



# Scoping a new forestry plan for Sperrin forests and woodland

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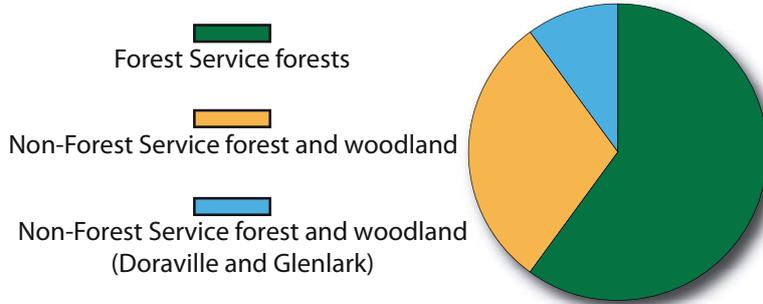
## **Appendices**

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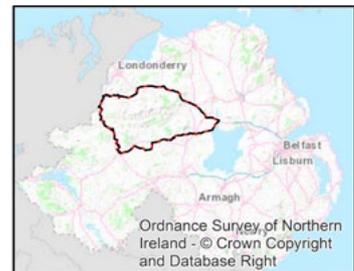
# Introduction

Forestry Plans help us shape the future aims and benefits we obtain from our forests. It is important that plans are reviewed from time to time to ensure that they are up to date and continue to meet the diverse and sometimes competing needs of people, wildlife and industry. Forests and woodlands in the Sperrin Forestry Planning Area (FPA), shown in Map 1, are estimated to cover around 12,100 hectares (ha), which is 8.5% of the FPA.



Forests managed by Forest Service within the Sperrin FPA are predominantly **coniferous**, and are in upland areas with limited agricultural potential. Forests are managed to meet a range of sustainable development objectives, and reflect the requirements of the **UK Forestry Standard**, which is the Government's statement on **sustainable forestry**. Areas managed as forest and open space by Forest Service are shown in **Appendix I**.

Map 1: Forests and woodland in Sperrin Forestry Planning Area (FPA)





Non-Forest Service forest and woodland mainly consists of a large number of small [broadleaved](#) or mixed woodlands, mostly less than 1 ha in size, scattered throughout the lowland farmed landscape, and the large coniferous plantations of Glenlark and Doraville, which are located in the uplands. There is little publicly available information on non-Forest Service forests and woodland, and on woodland owners' management objectives, except where it is managed by public bodies, or the land is under a forestry grant scheme, or, is subject to felling or environmental regulation. The [Ancient Woodland Inventory](#) provides basic information on the composition of woodland which has existed since at least since 1830.

## **Historical context**

Forestry has had a significant impact on the social, environmental and economic development of the Sperrin area for almost 100 years, when woodland cover is estimated to have been less than 1% of the area.

The first acquisition of land by the Ministry of Agriculture for Northern Ireland in the area was in the townland of Lislip East, in what is now Gortin Glen Forest Park, in the 1920s.

The development of forestry increased significantly during the 1940s, and continued for a further 5 decades.

Forestry also contributed to social development, with the construction of a village for Forest Service employees at Derrynoyd during the 1950s. Gortin Glen became established as the second forest park in Northern Ireland in 1967.

The Sperrin area also contains the largest development of non-Forest Service forests, at Glenlark and Doraville, during the 1980s.

## **Forest Plans**

Forest plans provide the direction for activities that are largely centred on the size and shape of felling areas (known as coupes), to produce timber. Regeneration of felled areas is designed to ensure continuity of woodland for timber and wood products, and the delivery of a range of non-timber outcomes, including landscape improvement, water protection, areas for public use, and native woodland.

Forest Service seeks greater involvement of people in the revision of forest plans, which has taken place on a 5 yearly cycle for many decades. The forest management plan for Sperrin forests was last reviewed in 2012. [Sperrin Management Plan 2012](#)

The [Forestry Act 2010](#) placed a duty on Forest Service to promote [afforestation](#) and sustainable forestry. Accordingly Forest Service plans will, in future, include references to non-Forest Service forest and woodland.



Achievements within the previous Sperrin Forestry Planning Area during the period 2012-16 are highlighted in the box below:

- Implementation of the design plan for Goles Forest, in the Glenelly valley, to improve its appearance in the landscape and provide greater protection to rivers and streams from erosion
- Implementation of operational plans to reduce potential forestry impacts on the pearl mussel in the Owenkillew River, in partnership with other organisations.
- Development of mountain biking trails in Davagh Forest in partnership with Mid-Ulster Council, including a network of walking trails, a picnic area, a play park and car parking.
- Development of walking trails in Derrynoyd, Moydamlaght and Iniscarn Forests with car parking in partnership with Mid-Ulster Council and in Learmount Forest with Derry City and Strabane Council.
- Facilitating the creation of 62 ha of new woodland under the forestry grant schemes.
- Producing an average of 63,000 tonnes of timber each year (equates to about 10 lorry loads of timber every working day) to supply the timber processing industry, creating jobs in rural areas and providing resources to reinvest in forests.
- Regenerating 500 ha of forest land, including the creation of additional unplanted areas to protect the environment, to provide resources for the benefit of future generations.
- Commencing the transformation of oak woodland in Derrynoyd Forest from [clearfelling](#) of [even-aged](#) plantations to [continuous cover](#) forestry.
- The establishment of “Operation Wild Deer” by PSNI, a multi-agency joint working group of members of the Partnership for Action Against Wildlife Crime in Northern Ireland (PAW NI) to target deer poaching in Davagh Forest.
- Completion of a survey of [ancient woodland](#) sites to identify threats to remnant ancient woodland features, and ensure these important habitats are conserved.
- Identifying candidate areas of afforested peatland with potential for habitat restoration, in Creggan, Davagh and Glenshane Forests.

## Scoping

Forestry planning opportunities are presented under 11 scoping topics which are intended to reflect the various areas of interest to stakeholders, these are as follows:

- Enhancing landscapes
- Protecting rivers and lakes
- Enabling the enjoyment of forests by local people and visitors
- Promoting afforestation and sustainable forestry
- Supplying sustainable wood products
- Regenerating forest land
- Growing trees sustainably
- Minimising the use of pesticides and fertilisers
- Targeting invasive species
- Protecting habitats and species
- Restoring peatland habitats

## Appendices

A summary of the composition of Forest Service forest is provided in [Appendix I](#). Details of environmental regulation requirements, designated areas, and historic monuments are provided in [Appendix II](#).

# 1 - Enhancing Landscapes

“Through the appreciation and analysis of landscape context, forests and woodlands can be designed so that they make a positive contribution to the character of a local area, and in some areas create attractive new landscapes.”

UK Forestry Standard, 4<sup>th</sup> Edition (2017)

## Background:

Forests and woodlands are important visual elements in the landscape that change over time. Forests contribute to the landscape character of the Sperrin mountains and surrounding foothills, and add to the experience of visitors to the area. Foresters acknowledge that the visual impacts of forests are important, and can be enhanced by modifying the design of the forest to remove straight lines or soften hard edges, and, by encouraging more tree planting.

**Opportunity:** Identify where the appearance of forests in the landscape can be improved by modifying the shape of felling boundaries, and carefully designed regeneration of felled areas.

**Opportunity:** Consider the potential for softening ‘hard’ forest edges by encouraging the afforestation of neighbouring agricultural land, subject to the landowners’ long-term intentions.

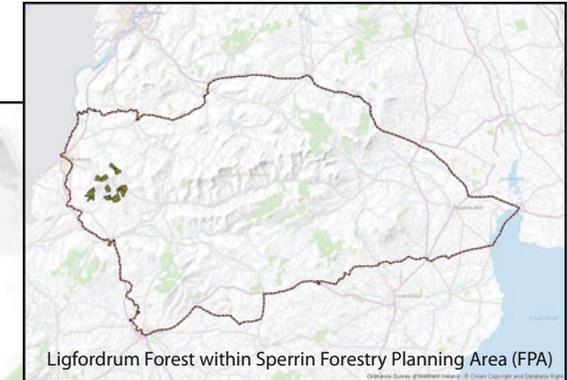
**Activity:** Undertake visual assessments of Forest Service forests from key viewpoints in the surrounding countryside, in order to identify the potential to influence the landscape effects of forest management decisions, focusing on planned felling.

**Activity:** Apply [UK Forestry Standard](#) requirements and forest landscape design guidelines, using GIS tools to undertake assessments and present options.

Outcomes	Benefits
<ul style="list-style-type: none"><li>- Increased potential to demonstrate landscape improvements using the regeneration and design plans</li><li>- Illustrate forests’ positive contribution to Sperrins tourism</li><li>- Stakeholders can contribute to forest design planning</li></ul>	<ul style="list-style-type: none"><li>- Attractive forest landscape views from the <a href="#">Sperrins Scenic Driving Routes</a></li></ul>

## Landscape design: Opportunity to review the visual impact of forests within the landscape

This forest block, part of Ligfordrum Forest, is situated alongside the Strabane - Plumbridge Road. It is part of the Sperrin Mountains Landscape Character Area and Sperrins Regional Landscape Character Area.



Use of GIS tools such as "Viewshed" allow us to identify which forest areas are visible from the selected viewpoints. (Green hatch in this example) This enables us to focus planning resources on landscape impacts on these areas.

Landscape photographs enable the effect of the forest on the landscape to be assessed from a number of selected viewpoints. It provides a basis to look at impact of felling coupe geometry and future planting in the landscape and a baseline for future landscape improvements.

Felling coupes are forest areas, usually less than 20 ha in size, where all trees are sold and cut down in the same period. Alternative forest management methods, referred to as 'continuous cover', or 'low impact' systems, are illustrated elsewhere.



Viewpoints are where a forest is most visible from. This can include settlements, tourist trails or visitor attractions.

-  Ligfordrum Forest
-  Felling coupes
-  Area of forest visible from viewpoint areas

## 2 - Protecting Rivers and Lakes

“Forests and woodlands have a close relationship with our water resources, and forest management and water quality are closely linked. Sustainable forest management is essential to ensure the supply of good-quality fresh water, provide protection from natural hazards such as flooding or soil erosion and to protect the needs of aquatic species.”

[UK Forestry Standard, 4<sup>th</sup> Edition \(2017\)](#)

### Background:

A number of Sperrin forests lie within the catchments of important angling rivers, including the Owenkillew, Faughan and Roe, and their tributaries, which are protected by statutory designations because of their importance for breeding salmon and trout, and fresh water pearl mussels.

The main forest design activity to protect water in these upland forests has been the creation of buffer areas of open ground between forestry land and watercourses and waterbodies. However, it is widely recognised that an open canopy of native **broadleaved** woodland can benefit aquatic habitats; an action to establish trees close to water to create **riparian woodland** in all forests is included in the cross-Departmental Sustainable Water - [A Long-Term Water Strategy for Northern Ireland \(2016\)](#).

**Afforestation** schemes, including the Forest Expansion Scheme, and the ‘Establishment of Native Woodland under 5 ha’ option of the Environmental Farming Scheme, also provide opportunities to provide additional protection of water through the creation of riparian woodland.

### [Grants and Funding](#)

New geographic information has become available, in the form of spatial datasets, on the potential of surface water flows on forest land to contribute to erosion and diffuse pollution in watercourses. These data may be used to improve the protection of water through better design of buffer areas and target some of these areas for riparian woodland creation in forest plans.

**Opportunity:** Identify the potential to increase the extent of riparian woodland by colonisation or planting

**Opportunity:** Use new sources of information to review the internal design of forests

Activity: Identify water buffer areas that have become colonised by native woodland, and where planting is appropriate.

Activity: Use a digital terrain model and other datasets, including the NIEA network dataset, to assist the revision of planned felling coupes, forest design plans, and forest regeneration plans.

Outcomes	Benefits
<ul style="list-style-type: none"> <li>- Assurance that risk to the ecological condition of features due to forest operations will be appropriately managed</li> <li>- Establishment of new native riparian woodland contributing to the NI Long-Term Water Strategy target</li> </ul>	<ul style="list-style-type: none"> <li>- Significant contribution to biodiversity, and to angling, arising from the promotion and practice of sustainable forestry</li> <li>- Long term protection of water quality resulting from increased extent of riparian woodland</li> </ul>



### 3 - Enabling Enjoyment of Forests by Local People and Visitors

“Access to woodlands is a public benefit that can improve people’s health and well-being.”

“Woodland visits help build an understanding and appreciation of the forest environment. Access to woodlands can be particularly beneficial for people from urban areas, people from disadvantaged social backgrounds, and people with disabilities....”

UK Forestry Standard, 4<sup>th</sup> Edition (2017)

#### Background:

The Forestry Act (Northern Ireland) 2010 promotes and encourages the enjoyment and recreational use of Forest Service land by the public, including a right of pedestrian access, and promotes the social benefits of other woodland. Partnership arrangements between Forest Service and Councils have been developed in keeping with the implementation of the Forest Service Recreation and Social Use of Forests strategy.

As a result, the variety of outdoor recreation opportunities in Sperrin forests has increased to include mountain biking, walking trails and children’s play facilities in Davagh forest, a play sculpture in Gortin Glen forest park augmenting the existing facilities widely used by school groups, and way-marked trails in Derrynoyd, Iniscarn, Learmount and Moydamlaght forests. There is considerable scope to build on this success, both in Davagh and in other forests.

**Opportunity:** Continue to discuss options for maintaining the existing provision of facilities and improving access to forests with Councils and other partners, and potential partners

Activity: Liaise with Councils to increase the recreational use of forests

Activity: Liaise with public bodies and neighbours to discourage activities presenting a risk to pedestrian users of forests

Outcomes	Benefits
<ul style="list-style-type: none"> <li>- Local people are able to make greater use of forests in their area</li> <li>- Promoting recreational use of forests</li> <li>- Delivering sustainable development in partnership with others</li> </ul>	<ul style="list-style-type: none"> <li>- Health and well-being</li> <li>- Development of local businesses</li> </ul>



## 4 - Promoting Afforestation and Sustainable Forestry

“The Department’s General Duty of promoting afforestation and sustainable forestry refers to all forests in Northern Ireland, not only the Department’s forest land. The Department recognises the valuable contribution that forestry makes in achieving its vision of a thriving, sustainable rural community. Through the Forest Service, it aims to ensure the sustainability of forests as an invaluable heritage, expansion of tree cover, [and] management of forests in a way that increases biodiversity, enhances the landscape and assists in improving water quality.”

[A Delivery Plan for the Implementation of the Forestry Act \(Northern Ireland\) 2010](#)

### **Background:**

NI Public Opinion of Forestry Surveys, conducted since 2005, have consistently found that 96% of respondents believed that forestry was worth supporting, to provide places for wildlife to live and for recreation. 79% of respondents said that they would like to see more woodland locally.

[Public Opinion of forestry, Northern Ireland: 2014 survey](#)

Promoting forest expansion is an integral part of Government policy and action to mitigate both climate change and flood risk, in addition to the many other benefits forests and woodland provide for people. Operation of forestry grant schemes (under the Rural Development Programme, Northern Ireland) and felling regulation (under the [Forestry Act](#)) provide opportunities for Forest Service to promote the delivery of ecosystem services from new and regenerated woodland, through the use of appropriate forest design and establishment techniques.

[Indicative map for woodland creation](#)

Information published on the DAERA website shows the extent of land potentially suitable for afforestation, and where [afforestation](#) can be of benefit in terms of flood risk mitigation.

[Opportunity mapping for woodland creation to reduce flood risk in Northern Ireland](#)

Forest planning will identify opportunities for woodland expansion to deliver benefits that are complementary to Forest Service forests by contributing to the local landscape character, and increasing connectivity between areas of neighbouring non-Forest Service woodland in the landscape. For the purposes of forest planning, Northern Ireland is divided into 8 Forestry Planning Areas, each of which incorporates a Forest Service forest planning unit.

The draft woodland register and basemap provides a means of assessing the location, extent and type of existing non-Forest Service woodland in each Forestry Planning Area. It indicates that the great majority of woodland outside of Forest Service forests occurs in small land parcels, is of [broadleaved](#) or mixed type, and particularly, in the Sperrin Forestry Planning Area, often occurs adjacent to rivers. The draft woodland register and basemap does not, however, provide information on the potential contribution of this woodland to community development, and its capacity to deliver ecosystem services other than in terms of its occurrence close to water.

[Forest Service Woodland Register](#)

Through the capture of relevant data from casual inspection of woodland adjacent to Forest Service forests, the review of management plans for these forests can make use of estimates of actual and potential use of this woodland, and of its additional contribution to sustainable forestry.

**Opportunity:** Identify potential for promoting woodland expansion adjacent to Forest Service forests, where appropriate

**Opportunity:** Review the extent of non-Forest Service woodland in the Sperrin Forestry Planning Area, and the potential risks to its contribution to sustainable forestry

Activity: Assess provision of ecosystem services by non-Forest Service woodland adjacent to forests

Outcomes	Benefits
<ul style="list-style-type: none"><li>- Landscape improvement through tree planting</li><li>- Evidence of the contribution of non-Forest Service woodland to well-being, and the potential for improvement through management</li></ul>	<ul style="list-style-type: none"><li>- Woodland services, for people's well-being and use</li><li>- Better quality of NI forestry through management</li></ul>



## 5 - Supplying Sustainable Wood Products

“Our forests support development of the Northern Ireland economy by supplying wood for industrial use. We sold 414,000 cubic metres of logs for £9.95 million, and we estimate that £24 million of value was added by industry in harvesting, timber haulage, and manufacture for construction, fencing, pallet and packaging, and energy. We obtained more of our timber supplies from tree thinning operations as part of our strategy to extend the life of plantations and reduce the impact of forestry operations on the environment.”

[Forest Service Annual Report 2015 - 2016](#)

### Background:

Timber harvesting operations are managed to avoid adverse environmental impacts, particularly preventing movement of sediment and pollutants into watercourses. Since 2012 Sperrin forests have produced just over 63,000 cubic metres of timber per year, mainly from [clearfelling](#). To provide assurance, Forest Service forests and management are subject to a periodic assessment and annual audits of compliance by an independent certification body to ensure they meet the requirements of both the Forest Stewardship Council® (FSC)® (Licence code: FSC-C084232), and, the Programme for Endorsement of Forest Certification (PEFC) (Licence code: PEFC/16-40-1924), each of which employs the [UK Woodland Assurance Standard](#). As a result of FSC® and PEFC forest management and ensuing ‘chain of custody’ certification components, wood products derived from Forest Service forests can be marketed by processors using the logos of the FSC® and PEFC, signifying they have come out of responsibly managed forests.

Over time, forest plans will seek to reduce the proportion of the total amount of timber produced by clearfelling, and, subject to risk of [windthrow](#), to increase the amounts produced both by [thinning](#) of plantations that will eventually, be clearfelled, and by using [low impact silvicultural systems](#).

**Opportunity:** Review the timing and boundaries of planned felling, to complement landscape design and enhance water protection, using innovative GIS tools and datasets.

**Opportunity:** To optimise the supply of timber from thinning and use of low impact silvicultural systems, including [continuous cover forestry](#)

Activity: Make use of advanced GIS tools and datasets to improve the design of felling coupes

Activity: Optimise thinning in Sperrin forests, and enhance planning capability

Activity: Develop and apply a rationale for identifying further areas where the use of low impact silvicultural systems is appropriate

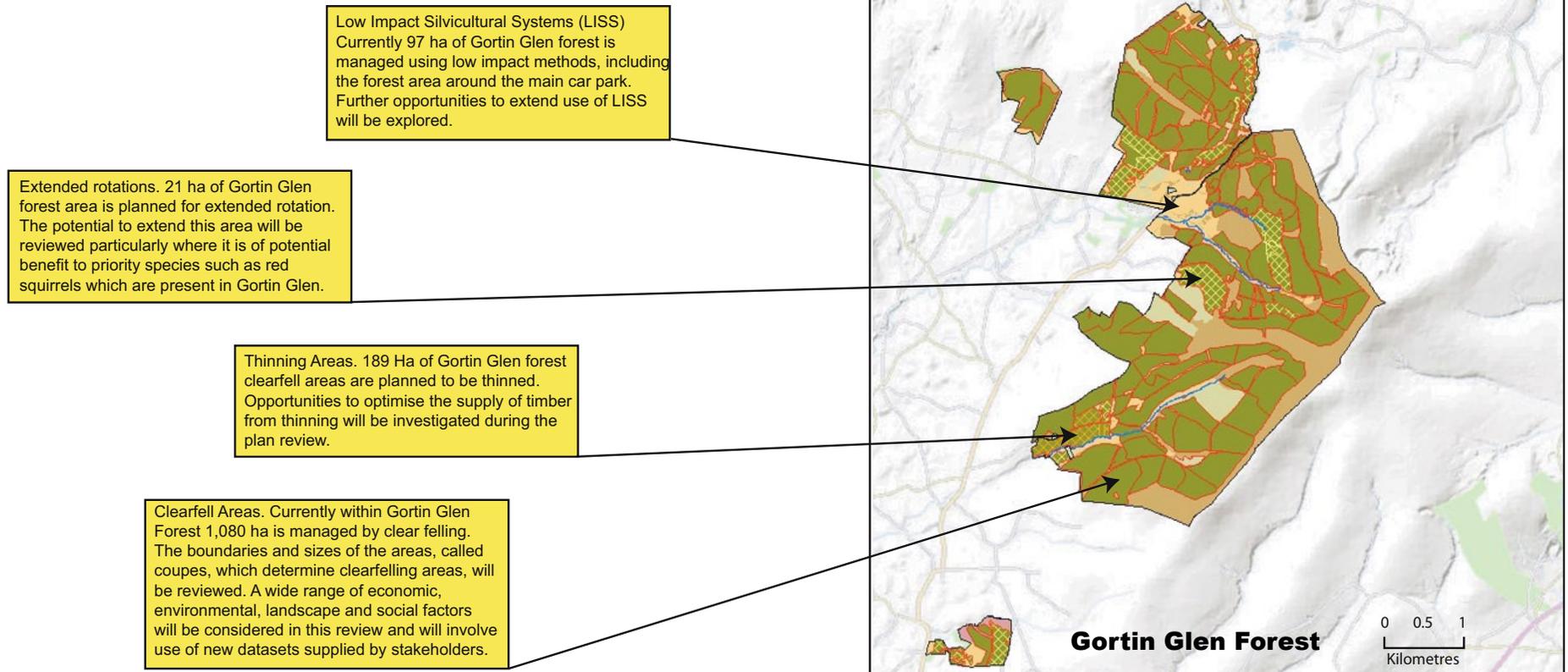
Outcomes	Benefits
<ul style="list-style-type: none"> <li>- Maintain supply of certified timber</li> <li>- Improved knowledge of future timber availability</li> <li>- Greater resilience of timber availability through the use of alternative silvicultural systems</li> </ul>	<ul style="list-style-type: none"> <li>- Sustainable economic activity in the rural landscape</li> <li>- Industrial output of home produced wood products to a variety of markets, including construction, agriculture, energy, and domestic heating.</li> </ul>

## Sustainable wood products: Opportunity to review harvesting plans

The review of the Sperrin forest plan provides the opportunity to review how timber is harvested from forest areas.

We have the opportunity to review:

- 1/ Clearfell: wood is produced using a clearfelling silvicultural system, where all trees in an area are harvested within the same period
- 2/ LISS: wood is produced using low impact systems under which a proportion of trees are removed singly or in small groups, and gaps are planted or allowed to regenerate naturally
- 3/ Thinning: wood is produced by periodically removing a proportion of trees from 18-20 years of age until clearfelling takes place
- 4/ Extended rotations: clearfelling is delayed beyond normal felling age



Areas managed by LISS
  Areas managed by clearfell
  Open ground
  Thinning areas
  Extended rotation
  Natural reserve
  Water

## 6 - Regenerating Forest Land

“Forest regeneration is the act of renewing tree cover by establishing young trees naturally or artificially - generally, promptly after the previous stand or forest has been removed. The method, species, and density are chosen to meet the goal of the landowner.”

[Land use, Land-Use and Forestry Fact Sheet 4.12. Intergovernmental Panel on Climate Change](#)

### Background:

Regeneration of forest land after felling (or, occasionally, destruction by fire) is an opportunity to improve the design of a forest to meet longer term objectives, including enhancing the landscape, protecting water, and, by using a wider range of trees species, improving wildlife habitats and increasing the resilience of the forest. Felled areas may be replanted, or allowed to regenerate naturally from seed, or, used to introduce more open ground into the forest. In some circumstances wood production can be increased by using improved planting material, for example, grown from seed harvested in seed orchards.

The development and improvement of forest design and regeneration plans is a significant forest management activity, involving extensive engagement with Governmental bodies, organisations, local people, and other stakeholders. Forest design plans have resulted in the creation of additional water buffer areas, some of which are suitable for establishing new native woodland.

Management of forests under some [low impact silvicultural systems \(LISS\)](#) involves making use of natural regeneration, where it occurs, to meet regeneration requirements, where it occurs, supplemented by planting as necessary.

**Opportunity:** Review and revise forest design and forest regeneration plans, to introduce native broadleaved trees and open ground, and favour the use of a wider range of conifer species for regeneration, where appropriate.

**Opportunity:** Revise felling and regeneration plans to increase age, species and structural diversity in forests

**Opportunity:** Specify the use of more productive Sitka spruce planting material in regeneration plans, where site conditions are suitable.

Activity: Assess the suitability of current and planned water buffer areas for the establishment of new native woodland

Activity: Identify areas suitable for use of alternative conifer species, including Norway spruce, Douglas fir and western red cedar

Activity: Identify areas where wildlife habitat can be enhanced by planting a wider range of tree species

Activity: Identify areas managed as LISS where supplementary underplanting is appropriate

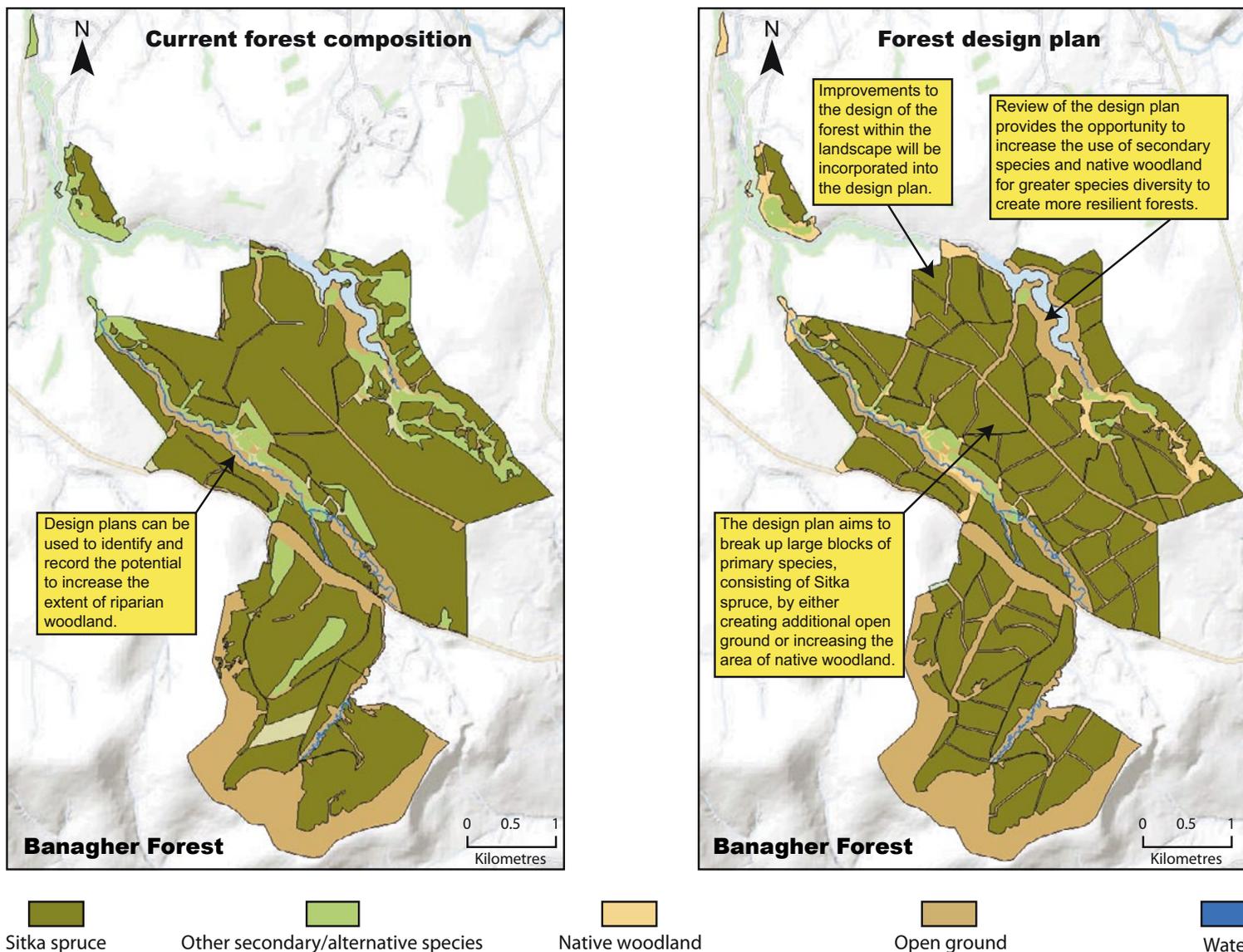
Outcomes	Benefits
<ul style="list-style-type: none"> <li>Regeneration plans identifying the establishment of native woodland adjacent to watercourses, and the appropriate use of alternative conifer species</li> </ul>	<ul style="list-style-type: none"> <li>Forests which deliver better ecosystem services and have more natural capital.</li> <li>Forests that are more resilient to the effects of disease, climate change and other pressures</li> </ul>

## Forest design and composition: Opportunity to review forest design plan

Forest Design Plans are used to design the longer term future composition of our forests. The forest planning review process provides the opportunity to review these design plans to meet our objectives following consultation.

Forest regenerations plans, which provide the opportunity to specify species and method of regeneration in more detail, will also be reviewed.

Review of the regeneration plan provides the opportunity to specify the use of more productive Sitka spruce planting material, where site conditions are suitable.



## 7 - Growing Trees Sustainably

“The essential consideration for the landowner or manager is to ensure that the forest thrives and is not degraded. This includes protecting young trees to make sure they become successfully established, and protecting the health of forests and woodlands, for example by ensuring they have the necessary resilience to cope with emerging threats and changing conditions – in particular climate change. It also involves maintaining levels of fertility and site potential for future rotations.”

[UK Forestry Standard, 4<sup>th</sup> Edition \(2017\)](#)

### Background:

Growing trees sustainably involves monitoring the health and vitality of the forest, and responding appropriately to threats. Sperrin forests are vulnerable to a similar range of threats occurring elsewhere in Northern Ireland, including harm to forest users and the environment arising from criminal or anti-social behaviour, and the effects of fire, pests and diseases, wind and storm damage, and loss of soil fertility. Areas recently planted with native and other **broadleaved** trees, including new **riparian woodland**, are particularly susceptible to damage by deer and grey squirrels, and from livestock, where they are not adequately fenced out. Deer are also able to hinder or prevent establishment of woodland by colonisation or natural regeneration.

While the risk of damage from many of these threats is managed by operational measures and contingency planning, continuous monitoring and liaison with neighbours, partners and stakeholders is essential.

**Opportunity:** Liaise with neighbours and statutory bodies in relation to controlling damage to woodlands, and preventing deer poaching and other wildlife crime.

**Opportunity:** Monitor the growth of trees in areas regenerated after felling, and develop plans to maintain fertility, using targeted fertiliser applications where necessary.

Activity: Collate and analyse monitoring information, including assessments of tree growth and nutrition

Activity: Identify areas where fertiliser applications will be required to maintain tree growth.

Outcomes	Benefits
<ul style="list-style-type: none"> <li>– Updated monitoring and contingency plans</li> <li>– Design plans include appropriate buffer zones adjacent to watercourses and lakes to permit fertiliser application where necessary</li> </ul>	<ul style="list-style-type: none"> <li>– Healthy, safe forests</li> <li>– Protected natural environments</li> </ul>

## 8 - Minimising the use of Pesticides and Fertilisers

“The use of artificial pesticides and fertilisers is generally a last resort in practising sustainable forest management...Pesticides and fertilisers are expensive, and should only be deployed in a reactive way to protect trees when a problem has been identified or is highly likely. Their use on special sites such as ancient woodland is particularly discouraged.”

[UK Forestry Standard, 4<sup>th</sup> Edition \(2017\)](#)

### Background:

Pesticide use in Forest Service forests is highly restricted as a result of a combination of statutory regulation and the implementation of a Forest Service minimisation strategy. Under this strategy, non-chemical control options are considered, and used, unless shown to be impractical, ineffective, excessively costly, or likely to carry the risk of causing more harm to people and the environment. The main remaining area of use of chemical control is as a last resort to protect trees replanted after felling from insect damage caused by the pine weevil (*Hylobius abietis*). The pyrethroid, cypermethrin, is currently used to protect trees from pine weevil. A neonicotinoid substitute, acetamiprid, is to be used from 2018. (In the formulation that will be used in forestry, acetamiprid is not classified as toxic to bees.)

Although a perception that pesticide use in forestry can have significant environmental effects may be widely held, this is unsupported by environmental monitoring carried out by NI Environment Agency.

Fertilisers have been routinely used to enable woodland establishment and promote tree growth in upland forests since the early 1960s, and, until around 2000, aerial fertiliser application to forests had taken place on an annual basis. Fertiliser use followed prescriptions for different tree species and site conditions that had been developed over many decades of research and monitoring. Since 2000, increasing areas of forest, that had been established and maintained using fertiliser, have been felled. There are strong indications that a proportion of regenerated areas are becoming deficient in nutrients and may again require fertiliser to maintain growth.

**Opportunity:** To contribute to the minimisation of pesticide use by planning the sequencing of felling years and increasing the area of forest managed under low impact silvicultural systems

**Opportunity:** To maximise the efficiency of fertiliser use in terms of uptake, and growth

Activity: Environmental monitoring of forested catchments, in conjunction with NIEA

Activity: Identify thresholds for fertiliser applications based on balancing economic returns and potential environmental effects

Outcomes	Benefits
<ul style="list-style-type: none"><li>– Pesticide use is minimised to the extent that residues are significantly below environmental monitoring thresholds</li><li>– Fertiliser applications will take place without affecting water</li></ul>	<ul style="list-style-type: none"><li>– Economic activity in forests contributing to the health and well-being of local people</li></ul>

## 9 - Targeting Invasive Species

“Here, as elsewhere in the world, invasive species are increasingly a serious threat to biodiversity and the benefits that healthy ecosystems provide to us... They are a risk to our unique flora and fauna, our economic interests such as forestry, fishing, and farming, our health, and our recreational interests.”

An invasive species strategy for Northern Ireland (2013)

### Background:

A number of invasive, non-native plant species occur in most forests, with the potential to affect access, biodiversity, regeneration of forests, and tree growth. The most widely occurring invasive plant species are rhododendron and laurel. Both are susceptible to *Phytophthora ramorum* (the cause of ‘Ramorum disease’, also known elsewhere as ‘sudden oak death’) and can act as hosts for the disease in a woodland and increase the amount of inoculum in an area. Fewer invasive non-native mammal species occur in forests, although the impact on biodiversity and tree health of the grey squirrel and introduced deer species can be locally significant.

Some invasive species are subject to regulation, under the EU Invasive Alien Species Regulation (Regulation No 1143/2014) and the Wildlife and Natural Environment Act (Northern Ireland) 2011. Actions targeted against invasive species by public bodies are co-ordinated under the Invasive Species Strategy for Northern Ireland. Effective action against invasive non-native species is generally very costly and is not undertaken without good justification, for instance removal from protected habitats and riparian areas.

**Opportunity:** Prioritise areas where control of rhododendron and laurel is required

**Opportunity:** Prioritise areas where control of colonising woodland is required in protected habitats and riparian areas in Forest Service forests

Activity: Collate and analyse data on the occurrence of invasive plant species in forests

Activity: Assess extent of colonisation of protected habitats and water buffer areas by Sitka spruce and other conifers

Outcomes	Benefits
<ul style="list-style-type: none"><li>– Decreasing area of forest land affected by invasive plant species</li><li>– Reduced threats to biodiversity and tree health</li></ul>	<ul style="list-style-type: none"><li>– Forests are more attractive</li><li>– Better access for angling</li></ul>



## 10 - Protecting Habitats and Species

“Northern Ireland’s biodiversity plays a significant role within its economy. A healthy, properly-functioning natural environment is the foundation of sustained economic growth, prosperous communities and personal well-being.”

[Valuing Nature A Biodiversity Strategy for Northern Ireland to 2020.](#)

### Background:

A quarter of the 76,000 ha of land managed by the Forest Service is designated for nature conservation, as SAC, SPA, ASSI or NNR. A large proportion of this designated land, which monitored by NIEA, is comprised of two SPAs, for hen harrier and hen harrier and merlin respectively.

<https://www.daera-ni.gov.uk/topics/biodiversity-land-and-landscapes/protected-areas>

Designated areas in Sperrin forests are listed in Appendix I. As a competent authority, Forest Service is required to undertake assessments of the potential impact of forestry on areas designated under the EU Habitats and Birds Directives as either SAC or SPA, which includes a number of rivers (Owenkillew, Faughan and Roe) and their tributaries, and a raised bog (Black Bog).

Forest plans identify areas in forests that correspond to priority habitats described in the EU Habitats Directive, in addition to designated areas. These include native woodland (including semi-natural and ancient semi-natural woodland), parkland, species rich grassland, bog and heathland. Connectivity between forest and woodland habitats can be enhanced by the appropriate use of natural regeneration of felled areas.

Biodiversity of forests is also enhanced through management of deadwood habitat, protecting ancient woodland remnant features, veteran trees, and other features of high biodiversity value, increasingly favouring the use of extended rotations and low impact silvicultural systems, and designating areas within forests as natural reserves or water buffers.

Parkland and open habitats may be susceptible to colonisation by woodland, particularly in lowland forests. Opportunities for addressing loss of biodiversity can be identified in forest plans. Forests provide habitats for a number of rare and protected plants, invertebrates, birds and mammals, and support populations of wild deer, which are managed to prevent damage to susceptible trees. Sperrin forests are significant refuges for the red squirrel, and raptors, including hen harrier and merlin. Forest operations are planned to avoid adverse effects on these species.

**Opportunity:** Complete Habitats Regulations Assessments (HRAs) of revised forest plans in respect of the Owenkillew, Faughan and Roe Special Areas of Conservation.  
**Opportunity:** Identify areas of open habitat where intervention is necessary to address potential loss of biodiversity, and maintain ecological connectivity.

Activity: Review potential effects of forest operations specified in forest plans

Activity: Undertake assessments of the risk to open habitats from colonisation by trees and other threats to biodiversity.

Outcomes	Benefits
- Contribution of forests to NI biodiversity is maintained or increased	- Opportunities for watching birds and wildlife in forests



# 11 - Restoring Peatland Habitats

“Peatland covers 12% of the land area of Northern Ireland... It is a resource which is of enormous importance to the stability and general well-being of our environment, creating distinctive upland and lowland landscapes, conserving biodiversity, and affecting river catchment hydrology. Peatland is also valuable as an archival record of climatic and vegetational history and archaeological remains. Globally, peatland acts as a massive carbon store with implications for the ‘greenhouse effect’ ”.

[Conserving Peatland In Northern Ireland: A Statement of Policy \(1993\)](#)

## Background:

Internationally, peatland habitats are threatened from human activities and climate change and are therefore considered areas of high conservation importance. Historically, in Northern Ireland, significant areas of land with a peat depth of more than 0.5m was acquired because it was considered to be suitable for **afforestation**, using Sitka spruce and lodgepole pine, without compromising local agricultural production. However, relatively high initial inputs in terms of cultivation, drainage and fertiliser were needed to establish plantations and to maintain tree growth. This took place over large areas of Ireland and Scotland, and to a lesser extent, in Wales and northern England. Similar activity took place in other European countries, particularly in northern Sweden and in Finland. However, growing trees on land which requires repeated inputs of fertiliser is no longer considered to be a compatible with **sustainable forestry**, and greater emphasis is placed on selecting species and silvicultural systems that do not require continuing inputs of fertilisers. This limits options for productive forestry on peatlands, particularly where the capacity to retain applied nutrients is low.

Peatland restoration avoids the need to plan for drainage and continuing fertiliser applications, and re-establishes a sink, and long-term store, for carbon. It also enables the recovery of biodiversity associated with bog habitats, and for previously afforested land to provide additional ecosystem services, including landscape improvement and flood risk mitigation.

However, it also requires inputs in terms of treatment of felled areas, including blocking of drains, and would result in a reduction in the timber production potential of forests, and, possibly, limit recreation opportunities. Therefore, it is critical that potential restoration sites are identified and carefully considered.

Sperrin forests include significant areas with soil described as peat > 50 cm in depth. Areas potentially suitable for restoration are most likely to be located in Creggan and Davagh forests.

**Opportunity: Identify and prioritise areas of afforested peat for restoration in Sperrin forests**

Activity: Develop a process for identifying and mapping potential candidate restoration areas based on peat depth, slope and topography.

Outcomes	Benefits
<ul style="list-style-type: none"> <li>- Reduction in area of regeneration of upland forests and their timber production potential</li> <li>- Change in upland forested landscapes</li> <li>- Reconnection of remnant patches of isolated peatland</li> </ul>	<ul style="list-style-type: none"> <li>- Flood risk mitigation and carbon storage</li> <li>- Reduced carbon footprint</li> </ul>

## Appendix I.

### Composition of Forest Service forests

Table 1. Area and Composition of Forest Service forests in Sperrin Forestry Planning Area

Forests	Area (Ha)	Composition (%)			
		Conifer	Broadleaved	Mixed	Open ground + water
Banagher	1703	76	4	0	20
Bradkeel	141	72	2	0	26
Creggan	659	77	2	1	20
Davagh	1517	70	3	0	27
Derrynoyd	102	24	60	9	7
Glenshane	1026	37	3	1	59
Goles	412	81	9	0	10
Gortin Glen	1576	74	5	2	19
Iniscarn	158	75	13	4	8
Killens	85	81	5	0	14
Learmount	118	48	20	28	4
Ligfordrum	619	83	6	2	9
Moydamlaght	299	71	7	2	20
Forest Planning Area	8415	70	5	1	24

## Appendix II

### Environmental regulation, designated areas, and historic monuments

#### 1. Environmental Regulation

**Afforestation**, deforestation, forest road works and forest quarry works are subject to regulation under the Environmental Impact Assessment (Forestry) Regulations (Northern Ireland) 2006, as amended under the Environmental Impact Assessment (Forestry) (Amendment) Regulations (Northern Ireland) 2017. Thresholds beyond which projects must be screened are determined by the type of project and existence of a designation, as listed in section 4.2.

In areas designated as **Special Area of Conservation (SAC)** or **Special Protection Area (SPA)**, management plans and, where necessary, operational plans in connection with forestry or recreational activities, are subject to regulation under the Conservation (Natural Habitats etc.) (Northern Ireland) Regulations (as amended), commonly referred to as the Habitats Regulations. Operational plans for forest management activities in **Areas of Special Scientific Interest (ASSI)** are subject to regulation under the Environment Order (Northern Ireland).

**National Nature Reserves (NNR)** are declared under the Nature Conservation and Amenity Lands Order (NI) 1985, and are managed in accordance with a management plan.

#### 2. Designated areas

Forestry land is designated under the Habitats Regulations, the Environment Order, and the Nature Conservation and Amenity Lands Order (NI) 1985. All forests in Sperrin planning unit except Derrynoyd lie within Sperrin Area of Natural Beauty (AONB).

Table 2. Designated areas adjacent to and including Forest Service forest land

Designated site or area	Designation type	Forest adjacent or included within
Sperrin	AONB	All forests in Sperrin planning unit except Derrynoyd lie within Sperrin Area of Natural Beauty (AONB).
River Faughan and Tributaries	SAC/ASSI	Learmount
River Roe and Tributaries	SAC/ASSI	Banagher Glenshane
Carn - Glenshane Pass	SAC/ASSI	Glenshane (nearby but not immediately adjacent)
Black Bog	SAC/ASSI and RAMSAR	Creggan
Teal Lough	SAC/ASSI	Davagh
Teal Lough Part II	ASSI	Davagh
Teal Lough and Slaghtfreeden Bogs	ASSI	Davagh
Banagher Glen	SAC/ASSI/NNR	Banagher
Owenkillew River	SAC/ASSI	Davagh Creggan
Owenkillew River	ASSI	Davagh Creggan
Mullaghcarn	ASSI	Gortin Glen Killens
Boorin	NNR	Gortin Glen

Designated non-Forest Service owned woodland includes Banagher Glen SAC/ASSI/NNR, Drumlea and Mullan Woods ASSI, Owenkilwee and Glenelly Woods ASSI, and Knockadoo Woods ASSI. A number of Sites of Local Nature Conservation Importance (SLNCI) that include woodland features were identified by Magherafelt District and Limavady Borough Councils. These include Forest Service forests (e.g. Derrynoyd) and a number of non-Forest Service woodlands.

Table 3. Historic monuments located in or close to forest boundary (within 50m)

Forest	Townland	Type	Protection	Location
Banagher	Teeavan	Altnaheglis Reservoir	Scheduled	Close to forest
	Teeavan	Mound	Non-scheduled	In forest
	Teeavan	Mound	Non-scheduled	Close to forest
	Teeavan	Megalithic tombs	Non-scheduled	In forest
Bradkeel	Bradkeel	Cairn	Non-scheduled	In forest
	Bradkeel	Cairn	Non-scheduled	Close to forest
	Doorat	Cairn	Non-scheduled	In forest
Iniscarn	Cairndaisy	Enclosure	Non-scheduled	In forest
Creggan	Formil	Two standing stones	Non-scheduled	In forest
	Formil	Standing stone on boundary	Non-scheduled	On boundary
	Kinnagillian	Standing stone	Non-scheduled	In forest
	Creggan	Non-antiquity (tree ring enclosure)	Non-scheduled	In forest
Davagh	Davagh Lower	Megalithic complex	Scheduled	In forest
	Davagh Lowe	Wedge tomb: Big Man's Grave	Scheduled	In forest
	Tullybrick	Crannóg on boundary (possible)	Non-scheduled	In forest
	Slaghtfreeden	Cairn	Non-scheduled	In forest
Derrynoyd	Derrynoyd	Bullaun stones (possible) Mound (possible)	Non-scheduled	In forest
Gortin Glen	Trinamadan	Rath	Non-scheduled	In forest
	Cullion	Cairn	Non-scheduled	In forest
Glenshane	Glenshane	Megalithic tomb (possible)	Non-scheduled	In forest
Ligfordrum	Ligfordrum/Douglas	Cairn	Non-scheduled	In forest
Learmount	Kilgort	Holy well	Non-scheduled	In forest
Moydamlaght	Moydamlaght	Burial ground	Non-scheduled	In forest
	Moydamlaght	Enclosure and burial ground	Non-scheduled	In forest

Map 1 Forests and woodland in Sperrin Forestry Planning Area (FPA)

