet the road near Clifford Bridge. From here you can continue along the main river into Cod Wood or walk through Halls Cleave (the hidden valley) towards Mardon Down.

4.0 LONG TERM POLICY

To develop a long term strategy to achieve the aspiration of the agreed "Sprit of Place" statement which states "In the coming decades, we want to help the gorge to clothe itself again, reverting to its more natural state. Fingle Wood's inheritance will help shape its future, making it a place of conservation in changing environment, and inspiration and enjoyment for everyone – today and for the generations to come"

In practice this will be to secure and enhance the semi-natural components of the site associated with western oak woodland habitat in a favourable condition and maintain and enhance associated flora and fauna. On-going woodland management and grazing will be necessary to maintain the complex interaction of woodland and open habitats to provide sufficient habitat niches to sustain the current range of species diversity. Areas of conifer will continue to be cyclically worked to reduce their dominance and to limit conifer regeneration with the intention of restoring these area to largely native woodland canopy over the next 50 years.

The spirit of place is intended to place Fingle and its natural and cultural heritage at the heart of the Teign Gorge landscape, and to act as a catalyst for community action to enhance and sustain their local natural and cultural heritage.

This will be achieved through the development of sustainable package of infrastructure, training, interpretation and public engagement that gives greater access and opportunities for people to explore, enjoy and work in the valley and further afield.

Vision

• To restore the native woodland character of a predominantly sessile oak woodland.
• To work through the current conifer cycle in a conventional way but with a view to a continuous cover approach with the emphasis on native woodland species, but sustaining conifer on secondary woodland areas.
• To protect and enhance habitats suitable for the notable species present in the Teign Valley and ensure sufficient survey work is undertaken identify a range of notable species across a full range of taxa.
• To work in partnership with the National Trust and Devon Wildlife Trust in managing an overall vision for the landscape.
• Management will be compliance with the UKWAS standard, under the auspices if an independently audited certification process and in line with best practice.

Objectives

1. Managing at a landscape scale in partnership with neighbour land holdings of Woodland Trust, National Trust and increasingly wider partners including the RSPB and Devon Wildlife Trust
2. Restoration of all conifer PAWS.
3. Protection and where possible enhancement of remnant semi-natural features
4. Upgrade harvesting access to make it suitable for modern harvesting and haulage vehicles to sustain a timber harvesting operation in the long term.
5. To develop the demonstration potential of the restoration activity at Fingle and to disseminate and

share progress and findings to land managers and land owning audiences.
6. Develop permissive access utilising and enhancing the existing track network, for a diverse range of user groups i.e. walking, riding, disability groups and cycling.

Strategy

• Target un-thinned conifer stands to improve growth, yield and quality within first 5 years
• Thin all conifer and productive sub-compartments at least once in the first 10 years of ownership
• Continue conventional thinning operations in older conifer crops, favouring stems for long term retention to aid continuous cover approach
• During thinning operations carefully increase light levels to favour regeneration of native ground flora and tree species.
• Thin to favour semi-natural “hot spots”, buffering and allowing gradual expansion
• Review and potentially extend the very limited areas of open ground against moorland edge, along central water course and forest rides.
• Develop permissive access in partnership with neighbouring land holdings and review potential for additional activity

5.0 KEY FEATURES

The Key Features of the site are identified and described below. They encapsulate what is important about the site. The short and long-term objectives are stated and any management necessary to maintain and improve the Key Feature.

5.1 Ancient Woodland Site

Description

Fingle is a complex of three woods in the Teign Valley , Fingle, Halls Cleave and Cod Wood The Valley is peri glacial with steep wooded sides which slope down to the Teign River which is a significant torrent river. The woodland is continuous on the southern side of the steep Teign Gorge . The extensive Teign Valley Woodland SSSI/SAC ancient upland oak wood, and heathland of the adjoining the woodland complex is of international significance and Fingle Woods retain a number of features associated with these habitats.

Fingle is a very significant part of the prehistoric landscape, with the Iron Age Wooston Castle Hill Fort a Scheduled Ancient Monument within the wider context of the Teign Valley and its two associated hill forts. Woodland management goes back to medieval times and many charcoal hearths survive in the ancient woodland areas which also include old wood banks and veteran boundary pollards. Elsewhere derelict ancient hedge banks indicate the presence of former small field systems. Significant heritage features nearby, include the medieval Fingle Packhorse Bridge, associated ancient tracks and the remains of several mills along the River Teign.

The woodland links in the east with the National Trust's woodlands of St Thomas Cleave, Bridford, Dunsford and to the west with the Castle Drogo Estate. Despite distinct legal ownership boundaries the three woodlands of Fingle are managed in partnership with the National Trust under a joint management agreement as a single landscape unit, The Woodland Trust is responsible for Woodland Management and the National Trust the public access arrangements, as well the historic environment and in particular specialist elements such as the Iron Age Hill Fort.

The overriding objective of management is the long term restoration of the ancient woodland areas to a predominately broadleaf condition but to undertake this whilst respecting the commercial significance of the woodland and is value to the forest industry. Management is intended to demonstrate the commercial viability of restoration management. The site was owned by the Dartington Estate from the early 1930s through to the 1970s. The influence of Leonard Elmhirst the owner of Dartington and Wilfred Hiley the forest economist on the development of commercial forestry industry in the UK the 20th century is not to be underestimated. The legacy of this important period in the woodlands history is evident in the structure of woodlands.

Fingle Wood - Lot1

This woodland is almost entirely conifer (131 ha), with a small area of open ground (4.76ha) mostly in the vicinity of the Iron Age Hill Fort Wooston Castle. Small areas of pre-plantation oak coppice and native woodland are present (21ha), together with veteran trees along the River Teign and in conjunction with historic boundaries and features such as Wooston Castle. In addition there is a small amount of plantation beech (10 ha) and regenerating broadleaves establishing following crop

failures (8ha).Approximately 86 hectares is PAWS, of which 65 hectares is conifer dominated and 21 hectares broadleaf dominated (Beech). Of the secondary woodland 26.5 ha was assessed as having ancient woodland characteristics in a review of the ancient woodland inventory of Dartmoor.

Halls Cleave Wood - Lot 2 (including Coleridge Wood)

The wood straddles a small watercourse that runs north into the River Teign. Locally it's described as the hidden valley as the relatively narrow entrance of the valley is hidden from view where it meets the main river at Clifford Bridge. The conifer dominated areas of the wood covers some 71 ha, a recent outbreak of Phyotphthora ramourm led to the felling of two sub compartments of mature larch which covered the entire area of Coleridge Wood, 5 ha was restocked with native broadleaves and an area of 9.13 ha of suppressed oak coppice was retained. After an extensive wind throw event 4 hectares of Sitka Spruce was cleared and this has been partially re-stocked with broadleaves and the remaining area retained for natural regeneration. Approximately 31 hectares is PAWS, but only 16 hectares is now conifer dominated following the recent disease outbreak. Of the secondary woodland 58 ha was assessed as having ancient woodland characteristics in a review of the ancient woodland inventory of Dartmoor.

Cod Wood Lot 3

Cod Wood forms the eastern section of the Fingle Woods complex. The woodland has mostly been converted to conifer (41.7 ha), there is no open ground identified in the sub compartment schedule. This site retains just over 7 ha of pre-plantation oak coppice and native oak woodland, together with occasional veteran trees along the River Teign and in conjunction with historic boundaries and features such as the boundary with St Thomas Cleave Wood. A small amount of plantation beech (2 ha) and small amount or regenerating broadleaves on recent clear-fell areas, which have regenerated since 2005 (9ha). Approximately 54 hectares is PAWS, of which 43 hectares is conifer dominated and 16 hectares broadleaf dominated (MB/MC regenerating). Of the secondary woodland 3 ha was assessed as having ancient woodland characteristics in a review of the ancient woodland inventory of Dartmoor.

Ancient Woodland

The Ancient Woodland Inventory (Nature Conservancy Council 1988) misses a number of important areas within the Fingle complex. These include Seamans Borough, Hitchcombe Wood, and part of Butterdon Ball Wood. Within Halls Cleave and Coleridge Wood the areas indicated as ancient on the inventory have rather arbitrary and linear boundaries and some "fine tuning" is needed to match these "boundaries" to historic field and wood banks. Reference to the First Edition OS provides a better representation of the "true" ancient woodland areas.

A survey of ancient woodland undertaken by Dartmoor National Park (Survey of vegetation by N.F Stewart June/July 1996) - covered the whole of Cod Wood (Lot3) and Halls Cleave/Coleridge (Lot 2) but only part of Fingle Wood (Lot 1) missing the areas presently excluded from the Ancient Woodland inventory east of Wooston Castle i.e. missing Seamans Borough and Hitchcombe Woods.

The detailed vegetation survey indicated the areas of interest were largely confined to the main river and the riparian margins of drainage lines, existing areas of semi natural woodland, wood/hedge banks and areas of recent felling and poorly established re-stock sites.

National Vegetation Classifications were undertaken:

Lot 1 – Main (Semi-Natural) NVC woodland habitats noted include:
W11a – Sessile oak, birch wood sorrel (4.7 ha) – mostly existing oak coppice
W17b – Sessile oak, birch, fork moss, bilberry (11.4 ha) – mostly existing oak coppice
W15a/b/c – Beech, wavy hair grass (5.4ha) – mostly beech plantation
CW25a/b – restock areas dominated by bramble/bracken (likely issue of coarse vegetation?)

In addition there were 4 wet woodland types identified.

Lot 2 - Lot 1 – Main (semi-natural) NVC woodland habitats noted include:
CW17b/CW11a – Sessile oak, birch, hair moss, bilberry and wood sorrel – 16a (establishing under 1947 larch areas)
W15a/b/c – Beech, wavy hair grass (3.7ha) – mostly beech plantation
CW25a/b – restock areas dominated by bramble/bracken (30ha) -likely issue of coarse vegetation
Lot 3 - – Main (semi-natural) NVC woodland habitats noted include:
W10a – Sessile oak, bramble bracken, along riverside margin 4.8 ha
W11a – Sessile oak, birch wood sorrel (5.1 ha) – mostly existing oak coppice
W17b – Sessile oak, birch, fork moss, bilberry (7.8 ha) – mostly existing oak coppice

In addition there were 4 wet woodland types identified.

CW11a/17b – larch areas dominated by bramble/bracken (30ha) - likely issue of coarse vegetation

The survey highlights the unintended “benefits” to the semi- natural vegetation structure that remains on the site. Dartingtons preferred management approach was to have numerous small sub-compartments of different species, age classes and management treatments. This has created a “patch work” across the site which has an extensive semi-natural fringe, much of which has which has the potential to be linked during early harvesting interventions focused on semi-natural edges.

Despite the overall conifer dominance Fingle Woods has proved to contain a surprising array of important species despite the often small fragmented nature of semi-natural habitat. This includes:

Veteran Trees

Fingle Woods holds an important population of veteran trees, either in the form of pollards or coppice stools. Veteran trees at Fingle are mainly oak, though there are also ash, holly and rowan. Bats use the hollows found in veteran trees, which are also highly valuable for lichens. There are also many invertebrates which depend on the different types of decaying and dead wood associated with these old trees.

Dormouse

A 2014 survey (Raven Quest 2014) found dormouse at five locations in Fingle Woods, mostly associated with surviving stands or hazel coppice, or relict hedgerows. These are: adjacent to the Wooston Castle hill fort car park; opposite Clifford Cottages on the Willingstone to Clifford Bridge lane; by the river opposite Upperton Wood; at the southern end of Coleridge Wood, on both sides of

the Mardon to Clifford Bridge lane; in the overgrown wet meadow at the eastern end of Cod Wood. In practice as pre-harvesting surveys indicate Dormice appear widely within dense conifer stands where they are fringed with more typical semi-natural habit.

Open Habitats

Despite covering a tiny proportion of the site, open habitats supported some of the highest priority species in Fingle, including the GB and England Red Listed near threatened plants Ivy-leaved bellflower Wahlenbergia hederacae and Slender bird's-foot trefoil Lotus angustissimus and GB threatened Toadflax-leaved St. John's wort Hypericum linariifolium. They also supported priority species of butterfly notably Dingy Skipper, Pearl-bordered fritillary and Wall.

River Teign

The river supports two otter holts, and is also home to a number of pairs of dipper, kingfisher and grey wagtail; the river is an important resource for wild fish, including salmon, sea-trout and trout. The river is also an important foraging feature for bats, including the very rare barbastelle bat, which is thought to have a roost in the vicinity of Fingle Woods.

Vascular Plants

Much of the flora that had been associated with the former areas of ancient woodland, and areas of valuable open habitat such as lowland acid grassland, lowland heathland and lowland meadow, has been lost as a result of the conifer planting . Nevertheless, Fingle still supports small populations of notable plant species including Ivy-leaved bellflower Wahlenbergia hederacae, Toadflax-leaved St. John's wort Hypericum linariifolium and Slender bird's-foot trefoil Lotus angustissimus (all three England Red Data List) and the nationally scarce Tutsan Hypericum androsaemum. In addition, The N T Conservation Evaluation found several small stands of woodland with a rich ancient woodland ground flora, including wild daffodil, wet flushes with a diverse range of flora including Greater tussock-sedge Carex paniculata and some impressive stands of Royal Fern Osmunda regalis.

Lichens

A lichen survey undertaken in 2014 (Sanderson 2014) found a number of scarce and threatened lichens. Sanderson recorded 137 lichen species, most of which were epiphytic (i.e. grow on trees). Based on this initial survey, Sanderson concluded that "A relatively rich oceanic woodland assemblage was recorded from the total complex but individual woods are much poorer. This is a relic assemblage, with many more sensitive species recorded as low populations scattered through the surviving native woodland patches where suitable conditions occur."

Bats

Nine species of bats were recorded in Fingle Woods (Angell 2014). This is over half the species in the entire UK bat fauna, making Fingle Woods significantly important for its bat fauna. Barbastelle, serotine, noctule and Lesser horseshoe bats were recorded, along with common, soprano and Nathusias' pipistrelle, a myotis bat; and a Long-eared bat. It is not possible to identify myotis or Long-eared bats to species level without catching them; it is possible that both Brandt’s and Whiskered are also present at Fingle.

Birds

Fingle is an important site for birds, including a number of Schedule 1 Species. A bird survey in 2014 concluded that Fingle Woods supports 36 species of breeding birds (Macklin 2014). Species of high conservation concern (red-listed sp.) were Lesser-spotted woodpecker, song thrush, wood warbler, spotted flycatcher, marsh tit, and yellowhammer. Species of conservation concern (amber listed sp.) were green woodpecker, grey wagtail, dunnock, redstart, mistle thrush, whitethroat, willow warbler, pied flycatcher and bullfinch. All amber and red-listed species have experienced a decline or severe decline over the last 25 years.
All the red-listed species together with dunnock and bullfinch are also listed as Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities Act (2006). Fingle appears to be particularly valuable for wood warbler, a species which has seen serious recent declines elsewhere in western and south western England, and further research is needed to establish how many breeding pairs Fingle supports, and what implications that information has for future management.

Lepidoptera

Fingle Woods have significant value for Lepidoptera (butterflies), despite much of it being unsuitable conifer habitat. Those areas which are suitable for butterflies are areas of semi-natural broadleaved woodlands, open areas of acid grassland and heathland, some areas of bracken and areas of wildflower meadow and pasture. These areas support the English Biodiversity list species (formerly priority species in the UK Biodiversity Action Plan) Dingy Skipper, Pearl-bordered fritillary and Wall. In addition, another very threatened priority species the High Brown fritillary has been recorded in the vicinity of Fingle Woods in the past and could either still be present in small numbers or could re-colonise should suitable habitat conditions be provided. High Brown fritillary has been recorded from the adjacent Devon Wildlife Trust nature reserve at Dunsford Wood.
The Marsh fritillary has also been recorded from areas very near to Fingle Woods and it is highly likely that it would have occurred in open areas before the conifer plantations were created. The Marsh fritillary food plant Devil's-bit scabious is present in the rides of Fingle and with suitable management; Marsh fritillary could recolonize this site. A comprehensive moth survey has not yet been undertaken, but the nationally scarce Yellow-legged clearwing has been recorded in Fingle (Boyce 2015).

Other Invertebrates

As with the other wildlife significance of Fingle Woods, the substantial value of the site for invertebrates (other than Lepidoptera) is associated with relict areas of ancient woodland and veteran trees, both with dead and dying wood, with wood edges and the surviving woodland field and ground layers of remnant deciduous woodland together with wet flushes, open habitats and the river. Invertebrates associated with decaying wood were particularly notable, including one nationally rare, one Red Data Book and ten nationally scarce beetles associated with rotting wood, wood mould or wood-rotting fungi. There is also a significant population of the Southern Wood Ant Formica rufa, and an assemblage of invertebrates which live in their nests and a nationally scarce fly which is believed to be a parasitoid of snails. The Section 41 species Violet oil-beetle Meloe violaceus has recently been recorded from the Teign Valley; and two nationally scarce fungus gnats were recorded in 2011 (A Foster pers. comm.).

Following the recent finding of rare species such as the Running lichen spider (Philodromus margaritatus) M. Parkins 2016 and Golden Haired Longhorn Beetle (Leptura aurulenta) M. Parkins 2017 going forward it is proposed that all new species are recorded on line via the I Record system https://www.brc.ac.uk/irecord/ in time the intention is that this will build into a useful database for reference purposes.

Recent Management History

Harvesting Contract – 2015 to 2019

A five year harvesting contract has been let to Euroforest for the “commercial” harvesting activity and this will seek to ensure all unthinned priority areas of conifer are thinning within the life of this contract. This means that around 30 hectares of unthinned conifer needs to be targeted each year, alongside the maintenance of a normal conifer rotation for other sub-compartments. As part of this operation areas of semi-natural habitat will be protected and extended, and in particular track corridors widened to develop zoned habitat development along the track margins.
As part of the commercial harvesting there have been four plant health notices requiring the clearance of infected larch stands.

Williingstone Plantation (secondary) Cpts 11a 1.98 ha, 11c 1.17 ha and 11d 0.32 ha

A plant health notice was issued in 2016, an area of larch with some Norway Spruce was cleared and restocked with native broadleaves, in line with NVC W17

Coleridge Wood(PAWS) – Sub Cpts 22a 11.36 ha and 22c 1.77 ha

An outbreak of Phyotphthora ramourm in 2015 led to the felling of two sub compartments of mature larch which covered the entire area of Coleridge Wood, 5 ha was restocked immediately with native broadleaves protected in 1.5 m tree shelters and an area of 9.13 ha of suppressed oak coppice was retained, effectively “restoring” this area.

Hore Wood (PAWS) 7e 0.43 ha , 6m 0.77 ha, 6n 0.33, 6d, 0.65, 6j (small part only affected)

Two small areas have been identified with phytophthora ramourm, one area in 2015 (7e) which was restocked and a second area (6m) in which supressed oak coppice has been retained and the narrow nature of the area limits replanting opportunities and it was agreed with the National Trust.

Halls Cleave (secondary) 7.44 ha

One other area of clear-fell undertaken was to clear an extensive area of windthrow affecting part of sub cpt 25b. This was a mature area of Sitka Spruce which in part covered an important area of “wetland mire ” , this area has been partly restocked with native broadleaves and remainder left to allow natural regeneration to establish.

The non-commercial harvesting activity is focussed within the HLF Management and Maintenance Plan for the next 10 years under Aim 1 – To undertake a programme of work to restore ancient

woodland and other habitats and features, conserve the historic environment, enhance the site for priority species, monitor our work and disseminate the results. This Aim has been broken down into five work strands

1. PAWS, ancient woodland, charcoal hearths, wood banks
a. Existing Ancient Semi-Natural Woodland
b. Broadleaved Plantations
c. Conifer Plantations – River Teign Corridor
d. Conifer Plantations – Stream Corridors
e. Conifer Plantations – mainly former ancient woodland areas
2. River Teign, streams
3. Wooston Castle hillfort, open habitats, meadows and butterflies (see KF Historic Features)
4. Veteran trees, lichens, deadwood invertebrates
5. Conifer (and broadleaved) Plantations, mostly on former fields. (See KF Secondary Woodland)

The restoration activity in this Key Feature are covered by Stands 1, 2, and 4, work to to-date and over the next 5 years will be undertaken as follows:

Strand 1

The first strand relates to the Ancient Woodland area within Fingle and is by far the largest (>120 ha); it has been further sub-divided into categories according to features of heritage value and reflecting different management requirements. Subsequent strands reflect the different valuable heritage features which have been recorded at Fingle and identified as priorities within the Conservation Plan.

Existing Ancient Semi-Natural Woodland

These sub-compartments support surviving fragments of ancient semi-natural woodland, principally oak coppice; management activities will focus on protecting the existing resource of ancient semi-natural woodland.

Broadleaved Plantations

These sub-compartments comprise a mix of Beech plantation and broadleaved plantation on former ancient woodland areas. Management activities will focus on regeneration of native broadleaved trees and shrubs.

Conifer Plantations – River Teign Corridor

The primary objective for this group of sub-compartments along the River Teign – mainly conifer plantations on former ancient woodland – is PAWS restoration within a 60m wide corridor on the south bank of the River Teign to create a largely semi-natural corridor of high conservation value.

Conifer Plantations – Stream Corridors

The primary objective for this group of sub-compartments along the smaller stream corridors – mainly conifer plantations on former ancient woodland – is PAWS restoration within a 20m wide corridor on

either side of the streams (increasing this to 40m in Halls Cleave where the watercourse is a more significant).

Conifer Plantations – Mainly former ancient woodland areas

These are all conifer plantations, mainly on former ancient woodland but in the drier areas away from the water courses. The management activities will focus on PAWS restoration.

Strand 2

The River Teign corridor is treated separately within the PAWS area (Strand 1c) on account of its recognised importance for biodiversity, including European Protected Species such as Atlantic Salmon and Otter; and birds such as Grey wagtail and Dipper. Bats are also known to use the Teign Corridor including the very rare Barbastelle. The Teign Corridor also supports a number of veteran trees. Away from former Ancient Woodland, remaining areas of the Teign Corridor are included in Strand 2 alongside the other water courses.

Stream corridors (in the PAWS area – Strand 1d; outside the PAWs area Strand 2) have been identified as likely to support a range of features of value. This is partly based on the fact that conifer plantings in these corridors have failed and they support a greater range of broadleaved trees and shrubs; because of the potential value of these streams for Bryophyte assemblages; and because they have been identified as providing habitat for a range of invertebrates and breeding woodland birds.

Most of these sub-compartments are not on ancient woodland areas. They've been grouped together because the principal features of interest are associated with the River Teign and streams; work in them will enhance the overall character of the river corridor and the stream corridors that run into the Teign.

Strand 4

One of the most valuable natural features of Fingle Woods is its large population of veteran trees. These may date from a time when the upper Teign Valley was predominantly pasture woodland, and concentrations such as at Seaman's Borough are particularly important. The veteran trees support a nationally important range of lichens, including species for which the UK has an international responsibility. Based on an initial survey, these veteran trees also support a range of rare and threatened invertebrates, many associated with dead wood. Strand 4 comprises most of the sub-compartments where veteran trees or lichen assemblages have been recorded in surveys carried out during the HLF-funded Development Phase. These sub-compartments comprise all but two of the sub-compartments within the Woods where veteran trees have been recorded so far. Management activity will focus on protecting the veteran trees and associated wildlife, such as epiphytic lichens including nationally rare and scarce and Section 41 Priority Species.
During the 2016/7 season at total area of 47.02 hectares of PAWS was worked as follows:

26.91 ha - P1 Initial phase of restoration, typically first thinning's, halo veterans, remove conifer to widen ride edges, water course margins and historic features.

9.72 ha - P2 Typically, later phase of thinning where regeneration of the ground flora/understory

has begun to develop, operation extends P1 to increase light levels to ancient woodland features

11.11 ha - Restored Either where complete conifer removal/regeneration has been achieved or area has been clear-felled and restocked following Plant Health Notice

Significance

1. Fingle is one of the largest areas of ancient woodland with restoration potential in England. Consisting of a large complex of different woodlands, Fingle Woods joins to other woods and wood pasture at both western and eastern ends, making the whole area one of the largest contiguous areas of woodland in south west England.
2. Fingle is a significant site in the history of 20th century forestry in the UK and is well known due to its ownership by the Elmhirst family as part of the philanthropic Dartington vision.
3. The partnership between the Woodland Trust and the National Trust provides an initial opportunity for the organisations to combine resources and share expertise and to explore how this might be applied nationally across both organisations on future projects.
4. A range of species surveys undertaken during the development phase have revealed nationally important populations of lichens, rare plants and insects and a significant population of woodland birds. Despite its conversion to conifer plantation during the 20th Century, Fingle also abounds in native mammals including dormouse; several species of bats, including the very rare barbastelle; and otters, as well as deer and badgers.
5. The current Dartmoor National Park Management Plan 2014 to 2019 identifies woodland within its vision for the park in the long term under Habitats and Wildlife “Dartmoor’s internationally and nationally important habitats are expanded and linked and in optimal condition, supporting resilient ecosystems with healthy populations of priority species”.

Opportunities & Constraints

1. Restrictions to harvesting access both externally and within the woodland complex, limiting management options and commercial exploitation of timber resource.
2. Initial funding opportunities through, project fundraising, EWGS and CSS provides an opportunity to seek early resolution of harvesting constraints.
3. The 5 year HLF programme provides a funding context for the delivery of a number of aspects of the restoration.
4. Developing a compromise approach between the polices of the National Trust and Woodland Trust, for example approach to re-stocking and temporary open ground.
5. The steep slopes are a significant limiting factor of the harvesting approach. Approximately 20% of the site is accessible to conventional harvesting machinery and consequently harvesting costs will always be relatively high. The site does benefit form a very complex array of contour tracks that date from the historical management of the site for coppice this does provide a network from which to access much of the woodland but these are often very narrow and on “made” up ground and require remedial work to make them accessible and safe for modern machinery.
6. Periods of high rainfall combined with steep ground can often lead to short periods of flooding and this can affect any of the seven small watercourses that drain the hillside of the main river itself. In most years this leads to the loss of track sections, damaged culvert, small and major landslips, and the loss of riverside trees. Remedial action is necessary and careful assessment and future proofing is required during and engineering works.
7. The range and diverse nature of protected species at Fingle can impact widely on woodland operations, and timing needs to be a careful balance between the conflicting needs of the range of species. Its critical our understanding of the distribution and numbers of species is continually recorded and updated so that we can make clear evidence based management decisions.

Factors Causing Change

1. Climate change
2. Tree disease - in particular, Phytophthora ramorum affecting Japanese larch, rhododendron ponticum, bilberry and sweet chestnut. Recent outbreaks of Chestnut Blight in Devon and Chalara fraxinea (ash dieback) are likely to have a short term impact, however there are a range biotic factors likely to impact the site in the long term. Since 2015 four plant health notices have been issued by the Forestry Commission at Fingle to control the spread of Phytophthora ramorum.
2. Conifer regeneration - conifer regeneration is widespread in many sub compartments but current management of PAWs approach may have the impact of unintentionally favouring conifer regeneration.
3. Invasive species - including, non-natives such as rhododendron, laurel, and Himalayan balsam, but also native species such as holly, sycamore and beech, where they negatively impact on rare and endangered species.
4. Deer and squirrels - the impact of the large fallow deer herd in the Teign Valley is being monitored through a series of and recently created exclosure plots (March 2017), initial thoughts have indicated the preferential browsing habitats of fallow herds and roe deer appear to favour the conifer regeneration as the deer are targeting regenerating broadleaves. The impact of squirrel damage on young trees is less evident as the populations are considered to be relatively low and the recorded impact on squirrels on the breeding bird population is not deemed significant.
5. Declining light levels - the limited presence and migration of lichen assemblages to the edges of the woodland indicates the very dense conifer has and continues to have a negative impact on lichens and other lower plants.
6. Rotations of dense conifer have had led to the loss of structural ground vegetation and some slopes are increasingly reverting to bare scree.

Long term Objective (50 years+)

Develop a long term strategy to achieve the aspiration of the agreed "Sprit of Place" statement which states "In the coming decades, we want to help the gorge to clothe itself again, reverting to its more natural state. Fingle Wood’s inheritance will help shape its future, making it a place of conservation in changing environment, and inspiration and enjoyment for everyone – today and for the generations to come"

In practice this will be to secure and enhance the semi-natural components of the site associated with western oak woodland habitat in a favourable condition and maintain and enhance associated flora and fauna. On-going woodland management will be necessary to maintain the complex interaction of woodland and open habitats to provide sufficient habitat niches to sustain the current range of species diversity. Areas of conifer will continue to be cyclically worked to reduce their dominance and to limit conifer regeneration with the intention of restoring these area to largely native woodland canopy over the next 100 years.

Short term management Objectives for the plan period (5 years)

1. Ensure all management objectives agreed and developed conform with the stated "Spirit of Place" dated 28.05.2015 agreed between the National Trust and Woodland Trust
2. Ensure the partnership between the National Trust and Woodland Trust continues to be strengthened but is developed to ensure it remains fit for purpose
3. During the first 5 years of ownership ensure all un-thinned conifer crops are worked to achieve an initial "first aid" intervention to comply with the Woodland Trust Restoration approach (see detail below).
4. To deliver the HLF Conservation and Management and Maintenance Plan of the project "Bringing Fingle Woods back to Life" which runs from May 2016 to April 2021.
5. Ensure the objectives set out in the Forestry Commission approved EWGS management plans for Finlge Woods Lot 1,2 and 3 set out sections 3.1, 3.2 and 3.3 and dated 1st September 2013 to 31st Aug 2018 are adopted where appropriate into future plans.
6. Invest in the long term access for haulage and harvesting access to ensure a long term viable network suitable for modern harvesting machinery.
7. To develop a range of "demonstration" opportunities to explore restoration techniques and to share the experience with the wider forest, conservation industry and private landowners.
8. To develop and use the blog and broader social media as an engagement tool and as a means of documenting and recording site management and the development and techniques of the demonstration activity.
9. Continue to control non-native species i.e. rhododendron/laurel/conifer regeneration and noxious weeds such as knotweed, balsam and hogweed.

Restoration Approach

One of the most challenging aspects of the restoration is the sheer extent of the works required. The intention is to look at two harvesting approaches in combination to achieve the PAWS strategy, that will open up the canopy to promote light and protect ancient woodland features, with the long term aim of creating regeneration opportunities for broadleaved trees.

Large Scale Commercial Harvesting - The first will be to undertake annual harvesting programme, this will be a commercial approach but will focus on all crops including areas of uneconomic conifer which in recent decades have been largely ignored because of their relatively high harvesting costs. Over the first five years up to 2019 the intention is to make sure all areas of “unthinned” conifer are worked alongside the maintenance of the thinning cycle of other crops. As part of the commercial work crop edges will be targeted and semi-natural areas enhanced.

Small Scale Harvesting (including thinning to waste/re-spacing) Working in partnership with the National Trust provides access to certificated volunteers who undertake a range of “contractor” type activities under the supervision of employed rangers. The intention is that the volunteers will focus on the “non-commercial” activity which would typically be the operations described as “secure and enhance”. This approach allows a more subtle less commercially pressurised approach in areas where a greater degree of “care” is required.

5.2 Connecting People with woods & trees

Description

The Fingle Woods complex covers some 330 hectares and it forms part of a the greater landscape of the Teign Gorge much of which is open access land within the Dartmoor National Park. This includes the National Trusts adjoining Drogo Estate to the west covering some 200 ha including the castle which receives around 120,000 paying visitors per annum. To east the National Trust owns the historic woodlands of St Thomas Cleave, Bridford Woods and leased Dunsford Woods which is managed by the Devon wildlife Trust which receives around 50,000 visits per annum.

The woodlands of the Teign Gorge have been a visitor attraction since Edwardian times for riverside walks along one of the most beautiful stretches of river on Dartmoor and to see the early spring daffodils which flower in March. The Fingle Bridge Inn was initially a tea shelter opened in 1897 by Jesse Ashplant on the north side of the bridge, serving refreshments to anglers, tourists, developing into the Anglers Rest and then today as the Fingle Bridge Inn.

Estimates made through the visitor counters we installed in 2014 show that there were around 60 to 80,000 visits to Fingle Bridge during 2016. This number have increased since Fingle Woods opened to the public in 2014. The high numbers at Fingle Bridge highlight constant activity around the Fingle Bridge Inn, however, as soon as you move into Fingle Woods itself the numbers drop by about 75%. Counters at the Clifford Bridge are again lower, while at the Sawmill Car Park and Mardon Down entrances numbers are very small, only numbering 20-35 visits per day.

Fingle Woods is in a part of Dartmoor close to the village of Drewsteignton. The area has a low density of local residents mostly occupying farms or houses in nearby villages, hamlets or small towns. While Fingle Bridge itself is receiving a large number of visits, elsewhere within the Fingle Woods complex, visitor numbers are low, a lack of car parking capacity, poor quality road access and no viable public transport to the site are significant factors. There is one public right of way within the site and now three waymarked trails and a small number of information/interpretation signs. The woodlands benefit from numerous woodland tracks and paths and in total these provide around 26 miles of recreational access form the busy riverside pub to the remote upper reaches of the woodland The paths are often steep, uneven and muddy befitting of the wild rugged nature of the steep valleys and the open moorland of Dartmoor but provide access to some of the most dramatic and beautiful scenery Dartmoor has to offer with magnificent views.

There are opportunities to increase the value of Fingle for recreation but the impact will have to be balanced against the benefits without altering the quiet and tranquil nature of the place. The geographical nature of the site naturally limits the ability to grow visitor numbers without causing significant management issues from car parking and congestion. Fingle will not be able to attract large numbers of general visitors. It is therefore likely that the best approach will be to zone the site for predominately quiet recreational use.

Significance

The extensive SSSI ancient upland oak wood, and heathland of the adjoining Teign George is of international significance and Fingle Woods retain a number of features associated with these habitats. The opportunity to interpret the value of these important features and the associated species provide a key engagement tool.

Fingle is a site of regional forest importance and arguably of national significance, owing to its well documented 20th century history during the ownership of the philanthropic Dartington Estate. The twentieth century Dartington experimental conifer planting played a significant role in the development of modern forestry in Britain. There is an opportunity to continue this forestry experimentation through best practice demonstration and research in the restoration of native broadleaved forest.

Fingle is a very significant part of the prehistoric landscape, with the Iron Age Wooston Castle Hill Fort within the wider context of the Teign Valley and its two associated hill forts. Woodland management goes back to medieval times and many charcoal hearths survive in the ancient woodland areas which also include old wood banks and veteran boundary pollards. Elsewhere relict ancient hedge banks indicate the presence of former small field systems. Significant heritage features nearby, include the mediaeval Fingle Packhorse Bridge, associated ancient tracks and the remains of several mills along the River Teign.

Fingle Woods is located in North Dartmoor, a very rural area, on the border of Mid Devon and West Devon. Dartmoor itself has a population of 34,000 (2012 census). The population within 20 minutes travelling time from Fingle is just 6,962, centred in the small towns of Moretonhampstead (7 miles, population c.1,500) and Chagford (4 miles, population c.1,500) small villages and hamlets. There are approximately 225,900 residents within a 40 minute drive of Fingle and 658,600 within 60 minutes. Within 60 minutes driving time of Fingle Woods are four large urban centres with a combined population of more than 380,000. These include Exeter (21 miles), Okehampton (10 miles), Newton Abbot (15 miles) and Plymouth (43 miles). The current population of Exeter is 125,000 and in Mid Devon it is 75,500 (2015 figures).

A recent visitor survey of the Dartmoor National Park estimated there were 3.8 million visitor days per annum. Of these, 54% were holiday visitors (2.05 million) and 46% were day trippers from within the region (1.75 million) and of this group only 9% were from outside Devon.

A recent report commissioned by the Dartmoor and Exmoor National Parks combined shows that both National Parks attract approximately 5 million visitors a year spending over £237 million (Economic Prospectus: Dartmoor and Exmoor National Parks 2015). The report also reinforces the role National Parks play in providing space for outdoor recreation with this being stated as one of the national favourite past times with 75% enjoying active recreation.

Fingle is being considered a part of the Woodland Trust's destination sites in acknowledgement of the way it helps deliver its aim of inspiring everyone to enjoy and value woods and trees.

Opportunities & Constraints

The growing numbers of visitors throughout the year provide an opportunity to develop and communicate the value of the Woodland Trust and its aim and objectives.

The majority of the major access points to Fingle are not within Woodland Trust ownership and therefore the Woodland Trust is reliant on third party access. The Woodland Trust owned car parks are typically small (approx 5 to 10 cars) and hard to locate by non-local visitors. The narrow and complex road network covering much of the site has very limited capacity and increased visitors will result in issues for local people.

Representatives of the local parishes of Moretonhampstead, Drewsteignton, Chertion Bishop and Dunsford have all expressed concerns against the over development of this important site.

The success of the HLF bid "Bringing Fingle Woods Back to Life provides a framework for the appropriate development of the recreational and cultural opportunities over the next 5 years through to 2021.

Factors Causing Change

1. Risk of overdevelopment resulting in increasing visitor numbers
2. Uninformed site use - loss of the special nature conservation features of the site
3. Erosion - associated with increasing visitor numbers, dogs, cycling, horse riding, perceived and real
4. Potential development beyond the boundary of Fingle
5. Issues of tree disease creating short term changes in the landscape impacting on visitor enjoyment

Long term Objective (50 years+)

The "spirit of place" vision for Fingle ends with the words "In the coming decades, we want to help the gorge to clothe itself again, reverting to its more natural state. Fingle Wood's inheritance will help shape its future, making it a place of conservation in changing environment, and inspiration and enjoyment for everyone – today and for the generations to come."

The spirit of place is intended to place the Fingle and its natural and cultural heritage at the heart of the Teign Gorge landscape, and to act as a catalyst for community action to enhance and sustain their local natural and cultural heritage.

1. To conserve the unique historic landscape and its natural habitats which tell the story of human influence over thousands of years
2. To significantly enhance physical and intellectual access to the heritage landscape for everyone to enjoy
3. To develop new ways of increasing community involvement and understanding of the historic and natural landscape and improve the ability of local people to share, celebrate and enjoy their local landscape
4. To sustain a living and working landscape by encouraging and facilitating business opportunities that capture the value of the landscape
5. To develop a well-trained and co-ordinated volunteer workforce for the area to help conserve and interpret the area's heritage both now and in future years.
6. Manage future visitor access to ensure it is adequately provided for without adversely affects the site, habitats or natural capital of the Teign Gorge.

Short term management Objectives for the plan period (5 years)

By June 2021 both organisations see Fingle Woods becoming a place for the local community to live, work and learn. We aim to engage new audiences with the Woods and inspire them with a lifelong love of their local heritage.

This will be achieved through the development of a package of infrastructure, training, interpretation and public engagement that gives greater access and opportunities for people to explore, enjoy and work in the Valleys and further afield. The plans for these actions are outlined in the three aims for people below:

1. Delivery of HLF activity plan for the "Saving Fingle Woods" project between July 2016 and June 2021.
2. Monitor visitors numbers (people counters) and manage the welcome and infrastructure as necessary without detriment to the site and habitats
3. Deepen engagements with local communities and visitors, with a particular focus on "hard to reach groups"
4. Create tailored engagement opportunities for targeted audience groups such as volunteering activities, targeted conservation and heritage activities and events to demonstrate site management.
5. Explore the opportunities that may arise from the Woodland Trust "Destination" project.
6. To develop and use the blog and broader social media as an engagement tool and as a means of documenting and recording the site development

5.3 Historic Features

Description

The wooded landscape of the Teign Valley contains many features illustrating the past, arguably the most significant are the series of Iron Age Hill Forts. The largest of these is Wooston Castle which lies within Lot 1 of Fingle Woods. The Fingle complex is made up of a number of historic woodland, the current names of the woods date back to at least the early seventeenth-century, these include Hore Wood, Butterdown Ball Wood, Willingstone Planation (Secondary), Houndsmoor Wood, Seamans Borough (omitted from the NCC survey of ancient woodland), Hitchcombe Wood (omitted from the NCC survey of ancient woodland), Halls Cleave (partly secondary), Coleridge Wood, and Cod Wood. In addition there are a number of unnamed field areas at the margins of the woodland which were converted to woodland in the 19th and 20th centuries. Between each of these areas of woodland and now wooded pasture are a series of former field and woodland boundaries of historical significance. The earliest written reference to the site found so far is in the entry for the Manor of Moreton in the Domesday Book (1086) - 'the woodland is one league (3 miles) long and one furlong (220 yards) wide'. That would cover an area of about 720 acres which compares to the area of about 830 acres today within the parish of Moretonhampstead. The manor was a royal possession in 1066 and after the conquest it changed hands several times. The most notable event of the early middle ages was the grant of the area around the hamlet of Doccombe to the monks of Canterbury by William de Tracey in atonement for his part in the murder of Archbishop Thomas Becket in 1170. This grant included the woodlands that became known as St Thomas Cleve and Coleridge Wood on the south-west side of the Fingle woods area. Within the ancient woodland there are numerous recorded charcoal hearths and other miscellaneous features of archaeological interest identified on the Historical Environmental Record (HER), charcoaling and coppice management has been a feature of the woodlands since at least the 14th century.

Recent Management

During the winters season of 2016/7 the first phase of conifer clearance was undertaken, this focused on areas of recently established conifer and conifer regeneration dating from the late 1980s. The sub compartments cleared were as follows:

11w - 1.15 ha – This area is towards the southern end of the hillfort adjoining the public road, a section of young developing scrub has been retained as this is a known dormice area, in future years conifer regeneration developing in this area will be controlled.
11m – 1.48 ha – A section circa (0.2h) was cleared of mature pine as part of the hillfort buffer.
12w – 3.28 ha - The remaining mature conifer was removed and stumps lowered.
14w – 2.94 ha - This was the largest and densest area of conifer removed, all of the main archaeological features were cleared of trees but a small area was retained awaiting the outcome of the magnometer survey being undertaken in early 2017.

Follow up treatment will include stump treatment of birch and gorse regrowth and the removal of any seedling conifer. Ultimately, the area will be prepared for "fenceless grazing".

Significance

Fingle is a very significant part of the prehistoric landscape, with the Iron Age Wooston Castle Hill Fort within the wider context of the Teign Valley and its two associated hill forts. Woodland management goes back to medieval times and many charcoal hearths survive in the ancient woodland areas which also include old wood banks and veteran boundary pollards. Elsewhere relict ancient hedge banks indicate the presence of former small field systems. Significant heritage features nearby, include the mediaeval Fingle Packhorse Bridge, associated ancient tracks and the remains of several mills along the River Teign.

Wooston Castle is a scheduled ancient monument (SAM) currently listed by Historic England as being under threat from dense conifer crops. The scheduled area of the hillfort covers some 15 hectares.

The Historic Environment Record (HER) for Fingle contains 159 records and there are many more unrecorded features including a potential bronze age hut circle.

Opportunities & Constraints

The success of the HLF bid "Bringing Fingle Woods Back to Life provides a framework for the appropriate conservation of the important heritage features at Fingle and for the development of the recreational and cultural opportunities over the next 5 years through to 2021.

The historical and cultural importance of this site has created a lot of interest and energy from the local community

Concerns have been expressed that large scale clearance of historical features (i.e. the hillfort) will denude the long term commercial conifer crops at Fingle, without some form of compensatory planning.

Factors Causing Change

1. Extensive conifer regeneration and likely long term wind throw
2. Developing scrub and trees growth
3. Damage from site operations and recreational activity
4. Unauthorised recreational misuse of the scheduled ancient monument

Long term Objective (50 years+)

To ensure the long term protection of the historical and cultural heritage of Fingle Wood.

1. The removal of Wooston Castle from the Heritage At Risk register, and the creation of a sustainable management approach to maintain with the condition of the site prevent future decline as a result of tree and shrub incursion.
2. Develop long term forestry management techniques that protect and enhance the features recorded on the HER
3. Manage this historic woodland site and ensure and maintain an archive of information of condition and management .
4. The Iron Age hill fort provides stunning views overlooking the valley, which is part of the landscape of fringing wooded river valleys around the high moors of Dartmoor, all of which are now within the National Park. The proposed restoration will recreate a deciduous woodland landscape so that today's visitors can enjoy views of the valley similar to those seen by the original inhabitants of the fort some 2,500 years ago.

Short term management Objectives for the plan period (5 years)

1. To deliver the archaeological elements of the HLF Conservation and Management and Maintenance Plan of the project "Bringing Fingle Woods back to Life" this runs from May 2016 to April 2021.
2. Undertake staged tree removal from Wooston Castle as agreed with HLF, and with advice from the lead archaeologist A. Crabb of the Dartmoor National Park/Historic England. Ensure at all times we have consent in place for any operations undertaken on scheduled area.
3. Develop the site facilities to accommodate livestock grazing to maintain Wooston Castle and other area of open ground associated with historical features.
4. Prior to annual harvesting operations locate and mark all HER features including any features identified as of significance but not listed on the HER. Record pre and post harvesting condition.
5. Undertake scrub control and treatment of birch, conifer, gorse regrowth as necessary to maintain recently cleared areas.
6. Work with the National Trust under the auspices of the HLF project "Bringing Fingle Woods back to Life" to protect and enhance Fingle Mill
7. Undertake annual rolling operations over cleared areas of the SM to control bracken and to limit damage to archaeology from extensive rhizome development.
8. Control scrub and conifer regrowth using a variety of techniques to maintain the open aspect of the SM and its buffer.
9. The LiDAR survey during the Development Phase recorded many other known and probable historic environment features within the Woods. These will be ground-truthed by volunteers to determine their nature and exact location in advance of restoration work each year, to ensure any necessary mitigating actions are taken. The Devon and Dartmoor National Park Historic Environment Record (DDNP HER) will be enhanced by new and updated records.

5.4 Secondary Woodland

Description

The secondary woodland areas at Fingle provide an opportunity to develop a long term strategy to maintain conifer rotations and to explore opportunities to both plant and to encourage conifer regeneration and to maintain conifer dominated areas of Continuous Cover Forestry.

Fingle Lot 1 - Fingle Woods - Secondary 43.08, including 10.64 of the SAM Wooston Castle.

The First Edition Ordnance Survey of 1880 provides a good indication of the Secondary Woodland areas, the area now known as Willingstone Plantation is shown as fields, much of Wooston Castle is rough grazing and the far eastern edge of the wood close to Clifford Bridge is a series of small fields. The farmland of Willingstone Plantation was planted between 1897-1904 with European Larch by the Smith family who had made their money selling newspapers and stationery through their W H Smith shops under the title of Viscount Hambleden. Willingstone comprised a single row of fields between oak coppice and Willingstone road but the larch was reported as not growing well when the Elmhirsts acquired it and as having ‘sabre’ butts. It was felled gradually and sold to the Newton Abbot clay mines. It was replanted with Japanese larch from 1935 into the war years, most of these areas were subsequently felled and restocked mainly with Douglas fir although much of the remaining larch was felled in 2016 following the issue of a Plant Health Notice.

The woodland areas of Seamans Borough, Hitchcombe Wood, and part of Butterdon Ball Wood were omitted from the Ancient Woodland Inventory (Nature Conservancy Council 1988) but its broadly accepted these were and certainly exhibit ancient woodland indicators and these areas are excluded from the secondary woodland calculation.

Finlge Lot 2 - Halls Cleave and Coleridge Wood - Secondary 66.31 ha

Halls Cleave has arguably the best potential for maintaining areas of commercial conifer. In terms of area a greater proportion of the woodland is secondary and its more remote and quite nature combined with its own haulage and machine access via Mardon Down means its would have far less impact on the more accessible areas of the site in the long term. However, Halls Cleave and Coleridge do contain a number of important areas of significant conservation. The upper moorland fringes provides for a transition scrub habitat of particular value to moorland birds and some key invertebrates and the wetland mire arising on the edge of Mardon Down provides the largest expanse of mire habitat across the woodland complex, this area drains into an unnamed watercourse draining Halls Cleave and Coleridge Wood and its riparian margins are important area of conservation value.

The secondary woodland areas in Halls Cleave were fields belonging to the former Clifford Farm acquired by Dartington just after the Second World War. The farm was assessed as too infertile and stony for productive farming and its riverside meadows were prone to flooding. 106 acres of abandoned fields were afforested and some oak coppice cleared and replanted. The rest of the farm was mainly run as a bed and breakfast and tea-room until it was sold off and it is now a series of residences at the bottom of Clifford Hill . The area planted at this time are readily identified as former fields on alongside the roads climbing both Clifford and Smallridge hills, for a number of years the roadside fields were the centre of Christmas Tree production one of Dartingtons forestry departments profitable sidelines.

Within Halls Cleave and Coleridge Wood the areas indicated as ancient on the inventory have rather arbitrary and linear boundaries and some “fine tuning” is needed to match these “boundaries” to historic field and wood banks. Reference to the First Edition OS provide a better representation of the “true” ancient woodland areas. The calculation of secondary woodland has been made by undertaking this fine tuning.

Fingle Lot 3 - Cod Wood - Secondary 9.43 ha

Apart from the small riverside meadow at the far eastern end of Cod Wood the secondary woodland areas adjoin Smallridge Hill and were part of the Clifford Farm complex purchased as previously described just after the second world war. Most of these former field areas exhibit ancient woodland characteristics, however, given the very close proximity of the large ancient woodland complex of Cod Wood, St Thomas Cleave and Bridford beyond this is not surprising. Some of the very earliest records relating to the woodland concern this area. The most notable recorded event of the early middle ages was the grant of the area around the hamlet of Doccombe as a manor to the monks of Canterbury by William de Tracey in atonement for his part in the murder of Archbishop Thomas Becket in 1170. This grant included the woodlands that became known as St Thomas Cleve (in memory of St Thomas Becket) and Coleridge Wood on the south-east side of the Fingle woods area. The Doccombe Estate remained in the hands of the church until the 1860s and was finally broken up in a sale in 1921.

Recent Management

Harvesting Contract – 2015 to 2019

A five year harvesting contract has been let to Euroforest for the “commercial” harvesting activity and this will seek to ensure all un-thinned priority areas of conifer are thinning within the life of this contract. This means that around 30 hectares of un-thinned conifer needs to be targeted each year, alongside the maintenance of a normal conifer rotation for other sub-compartments. As part of this operation areas of semi-natural habitat will be protected and extended, and in particular track corridors widened to develop zoned habitat development along the track margins.

As part of the commercial harvesting there have been four plant health notices issues one affecting a secondary woodland area , this required the clearance of infected larch stands.

Williingstone Plantation (secondary) Cpts 11a 1.98 ha, 11c 1.17 ha and 11d 0.32 ha

A plant health notice was issued in 2016, an area of larch with some Norway Spruce was cleared and restocked with native broadleaves, in line with NVC W17

Halls Cleave (secondary) 7.44 ha

One other area of clear-fell undertaken as part of the commercial harvesting was to clear an extensive area of wind throw affecting part of sub cpt 25b. This was a mature area of Sitka Spruce which in part covered an important area of “wetland mire” , this area has been partly restocked with native broadleaves and remainder left to allow natural regeneration to establish.

The non-commercial harvesting activity is focussed within the HLF Management and Maintenance Plan for the next 10 years under Aim 1 – To undertake a programme of work to restore ancient woodland and other habitats and features, conserve the historic environment, enhance the site for priority species, monitor our work and disseminate the results. This Aim has been broken down into five work strands, but only Stand 5 affects secondary woodland areas.

Strand 5. Conifer (and broadleaved) Plantations, mostly on former fields. (See KF Secondary Woodland)

During the 2016/7 season at total area of 21.51 hectares of secondary woodland was worked as follows:

12.95 ha - P1 Initial phase of restoration, typically first thinning's, halo veterans, remove conifer to widen ride edges, water course margins and historic features.
1.91 ha - P2 Typically, later phase of thinning where regeneration of the ground flora/understory has begun to develop, operation extends P1 to increase light levels to ancient woodland features
6.65 ha - Restored Either where complete conifer removal/regeneration has been achieved or area has been clear-felled an restock following Plant Health Notice

Significance

The commercial coniferisation of Fingle Woods can be traced back to the 1920s. Leonard Elmhirst bought Dartington Estate in 1926. At the time he held 190 acres of woodland; and wanted to make it profitable and demonstrate that forestry could be commercially sustainable. Elmhirst went to Wilfred Hiley, then lecturer at Oxford, for advice. Hiley argued that the Estate was too small – and that it needed to be 2,000 acres to be commercially sustainable. As a result Elmhirst bought more woodland, including Fingle Woods and Clifford woodland, and employed Hiley to run it and associated education, campaigning and research from 1932 to his death in 1961. The recent 20th century history of the site and its conversion to conifer is well documented in the Dartington Estate Archive and in a book called “A forestry venture” which was written by Wilfred Hiley.

Given the sites significant historical influence of the development of the UK forestry industry in the 20th century, the use of Fingle to demonstrate and to influence forest management and future policy will be greatly enhanced by the commitment to the retention of commercial conifer crops for the long term and to respecting the legacy of the Dartington Estate.

Opportunities & Constraints

1. Agreement will be necessary with the National Trust to undertake what is arguably a "change" of strategy from the agreed Conservation Plan dated November 2015 and Spirit of Place dated 28.05.2015.
2. Development of a commercial approach challenges the current Ancient Woodland and Conservation Polices of the Woodland Trust.
3. The recently developed demonstration programme provides an opportunity to develop and test concepts of Continuous Cover Forestry and to set up long term trials during the 5 years of the HLF project to 2021.
4. The size and extent of the Secondary Woodland areas provide an opportunity to develop a long term commercial approach to forestry without negatively impacting on the ancient woodland areas.
3. The retention and possible aspiration to retain and continue to undertake commercial forestry activities on secondary woodland areas may be perceived negatively by visitors and supporters.
4. Restrictions to harvesting access, limiting commercial exploitation of timber resource.
5. The success of initial funding opportunities through, project fundraising, EWGS and CSS provides an opportunity to seek early resolution of harvesting constraints.

Factors Causing Change

1. Climate change
2. Tree disease - in particular, Phytophthora ramorum affecting Japanese larch, rhododendron ponticum, bilberry and sweet chestnut; recent outbreaks of Chestnut Blight in Devon and Chalara fraxinea (ash dieback) which are likely to have a short term impact, however there are a range biotic factors likely to impact the site in the long term.
3. Conifer regeneration - conifer regeneration is widespread in many sub compartments but current management of PAWs approach may have the impact of unintentionally favouring conifer regeneration.
4. Invasive species - including, non natives such as rhododendron, laurel, and Himalayan balsam, but also native species such as holly, sycamore and beech.
5. Deer and squirrels - the impact of large fallow deer herds is being monitored through a series of and recently created exclosure plots (March 2017), initial thoughts have indicated the preferential browsing habitats of fallow herds and roe deer appear to favour the conifer regeneration as the deer are targeting regenerating broadleaves. The impact of squirrel damage on young trees is less evident as the populations are considered to be relatively low and the recorded impact on squirrels on the breeding bird population is not deemed significant.
6. Declining light levels - the limited presence and migration of lichen assemblages to the edges of the woodland indicates the very dense conifer has and continues to have a negative impact on lichens and other lower plants.
7. Rotations of dense conifer have had led to the loss of structural ground vegetation and some slopes are increasingly reverting to bare scree.

Long term Objective (50 years+)

Develop a long term strategy on the secondary woodland areas to retain commercial conifer crops but to balance this with the desire to achieve the aspiration of the agreed "Spirit of Place" statement which states "In the coming decades, we want to help the gorge to clothe itself again, reverting to its more natural state. Fingle Wood's inheritance will help shape its future, making it a place of conservation in changing environment, and inspiration and enjoyment for everyone – today and for the generations to come"

In practice this will be to secure and enhance the ancient and semi-natural components of the site associated with western oak woodland habitat in a favourable condition and maintain and enhance associated flora and fauna. On-going woodland management and grazing will be necessary to maintain the complex interaction of woodland and open habitats to provide sufficient habitat niches to sustain the current range of species diversity. To look for opportunities to retain conifer beyond commercial rotations and to cultivate future commercial conifer crops for the next 50 years in addition to ancient woodland areas of conifer that will continue to be cyclically worked to reduce their dominance and to limit conifer regeneration with the intention of restoring these area to largely native woodland canopy over the next 50 years.

Short term management Objectives for the plan period (5 years)

1. Ensure all management objectives agreed and developed conform with the stated "Spirit of Place" dated 28.05.2015 agreed between the National Trust and Woodland Trust
2. Ensure the partnership between the National Trust and Woodland Trust continues to be strengthened but is developed to ensure it remains fit for purpose
3. During the first 5 years of ownership ensure all un-thinned conifer crops are worked to achieve an initial "first aid" intervention to comply with the Woodland Trust Restoration approach (see detail below).
4. To deliver the HLF Conservation and Management and Maintenance Plan of the project "Bringing Fingle Woods back to Life" which runs from May 2016 to April 2021.
5. Ensure the objectives set out in the Forestry Commission approved EWGS management plans for Lot 1,2 and 3 in section 3.1, 3.2 and 3.3 dated 1st September 2013 to 31st Aug 2018 are adopted where appropriate into future plans.
6. Invest in the long term access for haulage and harvesting access to ensure a long term viable network suitable for modern harvesting machinery.
7. To develop a range of "demonstration" opportunities to explore restoration techniques and to share the experience with the wider forest, conservation industry and private landowners.
8. Develop a strategy in partnership with the National Trust to sustain commercial conifer production on secondary woodland areas.
9. Ensure regular communication with the local community offer through the Fingle Woods blog, social media and regular monthly meetings through the "Fingle Lecture Series" to explain the objectives and value of a continuing "commercial forestry" offer on secondary woodland areas.
10. Continue to control non native species i.e. rhododendron/laurel/conifer regeneration and noxious weeds such as knotweed, balsam and hogweed.

5.5 Semi Natural Open Ground Habitat

Description

Fingle supports a very small total area of open habitats, but these are highly valuable for the biodiversity of the site. The National Trust conservation evaluation mapped 15.85ha of open habitats in 2014, though most of this was bracken dominated (11.13ha) with two small areas of heathy grassland (0.5ha), two small areas of acid/neutral flush (0.29ha), three areas of marshy grassland (0.88ha), two small areas of poor semi-improved grassland (0.69ha) and two areas of semi-improved grassland (2.36ha).

Significant areas of open habitats occur at Wooston Castle hill fort and Thomas Cleave Meadow (Ross Meadow). In addition there is also an extensive network of rides which were created for the extraction of timber. Some of these have developed significant wildlife value, though some are narrow and heavily shaded by conifers.

Survey Findings

Wooston Castle (Open Areas) Sub compartment 14W

This area of Wooston Castle was recently clear-felled of conifer leaving a substantial area of bare ground. The areas subjected to NVC were those that were most vegetated. Unsurprisingly, the affinity to W10c Quercus robur-Pteridium aquilinum-Rubus fruticosus woodland, Hedera helix sub-community is slight. The flora was dominated by bracken bramble with frequent ivy Hedera helix, wood sorrel Oxalis acetosella and climbing corydalis
Ceratocapnos claviculata. Both wood sorrel and climbing corydalis are Ancient Woodland Indicator (AWI) species. W10c sub-community is typically a species-poor woodland type, frequently developed under a heavily shading canopy, either of conifers or unmanaged native trees.

Wooston Castle (Young conifer) Sub Compartment 12W

The canopy cover of this plantation is dominated by western hemlock Tsuga heterophylla with occasional Douglas fir and rowan saplings. This area of 0.5 hectares was surveyed in its entirety. The understorey within the compartment is incredibly sparse with occasional bracken coming up through the carpet of conifer needles. Some ground flora was recorded on the edge of the plantation including bilberry Vaccinium myrtillus, creeping soft grass and honeysuckle Lonicera periclymenum.

Ross Meadow - Sub Compartment 21i

Ross Meadow in Compartment 21i was originally an old hay meadow which was more recently planted with Douglas fir with an understorey of birch and scrub. In 2015 this area was cleared of trees and scrub with the aim of returning it to its original state. Green hay was introduced in two areas and the rest of the meadow was left to regenerate. Despite the frequency of grasses and wild flowers this meadow actually shows strongest affinity to W23b Ulex europaeus-Rubus fruticosus scrub, Rumex acetosella sub-community although it is clearly transitioning to grassland.

Significance

Fingle Woods contain a variety of nationally important open habitats, including, Lowland Acid Grassland, Lowland Heathland and Lowland Meadows. Although many of these occur at Fingle in small and fragmented stands, there is great potential to increase the size and connectivity of these habitat patches, through restoration of the wood from conifer woodland, to broadleaved woodland or key open habitat types.

These open areas, despite covering a tiny proportion of the site, supported some of the highest priority species in Fingle, including the GB and England Red Listed near threatened plants Ivy-leaved bellflower Wahlenbergia hederacae and Slender bird's-foot trefoil Lotus angustissimus and GB threatened Toadflax-leaved St. John's wort Hypericum linariifolium. They also supported priority species of butterfly notably Dingy Skipper, Pearl-bordered fritillary and Wall.

Opportunities & Constraints

Opportunities to extend and connect the limited and fragmented nationally important open habitats identified can be summarised as follows:

1. Wooston Castle (Scheduled Ancient Monument) - as part of the restoration of the scheduled ancient monument, woodland cover is to be removed over an area of some 10 hectares and the long term management of this area is to maintain the open habitat by grazing. Ultimately, this will create and maintain the most significant area of open ground within Fingle Wood.
2. Ross Meadow (Cod Wood) - This former riverside meadow has been cleared of a recently planted (P.2000) failed conifer crop and restored to a meadow, it is now been fenced and this is to be maintained by grazing.
3. The extensive track network of circa 45km provides a significant opportunity to create and manage open space on trackside verges, these are likely to be ephemeral in nature and will provide a wide range of habitats of different aspects and species composition.

The main constraint will be to determine the competing priorities of ancient woodland restoration and the restoration of nationally important open space habitats.

Factors Causing Change

1. Climate change
2. Extensive conifer regeneration in open habitats undergoing restoration.
3. Developing scrub and trees growth
4. Damage from site operations and recreational activity.
5. Failure to establish regular grazing cycle.
6. Failure to control widespread bracken development.

Long term Objective (50 years+)

Develop a long term strategy to achieve the aspiration of the agreed "Sprit of Place" statement which states "In the coming decades, we want to help the gorge to clothe itself again, reverting to its more natural state. Fingle Wood's inheritance will help shape its future, making it a place of conservation in changing environment, and inspiration and enjoyment for everyone – today and for the generations to come"

In practice this will be to secure and enhance the semi-natural components of the site, and in particular a connected network of open habitats associated with western oak woodland in a favourable condition and to maintain and enhance associated flora and fauna. On-going woodland management will be necessary to maintain the complex interaction of woodland and open habitats to provide sufficient habitat niches to sustain the current range of species diversity. Areas of conifer will continue to be cyclically worked to reduce their dominance and to limit conifer regeneration with the intention of restoring these area to largely native woodland canopy over the next 100 years.

Short term management Objectives for the plan period (5 years)

1. Ensure all management objectives agreed and developed conform with the stated "Spirit of Place" dated 28.05.2015 agreed between the National Trust and Woodland Trust
2. Ensure the partnership between the National Trust and Woodland Trust continues to be strengthened but is developed to ensure it remains fit for purpose
3. During the first 5 years of ownership develop a plan to buffer, extend nationally important habitats, and where feasible create better connectivity via the track network of open habitats. Work to achieve an initial "first aid" intervention to comply with the Woodland Trust Restoration approach for semi-natural habitats.
4. To deliver the HLF Conservation and Management and Maintenance Plan of the project "Bringing Fingle Woods back to Life" which runs from May 2016 to April 2021.
5. Develop a grazing strategy for Wooston Hill Fort and Ross Meadow in Cod Wood including scoping fencing options and the provision of water for livestock.
6. Undertaken annual NVC surveys to determine success of transitioning to an open of habitat, that fits with nationally important classifications.
8. To develop and use the blog and broader social media as an engagement tool and as a means of documenting and recording site management and the development and techniques of the demonstration activity.
9. Continue to control non-native species i.e. rhododendron/laurel/conifer regeneration and noxious weeds such as knotweed, balsam and hogweed.

5.6 Watercourses

Description

The Teign River passes along the northern boundary of Fingle Woods, and seven small unnamed rocky tributaries drain the hillside into the main river. The most significant of these is in Halls Cleave which is thought to be the only one of the tributaries accessible to spawning fish. The main river is valuable as a wildlife resource, although technically the northern half sits outside the site boundary, which runs along the middle of the stream. The river supports a number of otters, and is also home to a number of pairs of dipper, kingfisher and grey wagtail; the river is an important resource for wild fish, including salmon, sea-trout and trout. The river is also an important foraging feature for bats, including the rare barbastelle bat, which is thought to have one or more roosts in the old growth woodlands in the vicinity of Fingle Woods.

There is a rich ground flora in places and broadleaved woodland has survived in most places along the river. There are also a number of veteran trees which occur along the river bank and adjacent semi-natural woodland which are important for rare and scarce lichens. Some riparian areas may also support Pearl-bordered fritillary butterflies. The rocky outcrops high above the river support populations of rare species including the rare toadflax-leaved St. John's-wort, for which the Teign Valley is its main UK location.

Despite the relative high quality of the river and some of the riparian habitat, the rivers biodiversity appears to be in a long term decline. The most obvious indication of this is the long term decline in fish populations and the limited number of mature sea trout and salmon returning to the river to spawn. Low river flows and erratic rainfall patterns are also a factor in infrequent "spawning runs".

During the HLF consultation process the Upper Teign Fishing Association asked if the Woodland Trust as responsible riparian owners could undertake a study look at the impact of the woodland on acidity and turbidity in the river and how this might affect and already declining fish numbers.

It is clear from initial work that multiple conifer rotations have led to an almost complete decline in ground vegetation and in places huge soil loss, leaving areas of what is effectively bare scree. Early results from monitoring show flushes of acidity during heavy rainfall in both the main river and the adjoining streams but how much this is related to a lack of buffering is unclear. In time the work being undertaken is hoped to improve this situation and the demonstration project to monitor and record the restoration work to develop riparian buffers will provide data to back the assumption that this type of management approach will be beneficial to water quality.

Other factors are also at play and the Fingle Brook which drains into the main river just above the Fingle Bridge Inn carries run off form the A30 as it run parallel to this in its upper reaches and this introduces a range of unwelcome contaminants.

Although, there are numerous land management factors at play across the whole upper catchment , understanding the role woodland management has to play will hopefully inform management decision affecting the wider catchment.

Significance

In a recent Natural England publication " Climate change refugia for the flora and fauna of England" November 2014 the large river valleys of Dartmoor including the River Teign were identified as potential "refugia". A variety of evidence suggests that species may be able to withstand the effects of climate change in localised environments known as refugia, where specific environmental conditions act as a buffer against broader scale climatic changes. The potential value of these deep river valley systems in upland settings to sustaining rare and declining species in a warming climate is of great future ecological significance.

The cultural significance of the river is manifest in its history. The word Fingle is thought to be derived from the old English “fang”, meaning to catch, a reference to the suitability of the stretch of river for fishing. Historically, fishing and hunting have been popular pastimes in the Gorge. The fishing rights were shared between the estates either side of the river but poaching became a serious concern and in 1869 the Upper Teign Fishing Association was established to control the fishing and has flourished ever since.

The River Teign provides one of the most dramatic and beautiful of Dartmoor River Valleys and has long been an attraction to visitors, and those seeking quite recreation.

Opportunities & Constraints

1. The 5 year HLF programme provides a funding context for the delivery of a number of aspects of the restoration, including demonstrating the impact both negative and positive of the woodland restoration activity on the riparian zones of both the minor watercourses draining the hillside within the site and the main river.
2. During the development phase for the HLF concern was expressed by the Upper Teign Fishing Association on the declining fish stocks and the environmental factors affecting this and in particular increasing acidity and the role large conifer forests and forest harvesting may have.
3. The Environment Agency were keen to support an exploration of the impact of a large woodland restoration project on water quality and in particular "turbidity" during roading and harvesting operations and the in addition the potential to explore the value of "coarse woody debris" dams on flood attenuation.

Factors Causing Change

1. Increasing acidity of the water courses and main river.
2. Declining biodiversity across the catchment, indicated by falling fish stocks.
3. The anticipated increase in periods of high unseasonal rainfall, and the impacts of more regular periods of flooding.
4. Erosion associated with declining vegetation as young conifer crops establish and dominate, in particular where conifer is in its second or third rotations.
5. Harvesting operations and the impact poor ground conditions on the management of surface water during operations.
6. Unauthorised recreational use and degradation of river banks and increasing turbidity as a result of "dog washes".

Long term Objective (50 years+)

Develop a long term strategy to achieve the aspiration of the agreed "Spirit of Place" statement which states "In the coming decades, we want to help the gorge to clothe itself again, reverting to its more natural state. Fingle Wood's inheritance will help shape its future, making it a place of conservation in changing environment, and inspiration and enjoyment for everyone – today and for the generations to come"

In practice this will be to secure and enhance the semi-natural components within the riparian zones of the minor watercourses and the main river. Creating buffers on the minor water courses of 20 to 40 metres and up to 80 metres on the main river where the semi-natural habitats will be maintained in a favourable condition to enhance associated flora and fauna and to stabilised soils to prevent on-going erosion during increasing periods of intense rainfall. The establishment of increasingly "lush" long established buffers will help to minimise and control flushes of acidity during heavy rainfall and to minimise the risk of turbidity during harvesting operations. On-going woodland management will be necessary to maintain the complex interaction of woodland and open habitats to provide sufficient habitat niches to sustain the current range of species diversity. Areas of conifer will continue to be cyclically worked to reduce their dominance and ultimately there removal from the riparian zones to limit conifer regeneration with the intention of restoring these area to native woodland canopy over the next 50 years.

Short term management Objectives for the plan period (5 years)

1. Ensure all management objectives agreed and developed conform with the stated "Spirit of Place" dated 28.05.2015 agreed between the National Trust and Woodland Trust
2. To deliver the HLF Conservation, Management and Maintenance, and Activity Plan of the project "Bringing Fingle Woods back to Life" which runs from May 2016 to April 2021.
3. Install water monitoring equipment to record pH, turbidity, flow and rainfall.
4. Develop demonstration model as descried in the HLF project to share the findings of the water monitoring and the impacts of harvesting and recovering vegetation in the riparian zone on water quality.
5. Maintain all culverts, track surfaces and undertake remedial work to minimise impacts on watercourse following FC/EA guidance in the Forest And Water Guidelines - 5th Edition published in 2011
6. Consider carefully the design of any new harvesting roads and tracks or remedial work to poorly designed tracks and their impact on surface water run-off and following FC/EA guidance in the Forest and Water Guidelines - 5th Edition published in 2011.
7. When undertaking operations to remove conifer along stream margins to create "buffers" make reference to the survey "The status and distribution of bryophytes (liverworts and mosses)" November 2015 - R. Jeffrey for recommendations.
8. Continue to control non native species i.e. rhododendron/laurel/conifer regeneration and noxious weeds such as knotweed, balsam and hogweed.

6.0 WORK PROGRAMME

Year	Type of Work	Description	Due By

APPENDIX 1: COMPARTMENT DESCRIPTIONS

Cpt No.	Area (ha)	Main Species	Year	Management Regime	Major Management Constraints	Key Features Present	Designations
5a	1.40	Douglas fir	1985	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site
A compartment of mixed conifer species planted in 1985, mainly Douglas fir with Japanese larch in the upper (southern part). The sub compartment was thinned in the winter of 2014/5, this was a mainly a line thinning 1:8 to maintain crop stability but a 10m wide strip along the northern edge above the riverside track was removed completely, and the early results indicate a strong re-establishment of ancient woodland ground flora since the felling. The eastern edge of the compartment runs parallel to a watercourse which provides a narrow refuge of ancient woodland indicators and native broadleaves. Linear features such as streams are due to be worked i.e. thinned as part of a first phase restoration strategy between 2016 and 2020 as part of the Heritage Lottery Project. Mensuration 2014 - Basal area p/ha 43.37 - Mean DBH 19m - Top height - 23m DF + Larch. Split cpt. OK, ROW, BI understrey. Fungi on woodland floor - little else in top section. Bracken under more open canopy of Japanese larch, bedstraw, mixed flora. A lot of Birch. From PAWs Survey Table D Rickwood 5/2014							
5b	0.97	Douglas fir	1985	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site
A compartment of mixed conifer species planted in 1985, mainly Douglas fir with Japanese larch in the upper (southern part), and returning to Douglas fir above the track which was re-spaced in 206/7. The main area of the sub compartment was thinned in the winter of 2014/5, this was a mainly a line thinning 1:8 to maintain crop stability but a 10m wide strip along the northern edge above the riverside track was removed completely, and the early results indicate a strong re-establishment of ancient woodland ground flora since the felling. Increasing amounts of birch in area dominated by Japanese larch. Mensuration 2014 - Basal area p/ha 43.37 - Mean DBH 19m - Top height - 23m V similar to 5a. More moss & other fern spp. Thinned? DF + Larch. Split cpt. OK, ROW, BI understorey. Fungi on ground - little else top section. Bracken under more open canopy of Larch, mixed flora. Freq Birch. Rhododendron lower side. From PAWs Survey Table D Rickwood 5/2014							

5c	1.63	Douglas fir	1985	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site

A compartment of pure Douglas fir planted in 1985. The sub compartment was thinned in the winter of 2014/5, this was a mainly a line thinning 1:8 to maintain crop stability but a 10m wide strip along the northern edge above the riverside track was removed completely, and the early results indicate a strong re-establishment of ancient woodland ground flora since the felling. A couple of pockets of mixed sycamore and hazel exist.

Area 1.63 ha - Basal Area 29m2 - Mean DBH 17 - Top Height 27

From lower riverside track – fern spp diverse. Brambles, deadnettle, wood sorrel, sycamore saplings (some coppiced at W end), bedstraw (as photo), hazel (generous band) before DF crop – brashed and thinned. Wood sorrel frequent in interior. From PAWs Survey Table D Rickwood 5/2014

5d	0.78	Douglas fir	1966	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site

Riverside strip of mainly mature Douglas fir but including Western Red Cedar, Western Hemlock. A number of mature pre-plantation oak are present, with occasional ash and standing deadwood present along river edge and towards eastern end of sub compartment. Areas of mixed broadleaf under planting dating from late 1990s, tubes removed in 2014 (very first operation as new owners). Conifer regeneration present, re-spacing and cleaning required. Area last thinned by previous owners in 2007, thinned lightly in 2014/5 to favour pre-plantation oaks and river edge. Sub compartment has quite well developed field layer and understory including, Rose of Sharon, bedstraw (not quite goose grass), wood sedge, dogs mercury, hazel and holly, creeping violet, wood sage, and elder.

Mensuration 2014 - Basal area p/ha 61m2 - Mean DBH 56cm - Top Height 35m

5e	2.94	Douglas fir	1992	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site

A sub compartment of pure Douglas fir planted in 1992 with occasional Western Red Cedar. Line thinned in 2016/7 removing 1:8 rows, some light intermediate thinning was also undertaken to remove "tipi" poles at the same time. The rows were driven by the harvester but this was marginal in terms of steepness. The trackside edges have been in part worked to favour developing birch and native broadleaves at the sub compartment margins. Crop will produce high value Douglas fir longer term but more thinning/cleaning work needed at next thinning intervention. Little semi-natural ground cover within the interior of the sub compartment although the track edges has light bracken cover, foxgloves, moss, brambles. Birch and other broadleaves are present and its is hoped these will develop further following the 2016/7 thinning operations. From PAWs Survey Table D Rickwood 5/2014.

Mensuration : Area 2.94ha - 26 Mean DBH 15 cm - Top Height 18 - Planted 1992
Volume Removed in 2016/7 - 82 m3

5f	3.59	Douglas fir	1978	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site

A stand of pure Douglas fir planted in 1978 with the potential to yield very high value stems. The crop stands on a very steep slopes, the depth of soil varies but in places is pure scree. The crop is very drawn due to delayed thinning operations but in places 1:5 rows have been partially removed at some stage. During 2016/7 the whole sub compartment was thinned to favour stems of future high quality and to open up areas of oak in particular within the sub compartment and along the margins crop and track edges. Crop is generally well stocked with consequent bare understory some pockets of failure blow (less than 2 - 5%) with more diverse structure. Where wind firm the crop edges against river and sessile oak coppice have been thinned heavily or removed completely to favour the emerging native broadleaves and ground flora. Scattered clumps of rhododendron were cut and treated in 2014/5. Lots of old oak and conifer stumps are present but are no longer fixed due to the erosion of the scree on the steep ground and are just sitting on the surface, these occasionally fall down the slope and present a hazard to the public right of way below. Save of the crop edges ground flora and native broadleaves are almost entirely absent but it is intended the 2016/7 thinning may lead to increasing percentage semi-natural ground cover.

Mensuration - Area 3.6 ha - Basal Area 20 m2 Mean DBH 13 cm Top Height 18 cm Planted 1978

5g	1.23	Douglas fir	1982	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site

Douglas Fir P. 1982 - 1.23 ha – sub compartment has been partly line thinned and 1 in 5 lines have been removed. Thinned in 2016/7 season remaining areas line thinned or re-spaced, Growth in this sub-compartment is good and there are a number of extraction routes, where these "fade" out less where thinning has been undertaken. These tracks need re-forming with an excavator. In places there is some oak coppice from old stumps and some areas of NBL where light permits, and this is typically on some ride edges, however, much of the understory is largely devoid of any growth at all. Stand requires completion of line thinning (say 1:5 to match) due to steepness of slope and opportunity to re-visit within next 10 years. Other line thinned areas selective thinning required. Semi-natural edges would be best thinned to accommodate NBL and ground flora, other wise within the main sub cpt semi –natural vegetation is entirely absent, indeed almost any vegetation. DBH - 11,19,20,14,11,10,14,12,24,28,10,15,22,22,16,20 TOP HEIGHT - 22 BASAL AREA - 39 Vol thinned in 2016/7 estimated at 30 m3							
5h	1.53	Douglas fir	1993	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site
Douglas fir P. 1993 – 1.56ha . Very steep slope, stony in places just scree. Stand of pure DF un-thinned with a lot of self sown DF. Crop was poorly maintained and has a lot of broadleaf intrusion and establishing rhododendron (mostly treated in 2014/5). Where DF is well stocked the ground cover is absent. Crop is very dense even where NBL and is at late thicket stage. Crop edge was felled against river and now has emerging fringe of NBL and ground flora. Whole would benefit greatly from re-spacing/cleaning. Crop access is very poor. Old stumps (including large DF) or broken stumps the very bare/dry stony surface means that a lot of old stumps are no longer fixed and are just sitting on the surface. Stumps will be damaged during any harvesting operation (i.e. roll down hill). Stand requires line cleaning and re-spacing operation and rationalisation of conifer boundaries. Where DF stocking is good, thinning intensity (say 1:5) . Semi natural edges/pocket would be best thinned to accommodate NBL and ground flora. DBH – no measurements taken as tree small diameter but range 7cm to 15 cm but very erratic due to dense naturally regenerated DF and NBL. Coppiced hazel + oak, rowan and occ conifer WRC/DF regen/failed planting. E end of cpt conifers more freq – pole stage w coppice thicket u/storey. Mixed ground flora. Sycamore by river track. Pre-plantation trees along river inc alder oak birch beech & ash							
5i	1.02	Douglas fir	1968	PAWS restoration	Sensitive habitats/species on or adjacent to site, Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site

Narrow riparian strip of mixed conifer with some mixed broadleaf following the western edge of a small stream. Records indicate this was last thinned in 2007. However, the sub compartment was partially blown due to north wind in early 2016, the windblown was cleared as part of 2016/7 harvesting operation and a number of mature blown spruce and Douglas fir removed. Sub compartment comprises mature stand of Sitka spruce Douglas fir and a few silver/ grand fir and European larch. Patches of ferns, birch regeneration present under heavily thinned canopy. Willow present along the stream edge , with a scattering of ash at the southern end, including some mature specimens. The ground flora is quite diverse reflecting its streamside location . From PAWs Survey Table D Rickwood 5/2014 (see JW survey)							
5j	0.91	Oak (sessile)	1900	Coppice	Sensitive habitats/species on or adjacent to site, Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site
Area of stored oak coppice thought to have been felled during the 1940s (Second World War around 300 acres felled) and then restocked with Japanese Larch but unlike many other sub-compartments this silvicultural approach largely failed in this area and the oak re-established but some mature Japanese larch is still present within the mainly oak coppice. The western edge is fringed by a watercourse surrounded by beech. Ground flora, vaccinum myrtillus, caluna vulgaris ground flora suggests acid heathland vegetation. Occasional and sometime frequent cow wheat and occasional bracken. Regenerating birch and along the stream edge Western Hemlock. Some small clumps of rhododendron (surveyed Feb 2014 - M Parkins).							
6a	1.94	Oak (sessile)	1900	Coppice	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site
The majority of this sub compartment sold to the National Trust during the aquisition phase Area of stored oak coppice, with developing birch, areas is thought to have been felled during the 1940s (Second World War around 300 acres felled) and then restocked with Japanese Larch but unlike many other sub-compartments this silvicultural approach largely failed in this area and the oak re-established. Scattering of regenerating conifer present. Ground flora, vaccinum myrtillus, caluna vulgaris ground flora suggests acid heathland vegetation. Occasional and sometime frequent cow wheat and occasional bracken.							
6b	0.85	Sessile oak	2017	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site

The majority of this sub compartment sold to the National Trust during the acquisition phase - Area thinned in 2011. Mature JL with emerging oak and mixed b/leaf understory. Plant health Order issued in autumn of 2016. All JL felled in 2016/7 as part of harvesting operation, understory retained where practical and site left to regenerate naturally. A small exclosure was erected in March 2017 which is to be monitored annually for 5 years as part of HLF project.							
6c	0.56	Beech	1948	High forest	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site
The majority of this sub compartment sold to the National Trust during the acquisition phase. Last thinned in 2011. Plant health Order issued in autumn of 2016. All JL felled in 2016/7 as part of harvesting operation, mature beech and understory retained where practical and site left to regenerate naturally.							
6d	0.65	Sessile oak	2017	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site
The majority of this sub compartment sold to the National Trust during the acquisition phase - Area thinned in 2011. Mature JL with emerging oak and mixed b/leaf understory. Plant health Order issued in autumn of 2016. All JL felled in 2016/7 as part of harvesting operation, understory retained where practical and site left to regenerate naturally.							
6e	0.62	Oak (sessile)	1900	Coppice	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site
The majority of this sub compartment sold to the National Trust during the aquisition phase Area of stored oak coppice thought to have been felled during the 1940s (Second World War around 300 acres felled) and then restocked with Japanese Larch but unlike many other sub-compartments this silvicultural approach largely failed in this area and the oak re-established but some mature Japanese larch is still present within the mainly oak coppice. The western edge is fringed by a watercourse surrounded by beech. Ground flora, vaccinum myrtillus, caluna vulgaris ground flora suggests acid heathland vegetation. Occasional and sometime frequent cow wheat and occasional bracken.							
6f	0.06	Douglas fir	1966	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site

The majority of this sub compartment sold to the National Trust during the aquisition phase Relatively poor growth of Douglas fir given assumed age, looks more like 1980s ? has had some selective thinning but as elsewhere very steep, some felling/clearance for shooting gun stands along watercourse							
6g	0.41	Sessile oak	2017	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site
The majority of this sub compartment sold to the National Trust during the acquisition phase - Area thinned in 2011. Mature JL with emerging oak and mixed b/leaf understory. Plant health Order issued in autumn of 2016. All JL felled in 2016/7 as part of harvesting operation, understory retained where practical and site left to regenerate naturally.							
6i	0.68	Douglas fir	1966	PAWS restoration			
Dense stand of DF. No ground flora except at edges. Variable size stems. Deadwood OK coppice stools + moots visible on ground across cpt. Pre-plantation BE top end. BE + western hemlock regen near stream. Foxglove and variety of fern species near stream							
6j	4.21	Oak (sessile)	1900	Coppice	No/poor vehicular access within the site, Sensitive habitats/species on or adjacent to site		National Park, Planted Ancient Woodland Site
Area of stored oak coppice thought to have been felled during the 1940s (Second World War around 300 acres felled) and then restocked with Japanese Larch but unlike many other sub-compartments this silvicultural approach largely failed in this area and the oak re-established. Plant health Order issued in autumn of 2016. All Japanese larch felled in 2016/7 as part of harvesting operation, understory retained where practical and site left to regenerate naturally, but good Sessile oak canopy.. The western edge is fringed by a watercourse. Ground flora, vaccinum myrtillus, caluna vulgaris ground flora suggests acid heathland vegetation. Occasional and sometime frequent cow wheat and occasional bracken. PAWS Assessment May 2015 - Coppiced OK ROW & BI (HAZ virtually abs). DF regen rare. Vaccinnium m., Ling, cow wheat, grasses, mosses , woodants. Occ bracken. Badger sett. SW good ASNW character & mix, fern spp, OK, BI, BE, WRC regen, ROW, HAZ, SY							
6k	0.77	Oak (pedunculate)	1900	Coppice			

Area of stored oak coppice thought to have been felled during the 1940s (Second World War around 300 acres felled) and then restocked with Japanese Larch but unlike many other sub-compartments this silvicultural approach largely failed in this area and the oak re-established. Plant health Order issued in autumn of 2016. All Japanese larch felled in 2016/7 as part of harvesting operation, understory retained where practical and site left to regenerate naturally, but good Sessile oak canopy.. The western edge is fringed by a watercourse. Ground flora, vaccinum myrtillus, caluna vulgaris ground flora suggests acid heathland vegetation. Occasional and sometime frequent cow wheat and occasional bracken. PAWS Assessment May 2015 - Coppiced OK ROW & BI (HAZ virtually abs). DF regen rare. Vaccinnium m., Ling, cow wheat, grasses, mosses , woodants. Occ bracken. Badger sett. SW good ASNW character & mix, fern spp, OK, BI, BE, WRC regen, ROW, HAZ, SY							
6m	0.49	Sessile oak	2017	PAWS restoration	No/poor vehicular access within the site		National Park, Planted Ancient Woodland Site
The majority of this sub compartment sold to the National Trust during the acquisition phase - Area thinned/partly clear felled for pheasant rearing pen in 2011. Occasional mature JL with emerging oak and mixed b/leaf understory. Plant health Order issued in autumn of 2016. All JL felled in 2016/7 as part of harvesting operation, understory retained where practical and site left to regenerate naturally, but good Sessile oak canopy. PAWS Survey Notes : very open canopy – Vacc Myrt abundant. V similar to 6a + k but smaller OK and more open with occ mature SP. Deer active - dominant bracken ground cover. EL brush at lower trackside suggests recently clear felled.							
6n	0.34	Beech	1948	High forest			
Mostly mature pre-plantation oak, beech & pine. Hard to discern true boundary. Large SS plantation to S (privately owned?) Stinkhorn fungi evident The majority of this sub compartment sold to the National Trust during the acquisition phase. Last thinned in 2011. Plant health Order issued in autumn of 2016. All JL felled in 2016/7 as part of harvesting operation, mature beech and understory retained where practical and site left to regenerate naturally. Occasional large over mature larch retained to allow biological processes to lead to death but short term heavy seeding important for Schedule 1 Bird Species - crossbills in winter flocks.							
7a	3.80	Douglas fir	1992	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site

Patches and single JL removed through sub due to P Ramorum. What's left is an intimate mix of DF & Birch of varying densities. Ground cover v poor.

A sub compartment split into two sections the lower part was line thinned 1:8 during the 2015/6 harvesting season , part of the lower section was blown and this was cleared as part of the harvesting operation. The upper part of the site was difficult to thin without destabilising the crop and was therefore on lightly thinned, focussing on the removal of the Japanese larch that fell within the infected zone of sub compartment 7e.

7b	1.08	Douglas fir	1988	PAWS restoration	Archaeological features, Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site

Sub compartment was thinned in 2015 following the issue of Plant Health Notice for Phytophthora ramorum. All the larch was removed and the remaining Douglas fir and birch retained to ensure woodland cover, however the larch was dense in places and the retained stems were at times widely spaced but very drawn. Initially the crop coped with the initial early winter period following felling however, a series of strong storms in early 2016 resulted in quite widespread damage. It was thought it might be worth trying to recover the blown stems during the harvesting operation in 2016/7 however ultimately it was decided this might destabilise the area further and therefore the sub compartment would be left for a few more years to stabilise. The now open nature of the sub compartment and the increasing percentage of birch adds some variety to the very dense young crops of Douglas fir that surround this sub compartment.

7c	2.10	Douglas fir	1985	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site

This sub compartment was thinned heavily in 2015 to remove the infected Japanese larch, this left a mixture of very drawn and widely spaced Douglas fir initially the sub compartment coped the winter weather, however, a series of storms in the early months resulted in extensive areas of wind blow 2016, but one storm in particular came form the north and this was the most damaging. During the 2016/7 season the resulting windblow was cleared and the now open areas of the sub compartment have been left to naturally regenerate and this is likely to be mainly Douglas fir.

PAWS Assessment May 2015 - Boulder scree top end. Poorly thinned EL with windblow (occ DF - abundant at top). Bracken E margin with track, ferns abundant E edge. Top: BL giving way to DF further down. Wood sorrel, grasses, mosses, vaccinium m. Pre-plantation OK, HAZ, SY, ROW. Larch removed 2015 due to P Ramorum. Patchy blocks of DF and Birch intrusion.

7d	3.07	Douglas fir	1992	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site
Unthinned at 2015 round. Dense, dark, drawn up. Small amount Birch intrusion. Area line thinned in 2016/7 season removed 1:8 rows, crop quite "dirty" with widespread birch regeneration, at western edge some JL but removed as part of plant health notice affecting adjoining sub cpt 6b, has the potential to be high quality DF crop but vulnerable to wind throw.							
7e	0.43	Sessile oak	2016	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site
The mature larch in this sub compartment was notified under a plant health notice in September 2015. The area was clear felled during 2015/6 harvesting season and then the area was restocked with mainly sessile oak and hazel in March 2016. The planting was completed at 2.5 m centres i.e. 1600 stems per hectare and hazel planted (unprotected) between the trees. The area is also being used for testing the regrowth response of bracken following clear felling and the sub compartment has a series of plots marked with metal poles identifying the sampling grid. We are being assisted in this experiment by S. Payne and S. Pocock.							
7f	1.42	Oak (pedunculate)	1900	High forest	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site
Regenerating conifer requires removal. moderate amount Hazel understory, some Holly, Conifer regen. Ferns and Bracken dominate ground flora. Small amount of winblown oak removed in 2016/7 harvesting season for milling at Clifford Shed (circa 15 metres) This followed a period of north wind that caused significant wind throw following the line of the watercourse in March 2016.							
8a	0.67	Mixed conifers	1966	PAWS restoration			
Mature and semi mature stand of Western Red Cedar and Western Hemlock with deep shade preventing any noticeable growth of ground flora. Stream on W boundary of sub-compt has fragment of BL but very little ground flora visible. Small glade at top of sub-compt with foxglove, ferns and grass.							
8b	0.60	Mixed conifers	1992	PAWS restoration			

8c	4.42	Douglas fir	1998	PAWS restoration			
8d	0.98	Oak (pedunculate)	1900	Coppice			
8e	1.95	Douglas fir	1985	PAWS restoration	Archaeological features, Gullies/Deep Valleys/Uneven/ Rocky ground		National Park, Planted Ancient Woodland Site
Largely un-thinned sub cpt of DF, partly line thinned in 2016/7 harvesting operation but growth of DF limited due to lack of earlier thinning consequently thinning yield only poor material, sub cpt contains very heavily shaded and over stood historic boundary with limited remnants. Some cleaning undertaken for tipi poles, next thinning should yield better material. Some AW remnants and some birch/oak regeneration along track margins and cpt edges. Area drivable for harvesting machinery save for some rocky patches.							
8f	1.50	Beech	1942	High forest			
8g	1.62	Beech	1942	High forest	Archaeological features		National Park, Planted Ancient Woodland Site
large Beech, good form, typical lack of understory or ground flora. Area thinned in 2016/7 harvesting season mostly driven as relatively flat but some sections thinned by hand due to access limitations of being oversize for harvesting head. Historic boundary along eastern edge damaged in earlier operations and by creation of turning and loading areas called the lonely larch. Crop has virtually no understory it is hope thinning and some soil disturbance will encourage some regeneration.							
8h	1.03	Douglas fir	1989	PAWS restoration			
Dense & Unthinned.							
8i	2.26	Douglas fir	2003	PAWS restoration			
Thicket stage with some birch intrusion to work to.							

8k	0.19	Mixed conifers	1943	PAWS restoration			
Mainly NS. Heath and bracken dominate ground flora.							
8l	1.69	Oak (pedunculate)	1900	Coppice			
Poor form / stunted growth (thin soils) Heath and bracken dominate ground flora.							
8x	1.01	Douglas fir	2003	PAWS restoration			
very poor take, lots of Birch and some Ok, Be & Rowan to work to. Heath and bracken dominate what ground flora there is.							
8y	0.49	Norway spruce	1943	PAWS restoration			
large NS, no understory, bracken dominates ground flora.							
9a	0.39	Oak (sessile)	1997	High forest			
mature open grown Oak & Beech on riverside with road through middle. Some Holly & Hazel understory.							
9b	1.81	Douglas fir	1985	PAWS restoration			
Dense & dark. Roadside bank cleared off 2014.							
9c	0.75	Douglas fir	1992	PAWS restoration			
Dense & dark.							
9d	5.70	Mixed broadleaves	1997	Wood establishment			
An area of wet flushes and a small stream. Alder, Oak and Birch dominate top half whilst beech & Oak are main spcs lower half. Ferns, sedges, tussock grass and some bracken in patches. Conifer regeneration is a threat to this established natural community.							
9e	0.70	Douglas fir	1998	PAWS restoration			
Dense but lots of Birch & some Oak intrusion.							

9f	1.19	Norway spruce	1942	PAWS restoration			
Does not exist on GISMO , cant find large NS/SS on site in this area.							
9g	0.42	Douglas fir	1969	PAWS restoration			
Good form, very little ground flora except ferns. This appears as a narrow sub cpt on the map but in practice this is part of 9x and should be sub-summed when sub cpt structure is reviewed. Although mainly DF the sub cpt follows an historic boundary with a number of important veteran oaks and as the conifer is removed (part of HLF Strands) to open up and to free up the veteran pre-planation oaks and beech the sub compartment will become dominated by the pre-plantation trees. This sub cpt was thinned in 2016/7 and a small percentage of the Douglas fir was removed.							
9h	2.62	Douglas fir	1988	PAWS restoration	Archaeological features, No/poor vehicular access within the site, Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site
Dense & dark , partly line thinned - PAWS survey 2015. Crop line thinned 1:5 during 2016/7 harvesting season. Crop has the potential to yield high quality DF, access to the crop can be gained from the main track along its southern edge, from where the majority of the sub compartment can be reached for winching, the bottom edge of the crop is very steep and tricky to access, even with a poor track below. The far western racks (approx 4) were driven by harvester but the remaining areas were winched. Very little broadleaf save for at the edges of sub cpt margins which were targeted during thinning. A number of charcoal hearths present. It will be a few seasons for ground flora response to the thinning can be observed.							
9j	0.45	Norway spruce	1969	PAWS restoration			
Tall dense and dark with patches of Bi/Ok/Be							
9k	1.24	Douglas fir	1992	PAWS restoration			
Patchy take of DF with areas of open space, bl's and a few larger bl's.							

9l	1.17	Sessile oak	1900	High forest	Gullies/Deep Valleys/Uneven/ Rocky ground, Sensitive habitats/species on or adjacent to site		National Park, Planted Ancient Woodland Site
top 1/2 cleared to riparian zone as temporary open space, bottom 1/2 mature Be/Ok/Bi/Haz This sub cpt forms the riparian zone of a minor watercourse, and is one of the few locations on the sites where Royal Fern is present. The area was previously cleared of conifer and coppice cut and in places stump treated in order to maintain an open location for shooting, the legacy of this is an open area of scattered mature oak, with some dense patches of mixed native woodland merging into the surrounding conifer crops. The southern edge of the sub compartment runs beside the main access track, during the 2016/7 harvesting season the mature and mixed conifer of mainly Douglas fir was removed to form a semi-natural fringe along the track edge, in effect "restoring" the remaining part of this sub compartment dominated conifer. Ancient woodland ground flora is widespread despite former management approach which included widespread use of herbicide to maintain open gun stands.							
9x	1.20	Norway spruce	1942	PAWS restoration	Archaeological features, No/poor vehicular access within the site		National Park, Planted Ancient Woodland Site
Compartment of mainly mature Norway Spruce, with a distinct pocket of Sessile oak coppice and occasional stems of oak at the margins of the sub compartment. If the planting age is correct the grown of the Norway spruce is poor. Understory of developing bilberry good in places with occasional birch, rowan and holly. Where the conifer is more dense which tends to be pockets of Douglas fir the ground flora is more limited. Conifer regeneration is present although some has been cleared buy National Trust volunteers. The sub compartment was thinned as part of the 2016/7 harvesting operation, and track margins thinned to favour native broadleaves.							
9y	0.99	Douglas fir	2003	PAWS restoration			
Thicket stage (@2015) some Bi/Ok intrusion to work to							
10a	0.98	Corsican pine	1980	PAWS restoration	No/poor vehicular access within the site		National Park, Planted Ancient Woodland Site

thinned but drawn up, Birch in patches, especially at SW end.

A poor crop of Corsican Pine suffering with red band needle blight that's limited growth. Crop in part blown and patchy with widespread birch regeneration, at the eastern end the crop is drivable but further west it becomes steeper and rocky in places. In 2016/2017 the crop was partly thinned and wind blow removed especially as eastern end which has left an open crop. Dense bracken growth in places but bilberry establishing along trackside to northern edge of sub cpt where a large long disused badger sett was present, and this was in part formed underneath the forest track. Under licence the track was reformed in October 2016. Future crop unlikely to yield much timber at the next thinning but has the potential to develop into a very mixed area of pine and birch with regeneration of rowan and holly and become increasingly native in character.

10b	0.22	Lodgepole pine	1967	PAWS restoration			

Lots of windblow in this LP. Heathy vegetation where the bracken doesn't dominate. Some Birch.

10c	0.32	Japanese larch	1967	PAWS restoration			

A few young Oak, Beech, Rowan understory at 8-10m stage (2015). Bracken dominates but some heath vegetation.

10d	0.62	Beech	1944	PAWS restoration			

some LP and SP in here. Bracken dominates.

10e	5.29	Douglas fir	1992	PAWS restoration	Archaeological features, No/poor vehicular access within the site		National Park, Planted Ancient Woodland Site

Dense thicket Unthinned (2015) . Big beech along southern boundary.

A large irregular shaped sub compartment, of mixed quality. Crop was line thinned 1:8 rows during 2016/7 harvesting operation. The crop will be of increasingly high quality as thinning proceeds but some cleaning to remove suppressed stems is required between racks before next thinning operation. Along the southern edge the crop is bounded by an historic boundary dominated by mature oak and beech of significant biodiversity value, the crop margin was removed as part of the 2016/7 thinning operation to create more light and favour the mature broadleaves and this should future proof this feature during the next thinning operation. Save for the margins there is very little ground flora or indeed establishing native broadleaves.

10f	2.43	Beech	1942	High forest			

Big beech, good form. Very little ground flora, no understory.

10g	2.11	Douglas fir	1980	PAWS restoration	Archaeological features, No/poor vehicular access within the site		National Park, Planted Ancient Woodland Site
Dense & dark, line thinned. Douglas fir crop of good potential but erratically thinned in the past. Crop thinned throughout as part of the 2016/7 harvesting operation and where thinning operations were incomplete in past operations. The crop was mostly driven but a number of sections are steep and rocky and this limits access and these areas need to be winched. The sub compartment contains a number of charcoal hearths. Regrettably this sub compartment has very little ancient woodland ground flora and regeneration of native broadleaves is absent, but a number of old coppice stools are present and these as elsewhere on the site are "mobile" as the soil around them has eroded.							
10h	0.67	Beech	1942	High forest	Archaeological features		National Park, Planted Ancient Woodland Site
Medium form. No ground flora (check for Bluebells spring) Beech of reasonably good form, very little understory other than beech and ground flora very limited. Historic boundary which has been heavily modified along eastern edge. Crop thinned in 2016/7 season yielding some sawlog but mainly firewood. It is hoped that the "scarification" occurring as part of the harvesting operation may stimulate some regeneration.							
11a	1.98	Sessile oak	2017	PAWS restoration	Archaeological features		National Park
Sparse larch overstory. Some Oak & hazel through stand. Bracken dominates. Mature crop of Japanese larch that had been heavily over thinned in the past and partly blown in places. Crop did have a dense laurel/rhododendron understory but this was successfully stem injected in 2015. In September 2016 a Plant Health Notice was issued and the crop was cleared in early 2017 and then restocked with native broadleaves in February 2017. It was possible during the thinning to retain a small percentage of establishing native broadleaves including, hawthorn, hazel and sessile oak. An area has been left under planted to provide a "deer lawn". Ground flora dominated by dense bracken growth a legacy of earlier over thinning, despite being a secondary site native daffodils are present along with a range of ancient woodland flora but also gooseberrys presumed garden escapee. A fringe of mature Japanese larch has been retained that fell just outside the 250m diameter infection zone from the infected tree. These have been retained do provide amenity to the neighbouring properties but also as a refuge for schedule one species of breeding crossbills. Boundary wall against road of some antiquity.							
11b	0.21	Douglas fir	1992	PAWS restoration			
Dense & dark, Unthinned (2015)							

11c	1.17	Sessile oak	2017	PAWS restoration	Archaeological features		National Park
Big trees. Bracken dominates. windblow progressing through stand - possible clearfell ? Mature crop of Japanese larch and Norway spruce that had been heavily over thinned in the past and widely blown in places. Crop did have a dense laurel/rhododendron understory but this was successfully stem injected in 2015. In September 2016 a Plant Health Notice was issued and the crop was cleared in early 2017 and then restocked with native broadleaves in February 2017, some establishing native broadleaves along the road edge were protected during the felling . A small area of Norway Spruce (P. 1969) was retained. Ground flora dominated by dense bracken growth a legacy of earlier over thinning, the roadside boundary wall against road of some antiquity.							
11d	0.32	Sessile oak	2017	PAWS restoration	Archaeological features		National Park
Mature crop of Japanese larch that had been heavily over thinned in the past and partly blown in places. Crop did have a dense laurel/rhododendron understory but this was successfully stem injected in 2015. In September 2016 a Plant Health Notice was issued and the crop was cleared in early 2017 and then restocked with native broadleaves in February 2017. It was possible during the thinning to retain a small percentage of establishing native broadleaves including, hawthorn, hazel and sessile oak. The area contains a recently erected exclosure (March 2017) which will be monitored for deer and also vegetation response annually form 2017 to 2022. Ground flora dominated by dense bracken growth a legacy of earlier over thinning, the roadside boundary wall against road of some antiquity.							
11e	1.28	Douglas fir	1992	PAWS restoration			National Park
Dense and dark, Unthinned (2015) PAWS Survey A roadside block of un-thinned Douglas fir of good form and high potential. The roadside edge is very exposed and has suffered some wind blow. Although, the crop is very dense and generally well stocked the crop margins retain some ancient woodland indicator species and occasional native broadleaves. The crop was partly line thinned 1:8 in 2016/7 harvesting season and was driven by the harvester, however, this was limited to some extent by the risk of further wind throw. Crop will require cleaning prior to next thinning in 2022.							
11f	2.11	Douglas fir	1964	PAWS restoration	Archaeological features		National Park

Big stems. Large ferns dominate with bracken, grass, sorrel and DF regen in patches.

A mature crop of Douglas fir (P. 1964) quite "hairy" trees as befitting of its exposed location but trees of good form and quality nonetheless, crop thinned in 2016/7 harvesting season. Some heavy ivy growth with excellent potential for bats, breeding birds and dormice. Future thinning needs to be light to maintain crop structure and to benefit emerging understory of Douglas fir and mixed native broadleaves, and emerging ground flora, in particular ferns, and sorrel, dense bracken is a risk if crop over thinned. Roadside boundary of some antiquity and the fringe of natives provides useful semi-natural habitat that requires careful treatment during harvesting operations to encourage development. Part of the site was blown but this related to a blocked roadside drain which has now been cleared following the 2016/7 harvesting operation. Site can be driven by harvesting machine and forwarder.

Note sub cpts 11f, 11h and 11i can be combined to form one sub compartment of mature Douglas fir.

11g	0.27	Douglas fir	1992	PAWS restoration			

Dense & dark, Unthinned (2015

11h	0.84	Douglas fir	1944	PAWS restoration			

Big stems. Bracken, grass and fern.

Big stems. Large ferns dominate with bracken, grass, sorrel and DF regen in patches.

A mature crop of Douglas fir (P. 1964) quite "hairy" trees as befitting of its exposed location but trees of good form and quality nonetheless, crop thinned in 2016/7 harvesting season. Some heavy ivy growth with excellent potential for bats, breeding birds and dormice. Future thinning needs to be light to maintain crop structure and to benefit emerging understory of Douglas fir and mixed native broadleaves, and emerging ground flora, in particular ferns, and sorrel, dense bracken is a risk if crop over thinned. Roadside boundary of some antiquity and the fringe of natives provides useful semi-natural habitat that requires careful treatment during harvesting operations to encourage development. Part of the site was blown but this related to a blocked roadside drain which has now been cleared following the 2016/7 harvesting operation. Site can be driven by harvesting machine and forwarder.

Note sub cpts 11f, 11h and 11i can be combined to form one sub compartment of mature Douglas fir.

11i	1.02	Douglas fir	1964	PAWS restoration			

Big stems. Bracken, grass and fern. Big stems. Large ferns dominate with bracken, grass, sorrel and DF regen in patches. A mature crop of Douglas fir (P. 1964) quite "hairy" trees as befitting of its exposed location but trees of good form and quality nonetheless, crop thinned in 2016/7 harvesting season. Some heavy ivy growth with excellent potential for bats, breeding birds and dormice. Future thinning needs to be light to maintain crop structure and to benefit emerging understory of Douglas fir and mixed native broadleaves, and emerging ground flora, in particular ferns, and sorrel, dense bracken is a risk if crop over thinned. Roadside boundary of some antiquity and the fringe of natives provides useful semi-natural habitat that requires careful treatment during harvesting operations to encourage development. Part of the site was blown but this related to a blocked roadside drain which has now been cleared following the 2016/7 harvesting operation. Site can be driven by harvesting machine and forwarder. Note sub cpts 11f, 11h and 11i can be combined to form one sub compartment of mature Douglas fir.							
11j	0.97	Douglas fir	1992	PAWS restoration	Archaeological features		National Park
Dense & dark, Unthinned (2015) A roadside block of un-thinned Douglas fir of good form and high potential. The roadside edge is very exposed and has suffered some wind blow. Although, the crop is very dense and generally well stocked the crop margins retain some ancient woodland indicator species and occasional native broadleaves. The crop was partly line thinned 1:8 in 2016/7 harvesting season and was driven by the harvester, however, this was limited to some extent by the risk of further wind throw. Crop will require cleaning prior to next thinning in 2022.							
11k	0.94	Japanese larch	1961	PAWS restoration			
Bracken dominates, some hazel stools.							
11l	5.18	Douglas fir	1992	PAWS restoration	Archaeological features		National Park

Dense , Unthinned (2015) some large old sycamore at NW end nr entrance.

A compartment of two adjoining blocks, a roadside block of un-thinned Douglas fir of good form and high timber potential. The roadside edge is very exposed and has suffered some wind blow, this section of the sub compartment was line thinned 1:8 during the 2016/7 harvesting season. The main block is enclosed within what is believed to be a "corn ditch and wall" (circa 1200 AD) and during preparation for thinning a bronze age hut circle was discovered and the thinning of this part of sub compartment was suspended until more detailed survey and assessment of the sub compartment is undertaken. Although, the crop is very dense and generally well stocked the crop margins retain some ancient woodland indicator species and occasional native broadleaves. The most significant semi-natural feature is a former woodland boundary that runs along the western edge and this contains numerous veteran and pre-plantation trees. As described the crop was partly line thinned 1:8 in 2016/7 harvesting season and was driven by the harvester, however, this was limited to some extent by the risk of further wind throw and some sections are rocky. Crop will require cleaning prior to next thinning in 2022.

11m	1.48	Lodgepole pine	1966	PAWS restoration	Archaeological features, No/poor vehicular access within the site		National Park, Scheduled Ancient Monument

Bracken dominates with patches of needle litter. Some ESF / LP mix on eastern boundary.

An interesting mixed crop of lodgepole pine, and various conifer species, part of this area has long established areas of wind blow and is useful for training, the north edge sits within the scheduled ancient monument area of Wooston Castle, include some ditch features. The area within the SAM was cleared as part of the 2016/7 harvesting operation, and two wind blow training courses have cleared some of the wind blow across the site. Site will yield future thinning and may develop a wide range of conifer species regenerating. Ground flora is limited but bilberry and heathland species are present but bracken is a risk if sub compartment is over thinned.

11n	0.62	Silver birch	2005	PAWS restoration			

This is not P88 Df - more like P2005 ? Some Ok/ Row on edges, Birch through crop.

This sub compartment forms part of the "buffer" strip along part of the western edge of the Scheduled Ancient Monument (SAM) Wooston Castle. The sub compartment comprises hazel and birch, with patches of gorse and increasing areas of conifer regeneration. The area is used by dormice and has been retained to form a transitional habitat against the recently cleared central part of the SAM. In future conifer regeneration will be cut to waste and the scrub development encouraged, during the 2016/7 harvesting operation most of the larger conifer was removed and extracted.

11w	1.15	Open ground	2005	Wood pasture	Archaeological features, Management factors (eg grazing etc), No/poor vehicular access to the site		National Park, Scheduled Ancient Monument
Recently clear felled area, re-stock very poor, mixed conifer and broadleaves requires re-spacing. Very open in places potential for enrichment planting, say 10% or gross area, however as part of SAM complete tree removal. This sub compartment forms part of the Scheduled Ancient Monument (SAM) Wooston Castle. The area was cleared of regenerating conifer and birch over the winter of 2016/7 by volunteers working with horses to extract the timber which was then chipped whole tree for low grade biomass (a total of 715 cubic metres from all part of the hillfort) . The stumps of birch and gorse and other regenerating species are to be treated with herbicide to minimise regrowth. The area has a dense crop of bracken and this is to be rolled so the stems are bruised to limit the vigour of further growth. The intention is to maintain the open nature created following the recent felling by long term grazing arrangements.							
12a	1.05	Japanese larch	1939	PAWS restoration			
JL & open space patches, bracken dominates, odd smaller Sallow, Birch, Oak							
12b	0.56	Japanese larch	1939	PAWS restoration			
Hazel, Holly, Birch in sparse cover under JL, bracken dominates.							
12c	1.86	Douglas fir	1998	PAWS restoration			
Thicket stage (2015) with patches of Birch.							
12d	0.22	Japanese larch	1960	High forest	No/poor vehicular access within the site		National Park, Planted Ancient Woodland Site
Small trackside triangle of mature larch, lightly thinned in 2016/7 season. A semi-natural understory is beginning develop, in time during later thinning's the complete removal of the larch would allow this sub compartment to be subsumed into the adjoining sub compartment 9i and this would create a useful semi-natural buffer to the minor water course the rises below the main track.							
12e	2.37	Douglas fir	1992	PAWS restoration			
Dense and dark							

12f	2.14	Oak (pedunculate)	1900	Coppice			
Small & poor form due to thin rocky soils. Deconiferised 2013/14. Patches of Bilberry, Moss & Ferns with bare rock.							
12w	3.28	Open ground	2000	Non-wood habitat	Archaeological features, Management factors (eg grazing etc), No/poor vehicular access within the site		National Park, Scheduled Ancient Monument
Wooston Hill fort main enclave. Open with bracken dominating, Ok/Bi/JL/DF/SS scattered across as single trees, mainly on earthwork boundary. This sub compartment forms part of the Scheduled Ancient Monument (SAM) Wooston Castle. The area was cleared of regenerating conifer and birch over the winter of 2016/7 by volunteers working with horses to extract the timber which was then chipped whole tree for low grade biomass (a total of 715 cubic metres from all part of the hillfort) . The stumps of birch and gorse and other regenerating species are to be treated with herbicide to minimise regrowth. The area has a dense crop of bracken and this is to be rolled so the stems are bruised to limit the vigour of further growth. The intention is to maintain the open nature created following the recent felling by long term grazing arrangements.							
13a	7.76	Douglas fir	1992	PAWS restoration			
Dense stand of conifer on sloping ground, predominantly DF with a few remanants and individual BL trees – some small clusters of BL in conifers. Small group of semi mature chestnut, beech, birch along ride following higher contour along hill would benefit from halo cutting. East area of sub-compt between main track and river – mixed BL area with regerating conifers.							
13b	1.02	Japanese larch	1964	PAWS restoration			
Bracken dominates, odd Bi, Ok, Rowan understory tree.							
13c	1.63	Mixed conifers	1963	PAWS restoration			
Mature and semi mature conifers dominated by Western Red Cedar with other pine spp interspersed. At W end of sub-compt DF and other conifers are reaching maturity. Very little understorey and ground flora though there is evidence of primrose, wood sorrel, wood sage and bluebell.							

14a	2.33	Scots pine	1945	PAWS restoration	Archaeological features, Services & wayleaves		National Park, Scheduled Ancient Monument
Mainly Scots pine but with some western hemlock and Douglas fir towards old sawmill area. Growth rates are very poor, to such an extent is might be possible to question accuracy of inventory data. Site has heathland flora and has in all probability very poor fertility and this may explain poor growth. Scots Pine now suffering decline possibly red band needle blight. Understory of conifer beginning to form in patches with some birch, sycamore, oak and hazel at margins. Rowan and birch seedling present. Along the northern edge there is an old hedge/wood bank with a strip of mature oak some of which are important pre-plantation trees and veterans. This probably forms the boundary between heathland and woodland. At the western end the sub compartment borders the upper ramparts of Wooston Iron Age Hill fort and there is a defensive ditch circa 2 to 3 metres deep and 5 to meters wide. The linear feature are the county road and roadside bank to south and wood bank to north and rampart to west, all appear to be good refuges of ancient woodland flora and species diversity. Woodland Flora Species: Mostly heathland, Bilberry, Heather , Mat Gras, woodland species Wood Sage, Bluebell, Wood sorrel (edges) Coarse Vegetation; Bracken (minimal at present) Invasive: Conifer regeneration Douglas fir, Western Red Cedar, Western Hemlock may prove to be very extensive and replace the Scots Pine without intervention Mensuration: Average Diameter at Breast Height 22 cm Basal Area per Hectare 38 Top Height – Estimated 12m Management Options - Possible light thinning of Scots Pine but crop is dying on its feet so self-thinning taking place but regeneration of conifer potential issue. Control of regeneration more critical than silvicultural thinning within plan period. Specific targeted work required to wood bank and hill fort rampart required to remove excess tree growth and conifers in particular.							
14b	0.31	Other	2000	Non-wood habitat			
14c	0.43	Douglas fir	1949	PAWS restoration	Archaeological features, No/poor vehicular access within the site		National Park, Scheduled Ancient Monument
Tall but slim DF, heath type vegetation and lots of WH / DF regeneration 2-10m high.(2015)							
14d	2.14	Douglas fir	1978	PAWS restoration			
About 50/50 DF / BL - Birch/Rowan/Oak - could Respace to mostly BL.							

14e	0.65	Oak (pedunculate)	1900	High forest			
Mature Ok, no understory, bracken dominates.							
14f	3.46	Douglas fir	1992	PAWS restoration			
Dense & dark							
14g	2.54	Sitka spruce	1957	PAWS restoration	Archaeological features, Management factors (eg grazing etc)		National Park, Scheduled Ancient Monument

Mixture of Stika Spruce (bigger stems and dominant) and Norway Spruce. The crop is relatively poor and this is a far from ideal site for these species, site is very exposed and crop trees very coarse. At western end of sub cpt recent wind blow following Feb 2014 storms. Good woodland remnants at western end against field hedge bank boundary and along line of hill fort rampart. Power line crosses sub cpt and this has some birch establishment and occasional oak and good indication potential. Sub compartment is delineated by road to north and south and field bank at western end. Rowan, birch, oak, sycamore on margins and where pockets of crop failure. The linear features are the county road and roadside bank to west and hill for rampart. All appear to be good refuges of ancient woodland flora and species diversity.

Sitka spruce cleared from area of scheduled Ancient Monument (SAM) during 2015/6 harvesting season and the remaining part of the sub compartment thinned and the way leave cleared to prevent future damage from windblown Sitka Spruce. Crop will yield future thinning's although its not of the best quality or speed of growth.

Woodland Flora Species: bluebell, wood sorrel, ferns, honey suckle (edges and abundant at western edge)
Coarse Vegetation; Bracken and some bramble (minimal at present)
Invasive: adjoining sub cpt conifer regeneration

Management Options - Light thinning of spruce when clearing wind blow. Crop can be worked by machinery as level. Specific targeted work required to rampart required to remove excess tree growth and conifers in particular and recent wind throw.

Mensuration:

Average Diameter at Breast Height 24 cm
Basal Area per Hectare 40
Top Height – Estimated 20m

14w	2.94	Mixed conifers	1993	PAWS restoration	Archaeological features, Management factors (eg grazing etc), No/poor vehicular access within the site		National Park, Scheduled Ancient Monument

DF/WRC/LP/JL/BI - some very thin whippy stems especially BI & DF but some bigger stems through also.

This sub compartment forms part of the Scheduled Ancient Monument (SAM) Wooston Castle. The majority of the area was cleared of regenerating conifer and birch over the winter of 2016/7 by volunteers working with horses to extract the timber which was then chipped whole tree for low grade biomass (a total of 715 cubic metres from all part of the hillfort) . An area of conifer east of the last earth work has been retained awaiting further information following the magnometer archaeological survey in March 2017. The stumps of birch and gorse and other regenerating species are to be treated with herbicide to minimise regrowth. The area has a dense crop of bracken and this is to be rolled so the stems are bruised to limit the vigour of further growth. The intention is to maintain the open nature created following the recent felling by long term grazing arrangements.

15a	1.66	Douglas fir	1993	PAWS restoration			National Park, Planted Ancient Woodland Site

Unthinned 2015 except for a few tepee poles cut out. Dark and dense.

Young un-thinned crop of DF P 1993, with potential to form a high quality crop, but a lot of broadleaf intrusion that has restricted crop development. Partly line thinned 1:8 by machine in 2016/7 harvesting season but work incomplete due to crop condition. Crop margin worked to open up track edges and this has worked well where gradual and young oaks have been left to develop. Ground flora mainly bilberry and developing heathland although ancient semi-natural. Crop has been worked for tipis and this has re-spaced the crop in advance of next thinning in 2022. Along the southern edge is the sub-compartment is a historic woodland boundary containing a number of veteran pre-plantation trees and a useful source of ancient woodland flora.

15b	2.77	Western hemlock	1966	PAWS restoration			National Park, Planted Ancient Woodland Site

Dense shade WH. Stand less shade NS. Other firs NE. Occ EL, DF, MCs. Thinned. Brash, poor ground flora ferns & mosses. WH & WRC regen N-S track. Young OK BI HAZ DF WRC + WH regen. Vaccinium m, H. perforatum, M perennis, O acetosella, Fox Glove, violet. (PAWS assessment May 2015).

Mature crop of mixed conifers, mainly Western Red Cedar, Western Hemlock and Douglas fir, the crop was thinned during 2016/7 harvesting operation and Western Hemlock was targeted for removal in favour of both WRC/DF. Crop has good potential to produce high value conifer during future operations, but basal decay present in many stems. Crop is driveable with harvester. Western hemlock regeneration is widespread but glimmers of semi-natural ground flora and regeneration present at crop margins. Along the road side edge there are a handful of pre-plantation trees on a historic boundary, just south of this a small cluster of confers have been removed next to the Clifford sawmill entrance.

15c	0.54	Douglas fir	1998	PAWS restoration			

Thicket stage (2015) with patches of open ground (bracken dominated) and BL intrusion - some good patches of BL to work to.

15d	0.39	Douglas fir	1967	PAWS restoration			

Dense & dark.

15e	1.95	Douglas fir	1986	PAWS restoration	Archaeological features, No/poor vehicular access within the site		National Park, Planted Ancient Woodland Site

Young, dense DF tree largely unthinned but with some minor windthrow in places. Moss and ferns appearing at extent. More BL species (i.e. hazel, oak) at road boundary. Track at lower extent with sorrel, bluebell and woodsage

Young un-thinned crop of DF P 1986, with potential to form a high quality crop, the crop is quite "dirty" in places having suffered some wind throw in the past. Partly line thinned 1:8 by machine but crop vulnerable along road edge to wind blow as exposed. The majority of the block was line thinned but winched. Numerous charcoal hearth throughout. The roadside edge has an historic bank with a good hazel population which provide linkage across the public highway. Ancient woodland indicators present at the margins but absent across the majority of the sub compartment. Note crop has been part worked for tipi poles but requires cleaning and re-spacing before next thinning operation.

15f	4.15	Oak (pedunculate)	1900	Coppice			

Predominantly high OK woodland (not coppice as in amalgamated inventory spreadsheet). Healthy ASNW ground flora but mixed conifer regen (DF, WH, WRC) beginning to get a hold in some areas. Small stream runs through/drains compartment towards River Teign							
15g	1.59	Douglas fir	1984	PAWS restoration			
Dense un-thinned stand of Douglas fir, mixed with Western Hemlock and Western Red Cedar. Crop was restocked following felling in 1984 but widespread natural conifer regeneration throughout, this has resulted in a dense but irregularly grown crop. The sub compartment has two tracks one main track along the southern boundary and second to the north which is lower on the slope but unused sine felling in 1984. From both these tracks its possible to winch most of the sub compartment, and it may be possible to winch the sub compartment below15h but this might be lengths of up to 80m. The crop was due to be thinned in 2016/7 but due to time constraints only a small amount of felling was undertaken to create access to the heavily overgrown lower track. Thinning operation was postponed to 2017/8 to allow time for the middle access track to be reformed and widened, however, the steep narrow nature of the track will limit machinery to be used. The crop has little native ground flora due to the dark nature of the crop, some birch, hazel and occasional oak present the track side verges current sustain little ground flora but recent work to open up the southern main track has improved light levels and fragments of native ground flora are re-establishing. A number of charcoal hearths are evident and these have been marked to prevent damage during harvesting. PAWS Survey May 2015 - Dense predominantly young MC (stumps evident pos DF listed) MC on steep N ground. Little/poor ground flora and increasingly overstood BI & HAZ + OK to N. Unmarked track middle of site. N of cpt larger v dense WRC/WH needs thinning + occ OK							
15h	0.58	Western hemlock	1967	PAWS restoration	No/poor vehicular access within the site, Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site

Dense largely un-thinned stand mixed with Western Hemlock and Western Red Cedar Planted in 1967. The northern edge of the crop (a full tree length) directly above the riverside track was removed to permit track widening to create safe access for timber lorries but also to reduce the future need to work this sub compartment from the riverside track. The wide verge provides and opportunity for semi-natural vegetation to establish and link the sections of native woodland to the either side. A track to the south which runs through sub cpt 15g should be sufficient to provide access to the whole sub compartment. Thinning operation was postponed to 2017/8 to allow time for the middle access track in sub compartment 15g to be reformed and widened, however, the steep narrow nature of the track will limit machinery to be used. The crop has little native ground flora due to the dark nature of the crop, some birch, hazel and occasional oak present. The riverside track verge was cleared as previously described and restocked with hazel and although some ground flora is beginning to emerge such as greater woodrush but western hemlock is regenerating freely. PAWS Survey May 2015 - Check this seems to be wrong - Dense conifer EL and DF – 2nd rotation crop (planted since 1967 WRC on inventory) some wind blown largely pole/thicket stage . Occ breaks in canopy - sparse ground flora: wood sorrel, bluebell, fern, St Johns Wort, foxglove. Occ small Bl, Honeysuckle							
15i	2.87	Douglas fir	1978	PAWS restoration			
Dense, partially line thinned. Steep ground.							
15j	2.16	Douglas fir	1992	PAWS restoration			
Dense & dark.							
15k	1.69	Oak (pedunculate)	1900	Coppice			
Oak with some Beech and Birch, sparse Hazel understory							
15l	0.29	Open ground		Non-wood habitat			
Sawmill Entrance, parking and building							
16a	2.43	Douglas fir	1981	PAWS restoration	Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site

The sub compartment was selectively thinned in the harvesting season 2014/5 along the track edge to open up the main riverside track and the remainder of the sub compartment partially line thinned in order to try and complete an earlier thinning operation. The area of the sub compartment below the riverside track runs directly along the river edge where there are a number of veteran oak present. Where practical these were haloed in 2014/5 and young Douglas fir however there are some sensitivities with the neighbour to be considered along this section of river. Sub compartment has been selected for the Continuous Cover Forestry (CCF) trial and will be initially worked in 2017/8.

PAWS Survey May 2015 - Block of young Douglas Fir (too small / young for the p1981 YC 18 that is listed in the amalgamated inventory?) alongside river track with a ground flora of bluebell, mixed spp. Ferns, red campion, wood sage, yellow archangel and wood sorrel (ranging between Occ – rare under the DF but F-A at the trackside edge). With every 5th row of DF having been removed the woodland ground flora has maintained more of a toe-hold within the middle of the plantation rather than just being at the edges. The sub cpt sits in a part of the wood not recognised on the Ancient Woodland Inventory but the site name Hitchcombe Wood and the ground flora and pre-planation trees along the river appear to contradict this.

Basal area sweep – All of compartment 16a (DF): 11 @ BAF 3.481 ? G=38 m2/ha
Sample of trees in 8m Radius plot within centre (more or less) of stand:
Dbh: 25, 19, 20, 26, 27, 16, 21, 19, 15, 23, 23, 11, 10, 27, 20, 24, 11, 25, 21, 15, 37*, 17, 18 ? G = 41m2/ha
Top height*: 26m
Estimated current stand volume: 996m3 (for 2.43ha - although a portion between track and riverside that is not under DF may have been included in this compartment area)

Management Options - Regular selective thinning of DF trees required to help bring more light to the woodland floor incrementally to favour the ASNW ground flora and promote native BL tree regeneration. This would be an ‘easy win’ to demonstrate PAWS restoration to the public so close to the main arterial track through the site. Although it’s not the highest priority purely from the PAWS survey point of view, it offers a good text book case with established in-roads / remnant hotspots from which woodland ground flora can get re-established within the compartment.

16b	3.75	Beech	1930	PAWS restoration			
16c	3.19	Western hemlock	1955	PAWS restoration			
16d	0.30	Japanese larch	1965	PAWS restoration			
Strip of Larch on roadside							

16e	1.28	Douglas fir	1992	PAWS restoration			National Park
Dense un-thinned crop of Douglas fir used as a training block by National Trust for chainsaw training. During 2014/5 season the National Trust volunteers removed the front edge of the crop to reveal an area of suppressed and drawn hazel coppice and this has now been freed up to establish a semi-natural fringe along the southern edge of this sub compartment. In 2016/7 racks were cut through to removed every 8th row, in the same year an exclosure was created to monitor deer browsing impacts on both the hazel and the ground flora. Crop contain occasional birch and hazel throughout but the growth rate of the Douglas fir is such that this will be suppressed in advance of the next thinning operation, whole requires "cleaning" to remove low value stems and free up any native species. PAWS May 2015 - Dense, unthinned canopy of Douglas fir, heavily shaded. Ground flora scarce except roadside border which has occasional silver birch in canopy							
16f	0.43	Douglas fir	1981	PAWS restoration			National Park
Small sub compartment of good quality Douglas fir somewhat erratically thinned in 2016/7 harvesting season, racks previously established, The sub compartment runs along the roadside boundary and during the thinning operation a number of road edge trees were removed. This sub compartment also runs along a fringe of semi natural oak woodland and ground flora along this fringe has the potential establish within the recently thinned Douglas fir. Crop can be accessed by harvester. Line thinned 1:7, a few ferns, sorrel and primrose but mostly needle litter.							
16g	7.60	Common alder	2003	Wood establishment	Services & wayleaves		National Park
Rivermeads - former riverside field called Rrivermeads" that falls within flood zone 3. Site planted with a mixed broadleaves, but now alder, birch and ash dominant but birch in decline despite being only 15 years old. Minor component species becoming more significant.							
16h	0.45	Peduncu late/com mon oak	1900	High forest	No/poor vehicular access to the site		National Park
Strip of native woodland on steep bank above former field of "Rivermeads". Occasional mature stems of oak but mainly understory species and in particular mature hazel, sub cpt is bisected by power lines. EPS species present both dormice and active badger sett.							
16i	0.93	Mixed broadlea ves	1995	High forest			

High BE with understorey of BI, HAZ, WRC & planted BE; HAW elsewhere. Bluebells, dog's mercury & ferns in ground flora almost resembling woodland pasture with closely cropped grass. Signs of deer grazing & browsing on lower BE foliage/branches							
16u	1.79	Western hemlock	1955	PAWS restoration			
WRC dom with pole stage MC inc dawn or RSQ & BI thicket E. Tracks top & bottom have bluebells, ferns etc (?important seed bank for poor ground flora under dense shade. Ravens nesting in WRC top end. Higher thinned less than lower. V high volume timber							
16v	1.37	Western hemlock	1955	PAWS restoration			
Mixed conifer dating form 1955							
16x	2.16	Beech	1930	High forest			
Thinned high beech wood. Relatively open semi-mature stand with ground flora of wood sorrel, bluebell and foxglove dominated by beech leaf litter. Ferns sparsely located							
16y	1.60	Beech	1930	High forest			
Mature Beech overstory with underplanting circa 1995 of DF Unthinned 2015.							
17a	3.18	Beech	1930	High forest			National Park

A number of sub dominants remain, the thinning in 2007 must have been very light. Another thinning needed. Potential high quality beech.

Beautiful stand of pure beech of very good timber form but with some stem diameter variability and numerous sub-dominants. Crop was last thinned in 2007. Ground flora patchy reasonable development in some areas but declining in others as light levels are increasingly reduced. There is very little regeneration of species and the understory is effectively absent. Around the margins of the sub compartment adjacent to tracks there is good array of bluebells and other woodland flora, and where recent blow has occurred foxglove is emerging and potential for bracken and bramble development. There are lots of old stumps within the crop most are form the former crop. The linear features are the tracks, and roadside bank all good refuges of ancient woodland flora and species diversity. Roadside bank has well established hazel possibly very old. Note site is secondary planted on former field in 1930.

A truly amazing crop of high quality beech planted in 1930, crop was thinned in 2007 and again in 2016/17 season, removing sawlogs and mainly firewood to re-space and remove poorer quality stems and problematic edge trees along the roadside. Crop was dense with fairly low light levels once in full leaf. Occasional mature larch along roadside. The crop has no understory and its hoped the recent thinning will aid regeneration but deer are browsing this sub compartment heavily. The ground flora forms a dense mat of blue bells and a number of other ancient woodland indicators.

Woodland Flora Species: Bluebell, Wood Sage, Foxglove, Wood Sorrell,
Coarse Vegetation; Bracken
Invasive: None

Mensuration:

Average Diameter at Breast Height 36 cm
Basal Area per Hectare 8.6
Top Height – Estimated 25 m

Management Options - Stand can be left in present condition and would sustain a very light thinning in future. Potential to under plant with hazel

17b	2.99	Douglas fir	1992	PAWS restoration	Housing/infrastructure, structures & water features on or adjacent to site		National Park

Un-thinned but in places broadleaved intrusions require favouring during silvicultural operations

A relatively large sub compartment spread over three small blocks sub divided by extraction tracks and edge by public road. All three blocks are well stocked and generally un-thinned stands of Douglas fir but part has been thinned (1 in 3 rows) possibly for shooting purposes. As the compartment is sub divided by tracks there is a lot of “edge effect”, where broadleaved intrusions are present and good ground flora. There is good scrub development on some margins which were possibly left unplanted when re-stocked, species including, willow, hazel, sycamore, birch, hawthorn, ash and oak. These trees are well developed but save for very old hazel there are very few pre-plantation trees. It is assumed internally the crop species is consistent/pure. Sub compartment appears to relatively wet indicating impeded drainage certainly when compared to adjacent sub cpts.
Adjacent to the central ride are water tanks and underground water pipes and associated equipment supplying water to Clifford Cottages. Note secondary woodland former field planted in 1930s.
The linear features are the tracks/public highway and a former hedge bank, all good refuges of ancient woodland flora and species diversity.

Woodland Flora Species: Bluebell, Wood Sage, Foxglove, Wood Sorrell, Soft Rush (try to get more detail as wet)
Coarse Vegetation; possibly willow in places
Invasive: Laurel (locally extensive pure stand)

Mensuration:

Average Diameter at Breast Height 12 cm
Basal Area per Hectare 18
Top Height – Estimated 10 m

Management Options - Crop requires line thinning 1 in 7 or 1 in 5; site is level and would permit machine access but care needed with ground conditions. Needs thinning within first 5 years. Laurel needs removing in winter of 2014/15.

17c	1.38	Douglas fir	1978	PAWS restoration	Archaeological features		National Park

Stand of pure Douglas fir planted in 1978 of reasonable form, last thinned in 2013. In February storms of 2014 around 50% or more of the crop was blown and the remaining crop is very unstable. Around the margins of the sub compartment adjacent to tracks there is good array of bluebells and other woodland flora, and where recent blow has occurred foxglove is emerging and potential for bracken and bramble development. In particular along the eastern edge there are numerous old hardwood stumps, these were part of a layered hedge, indicating a possible old track way. There is also a small pit/earthwork on south eastern edge. Within the crop there are odd gaps and these contain ancient woodland remnants. There are lots of old stumps within the crop most are form the former conifer crop but there are some old oak stumps for the pre-plantation woodland. Along the SW edge there is an old hedge bank (possibly wood bank against ASNW) with a strip of semi-mature beech.

The linear features are the tracks and a former hedge bank, all good refuges of ancient woodland flora and species diversity.

Woodland Flora Species: Bluebell, Wood Sage, Foxglove, Wood Sorrell (approx. 10 species and any exceptional)
Coarse Vegetation; Bracken (minimal at present)
Invasive: None

Mensuration:

Average Diameter at Breast Height 20 cm
Basal Area per Hectare 48
Top Height – Estimated 20 m

Management Options : Consider removal of wind blow/possible clear fell ?demonstration? either restock or leave to regeneration. Alternative clear wind blow with care and leave to regenerate. Extraction needs to proceed with care to avoid damage to bank feature.

17d	2.78	Douglas fir	1979	PAWS restoration	Archaeological features, Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park

Area thinned more than once good potential for high value DF

Exclusively Douglas Fir (DF) in an under thinned stand (roughly ‘rectangular’ block) with conifer regeneration at edges particularly close to the car park / entrance to the NE end. Very little or no ground flora except at margins parallel to the road and tracksides. A linear extraction track runs up right through the middle of the compartment. Occasional wind blow of DF trees towards the top of the compartment.
Species at edge include the following:
Trees – Oak, Birch, Hazel (all generally young / small DBH) (+ DF, WRC and Western Hemlock regeneration)
Ground flora (predominantly at edges) – Bluebells, Wood Sage, Dog’s mercury (Extensive patch at W-SW end), Wood Sorrel, Fox Gloves (at / near top), violet, bedstraw, stinging nettles
Ferns and mosses – bracken (small dispersed), hard fern, buckler ferns and a number of other species. Numerous Club moss and cushion moss spp.
Previous harvesting waste left at ride sides.
Basal area count: 13 @ BAF 3.481 ? G=45 m3/ha
Top Height @ DBH: 21m@39cm; 20m@35cm; 23.5m@36cm

Management Options : Thinning of DF and control of conifer regeneration at north-eastern end. Clearance of windblown DF trees. Selectively fell DF close to but not at edges of stand to help give inroads for woodland ground flora to re-colonise from margins.

17e	1.29	Douglas fir	1983	PAWS restoration	Archaeological features, Very steep slope/cliff/quarry/ mine shafts/sink holes etc		National Park, Planted Ancient Woodland Site

Late thinned very tall and straggly, lots of fallen/bent stems will take another one or two thinning's to recover.

Roughly trapezoid block compartment (1.29ha) on steep S-SE facing slope (continuing on S-Westwards from cpt17j). Predominantly conifer, more open at eastern end on northern side adjacent to track with some more, limited ground flora visible. More densely distributed conifer throughout than in 17j although hard to measure due to steepness of slope and inaccessibility made worse by extensive wind blow events towards the SW / top end of the site.
Trees –dominant/co-dominant mostly DF, NS. Occasional birch or hazel struggling up in under storey.
Ground flora – Bluebells (present in places but clearly at threat) other species include dog's mercury, celandine and foxglove (esp in disturbed soils associated with the windblown trees)
Ferns and mosses – (R-O),
Due to the difficult terrain and wind blow within this compartment only one tree height and dbh were taken:
26.25m @ 30cm NS.
Mainly Douglas fir, with some Norway spruce planted in 1983 on a very steep slope. Very tall straggly crop, last thinning very last and crop partially blown and tall stems collapsing. 20m strip along bottom ride felled.

Management Options : Removal of windblown combined with a considered, extensive approach to thinning of conifer to help promote natural regeneration and expand existing BL stock. This work should be combined with that required in Cpt 17j where the denser areas of conifer will need a 'D' approach as standard work proposal rather than the 'C' given for the most part. Steep ground will make for challenging conditions to operations.

17f	0.31	Norway spruce	1990	PAWS restoration			National Park

Small area opposite Clifford Cottage requires removal to create open space, in front of cottages.

A small area of Norway Spruce opposite Clifford Cottages with a very small rectangular clearing against the road. Crop spacing very close and species choice indicate former Christmas tree plot and its assumed this was done not to block out morning light to the cottages opposite, however, as the tree were never harvested the trees now impact on the light reaching cottages.

There is good hazel on the roadside margins, dogs' mercury and other ground flora where light levels permit. The linear features are the tracks/public highway, all good refuges of ancient woodland flora and species diversity. Note some large ants nest on eastern edge where indistinct ride and some broadleaf intrusion. Note secondary woodland, planted former field.

Woodland Flora Species: Dogs Mercury / Hazel, Blue Bell (try to get more detail as wet)
Coarse Vegetation; possibly willow in places
Invasive: Laurel (locally extensive pure stand)not in the sub compartment but very close

Mensuration:

Average Diameter at Breast Height 16 cm
Basal Area per Hectare 18.5
Top Height – Estimated 12 m

Management Options : Crop requires line thinning 1 in 5; site is level and would permit machine access but care needed with ground conditions. Also site is tiny and needs to be worked with 17b. Probably a good idea to thin this crop by hand in advance of any commercial work to benefit road edge/cottages. High priority. Needs thinning within first 5 years. Laurel needs removing in winter of 2014/15.

17g	0.91	Japanese larch	1961	PAWS restoration			

Final crop spacing, strip of mature pine and younger broadleaves along faint bank feature on SE edge.
Stand of pure Japanese Larch planted in 1961 of poor to reasonable form, last thinning appears to have been very heavy and as there is a lot of former harvesting debris, hence relatively poor crop development and vigour.

17h	1.69	Douglas fir	1992	PAWS restoration			

Unthinned quite uniform crop save for edges

Well stocked, pure stand of Douglas fir planted in 1992. Around the margins of the sub compartment adjacent to tracks there is good array of bluebells and other woodland flora.

17i	1.15	Douglas fir	1992	PAWS restoration			

Unthinned quite uniform crop save for edges

Well stocked, pure stand of Douglas fir planted in 1992. Around the margins of the sub compartment adjacent to tracks there is good array of bluebells and other woodland flora. Edegs include occasional hazel, oak, birch and ash. Gradual slope to east.

17j	0.61	Douglas fir	2000	PAWS restoration			

This is not open space but mainly unthinned DF there is a small patch of OG where conifer has failed. Planting date appears incorrect. WH/DF 1990 ish

Described as open ground on the compartment schedule by DF and MC with some b/leaved intrusions where restock failed

18a	0.92	Douglas fir	1983	PAWS restoration			

Upper level section partially thinned in 2013 lower slope not worked.

Douglas fir (some NS) planted in 1983, site was partly worked in 2013 and suffered extensive wind blow in Feb 2014, approx. 25% of area, remains unstable. Ancient woodland ground flora rare.

18b	1.51	Douglas fir	1979	PAWS restoration			

Late line thinning very tall and straggley, lots of fallen/bent stems will take another one or two thinnings to recover.

Douglas fir planted in 1979, clearly late thinned when last worked, very tall straggly and suffered extensive wind blow in two phases, lastly in Feb 2014, approx 25% of area, crop remains unstable. Ancient woodland ground flora rare.

18c	1.40	Western hemlock	1962	PAWS restoration			

Thinned stand of WH . Little ground flora. Track lower/downhill E side with ferns, mosses, liverworts, BI regen, WH regen, brambles, soft rush, cinquefoil/tormentil, single EL, violets, sedge, windblown WH specimens & cross-leaved heath heather

18d	0.38	Douglas fir	1988	PAWS restoration			

Riverside strip, need to remove all sub dominents and regenerating conifer to favour b/leaves and watercourse

Lg Abies grandis, fragmented canopy, borders stream. BL & conifer regen in open areas inc. WH, ESF, GF, BI, DF & OK. Ground flora – spreading brambles, bilberry, ferns, moss in more shaded spots. Large ant nest on fallen log. Some AH & willow near stream

18e	0.86	Douglas fir	1968	PAWS restoration			
Riverside strip, need to remove all sub dominants and regenerating conifer to favour b/leaves and watercourse. This is thought to incorporate small area of poplar (P.1970 0.18ha was originally 18ei) Open stand of mature grand fir on streamside. Sign of regen of fir. Ground flora inc wood sorrel, wood sage, St John's wort, ferns, brambles and bluebells							
18g	3.95	Douglas fir	1986	PAWS restoration			
Partly clearfelled along ride edge and not restocked (?windblow?) Late line thinning very tall and straggly, lots of fallen/bent stems will take another one or two thinning's to recover.							
18h	0.19	Oak (pedunculate)	1900	PAWS restoration			
Thin strip mature SP & Oak against boundary. DF & WH regen causing ground to be dark & leaf litter only.							
18i	1.52	Douglas fir	1998	PAWS restoration			
Very poor take large gaps in crop (pheasent rearing area) potential to remove remaining conifer completely 50% of crop area. Clear felled in ? scattered regrowth, presumed unplanted ? Very open in places potential for enrichment planting, say 10% or gross area							
18x	1.59	Douglas fir	1993	PAWS restoration			
Crop mostly intact but unthinned. Plenty of b/l intrusions. Thinned high beech wood. Relatively open semi-mature stand with ground flora of wood sorrel, bluebell and foxglove dominated by beech leaf litter. Ferns sparsely located.							
18y	0.25	Japanese larch	1939	PAWS restoration			
larch , bracken dominates ground flora.							
19b	2.17	Douglas fir	1986	PAWS restoration			
Former pen site , potential to remove conifer along watercourse and favour b/leaves. Some limited line thinning. DF + AR, AH, BI, OK, HAZ stream side. ASNW/grassland/wet land type. V varied ground flora. Some BE regen with sparse bluebells. Fungi edge of track under dense DF canopy. Minor windblow visible in small portions of the DF stand							

19c	0.63	Norway spruce	1960	PAWS restoration			
Well thinned and largley even stem diameters, and likely butt rott an issue. DF plantation similar to 19d but has been thinned in more recent years. Very little ground flora but some dog's mercury, ferns and bluebells in area where row has been taken out. Top boundary – old wall includes 1x oak, 1x hazel and some holly							
19d	1.19	Douglas fir	1980	PAWS restoration			
Area thinned good potential for high value DF DF - occasional wind blow - little ground flora- partially thinned/cleaned conifer. Bluebells, dog's mercury, salad burnet, hairy bittercress, vetch sp. Ancient boundary with OK above, track through middle with few ASNW features or ground flora							
19e	3.00	Douglas fir	1993	PAWS restoration			
Potential to remove conifer along watercourse and favour b/leaves. Some limited line thinning. 3ha cpt of predominantly Douglas Fir P 1993 ; dense but has been partly thinned towards NW end. Old track at topside/stream along SW edge.DF stand made up of younger trees as a much more dense thicket (ie unthinned) at S-SW end. Note former pheasent pen.							
19f	0.94	Douglas fir	1993	PAWS restoration			
Unthinned DF, small area of good hazel (dormice present) and AW flora							
19g	1.42	Douglas fir	1965	PAWS restoration			
Possibly amagamated with 19gi 0.45ha 2006 MB but this is unclear ? Semi mature DF crop requiring some minor thinning work before final spacing. Very little ground flora except for patches of bramble and ferns/grasses.							
19h	6.60	Norway spruce	1965	PAWS restoration			
Well thinned and largely even stem diameters, windthrow and likely butt rott an issue. Extensive windthrow (Feb 2014) circa 25% NS thinned - occasional windblow (. Mixture of grassland and Bl woodland type ground flora. Wood ants. Veteran trees (OK, AH and HOL + HAZ) along old boundary NW side + along ancient track to the S with wild arum, primrose, bugle & violets							

19i	0.00	Beech	1932	High forest			
Some conifer regen along stream edge to remove, potential high quality beech.							
19j	5.52	Norway spruce	1965	PAWS restoration			
Thinned, large trees. Bramble dominates in patches, ferns & nettles co dominate some primrose, elder, foxglove. Relic coppice hedgebank runs N to S through part of sub							
19k	1.55	Douglas fir	1979	PAWS restoration			
Thinned 1:6, some windblow, sorrel, bramble, bracken fern - mostly on edges and light patches.							
19x	0.70	Douglas fir	1993	PAWS restoration			
Unthinned DF Young, clean/brashed DF – OK, HAZ and AH at edges. AH pollard & OK coppice in ancient boundary towards NE end. Blackthorn, Woodsage, honeysuckle, dog's mercury & wild currant at edge. Impoverished ground flora under DF							
19y	0.67	Mixed broadleaves	1993	PAWS restoration			
Recently clear felled area of JL remain mixed conifer and broadleaves requires respacing. Check behind properties to rear of Clifford Farm. Small sub compartment of mixed broadleaves but very heavily dominated by Western Hemlock regeneration. Site was clear-felled in 1992 of Japanese larch but Western hemlock was undoubtedly a component.							
20a	0.61	Douglas fir	1965	PAWS restoration			
Semi mature DF of varying quality (form and damage). Requires thinning before final crop spacing is achieved. Very little ground flora due to shading.							
20b	2.23	Beech	1932	PAWS restoration			
Stand of beech with bluebells in leaf litter and a few ferns. A few other BLs in stand such as ash and sycamore. Very little understory due to shading and management of beech wood. Thinning is on-going, removing smaller trees and those with poor form, leaving better quality trees and some standing deadwood.							

20c	3.78	Douglas fir	1980	PAWS restoration			
Line thinned, very drawn and unstable, lots of partially blown/bent stems							
20d	2.69	Mixed broadleaves	2005	PAWS restoration			
Clear felled in 2005 scattered regrowth, presumed unplanted ? Very open in places potential for enrichment planting, say 10% or gross area							
20e	4.97	Douglas fir	1967	PAWS restoration			
Of limited size given age (insufficient thinning) but potential for high value crop. Dense stand of DF undergoing second thinning. Racks being removed at regular intervals. Increased light levels will assist small clusters of remnant BL within DF crop. Towards SE of sub-compt has been thinned more and ground flora improves, becoming frequent.							
20f	0.89	Oak (pedunculate)	1900	High forest			
Oak Coppice with some limited conifer regen							
20g	3.62	Mixed broadleaves	2005	PAWS restoration			
Clear felled in 2005 scattered regrowth, large rambling sub cpt with varied stocking some large gaps potential to enrich, up to 10%.							
20h	1.36	Oak (pedunculate)	1900	High forest			
Large rambling sub cpt of mainly oak coppice but with some regen of conifer present							
20i	1.76	Douglas fir	2005	PAWS restoration			
Very poor area of DF re-stock, lots of birch. Respace to favour b/leaves. Original sub cpt 20ii is part of this sub cpt 0.50 ha DF from 1990s							
20k	1.21	Norway spruce	1962	PAWS restoration			
Recently thinned and well spaced potential final crop spacing growth fairly poor given age.							

21a	0.87	Douglas fir	1993	PAWS restoration			
Very poor quality DF, thin to favour broadleaves should convert very easily as b/ls dominant.							
21b	0.96	Douglas fir	1955	PAWS restoration			
Of limited size given age (insufficient thinning) but potential for high value crop. Arguably best stand on site. DF at both pole stage and some semi mature above riverside track. Bramble grows in more open areas but under more dense canopy there is limited ground flora with occ/rare wood sorrel and wood sage. Bilberry starts to appear under DF towards W end of sub compt. Stream on W boundary of sub-compt with stand of remnant oak woodland alongside. Some holly and hazel with bilberry dominant ground flora. Otter spraint found in oak wood – containing traces of diving beetle carapaces							
21d	3.00	Mixed broadleaves	2005	PAWS restoration			
Clear felled in 2005 scattered regrowth, large rambling sub cpt with varied stocking some large gaps potential to enrich, up to 10%.							
21e	1.10	Norway spruce	1960	PAWS restoration			
Recently thinned and well spaced potential final crop spacing growth fairly poor given age. Previously thinned Norway spruce (P. 1960) compartment of triangular shape 1.1ha. Bracken frequent at edge, other ferns and bramble – Occ/Rare (the latter esp close to upside and bottom side track) otherwise impoverished ground flora.							
21f	4.44	Corsican pine	1981	PAWS restoration			
Very poor crop indeed, potential to repace to stems of best form vigour, readily converted to mixed broadleaves.							
21g	4.26	Oak (peduncculate)	1900	PAWS restoration			
Pure oak coppice, with good understory of bilberry. Little regen of conifer observed. Sessile oak coppice dominated compartment of 4.26ha tapering from west towards the east along and down the north facing side of the Teign valley. Lower portion oak trees are larger with more beech, sycamore, rowan and hazel visible. Previous line of pheasant pen visible (removed Mar/Spr 2014) Vacciniuim (Wild bilberry)							

21h	4.45	Japanese larch	1962	PAWS restoration			
At final crop spacing, very good form, growth rates better than elsewhere lower and less exposed and likely better soils. Mature 4.45ha stand of final crop larch, good quality well spaced with light, open canopy with bracken and grass ground flora. Wood white &/or orange tip ? butterfly. Bramble, wood sorrel, bluebell and honeysuckle occasional/rare.							
21i	2.61	Open ground	2003	Non-wood habitat			
Former wet riverside meadow, copious regen but DF crop very patchy, clear to re-instate wet meadow for butterflies. Now Cleared and fenced (2015)							
21x	0.83	Oak (pedunculate)	1900	High forest			
Clear conifer regeneration							
21y	6.34	Japanese larch	1962	PAWS restoration			
At final crop spacing, very good form but limited growth rates have affected tree size significantly.							
22a	11.36	Japanese larch	1947	PAWS restoration			
Advanced regeneration of native b/leaves need to remove regenerating conifer. JL To be clearfelled late 2015 P Ramorum & SPHN							
22b	0.43	Mixed native broadleaves	1957	PAWS restoration			
Small area of MB with some JI (to be removed 2015 P Ramorum SPHN) could be merged with 22a							
22c	1.77	Japanese larch	1965	PAWS restoration			
Advanced regeneration of native b/leaves need to remove regenerating conifer.							
23a	8.78	Douglas fir	1993	PAWS restoration			
Unthinned but in places broadleaved intrusions require favouring during silvicultural operations							

23b	1.31	Mixed broadleaves	2012	PAWS restoration			
Recently clear felled area of JL remain mixed conifer and broadleaves requires respacing							
23c	2.02	Japanese larch	1957	PAWS restoration			
Recently clear felled area of JL remain mixed conifer and broadleaves requires respacing. Very open in places potential for enrichment planting, say 10% or gross area							
23d	0.39	Mixed conifers	1959	PAWS restoration			
Sequoia stand needs further thinning/respacing and work along ride edge where soil has been pushed into the wood long term retention feature.							
24a	3.21	Mixed broadleaves	2010	PAWS restoration			
Recently clear felled area of JL following plant health notice remain mixed conifer and broadleaves requires respacing. Very open in places potential for enrichment planting, say 20% or gross area. Remaining Conifers being removed November 2015.							
24b	9.47	Douglas fir	1993	PAWS restoration			
Unthinned but in places broadleaved intrusions require favouring during silvicultural operations							
24c	1.51	Sitka spruce	1993	PAWS restoration			
Unthinned							
24d	0.25	Oak (sessile)	1957	High forest			
large mature oak with hazel. bracken dominated. Whole area is raised -looks man made - potential heritage item, remnants of wall / house ?							
25a	1.88	Douglas fir	1993	PAWS restoration			
Unthinned Dense plantation of young and semi mature douglas fir producing heavy shade and reducing ground flora to a minimum. Occasional flowers and herbs along boundaries, track edges and in small glades. There is a small wet flush on the W side of sub-compt where a remnant of BL exists. A BL hedgerow exists on the S and E boundaries which is ageing, gappy and needs attention.							

25b	8.47	Sitka spruce	1961	PAWS restoration			

Thinning in 2012 possibly too heavy having been too late. Extensive windthrow in Feb 2014, say 20% of area.

Thinned and spaced stand of spruce spp suffered recent significant wind damage across the majority of the more exposed part of the sub-compt on the higher ground. Wet ground beside stream on W of sub-compt with remnant of BL wet woodland. A gappy old BL hedge on E boundary.

Appendix 2: Harvesting operations (20 years)

Forecast Year	Cpt	Operation Type	Work Area (ha)	Estimated vol/ha	Estimated total vol.
2017	5e	Thin	2.94	28	82
2017	5f	Thin	3.59	22	80
2017	5g	Thin	1.23	24	30
2017	5i	Thin	1.02	49	50
2017	6b	Clear Fell	0.85	118	100
2017	6c	Clear Fell	0.56	116	65
2017	6d	Clear Fell	0.65	115	75
2017	6g	Clear Fell	0.41	110	45
2017	6m	Clear Fell	0.49	122	60
2017	6n	Clear Fell	0.34	88	30
2017	7c	Thin	2.10	14	30
2017	7d	Thin	3.07	28	85
2017	8e	Thin	1.95	26	50
2017	9g	Thin	0.42	24	10
2017	9h	Thin	2.62	32	85
2017	9l	Selective Fell	1.17	21	25
2017	9x	Thin	1.42	25	35
2017	10a	Thin	0.98	51	50
2017	10e	Thin	5.29	26	140
2017	10g	Thin	2.11	47	100
2017	10h	Thin	0.67	52	35
2017	11a	Clear Fell	1.98	80	158
2017	11c	Clear Fell	1.98	48	95
2017	11d	Clear Fell	0.32	125	40
2017	11d	Clear Fell	0.32	125	40
2017	11e	Thin	1.28	27	35
2017	11f	Thin	2.11	47	100
2017	11h	Thin	0.84	60	50
2017	11i	Thin	1.02	49	50
2017	11j	Thin	0.97	26	25
2017	11l	Thin	5.18	5	25

2017	11m	Thin	1.48	27	40
2017	11n	Thin	0.68	15	10
2017	11w	Thin	1.18	42	50
2017	12d	Thin	0.22	45	10
2017	12w	Thin	3.27	31	100
2017	14w	Thin	2.92	68	200
2017	15a	Thin	1.66	12	20
2017	15b	Thin	2.77	40	110
2017	15e	Thin	1.95	36	70
2017	15g	Thin	1.59	13	20
2017	16e	Thin	1.28	16	20
2017	16f	Thin	0.43	81	35
2017	17a	Thin	3.13	24	75
2018	9b	Thin	1.81	36	65
2018	9c	Thin	0.73	41	30
2018	9e	Thin	0.70	17	12
2018	9f	Thin	1.19	34	40.46
2018	9g	Thin	0.42	42	17.64
2018	9h	Thin	2.62	34	89
2018	9j	Thin	0.45	42	18.9
2018	9k	Thin	1.22	29	35
2018	9x	Thin	1.00	10	10
2018	10a	Thin	0.98	15	15
2018	10b	Thin	0.22	23	5
2018	10c	Thin	0.32	16	5
2018	10d	Thin	0.62	21	13.02
2018	10e	Thin	5.22	32	165
2018	10f	Thin	2.43	14	35
2018	10g	Thin	2.10	14	30
2018	10h	Thin	0.69	14	10
2018	11j	Thin	0.96	36	35
2018	11k	Thin	0.92	26	23.92
2018	11l	Thin	5.10	10	50
2018	11m	Thin	1.48	3	5
2018	14c	Thin	0.42	60	25
2018	15g	Thin	1.59	38	60

2018	15h	Thin	0.58	52	30
2018	16a	Thin	2.43	37	90
2018	19x	Thin	0.70	36	25
2019	5a	Thin	1.43	63	90.09
2019	5b	Thin	0.98	35	34.3
2019	5e	Thin	2.92	63	183.96
2019	5g	Thin	1.23	63	77.49
2019	5h	Thin	1.56	63	98.28
2019	5i	Thin	1.01	63	63.63
2019	6a	Thin	2.71	0	0
2019	6b	Thin	1.61	21	33.81
2019	6c	Thin	0.89	14	12.46
2019	6d	Thin	0.65	21	13.65
2019	6e	Thin	4.81	0	0
2019	6f	Thin	0.75	63	47.25
2019	6g	Thin	0.39	0	0
2019	7d	Thin	2.97	63	187.11
2019	8b	Thin	0.58	0	0
2019	16i	Thin	0.93	0	0
2019	17c	Thin	1.38	63	86.94
2019	17e	Thin	1.29	63	81.27
2019	17f	Thin	0.28	34	9.52
2019	17g	Thin	0.92	26	23.92
2019	17j	Thin	0.60	0	0
2019	18a	Thin	0.85	63	53.55
2019	18c	Thin	1.40	42	58.8
2019	18e	Thin	0.88	33	29.4
2019	18g	Thin	3.93	63	247.59
2019	18h	Thin	0.18	0	0
2019	18i	Thin	1.49	21	31.29
2019	18x	Thin	1.58	63	99.54
2019	18y	Thin	0.26	21	5.46
2019	19c	Thin	0.63	42	26.46
2019	19f	Thin	0.94	63	59.22
2019	19i	Thin	0.90	14	12.6
2019	19j	Thin	5.49	42	230.58

2019	19k	Thin	1.55	63	97.65
2019	19y	Thin	0.74	0	0
2019	20a	Thin	0.58	56	32.48
2019	20b	Thin	2.12	14	29.68
2019	20c	Thin	3.74	63	235.62
2019	20d	Thin	2.73	0	0
2019	20e	Thin	4.91	63	309.33
2019	20f	Thin	0.90	0	0
2019	20g	Thin	3.61	0	0
2019	20h	Thin	1.36	0	0
2019	20i	Thin	1.76	15	26.25
2019	20k	Thin	1.20	42	50.4
2019	21a	Thin	0.86	63	54.18
2019	21d	Thin	3.00	0	0
2019	21e	Thin	1.10	42	46.2
2019	21f	Thin	4.45	42	186.9
2019	21g	Thin	4.19	0	0
2019	21h	Thin	4.38	26	113.88
2019	21i	Thin	2.61	21	54.81
2019	21x	Thin	6.33	26	164.58
2019	21y	Thin	0.82	0	0
2019	23a	Thin	8.80	63	554.4
2019	23c	Thin	2.02	24	48.48
2019	23d	Thin	0.40	42	16.8
2019	24a	Thin	3.15	0	0
2019	24d	Thin	0.26	42	10.92
2020	8c	Thin	4.48	21	94.08
2020	8e	Thin	1.95	63	122.85
2020	8f	Thin	1.49	14	20.86
2020	8g	Thin	1.59	14	22.26
2020	8h	Thin	1.03	63	64.89
2021	7a	Thin	3.80	30	115
2021	11a	Thin	1.94	26	50.44
2021	11b	Thin	0.21	63	13.23
2021	11c	Thin	1.20	42	50.4
2021	11d	Thin	0.30	35	10.5

2021	11e	Thin	1.27	63	80.01
2021	11f	Thin	2.10	56	117.6
2021	11g	Thin	0.27	63	17.01
2021	11h	Thin	0.83	39	32.37
2021	11i	Thin	0.99	56	55.44
2022	5e	Thin	2.94	26	75
2022	5f	Thin	3.59	26	95
2022	5f	Thin	3.64	63	229.32
2022	5h	Thin	1.53	23	35
2022	5i	Thin	1.02	34	35
2022	8e	Thin	1.95	31	60
2022	9c	Thin	0.75	37	28
2022	9e	Thin	0.70	86	60
2022	9h	Thin	2.62	57	150
2022	10a	Thin	0.98	51	50
2022	10e	Thin	5.29	28	150
2022	11e	Thin	1.28	35	45
2022	11f	Thin	2.11	47	100
2022	11h	Thin	0.84	60	50
2022	11i	Thin	1.02	49	50
2022	11l	Thin	5.18	29	150
2022	11m	Thin	1.48	30	45
2022	12a	Thin	1.04	21	21.84
2022	12b	Thin	0.55	21	11.55
2022	12c	Thin	1.86	21	39.06
2022	12d	Thin	0.20	0	0
2022	12d	Thin	0.22	45	10
2022	12e	Thin	2.33	63	146.79
2022	13b	Thin	1.01	26	26.26
2022	14a	Thin	2.45	42	102.9
2022	14d	Thin	2.12	63	133.56
2022	14f	Thin	3.46	63	217.98
2022	15a	Thin	1.66	27	45
2022	15b	Thin	2.77	45	125
2022	15e	Thin	1.95	56	110
2022	16f	Thin	0.43	81	35

2023	15a	Thin	1.63	63	102.69
2023	15b	Thin	2.78	42	116.76
2023	15c	Thin	0.54	21	11.34
2023	15d	Thin	0.39	63	24.57
2023	15e	Thin	1.97	63	124.11
2023	15g	Thin	1.58	63	99.54
2023	15g	Thin	1.59	44	70
2023	15h	Thin	0.58	52	30
2023	15i	Thin	2.87	63	180.81
2023	15j	Thin	2.16	63	136.08
2023	16a	Thin	2.43	37	90
2023	16e	Thin	1.28	39	50
2023	16x	Thin	2.16	62	133.98
2023	16y	Thin	1.60	84	134.4
2024	9c	Thin	0.73	63	45.99
2024	11k	Thin	0.92	26	23.92
2024	11l	Thin	5.10	63	321.3
2025	8i	Thin	2.24	21	47.04
2025	8k	Thin	0.19	34	6.46
2025	8l	Thin	1.68	0	0
2025	8x	Thin	1.00	21	21
2025	8y	Thin	0.49	34	16.66
2027	10h	Thin	0.67	52	35
2027	17a	Thin	3.13	24	75

GLOSSARY

Ancient Woodland

Ancient woods are defined as those where there has been continuous woodland cover since at least 1600 AD. In Scotland ancient woods are defined strictly as sites shown as semi-natural woodland on the 'Roy' maps (a military survey carried out in 1750 AD, which is the best source of historical map evidence) and as woodland all subsequent maps. However, they have been combined with long-established woods of semi-natural origin (originating from between 1750 and 1860) into a single category of Ancient Semi-Natural Woodland to take account of uncertainties in their identification. Ancient woods include Ancient Semi-Natural Woodland and plantations on Ancient Woodland Sites (see below). May support many species that are only found in ancient woodland.

Ancient Semi - Natural Woodland

Stands in ancient woods defined as those consisting predominantly of native trees and shrubs that have not obviously been planted, which have arisen from natural regeneration or coppice regrowth.

Ancient Woodland Site

Stands in ancient woods that have been converted to plantations, of coniferous, broadleaved or mixed species, usually for timber production, including plantations of native species planted so closely together that any semi-natural elements of the understorey have been suppressed.

Beating Up

Replacing any newly planted trees that have died in the first few years after planting.

Broadleaf

A tree having broad leaves (such as oak) rather than needles found on conifers (such as Scots pine).

Canopy

The uppermost layer of vegetation in a woodland, or the upper foliage and branches of an individual tree.

Clearfell

Felling of all trees within a defined area.

Compartment

Permanent management division of a woodland, usually defined on site by permanent features such as roads. See Sub-compartments.

Conifer

A tree having needles, rather than broadleaves, and typically bearing cones.

Continuous Cover forestry

A term used for managing woods to ensure that there are groups or individual trees of different ages scattered over the whole wood and that some mature tree cover is always maintained. Management is by repeated thinning and no large areas are ever completely felled all at once.

Coppice

Trees which are cut back to ground levels at regular intervals (3-25 years).

Exotic (non-native) Species

Species originating from other countries (or other parts of the UK) that have been introduced by humans, deliberately or accidentally.

Field Layer

Layer of small, non-woody herbaceous plants such as bluebells.

Group Fell

The felling of a small group of trees, often to promote natural regeneration or allow planting.

Long Term Retention

Discrete groups of trees (or in some cases single trees) that are retained significantly past their economic felling age. Operations may still be carried out within them and thinning is often necessary to maintain stability.

Minimum Intervention

Areas where no operations (such as thinning) will take place other than to protect public safety or possibly to control invasive exotic species.

Mixed Woodland

Woodland made up of broadleaved and coniferous trees.

National vegetation classification (NVC)

A classification scheme that allows an area of vegetation to be assigned to the standardised type that best matches the combination of plant species that it contains. All woodlands in the UK can be described as being one of 18 main woodland types (W1 - W18), which principally reflect soil and climatic conditions. For example, Upland Oakwoods are type W11, and normally occur on well drained infertile soils in the cooler and wetter north and west of Britain. Each main type can be subdivided into numerous subtypes. Most real woods contain more than one type or sub-type and inevitably some woods are intermediate in character and can't be properly described by any sub type.

Native Species

Species that arrived in Britain without human assistance.

Natural Regeneration

Naturally grown trees from seeds falling from mature trees. Also regeneration from coppicing and suckering.

Origin & Provenance

The provenance of a tree or seed is the place where seed was collected to grow the tree or plant. The origin is the geographical location within the natural range of a species from where seeds/tree originally derives. Thus an acorn collected from a Turkey oak in Edinburgh would have an Edinburgh provenance and a southern European origin.

Re-Stocking

Re-planting an area of woodland, after it has been felled.

Shrub Layer

Formed by woody plants 1-10m tall.

Silviculture

The growing and care of trees in woodlands.

Stand

Trees of one type or species, grouped together within a woodland.

Sub-Compartment

Temporary management division of a compartment, which may change between management plan periods.

Thinning

The felling of a proportion of individual trees within a given area. The remaining trees grow to fill in the space created.

Tubex or Grow or Tuley Tubes

Tubes placed over newly planted trees or natural regeneration that promote growth and provide protection from animals such as rabbits and deer.

Weeding

The control of vegetation immediately around newly planted trees or natural regeneration to promote tree growth until they become established. Either by hand cutting or with carefully selected weed killers such as glyphosate.

Windblow/Windthrow

Trees or groups of trees blown over (usually uprooted) by strong winds and gales.