



DUMFRIES AND  
GALLOWAY COUNCIL

**Local  
Development  
Plan**

**Supplementary  
Guidance**

Adopted 1st December 2014



*Dumfries and  
Galloway Forestry  
and Woodland  
Strategy*



# Dumfries and Galloway Forestry and Woodland Strategy

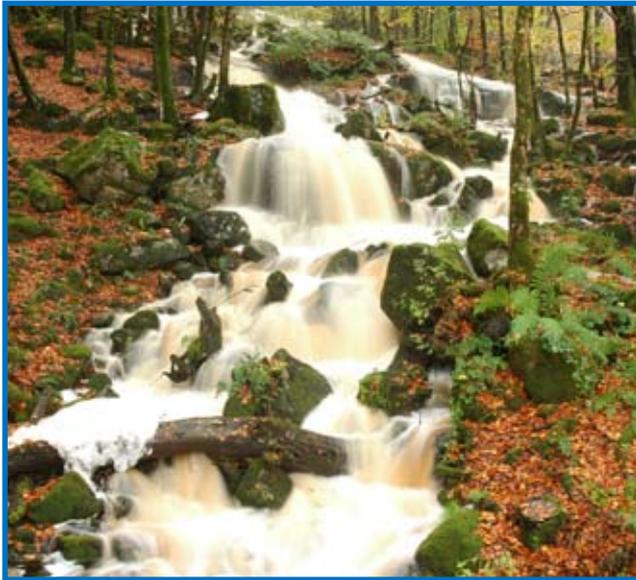
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# Dumfries and Galloway Forestry and Woodland Strategy

## 1.0 Part 1: Introduction

1.1 The Dumfries and Galloway Forestry and Woodland Strategy (DGFWS) provides a framework for guiding forestry and woodland practice within Dumfries and Galloway over the next ten years. It will guide both woodland creation and the restructuring and management of existing forests and woodlands, to maximise the benefits for the local economy, communities and environment. The strategy will also inform the development of associated processing and infrastructure and the best use of all products from forests and woods. Whilst the strategy covers a 10 year period, forestry planning is a long term process and the forest and woodland resource crosses generations; we are planting and caring for trees now for the benefit and enjoyment of future generations.

1.2 The strategy will take account of local circumstances and steer both the type and location of new planting to the most appropriate areas whilst maximising the potential benefits our woodlands bring to such things as local businesses, recreational opportunities and environmental assets. It is hoped that the consideration of issues contained in the strategy will help to reduce conflict over woodland creation proposals.



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1.3 The strategy is based on advice contained in the 'The Right Tree in the Right Place, Planning for Forestry and Woodlands' (Forestry Commission Scotland Guidance note, 2010) and the UK Forestry Standard (UKFS) and supports Scottish Ministers' desire to see an expansion in woodland cover, delivering multiple benefits across the country.

1.4 The strategy has been developed through a number of organisations working in partnership including Dumfries and Galloway Council, Forestry Commission Scotland, Rural Payments and Inspections Directorate (RPID), Scottish Natural Heritage (SNH), and Scottish Environment Protection Agency (SEPA). Two events were also held which involved a large number and variety of organisations which assisted in developing the strategy.

### Background

1.5 Forestry, woodlands and trees are an important part of our cultural and natural heritage. They contribute to the local economy providing jobs and creating wealth. They inspire artists, evoking strong emotions and reactions from visitors and residents alike. They offer opportunities for recreation and tourism, reflection and adventure.

1.6 Forests and woodlands affect the natural processes that control our air, land and water. For example, they store carbon that otherwise might change the climate; they can help keep our rivers and water supplies clean; and they can assist in preventing excessive flooding and soil erosion. Trees can enhance our streets and open spaces, defining views, softening harsh buildings, providing shade and shelter, seasonal interest and contact with nature. Some types of trees are capable of supporting more biodiversity than any other terrestrial habitats and are also a link to our past, often indicating previous land-uses or industrial processes.

1.7 Dumfries and Galloway has a fantastic range of forestry, wood pastures, shelter belts, policy woodlands, hedgerow trees and formal tree avenues including tree avenues and woodlands laid out in the 18th and 19th centuries as part of designed landscapes. Commercial softwood forests, designed landscapes and trees within agricultural areas create a rich tapestry of different landscapes as well as contributing to species and habitat diversity. Long-established woodlands and traditional hedgerows and avenues provide evidence of earlier settlement and land-use patterns and form part of the historic environment.

1.8 In the mid-twentieth century large areas were planted with softwoods, mainly in the region's

# Dumfries and Galloway Forestry and Woodland Strategy

upland areas, when timber supplies throughout the UK were critically low. Dumfries and Galloway is now one of the most wooded regions in Scotland with just over 211,000 hectares of existing forest and woodland cover out of a total 667,278 hectares. This is approximately 31% of the total area and is based on woodlands in excess of 0.5 hectares (FCS data). NB previous estimates of 27-28% were based on woodlands in excess of 2ha).

1.9 Many of the region's softwood plantations are currently being harvested, creating opportunities to improve the forest design and mix of species. Forests are now designed and managed to meet strong sustainability, biodiversity and landscape standards through the UK Forestry Standard and independent verification through certification. These mechanisms were developed in response to the blanket single-species afforestation of the 1950-80's, which had such a marked effect on the local environment and landscape. Whilst these woodlands now require restructuring to reflect current standards, the presence of such an extensive timber resource has benefited many aspects of the local economy, creating jobs in harvesting, transport and processing. It has also contributed to tourism and recreation through forest parks, the 7Stanes mountain bike routes, the Galloway Forest Dark Sky Park, forest trails, bridleways and other facilities that offer a diverse range of opportunities for outdoor activity.

1.10 Timber production and forest industries; Dumfries and Galloway produces around 30% of Scotland's annual timber harvest and in response to this output, has a major processing capacity through two large sawmills at Lockerbie and Dalbeattie plus a range of medium or smaller facilities across the region. Processing timber close to where it is grown reduces carbon emissions, supporting a low carbon economy as well as retaining employment within the region. The timber industry is a major employer within the region with around 3000 jobs across all sectors. However, continued growth of the industry and increased mechanisation has led to a recognised skills gap and further employment opportunities across all sectors.

1.11 The region has recognised potential for productive hardwood and softwood production through restructure of existing forests and potential new planting. In timber processing, opportunities for growth occur through encouraging increased use of softwood timber in construction, though increased use of woodfuels and through more diverse or innovative uses of locally-grown timber.



## Purpose and Scope

1.12 This strategy presents a vision for forestry and woodland growth, management and use over the next ten years in the region. It is likely that there will be an opportunity to review it in five years' time. It forms Supplementary Guidance to the Local Development Plan and supports national policy whilst integrating with other Dumfries and Galloway Council strategies and plans.

1.13 The DGFWS supersedes the Dumfries and Galloway Indicative Forestry Strategy Technical Paper No. 4 and the Forestry Strategy Diagram which forms part of the Dumfries and Galloway Structure Plan (approved 1999) and the Galloway and Langholm/Lockerbie Local Forestry Frameworks (2000). However, it does not replace the 'Landscape Design Guidance for Forests and Woodlands in D&G' (SNH/DGC 1998) and is intended to complement other guidance published within the UK Forestry Standards (FC).

## Overview

1.14 The Scottish Government guidance (Right Tree in the Right Place) suggests that local authorities will wish to consider the potential role of forestry and woodlands in terms of a variety of issues including the following:

- the natural environment;
- economic growth and tourism;
- contributions to renewable energy; and
- social impacts such as deprivation, health and recreation and education Authorities will also

## Dumfries and Galloway Forestry and Woodland Strategy

need to consider how any potential negative impacts from new forestry and woodland proposals can be avoided, minimised or mitigated.

1.15 The Strategy is the Council's response to the above and is a strategic management tool – helping not only to inform the location, design and management of woodlands within an area and to target grant support for forestry projects but also to provide a framework for the wider environmental, economic and social benefits that can be derived from forestry and woodlands. It is anticipated the Strategy will also be used by other organisations such as Forestry Commission Scotland (FCS), Scottish Natural Heritage (SNH), Scottish Enterprise and Scottish Government. It will be used to inform:

- The consideration of **Felling Licences** submitted to the Forestry Commission Scotland.
- **Development Management** decisions that include development proposals for woodland removal, including replacement planting schemes where required, or woodland creation, or other developments affecting woodlands.
- The development of Regional Priorities for the **Scottish Rural Development Programme** and a local authority's views on planting proposals and

applications for grant support (for example, for rural development contracts under the SRDP).

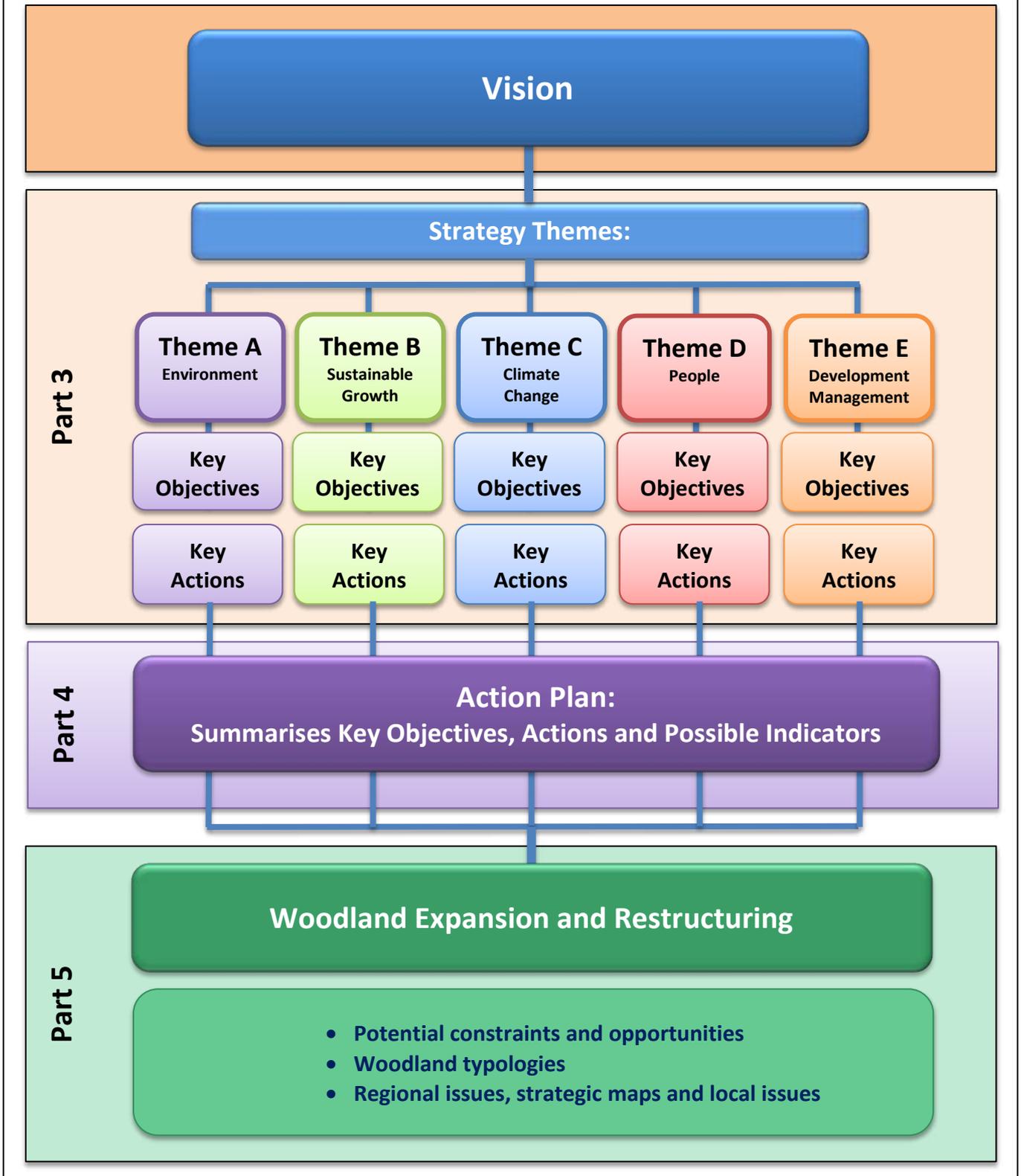
- The screening and scoping of proposals that fall within the scope of the **Environmental Impact Assessment (Forestry) (Scotland) Regulations (1999)** – i.e. proposals for new planting; deforestation; the formation, alteration or maintenance of forest roads; or the creation of forest quarries.
- The development and approval of **Forest District Strategic Plans** and long term **Forest Design & Management Plans**, including felling proposals.
- The content of **related spatial plans**.

1.16 The Strategy will inform the high level assessment of any proposals that come forward involving the creation, felling, restructuring and management operations of forests, woodlands and trees. These will all be considered on a case by case basis.

1.17 The Strategy is divided into five themes, each of which looks at a different aspect of forestry and woodland to ensure that the strategy provides a framework for the environmental, economic and social benefits to the region as a whole in an integrated manner to meet the Vision.



## Overview of the Dumfries and Galloway Forestry and Woodland Strategy



**THE VISION**

**Dumfries and Galloway Forestry and  
Woodland Strategy**

**'... SO  
much more  
than  
trees'**

*'Developing the region's forests and woodlands for the benefit of all, promoting economic development and healthy communities, enriching cultural heritage, landscape and the natural environment.'*



## 2.0 Part 2: Policy Context

### National Context

#### National policy documents

Scottish Forestry Strategy (2006)

Getting the best from our land – A Land Use Strategy for Scotland (2011)

Scottish Planning Policy 2014

National Planning Framework for Scotland 3 2014

2.1 Trees, woods and forests play an important role in many aspects of Scottish life but different land uses, both those that utilise trees and those that do not, have the potential to conflict with each other. A number of strategies have been formulated to guide integration of such land uses.

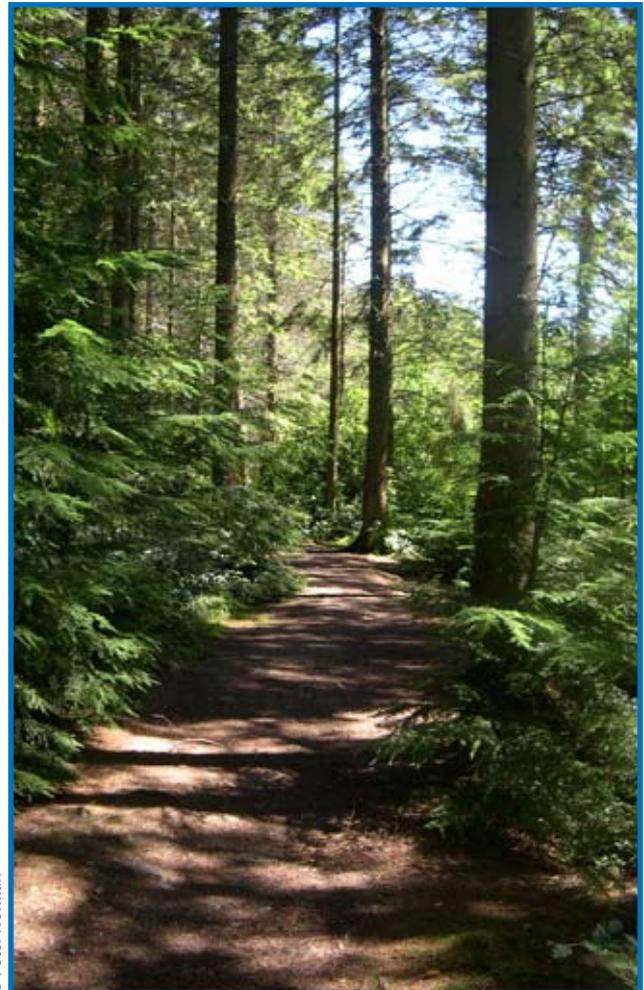
2.2 The principal policy framework for developing this strategy is contained within the Scottish Forestry Strategy (and guidance contained in 'The Right Tree in the Right Place, Planning for Forestry and Woodlands') and The Scottish Land Use Strategy, whilst taking into account Scottish Planning Policy (SPP) and the National Planning Framework. European and national legislation has not been listed since they are encompassed within Scottish planning and land-use policies and guidelines detailed in the following chapters.

Outlined below are the key overarching policy documents of relevance to the DGFWS:

#### The Scottish Forestry Strategy (2006)

2.3 The Scottish Forestry Strategy sets out the Scottish Government's vision for Scotland's forests, focussing on the key themes of climate change, timber, business development, community development, access and health, environmental quality and biodiversity; all themes that have been incorporated into this strategy.

2.4 The Scottish Forestry Strategy sets out a vision that acknowledges the central role that the forestry resource will play in the culture, environment and economy of Scotland through the principles of sustainable development and social inclusion through creating a culture of 'forestry for and with people'.



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2.5 The following are the key themes of achieving the vision:

- Climate Change – using forestry and changing forest practices to assist in reducing the impact of climate change.
- Timber – getting the most from Scotland's increasing sustainable timber resource.
- Business Development – strengthening forestry industry in it's widest sense, including biomass and forest tourism to underpin sustainable forest management and support economic growth and employment.
- Community development – improving the quality of life and wellbeing of people by supporting community development and education.
- Access and Health – improving access to woodland and forestry to help improve physical and mental health.

- Environmental Quality – protecting environmental quality of the natural resources, contributing to and improving our scenery and helping to make the most of our unique historic environment.
- Biodiversity – helping to restore maintain and enhancing biodiversity and increasing awareness and enjoyment of it.



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2.6 The Scottish Forestry Strategy also sets the following national targets:

- Woodland creation target; to plant 10,000 hectares per year over the period 2012-2022 (to be reviewed in 2020 to see whether or not the aim should be for 25% woodland cover).
- The forestry sector delivering annual carbon savings of 0.6 million tonnes of carbon (MtC) by 2010, 0.8 MtC by 2015 and 1.0 MtC by 2020.
- Bringing 80% of the special features on Scotland's nationally important nature sites into favourable condition by March 2008.

## Getting the best from our land – A Land Use Strategy for Scotland (2011)

2.7 This document sets out a strategic framework for getting the best out of Scotland's land resources. It looks at the potential of the land and the ways in which it is used, both now and in the future. Principles of sustainable land use are central to its vision for the future.

2.8 The strategy looks at ways of :-

- Delivering multiple benefits
- Creating partnerships with nature
- Linking people with the land

2.9 With specific reference to forestry, the strategy seeks to identify more closely which types of land are best for tree planting in the context of other land-based objectives, and promote good practice and local processes in relation to tree planting so as to secure multiple benefits. This will be achieved by a partnership approach through Forestry and Woodland strategies.

## Scottish Planning Policy (SPP, 2014)

2.10 The SPP includes a section on trees and woodland (paragraphs 201, 216-218). This recommends that local authorities should consider preparing woodland strategies as supplementary guidance. Specific reference is also made to the protection of ancient and semi-natural woodland, veteran trees, green networks and the Scottish Government's Control of Woodland Removal Policy. The DGFWS sets out these issues and reflects specific local circumstances.

2.11 The SPP encourages woodland creation and planting where appropriate whilst discouraging the loss of woodland - though this is mainly in relation to development proposals and not commercial forestry and woodlands. However SPP also supports the promotion of renewable energy and this has resulted in a loss of forestry through the development of onshore windfarms.

# Dumfries and Galloway Forestry and Woodland Strategy

## National Planning Framework for Scotland 3 (NPF3) (2014)

2.12 NPF3 (paragraph 4.23) reinforces the commitments made in the Scottish Forestry Strategy, requiring over 100,000 hectares of new woodland planting over the next 10 years, With the Scottish Government pledging to plant 100 million trees by 2015.

2.13 It also makes reference to future reviews to consider the need for further woodland expansion to ensure that Scotland meets emissions reduction targets and wider land use objectives. It also makes reference to the growing role that biomass is playing in providing heat development of woodlands as a renewable energy source to mitigate climate change; expansion and improvement of the quality of woodlands around settlements and to provide an improved landscape setting; widening recreational opportunities; the contribution forests and woodlands make to urban regeneration; creation of green networks and forest habitat networks; bringing vacant and derelict land into beneficial use; and improving biodiversity.

2.14 Future reviews will assess what further woodland expansion is required in the 2020s to ensure that we meet emissions reduction targets and wider land use objectives. Biomass has a growing role to play in providing heat.

2.15 There is recognition that as the forests mature further consideration will need to be given to timber transport networks and the requirements for processing facilities.

## Local Context

2.16 The Dumfries and Galloway Local Development Plan provides and sets out the local authority's position in respect of consultations regarding woodland/forestry planting, restructuring and removal schemes and also how trees and woodlands will be considered in the consideration of development proposals. This is achieved through a planning policy framework.



## 3.0 Part 3: Strategy Themes

### Introduction

3.1 This part of the DGFWS has been divided into five interrelated themes which expand on the Vision. The themes provide a context for all aspects of the forestry industry and the wider benefits, issues and opportunities of trees, forests and woodlands. They also set out the basis for consideration of potential new planting and restructuring of existing forestry and woodlands. The main strategic objectives and key actions are set out under each theme and brought together within the Action Plan. In considering proposals

and schemes account should be taken of the advice provided within each theme and also contained in Part 5 of this strategy. At times advice may seem to conflict however each will be considered on a case by case basis weighing up and balancing the individual and cumulative merits and impacts in each circumstance.

### Strategic Themes

3.2 Key considerations have been grouped under the following five broad themes:

#### Theme A: Woodlands and the Environment

The first theme looks at aspects of both the natural and historic environment, and also looks briefly at land restoration, in relation to forests, woodlands and trees.



#### Theme B: Woodlands and Sustainable Growth

This theme concentrates more on the industry and commercial side of the sector and in particular looks at timber supplies, sustainable construction, employment and skills development, timber transport and tourism.



#### Theme C: Woodlands and Climate Change

This theme looks at the impacts of climate change and how it could relate specifically to trees and woodlands. How trees and woodlands can mitigate against climate change and the need for resilience in our forests. It also considers issues regarding increased use of renewable energy.



#### Theme D: Woodlands for People

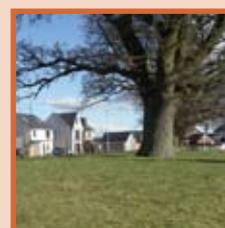
This theme considers the benefits of promoting the use of forests and woodlands for improved health and wellbeing as well as an important learning resource.



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#### Theme E: Woodlands and Development

The final theme considers the role of planning in protecting and retaining important and valued trees as part of developments whilst encouraging new planting.



## 4.0 Theme A: Woodlands and the Environment

### Key Policy Objectives:

- A1. Conserve and enhance biodiversity within the region
- A2. Protect, enhance and restore the water (including flood management), soil and air environment
- A3. Ensure that tree, forest and woodland planting or restructuring are appropriate to and enhance their landscape setting
- A4. Recognise the contribution of trees and woodlands as key components of valued historic environments and to ensure protection of sites and features of interest in woodlands and forests
- A5. Encourage the sympathetic planting of restoration sites, creating new habitats, green networks and/or productive forestry and woodland



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4.1 The theme of Woodlands and the Environment covers a diverse range of factors and considerations relating to both the natural and cultural environment. These issues cover such factors as biodiversity; water, soil and air; landscape impacts; the historic environment and raises the issues of land restoration/improvement.

It is one of Scotland's National Outcomes<sup>1</sup> to protect and enhance the natural environment and the sustainable use and enjoyment of it. The Council is also committed to supporting the conservation and management of our rich and diverse historic environment taking into account not only the impact on individual features but also their setting.



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<sup>1</sup> Part of National Performance Framework (Scottish Government 2007)

## A1. Conserve and enhance biodiversity within the region

### National Policy

Getting the best from our land – A Land Use Strategy for Scotland (SG 2011)

Applying an Ecosystems Approach to Land Use, Information note (SG 2011)

Scotland's Biodiversity – It's in Your Hands (2004)

2020 Challenge for Scotland's Biodiversity (2013)

Forests and Biodiversity – UK Forestry Standard Guidelines (FC 2011)

### Local Policy

Dumfries and Galloway Local Biodiversity Action Plan 2009

### National Context

4.2 The Scottish Land Use Strategy identifies the need to recognise land that is most suitable for a particular purpose, but wherever possible to encourage opportunities to deliver multiple benefits. All land use decisions should be informed by an understanding of the functioning of the ecosystems which they affect in order to maintain the benefits of the ecosystem services which they provide. A commonly-used definition of this approach is:

*'A strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way, and which recognises that people with their cultural and varied social needs are an integral part of ecosystems' (Convention on Biological Diversity Conference of the Parties 2000. Decision VI/6).*

4.3 The ecosystem approach integrates conservation of natural resources with social and economic needs, in a way that sustains the health of ecosystems on which they depend. It is a way of delivering sustainable development. *Sustainable forest management*

is recognised as being aligned to the ecosystem approach in definition, and current guidelines encompass all ecosystem principles [from 'Applying an Ecosystem Approach in Scotland: a Framework for Action' SNH, March 2009]. SNH are developing guidance on the whole ecosystem approach and this should be used to guide future forest and woodland development.

4.4 The Scottish Biodiversity Strategy (as represented in 'Scotland's Biodiversity – It's in Your Hands' and the '2020 Challenge for Scotland's Biodiversity') has objectives to halt the loss of species and habitats; to increase awareness, understanding and enjoyment of biodiversity; to restore biodiversity in urban and rural environments; to integrate biodiversity into all decision-making; and to ensure that new and existing biodiversity information is made available.



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4.5 Both national policy and local plans identify the need to reverse declines in biodiversity through expansion and management of native woodlands. They also contain objectives for the protection and enhancement of species and habitats of non-wooded ecosystems. The location, extent and condition of native woodlands are being assessed through the Native Woodlands Survey of Scotland.

## Local Context

4.6 National biodiversity objectives are incorporated into the Local Biodiversity Action Plan, which details how they relate to Dumfries and Galloway. This should be used to inform all forest and woodland proposals. Once the relevant sections of the Native Woodlands Survey have been completed for this region, the results should also be used to guide local decision-making.



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4.7 Woodland is the natural vegetation of most of Dumfries and Galloway and much of the region's terrestrial biodiversity has evolved in habitats dominated by trees. Loss of woodland over the last 5000 years has depleted this woodland biodiversity' though in some places it has been replaced by valuable open habitats. No truly 'natural' woodland remains and remnant woods, including designated sites, are often isolated from one another. However, many species remain closely associated with trees. Of our ancient woods, those that have been least modified by man support the most species and the majority of the most critically endangered species.

4.8 Major opportunities therefore exist to enhance biodiversity by:

- expanding appropriate types of woodland
- modifying existing forest and woodland habitats to enhance their value for particular species

- using new woodland to create habitat networks to strengthen the capacity of biodiversity to withstand climate change
- encouraging ecosystem processes in forests and woodlands to contribute multiple benefits such as reducing diffuse pollution and promoting greater resistance to disease outbreaks
- ensure our semi-natural woodlands are resilient to current and future environmental challenges

4.9 Trees are also important for biodiversity in **non-woodland environments**. Loss of trees through lack of management in wood pastures and parklands, farmland and towns can have serious biodiversity and cultural implications. Veteran trees are of critical importance for species such as lichens, invertebrates and bats; most are located within wood pastures, parklands or farmland. Even otherwise 'ordinary' trees in hedgerows, towns and villages are important components of habitat networks.



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4.10 Following the historical loss of woodland, some species have adapted to **open habitats**. Where such habitats are of importance for biodiversity they should be protected from woodland expansion and, where possible, restored. Open habitat species include iconic birds such as Golden Eagles and Red Grouse as well as orchids and invertebrates (eg butterflies). These species require habitats such as unimproved grassland, upland heath and montane habitats. Other species, such as Black Grouse, require a mix of open and wooded habitats.

4.11 Late twentieth century forest planting on **peatlands** had a significant detrimental impact on biodiversity. Dumfries and Galloway has approximately 5.4% of all UK peatlands over 1metre in depth, much of which is likely to be capable of restoration and water conservation. Current Forest and Water guidelines aim to avoid adverse impacts on **freshwater biodiversity** from new planting. However, there are historical examples where this has not been the case, especially in parts of

Galloway where the underlying geology makes watercourses susceptible to acidification. It is therefore important to enhance riparian habitats, keeping them free from potentially damaging forestry and, in the most acidified areas, replacing existing conifer plantations with open space or broadleaves and to follow the Forestry and Water Guidelines (FCS 2011). (See also section on 'Water')



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### Key Actions:

- BIO 1** Increase native woodland cover following UKFS.
- BIO 2** Reduce fragmentation of native woods through the creation of Forest Habitat Networks.
- BIO 3** Restore ancient woodlands and plantations in ancient woodlands (PAWs), through removing non-native species and other appropriate measures.
- BIO 4** Protect, and where possible enhance, important areas of extensive non woodland habitats such as those recognised in the UK and LBAP including heather moorland, purple moor-grass and rush pasture, semi or unimproved grassland, peatlands, wetlands, water margins and flushes
- BIO 5** Manage sites nationally or internationally designated for woodland (Special Areas of Conservation or Sites of Special Scientific Interest) to achieve and maintain favourable conservation status
- BIO 6** Manage sites identified as Red Squirrel 'Strongholds' according to recognised guidance. Consider the needs of other key species, such as Golden Eagle, Black Grouse and Nightjar, in the management of other sites
- BIO 7** Ensure forestry practice adheres to the Code of Practice on Non-native Species made by Scottish Ministers under section 14c of the Wildlife and Countryside Act 1981 and follows good bio-security practice.



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## A2. Protect, enhance and restore the water (including flood management), soil and air environment

### National Policy

Forests and Soils – UK Forestry Standard Guidelines (FC 2011)

Scottish Soil Framework (SG 2009)

Forests and Water : UK Forestry Standard Guidelines (5<sup>th</sup> Edition; FC 2011)

Air Quality Strategy for England, Scotland, Wales and Northern Ireland (DEFRA 2007)

Solway Tweed River Basin Management Plan (SEPA 2009)

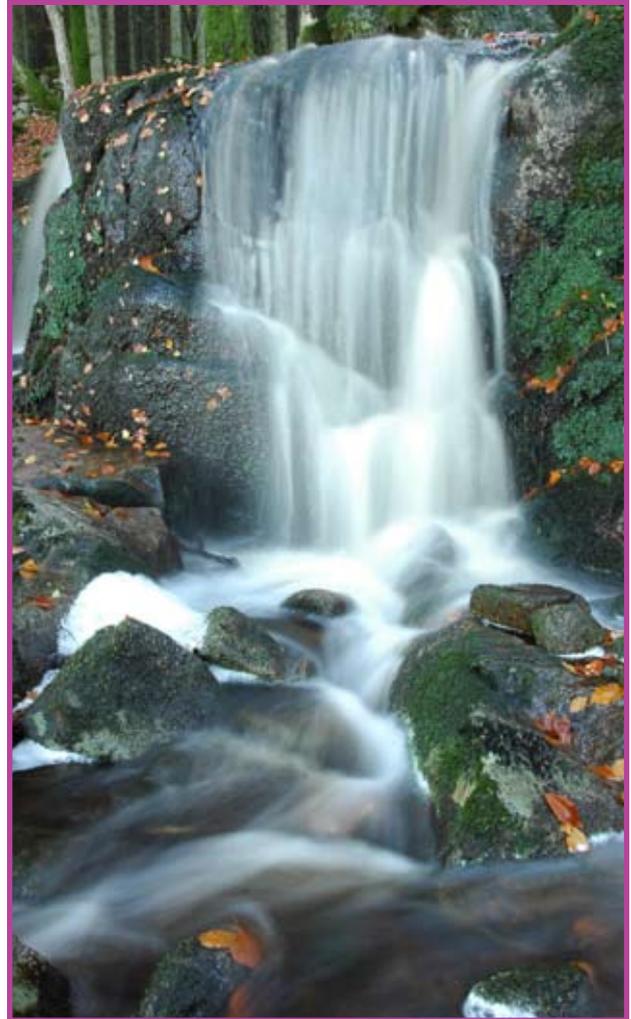
### National Context

4.12 Well designed and carefully managed forests and woodlands can improve **water quality** by intercepting pollution and by reducing soil erosion. Planting of appropriate riparian woodland can improve the morphology of the watercourse. Leaf litter can provide valuable nutrients for fish and invertebrates. Unfortunately, the ability of trees and especially coniferous trees to capture airborne pollutants, can also contribute to acidification of watercourses. This is more pronounced where conifer forests are planted in acid soils and/or on susceptible geology.



4.13 Trees, forests and woodlands if planted in the appropriate manner and site can assist in **flood management** by attenuating peaks in rainfall, slowing water run-off and by stabilising slopes and riverbanks. Forests and woodlands can affect

climate and rainfall on a global scale (see Theme C) and on a local scale by retaining humidity on warm days, releasing water vapour to form mist, prolonging pockets of frost, etc.

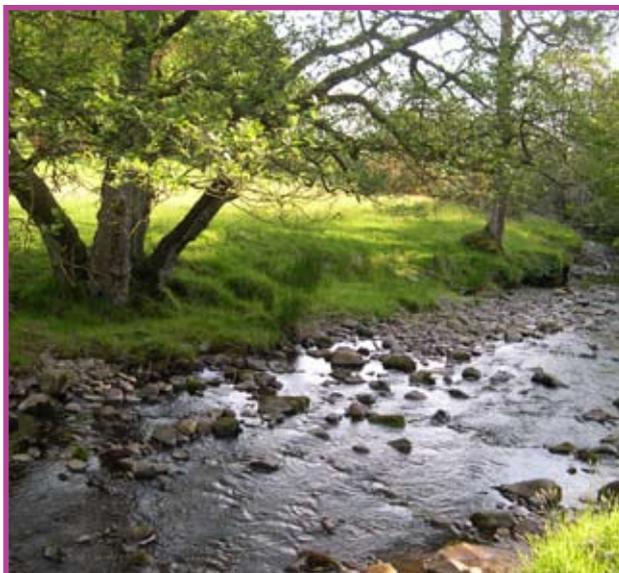


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4.14 Current forestry practices aim to avoid undue impacts on surface water runoff eg through appropriate felling operations or ground preparation prior to new planting. The Flood Risk Management (Scotland) Act 2009 places an obligation on all involved (including the design and delivery of forestry operations) to consider natural flood management measures and to reduce flood risk.

4.15 'The Forests & Water Guidelines' encourage adopting forestry practices that address all of the above issues. A key action from this strategy is to ensure that forestry operations and plans follow these guidelines and established best practice and work to promote new best practice measures. During 2013 FCS, SEPA and other agencies agreed on a Practice Guide on Forestry and Acidification and this will replace the old method of assessment (Critical Load Analysis) which was purely based on

chemistry of the watercourse but the new guide will take into consideration ecology as well as chemistry of the watercourses. This guide, "Managing Forests in Acid Sensitive Water Catchments", is expected to be published in 2014.



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4.16 **Soil** is a finite and valuable resource. Forestry and woodlands can have both positive and detrimental effects on soil stability, structure and quality. Leaf litter returns nutrients and organic matter to soils, however, conifer plantations can alter pH values in soils and watercourses, potentially impacting on riparian species and on water quality. Planting on deep peatlands not only damages habitats, but lowers water tables and releases carbon to the atmosphere. Appropriate tree planting can help to stabilise soils on steeper slopes or on riverbanks. When planted in shallow soils, trees can be susceptible to wind-blow often resulting in soils being washed away (see; 'Forests and Soil Guidelines').

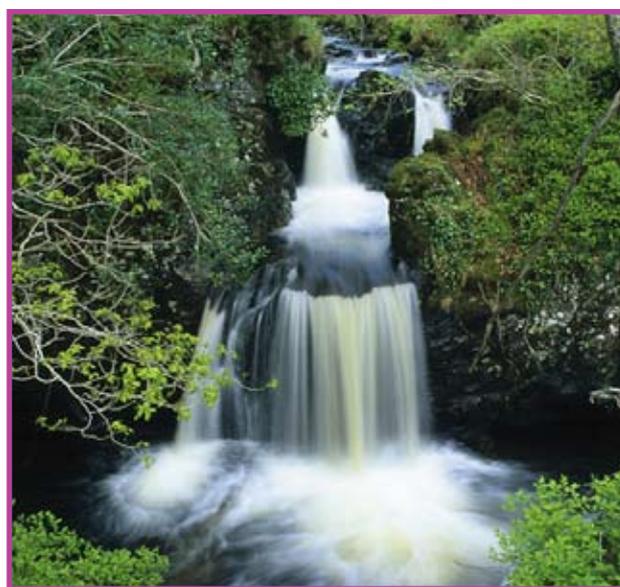
4.17 Apart from their role in climate regulation (see Theme C: Climate Change), forests and woodlands provide important ecosystem services relating to **air quality**. Trees remove pollutants, especially ozone, nitrogen dioxide and particles from the air, the latter having a particularly significant beneficial effect in urban areas. They do, however, emit volatile organic compounds (VOCs) that contribute to the production of some pollutants, and overall benefits depend on species selection and location.

4.18 The value of trees as wind breaks, in providing shade, shelter, etc is covered in Theme E.

## Local Context

4.19 It is recognised that in the past large-scale conifer plantations and certain forestry operations have impacted on **water quality** in the region. 64% of water bodies impacted by acidification in Scotland are found in the Solway Tweed river basin district. Acidification is due to a combination of poor air quality caused by atmospheric pollutants, an acidic (non-buffering) geology and planting of conifer forests. Conifer trees 'scavenge' acid pollutants out of the air. After rainfall these acid pollutants are washed off the trees and into the adjacent surface waters. Affected water courses include parts of the Bladnoch, Cree, Dee-Ken and Fleet Catchments. Consequently these areas are likely to be sensitive to further softwood planting and there is an emphasis on forest restructure.

4.20 A range of smaller reservoirs, river abstraction sites and private bore holes provide **water supplies** in Dumfries and Galloway. The diverse and dispersed nature of supply systems means that all forest and woodland sites could impact on water supply and should be designed and managed with due regard to the forest and water guidelines.



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4.21 The region's rivers are also important for fish stocks (in particular salmon and trout) and changes to morphology, flow rates and water quality can impact on spawning grounds. Large-scale felling operations can alter **morphology, flow rates and water quality** over a very short timescale whereas new planting may reduce flows over decades. Relatively simple measures, such as introducing large wood debris in rivers, can boost fish and invertebrate populations. Current forestry

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guidance aims to address and mitigate these issues and should be adopted with reference to river catchment management plans and in consultation with the local salmon fisheries board/trust.



4.22 **Flooding** is a natural process affecting most of the region's rivers and occasionally impacting on larger settlements such as Newton Stewart and Dumfries. Forest and woodland is a significant land-use within the Cree, Dee, Nith, Annan and Esk catchments, so adoption of the forest and water guidelines is particularly important. Forest and

woodland operations and proposals should also follow details set out in the relevant river catchment management plans.

4.23 Brash and tree stumps can be harvested for use as biomass fuels. However, **stump removal** in particular can cause soil damage, increased carbon loss, removal of essential nutrients, and soil buffering capacity leading to increased soil and stream water **acidification**. Whilst the presence of potential biomass markets is an important factor in the region, any proposal to remove stumps or brash should take account of Forestry Commission guidance (see 'Stump Harvesting: Interim Guidance on Site Selection and Good Practice', Forest Research, April 09).

4.24 Diffuse Pollution from rural land use is one of the biggest contributors to downgrading of waterbodies throughout Scotland. The disturbance of soils can lead to leaching of nutrients such as Phosphorus which leads to nutrient enrichment and increased algal and plant growth in receiving watercourses. Appropriate ground preparation, tree planting and riparian management can help to reduce this effect.

4.25 Within the Lower Nithsdale Nitrate Vulnerable Zones (NVZs) there is scope to encourage woodland planting to reduce nitrogen loadings. Fertiliser usage in woodland creation is minimal so targeted planting within the NVZ may be beneficial in reducing nitrate levels in the underlying groundwaters.

### Key Actions:

- ENV 1 Ensure that the beneficial effects of forestry and woodland for water are maintained and improved as set out in the Forests & Water Guidelines
- ENV 2 Ensure that new planting and restructuring should contribute to measures within the River Basin Management Plans
- ENV 3 Establish appropriate woodland in NVZs
- ENV 4 Improve water quality by mitigating acidification in sensitive catchments, through restructuring existing and appropriate design of new plantations
- ENV 5 Consider the importance of appropriate tree cover in reducing run-off, especially within flood-prone valley systems
- ENV 6 Consider hydrological impacts of new planting on water supplies or low river flows, especially in catchments already experiencing abstraction pressures

- ENV 7** Focus woodland expansion and restructuring away from deeper peat soils, encouraging peatland protection & restoration (deep peat can also hold valuable historic environmental data)
- ENV 8** Restrict stump removal to sites where impacts on soil stability, water quality and carbon sequestration would be minimal or can be mitigated
- ENV 9** Adopt forest practices which do not lead to soil erosion, sedimentation or pollution of watercourses and soils
- ENV10** Encourage tree planting in urban areas to benefit microclimates and improve air quality
- ENV11** Improve waterbody morphology by restoration and mitigation by the provision of good quality riparian woodland and buffer strips

### A3. Ensure that tree, forest and woodland planting or restructuring are appropriate to and enhance their landscape setting

#### National Policy

The Town and Country Planning (National Scenic Areas) (Scotland) Designation Directions 2010

The Special Qualities of National Scenic Areas (SNH Report 374, 2010)

European Landscape Convention 2000

Forests and Landscape UK Forest Standard Guidelines (FC 2011)

Short Rotation Coppice in the Landscape, Guideline Note (FC Aug 2001)

#### Local Policy

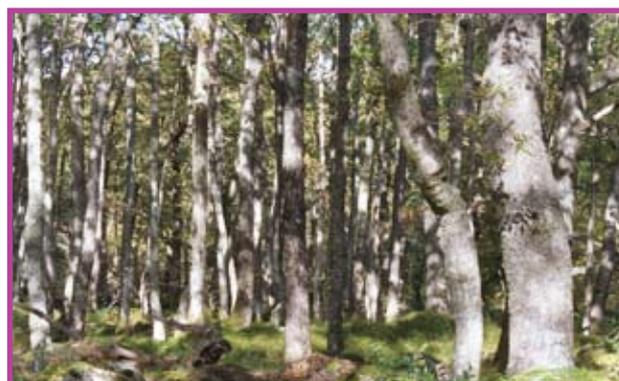
Dumfries and Galloway Landscape Assessment (SNH/LUC 1998)

Landscape Design Guidance for Forests & Woodlands in Dumfries & G/way, 1998

National Scenic Areas (NSAs) Management Strategies

#### National Context

4.26 Scotland's landscapes are characterised by a rich diversity of geology and landform and have been shaped by the wind, the rain, snow and ice, rivers and seas, and of course by man's activities. The 'landscape' is not just what we can see – or even what we experience by using all of our senses; it is also shaped by our perceptions, memories and experiences. Recognising and safeguarding the key elements of a landscape which matter to local people or which draw visitors to an area should be a consideration alongside the protection of valuable habitat, safeguarding water supplies or promoting timber and food production.



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4.27 Tree planting and felling can change a landscape, and people's perceptions of it, on either an intimate or on a large scale, suddenly through felling, seasonally and over a lifetime. New planting and restructuring proposals should take account of the capacity of a landscape to accommodate such changes and the likely impacts on landscape features, views and people's perceptions.

# Dumfries and Galloway Forestry and Woodland Strategy

4.28 'Landscape' as defined in the European Landscape Convention (ELC) covers settled and urban as well as rural areas. The ELC emphasizes that 'all landscapes matter' and the landscape around where people live can be as important to local residents as nationally designated landscapes. High quality streets and spaces with established trees have been shown to enhance property values, and resident's appreciation of their local environment, encouraging walking, cycling and informal recreation. The value of trees and woodlands to communities is also recognised in schemes such as 'Woodlands in and Around Towns' (WIAT) and in recent 'green infrastructure' initiatives.



4.29 National Scenic Areas (NSAs) are designated under Section 263A of the Town and Country Planning (Scotland) Act 1997, and are defined as "of outstanding scenic value in a national context". The legislation also states that within an NSA "special attention is to be paid to the desirability of safeguarding or enhancing its character or appearance". SNH have recently published a description of the special qualities for each NSA which provides useful background information for understanding how a local landscape is perceived.



## Local Context

4.30 Well designed commercial softwood plantations, woodlands and individual trees make a positive contribution to, and help define the nature and character of the region's various landscapes. Wholesale planting of often single-species conifer forests in the 1950's – 1970's had a profound effect on the character of areas like Glentroll, Carsphairn and Eskdalemuir. The limitations and potential impacts of this approach on habitat, historic landscapes and on communities are well recognised today. Current forestry policy, guidelines and best practice promote restructuring and new planting which recognises landscape character and sensitivity and has led to significant improvements in forest landscape design within many of the region's afforested areas.

4.31 The introduction of new tree species or the loss of established trees to climate change, pathogens or disease could have significant effects on the region's landscapes. For example, planting Eucalyptus trees as a potential energy crop would introduce new colours, scents and sounds to the landscape; Japanese Larch provides seasonal interest and a contrast to the dark green evergreens and its loss to *P. ramorum* would seriously limit the forestry designer's planting palette. Potential impacts from

ash dieback on traditional ash woodlands could also be profound. Changes such as these may be inevitable, however landscapes change and the challenge is to predict and understand the implications of these changes on key landscape elements.

4.32 The region has attracted a lot of interest from wind energy developers and many afforested areas are also potentially suitable locations for windfarms. Integrating **wind energy developments** into wooded areas can have advantages in that the visual impacts of access roads, borrow pits, etc may be screened or softened by planting. Replanting around and close to turbines once installed could help soften visual impacts whilst contributing to overall forest design objectives.



4.33 Potential grant funding for **large-scale broadleaf planting** could also change some of the region's landscapes, whether replacing existing conifer plantations at rotation or in planting on currently open land. An example of this is at Corehead, north of Moffat where 200,000 mixed broadleaf trees have been planted within areas of unimproved pasture for hardwood timber production and to contribute to habitat restoration.



4.34 The council in association with SNH and the Forestry Commission has developed landscape design guidance for forests and woodlands in Dumfries and Galloway, based on the Dumfries and Galloway Landscape Assessment (SNH/LUC 1998). It provides detailed guidance to help planners and designers to take into account local landscape considerations during the forest design process.

4.35 There are three NSAs within the region (Nith Estuary, East Stewartry Coast and Fleet Valley), all in coastal locations adjoining the Solway Firth. NSA Management Strategies have been developed for each of these areas by Dumfries and Galloway Council. These strategies set out actions which are required to preserve and enhance the special qualities that have been identified in these areas.

4.36 There are ten Regional Scenic Areas within Dumfries and Galloway including coastal landscapes such as the Solway Coast RSA and extensive upland areas including the Galloway and Moffat Hills RSAs. The original rationale for designating the RSAs including the significance of forestry and woodlands to this designation is set out in 'Regional Scenic Area Technical Paper (DGC, 2013).

## Trees, forests and woodlands which contribute to landscape:



**Wind-sculpted coastal woods** contribute to the coastal setting, reinforcing proximity to coast, emphasizing the forces of nature. They can create local shelter, defining and framing views.



**Policy and farm woodlands** are characteristic of our farmed landscapes, helping to define and frame farm steadings, providing shelter and visual containment plus wood produce.



**Riparian woods:** Trees and woods by watercourses may be historic remnants of more widespread woodland. They can help define the landform, enhancing incised valleys, preserving steeper slopes and adding texture in more open landscapes.



**Large-scale commercial softwood forests** are mostly recent additions to the region but have assumed a character of their own. Natural conifer forests such as the Canadian pacific coastal areas or relic Caledonian pine forests fit with the local landscape. Plantations need to be well designed and managed to achieve a landscape fit; arbitrary lines/ edges look out of place whereas clearings on scree slopes or around peat hags, etc may complement the setting.



**Hedgerow trees** are useful as physical enclosure and shelter for stock and crops. They can define the scale of certain landscapes, creating a pattern which overlays landform. The loss of hedgerows and trees can undermine landscape character creating 'sterile, bleak' landscapes.



**Parkland, wood pasture and veteran trees** can be prominent local landmarks providing connections with the past. They may be relics of former plantations and designed parkland or from a more wooded historic landscape. Veteran trees can evoke strong reactions in people. Wood pastures help define scale and texture in the landscape, with strong associations with former land-use patterns.



**Planting trees in streets and spaces** within and around settlements can enhance the setting of our built environments. It can add colour, texture, sensory and seasonal interest, contact with nature, shelter, screening, shade and can help reduce air pollution.

## Key Actions:

- LAN 1 Encourage landowners and forest managers to consult the public and local residents to build a better picture of local views of the landscape of a site before planning new planting or forest restructure
- LAN 2 Ensure that the capacity of a landscape to accommodate change is considered at an early stage when planning tree planting or forest restructure
- LAN 3 Continue the process of restructuring productive forests to enhance their landscape setting in accordance with the UK Forest Standard
- LAN 4 Encourage planting open and accessible woodlands close to centres of population
- LAN 5 Encourage the planting and ongoing management of trees in urban settings and road improvement schemes
- LAN 6 Encourage an increase in, and appropriate management of, trees in non-woodland environments such as wood pastures, parklands and farmland
- LAN 7 Reinstate hedgerow trees and shelter belts in appropriate agricultural landscapes to meet a range of historic environment, landscape and biodiversity objectives
- LAN 8 Publicise best practice in forest design and tree planting including emerging trends in response to climate change eg short rotation forestry or coppice
- LAN 9 Work with emerging guidance on integrating wind energy developments within forest landscapes

## A4. Recognise trees and woodlands as key components of the historic environment and to ensure protection of sites and features of interest within forests and woodlands

### National Policy, Guidelines and Practice Notes

Scottish Historic Environment Policy (Historic Scotland 2011)

Scotland's Woods and the Historic Environment (FCS 2008)

Forests and Historic Environment, UK Forestry Standard Guidelines (FC 2011)

Conserving and managing trees and woodlands in Scotland's designed landscapes (FCS, 2011)

Identifying the Historic Environment in Scotland's Forests and Woodlands (FCS 2010)

Managing Change in the Historic Environment (Historic Scotland 2010)

### National Context

4.37 The Scottish Historic Environment Policy describes how our whole environment has a historic dimension that contributes to its quality and character, as evidenced by our built heritage ancient monuments, archaeological sites/landscapes, parks, gardens and designed landscapes. It also notes that the context or setting in which specific historic features sit and the patterns of past use are part of our historic environment. The historical, artistic, literary, linguistic, and scenic associations of places and landscapes are some of the less tangible elements of the historic environment. These elements make a fundamental contribution to our sense of place and cultural identity.

4.38 The twentieth century saw a rapid increase in forestry plantations. By the end of the century, '20<sup>th</sup> century forestry' had become the exclusive and characteristic historic land use type for extensive areas (See RCAHMS -Historic Land Use Assessment,). The loss and damage to historic sites

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through large scale commercial afforestation was recognised at a national level. The FC introduced policies and procedures to address this issue and recognised the valuable contribution the historic environment makes to valued woodlands. Scottish local authorities were encouraged to assist the forestry sector in addressing these issues and requirements have been established in the UK Forestry Standard. In the latter part of the 20<sup>th</sup> century financial incentives have resulted in an increase in native woodland cover to deliver, for example, biodiversity, aesthetic and historic environment benefits as well to contribute to production’.

## Local Context

4.39 Dumfries and Galloway contains numerous archaeological and historic sites that need to be considered in planning woodland expansion and managing existing forests, woodlands and designed landscapes.



4.40 The region’s **Archaeologically Sensitive Areas** include 21 sensitive rural areas where character and archaeological interest are highly significant and can cover large areas. (See Technical Paper: Archaeologically Sensitive Areas on Planning pages the Council’s web site, [www.dumgal.gov.uk](http://www.dumgal.gov.uk)) Any woodland expansion proposals in these areas need to carefully consider potential effects at an early stage and propose mitigation. Designated **Scheduled Monuments** and other significant archaeological sites occur throughout the region. Their protection, enhancement and long-term care should also be considered at an early stage in any forest and woodland proposals. Scheduled

monument consent will be required for activities affecting designated areas. Historic Scotland can advise.



4.41 The setting of **listed buildings and Conservation Areas** can be affected by trees, forest and woodland planting or restructuring. Proposals should take account of the character, scale and setting of the buildings or area (see Historic Scotland’s ‘Managing Change in the Historic Environment’).

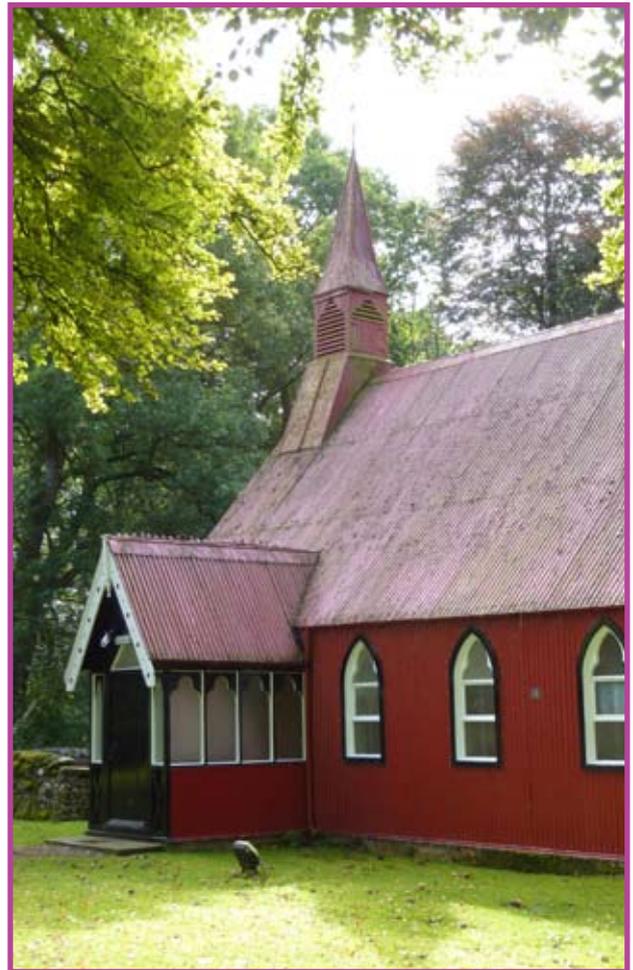
4.42 Around 170 **Gardens and Designed Landscapes** have been identified in Dumfries and Galloway, of which 20 have been included in the nationally important Inventory of Gardens and Designed Landscapes. These historic landscapes are a very important feature of the region and can be sensitive to new planting or the loss of existing features. There are also opportunities to restore historic features such as avenues, boundaries and specimen trees.

4.43 **‘Promoted Heritage Sites’** (details of which can be found on the Council’s website [www.dumgal.gov.uk](http://www.dumgal.gov.uk)) such as Historic Scotland’s Properties in Care; Archaeosites; plus Council led schemes or local community initiatives can be sensitive to planting. Many are of importance to community engagement with the past and tourism, in addition to archaeological interest. Examples of less tangible aspects that have not been mapped are land art such as the creations of Andy Goldsworthy; sculptures such as the Henry Moore and Rodin figures at Glenkiln; places associated with the literature, poems and artworks of Burns, Hugh McDiarmid, McNeil, etc. Individual locations may have very particular associations e.g. war memorials, covenanters’ graves.

4.44 There are a number of **battlefields** within the region (see the Council's Historic Environment Record on the website, as above). At the time of writing, none are yet listed in Historic Scotland's Inventory of Historic Battlefields, the guidance in 'Managing Change in the Historic Environment: Historic Battlefields' is generally applicable.

4.45 Guidelines for dealing with these issues are detailed in 'Scotland's Woodlands and the Historic Environment' and in 'Identifying the Historic Environment in Scotland's Forests and Woodlands' (FCS publications).

4.46 **Historic Land-use Assessment; Areas of Relict Land Use:** This data set, produced by RCAHMS and available at <http://www.rcahms.gov.uk/historic-land-use-assessment.html> describes the historic land-use type, category and period for all land. Traces of former land-uses that have fallen out of use may be detected within current patterns in the modern landscape. These surviving archaeological landscape features are classified as 'Relict Land-use Types' and are relatively uncommon. The data should be considered when developing proposals for new planting or restructuring as it will assist in identifying sensitive areas and areas of opportunity.



### Key Actions

- HIS 1** Create new and manage existing native woodlands along traditional lines, developing a new recognised and valued land-use type that can support low impact wood-based industries
- HIS 2** Encourage design solutions which take account of key views, vistas and settings of historic features for potential woodland expansion or restocking (in connection with 'Promoted Heritage Sites')
- HIS 3** Recognise Archaeologically Sensitive Areas as having special character that require a distinctive approach to woodland management or expansion
- HIS 4** Encourage the holistic management of designed landscapes/parklands to ensure a legacy of distinctive trees and woodland for future generations
- HIS 5** Ensure that land that is unplanted due to archaeological interest is managed to maintain the interest for the long term

## A5. Encourage the sympathetic planting of restoration sites, creating new habitats, green networks and/or productive forestry and woodland.

### National Policy

Scottish Planning Policy (SG 2014); Land Restoration, Section 223

### National Context

4.47 Forestry and woodlands can be a suitable end use for land restoration sites. Tree planting can also help mitigate contaminated land and bring derelict sites back into use.

4.48 Minerals and open cast coal operators are encouraged to consider uses that result in

environmental improvement, rather than restoring land to its previous state.

### Local Context

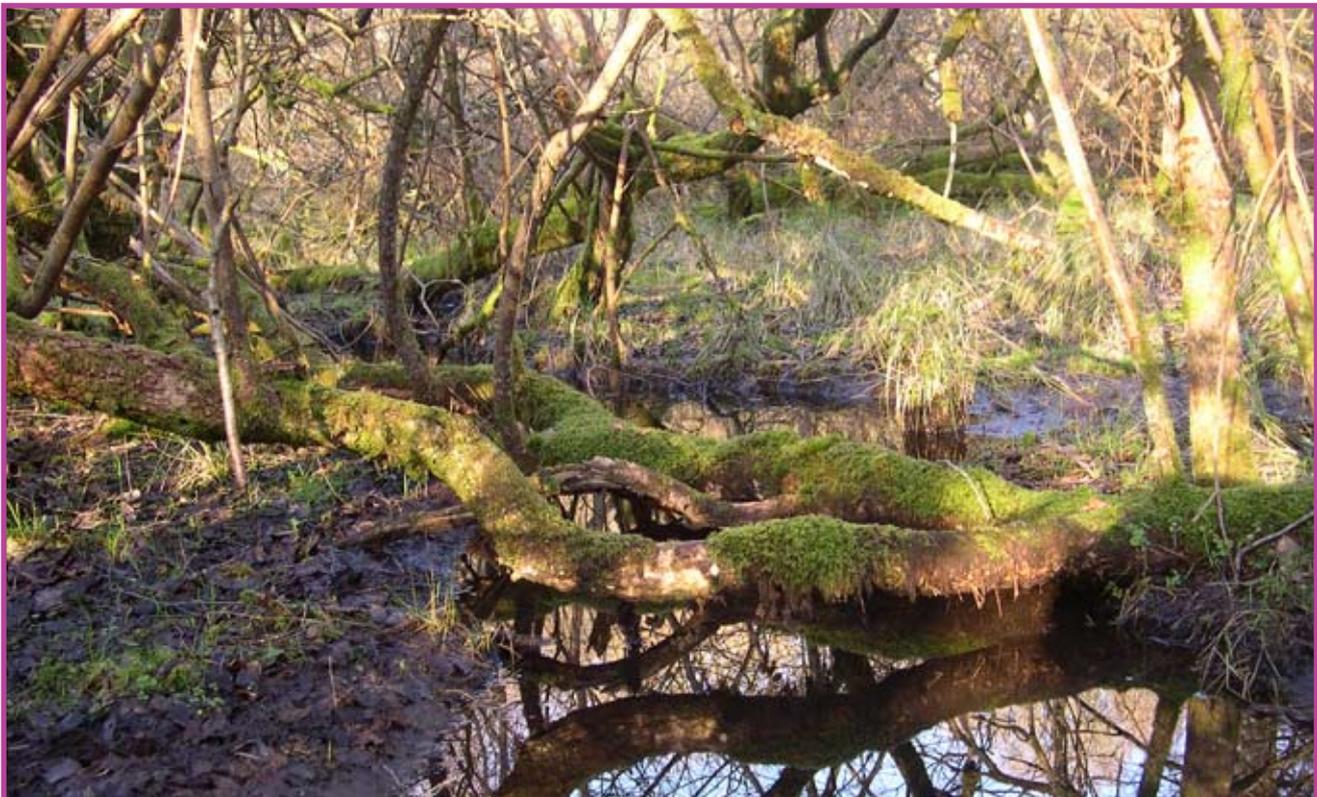
4.49 Potential sites within the region which could offer opportunities for woodland expansion would include;

- Open cast and minerals sites
- Sand and gravel workings
- Former MoD sites
- Eroded hillsides requiring slope stabilisation
- Commercial or industrial sites close to centres of population

### Key Actions

**RES 1 Encourage opportunities where appropriate, to create green networks, woodland habitat and/or productive forestry on land restoration sites which respond to and enhance their setting**

**RES 2 Encourage early engagement between developers/operators, the council and Forestry Commission Scotland and other relevant bodies, to identify potential opportunities for woodland planting**



## 5.0 Theme B: Woodlands and Sustainable Growth

### Key Policy Objectives:

- B1. Support predictable and stable timber supplies**
- B2. Promote greater use of sustainable construction using local timber and supporting greater added value to local forest products**
- B3. Support forestry employment and skills development**
- B4. Continue to explore and develop more sustainable timber transport**
- B5. Further develop and enhance forestry related tourism**



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5.1 Forestry and associated activities are a significant land use with forests and woodlands covering approximately 31% of the region. It also provides a major source of employment within the region. Many of the existing softwood plantations are being harvested, creating opportunities to improve the structure, design and mix of species. Forests are now designed and managed to meet strong sustainability, biodiversity and landscape standards under the UK Forestry Standard.

Forests are also increasingly becoming a focus for recreational opportunities and activities. The Galloway Forest Park alone is estimated to attract 1.1 million visitors a year with Ae Forest attracting approximately 413,000 visitors per annum.



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### National Context

#### National Policy

The Timber Development Programme 2007-10 (FCS 2007)

The Scottish Government's Policy on Non-Timber Forest products (FCS 2009)

Supporting Business development (FCS 2009)

5.2 The Scottish Government has set a national woodland creation target for 10,000 hectares per year over the period 2012-2022. On current levels of planting, this ambitious target will not be achieved.

# Dumfries and Galloway Forestry and Woodland Strategy

Expansion must focus on planting the right tree in the right place for the right reason. Such expansion would help promote stable timber supplies, maintain and enhance the existing significant processing industry and develop further local employment where this can be achieved without compromising important areas of biodiversity and other important open country considerations.



5.3 Parts of Scotland including Dumfries and Galloway also have the potential to produce good quality hardwood timber. Whilst in volume terms this will never be as significant as the softwood sector, it still has the potential to create rural employment and added value. Encouragement should therefore be given for the continuing development of the hardwood timber sector within Dumfries and Galloway.

5.4 In 2012, removal of softwoods from Scotland's forests amounted to 6.4 million green tonnes of timber harvested (a rise from 4.7 million green tonnes in 2003. This is anticipated to peak at around 8.4 million green tonnes between 2012 and 2016. Mills in Scotland consumed around one half (52%) of the 6.2 million green tonnes of softwood delivered to UK sawmills in 2012. 1.7 million cubic metres (52%) of sawn softwood was produced by sawmills in Scotland in 2012, a rise from 1.2 million cubic metres in 2003<sup>2</sup>. In 2007 4167 ha of new planting was also completed and this is expected to increase<sup>3</sup>. This rise in production from existing woodlands coupled with the anticipated rise in woodland creation activity will lead to significant demands on the existing workforce and create recruitment pressures.

5.5 A recent National study "The Future of the Forestry Workforce in Scotland" concluded that, "although all stakeholders agree that the Forest Industry makes a significant contribution to Scotland's economy, culture and environment, this is contingent upon having an appropriate scale of suitably skilled workers. As has been indicated in the report workforce recruitment, retention and development is an industry issue which is set to become a significant challenge."

5.6 Likewise, a more detailed study carried out in 2007 "A Survey of People in the Forest Industries in South Scotland" (carried out by Barfill on behalf of South Scotland Forestry Industries Cluster) further refined such issues in the context of Dumfries and Galloway, and made a series of recommendations for action.



<sup>2</sup> Forestry Statistics 2013 – Forestry Commission

<sup>3</sup> The Future of the Forestry Workforce in Scotland Mark Smither BSc, PGCE/Charlie Fulton NDF, South of Scotland Forest Industries Cluster, MICFor, 2010

5.7 Increases in harvesting work are likely to be met by fewer new full time jobs due to high levels of mechanisation, but this involves large capital outlay and very high levels of business management and associated skills. A clear skills gap has been identified in all forestry sectors and the development and agreement on skills training schemes will require a partnership with skills agencies and the industry. The private forestry sector will also have a role in developing, funding and delivering skills training to meet the industry's needs.

5.8 The structure of this workforce has a high level of self-employment; this is often coupled with relatively low levels of business skills, profitability and earnings. These factors need to be addressed and encouragement given to individuals and firms who want to move into this line of work.

5.9 The production of timber from Scotland's rural areas is a significant economic output, but it brings with it potential transportation pressures, often relying on extensive use of minor and unclassified public roads. This places pressure on the rural roads infrastructure and the communities that use it. In recent years more sustainable solutions have been sought to try to alleviate such pressures, through a co-operative and partnership approach being adopted between the sector and Local Authorities. This has taken the form of local Timber Transport Groups (TTG's) supported nationally through a Strategic Timber Transport Fund set up by the Scottish Government.

5.10 Support for the sector is largely provided under the EU Rural Development Regulation 'The Scotland Rural Development Programme (SRDP) 2007-13'. This Programme brings together a wide range of formerly separate support mechanisms covering forestry, farming, primary processing sectors and other rural sectors. It includes measures to address economic and social goals as well as environmental measures. It is outcome-focused and primarily aims to deliver a Greener Scotland and to promote a Wealthier and Fairer rural Scotland. It will contribute to the Government's Healthier and Smarter objectives and will help to strengthen rural communities.

5.11 The programme for the period 2007 to 2013 is focused on three key themes (known as "thematic axis"). These are:

- Axis 1 - Improving the competitiveness of the agricultural and forestry sector.
- Axis 2 - Improving the environment and the countryside.
- Axis 3 - Improving the quality of life in rural areas and encouraging diversification of the rural economy.

The Rural Development Programme for Scotland is the key programme for targeting European funds under SRDP and it will have a major influence on the implementation of the Scottish Forestry Strategy at national and local levels. Adequate financial support for the sustainable development and enhancement of forests and woodlands should be delivered through SRDP.



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## Local Context

### B1. Support predictable and stable timber supplies

5.12 The main aim is to maximise the economic potential of Dumfries and Galloway's timber resources. Promoting forest management and expansion with the appropriate and relevant species, particularly in relation to productive forestry on all scales, where this helps to support a sustainable local forest products industry. Encourage the continued investment in timber processing within the region by sustaining a crucial predictable and stable supply of good quality timber. Given the proximity of the forests within Dumfries and Galloway to the numerous timber processing facilities within or very close to the region, a significant economic advantage is gained by retaining the economic wealth from the forest based industries within the region. This also increases the efficiency of the timber supply chain, improving sector competitiveness, and reducing potential social and environmental impacts from timber transport.

5.13 A critical mass of forests and woodlands in the region has and will assist in the developing wood fuel supply chain. Since the launch of the Renewable Heat Incentive (RHI) to commercial users there has been an increase in demand for biomass, especially wood chip. With the proposed launch to domestic users in 2013/14 there will be an even greater demand, especially for wood pellets as they are easier to use and store. This will present significant opportunities for the promotion of biomass. Further development of the wood fuel sector in Dumfries and Galloway should be encouraged particularly at this local level as woodfuel users are buying woodfuel from outside the region – there has been interest from at least two local companies looking to set up biomass processing plants in Dumfries & Galloway.

This will highlight the role of wood fuel as a low carbon alternative to fossil fuels, sustaining and increasing local economic activity and encouraging more productive management of under managed/



neglected and often smaller areas of woodland.

5.14 Potential demand for hardwood timber will increase interest in developing new productive broadleaf woodlands and increased management of existing woodlands for their timber resource. This needs to be balanced with the requirements to support national and LBAP priority species and to manage existing broadleaf and native woodlands in a sustainable manner.

#### Key Actions:

- STS 1 Identify appropriate opportunities for productive conifer woodland management and expansion which helps support a stable supply of timber for the processing sector within Dumfries and Galloway**
- STS 2 Support the creation of new productive broadleaved woodlands and improve the management of existing woods to enable the long term development of that sector**

## B2. Promote the use of local timber in sustainable construction methods and support added value to local forest products

5.15 Dumfries and Galloway forests account for approximately 30% of the annual Scottish timber harvest. Unlike many other parts of Scotland, the majority of local timber is processed within the region or nearby in Ayrshire. Indeed Dumfries and Galloway and more generally South Scotland contain some 45% of Scotland's total processing capacity, based on 2006 data. The industry sustains approximately 3,000 (FTE) jobs within the South Scotland region<sup>4</sup>. This well-developed existing processing sector has grown up as the woodland resource has evolved. This ranges from several large mills processing predominantly spruce logs for construction purposes, through a range of medium to smaller scale processors also working with spruce but in addition other conifer species for more specialised markets such as fencing, pallets, packaging and small building manufacture. Smaller scale specialist hardwood sawmills are also located in the region, including water-powered mills.



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5.16 This is a significant economic benefit to the region, and clearly adds value to the raw materials produced in the area. It is a success story to be built upon and developed further.

5.17 Dumfries and Galloway needs to enhance its low carbon credentials and act as an exemplar by maximising opportunities to use local timber in construction in both domestic and commercial buildings; this would also aid the growth of opportunities within the local economy. The ECCM Report 196, 2006<sup>5</sup> compared construction

using different materials and the result was that the embodied energy of construction materials was lower if the timber content increased – there was potential for an 86% reduction in greenhouse gas emissions by increasing the timber content of construction using timber that was locally sourced.



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5.18 Awareness needs to be raised with local architects and builders to develop appropriate designs that can incorporate the product specifications that are produced locally. We also need to ensure that planning guidance supports the use of timber in construction. There is a large amount of locally sourced timber suitable for construction being produced by numerous local sawmills both large and small this needs to be utilised more fully.



<sup>4</sup>As stated in "A Survey of People in the Forest Industries in South Scotland" 2007 – It should be noted that South Scotland in this instance includes Dumfries and Galloway, the Borders, South, East and North Ayrshire.

<sup>5</sup>Forestry Commission Scotland Greenhouse Gas Emissions Comparison Carbon benefits of Timber in Construction - A report by the Edinburgh Centre for Carbon Management Ltd, .August 2006.

## Key Actions:

- STC 1 Promote greater use of the timber products produced in Dumfries and Galloway with local architects and builders**
- STC 2 Ensure planning guidance supports the use of timber in construction and helps Dumfries and Galloway become an exemplar in this subject within Scotland and further afield**
- STC 3 Continue to encourage further expansion and add value within the existing forest products sector, supporting new product development and innovation**
- STC 4 Encourage greater local processing of hardwood timber**

## B3. Support forestry employment and skills development

5.19 Present employment levels for the South Scotland forest industry are estimated at approximately 3000 full time equivalent jobs. This will need to rise of 431 full time jobs Scotland wide to meet anticipated activity levels in 2017. This data was sourced from “The Future of the Forestry Workforce in Scotland” report in 2010 by South Scotland Forest Industries Cluster. Local Strategy documents emphasize the requirement for skills and developing an educated and competitive work force within Dumfries and Galloway.



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5.20 The sector faces two significant challenges going forward, to equip those within the sector with the right skills to be competitive, and to bring enough people into the sector to meet both rising programmes and replacing what is currently an ageing workforce.

5.21 The attempt to increase skills within the existing work force is under way with the pilot for South of Scotland Forestry Skills Development Programme having been run early in 2011 with SRDP support. Work will need to continue to further support this initiative.

5.22 Barony College, part of Scotland’s Rural College (SRUC), is located in the region and offers a range of courses in forestry and arboriculture to help fill the skills gaps in the local employment market and to assist in providing employment opportunities for young people in the region. Following its merger into SRUC there is also potential to further increase the volume of training delivered at the Barony campus.

5.23 Whilst several good pieces of work have been carried out in recent years to attract new entrants into the sector, such as through the Forest Education Initiative, more still needs to be done.

## Key Actions:

- FES 1 Further develop and support the work on skills development within the sector, to ensure a competitive, multi skilled workforce for the future**
- FES 2 Promote employment opportunities within the forestry related sector in Dumfries and Galloway**

## B4. Continue to explore and develop more sustainable timber transport

5.24 Many of the forests of Dumfries and Galloway were established on land which was marginal for agriculture. These areas are frequently served by minor and unclassified adopted roads which were not built to accommodate today's haulage vehicles. The timber production in the region is continuing to rise and is therefore likely to place ongoing and greater demands on the public road network.



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5.25 In 2002 Dumfries and Galloway Timber Transport Group (TTG) launched its first Agreed Routes Map. The TTG is formed by representatives of Dumfries and Galloway Council as the roads authority and all parts of the forestry and timber industry. The Agreed Routes Map has been prepared with extensive consultation and dialogue between all these representatives. The outcome is the identification of the preferred timber haulage route for each forest area. The routes are categorised into one of the 4 national classifications for road suitability i.e. agreed, consultation, severely restricted and excluded.

5.26 A further important outcome of the TTG and the Agreed Routes Map has been the establishment of partnership working between the industry and the Council and the recognition of each other's concerns and priorities. This partnership will continue to work together to develop and use best management practice for timber transport throughout the region recognising that the Agreed Routes Map is only one stage and one tool in the task of achieving a sustainable and cost-effective long term strategy for the haulage of timber in Dumfries and Galloway.

5.27 This approach has also been supported by Scottish Government through the provision of funding through the Strategic Timber Transport Fund (STTF). Dumfries and Galloway has been particularly successful at securing funding from this source which has allowed it to put in place some significant improvement projects which should make long term timber haulage more sustainable within the region.

5.28 There are a number of local timber processing facilities in the area, based in Dalbeattie, Lockerbie, Annan and further afield in Carlisle with some smaller mills located within the region. This means that there is a large amount of timber moving within and around the region from both harvested areas and local processing plants. The location of further developments in the processing sector should take into account the proximity of the supply chains and centres of demand for processed goods in order to make the most efficient use of the haulage routes.



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5.29 The former quay at Kirkmabreck, Creetown has recently been the subject of some investigation to consider its re-opening for perhaps the purposes of timber transport. This would enable the transportation of timber by sea reducing road haulage in the region and its impact on the road network. There is also the possibility that such a route could also be used to import timber from other parts of the UK to supply processing plants in the region.

## Key Actions:

- STT 1 Continue to support and evolve the existing TTG approach to seek partnership solutions to timber transport pressures**
- STT 2 Seek to identify and support long term strategic solutions to the roads infrastructure to allow ongoing realisation of the downstream economic benefits to timber production in Dumfries and Galloway**

## B5. To further develop and enhance forestry related Tourism



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5.30 The Scottish Forestry Strategy recognises the importance of forest tourism to the local economy. The restructuring of first generation plantation forests within Dumfries and Galloway presents a significant opportunity to develop attractive, multi-purpose productive forests. This woodland resource also creates unparalleled opportunities to develop the tourism and leisure sectors in many areas including: activity and adventure tourism (mountain biking, leisure cycling, walking, riding, rallying); eco-tourism (wildlife watching, red kites, deer and wild goat parks, iconic woodlands, country sports, astronomy); cultural heritage tourism (historic land uses, cultural history of forest workers in Dumfries and Galloway) as well as general touring. The

importance of how these various tourism areas are linked and intertwined and how they may link with outdoor learning and health and wellbeing objectives should not be overlooked. The large public National Forest Estate within the region is a particular asset in this regard, with Galloway Forest Park, being the first and largest of its kind in Scotland.

5.31 FCS under took an All Forest Visitor Survey in 2004-2007 and this put visitor numbers at 800,000 per year for the Galloway Forest Park, this has risen since then to an estimated 1.1M per year. Ae forest also attracted 413,000 visitors per year over a similar period and its figures have steadily risen. The tourist attraction best known outside the region is the 7Stanes mountain bike trails, but many other recreational activities are also supported, from walking to car rallies. The Galloway Forest Park Tourism Strategy aims to diversify the tourism offered and increase economically active visitor numbers. Forestry Commission Scotland has made recent investments in tourism and is currently undertaking extensive improvement works to the visitor centres within the Galloway Forest Park which have been completed during 2013.



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5.32 Private sector involvement in woodland and forest based tourism is also increasing with large estates such as Drumlanrig Castle, Hoddum and Kinmount Estate and Glenure Forest Estate becoming significant destinations in their own right. The challenge is to create sustainable opportunities for the private sector to capitalise on the rising trend in forest tourism.

5.33 Other broader tourism opportunities exist which derive at least part of their “offer” from

the woodland resource. Obvious examples would be The Galloway Kite Trail, the Dark Sky Park and development of the Biosphere approach in the west of the region. These are examples of the valuable contribution that tourism makes to the Dumfries & Galloway economy and it underlines the importance of looking after and enhancing our natural environment for tourism to enable the region to benefit economically.

## Key Actions:

**FRT 1 Promote Dumfries and Galloway as a forest based tourism destination**

**FRT 2 Encourage and support greater private sector provision of both forest based tourism facilities and associated support services such as accommodation**



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## 6.0 Theme C: Woodlands and Climate Change

### Key policy objectives:

- C1. Encourage sustainable forest management practices and appropriate woodland expansion (including greater diversity of the woodland resource) to mitigate the effects of Climate Change
- C2. Encourage effective development of renewable energy from forests in the form of biomass woodfuel and the integration of appropriate renewable energy schemes within forests and woodlands

### National Context

#### National Policy

Climate Change (Scotland) Act 2011

Climate Change Action Plan 2009-11 (FCS 2009)

Scotland's Climate Change Adaptation Framework: Forests and Forestry Sector Action Plan (SG/FCS 2011)

Forests and Climate Change - UK Forestry Standard Guidelines (FC 2011)

2020 Routemap for Renewable Energy Scotland (SG 2011)

6.1 Human activity is changing the world's climate and increasing the atmospheric concentration in carbon dioxide and other greenhouse gases mainly through the use of fossil fuels and changing land use. There is evidence that global temperatures are rising, rainfall patterns are changing (less rainfall in summer and more in winter months), sea levels are rising, glaciers and arctic sea ice are retreating and the incidence of extreme weather is increasing.

6.2 The impacts of climate change are beginning to become apparent in UK woodlands, e.g. through the effects on productivity, tree condition, the function of woodland soils, woodland fauna and flora and forest hydrology. There is increasing concern over the number of outbreaks of pests and diseases which could compromise the ability of woodlands to adapt and contribute to climate change.



6.3 Trees absorb and store atmospheric carbon dioxide (CO<sub>2</sub>). This accumulation of carbon in forests is known as sequestration. Carbon once captured can be returned to the atmosphere through dieback, decay or burning of wood. Woodlands in the UK remove approximately 15 mega tonnes of CO<sub>2</sub> equivalents per year from the atmosphere (2007 figures). Once felled the carbon sequestered can be retained and stored for a further period within the timber products produced; although this needs to be balanced against greenhouse gas emissions associated with the manufacture of timber products, e.g. fuel used in forestry operations, transport (both to the sawmill and to the customer), processing and packaging. The longer the timber is in use, the longer the carbon will be stored. CO<sub>2</sub> emissions from forestry operations are small in comparison to the level of CO<sub>2</sub> sequestration from the forest ecosystem.

6.4 Around 640 mtC (Mega tonnes of Carbon) (2350 mtCO<sub>2</sub> (Mega tonnes carbon dioxide)) is stored in forest and woodland soils in the UK<sup>6</sup>, however this can be released during disturbances caused by cultivation or drainage. Generally woodland

<sup>6</sup> Combating climate change - a role for UK forests (tso, 2009).

soils have low or infrequent levels of disturbance, particularly under continuous cover management systems. Where woodlands and forests are on deep peat then the balance between sequestration by the trees and carbon loss from the drying peat may be negative.

6.5 Forestry is expected to have a significant role in helping to mitigate the effects of climate change but also has a role in adaptation measures:

- **Mitigation:** Actions to permanently eliminate or reduce the long term effects of climate change by reducing the sources of green house gases in the atmosphere and by enhancing carbon sinks - such measures include: increasing woodland cover and promoting the use of biomass. In recent years, levels of woodland creation have declined whereas the removal of existing woodland has increased as a result of development pressures, leading to net deforestation and potentially reduced carbon sequestration. However, open habitat restoration of peatlands may result in a greater capacity to sequester carbon.
- **Adaptation:** Relates to the ability of systems to adjust and respond to the effects of climate change, to moderate the damage of climate change, or to cope with its consequences. Resilience to climate change will be the key attribute for most types of forests and woodlands. Appropriate choice of species, effective stand management, diversity of species and structure will help the ability to

thrive in a changing environment. Forests can also contribute to adaptation through: creation and expansion of functional habitat networks; through effective flood risk management, to help protect water quality and quantity and assist in soil erosion and slope stability; increase infiltration rates which can reduce runoff helping to moderate extreme flows associated with flooding.

6.6 On a global the more mitigation measures are provided the fewer adjustments/adaptations will be required; the less mitigation provided will lead to greater climate change and therefore the need for greater adaptation measures. However this is an oversimplification and may not apply at the local level.



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**C1. Encourage sustainable forest management practices and appropriate woodland expansion (including greater diversity of the woodland resource) to mitigate the effects of Climate Change through adaptation**

## Local Context

6.7 Within the 'Climate Change Delivery Plan' 2009, Ministers have endorsed the Scottish Forestry Strategy 2006. The Scottish Government's woodland creation target is to plant 10,000 hectares per year over the period 2012-2022, compared with the current average rates of 4,000-5,000 ha/yr. This will be reviewed in 2020 to see whether or not to aim for 25% woodland cover.

6.8 Going forward it will be important that the strategy guides both appropriate new woodland creation, whilst also retaining and supporting greater diversification and restructuring of the existing extensive woodland resource in the face of likely climate change pressures. It is important to ensure resilience in the face of predicted changes (such as functional habitat connectivity, enhancing structural and tree species diversity, invasive non-native impacts, new pests and disease threats, windthrow, fire and flooding frequency, use of different silvicultural systems, etc.) through adapting current practices in existing forests and woodland.

6.9 Recent outbreaks of diseases within the region's forest and woodlands have highlighted the need for change in forest practices and species diversity. Chalara ash dieback has caused widespread

damage to ash populations throughout Europe and has been found at sites across the UK, including in Dumfries and Galloway in 2012. *P.ramorum*, which affects larch trees, was found in the region during 2013. The rapid spread of the disease is likely to result in the loss of large numbers of trees in the next few years; particularly in the west of the region where 7% of trees within the Galloway forest area are larch. Potential impacts will be particularly

noticeable where larch has traditionally been grown around tourist routes and facilities. This will also lead to increased felling activity affecting forest management, harvesting, haulage and the timber processing sectors at a time when harvesting and processing levels are already high. This highlights the need to consider greater diversity of species within new planting schemes.

## Key Actions:

**SCC 1 Identify appropriate opportunities for woodland expansion schemes for carbon storage and sequestration benefits**

**SCC 2 Support approaches which diversify the woodland resource and improve its robustness in respect to climate change and likely adaptation pressures**

**SCC 3 Utilise the most appropriate techniques and practices to minimise soil disturbance, capture rainfall and reduce site run-off**

**C2. Encourage the development of renewable energy from forests in the form of biomass, woodfuel and the integration of appropriate renewable energy schemes within forests and woodlands**

## National Context

6.10 Reducing reliance on fossil fuels and increasing the production of energy from more renewable resources is one of the means of dealing with climate change. The Scottish Government has set a target of generating at least 100% of electricity demand equivalent derived from renewable sources by 2020.

6.11 Hydro schemes and onshore wind farms are likely to make the most contribution to renewable energy generation in the near future. Other technologies are currently being developed, such as wave, tidal, biomass, hydrogen, methane and deep water off shore wind farms, and these may become more commercially attractive in the next 25 years. There is potential for additional small scale hydro schemes within woodland areas.

6.12 Wood is considered to be a low carbon, renewable fuel. CO<sub>2</sub> sequestered during the growth of the trees balances the CO<sub>2</sub> emitted in the production and burning of the wood fuel. Small



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to medium size wood-fuel heating systems have the potential to make a significant contribution to sustainable development as they can provide a locally sourced, clean and economic heating system. The Renewable Heat Incentive which provides grants for installing wood fuel heating systems, may bring more schemes forward in the future.



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6.13 There may be potential within some of the existing forested areas for the siting of wind farms; however this needs to be balanced against the loss of trees and carbon emissions from their construction. The level of forestry and woodland cover in the region is beginning to reduce partly due to the loss of trees through commercial harvesting and the loss of trees required for the siting of windfarms in areas which have previously been forested. Often the loss of trees during the construction of a windfarm is at a faster rate and in a different harvesting pattern than would have been planned when the trees were planted. The potential impact of forestry on turbine efficiency is not fully understood as yet, however clear-felling of extensive areas around turbines is quite common.

Both the Local Development Plan (LDP) and the Wind Energy Supplementary Guidance emphasize the need for replacement planting of woodland lost as a result of development (see paragraph 8.4). However, replacement planting does not always replace 'like for like' and can result in lower planting densities, loss of productive softwoods or a net loss of coverage.

6.14 The access and transportation needs of both the timber industry and windfarm construction should be planned for in a comprehensive and inclusive manner.

### Local Context

6.15 Steven's Croft, outside Lockerbie, is the largest biomass plant in Scotland and generates enough electricity to power the equivalent of 70,000 homes every year (44MW) whilst also displacing up to 140,000 tonnes of greenhouse gases every year. The project created 40 direct jobs and helps to maintain up to 300 indirect jobs in the local forestry industry as the plant is initially supplied from the adjacent sawmills and processing plants however additional supplies are also required to be imported from elsewhere and the plant is unlikely to be sustained purely by local sources alone. Local farming has also benefitted from the long term, low risk energy crop initiative developed by E.ON.

6.16 There are opportunities within the region to make more use of small to medium scale biomass plants, however it may be difficult to secure sufficient timber to provide for another large scale biomass plant. There may be opportunities for growing energy crops close to existing settlements to serve local and domestic biomass boilers. Further research is required to establish the most appropriate type of 'energy crop' and whether this is the best use for timber products bearing in mind that the carbon stored within the timber is entirely lost when the wood is burnt.

### Key Actions:

- DRE 1 Encourage use of wood for fuel (has to be balanced with supply issues particularly in relation to larger biomass plants)**
- DRE 2 Develop effective local guidance and practice to minimise woodland loss from renewable energy developments**

## 7.0 Theme D: Woodlands for People

### Key policy objectives:

- D1. Encourage and promote the use of forests and woodlands to improve health and wellbeing in a variety of ways**
- D2. Encourage and promote the use of forests and woodlands for outdoor learning**
- D3. Increase the opportunities for access and links to and enjoyment of forests and woodlands by all sectors of society, particularly by developing new woodlands close to towns and villages and promoting community development and participation in woodland management and promoting sustainable travel as a means of access**

7.1 Well-designed and managed woodlands can make a significant contribution to the quality of local environments, provide opportunities for healthier lifestyles and help create places where people want to live and work. Woodlands also represent a dynamic and flexible learning resource that increasing numbers of schools and community groups are using to educate and engage children of all ages. As part of green networks, new and improved woodlands can contribute significantly to the regeneration of deprived communities.

7.2 The Land Reform (Scotland) Act 2003 provides some of the best access rights in the world and gives the right to be on most land and inland water for recreation, education and going from place to place, providing that people act responsibly, this includes forests and woodlands. These access rights and responsibilities are explained in the Scottish Outdoor Access Code.



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**D1. Encourage and promote the use of forests and woodlands to improve health and wellbeing**

### National Context

#### National Policy

Woods For Health (FCS 2009)

#### Local Policy

Outdoor Access Strategy 2012-17(DGC)

7.3 Woodlands and high quality green spaces are good for people's mental and physical health and general wellbeing. The presence of accessible woodlands and greenspace locally can encourage physical activity, which in turn has proven benefits for health and wellbeing. Woodlands are perceived as places to reduce stress and anxiety (having restorative and therapeutic benefits) and are popular places to exercise and keep fit. For example, recent research by Glasgow University found that the gap in mortality rates between those on high and low incomes were considerably reduced in 'greener' areas. Although the evidence shows that access to woodland and green space is beneficial

for health and wellbeing, many groups are failing to reap the rewards of their natural environment.

7.4 Improving the health of the Scottish population and, in particular, tackling health inequalities is a major driver of Scottish Government policy. Government and public bodies are expected to take specific steps to encourage the use and enjoyment of green space by all, including an increase in the prescription of “green space use” by GPs and clinical practitioners.



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7.5 Forestry Commission Scotland (FCS) promotes wider public use of woodlands and is supporting a range of initiatives to improve and benefit people’s physical and mental wellbeing by promoting wider access to woodlands. Forestry and Woodlands can absorb multi use activities and trails for walking, cycling and horse riding; ensuring that the benefits are equitably distributed and sustainable is a major focus of this work.

7.6 9% of the public events organised by FCS between mid-2006 and mid-2007 were considered to have had ‘health and well-being’ as the primary purpose. An approximate estimate for the annual value of the physical and mental health benefits of Scottish woodlands is calculated to be at least £10 million (2007/08 prices<sup>7</sup>), depending upon the assumptions used. Further research is needed to refine these estimates.

<sup>7</sup> (based on 23A valuation of the economic and social contribution of Forestry for People in Scotland) [www.forestresearch.gov.uk/website/forestresearch.nsf/ByUnique/INFD-658CSP](http://www.forestresearch.gov.uk/website/forestresearch.nsf/ByUnique/INFD-658CSP) (JD 28/2/13).

## Local Context

7.7 The Physical Activity Strategy for Dumfries and Galloway 2008 – 2011 highlighted the role woodlands can play in active healthy lifestyles. Since then, the region’s forests have hosted many initiatives including walking for health groups, child healthy weight events and volunteering activities to support those with mental illness. Today, DG Health & Wellbeing Unit and Locality Health and Wellbeing Strategic Partnerships work with partners to help create and maintain healthy communities. This partnership working contributes to the Physical Activity Index Tool (PHIT) outcome contained in Dumfries and Galloway’s new Single Outcome Agreement, which is intended to increase levels of physical activity.

7.8 Forests have the unique ability to absorb multi use activities and woodland close to towns and villages and are highly valued as livestock free areas, offering significant opportunities to promote active lifestyles and active travel to and from locations. Innovative projects such as 7Stanes and Galloway Forest Park Dark Skies highlight the growing demand from a diverse range of groups to take part in woodland leisure activities. With growing demand comes the potential for conflict with forestry operations. Enhanced access education and management will ensure access rights and commercial forestry operations can safely co-exist.



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7.9 The potential for recreational activities in areas such as the Galloway, Ae, Dalbeattie and Mabie forests is a factor in encouraging people to settle in the area. They also offer excellent facilities for an ageing population with an increased life expectancy and potentially increased leisure time available through retirement. Encouraging a

# Dumfries and Galloway Forestry and Woodland Strategy

new woodland culture which builds on tradition and natural heritage, whilst taking on social and environmental change could have a profound

impact on promoting health and wellbeing within the region.

## Key actions:

**HWB1 Promote the benefits of woodlands and greenspace in respect to personal health and wellbeing**

## D2. Encourage and promote the use of forests and woodlands for outdoor learning



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through Outdoor Learning’ and FCS’s ‘Woods for Learning Strategy and action plan 2010 – 13’ for guidance and teaching resources.

7.11 One increasingly popular delivery model is the establishment of woodland learning sites close to schools and nurseries, often through the ‘Forest School’ programme. These provide secure areas where children can explore, investigate and discover the natural environment. At another level, this can illustrate the connection between trees, the economy, skills and employment, whilst also providing an excellent foundation for learning about sustainability and global citizenship.

7.12 The Forest Education Initiative (FEI) works nationally to increase the understanding and appreciation, particularly among young people, of the environmental, social, and economic potential of trees, woodlands and forests and of the link between the tree and everyday wood products. Its partners include government departments, environmental charities, and the timber industry.

## National Context

### National Policy

Woods For Health (FCS 2009)

Curriculum for Excellence through Outdoor Learning (Education Scotland 2010)

7.10 90% of all schools in Scotland are within 1km of woodland and these woodlands can provide the setting for outdoor learning, promoting a range of other initiatives such as the Lifelong Learning and Skills agenda as a means of achieving educational, vocational, health, wellbeing and personal development benefits. Using sites within walking distance has associated health benefits, and children are more likely to undertake return visits to familiar local sites with family and friends. See Education Scotland’s ‘Curriculum for Excellence



## Local Context

7.13 The Dumfries and Galloway FEI Cluster Group is an active partnership of countryside rangers, foresters, teachers, Forest School leaders and others. The group's current focus is on supporting schools to identify local woodland learning sites, developing associated training opportunities for teachers, and providing assistance during establishment, with recent projects involving Auchencairn, Heathhall, Holywood, Applegarth, Penninghame, St Mungos and Dalbeattie primary schools. The group works closely with Dumfries and Galloway Council's Education Department, supporting the region's Outdoor Learning co-ordinator.

7.14 The Rural Skills Programme, designed for secondary schools and offering forestry as a subject choice, is in its 3<sup>rd</sup> year of delivery at the Douglas Ewart High School, Newton Stewart, with delivery also underway at Kirkcudbright Academy, Lockerbie Academy, Wallace Hall Academy and also proposed at Stranraer Academy.

7.15 It is essential that schools have easy access to woodlands (or other quality green spaces) for outdoor learning opportunities to be fully realised. Establishment and management of woodlands close to communities, linked by safe walking and cycling routes should be encouraged wherever possible.

### Key actions:

**OLS 1 Support and develop woodland educational activities and engage with communities**

**D3. Promote access and links to forests and woodlands by all sectors of society, particularly by developing new woodlands close to settlements and by promoting community participation in woodland management and promoting sustainable travel as a means of access**

## National Context

### National Policy

Forests for People – Access, Recreation and Tourism (FCS 2008)

7.16 In 2006 just under a quarter of the Scottish population (23%) lived within 500m of accessible woodland greater than 2 hectares in size, while just over two-thirds (68%) lived within 4km of an accessible woodland of greater than 20 hectares. The Scottish Government's Woods In and Around Towns (WIAT) programme recognises that high quality, accessible woodlands can make a significant contribution to sense of place and to quality of life for local residents. The WIAT programme focuses on:

- creating new woodland;
- bringing neglected woodland into active management; and
- working with people to help them use their local woodland.

7.17 Scotland has a vibrant Community Woodland sector with over 130 groups actively involved in managing 1.5% of Scotland's woodlands. Community involvement ranges from outright ownership through to small-scale informal activities, such as community litter picks. Community ownership of commercial woodland is also proving successful in Scotland. Community ownership offers an alternative model which, while perhaps producing a lower financial return on capital nevertheless supports effective management,



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## Dumfries and Galloway Forestry and Woodland Strategy

much greater engagement by communities in their local forests and greater diversity in the way the forest is used. All help build community capacity and empower local groups to get involved in the future maintenance and improvement of their local environment. Volunteering in woodlands can help people gain skills and confidence and improve their health and well-being. Community organisations can also acquire land managed by FCS to undertake a range of projects that support local development (in particular affordable housing and woodland crofts) through the National Forest Land Scheme.



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7.18 The National Planning Framework and Scottish Planning Policy also emphasise the importance of developing green networks and recognise that engagement with green space and woodlands can have an important role in building new connections with communities and enhancing the health of the community.

7.19 There is growing demand from a diverse range of groups within society for opportunities to take part in leisure activities. The creation of accessible, attractive environments in which people wish to live, work and invest can help regenerate deprived communities and the Scottish Regeneration Statements (2002, 2006) recognised the value of high quality urban and rural green environments in tackling social exclusion (*SE; 2002*). *Closing the gap: Scottish Government*).

7.20 Increasing demand for leisure use of open space requires a proactive approach to perceived and actual barriers to access, promoting engagement with communities and hard to reach groups. The Land Reform (Scotland) Act 2003 establishes that everyone, whatever their age or ability, has access rights to all public and private forestry and woodlands, provided that those rights are exercised responsibly. Access provision should be focused on delivering a high quality product – doing more with less rather delivering many low quality routes.

### Local Context

7.21 A high standard of access provision, appropriate to its location and level of use will help Dumfries and Galloway Council achieve its corporate objectives and vision of making the region the best place in Scotland to live, learn, work, visit and grow. Core Paths have been designated within most woodlands close to towns and villages with the main long distance route in the region, the Southern Upland Way, attracting around 80,000 people per annum visiting the 130 mile western section incorporating many forestry sections. Projects are on-going to improve access to woodlands such as the proposed Dumfries to Mable cycle path.

7.22 There are a number of existing successful community woodland schemes within Dumfries and Galloway already, at such places as Langholm, Moffat, Moniaivie, Creetown, Newton Stewart, Stranraer and Dalbeattie.

### Key actions:

**WFC 1 Support and develop recreational activities in forests and woodlands, including countryside walks, mountain bike trails, improved links, bridle routes and tourism facilities, etc. for a diverse range of users and groups**

**WFC 2 Empower communities to develop a sense of ownership and stewardship**

**WFC 3 Promote the use of sustainable travel as a means of accessing forests**

## 8.0 Theme E: Woodlands and Development

### Key policy objectives:

- E1. Protect and retain trees valued for their rarity, visual amenity or cultural significance and ensure appropriate compensatory planting occurs where trees are lost as part of approved development works
- E2. Encourage the inclusion of tree planting in landscaping and development schemes



### National Context

#### National Policy

Scottish Planning Policy (SG 2014)

National Planning Framework for Scotland 3 (SG 2014)

Control of Woodland Removal (FCS 2009)

#### Local Policy

Dumfries and Galloway Structure Plan (1999)

Four Area Local Plans (Annandale and Eskdale, Nithsdale, Stewartry, Wigton), (2006)

Proposed Local Development Plan published January 2012 (Emerging Dumfries and Galloway Local Development Plan will replace Structure and Local Plans once adopted)



8.1 Trees provide an important feature within our rural and built up areas and open spaces which are often known as urban forests and have become a key component of infrastructure that makes places work, look and feel better. They provide visual interest, habitats for nature and a relief from the otherwise hard materials used in towns and villages. They also provide relief from the elements, giving us shade and shelter and acting as wind breaks. It is important that these green areas are not lost and that, where possible, they are linked together as green corridors and enhanced.

**E1. Protect and retain trees valued for their rarity, visual amenity or cultural significance or ensure appropriate compensatory planting occurs where trees are lost as part of permitted development works**

8.2 Development Management, the section that considers planning applications, appeals and enforcement matters along with Tree Preservation Orders and trees in conservation areas, can have a vital part to play in managing the loss and/or gain of trees in the landscape. Local planning authorities have a duty to ensure that, where possible, planning permissions make adequate provision for the preservation of existing or planting of new trees.

8.3 Developers are expected to give priority to the retention of trees and hedgerows on development sites and it is important that where individual or groups of trees are of landscape or amenity value, they are retained and that developments are designed to fit around existing trees. If this is not possible then appropriate replacement planting may be required. Developers will be expected to care for trees on development sites in accordance with BS5837: 2012 'Trees in Relation to Design, Demolition and Construction'.



8.4 Consent for the loss of any trees as part of a planning consent will require details of the precise area to be felled and details of any compensatory planting (which would be covered by planning conditions or agreements). Any future maintenance of trees in relation to developments and in the wider public realm will also be a consideration. These aspects would be determined by the Council as Planning Authority based on policies within the Local Development Plan.



8.5 Locating wind farms or turbines within woodland or productive forests can necessitate clear felling, short rotational forestry (which results in maintaining a lower top height than normal for the duration of the development), 'topping' (removing a portion of the living crown to reduce the canopy height, improving stability and resistance to wind blow) and 'keyholeing' which can lead to a loss of woodland cover. In 2009 the Scottish Government introduced a policy on "The Control of Woodland Removal"<sup>8</sup>. This policy places a requirement on developers to protect woodland cover, and where proposals would result in the loss of forests or woodlands then appropriate replacement planting schemes will be required. Where a felling licence is required, Forestry Commission Scotland (FCS) as the competent authority and should be consulted in respect of these proposals. Any such proposals should aim to improve the composition, age structure and design of existing forestry in accordance with current guidance and where possible should be located within the region. There will be a presumption against the removal of ancient woodlands.



<sup>8</sup> FCS 2009 [http://www.forestry.gov.uk/pdf/fcfc125.pdf/\\$FILE/fcfc125.pdf](http://www.forestry.gov.uk/pdf/fcfc125.pdf/$FILE/fcfc125.pdf).

## Key actions:

**DEV 1 Monitor effectiveness of policy in Local Development Plan in respect of loss of trees and compensatory planting**

## E2. Encourage the inclusion of tree planting in landscaping schemes



8.6 There is a need to raise awareness of the potential benefits of retaining and planting trees within development sites to developers and to the eventual owners, also to provide a greater understanding of the importance of trees for biodiversity and for landscape and visual amenity. Potential benefits from tree planting in more urban areas as part of a landscaping scheme, can include; providing noise attenuation adjacent to a busy road, improving views, providing shade and shelter from windy conditions. It can help screen neighbouring properties, creating privacy and introducing an element of nature 'greening' the neighbourhood.



## Local Context

8.7 There is a policy link between the Local Development Plan (LDP) and DGFWS in order for it to have the relevant status of Supplementary Guidance in the future. The LDP contains policies relating to Forestry and Woodland (Policy NE6), Trees and Development (Policy NE7) and Tree Preservation Orders (Policy NE8).



8.8 There may be a need in the future to make links with public open space and provision of woodlands within settlement boundaries for amenity and recreational value although this may only apply to larger, more urban, settlements of which Dumfries and Galloway has very few.

## Key actions:

**EIT 1 Consider possible guidance relating to landscaping schemes**

**EIT 2 Consider possible awareness raising events for importance of trees in the landscape, possibly linked to climate change agenda**

## 9.0 Part 4: Action Plan and Monitoring

9.1 In order to realize the vision the DGFWS does not only have to be formulated, it also has to be implemented. This cannot be achieved by DGC alone but requires the assistance, commitment, involvement and collective expertise and resources from all stakeholders across the forestry sectors.

9.2 Not only does the strategy need to be delivered it also needs to be monitored, assessed and reviewed to ensure that it is effective and responds to changing circumstances over time. The following Action Plan lays out how the objectives can be monitored using particular indicators, and which bodies can assist in this process. The table is laid out by theme and uses the action codes from the sections within Chapter 4.

Key Policy Objectives	Key Actions	Possible Indicators	Lead Partners
<b>Theme A: Woodlands and the Environment</b>			
A1. Conserve and enhance biodiversity within the region	BIO 1 BIO 2 BIO 3 BIO 4 BIO 5 BIO 6 BIO 7	Total area of woodland in approved planting proposals	FCS SNH
A2. Protect, enhance and restore the water (including flood management), soil and air environment	ENV 1 ENV 2 ENV 3 ENV 4 ENV 5 ENV 6 ENV 7 ENV 8 ENV 9 ENV 10 ENV 11	Regular auditing of sites in respect of diffuse pollution Identification of high nitrate levels and long term monitoring of groundwater quality after planting Monitor ecological data on watercourses affected by acidification Gathering of data through auditing of sites	SEPA, FCS
A3. Ensure that tree, forest and woodland planting or restructure are appropriate to and enhance their landscape setting	LAN 1 LAN 2 LAN 3 LAN 4 LAN 5 LAN 6 LAN 7 LAN 8 LAN 9	Monitor Forest Design Plans Monitor planning applications for protection of woodlands through DGC's Open Space Strategy Monitor the Woodland Trust's mapping of Ancient Trees (in wood pastures). Monitor the Garden History Society's work on local designed landscapes Monitor use of regional landscape design guidance Monitor implications for forestry in wind energy applications	FCS DGC WT

## Dumfries and Galloway Forestry and Woodland Strategy

A4. Recognise the contribution of trees and woodlands as key components of valued historic environments and to ensure protection of sites and features of interest in woodlands and forests	HIS 1 HIS 2 HIS 3 HIS 4 HIS 5	Monitor proposals and approved schemes	FCS DGC
A5. Encourage the sympathetic planting of restoration sites, creating new habitat, green networks and/or productive forestry and woodland.	RES 1 RES 2	Monitor forestry and woodland elements of restoration proposals for new and existing sites	DGC FCS
<b>Theme B : Woodlands and Sustainable Growth</b>			
B1. Support Predictable and stable timber supplies	STS 1 STS 2	Monitor woodland cover within D&G and relate to National Production Forecasting work and revisions to ensure ongoing stable supplies of material are available	FCS
B2. Promote greater use of sustainable construction using local timber and supporting greater adding of value to local forest products	STC 1 STC 2 STC 3 STC 4	Promotion and awareness raising through various projects, events and supplementary guidance.	DGC
B3. Support forestry employment and skills development	FES 1 FES 2	Monitor the needs of employers and ensure appropriate skills are delivered.	DGC, SDS, SE, SRC
B4. Support the work of the Timber Transport Liaison Group to enable the sustainable extraction and transportation of timber and promote efficiency	STT1 STT2	Ongoing support of Timber Transport Officer and the TTGs.	DGC, FCS
B5. Continue collaborative working between the timber transport industry and public authorities to maintain and implement the Agreed Routes Map	STT1 STT2	Monitor and revise the Agreed Route Map so that it is fit for purpose on a quarterly basis.	DGC, FCS
B6. Develop local solutions including an exploration of the potential for transport of timber by rail and water, plus the use of forest haul roads to avoid sensitive locations	STT1 STT2	Support and develop the feasibility of some of these solutions so that projects can apply for STTF.	DGC, FCS

## Dumfries and Galloway Forestry and Woodland Strategy

B7. Ensure that proposals for new softwood forests reflect the capacity of the local road network	STT1 STT2	Monitor new planting applications ensure they are sent to the Roads Department for comments.	DGC, FCS
B8. Further develop and enhance forestry related tourism	FRT 1 FRT 2	Ongoing support for 7 Stanes and other recreational activities through investment in new Facilities in Galloway Forest District	Visit Scotland FCS DGC
<b>Theme C : Woodlands and Climate Change</b>			
C1. Encourage sustainable forest practices and appropriate woodland expansion to mitigate the effects of climate change	SCC 1 SCC 2 SCC3	Number of schemes provided specifically for carbon storage and sequestration benefits  Number of woodland diversification schemes implemented for climate change adaptation.  Monitored through site auditing	FCS, DGC, SEPA
C2. Encourage effective development of renewable energy from forests in the form of biomass woodfuel and the integration of appropriate renewable energy schemes within forests and woodlands	DRE 1 DRE 2	Number of timber based energy projects implemented.	DGC, FCS, SE
<b>Theme D: Woodlands for People</b>			
D1. Encourage and promote the use of forests and woodlands to improve health and wellbeing in a variety of ways	HWB 1	Recorded increase in visitor numbers to woodland sites (path counter data).  Number of participants in woodland access for health initiatives	FCS DGC NHS
D2. Encourage and promote use of forests and woodlands for outdoor learning	OLS 1	Number of woodland learning sites created and number of children using them for outdoor learning.	FCS DGC FEI

<p>D3. Promote and increase the opportunities for sustainable access and links to and enjoyment of forests and woodlands by all sectors of society, particularly by developing woodlands close to towns and villages and promoting community development and participation in woodland management</p>	<p>WFC 1 WFC 2 WFC 3</p>	<p>SWA working specifically to increase woodland development and enterprise.  Alternative projects to be reviewed.</p>	<p>SWA, DGC, FCS</p>
<p><b>Theme E: Woodlands and Development</b></p>			
<p>E1. Ensure that trees valued for their rarity, visual amenity or cultural significance are protected and retained and that where trees are lost as part of development works that appropriate compensatory planting is provided</p>	<p>DEV 1</p>	<p>Effectiveness of new policy within LDP in relation to loss of trees on development sites</p>	<p>DGC</p>
<p>E2. Encourage inclusion of trees in landscaping schemes</p>	<p>EIT 1 EIT 2</p>	<p>Number of awareness raising events and publications in relation to the importance of trees</p>	<p>DGC</p>



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## 10.0 Part 5: Opportunities for Woodland Expansion and Restructure

### Key Objectives:

1. Identify potential areas where woodland expansion could make a significant contribution to one or more of the themes within this strategy
2. Target opportunities for tree planting and woodland expansion to appropriate locations, using an appropriate mix of tree species
3. Identify potential constraints and opportunities for enhancement through new planting and through restructure of the existing forest and woodland resource
4. Ensure a continuing supply of suitable timber and woodland produce to sustain and grow the region's forest industries

### How the chapter is structured:

10.1 Previous chapters have looked at the range of potential reasons for and benefits of planting trees. This chapter looks at the potential opportunities and constraints associated with new planting and restructuring of existing forests and woodlands. It covers the following aspects:

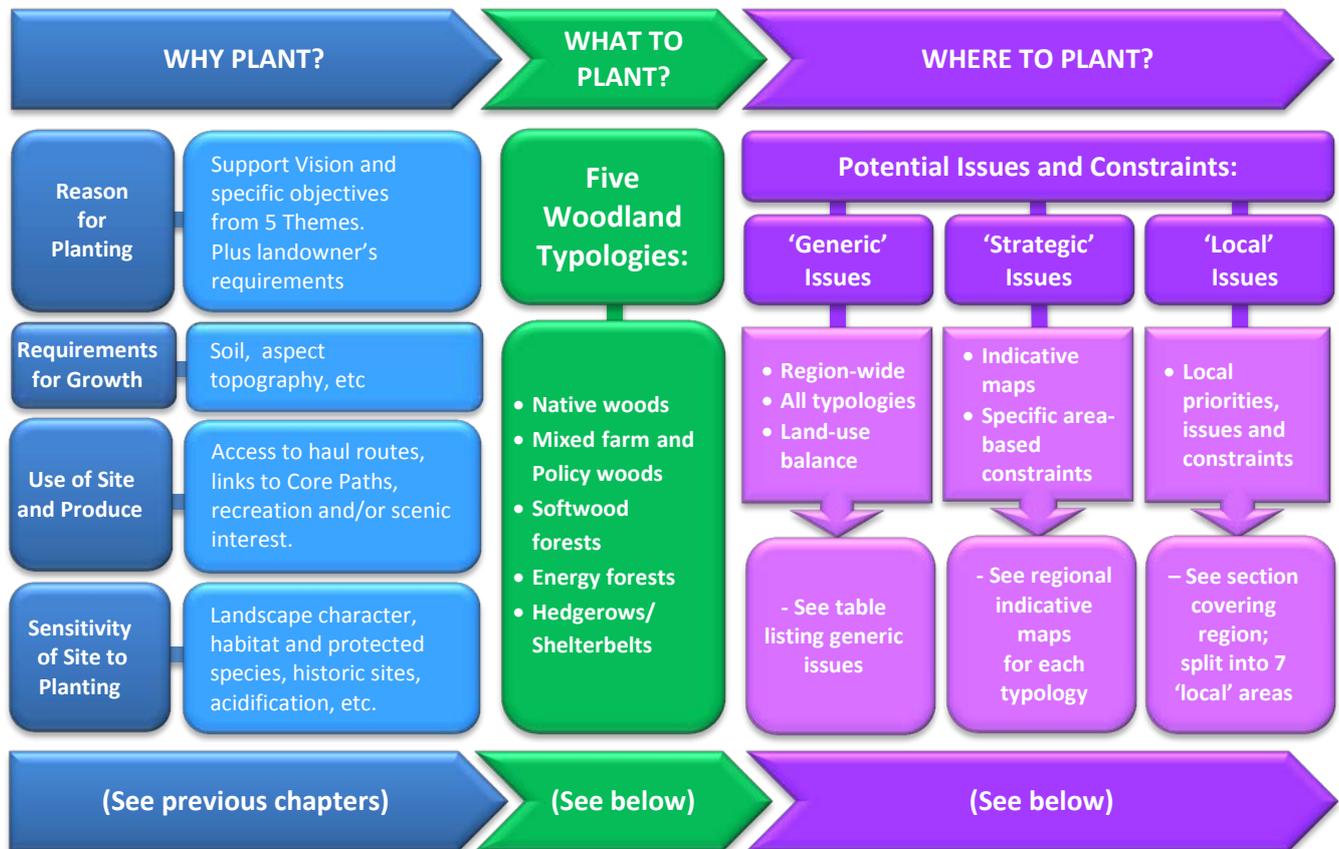
- **Woodland typologies;** five distinct types of woodland are defined to highlight potential benefits and issues of different forms of planting. These are called woodland 'typologies'.
- **'Generic' issues or constraints;** potential generic issues or constraints could be applied to all five typologies or could be applicable across the whole region. Generic issues would include aspects such as land-use balance or habitat network creation.
- **'Strategic' constraints;** potential strategic constraints occur over broad areas and can be mapped. An example of a strategic constraint would be an area covered by an environmental designation. Strategic constraints are combined to establish broad 'preferred', 'potential' and 'sensitive' areas for each woodland typology and are shown on region-wide maps with associated flowcharts to explain how the constraints can be applied.

- **Potential 'local' issues or constraints;** seven smaller 'local areas' (see Map 6) are identified to focus in on local issues, potential constraints and opportunities and on priorities for woodland restructure and new planting within each area.



10.2 Grouping potential issues, opportunities and constraints into strategic, generic and local categories does not imply a hierarchy of importance. Identifying what to plant and where – and indeed whether to plant at all, should be based on a systematic consideration of all potential strategic, generic and local issues, opportunities and constraints.

## Process for Identifying Potential Opportunities for New Planting:



### Woodland Expansion and Restructure:

10.3 Excluding open water and urban areas, there are few places within Dumfries and Galloway where trees will not grow. Forestry, wood pastures, shelter belts, policy woodlands, hedgerow trees and formal avenues all form an integral part of the region's rich and varied landscapes. Regional forest and woodland cover currently stands at roughly 31% (211,000ha of woodlands in excess of 0.5ha out of 667,278ha total area; FCS data. NB previous estimate of 27-28% was based on woodlands >2ha). This level of tree cover is relatively high compared to the rest of Scotland (17%) and the UK but low in comparison to much of Europe (for example; Germany, Italy and Spain all have between 30 and 40% coverage; Sweden and Finland have over 60%).

10.4 The Scottish Government has expressed a desire to see increased levels of tree cover to support a range of sustainability, community, environmental and economic objectives. The 'Rationale for Woodland Expansion' (FCS 2009) included an assessment of the country's forest and woodland resource and suggested that aspirations for 25% woodland cover across Scotland were

achievable. It also suggested that there was 150,000ha of 'land with the greatest potential for woodland expansion' in Dumfries and Galloway (Fig5, p28, from MLURI/Forest Research). Whilst the figures quoted above suggest that a significant proportion of the region might be suitable for planting, it does not take account of local issues, opportunities or constraints and makes no distinction between different forms of planting. It should also be stressed that the government has not set regional targets and the figures do not represent 'quotas' for potential new planting.

10.5 To support the Scottish Government's aspiration of increasing nationwide forest and woodland cover by planting 10,000ha per year over the period 2012-2022 and to support local timber and forestry industries, it is important to look for opportunities to enhance the existing woodland resource and opportunities for new planting.

10.6 Existing forestry and woodland is a vital asset to the region's economy as well as providing valuable habitat and opportunities for tourism and recreation. It should be managed to meet the requirements of the five themes within

# Dumfries and Galloway Forestry and Woodland Strategy

this strategy and to meet the current UK Forest Standards where applicable. New planting can also contribute to the objectives listed under the five themes and is important in helping to offset net losses in woodland cover through changing forestry practice or to wind farm development. Considering the full range of potential objectives at an early stage in the planning process may

broaden the potential benefits from a scheme. The purpose of this chapter is to support this process based on the methodology set out in the diagram below.

## What to Plant – Woodland Typologies:

10.7 'The Right Tree in the Right Place' (Scottish Government, 2010) provides guidance on developing local forestry and woodland strategies based on recognising that different tree species require different growth conditions, have different physical characteristics and can be used for different purposes. In order to help target forest and woodland planting to the most appropriate locations, this strategy identifies several distinct types of woodland or '*woodland typologies*'.

10.8 The typologies used are based on the Scottish Government's 'Rationale for Woodland Expansion' strategy document (FCS 2009) which identified four types of woodland to deliver the government's aspirations for forestry and woodlands. This strategy identifies an additional typology with revisions to the others to reflect local circumstances, as follows:



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## Woodland Typologies;

### Native Woodlands:

Native woodlands are woods composed of species native to the site. The emphasis of new planting is likely to be on habitat and habitat network creation, developing structure and species diversity, though native woodlands can potentially meet a range of other objectives. Well-designed woods which link to or expand existing woodland habitat and in particular existing ancient woodland or semi-natural woodland. This category includes riparian woodlands of suitable native species (see footnote below for guidance notes).

### Mixed Farm and Policy Woodlands:

Mixed farm and policy woodlands are typically small scale however; larger-scale hardwood plantations with an emphasis on timber production are also included in this category. Mixed farm and policy woods are usually set within farmed or designed landscapes on traditional estates, designed to provide screening, game coverts, landscape enhancement and shelter, as well as producing a range of timber and other wood-based products. New woodlands should be designed with care to fit with the local landscape and to meet as wide a range of objectives as possible. Species could include native and/or traditional broadleaves, including sycamore, beech or sweet chestnut with an element of conifers reflecting local circumstances and tradition.

### Softwood Forests:

This typology includes medium to large-scale commercial softwood forests primarily planted for timber supply but potentially meeting a range of other objectives (such as access and recreation). Well-designed plantations will meet forest design standards and follow current best practice in terms of water management, landscape design, habitat creation, etc.

### Energy Forests:

Biomass production could include a diverse range of plant species and harvesting systems including short rotation coppice woodlands or field crops planted with non-coniferous species such as Miscanthus, willow or poplar where the planting is aimed primarily at biomass production on short rotations. The use of less 'typical' species or forestry methods will need to be considered on a case by case basis to assess impacts on any potential constraints. However, potential constraints to all energy forests have been mapped.

### Hedgerow Trees and Shelter Belts:

This typology covers single trees, avenues and smaller groups, planted within agricultural lowland and valley landscapes, with shelter belts occasionally planted in areas of hill farming. Hedgerow trees and shelter belts can enhance the landscape, restore traditional enclosure patterns and create habitat networks; provided they are designed and specified with care and attention to local environmental circumstances (beech avenues are a distinctive feature in some parts of the region, whereas oak or ash is preferred in others). The region also has some of the best wood pastures in the UK and proposals to establish new or improve existing wood pastures are welcomed.

**Native Woodlands footnote:** Further information on native tree species and on suitable woodland mixtures is available in 'Creating New Native Woodlands' (FCS Bulletin 112) and 'Seed Sources for Planting - Native Trees and Shrubs in Scotland' (FCS Guidance 2006). See also the FCS survey of Native Woodlands in Scotland.

## Where to Plant - Generic Issues and Constraints:

10.9 There are a number of generic issues or potential constraints which could be applicable to most forms of new planting and are not necessarily related to a specific geographic area. The following issues should be considered for all proposed new planting and where applicable restructure proposals:

10.10 Local small-scale constraints such as Scheduled Ancient Monuments, tourism trails, etc will need to be considered as part of the site analysis process. Existing guidance within the Dumfries and Galloway Structure Plan and/or the UK Forest Standard should be referred to for details.

### Main Generic Issues and Constraints:

**Wind energy developments;** potential conflicts with existing and proposed new woodlands:

- The potential for integrated design, including modifying woodland design to incorporate turbines but retain woodland cover; use of short rotation crops, compensatory planting, etc should be explored to ensure that there is no overall net loss of productive forestry.

**Land use balance** and better integration of agriculture and forestry:

- Proposals should consider the balance of woodland and open space in upland areas – both need to be retained. Further new planting may put farming at risk in areas already heavily afforested.
- Open spaces within existing afforested areas are highly important in terms of land-use balance and their contribution to habitat diversity and to local landscape character. Such areas are unlikely to be suitable for new planting. National policy guidance and FCS guidance which considers this aspect more fully should be followed.

**Public access to woodlands near communities;**

- Where new woodlands are proposed near communities, ensure adequate engagement with the community in the design stage, and ensure provision of appropriate facilities commensurate to the likely level of usage.

**Timber Haul routes;**

- New woodlands must reflect on likely future impact on roads and communities from activity and timber which may be generated by the new woodland in the future.

**Local provenance;**

- Where appropriate and possible all new broadleaf planting schemes should utilise local provenance.

**Species diversity;**

- Proposals for new woodland should consider using the widest range of suitable species, to ensure a robust capacity to deal with pressures from climate change, pests and diseases.

**Habitat network creation;**

- Woodland connectivity is an important consideration throughout the region and any new planting proposals should consider potential links to existing woodland.

## Main Generic Issues and Constraints (continued):

### Priority LBAP species;

- New planting proposals should take account of the specific habitat requirements of priority LBAP species such as Black Grouse or Golden Eagles where the species are known to exist.

### Landscape character;

- Many of the region's landscapes have been denuded by the loss of hedgerow trees, farm woodlands, wood pastures, etc or from inappropriate planting and forest design. New planting proposals should seek to enhance local landscape character.

### Poorly managed existing woodlands;

- Some broadleaf woodlands and conifer plantations within the region would benefit from improved management. This could help to meet a broad range of objectives, for example where native broadleaf woodlands are managed for timber production and for habitat conservation using low impact silvicultural systems, etc.

### Business development;

- Larger new woodland proposals in particular should consider opportunities for local employment during the establishment phase and for potential longer term opportunities to support local energy projects and small-scale woodland industries.

## Where to Plant - Strategic Constraints:

10.11 This section uses potential 'strategic' constraints and sensitivities that can be mapped at a regional level, to establish more and less suitable broad areas for different types of woodland. The mapping can be used alongside the generic issues listed above, to guide potential new planting at a broad scale but clearly decisions on any new planting will also be based on the requirements of land-owners and managers in combination with specific site conditions and local issues (see next section).

10.12 Some potential strategic constraints may apply to all new planting, whereas others are particular to a certain typology. For example; any new planting might affect archaeological sites or prime agricultural land, whereas only conifers are likely to impact on surface water acidification. Therefore, a range of potential constraints has been considered in relation to each woodland typology to identify broad levels of sensitivity.

10.13 **Sieve Mapping;** The constraints were 'weighted' to establish relative significance, then a 'sieve mapping' process was used where the weighted constraint layers were overlaid to highlight areas where one or more constraints

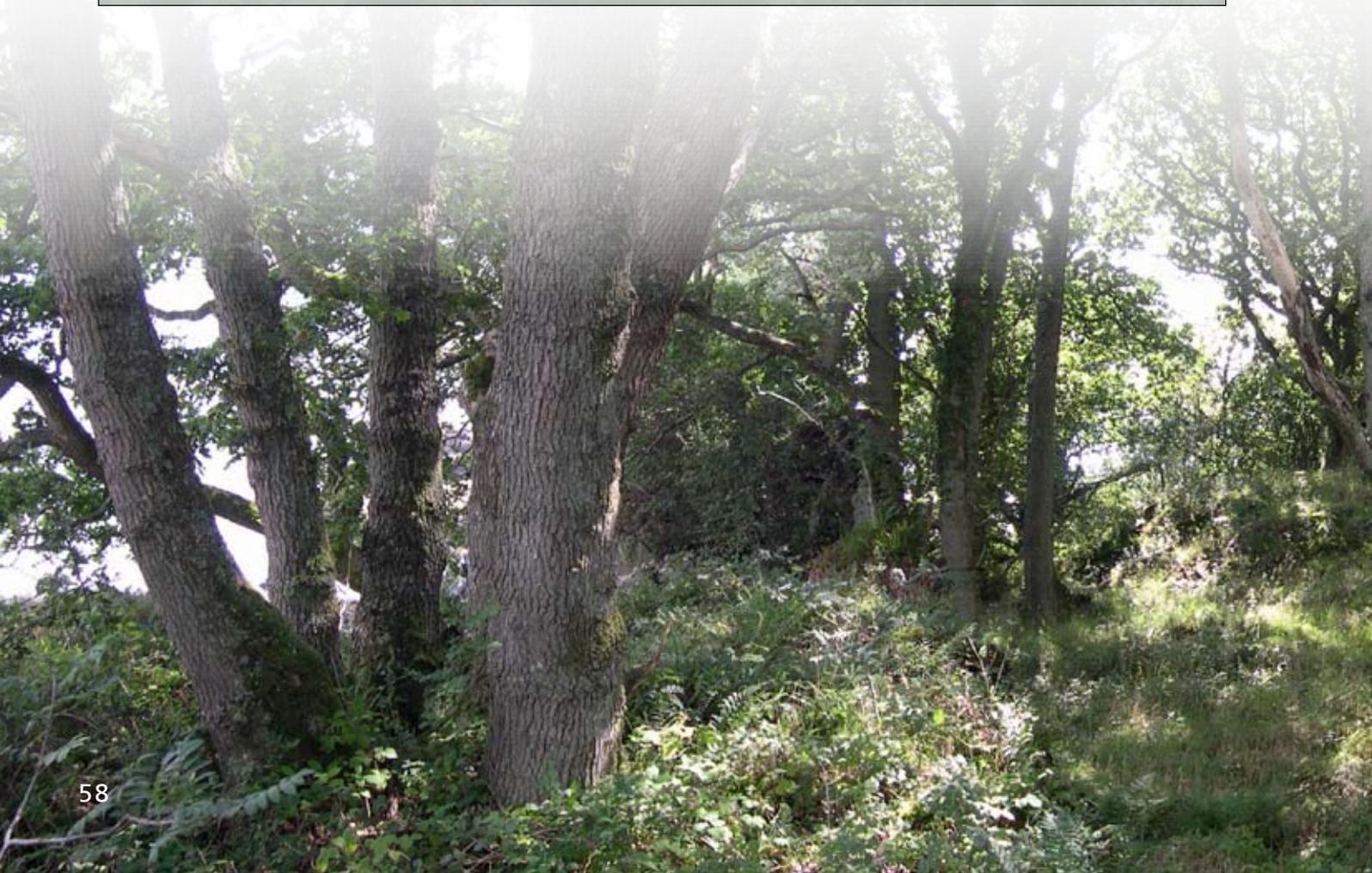
might apply. Details of the methodology used are included in the appendices.

10.14 **Preferred, Potential and Sensitive Areas;** Areas where no significant broad constraints occur (the gaps in the sieve) are identified as 'preferred' areas; areas with some constraints are termed 'potential' areas and areas with one or more significant constraints are identified as 'sensitive' areas for new planting. In principle, proposals to plant a particular woodland typology would be directed toward 'preferred' areas where less strategic constraints apply. Planting within 'potential' areas would require additional consideration and mitigation to deal with the particular constraints involved. New planting is unlikely to be supported in 'sensitive' areas.

10.15 'Preferred areas' may be more suited to planting a particular typology, however, it would not be practical or desirable to plant the whole area and there will be generic and local factors to consider – some of these are included in the local issues section below.

## Strategic Constraints Layers Used in the Mapping Process:

<b>NB: Potential constraints may be a constraint in different ways or to varying degrees according to the type of potential new woodland:</b>	
Open water, settlements and areas of existing planting are not suitable for new planting so were excluded for all typologies.	
<ul style="list-style-type: none"> <li>• Archaeologically Sensitive Areas.</li> </ul>	<ul style="list-style-type: none"> <li>• Local wildlife Sites and other important areas of open habitat for bird species (UK BAP Priorities)</li> </ul>
<ul style="list-style-type: none"> <li>• Areas of deep peat.</li> </ul>	<ul style="list-style-type: none"> <li>• Marginal land for planting commercial forestry due to poor growth conditions</li> </ul>
<ul style="list-style-type: none"> <li>• Areas sensitive to surface water acidification or soil Acidity</li> </ul>	<ul style="list-style-type: none"> <li>• Merrick Core Wild Land area</li> </ul>
<ul style="list-style-type: none"> <li>• Complex fine-grained landscape character areas</li> </ul>	<ul style="list-style-type: none"> <li>• Non-inventory Designed Landscapes</li> </ul>
<ul style="list-style-type: none"> <li>• Designated environmental sites (Ramsar, SAC, SPA, NNR, SSSI)</li> </ul>	<ul style="list-style-type: none"> <li>• National Scenic Areas</li> </ul>
<ul style="list-style-type: none"> <li>• Inventory Designed Landscapes</li> </ul>	<ul style="list-style-type: none"> <li>• Prime agricultural land</li> </ul>
<ul style="list-style-type: none"> <li>• Land technically unsuitable for planting or commercial forestry</li> </ul>	<ul style="list-style-type: none"> <li>• Regional Scenic Areas</li> </ul>
<ul style="list-style-type: none"> <li>• Landscape Character Areas where openness and exposure are key characteristics</li> </ul>	



10.16 **Notes on mapping;** the existence of strategic constraints does not automatically prevent new planting, since appropriate design, mitigation and management measures may overcome the potential constraints shown. All cases would therefore need to be assessed on their individual merits but clearly schemes within areas shown as having no strategic constraints stand a greater chance of being supported.

10.17 The maps for each typology indicate the potential for **new** planting. Existing forestry and woodland is included within the 'unsuitable areas' and the restructure and management of existing forests and woodland are covered elsewhere in the strategy.

10.18 The mapping was produced using data available at the time of production (June 2013). Users should check for any recent data or guidance when considering any proposed planting scheme.

10.19 **Forest restructure;** restructuring of existing afforested areas can present unique opportunities; for example to restore ancient woodland by replanting sites previously planted with conifers with native species once the softwood crop has been removed. Also, opportunities to increase

species diversity as a way of reducing potential exposure to plant diseases whilst potentially also meeting habitat, public access and/or landscape objectives.

### **Special Protection Areas, Special Areas of Conservation and Ramsar sites;**

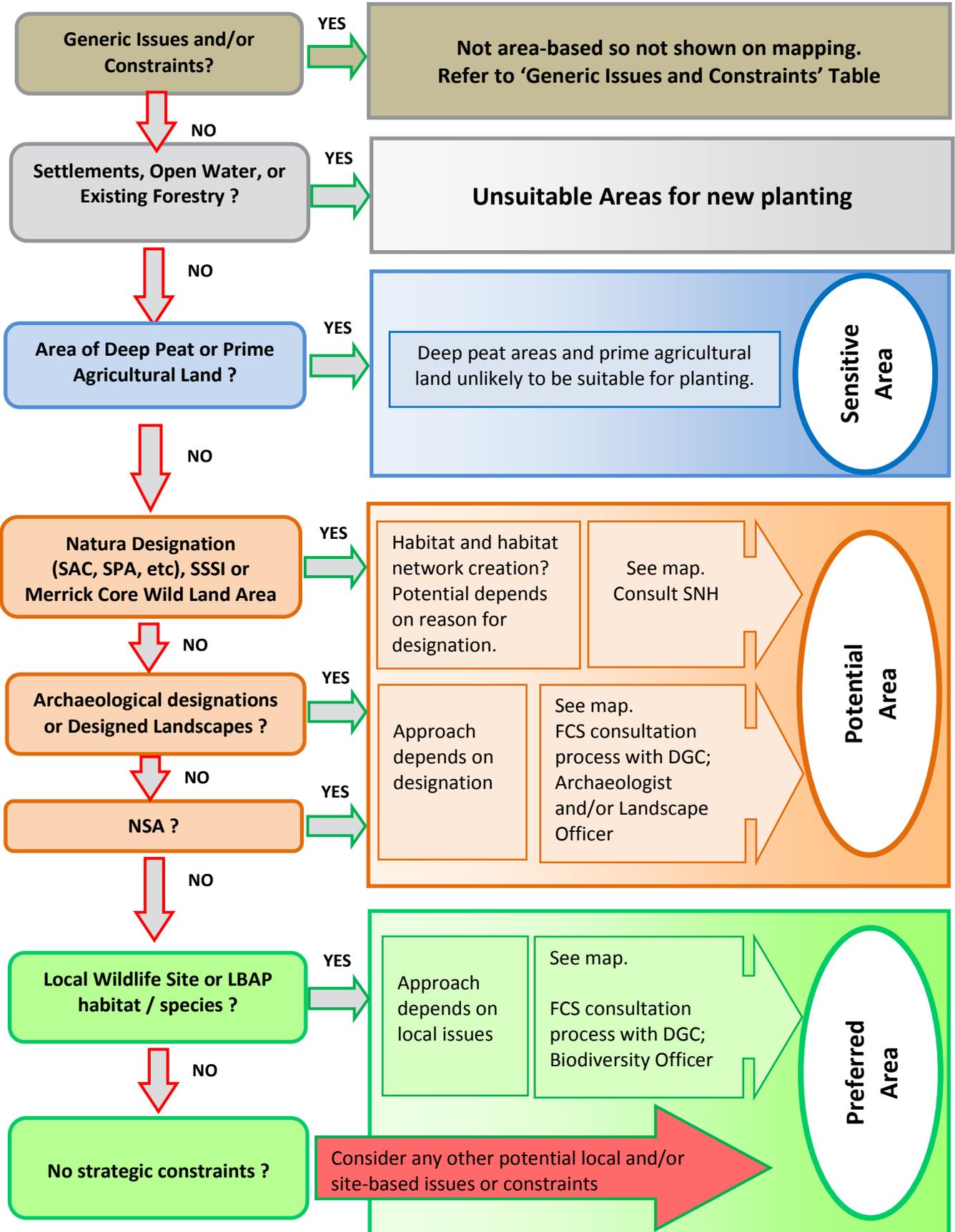
10.20 All forestry proposals likely to have a significant effect on an existing or potential Special Protection Area (SPA), Special Area of Conservation (SAC) or Ramsar site, including proposals outwith the site, will require an appropriate assessment and will only be permitted where the proposal does not adversely affect the integrity of the site or there are no alternative solutions and there are imperative reasons of overriding public interest including those of a socio-economic nature.

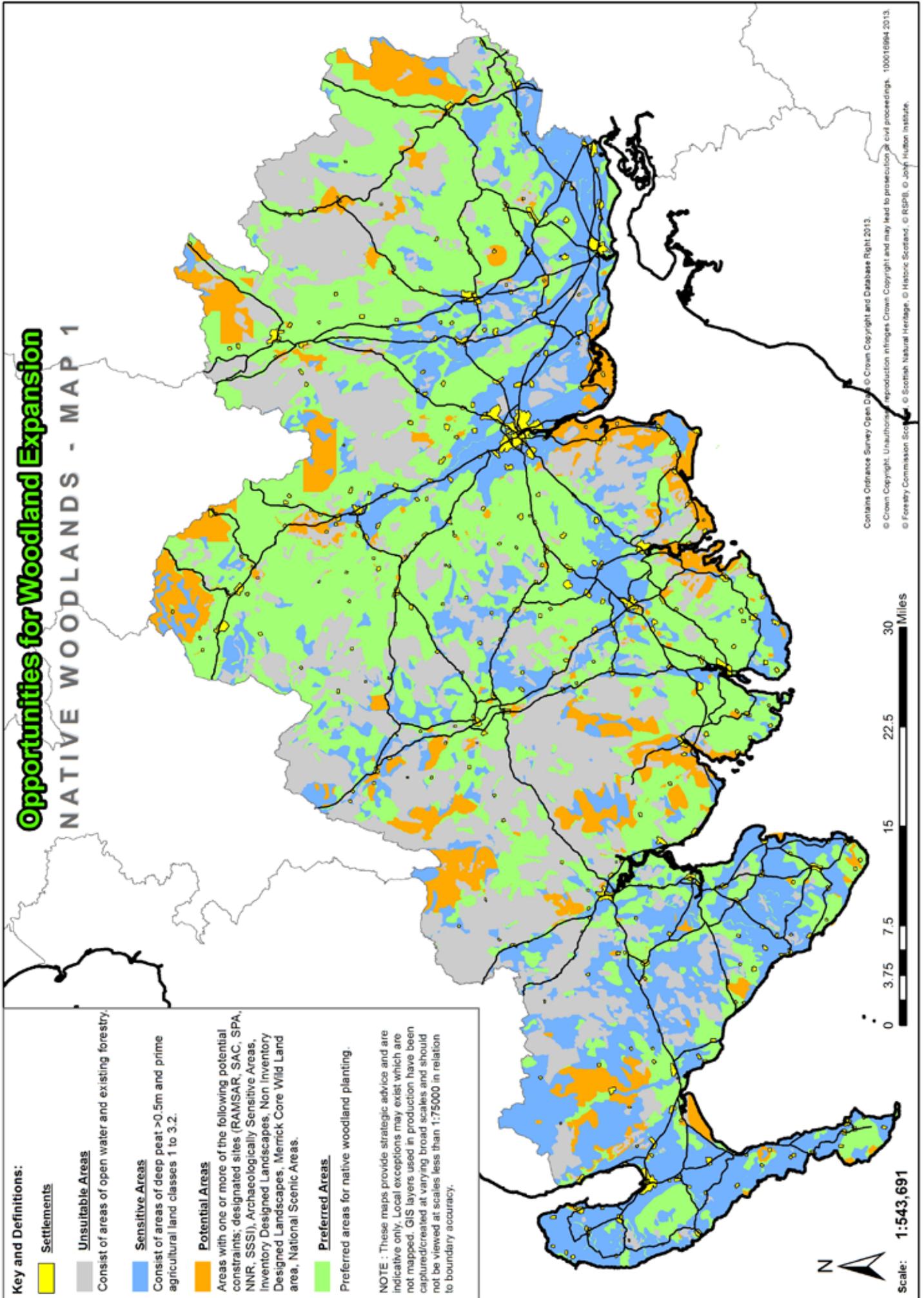
### **Selecting a Suitable Woodland Typology:**

10.21 The next few pages include regional maps which show the results of the sieve mapping process for each typology. 'Decision trees' illustrate the process of applying the various generic, strategic and local constraints to an area in order to help establish what to plant and where.

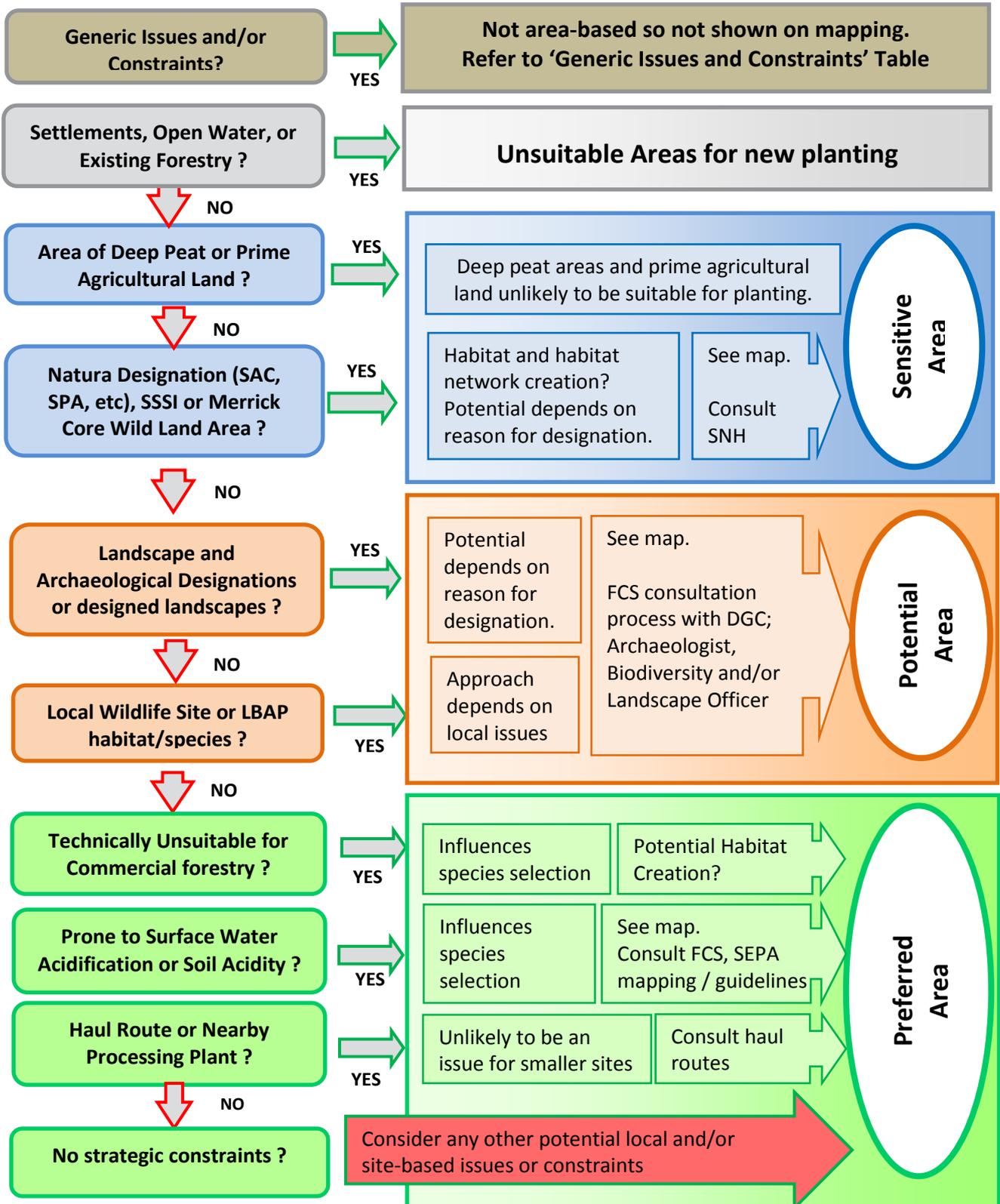


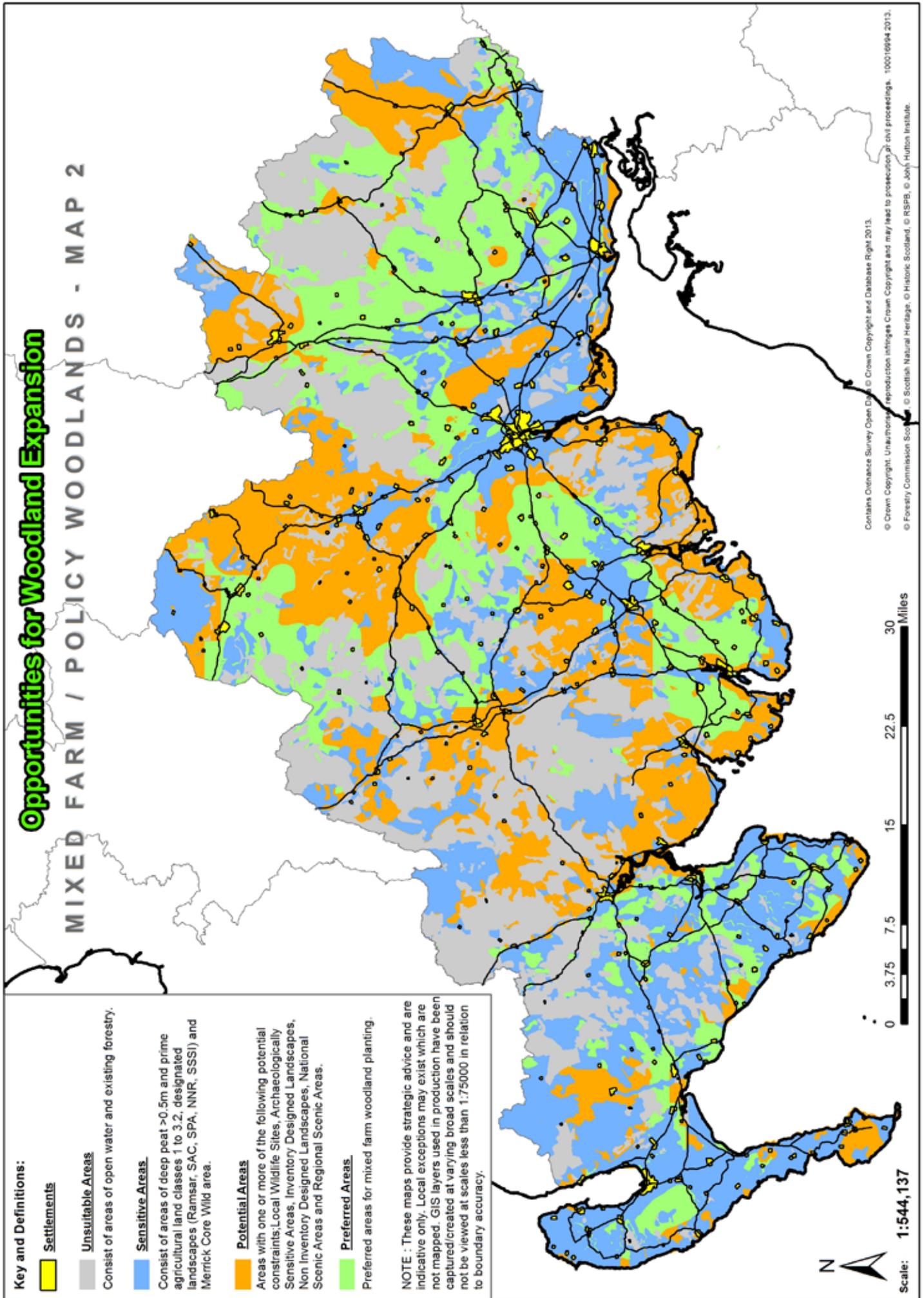
# 1. Native Woodlands



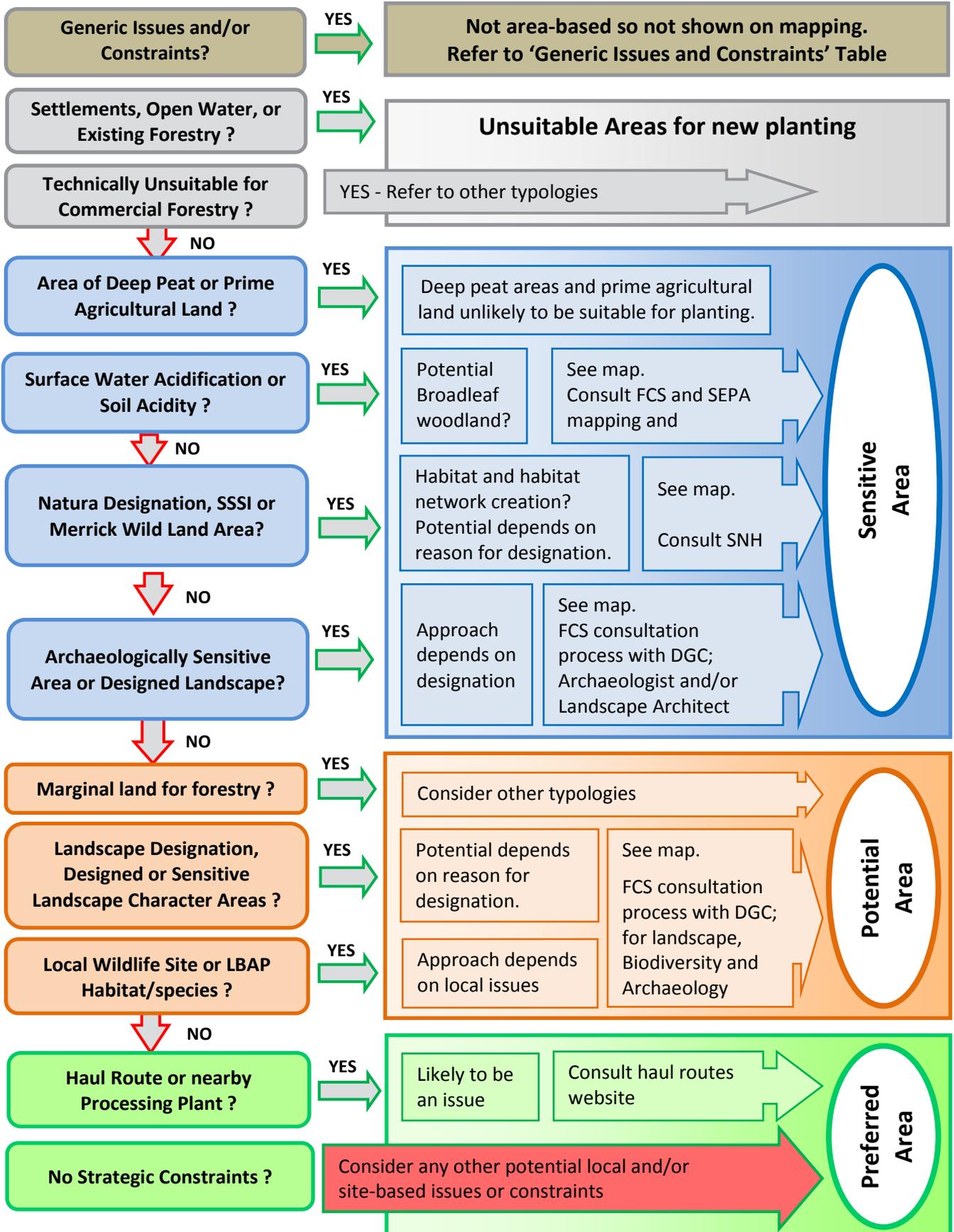


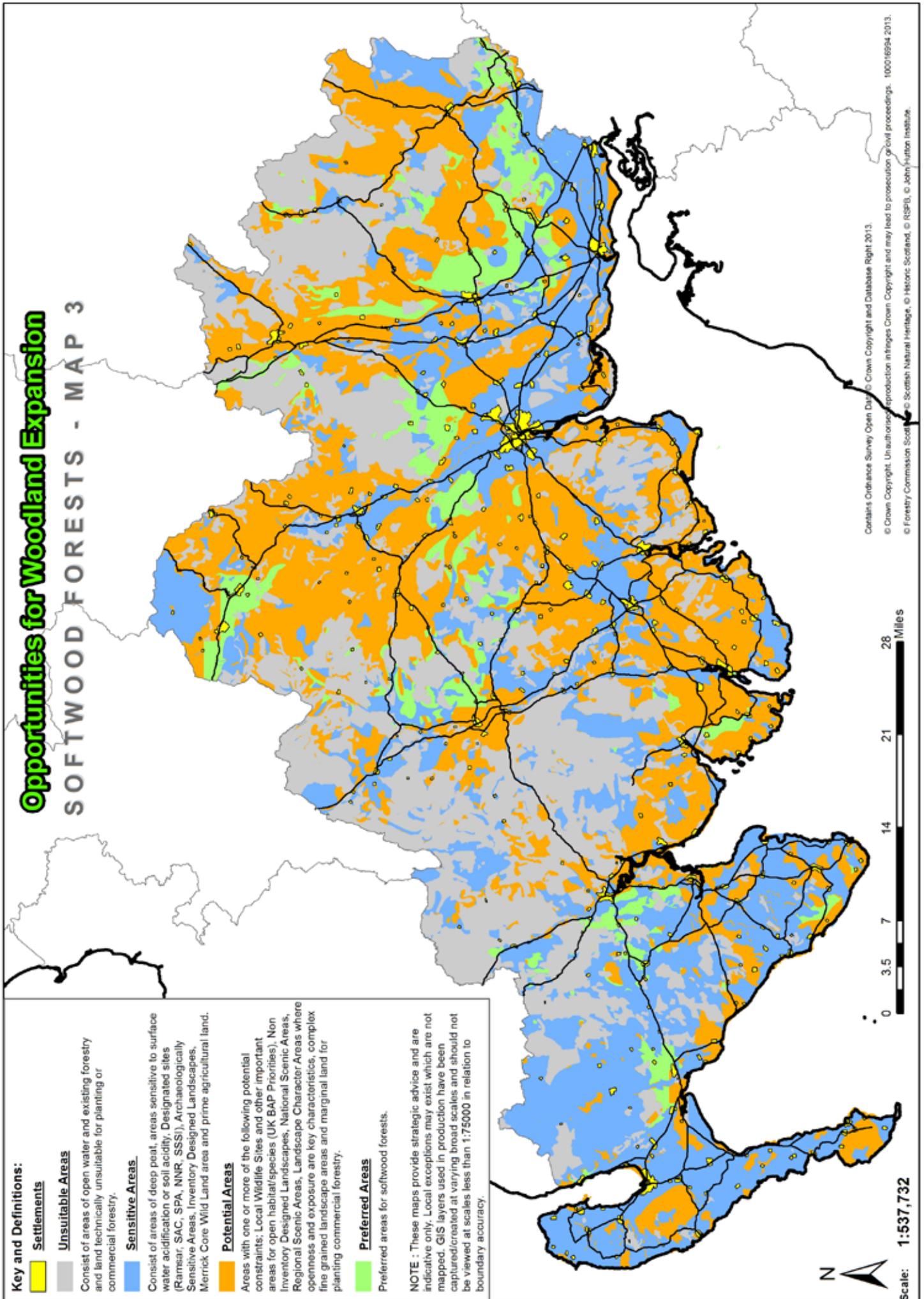
## 2. Mixed Farm or Policy Woodlands



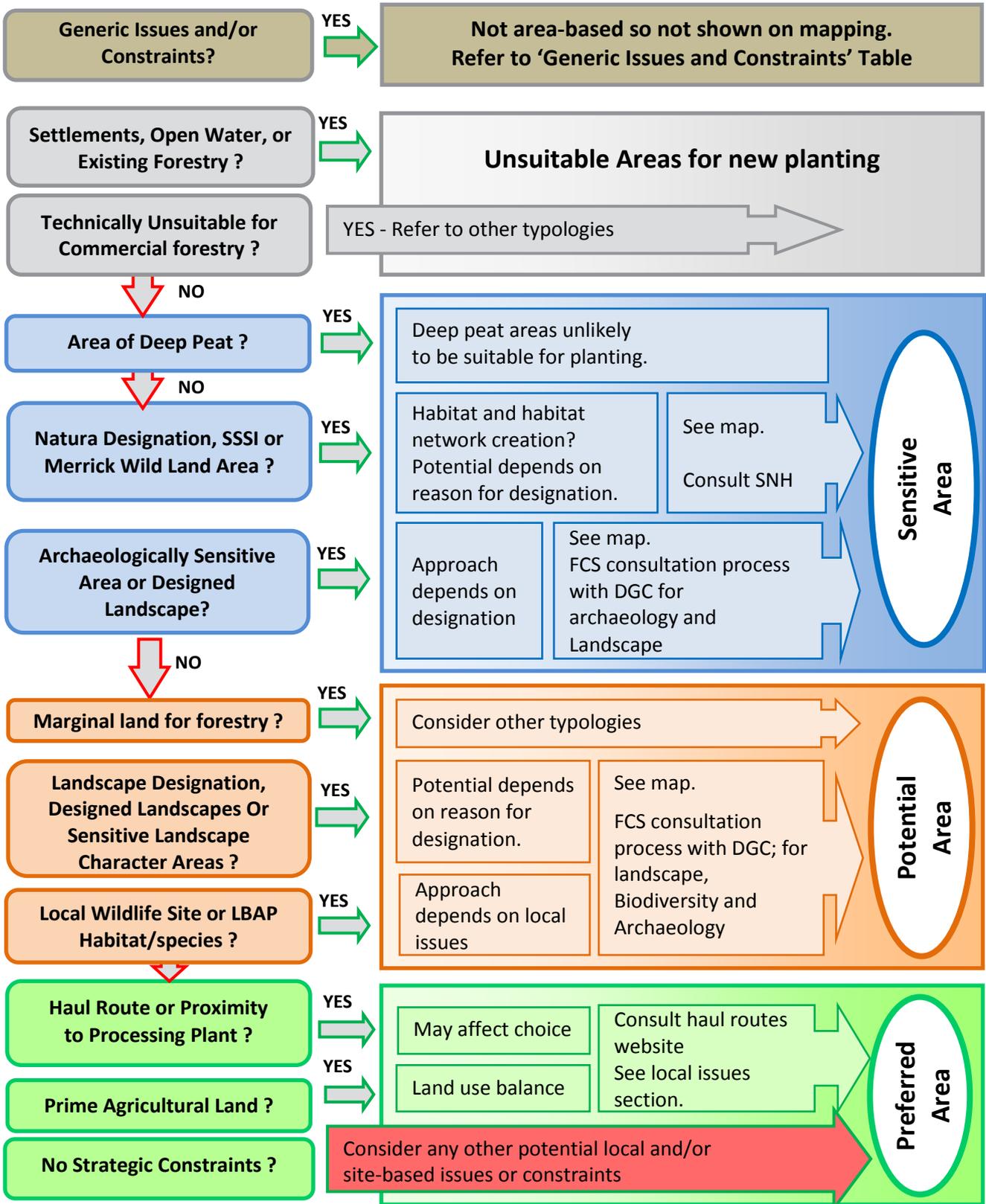


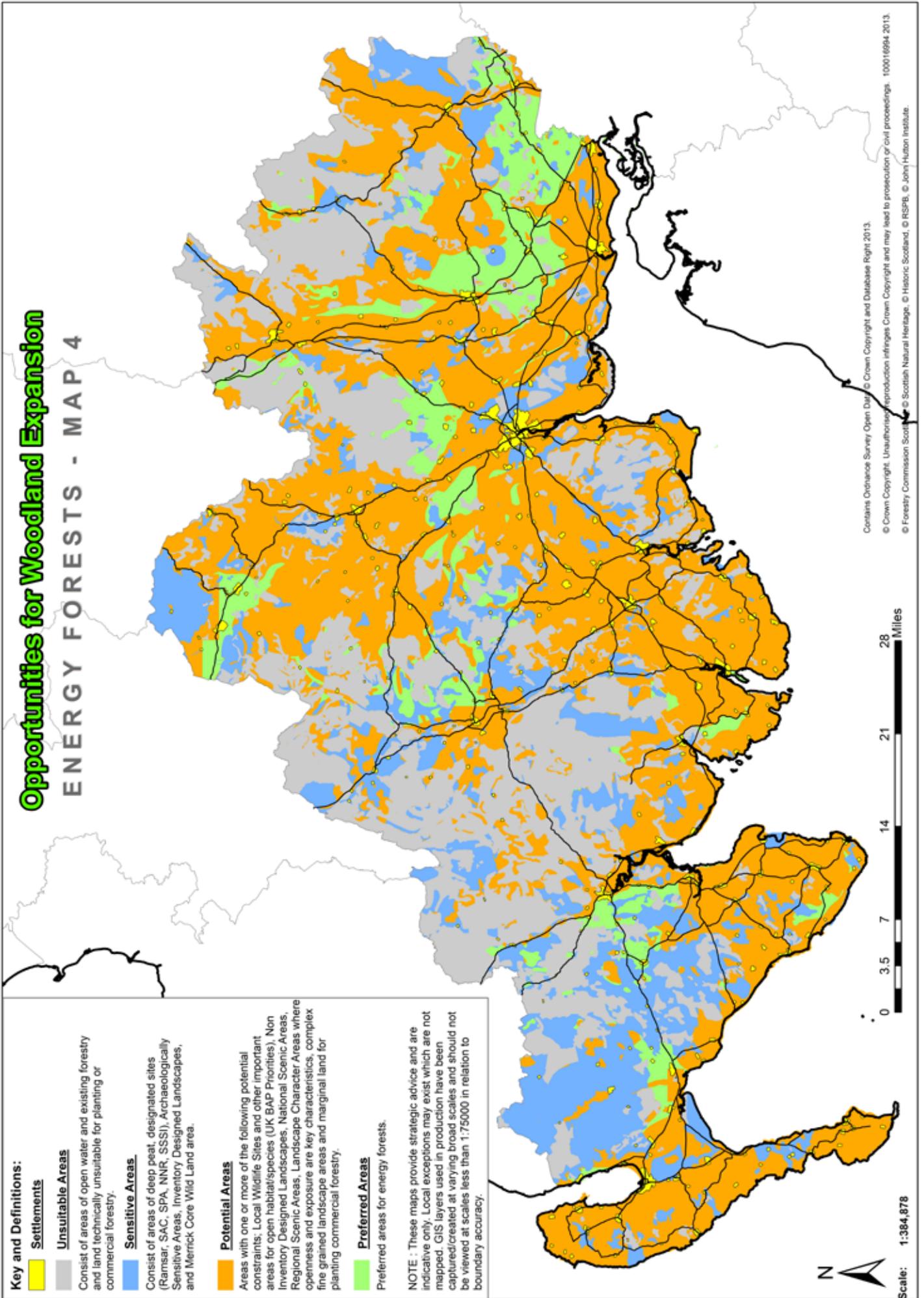
### 3. Softwood Forests



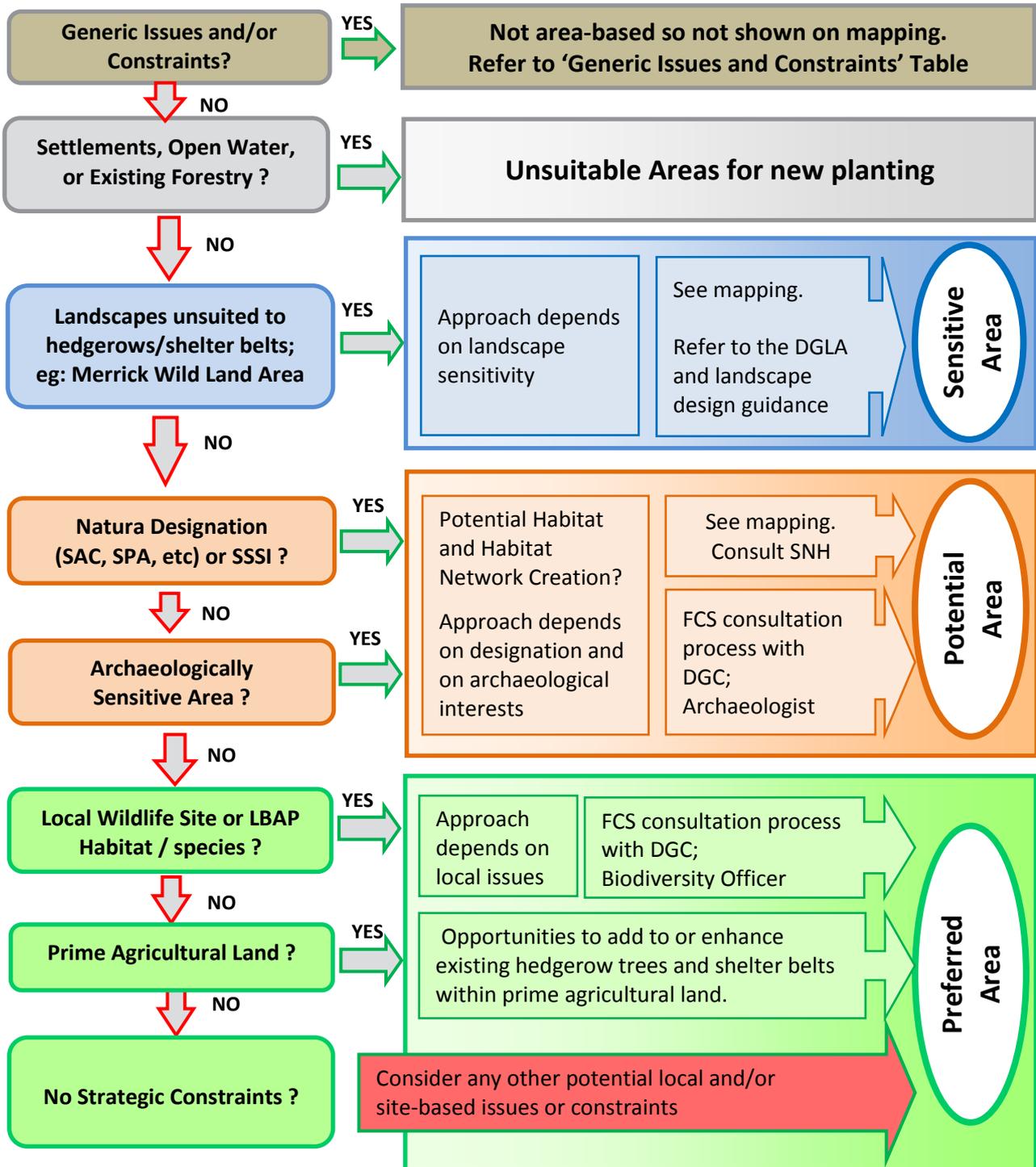


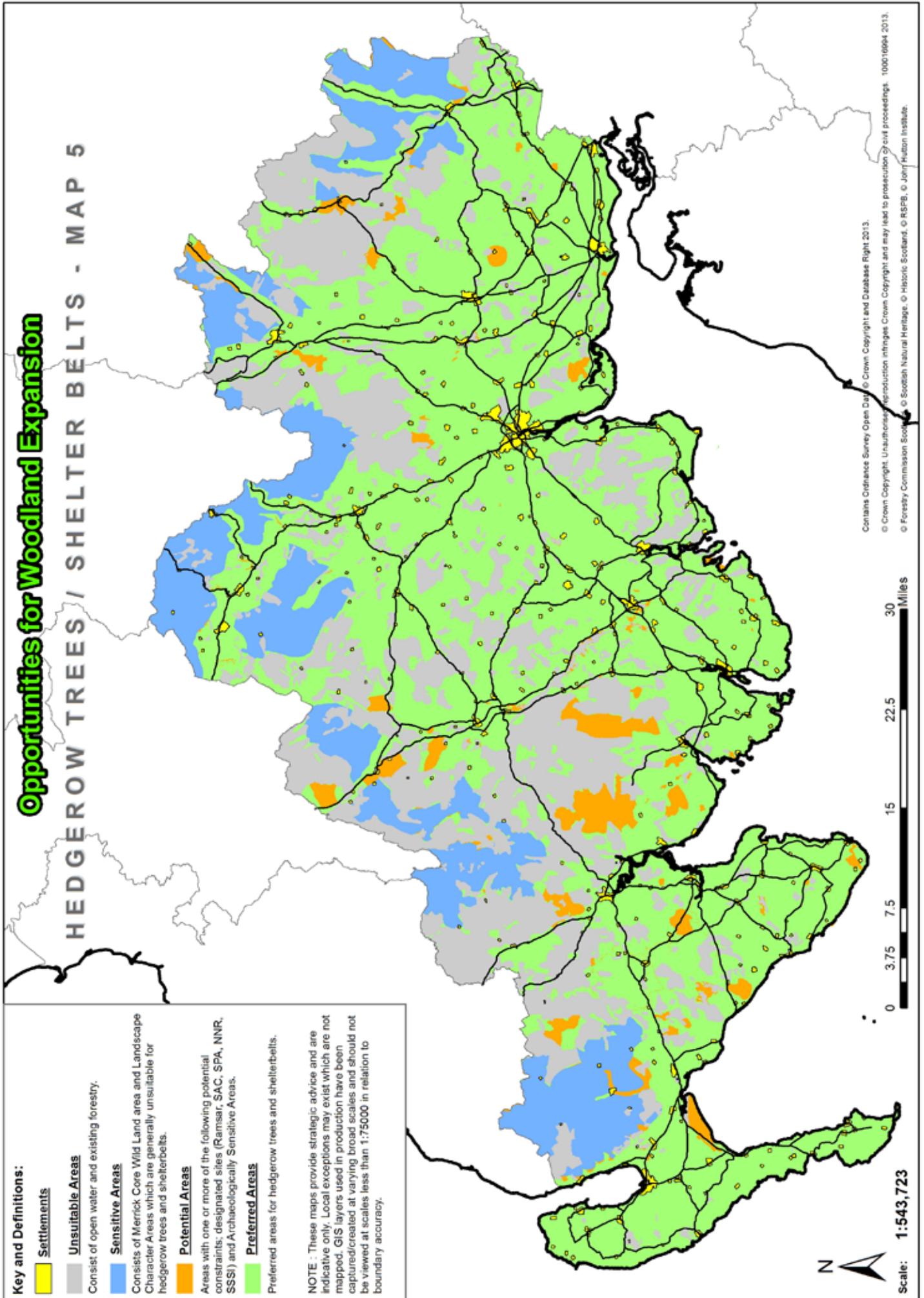
## 4. Energy Forests





## 5. Hedgerow Trees and Shelter Belts





## Where to Plant – Local Opportunities and Constraints:

10.22 This section identifies smaller ‘local’ scale constraints or opportunities which can’t be mapped at a regional scale or do not apply to all potential new planting but are equally important.

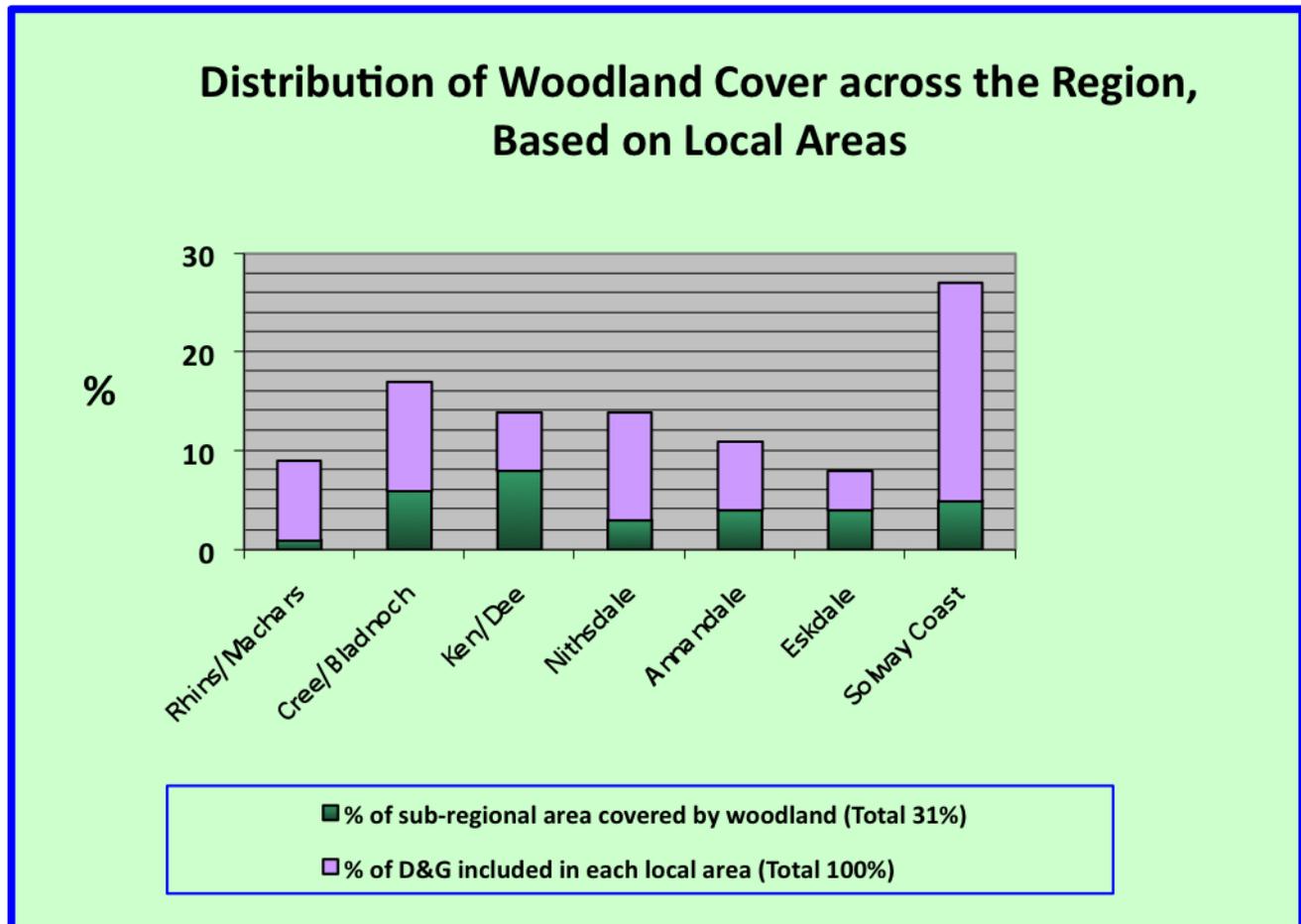
### Local Issues

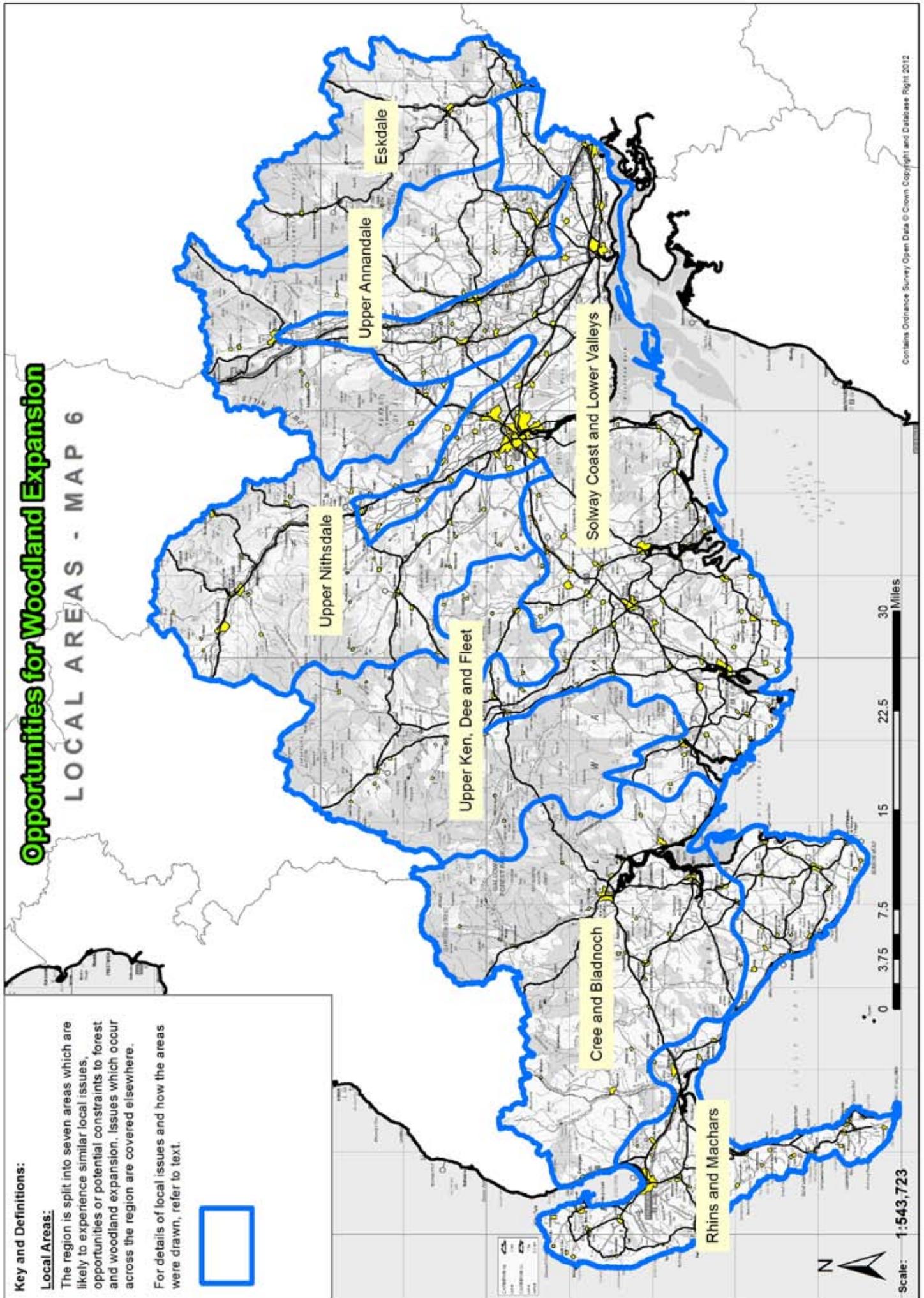
10.23 Dumfries and Galloway is an extensive and varied region with specific opportunities and challenges to new planting experienced in different parts of the region. These can be locally unique such as the proximity to a timber processing plant, or may apply to a particular valley system (eg local water quality issues). Such issues should be considered as part of the site analysis and selection process but in order to celebrate and recognise these potential opportunities and issues, the region has been split into the following sub-areas;

- Rhins and Machars
- Cree and Bladnoch
- Upper Ken, Dee and Fleet Valleys
- Upper Nithsdale
- Upper Annandale
- Eskdale
- Solway Coast and Lower Valleys

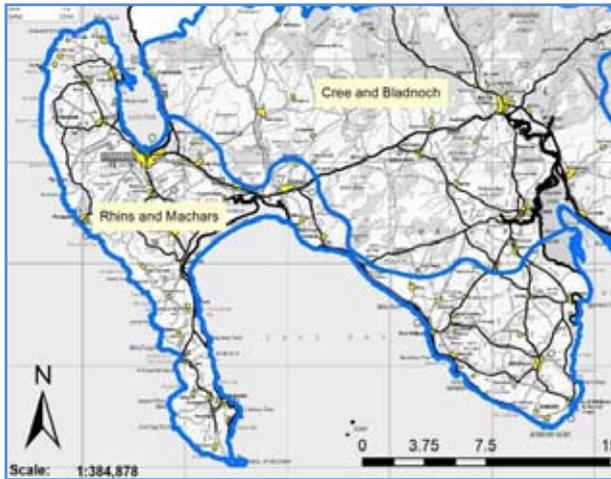
10.24 The ‘local’ areas shown on Map 6 overleaf, were drawn using a combination of river catchment areas and local Landscape Character Types in order to show areas with potentially similar local issues (‘LCT’s’ - see the Dumfries and Galloway Landscape Assessment; LUC/SNH 1998).

10.25 The graph below shows the relative size of the seven ‘local’ areas (as a percentage of total area) and the proportion of woodland within each area, expressed as a percentage of the region’s overall woodland cover:





## The Rhins and Machars Area



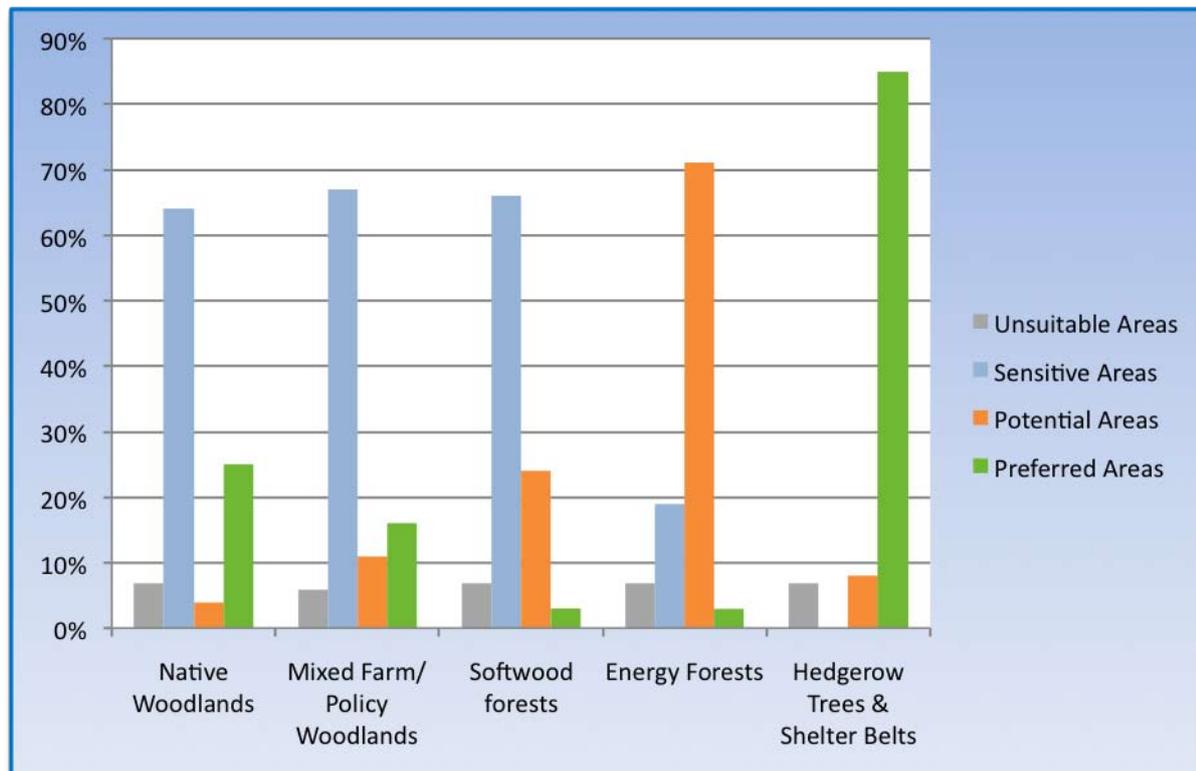
### 10.26 Overview and description of area:

This area covers the north and south Rhins and coastal sections of the Machars, plus the Stranraer basin, Luce Bay and Glenluce area. The northern part of the Machars peninsula is within the Bladnoch catchment and has been included in the 'Cree and Bladnoch' area.

10.27 The peninsula landscapes are characterised by improved pastures divided into medium-scale fields with occasional thickets of gorse or wind-sculpted shrubs and trees. The wooded designed landscapes of the Rhins contrast with the generally more open agricultural landscapes. The Stranraer Basin is more sheltered, with a patchwork of improved pastures, settlements and occasional small woodland blocks. It includes an airfield, sand and gravel extraction and important habitats at the dune systems and forestry around Torrs Warren and Luce Bay. Includes the coastal plain and estuarine flats of the Cree estuary where the open gently undulating landscape includes hedges, occasional hedgerow trees and shelter belts. Principal River Catchments include minor river systems draining into Luce Bay, Loch Ryan or directly into the Solway/ Irish Sea.

### 10.28 Existing woodland resource:

Trees are relatively scarce in this landscape with 8% woodland cover (1% of regional total) often found as field corner plantations, occasional policy woodlands and a small number of small forest plantations in more sheltered areas spread across the Machars and occasionally the Stranraer Basin and on the Rhins peninsula. Total area 62,913 hectares; woodland cover 5,121ha.



Potential for New Planting within the Rhins and Machars Area

## 10.29 Local Assets;

- Scenic coastlines including the rugged cliffs of the Rhins coast and the gorse knolls around Monreith and the Isle of Whithorn.
- Key tourism and recreation destinations including Whithorn, the Isle of Whithorn, Loch Ryan, Luce Bay, the Mull of Galloway, Portpatrick and Stranraer.
- The Southern Upland Way.
- Proximity to Stranraer and ports on Loch Ryan plus rail links to the north.
- Potential import/export of timber via shipping
- Biosphere transition areas
- Designed gardens and landscapes
- Designated sites for open-habitat species at Loch of Inch and Torrs Warren

## 10.30 Main Issues;

- Diffuse pollution from Agriculture
- Lack of Good Quality Riparian Woodland
- High value agricultural land, limiting opportunities for woodland expansion in some areas
- Heavily modified water courses (dredged and straightened)
- Poorly managed existing woodlands
- Maritime / Coastal environment, broad horizons and “open” landscapes which are an important aspect of the tourism appeal

## 10.31 Priorities for Woodland Management

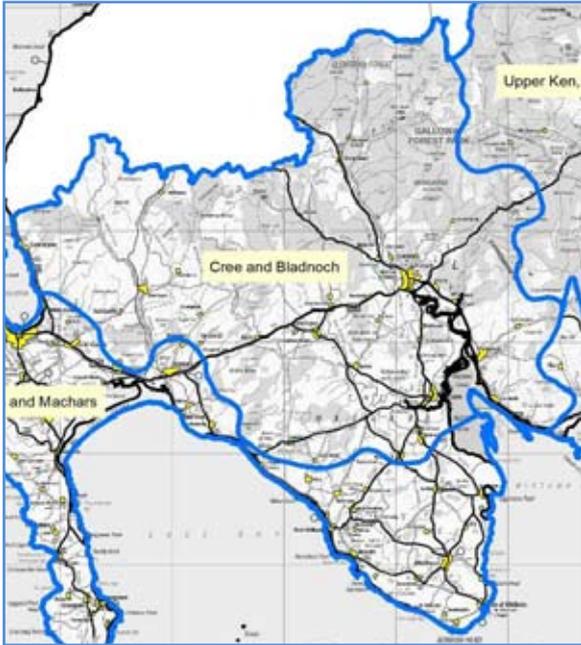
- Bring more woodlands into effective management, particularly farm woodlands and those close to communities. Potential for delivering multiple objectives (access, recreation, timber production and visual amenity)

- Existing conifer plantations with straight edges or block shapes contrast sharply with the otherwise smooth-flowing contours. These would benefit from further restructuring to take greater account of landform plus the introduction of more open ground and broadleaves and improvements to riparian zones
- Consider long term future approach to those woodlands within the area currently associated with very weak public roads

## 10.32 Priorities for new Woodlands

- Encourage new woodlands of all types to help reduce diffuse pollution provided they are appropriate to the setting and context
- Potential for woodland planting within floodplains near to settlements with potential public access and benefits to water quality or flood alleviation
- Potential planting of Mixed woodlands, Native woodlands, and farmland trees and shelterbelts on Farms – keeping farming as the main activity. There are also limited opportunities to extend existing policy woodlands
- Native and riparian woodlands which help address the scenic and habitat limitations of heavily modified waterbodies
- Some opportunities for small scale scrub and maritime woodland planting and for expansion of good quality small to medium scale softwood forests where the road network is suitable, taking account of public access, landscape and tourism, balanced within the context of an historical open landscape with much archaeology and scenic interest.

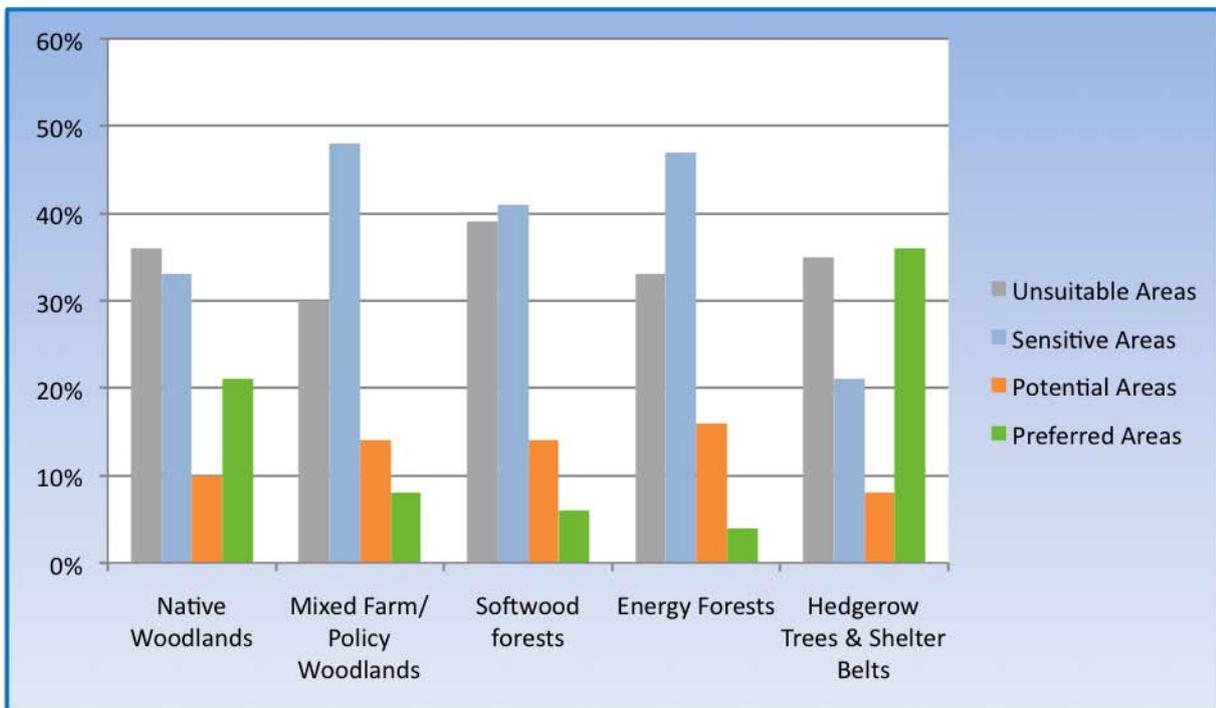
**The Cree / Bladnoch Area**



**10.33 Overview and description of Area;** This area is based on the catchments of the Water of Luce, the Bladnoch and the Cree. It includes the extensive upland moorlands between Loch Ryan and Newton Stewart plus the afforested areas around Ochiltee, Glentool, Kirroughtree and Cairnsmore of Fleet. It also includes the drumlin pastures around Kirkcowan and Wigtown which have a more mixed land-use, plus the moss and forest lowlands and plateau moorland around Mochrum lochs. Principal River Catchments include the Water of Luce, the Bladnoch and the Cree.

**10.34 Existing woodland resource;** There are extensive productive softwood forests within this area, especially on the hills to the north of the A75 with total woodland cover at 37% (6% of regional total). Mixed riparian woods around the Bladnoch and Cree rivers are important for habitat and scenic interest as are the Cree Valley Community Woodlands around Newton Stewart.

Total area 112,745 hectares; woodland cover 41,401ha.



**Potential for New Planting within the Cree/Bladnoch Area**

## 10.35 Local Assets;

- The Biosphere, Dark Skies Park, Merrick Wild Land core area, Kirroughtree and Galloway Forest Parks, plus Cree Valley Community Woodlands.
- The Southern Upland Way.
- Key tourist destinations including the above plus Bladnoch, Glentool, Newton Stewart, the Three Lochs, Wigtown,
- Fishing on the river Cree, Bladnoch and tributaries
- Access to the A75 trunk road and potential import/export of timber via shipping
- Established forestry industry
- Designated sites for open-habitat species at Flow of Dergoals, Kilhern Moss, Kirkcowan Flow, Merrick Kells, Mochrum Lochs, River Bladnoch, Glen App & Galloway Moors.

## 10.36 Main Issues;

- Surface Water acidification
- Land use heavily focused towards Spruce Forestry with much of the “old style” forests still to be restructured
- Conservation interests associated with SAC, SPA and Biosphere designations
- Retention of remaining significant areas of open “wild character” land and open green space given the extent of existing forestry
- Significant areas of deep peat under existing forests and within unforested moorlands
- Historic landscapes and features including an extensive ASA
- Very weak minor road network associated with several large conifer woodland areas in east of area, many of which on peaty soils

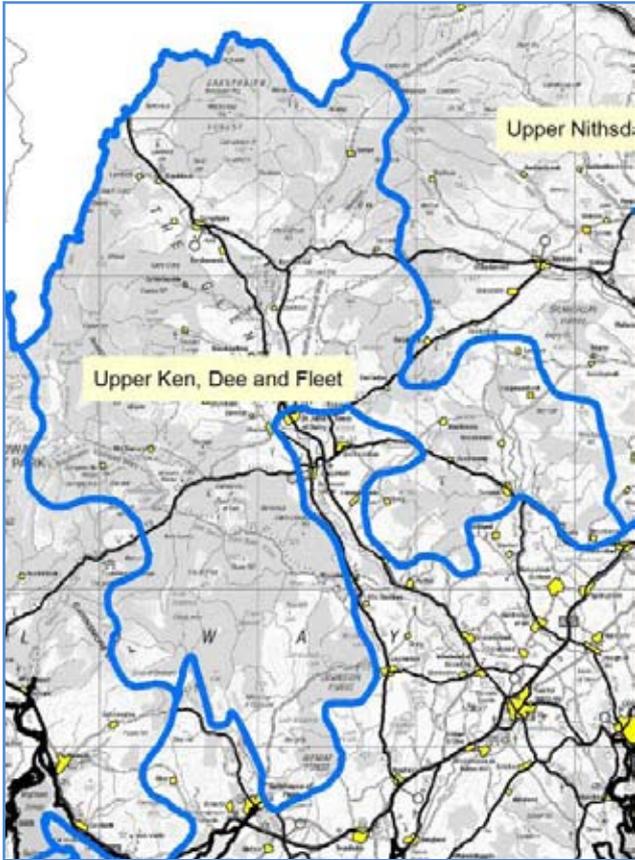
## 10.37 Priorities for Woodland Management;

- Existing conifer plantations would benefit from further restructuring and introduction of more open ground and broadleaves, particularly in respect to riparian zones
- Identification of high value deep peat sites which have the potential to be restored or retained
- Opportunities to further improve landscape design of existing extensive conifer areas
- Explore potential to create a better interface between existing conifer forests and remaining extensive open ground habitats
- New, more extensive Native woodland planting in areas with degraded larger scale habitats
- Maintain forest parks as a valuable recreational resource
- Redesign of existing forests to accommodate wind farms

## 10.38 Priorities for new Woodlands;

- Potential planting of Mixed woodlands, Native woodlands, and farmland trees and shelterbelts on farms – keeping farming as the main activity
- Opportunities for new native woodlands, particularly where these can enhance the transition from extensive conifer forests to open habitats
- Native and riparian woodlands which help buffer waterbodies from diffuse pollution
- Some opportunities for woodlands close to communities where these can provide good quality access to the public
- Opportunities for woodland planting within floodplains for flood alleviation purposes

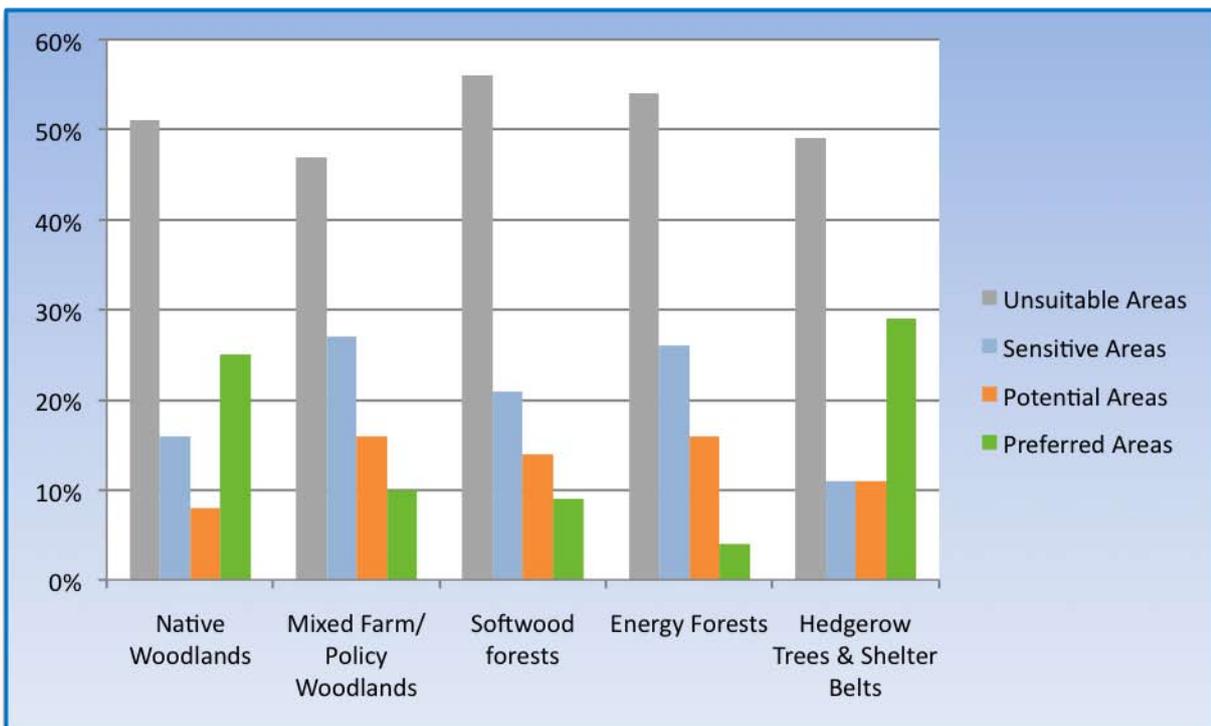
**The Upper Ken / Dee and Fleet Area**



**10.39 Overview and Description of Area;** This area is based on the catchments of the Ken and Dee, upstream from Dalry/New Galloway and Mossdale plus upper sections of the Fleet and Urr (the lower valleys of all of these river systems are included in the Solway Coast and Lower Valleys Area). It includes extensive commercial softwood plantations within upland landscapes, including part of the Galloway Forest Park, Glengap, Laurieston and Carsphairn forests as well as the eastern part of the Merrick granite hills, the Rhinns of Kells and the Glenkens. Principal River Catchments; Upper sections of the Ken, Dee, Fleet and Urr.

**10.40 Existing woodland resource;** There are extensive productive softwood forests within this area, with total woodland cover at 55% (8% of regional total).

Total area 90,825 hectares; woodland cover 50,348ha.



**Potential for New Planting within the Upper Ken / Dee and Fleet Area**

## 10.41 Local Assets

- The Biosphere, Dark Skies Park, Merrick Wild Land core area, Glenkens and Galloway Forest Park.
- The Southern Upland Way.
- Scenic routes including the A714, B7027 and minor moorland roads
- Fishing on the River Ken, Dee, Fleet, Urr and tributaries
- Merrick Kells designated site for open-habitat species

## 10.42 Main Issues

- Surface water acidification, particularly in poorly buffered headwaters
- Contrast between mixed land use and spruce forestry
- Much of the “old style” forests still to be restructured
- Lower quality of land on some agricultural holdings and risk of potential loss of open ground habitats and landscapes
- Key “wild land” areas associated with Biosphere core
- Integration of forests with wind farms

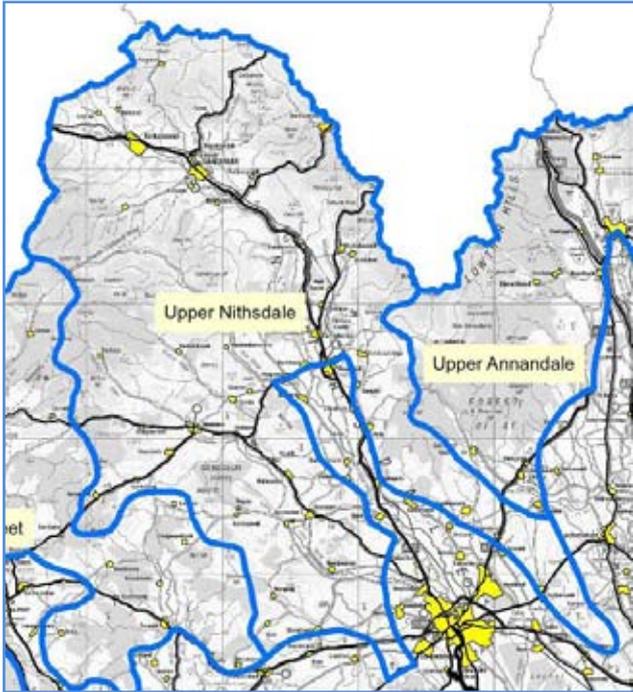
## 10.43 Priorities for Woodland Management

- Visually attractive current mixed land use in some areas and heavily focused towards Spruce Forestry in other usually more upland areas. Restructuring to current UK Forest Standards should address many concerns in areas which are well suited to softwood production
- Focus on opportunities for improving edge of existing plantations for habitat with associated aesthetic benefits - especially within the Biosphere core area
- Existing conifer plantations particularly those in the higher parts of the catchment would benefit from further restructuring and introduction of more open ground and broadleaves, particularly in respect to riparian zones
- Consider further opportunities to reduce the impact of existing extensive conifer areas on the landscape by improving visual appearance and landscape ‘fit’

## 10.44 Priorities for new Woodlands

- Potential planting of Mixed woodlands, Native woodlands, farmland trees and shelterbelts on farms – keeping farming as the main activity
- Opportunities for new native woodlands, particularly where these can enhance the transition from extensive conifer forests to open habitats
- Native and riparian woodlands which help buffer waterbodies from diffuse pollution
- Some opportunities for Softwood Forests where these can be effectively integrated into the already diverse and well structured landscape and land use balance

**The Upper Nithsdale Area**

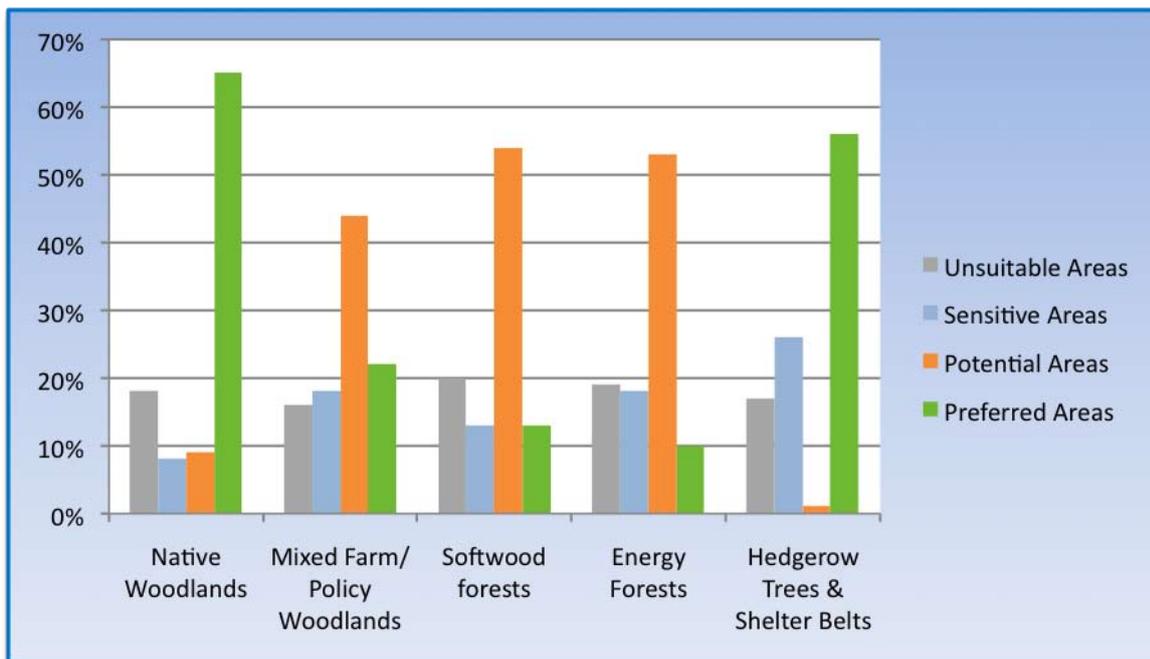


**10.45 Overview and description of Area;** This area is based on the Nith and Scar Water catchments, upstream of Thornhill including the incised valleys of Kello and Euchan Waters. It also includes the Glenkiln valley and Cairn Water to the west. The upper Nith valley is open and exposed with long

views of the surrounding upland peaks and land use which is characterised by improved pastures in the valley bottom, changing to rough pasture on the valley sides. The land is generally less cultivated than lower sections of the valley and the hills less afforested than the Glenkens to the west or Lowther hills to the east. The rounded hills of the Southern Uplands and Lowther Hills around Sanquhar are large in scale and open, providing a stark contrast to the afforested hills around Carsphairn to the west. The series of valleys around Penpont and Moniaive are more enclosed with a complex pattern of land usage which reflects the diversity in topography, soils, aspect and drainage. The fine-grained landscape features and range of historic settlements contribute to a rich variety of landscape character types.

**10.46** The Nith valley to the south of Thornhill is wide and open with a different landscape character, patterns of settlement and land use; it has therefore been included in the Solway Coast and Lower Valleys area.

**10.47 Existing woodland resource;** Extensive productive softwood forests cover parts of this area in contrast to the open hills. Total woodland cover is 24% (3% of regional total). Total area 92,584ha; woodland cover 22,691ha.



**Potential for New Planting within the Upper Nithsdale Area**

## 10.48 Local Assets;

- Biosphere transition zone
- The Southern Upland Way.
- Diverse mixed landscape featuring some extensive open ground habitats including designated sites at Muirkirk & North Lowther Uplands and narrow upland glens. Settlements and tourist destinations including Moniaive, Penpont, Drumlanrig and Wanlockhead
- Hardwood processing facility at Penpont
- Large scale designed landscapes and policy woodlands
- Scenic routes including the A713 and A702
- Fishing on the River Nith and tributaries

## 10.49 Main Issues;

- Erosion and downstream flooding on the Nith and broader issues around water quality
- High value agricultural land, limiting opportunities for woodland expansion in some areas
- Open ground habitat and distinctive landscapes, contrast between visually attractive mixed land use and some less attractive areas of spruce forestry
- Mineral workings and previously restored sites
- Open, exposed and sparsely settled areas seen as 'bleak' and less attractive landscapes

## 10.50 Priorities for Woodland Management;

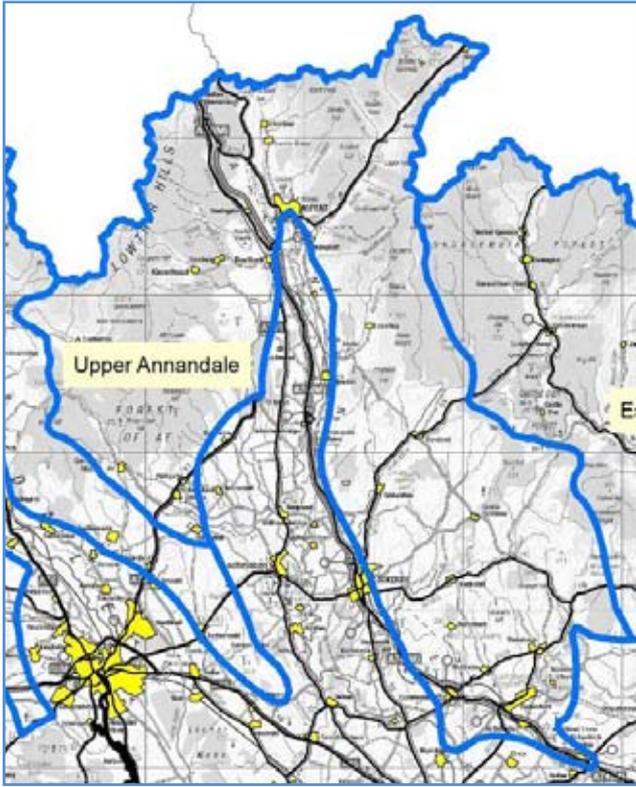
- Focus on opportunities for improving edge of existing plantations for habitat and for aesthetic reasons - especially the transition into areas of high value open ground habitat
- Existing conifer plantations particularly those in the higher parts of the catchment would benefit from further restructuring and introduction of more open ground and broadleaves, particularly in respect to riparian zones

- Visually attractive current mixed land use in some areas and heavily focused towards spruce forestry in other more upland areas. Restructuring should address many concerns in areas which are well suited to softwood production
- Consider further opportunities to reduce the impact of existing extensive conifer areas on the landscape by improving visual appearance and landscape 'fit'

## 10.51 Priorities for new Woodlands;

- Potential for woodland planting within floodplains with potential public access and benefits to water quality or flood alleviation
- Potential planting of mixed woodlands, native woodlands, and farmland trees and shelterbelts on farms – keeping farming as the main activity
- Opportunities for new native woodlands, particularly where these can enhance the transition from extensive conifer forests to open habitats and opportunities to extend riparian woodlands in some of the main valleys and glens – linking with designated sites. Also for new native woodland in parts of the upper catchment area
- Native and riparian woodlands which help buffer waterbodies particularly from pressure from diffuse pollution and NVZ pressures
- Potential to reconnect upper river sections with open hill ground to improve habitat connectivity
- Some opportunities for softwood forests where these can be effectively integrated into the already diverse and well structured landscape and land use balance, and also for appropriate forest and woodland planting on completion of mining activities at large open cast sites
- Opportunities for more shelter belts and/or amenity planting in Upper Nithsdale. Carefully designed planting of suitable woodlands and trees could enhance the "bleak" landscape character of parts of the upper valley

**The Upper Annandale Area**

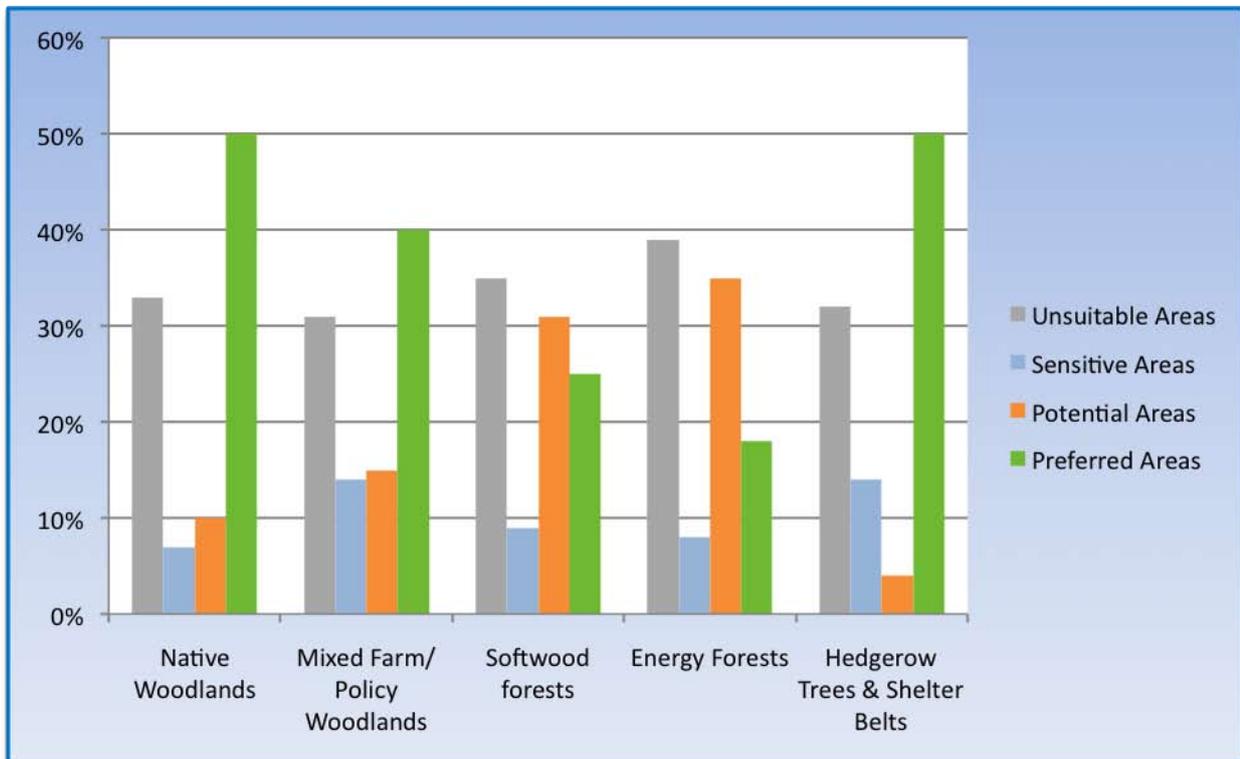


**10.52 Overview and description of Area;**

This area includes the enclosed valleys to the north and east of Moffat, plus the Lowther Hills and Southern Uplands which enclose the valley to the west, north and east. The rounded open forms of the Southern Uplands provide a prominent backdrop to the valleys and offer a striking contrast to the afforested foothills at the Forest of Ae and around Beattock. It also includes the upland fringe and foothills landscapes to the east of Lockerbie and Ecclefechan which are predominantly agricultural landscapes with a range of policy woodlands, shelterbelts and smaller conifer plantations. The area extends to the watershed with the River Esk so includes the deeply incised Dryffe Water valley and western sections of the Castle O’er Forest.

**10.53 Existing woodland resource;**

Recent extensive broadleaf planting at Carrifran and Corehead plus extensive conifer plantations within Castle O’er Forest. Smaller plantations, farm and policy woods within the upland fringe and foothills landscape areas also contribute to a total woodland cover of 39% (4% of regional total). Total area 74,577 ha; woodland cover 29,347ha.



**Potential for New Planting within the Upper Annandale Area**

## 10.54 Local Assets;

- The Southern Upland Way
- Forest of Ae visitors centre and trails
- Tourism destinations at Moffat, Forest of Ae
- Proximity to processing plants and key transport corridors
- Scenic routes including the A701
- Fishing on the River Annan and tributaries
- Moffat Hills designated site for open-habitat species

## 10.55 Main Issues;

- Erosion and downstream flooding and broader issues around water quality
- Close proximity to processing capacity and transport links creates opportunities to maximise new productive woodlands and minimise resultant transport and carbon impacts
- Proximity to biomass plant creates opportunities for energy crops
- Diffuse pollution
- Lack of riparian woodlands
- Contrast between visually attractive mixed land use and areas of spruce forestry
- Integration of forests with wind farms

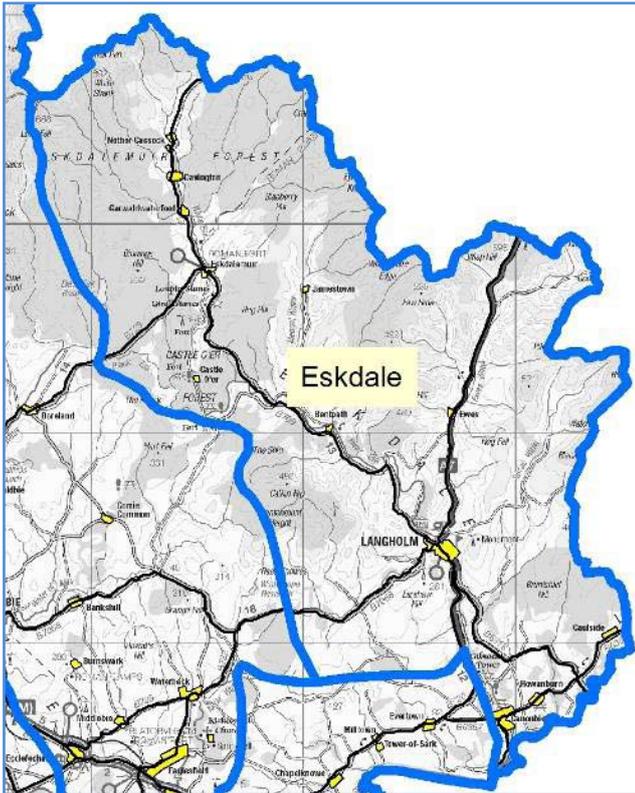
## 10.56 Priorities for Woodland Management;

- Consider opportunities for removing planting which goes too high or doesn't respect local landscape character. Focus on opportunities for improving edge of existing plantations for habitat and aesthetic gain - especially the transition into areas of high elevation
- Area is heavily focused towards spruce forestry. Restructuring should focus on the introduction of more open ground and broadleaves, particularly in respect to riparian zones

## 10.57 Priorities for new Woodlands;

- Potential for woodland planting to contribute to flood mitigation on mid Annan through planting woodland within the floodplain to aid flood interception
- A core timber production area with opportunities for new softwood forests close to timber processors
- There is a lack of good quality riparian woodlands in this area. Significant opportunities for native, mixed and riparian woodland expansion which deliver these objectives and help buffer waterbodies particularly from pressure from diffuse pollution
- Also for potential new native woodland on upper catchments where this can be achieved without compromising landscape character or other environmental interests

## The Eskdale Area

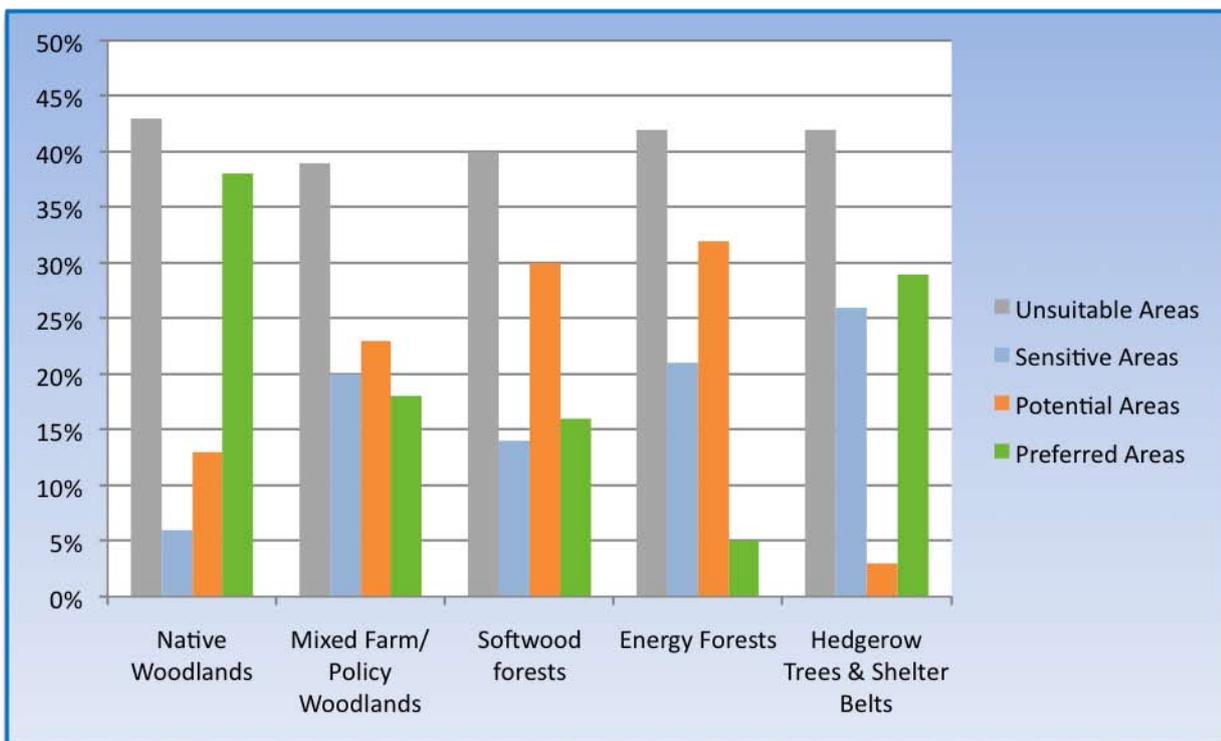


### 10.58 Overview and description of Area;

This area includes the extensively afforested hills which surround the Esk valley to the north of Langholm including sections of Castle O'Er within the Esk catchment. The Esk valley is narrow, frequently steep-sided and enclosed by forestry with agricultural land including improved pastures and occasional riparian or policy woodland within the valley floor. The more open Southern Uplands around Meggat Water and Ewes Water and the upland fringe landscapes south toward the Liddel Water and including Tinnisburn Forest are also included. These valley systems, plus the area around Wauchope Water to the west are characterised by a mix of smaller plantations, policy woodlands and predominantly agricultural land-use.

**10.59 Existing woodland resource;** Extensive conifer plantations within Castle O'Er Forest, Eskdalemuir forest and other outlying areas. Smaller plantations, farm and policy woods within the upland fringe and foothills landscape areas and within agricultural landscapes of the valley bottoms. The proportion of woodland cover is 53% (4% of regional total).

Total area 51,386 ha; woodland cover 27,130ha.



Potential for New Planting within the Eskdale Area

## 10.60 Local Assets;

- Reasonable proximity to processing plants and key transport corridors
- Extensive high value designated open ground habitats
- Scenic routes including the A7 and B709
- Fishing on the River Esk and tributaries
- Langholm-Newcastleton Hills designated site for open-habitat species

## 10.61 Main Issues;

- Open ground habitat and distinctive open landscapes around Meggat Water and to the east and south of Langholm
- Land use balance; significance of open areas of land within landscapes which are predominantly covered by forests
- Much of the “old style” forests still to be restructured
- Lack of good quality native woodland; need for native and riparian woodland development

## 10.62 Priorities for Woodland Management;

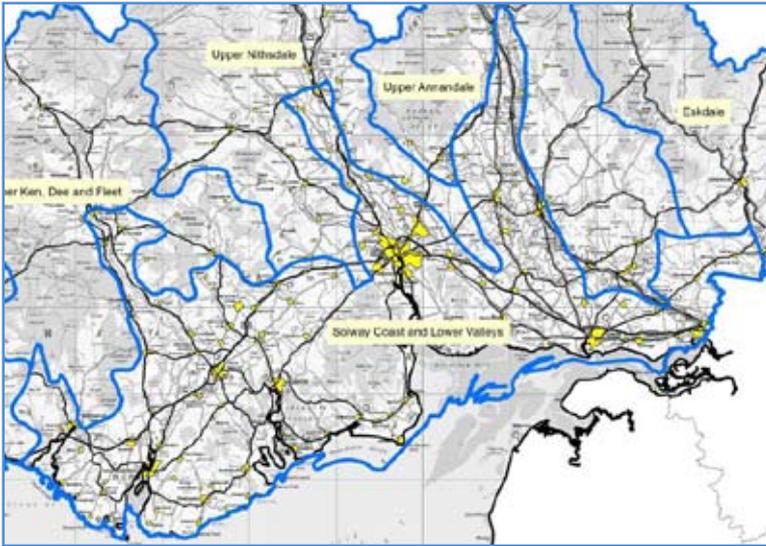
- Some areas of existing plantation go too high and create poor edges to open areas of high natural heritage value, consider opportunities for removing planting which goes too high or doesn't respect local landscape character; focus on opportunities for improving edge of existing plantations for habitat and aesthetic gain - especially the transition into areas of high elevation

- The relative lack of open space within existing forestry increases the value of green open space for recreation, scenic interest and diversity; opportunities should be sought to expand these areas through forest restructuring

## 10.63 Priorities for new Woodlands;

- A core timber production area with opportunities for new softwood forests close to timber processors, but area contains key open ground habitats and important open landscapes and significant fragmentation of these should be avoided
- Potential for new native woodland on upper catchments where this can be achieved without compromising landscape character or other environmental interests
- There is a lack of good quality riparian woodlands in this area. Significant opportunities for native woodland expansion which deliver these objectives
- In lower parts of the catchment, good potential for planting of mixed woodlands, native woodlands, and farmland trees and shelterbelts on farms – keeping farming as the main activity
- Opportunities for woodland planting within floodplains for flood alleviation purposes

## The Solway Coast Area

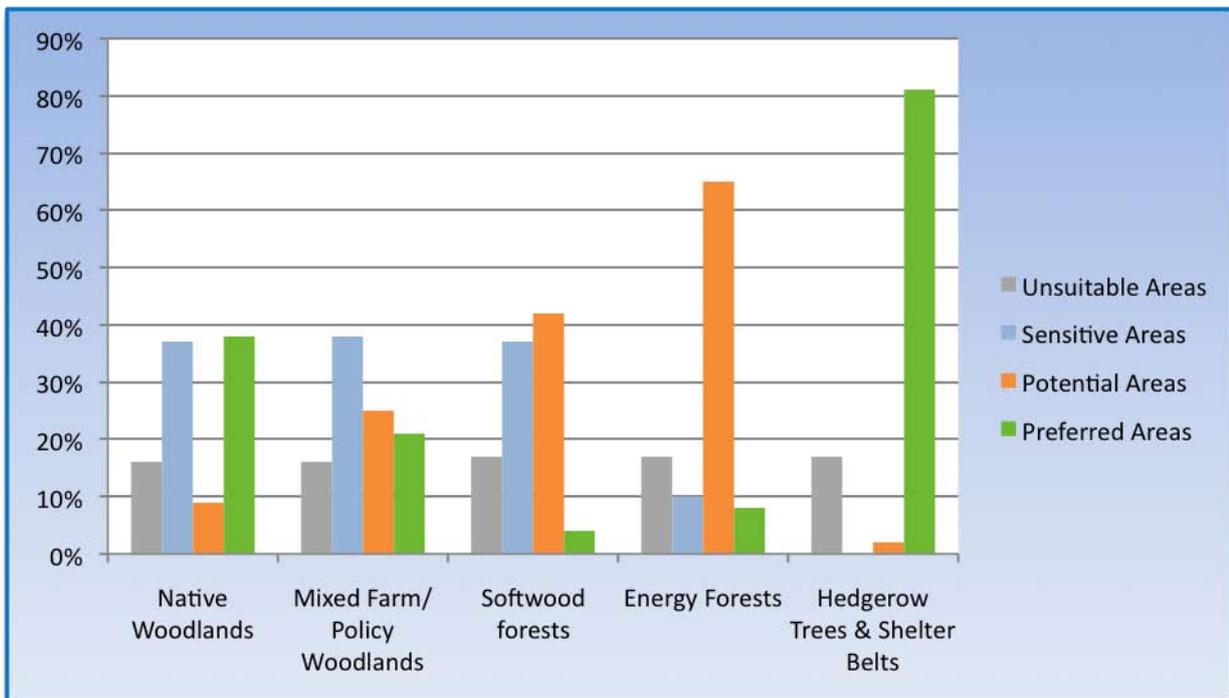


and broad valley systems. The drumlin pastures and peninsula landscapes around the granite uplands are characterised by predominantly agricultural land-use with occasional smaller plantations and a significant number of designed gardens and landscapes which usually incorporate a range of established broadleaf and conifer species.

10.65 The larger settlements of Dumfries, Annan, Castle Douglas and Dalbeattie and the region's three National Scenic Areas are within this area, as are the main valleys around Loch Ken, the River Nith and the River Annan (upper valleys and the upland fringe landscapes around these valleys are included in the other areas).

**10.64 Overview and description of Area;** This extensive and diverse area covers the coastal fringes and valley systems between the Fleet estuary and the upper Solway. It combines lowland landscape character areas which are likely to experience similar forestry and woodland issues, plus the distinctive coastal granite uplands which offer a contrast to the surrounding coastal plains

**10.66 Existing woodland resource;** Small to medium scale softwood forests within the coastal granite uplands plus a wide range of smaller policy, farm and native woodlands dispersed across the area contribute to a total woodland cover of 19% (5% of regional total). Total area 182,248 ha; woodland cover 35,281ha.



Potential for New Planting within the Solway Coast Area

## 10.67 Local Assets;

- Scenic coastlines and estuaries and designated sites for open-habitat species within the Solway Firth
- Biosphere transition zone
- Key tourism and recreation destinations including Kirkcudbright, Castle Douglas, Gatehouse of Fleet, Lochmaben, Loch Ken and the Coastal Granite Uplands
- Proximity to processing capacity and transport links
- Potential import/export of timber via shipping
- Most of the region's population live in this area
- Established broadleaved trees within farm woodlands, hedgerows, shelter belts and designed landscapes with occasional relic native woodlands.
- 'Fishing on the lower sections of the five main rivers'

## 10.68 Main Issues;

- Diffuse pollution from agriculture and urban sources within the Lower Nithsdale NVZ
- High value agricultural land, limiting opportunities for woodland expansion in some areas
- High quality landscapes valued for their scenic diversity, maritime and coastal environments, broad horizons and open character
- Lack of good quality riparian woodland
- Raised moss habitat
- Erosion and flooding on the Nith and other lower catchments and broader issues around water quality

## 10.69 Priorities for Woodland Management;

- Bring more woodlands into effective management, particularly farm woodlands and those close to communities

- Consider opportunities for retaining/enhancing coastal woodlands which can have multiple landscape, recreational and biodiversity benefits. The three NSA's and coastal landscapes within this area are critical to the tourism appeal of the region
- Explore opportunities for restoration and protection of raised moss habitat through appropriate management and removal of existing plantations

## 10.70 Priorities for new Woodlands;

- Potential for woodland planting within floodplains with potential public access and benefits to water quality or flood alleviation
- Opportunity to encourage new farm woodlands which can assist NVZ issues and broader diffuse pollution challenges and help integrate the two productive land uses of forestry and farming
- Whilst areas of high value agricultural land may not be suitable for commercial forestry, they may benefit from farm woodlands, shelter belts or hedgerow tree planting. Agricultural diversity includes wood pastures (e.g. in the Gatehouse of Fleet area). Appropriate management of wood pastures (and veteran trees) and additional new planting can deliver a range of environmental benefits
- Publicly accessible town woods or other small scale woodlands close to towns can contribute to a wide range of commercial, environmental, social and community benefits. Woodlands can also form useful corridors for people as well as wildlife
- Opportunities to plant and manage urban trees, roadside trees and 'green gyms' within main settlements and on key tourism routes
- Designed landscapes, big estates / country houses and policy woods contribute to the area's attractiveness and are valuable to landscape, recreation and amenity. Opportunities exist to enhance and expand these areas through well designed new woodlands

## Dumfries and Galloway Forestry and Woodland Strategy

- There is a lack of good quality riparian woodlands in this area
- New farm woodlands, hedgerow trees and riparian woods could enhance fine-grained landscapes if designed to fit with the existing local landscape character. This includes opportunities for small scale woodlands and scrub and maritime woodland planting along the coastal fringes, balanced with open space and views
- Some opportunities for expansion of good quality small to medium scale softwood forests where the road network is suitable, taking account of public access, tourism and which doesn't affect the special landscape qualities of the NSAs or other highly valued landscapes



## Local Areas; Landscape Character Areas

### The Rhins and Machars;

- LCT 1 'Peninsula' - Rhins and Machars units
- LCT 1a 'Peninsula with Gorsey Knolls' - Monreith and Burrow Head units
- LCT 2 'Coastal Flats' - Stranraer Basin and part of Wigtown Flats unit
- LCT 13 'Drumlin Pastures' - part of Machars unit

### The Cree / Bladnoch Area;

- LCT 2 'Coastal Flats' – Wigtown unit
- LCT 3 'Shallow Flat-bottomed Valley' - Water of Luce
- LCT 4 'Narrow Wooded Valley' - Cree, Palnure and Moneypool units
- LCT11 'Moss and Forest Lowland'
- LCT12 'Drumlin Pastures in Moss and Moorland'
- LCT13 'Drumlin Pastures' - Machars unit
- LCT 16 'Upland Fringe' - Balker Moor and Camrie units
- LCT 17 'Plateau Moorland' and 17a 'Plateau Moorland with Forest'
- LCT 21 'Rugged Granite Uplands'

### The Upper Ken / Dee and Fleet Area;

- LCT 4 'Narrow Wooded Valley'
- LCT 9 'Upper Dale'
- LCT 16 'Upland Fringe' - Balker Moor and Camrie units
- LCT 18 'Foothills' and 18a 'Foothills with Forest'
- LCT 19 'Southern Uplands' and 19a 'Southern Uplands with Forest'
- LCT 21 'Rugged Granite Uplands' and 21a 'Rugged Granite Uplands with Forest'

### The Upper Nithsdale Area;

- LCT 5 'Intimate Pastoral Valley' – Cairn unit
- LCT 9 'Upper Dale' – Upper Nithsdale unit
- LCT10 'Upland Glens' – Scar, Shinnel, Dalwhat, Castlefairn, Mennock and Dalveen units.
- LCT 16 'Upland Fringe' – Ae, Dunscore, Corsock, Torthorwald and Cairn units
- LCT 18a 'Foothills with Forest' – Ae unit and eastern section of the Stroan unit
- LCT 19a 'Southern Uplands with Forest' – eastern section of the Ken unit

### The Upper Annandale Area;

- LCT 5 'Intimate Pastoral Valley' – Dryfe unit
- LCT 9 'Upper Dale' – Upper Nithsdale unit
- LCT10 'Upland Glens' – Evan and Moffat units
- LCT 16 'Upland Fringe' – Ae, Dunscore, Corsock, Torthorwald and Cairn units
- LCT 18 'Foothills' – Beattock unit and western part of the Annandale unit
- LCT 18a 'Foothills with Forest' – Part of the Ae unit
- LCT 19 'Southern Uplands' – eastern section of the Lowther unit, North and East Moffat units
- LCT 19a 'Southern Uplands with Forest' – western section of the Eskdalemuir unit

## The Eskdale Area;

- LCT 4 'Narrow Wooded Valley' – Eskdalemuir and Liddel units
- LCT 5 'Intimate Pastoral Valley' – Pastoral Eskdale unit
- LCT 7 'Middle Dale' – Mid Eskdale and unit
- LCT10 'Upland Glens' – Ewes unit
- LCT 16 'Upland Fringe' – South-eastern part of Annandale unit and Liddesdale unit
- LCT 18 'Foothills' –Eastern part of the Annandale unit
- LCT 18a 'Foothills with Forest' – Oer, Eskdale and Tinnisburn units
- LCT 19 'Southern Uplands' –North and West Langholm and Tarras units
- LCT 19a 'Southern Uplands with Forest' – Eastern section of the Eskdalemuir unit

## The Solway Coast Area;

- LCT 1 'Peninsula' – Dundrennan unit
- LCT 1a 'Peninsula with Gorse Knolls' – Borgue and Rockcliffe units
- LCT 2 'Coastal Flats' – Nith Coastal Fringe and Inner Solway units
- LCT 4 'Narrow Wooded Valley' – Fleet, Urr and Kirtle units
- LCT 5 'Intimate Pastoral Valley' – Pastoral Eskdale unit
- LCT 6 'Lower Dale' – Lower Nithsdale and Lower Annandale units
- LCT 7 'Middle Dale' – Mid Nithsdale and Mid Annandale units
- LCT 8 'Flooded Valley' – Ken Valley unit
- LCT13 'Drumlin Pastures' – Deeside and Milton units
- LCT 14 'Coastal Plateau' – Hoddom and Annandale units
- LCT 15 'Flow Plateau' – Annandale unit
- LCT 20 'Coastal Granite Uplands' – Bengairn and Dalbeattie units



## 11. Appendix A: Abbreviations and Glossary

### Abbreviations:

ASA	Archaeological Sensitive Area
BAP	Biodiversity Action Plan
CO <sub>2</sub>	Carbon dioxide
DGC	Dumfries and Galloway Council
DGFWS	Dumfries and Galloway Forestry and Woodland Strategy
ELC	European Landscape Convention
FC	Forestry Commission (UK)
FCS	Forestry Commission Scotland
FEI	Forest Education Initiative
FTE	Full Time Equivalent jobs
GHG	Green house gases
LCT	Landscape Character Type
LUC	Land Use Consultants
Ha	Hectare(s)
MoD	Ministry of Defence
MtC	Million tonnes of carbon
NNR	National Nature Reserve
NPF	National Planning Framework
NSAs	National Scenic Areas
NVZs	Nitrate Vulnerable Zones
PHIT	Physical Activity Index Tool
RCAHMS	Royal Commission on the Ancient and Historical Monuments of Scotland
RHI	Renewable Heat Incentive
RPID	Rural Payments and Inspections Directorate
SAC	Special Area of Conservation
SE	Scottish Enterprise
SEPA	Scottish Environment Protection Agency
SNH	Scottish Natural Heritage
SPA	Special Protection Area
SPP	Scottish Planning Policy
SRDP	Scottish Rural Development Programme
SRUC	Scotland's Rural College
SSSI	Site of Special Scientific Interest
STTF	Strategic Timber Transport Fund
TTGs	Timber Transport Groups
VOC's	Volatile Organic Compounds
WIAT	Woodlands in and Around Towns
WT	Woodland Trust

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## Glossary:

Accessible Woodland	Access legislation gives a right of access to most woodland. Woodland that has an entrance, a useable path, track or forest road as well as access that is welcoming is considered to be accessible.
Acidification	Acidification of surface water occurs where there are large inputs of acidic pollutants and where catchments have susceptible acid soils and underlying rocks. The primary source of the pollutants comes from the burning of fossil fuels. Forest canopies can significantly enhance the capture of some of these pollutants, leading to increased acidity in stream water in susceptible catchments.
Ancient woodland	Woodland that has been in continuous existence since before 1750 in Scotland
Archaeologically Sensitive Areas (ASA)	In parts of Dumfries and Galloway the archaeological interest is not confined to a particular site but extends over large areas. Two types of ASA are identified; historic settlements and rural areas. Historic settlements cover the core of medieval towns and a number of settlements with distinctive historic character. Rural areas have been identified across the region where factors such as a particular concentration of designated sites, group rarity, or promoted uses such as heritage trails, where setting is likely to be a key consideration. Structure Plan Policy E13 and Local Plan General Policy 55 apply
Biodiversity	'The variety of Living Things' it includes all fungi, plants and animals
Biofuels	Fuel derived directly or indirectly from biomass (recently living organisms or their metabolic by-products). It is a renewable energy, unlike other natural resources such as petroleum, coal and nuclear fuels. Includes ethanol, biodiesel, and methanol.
Biomass	Biomass is a renewable energy resource and is a biological material from living, or recently living organisms. As an energy source, biomass can either be used directly, or converted into other energy products such as biofuel.
Carbon sequestration	Provision of long-term storage of carbon (in this case in trees, vegetation and soils).
Clear felling	Cutting down all, or most, trees in an area
Climate Change	A process of changes to weather patterns and temperatures largely caused by the emission of certain 'greenhouse gases' from the earth, principally associated with the burning of fossil fuels
Core path network	Arising from the Land Reform (Scotland) Act 2003, local authorities have a statutory requirement to produce a Core Path Plan by February 2008. Comprises a mixture of existing and new paths which link together to form an overall paths network which caters for all types of user.
Critical load	Maximum load of a pollutant that a given ecosystem can tolerate without suffering adverse effects.
Ecosystem	Functional unit consisting of all living organisms (plants, animals, and microbes) in a given area, and all the non-living physical and chemical factors of their environment, linked together through nutrient cycling and energy flow.
Forest	Usually applied to a large area of woodland of varied ages and tree species.
Forestry	The practice of all aspects of tree management, including forests, woodland management, arboriculture, urban forestry and environmental forestry and research, education and training in these fields.

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Forest habitat network	Restoration of connections between woodland habitats to alleviate the adverse effects of fragmentation and reduced habitat size. Many species will benefit from the reduced isolation afforded by these restored connections.
Fuel poverty	When a household needs to spend more than 10% of its income on fuel to maintain a satisfactory heating regime. Main causes of fuel poverty in the UK are a combination of low incomes and poor energy efficiency.
Geodiversity	Natural diversity of geological, landform and soil features and processes.
Green Network	Functionally connected greenspaces
Greenspace	Any vegetated land, or water, in, or adjoining, an urban area. Can include: derelict, vacant and contaminated land that has potential to be transformed; natural and semi-natural habitats; green corridors – paths, disused railway lines, rivers and canals; amenity grasslands, parks and gardens; outdoor sports facilities, playing fields and childrens’ play areas; other functional greenspaces eg, cemeteries and allotments; and countryside immediately adjoining a town/village that people can access from their homes.
Hardwood	Timber from broadleaved trees such as oak, ash, birch, beech, sycamore etc.
Hectare (ha)	Unit of land equal to 100 metres x 100 metres (or 2.47 acres)
Historic environment	Historic Environment is defined within the Scottish Historic Environment Policy. Includes scheduled monuments and other significant archaeological sites and landscapes, listed buildings, conservation areas, historic gardens and designed landscapes and any other features of national and regional importance which are likely to be included
Indicative Forestry Strategy	Local authority strategy for forestry in its area.
Inventory	A battlefield is defined in the Inventory as an area of land over which a battle was fought or significant activities relating to a battle occurred. a battle is a combative engagement involving wholly or largely military forces that had the aim of inflicting lethal force against an opposing force.
Battlefield	<p>A battlefield is of national importance if it makes a contribution to the understanding of the archaeology and history of the nation as a whole, or has the potential to do so, or holds a particularly significant place in the national consciousness.</p> <p>For a battlefield to be included in the Inventory, it must be considered to be of national importance <b>either</b> for its association with key historical events or figures; <b>or</b> for the physical remains and/or archaeological potential it contains; <b>or</b> for its landscape context. In addition, it must be possible to define the site on a modern map with a reasonable degree of accuracy.</p> <p>Battlefields that cannot be located accurately on the basis of present knowledge are not included in the Inventory even though they may meet other criteria. The full criteria for selecting battlefields for the Inventory are set out in Scottish Historic Environment Policy (SHEP) 2009, Annex 5.</p>
Low impact forest management	Sometimes referred to as lower impact silvicultural systems. They retain permanent woodland appearance, with felling carried out at a more intimate scale and with a preference for natural regeneration rather than planting.
Morphology	The branch of biology dealing with the form and structure of organisms

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National Scenic Areas (NSA)	An area designated by the Countryside Commission for Scotland (predecessor of SNH) as of national scenic importance due to highly valued landscapes needing special care
National Nature Reserve (NNR)	Areas considered to be of national importance for their nature conservation interest which are managed as nature reserves. They may either be owned or leased by SNH or managed by the owners and occupiers under a Nature Reserve Agreement.
Native woodland	Woodland consisting of native species, either broadleaved or conifer, such as Scots pine, birch, oak and ash. Excludes beech, sycamore and most conifers. Supports a complex native fauna and is an important component of some of our best and most characteristic landscapes.
Natura 2000	Under the EU Habitats Directive, SPAs, SACs are together intended to form a European-wide network of protected areas designed to maintain or restore the distribution and abundance of species and habitats of EU interest. Many areas qualify for both SPA and SAC designation and as a matter of Government policy sites designated under the Ramsar Convention are afforded the same level of protection.
Nitrate-vulnerable zones (NVZ)	EU Nitrates Directive designation. Applies to areas that drain into waters that have been identified as being polluted, or which could be polluted, by excessive nitrate contamination. Usually associated with areas of intensive agriculture. In Dumfries and Galloway at present there is one designated NVZ in Lower Nithsdale. A map of the designated area can be found at; <a href="http://www.scotland.gov.uk/Topics/farmingrural/Agriculture/Environment/NVZintro/LowerNithsdaleNVZmap">http://www.scotland.gov.uk/Topics/farmingrural/Agriculture/Environment/NVZintro/LowerNithsdaleNVZmap</a>
Non-timber products	Forest derived edible goods, herbal medicines, decorative goods, pharmaceuticals and cosmetics/aromatics.
Pasture woodland	Usually ancient woodland, typically comprised of scattered trees, where seasonal grazing restricted woodland regeneration to a few individual trees, clumps or patches of scrub.
Plantation	Woodland where the current trees have been planted. Often includes naturally regenerating trees. Includes former semi-natural woodlands that have been replanted.
Prime Agricultural Land	Land of Classes 1, 2 and 3.1 in the land capability for agriculture developed by the Macaulay Land Use Research Institute
Ramsar sites	Wetlands of international importance designated under the Ramsar Convention 1971, which requires signatory countries to protect international important wetlands, especially those used by migratory water birds, and to use wetlands wisely
Renewable Energy	Collective term for energy flows that occur naturally and repeatedly in the environment. It includes energy derived from wind; by the sun, such as solar hot water, and solar electric (photo-voltaic); hydro power; wave; tidal; biomass; biofuels; and from geothermal sources, such as ground source heat pumps. Energy from waste is not regarded as a renewable energy source as it is not capable of being renewed by the natural ecological system
Restructuring	Phased redesign of the age and species composition of plantations so that they become structurally more diverse forests or woodlands.

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Rights of way	Routes along which the public have a right of passage. Must have been used by the public for at least 20 years, must connect two places and must follow a more or less defined route.
Riparian	Relating to or situated on the banks of a river
Rotation	Life cycle of a plantation from planting to felling, followed by replanting. Typical conifer plantations have a rotation of between 35 and 60 years
Semi-natural Woodland	Almost all vegetation in Scotland has been modified to some extent by human activities (most often through the management of grazing animals). That vegetation which has been least disturbed can be described as semi-natural. It contains only natural species, has arisen spontaneously (as opposed to being planted) and is generally a long established, complex ecosystem (eg, heather moorland or birch woodlands). Where a semi-natural woodland is on a site which ecologists believe to have never been completely cleared, then it is termed an 'ancient semi-natural woodland'.
Short rotation coppice	Energy crop that usually consists of densely planted, high yielding varieties of poplar or willow. Stems are usually harvested every 3 to 5 years and the coppice stools (stumps) remain productive for up to 30 years.
Short rotation forestry	Trees grown on a rotation of between 8 and 20 years
Silviculture	Techniques of tending, regenerating and harvesting woodlands.
Site of Special Scientific Interest (SSSI)	Key areas of marine or terrestrial conservation and wildlife importance. They are special for the nature conservation value of the plants, animals, habitats or rock formations that they contain. SSSIs are designated by SNH under the provisions of the Wildlife and Countryside Act 1981
Softwood	Timber from conifer tree species such as Sitka spruce, Douglas fir, Scots pine, larch, etc.
Special Areas of Conservation (SAC)	A European wide network of important sites containing rare or endangered species and habitats designated under the terms of the EC Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna. (The Habitats Directive)
Special Protection Areas (SPA)	Designated under the terms of the 1979 EC Directive on the Conservation of Wild Birds. These areas are specifically protected for their ornithological importance. Together SACs and SPAs form the Natura sites
Sustainable Development	Development which maintains or improves the quality of life of the present generation while conserving the environment and resources to meet the needs of future generations

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Sustainable forest management	<p>The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfill, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems.</p> <p>In simpler terms, the concept can be described as the attainment of balance – balance between society’s increasing demands for forest products and benefits, and the preservation of forest health and diversity. This balance is critical to the survival of forests, and to the prosperity of forest-dependent communities.</p>
Urban forests	Trees in and around built-up areas
Water Environment	Refers to a number of factors such as wetlands, surface waters and ground waters
Wood/Woodland	Often describes a smaller area of trees.



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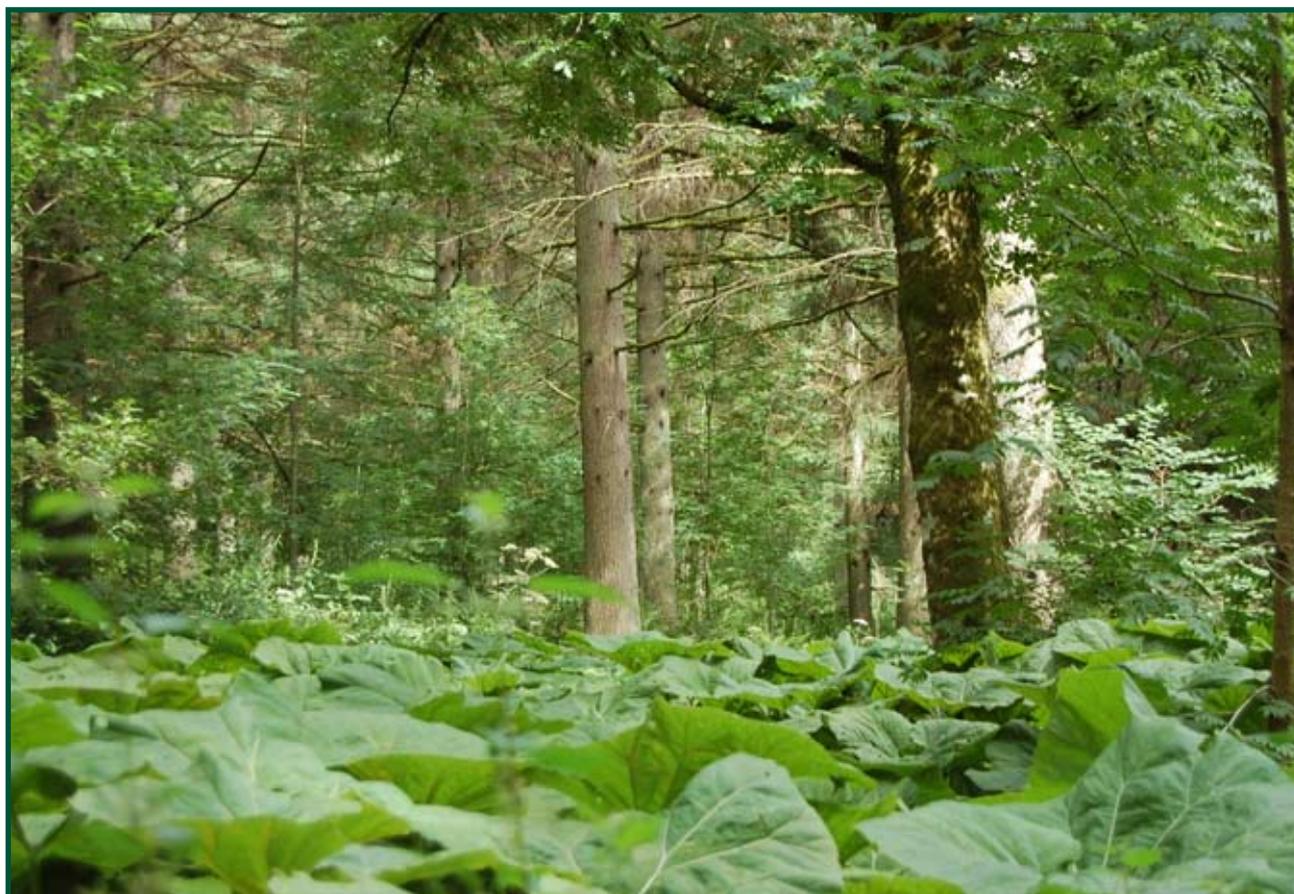
## 11. Appendix B: Opportunities for Woodland Expansion

### – Selecting a Suitable Woodland Typology

The 16 strategic constraints were 'weighted' to determine whether areas should be considered as preferred, potential or sensitive planting sites, based on the relative significance of the constraints. Constraints are grouped as follows:

1. **'Primary constraints'**; areas of high sensitivity to a particular type of planting where new planting is unlikely to be supported. Areas with one or more primary constraint are called 'Sensitive Areas' on the mapping.
2. **'Secondary constraints'**; sites with one or more secondary constraint are more likely to be suitable for planting but have specific constraints; these areas are classified as 'potential' areas for planting.
3. **'Tertiary constraints'**; sites with a tertiary constraint or no constraints to a particular typology are referred to as 'preferred' areas for planting. Where three or more tertiary constraints overlap, the area would be considered as a 'potential' planting site because of the range of potential constraints or sensitivities involved.

Details of the data used and the weighting process for each woodland typology are set out in the following tables.



**Opportunities for Woodland Expansion – ‘Weighting’ of Strategic Constraints Data**

Constraints	Woodland Typology					
	Native Woodlands	Mixed Farm / Policy Woodlands	Softwood Forests	Energy Forests	Hedgerow Trees / Shelter Belts	
<p>‘Primary constraints’ – shown as ‘P’,</p> <p>‘Secondary constraints’ – shown as ‘S’,</p>	<p>‘Tertiary constraints’ – shown as ‘T’, (3 or more tertiary constraints are considered a ‘secondary’ constraint)</p> <p>Not Applicable to this typology – shown as a dash</p>					
1. Archaeologically Sensitive Areas.	S	S	P	P	S	
2. Areas of deep peat.	P	P	P	P	-	
3. Areas sensitive to surface water acidification or soil acidity	-	-	P	-	-	
4. Complex fine-grained landscape character areas	-	-	S	S	-	
5. Designated environmental sites (Ramsar, SAC, SPA, NNR, SSSI)	S	P	P	P	S	
6. Inventory Designed Landscapes	S	S	P	P	-	
7. Land technically unsuitable for planting or commercial forestry	-	-	P	P	-	
8. Landscape Character Areas where openness and exposure are key characteristics	T	T	S	S	-	

Constraints (cont.)	Woodland Typology					
	Native Woodlands	Mixed Farm / Policy Woodlands	Softwood Forests	Energy Forests	Hedgerow Trees / Shelter Belts	
'Primary constraints' – shown as 'P'	'Secondary constraints' – shown as 'S'	'Tertiary constraints' – shown as 'T' (3 or more tertiary constraints are considered a 'secondary' constraint)				Not Applicable to this typology – shown as a dash
9. Landscape Character Areas which are generally unsuitable for hedgerow trees/shelterbelts	-	-	-	-	P	
10. Local wildlife Sites and other important areas for open habitat/species (UK BAP Priorities)	T	S	S	S	T	
11. Marginal land for planting commercial forestry due to relatively poor ground conditions	-	-	S	S	-	
12. Merrick Core Wild Land area	S	P	P	P	P	
13. Non-inventory Designed Landscapes	S	S	S	S	-	
14. National Scenic Area (NSA)	S	S	S	S	T	
15. Prime agricultural land	P	P	P	T	-	
16. Regional Scenic Area (RSA)	T	S	S	S	T	

## Opportunities for Woodland Expansion

### – Data Sources and notes on why they were selected and how they have been used.

No.	Data	Original Source	Notes
1	Archaeologically Sensitive Areas	DGC data	Areas designated for the concentration of historic features are likely to be highly sensitive to commercial forestry. These areas are considered to be a primary constraint to softwood and energy forests because of the likely extent and nature of potential works involved. However, any planting can impact on the historic landscape and specific features so this is considered a secondary constraint to all other forms of planting.
2	Areas of deep peat	Taken as areas with a depth of greater than 0.5m; JHI data	Areas of deep peat are likely to be highly sensitive to all forms of tree planting and are considered as a primary constraint.  Data from the John Hutton Institute combines several different peat surveys. The combined layer is the peat depth taking account of the actual average depth from measurements where it exists, along with the depth associated with the specific peat type. All peat areas that are identified as being >0.5m were identified to create a layer that is indicative of deep peat.
3	Areas sensitive to surface water acidification	FCS data; 'Galloway Catchment Risk Map'	Potential constraint includes rivers, lochs and sub-catchment areas whose status is described as; 'failing' and 'at risk'. These are identified as a primary constraint to softwood forests.
4	Complex fine-grained landscape character areas	Dumfries and Galloway Landscape Assessment; LUC/SNH/DGC 1998 Based on the following Landscape Character Types; <ul style="list-style-type: none"> <li>o LCT 2 Coastal Flats,</li> <li>o LCT 3, 4, 5 – Shallow Flat Bottomed, Narrow Wooded and Intimate Pastoral Valleys</li> <li>o LCT 7 Middle Dale,</li> <li>o LCT 11 Moss and Forest Lowland</li> <li>o LCT 13 Drumlin Pastures</li> </ul>	These landscapes are fine-grained with smaller scale often complex arrangements of landscape features. Views within these areas often focus on local features such as dykes, burns, rocky knolls or planting, with occasional framed views of more distant elements such as the coastal granite uplands or looking down the minor estuaries to the Solway. The potential nature and scale of any new planting will depend upon its relationship with the local landscape features and character. These areas are identified as a secondary constraint to commercial softwood and energy forests because of the likely extent and nature of potential works involved.  Further design guidance and details of landscape sensitivity are included in the 'Landscape Design Guidance for Forests and Woodlands in Dumfries and Galloway (Nov 1998, DGC/FCS/SNH).

5	Internationally or nationally designated sites	Ramsar, SAC, SPA, NNR and SSSI sites; DGC data	Areas designated as habitat or for their value to specific protected species are likely to be highly sensitive to commercial forestry. These areas are considered to be a primary constraint to softwood and energy forests but also a secondary constraint to all other forms of planting. The nature of this constraint will depend on the conservation objectives behind the designation (eg open ground habitat for Hen Harries may not be suitable for any new planting).
6	Inventory Designed Landscapes	An Inventory of Gardens and Designed Landscapes in Scotland' LUC/CCS/DGC, 1987	Established patterns of tree planting and open spaces can be key elements of historic designed landscapes. Designed landscapes which are identified as being of national importance are highly sensitive to commercial forestry and are considered a primary constraint for softwood and energy forests. Planting farm-scale mixed or native woodlands could also impact on these landscapes and this is identified as a secondary constraint for these typologies. Hedgerow trees and shelter belt planting may be appropriate but will need to take account of the qualifying features of the designed landscape.
7	Land technically unsuitable for commercial forestry	Based on Class F7 land; FCS / John Hutton Institute (JHI) data	These areas are considered unsuitable for planting commercial softwood and energy forests due to poor growing conditions but may be able to accommodate appropriate native woodland.
8	Landscape Character Areas where openness and exposure are key characteristics	Dumfries and Galloway Landscape Assessment LUC/SNH/DGC 1998 Based on the following Landscape Character Types; <ul style="list-style-type: none"> <li>o 1 Peninsula,</li> <li>o 2 Coastal Flats,</li> <li>o 17 Plateau Moorland,</li> <li>o 19 Southern Uplands,</li> <li>o 20 Coastal Granite Uplands</li> <li>o 21 Rugged Granite Uplands</li> </ul>	<p>These landscape types are defined by their open and exposed character. Experience of these areas is frequently based on long views across the Solway, the Irish Sea or across upland areas from raised viewpoints. These areas are identified as a secondary constraint to commercial softwood and energy forests because of the likely extent and nature of potential works involved.</p> <p>There is an increased level of sensitivity within these areas to planting native or mixed/policy woodlands and the DGLA should be referred to for further details and guidance on potential design (expanded in the 'Landscape Design Guidance for Forests and Woodlands in Dumfries and Galloway').</p>

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9	<p>Landscape Character Areas which are generally unsuitable for hedgerows and shelterbelts</p>	<p>Dumfries and Galloway Landscape Assessment LUC/SNH/DGC 1998 Based on the following Landscape Character Types;</p> <ul style="list-style-type: none"> <li>o 17 Plateau Moorland,</li> <li>o 19 Southern Uplands,</li> <li>o 21 Rugged Granite Uplands</li> </ul>	<p>This potential constraint is applied only to the hedgerow trees and Shelterbelts typology.</p> <p>The region's more exposed and rugged upland areas are unlikely to be suitable for hedgerow or shelterbelt planting due to landscape character, land-use as well as physical growing conditions. Within these areas, there may be scope for other forms of planting such as riparian or native woodland in more sheltered areas or where potential planting would not compromise the open character of the local landscape (refer to the DGLA for details).</p>
10	<p>Local Wildlife sites and other areas of open habitat for key bird species</p>	<p>Local Wildlife Sites; DGC data.  Open habitat / UK BAP Priority bird species based on SNH/RSPB data</p>	<p>Open habitat was mapped using data for key bird species. 'High' sensitivity areas and Local Wildlife Sites are identified as a secondary constraint for all commercial planting (farm/mixed woodlands, softwood and energy forests) because of the sensitivity of open habitats to planting. These areas are also considered as a tertiary constraint to the other typologies because potential impacts on the habitat/key species will need to be considered in any new planting scheme.</p>
11	<p>Marginal land for planting commercial forestry</p>	<p>Based on Class F6 land; FCS / John Hutton Institute (JHI) data</p>	<p>Areas with marginal suitability for planting commercial softwood or energy forests due to relatively poor ground conditions are not included in preferred areas.</p>
12	<p>Merrick core wild land area</p>	<p>Based on data from SNH identifying Scotland's wild land areas</p>	<p>This remote, open and exposed upland area is highly valued as a recreational resource and for its open ground habitat. It is highly sensitive to planting and is considered as a primary constraint to all typologies. The only potential exception is native woodlands since there may be some capacity for planting appropriate species to enhance or restore habitat and/or local landscape character.</p>
13	<p>Non-inventory Designed Landscapes</p>	<p>'List of Non-inventory Gardens and Designed Landscapes in Dumfries and Galloway Region' DGC / SNH / Garden History Society 1994</p>	<p>Established patterns of tree planting and open spaces can be key elements of historic designed landscapes. Designed landscapes which are identified as being of regional importance may be sensitive to new planting and this is identified as a secondary constraint for all typologies except hedgerow tree and shelter belt planting (though even this typology will need to take account of the qualifying features of the designed landscape).</p>
14	<p>National Scenic Areas (NSA)</p>	<p>DGC</p>	<p>NSAs are highly valued for the rich and diverse range of local landscapes. Trees and woodlands are important elements within these areas as is the balance between open land and woodland. The NSAs are potentially sensitive to any new planting, so the NSAs are considered to be a secondary constraint to all typologies (with the exception of hedgerow and shelter belts which could be accommodated if carefully designed and specified).</p>

15	Prime agricultural land	Based on land capability for agriculture Classes F1, 2 and 3; FCS / JHI data	Areas of high quality land are likely to be suitable for growing food crops, other field crops or for livestock and are a valuable resource. They are therefore considered as a primary constraint for all woodland typologies with the exception of energy forests, hedgerow and shelter belts.
16	Regional Scenic Area (RSA)	DGC	RSAs are valued for the rich and diverse range of local landscapes. Trees and woodlands can be important elements within these areas as is the balance between open land and woodland. The RSAs are potentially sensitive to new planting (depending on the rationale for designation) and are considered to be a secondary constraint to for farm/mixed woodlands, softwood and energy forests. Native woodlands, hedgerow trees and shelter belt planting may be appropriate but will need to take account of the qualifying features of the particular RSA designation.
<b>Other Data;</b>			
17	Native Woodland Survey	FCS website	Used to plot existing woodland cover
18	National Forest Inventory	FCS website	Used to plot existing woodland cover
	Potential Native Woodland Networks	'Core Woodlands and Target Areas FCS website	Used for comparative purposes – not mapped as potential constraints
	Main tourist routes / corridors	DGC	Used for reference rather than as a potential constraint
	Woodlands in and around towns (WIAT)	FCS	Used for reference rather than as a potential constraint