# Glasgow and the Clyde Valley Strategic Development Plan

## Proposed Plan

Background Report 09

## Forestry and Woodland Framework

October 2011

09

# Glasgow and Clyde Valley Forestry and Woodland Strategy

**Prepared for Glasgow and Clyde Valley Strategic Development Planning Authority**
**by**
**Land Use Consultants**

**October 2011**

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# 1 Introduction

## PURPOSE

1.1 The Forestry and Woodland Strategy (FWS) was developed to support the **Glasgow and Clyde Valley Strategic Development Plan**. It is intended to guide woodland expansion and management, providing a policy and spatial framework to maximise the contribution of woodland and forestry to the people, economy and environment of the region.

## ORIGINS

1.2 Glasgow and the Clyde Valley (GCV) has a long history of planning for woodland and forestry, and the FWS is the latest step in this process. It builds on, and replaces, the existing Forestry and Woodland Framework, prepared in 2005 to support the GCV Structure Plan.

1.3 The FWS has been developed in accordance with the policies and principles of the **Scottish Forestry Strategy**, and draws on the latest Scottish Government / Forestry Commission Scotland advice, set out in ***'The Right Tree in the Right Place: planning for forestry and woodland.'***

1.4 'Green network thinking' is critical to the FWS, and it is anticipated that it make an important contribution to achieving the goals of the GCV and Central Scotland Green Networks. Funding for woodland creation and management should be seen as a key part of the 'green network toolkit' and a major opportunity for urban and rural areas alike.

## LIFESPAN

1.5 In common with the SDP, the FWS looks around 40 years ahead. Woodland creation and management are intrinsically long term activities, which require suitably long term planning to make an effective contribution. Securing green networks and the multiple benefits woodland can convey needs a vision that works in parallel with the aspirations for economic and social development. It is anticipated that the core strategy will be updated with each iteration of the SDP, on a five-yearly cycle.

1.6 To facilitate implementation, the Strategic Priorities of the FWS are translated into key actions to be pursued by partners in the city-region's development. The resulting Action Plan will be updated more frequently to keep up with changing local priorities as objectives are met and to support emerging initiatives.

## IMPLEMENTATION

1.7 The FWS will be used by Forestry Commission Scotland and local authorities in assessing applications for grant support for woodland creation and management in support of the existing regulatory and environmental protection processes.

1.8 Key actions will be taken forward by identified partners, and progress will be monitored to ensure the FWS remains relevant and effective.

## USING THE STRATEGY

1.9 The Strategy is intended to be accessible and useful for everyone with an interest in woodland and forestry issues. It highlights the important contribution that trees and woodlands can make to a wide range of economic, social and environmental policy agendas. It provides the framework that will guide the area's contribution to national targets for woodland expansion and, equally importantly, encourages positive management and enhancement of our existing woods and forests.

### Local authorities

1.10 It is anticipated that local authorities will make use of the Strategy, and the attendant spatial data, in responding to consultations on woodland creation proposals. The Strategy is also intended to provide a regional guidance framework which informs the Strategic Development Plan and provides a starting point for more detailed Local Development Plan policies, planning guidance and development management decisions. It provides one way in which local authorities can ensure that new development makes a positive contribution to development of the Green Network.

### Forestry Commission Scotland

1.11 FCS will require land managers seeking grants for woodland expansion or management to develop their proposals in line with this Strategy, ensuring that they are suitable for the environments, constraints and opportunities of the area.

### Woodland managers and developers

1.12 The Strategy provides a clear vision for how the woodland resource and forest-based economy in the region should develop over the coming 40 years. The priorities established in Part B provide clear guidance on what type of woodland management and creation schemes will be supported, and where, giving agents and landowners a degree of certainty in applying for support.

### Communities

1.13 The Strategy provides communities with a useful insight into the key issues, and the likely patterns of woodland management they are likely to see in their area. It also sets out the range of social, environmental and economic benefits that the partners expect woodland and forestry to deliver to local people.

1.14 The region's woodlands are a major resource for its people, providing high quality environments, opportunities for employment and education, and a largely untapped sustainable energy reserve. They also provide a range of less tangible benefits, known as 'ecosystem services' – such as clean air, flood attenuation and carbon storage – which contribute to everyone's wellbeing.

# 2 Policy context

2.1 A number of elements of Scottish Government legislation and guidance are relevant to the FWS. These are described in the following sections.

## The Scottish Forestry Strategy

2.2 The Scottish Forestry Strategy (SFS) sets out Ministers' aspirations for Scotland's woodland resource, highlighting key themes, issues and policies for expansion and management.

2.3 The SFS vision is as follows:

2.4 By the second half of this century, people are benefiting widely from Scotland's trees, woodlands and forests, actively engaging with and looking after them for the use and enjoyment of generations to come. The forestry resource has become a central part of our culture, economy and environment.

2.1 Building on the Scottish Government's five strategic objectives, the SFS established the vision for Scotland's woodlands and identified the following seven themes to help achieve the vision:

- Helping Scotland mitigate and adapt to climate change
- Getting the most from Scotland's **timber** resource
- Supporting sustainable economic growth through the **business development** of the Scottish woodland sector
- Supporting **community development** to improve quality of life and wellbeing
- Improving **access** to woodlands, to help improve the **health** of the nation
- Protecting **environmental quality** of our natural resources, including water, soil, air, landscape and historic environment
- Helping to conserve and enhance Scotland's **biodiversity.**

2.2 The SFS sets a target of increasing Scotland's woodland cover to 25% by the second half of the century[1]

2.3 The policies of the SFS are supported by the current suite of Forestry Commission guidance and the UK Forestry Standard (UKFS) and the UK Woodland Assurance Standard (UKWAS). These policies should ensure best practice in woodland design and management. Meeting these policies is a requirement of grant assistance.

2.4 The Scottish Forestry Strategy set the context for a number of policy documents and initiatives which expand upon the role of woodland and forestry in meeting a broad range of objectives. The Woodlands in and around Towns (WIAT) initiative is delivered as part of the Scottish Rural Development Programme, it aims to improve and regenerate woodland close

[1] Further developed in the Scottish Government Rationale for Woodland Expansion (FCS, 2009) http://www.forestry.gov.uk/pdf/ForestExpansion.pdf/$FILE/ForestExpansion.pdf

to where people live and work. The Forestry for People Challenge Fund has also been established to help local groups realise the potential that Forestry can make to health, learning and strengthening of communities.

2.5 Scottish Government guidance '**The Right Tree in the Right Place – Planning for Forestry and Woodlands**' sets the current context for the production of indicative forestry strategies.

## National Planning Framework

2.6 The second iteration of the National Planning Framework (NPF) sets out the Scottish Government's vision for sustainable economic development, providing a strong spatial framework into which the emerging generation of Strategic and Local Development Plans nest.

2.7 The NPF supports the objectives of the SFS, emphasises the need to proactively plan for woodland expansion and confirms the protection that should be given to existing woodland.

## Central Scotland Green Network

2.8 The NPF also affords 'National Development' status to the development of the Central Scotland Green Network (CSGN), the most ambitious environmental enhancement project of its type in Europe.

2.9 Inclusion of CSGN as a National Development provides a major opportunity to build high quality, multi-objective woodland management and expansion into the region's planning policy framework – as NPF policies must be reflected in the relevant Strategic and Local Development Plans. NPF states that CSGN

2.10 …offers the opportunity to effect a step change in environmental quality, woodland cover and recreational opportunities. It will make Central Scotland a more attractive place to live and do business, help to absorb $C0_2$ and promote healthier more active lifestyles.

2.11 The CSGN Prospectus defines a series of high level objectives:

- It will make Central Scotland a more **prosperous and competitive** place.
- It will promote **health and well-being**.
- It will make Central Scotland a more **attractive and distinctive** place to live.
- It will **enhance the nature and landscapes** of Central Scotland, and support the Government's objectives for a greener Scotland.
- It will make a major contribution to Scotland's efforts to **mitigate and adapt to climate change**.

2.12 There is an aspiration to increase the area of woodland within the CSGN area by 50% by the middle of the century.

## Planning policy

2.13 The Scottish Planning Policy (SPP) sets out the Scottish Government's national level policy on the purpose, practice and core principles of spatial planning. It also provides concise guidance on key policy themes.

2.14 The Town and Country Planning (Scotland) Act 1997, as amended, which requires planning authorities to ensure that development includes conservation or planting of trees.

## The Climate Change (Scotland) Act 2009

2.15 The Climate Change (Scotland) Act 2009 ('the 2009 Act') sets ambitious targets for reductions in carbon emissions and establishes the duty for Ministers to produce a Land Use Strategy[2] and conveys the power to modify the functions of the Forestry Commissioners to facilitate efforts to adapt to and mitigate climate change.

2.16 The 2009 Act also establishes the legal framework for emissions reductions by 2050. While the FWS can play only a very limited role in achieving these targets, it is important to acknowledge the reliance of the forestry sector – in common with all land-based industries – on the use of fossil fuels. Of particularly importance will be issues of improving the sustainability of timber transport and forest operations reliant on the use of heavy machinery.

2.17 The FWS Action Plan will include provisions to support the reduction of emissions from the sector as a whole.

## Climate change Adaptation Framework

2.18 Scotland's **Climate Change Adaptation Framework** sets out the key actions for the sector in responding to climate change, including[3]:

- Understanding the consequences of a changing climate:
- Commissioning research and modelling to develop risk management plans for disease, pests and weather threats
- Investigating the role of forestry in sustainable flood and catchment management
- Equipping decision makers with appropriate skills and tools
- Developing guidance based on research findings
- Identifying vulnerable sites and helping facilitate management
- Integrate adaptation into public policy and regulation
- Revision of the UK Forestry Standard
- Promoting development of strategic land-use planning
- Supporting River Basin and Flood Risk Management

2.19 These provisions are already influencing policy, such as the Scottish Government Policy on the Control of Woodland Removal and by helping to integrate institutional responses to the threat of climate change.

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[2] Section 57, The Climate Change (Scotland) Act 2009

[3] http://www.scotland.gov.uk/Resource/Doc/295146/0091317.pdf

### ‘Getting the best from our land: A land use strategy for Scotland’

2.20 The Land Use Strategy seeks to steer Scotland towards a low-carbon economy based on appreciation of the natural environment and which enables people to maintain and enhance their connection to the land. The strategy encourages land-use decisions which will deliver multiple benefits to the economy, the environmental and communities alike.

2.21 Indicative Forestry Strategies are identified as a key means of achieving appropriate and sustainable land use. Key interactions include:

- Carbon sequestration and management of existing carbon stores
- Understanding and conserving ecosystem services
- Understanding the relationship between land management change and ecosystem processes
- Integrating this knowledge in decision-making
- Developing appropriate regulatory and policy frameworks to facilitate transition to a low carbon economy

### Policy on Control of Woodland Removal

2.22 The Scottish Government woodland removal policy aims to prevent avoidable woodland loss. It establishes the need for compensatory planting where development proposals or forestry work necessitates the loss of woodland.

### The Flood Risk Management (Scotland) Act 2009

2.23 The Act places a duty on responsible authorities (including local authorities and Scottish Water) to manage flooding in a sustainable manner and ensure the adoption of consistent principles and practices. A consultation on the delivery of sustainable flood management is underway and this will have a significant impact on the development plans of the future.

### River Basin Management Planning

2.24 The GCV area lies within the Scotland River Basin District, in which eight area management plans (AMPs) have been prepared – of which the Clyde AMP is relevant to the GCV area. AMPs describe how the water environment will be managed over the next six years, with the current plan covering the period from 2009 to 2015. The plan sets out what needs to be achieved for all water bodies in the area to reach ‘good ecological status’.

2.25 Forestry practice has potential to affect the water environment but Forestry Commission guidelines, adherence to the UK Forestry Standard and an ambition for woodland managers to meet the objectives set by the UK Woodland Assurance Standard will help ensure that any negative effects are minimised.

### Scottish Soil Framework

2.26 The Scottish Soil Framework was published in May 2009 and aims to raise awareness of the services soils provide to society and the pressures they face.

Scotland's soil resource is in generally good health, but is under pressure from soil carbon loss and the effects of climate change.

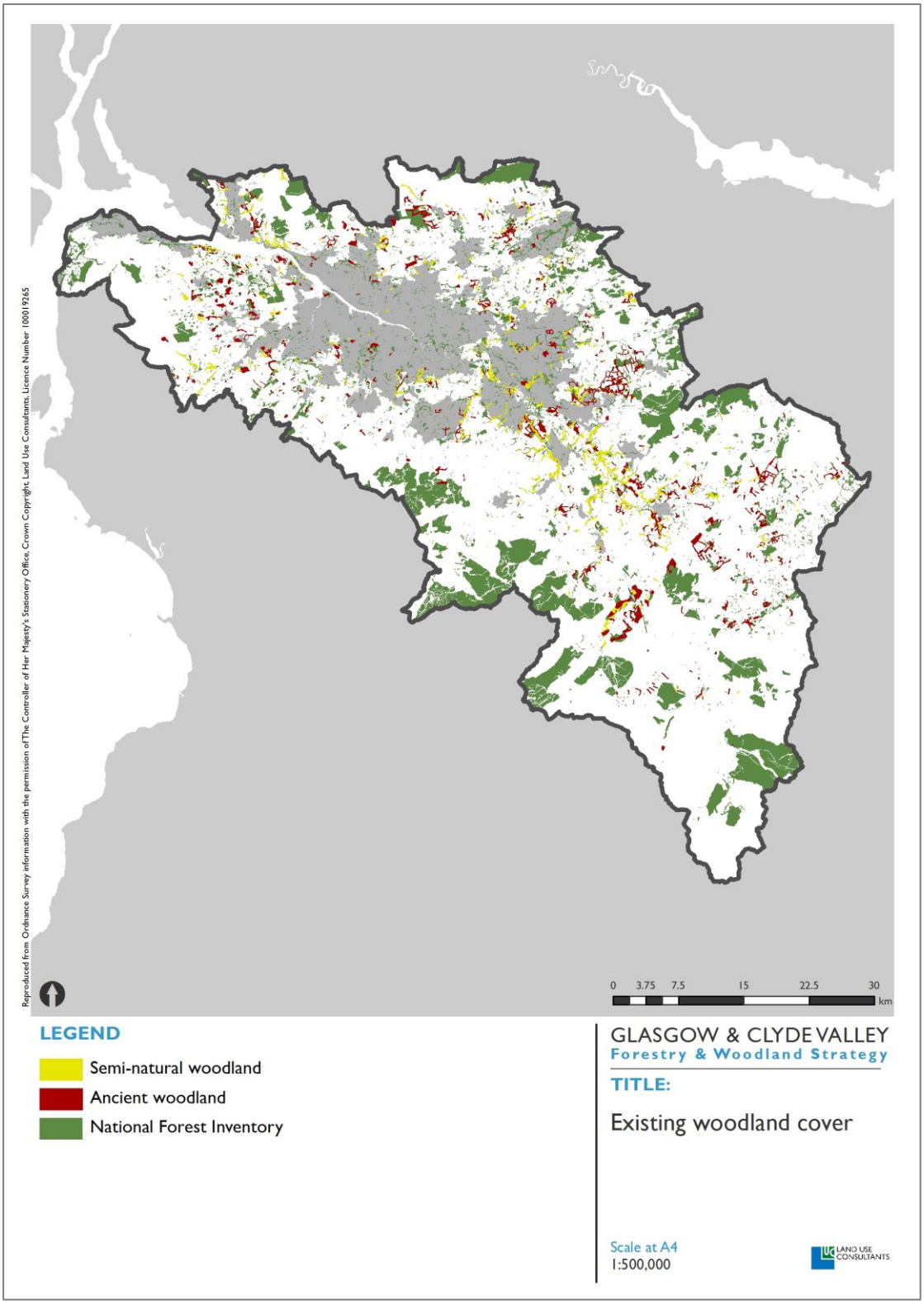


**Figure 2.1: Existing woodland cover**

# 3 Overview of woodland and forests in Glasgow and the Clyde Valley

3.1 Forests, woodlands and trees make an important contribution to the character of landscapes across Glasgow and the Clyde Valley. Equally, there are a range of ways in which the extent of woodland, and the range of benefits it provides, could be increased in line with the objectives of the Scottish Forestry Strategy, CSGN and Glasgow and the Clyde Valley Green Network, and the framework of strategic and local policies and individual councils' Single Outcome Agreements.

3.2 Trees can be an important component of the urban environment, contributing to the quality of large urban greenspaces such as Pollok Country Park, Glasgow Green or Queen's Park, formal squares and gardens such as those found across the West End, key river corridors including the Kelvin, Leven and the White Cart through Linn Park in Glasgow and East Renfrewshire. New towns such as Cumbernauld, by contrast, have an extensive planned greenspace network, much of which includes woodland which is now starting to mature. Trees and woodlands are, however, much less characteristic of large areas of social housing and some of the newer suburbs. There is significant potential to increase tree cover across the area's townscapes, linking and extending existing habitats, providing stepping stones and corridors through the urban area, providing shelter and improving the physical environment. There are opportunities to link into existing programmes including WIAT, local food growing (e.g. orchards) and wood fuel projects.

3.3 The middle Clyde valley, and its series of deeply incised tributaries, has some of the most intact and ecologically rich woodlands in the Glasgow and Clyde Valley area. The Clyde Valley has a legacy of orchards, many of which have been lost or stand derelict, and a series of designed landscapes many with distinctive policy woodlands. Here, the emphasis may be on managing and restoring woodlands and orchards, developing woodland related businesses and increasing opportunities for public access and interpretation.

3.4 Neighbouring areas of plateau farmland are, by contrast, more open and exposed, with woodland cover often limited to lines of field boundary trees and small farm woodlands. Here there is a need for positive management and replacement of existing trees, but also potential for new woodland planting, possibly linked to habitat networks and wood fuel production.

3.5 Across significant parts of Lanarkshire the pattern of coal mining and associated industrial activity has left a legacy of vacant and derelict land with a wider fragmented rural landscape. Over the past decade, the Central Scotland Forest has made a significant positive contribution to these landscapes, using woodland planting and other enhancements to improve a damaged landscape and secure significant benefits for communities across the area. This provides lessons which could be used to inform the strategy across much of the study area. There is significant potential to further increase woodland cover in these areas to transform post-industrial landscapes while contributing to a broader range of policy outcomes.

3.6 Productive forestry is an important feature of many rural areas, particularly in plateau and upland areas where geometric blocks of even aged conifers often contrast with the apparent wildness of the surrounding area. Examples are found on the Kilpatrick Hills, Clyde Muirshiel, parts of the Campsie and Kilsyth Fells, the Southern Uplands and the plateau moorlands bordering Ayrshire to the south west and Falkirk and the Lothians to the north east. Restructuring is beginning to have an enhancing effect on these areas, with more varied species and age structures and an increase in the diversity of habitats. Some of these area offer significant potential for recreation, with areas such as the Carron Valley already accommodating a regionally important mountain biking facility.

3.7 Table 3.1shows the composition of woodland across the GCV area. It shows that, overall, 16% of the area is made up of woodland. This compares to an average figure of 17% for the whole of Scotland.

3.8 Coniferous woodland makes up the largest share of woodland in the GCV area, accounting for nearly 80%. Around 16% of the area's woodland is ancient or long established in origin.

**Table 3.1: GCV woodland composition**

| | Ha | % of the area | % of woodland |
|---|---|---|---|
| Broadleaved | 1123.6 | 2.1 | 2.27 |
| Coniferous[4] | 37544.1 | 70.3 | 11.3 |
| Mixed | 6792.7 | 12.7 | 13.72 |
| Scrub / shrub | 1412.6 | 2.6 | 2.85 |
| Recently created woodland | 6565.8 | 12.3 | 2.0 |
| **TOTAL** | **53438.8** | **16** | **100** |
| Ancient woodland | 7902.1 | 2.4 | 14.8 |

3.9 Since the publication of the Glasgow and Clyde Valley Forestry Framework in 2005, there has been a significant reduction in woodland cover across the region. Relating largely to large-scale removals as a consequence of wind energy development around 3200ha of mainly coniferous woodland has been lost.

[4] Figures for coniferous woodland compiled from the National Inventory of Woodland and Trees, corrected with FCS figures for woodland removal as a result of wind energy development.

# 4 Vision and objectives

## INTRODUCTION

4.1 This strategy aims to increase the economic, social and environmental contribution that forests and woodlands make to Glasgow and the Clyde Valley. We need to make sure that all policy makers and decision makers recognise the role that woodland, in all its various forms, can play in creating an environment where business thrives, communities enjoy a high quality of life and where the environment is diverse and resilient.

4.2 Part of the strategy is about making the most of our existing woodlands – bringing them into positive use and creating new opportunities for recreation, training and learning. It is also about increasing the area of woodland cover within the region, whether that takes the form of street trees, native woodlands or productive conifer forests.

## VISION

4.3 The vision for forestry and woodland in Glasgow and the Clyde Valley over the next 25 years is as follows:

4.4 Forest and woodland will contribute to a competitive and successful economy, healthy and empowered communities and a rich and resilient environment.

## POTENTIAL FOR WOODLAND EXPANSION

4.5 Section 5 of the strategy provides an overview of opportunities for woodland expansion, describing how Glasgow and the Clyde Valley will contribute to aspirational targets that have been set for Scotland and the Central Scotland Green Network area.

## ACHIEVING THE VISION

### Themes

4.6 Part B of this document sets out the themes and priorities that will help partners achieve the ambitions established in the Vision, and creates a framework for action in taking advantage of the opportunities outlined in Section 5.

4.7 This Vision is supported by four strategic themes which structure Sections 6 to 9 of this document. The themes, supported by sub-themes, are as follows:

To maximise the role of forests and woodlands in supporting the economy of Glasgow and the Clyde Valley. This will be achieved by:

- Contributing to an environment for investment
- Supporting a healthy timber production and processing sector

To maximise the role of forests and woodlands in improving quality of life for residents and visitors to Glasgow and the Clyde Valley. This will be achieved by:

- Improving local environments where it is needed most
- Involving and empowering communities

To maximise the role of forests and woodlands in addressing climate change and adapting to its impacts. This will be achieved by:

- Increasing climate change mitigation
- Supporting climate change adaptation

To maximise the role of forests and woodlands in contributing to the quality of the environment. This will be achieved by:

- Conserving and enhancing diverse species and habitats
- Creating better townscapes and landscapes
- Securing high environmental quality

### Strategic priorities

4.8 Nested within each sub-theme are a number of strategic priorities that define the key means of achieving each theme. In addition, more detailed opportunities for action are provided against each strategic priority to assist partners in the development of appropriate, achievable schemes that meet funding requirements and optimise added value.

## GEOGRAPHIC PRIORITIES

4.9 Part 9 of the strategy provides guidance on how these strategic themes should be prioritised in different parts of Glasgow and the Clyde Valley. It describes the existing patterns of woodland cover and priorities for woodland management and expansion.

## ACTION PLAN

4.10 The final part of the strategy sets out the detailed actions from Section 5 to 8, defining lead partners, timescales and key policy links.

# 5 Potential for woodland expansion

5.1 This section of the Strategy sets out the broad potential for woodland expansion across the region, based on spatial analysis of environmental and regulatory constraints. It classifies the area's sensitivity to woodland expansion before interpreting this information to provide guidance for different types of woodland.

## LAND CATEGORISATION

5.2 The land area of Glasgow and the Clyde Valley has been classified by sensitivity to woodland expansion, based on the guidance provided by '*The Right Tree in the Right Place*' – FCS and the Scottish Government's recent publication on forestry and woodland strategies.

5.3 The categorisation is necessarily a strategic process, giving a **general impression** of an area's suitability or otherwise for woodland expansion – on detailed examination there will inevitably be small areas that could readily fall into a different category. **The importance of site-specific assessment of individual proposals for woodland expansion, or woodland removal, is therefore paramount.** The following categories have been adopted:

***Preferred***: *land that offers the greatest scope to accommodate future expansion of a range of woodland types, and hence, to deliver on a very wide range of objectives. Sensitivities are limited and it should be possible to address any site-specific issues within well-designed proposals that meet the UK Forestry Standard and associated guidelines.*

***Preferred (urban fringe)***: *priority peri-urban area - used to highlight the great opportunity to secure a range of strategic objectives and public benefit from any woodland expansion close to settlements and does not reflect a blanket suitability of this area for woodland.*

***Potential***: *land that offers considerable potential to accommodate a range of woodland types, but where at least one significant sensitivity exists. Design of proposals in this area will require careful, site-specific consideration to ensure they are of an appropriate type and scale to be successfully accommodated.*

***Sensitive***: *areas where the nature or combination of sensitivities restricts the scope to accommodate woodland expansion or removal. Limited expansion is only likely to be possible where proposals are of a scale and character which can be accommodated without significant negative impacts, and/or where it would positively enhance features of interest*

***Existing woodland***: *land that is currently under woodland of all types*

***Unsuitable***: *land that is physically unsuitable for the growth or management of trees*

***Built-up***: *the metropolitan area and major settlements, within which opportunities for woodland creation are generally too small to map effectively at a strategic scale*

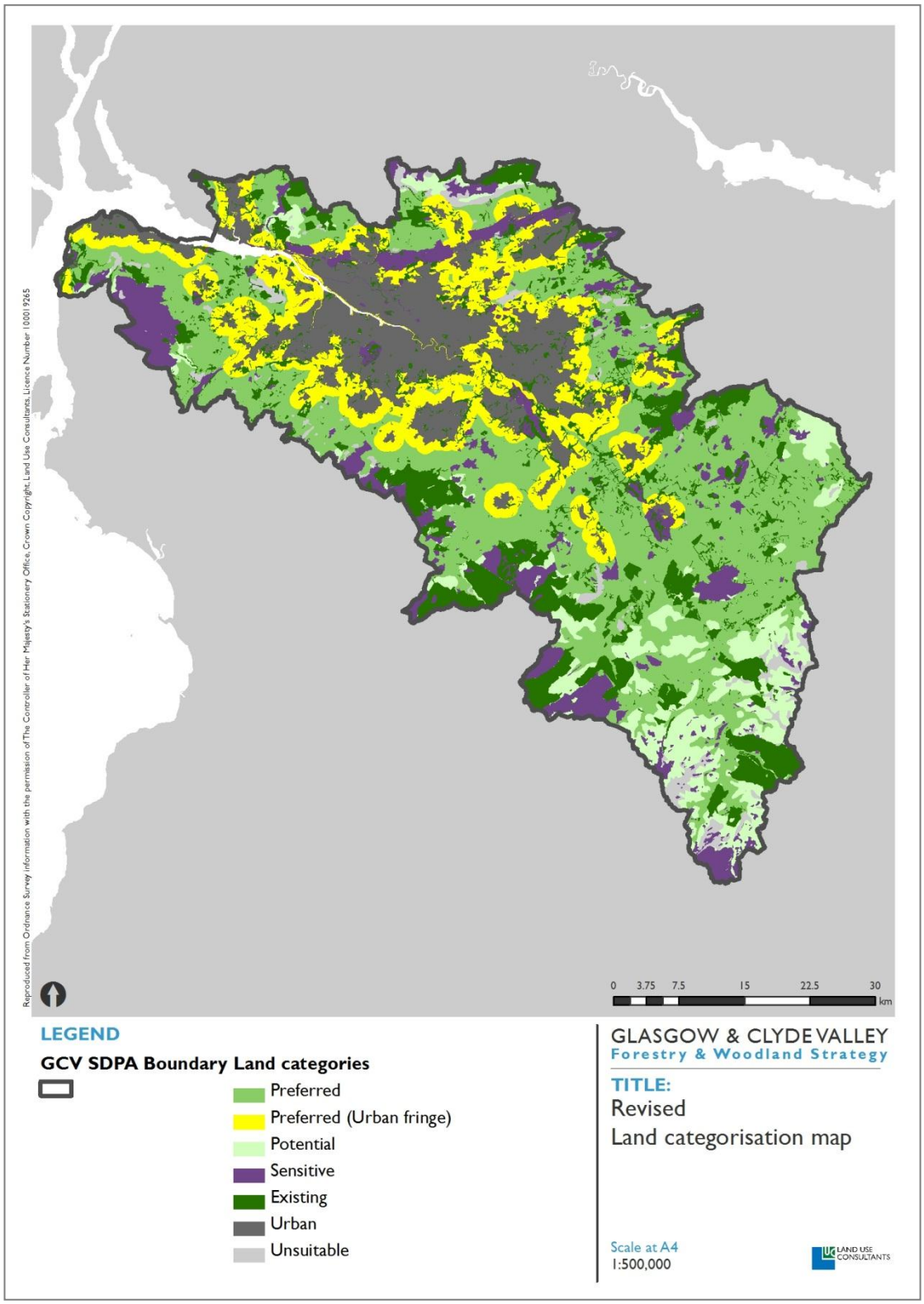


**Figure 5.1: Indicative potential for woodland expansion**

## Commentary

5.4 As indicated in Figure 5.1, Glasgow and the Clyde Valley has considerable potential to accommodate a range of woodland expansion.

*The methodology used to derive Figures 5.1 – 5.7 is supplied as Appendix 1. The accompanying SEA Environmental Report should also be consulted for details on how the quantitative analysis undertaken through the SEA has influenced the FWS.*

**Table 5.1: Land categories**

| Category | Area (nearest hectare) | % GCV land area |
|---|---|---|
| Preferred | 51,633 | 35 |
| Preferred (urban fringe) | 45,995 | 14 |
| Potential | 28,451 | 9 |
| Sensitive | 33,275 | 10 |
| Urban | 46,620 | 14 |
| Unsuitable for woodland | 45,995 | 3 |
| Existing forests | 51,633 | 15 |

5.5 It is particularly striking that the areas with likely capacity to accommodate woodland expansion (the 'preferred', urban fringe and 'potential' areas) relate to an area nearly three times the size of the existing woodland resource and accounting for over half of the GCV land area.

5.6 Clearly, it would be neither practical nor desirable to suggest that this area should be entirely converted to woodland – however, it does clearly illustrate the potential contribution GCV can make in meeting key national targets.

5.7 When viewed in the context of the spatial framework, set out at Figure 10.1, the spatial variations in potential are clear.

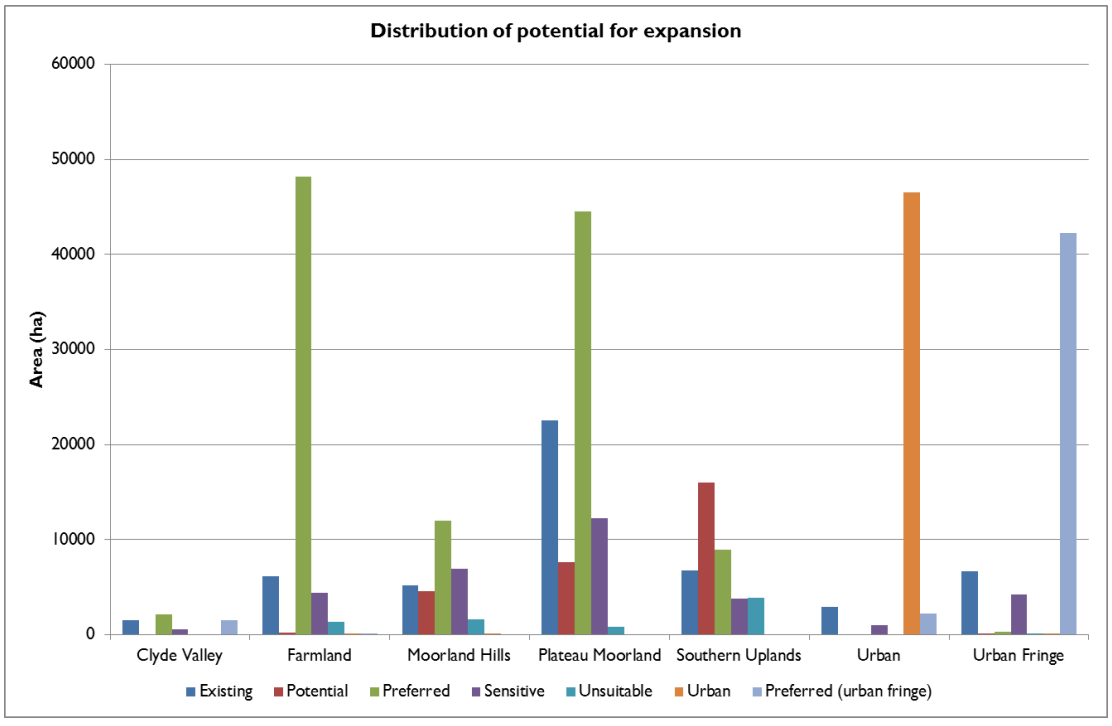


**Figure 5.2: potential by zone**

5.8 The potential of each zone is explored in more detail in Chapter 10. However, it is clear that the urban fringe surrounding metropolitan Glasgow and the region's larger settlement has significant capacity to contribute. Similarly, the figures suggest that the more 'traditional' locations for forestry – namely the moorland and upland fringes – are likely to have capacity to accommodate substantial new woodlands to address a perceived shortfall in productive area, and to mitigate losses as a result of renewable energy development.

5.9 Similarly, realising only a fraction of the potential of the region's agricultural areas to accommodate appropriate woodland stands to make a major contribution to achieving a range of green network, climate change and rural diversification objectives.

## WOODLAND TYPES

5.10 The ambitious national targets for woodland expansion cannot be achieved by concentrating on a single woodland type or strategic objective. Instead, the Strategy echoes government guidance in promoting a multi-benefit model of woodland expansion and management. This is intended to develop a woodland resource that is diverse, resilient to the challenges of climate change and makes a positive contribution to the economy, securing environmental quality and helping communities achieve their potential. This section therefore sets out strategic guidance for the following woodland types:

- forests to provide a source of softwood timber;
- mixed woodlands such as farm woodlands and shelterbelts;
- native woodlands contributing to habitat networks;
- existing and new woodlands with potential to provide a source of woody biomass;
- woodlands contributing to strategic development and regeneration objectives.

5.11 These maps are indicative and intended to provide a starting point to inform the development and evaluation of more detailed woodland expansion proposals. It is likely that there will be opportunities for each type of woodland outside the areas identified on these maps. Some areas are likely to be suitable for more than one woodland type, and some woodlands may fall within more than one category.

5.12 Section 10 of this strategy provides more detailed guidance on the location, extent and balance of these woodland types in different parts of the area.

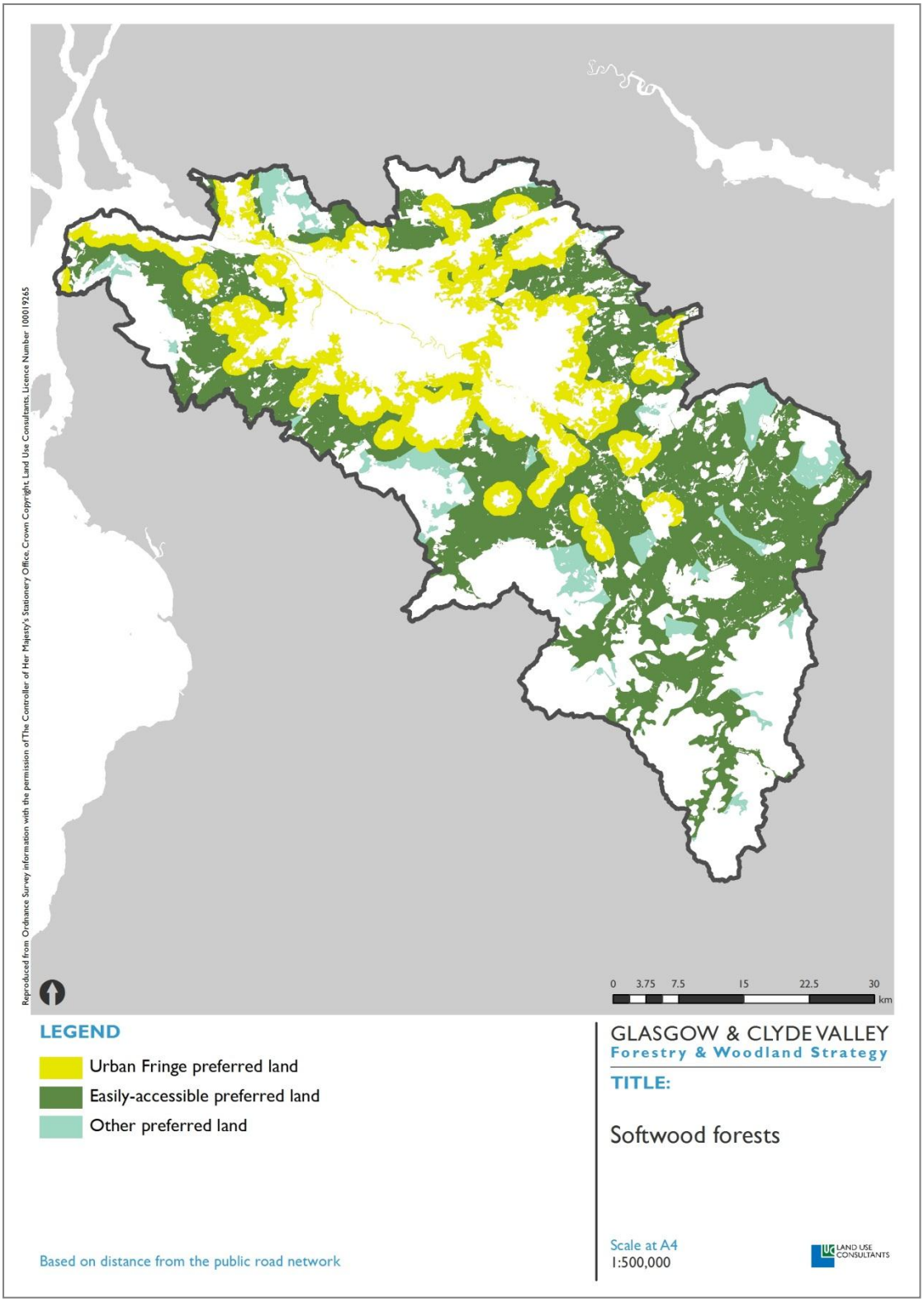


**Figure 5.3: Opportunities for softwood forests**

## Softwood forests

5.13 Figure 6.3 shows areas which are most suitable for the creation of new softwood forests. It maps Preferred Areas (including preferred urban fringe areas) which are most accessible from the main road network.

5.14 The relative emphasis on softwood forest expansion, and the most appropriate scale and design of new forests, varies considerably within the areas identified on this map. For example, smaller scale forests are likely to be most appropriate in areas along the urban fringe and in many of the farmland areas, whereas there could be scope for medium sized forests in some upland valley areas. This is explored in greater detail in Section 10 of the strategy which provides guidance for each of six broad spatial zones.

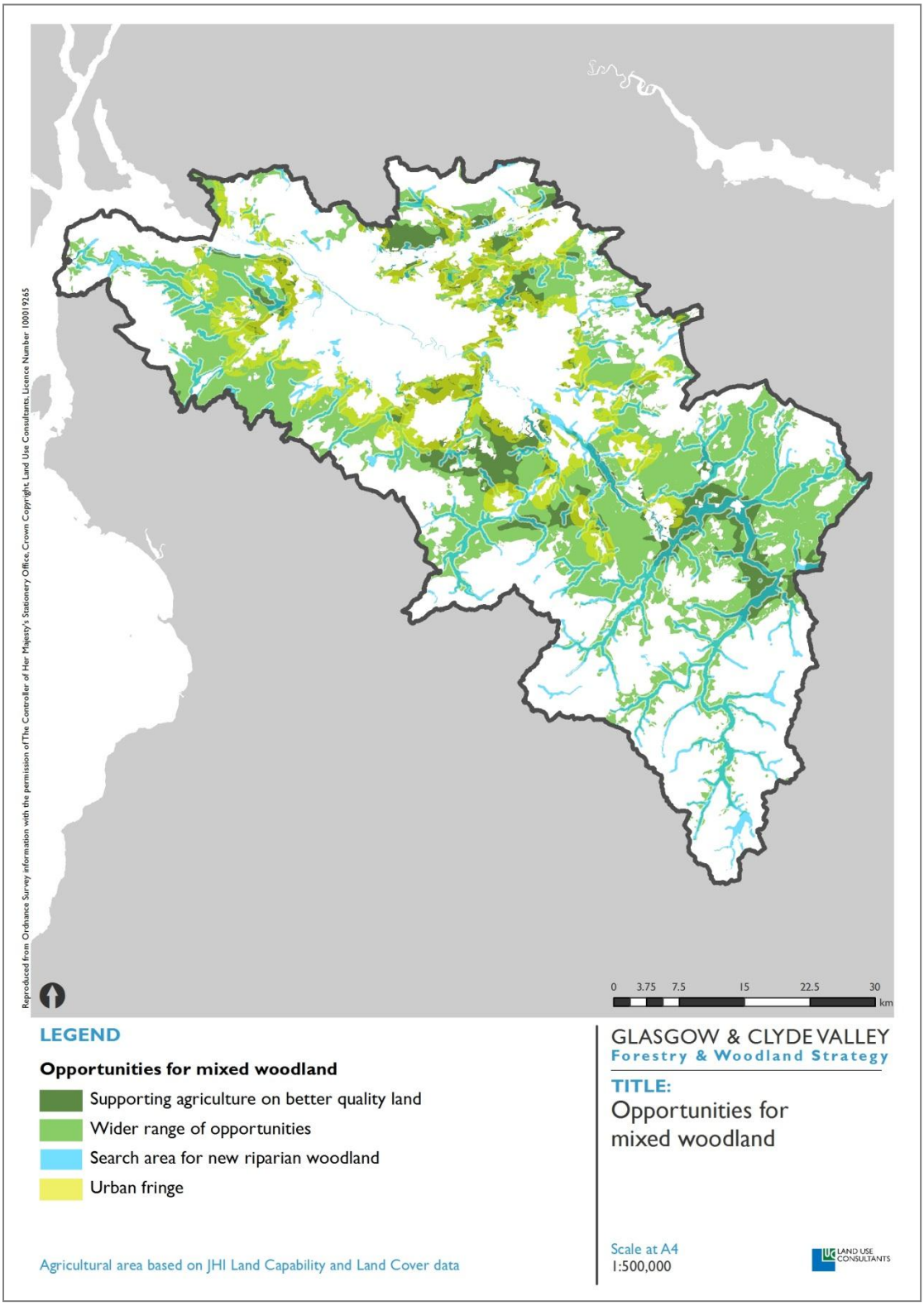


**Figure 5.4: Opportunities for mixed woodland**

## Mixed woodlands

5.15 Figure 6.4 shows areas which are most suitable for the creation of new mixed woodlands. It maps farmland (arable, enclosed and improved pasture) within Preferred Areas (including preferred areas along the urban fringe). These are areas where there is likely to be most potential for the creation or expansion of farm woodlands and shelterbelts as part of existing farm businesses. These woodlands should also deliver a range of benefits including recreation, woodfuel, landscape enhancement and sustainable flood management.

5.16 The relative emphasis on new mixed woodlands varies within areas identified on this map. Section 10 of the strategy therefore provides guidance for each of six broad spatial zones.

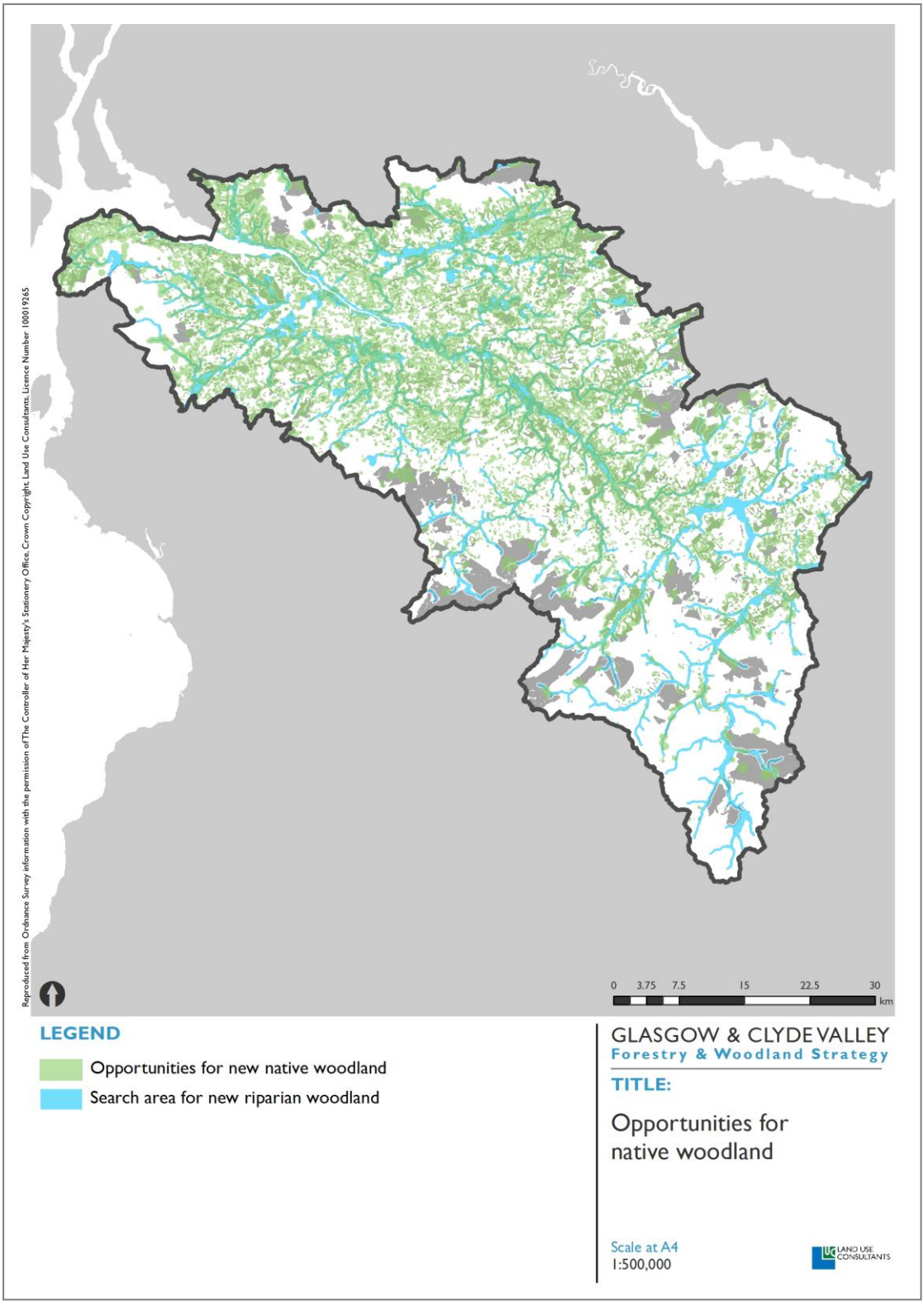


**Figure 5.5: Opportunities for native woodlands**

## Native woodlands

5.17 Figure 5.5 shows areas which are most suitable for native woodland expansion. It is based on Integrated Habitat Network data, and maps core areas and strategic links between them and with neighbouring parts of Scotland. The IHN dataset provides much more detailed information which should be used to guide the development of native woodlands across the region.

5.18 The relative emphasis on new native woodlands varies within areas identified on this map. Section 10 of the strategy therefore provides guidance for each of six broad spatial zones.

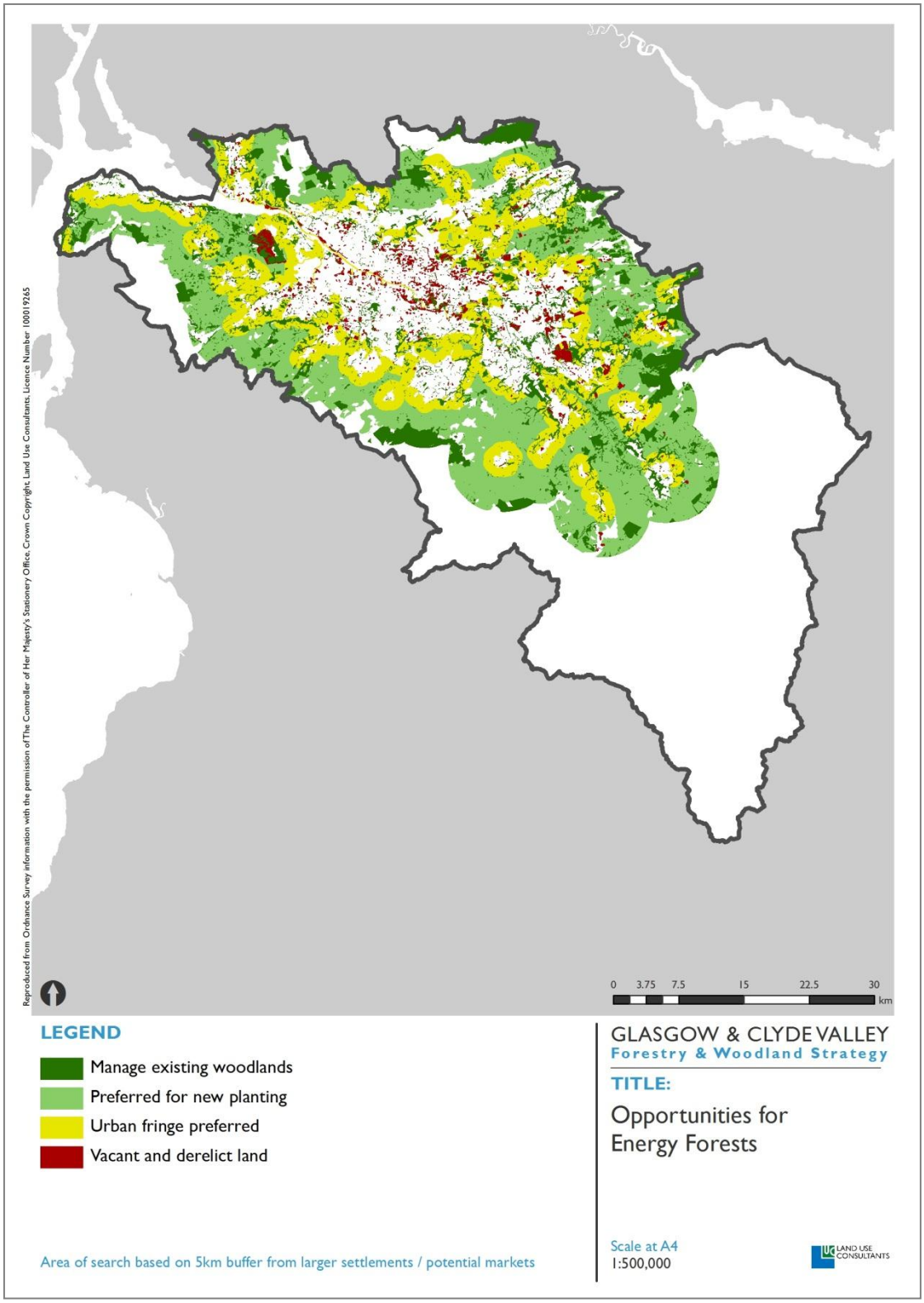


**Figure 5.6: Opportunities for energy woodlands**

## Energy woodlands

5.19 'Energy woodlands' are woods planted and/or managed with a primary focus on the production of wood fibre to provide feedstock for woodfuel boilers and combined heat and power (CHP) systems. Such woodlands can take the form of short-rotation coppice, cut on an average of a 5-yearly cycle, or short-rotation forestry, where fast-growing trees are planted and harvested on a between 8 and 20 year cycle.

5.20 Active management of existing woodlands could provide a significant woodfuel resource, in addition to conveying benefits for biodiversity and landscape quality.

5.21 Figure 5.6 shows areas which are likely to be most suitable for energy woodlands. Highlighting areas within 5 km of larger settlements, it identifies existing woodlands and forests (where management could increase the supply of woodfuel), Preferred areas (including preferred areas along the urban fringe) and areas of vacant and derelict land.

5.22 The relative emphasis on energy woodlands varies within areas identified on this map. Section 10 of the strategy therefore provides guidance for each of six broad spatial zones. It is likely that new mixed and softwood forests will also provide a source of woody biomass as they are managed and harvested.

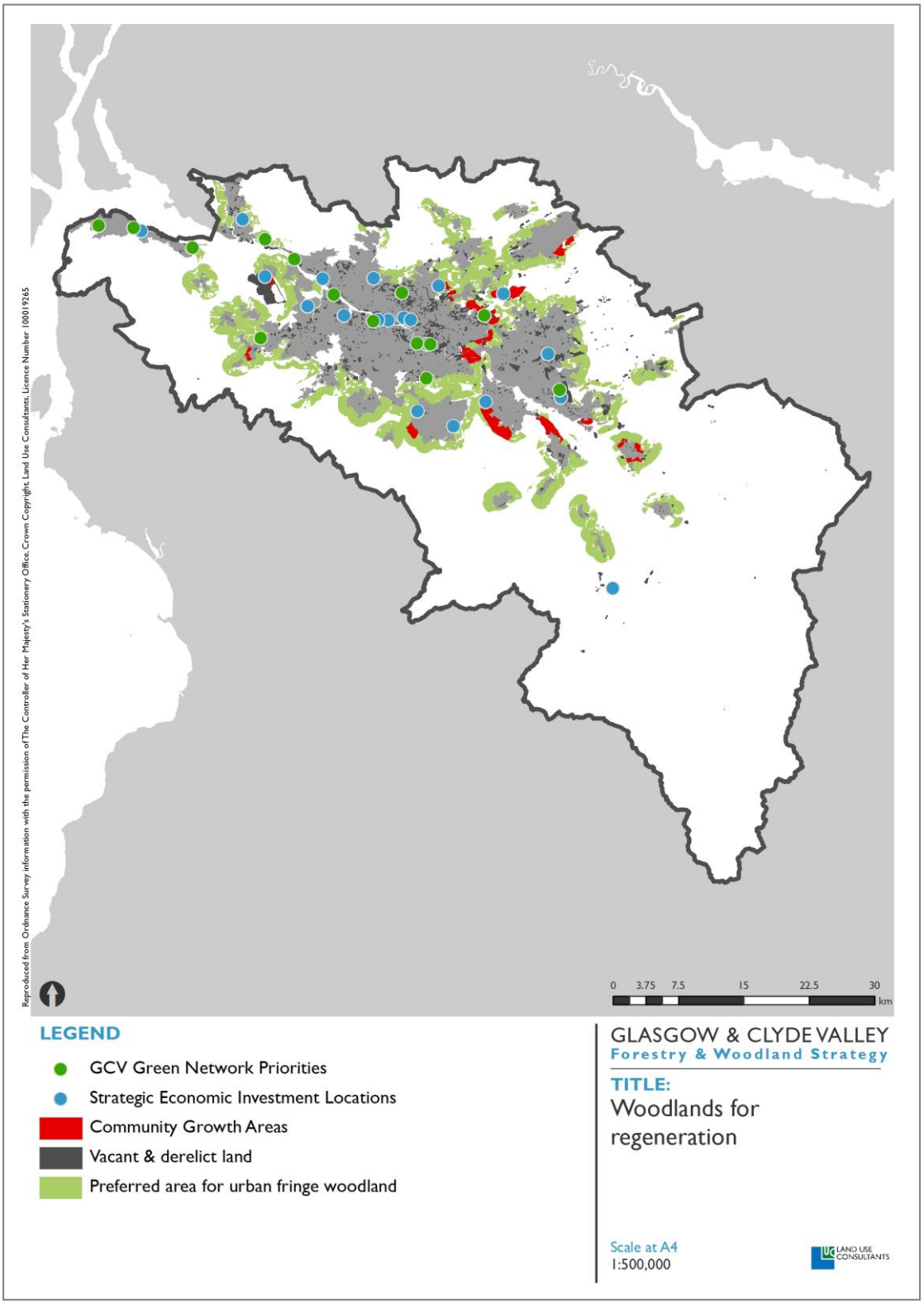


**Figure 5.7: Woodlands for regeneration**

## Woodlands for regeneration

5.23 Figure 5.7 shows areas where woodland expansion, and the management of existing trees and woodland, should make a significant contribution to development and regeneration. These areas include:

- Strategic economic investment locations
- Community growth areas
- Vacant and derelict land
- Preferred areas along the urban fringe
- GCV Green Network spatial priorities
- Central Scotland Forest

5.24 It is likely that woodland within these areas will comprise a combination of mixed, native and energy woodlands.

# PART B: Achieving the Vision

# 6 Supporting the economy

6.1 Trees and woodlands will make an increasingly important contribution to the region's economy. As well as supporting a healthy timber sector, trees and woodlands will help create an environment which attracts investment and encourages high quality development.

## AN ENVIRONMENT FOR INVESTMENT

6.2 A high quality environment is essential in supporting economic growth within Glasgow and the Clyde Valley. The region competes at a global scale and the quality of the environment is one of the factors influencing investors' decisions. A high quality environment also helps attract and retain a skilled workforce – an important factor for existing businesses and potential investors.

6.3 Trees and woodland already make an important contribution to the environment of the region. Development of the Glasgow and the Clyde Valley Green Network, individual Councils' open space strategies and growth of the Central Scotland Forest are increasing this contribution, particularly in areas where the physical and social legacy of industrial activity is most evident, and in areas where investment and regeneration are needed most.

6.4 This strategy aims to increase the role of trees and woodland in creating an environment for investment by:

- Enhancing economic investment locations
- Encouraging temporary planting on stalled sites and derelict land
- Growing the Green Network
- Enhancing transport corridors
- Promoting rural development and diversification
- Supporting the tourism sector
- Shaping new communities.

## Enhancing economic investment locations

6.5 Glasgow and the Clyde Valleyhas a series of strategic investment locations with a focus on stimulating economic, social and environmental regeneration. These include Clyde Waterfront, Clyde Gateway, the GartlochGartcosh Corridor, Ravenscraig and Bishopton. Other, smaller sites across the region have also been allocated for industrial, commercial and community development.

6.6 Trees and woodland can help support economic investment in these locations by helping to creating the high quality environment that attracts and retains investment. Trees and woodland can also help new developments make a positive contribution to the wider environment – helping to create a virtuous cycle supporting future investment.

6.7 Opportunities for action:

- Adopt a strategic approach to woodland planting and management designed to improve the environmental quality and setting of economic investment locations within the wider Green Network;
- Encourage a sensitive approach to existing trees and woodland in and around development sites and supporting their retention, enhancement and expansion wherever possible;
- Promote the bold use of new woodland planting to create to high quality landscape structure for new development, whilst contributing to integrated habitat networks, access and recreation opportunities, shelter and sustainable drainage and creating links with surrounding communities;
- Encourage imaginative use of trees along access routes, in public greenspaces, civic spaces and private gardens;
- Promote advanced planting to create a high quality setting for development.

6.8 The planting and management of trees and woodlands on these sites will play a key role in creating the GCV Green Network.

### Temporary planting on stalled sites

6.9 Many sites across Glasgow and the Clyde Valley have been prepared for commercial or industrial development in advance of specific investment proposals. The recent recession has reduced demand for these sites, meaning that it may take longer for development to take place than previously anticipated. In the meantime, there is a risk that the environmental quality of these vacant sites will deteriorate, making them less attractive to investors and blighting neighbouring communities. Unused land also fails to provide any economic return.

6.10 Planting in advance of development can help address these problems. One possibility is to use tree planting to provide screening around the periphery of vacant sites, particularly where this contributes to habitat networks and increases the region's overall woodland cover. Anotherinnovative approach could be to plant biomass crops such as short rotation coppice or short rotation forestry. Where ground conditions allow, these have the potential to provide an income stream for the land owner, as well as supporting the development of the wood fuel sector in Glasgow and the Clyde Valley– and contributing to Green Network objectives. This is a significant opportunity for forestry to contribute to regeneration and environmental improvement which enjoys strong support from local authorities and the third sector[5].

6.11 However, it will require a creative and flexible approach from applicants, local authorities and Forestry Commission Scotland to ensure that schemes are appropriate, can be funded and will not affect the ability of the site to be developed when a suitable opportunity arises. It is also important that the temporary nature of this type of planting is widely understood by communities and stakeholders.

6.12 Opportunities for action

- Encourage temporary planting to improve the environmental quality of vacant and derelict land and stalled development sites
- Prioritise biomass crops to provide a source of wood fuel and an income stream for owners of land.

[5] E.g. Greenspace Scotland (2010) *Stalled spaces – delivering community and environmental benefits through temporary greenspace: Scoping Report;* Glasgow City Council's approach to temporary landscaping advocated in City Plan 2 and online guidance for dealing with stalled spaces http://www.glasgow.gov.uk/en/Business/Environment/Clyde_KelvinGreenspace/Stalled+Spaces++++Temporary+Landscapes.htm

## Greening vacant, derelict and underused land

6.13 Industrial development during the nineteenth and twentieth centuries has left an extensive legacy of vacant and derelict land right across Glasgow and the Clyde Valley. In some parts of the urban fringe a combination of industrial dereliction and urban expansion means that rural landscapes have become fragmented and uneconomic to farm. The environmental quality of these areas has declined, with other activities replacing farming and some areas being abandoned altogether, adding to the impacts of past industrial activity.

6.14 The development of the Central Scotland Forest shows how tree and woodland planting can provide a new focus for these damaged landscapes, creating a high quality environment and transforming the way that decision makers and local people think about the area.

6.15 Using new tree and woodland planting to enhance derelict, vacant and underused land could further change perceptions of the region as a whole, as well as creating opportunities for investment, training and employment. It could also deliver a range of other important benefits, including:

- Improving communities' quality of life;
- Creating new opportunities for recreation;
- Creating and reconnecting woodland habitats;
- Creating a potential source of wood fuel close to key sources of demand;
- Helping to reduce greenhouse gas emissions by absorbing carbon from the atmosphere;
- Contributing to sustainable flood management by slowing run-off into burns and rivers.

6.16 Using woodland to tackle vacant, derelict and underused land and securing a range of economic, social and environmental benefits will contribute to the aims of the GCV Green Network.

6.17 Opportunities for action

- Prioritise the creation of new woodlands, and the management of existing trees and woodland, to improve the environmental quality of vacant, derelict and underused land.

### Enhancing transport corridors

6.18 The GCV area has a large number of busy major road and rail links. The many people who live, visit or work in Glasgow and the Clyde Valley form their impressions of the region from the experience of travelling along these transport routes.

6.19 New woodland planting can be used to improve the quality of the landscape along road and rail corridors and to shape perceptions of the area as somewhere to live, work and invest. This applies to existing transport corridors and new infrastructure, to longer distance and longer routes. Careful design is needed to protect important views and to contribute to habitat networks. The visibility of these woodlands means that effective maintenance and management is essential.

6.20 Opportunities for action

- Support the creation of new woodlands along transport corridors where this provides screening and improves views.
- Prioritise the management of new and existing woodlands along transport corridors to maintain their contribution to the Green Network.

## Promoting rural development and diversification

6.21 Large parts of the region are rural in character and farming remains an important part of the economy. Woodland creation and management can provide an additional source of income for farm enterprises under the regional priorities of the Scottish Rural Development Programme. There are also increasing opportunities to manage existing woodlands to provide a sustainable source of wood fuel, particularly in areas close to processing facilities. There may also be opportunities to re-establish orchards and other productive woodlands once found in different parts of the region.

6.22 New and existing woodlands can also deliver other benefits in rural areas including:

- Providing shelter for farm animals and crops – this may be increasingly important if climate change brings wetter winters, stormier weather and sunnier summers;
- Increasing the role of farm woodlands in absorbing and storing carbon from the atmosphere;
- Contributing to sustainable flood management by intercepting rainfall and slowing the rate of runoff into burns and rivers;
- Helping to link habitats, reversing habitat loss and helping plants and animals adapt to the changing climate.

6.23 In areas where agriculture is no longer viable more extensive woodland planting may be an important alternative, creating new opportunities for training and employment.

6.24 There are a range of ways in which communities can become involved in managing or even taking ownership of woodlands. This can provide the basis for social enterprises based on timber products or woodland based recreation activity.

6.25 Opportunities for action

- Work with land managers to increase the contribution of woodland and forests to the rural economy, bringing benefits for the agricultural sector, creating alternative sources of rural income and supporting community ownership and social enterprise.
- Work with the farming sector to increase the management of farm woodlands and to identify opportunities to create new farm woods

## Supporting tourism and recreation

6.26 Tourism also makes an important contribution to the regional economy and the range of recreation opportunities helps make Glasgow and the Clyde Valley an attractive place to live and work.

6.27 Forests and woodlands already provide recreation opportunities ranging from the network of mountain biking routes in the Carron Valley to rich woodlands around the New Lanark World Heritage Site and the Falls of Clyde. Woodlands contribute to the character of a number of longer distance trails, including the West Highland Way, Clyde Walkway and Kelvin Walkway as well as creating the setting for attractions such as the Antonine Wall World Heritage Site, the Burrell Collection and Kelvingrove Art Gallery. Trees and woodlands are also characteristic of many of the area's most popular parks and historic gardens.

6.28 There is potential to create new recreation and tourism opportunities linked to existing and new woodlands. These could include:

- Additional mountain biking facilities or the development of other outdoor recreation projects in appropriate locations;
- The creation of new woodland trails for walkers, cyclists, horse-riders and more specialist groups such as orienteers;
- The sensitive creation of woodland trails in ecologically rich woodlands such as those found in the Clyde Valley near Lanark;
- The development of a strategic recreation resource within the network of new and existing woodlands in the Kilpatrick Hills;
- The use of woodland and tree planting to improve the setting of tourism attractions, long distance trails and features such as the Antonine Wall and Forth and Clyde Canal;
- The positive management of historic trees and policy woodlands where these are important recreation areas or contribute to wider landscapes;
- The careful management of trees and woodlands to maximise the quality of urban open spaces, civic spaces and country parks.

6.29 Opportunities for action

- Increase the role of woodlands and forests in supporting tourism and recreation by developing and promoting new recreation opportunities;
- Encourage the use of woodland to improve the setting of tourism sites;
- Prioritise the management of existing trees with historic landscapes and where they make a significant contribution to the quality of open spaces, civic spaces and country parks.
- Explore the creation of a Kilpatrick Hills Forest complex, offering major new recreation and access opportunities.

6.30

## Shaping new communities

6.31 A series of Community Growth Areas provide the focus for new housing development across Glasgow and the Clyde Valley. Some of these new communities are being built on brownfield land (e.g. Ravenscraig and Bishopton) while others are on Greenfield sites adjacent to existing settlements. Most are linked to the regeneration of existing communities.

6.32 Urban Regeneration Companies have been established to help regenerate key locations within Glasgow & Clyde Valley. Currently, these are Clyde Gateway, Clydebank Rebuilt and Riverside Inverclyde.

6.33 Woodland creation and management can help these new communities enjoy a high quality environment by contributing to networks of open space, and providing shelter and containment. This will make developments more attractive places to live as well as improving their sustainability in the longer term. Woodland will also help fit new housing schemes into the wider landscape and connect them with the Green Network.

6.34 Opportunities for action

- Prioritise the role of existing and new woodlands in creating attractive and sustainable Community Growth Areas.
- Encourage the creation of high quality woodlands in and around new urban developments, connecting them with the surrounding countryside and existing urban greenspace to contribute to the wider Green Network
- Wherever possible, carrying out new woodland planting in advance of new development.
- Encourage the management and maintenance of new and existing trees and woodlands in and around new development in the long term.
- Work with the Urban Regeneration Companies to identify opportunities for the creation of new urban woodlands as a component of the regeneration of strategic locations within the Region.

## A HEALTHY TIMBER PRODUCTION AND PROCESSING SECTOR

6.35 The timber growing and processing sector is an important component of the Glasgow and the Clyde Valley economy, but one where there is potential for growth.

6.36 The region includes around 37,000ha of productive forest, most of which is made up of Sitka spruce and other introduced species. The character of these woodlands is changing as they are harvested and replanted, with a greater emphasis on open space, native tree species and varying age structure. At the same time, there is potential to expand the total area of productive forest, and to increase the volumes of hardwood and biomass production.

6.37 Compared with other parts of Scotland, Glasgow and the Clyde Valley has a good network of transport routes able to accommodate timber transport, lies close to local markets, several sawmills and processing plants. This provides a good base upon which to grow the sector.

6.38 This strategy aims to support the growth of timber production and processing in Glasgow and the Clyde Valley by:

- Maintaining and increasing timber production
- Supporting the development of robust supply chains
- Encouraging hard wood production
- Encouraging management and expansion of woodland for biomass production
- Supporting the expansion of timber processing
- Creating and protecting local markets

## Maintaining and increasing timber production

### *Overview of existing productive woodland cover*

6.39 Glasgow and the Clyde Valley has extensive areas of productive forest. They tend to be concentrated in more uplands areas including the Campsie Fells, Clyde Muirshiel Hills, Kilpatrick Hills, the Southern Uplands and the plateau moorlands that enclose much of the Clyde valley.

### *Improving existing productive forests*

6.40 Many areas of forest were planted at a time when there was an emphasis on volume timber production, with less attention paid to their appearance or habitat value. Forestry practice has been transformed over the past twenty years and there is now a much stronger emphasis on designing forests which fit the landscape, include more open space, are varied in terms of the age and species of trees (including native species) and which include a range of different habitats. There are also moves towards continuous cover forestry in place of clear felling.

6.41 As existing areas of forest mature and are harvested, a process of redesigning and restructuring the forests will occur as new trees are planted. This will result in forests that are better suited to their setting and that provide a range of recreation, ecological and other benefits alongside timber production. Supporting this process is therefore a key priority of this strategy.

6.42 Opportunities for action

- Support the restructuring of existing productive forests to increase their landscape, biodiversity and recreational benefits
- Prioritise restructuring of forests in more sensitive locations

### *Increasing the area of productive forestry*

6.43 There is considerable potential to increase the area of productive forest within the Glasgow and Clyde Valley region. Some expansion is needed to compensate for the restructuring of existing forests, including the inclusion of larger areas of open space and a higher proportion of native tree species. Expansion is also required to replace woodland lost as a result of wind energy development. Added to this is the Scottish Government's national target to increase to increase woodland cover to 25% by 2050 and the growing emphasis on wood fuel and quality hard wood. As other sections of this strategy have suggested, there is also scope for new productive forests to supplement agricultural incomes or provide alternatives where farming is no longer considered viable.

6.44 It is likely that planting for softwood timber production will continue to be concentrated on the plateaux moorlands and upland fringes of the southern portion of the region. However, potential for implementing continuous cover forestry and developing more diverse, multi-functional woodland could open up opportunities for productive woodlands in other locations.

## Encouraging hardwood production

6.45 In much of Glasgow and the Clyde Valley, broadleaves grow well – as illustrated by the ancient woodland resource of the Clyde and Avon Valleys. Field trees, shelter belts and small-scale broadleaved woodlands are an also important aspect of landscape character across the lowland portion of the region. There is potential for new planting of native broadleaves for timber production in these contexts, contributing to restoration of landscape structure and creating a viable resource for the future.

6.46 Similarly, bringing existing mixed and broadleaved woodlands into positive management could also provide a supply of high quality hardwood. Gradually eradicating invasive beech and sycamore in key native woodlands and actively managing the resource could provide twin benefits of enhancing biodiversity and creating new incomes streams of landowners.

6.47 Local authorities could also play a significant role in kick-starting the hardwood sector by strategically managing their woodland estates to provide an income stream to fund environmental enhancement projects.

6.48 Opportunities for action:

- Encourage landowners to bring woodland into positive management to build hardwood supply chains
- Highlight the potential for hardwood timber production to provide a catalyst for environmental enhancement
- Promote planting of broadleaves for timber production to strengthen and restore landscape structure and character
- Minimise the loss of existing woodland through the rigorous application of the woodland removal policy

## Biomass

6.49 Recent research carried out for the Glasgow and Clyde Valley Green Network Partnership, Forestry Commission Scotland and Scottish Enterprise[6] confirmed the potential to establish a viable biomass market in the region. This requires there to be an established demand for wood fuel, a sustainable supply and an effective processing and distribution network.

6.50 There is already some demand for woodfuel with a number of large biomass boilers installed and major schemes such as the wood fuelled power station at Lockerbie and the power plant at Caledonian Paper at Irvine in Ayrshire creating demand at a wider level. The public sector has a continuing role to play in demonstrating the viability of wood fuel as an energy source and encouraging private companies and householders to adopt the technology. The planning process can also promote the use of wood fuel within low carbon developments.

6.51 While there is potential to establish new woodlands to provide a source of woody biomass, the greatest scope lies in the management of existing woodlands across the region. The Green Network Partnership research calculated that woods within the region have the potential to provide sufficient biomass to supply all the wood-fuelled boilers likely to be installed in the foreseeable future (excluding proposed large-scale electricity only installations).

6.52 One of the main barriers to realising this potential is the low levels of awareness among many land owners, with a high proportion of existing woodlands remaining unmanaged when they could be providing a source of fuel and a viable income stream. Again, the public sector should take a lead, demonstrating ways in which existing woodland can be managed to provide a source of woody biomass.

6.53 There is also scope to make better use of the material traditionally left behind when productive forests are harvested. These waste materials are increasingly being used as a source of wood chips for energy production.

6.54 New woodlands and forests offer further potential as sources of wood fuel. There is potential to establish short rotation coppice crops and short rotation forestry on vacant and underused land, and in some urban fringe and rural areas where farming is less viable.

6.55 There also needs to be an effective processing and distribution network to connect these growing sources of supply and demand. Wood fuel is a bulk material and transport costs can be relatively high. Processing plants and depots typically draw material from a radius of up to 50 miles, supply customers within 20 miles. This suggests that a number of processing plants will be needed to cover the main centres of population and that demand for timber from existing or new woodlands will be concentrated in areas closest to these plants.

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[6]John Clegg Consulting Ltd, The Campbell Palmer Partnership Ltd and Cawdor Forestry Ltd December 2007www.gcvgreennetwork.gov.uk/component/option,com_docman/Itemid,53/gid,163/task,cat_view/

6.56 The Renewable Heat Incentive, introduced in March 2011, is intended to drive a sevenfold increase in renewable heat use over the coming decade. Energy Service Contracts offered by the industry provide a means for public bodies and businesses to finance and deliver wood energy in larger buildings. This represents a major opportunity for users to reduce their carbon emissions and save money – and also to support a growing green industry.

6.57 The Green Network Partnership research identified three options for the development of the fuelwood supply chain in metropolitan Glasgow:

- The first option is to continue present support activities and wait for the private sector to develop the supply chain.
- The second option involves identifying a number of small local sites where woody biomass can be collected together before being taken to large sites where the material can be stored and dried before being chipped and transported to boilers. The sites could be operated by the Councils or by the private sector. Initially the use of the site would be free but as the market develops it may be possible to pay for the material.
- The third option involves setting up a dedicated wood fuel supply chain/s linked to specific woods and one or more boilers using heat contracts. This would require accurate information on woody biomass quantities potentially available in each wood, investment in harvesting, transport, storage and chipping equipment and very clear organisational and managerial arrangements. It also involves risks for either Councils or the private sector operator/s.

6.58 Opportunities for action:

- Encourage the management of existing woodlands to provide wood fuel and income for woodland owners
- Prioritise the creation of new areas of biomass on vacant and derelict land, and in areas where farming is less viable
- Encourage local authorities and businesses to take advantage of the opportunities offered by the Renewable Heat Incentive when procuring or refurbishing buildings stock
- Support the development of a market for wood fuel by encouraging public sector organisation to take the lead on biomass boiler procurement, raising awareness among developers and householders, and liaising with regulators to providing clear guidance on the use of biomass equipment in Smoke Control Areas and Air Quality Management Areas
- Support the creation of an efficient processing and distribution network for wood fuel

6.59

### Timber transport, processing and local markets

6.60 Glasgow and the Clyde Valley does not currently host any major timber processing sites. However, the region's excellent transport network facilitates easy access to nearby sites at Cardross, Irvine, Ayr and Auchinleck.

There are, however, smaller-scale wood-using businesses ranging from a paper mill to musical instrument manufacturers.

6.61 While major developments in large-scale processing infrastructure are not anticipated, there is potential for the development of a network of smaller-scale sites catering to specific local markets.

6.62 Some productive forests in Glasgow and the Clyde Valley lack suitable access and have poor internal road networks – such as those in the Kilpatrick Hills. Partnership solutions will be necessary to facilitate the development of suitable infrastructure to enable harvesting, restructuring and restocking. The Timber Transport Forum and the Scottish Timber Transport Fund will continue to be important means of achieving such objectives and reducing transport impacts on communities and the road network. Plans for new productive woodlands should ensure that suitable access can be maintained over the lifetime of the forest.

6.63 The majority of the region's forest products are moved by road. This is likely to continue throughout the lifetime of the FWS, but ensuring that emissions are reduced and impacts on communities and the road network are minimised is a priority.

6.64 Opportunities for action:

- Support and secure existing forestry sector sites through liaison with local authorities and the Mid-Scotland Forest Industries Cluster
- Survey and review industrial locations and identify appropriate sites for future forestry sector development

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# 7 Improving quality of life

7.1 Trees and woodlands have a key role to play in creating healthy and sustainable communities. They will help improve the quality of places where we live and work, create opportunities for communities to get involved in managing and owning woodlands, encourage healthier lifestyles and support education, training and social enterprises.

7.2 This part of the strategy defines objectives which should help maximise trees' contribution to quality of life under the headings of:

- Improving local environments where it is needed most
- Involving and empowering communities
- Promoting access and better health
- Education and skills

## IMPROVING LOCAL ENVIRONMENTS WHERE IT IS NEEDED MOST

7.3 The quality of the local environment makes an important contribution to people's quality of life, with poorer environments often compounding patterns of poor health and social deprivation. The Glasgow and Clyde Valley Green Network and Central Scotland Green Network both prioritise measures to improve the quality of the local environment, focusing on areas with concentrations of multiple deprivation.

7.4 This Strategy will make sure that woodland creation and management play a central role in improving local environments where it is needed most.

### Woodland in and around towns

7.5 Forestry Commission Scotland's Woods in and Around Towns (WIAT) programme provides an important way of improving quality of life. The programme is focused on woods within 1km of settlements with a population of more than 2000 people, and supports the creation of new woodlands, the management of neglected woodland and action to help local people make more use of their local woodland.

7.6 The aim is to create woodlands which will accommodate different activities and deliver a wide range of benefits. These woodlands will create opportunities for active recreation such as walking and cycle close to where people live. They will provide resources for formal and informal education, training and employment. They will contribute to habitat networks, increase the amount of carbon absorbed from the atmosphere, reduce the risk of flooding and provide a potential source of wood fuel. Equally importantly, they will help reconnect people with their local environment, providing new ways to get involved in planning, managing and owning woodlands.

7.7 The Green Network will help prioritise woodland creation and management in and around towns across the region. Council open space strategies will also play a key role in targeting tree planting, woodland creation and management of existing woodlands where they will secure the greatest benefits. Local Development Plans and the Development Management Process provide an additional way of highlighting priorities for woodland planting and management, and ensuring that new development makes a positive contribution.

7.8 Opportunities for action:

- Continue the focus of woodland management and creation on woodlands in and around town
- Increase opportunities for people to get involved in planning and managing their local woodlands
- Increase the range of opportunities for recreation, education, training and employment linked to existing and new woodlands
- Ensure that local planning and open space documents prioritise opportunities for woodland creation and management

7.9

## New woodlands on vacant, derelict and underused land

7.10 Industrial development during the nineteenth and twentieth centuries has left an extensive legacy of vacant and derelict land right across Glasgow and the Clyde Valley. In some parts of the urban fringe a combination of industrial dereliction and urban expansion means landscapes have become fragmented, neglected and in some cases abandoned. This can have a serious impact on neighbouring communities, with problems of dumping, vandalism and other anti-social behaviour compounding social and economic problems.

7.11 The development of the Central Scotland Forest shows how tree and woodland planting can provide a new focus for these damaged landscapes, creating a high quality environment and transforming the way people think about the area.

7.12 Using new tree and woodland planting to enhance derelict, vacant and underused land could further contribute to communities' quality of life while delivering a range of other important benefits.

7.13 Opportunities for action:

- Prioritise the creation of new woodlands, and the management of existing trees and woodland, to improve the environmental quality of vacant, derelict and underused land.

## INVOLVING AND EMPOWERING COMMUNITIES

7.14 There is a new emphasis on involving communities in the creation and management of woodlands. At the very least, this means providing effective way of discussing woodland creation or enhancement proposals particularly where they could affect local communities. There are also opportunities for people to become more actively involved in owning and managing woodlands.

### Community participation in woodland planning and management

7.15 The Scottish Forestry Strategy emphasises the importance of involving the public in the forestry planning process. Woodland managers need to be equipped with the skills necessary for effective consultation and stating the requirement for such consultation as a condition of grant support will help make such involvement a part of normal forestry practice.

7.16 Opportunities for action

- Ensure communities are engaged at key stages in forest and woodland planning
- Ensure woodland managers have training to allow effective consultation

### Community ownership

7.17 There are a growing number of examples where local communities are managing their local woodlands. In some cases the aim is to protect an existing woodland resource close to where people live. More commonly, community ownership provides an opportunity to create new woodlands or improve existing woodlands which can deliver a range of new benefits such as:

- Improved recreation with paths for walkers and cyclists or more specialised provision for mountain biking, orienteering or other woodland based activities;
- Creating and improving woodland habitats, linking to surrounding areas and providing a resource for education and learning;
- Creating opportunities for people to volunteer, receive training or secure employment from woodland related activities;
- Providing sources of income for example from timber production and wood fuel.

7.18 The National Forest Land Scheme can help support the transfer of woodlands into community ownership.

7.19 Opportunities for action:

- Support community ownership of woodlands where this brings benefits for local people.
- Ensure there is adequate training, advice and support for communities taking ownership of woodlands.

### Woodland based social enterprise

7.20 The management and creation of woodland can create opportunities for social enterprises - locally owned companies with social and environmental as well as commercial objectives.

7.21 These kinds of initiative can help create training or employment opportunities based on activities such as tree planting, forest management, timber harvesting and processing together with recreation and interpretation. Social enterprises have, for example, focused on managing woodlands as a source of wood fuel (logs and wood chips) for the local community.

7.22 To maximise their social benefit, these kinds of projects need to be linked to formal training and educational processes.

7.23 Opportunities for action:

- Promote the role of new woodlands and existing woodland in supporting social enterprises linked to training and education.

## PROMOTING ACCESS AND BETTER HEALTH

7.24 Outdoor recreation and exercise is widely recognised as a key way of securing health improvement in Scotland- contributing to physical and mental wellbeing. Woodlands and forests have an important role to play in providing opportunities for outdoor recreation, and contributing to better health.

7.25 The increasing contribution of woodlands to improved physical and mental health should be measured to provide evidence to support further intervention.

7.26 Council Core Path Plans and Open Space Strategies, together with individual forest plans will play a key role in prioritising and developing woodland based access opportunities and linking them to wider access networks. The involvement of NHS Greater Glasgow and Clyde and Lanarkshire Health Boards will ensure that health benefits are maximised.

7.27 Although many woods and forests in Glasgow and the Clyde Valley are well used for recreation, many groups and communities have traditionally had little contact with the resource. The FCS Central Scotland Engagement Strategy 2010-2013[7] prioritises developing links with underrepresented groups to highlight the universal health and social benefits of woodland and to assist in overcoming physical and conceptual barriers to access.

7.28 Opportunities for action:

Woodlands and forests in Glasgow and the Clyde Valley will contribute to access and health improvement by:

- Creating high quality access and recreation opportunities close to where people live;
- Targeting provision in areas with poor health, low incomes and

[7] http://www.forestry.gov.uk/pdf/FCSEngagementStrategy.pdf/$FILE/FCSEngagementStrategy.pdf

poor access to recreation sites;

- Tailoring access provision to different types of recreation, including specific health walks, all abilities routes, walking and cycling, together with more specialised activities such as mountain biking and horse riding. This should build on existing provision including core path networks, regional and country parks and forest based provision;
- Good signage and information to raise awareness of opportunities and provide reassurance for new users;
- Measures to encourage participation including led walks, liaison with schools and community groups and initiatives such as Green Gyms and the Forestry Commission Woods for Health Programme.
- Support targeted engagement to encourage 'hard to reach' groups, and communities that rarely visit woodlands to understand the benefits of outdoor recreation and the assets in their area
- Support the implementation of the FCS Central Scotland Engagement Strategy 2010-2013

## EDUCATION AND SKILLS

7.29 Woodlands provide a rich environment for learning, whether that is in the formal education system, vocational training or informal, lifelong learning.

7.30 The Forest Schools programme aims to improve people's understanding of the natural world while helping to develop confidence and personal skills. They involve groups of up to 12 people (children or adults) visiting a local woodland every one or two weeks and taking part in a range of forest related activities, providing opportunities to learn individual skills or master specific tasks.

7.31 Woodlands could also provide a basis for wider environmental education for local schools. The Eco-Schools initiative, for example, could help tie schools into local woodlands, with field visits linked to coursework or habitat projects within or close to local schools.

7.32 Other parts of the Strategy have noted the opportunity to use woodland creation and management to create opportunities for volunteering and training. Partnerships with organisations such as the BTCV, the Wise Group or SWT, and local Intermediate Labour Market initiatives to build a volunteering and training infrastructure based on tree planting, woodland management, harvesting and processing together with habitat and recreation management. This will help create a pathway through training to employment. Social enterprises and community level projects could be central to this kind of initiative.

7.33 Opportunities for action:

- Raise awareness of the role of woodlands in supporting education and lifelong learning
- Promote the Forest Education Initiative in increasing the role of woodland in education
- Work with training and intermediate labour market organisations to develop woodland based training and employment projects.

# 8 Responding to climate change

8.1 Climate change is one of the greatest challenges we face today. Trees and woodland have an important role to play in reducing the rate of climate change. Trees and woodland can also help us to adapt to the changing climate. However, the changing climate will affect existing trees and woodland across the region so forestry practice will need to change.

## MITIGATING CLIMATE CHANGE

8.2 Trees and woodlands have a key role to play in helping to reduce net carbon emissions into the atmosphere – so called climate change mitigation. This strategy will increase the contribution of trees and woodland to climate change mitigation in the following ways:

- Increasing the total extent of tree cover across Glasgow and the Clyde Valley and, as a result, increasing the amount of carbon absorbed from the atmosphere and locked up in timber;
- Encouraging the use of timber as a sustainable building material, particularly where this reduces the need for carbon intensive materials such as steel, concrete or materials transported long distances;
- Developing the biomass and wood fibre sector as a source of low carbon fuel for heating and power generation;
- Accommodating renewable energy infrastructure associated with existing woodlands and forests, where other constraints allow.

### Increasing carbon sequestration

8.3 Trees absorb (or sequester) carbon from the atmosphere as they grow, only releasing it again when timber is burnt or decays naturally. By increasing the overall extent of woodland, and encouraging wider use of timber products, this strategy will help increase the total amount of carbon sequestered across Glasgow and the Clyde Valley. This will help offset carbon emissions from fossil fuel use.

#### *Woodland expansion*

8.4 The Scottish Government has set a target to increase woodland cover to 25% by 2050, reflecting the potential for woodland to contribute to national targets for carbon reduction.

8.5 Glasgow and the Clyde Valley currently has around 16% woodland cover, slightly below the Scottish average.. Some areas of the region – notably the Clyde Valley and the moorland plateaux of South Lanarkshire– have more extensive woodland cover, while others have considerably less. Similarly, different landscapes have different capacity to support new woodlands due to a combination of environmental, economic and land use factors. Analysis conducted to inform this Strategy, and in the course of the Strategic Environmental Assessment, suggests that there are a wide range of options for delivering appropriate woodland expansion.

8.6 New woodlands should avoid peat soils which themselves provide an important way of locking up carbon. Blanket bog is concentrated in the

moors and upland areas of Clyde Muirshiel, South Lanarkshire, the Slammannan plateau and the Kilpatrick Hills. Fragmentary areas of raised bog, such as the Black Loch and North Shotts Mosses, are also highly sensitive to woodland. These habitats have therefore been included in the 'sensitive' category of the indicative potential map Figure 5.1.

8.7 Although research suggests that fast growing conifers may absorb carbon most rapidly, it important that new woodlands also contribute to wider objectives and that we do not create mono-culture forests with little habitat, landscape or recreational benefit. Increasing the extent of native woodland can create longer lasting carbon stores as well as helping habitats adapt to the changing climate.

8.8 Opportunities for action:

- Expand the total area of woodland and forests within the region to increase the amount of carbon dioxide absorbed from the atmosphere in line with the aspiration set out in Part 3 of this strategy.
- Ensure that woodland expansion reflects the spatial priorities set out in Part 4 of this strategy in terms of broad locations, types and amounts of woodland.

### *Timber in construction*

8.9 Given the amount of construction activity taking place across the region, there is considerable potential to encourage the use of timber as a building material. This can help reduce carbon emissions associated with the manufacture and transportation of more energy intensive materials such as steel and concrete. It can also provide a way of locking up carbon in the longer term.

8.10 Scottish timber is increasingly recognised as a high quality and sustainable building material, with strong links to vernacular styles and applications in cutting edge architecture alike.

8.11 The public sector has an important role to play in raising awareness of timber in construction. Forestry Commission Scotland has already published guidance designed to publicise the use of timber in sustainable construction. The planning and building control processes should also promote the use of timber as a low carbon building material, and there is scope for demonstration projects to influence investors and housebuilders.

8.12 Opportunities for action:

- Encourage wider use of timber as a low carbon building material

### *Energy efficiency and the forestry sector*

8.13 The forestry sector as a whole is a major user of fossil fuels at every stage of the process from planting, through harvesting and transporting to processing and use. Reducing the sector's reliance on such fuels is critical to maximise the contribution to climate change mitigation in line with the Scottish Government Land Use Strategy[8]. This will require monitoring and auditing,

[8] Scottish Government, 2011, *Getting the best from our land: A land use strategy for Scotland – Consultation Draft* Edinburgh: Scottish Government

and the use and proper maintenance of the most efficient forestry technologies.

8.14 Opportunities for action:

- Encourage energy efficiency in the timber sector

8.15

## Contributing to renewable energy development

8.16 The development of renewable energy infrastructure provides a low carbon source of energy which can reduce the requirement for fossil fuels.

### *Biomass*

8.17 Paragraphs 7.38-7.46 describe the potential to develop a biomass sector in Glasgow and the Clyde Valley, based on three main components:

- **Supply:** Existing woodlands should be brought into positive management alongside new short rotation coppice crops and short rotation forestry to provide a viable supply of wood fuel. Research suggests there is considerable scope to increase production within Glasgow and the Clyde Valley
- **Demand:** The public sector will have a key role to play in generating demand for wood fuel, by direct investment in public buildings and by raising awareness among development companies and householders.
- **Distribution:** There will also need to be an efficient supply chain, with a network of distribution and processing depots. The planning process can help identify suitable locations for such infrastructure.

8.18 Opportunities for action:

- Encourage the management of existing woodlands to provide wood fuel and income for woodland owners
- Prioritise the creation of new areas of biomass on vacant and derelict land, and in areas where farming is less viable
- Support the development of a market for wood fuel by encouraging public sector organisation to take the lead on biomass boiler procurement, raising awareness among developers and householders, and liaising with regulators to providing clear guidance on the use of biomass equipment in Smoke Control Areas and Air Quality Management Areas
- Support the creation of an efficient processing and distribution network for wood fuel

### *Wind farms*

8.19 Forests and woodlands may also be able to accommodate other types of renewable energy development. This is particularly true in upland and plateau moorland areas where there is interest in developing wind farms.

8.20 By 2011 around 3200 ha of woodland – the vast majority being productive conifers – will have been lost in the GCV area as a result of wind farm development[9]. A significant area is threatened by future development.

8.21 The Scottish Government policy on woodland removal means that any trees that are felled in order to build new wind farms should be balanced by new woodland creation. Where opportunities arise, the process of woodland removal and new planting should be used positively to improve the visual, ecological and recreational benefits of upland forests.

8.22 Where woodland removal is proposed, compensatory planting should take place within the region. The type, siting and design of new woodlands may differ from those being removedbut should reflect the guidance set out in this strategy.

8.23 Opportunities for action:

- Minimise the requirement for woodland removal and ensure that any losses are balanced by woodland creation within the Glasgow and Clyde Valley region and in line with the guidance set out in this strategy
- Use woodland removal and new planting to help restructure existing areas of forest

[9] Figures from FCS Central Scotland Conservancy, rounded to the nearest 100ha (correct as of March 2011)

## ADAPTING TO CLIMATE CHANGE

8.24 The latest modelling suggests that winters are likely to become milder and much wetter, while summers will become warmer and drier. Trees and woodlands can help us adapt to some of the challenges that will result from this changing climate. At the same time, the way we manage our trees and woodlands will need to change. This strategy promotes climate adaptation in terms of:

- Contributing to sustainable flood management
- Expanding habitat networks
- Managing trees and woodlands in a changing climate

### Contributing to sustainable flood management

8.25 Wetter winters are likely to increase the risk of flooding, particularly if heavy rain becomes more common. This is a significant concern given the history of flooding within parts of the metropolitan area together with smaller settlements across the region. Woodland and forests can help reduce this risk as part of sustainable flood management projects. Woodland expansion in the upper parts of river catchments and on river floodplains can help slow the rate at which rainfall runs off into rivers, in turn reducing the risk of flooding downstream.

8.26 Developing floodplain and riparian woodland in the upper catchments of the area's major rivers, including the Clyde, Kelvin, White and Black Cart Waters and the Gryfe could play an important role in this respect and make a major contribution to enhancing biodiversity values and landscape quality.

8.27 Woodland can also help stabilise steeper slopes where there is a risk of landslips. This can be important in increasing the resilience of transport routes and providing protection for property.

8.28 Opportunities for action:

- Increase awareness of the role of woodlands in contributing to sustainable flood management and the stabilisation of slopes.

### Expanding habitat networks

8.29 We also need to help plants and animals adapt to the changing climate, particularly where habitats have been lost or fragmented in the past. Habitat networks can linking these habitats, helping species to become more resilient by establishing larger and healthier populations which are able to relocate in response to the changing climate. Existing and new woodlands can form an important part of Integrated Habitat Networks across the region.

8.30 Opportunities for action:

- Promote the development of integrated habitat networks to help species become more resilient to climate change

## Managing trees and woodlands in a changing climate

8.31 Existing trees and woodlands are likely to be affected by climate change as winter waterlogging alternates with summer drought, storms become more frequent and severe and pests and diseases become more common. The long timescales associated with trees and woodlands means we need to start planning for these impacts now.

### *Productive forestry*

8.32 For productive forestry, climate change could affect the choice of tree species and might mean that higher and more exposed sites become more vulnerable to storm damage. There is likely to be a move towards 'continuous cover' forestry and away from clear felling, since this will help avoid increasing flood risk or soil erosion. The design of forest infrastructure such as roads and culverts may need to reflect increases in winter rainfall. The changing climate could also bring some positive effects for productive forests, by increasing the length of the growing season, increasing productivity and allowing woodland to be planted in areas that are currently less suitable.

8.33 Forestry Commission Scotland guidance is designed to help forest managers to start planning for climate change by anticipating the implications for site selection, tree species, management techniques, harvesting and the design of forest infrastructure. Reflecting these factors in new and restructured forests will be essential if other objectives relating to climate change, and multi-purpose forestry are to be achieved.

8.34 It is likely that traditional approaches to harvesting, based on the clear-felling of larger blocks of forest will give way to 'continuous cover' forestry based on the selective felling of trees within a woodland. This will create a more varied woodland structure and should reduce the risk of erosion.

8.35 Opportunities for action:

- Ensure that forest management adapts to the changing climate
- Support the move to continuous cover forestry where practical

### *Urban, historic and semi-natural woodlands*

8.36 Trees in urban areas could also experience stress as temperatures rise and summer droughts take their toll. This could have a major impact on street trees, green corridors, urban woodlands and open spaces and parks.

8.37 Trees and woodlands make an important contribution to the character of the many historic designed landscapes found in Glasgow and the Clyde Valley. The effects of climate change could have impacts on ancient trees, features such as avenues and parkland trees and on wider policy woodlands.

8.38 Within the wider landscape, climate change could result in the further loss of farm woodlands, field boundary trees and shelter belts, many of which make an important contribution to the character of the area. Native and semi-natural woodlands, such as those along the Clyde valley between Lanark and Hamilton, could also suffer stress as the climate changes and pests and diseases become more common.

8.39 Again, it is important to start anticipating these impacts now rather than waiting until the evidence of tree loss is visible across the area. The first priority should be to maintain trees and woodland so they are in the best condition possible to cope with the changing climate. Where it is likely that trees will be lost replacement planting should start as soon as possible, using species suited both to the location and to future conditions. This may mean some difficult decisions where, for example, an historic landscape is characterised by particular types of trees.

8.40 Opportunities for action:

- Promote good management of trees and woodland to increase their resilience to climate change
- Where appropriate, start to replace important trees where these could be lost in the future

# 9 Enriching the environment

9.1 Trees and woodlands make an important contribution to the environmental character and quality of Glasgow and the Clyde Valley. They support internationally important wildlife habitats, help shape the wider landscape, contribute to our cultural heritage and help maintain the quality of air and water resources. The strategy aims to increase this contribution, helping to create a richer and more diverse environment.

## DIVERSE SPECIES AND HABITATS

9.2 Woodlands within Glasgow and the Clyde Valley provide rich and varied habitats for wildlife. Existing ancient or long-established native or semi-natural woodlands tend to be concentrated along the river valleys of the Clyde, Leven, Avon, and Calders and in the foothills of the Campsie and Kilsyth Hills and Kilpatrick Hills. Most native woodland is found along rivers and burns where steep grazing have made cultivation and grazing difficult.

9.3 Of the 93 Sites of Special Scientific Interest in the area, several are designated for their high quality woodland habitats. The region has around 7900 ha of ancient and long-established woodland, comprising around 2.4% of total land area. There are also many other undesignated areas – both wooded and open – which make a major contribution to the biodiversity and character of the area.

9.4 The Strategy aims to improve, expand and link surviving woodland habitats whilst conserving other, non-woodland habitats by:

- Improving the condition of nationally important woodland habitats
- Contributing to local biodiversity action plan targets
- Restoring ancient and semi-natural woodland
- Developing habitat networks
- Expanding native woodlands
- Protecting and enhancing other important habitats

## Nationally and internationally important woodland habitats

9.5 Many of the area's native woodlands are designated SSSI for their habitat value, with the finest of these – notably the Clyde Valley Woodlands – being subject to European designations (SAC). As noted above, much of this resource clings to steep-sided river valleys and has survived because of its isolation from human activity. However, other significant woodland habitats in the region only exist because of many generations of positive management. Hamilton High Parks, once part of the extensive Hamilton estates, preserves one of the best examples of lowland wood pasture in Scotland. With veteran trees dating back to the 15th century, they are nationally significant for both their natural and cultural heritage value and represent the relics of many phases of landscape development.

9.6 Opportunities for action:

- Promote positive management of designated woodland habitats;
- Encourage the development of integrated habitat networks as a means of expanding and linking designated woodland habitats;
- Work with land managers to raise awareness of the biodiversity importance of designated sites and the availability of funding via the Scottish Rural Development Programme for woodland management.

## Contributing to Local Biodiversity Action Plan targets

9.7 All local authorities in the GCV area have prepared Local Biodiversity Action Plans. These set out priorities for the conservation and enhancement of locally important habitats and key species. All include specific objectives for woodland habitats which include, for example, measures to:

- Maintain and expand ancient and semi-natural woodlands
- Develop integrated forest habitat networks to expand and link fragments of native woodland
- Conserve specific woodland habitats and species
- Improve access to woodlands
- Improve understanding and awareness of woodland habitats

9.8 The plans also define priorities for non-woodland species and habitats. Many of these assets are sensitive to woodland expansion – particularly key open ground habitats of importance for large raptors – and are therefore included in the 'sensitive' category of the indicative potential map (Figure 5.1).

9.9 The strategy supports actions to conserve and enhance the biodiversity value of existing woodlands in the GCV area and actions to create new woodlands which are ecologically rich and help reverse past habitat loss.

9.10 Opportunities for action:

- Encourage positive management of existing ancient, semi-natural and native woodlands, with a focus on priority habitats and species;
- Use the development of integrated habitat networks as a means of expanding and linking priority woodland habitats;
- Increase the overall extent of woodland in the GCV area, and ensuring that habitat creation and management is considered alongside other objectives such as timber production so that the biodiversity value associated with woodlands as a whole increases;
- Work with land managers to raise awareness of woodland biodiversity and the availability of funding via the Scottish Rural Development Programme for woodland management.

## Restoring ancient and semi-natural woodland

9.11 In the past, some areas of productive forestry were planted on what are now recognised as key biodiversity sites. Of particular significance are Plantations on Ancient Woodland Sites (PAWS) – locations where native woodlands have been converted into plantations, generally of non-native conifers. Between the 1930s and the early 1980s it is estimated that nearly 40% of the ancient semi-natural woodlands in the UK were lost in this way[10]. The process of restructuring of planted conifer woodlands as trees are harvested and replanted creates an important opportunity to restore native woodland on ancient woodland sites where key woodland species, or fragments of the ancient woodland survive.

9.12 Opportunities for action:

- Promote the restoration of native woodland restoration on former ancient and semi-natural woodland sites where this will result in significant biodiversity benefits.

[10] Thompson, R.N., Humphrey, J.W., Harmer, R. and Ferris, R. (2003) *Restoration of native woodland on ancient woodland sites,* Forestry Commission Practice Guide,Edinburgh: Forestry Commission

## Developing habitat networks

9.13 Habitat networks can help reverse the loss and fragmentation of habitats that has taken place over many decades as a result of urban growth, industrial activity and farming expansion. Networks aim to link surviving areas of semi-natural habitat with corridors or stepping stones. This can help reduce the isolation and vulnerability of plants and animals and allow them to adapt to climate change. Habitat networks can also bring other benefits including landscape improvements and the creation of new paths and trails.

9.14 Glasgow and the Clyde Valley Green Network Partnership has been developing the idea of 'integrated habitat networks' which comprise a mix of habitats including unimproved grassland, floodplain wetland, woodlands and raised bogs. Work carried out by Forest Research identified potential for 14 Priority enhancement areas for woodlands within GCV where new woodland planting would connect and expand existing areas of established woodland or contribute to mixed habitats such as those found along river corridors.

9.15 Although the expansion of woodland as part of new habitat networks is driven by the importance of reversing past biodiversity losses, such networks will also deliver a range of other benefits including:

- Contributing to woodland expansion within the GCV area;
- Contributing to carbon storage and new sources of woodfuel;
- Contributing to flood management and air and water quality improvements;
- Contributing to recreation networks;
- Contributing to landscape enhancement and improved land management.

9.16 Opportunities for action:

- Promote the role of new and existing native woodlands in contributing to integrated habitat networks, particularly where they link areas of ancient and semi-natural woodland (including sites that have been planted with productive forestry), where they connect with areas of woodland planted primarily for timber and where they create networks in areas with few existing habitat links (e.g. urban areas and intensively farmed areas)

### Expanding native woodlands

9.17 There are major opportunities to expand the area and proportion of native woodlands within the GCV area. This will bring significant benefits for biodiversity but will also bring other environmental, community and economic benefits.

9.18 This will be achieved in a number of different ways, including:

- The restructuring of existing productive woodlands during the cycle of harvesting and replanting, resulting in higher proportion of native species;
- The restoration of ancient and semi-natural woodland sites which have been planted with productive woodland in the past to include a higher proportion of native species;
- The creation of new woodlands as part of integrated habitat networks, expanding and linking surviving areas of ancient and semi-natural woodland;
- The planting of woodland which helps address other aspects of climate change including carbon sequestration, flood management and woodfuel provision;
- The creation of woodlands designed to improve the quality of urban, urban fringe and rural landscapes, particularly where they have been damaged by industrial activity or otherwise neglected.

9.19 New native woodlands should normally use trees of local genetic provenance where available. It is, however, necessary to consider what the changing climate could mean for different tree species, and to reflect this in the design of new woodlands.

9.20 Opportunities for action:

- Promote the contribution of native species to woodland expansion aspirations described in Part 3 of this strategy.

## Protecting and enhancing other important habitats

9.21 The GCV area includes a range of non-wooded habitats which are of local, national or international importance. These include areas of moorland and blanket bog in the uplands, wetlands and river floodplains, areas of unimproved grassland and the Inner Firth of Clyde.

9.22 It is important that measures to expand the area of woodland within the GCV area do not result in damage or loss of other important habitats. All proposals for new or expanded woodlands that could affect nationally or internationally important biodiversity sites require careful assessment to demonstrate that the sites in question will not be affected[11].

9.23 Opportunities for action:

- Ensure the management and expansion of woodland in Glasgow and the Clyde Valley does result in adverse impacts on internationally important habitats

[11]The Conservation (Natural Habitats, & c.)Regulations 1994 require that certain plans which are likely to have a significant effecton internationally important designated sites must be subject to an "Appropriate Assessment" by the plan-making authority. The process for determining whether an appropriate assessment is required, together with the appropriate assessment itself - where necessary - is known as 'Habitats Regulations Appraisal'.
The Nature Conservation (Scotland) Act 2004 set out protection nationally important designated biodiversity sites.
Forestry proposals are also subject to environmental impact Assessment under the terms of the Environmental Impact Assessment (Forestry) (Scotland) Regulations 1999 and the Environmental Impact Assessment (Scotland) Amendment Regulations 2006.

## BETTER TOWNSCAPES AND LANDSCAPES

9.24 Trees and woodlands form part of our cultural heritage, contributing to the character of cities, towns and villages, helping to shape the rural landscape and forming part of many important historic sites. The strategy will increase awareness of trees' cultural and landscape importance, aiming to increase their contribution to landscape and townscape quality. This will be achieved by:

- Improving townscapes and landscapes
- Enhancing damaged landscapes
- Maintaining important designed landscapes and specimen trees
- Protecting the historic environment

## Improving townscapes and landscapes

### *Trees in towns*

9.25 Many of our finest urban environments are characterised by trees and woodland. Public parks such as Kelvingrove, Glasgow Green, Pollok Country Park, Victoria Park and Queens Park are all distinguished by their avenues of mature trees and fine specimen trees. Trees also contribute to the formal townscapes of city squares, crescents and circuses. Less formal areas of woodland are found along some of the river corridors, including sections of the Clyde itself, in country parks and along the urban fringe. Trees and woodland help to make these attractive places to live and to work.

9.26 Other parts of the urban area are characterised by much lower levels of tree cover. These include former industrial areas such as Clyde Waterfront and Clyde Gateway, and many residential areas – particularly densely tenemented areas and more recent areas of post-war municipal housing. Often, these are areas where a poor quality environment coincides with high levels of deprivation.

9.27 Opportunities for action:

- Encouraging positive management of existing trees in urban areas, helping to improve their resilience to climate change and ensuring the programmed maintenance and replacement of trees in good time. Conservation Areas and Tree Preservation Orders provide important protection mechanisms;
- Ensuring planning for woodland and trees is an integral part of regeneration initiatives for former industrial sites across the GCV area;
- Ensuring that community growth areas and other Greenfield developments are, where appropriate, set within a woodland framework;
- Encouraging new woodland and tree planting in areas with low levels of tree cover, using a combination of planting along road corridors, on underused areas of open space and private gardens to enhance the character of the urban landscape;
- Promoting woodland planting along major road corridors where it provides screening and enhances key views;
- Promoting temporary planting on sites awaiting development.

### *Rural areas*

9.28 Trees are an equally important component of landscapes within the GCV area, often emphasising the contrast between valleys, lowland and upland parts of the area. Traditionally, trees and woodlands performed a number of important functions including providing shelter, building materials and fuel. Orchards were characteristic of areas such as the Clyde Valley where the microclimate combined with proximity to Glasgow to create a niche market. Today, many of the factors that shaped our rural landscapes have changed and many woodlands have fallen into neglect. In some areas, the lines of trees that once marked field boundaries are gradually being lost, creating a more open and less varied landscape in their place.

9.29 In many areas, the emphasis should be on maintaining existing trees and woodland, replanting trees in good time and ensuring woodlands are best able to cope with the effects of climate change. At the same time, there is potential to establish new farm woodlands and shelterbelts where these reflect the character of the rural landscape. Such woodlands could provide shelter for stock and crops, a source of low carbon fuel and networks for animals and plants, as well as contributing to sustainable flood management and carbon sequestration.

9.30 In some areas there may be potential to establish more extensive areas of new woodland, particularly where landscapes have become degraded or where agriculture is no longer viable. These woodlands will help create new landscapes with opportunities for recreation, local businesses and community involvement.

9.31 The Forestry Commission Scotland suite of Landscape Design Guidelines guides the development of woodland and forest proposals to ensure they contribute to landscape character and quality. The Glasgow and the Clyde Valley Landscape Character Assessment also provides a useful description of landscape character types.

9.32 Opportunities for action:

- Promote positive management of trees and woodland where they make an important contribution to the character and quality of the landscape
- Work with land managers to raise awareness of the importance of trees and woodlands and the availability of funding via the Scottish Rural Development Programme for woodland management and creation.
- Promote the role of woodlands in improving the quality and character of damaged landscapes

### Maintaining important designed landscapes and specimen trees

9.33 Historic gardens and designed landscapes are found throughout the GCV area, making an important contribution to its landscape as well as representing a valued historic resource in their own right. Some survive relatively intact, others have lost their historic houses while some have been absorbed into the urban fabric, sometimes being included as public parks and open space. Trees and woodlands are an essential component of these landscapes, often taking the form of exotic policy woodlands, avenues and individual specimen trees. Designed landscapes are also an important resource for biodiversity, often hosting veteran trees and woodlands of great age, and habitats such as ancient wood pasture that would not otherwise survive.

9.34 Opportunities for action:

- Support selective replanting of exotic and native tree species in order to conserve the historic character of the landscape
- Ensure that any new woodland planting within or adjacent to historic gardens and designed landscapes are in keeping with the historic design
- Prioritise woodlands of greatest historic significance, and those best able to contribute to the wider objectives of this strategy

## Protecting the historic environment

9.35 Woodlands are an integral part of the historic environment: contributing to the setting of a range of assets, adding to the character of historic towns and villages, and preserving the patterns of past activity. Trees themselves often provide clues to how and why land has been managed in the past. For instance, the rich ancient woodlands of the Clyde Valley show extensive evidence of coppicing dating to at least the 18th century, supplying products for industries ranging from leather tanning to mining and gunpowder production.

9.36 While trees and woodlands are often of historic importance, there are many historic sites which are sensitive to woodland planting or natural regeneration. Archaeological sites, both above and below the ground, are often vulnerable to damage from tree roots and mechanised processed used in large-scale planting. Sites with a strong relationship to the surrounding landscape – such as the Antonine Wall – are also sensitive to planting that could interfere with key visual relationships. However, well-planned woodlands can make a significant positive contribution to the setting of sites, reinforcing landscape character and restoring degraded landscape structure.

9.37 Wilsontown Ironworks, near Forth in South Lanarkshire, provides an excellent example of how management of the historic environment in forest environments has changed in recent years. The 18th-20th century ironworks and colliery complex, partially planted with conifers during the 1970's, has been extensively researched, conserved and promoted by FCS since 2001.

9.38 The harvesting and restructuring of existing woodland provides an opportunity to improve the setting of historic features including buildings and field boundaries.

9.39 Careful siting and survey will help ensure that new woodlands do not cause physical damage to historic features or affect their setting, for example by interrupting important views.

9.40 Opportunities for action:

- Conserve and enhance the setting of historic environment assets through sensitive woodland planning and appropriate planting
- Promote the importance of trees and woodland as a key component of the historic environment

## HIGH ENVIRONMENTAL QUALITY

9.41 Trees and woodlands can play an important role in maintaining and improving environmental quality by:

- Contributing to a high quality water environment
- Maintaining good air quality
- Reducing the impacts of noise
- Conserving soils

### Contributing to a high quality water environment

9.42 The Water Framework Directive requires all member states to produce River Basin Management Plans which outline how the objective of reaching good ecological status will be achieved by 2015.

9.43 The predicted impacts of climate change, with a milder wetter climate being forecast, will increase the importance of receptors and sinks for rainwater. Trees are amongst the most effective receptors of rainwater because of their ability to both consume water and intercept rainfall, thus slowing the speed at which water runs-off into burns and rivers.

9.44 The ongoing process of producing River Basin Management Plans for Scotland is overseen at the national scale by the Scottish Environment Protection Agency (SEPA), and implemented at a regional scale through partnership 'Area Advisory Groups' (AAGs). The Clyde Advisory Group has been established to co-ordinate and input to river basin planning across the area and to produce detailed Area Management Plans. Woodland management, and planting along river corridors, can help maintain and improve water quality.

9.45 Opportunities for action:

- Support the use of woodland and trees as part of sustainable catchment management to reduce the risk of downstream flooding

## Maintaining good air quality

9.46 Trees and woodlands can have a positive influence on air quality where they filter and absorb pollutants from the air. The benefits of this are most likely to be noticed adjacent to major road corridors and other sources of air pollution.

9.47 While the burning of woody biomass as a source of heat and power can help reduce our reliance on fossil fuels, it can increase pollutant emissions, particularly in denser urban areas. Restrictions apply to the equipment and fuels that can be used with Smoke Control Areas and Air Quality Management Areas. In the medium term it is likely that more equipment will be approved for use in these areas, but in the meantime the focus should be on providing good advice to organisations and householders interested in moving to woodfuel for heat or power.

9.48 Opportunities for action:

- Encourage the planting of trees to filter and absorb air pollutants adjacent to transport corridors and other sources of air pollution

## Reducing the impact of noise

9.49 Trees can help reduce the impacts of noise, both by providing a barrier which absorbs noise, and by creating a more natural source of noise which can mask or reduce the prominence of traffic or other sources of noise.

9.50 Opportunities for action:

- Encourage the planting of trees to absorb and reduce noise impacts

## Conserving and improving soils

9.51 Planting trees on contaminated sites can help break down organic pollutants, reduce concentrations of heavy metals and the development of healthy soils. Careful choice of species is needed to ensure that trees are matched to the environmental character of the site in question.

9.52 Trees can also help stabilise soils where there is a risk of loss or damage as a result of water or wind erosion. Wetter winters and drier summers could increase the importance protecting and conserving soils. On steeper slopes, trees can also help reduce instability following heavy rain.

9.53 Wetter winters could also have implications for woodland management. It may be necessary to modify existing forestry practice to reduce the risks of soil erosion or damage associated with harvesting and activities, particularly where heavy machinery is involved. The move towards continuous cover forestry will help reduce the risk of erosion associated with clear felling.

9.54 Opportunities for action:

- Support the use of tree planting on derelict and contaminated sites as an integral part of site restoration and soil restoration
- Promote the use of trees and woodland to minimise soil erosion

# 10 Geographic priorities

10.1 This section of the FWS sets out the key Opportunities for action for each broad landscape area, as illustrated by Figure 10.1 below.

10.2 It examines the existing woodland resource of each area, highlights key social, economic and environmental issues and establishes priorities for woodland expansion and management.

10.3 These priorities reflect:

- existing patterns of woodland cover;
- categorisation of each zone into preferred, potential and sensitive areas for woodland expansion (and different woodland types) described in **Chapter 6**;
- thematic priorities described in **Chapters 7 to 10**;
- analysis of the environmental character and indicative types of woodland for each zone, carried out as part of the Strategic Environmental Assessment accompanying this Strategy.

## Landscape framework

10.4 The areas defined in Figure 10.1 are based on broad commonality in landscape character, woodland creation and management priorities and socio-economic conditions. The Glasgow and Clyde Valley Landscape Character Assessment, published by SNH, provides a more detailed description of the area's landscape and the contribution made by trees and woodland.

10.5 Given the importance of addressing key peri-urban issues across the region, a 1km zone around the larger settlements has been defined (as 'urban fringe') to target action were it can add most value.

10.6 Although much smaller than the other zones, the Clyde Valley is highlighted for its very specific character, quality and sensitivity of the existing woodland resource.

## Highlighting priorities

10.7 The characteristics of each zone are briefly discussed, including the existing woodland resource and potential to add value. The potential for woodland expansion is highlighted, and a summary table (outlined below) provides an at-a-glance guide to the Opportunities for action applicable to that zone

| THEME (e.g. SUPPORTING THE ECONOMY) | Key |
|---|---|
| **Sub-theme (e.g. An environment for investment)** | |
| Strategic Priority A (e.g. Enhancing economic investment locations) | High priority |
| Strategic Priority B (e.g. Encouraging temporary planting...) | Medium Priority |
| Strategic Priority C (e.g. Greening vacant, derelict and underused land) | Low priority |

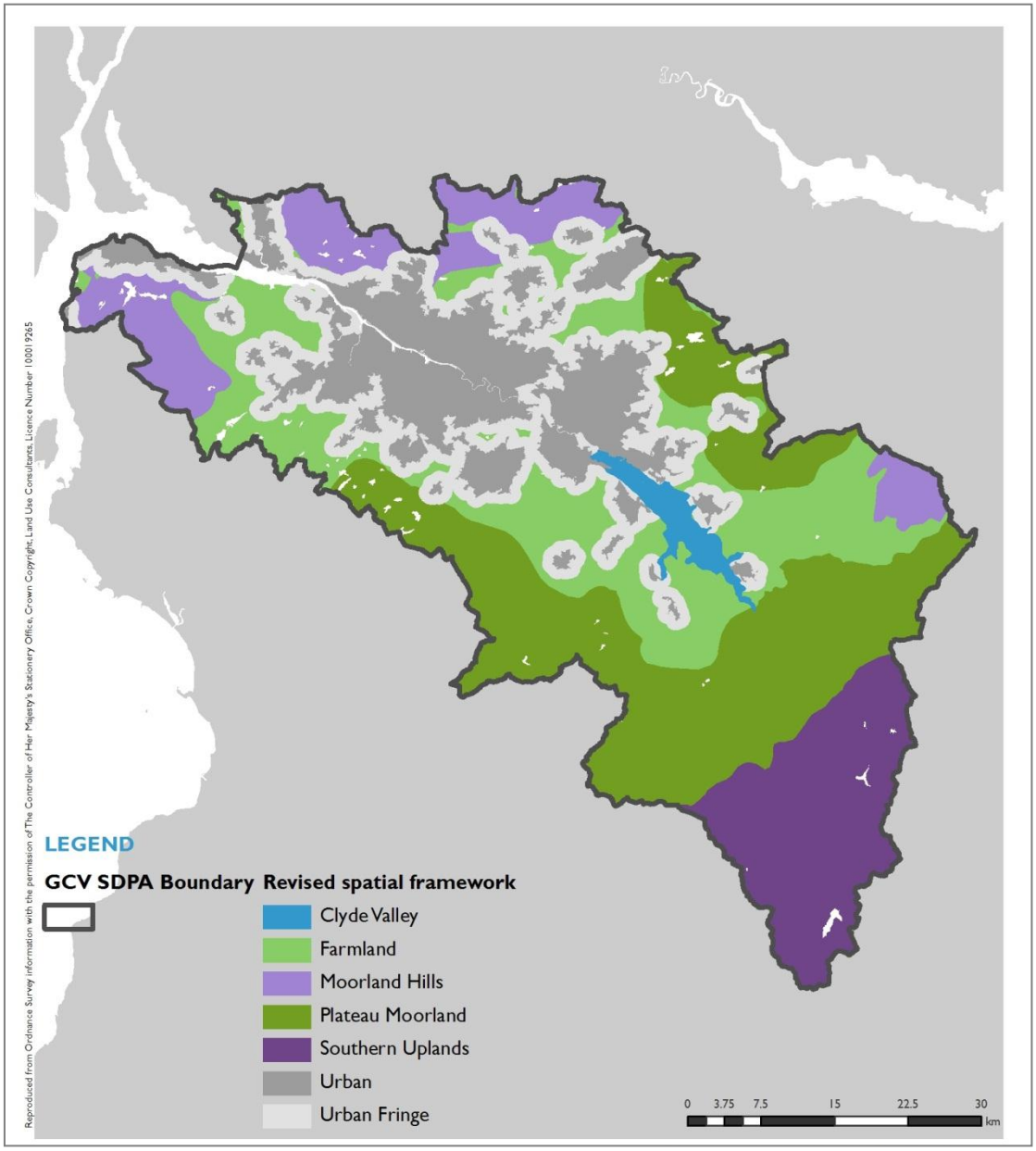



**Figure 10.1: spatial framework**

## URBAN AREAS AND THE URBAN FRINGE

### Overview

10.8 This zone comprises the Glasgow metropolitan area (including parts of Renfrewshire, East Renfrewshire, South Lanarkshire, North Lanarkshire, East Dunbartonshire and West Dunbartonshire, together with the urban part of Glasgow itself), larger settlements such Dumbarton, Greenock and Gourock, Paisley, East Kilbride and Cumbernauld and smaller towns such as Kilsyth and Lanark.

10.9 The zone also includes the urban fringe around these settlements (defined as areas within 1km of the edge of settlements), reflecting the influence of urban areas on the surrounding countryside, and the opportunity for Woods in and Around Towns initiatives.

10.10 Urban areas account for around 16% of the Glasgow and Clyde Valley area (almost a third of the region if you include a 1km urban fringe), and account for most of the region's population, employment and economic activity. Many parts of the urban area are characterised by multiple deprivation, with high unemployment and poor health. The region's key regeneration initiatives are concentrated in the urban areas and are designed to tackle the economic, social and environment legacy of the area's industrial past.

10.11 Trees and woodlands make an important contribution to some areas, including many Victorian parks, squares and crescents and some sections of river corridor. Many of the more recent commercial and residential developments include new tree or woodland planting, though in most cases this will take decades to reach maturity.

10.12 Trees are less common in other parts of the urban area. In part this reflects the history of industrial activity and the pattern of twentieth century urban growth. However, it means that much of the area gains few of the economic, community and environmental benefits associated with trees and woodlands.

10.13 Around the urban fringe a combination of vacant and derelict land and areas of fragmented, and sometimes abandoned, farmland presents different challenges and opportunities in terms of environmental enhancement and new forms of woodland planting.

## Priorities for woodland management and expansion

10.14 Much has already been achieved through the FCS Woods in and Around Towns (WIAT) scheme – however, significant opportunities remain for woodland to contribute to quality of life, environmental enhancement and sustainable economic development.

10.15 A key priority of the Strategy is to encourage the positive management of existing trees and woodland within urban areas. This will reinforce settlements' attractiveness as a place to live, work, invest and visit. It will also contribute to the development of habitat networks and increase resilience to climate change.

10.16 The Strategy supports a significant increase in woodland cover within urban areas and a very significant increase around the urban fringe.

10.17 These new woodlands could comprise a mix of:

- **Native woodlands** contributing to integrated habitat networks, including along river corridors;
- **Mixed woodlands** to enhance the environmental quality of residential areas, commercial and industrial areas, transport corridors and urban fringe landscapes;
- **Energy forests**, particularly where these can be established on vacant and derelict land and on underused land around the urban fringe.

10.18 Existing and new woodlands will also play a key role in place-making, contributing to the development of strategic economic investment locations and community growth areas, creating high quality environments for investment and local communities. They will also contribute to the enhancement of degraded urban and urban fringe environments (including vacant and derelict land)and provide a resource for education, exercise and wellbeing. Woodland management and expansion will contribute to the achievement of GCV and Central Scotland Green Network objectives.

| SUPPORTING THE ECONOMY | |
|---|---|
| **An environment for investment** | |
| Enhancing economic investment locations | |
| Encouraging temporary planting on stalled sites and derelict land | |
| Greening derelict, vacant and underused land | |
| Enhancing transport corridors | |
| Promoting rural development and diversification | |
| Supporting the tourism sector | |
| Shaping new communities | |
| **A healthy timber production and processing sector** | |
| Maintaining and increasing timber production | |
| Encouraging hardwood production | |
| Biomass | |
| Timber transport, processing and local markets | |
| **IMPROVING QUALITY OF LIFE** | |
| **Improving local environments where it is needed most** | |
| Woodland in and around towns | |
| New woodlands on derelict and underused land | |
| **Involving and empowering communities** | |
| Community participation in woodland planning and management | |
| Community ownership | |
| Woodland based social enterprise | |
| Access and health improvement | |
| Education and skills | |
| **RESPONDING TO CLIMATE CHANGE** | |
| **Mitigating climate change** | |
| Increasing carbon sequestration | |
| Energy efficiency and the forestry sector | |
| Woodfuel and biomass | |
| Contributing to renewable energy development | |
| **Adapting to climate change** | |
| Sustainable flood management | |
| Expanding habitat networks | |
| Managing trees and woodlands in a changing climate | |
| **ENRICHING THE ENVIRONMENT** | |
| **Diverse species and habitats** | |
| Improving the condition of nationally important woodland habitats | |
| Contributing to Local Biodiversity Action Plan targets | |
| Restoring ancient and semi-natural woodland | |
| Developing habitat networks | |
| Expanding native woodlands | |
| Protecting and enhancing other important habitats | |
| **Better townscapes and landscapes** | |
| Improving townscapes and landscapes | |
| Enhancing damaged landscapes | |
| Maintaining important designed landscapes and specimen trees | |
| Protecting the historic environment | |
| **High environmental quality** | |
| Contributing to a high quality water environment | |
| Maintaining good air quality | |
| Reducing the impact of noise | |
| Conserving soils | |

| Key |
|---|
| High priority |
| Medium Priority |
| Low priority |

# FARMLAND

## Overview

10.19 The farmland zone[12] makes up around 18% the GCV region. It ranges from lower lying areas on the floodplains of the Black and White Cart Waters and in the Kelvin Valley, to more open and elevated pastures along the middle Clyde valley in South Lanarkshire.

10.20 Key characteristics of these areas include:

- Plateau landforms with some smaller areas of more complex upland and valley farmland;
- Predominance of pastoral farming;
- Patterns of shelterbelts, farm woodlands, field boundary trees, policy woodlands and areas of productive forest;
- Localised impact of mineral working, settlements, transport and other infrastructure.

10.21 Agriculture also makes an important contribution the economy of the region, to the vitality of rural communities, and to the character of the wider landscape. The emphasis of current policy is to achieve greater integration of agriculture and forestry, with woodland creation and management contributing practically and financially to farm businesses, whilst delivering other social and environmental benefits.

[12] This zone corresponds broadly to the Rolling Farmland, Plateau Farmland, Rugged Upland Farmland and parts of the Fragmented Farmland landscape character types as defined within the Glasgow and Clyde Valley Landscape Character Assessment.

## Priorities for woodland management and expansion

10.22 Across the GCV area, there are significant opportunities for woodland to support existing agricultural activity and provide new business opportunities for land owners and managers. There is also potential to contribute to the achievement of a range of social, economic and environmental objectives.

10.23 A key priority of the Strategy is to encourage the positive management of existing woodland and trees within the Farmland zone.

10.24 The Strategy supports a significant increase in woodland cover across this zone, These new woodlands could be made up of:

10.25 New **mixed woodlands**, comprising farm woodlands and shelterbelts, will account for much of the increase in woodland cover in this zone. These woodlands could help reinforce existing landscape character, contribute to farm incomes and create opportunities to expand habitat networks, create new sources of wood fuel and opportunities for recreation.

10.26 There will also be opportunities for new **softwood forests**, though care would be required not to affect the smaller scale character of some parts of this zone.

10.27 New **native woodlands** will make an important contribution to integrated habitat networks, reconnecting woodland habitats within and neighbouring this zone.

10.28 There will be opportunities to establish new **energy woodlands** within this zone, particularly closer to transport infrastructure, settlements and processing infrastructure. These will be in addition to mixed woodlands described above.

| SUPPORTING THE ECONOMY | |
|---|---|
| **An environment for investment** | |
| Enhancing economic investment locations | |
| Encouraging temporary planting on stalled sites and derelict land | |
| Greening derelict, vacant and underused land | |
| Enhancing transport corridors | |
| Promoting rural development and diversification | |
| Supporting the tourism sector | |
| Shaping new communities | |
| **A healthy timber production and processing sector** | |
| Maintaining and increasing timber production | |
| Encouraging hardwood production | |
| Biomass | |
| Timber transport, processing and local markets | |
| **IMPROVING QUALITY OF LIFE** | |
| **Improving local environments where it is needed most** | |
| Woodland in and around towns | |
| New woodlands on derelict and underused land | |
| **Involving and empowering communities** | |
| Community participation in woodland planning and management | |
| Community ownership | |
| Woodland based social enterprise | |
| Access and health improvement | |
| Education and skills | |
| **RESPONDING TO CLIMATE CHANGE** | |
| **Mitigating climate change** | |
| Increasing carbon sequestration | |
| Energy efficiency and the forestry sector | |
| Woodfuel and biomass | |
| Contributing to renewable energy development | |
| **Adapting to climate change** | |
| Sustainable flood management | |
| Expanding habitat networks | |
| Managing trees and woodlands in a changing climate | |
| **ENRICHING THE ENVIRONMENT** | |
| **Diverse species and habitats** | |
| Improving the condition of nationally important woodland habitats | |
| Contributing to Local Biodiversity Action Plan targets | |
| Restoring ancient and semi-natural woodland | |
| Developing habitat networks | |
| Expanding native woodlands | |
| Protecting and enhancing other important habitats | |
| **Better townscapes and landscapes** | |
| Improving townscapes and landscapes | |
| Enhancing damaged landscapes | |
| Maintaining important designed landscapes and specimen trees | |
| Protecting the historic environment | |
| **High environmental quality** | |
| Contributing to a high quality water environment | |
| Maintaining good air quality | |
| Reducing the impact of noise | |
| Conserving soils | |

| Key |
|---|
| High priority |
| Medium Priority |
| Low priority |

## CLYDE VALLEY AND TRIBUTARIES

10.29 Between Lanark and Hamilton, the Clyde Valley[13], together with tributary valleys such as the Avon, Nethan, South Calder and Garrion, contains some of the UK's finest areas of riverine and gorge woodlands. Many of these woodlands are ancient in origin and have a history of woodland management that extends back to the middle ages and their rich ecology is reflected in designation under European legislation as a Special Area of Conservation. The steep, often unstable nature of many valley slopes meant that these woodlands survived despite the industrialisation of neighbouring areas of countryside during the 19th and early 20th centuries. The woods are not untouched, however, reflecting the history of grazing, coppicing and other types of management.

10.30 These rich, semi-natural and ancient woods are accompanied by a series of historic gardens and designed landscapes, many of which exploited the dramatic, well wooded character of the valley. There is also a legacy of fruit orchards, remnants from the time when farmers in the Clyde Valley exploited the micro-climate to supply Glasgow with apples and soft fruit. Orchards subsequently gave way to horticultural glasshouses and later to garden centres.

10.31 The Clyde Valley has a series of small settlements, many based around bridging points or mills, the latter including the World Heritage Site of New Lanark. The area is of importance for tourism and recreation. In addition to the World Heritage Site, the Clyde Walkway passes and a tourist route pass through the valley.

[13] This zone corresponds broadly to the Incised River Valleys landscape character type as defined within the Glasgow and Clyde Valley Landscape Character Assessment.

## Priorities for woodland management and expansion

10.32 The main priority within the Clyde Valley FWS Zone is on managing the existing woodland resource with a particular emphasis on internationally and nationally important woodland habitats, the area's legacy of historic gardens and designed landscapes, ancient wood pasture and surviving orchards.

10.33 The strategy supports a relatively small increase in woodland cover. This will be made up of:

- **Riparian woodland** to contribute to sustainable flood management and slope stabilisation;
- **Native woodlands** to restore and connect woodland habitats, as part of wider habitat networks. The zone should provide a core from which woodland planting in surrounding areas can contribute to the enhancement of integrated habitat networks. New planting can make an important contribution to improving the resilience of the existing resource, and key species, to the challenges of climate change;
- **Mixed woodlands** comprising farm woodlands and shelterbelts. These woodlands will reinforce existing landscape character, contribute to farm incomes and create opportunities to expand habitat networks, create new sources of wood fuel and opportunities for recreation.

10.34 Rural support mechanisms can play a major role in restoring important woodland assets by enabling landowners to implement positive management regimes that benefit species and habitats. Restoring woodland SSSIs to 'favourable' condition is therefore a high priority.

| SUPPORTING THE ECONOMY | |
|---|---|
| **An environment for investment** | |
| Enhancing economic investment locations | |
| Encouraging temporary planting on stalled sites and derelict land | |
| Greening derelict, vacant and underused land | |
| Enhancing transport corridors | |
| Promoting rural development and diversification | |
| Supporting the tourism sector | |
| Shaping new communities | |
| **A healthy timber production and processing sector** | |
| Maintaining and increasing timber production | |
| Encouraging hardwood production | |
| Biomass | |
| Timber transport, processing and local markets | |
| **IMPROVING QUALITY OF LIFE** | |
| **Improving local environments where it is needed most** | |
| Woodland in and around towns | |
| New woodlands on derelict and underused land | |
| **Involving and empowering communities** | |
| Community participation in woodland planning and management | |
| Community ownership | |
| Woodland based social enterprise | |
| Access and health improvement | |
| Education and skills | |
| **RESPONDING TO CLIMATE CHANGE** | |
| **Mitigating climate change** | |
| Increasing carbon sequestration | |
| Energy efficiency and the forestry sector | |
| Woodfuel and biomass | |
| Contributing to renewable energy development | |
| **Adapting to climate change** | |
| Sustainable flood management | |
| Expanding habitat networks | |
| Managing trees and woodlands in a changing climate | |
| **ENRICHING THE ENVIRONMENT** | |
| **Diverse species and habitats** | |
| Improving the condition of nationally important woodland habitats | |
| Contributing to Local Biodiversity Action Plan targets | |
| Restoring ancient and semi-natural woodland | |
| Developing habitat networks | |
| Expanding native woodlands | |
| Protecting and enhancing other important habitats | |
| **Better townscapes and landscapes** | |
| Improving townscapes and landscapes | |
| Enhancing damaged landscapes | |
| Maintaining important designed landscapes and specimen trees | |
| Protecting the historic environment | |
| **High environmental quality** | |
| Contributing to a high quality water environment | |
| Maintaining good air quality | |
| Reducing the impact of noise | |
| Conserving soils | |

| Key |
|---|
| High priority |
| Medium Priority |
| Low priority |

## MOORLAND HILLS

10.35 This FWS Zone[14] comprises the Clyde Muirshiel Hills, Kilpatrick Hills, Campsie and Kilsyth Fells and the south western part of the Pentland Hills. Together, these hills make up just over 9% of the GCV area. The moorland hills support a range of upland habitats including peat bog, grasslands and wetlands. The hills also include some areas of productive coniferous forest. Key characteristics include:

- distinctive upland character created by the combination of elevation and exposure,
- rugged landform, moorland vegetation and the predominant lack of modern development;
- a sense of remoteness which contrasts strongly with the farmed and developed lowland areas;
- presence of archaeological sites on some hilltops and sides .

10.36 The hills are already an important recreation resource for the GCV area, providing areas with a more remote character and extensive views close to the metropolitan area. The Clyde Muirshiel Hills form part of a Regional Park that extends into North Ayrshire, with a visitor centre and a network of trails. The Campsie Fells include the Carron Valley forest which has regionally important mountain biking trails and a more extensive network of forest tracks and paths. The wider Campsies are an important recreation resource and have been proposed as a Regional Park. The Kilpatrick Hills are also important, with work underway to expand native woodland and improve recreation opportunities. That part of the Pentland Hills within this zone lies outwith the Pentland Hills Regional Park.

[14] This zone corresponds broadly to the Rugged Moorland Hills, Old Red Sandstone Hillsand Drumlin Foothills landscape character types as defined within the Glasgow and Clyde Valley Landscape Character Assessment.

## Priorities for woodland management and expansion

10.37 These hills will continue to include areas of productive conifer forest. Given the hills' recreation importance, the emphasis will be on restructuring these woodlands to improve their landscape and ecological value whilst further developing opportunities for woodland based recreation. This may involve the removal of some areas of productive forest, together with an expansion of native woodlands and, where appropriate, restoration of open ground habitats.

10.38 The Strategy supports a moderate increase in woodland cover across this zone.

10.39 Most of this expansion will comprise **native woodlands**, with an emphasis on particularly on lower hill slopes and along burns and river valleys.

10.40 There will be some opportunities for new **softwood forests**. These are likely to be of on lower hills slopes and would require sensitive siting and careful design to reflect the hills' environmental and recreational importance.

10.41 There may be opportunities to work with communities neighbouring these moorland hills to create significant new community woodlands.

10.42 There may be opportunities, particularly in the Kilpatrick Hills, to expand the existing network of forests and woodlands to deliver new access and recreation opportunities of regional scale and significance.

| SUPPORTING THE ECONOMY | |
|---|---|
| **An environment for investment** | |
| Enhancing economic investment locations | |
| Encouraging temporary planting on stalled sites and derelict land | |
| Greening derelict, vacant and underused land | |
| Enhancing transport corridors | |
| Promoting rural development and diversification | |
| Supporting the tourism sector | |
| Shaping new communities | |
| **A healthy timber production and processing sector** | |
| Maintaining and increasing timber production | |
| Encouraging hardwood production | |
| Biomass | |
| Timber transport, processing and local markets | |
| **IMPROVING QUALITY OF LIFE** | |
| **Improving local environments where it is needed most** | |
| Woodland in and around towns | |
| New woodlands on derelict and underused land | |
| **Involving and empowering communities** | |
| Community participation in woodland planning and management | |
| Community ownership | |
| Woodland based social enterprise | |
| Access and health improvement | |
| Education and skills | |
| **RESPONDING TO CLIMATE CHANGE** | |
| **Mitigating climate change** | |
| Increasing carbon sequestration | |
| Energy efficiency and the forestry sector | |
| Woodfuel and biomass | |
| Contributing to renewable energy development | |
| **Adapting to climate change** | |
| Sustainable flood management | |
| Expanding habitat networks | |
| Managing trees and woodlands in a changing climate | |
| **ENRICHING THE ENVIRONMENT** | |
| **Diverse species and habitats** | |
| Improving the condition of nationally important woodland habitats | |
| Contributing to Local Biodiversity Action Plan targets | |
| Restoring ancient and semi-natural woodland | |
| Developing habitat networks | |
| Expanding native woodlands | |
| Protecting and enhancing other important habitats | |
| **Better townscapes and landscapes** | |
| Improving townscapes and landscapes | |
| Enhancing damaged landscapes | |
| Maintaining important designed landscapes and specimen trees | |
| Protecting the historic environment | |
| **High environmental quality** | |
| Contributing to a high quality water environment | |
| Maintaining good air quality | |
| Reducing the impact of noise | |
| Conserving soils | |

| Key |
|---|
| High priority |
| Medium Priority |
| Low priority |

## PLATEAU MOORLANDS

10.43 Plateau moorlands and foothills enclose much of the Clyde Valley to the south and east of the Glasgow conurbation[15]. Key characteristics of this area include:

- distinctive upland character created by the combination of elevation, exposure, smooth, plateau landform and moorland vegetation;
- a sense of remoteness which contrasts with the farmed and settled lowlands.
- These are open areas of gently sloping moorland with a mixture of peatland, grassland and coniferous forests. The moorlands include important habitats and a number of areas which are protected under European legislation. The hills are cut by the open valleys of the Clyde and its tributaries, providing routes for transport corridors and more sheltered locations for villages and smaller towns. Mineral working has affected large parts of this area and today it accommodates a number of wind energy developments. Forest cover in this zone has been reduced as a result of wind farm development.

[15] This zone corresponds broadly to the Plateau Moorland and parts of the Upland River Valley landscape character types as defined within the Glasgow and Clyde Valley Landscape Character Assessment.

## Priorities for woodland management and expansion

10.44 These plateau moorlands will continue to include areas of productive conifer forest. The long term restructuring of these forests will continue to improve both their landscape and ecological value.

10.45 The Strategy supports a significant increase in woodland cover across this zone.

10.46 These new woodlands will comprise a combination of:

- New **softwood forests** which will likely be sited in areas accessible from the main road network. There may also be important opportunities to create new areas of softwood forest in areas affected by mineral working.
- New **native woodlands**, designed to expand integrated habitat networks on lower hill slopes and along burns and river valleys. Native woodland expansion will also contribute to riparian woodland and sustainable flood management.
- New **energy woodlands**, particularly closer to transport infrastructure, settlements and processing infrastructure.
- New **mixed woodlands**, comprising farm woodlands and shelterbelts within the larger valleys cutting through these moorlands. There will also be opportunities for new woodlands to help screen developments such as mineral extraction.

10.47 There may be opportunities to work with communities in the river valleys and fringes of the plateau moorlands to create new community woodlands.

| SUPPORTING THE ECONOMY | |
|---|---|
| **An environment for investment** | |
| Enhancing economic investment locations | |
| Encouraging temporary planting on stalled sites and derelict land | |
| Greening derelict, vacant and underused land | |
| Enhancing transport corridors | |
| Promoting rural development and diversification | |
| Supporting the tourism sector | |
| Shaping new communities | |
| **A healthy timber production and processing sector** | |
| Maintaining and increasing timber production | |
| Encouraging hardwood production | |
| Biomass | |
| Timber transport, processing and local markets | |
| **IMPROVING QUALITY OF LIFE** | |
| **Improving local environments where it is needed most** | |
| Woodland in and around towns | |
| New woodlands on derelict and underused land | |
| **Involving and empowering communities** | |
| Community participation in woodland planning and management | |
| Community ownership | |
| Woodland based social enterprise | |
| Access and health improvement | |
| Education and skills | |
| **RESPONDING TO CLIMATE CHANGE** | |
| **Mitigating climate change** | |
| Increasing carbon sequestration | |
| Energy efficiency and the forestry sector | |
| Woodfuel and biomass | |
| Contributing to renewable energy development | |
| **Adapting to climate change** | |
| Sustainable flood management | |
| Expanding habitat networks | |
| Managing trees and woodlands in a changing climate | |
| **ENRICHING THE ENVIRONMENT** | |
| **Diverse species and habitats** | |
| Improving the condition of nationally important woodland habitats | |
| Contributing to Local Biodiversity Action Plan targets | |
| Restoring ancient and semi-natural woodland | |
| Developing habitat networks | |
| Expanding native woodlands | |
| Protecting and enhancing other important habitats | |
| **Better townscapes and landscapes** | |
| Improving townscapes and landscapes | |
| Enhancing damaged landscapes | |
| Maintaining important designed landscapes and specimen trees | |
| Protecting the historic environment | |
| **High environmental quality** | |
| Contributing to a high quality water environment | |
| Maintaining good air quality | |
| Reducing the impact of noise | |
| Conserving soils | |

| Key |
|---|
| High priority |
| Medium Priority |
| Low priority |

## SOUTHERN UPLANDS

10.48 Immediately south of the Southern Upland Fault lies a bold upland area with a character very different to the lower moorlands and hills to the north and west. The Southern Uplands are distinguished by their height (up to 575 m AOD), their geology and the influence of glacial erosion. The hills have steep, smooth slopes rising to rounded summits. A series of valleys are cut into the hills, providing routes for road and rail corridors and a number of small settlements, some of industrial origin.

10.49 Landcover in the Southern Uplands is typically coarse grassland, though the highest areas often comprise heather moorland. Areas of rough grazing generally lack walled enclosures. Semi-natural woodland is scarce, limited to a few more sheltered glens, gullies and clefts. There are also extensive areas of coniferous forest, together with prominent, almost sculptural plantations, particularly around the fringes of the higher hills. Forest cover in this zone has, however, been reduced as a result of wind farm development.

## Priorities for woodland management and expansion

10.50 The Southern Uplands will continue to include areas of productive conifer forest. The emphasis should be on restructuring these woodlands to improve their landscape and ecological value. There may be opportunities for additional productive forests in this area.

10.51 The Strategy supports an increase in woodland cover across this zone.

10.52 These new woodlands will comprise a combination of:

- New **native woodlands**, designed to expand integrated habitat networks on lower hill slopes and along burns and river valleys. Native woodland expansion will also contribute to riparian woodland and sustainable flood management.
- New **softwood forests** which will be sited in areas accessible from the main road network to optimise efficiency and reduce emissions.

10.53 There may be opportunities to work with communities within the Southern Uplands to create new community woodlands.

| SUPPORTING THE ECONOMY | |
|---|---|
| **An environment for investment** | |
| Enhancing economic investment locations | |
| Encouraging temporary planting on stalled sites and derelict land | |
| Greening derelict, vacant and underused land | |
| Enhancing transport corridors | |
| Promoting rural development and diversification | |
| Supporting the tourism sector | |
| Shaping new communities | |
| **A healthy timber production and processing sector** | |
| Maintaining and increasing timber production | |
| Encouraging hardwood production | |
| Biomass | |
| Timber transport, processing and local markets | |
| **IMPROVING QUALITY OF LIFE** | |
| **Improving local environments where it is needed most** | |
| Woodland in and around towns | |
| New woodlands on derelict and underused land | |
| **Involving and empowering communities** | |
| Community participation in woodland planning and management | |
| Community ownership | |
| Woodland based social enterprise | |
| Access and health improvement | |
| Education and skills | |
| **RESPONDING TO CLIMATE CHANGE** | |
| **Mitigating climate change** | |
| Increasing carbon sequestration | |
| Energy efficiency and the forestry sector | |
| Woodfuel and biomass | |
| Contributing to renewable energy development | |
| **Adapting to climate change** | |
| Sustainable flood management | |
| Expanding habitat networks | |
| Managing trees and woodlands in a changing climate | |
| **ENRICHING THE ENVIRONMENT** | |
| **Diverse species and habitats** | |
| Improving the condition of nationally important woodland habitats | |
| Contributing to Local Biodiversity Action Plan targets | |
| Restoring ancient and semi-natural woodland | |
| Developing habitat networks | |
| Expanding native woodlands | |
| Protecting and enhancing other important habitats | |
| **Better townscapes and landscapes** | |
| Improving townscapes and landscapes | |
| Enhancing damaged landscapes | |
| Maintaining important designed landscapes and specimen trees | |
| Protecting the historic environment | |
| **High environmental quality** | |
| Contributing to a high quality water environment | |
| Maintaining good air quality | |
| Reducing the impact of noise | |
| Conserving soils | |

| Key |
|---|
| High priority |
| Medium Priority |
| Low priority |

# 11 Action plan

11.1 The Action Plan takes forward the **strategic priorities** outlined in Sections 6 to 9 of the Strategy, highlighting the potential partners that will contribute to the achievement of each.

| | Themes and priority actions | Lead organisations | Timescale |
|---|---|---|---|
| **I** | **Supporting the economy** | | |
| A | An environment for investment | | |
| A1 | Enhancing economic investment locations | GCVSDPA<br>Councils<br>GCV GNP<br>Forestry Commission Scotland<br>Developers | |
| A2 | Encouraging temporary planting on stalled sites and derelict land | Forestry Commission Scotland<br>Councils<br>Mid Scotland Forest and Timber Industries Cluster<br>Land owners<br>GCV GNP | |
| A3 | Greening vacant, derelict and underused land | Forestry Commission Scotland<br>Councils<br>Land owners<br>GCV GNP | |
| A4 | Enhancing transport corridors | Transport Scotland<br>Network Rail<br>Councils<br>Forestry Commission Scotland | |
| A5 | Promoting rural development and diversification | RERAD<br>Land managers<br>NFU and SRPBA<br>Councils<br>Forestry Commission Scotland | |
| A6 | Supporting the tourism sector | Visit Scotland<br>Forestry Commission Scotland<br>Woodland owners<br>Tourism operators<br>Councils<br>Owners of historic landscapes Historic Scotland | |
| A7 | Shaping new communities | Councils<br>Developers<br>GCV GNP<br>Forestry Commission Scotland | |
| B | A healthy timber production and processing sector | | |
| B1 | Maintaining and increasing timber production | Forestry Commission Scotland<br>Forest sector | |

| | Themes and priority actions | Lead organisations | Timescale |
|---|---|---|---|
| B2 | Encouraging hardwood production | Forestry Commission Scotland<br>Forest sector<br>Woodland owners<br>Mid ScotlandForest and Timber Industries Cluster | |
| B4 | Biomass | Forestry Commission Scotland<br>Councils<br>Mid ScotlandForest and Timber Industries Cluster<br>Land owners<br>GCV GNP | |
| B5 | Timber transport, processing and local markets | Forestry Commission Scotland<br>Councils<br>Mid ScotlandForest and Timber Industries Cluster<br>Public sector organisations<br>GCV GNP | |
| **2** | **Improving quality of life** | | |
| C | Improving local environments where it is needed most | | |
| C1 | Woodland in and around towns | Forestry Commission Scotland<br>Councils<br>GCV GNP<br>Community and voluntary sector<br>Intermediate labour market organisations | |
| C2 | New woodlands on derelict and underused land | Forestry Commission Scotland<br>Councils<br>GCV GNP | |
| D | Involving and empowering communities | | |
| D1 | Community participation in woodland planning and management | Forestry Commission Scotland<br>Councils<br>GCV GNP<br>Community and voluntary sector | |
| D2 | Community ownership | Forestry Commission Scotland<br>Councils<br>GCV GNP<br>Community and voluntary sector | |
| D3 | Woodland based social enterprise | Forestry Commission Scotland<br>Councils<br>GCV GNP<br>Community and voluntary sector<br>Intermediate labour market organisations | |
| D4 | Access and health improvement | Councils<br>GCV GNP<br>Glasgow Centre for Population and Public Health<br>Forestry Commission Scotland | |

| | Themes and priority actions | Lead organisations | Timescale |
|---|---|---|---|
| D5 | Education and skills | Forestry Commission Scotland<br>Education Authorities<br>Councils<br>GCV GNP<br>Community and voluntary sector<br>Intermediate labour market organisations | |
| **3** | **Responding to climate change** | | |
| E | Mitigating climate change | | |
| E1 | Increasing carbon sequestration | Forestry Commission Scotland<br>Forestry sector<br>Mid Scotland Forest and Timber Industries Cluster | |
| E2 | Energy efficiency and the forestry sector | Forestry Commission Scotland<br>Forestry sector<br>Mid Scotland Forest and Timber Industries Cluster | |
| E3 | Woodfuel and biomass | Forestry Commission Scotland<br>Councils<br>Mid Scotland Forest and Timber Industries Cluster<br>Public sector organisations<br>GCV GNP | |
| E4 | Contributing to renewable energy development | Forestry Commission Scotland<br>Forestry sector<br>Councils<br>Utilities and developers | |
| F | Adapting to climate change | | |
| F1 | Sustainable flood management | Forestry Commission Scotland<br>Councils<br>SEPA<br>Clyde River Basin District Advisory Group | |
| F2 | Expanding habitat networks | Forestry Commission Scotland<br>Scottish Natural Heritage<br>GCV GNP | |
| F3 | Managing trees and woodlands in a changing climate | Forestry Commission Scotland<br>Forestry sector<br>Historic Scotland<br>Councils<br>Gardens and designed landscape owners | |
| **4** | **Enriching the environment** | | |
| G | Diverse species and habitats | | |
| G1 | Improving the condition of nationally important woodland habitats | Forestry Commission Scotland<br>Scottish Natural Heritage RERAD<br>Land owners and managers<br>Councils | |

| | Themes and priority actions | Lead organisations | Timescale |
|---|---|---|---|
| G2 | Contributing to Local Biodiversity Action Plan targets | Forestry Commission Scotland<br>Scottish Natural Heritage<br>Woodland owners and managers | |
| G3 | Restoring ancient and semi-natural woodland | Forestry Commission Scotland<br>Scottish Natural Heritage | |
| G4 | Developing habitat networks | Forestry Commission Scotland<br>Scottish Natural Heritage<br>Land owners and managers<br>Councils | |
| G5 | Expanding native woodlands | Forestry Commission Scotland<br>Scottish Natural Heritage<br>Land owners and managers<br>Councils | |
| G6 | Protecting and enhancing other important habitats | Forestry Commission Scotland<br>Scottish Natural Heritage<br>Forestry sector | |
| H | Better townscapes and landscapes | | |
| H1 | Improving townscapes and landscapes | Councils<br>Forestry Commission Scotland<br>GCV GNP<br>Developers<br>Transport Scotland<br>Network Rail | |
| H2 | Enhancing damaged landscapes | Forestry Commission Scotland<br>Scottish Natural Heritage<br>Land owners and managers<br>Councils | |
| H3 | Maintaining important designed landscapes and specimen trees | Historic Scotland<br>West of Scotland Archaeological Service<br>Forestry Commission Scotland<br>Owners | |
| H4 | Protecting the historic environment | Historic Scotland<br>West of Scotland Archaeological Service<br>Forestry Commission Scotland<br>Councils | |
| I | High environmental quality | | |
| I1 | Contributing to a high quality water environment | SEPA<br>Forestry Commission Scotland<br>Clyde River Basin District Advisory Group | |
| I2 | Maintaining good air quality | SEPA<br>Forestry Commission Scotland<br>Councils<br>Forestry sector | |

| | Themes and priority actions | Lead organisations | Timescale |
|---|---|---|---|
| I3 | Reducing the impact of noise | Forestry Commission Scotland<br>Councils | |
| I4 | Conserving soils | Forestry Commission Scotland<br>Councils | |

# APPENDIX 1: MAPPING METHODOLOGY

# DEVELOPING THE 'INDICATIVE POTENTIAL' MAP (FIGURE 5.1)

## Context

Scottish Government advice 'The Right Tree in the Right Place' (RTRP) provided the context for the mapping work, outlining the broad criteria that Forestry and Woodland Strategies should follow. It states that '*woodland strategies should divide land into categories, including the suitability of different locations for new woodland planting,*' defining the following recommended categories:

- **Preferred** land will be that which offers the *greatest scope to accommodate future expansion of a range of woodland types*, and hence, to deliver on a very wide range of objectives. Within preferred areas sensitivities are, in general, likely to be limited, and it should be possible to address any particular site specific issues within well designed proposals that meet the UK Forestry Standard and associated guidelines. Future woodland expansion is therefore likely to be focused on preferred areas.
- **Potential** land will be that which offers considerable potential to accommodate future expansion of a range of woodland types, but *where at least one significant sensitivity exists*. The extent to which specific proposals in potential areas will be permissible will depend on how well sensitivities can be addressed within the proposals. The design of schemes in such areas will require careful consideration.
- **Sensitive** areas will be those where a *combination of sensitivities means there is limited scope to accommodate further woodland expansion*. Limited woodland expansion is only likely to be possible within sensitive areas where it is of a scale and character which can be accommodated without significant negative impacts and/or where it would positively enhance the features of interest locally. In some areas cumulative impact may be a relevant consideration.
  *It will be for planning authorities to determine the detailed list of sensitivities* locally that should inform the categorisation of land, but it is expected that this will include priority species and habitats, landscape, the cultural and historical environment, and interactions with the water environment and soils.

RTRP is clear that planning authorities are responsible for developing an approach that is suitable for their area of responsibility and adequately addresses the environmental sensitivities of that area at an appropriate scale and level of detail.

### *Interpretation*

RTRP implies that the 'land categorisation' map should apply to **all** woodland types, representing a summation of the key sensitivities that should influence decisions on proposed woodland expansion.

As a regional strategy, forming part of the GCV Strategic Development Plan, the GCV FWS and its attendant Strategic Environmental Assessment focussed on regionally significant sensitivities and environmental effects. Figure 5.1 was therefore compiled using GIS datasets that depicted the most important environmental features of the region. In line with RTRP, each of the identified sensitivities was then assigned to the 'sensitive' or 'potential' category, depending on the likely level of constraint their presence would impose on *any type* of future woodland expansion, as indicated in Table 11.1 below. These were discussed and agreed with the project Steering Group and moved through a number of iterations before the finalised version included in this document as Figure 5.1. (Versions can be consulted in the SEA Environmental Report).

Additional land categories were selected to draw out key messages of the FWS:

- **Existing woodland**: highlighting the presence (or absence) of the current woodland resource in the region
- **Unsuitable**: areas assessed as being physically unsuitable for the growth or management of trees (based on the-then Macaulay Institute Land Capability for Forestry)
- **Urban**: larger settlements comprising the metropolitan area of the GCV SDP region – reflecting the focus on regeneration and economic development, and the fact that opportunities for new woodland within settlements are often too small to map at a strategic scale
- **Preferred (urban fringe)**: reflecting the fact that enhancement of the urban fringe area is a priority of the SDP - addressing poor local environmental quality, contributing to the setting of proposed and existing development and creating opportunities for community involvement

**Table 11.1: 'Sensitivity' datasets**

| Category | GIS Dataset |
|---|---|
| **Sensitive** | Natura 2000 sites<br>SSSI<br>Scheduled Monuments<br>World Heritage Sites (+ buffer zones)<br>Conservation Areas<br>Inventory-listed Gardens & designed landscapes<br>National Scenic Areas<br>Peat soils<br>Ancient and Semi-natural woods<br>[+ *intersection of 2 or more significant sensitivities* – ***no longer applies due to single 'potential' dataset***] |
| **Potential** | Areas with lower land capability for woodland<br>[*Local landscape designations* – ***REMOVED***]<br>[*Land capability for agriculture class 3* – ***REMOVED***] |
| **Preferred** | No significant constraints |
| **Preferred (urban fringe)** | No significant constraints, within 1km of settlement with population >3000 |
| **Unsuitable** | Land Capability for Forestry – unsuitable<br>Water bodies |
| **Built-up** | Scottish Government urban/rural classification |
| **Existing** | FC National Forest Inventory dataset |

### Key assumptions

It is critical to understand that the mapping provided in this Strategy is necessarily indicative and that site-specific constraints and opportunities exist within each land classification – but cannot be effectively recorded or depicted at a scale appropriate for the FWS. Detailed assessment of individual woodland creation proposals, as required by forestry legislation and regulations, remains the primary means of environmental safeguarding. As noted above – and expanded upon in the Environmental Report – the mapping depends upon the effective administration of existing environmental safeguards (e.g. the UK Forestry Standard, the Environmental Impact Assessment (Forestry) (Scotland) Regulations 1999 and the suite of Forestry Commission guidance). The maps in this document are therefore intended only to guide applicants towards suitable sites and to highlight areas where particularly objectives apply.

The constituent datasets were all captured at different scales/resolutions which limit the range of scales at which the map can be used effectively.

### GIS modelling process

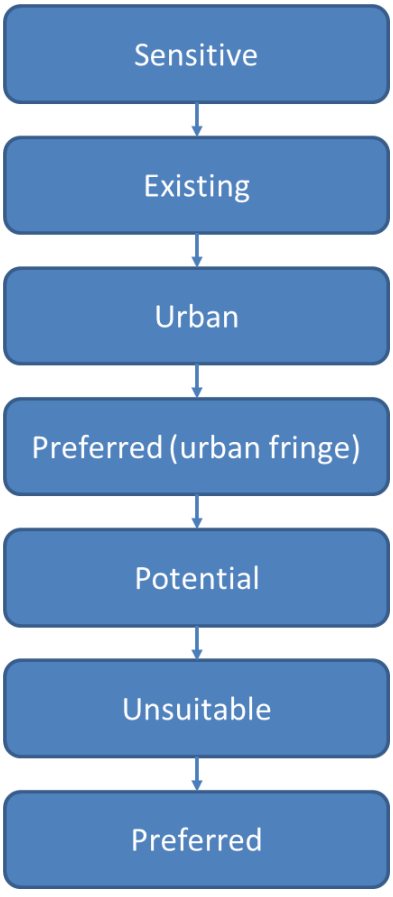
A range of options for map creation were considered during the course of the project, but ultimately a relatively simple approach based on intersection of sensitivities was adopted, for a number of reasons:

- Transparency and potential for consultation in arriving at components of each land class and their relationships
- Greater certainty of results – as opposed to approaches using weighting / grid-based intersection analysis

Each of the datasets listed in Table 11.1 was assembled into a unified 'category' layer using the relevant operations in ArcGIS. The seven category layers were then joined using a 'union' process, which intersects each layer in the desired order and retains attribute information.

The resulting dataset was then streamlined (using the 'dissolve' process) to retain only the relevant attribute information, and to create single multipart features for each land category. This was then used to calculate the area of the region falling into each category to begin to inform the quantitative scenario planning work within the SEA.

*In previous iterations of the map, where three significant sensitivities were identified within the 'potential' category, and additional step in the workflow was followed. This comprised conducting an intersection analysis on the three datasets to highlight where there were possible interactions between constraints that would result in the area in question falling into the 'sensitive' category.*




## QUANTIFYING WOODLAND EXPANSION

A key aspect of the SEA involved attempting to understand the potential effects of various approaches to delivering woodland expansion, ranging from a relatively low-level model (based on current trends) to more significant models based on the (then) Central Scotland Green Network or Scottish Forestry Strategy targets.

In common with the broadly landscape-driven approach adopted in the Strategy, the indicative map was subdivided by the landscape zones (as illustrated in Figure 10.1) to provide a breakdown of the amount of preferred, potential, sensitive etc. land available in each zone.

This information formed the basis of the 'scenario planning' exercise undertaken as part of the SEA, determining the broad effects of attempting to meet various targets. For further information, see the Environmental Report (5.39 onwards).

## MAPPING WOODLAND TYPES

RTRP also states that, in addition to the land categorisation maps, authorities '*should also identify how the categories apply to different woodland types*' suggesting that the four main types of woodland identified in the Scottish Government Rationale for Woodland Expansion could be used. They are:

- Native woodlands
- Mixed woodlands (in GCV, principally farm and riparian woodlands)
- Softwood forests
- Energy forests
- *Woodlands for regeneration* (additional, reflecting importance of major redevelopment in GCV)

The approach of creating a separate 'constraints' style map for each woodland type was rejected on the grounds that the majority of the GCV area could readily accommodate most types of woodland. Similarly, the focus on regionally significant constraints meant that the IFS map applies equally to all woodland types.

The maps for each woodland type were developed using the indicative potential dataset as their basis, to ensure that key sensitivities were respected in each instance. Additional sources of data were used to draw out opportunities and different priorities. These included:

- Indicative Habitat Network datasets (highlighting opportunities for new native woodland)
- Land capability for agriculture (highlighting better quality agricultural land where the priority would be supporting existing agriculture – and more marginal areas where woodland could add value for farmers and the environment alike)
- Indicative flood risk map (highlighting the 'area of search' for new floodplain and riparian woodland to contribute to climate change adaptation)
- Strategic transport network [and distance buffer] (highlighting areas where land with potential for new productive woodlands are easily accessible from the public road network)

GLASGOW and
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