

Ecological Report: “The Management of The Hillyfield, a woodland farm on Dartmoor”

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1. Introduction

Land and Heritage Ltd was commissioned by the landowner to undertake an ecological review of the woodland in relation to its current management. Our experience for this work includes over thirty years of working in woodland management in the south west. This report is covered by our professional indemnity insurance policy held with Hiscox Underwriting. The author has a masters degree in conservation, is a full member of the Chartered Institute of Ecology and Environmental Management and has over 30 years of experience in woodland management as a landowner, contractor and consultant.

The site was visited on 5th January 2017, although already known to the author prior to this visit. The landowner was interviewed and the current management plan, approved by the Forestry Commission was reviewed. This report should be read in conjunction with that management plan.

2. Site description and designations

The site is a mixed broadleaved and conifer woodland on the lower slopes of south Dartmoor. The woodland is located within Dartmoor National Park. The southern part of the woodland is designated as ancient woodland, with parts listed as semi-natural and parts as plantation on an ancient woodland site. This designation emphasises the ecological importance of the woodland and has guided the objectives within the woodland management plan.

Much of the woodland previously consisted of a larch plantation, with a mix of young broadleaves seeded in among the conifer crop. Following the outbreak of larch dieback disease, much of the larch has been cleared in recent years, leaving some relatively open areas of replanting and natural regeneration. All of the replanting has been undertaken with broadleaf species. The remaining larch has been ring-barked, to kill the trees standing, and prevent further spread of the disease.

The woodland includes the following priority habitats, as listed in the UK Biodiversity Action Plan:

- Upland mixed ash woods (compartment 3d)
- Upland oak wood (compartment 1)
- Wet woodland (compartment 2)

The woodlands are also registered as section 3 woodlands by the National Park Authority, a listing emphasising the importance to conserve and actively manage them.

3. Previous Woodland Management

There are occasional records of timber extraction from the 19th century, and the presence of old pheasant pens on adjacent land and the presence of laurel suggests previous use for pheasant shooting. The conifer crop currently being felled and removed is thought to date back to the 1970s.



In 2006 -2009 Hillyfields was part of a Dartmoor National Park Authority led funded project called 'Restoring Ancient Woodlands' RAW. This helped write up a management plan for the previous owner and fund the poisoning of invasive laurel. It also subsidised halo-thinning of the PAWS (Plantation on Ancient Woodland Site, which the client, Mr D King-Smith contributed to as a volunteer during 2009.

The woodlands came into their current ownership in 2009. At that time the conifer plantations were well established but relatively unthinned. There was also a significant problem with invasive species, with both bamboo and laurel still present. Laurel is particularly harmful to ecology and wildlife, as it supports low numbers of insect species, and provides dense cover. The dense cover was why laurel was often planted, providing cover for game birds. However, it also suppresses native groundflora and natural regeneration of the woodland canopy, and removal has significantly enhanced the ecology of the woods. On our initial site survey natural regeneration of elder, bramble, raspberry, oak, beech, ash and hazel were all noted.

The current owners completed the laurel clearance and stump treatment, works prior to approval of the current woodland management plan in 2014. Stump treatment of remnant regrowth continues, but is now almost complete. This work has safeguarded previous clearance work, and ensured the sustainability of former ecological gains. Failure to treat intermittent regrowth of cleared laurel is a common fault of woodland restoration. The long term approach at Hillyfield has avoided this mistake. Old pheasant pens, associated with the laurel, have also been removed under current management.

Cutting of bamboo, another introduced and potentially invasive species, has also been undertaken, notably in compartment 2, to manage and enhance the woodland ecology.

4. Current Woodland Management

The objectives within the current woodland management plan, approved by the Forestry Commission and written by the former Dartmoor National Park Forester, are listed below:

No.	Objectives (include environmental, economic and social considerations)
1	Develop and implement a truly sustainable approach to woodland [and farm] management that works closely with UKFS & Dartmoor National Park Authority Woodland strategy 2005 – 2010
2	Manage woodlands in accordance with UKFS and Forestry Commission's practice guide Managing ancient and native woodland in England wherever possible.
3	Develop a low impact small scale community supported business in keeping with one planet vision
4	Increase carbon storage by growing trees, locking up carbon in products and leaving brash to recycle rather than burning and encouraging locals to substitute high carbon footprint fuels with wood.
5	All fixed power sources to be of green origins – hydro and solar.

No.	Objectives (include environmental, economic and social considerations)
6	Involve the community by providing opportunities for local and visiting people to share and take part in co-creating an ecologically diverse and abundant woodland environment
7	Provide sanctuary for people to enjoy, learn, share and be inspired in
8	Consult broadly prior to embarking on major new projects

The objectives clearly place ecology and sustainability at the heart of the management of the wood and also align with the National Park’s own woodland strategy(see section 7.2).

Within the plan there is a section on protecting and enhancing biodiversity (pages 26-29), with the underpinning statement that “management for biodiversity is seen at the Hillyfield as running hand in hand with the commercial interest of the woodlands”. Our site visit confirmed that the management plan was being implemented in line with the stated management objectives and planned actions.

For the purpose of this report, we have categorised woodland features that together affect the ecological value of the wood. The woodland attributes relevant to this report are:

1. Species mix
2. Structural diversity
3. Dead timber
4. Groundflora
5. Invasive species
6. Rarities and Protected Species
7. Man-made features: tracks, buildings etc

The history of the woodland is also important, but obviously not under the control of the current owners. Continuity is important, and ancient woodlands (woods that date back to at least 1600) are recognised of particular ecological importance, and feature prominently in woodland conservation policies and plans. It has already been noted that parts of Hillyfield Wood are ancient in origin.

The key woodland features are considered in turn below.

4.1 Species Mix

The woodland is being returned to a predominantly broadleaved woodland, with the removal of larch, and encouragement of natural regeneration. Native tree species support a greater range of invertebrates and a more diverse groundflora than introduced conifer species. Natural regeneration observed on site included ash, sycamore, hazel and goat willow. The replanting also includes elements of shrub species, for example hazel and hawthorn, which further enhance ecological value.

Species diversity is good for the woodland ecology, and supports a wide range of insect species, which in turn provide food for other animals e.g. bats and insectivorous birds.

Areas of young planting, common in Hillyfield, are particularly good for groundflora in the first two or three years, and as brambles spread into the planted areas, cover is provided for nesting birds, and the brambles, a valuable food plant for dormice.

Diversity of species is now also a key recommendation from the Forestry Commission, to provide resilience to climate change and plant diseases. Monocultures, as found in traditional forestry, are more susceptible to climate change. Recent increases in plant diseases (for example *Phytophthora ramorum* and *Hymenoscyphus fraxineus*) are in part due to increased international trade, but also climate change.



Figure 1: Replanting site

‘Diversity is at the core of woodland adaptation and ensuring resilience in the future. This should be achieved through diversification of:
Species – planting a wider range of tree species, from a wider range of origin.’

Forestry Commission advice

<https://www.forestry.gov.uk/england-resilience#Diversification>

4.2 Structural Diversity

Structural diversity is equally important for a woodland managed for wildlife conservation. An ecologically valuable wood will contain trees of varying ages from young seedlings or coppice regrowth (good for nesting birds) through all ages to old and senescent trees (which may support bat roosts, lichens and other epiphytes).

The management of The Hillyfield exemplifies the objectives of maintaining and enhancing structural diversity. Of particular note are:

- The planting of hazel and sweet chestnut to support some short rotation coppice.
- Careful retention of broadleaves from areas cleared of larch.
- Mapping and protection of all veteran trees on site.
- The woodland track system has enhanced the open areas, as well as facilitating improved management throughout the woodland. The tracks allow in more light which will encourage a different range of plants and also butterflies.

Structural diversity also enables a long-term approach to timber harvesting, favouring a selective approach rather than regular thinning and clear felling. Harvesting in Hillyfield is often undertaken with horses, a system promoted as best practice for its low impact. It minimises damage to the ground vegetation and also minimises issues of soil erosion. In working with two local horse loggers Hillyfield is also contributing to the sustainable rural local economy.

The small scale approach to harvesting means that when machinery is used, then it is smaller scale machinery, developed for work in smaller woodlands, rather than large harvesters or forwarders. Again this minimises soil erosion.



Figure 2: Broadleaves selectively retained, to enhance structural diversity and species mix

Horse logging has been promoted by many conservation organisations, including the current Moor than meets the eye project, for which Dartmoor National Park is the lead partner.



Horse logging event promoted through Moor than meets the eye, Pullabrook Woods, April 2015.

<https://moorthanmeetstheeye.wordpress.com/2015/04/20/woodland-skills-weekend-in-the-bovey-valley-charcoal-hurdles-and-heavy-horses/>

The future management of the wood envisages a system of continuous cover forestry (CCF): avoiding future clear felling. This requires a structurally diverse wood, to enable selective felling, small scale natural regeneration of young trees and a diverse mix of ages in the tree crop. One of the acknowledged benefits of CCF is reduced soil erosion, as heavy machinery is not used for clear felling, and large bare areas of soil are not left after harvesting. This was the original motivation behind the development of the Bradford Plan of CCF on the Tavistock Woodlands Estate in Devon (<https://www.wildlife-woodlands.co.uk/continuous-cover-forestry/>). Reduced soil erosion benefits water quality and the aquatic environment downstream, with reduced turbidity and a wider range of plants and aquatic invertebrates. CCF is also acknowledged by the Forestry Commission as an important way to reduce the risks posed by future changes in the climate and biotic threats. (<https://www.forestry.gov.uk/fr/ccf>).

4.3 Dead Timber

Dead wood hosts a further range of fungi and saprophytic invertebrates; estimates are that one third of woodland organisms live on the dead wood habitat. The current management protects and enhances this habitat in a number of ways:

- Keeping dead wood on the ground.
- The leaving of all naturally occurring standing dead timber.

- To enable the steady harvesting and on-site processing of timber, some of the remaining areas of larch have been ring-barked, to kill the trees, and stop the spread of disease. This has created additional valuable standing dead wood in the short term.



Figure 3: Ring-barking of larch to enable spread out harvesting cycle

Microhabitats

“Standing dead trees (snags) and fallen debris provide a fantastic array of 'microhabitats'. There is a breathtaking range of saproxylic (deadwood-dependent) organisms including [fungi](#), lichens, invertebrates, mosses and birds, many of them having very specific requirements, and some specialising exclusively on one particular microhabitat. A remarkable 40% of woodland wildlife is dependent on this aspect of the forest ecosystem”.

Trees for Life

<https://treesforlife.org.uk/forest/dead-wood/>

4.4 Groundflora

The woodland has a relatively rich groundflora, with bluebells, primroses and wood sorrel all present (Woodland Management Plan). These are all species that point to the ancient woodland origin of Hillyfield. Botanical records for Hillyfield include 32 species identified by the Woodland Trust as being indicators of ancient woodland (<http://www.backonthemap.org.uk/theproject/analysis/species>):

Latin name	Common name
<i>Ajuga reptans</i>	Bugle
<i>Arum maculatum</i> *	Lords-and-ladies
<i>Blechnum spicant</i> *	Hard-fern
<i>Carex remota</i> *	Remote sedge
<i>Carex sylvatica</i> *	Wood-sedge
<i>Chrysosplenium oppositifolium</i> *	Opposite-leaved golden-saxifrage
<i>Circaea lutetiana</i> *	Enchanter's-nightshade
<i>Conopodium majus</i>	Pignut
<i>Corylus avellana</i> *	Hazel
<i>Digitalis purpurea</i>	Foxglove
<i>Dryopteris affinis</i> *	Scaly male fern
<i>Galium palustre</i>	Common marsh-bedstraw
<i>Geranium robertianum</i> *	Herb-robert
<i>Geum urbanum</i>	Wood avens
<i>Glyceria fluitans</i>	Floating sweet-grass
<i>Hedera helix</i>	Ivy
<i>Hyacinthoides non-scripta</i> *	Bluebell
<i>Luzula sylvatica</i> *	Great wood-rush
<i>Lysimachia nemorum</i> *	Yellow pimpernel
<i>Oxalis acetosella</i> *	Wood sorrel
<i>Polypodium interjectum</i>	Intermediate polypody
<i>Potentilla sterilis</i> *	Barren strawberry
<i>Prunus spinosa</i>	Blackthorn
<i>Ranunculus ficaria</i>	Lesser celandine
<i>Salix cinerea</i>	Grey willow
<i>Senecio aquaticus</i>	Marsh ragwort
<i>Sorbus aucuparia</i> *	Rowan
<i>Stellaria holostea</i> *	Greater stitchwort
<i>Stellaria uliginosa</i> *	Bog stitchwort
<i>Valeriana officinalis</i> *	Common valerian
<i>Veronica montana</i> *	Wood speedwell
<i>Viola riviniana</i> *	Common dog-violet

Management of the woodland that has specifically addressed the groundflora has been:

- Lower impact on soils and soil erosion by the use of horses for extraction of timber.
- Use of a timber winch in other locations, keeping tractors and machinery to the track system.
- Management of deer, through careful culling and protection of areas of regeneration with “hedges” of dead brash wood.
- A major control programme of laurel, which smothers the native flora.



Figure 4: Low impact timber extraction by horse.

4.5 Invasive Species

The major issues at Hillyfield are the presence of laurel (much reduced in the last ten years) and bamboo. Small patches of Japanese Knotweed are also present and being treated. This helps protect the native groundflora, and also provides enhanced conditions for natural regeneration of the tree and shrub species. Himalayan Balsam, another non-native invasive species, has also been regularly pulled by hand.

The deer control programme also enhances the ecology of the woodland. Deer graze on young seedlings and coppice growth, and in larger numbers can severely affect the groundflora as well. Brash hedges and 1.5 metre high tree shelters also help minimise the impact of roe deer, which no longer have any natural predators in this country.



Figure 5: Dense laurel suppressing native groundflora in adjacent woodland.

4.6 Rarities and Protected Species

The woodland management plan records protected species and measures to ensure their protection, primarily around timing of works or avoiding disturbance. They are:

- A nationally important roost of the greater horseshoe bat is situated at Buckfastleigh. The Hillyfield is likely to be on the periphery of their foraging route. Habitats in and immediately adjoining the woodland are ideal – wet woodland, overhanging boundary trees, ponds and permanent pasture.
- Badger setts are mapped in WMP and woodland operations planned and timed to avoid disturbance,
- Buzzard, wood warbler, song thrush and woodcock have been recorded in the woodland. The current management of mixed broadleaves and a developing structural diversity are good for woodland birds, providing for example, shrubs and understorey for nesting and more open rides and glades for feeding.
- Otters: the favoured management in woodlands is to leave a buffer strip along watercourses, which Hillyfields does. It is worth noting that kingfishers, snipe and dippers have also been recorded along the river banks.

- Dormice have not been recorded but are likely to be present (recorded 1.5km away). Forestry Commission and Natural England guidelines recommend no felling work during the breeding season, and no excavation (e.g. track construction) during the winter months. Thinning should be no more than two thirds of a wood and felling one third at any one time.



Figure 6: Calendar of dormouse activity

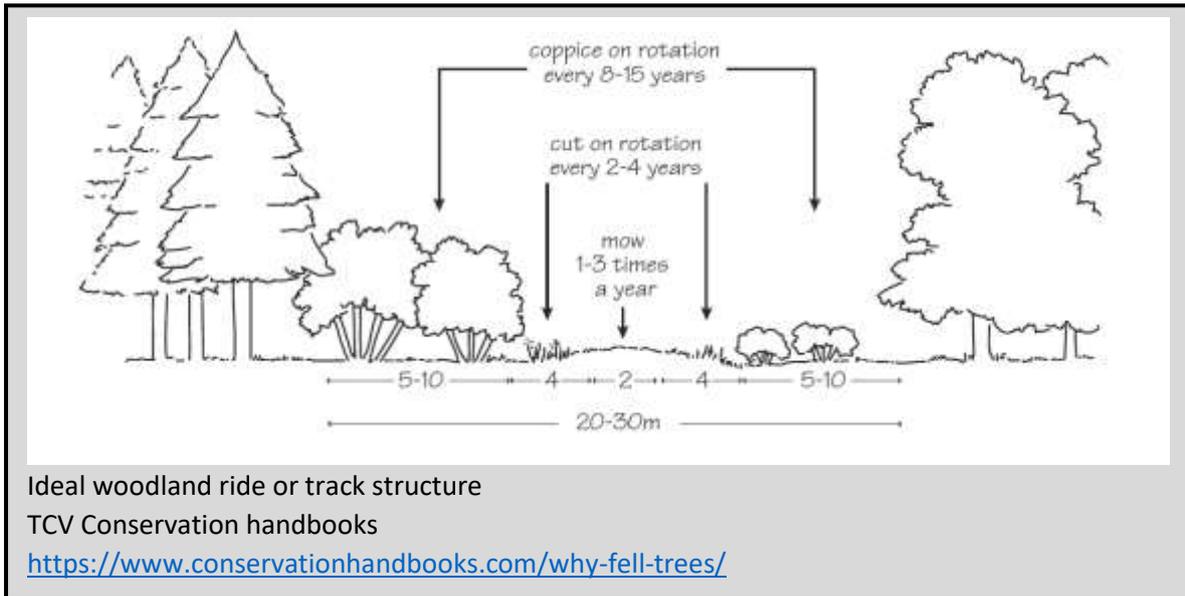
from: [http://www.forestry.gov.uk/pdf/england-protectedspecies-dormouse.pdf/\\$FILE/england-protectedspecies-dormouse.pdf](http://www.forestry.gov.uk/pdf/england-protectedspecies-dormouse.pdf/$FILE/england-protectedspecies-dormouse.pdf)

To the best of our knowledge Forestry Commission guidelines and the woodland management plan have been followed throughout.

Groundflora species indicative of ancient woodland include bluebells, primrose, dog’s mercury and wood sorrel. A fuller list has been itemised in section 4.4. None of these are rare, but as indicators of ancient woodland they do demonstrate the generally high ecological value of the woodland.

4.7 Man-made Structures

Tracks have been installed throughout the woodland, to aid its management, and to provide access to extract and process the larch trees subject to a statutory plant health notice. The woodland tracks were installed with grant aid support from the Forestry Commission and with formal planning consent from the National Park. As well as enabling sustainable harvesting of timber for the local economy, they also contribute to the ecology of the wood. The tracks provide more open areas, and if margins are managed as coppice they will provide good habitat for butterflies and other insects. Cut embankments can also provide habitats of particular importance for some invertebrates. While track construction does cause short term disturbance, in the longer term they contribute to structural diversity and ecological value.



There are two main areas of stores or temporary structures within the woodland areas. The first is the old quarry, which is of relatively low ecological interest, with a hard stone / bare ground working area. The natural rock faces provide a specialised habitat, but are unaffected by the presence of the structures.

The second site is within the mapped ancient woodland area, and contains a tool shed and workshop, together with a timber milling area. The footprint of these activities is small, but there is a small harmful effect (minor adverse) on the ecology. We understand that there are plans to relocate this area to a recently approved site in adjacent pasture, which will mitigate the effect.



Figure 7: On-site timber milling at Hillyfield

It is interesting to note that on-site milling to enhance timber value and increase the “farm gate” sale value is widely promoted as a means of delivering active management and conservation of small woodlands in the United Kingdom. The Chilterns AONB have published a detailed guide (http://www.chilternsaonb.org/uploads/files/AboutTheChilterns/Woodlands/On_site_Sawmilling_web.pdf), and the Dartmoor-based ‘Moor than meets the eye’ project has also worked with the East Dartmoor National Nature Reserve to run and promote a mobile milling demonstration. Adding value is seen as key to making local woods profitable and sustainable.

Adding value through on-site processing also reduces transport costs and therefore contributes to the wider environment through a reduced carbon footprint. It also reduces transport costs, as all waste wood is kept within the woodland, sawdust is composted and returned to the soil and all parts of the tree are used rather than treated as waste elsewhere. Timber use in, for example construction, can reduce the use of other high carbon products e.g. steel and concrete. Hillyfield provides locally grown, air-dried firewood with a growing customer base located within 7 miles of the woodland which is very low carbon fuel.



Mobile sawmilling event promoted by East Dartmoor National Nature Reserve, Pullaford Wood
<https://www.facebook.com/media/set/?set=a.1022764554436538.1073741829.179030102143325&type=3>

5. Alternative Woodland Management Options

The presence of *Phytophthora ramorum* in the larch has made felling essential. Had the current system of sequential felling, with on-site processing not been followed, two other management regimes could have been implemented. One option would be to fell all the diseased timber to waste, leaving it to decay on the ground. The other option would have been to bring in an external contractor and harvest all the larch in one season, using much larger timber harvesting equipment, and selling the sawlogs off site. In our opinion both options would have more harmful effects for the ecology of the woodland.

Clear felling in one season, with large machinery, by an external contractor, would certainly have led to the loss of many of the retained broadleaved trees. The forest machinery would have caused significant damage to the soils and groundflora, particularly if forwarders or harvesters were used. Also, the majority of the woodland would have been subject to dramatic change, which would have harmed the habitat for a range of species, including nesting birds, and the groundflora. The alternative phased approach that has been adopted has helped maintain a higher level of woodland cover and allowed for more gradual change to which many woodland species can adapt.

Felling larch to waste would also be a legally compliant outcome of the Statutory Plant Health Notice. However the likely result of a much lower level of active management, or no management, could be expected to include:

- A gradual spreading of laurel and other invasive species, from remnant stumps and neighbouring woodlands.
- Slow natural regeneration on site, with a high proportion of sycamore. Sycamore is not native and has lower biodiversity value than oak, birch, willow and most native species.
- Regeneration would be of a similar age and would condemn the wood to another generation of uniform structure and lower ecological value.
- Soil erosion and flood alleviation would not suffer, but the ecology and biodiversity of the site would be significantly harmed.

6. Ecological Management of Other Habitats

In addition to management of the woodland, the Hillyfield smallholding has undertaken a wider series of management actions to improve the biodiversity and conservation value of the land.

- i. A new hedge has been planted, using native species of high wildlife value, as part of the grant-aided track installation works. This is approximately 440 metres long. Hedges are an important part of the south Dartmoor landscape and also function as wildlife corridors, e.g. they are often used by bats commuting or foraging between different areas of woodland. Species planted were chosen to be of high ecological benefit for insects, foraging birds and mammals, including hazel, birch, hawthorn, blackthorn, holly, dog rose and oak.



Figure 8: Newly planted hedge

- ii. The meadows are managed organically, with a late hay crop being taken, to allow wildflowers time to set seed before harvest. Being managed organically means that no fertilisers or herbicides are used. Species rich wildflower meadows have declined by over 95% since the Second World War (Devon Wildlife Trust, <http://www.devonwildlifetrust.org/wildlife/habitats/lowland-meadows>). The quality of the meadows is currently modest, and a result of previous more intensive management. However, the current management regime should lead to a slow but steady increase in floristic diversity.
- iii. Woodland is playing an increasing role in managing peaks of flood water downstream. Following advice from local Environment Agency staff, woody debris is left in the river and on the edges of the riverbank at Hillyfield, slowing water flow in peak time and reducing potential levels of flooding downstream. This accords with the Upstream Thinking Project (<http://www.upstreamthinking.org/>), promoted by South West Water, but also including Devon Wildlife Trust and the West Country Rivers Trust. A small bed of short rotation coppice has been planted in the stream valley. As well as providing a harvestable craft material the willow bed also slows water flows in peak spate conditions, and will in a small way contribute to reducing peak flows further downstream.



Figure 9: Willow planted at Hillyfields helps manage peaks and troughs in water flows



Figure 10: retained fallen timber provides an additional habitat and contributes to flood alleviation downstream.

- iv. There has also been a major extension of woodland, with the planting of a further 2.1 hectares of mixed native broadleaved woodland, contributing to the Government target of an additional hectares of woodland in England every year.
- v. Two large ponds or small lakes within Hillyfield include retained dead wood habitat areas created by both lakes to support invertebrate and pondlife.

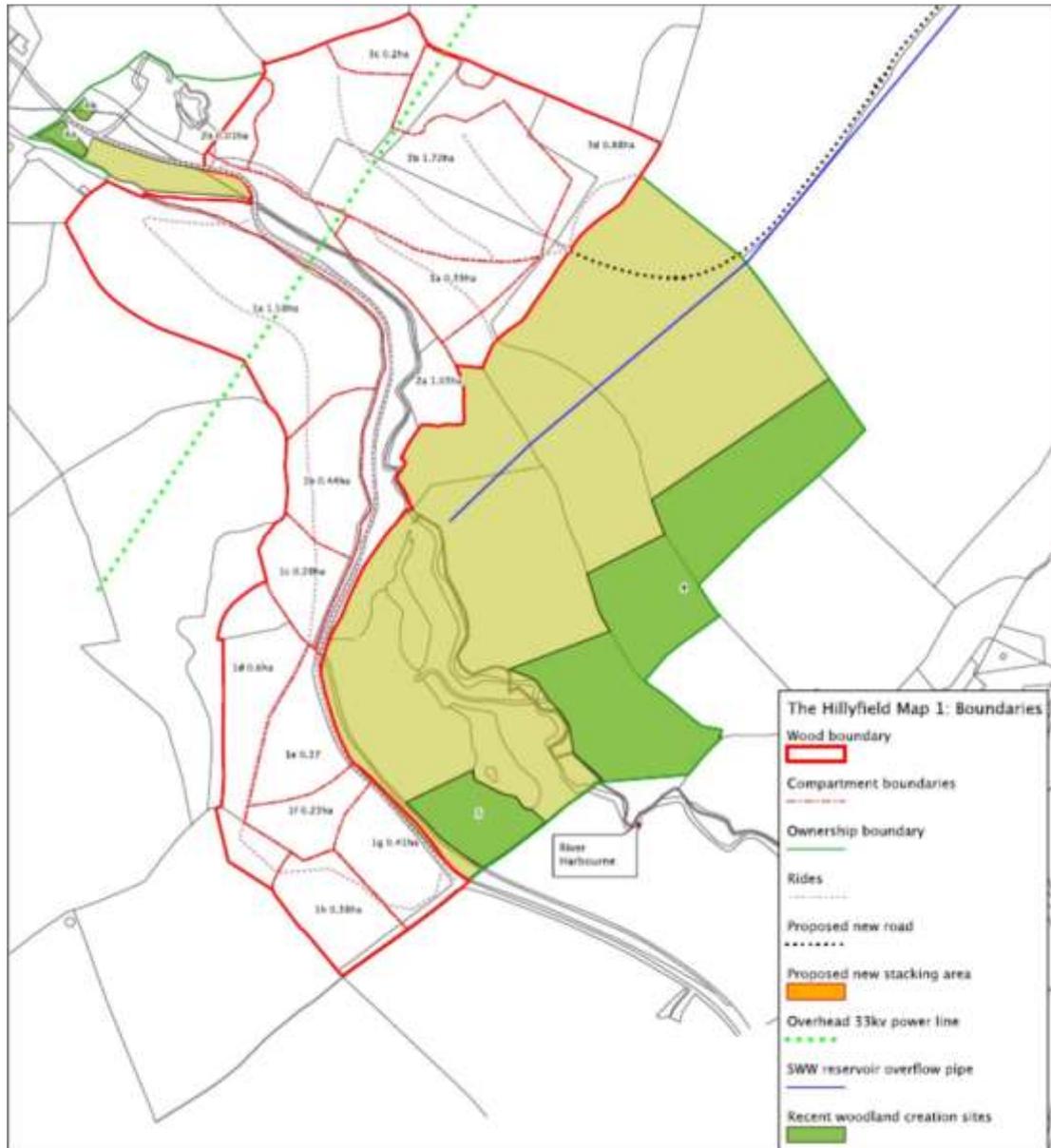


Figure 11: New woodland planting (bright green areas), from Hillyfield Woodland Management Plan



7. Policy Context

In reviewing the current management of Hillyfield Wood, we have sought to both demonstrate that it is being managed to high ecological standards, but also link the management activities to advice from a range of government and conservation agencies and charities.

In this section we briefly review a number of government and local policies and guidelines that further support the approach taken to the management of the Hillyfield woods.

7.1 National Policy

Section 40 of the Natural Environment and Rural Communities Act 2006, places a duty on all public authorities in England and Wales to have regard, in the exercise of their functions, to the purpose of conserving biodiversity. In this section we seek to review some of the policies and documents that relate to woodlands, and to show how the current and future management of Hillyfield, including marketing of produce locally, meets all of the published criteria.

The current Government **Forestry and Woodlands Policy** was published in 2013 (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/221023/pb13871-forestry-policy-statement.pdf) It notes “around 47% of woodlands, most in private sector ownership, remain unmanaged or under-managed. This can and should be addressed if we are to realise more of the economic, social and environmental potential that England’s woodlands have to offer. Our priority will be management that increases the resilience of the woodland asset so that it continues to provide multiple benefits to society, such as helping manage flood risk, safeguard clean water supplies and conserve and enhance biodiversity. Key to this will be to increase the amount of woodland management driven by economic activity through the sustainable harvesting of wood products”.

COMMENT: Hillyfields ticks all these boxes. The successful management of the woodland has been, to date, founded on a mix of innovative marketing (rocket logs), local markets (firewood) and added value (mobile sawmilling on site).

Biodiversity 2020: A strategy for England’s wildlife and ecosystem services

(https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf), the current Government statement on biodiversity also advocates active sustainable woodland management and harvesting, **as is currently undertaken at The Hillyfield**. It lists priority actions including to “bring a greater proportion of our existing woodlands into sustainable management and expand the area of woodland in England. Active management of woodland can prevent and address the most widespread and serious problems affecting ecological condition, for example, shadiness and high deer populations causing a loss of shrub layer and ground cover. It can also deliver other benefits, for example, woodfuel and timber and recreation and leisure”.



The responsible government agency is the Forestry Commission, and in their **Corporate Plan for 2015-16**

([https://www.forestry.gov.uk/pdf/FCECorporatePlan20156WebFinal.pdf/\\$FILE/FCECorporatePlan20156WebFinal.pdf](https://www.forestry.gov.uk/pdf/FCECorporatePlan20156WebFinal.pdf/$FILE/FCECorporatePlan20156WebFinal.pdf)) they state key priorities are to protect, improve and extend England's woodlands.

COMMENT: Hillyfield meets all three priorities.

The policy states *"we want to see increasing woodland resilience and will use professional advice, regulations, grants and management plan support, to promote greater biological and structural diversity in England's woodlands". And "we are focused on growing the forest economy to bring woodlands into sustainable forest management, with its wider benefits for people and nature, as well as the economy".* Their chosen indicator is to increase the percentage of sustainably managed woodlands from 52% (2010) and 57% (2014) to 66% by 2018. They further note *"we currently import two-thirds of our timber, yet could sustainably harvest more than 30 million more tons from our woodlands. We will work with the sector to accelerate progress towards our woods fulfilling more of their potential".*

COMMENT: Hillyfield's management and marketing of the timber locally again helps deliver against these policy objectives. It seeks to achieve greater biological and structural diversity, it is an example of sustainable forest management, and by selling into local markets it indirectly contributes to reducing timber imports.

The UK Forestry Standard (2017) ([https://www.forestry.gov.uk/pdf/FCFC001.pdf/\\$FILE/FCFC001.pdf](https://www.forestry.gov.uk/pdf/FCFC001.pdf/$FILE/FCFC001.pdf)) recognises the role of active forestry and timber harvesting in supporting *measures to mitigate climate change and adapt to its impacts are high priorities for the UK Government and the devolved administrations. Sustainable wood products can contribute to climate change mitigation through their use as substitutes for less sustainable materials. As fuel, wood can provide a valuable substitute for fossil fuels; although wood releases carbon dioxide when it is burned, an equivalent amount has been sequestered from the atmosphere as the trees grew.*

COMMENT: Hillyfield has diversified structure and species, key elements of the Forestry Commission's strategy to increase woodland resilience to climate change. It also supplies milled timber to local markets, substituting for less sustainable materials, and supplies firewood, substituting for fossil fuels.

Hillyfields has received grant aid for its woodland management from the Forestry Commission Woodland Grant Schemes, including for preparing the current woodland management plan, installing tracks for sustainable timber harvesting and replanting areas of larch affected by *Phytophthora ramorum*. It has also received funding from Europe, via the Farm and Forestry Improvement Strategy delivered by DEFRA through the RDPE. This was to invest in the onsite harvesting and timber processing machinery.



COMMENT: These grants demonstrate support from specialist organisations charged with protecting and managing our woodland resource.

7.2 Local Policy

The **Dartmoor National Park Authority Local Development Framework Core Strategy Development Plan Document 2006 -2026** includes a range of core policies and development management policies which are relevant to the woodland management undertaken at Hillyfield. These include:

Policy COR 1

- d) support for the socio-economic vitality of the National Park;*
- e) the conservation of the quality and quantity of natural resources including water, air, soils, geodiversity and biodiversity;*

Policy COR8. *Development should ensure that natural resources are used in efficient and sustainable ways. This will include the following aims:*

- (vi) providing opportunities for the beneficial management of strategic nature areas and other habitats and species to promote adaptation to climate change and to sustain their contribution to the mitigation of climate change.*

Policy COR18

Outside the classified settlements, local employment and business opportunities will be sustained by:

- (c) support for development to assist the agricultural and forestry sectors and other rural enterprises with strong links to the cultural heritage of Dartmoor;*

COMMENT: The management of Hillyfields and the on-site timber processing is, we believe, in accordance with these policies.

Regarding development management,

Policy DMD14 refers to Natural environment, biodiversity and geodiversity. This states that development proposals will conserve, enhance and/or restore biodiversity and geodiversity within Dartmoor National Park by:

- providing Special Areas of Conservation with the highest level of protection and enhancement;
- furthering the conservation and enhancement of nationally protected sites, habitats and species;
- conserving, enhancing or restoring priority habitats, species and geodiversity assets identified in the Dartmoor Biodiversity Action Plan;
- protecting and where appropriate enhancing other defined sites, features, habitats, species or networks or natural processes of ecological or geological importance;

- ensuring that effective avoidance or on-site mitigation measures are put in place where there may be an adverse effect on biodiversity or geodiversity interests. In rare cases, off-site compensation may be feasible and acceptable. There should be no net loss of biodiversity or geodiversity as a result of development.

Within this section the plan also states that biodiversity cannot thrive in isolation. Protecting sites and important habitats can only have limited benefit if those habitats are not connected within the wider landscape as part of a network, generally known as Green Infrastructure.

COMMENT: Hillyfield is a valuable local contributor to the green infrastructure. While it has no international or national protection native broadleaved woodland is a biodiversity plan priority habitat, and Hillyfield is likely to have otter and dormice, both of which are listed as key species. The policies are geared to minimising harm from development (the avoidance, mitigation and compensation hierarchy). **However, the active woodland management at Hillyfield achieves the opening statement; “will conserve, enhance and/or restore biodiversity”.** Replanting of cleared larch with native broadleaves is enhancing and restoring native broadleaved woodland and benefitting biodiversity.

Policy DMD34: Agricultural, forestry and rural business related development states:

Agricultural, forestry and other rural enterprise related non-residential development will be permitted where the proposal complies with the following criteria:

- there is a demonstrable need that is proportionate to the use of the land;*
- it relates well to local landscape features and other building groups;*
- it is located and oriented with respect to local topography so as to reduce intrusive effects;*
- it demonstrates a scale and form that is well related to its function;*
- it will not cause unacceptable harm to biodiversity, geodiversity and archaeological and cultural heritage assets, natural drainage or soil stability;*
- efficient use is made of existing buildings;*
- existing non-traditional structures made redundant by the proposed development are removed.*

COMMENT: In our opinion the active woodland management meets or exceeds these criteria, enhancing the biodiversity, enhancing flood management and soil stability and the tracks and buildings for timber storage and processing are proportionate to the land use.

Also within the Core Strategic Aims, for farming it states “*To assist in sustaining viable farming and forestry systems as a vital element in the local economy particularly in ways that further the purposes of National Park designation*”, (page 23).

COMMENT: What better example than Hillyfield?

Living Dartmoor was produced by the Dartmoor Biodiversity Partnership in 2013. It sets out to co-ordinate work which will enable a network of healthy, diverse habitats to benefit wildlife, landscapes, people and natural resources over the next ten years. Its page on woodlands highlights Pullabrook



Wood, a Woodland Trust site 7.6 miles from Hillyfield. Pullabrook is undergoing sequential selective felling of conifers and replanting broadleaves, just like Hillyfield. At local level Living Dartmoor states “The delivery of Living Dartmoor will be dependent to a large degree upon the involvement and support of local landowners, communities and voluntary organisations. Re-connecting people and wildlife was one of the four main themes of The Natural Choice, the Natural Environment White Paper and is also highlighted in the National Park Management Plan. The Dartmoor Biodiversity Partnership would like to increase the opportunities for people to get involved in their local environment to produce benefits for wildlife. These projects are best achieved through the development of local initiatives”.

COMMENT: Hillyfield is just such a local initiative. While this report focuses on the ecological aspects of the management at Hillyfield it is worth noting here that the owner also strives to provide opportunities for volunteers and local people to participate in the site management and in occasional events organised at the holding.

A Woodland Strategy for Dartmoor National Park 2005 – 2010

(http://www.dartmoor.gov.uk/_data/assets/pdf_file/0003/59187/dws.pdf) states that the “National Park is in partnership with South Devon and the Tamar Valley Areas of Outstanding Natural Beauty to develop a local wood marketing project to promote the use of local timber and to assist producers and processors in the area”. It also states “many skilled forest workers and timber processors have left the industry in recent years. There is a need to develop employment opportunities, and develop skills across the sector”. It also proposes to assist owners/managers with restructuring plans and thinning operations and to remove main invasive species.

COMMENT: These are a series of desires, whereas Hillyfield is actually delivering on the ground.

While not policy it is worth reiterating some of the fine work currently being undertaken by the Heritage Lottery funded programme, Moor than meets the eye. Dartmoor National Park is the lead partner, and Natural England (East Dartmoor National Nature Reserves), the Woodland Trust (Bovey Valley Woods and the Forestry Commission (Believer and Fernworthy Forests) are all partners. The project has organised numerous woodland activities and events, including horse logging demonstrations and one on-site mobile sawmilling demonstration. One project within the scheme is to sensitively restore the conifer plantations at Pullabrook, Houndtor and Hisley Woods to their former broadleaf woodland condition. (<http://www.moorthanmeetstheeye.org/projects/the-wildlife-of-dartmoor/projects2/discovering-the-nature-of-the-bovey-valley>) The work comprises of thinning conifer to create more open conditions for native ground flora and woodland to regenerate.

COMMENT: This is once again exactly the sort of work being undertaken at The Hillyfield.

8. Conclusions

Overall, we commend the current management of the wood, which is achieving ecological enhancements, protecting biodiversity and has high standards of management.

1. The woodlands are managed to high ecological standards, to a Forestry Commission approved plan that conforms to the United Kingdom Woodland Assurance Standards (UKWAS).
2. The management of the site has been heavily influenced by the presence of *Phytophthora ramorum* disease in the larch trees and the consequent serving of Statutory Plant Health Notices.
3. Selective low key harvesting and on site processing has enabled the management and larch felling to be spread out over a period that is likely to last ten years in total. This has slowed the rate of change within the woodland, minimising the disturbance to habitat and all the associated species.
4. The use of horse logging on some of the site has protected the groundflora and also enabled retention of broadleaved trees within the felled areas. This has therefore helped safeguard and enhance the ecological value of the site.
5. The landowner has worked hard to encourage natural regeneration of native species and to enhance the structural diversity of the woodland, which has had significant ecological benefits.
6. The sustainable local use of the harvested timber has provided mechanism to help fund the ecological management of the woodland. On site conversion is increasingly seen as a way forward to help improve the commercial balance of conservation-led woodland management. It has been used by many conservation organisations, including Natural England and the Woodland Trust at East Dartmoor National Nature Reserve. Horse logging and mobile sawmilling have been undertaken on the reserve in a scheme funded by the Heritage Lottery Fund and led by Dartmoor National Park. (see <https://eastdartmoorwoods.org/2016/03/22/smoke-wood-skills-and-horses/>).
7. There is scope to enhance the woodland ecology by relocating the shelter and timber milling area, from the ancient woodland to a nearby area of hard standing.
8. Sensitive and creative management of hedges, pasture and wetland habitats is further conserving and actively enhancing the biodiversity of the site.
9. We have sought to show that the management of The Hillyfield conforms to a wide range of policies, at both national and at Dartmoor National Park level. Those policies seek to promote best practice in woodland management and biodiversity, and Hillyfield is, in our opinion, an excellent example of such policies in practice.

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