

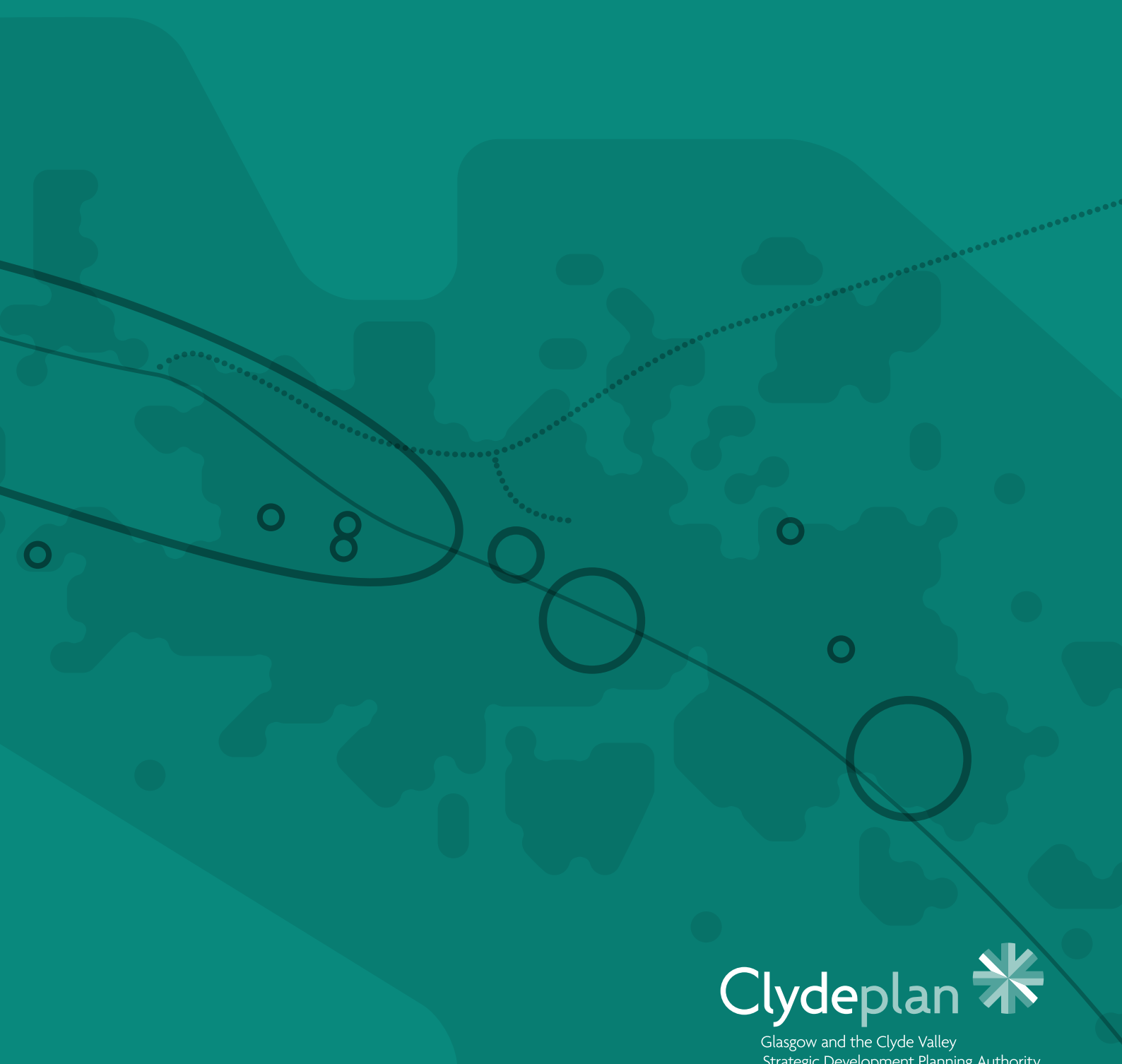
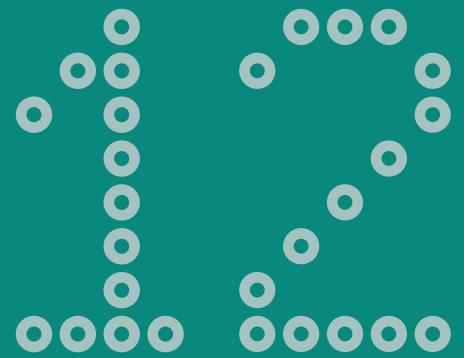
# Strategic Development Plan

Proposed Plan - Background Report

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January 2015

Forestry and Woodland Strategy



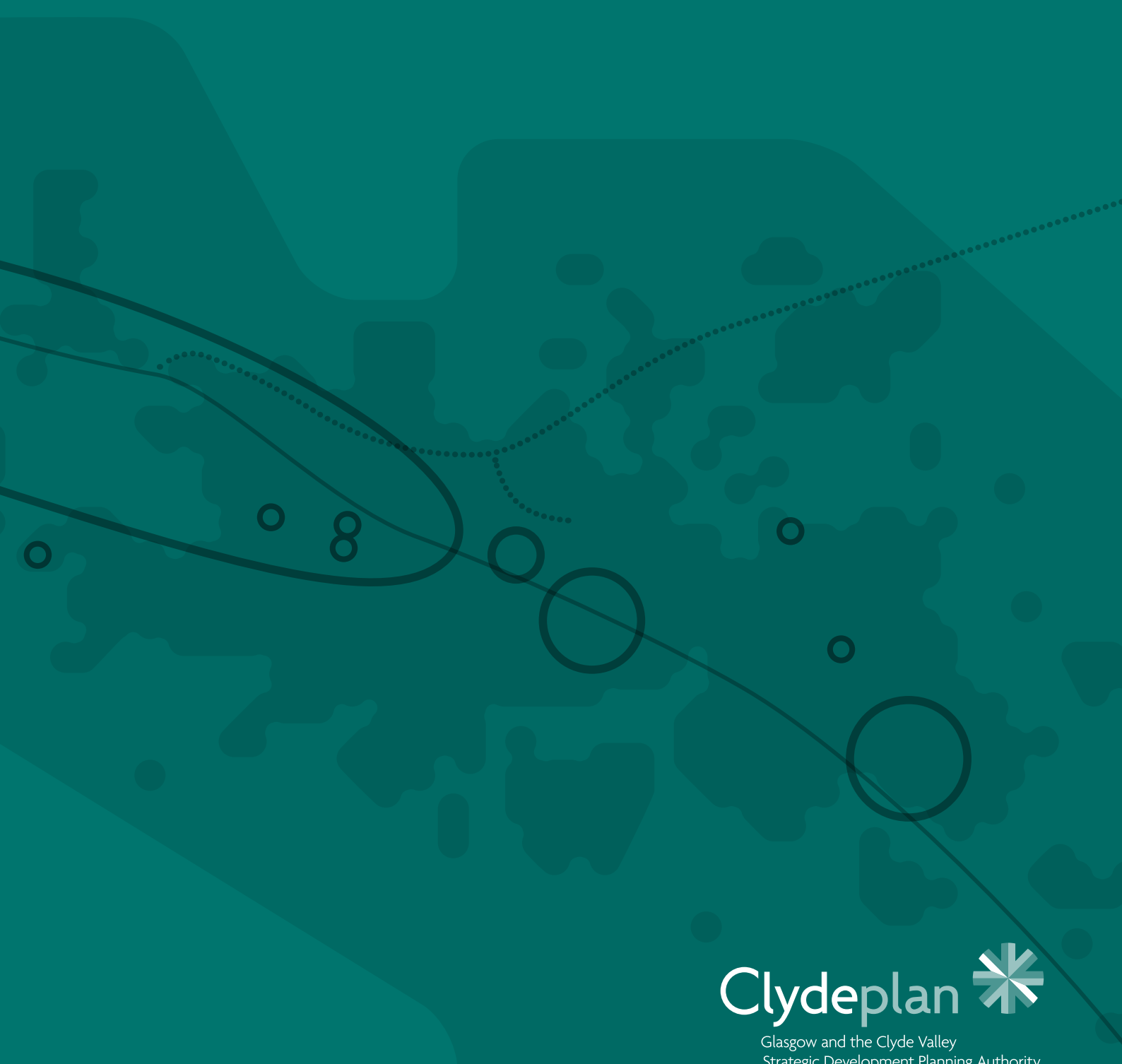
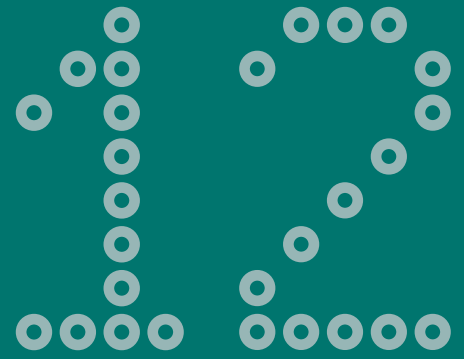
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January 2015

Forestry and Woodland Strategy







# **Clydeplan Forestry and Woodland Strategy**

Technical Report

January 2016









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# Clydeplan Forestry and Woodland Strategy

Prepared by LUC  
January 2016

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# Contents

	List of abbreviations	1
	Glossary	2
<b>1</b>	<b>Introduction</b>	<b>4</b>
	Background	4
	Purpose of the Strategy	4
	Status of the Strategy	5
	Operational Role	5
	Timescale	5
	Using the Strategy	5
	Delivery and monitoring	6
	Policy Context	7
<b>2</b>	<b>Clydeplan's Woodlands</b>	<b>9</b>
	Introduction	9
	Overview of Clydeplan's woodland resource	9
<b>3</b>	<b>Vision, aims and objectives</b>	<b>15</b>
	Where we want to be...	15
	How we're going to get there...	15
	Aims and objectives	16
<b>4</b>	<b>Expand and Manage</b>	<b>19</b>
	Introduction	19
	The current situation	19
	Encourage the creation of woodlands of an appropriate nature, scale and composition to deliver the Strategy's priorities	20
	Promote improved management of Glasgow and the Clyde Valley's woodland resource	24
	Promote high standards of woodland design	24
	Make a sustainable contribution to national woodland expansion targets	25
	Woodland types	26
<b>5</b>	<b>Economy</b>	<b>36</b>
	Creating an environment for investment	36
	Contributing to a healthy wood production and processing sector	43
<b>6</b>	<b>Community</b>	<b>47</b>
	Introduction	47
	Facilitating community involvement in woodland planning, management and ownership	47
	Supporting community enterprise and development	49
	Supporting opportunities for education and lifelong learning	49
	Contributing to physical and mental health and wellbeing	50
	Enhancing local sense of place and promoting connections to the wider environment	51
<b>7</b>	<b>Environment</b>	<b>53</b>
	Introduction	53
	Improve the condition and resilience of biodiversity	53
	Supporting the Central Scotland Green Network	59
	Improve woodland's contribution to the conservation and management of ecosystem services and functions	61
	Contribute to the conservation, enhancement and understanding of Clydeplan's valued natural heritage and historic environment	65



<b>8</b>	<b>Climate Change</b>	<b>69</b>
	Introduction	69
	Reduce the forestry sector's emissions and contribute to mitigation measures	69
	Adapt to the predicted effects of climate change	73
<b>9</b>	<b>Spatial Guidance</b>	<b>78</b>
	Introduction	78
	Spatial framework	79
	Farmland	81
	Foothills	83
	Incised River Valleys	85
	Lowland Valley	87
	Moorland Hills	89
	Plateau Moorland	91
	Southern Uplands	93
	Upland Farmland	95
	Upland Valley	97
	Urban & Urban Greenspaces	98
<b>Appendix 1</b>		<b>100</b>
	Policy context	100
<b>Appendix 2</b>		<b>107</b>
	Mapping methodology	107
	Context	108
	Interpretation	108
	Key assumptions	109
	Mapping woodland types	110
<b>Appendix 3</b>		<b>111</b>
	Interpreting the maps	111

## Tables

Table 1.1 National and strategic policy context	7
Table 2.1 Clydeplan woodland composition	10
Table 4.1 Land categories	20
Table 7.1 Vacant and Derelict Land	62
Table 8.1 Potentially Vulnerable Areas by Local Authority area	73
Table 8.2 Climate change impacts on trees and forestry practices	75
Table A3.1: Interpreting the IFS map	112
Table A3.2: Interpreting the Softwoods map	112
Table A3.3: Interpreting the Energy Woodlands map	112
Table A3.4: Interpreting the Mixed Woodlands map	113
Table A3.5: Interpreting the Native Woodlands map	113
Table A3.6: Interpreting the Urban Woodlands Map	114

## Figures

Figure 1.1 Clydeplan Strategic Development Plan Area	8
Figure 2.1 National Forest Inventory	13
Figure 2.2 Native Woodland Survey of Scotland	14
Figure 4.1 Indicative potential for woodland expansion	23
Figure 4.2 Opportunities for softwood forests	27
Figure 4.3 Opportunities for energy forests	29
Figure 4.4 Opportunities for mixed woodland	31
Figure 4.5 Opportunities for native woodland	33
Figure 4.6 Opportunities for Urban Woodlands	35
Figure 5.1 Land Allocations	41
Figure 5.2 Vacant & Derelict Land	42
Figure 6.1 Relative deprivation in the Clydeplan area	52
Figure 7.1 Ancient and Semi-Natural Ancient Woodland	57
Figure 7.2 Natural Heritage Designations	58
Figure 7.3 Central Scotland Green Network	60
Figure 7.4 Air Quality Management Areas	63
Figure 7.5 Hydrology	64
Figure 7.6 Landscape Designations	67
Figure 7.7 Historic Environment	68
Figure 8.1 Carbon rich soils and peatland	72
Figure 9.1 Spatial Framework	80



## List of abbreviations

AQMA	Air Quality Management Area	SLA	Special Landscape Area
CCF	Continuous Cover Forestry	SM	Scheduled Monuments
CSFT	Central Scotland Forest Trust	SNH	Scottish Natural Heritage
CSGN	Central Scotland Green Network	SPA	Special Protection Area
CSGNT	Central Scotland Green Network Trust	SPP	Scottish Planning Policy
EIA	Environmental Impact Assessment	SRDP	Scotland Rural Development Programme
FC	Forestry Commission	SSSI	Site of Special Scientific Interest
FCS	Forestry Commission Scotland	SMF	Sustainable Management of Forests
FEI	Forest Education Initiative	SuDS	Sustainable Drainage Systems
FFWS	Falkirk Forestry and Woodland Strategy	SVDLS	Scottish Vacant and Derelict Land Survey
HRA	Habitats Regulations Appraisal	SWT	Scottish Wildlife Trust
HS	Historic Scotland	TCV	The Conservation Volunteers
INNS	Invasive Non-Native Species	UKFS	UK Forestry Standard
LCA	Landscape Character Assessment	UKWAS	UK Woodland Assurance Standard
LDP	Local Development Plan	VDL	Vacant and Derelict Land
LISS	Lower Impact Silvicultural Systems	WHS	World Heritage Site
LNR	Local Nature Reserve	WIAT	Woods In and Around Towns
NFLS	National Forest Land Scheme	WIG	Woodland Improvement Grant
NNR	National Nature Reserve		
NPF3	National Planning Framework 3		
PAWS	Plantations on Ancient Woodland Sites		
RAFTS	Rivers and Fisheries Trusts of Scotland		
SAC	Special Area of Conservation		
SFS	Scottish Forestry Strategy		
SG	Scottish Government		
SHEP	Scottish Historic Environment Policy		
SIMD	Scottish Index of Multiple Deprivation		
SINC	Site of Importance for Nature Conservation		
SIRR	Special Initiative for Residential-led Regeneration		

## Glossary

Term	Definition/ Explanation
Adaptation	Measures reducing vulnerability to the impacts of climate change, for example by increasing readiness for pests and winds, creating woods and networks, and using woodlands in flood management.
Ancient semi-natural woodland	The term ancient semi-natural woodland (ASNW) is used to describe those semi-natural stands on ancient woodland sites.
Ancient woodland	Woodland is referred to as ancient woodland when it has been in continuous existence since before AD 1600 in England, Wales and Northern Ireland or since before AD 1750 in Scotland.
Biodiversity	The variety of ecosystems and living organisms (species), including genetic variation within species.
Biodiversity Action Plan	A Biodiversity Action Plan is a plan for a key habitat or species, to establish the factors for its decline and the work necessary for its recovery.
Broadleaves	Broadleaved trees are characterised by their broad leaves and most are deciduous. They produce 'hardwood' timber.
Central Scotland Green Network	The Central Scotland Green Network is a long-term initiative which aims to restore and transform the landscape of Central Scotland and to promote environmental quality, woodland cover and recreational opportunities. It covers an area stretching from Ayrshire and Inverclyde in the west to Fife and the Lothians in the east
Central Scotland Green Network Trust	The CSGNT provides capacity to help realise the aims of the CSGN.
Clear felling	Cutting down of an area of woodland (if it is within a larger area of woodland it is typically a felling greater than 0.25 ha).
Climate change	Natural and human-induced changes in the 'average weather' of a region.
Conifers	Coniferous trees are characterised by their needle or scale-like leaves and most are evergreen. They produce 'softwood' timber.
Continuous cover forestry	Management of forests where a permanent growing stock is maintained and an increment is removed in cyclical interventions.
Coppice	Management based on regeneration by re-growth from cut stumps (coppice stools). The same stool is used through several cycles of cutting and re-growth.
Ecosystem	The interaction of communities of plants and animals (including humans) with each other and with the non-living environment.
Ecosystem services	Collective term for the multitude of resources and processes supplied by natural ecosystems, which benefit humankind. Ecosystem services are distinguished from other ecosystem products and functions because there is human demand for them, and many studies have attempted to quantify their economic value. Ecosystem services include provisioning services (food, water and timber); cultural services (recreational, health, aesthetic, and spiritual benefits); regulating services (protection of water and soil resources; provision of shelter, shade and cooling, locking up atmospheric carbon); and supporting services (soil formation and photosynthesis).
Energy forests	Woodlands where the primary objective is wood fuel production.
Environmental Impact Assessment	Environmental impact assessment (EIA) is the process and documentation associated with the statutory requirement under the EU Environmental Assessment Directive.
Felling licence	Licence issued by the Forestry Commission to permit trees to be felled. With certain exceptions it is illegal to fell trees in Great Britain without prior Forestry Commission approval.
Forest Commission	The government department with responsibility for the regulation of forestry and the management of the state woodlands throughout Great Britain. The abbreviations FCE, FCS and FCW refer to the FC's divisions for England, Scotland and Wales respectively.
Forest school	An innovative educational approach to outdoor play and learning. The philosophy of Forest School is to encourage and inspire individuals of any age through regular positive outdoor experiences.
Forest/ woodland	Predominantly tree covered land whether in large tracts (generally called forests) or smaller units (known by a variety of terms such as woodlands, woods, copses and shelterbelts).
Forestry	The term 'forestry' is used to refer to the science, art and practice of managing woodlands on a professional and sustainable basis to ensure that their economic, social and environmental benefits to society are optimised.



Term	Definition/ Explanation
Habitats Regulations Appraisal	The Conservation (Natural Habitats, & c.) Regulations 1994 require that certain plans which are likely to have a significant effect on a 'Natura 2000' site must be subject to a Habitats Regulations Appraisal by the plan-making authority.
Invasive species	Introduced non-native species which spread readily and dominate native species.
Lower impact silvicultural systems	Silvicultural systems including group selection, shelterwood or under-planting, small coupe felling, coppice or coppice with standards, minimum intervention and single tree selection systems which are suitable for windfirm conifer woodlands and most broadleaved woodlands.
Mixed woodland	Mixed species woodlands often include native broadleaves, traditional broadleaves (such as beech and sycamore) and conifers designed to provide year-round shelter, landscape enhancement, screening or enclosure, as well as the potential to provide products for local use. In a traditional estate setting they are often known as 'policy woods'.
Native species	A species that has arrived and inhabited an area naturally, without deliberate assistance by man, or would occur had it not been removed through past management. For trees and shrubs in the UK this is usually taken to mean those species present after post-glacial recolonisation and before historic times. Some species are only native in particular regions. Differences in characteristics and adaptation to conditions occur more locally hence the term 'locally native'.
Native woodland	Woods composed of native species, matched to local site conditions, making use of natural colonisation where evident. They are managed mostly using low intensity or minimum intervention systems with an emphasis on developing the structural and species diversity appropriate to the woodland type.
Plantations on Ancient Woodland Sites	Plantations on Ancient Woodland Sites are former Ancient Semi-Natural Woodlands (ASNW) that have been more or less completely replanted with native or non-native species, degrading the ecological value of the site. The degree of loss of biodiversity varies markedly with species planted and subsequent management.
Plantations	Those woodlands which are derived principally from the human activity of planting, sowing or intensive silvicultural treatment but lack most of the principal characteristics and key elements of semi-natural woodland are generally referred to as plantations or woodlands of planted origin. They often include a proportion of naturally regenerated trees and are often managed to become more like natural woodlands over time.
Provenance	Location of trees from which seed or cuttings are collected. Designation of Regions of Provenance under the Forest Reproductive Materials regulations is used to help nurseries and growers select suitable material. The term is often confused with 'origin' which is the original natural genetic source.
Ramsar sites	Wetlands of international importance designated under the Ramsar Convention.
Semi-natural woodland	Those woodlands which are comprised mainly of locally native trees and shrubs, and have some structural characteristics of natural woodland are referred to as semi-natural woodland.
Short rotation coppice	Short rotation coppice (usually willow or poplar) typically grown as an energy crop and harvested every 3 years.
Short rotation forestry	The cultivation of fast-growing trees for 8-20 years.
Silviculture (silvicultural)	The techniques of tending and regenerating woodlands, and harvesting their physical products.
Site of Special Scientific Interest (SSSI)	A statutory designation in Great Britain that offers statutory protection to habitats and species.
Softwood forests	Softwood forests are designed to provide a sufficient quantity and consistency of predominantly softwood timber for economically viable timber production. Careful design uses opportunities to protect and enhance biodiversity while also providing a backdrop for outdoor access and recreation. Modern softwood forests have substantial areas of open space, areas of native species and a growing emphasis on the use of mixed species and different silvicultural systems (where feasible) to increase diversity and resilience in the face of climate change.
Special Area for Conservation (SAC)	Area designated under the EU Habitats and Species Directive.
Special Protection Area (SPA)	Area designated under the EU Birds Directive.
Thinning	Tree removal, which results in a temporary reduction in basal area, made after canopy closure to promote growth and greater value in the remaining trees.
Windthrow	Uprooting of trees by the wind.

# 1 Introduction

## Background

- 1.1 Forestry and woodlands make a significant contribution to the economy, communities, and the environment of the Clydeplan area. The Clydeplan Forestry and Woodland Strategy (hereafter referred to as The Strategy) updates the existing Glasgow and the Clyde Valley Forestry and Woodland Strategy<sup>1</sup> which was prepared in 2011 to support the Glasgow and the Clyde Valley Strategic Development Plan<sup>2</sup> (SDP1 approved in 2012). This review is primarily directed towards:
- refocusing the policy and spatial framework of the Strategy in light of changes to the National Planning Framework (NPF3) and Scottish Planning Policy (SPP 2014); and,
  - the preparation of the second Clydeplan Strategic Development Plan (SDP2), taking into account feedback from users of the 2011 Strategy.

## Purpose of the Strategy

- 1.2 The aim of The Strategy is to guide woodland expansion and management of woodlands in the Clydeplan area<sup>3</sup> (see **Figure 1.1**), providing a policy and spatial framework to optimise the benefits for the local economy, communities and the environment. Specifically, it will:
- promote the creation of high quality, multi-objective woodland;
  - inform the design and management of woodland in the Clydeplan area;
  - assist in protecting and enhancing valued woodland;
  - inform development of future Local Development Plan (LDP) Supplementary Planning Guidance (SPG) for the local authorities within the Clydeplan area;
  - identify priority locations for woodland management and expansion in the Clydeplan area which will inform the Spatial Development Strategy of SDP2;
  - inform local authority development management, investment and asset management decisions on proposals that include woodland removal or woodland creation;
  - guide local authority responses to consultation on planting proposals and applications for grant support for woodland creation and management;
  - assist with the development and approval of Felling Licences, Forest District Strategic Plans and long term Forest Plans and Land Management Plans; and,
  - guide development and delivery of grant support for forestry activities via the Scottish Rural Development Programme (SRDP).

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<sup>1</sup> Land Use Consultants, 2011. *Glasgow and the Clyde Valley Forestry and Woodland Strategy* [pdf]. Available at: [http://www.clydeplan-sdpa.gov.uk/files/Glasgow\\_and\\_Clyde\\_Valley\\_Forestry\\_and\\_Woodland\\_Strategy.pdf](http://www.clydeplan-sdpa.gov.uk/files/Glasgow_and_Clyde_Valley_Forestry_and_Woodland_Strategy.pdf) [Accessed 14 November 2014]

<sup>2</sup> Glasgow and the Clyde Valley Strategic Development Planning Authority, 2012. *Glasgow and the Clyde Valley Strategic Development Plan* [pdf]. Available at: <http://www.clydeplan-sdpa.gov.uk/sdp/approved-strategic-development-plan-may-2012> [Accessed 14 November 2014]

<sup>3</sup> Clydeplan comprises the eight local authorities of East Dunbartonshire, East Renfrewshire, Glasgow City, Inverclyde, North Lanarkshire, Renfrewshire, South Lanarkshire, and West Dunbartonshire Councils.

## Status of the Strategy

- 1.3 The Strategy forms part of the evidence base for the Clydeplan Strategic Development Plan. It will also influence the development of the Clydeplan local authorities' Local Development Plans and associated guidance. It is therefore a material consideration in planning decisions.

## Operational Role

- 1.4 The Strategy is intended to provide broad strategic locational and environmental advice to those seeking to manage or expand woodlands. It cannot provide detailed guidance on site-specific sensitivities or the suitability of individual proposals. The importance of site-specific assessment of individual proposals for woodland expansion, or woodland removal, remains paramount.
- 1.5 It complements – and relies on – the existing regulatory process administered by Forestry Commission Scotland under the Forestry Act 1967 and the Environmental Impact Assessment (Forestry) (Scotland) Regulations 1999. Where woodland creation or removal accompanies development within the meaning of the planning acts, the Clydeplan local authorities are generally responsible for determining applications<sup>4</sup>. In addition to relevant national and local planning policies, the [Scottish Government Policy on the Control of Woodland Removal](#) is a key consideration in such cases.
- 1.6 In addition, woodland expansion and management will be expected to comply with the [UK Forestry Standard](#) and [Forestry Commission Scotland Guidelines and practice notes](#).

## Timescale

- 1.7 The Clydeplan Forestry and Woodland Strategy has been developed through consultation with a wide range of stakeholders and provides a strategic framework for forestry and woodland management and expansion in the area. The Strategy covers a 20 year period from 2015 to 2035 – and incorporates 5 yearly reviews. Woodland creation and management are intrinsically long-term activities, which require long-term planning to make an effective contribution. Securing green networks and the multiple benefits that woodland and forestry can provide needs a vision that works in parallel with aspirations for economic and social development. Therefore, it is anticipated that the core policy content of the Strategy will be updated and aligned with the review process for the Clydeplan Strategic Development Plan.

## Using the Strategy

- 1.8 The Clydeplan Forestry and Woodland Strategy is intended to be accessible and useful for everyone with an interest in woodland and forestry issues, including: public agencies; Local Authority Officers and elected Members; landowners; land managers and agents; private sector businesses and individuals; representative organisation and community partnerships. The following paragraphs provide further details on how the Strategy will be of particular benefit to a range of stakeholders.

### Clydeplan Local Authorities

- 1.9 The Clydeplan Forestry and Woodland Strategy, and associated spatial data, will inform the planning authorities' development management decisions that include proposals for woodland removal or creation, and in developing locally-focussed action plans for woodland expansion and management.

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<sup>4</sup> For larger-scale energy developments (e.g. wind farms over 50MW in capacity) the Scottish Government Energy Consents and Deployment Unit, on behalf of Scottish Ministers, is responsible for determining applications under the Electricity Act 1989

- 1.10 The Clydeplan Forestry and Woodland Strategy forms part of the evidence base for the Clydeplan Strategic Development Plan and will provide a consistent approach to woodland creation and management across the region. The eight Clydeplan local authorities will have regard to the Strategy when preparing their Local Development Plans and future Supplementary Planning Guidance. In addition, it will be a material consideration in planning decisions. Authorities will have regard to the Strategy when responding to applications for woodland creation and management funding under SRDP.
- 1.11 The Strategy will be interpreted and applied in line with existing and emerging policy frameworks, and the priorities identified in the Single Outcome Agreements between the relevant Community Planning Partnerships and the Scottish Government.

### **Forestry Commission Scotland**

- 1.12 Forestry Commission Scotland (FCS) will require land managers seeking grants for woodland expansion or management to develop their proposals in line with this Strategy, ensuring that opportunities are maximised while taking account of environmental and other sensitivities.
- 1.13 Proposals will be assessed in line with relevant forestry legislation and policy, and will be expected to comply with the UK Forestry Standard (UKFS) and relevant FCS technical guidance.
- 1.14 The Strategy will also assist with the development and approval of Felling Licences, Forest District Strategic Plans, long-term Forest Plans and Urban Woodland Management Plans.

### **Woodland managers and developers**

- 1.15 The private sector will be central to delivering a significant component of the target for woodland cover in the region, and across Scotland as a whole.
- 1.16 The Strategy provides a clear vision for how the woodland resource and forest-based economy in the Clydeplan area should develop over the next 20 year period. The priorities established in the following chapters provide guidance on what type of woodland management and creation schemes are likely to be supported, and also where agents and land managers should refer to this information when developing grant proposals and/or seeking to establish new woodland.

### **Communities**

- 1.17 The Strategy provides communities with a useful insight into the key issues, the potential patterns of woodland management that could develop in their area, and highlights the benefits that can be derived from woodland by local people. It also sets out the range of social, environmental and economic benefits that the partners expect woodland and forestry to deliver to communities.

## **Delivery and monitoring**

- 1.18 To facilitate implementation, the strategic aims of the Strategy are translated into objectives and priorities to be pursued by partners in the region's development.
- 1.19 Local authorities will take the lead in developing locally-focussed and thematic action plans to deliver the aims of the Strategy in their areas.
- 1.20 Performance against the aims, objectives and priorities of this Strategy will be monitored by partners and fed into action planning and future revisions.



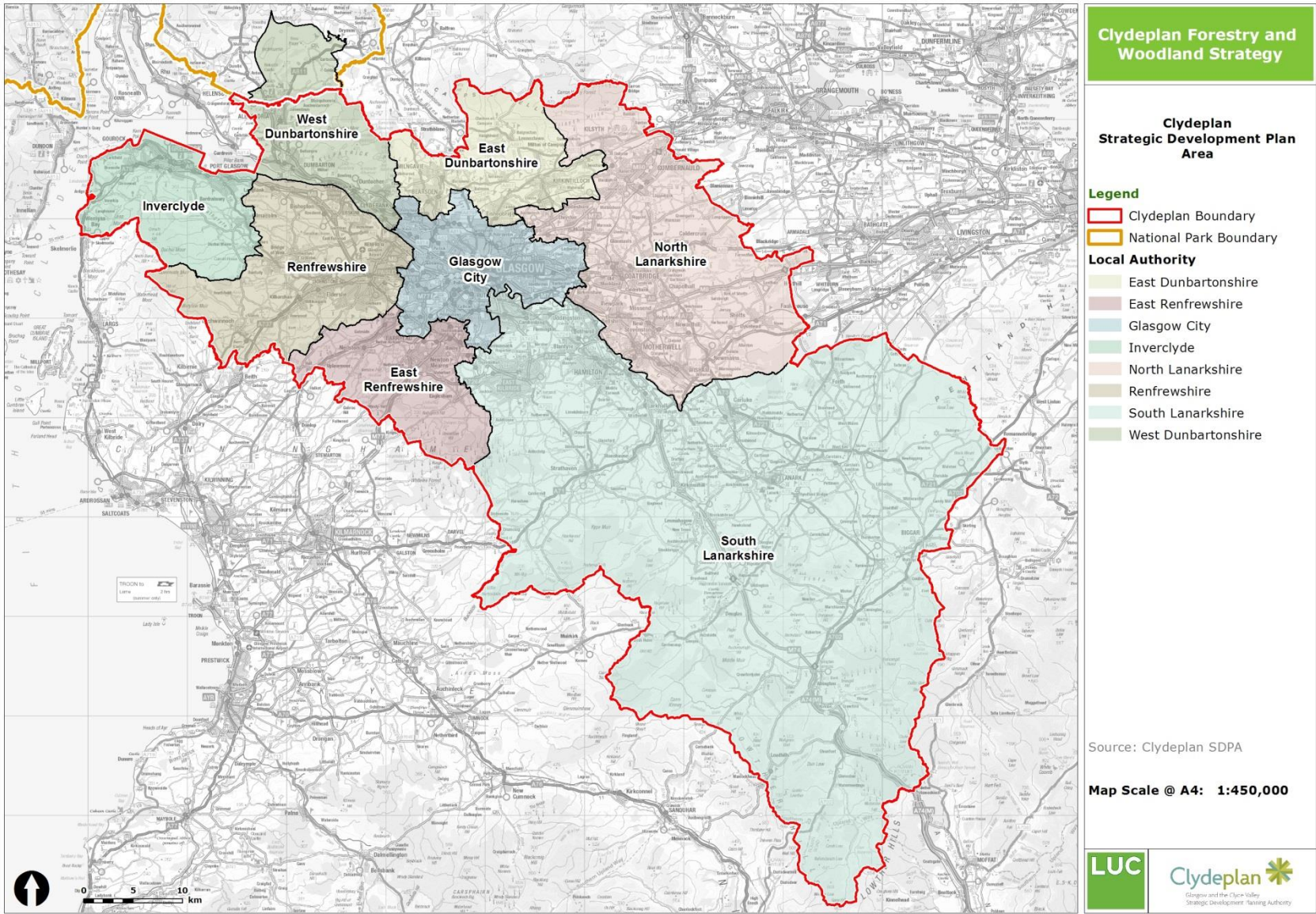
## Policy Context

- 1.21 The management, use and expansion of woodlands sit at the interface of planning, environmental and forestry policy. While this means that trees and woodland can help to achieve a wide range of objectives, it also means that the regulatory situation is sometimes complicated. This does, however, help to ensure that adverse social and environmental effects can be identified and successfully avoided or mitigated. **Appendix I** explores the policy context in more detail.

### Table 1.1 National and strategic policy context

Forestry	Planning	Natural heritage	Historic environment	Water and soil
<p>Climate Change (Scotland) Act 2009;</p> <p><b>Environmental Impact Assessment (Forestry) (Scotland) Regulations 1999</b></p>	<p>Town and Country Planning (Scotland) Act 1997, as amended</p> <p><b>Environmental Impact Assessment (Scotland) Regulations 2011, as amended</b></p>	<p>Nature Conservation (Scotland) Act 2004;</p> <p><b>The Conservation (Natural Habitats &amp;c.) Regulations 1994, as amended;</b></p> <p>Wildlife and Countryside Act 1981</p>	<p>Historic Environment (Amendment) (Scotland) Act 2011</p>	<p>Water Environment and Water Services (Scotland) Act 2003;</p> <p>Flood Risk Management (Scotland) Act 2009;</p>
<p><u>UK Forestry Standard</u>;</p> <p><u>Scottish Forestry Strategy 2006</u>;</p> <p>(Scotland Rural Development Programme)</p>	<p>Scottish Planning Policy (SPP);</p> <p>National Planning Framework 3</p>	<p><u>2020 Challenge for Scotland’s Biodiversity: A strategy for the conservation and enhancement of biodiversity in Scotland</u></p>	<p>Scottish Historic Environment Policy (SHEP)</p> <p>‘Our Place in Time’: The Historic Environment Strategy for Scotland (2014)</p>	<p><u>Scottish Soil Framework (2009)</u>;</p> <p>‘Getting the Best from our Land’: A land use Strategy for Scotland (2011);</p> <p>Scotland River Basin Management Plan;</p>
<p><u>Scottish Government Rationale for Woodland Expansion</u>;</p> <p><u>Policy on the Control of Woodland Removal</u>;</p>			<p><u>Scotland’s Woodlands and the Historic Environment</u></p>	
<p><u>Central Scotland Forest Strategy (2013)</u>;</p> <p>National Forest Estate Strategic Plan / Forest District Strategic Plans</p>	<p>Clydeplan Strategic Development Plan</p> <p>Local Development Plans</p>			<p>Clyde Area Management Plan</p>
<p><u>FC Guidelines</u></p>		<p><u>Forests and Landscape</u>;</p> <p><u>Forests and Biodiversity</u></p>	<p><u>Forests and the Historic Environment</u></p>	<p><u>Forests and Water</u>;</p> <p><u>Forests and Soil Guidelines</u>;</p> <p><u>Forests and Peatlands</u></p>

Figure 1.1 Clydeplan Strategic Development Plan Area



## 2 Clydeplan's Woodlands

### Introduction

- 2.1 Forests, woodlands and trees make an important contribution to the character of landscapes and environmental quality of the Clydeplan area. They are a key resource for biodiversity, form an integral part of historic landscapes, and provide a range of environmental benefits (or 'ecosystem services') that support land-based industries and make a substantial contribution to quality of life. However, there are significant opportunities for the range of benefits delivered to the region's environment, people and economy by woodland to be expanded and optimised through a combination of woodland creation and management of existing assets.
- 2.2 This section of the Strategy explores the key types of woodland in the region, sets out the main issues affecting the resource and highlights where action is required to secure additional benefits.

### Overview of Clydeplan's woodland resource

- 2.3 Trees can be an important component of the urban environment, contributing to the quality of urban greenspaces such as Strathclyde Park and Castlemilk Woodland Park, to 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 common in 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, offering shelter and improving the physical environment. There are opportunities to link into wider policies and programmes such as 'Woods In and Around Towns' (WIAT), local food growing (e.g. allotments and orchards) and wood fuel projects.
- 2.4 The middle Clyde Valley, and its series of deeply incised tributaries, has some of the most intact and ecologically rich woodlands in the Clydeplan area much of which is internationally or nationally designated. 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. 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 improving habitat networks and wood fuel production.
- 2.5 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.
- 2.6 The contribution woodlands can make to regenerating areas is being recognised across the Clydeplan area. The Commonwealth Woodland Programme, spanning 14 woodlands in Glasgow, West Dunbartonshire, Renfrewshire, North Lanarkshire, and South Lanarkshire, provide a range of activities such as Commonwealth-themed sculpture trails, walking routes, woodland workouts and green routes to school. The largest and most significant of the woodlands is the £5 million

Cuningar Loop Woodland Park, situated within the Clyde Gateway regeneration area at Rutherglen.

- 2.7 The Clydeplan area has proved to be an attractive location for wind energy developments, particularly for medium to large scale schemes in upland locations, with some of the largest wind farm schemes in the country located in the area (for example Whitelee Wind Farm and Clyde Wind Farm). As a result, woodlands in the area are under increasing pressure, particularly as extensive forest coverage often coincides with upland areas which have potential for wind farms.
- 2.8 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 places offer significant potential for recreation, with areas such as the Carron Valley already accommodating a regionally important mountain biking facility.

### Composition of Clydeplan's woodland resource

- 2.9 According to the National Forest Inventory 2013, there are approximately 56,850 hectares of woodland within the Clydeplan area, of which approximately 14,691 hectares are native woodlands (derived from the Native Woodland Survey of Scotland 2014).

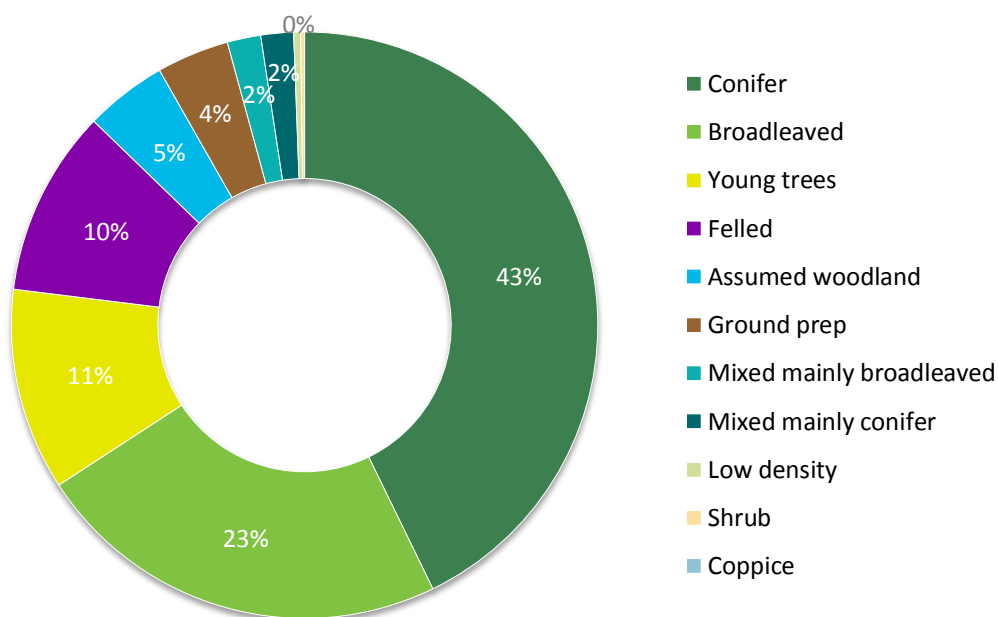
**Table 2.1 Clydeplan woodland composition<sup>5</sup>**

Woodland Type	Hectares	% of the study area	% of total woodland area
Coniferous	24,327.78	7.16%	43%
Broadleaved	13,090.00	3.85%	23%
Young trees	6,334.36	1.86%	11%
Felled	5,845.22	1.72%	10%
Assumed woodland	2,573.36	0.76%	5%
Ground prepared for planting	2,269.27	0.67%	4%
Mixed mainly broadleaved	1,051.17	0.31%	2%
Mixed mainly conifer	1,022.69	0.30%	2%
Low density	215.99	0.06%	0.38%
Shrub	119.49	0.04%	0.21%
Coppice	1.55	0.0005%	0.002%
<b>TOTAL<sup>6</sup></b>	<b>56,850.89</b>	<b>16.74%</b>	<b>100%</b>
<i>Native woodland</i>	<i>(11,799.35)</i>	<i>3.5%</i>	<i>21%</i>
<i>Nearly-native woodland</i>	<i>(1,596.90)</i>	<i>0.5%</i>	<i>3%</i>
<i>Plantations on Ancient Woodland Sites</i>	<i>(556.59)</i>	<i>0.2%</i>	<i>1%</i>

<sup>5</sup> Derived from the National Forest Inventory Scotland 2013 and the Native Woodland Survey of Scotland 2014.

<sup>6</sup> The total area of the study area is 339,706.93 ha.





**Diagram 2.1 Composition of Clydeplan's woodland resource**

### Woodland types

#### *Softwood forests*

- 2.10 The area has a very extensive softwood resource, concentrated on the moorland plateaux and hills around the edges of the city region, most notably in the Southern Uplands, Lowther Hills, on Eaglesham Moor, the Slamannan Plateau and in the Campsie Fells and Kilsyth Hills. These forests make an important contribution to the rural area, as well as contributing to a sustainable timber supply to meet the needs of Scotland's growing timber processing sector.
- 2.11 Many of these woodlands are reaching the end of their rotation and present opportunities for improving stand resilience and sustainability, access for recreational users and enhanced biodiversity and landscape values.
- 2.12 Over the past decade wind energy developments such as the Whitelee and Clyde wind farms – respectively the largest and second-largest onshore wind farms in the UK – have resulted in significant losses of woodland. As a consequence of this threat, and Scotland's climate change commitments, the Scottish Government Policy on the Control of Woodland Removal will ensure that, where consent for such projects is granted, appropriate compensatory planting is provided.

#### *Energy forests*

- 2.13 Since the publication of the 2011 Strategy, there has been comparatively little activity with regard to expanding woodland principally for the production of biomass. A range of research has been undertaken into the potential for biomass planting to contribute to temporary greening solutions, and bioremediation of vacant and derelict land – for example for East Renfrewshire Council<sup>7</sup>, Renfrewshire Council<sup>8</sup> and by Forest Research through the Central Scotland Green Network. Reporting on the Forest Research work will provide valuable insights into the potential of the approach to contribute to greening the region's significant vacant and derelict land resource.

<sup>7</sup> Ironside Farrar, 2012. *Green Network Biomass, Phytoremediation and Woodland Creation* [pdf]. Available at: <http://www.eastrenfrewshire.gov.uk/CHttpHandler.ashx?id=7240&p=0> [Accessed 22 June 2015]

<sup>8</sup> In May 2015, CSGN awarded funding to Renfrewshire Council to quantify and evaluate the wood fuel biomass available from the Council's existing and potential future woodlands.



- 2.14 Management of existing woodlands, and waste wood from productive forests, currently comprise the majority of locally produced and used biomass. As larger commercial and public sector users increasingly adopt biomass heat and power technology, the portion of the market is likely to continue to grow.

#### *Mixed woodlands*

- 2.15 The Clydeplan area's mixed woodland resource is primarily located in the region's parks, gardens and designed landscapes, and in amenity planting associated with transport corridors and development. There was an increase in mixed woodland creation under the Scotland Rural Development Programme 2007-13.

#### *Native woodlands*

- 2.16 The native woodland networks of the Clyde Valley and its tributaries are internationally important for their biodiversity value, as some of the most intact – and dramatically located – ancient and semi-natural woodlands in lowland Scotland. Similarly, being located within an hour's drive for the majority of the nation's population, they are highly accessible. They also incorporate areas of high cultural heritage value, taking in important areas of ancient wood pasture at Hamilton High Parks (in the Chatelherault Country Park). Across the region, riparian networks hold a significant proportion of the higher quality native woodland resources – for example in the foothills of the Campsie Fells and the Kilsyth and Kilpatrick Hills. However, outside of these relatively undisturbed areas, much of the region's native woodlands are often both highly fragmented and relatively small in size. Joining up the resource and improving the resilience of core areas will remain a priority.

#### *Urban woodlands*

- 2.17 As noted above, trees and woodlands are an important aspect of the region's urban areas. These features are key aspects of the quality, character and distinctiveness of the region's historic towns and villages. Historically, extensive networks of new woodlands were created in parallel with the establishment of New Towns at Cumbernauld, Erskine and East Kilbride, and these have matured into an important component of the region's woodland resource.
- 2.18 The region has already benefitted significantly from efforts to expand and positively manage woodlands in and around urban areas, through the work of the Central Scotland Forest and Forestry Commission Scotland 'Woods In and Around Towns' (WIAT) programme. Successes of projects such as the Bishop's Estate Woods, bringing a substantial area of woodland on the edge of Easterhouse into positive management, improving habitat, access networks and reconnecting communities to environmental assets, illustrate the potential that the region's woods have in contributing to regeneration.
- 2.19 WIAT funding, delivered through the Woodland Improvement Grant (WIG) and the Sustainable Management of Forests (SMF) funds of the SRDP 2014-2020, should be utilised to assist in bringing more urban woodlands into active management.

Figure 2.1 National Forest Inventory

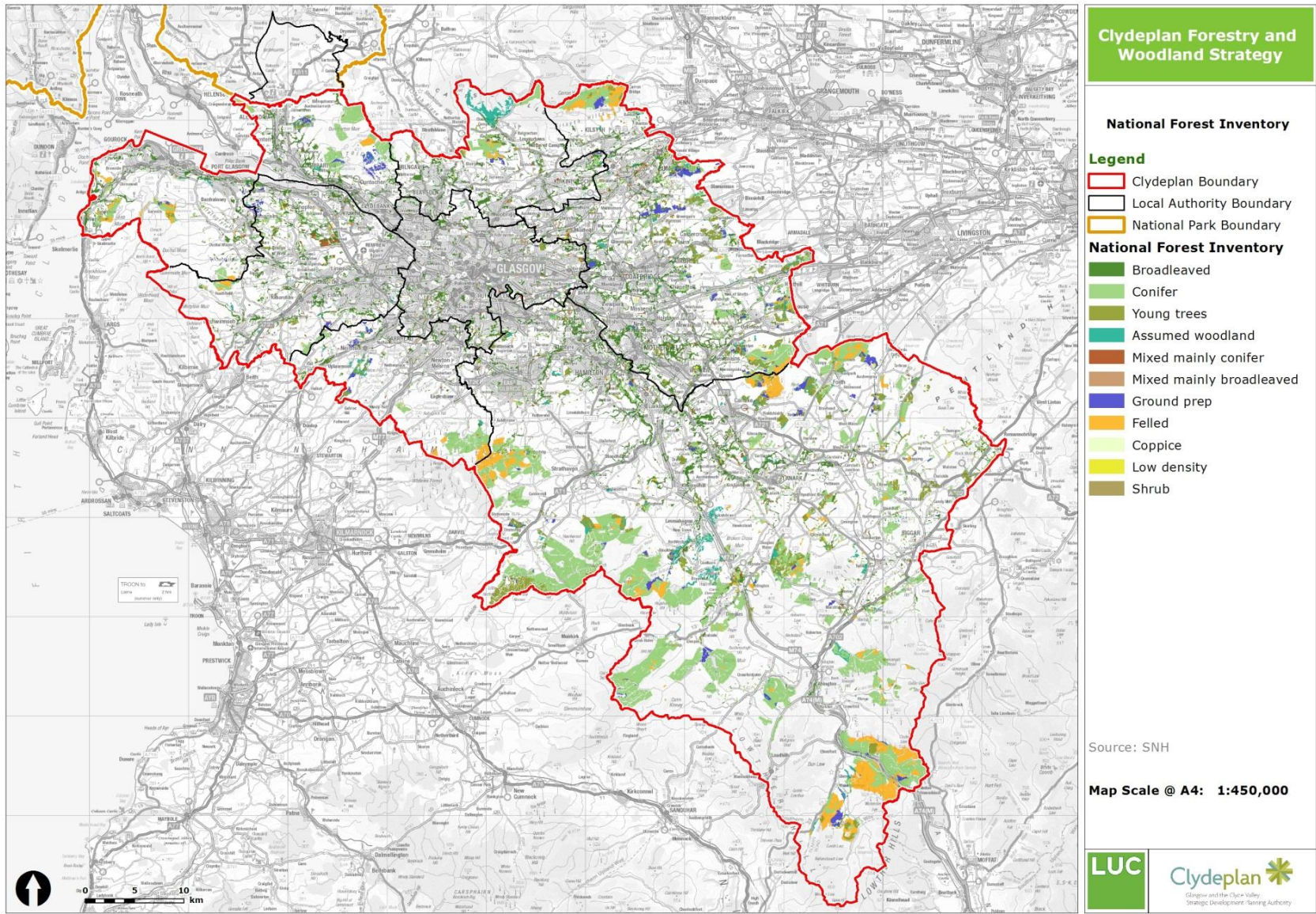
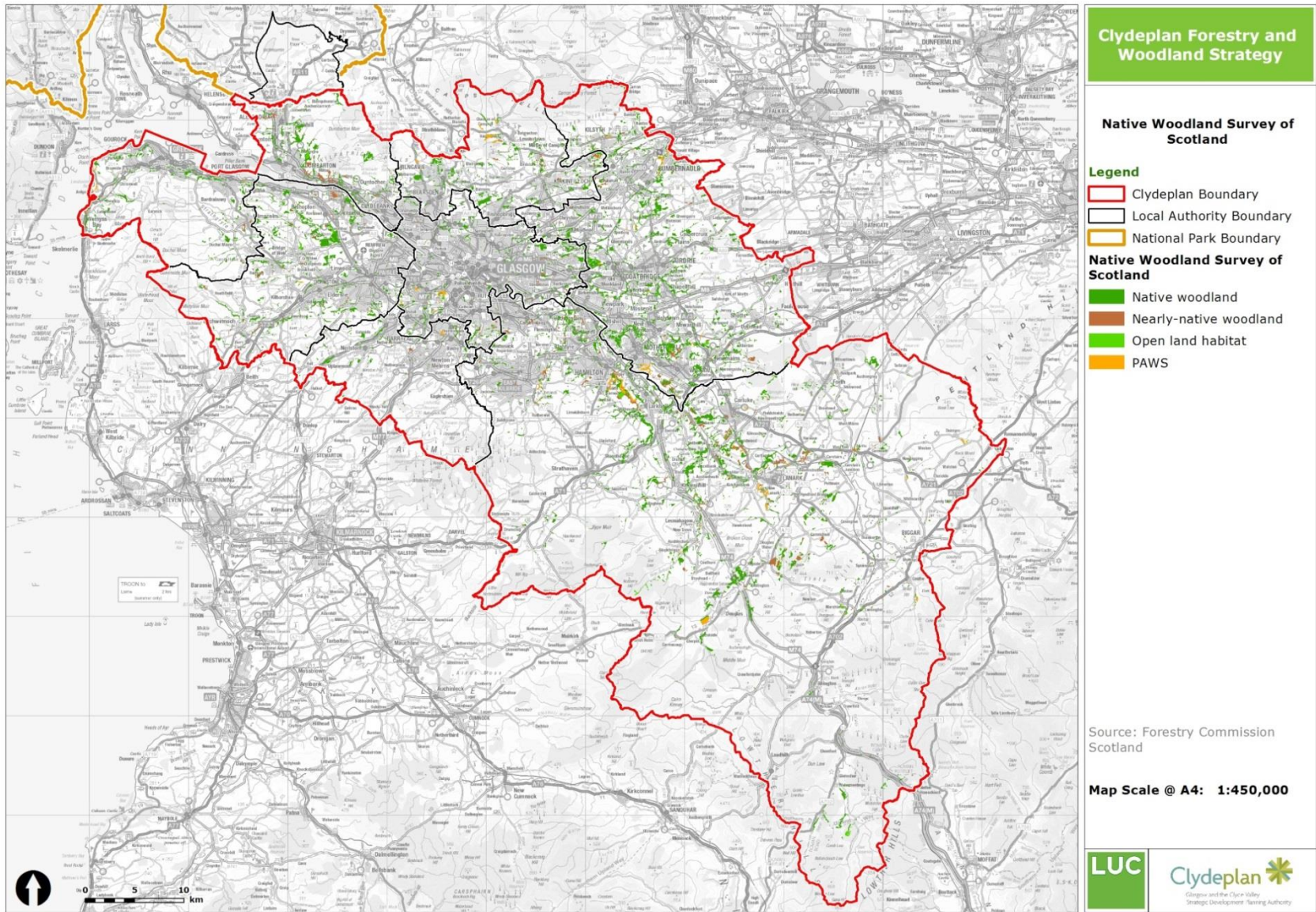




Figure 2.2 Native Woodland Survey of Scotland



### 3 Vision, aims and objectives

Where we want to be...

#### The vision

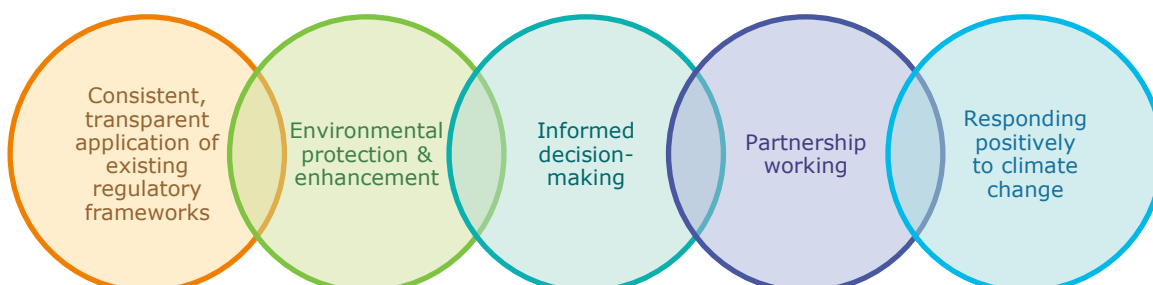
**"By 2035, expanded networks of woodland in the Clydeplan area will contribute to a competitive and successful economy; healthy and empowered communities; and a rich and resilient environment".**

- 3.1 The Clydeplan Forestry and Woodland Strategy will be a key means of delivering this vision, providing advice on how it can be achieved, priorities for woodland management and expansion and information on the opportunities for woodland to add value to the economy, the environment and social outcomes.

How we're going to get there...

#### Cross-cutting principles

- 3.2 The Clydeplan Forestry and Woodland Strategy sits within a complex legislative and policy context, as illustrated in Table 1.1 above, and relies on a range of pre-existing regulatory processes to implement its priorities and provide robust decision-making processes. Therefore, the Strategy can only play an advisory role in relation to environmental protection and the weighing of potential benefits against likely impacts. Detailed site-specific assessment of proposals for woodland creation and management will always be required to provide this information and contribute to well-informed decisions.
- 3.3 The following policy principles, drawn from the forestry, planning and wider environmental protection regimes acting upon woodland creation and management practice, will influence delivery of all of the Strategy's priorities. They provide a robust framework to ensure that national and international legislative policy and regulatory commitments are adhered to and that the core aims of the Scottish and UK Governments' aspirations for woodland – embodied by the Scottish Forestry Strategy and the UK Forestry Standard – are achieved.



**Diagram 3.1 Cross-cutting principles**

## Aims and objectives

3.4 The following aims, established in the Vision, have been identified for the Strategy:

- expanding Clydeplan's woodland resource and improving its management;
- building and supporting Clydeplan's forest and woodland economy;
- empowering communities and enhancing quality of life and wellbeing;
- promoting and enhancing the quality of Clydeplan's environment; and,
- securing resilience to climate change and adapting to its impacts.

3.5 These aims are developed in the following sections of the Strategy, each supported by more detailed **objectives**. Under each objective, a number of **priorities** have been defined for the next five years to guide woodland management and expansion activity. These are designed to maximise the contribution that trees and woodlands can make to a broad range of policy goals. This provides a framework to guide implementation and monitoring of progress during the Strategy's lifetime.

3.6 The relationship between the aims, objectives and priorities is summarised below:

### THEME: EXPAND AND MANAGE...

**AIM:** Expanding Clydeplan's woodland resource and improving its management

- Encourage the creation of woodland of an appropriate nature, scale and composition to deliver the Strategy's priorities.
- Promote active management of the Clydeplan area's woodland resource.
- Promote high standards of woodland design in new and existing woodlands.
- Make a sustainable contribution to the delivery of the Scottish Government's national target of 10,000ha of new woodland per annum.

### THEME: ECONOMY...

**AIM:** Building and supporting the forest and woodland economy

- Creating an environment for investment
- Contributing to a healthy wood production and processing sector

### THEME: COMMUNITY...

**AIM:** Empowering communities and enhancing quality of life

- Facilitating community involvement in woodland planning, management and ownership
- Supporting community enterprise and development
- Supporting opportunities for education and lifelong learning
- Contributing to physical and mental health and well-being
- Enhancing local sense of place and promoting connections to the wider environment

### THEME: ENVIRONMENT...

**AIM:** Promoting and enhancing the quality of the environment

- Improving the condition and resilience of Clydeplan's woodland biodiversity
- Supporting the delivery of the Central Scotland Green Network
- Improving woodland's contribution to the conservation and management of ecosystem services and functions



- Contributing to the conservation, enhancement and understanding of Clydeplan's valued natural heritage and historic environment

#### **THEME: CLIMATE CHANGE...**

**AIM:** Securing resilience to climate change and adapting to its impacts

- Reducing the forestry sector's emissions and contribute to mitigation measures
- Adapting to the predicted effects of climate change

#### **Implementation**

3.7 As noted above, the Strategy does not stand alone. It will be interpreted, applied and delivered through two key routes:

- The Scottish Rural Development Programme (SRDP) grants and assessment process and felling licencing, administered by Forestry Commission Scotland; and,
- The Town and Country Planning system and related consents, administered by:
  - The Clydeplan local authorities, for the purposes of development planning and development management; and,
  - Scottish Ministers, for planning appeals, 'called-in' applications and energy consents<sup>9</sup>.

3.8 Through either route, good planning and rigorous assessment are essential, ensuring that site-specific issues, opportunities and constraints are fully understood and other regulatory requirements are met.

#### *Environmental Impact Assessment*

3.9 Some types of forestry and development projects have the potential for significant environmental effects, including:

- Energy, extractive industries, waste processing, infrastructure development or larger-scale housing;
- Development with the potential to generate pollution<sup>10</sup>;
- Afforestation over 5ha (no threshold in: SSSI, Natura 2000 sites, World Heritage Sites, Scheduled Monuments);
- Woodland removal over 1 ha (no threshold as above);
- Forest roads and quarries over 1ha (no thresholds as above)<sup>11</sup>.

3.10 It is for the decision-making body (planning authorities for development; Forestry Commission Scotland for forest roads, quarries, woodland creation and removal) to determine whether a proposal could have significant environmental effects and require formal EIA processes.

#### *Habitats Regulations Appraisal*

3.11 Where plans or projects are likely to have significant effects on Natura 2000 sites – Special Areas of Conservation and Special Protection Areas – the Habitats Regulations require competent authorities (i.e. the public body producing the plan or making a decision on proposals) to undertake an assessment of these effects. This requirement applies to any plan or project that has the potential to affect a Natura site, regardless of how far away the proposed activities may take place. 'Habitats Regulations Appraisal' (HRA) refers to the whole assessment process:

- Screening: to determine whether the plan or project will have likely significant effects on the qualifying interests and conservation objectives of the site and, hence, whether appropriate assessment is required.

<sup>9</sup> For example, under Sections 36 (generating stations) and 37 (overhead transmission) of the Electricity Act 1989, as amended.

<sup>10</sup> A full list is provided in Schedules 1 and 2 of the [Town and Country Planning \(Environmental Impact Assessment\) \(Scotland\) Regulations 2011](#)

<sup>11</sup> Guidance on EIA of forestry projects can be obtained from the [FCS website](#).

- 'Appropriate assessment'<sup>12</sup>: assessing each of the likely significant effects in detail, setting out detailed conclusions and what actions are proposed to ensure compliance with the Habitats Regulations (i.e. to avoid or mitigate impacts).
- HRA Record: a succinct document setting out the findings of the process and correspondence with SNH.

3.12 For forestry activities, qualifying **plans** could include:

- Forest District Strategic Plans;
- Long Term Forest Plans prepared to support grant applications;
- Detailed management plans produced by local authorities for managing their woodland estate;
- Forestry and Woodland Strategies (HRA Screening has been undertaken for this document).

3.13 Qualifying **projects** could include:

- Woodland creation schemes with the potential to affect the qualifying interests, integrity or conservation objectives of a Natura site. For example:
  - Planting, woodland removal, creation of forest roads or quarrying within the boundaries of any Special Area of Conservation, Special Protection Area or candidate site for designation;
  - Planting, woodland removal, creation of forest roads or quarrying in areas providing supporting habitat for SPA bird populations (e.g. favoured raptor foraging or goose grazing and roosting areas)
  - Planting, woodland removal, creation of forest roads or quarrying in areas providing supporting ecosystem services to designated habitats (e.g. planting within the same hydrological unit as SAC-designated habitat, affecting drainage patterns; planting where changes to drainage patterns could affect SAC-designated watercourses)

3.14 Competent authorities, in consultation with SNH, determine whether HRA is required. It should be noted that it is not the nature or scale of a plan or project that is important – simply whether it could have likely significant effects on Natura interests.

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<sup>12</sup> Regulation 48 of The Conservation (Natural Habitats, &c.) Regulations 1994, as amended, requires competent authorities to make 'an appropriate assessment' of the implications for the site and its conservation objectives of any likely significant effects

## 4 Expand and Manage

### Introduction

- 4.1 Creating and managing woodland is an intrinsically long-term activity. Decisions made today will affect the environment and resources available to future generations. This part of the Strategy sets out how woodlands could be managed, enhanced and expanded to achieve the Vision.
- 4.2 To be successful and sustainable, woodland needs to be planned for and managed in a way that is well integrated with other uses of, and aspirations for, the region's finite land resources. A key role of this Strategy is therefore to encourage new planting and management activities to areas where benefits can be optimised. Equally, there may be instances where existing woodland is not the optimal land use, and the Strategy provides guidance to aid decision-making and steer appropriate compensatory planting to locations where a wider range of benefits can be delivered<sup>13</sup>.

### The current situation

- 4.3 Woodland in the Clydeplan area accounts for almost 17% of the total land area<sup>14</sup> – broadly in line with the Scottish average.
- 4.4 The majority of the region's woodland is non-native conifers established mainly during the 1970s and 1980s. Though rates of woodland creation have slowed in recent years, the new forestry grant scheme 2014-2020 contains specific, targeted measures to support woodland creation in the Clydeplan area.
- 4.5 Major programmes of environmental enhancement, most notably the Central Scotland Forest and, more recently, the Glasgow and Clyde Valley and Central Scotland Green Networks, have provided an impetus for the creation of high quality, accessible and biodiverse woodland networks close to where people live. The Clydeplan area provides ample opportunities to improve networks of woodland within the urban environment whilst supporting the more 'traditional' forestry industries concentrated in the more rural parts of the region.
- 4.6 The Strategy has four overarching objectives to help expand the region's woodland resource and improve its management:
- Encourage the creation of woodland of an appropriate nature, scale and composition to deliver the Strategy's priorities.
  - Promote active management of the Clydeplan area's woodland resource.
  - Promote high standards of woodland design.
- 4.7 Make a sustainable contribution to the delivery of the Scottish Government's national target of 10,000ha of new woodland per annum. These objectives cut across all of the Strategy's other aims and objectives, and should be at the heart of all woodland-related activities in the region. The following sections of the Strategy set out:
- The types, appropriate locations and scales of new woodland that can best deliver multiple benefits and help the region deliver a sustainable contribution to national woodland expansion targets.
  - The key management priorities for existing woodlands.

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<sup>13</sup> In line with the Scottish Government [Policy on the Control of Woodland Removal](#) – a strong presumption against woodland removal exists except where it would achieve significant and clearly defined additional public benefits.

<sup>14</sup> In the year 2015.

- The main issues that should be taken into account when planning and designing new woodlands, or managing existing resources.

4.8 **Chapter 10 of this Strategy provides spatially-specific guidance on local issues and opportunities, and where new woodland can add social, economic and environmental value.**

## Encourage the creation of woodlands of an appropriate nature, scale and composition to deliver the Strategy's priorities

### Future extent of woodland

#### National objectives

- 4.9 It is the aim of the Scottish Government to encourage the creation of an additional 10,000ha of new woodland every year nationwide, thereby:
- helping tackle greenhouse gas emissions;
  - restoring lost and degraded habitats and aiding adaptation to climate change;
  - helping manage ecosystem services;
  - underpinning a sustainable forest products industry;
  - providing community benefits; and,
  - enhancing urban areas and improving landscapes<sup>15</sup>.
- 4.10 The Central Scotland Green Network (CSGN) is a key initiative across the region, particularly in and around the urban area. The CSGN identifies a range of opportunities for woodland to contribute to regeneration, improving access to quality environments and assist in local efforts to adapt to climate change.

#### Land categorisation

- 4.11 Based on the recommendations in **The Right Tree in the Right Place – Planning for Forestry and Woodlands**<sup>16</sup> (2010), the Strategy will split areas with the capability to support woodland expansion into three categories with increasing levels of constraint, i.e. Preferred, Potential, and Sensitive. In addition, areas physically unsuitable for woodland, built-up areas and existing woodland will be used in the analysis.
- 4.12 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.
- 4.13 The importance of site-specific assessment of individual proposals for woodland expansion, or woodland removal, is therefore paramount.

**Table 4.1 Land categories**

Land Category	Description
Built-up	Settlements, within which the opportunities for woodland creation are often too small to map effectively at a strategic scale.
Existing woodland	Land currently under woodland of all types.
Preferred	Land with no strategic constraints, 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

<sup>15</sup> Scottish Government Rationale for Woodland Expansion, p.6

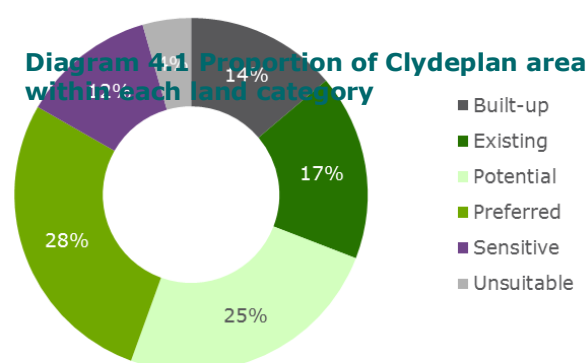
<sup>16</sup> Forestry Commission Scotland, 2010. *The Right Tree in the Right Place – Planning for Forestry and Woodlands*. [pdf] Edinburgh: Forestry Commission Scotland. Available at: [http://www.forestry.gov.uk/pdf/fcfc129.pdf/\\$FILE/fcfc129.pdf](http://www.forestry.gov.uk/pdf/fcfc129.pdf/$FILE/fcfc129.pdf) [Accessed 01 April 2014]

Land Category	Description
	that meet the UK Forestry Standard and associated guidelines. Future woodland expansion is therefore likely to be focused on preferred areas.
<b>Potential</b>	Land 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, site-specific consideration to ensure they are of an appropriate type and scale to be successfully accommodated.
<b>Sensitive</b>	Land on which, due to a combination of sensitivities, 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.
<b>Unsuitable</b>	Land physically unsuitable for the growth or management of trees. For completeness, this includes areas of inland open water.

- 4.14 The process of developing the mapping contained in the Strategy is set out in more detail in **Appendix 2**.
- 4.15 The indicative potential for woodland expansion maps illustrate the general level of constraint / opportunity for woodland expansion – **not** land which the Strategy proposes should be planted. How and where proposals for woodland management or expansion come forward will be driven by landowners' decisions, and these will be subject to a process of rigorous assessment by Forestry Commission Scotland.
- 4.16 Woodland is one of many possible uses for much of the region's land. Inclusion within the 'preferred' or 'potential' land classes should not be interpreted as precluding other viable and environmentally acceptable land uses.

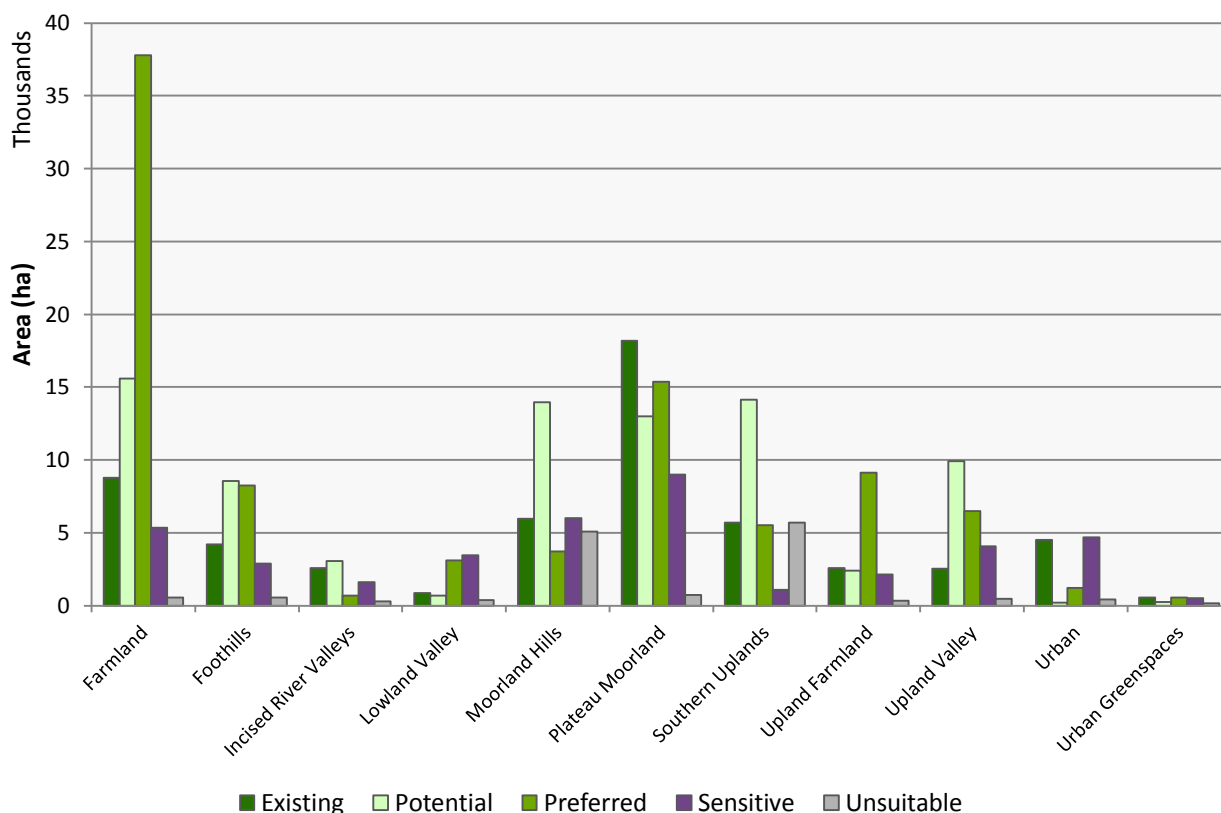
#### *Potential for expansion*

- 4.17 **Figure 4.1 indicates the level of potential for woodland expansion across the region. The map requires careful interpretation and does not illustrate the areas that will, should or should not, be planted. Instead, it depicts the broad level of environmental sensitivity of the region to new woodland of all types.**
- 4.18 There is significant potential to accommodate new woodland within the region – with over half of the region's land area assessed as having some capacity.
- 4.19 While it would be neither practical nor desirable to suggest that this area should be entirely converted to woodland, it does highlight the possibilities for an increase in woodland cover, and for the Clydeplan area to make an expanded contribution to Scottish Government aspirations.
- 4.20 This potential is not, however, evenly distributed throughout the region as Diagram 4.2 shows. The area contains a significant amount of land covered by a range of national and international environmental designations, classified as being 'sensitive' to woodland expansion. This does not mean that these are 'no go' areas for new woodlands – but the significance of the constraints limits the type and scale of woodland that can be supported and highlights the need for exemplary planning, consultation and design.





- 4.21 Section 10 of the Strategy provides more detailed guidance on the types of woodland that are best suited to the opportunities of each of the region's landscapes.



**Diagram 4.2 Distribution of potential for expansion**

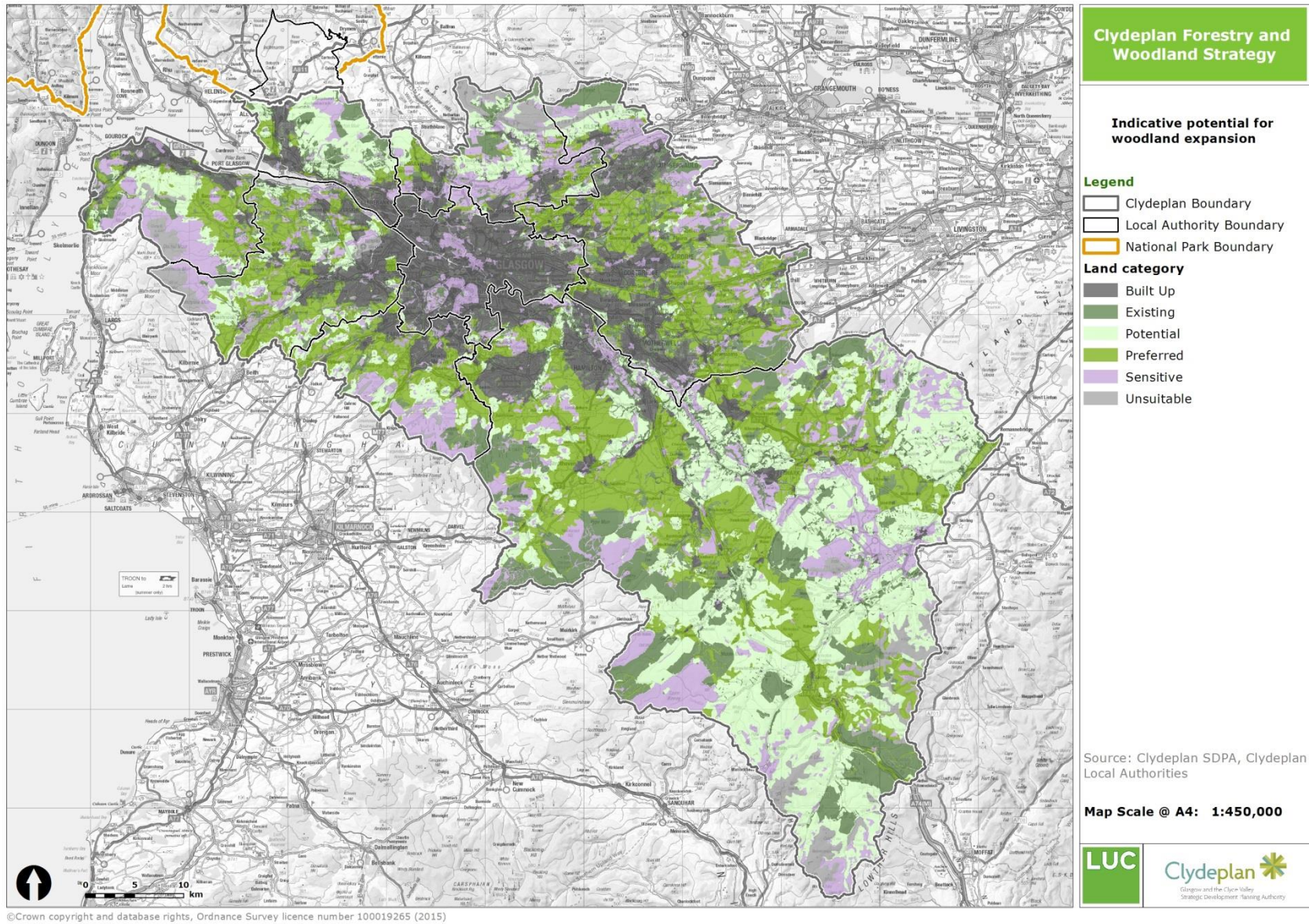
#### Aspiration for woodland expansion

- 4.22 Using the figures derived from the GIS analysis outlined above, the Strategic Environmental Assessment (SEA) process tested a number of possible scenarios for woodland expansion in the Clydeplan area. This process was intended to determine an ambitious, but achievable and environmentally, economically and socially sustainable aspiration for the sector to work towards.
- 4.23 It has therefore been calculated that the Clydeplan area could readily accommodate woodland cover of a little over **19% of land area** – an increase of approximately 6,000ha – over the lifetime of the Strategy.

**The following sections of the Strategy set out the appropriate location, nature and scale of new woodland that can help deliver this aspiration, and enhance the social, economic and environmental benefits that trees and woodland already provide in the Clydeplan area.**

- EM 1.1 Support the delivery of approximately 6,000ha of new woodlands over the 20-year lifespan of the Strategy.
- EM 1.2 Promote a strong multi-benefit approach to woodland planning, design and management in the Clydeplan area.
- EM 1.3 Ensure that proposals for woodland creation support the aims and objectives of the Clydeplan Forestry and Woodland Strategy.

**Figure 4.1 Indicative potential for woodland expansion**



## Promote improved management of Glasgow and the Clyde Valley's woodland resource

- 4.24 In addition to delivering additional woodland across the Clydeplan area, ensuring that existing resources are appropriately managed is a key priority. While much of the region's woodland is already well-managed, with long term forest plans in place to guide future decisions on many sites, bringing undermanaged resources into positive stewardship could help to unlock significant economic, social and environmental value.
- 4.25 In many of the region's older softwood forests, restructuring and restocking is already underway – helping to ensure that future rotations will deliver better quality timber, improved economic value and make a stronger contribution to the conservation of landscape, natural and cultural heritage values. Similarly, designing in provisions for access and recreation can help improve community use of woodland resources, contributing to improved health and well-being.
- 4.26 Bringing under-managed resources, particularly in urban fringe environments, into positive management has been a particular success, delivered in part through the Forestry Commission 'Woods In and Around Towns' programme, the Central Scotland Forest and the Glasgow and Clyde Valley Green Network. However, ensuring that these successes continue to be recognised and built on will remain a priority.
- 4.27 Woodland management will be a key source of material to help promote the growth of local biomass markets, helping to provide an income to fund improved management activities and helping to make the case for investment in under-performing woodland assets.
- 4.28 The Forestry Grant Scheme 2014-2020, particularly the Woodland Improvement Grant (WIG), encourages an increase in the sustainable management of existing woodlands for example, by providing grant support for Lower Impact Silvicultural Systems, restructuring of even aged woodlands, natural regeneration of woodlands, and improving public access and management of urban woodlands (through WIAT).
- 4.29 Management priorities will include:

EM 2.1	Promote restructuring of existing softwood forests to contribute to improved economic, social and environmental values.
EM 2.2	Continue to promote opportunities to bring woodlands into positive management, prioritising assets close to where people live and where they can make an enhanced contribution to the character, quality and attractiveness of new and existing places.
EM 2.3	Highlight the potential economic returns of improved woodland management as a means of driving investment in existing resources.
EM 2.4	Promote the adoption of Lower Impact Silvicultural Systems / Continuous Cover management approaches on suitable sites to help improve climate resilience, stand dynamics, timber values and contribution to landscape and biodiversity values.

## Promote high standards of woodland design

- 4.30 As noted above, the process of restructuring and restocking the region's existing softwood forests creates a major opportunity to improve the design of these resources – enhancing their contribution to landscape character, habitat networks, public access and recreation and natural and cultural heritage values. The production of long term land management plans can help land managers develop more effective – and successful – approaches to optimising the value delivered by their assets, as well as making an enhanced contribution to wider social and environmental benefits.
- 4.31 In establishing new woodland, a range of tools and techniques are available to help optimise their planning and design. These can help ensure that woodlands function effectively as both assets (e.g. so that they can be planted, thinned and harvested easily and with minimal disruption) and



as part of the wider ecosystem delivering multiple benefits. The UK Forestry Standard sets the standards and requirements for new woodland, and its associated Guidelines provide key advice on ensuring new woodlands are designed to make a positive social and environmental contribution.

4.32 Priorities will include:

EM 3.1	Ensuring that proposals for woodland creation are designed to optimise the delivery of multiple benefits and make a positive contribution to local landscapes.
EM 3.2	Encourage land managers and their Agents to engage and consult widely in the development and delivery of forest plans and planting proposals.
EM 3.3	Highlight the importance of good design in helping to unlock the potential for woodland expansion in areas of more sensitive landscape.

## Make a sustainable contribution to national woodland expansion targets

- 4.33 Woodland and trees have an important role to play in meeting Scotland's international climate change commitments. Their ability to absorb and store CO<sub>2</sub> from the atmosphere – known as carbon sequestration – provides a key means of reducing our net emissions, in parallel with wider carbon reduction mechanisms<sup>17</sup>.
- 4.34 All growing trees absorb CO<sub>2</sub>, therefore all woodland contributes to the national carbon budget. Similarly, organic forest soils retain significant quantities of carbon, therefore reducing the impact of management operations on this resource can have significant benefits in carbon terms.
- 4.35 Since 2013<sup>18</sup> all companies listed on the stock market have been legally required to measure and report their Greenhouse Gas (GHG) emissions. All other companies are encouraged to do so voluntarily. Although companies are first required to avoid and reduce their emissions as far as possible, for example through improved efficiency or changes in processes, establishing new woodlands can be used as a means of reducing their net emissions. A number of businesses support companies in doing this, but quality assurance – provided through schemes such as the [Woodland Carbon Code](#) – is critical in ensuring companies can meet their reporting responsibilities and ensure that woodland is established and managed in an effective and responsible manner.
- 4.36 All woodland established primarily for carbon sequestration purposes will be required to meet the UK Forestry Standard – and should therefore deliver multiple benefits. The aspiration to expand the region's woodland by around 6,000ha over the lifespan of the Strategy will ensure that the Clydeplan area makes a sustainable and long-term contribution to meeting the national target.
- 4.37 Priorities will include:

EM 4.1	Ensuring that the carbon sequestration potential of woodland is optimised through high quality design and management.
EM 4.2	Ensuring that woodlands established principally for carbon sequestration meet the requirements of UKFS, and contribute to the objectives of the Clydeplan Forestry and Woodland Strategy.
EM 4.3	Promoting the value of Woodland Carbon Code accreditation for land managers seeking to participate in carbon sequestration projects.
EM 4.4	Collecting data and monitoring the contribution of woodlands in Clydeplan to Scotland's emissions reduction targets.

<sup>17</sup> Scottish Government (2013) *Low Carbon Scotland: Meeting the emissions reduction targets 2013-2027 – the second report on proposals and policies*.

<sup>18</sup> Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013

## Woodland types

- 4.38 The Scottish Government's aspirations for woodland expansion cannot be achieved by concentrating on a single woodland type or strategic objective. Similarly, achieving the right mix of woodland requires guidance on where each type is most appropriate and can add most value.
- 4.39 As previously noted, managing our existing woodland resource is a key priority of the Strategy – therefore spatial guidance is provided for both management and expansion of key woodland types in Chapter 10 of the Strategy. 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.
- 4.40 This section sets out strategic guidance for the following woodland types:
- forests to provide a source of **softwood** timber;
  - woodlands for biomass **energy**;
  - **mixed** woodlands, such as farm woodlands and shelterbelts;
  - **native** woodlands contributing to habitat networks; and,
  - **urban woodlands** contributing to strategic development and regeneration objectives.
- 4.41 **These maps are indicative and intended to provide a starting point to inform the development and evaluation of more detailed woodland management and creation 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 woodland may fall within more than one category.**

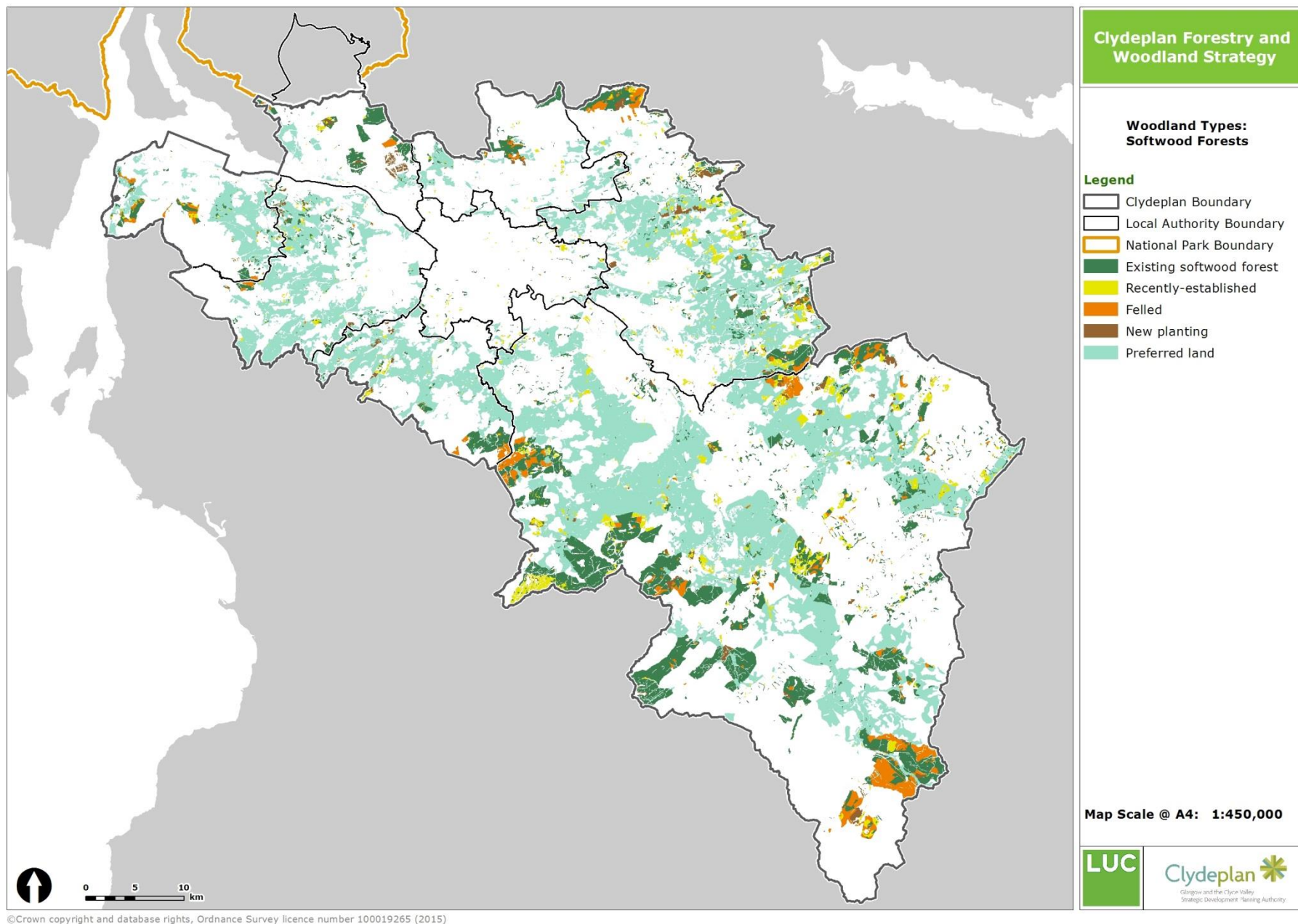
### Softwood forests

#### *Managing the existing resource*

- 4.42 The majority of the area's existing softwood forests are concentrated on the Plateau Moorlands forming the north-eastern and south-western boundaries of the region, with some significant areas in the Southern Uplands and in the Campsie Fells and Kilsyth Hills.
- 4.43 Ongoing restructuring and restocking of existing woodlands creates a major opportunity, through the Forest Design Planning process, to deliver benefits ranging from improved stand resilience and sustainability, enhanced public access, to habitat networks and improved landscape values.
- This area contains some of the best opportunities for building on the success of the existing highly productive softwood forests by expanding the amount softwood forests in the region due to a combination of excellent softwood growing conditions and close market access. These conditions also mean that continued investment in quality restocking will be important in securing the long-term supply of timber – particularly 'whitewood' species. Supported by ongoing good silvicultural practices, the region's softwood forests can continue to produce high volumes of quality sawlogs and small roundwood to help meet the future requirements of the timber industry. Potential for expansion*
- 4.44 With an excellent climate for growingThere is potential for well-planned new and expanded conifer woodlands in the Clydeplan area. However, high standards of design will be necessary to ensure that landscape values and natural heritage issues are appropriately addressed. Competition, with renewable energy in particular, for land in the upland and moorland areas of the region – as well as increasing national emphasis on the conservation and enhancement of peat resources – means that there may be a subtle shift into areas of lower landscape and natural heritage sensitivity. In upland areas covered by local landscape designations careful planning, design and can help to unlock significant opportunities for appropriate woodland creation.
- 4.45 Investing in new softwood forests is a priority in terms of supporting the nationally-significant processing industry in central Scotland, contributing to security of supply for end users and continuing to improve the sustainability of locally produced timber. Current production forecasts suggest that domestic production is likely to fall significantly beyond 2040, creating a shortfall – and highlighting the need to find suitable and sustainable locations for new woodland.



**Figure 4.2 Opportunities for softwood forests**



## **Energy forests**

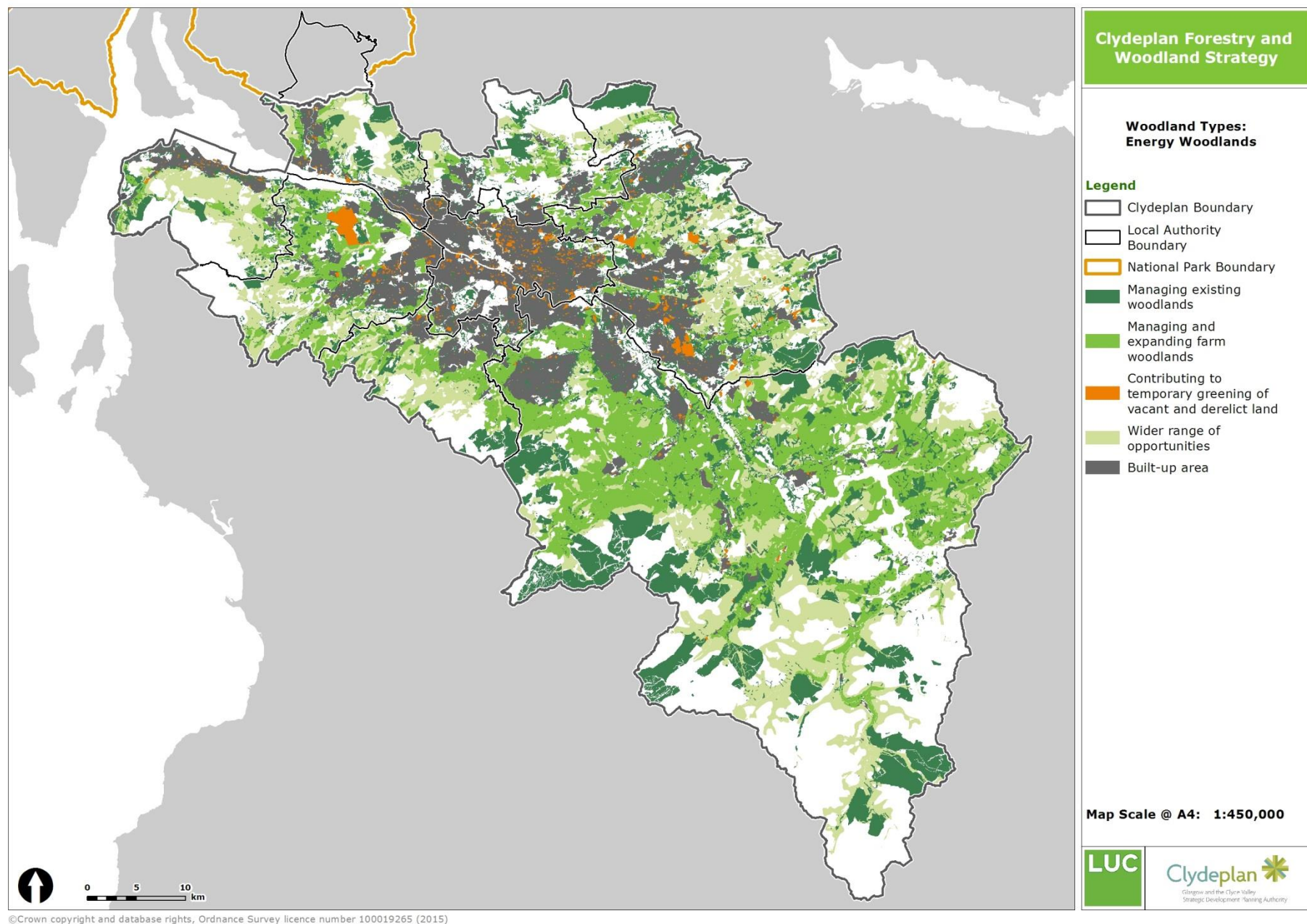
### *Managing the existing resource*

- 4.46 Much of the region's woodland has some potential to contribute to growing the biomass sector. In addition to providing a fuel resource, this could make a substantial contribution to the health of native woodland ecosystems by providing income to secure positive management, improve the appearance and value of under-managed woods close to towns and villages and providing revenue from a currently underperforming resource.
- 4.47 Developing robust supply chains is the key to ensuring long-term sustainability of the local biomass sector. Existing biomass producers and users already source significant quantities of material from local woodlands.

### *Potential for expansion*

- 4.48 The Scotland Rural Development Programme 2014-2020 does not support short rotation coppice, therefore it is unlikely that such planting will represent a significant element of woodland expansion during the FWS period. It is therefore likely that management of existing woodlands and waste from harvesting softwood forests will form the majority of the biomass resource.
- 4.49 Close to settlement, the expansion and management of amenity woodlands could provide additional material through thinning and maintenance. Biomass could also make an important contribution to the management and sustainability of community woodlands – providing an income to support access and recreation enhancements and, potentially, a source of fuel for community ventures.
- 4.50 In more marginal areas, short rotation forestry could become a component of new planting schemes. In urban areas, vacant and derelict land – and even stalled development sites or long-term safeguarded sites – could provide an attractive location for new woodland with a biomass component.

**Figure 4.3 Opportunities for energy forests**



## **Mixed woodlands**

### *Managing the existing resource*

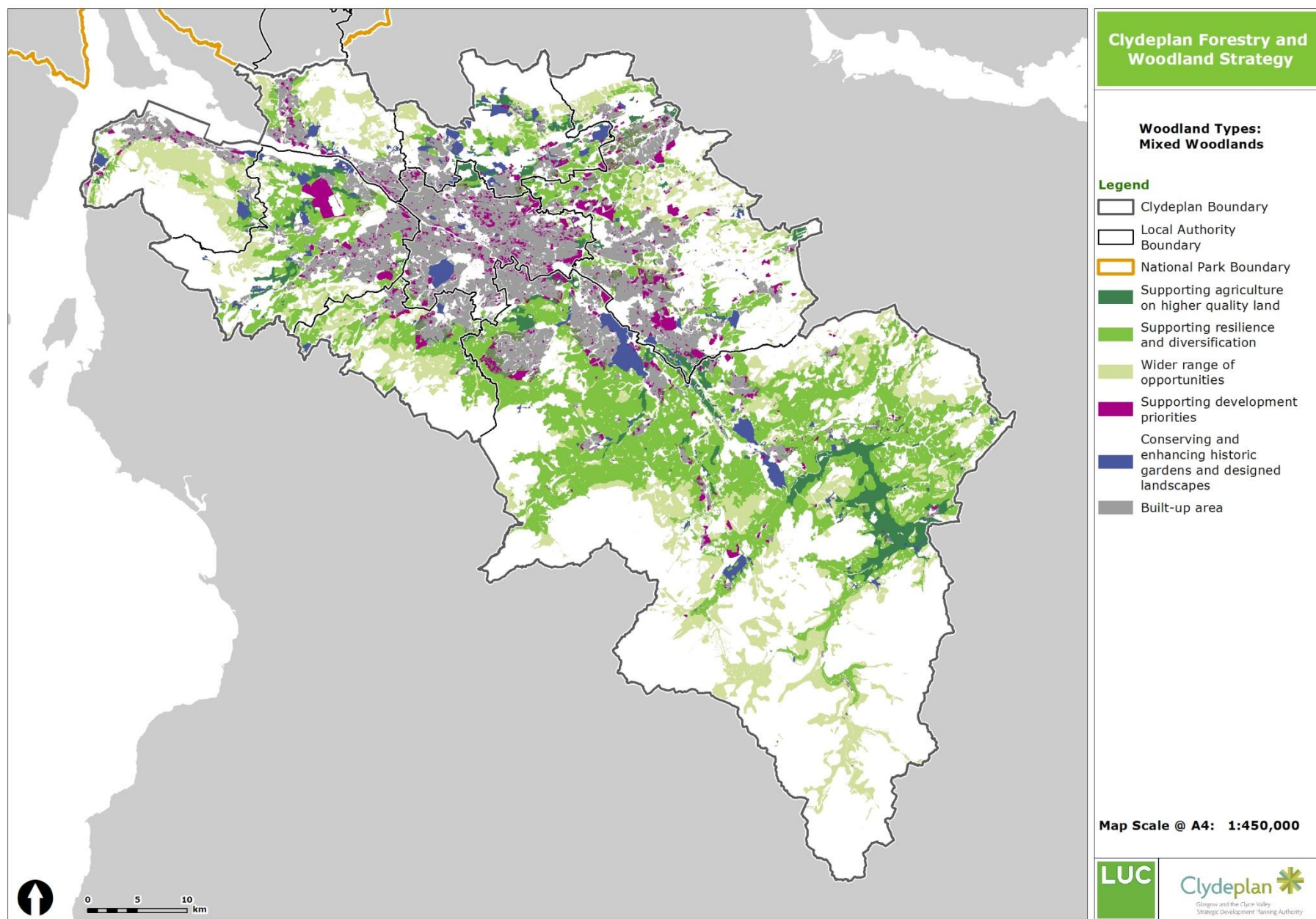
- 4.51 The Clydeplan area has a comparatively sparse distribution of mixed woodland, predominantly concentrated in the region's parks, gardens and designed landscapes. Amenity planting, connected with development and transport networks, and small farm woodlands also comprise a small but significant proportion of this resource.
- 4.52 In designed landscapes and for field trees, succession planning is vital to ensure that landscape character and heritage significance are maintained. The effects of climate change should also be taken into account in the selection of species and provenance, helping to design in resilience.

### *Potential for expansion*

- 4.53 It is likely that agricultural areas will provide an additional focus for new mixed woodland creation, providing a diverse resource for on-farm use, timber sale and biomass production. Over the time period of the Strategy it is important that farm forestry, as a key means of delivering farm-scale adaptation, is promoted accordingly.
- 4.54 Highlighting the role of trees and woodland in meeting the challenge of adapting to climate change could help to boost uptake. Increasing planting in river corridors can help to mitigate the effects of floodwaters. Again, understanding how woodland and forests relate to the decisions of different land managers will be critical in developing incentives, information and support to help achieve this kind of expansion. New planting of farm woodlands and shelterbelts could also help to restore lost or degraded boundaries and help to maintain character, particularly around designed landscapes where distinctive field patterns can provide strong landscape structure and local distinctiveness.



**Figure 4.4 Opportunities for mixed woodland**



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## **Native woodlands**

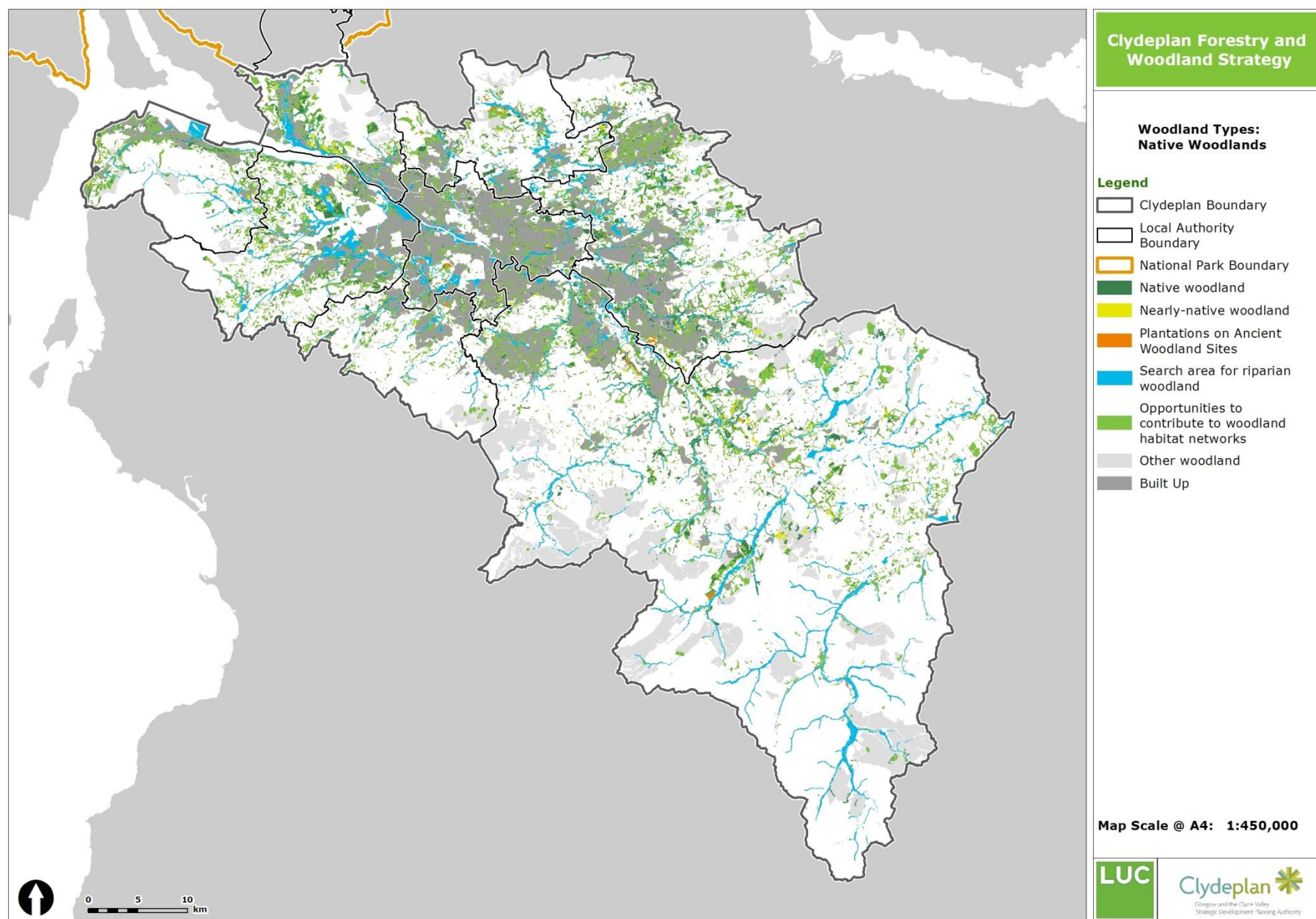
### *Managing the existing resource*

- 4.55 A little over 20% of the region's woodland is classified as native, with the majority of the resource concentrated in riparian networks, designed landscapes and protected areas. Recent environmental enhancement projects, delivered by local authorities, the Central Scotland Forest and through the Glasgow and Clyde Valley and Central Scotland Green Networks, have also contributed substantial areas of new, multi-benefit native woodland – along with the key contribution of numerous individual land owners and managers investing in new woodland.
- 4.56 Across the north of the region, physical and functional connectivity of native woodland habitats is relatively good, while the Clyde Valley provides a high quality green artery running from the foothills of the Southern Uplands into urban Glasgow. However, the plateau farmland and moors surrounding the metropolitan area have a far more sparse distribution, with these landscapes creating substantial barriers to connectivity – and the ability of species to adapt to the challenges of climate change.

### *Potential for expansion*

- 4.57 Conserving and enhancing the region's internationally and nationally significant native woodlands in the Clyde and Avon Valleys is a key priority, as is optimising the biodiversity value of this resource by reinforcing existing and developing new networks of high quality habitat. Similarly, building on existing links to Loch Lomond through the Vale of Leven and the fringes of the Kilpatrick Hills will help to build resilience and connections to the Atlantic oakwoods in the National Park.
- 4.58 Integrated Habitat Network (IHN) models can provide some insight as to where new planting may add value to existing networks and create new connections in fragmented areas. The pastoral farmland of the region poses a significant challenge as, in many areas, traditional networks of field trees, farm woodlands and hedgerows are under-managed and require investment to secure their future. Ensuring that new native woodlands are part of the mix promoted to assist agriculture adapt to the effects of climate change could have significant benefits in building connectivity across these areas.

**Figure 4.5 Opportunities for native woodland**



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## **Urban woodlands**

### *Managing the existing resource*

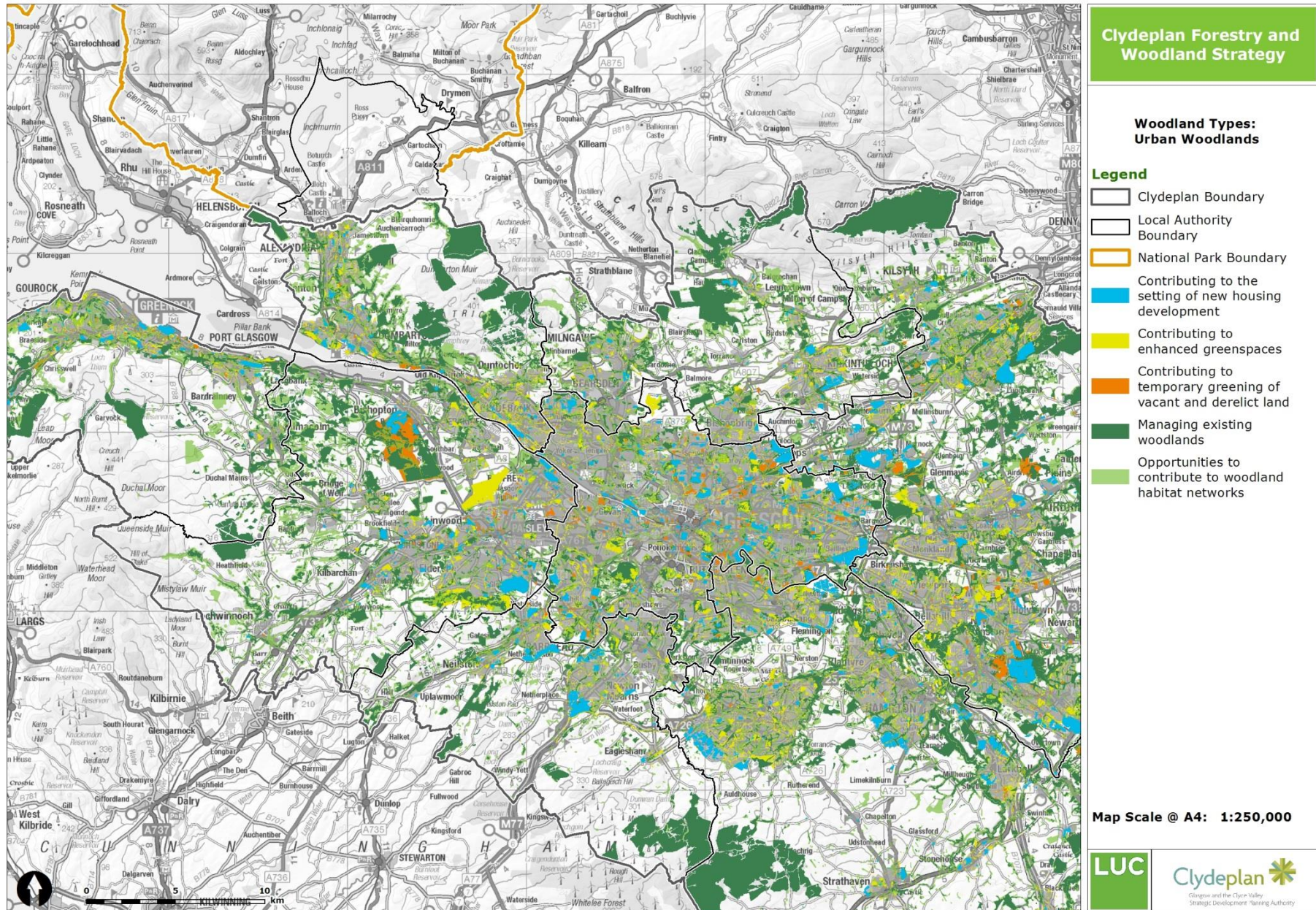
- 4.59 Access to high quality woodlands close to where people live can bring significant community benefits by providing places for recreation and learning. Despite containing Scotland's largest city, and a significant number of large settlements, the urban areas of the region hold around 8% of its woodland. A substantial proportion of this resource is located in urban parks, historic estates, gardens and amenity planting, and in the corridors of major rivers and the Forth and Clyde Canal. There is still considerable scope for more effective management and enhancement of the region's urban woodland resource. The priority is therefore identifying and prioritising under-managed woodlands and continuing to work with all stakeholders to unlock their potential.

### *Potential for expansion*

- 4.60 As this document is intended as a regional strategy, the spatial analysis undertaken is not suitable for identifying individual sites for planting. However, there is some potential within the urban area – particularly in terms of vacant and derelict land – for meaningful woodland expansion. Similarly, ongoing regeneration projects can make a substantial contribution to the woodland component of green network development. Temporary greening of stalled development sites has already had some significant success in Glasgow, and appropriate use of woodland can contribute to the wider roll-out of this approach to addressing issues of blight and perception across the region.
- 4.61 The region's towns also have a substantial resource of under-used amenity grassland that adds little value for communities, nature or sense of place. Activity could focus on converting under-used or problematic amenity grassland, to contribute to local character and habitat networks, enhancing the setting of new and existing development and addressing issues with vacant and derelict land.



Figure 4.6 Opportunities for Urban Woodlands





## 5 Economy

- 5.1 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.

### Creating an environment for investment

- 5.2 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.
- 5.3 Trees and woodland already make an important contribution to the diverse rural and urban environments of the region. Development of the Glasgow and the Clyde Valley Green Network, individual Councils' open space strategies, growth of the Central Scotland Forest and increasing involvement of third-sector organisations are growing 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.
- 5.4 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

- 5.5 Clydeplan has a series of Strategic Economic Investment Locations (SEILs) with a focus on stimulating economic, social and environmental regeneration<sup>19</sup>. These include the continued delivery of development at Clyde Riverside, Clyde Gateway, Gartosh, Ravenscraig and Bishopton; and new areas such as the 'Creative Clyde Enterprise Area', the South Glasgow University Hospital, and 'BioCity Scotland' at Newhouse. Building on the proposals of SDP1, significant investment will also continue in delivering upgraded transport networks.
- 5.6 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 supporting regeneration and future investment opportunities.
- 5.7 Opportunities for action:

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<sup>19</sup> SEILs include: Glasgow City Centre, ITREZ, Clyde Gateway, IFSD, Pacific Quay, Robroyston, West of Scotland Science Park, Inverclyde Waterfront, Eurocentral, Gartosh, Ravenscraig, Bishopton, Glasgow International Airport Zone, Hillington Renfrew North, Clyde Gateway (SLC element), Hamilton International Technology Park, Peel Park North, Poniel, Scottish Enterprise Technology Zone, Clydebank Riverside, and Lomondgate.



EC 1.1	Adopt a strategic approach to woodland planning, establishment and management designed to improve the environmental quality and setting of economic investment locations within the wider Green Network
EC 1.2	Encourage a sensitive approach to existing trees and woodland in and around development sites and supporting their retention, enhancement and expansion wherever possible
EC 1.3	Promote the bold use of new woodland planting to create high quality landscape structure for new development, whilst contributing to habitat connectivity, access and recreation opportunities, shelter and sustainable drainage and creating links with surrounding communities
EC 1.4	Encourage imaginative use of trees along access routes, in public greenspaces, civic spaces and private gardens, including 'retro-fitting' of green infrastructure where possible
EC 1.5	Promote greening ahead of development to create a high quality setting for planned development.

### **Temporary planting on stalled sites**

- 5.8 Many sites across the region 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.
- 5.9 Planting in advance of development could help address the financial and greening aspects associated with new development. Tree planting could be used to provide screening around the periphery of sites, particularly where this contributes to habitat networks and increases the region's overall woodland cover, and can be retained post-development. Since the approval of SDP1 and the 2011 Glasgow and Clyde Valley Forestry and Woodland Strategy, the 'stalled spaces' approach has been rolled out nationally as part of the Legacy 2014 programme. To align with the Scottish Government's Town Centre Action Plan, and the Town Centre First Principle, the programme will primarily look at stalled spaces in town centres or district centres within city boundaries. It is anticipated that a pilot project will run in early 2015, with a tranche of up to 30 projects being delivered nationwide over the following two-and-a-half years.
- 5.10 Opportunities for action:

EC 2.1	Encourage temporary planting to improve the environmental quality of vacant and derelict land and stalled development sites
EC 2.2	Work with Clydeplan local authorities to identify opportunities for new woodland to contribute to 'Stalled Space' projects

### **Greening vacant, derelict and underused land**

- 5.11 Industrial development during the nineteenth and twentieth centuries, and subsequent de-industrialisation from the 1970s onwards, has left an extensive legacy of vacant and derelict land right across the region. 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.
- 5.12 The work of the Central Scotland Green Network Trust (CSGNT), FCS, third-sector organisations, the Glasgow and Clyde Valley and Central Scotland Green Networks illustrates 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. It should be noted, however, that not all areas of vacant and derelict land are suitable for woodland planting.

- 5.13 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' health and 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.
- 5.14 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 Glasgow and Clyde Valley Green Network. Tackling this legacy is identified as one of the three core purposes of the Central Scotland Green Network in NPF3. However, delivering appropriate solutions will require wide-ranging partnerships. Bringing together local authorities, public bodies, the private sector and communities is essential to ensure that regeneration priorities are well balanced, locally appropriate and meeting identified needs.
- 5.15 Opportunities for action:

**EC 3.1** 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**

- 5.16 The Clydeplan 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.
- 5.17 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.
- 5.18 Opportunities for action:

**EC 4.1** Support the creation of new woodlands along transport corridors where this provides screening and improves views.

**EC 4.2** Prioritise the management of new and existing woodlands along transport corridors to maintain their contribution to the Green Network.

### **Promoting rural development and diversification**

- 5.19 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 and/or restore productive woodlands once found in different parts of the region.
- 5.20 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;
  - This can also assist in reducing the impact of agricultural diffuse pollution (see priority ENV 3.1)
- Helping to link habitats, reversing habitat loss and helping plants and animals adapt to the changing climate.

5.21 In areas where agriculture is less viable, more extensive woodland planting may be an important alternative, creating new opportunities for training and employment.

5.22 There is 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.

5.23 Opportunities for action:

- |        |  |
|--------|--|
| EC 5.1 | 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. |
| EC 5.2 | Work with the agricultural sector to increase the management of existing woodlands and to identify opportunities to create new farm woods  |

### Supporting tourism and recreation

5.24 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.

5.25 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 National Nature Reserve, the Kilpatrick Hills and the Clyde Muirshiel Regional Park. 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 Frontiers of the Roman Empire (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.

5.26 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.

5.27 Opportunities for action:

- |        |   |
|--------|---|
| EC 6.1 | Increase the role of woodlands and forests in supporting tourism and recreation by developing and promoting new recreation opportunities; |
| EC 6.2 | Encourage the use of woodland to improve the setting of tourism sites;  |

EC 6.3	Prioritise the management of existing trees and woodland within historic landscapes and where they make a significant contribution to the quality of open spaces, civic spaces and country parks.
EC 6.4	Building on the Commonwealth Games Legacy projects to enhance the recreation offer of woodlands, including in the Kilpatrick Hills

### Shaping new communities

- 5.28 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. at Bishopton) while others are on greenfield sites adjacent to existing settlements. Most are linked to the regeneration of existing communities.
- 5.29 Urban Regeneration Companies have been established to help regenerate key locations within Glasgow & Clyde Valley. Currently, these are Clyde Gateway and Riverside Inverclyde<sup>20</sup>.
- 5.30 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.
- 5.31 Opportunities for action:

EC 7.1	Prioritise the role of existing and new woodlands in creating attractive and sustainable Community Growth Areas
EC 7.2	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
EC 7.3	Wherever possible, carrying out new woodland planting and green infrastructure creation in advance of new planned development.
EC 7.4	Encourage the management and maintenance of new and existing trees and woodlands in and around new development in the long term
EC 7.5	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
EC 7.6	Ensure that, where new woodland is created in parallel with development, appropriate mechanisms are put in place at the planning stage to secure long-term management and maintenance

<sup>20</sup> The third URC, Clydebank Rebuilt, was wound up in July 2014



Figure 5.1 Land Allocations

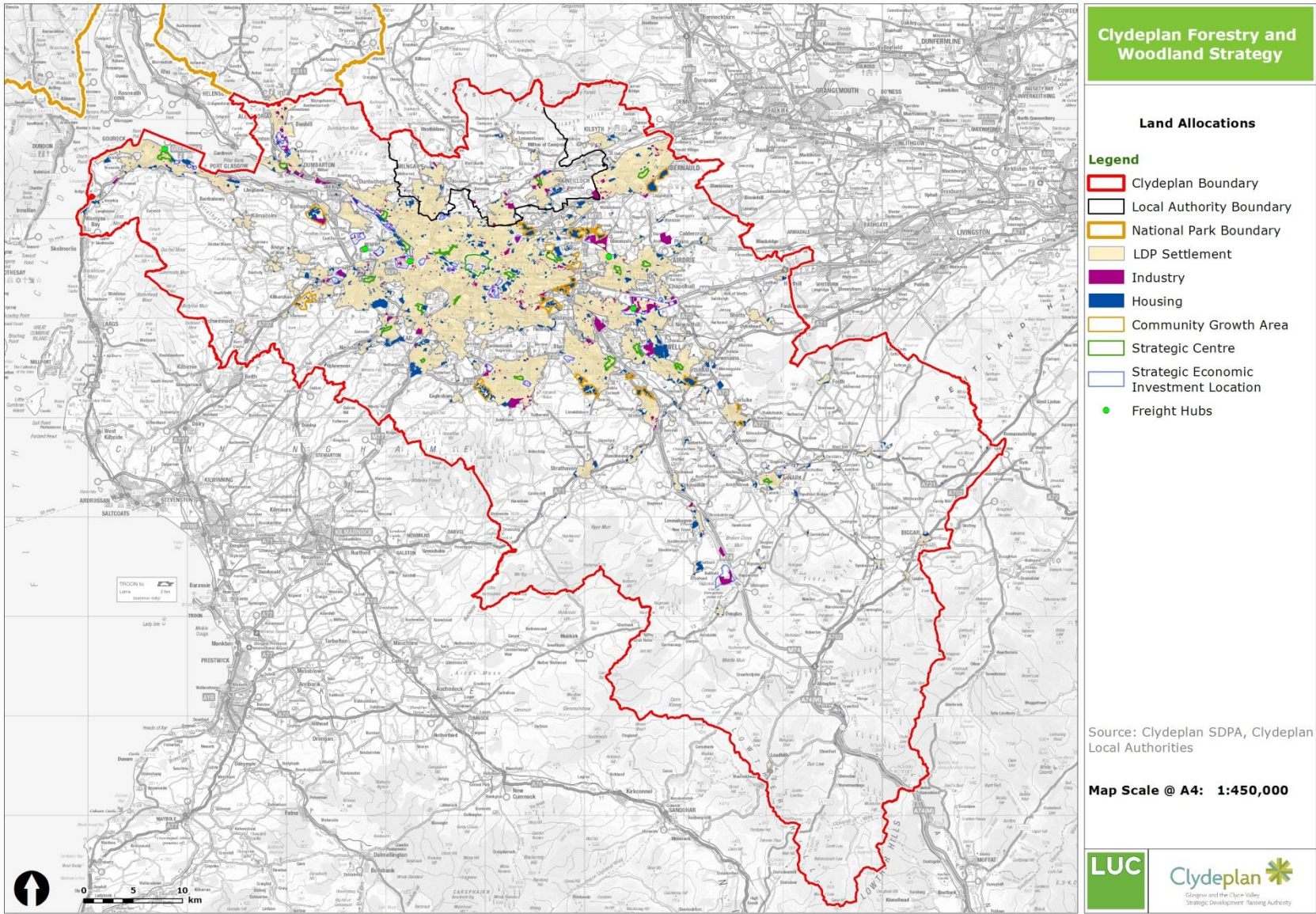
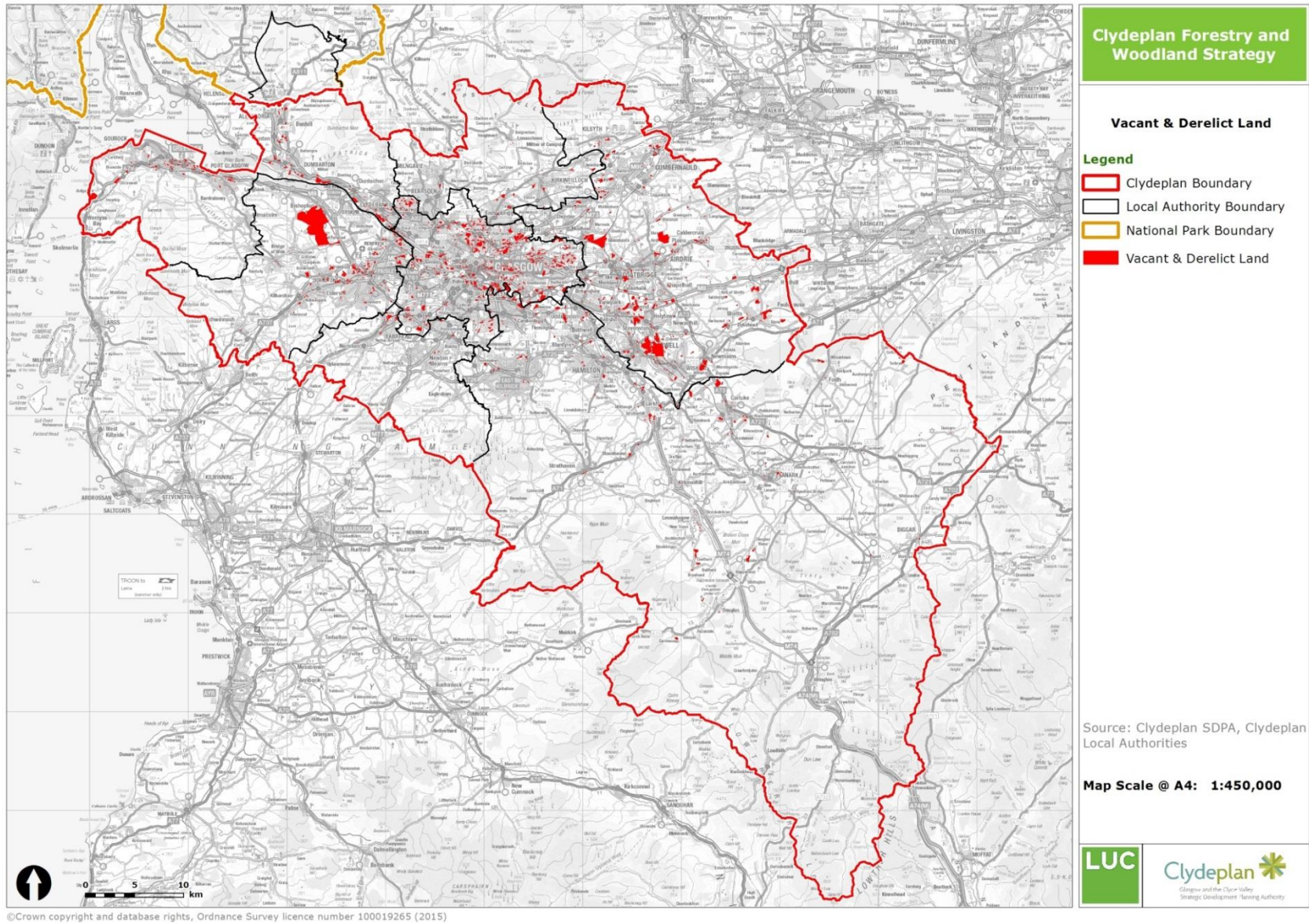




Figure 5.2 Vacant & Derelict Land



## Contributing to a healthy wood production and processing sector

- 5.32 The timber growing and processing sector is a small but significant component of the Clydeplan area's economy, but one where there is potential for growth.
- 5.33 The region includes around 35,000ha 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 stand resilience, native tree species and varying age structure. At the same time, there is potential to expand the total area of productive forest to include volumes of hardwood and biomass production.
- 5.34 Compared with other parts of Scotland, the region 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.
- 5.35 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.
  - Encouraging the development of self-harvesting groups prepared to take on existing, under-managed woodland and manage them sustainably.

### Maintaining and increasing timber production

#### *Overview of existing productive woodland cover*

- 5.36 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*

- 5.37 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 following the publication of the UK Forest Standard 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.
- 5.38 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.
- 5.39 Opportunities for action:

- |        |  |
|--------|--|
| EC 8.1 | Continue to promote restructuring and redesign of existing softwood forests to improve timber quality in subsequent rotations, enhance landscape and biodiversity values and secure resilience to climate change |
| EC 8.2 | Work with land managers to guide restructuring of forests in more sensitive locations  |
| EC 8.3 | Prioritise quality restocking of 'whitewood' species on suitable sites   |

### *Increasing the area of productive forestry, particularly whitewood species*

- 5.40 There is considerable potential to increase the area of productive forest within the Clydeplan area. Some new planting is required to compensate for the restructuring of existing forests, such as the inclusion of larger areas of open space. Planting is also required to replace the considerable amount of woodland lost as a result of wind energy development. Added to this is the Scottish Government's aspiration to increase national woodland cover by 10,000ha per annum 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 woodland to supplement agricultural incomes.
- 5.41 It is likely that new planting for softwood timber production will be concentrated on the fringes of the plateau farmlands and in the plateau moorlands. Much of the land resource in these areas is ideal for growing conifer crops, therefore there is substantial potential for sustainable expansion. In addition, potential for implementing continuous cover forestry and developing more diverse, multi-functional woodland could open up opportunities for productive woodlands in other locations.

EC 8.3	Sustain consistent long-term timber supplies through planting of new productive forest areas, capitalising on ideal growing conditions for whitewood species
EC 8.4	Work with the forestry sector to develop and increase the competitiveness of local timber-using businesses, with a focus on provenance and sustainability
EC 8.5	Encourage the use of locally-grown timber for manufacturing purposes (construction materials, furniture, and fencing)
EC 8.6	Promote sustainable silvicultural practices, supply chain development and markets to grow the hardwood timber sector
EC 8.7	Continue to support the use and development of machinery rings to provide specialist equipment to improve the attractiveness and viability of farm woodland
EC 8.8	Promote the development of forest plans as a tool for improving timber quality and output while delivering more sustainable woodland management

### **Encouraging hardwood production**

- 5.42 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.
- 5.43 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 income streams of landowners.
- 5.44 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.
- 5.45 Opportunities for action:

EC 10.1	Encourage landowners to bring woodland into positive management to build hardwood supply chains
EC 10.2	Highlight the potential for hardwood timber production to provide a catalyst for environmental enhancement
EC 10.3	Promote planting of broadleaves for timber production to strengthen and restore landscape structure and character
EC 10.4	Minimise the loss of existing woodland through the rigorous application of the Scottish Government Policy on the Control of Woodland Removal

## Biomass

- 5.46 Research carried out for the Glasgow and Clyde Valley Green Network Partnership, Forestry Commission Scotland and Scottish Enterprise<sup>21</sup> 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.
- 5.47 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.
- 5.48 While there is potential to establish new woodlands to provide a source of woody biomass, the greatest scope lies in the management of existing woodland across the region, which has the capacity to support the predicted domestic and small-scale industrial demand.
- 5.49 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. There is also scope to maximise the harvest potential from productive sites to support the biomass industry.
- 5.50 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.
- 5.51 Considerable success has already been delivered through partnership working between the Central Scotland Forest Trust, CSGN and North Lanarkshire Council – through the Lanarkshire Biomass project – converting four public buildings to biomass heat, planting vacant and derelict land with energy crops and developing a woodfuel depot at Strathclyde Country Park.
- 5.52 Opportunities for action:
- |         |  |
|---------|--|
| EC 11.1 | Establish and monitor regional demand for wood fibre from the biomass sector to understand effects on local markets  |
| EC 11.2 | Encourage the management of existing woodlands to provide wood fuel and income for woodland owners   |
| EC 11.3 | Encourage management of existing woodland for woodfuel by highlighting the financial benefits and sharing best practice among land owners and managers   |
| EC 11.4 | Work with partners, stakeholders and landowners to prioritise the creation of new areas of biomass on vacant and derelict land, and in areas where farming is less viable  |
| EC 11.5 | Encourage local authorities and businesses to take advantage of the opportunities offered by the Renewable Heat Incentive when procuring or refurbishing buildings stock   |
| EC 11.6 | Support the development of a market for wood fuel by encouraging public sector organisations 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 |
| EC 11.7 | Support the creation of an efficient processing and distribution network for wood fuel   |

<sup>21</sup> John Clegg Consulting Ltd, The Campbell Palmer Partnership Ltd and Cawdor Forestry Ltd  
December 2007 [www.qcvgreennetwork.gov.uk/component/option,com\\_docman/Itemid,53/qid,163/task,cat\\_view/](http://www.qcvgreennetwork.gov.uk/component/option,com_docman/Itemid,53/qid,163/task,cat_view/)



### Timber transport, processing and local markets

- 5.53 The Clydeplan area does not currently host any major timber processing sites. However, the region's excellent transport network, for example the Eurocentral Freight Terminal, facilitates easy access to nearby sites at Cardross, Irvine, Ayr, Troon and Auchinleck. There are, however, smaller-scale wood-using businesses ranging from a paper mill to musical instrument manufacturers.
- 5.54 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.
- 5.55 Some productive forests in the region 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 Strategic 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.
- 5.56 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.
- 5.57 Opportunities for action:

EC 12.1 Support and secure existing forestry sector sites through liaison with local authorities and the Mid-Scotland Forest Industries Cluster<sup>22</sup>

EC 12.2 Survey and review industrial locations and identify appropriate sites for future forestry sector development

### Encouraging the wider use of timber in construction

- 5.58 Given the amount of construction activity taking place across the region, there is considerable potential to encourage the use of local timber as a building material. In Scotland, timber frame construction accounts for approximately 75% of all new housing<sup>23</sup>. The use of timber in construction can help reduce carbon emissions associated with the manufacture and transportation of more energy intensive materials such as steel and concrete. Timber construction can also lock up considerable quantities of carbon for the lifetime of the building.
- 5.59 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.
- 5.60 The public sector has an important role to play in raising awareness of timber in construction. Forestry Commission Scotland has published guidance designed to publicise the use of local timber in sustainable construction (see [Sustainable Timber Construction](#)). The planning and building control processes should also promote the use of local timber as a low carbon, versatile construction material.

**EC 12.3** Encourage the use of locally sourced timber as a building material by local businesses and stakeholder organisations.

<sup>22</sup> The Mid Scotland Forest Industries Cluster covers Perth, Argyll and Central Scotland.

<sup>23</sup> Forestry Commission Scotland, 2009. *Sustainable Construction Timber: Sourcing and specifying local timber* [pdf]. Available at: <http://scotland.forestry.gov.uk/images/corporate/pdf/sustainable-construction-timber.pdf> [Accessed 16 December 2014]

## 6 Community

### Introduction

- 6.1 Trees and woodlands can contribute to quality of life, supporting the development of healthy and sustainable communities through the enhancement of the quality of the immediate environment. The Strategy seeks to maximise community benefit from forests and woodlands through a variety of means, including securing and supporting new opportunities for woodland projects, facilitating community involvement in woodland planning, management and ownership, and maximising the benefits for active recreation, education, training and the development of social enterprises.
- 6.2 The Strategy will provide a means of delivering the woodland required to contribute to the delivery of the Central Scotland Green Network (CSGN), and is therefore strongly linked to its agenda.
- 6.3 The Strategy aims to maximise the contribution of trees and woodlands to quality of life under the following objectives:
- Facilitating community involvement in woodland planning, management and ownership.
  - Supporting community enterprise and development.
  - Supporting opportunities for education and lifelong learning.
  - Contributing to physical and mental wellbeing.
  - Enhancing local sense of place and promoting connections to the wider environment.

### Facilitating community involvement in woodland planning, management and ownership

- 6.4 There is significant scope for communities to become more actively engaged in planning, developing, managing and maintaining woodlands across the Clydeplan area. Community involvement in woodland planning and management utilises local and user knowledge, ideas, skills and expertise which ensures the long term sustainability of the woodland.
- 6.5 Scotland has a vibrant community woodland sector with over 200 groups involved in or responsible for the management of thousands of hectares of woodland<sup>24</sup>. Community involvement ranges from partial or complete ownership through to small-scale informal activities, such as community litter picks or tree planting.
- 6.6 There are particular opportunities to support community involvement close to urban areas. The Woods In and Around Towns (WIAT) initiative is one of the most significant initiatives undertaken by Forestry Commission Scotland, and its partners, to highlight the role of urban woodland management in delivering economic, environmental and social benefits. This initiative has particularly benefitted woodlands in Glasgow City and North Lanarkshire and has included urban forest management operations, creating paths, installing signage and seating, and delivering a programme of forest education and community engagement.
- 6.7 Examples of successful WIAT projects in the Clydeplan area include Castlemilk and Drumchapel Woods (Glasgow), Windyhill (Renfrewshire) and Riccard Johnson (South Lanarkshire).

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<sup>24</sup> Community Woodland Association, 2014. *Welcome to the CWA* [online]. Available at: <http://www.communitywoods.org/> [Accessed 22 August 2014]

- 6.8 As part of the Bishop's Loch WIAT initiative, work with local schools since 2004 has introduced hundreds of local school children to their local woodland environment, along with delivering the 'Health Walks' and 'Branching Out' services, contributing to improved physical and mental health.
- 6.9 Organisations including The Conservation Volunteers (TCV), Forestry Commission Scotland, Central Scotland Green Network Trust (CSGNT), Glasgow and Clyde Valley Green Network Partnership and local authority partners have gained substantial experience in assisting community groups and acting as catalysts for action on the ground. They have a key role to play in supporting encouraging communities to become involved in woodland projects.
- 6.10 The National Forest Land Scheme (NFLS) gives community organisations, recognised non-governmental organisations (NGOs), and appropriate housing bodies the opportunity to buy or lease National Forest Land where they can provide increased public benefits. Since the scheme's inception in 2005, there have been 22 projects that have purchased land from Forestry Commission Scotland. An example of one such project in the Clydeplan area is the community acquisition of 0.5 ha of land at Brocketsbrae, in South Lanarkshire for division into allotments.
- 6.11 Woodlands can also be used to support volunteering and training initiatives which can help people gain skills and confidence in addition to improving their health and well-being.
- 6.12 The Community Empowerment (Scotland) Act 2015 creates a range of opportunities for local people to take a more active role in woodland ownership and management. It is intended to, among other things, expand the 'community right to buy' provisions of the Land Reform (Scotland) Act 2003 to enable certain community bodies to buy abandoned, under-used or neglected land and buildings – even where the property is not on the open market. It also confers the ability for communities to take over ownership, rental or management of public assets (including woodland), with the agreement of the Scottish Government, where their plans are of more public benefit than current uses.
- 6.13 It adds to the potential for communities to take a leading role in managing local environments – but also places a responsibility on public bodies to understand their land holdings and respond positively to community aspirations.

6.14

COM 1.1	Support community involvement in and management of woodland projects, especially through mentoring and co-ordinating delivery of activity on the ground.
COM 1.2	Work with the sector, land managers and stakeholders - including the Central Scotland Green Network Trust - to highlight the benefits of community engagement and participation in woodland planning and development processes
COM 1.3	Encourage stewardship of woodlands by and for local people and support the development of the necessary skill base to deliver meaningful engagement and long-term management
COM 1.4	Support the delivery of training to forest and land managers to help provide the tools for positive and productive community and stakeholder engagement
COM 1.5	Support and facilitate capacity-building through Community Planning Partnerships and relevant community-based structures
COM 1.6	Work with Government, local authorities and key stakeholders to understand and develop opportunities arising from the Community Empowerment (Scotland) Act 2015.

## Supporting community enterprise and development

- 6.15 Over the last ten years there has been growing interest in the potential contribution that social enterprises can make to society<sup>25</sup>. It has been suggested that they can help to create a more ethical, sustainable and socially inclusive economy and can support community empowerment, facilitate social inclusion and generate social capital.
- 6.16 Woodland-based community enterprises can help create training or employment opportunities based on activities such as tree planting, forest management, timber harvesting and processing. In addition to traditional woodland enterprises, other enterprise opportunities exist such as country sports (e.g. hunting and shooting), and the production of venison, charcoal, crafts and firewood. Social enterprises have, for example, focused on managing woodlands as a source of woodfuel for the local community. There are also opportunities in the provision of recreation, adventure play, team building and other commercial leisure activities, which all add value to the local economy.

COM 2.1 Support the establishment of community and social enterprises with a woodland and/or forestry dimension.

COM 2.2 Support the delivery of training to emerging woodland-focussed community and social enterprises.

## Supporting opportunities for education and lifelong learning

- 6.17 Clydeplan's woodlands have the scope to support wider economic and social objectives, such as training and education and addressing social inclusion.
- 6.18 Presently, Clydeplan's woodlands are being used for a variety of outdoor learning initiatives to deliver the Curriculum for Excellence, including the Outdoor & Woodland Learning (OWL) Scotland (previously known as the Forest Education Initiative). OWL Scotland aims to increase the understanding and appreciation, particularly among young people, of the environmental, social, and economic potential of trees, woodlands and forests. The initiative promotes the concept of Forest Schools and Forest Kindergarten which involve small groups of children or adults visiting local woodlands every one or two weeks to take part in a range of forest-based activities. Uptake across the region is already high and increasing, including:
- 44 educational establishments in North Lanarkshire have participated in the 3 day training programme (75 staff);
  - All 'early years' establishments in Renfrewshire have participated in training (64 staff);
  - 14 establishments in Glasgow City have been trained (22 staff), with additional interest across the city.
- 6.19 Funds from CSGN have been invested in supporting schools develop outdoor learning resources, including the following projects:
- Allanton Primary Nursery Class (North Lanarkshire) was awarded a grant to transform their overgrown nursery garden.
  - Our Lady and St Joseph's Nursery Class (North Lanarkshire) was awarded a grant to further develop their pre-existing Forest Kindergarten project.
  - Townhill Primary School (South Lanarkshire) was granted funding to increase and enhance opportunities for outdoor learning.
  - Linnvale Primary Eco Group in Clydeplan (West Dunbartonshire) was granted funding to create an outdoor learning garden.

<sup>25</sup> There is no Scotland-specific legal definition of a 'social enterprise', but the [Voluntary Code of Practice for Social Enterprise in Scotland](#) establishes five, generally understood, criteria for social enterprises and a system of values and behaviours. These are more stringent than the legal equivalents in England.



- 6.20 While the CSGN 'Learning Outdoors Fund' has now closed, these projects highlight the value and potential of helping the next generation connect with their environment.

COM 3.1	Increase awareness of the role of woodlands as an outdoor learning resource and a resource for education, training and lifelong learning
COM 3.2	Promote the development and delivery of woodland-based education programmes in the Clydeplan area
COM 3.3	Work with partners and stakeholders to help connect potential volunteers to suitable projects and programmes

## Contributing to physical and mental health and wellbeing

- 6.21 There is growing awareness of the value of woodlands, forests and other open greenspaces in providing opportunities for walking, cycling and horse riding, together with activities like orienteering and geocaching. The Woodland Trust's VisitWoods project has mapped a number of accessible woodlands across the Clydeplan area including community woodlands, privately owned woodlands with public access, RSPB woodlands, and Forestry Commission Scotland owned woodlands, with many of the woodlands including Core Paths, local paths and longer distance routes.
- 6.22 Poor physical and mental health, and health inequality – as illustrated in Figure 6.1– are a feature of many of Clydeplan's settlements. Access to high quality woodlands close to where people live can bring significant health benefits by providing places for outdoor recreation and relaxation both in rural and urban areas. There is a need to raise wider awareness of opportunities for woodland based recreation, and to provide people with confidence to get involved. This includes ensuring that individuals from all sections of society are able to enjoy and benefit from woodlands and forests across the Clydeplan area. Information and interpretation may use a combination of way-marked routes, leaflets, signboards and ranger led walks, together with digital and social media, web-based learning and location-aware mobile technology more suited to younger audiences.
- 6.23 The value of woodland and outdoor activity and learning has already made a substantive difference to people with mental health issues, through the 'Branching Out' programme. This project engages clients referred on by mental health services in a 12-week programme of cooperative woodland-based conservation activities, shelter construction, 'bushcraft' and more general outdoor skills to help build self-esteem, confidence and social skills. Originally conceived in partnership by FCS, Glasgow and the Clyde Valley Green Network Partnership and NHS Greater Glasgow and Clyde, the 'Branching Out' programme is currently available in the NHS board areas of Greater Glasgow and Clyde, Lanarkshire, Tayside, Fife, Lothian, Borders, Highland, Forth Valley and Ayrshire and Arran.
- 6.24 An innovative project at Gartnavel Royal Hospital is using greenspace and woodland to help patients' recovery and improve the health of staff, visitors and the community. Walking routes have been introduced around the hospital buildings with over 150 fruit and native trees planted along the routes.
- 6.25 Green Gyms® provide opportunities for individuals to connect with nature and their community, and to create high quality and sustainable green spaces. Opportunities should be explored to set up wellbeing initiatives (e.g. Green Gyms, Branching Out) and projects for community capacity building through woodland projects. The Forestry Commission's Active Woods Campaign is an example of a programme that encourages the greater use of woodlands.
- 6.26 Paths for All, in partnership with the Forestry Commission, are promoting walking for health and the development of multi-use path networks in Scotland's woodlands. For example, the 14 'Commonwealth Woods' developed or enhanced as part of the legacy for the Glasgow 2014 Commonwealth Games.

COM 4.1	Promote the role of woodlands in providing a resource for physical activity, accessible to all parts of society close to where people live and work.
COM 4.2	Prioritise woodland based projects designed to deliver physical and mental health benefits, particularly in areas with higher levels of deprivation and poorer health.

COM 4.3 Work to increase the appreciation and use of woodlands and forests by people from a wide range of socio-economic and ethnic backgrounds, and ensure that facilities and promotion are fully inclusive.

## Enhancing local sense of place and promoting connections to the wider environment

- 6.27 Like many other parts of Central Scotland, industrial development during the nineteenth and twentieth centuries has left a legacy of damaged and degraded land across the Clydeplan area. Much of this is concentrated in and around the area's main settlements and coalfields, often compounding problems of social deprivation and poor health. Tackling these post-industrial landscapes is a key objective of the Central Scotland Green Network, and this Strategy provides a means of focusing environmental enhancement where it is needed most.
- 6.28 Quarrying and coal mining is still a feature of the Clydeplan landscape today, with approximately 36 individual quarries and coal mines, the majority of which are located in the South Lanarkshire Council area<sup>26</sup>. There is potential for restoring these sites once extraction is complete, with successful restoration projects within the Clydeplan area including at Drumbrow coal mine (North Lanarkshire) and Damside opencast coal site (North Lanarkshire). However, some sites remain un-restored, with increasing risks of pollution and flooding due to deterioration of such sites. New native, softwood, mixed and energy woodlands can make an important contribution to restoring these landscapes by securing environmental improvement.
- 6.29 Access to high quality woodlands close to where people live can bring significant community benefits by providing places for recreation and learning both in rural areas and in and around towns. Community woodlands and Forestry Commission Scotland's WIAT schemes have played an important role in increasing public access to woodlands in the Clydeplan area. The WIAT grants available in the Forestry Grant Scheme (WIAT; Public Access – Rural Woods; and Public Access – WIAT) should be fully utilised to continue to improve public access and the sustainable management of urban woodlands in the Clydeplan area.
- 6.30 Development of woodlands close to where people live and work can help reinforce and, in places, restore a strong sense of place, supporting the placemaking agenda. A strong sense of place, together with more involved and empowered communities, will help engender local identity and a growing sense of pride in local communities. For example, the restoration of Castlemilk Woodlands has created a sense of place and enhanced community pride by transforming the quality of the environment of an under-used landscape.

COM 5.1 Target management and woodland creation activity on areas of degraded environmental quality.

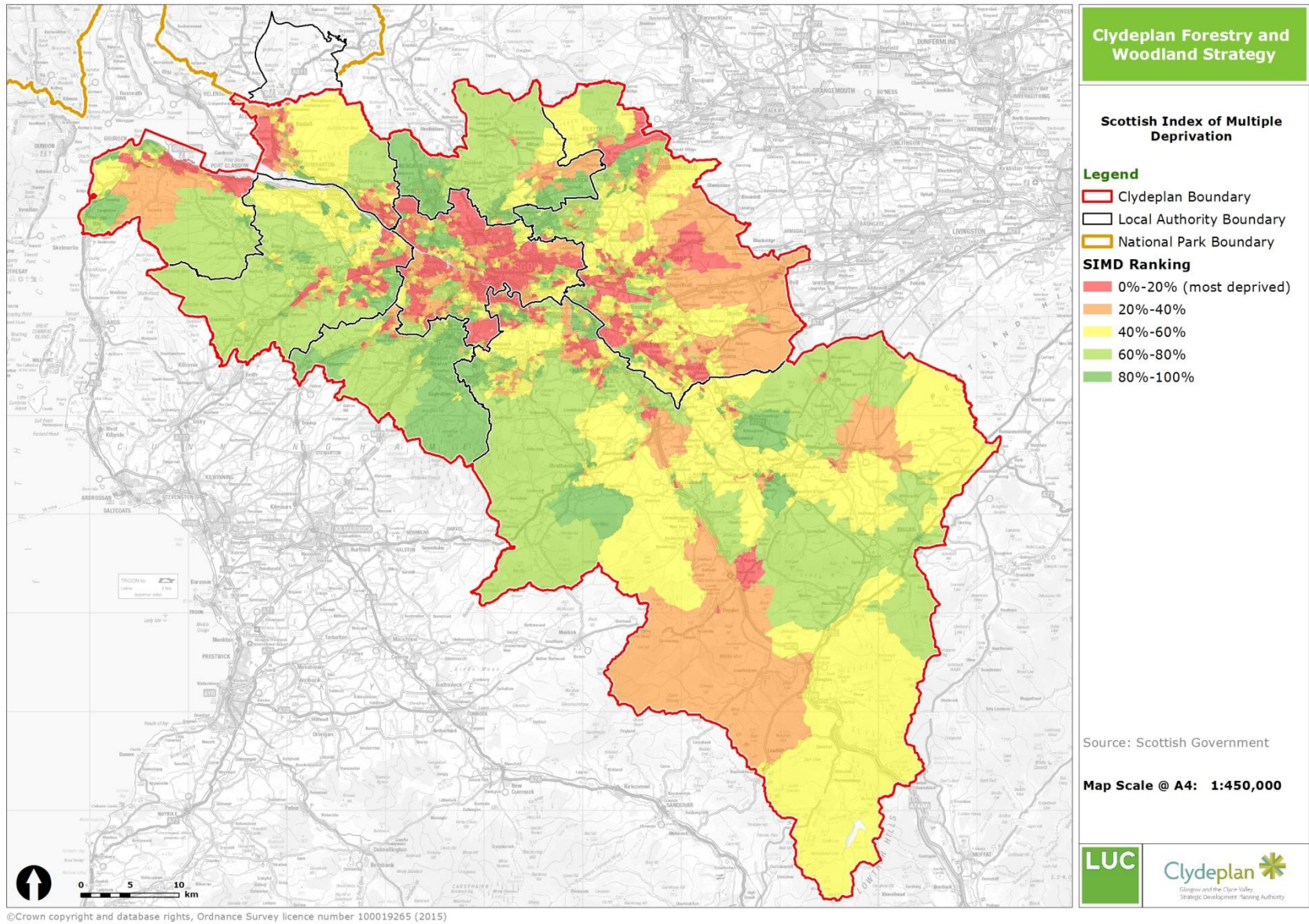
COM 5.2 Promote stronger links between local cultural activities and woodland environments, identifying opportunities for woodland-based activities, where possible.

COM 5.3 Work with partners and stakeholders to identify opportunities for enhanced cultural provision in and around Clydeplan's woodlands.

COM 5.4 Work with partners, land managers and communities to ensure that new woodlands are designed to reflect and enhance local townscape and landscape character.

<sup>26</sup> British Geological Society, 2014. *Directory of Mines and Quarries*. Keyworth, Nottingham: British Geological Survey.

Figure 6.1 Relative deprivation in the Clydeplan area



## 7 Environment

### Introduction

- 7.1 The Clydeplan area benefits from a rich natural and cultural heritage that provides a strong sense of place and local distinctiveness and which underpins the area's economic, environmental and cultural life.
- 7.2 Clydeplan's trees and woodlands make a substantial contribution to urban and rural landscapes, providing a range of natural and semi-natural habitats and forming an integral part of the area's historic environment. It is also increasingly recognised that trees can play an important role in creating a resilient and healthy environment contributing to sustainable flood management, and to the quality of rivers, soils and air. The Strategy aims to increase this contribution, helping to create a richer and more diverse environment.
- 7.3 This part of the Strategy aims to conserve and enhance Clydeplan's natural and cultural heritage under the following objectives:
- Improve the condition and resilience of biodiversity.
  - Support the Central Scotland Green Network.
  - Improve woodland's contribution to the conservation and management of ecosystem services and functions.
  - Contribute to the conservation, enhancement and understanding of Clydeplan's valued natural heritage and historic environment.

### Improve the condition and resilience of biodiversity

- 7.4 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.

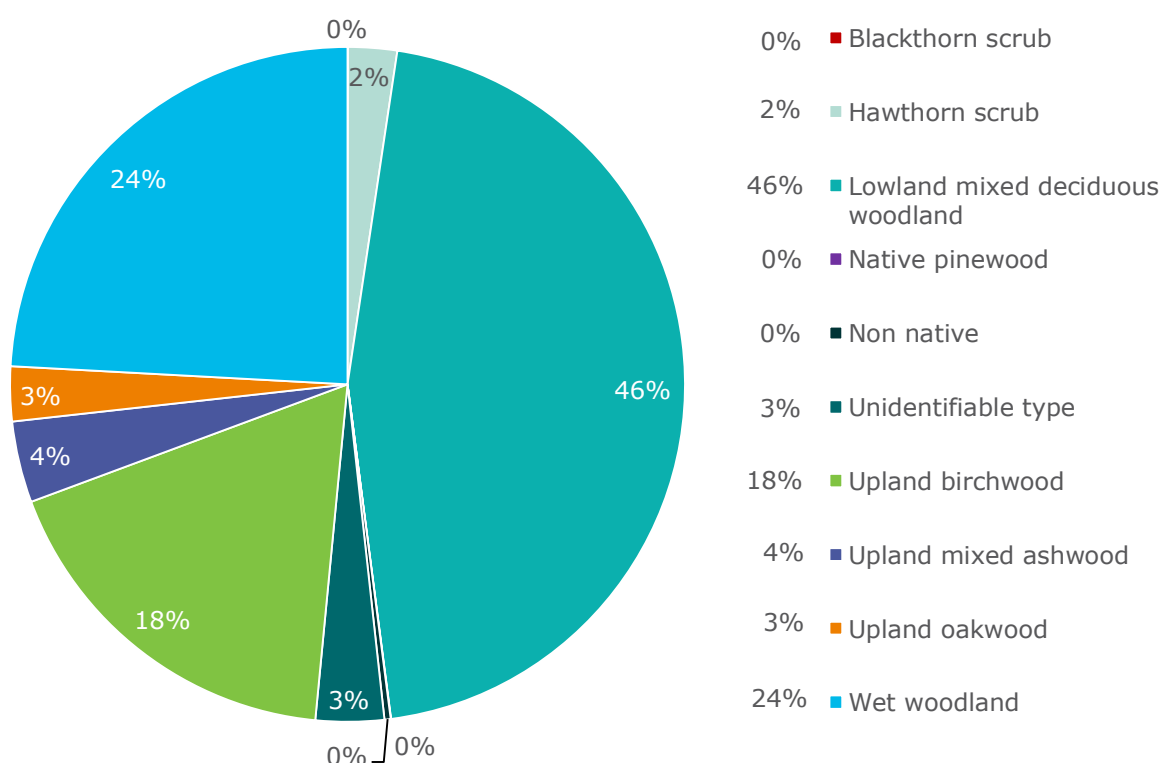
#### Enhancing woodland habitats

- 7.5 Clydeplan's native woodlands, comprising approximately 11,800 hectares, are a key component of the area's biodiversity value. Many of the area's native woodlands are designated as SSSI for their habitat value, with the finest of these – notably the Clyde Valley Woodlands – being recognised by 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. For example, 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 15<sup>th</sup> century, they are nationally significant for both their natural and cultural heritage value and represent the relics of many phases of landscape development. As Diagram 7.1 below illustrates, the native woodlands of the region are rich and varied in habitat type. While lowland mixed deciduous woodland makes up the majority of the resource, wet woodland is a particularly important component, accounting for almost a quarter of the region's native woodlands.
- 7.6 Across the area, levels of woodland habitat connectivity are reasonable in comparison to other parts of Central Scotland, due in part to recent environmental enhancement initiatives and extant Improvement-era landscape structure. However, enhancing these connections will be an



important means of improving the climate resilience of woodland species. Here, mixed and non-native conifer woodlands also have a contribution to make, providing physical and functional links, particularly where native networks are currently fragmented. The habitat value of such woodlands can be greatly improved by including native woodland corridors as part of long term management plans and processes. Reinforcing existing and establishing new links between Clydeplan's woodlands and those in neighbouring authorities is critical as neither species nor the effects of climate change recognise administrative boundaries. Ongoing collaboration and partnership working with neighbouring authorities and cross-boundary land owners will be valuable in delivering resilient networks.

- 7.7 In the past, some areas of productive forestry were planted on ancient, semi-natural and long-established woodland sites. 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<sup>27</sup>. Within the Clydeplan area, the remaining ancient woodlands are few in number and largely fragmented, and some have been felled and replanted, sometimes with non-native species.
- 7.8 The process of restructuring planted conifer woodlands following harvesting creates an important opportunity to re-establish a functioning native woodland ecosystem on ancient woodland sites where key woodland species or fragments of the ancient woodland survive.
- 7.9 Restoration work should prioritise Plantations on Ancient Woodland Sites (PAWS) (comprising approximately 556 hectares within Clydeplan) where relict features, flora or a viable seedbank survives, or where the woods could make a significant contribution to wider habitat networks.
- 7.10 The Woodland Improvement Grant (WIG) Habitats and Species grant should be utilised to its full potential to help encourage natural regeneration which will benefit priority habitats and species in the Clydeplan area. In addition, the Sustainable Management of Forests (SMF) Native Woodlands grant should be utilised to restore PAWS to native woodland.



**Diagram 7.1 Composition of the Clydeplan area's native woodlands**

<sup>27</sup> Thompson, R.N., Humphrey, J.W., Harmer, R. & Ferris, R., 2003. *Restoration of native woodland on ancient woodland sites*. Edinburgh: Forestry Commission

<b>ENV1.1</b>	Promote the positive management and expansion of International and UK Biodiversity Action Plan priority woodland habitats, including semi-natural ancient woodlands.
<b>ENV1.2</b>	Promote woodland creation to build strategic habitat network links to between core areas.
<b>ENV1.3</b>	Promote partnership working between land managers to ensure 'joined-up' management of linear woodlands.
<b>ENV1.4</b>	Work with agency partners and neighbouring authorities to deliver opportunities for cross-boundary enhancement of woodland habitat networks.
<b>ENV1.5</b>	Promote the restoration of native woodland in former native, ancient, and semi-natural woodland, and encourage appropriate management of existing Plantations on Ancient Woodland Sites including habitat enhancement for key native species.
<b>ENV1.6</b>	Promote the potential opportunities for woodland habitats to contribute to the greening measures contained within SRDP.

### Conserving non-woodland habitats and species

- 7.11 In addition to its woodland, the Clydeplan area also contains a number of important non-woodland habitats that need to be considered in planning for woodland expansion and management. The Clydeplan area contains five Special Protection Areas<sup>28</sup> and 10 Special Areas of Conservation<sup>29</sup>. Designated non-woodland habitats include:
- Blanket bog in the uplands, for example, in West Fannyside Moss SAC.
  - Lowland raised bog. Examples include Red Moss SAC, Black Loch Moss SAC, Braehead Moss SAC, Cranley Moss SAC, Coalburn Moss SAC, North Shotts Moss SAC, Red Moss SAC, and Waukenwae Moss SAC.
  - Species rich grassland in the uplands, for example, in the small section of the Craigengar SAC which is within the Clydeplan boundary.
  - SPA species supporting habitats – Black Cart (whooper swan), Inner Clyde (redshank), Muirkirk and North Lowther Uplands (hen harrier, short-eared owl, peregrine, golden plover, merlin), Renfrewshire Heights (hen harrier), and Slamannan Plateau (taiga bean goose).
- 7.12 It is important that measures to expand the area of woodland within the Clydeplan area do not result in damage or loss of other important habitats. The design and location of schemes should therefore have regard to designated sites and the Clydeplan local authorities Local Biodiversity Action Plans to ensure that adverse effects on protected and priority species and habitats are avoided. Designated areas of high natural heritage value have been included in the 'sensitive' category in the detailed mapping and analysis accompanying this Strategy. However, it is important to ensure that site-specific assessments of woodland creation proposals give appropriate consideration to significant, but undesignated, habitats – such as the transition habitats between areas of wetland, grassland and woodland habitats.

<sup>28</sup> Slamannan Plateau, Muirkirk and North Lowther Uplands, Inner Clyde, Renfrewshire Heights, and Black Cart.

<sup>29</sup> Black Loch Moss, Braehead Moss, Craigengar, Cranley Moss, Clyde Valley Woods, Coalburn Moss, North Shotts Moss, Red Moss, West Fannyside Moss, and Waukenwae Moss.

## Woodland and the Habitats Regulations

Clydeplan contains 5 **Special Protection Areas**, designated under the EU Birds Directive, and 10 **Special Areas of Conservation** designated under the EU Habitats Directive (known collectively as 'Natura 2000 sites'). These areas are of international significance, and are therefore subject to extensive protection under The Conservation (Natural Habitats, &c.) Regulations 1994, as amended – generally known as the 'Habitats Regulations.' Consequently, all of these areas have been included within the 'sensitive' land class in the spatial modelling work undertaken in the production of this Strategy.

The quality and integrity of designated features often depend on ecological features and functions outside the designated area. Article 10 of the Habitats Directive requires member states to encourage the management of features in the landscape that are of major importance to wild flora and fauna, and contribute to the ecological coherence of the Natura 2000 Network.

**Proposals for woodland creation or management within, or likely to have a significant effect on the qualifying interests of, a European site will be required to be subject to Habitats Regulations Appraisal.**

**ENV1.8** Ensure woodland expansion does not have an adverse impact on nationally or internationally important non-woodland habitats and respects locally important biodiversity assets.

### Tackling invasive non-native species

- 7.13 Invasive non-native species of plants and animals pose a significant and growing threat to Scotland's biodiversity – and the Clydeplan area is no exception. Plants and animals introduced to areas outside of their natural range often have few potential predators and are frequently able to out-compete indigenous species occupying a similar ecological niche.
- 7.14 Riparian habitats are particularly susceptible to invasive plants, as seeds and other plant material can be quickly and widely spread by the action of the water. As these areas are often relatively undisturbed, even in urban areas, populations of invasive species can become well established without being noticed – making the issue harder to tackle.

**ENV1.9** Support efforts to identify, manage and eradicate invasive non-native species in the Clydeplan area.

**ENV1.10** Promote partnership working between managers to ensure coordinated delivery of efforts to tackle non-native invasive species.

**Figure 7.1 Ancient and Semi-Natural Ancient Woodland**

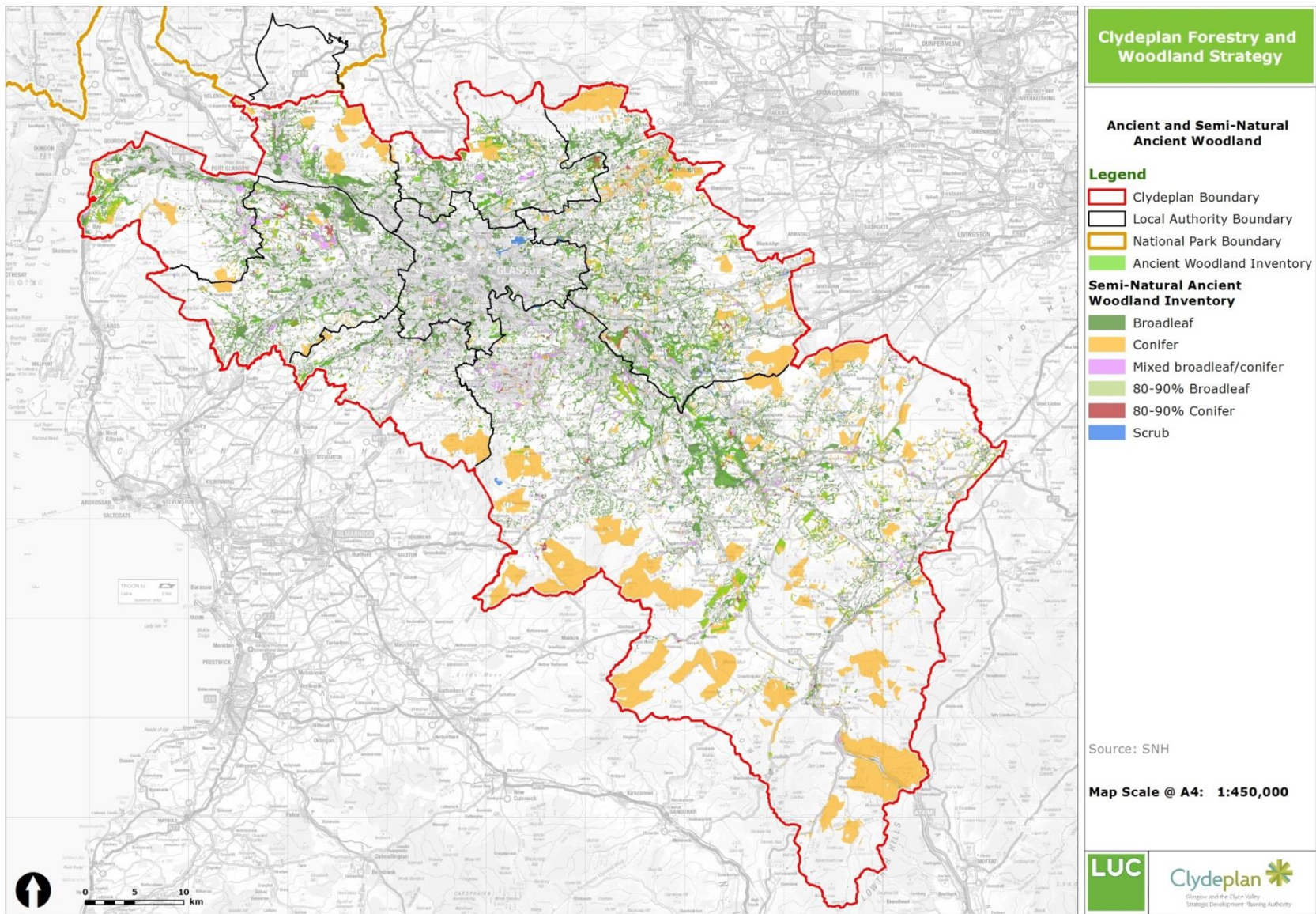
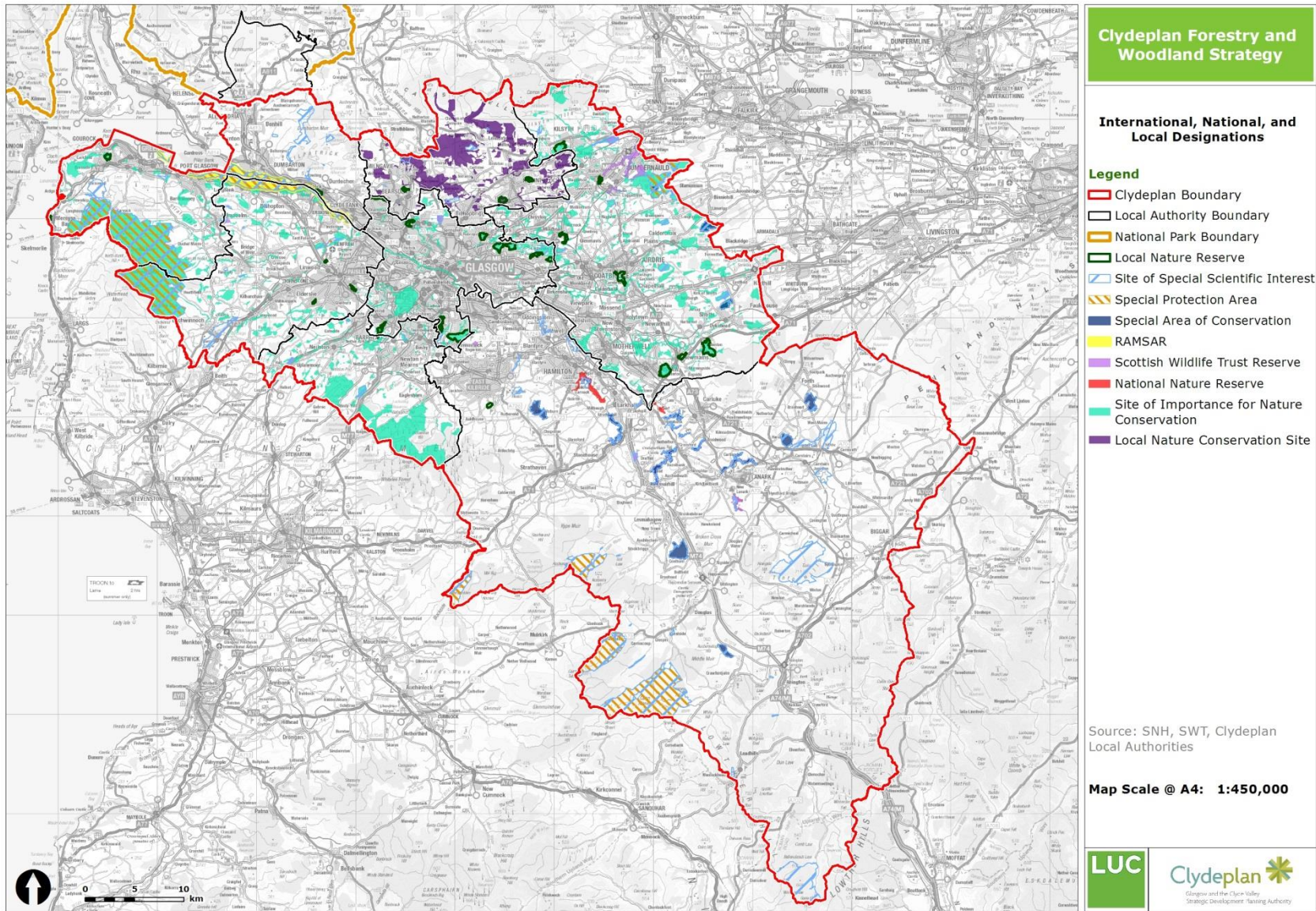




Figure 7.2 Natural Heritage Designations



## Supporting the Central Scotland Green Network

- 7.15 This Strategy is intended to align closely with CSGN priorities and principles, and provide a tool to enable land managers to access funding opportunities and ensure their woodland creation proposal is fit for purpose with regard to the wider aims of CSGN.
- 7.16 Five Clydeplan local authorities<sup>30</sup> have signed up to CSGN's Local Authority Concordat, and have pledged to embed CSGN in all relevant policies, strategies and plans and to ensure it is reflected in decision making. The remaining three Clydeplan local authorities<sup>31</sup> support the work of the Glasgow and Clyde Valley Green Network Partnership as a regional expression of CSGN principles of partnership working. Longstanding partnership approaches have already delivered a range of transformative projects across Clydeplan, of which new woodland has often been a key part. Some of the most notable CSGN projects in Clydeplan include the reinvigoration of the Castlemilk Woodlands, and the development of a high quality green network at Seven Lochs Wetland Park.
- The Central Scotland Green Network (CSGN) is a national development in the Scottish Government's NPF3. With a wide-ranging remit, far beyond a 'green initiative', the CSGN aims to improve the vitality, health and well-being of central Scotland, as well as making the area more resilient to climate change. Its main priorities as defined by NPF3 are: Remediation of derelict land;
  - Prioritised action in disadvantaged communities; and
  - Active travel.
- 7.17 However, creating physical and functional links between urban centres and rural habitat, leisure and recreation attractions and potential business development opportunities underpins everything that the initiative does. Communicating this universal relevance is an important task for partners, particularly the CSGNT. Articulating the benefits of understanding and participating in the initiative to land managers could help to unlock both valuable links to help deliver the CSGN and business and development opportunities for local businesses and landowners.
- 7.18 Similarly, networks are most successful when they benefit from optimal connectivity. To achieve this, significant cross-boundary cooperation between strategic and delivery partners is required. While much has been achieved by public sector partnership, particularly in developing strategic projects, there have comparatively few explicitly cross-boundary delivery projects – and even fewer involving private sector partners. Nationwide, as the majority of woodlands are created by the private sector, unlocking this source of investment in Clydeplan may be useful. CSGN is a strong, and widely recognised 'brand' that can help promote links between business and the community; highlight corporate social responsibility; and tap into potential markets.

**ENV2.1** Highlight and promote the benefits of participation in CSGN, and the availability of funding, to potential private sector partners in both urban and rural environments.

**ENV2.2** Work with partners and stakeholder to identify the potential for cross-boundary opportunities and delivery mechanisms.

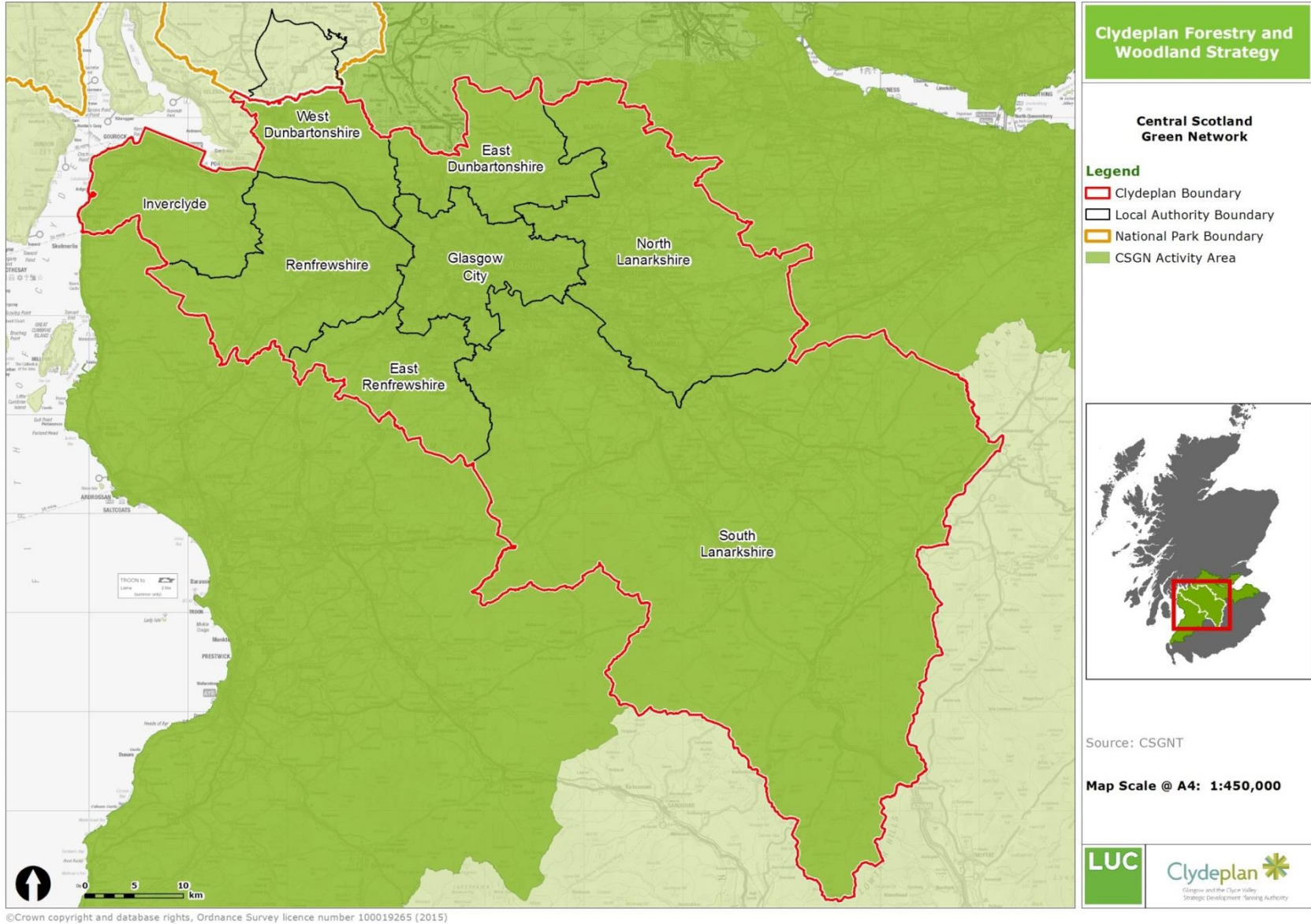
**ENV2.3** Promote the importance of, and opportunities for, rural business and land management in providing the destinations that make the green network function.

<sup>30</sup> East Renfrewshire Council, Glasgow City Council, Inverclyde Council, South Lanarkshire Council, West Dunbartonshire Council.

<sup>31</sup> East Dunbartonshire Council, North Lanarkshire Council, Renfrewshire Council.



**Figure 7.3 Central Scotland Green Network**



## Improve woodland's contribution to the conservation and management of ecosystem services and functions

- 7.19 Woodlands already make an important contribution to the quality of Clydeplan's environmental resources; 'scrubbing' pollutants from the air in urban areas and transport corridors, slowing flows of surface and flood waters and contributing to soil development and stability. However, there is potential for new and enhanced woodlands to make a greater contribution to these supporting and regulating services – as well as directly providing food and fibre (provisioning services).

### Water, air and soil quality

- 7.20 The preparation of River Basin Management Plans outlining how water bodies will achieve good ecological status by 2015 is a requirement of the Water Framework Directive. 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 the Clyde Area Management Plan (AMP). The Clyde AMP provides detailed information on the current information of the water environment, the pressures and risks, and objectives for improvements.
- 7.21 Within the Clyde AMP area, 36% of all water bodies are in good condition with 27% of moderate status and only 2% in high/maximum condition. Approximately, 34% of all water bodies are classified as being in poor or bad condition<sup>32</sup>. The Clyde advisory group has identified a number of pressures and risks on the water environment:
- Urban drainage; and,
  - Diffuse pollution from rural sources.
- 7.22 As outlined in the *Climate Change* chapter of the Strategy, increased urbanisation causes problems with flash flooding after sudden rainfall as areas of vegetation have been replaced by impermeable concrete losing its ability to absorb rainwater. Trees, woodlands and greenspaces in urban areas, including green infrastructure and Sustainable Drainage Systems (SuDS), protect the quality of urban environments by minimising surface water run-off and flood risk.
- 7.23 Run-off entering watercourses is an important source of diffuse pollution. In rural areas, this can arise from livestock and farmyard effluent and agri-chemicals being washed into streams and rivers, or from stock directly entering watercourses. The creation of appropriate wooded and mosaic buffer strips adjacent to watercourses can intercept this pollution and make a substantial contribution to meeting land managers' cross-compliance objectives under SRDP.
- 7.24 Expanded woodland networks in the corridors of roads, particularly motorways, and the rail lines, could help to reduce pollutant loads – especially particulate matter arising from diesel engines. There may be potential for woodland creation and expansion to significantly improve the air quality of the 15 Air Quality Management Areas.
- 7.25 Woodland soils are generally excellent carbon stores, often holding around twice the amount of carbon stored in the trees<sup>33</sup>. In agricultural contexts, farm woodlands and shelter belts can play a key role in promoting soil stability, providing shelter to reduce wind erosion of ploughed fields and helping to reduce the intensity of rainfall, reducing run-off.

- ENV3.1** Promote the benefits of riparian woodland in reducing rural diffuse pollution, contributing to enhanced water quality, and reducing the risk of flooding downstream.
- ENV3.2** Encourage the planting of trees to filter and absorb air pollutants adjacent to transport corridors and other sources of air pollution.

<sup>32</sup> SEPA, 2014. *The water environment and achieving the environmental improvements* [online]. Available at: [http://www.sepa.org.uk/water/river\\_basin\\_planning/area\\_advisory\\_groups/clyde/condition\\_and\\_objectives.aspx](http://www.sepa.org.uk/water/river_basin_planning/area_advisory_groups/clyde/condition_and_objectives.aspx) [Accessed 16 December 2014]

<sup>33</sup> Forestry Commission, 2009. *Combating Climate Change: A Role for UK Forests*. Edinburgh: The Stationary Office.



**ENV3.3** Highlight the value of farm woodland and shelter belts for improving soil quality and resilience.

### Regeneration of brownfield, vacant and derelict land

- 7.26 As outlined in the Economy section above, industrial development during the nineteenth and twentieth centuries, and subsequent de-industrialisation from the 1970s onwards, has left an extensive legacy of vacant and derelict land right across the region.
- 7.27 One of CSGN's key aims is to tackle Central Scotland's legacy of vacant and derelict land – often a relic of our recent industrial past. The Clydeplan area contains approximately 3,209 hectares of derelict land, and 1,183 urban vacant land, with sites in both town and country<sup>34</sup> (see Figure 5.2).

**Table 7.1 Vacant and Derelict Land**

	Derelict Land	Urban Vacant Land	Total Derelict and Urban Vacant Land
East Dunbartonshire	55	6	62
East Renfrewshire	39	21	60
Glasgow City	644	551	1,195
Inverclyde	26	123	149
North Lanarkshire	1,132	169	1,300
Renfrewshire	783	173	956
South Lanarkshire	362	120	482
West Dunbartonshire	168	20	188
TOTAL	3,209	1,183	4,392

- 7.28 Trees and woodland can play a number of roles in helping to address this legacy. Planting on contaminated sites can help break down organic pollutants, reduce concentrations of heavy metals and contribute to improved soil quality, helping to unlock future sustainable uses. Temporary greening of derelict sites can help to improve their appearance and environmental contribution, reducing the real or perceived 'blight' and helping to make places more attractive for prospective investors and residents alike. Similarly, the use of biomass crops in this context can help to provide landowners with an interim income while more permanent solutions are secured.
- 7.29 It should, however, be noted that some brownfield sites – particularly those long-abandoned areas that nature has begun to reclaim – can have significant biodiversity value in their own right (as 'Open Mosaic Habitat on Previously Developed Land')<sup>35</sup>. It should not therefore be assumed that all brownfield sites can be either redeveloped or planted without detailed assessment of site-specific values and sensitivities. There may, however, be opportunities for planting that can conserve key areas of mosaic habitat while contributing to the development of woodland networks.

**ENV3.4** Promote woodland creation on suitable derelict and contaminated sites as an integral part of site restoration and soil restoration.

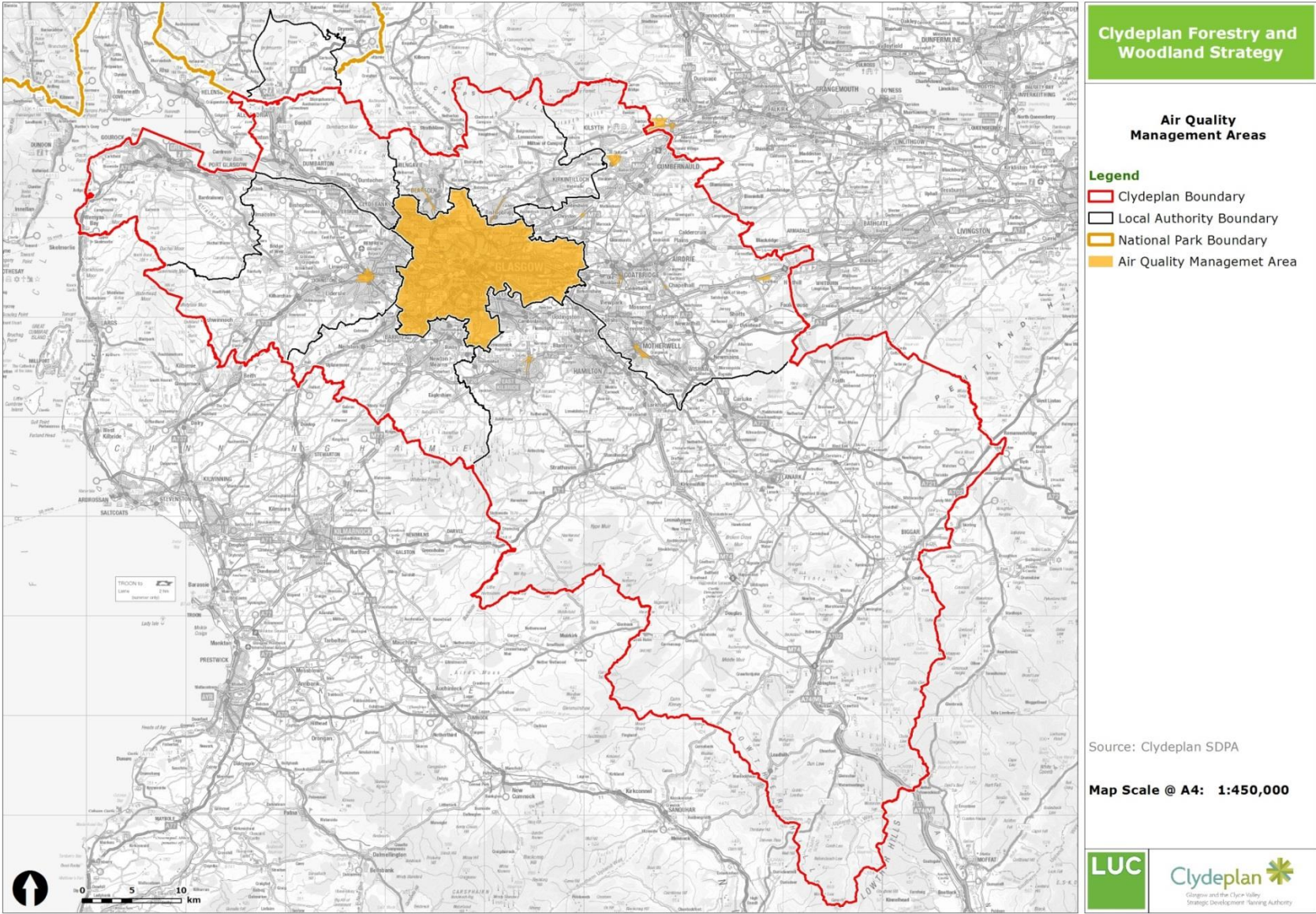
**ENV3.5** Work with land owners and developers to identify opportunities for woodland as part of brownfield remediation programmes.

**ENV3.6** Work with land owners and managers to bring forward opportunities for temporary greening to improve the quality of degraded places and help to attract investment.

<sup>34</sup> Scottish Government, 2014. *Scottish vacant and Derelict Land Survey 2013* [online]. Available at: <http://www.scotland.gov.uk/Publications/2014/02/7170/downloads#res444542> [Accessed 16 December 2014]

<sup>35</sup> Recent research on this subject, by Buglife for SNH, is available on the [SNH website](#)

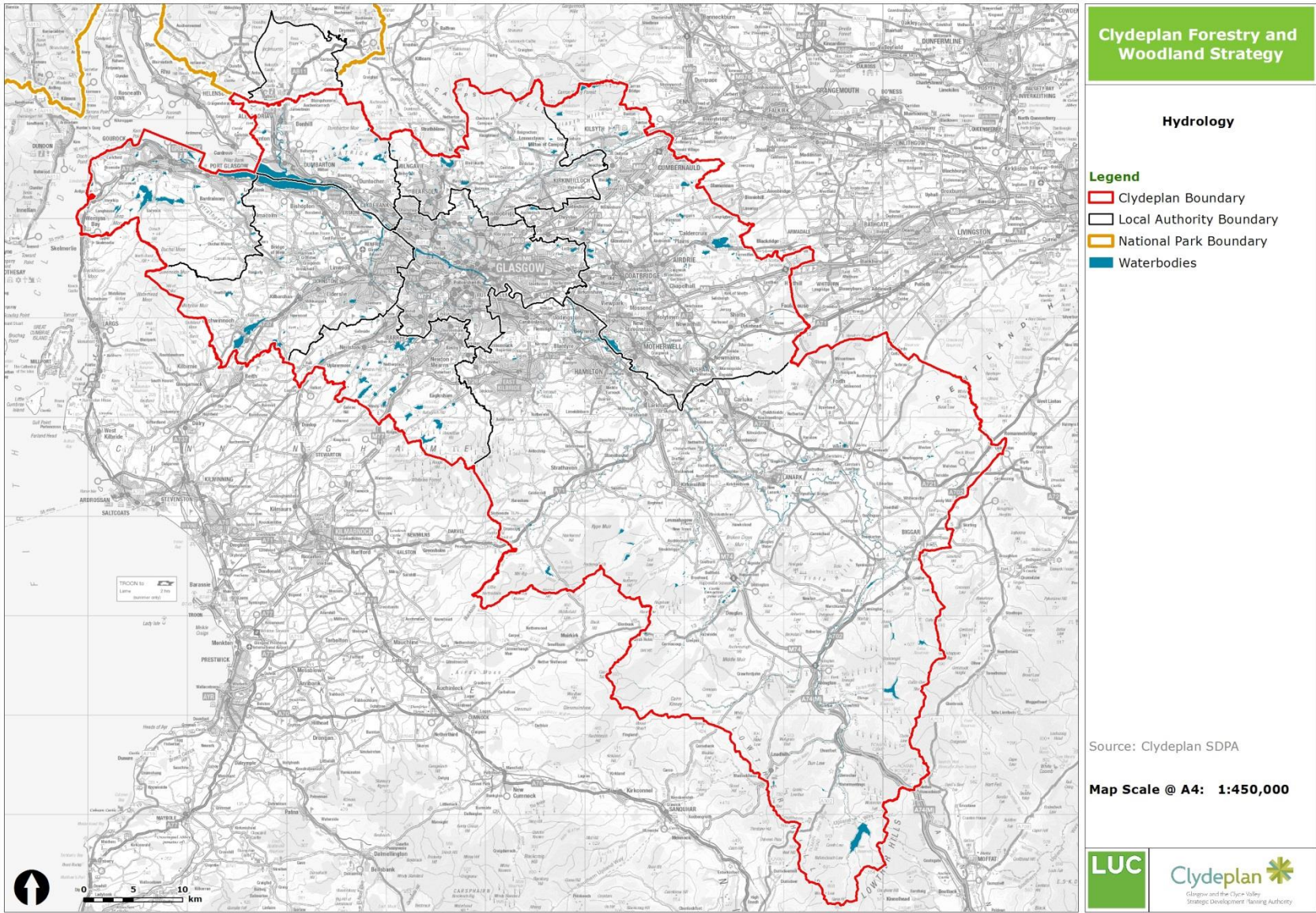
Figure 7.4 Air Quality Management Areas



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Figure 7.5 Hydrology



## Contribute to the conservation, enhancement and understanding of Clydeplan's valued natural heritage and historic environment

- 7.30 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;
  - Maintaining important designed landscapes and specimen trees; and,
  - Protecting the historic environment.

### Improving townscapes and landscapes

- 7.31 Woodland is a key feature of many of the varied landscapes within Clydeplan, often emphasising the contrast between valleys, lowland and upland parts of the area. Ensuring that these woodlands are managed and enhanced is a priority to maintain landscape character.
- 7.32 Many of our finest urban environments are characterised by trees and woodland. Public parks such as Kelvingrove, Glasgow Green, Pollok Country Park, Victoria Park, Queens Park and Rouken Glen 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.
- 7.33 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.
- 7.34 Trees and woodlands are equally important components of the rural landscapes within the Clydeplan area. 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.
- 7.35 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.
- 7.36 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 less viable. These woodlands will help create new landscapes with opportunities for recreation, local businesses and community involvement.
- 7.37 In line with UKFS, restructuring of existing softwood forests is already helping to create more naturalistic and integrated woodlands which enhance landscape character and quality.

**ENV4.1** Promote positive management of trees and woodland where they make an important contribution to the character and quality of the landscape.

**ENV4.2** Promote the role of trees and woodland in enhancing the character and quality of degraded or damaged landscapes.

**ENV4.3** Encourage the positive management of trees, woodlands and shelter belts in recognition of their contribution to landscape structure and distinctiveness.



**ENV4.4** Support the ongoing restructuring of conifer woodlands to enhance landscape character and quality.

**Protecting the historic environment**

- 7.38 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.
- 7.39 While trees and woodlands are an important component of many of Clydeplan's historic landscapes, often reflecting past patterns of land management and industrial activity, there is potential for new woodlands, whether planted or naturally regenerated, to affect sensitive parts of the historic environment. Archaeological sites, both above and below the ground, are often vulnerable to damage from tree roots and mechanised processes used in large-scale planting. Archaeological landscapes and inter-visibility of monuments can be affected by inappropriately located 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, careful siting and well-planned woodlands can make a significant positive contribution to the setting of sites, reinforcing landscape character and restoring degraded landscape structure.
- 7.40 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 18<sup>th</sup>-20<sup>th</sup> century ironworks and colliery complex, partially planted with conifers during the 1970's, has been extensively researched, conserved and promoted by Forestry Commission Scotland since 2001.
- 7.41 The restructuring of existing areas of softwood forest following harvesting can provide an opportunity to improve the physical setting and interpretation of historic features such as field boundaries and buildings.
- 7.42 Similarly, positive management of the area's extensive suite of designed landscapes is necessary to secure the contribution these assets make to local character, distinctiveness and a sense of time-depth in the landscape. Many of the trees in these historic landscapes are mature or over-mature and in some cases they are suffering due to a lack of appropriate management or from the effects of development. The changing climate could compound these issues as a result of storm damage, stress and disease. Positive management is needed to ensure that the historic, landscape and biodiversity significance of these landscapes is maintained. This may include planned replanting of individual trees, avenues or other features to ensure the character of these historic landscapes is maintained.
- 7.43 Land managers should refer to the Forestry Commission [Forests and the Historic Environment](#) guidance note for advice on planning operations and managing heritage assets on forest land and meeting the requirement of UKFS.

**ENV4.5** Conserve and enhance the setting of historic environment assets through sensitive woodland planning and appropriate planting.

**ENV4.6** Promote woodland restructuring as an opportunity to improve the setting, access to and interpretation of, heritage assets.

**ENV4.7** Promote understanding and awareness of trees and woodlands as part of the historic environment.

**ENV4.8** Encourage positive management of trees and woodlands within historic gardens and designed landscapes, including succession planning and selective replanting to conserve the character and significance of assets, and improve their resilience to the effects of climate change.

Figure 7.6 Landscape Designations

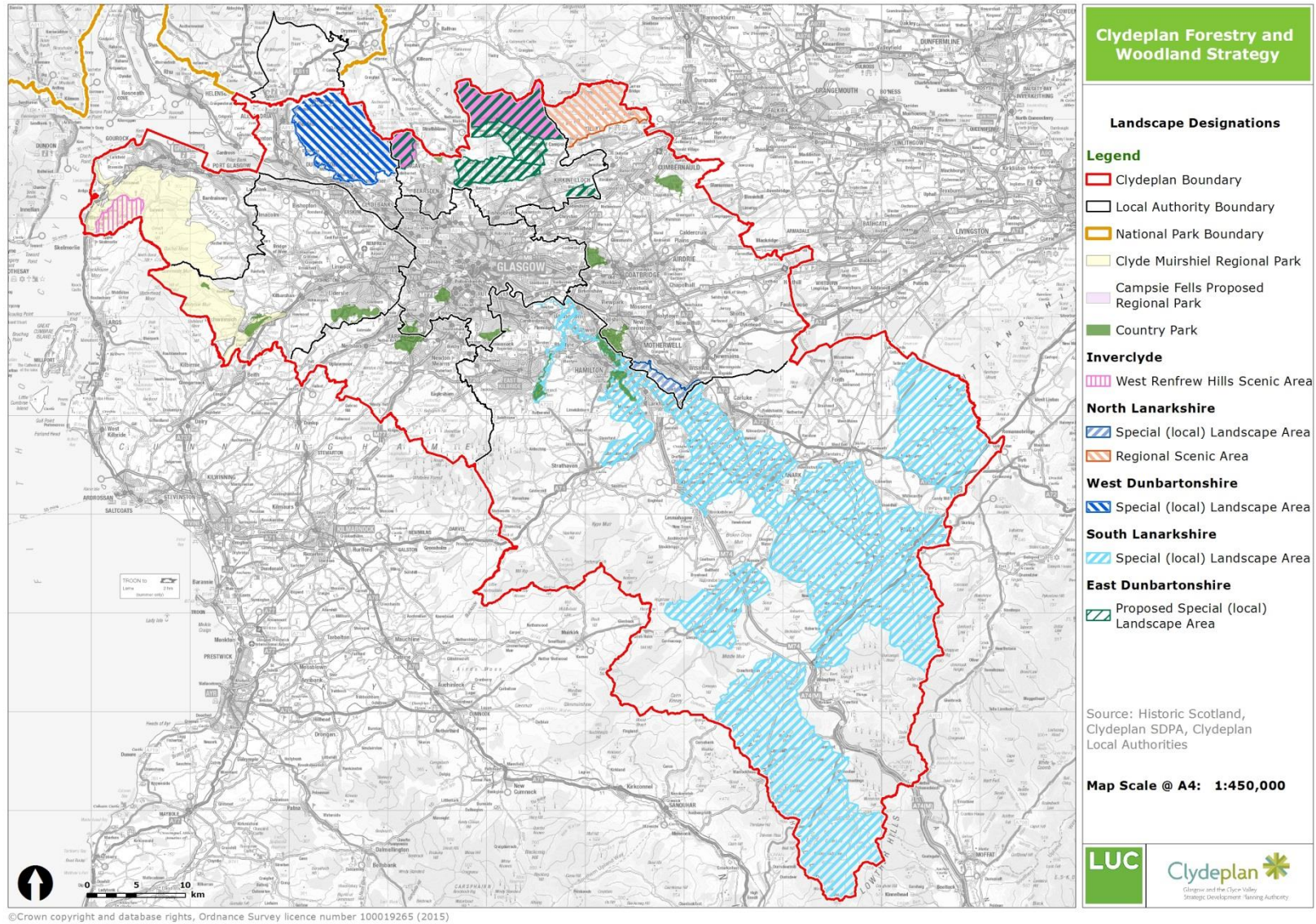
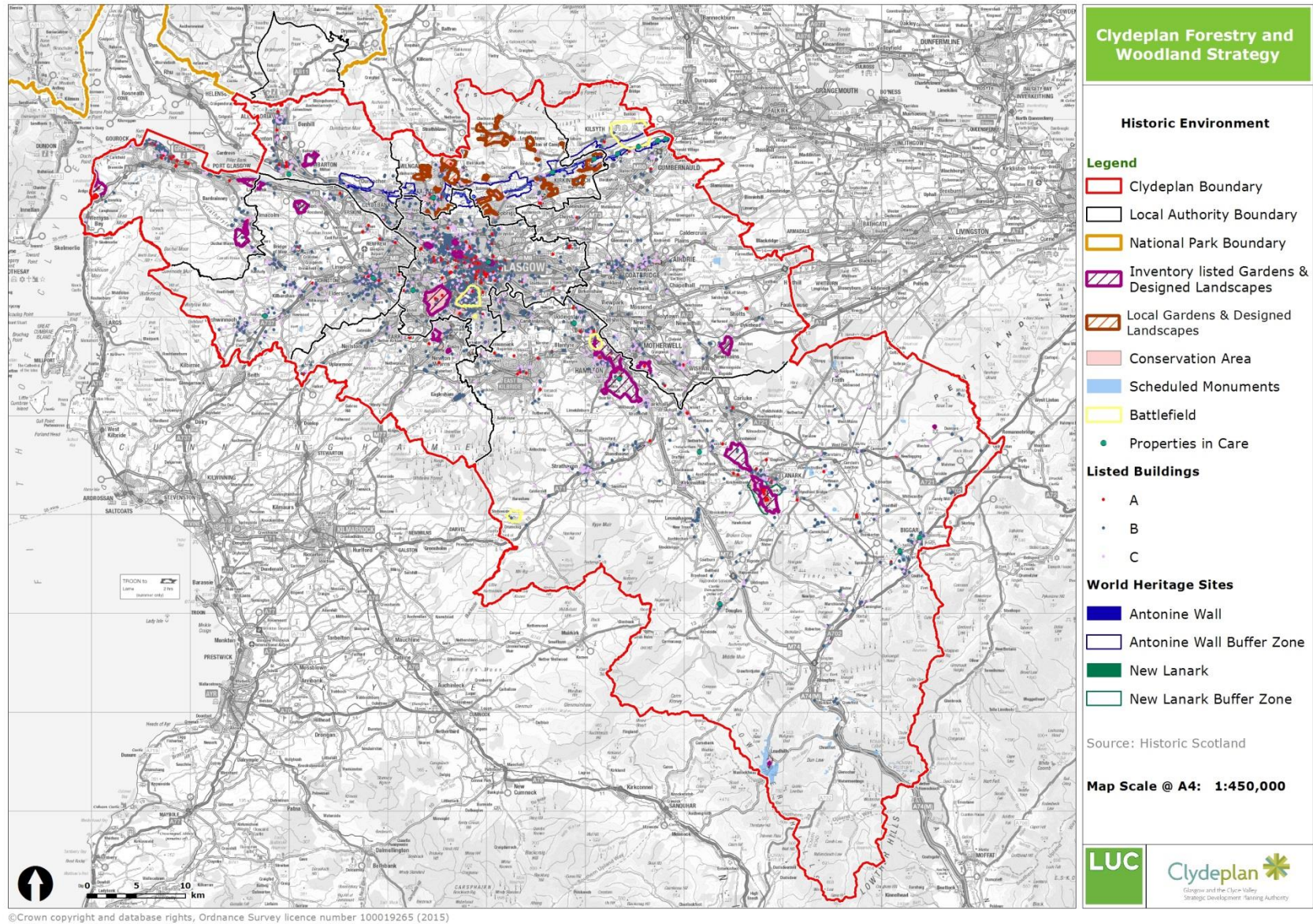




Figure 7.7 Historic Environment



## 8 Climate Change

### Introduction

- 8.1 Climate change projections suggest that the Clydeplan area will experience milder and wetter winters; warmer and drier summers; rising sea levels; and, an increase in the frequency and intensity of storm events (UK Climate Projections, 2014). Clydeplan's contribution to tackling climate change through woodlands will involve mitigating the effects of climate change by increasing carbon sequestration; reducing carbon emissions; encouraging the use of woodfuel as a substitute for fossil fuels; promoting the wider use of timber in construction; and adapting to changes in the climate by increasing woodland cover in flood catchments and urban areas, and promoting sustainable and lower impact woodland management.

### Reduce the forestry sector's emissions and contribute to mitigation measures

- 8.2 Trees and woodlands have a key role to play in helping to achieve reductions in greenhouse gas emissions. The Strategy will increase the contribution of trees and woodlands to climate change mitigation in the following ways:
- Increasing the total extent of tree cover across the Clydeplan area and, as a result, increasing the amount of carbon absorbed from the atmosphere and locked up in timber;
  - Encourage measures to reduce the use of fossil fuels within the forestry sector;
  - Developing the biomass and wood fibre sector as a source of low carbon fuel for heating and power generation;
  - 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; and,
  - Accommodating renewable energy infrastructure associated within existing woodlands and forests, where other constraints allow.

### Increasing carbon sequestration

- 8.3 Increasing the amount of carbon sequestered by woodland is a national priority, set out in the [Scottish Government's Rationale for Woodland Expansion](#). Forests and woodlands are widely recognised for their ability to sequester carbon from the atmosphere and store it in woody biomass, soils and litter. Although research suggests that fast growing conifers may absorb carbon most rapidly, it is important that new woodlands also contribute to wider objectives and that mono-culture forests are not created which have 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.
- 8.4 Protecting the carbon resource is a national priority, expressed in the Scottish Government's [Policy on the Control of Woodland Removal](#) which introduces a formal, cross-cutting presumption in favour of woodland retention; sets the policy tests against which proposals are measured; and highlights the need for appropriate compensatory planting.
- 8.5 While woodlands lock up a substantial amount of carbon (approximately 910 million tonnes), Scotland's peatlands are our most significant carbon store – holding an estimated 1,600 million



tonnes of carbon<sup>36</sup>. Therefore protecting and, where possible, restoring this resource is of strategic national importance<sup>37</sup>.

- 8.6 Blanket bog is concentrated in the moors and upland areas of Clyde Muirshiel, South Lanarkshire, the Slamannan plateau and the Kilpatrick Hills. Widespread but 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.

The **UK Forestry Standard** requires the avoidance of peat soils over 50cm in depth, and on sites that could compromise the hydrology of adjacent bog habitats, when establishing new woodlands. Site-specific assessment of proposals is critical in determining peat depths on site, and whether woodland creation is appropriate.

[Scotland's National Peatland Plan](#) [currently in Consultation Draft form] sets out the priorities for conserving and responsibly managing our peat soils. Following the Ramsar Convention and Soil Survey of Scotland definitions, it applies to soils with an organic layer or layers greater than 50cm deep from the soil surface, and which contain more than 60% organic matter.

- 8.7 Priorities to increase carbon sequestration will include:

- |              |  |
|--------------|--|
| <b>CC1.1</b> | Expand woodland cover within the Clydeplan area as a means of increasing carbon sequestration and reducing net carbon emissions. |
| <b>CC1.2</b> | Work with land managers to highlight the significance of peat soils and encourage restoration where feasible and appropriate.    |

#### **Contributing to emissions reduction**

- 8.8 The Climate Change (Scotland) Act 2009 set greenhouse gas emission reduction targets of 42% by 2020 and 80% by 2050. In total the Clydeplan local authorities emit approximately 11,000 kilotonnes of carbon dioxide per annum, representing around 15% of the Scottish total. Measures to reduce carbon emissions will include:

- Improved energy efficiency designed to reduce the demand for fossil fuels;
- The substitution of fossil based fuels with low carbon and renewable energy sources;
- Initiatives to increase the amount of carbon absorbed and retained within the environment.

- 8.9 Woodland and forestry should contribute to all three types of response.

#### *Energy efficiency in the forestry sector*

- 8.10 The forestry and timber industries are major users of fossil fuels at every stage of the process from planting, through harvesting and transporting to processing and use. Reducing the forestry 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<sup>38</sup>. This will require monitoring and auditing, and the use and proper maintenance of the most efficient forestry technologies.

- |              |   |
|--------------|---|
| <b>CC1.3</b> | Support the development of energy-efficiency measures in Clydeplan's forestry and timber sectors.   |
| <b>CC1.4</b> | Promote the use and adoption of fuel-efficient plant and machinery, making links between suppliers, existing users and local contractors to highlight the benefits. |

<sup>36</sup> Figures from Scottish Government (2009) *Low Carbon Scotland: Meeting the emissions reduction targets 2010-2022 – Report on the proposals and policies*

A conservative estimate of the carbon stored in Scotland's woodlands is approximately 910million tonnes of carbon (based on an average of 700t/C per hectare) – although forest soils will also store a significant amount of carbon, in some cases more than in the trees themselves.

<sup>37</sup> Reflected in Scottish Government policy, including the Land Use Strategy, and in the recent document *Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027*, Section 9.

<sup>38</sup> Scottish Government, 2011. *Getting the best from our land: A land use strategy for Scotland*. Edinburgh: Scottish Government

### *Developing the biomass and wood fibre sector*

- 8.11 Supporting the development of woody biomass as a source of low carbon fuel is key means of displacing non-renewable energy sources<sup>39</sup>. Key priorities include:
- Bringing existing woodland into positive management to increase the supply of logs and wood chips;
  - Making full use of residues from thinning and harvesting operations;
  - Establishing energy woodland (short and long rotation coppice) focused on urban fringe, derelict and vacant land, including restored mineral sites, and in areas where farming is less viable;
  - Supporting the development of a processing and supply chain;
  - Supporting the development of a market comprising public and private sector organisations and householders, as well as existing large scale biomass users.

Priorities for the biomass sector are dealt with in Chapter 6 of this Strategy

### *Contributing to other forms of renewable energy development*

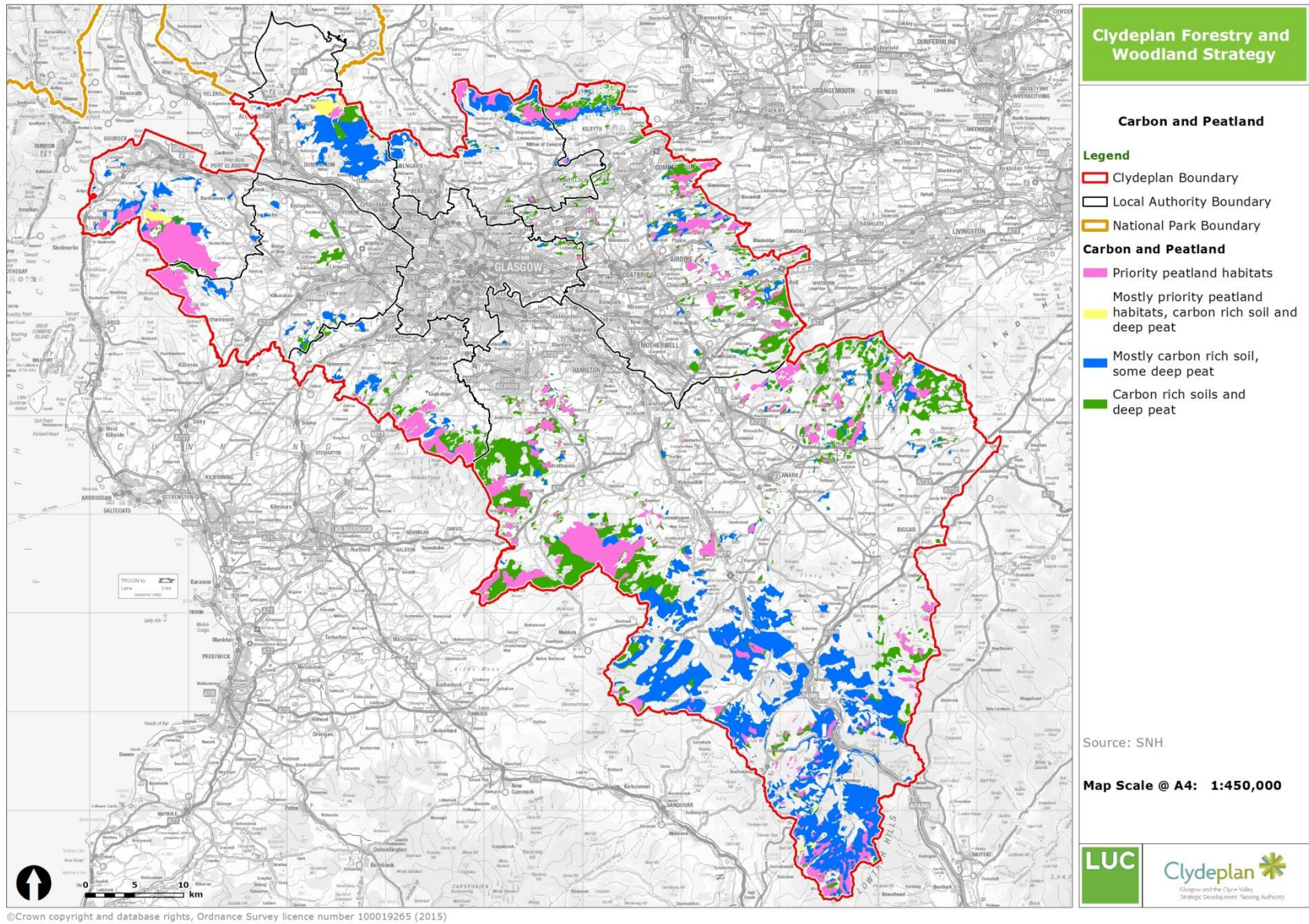
- 8.12 Forests and woodlands may also be able to accommodate other types of renewable energy development, such as wind and hydro developments.
- 8.13 Where development is proposed, the Scottish Government [Policy on the Control of Woodland Removal](#) includes a strong presumption in favour of protecting woodland resources and the removal of woodland should only be permitted where significant and well defined additional public benefits would be delivered.
- 8.14 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 removed but should reflect the guidance set out in the above Policy and in this Strategy.

- CC1.5** Where woodland removal in connection with development is proposed, and meets the requirements of the Scottish Government Policy on the Control of Woodland Removal, work with developers to ensure that compensatory planting is delivered in line with the priorities and spatial guidance provided by this Strategy.
- CC1.6** Ensure that reductions in woodland cover arising from restructuring and development are compensated within the Clydeplan area, wherever possible.

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<sup>39</sup> It must be noted that woodfuel can only be considered to be 'low carbon' where the equivalent number of trees felled for fuel are replanted to reabsorb the carbon emitted through combustion.

Figure 8.1 Carbon rich soils and peatland





## Adapt to the predicted effects of climate change

8.15 The creation of new tree cover can help us adapt to some of the challenges that will result from this changing climate. Equally important is the need to manage existing tree cover to increase its resilience to climate change. The Strategy promotes climate change adaptation in the following ways:

- Contributing to sustainable flood management; and,
- Increasing the resilience of Clydeplan's woodlands by:
  - Expanding habitat networks;
  - Protecting the quality of urban environments;
  - Protecting historic and semi-natural woodlands; and,
  - Adapting forest management practices.

### Contributing to sustainable water and flood management

8.16 Changes in rainfall patterns are likely to result in flooding on a more frequent basis. The [National Flood Risk Assessment](#) has identified that there are 33 potentially vulnerable areas, covering the majority of the Clydeplan area. The Clydeplan area falls into the Clyde and Loch Lomond Local Plan District. The largest potential source of flood risk in this district is from surface water, which is closely followed by river flood risk.

**Table 8.1 Potentially Vulnerable Areas by Local Authority area**

Local Authority	Number of Potentially Vulnerable Areas	Potentially Vulnerable Area Reference Number
East Dunbartonshire	2	11/04 (River Kelvin), 11/05 (Glasgow Coastal)
East Renfrewshire	3	11/12 (Black Cart Water Glasgow Coastal), 11/13 (White Cart Water Glasgow Coastal), 12/06
Glasgow City	7	11/04 (River Kelvin), 11/05 (Glasgow Coastal), 11/13 (White Cart Water Glasgow Coastal), 11/14 (Glasgow Coastal), 11/15 (Glasgow Coastal), 11/16 (Glasgow Coastal), 11/17 (River Clyde)
Inverclyde	4	11/08 (Inverclyde Coastal), 11/09 (Glasgow Coastal), 11/11 (River Gryfe), 11/12 (Black Cart Water Glasgow Coastal)
North Lanarkshire	5	11/04 (River Kelvin), 11/17 (River Clyde), 11/18 (River Clyde), 11/19 (River Clyde), 11/20 (River Clyde)
Renfrewshire	5	11/09 (Glasgow Coastal), 11/10 (Glasgow Coastal), 11/11 (River Gryfe), 11/12 (Black Cart Water Glasgow Coastal), 11/13 (White Cart Water Glasgow Coastal)
South Lanarkshire	4	11/13 (White Cart Water Glasgow Coastal), 11/14 (Glasgow Coastal), 11/17 (River Clyde), 13/07 (River Tweed)
West Dunbartonshire	3	11/01 (River Leven Dumbarton Coastal), 11/04 (River Kelvin), 11/05 (Glasgow Coastal)

8.17 Developing floodplain and riparian woodlands in the middle and upper catchments of the area's major rivers, including the Clyde, Kelvin, Gryfe, and the White and Black Cart Waters, could play an important role in attenuating flood events through a number of mechanisms including: direct absorption of rainfall through leaves and root systems; improved infiltration of water into soils; and, slowing flows of surface water and increasing catchment response times. This can also help to reduce peak flows, reducing the risk or severity of flooding, and potentially reducing or offsetting the need for engineered flood defences. In addition, trees can help reduce soil erosion and stabilise steep slopes if concentrated along river valleys and in upland parts of the Clydeplan area, reducing the risk of landslides when soils become waterlogged.

8.18 Trees, woodlands and greenspaces in urban areas can also play a key role in helping to deliver sustainable water management in the form of Sustainable Drainage Systems (SuDS), a national



policy requirement for surface water management in new development. In addition, where woodland can make a substantive contribution to the delivery of the Metropolitan Glasgow Strategy Drainage Partnership – designated as a National Development in NPF3 – this should be a priority.

### Forestry and flood management

The EU Floods Directive is transposed into Scots law as the Flood Risk Management (Scotland) Act 2009.

The Act introduces a more integrated and sustainable approach to understanding and planning for flood risk at a national and local level. It conveys significant responsibilities on to Scottish public bodies – including local authorities and Forestry Commission Scotland – for managing flood risk through their operations and decision-making functions.

For forestry, the emphasis on natural flood management – working with nature and using natural hydrological features in the landscape to slow peak flows, store floodwater and lengthen catchment response times – to mitigate risk to infrastructure, assets and communities is particularly significant.

- CC2.1** Promote the role of woodland in terms of sustainable flood management, prioritising Potentially Vulnerable Areas identified by SEPA.
- CC2.2** Increase awareness of the importance of woodlands and trees in contributing to sustainable flood management and the stabilisation of slopes.
- CC2.3** Work in partnership with the relevant authorities to identify opportunities for better management of existing woodland or planting of new woodland to aid natural flood management at a catchment scale.

### Increasing the resilience of Clydeplan's woodlands

#### *Expanding habitat networks*

- 8.19 Habitat connectivity is crucial in enabling species to adapt and be more resilient by establishing larger and healthier populations which are able to relocate in response to the changing climate. There are also likely to be impacts on movement of animals and the prevalence of pests and disease because of a changed climate.
- 8.20 Well-planned woodland creation can play a key role in enhancing habitat connectivity, boosting resilience and forging new links where connections are currently lacking. The Integrated Habitat Network (IHN) datasets are a useful tool in identifying areas where new woodland can make a contribution to physical and functional connectivity. Similarly, they are valuable in highlighting important non-woodland habitat types that also require support, assisting land managers and decision-makers identify and develop optimal uses.

- CC2.4** Promote the use of Integrated Habitat Network data in parallel with this Strategy to inform land management decisions.

#### *Protecting the quality of urban environments*

- 8.21 Trees and woodlands can play an important role in maintaining the quality of urban environments as the climate changes by improving air quality and providing shade and temperature regulation helping to combat the 'urban heat island' effect. According to Climate Ready Clyde<sup>40</sup>, Glasgow City centre already has one of the most significant 'urban heat island' effects in the UK.
- 8.22 Trees, woodlands and greenspaces in urban areas, including green infrastructure and Sustainable Drainage Systems (SuDS), protect the quality of urban environments by minimising surface water run-off and flood risk, in addition to providing attractive planting features and increased biodiversity.

<sup>40</sup> Adaptation Scotland, 2013. *Climate Ready Clyde* [pdf]. Available at: <http://www.adaptationscotland.org.uk/Upload/Documents/CRCVisonFINAL.pdf> [Accessed on 11th December 2014]

**CC2.5** Promote the role of trees and woodlands in improving urban microclimates.

*Protecting historic and semi-natural woodlands*

- 8.23 Trees and woodlands make an important contribution to the character of the many historic gardens and designed landscapes found in the Clydeplan area. The effects of climate change could impact on ancient trees, features such as avenues and parkland trees, and on wider policy woodlands. 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.
- 8.24 Maintaining the health and resilience of native and semi-natural woodlands and individual trees is critical in securing their contribution to sense of place, landscape character and their habitat and heritage values. Positive management, including planned programmes of replanting using like-for-like replacements particularly for specimen trees, will help to ensure that they are resilient to the changing climate.

**CC2.6** Identify vulnerable gardens, designed landscapes and policy woodlands and promote succession planning to maintain their heritage value and significance.

*Adapting forest management practices*

- 8.25 The effects of climate change are likely to necessitate a range of changes in the ways that woodlands are planned and managed to ensure that both the woods themselves and their attendant industries are resilient to change.

**Table 8.2 Climate change impacts on trees and forestry practices**

Effect type	Impacts on trees	Impacts on forestry practice
<b>Weather</b>		
Hotter, drier summers	<p>Increased tree mortality for drought-prone / shallower-rooting species</p> <p>Failure or impaired establishment for new planting</p> <p>Stress increasing susceptibility to pathogens</p> <p>Increased incidence of forest fires</p>	<p>Potential need for irrigation (although likely to be impractical)</p> <p>Need for drought-resistant species/provenance</p> <p>Increased wind erosion of exposed soils</p> <p>Need for increased resilience planning for fire</p>
Warmer, wetter winters	<p>Longer growing season</p> <p>Reduction in number of frost days</p> <p>Greater soil instability due to water-logging</p> <p>On wetter sites, waterlogging causing root damage</p> <p>Increased pathogen threat, due to more favourable conditions</p>	<p>Faster growth of timber, potentially affecting strength and end-use?</p> <p>Potential reduction in frost damage</p> <p>Uncertainty making planning of operations more difficult; increased waterlogging reducing number of available working days</p> <p>Increased soil damage from machinery activity</p> <p>Increased importance of sediment management to prevent polluting run-off</p> <p>Increased need for good silviculture, including thinning, in order to reduce the likelihood and impact of pathogen attack</p>
Increased storminess	<p>More frequent, and more severe, wind-throw</p>	<p>Increased need for proactive management; identifying and removing potentially unstable trees</p> <p>Increased risk associated with woodland in exposed locations</p>

Effect type	Impacts on trees	Impacts on forestry practice
		Adopting CCF and other approaches to improve wind-fastness  Increased need for use of best practice approaches to silviculture, including well-planned in-crop drainage
Increased uncertainty		Long-term planning needs to reflect this uncertainty to manage risk  Length of rotation and timing of thinning etc. for timber species may need to adapt
<b>Pests and diseases</b>		
Changes in range / distribution of insect pests (due to lessening of climatic controls)	Increased windthrow potentially increasing available deadwood habitat for beetle and weevil population build-up  Additional stress factors increasing tree susceptibility to attack  Increased potential for multiple pathogen attack (e.g. by bark beetles and defoliating caterpillars)	Potential need to adapt management approach and future woodland structure to reduce favourable conditions for pests  Increased use of pesticides?
Weather-related changes in susceptibility to pathogen attack	Warmer, wetter winters improving conditions for fungal pathogens (e.g. red band needle blight, <i>Chalara fraxinea</i> / <i>Hymenoscyphus pseudoalbidus</i> )  Higher summer temperatures and reduction in soil frosts increasing damage as a result of <i>Phytophthora</i> infection	
Reduced winter mortality for mammalian pests (particularly deer)	Increased browsing damage, particularly in young woodlands	Need for additional fencing / protection
Invasion by additional non-native pests and diseases		Planning, and close partnership working between agencies and the sector
Increased competition from ground and shrub layers in young woodland (e.g. rank brambles)	Difficulties in establishment, particularly in areas of natural regeneration	More active management of natural regeneration to ensure proper establishment

8.26 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. It has been proposed that traditional approaches to harvesting, based on the clear-felling of larger blocks of forest may – on suitable sites – be replaced by other techniques, including ‘continuous cover’ forestry based on the selective felling of trees within a woodland. This can help to create a more varied woodland structure and should reduce the risk of erosion.

8.27 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. However, establishment and management practices are likely to require some changes to ensure that the forestry industry and woodlands themselves remain sustainable in the face of changing climatic conditions and patterns of weather.

**CC2.7** Ensure forestry plantations are managed using the most sustainable option with consideration given to continuous cover forestry techniques.

**CC2.8** Promote positive and proactive management of key tree species and woodlands to improve their resilience to climate change.





## 9 Spatial Guidance

- 9.1 This section of the Strategy sets out the local priorities for woodland expansion and management by broad landscape 'zone.' It presents a breakdown of the potential for expansion in each zone and describes the principal opportunities and constraints that should be taken into account in new planting proposals.

### Introduction

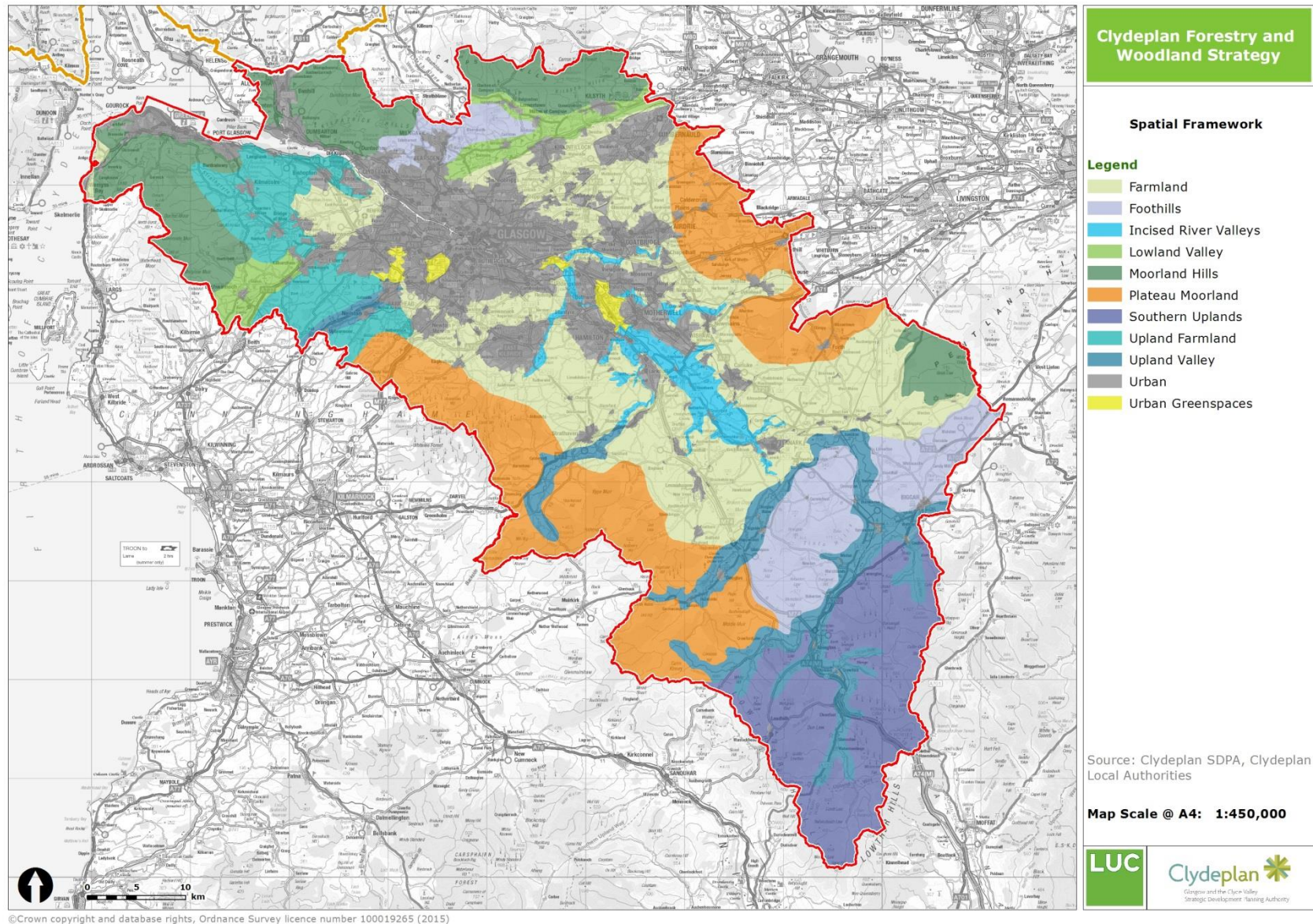
- 9.2 Adapting the revised landscape types developed for the regional Landscape Character Assessment and recent Wind Energy Capacity Study, the spatial framework adopts a landscape-led approach to interpreting the potential for expansion in each 'zone'. It aims to add contextual detail in relation to the opportunities and likely sensitivities affecting woodland expansion and management, and highlights areas where additional assessment or regulatory processes are likely to be required.

## Spatial framework

9.3 The spatial framework, comprising seven separate landscape 'zones', are:

Zone name	Description	Woodland cover – key facts
<b>Farmlands</b>	Extensive plateau and rolling farmland encircling the main metropolitan area	8,785ha of woodland 13% of zone wooded 16% of the region's woodland
<b>Foothills</b>	Rising ground and foothills of the Kilpatrick Hills, Campsie Fells and the Southern Uplands	4,205ha of woodland 17% of zone wooded 7% of the region's woodland
<b>Incised River Valleys</b>	Steeply-incised valleys and gorges of the middle Clyde and Avon Valleys and their tributaries	2,573ha of woodland 31% of zone wooded 5% of the region's woodland
<b>Lowland Valley</b>	Broad valley lowlands of the Kelvin Valley and the Lochwinnoch Gap	846ha of woodland 10% of zone wooded 1% of the region's woodland
<b>Moorland Hills</b>	Clyde Muirshiel Hills, Kilpatrick Hills, Campsie Fells and Kilsyth Hills and the south western part of the Pentland Hills	5,965ha of woodland 17% of zone wooded 11% of the region's woodland
<b>Plateau Moorland</b>	Elevated and exposed moorlands of the Muirkirk and Lowther Hills, and the western extremity of the Slamannan Plateau	18,190ha of woodland 32% of zone wooded 32% of the region's woodland
<b>Southern Uplands</b>	High, open and exposed hills of the Southern Uplands	5,714ha of woodland 18% of zone wooded 10% of the region's woodland
<b>Upland Farmland</b>	Rolling, convoluted agricultural landscapes of Renfrewshire and Inverclyde	2,581ha of woodland 16% of zone wooded 5% of the region's woodland
<b>Upland Valley</b>	Upper valleys of the region's main rivers	2,528ha of woodland 11% of zone wooded 4% of the region's woodland
<b>Urban</b>	The region's larger settlements	4,506ha of woodland 8% of zone wooded 8% of the region's woodland
<b>Urban Greenspaces</b>	Large parks and greenspaces on the fringes of Glasgow	536ha of woodland 26% of zone wooded 1% of the region's woodland

**Figure 9.1 Spatial Framework**



## Farmland

### Overview

- 9.4 This zone ranges from lower lying areas on the floodplains of the Black and White Cart Waters, to more open and elevated pastures along the middle Clyde valley in South Lanarkshire.
- 9.5 Agriculture makes an important contribution to 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.

### Existing woodland resource

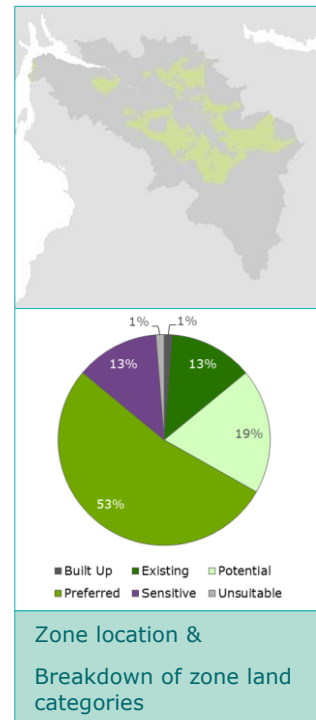
- 9.6 Despite its large size, the zone is comparatively sparsely wooded. The resource is composed of shelterbelts, farm woodlands, smaller softwood forests and areas of policy woodland, such as Bar Hill and Gartshore Estate.
- 9.7 The zone also contains the bulk of the region's peri-urban landscapes, and therefore holds a significant area of under-managed woodland that could make a greater contribution to the quality, character and distinctiveness of settlements.

### Key issues

- 9.8 Local issues for woodland and forestry include:
- Significant fragmentation of native woodland resources
    - Presenting an often significant barrier to species' adaptation to the effects of climate change
  - Decline and under-management of farm woodlands, shelterbelts and field trees, eroding landscape quality and character
  - Difficult economic circumstances, making it hard for farm forestry to compete with other land uses
  - Need for support for agriculture in adapting to the effects of climate change
  - Forms the immediate setting for much of the region's settlement – but land degradation and abandonment, anti-social behaviour and under-management of woodland resources often undermines the potential contribution to character and distinctiveness
  - Generally poor ecological condition of waterbodies, with agricultural diffuse pollution a key issue
  - Significant peri-urban land allocations, particularly for housing

### Local sensitivities

- 9.9 The presence of the New Lanark World Heritage Site and its buffer zone is a key sensitivity in the south of the zone, meaning that proposed planting in the area needs to be carefully planned and managed to safeguard the Outstanding Universal Value of the site. In practice, given the local topography, it is likely that proposals would be limited to conserving and enhancing existing native woodland networks.
- 9.10 Similarly, the zone contains the southern edge of the Frontiers of the Roman Empire (Antonine Wall) World Heritage Site and buffer zone. While less sensitive to visual impacts from the south, the WHS requires careful consideration in the location and design of new woodlands to avoid adverse effects on the setting of the site, which makes a major contribution to its significance.





New planting within the Scheduled Area is unlikely to be supported, and management of existing resources will frequently require Scheduled Monument Consent from Scottish Ministers.

- 9.11 A substantial proportion of the zone is also covered by local landscape designations (South Lanarkshire 'Special Landscape Areas') intended to conserve the special qualities of the Clyde and Avon Valleys and the rural environs of Lanark. New woodland proposals would therefore need to be designed in a manner that understands and reflects the key characteristics of these areas.
- 9.12 The zone contains a number of important remnant peatlands, including a number of SSSI and Special Areas of Conservation (e.g. Coalburn, Braehead and Waulkenwae Mosses). These areas are highly susceptible to hydrological change, therefore woodland expansion in the vicinity must be carefully managed to prevent adverse effects.
- 9.13 Existing agricultural land uses, particularly in areas of higher land capability and value, are also a key consideration.

#### **Priorities for woodland management**

- Bringing under-managed urban fringe woodlands into positive management through FCS 'Woods In and Around Towns' and successor programmes to improve the setting of existing and proposed development
- Promoting management and enhancement of existing farm woodlands
- Succession planning for key features in gardens and designed landscapes, and for important field trees

#### **Priorities for woodland expansion**

- Contributing to the development of woodland habitat networks, particularly where these can link to significant existing assets – such as the Clyde Valley woodlands
- Delivering new farm woodlands to aid adaptation to climate change, contribute to diversification and help to expand potential timber and biomass production opportunities
- New softwood and mixed forests, located and designed to reflect the character and quality of the landscape
- Identifying and prioritising suitable sites for application of Continuous Cover Forestry in more sheltered areas
- Supporting the delivery of significant housing development on the fringes of the metropolitan area – contributing to landscape character, quality and sense of place

## Foothills

### Overview

- 9.14 This zone comprises the foothills of the Kilpatrick Hills and Campsie Fells in the north of the region, from the Kelvin Valley to Strathblane. And, in the south, the Tinto Hills and the rising ground to the north of the upper Clyde Valley, forming the foothills of the Southern Uplands. This portion of the zone is bisected by the Clyde.

### Existing woodland resource

- 9.15 With woodland cover matching the regional average, this zone of transitional and upland landscapes has a mix of woodland cover. Although principally composed of relatively large scale conifer forests, the lower-lying areas have a strong landscape structure created by regular patterns of shelterbelts and small farm woodlands. A substantial proportion of the resource has been planted relatively recently; therefore the landscape is likely to evolve over the FWS period as these woodlands mature.

### Key issues

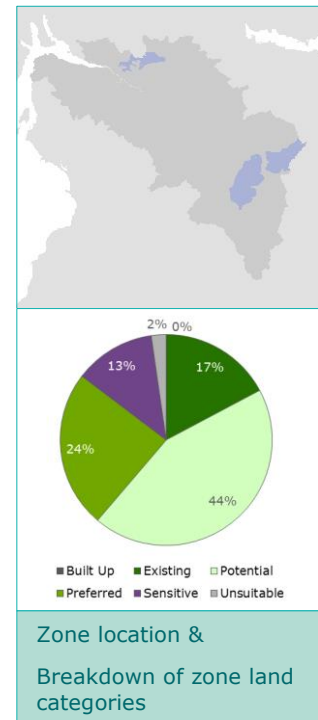
- 9.16 Local issues for woodland and forestry include:
- Changing landscape character as a consequence of recent woodland planting, potentially reducing the capacity for further larger-scale expansion
  - Potential improvement in land capability and value as a consequence of climate change
  - Very sparse and fragmented native woodland resource

### Local sensitivities

- 9.17 The landscapes of this zone are highly valued locally, and this is confirmed by the designation of a substantial proportion of the zone as 'Special Landscape Areas' (SLA) by South Lanarkshire Council<sup>41</sup>:
- Upper Clyde Valley and Tinto SLA;
  - Pentland Hills and Black Mount SLA;
  - Douglas Valley SLA (very small portion)
  - Leadhills and the Lowther Hills SLA (very small portion)
- 9.18 In addition, East Dunbartonshire Council has designated:
- Bardowie, Baldernock and Torrance Local Landscape Area (LLA)
- 9.19 The Tinto Hills are also designated as a Site of Special Scientific Interest (SSSI) for their geological significance and their upland plant assemblage, meaning that this area – comprising a little over 6% of the zone – is particularly sensitive to woodland expansion.
- 9.20 Due to the elevation of the western portion of the zone in particular, there is comparatively little intensive agriculture. This means that a range of archaeological remains are present within the zone, including later prehistoric hillforts and enclosures and extensive pre-Improvement agricultural landscapes. New woodland would therefore need to take into account the potential for physical harm to heritage assets, and impacts on their setting.

### Priorities for woodland management

- Ongoing restructuring and enhancement of existing softwood forests



<sup>41</sup> Ironside Farrar for South Lanarkshire Council (2010) [South Lanarkshire: Validating Local Landscape Designations](#); and reaffirmed in the Proposed South Lanarkshire Local Development Plan (2013)

- Bringing neglected shelterbelts, farm woodlands and field trees back into positive management, particularly where these features make an important contribution to landscape character and quality

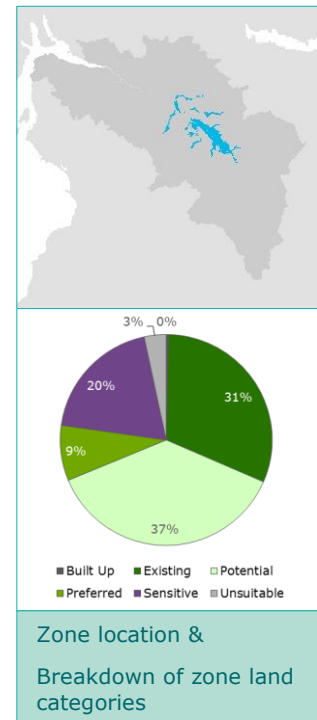
#### **Priorities for woodland expansion**

- Highlighting the potential of new woodland in assisting agricultural adaptation to climate change – particularly providing shelter and shade for livestock in pastoral areas
- Developing high quality new native woodland to link with riparian networks in the Clyde Valley and its tributaries
- Expansion of existing softwood forests, appropriate in size and scale to the character and quality of local landscapes
- New farm woodlands to contribute to diversification and resilience

## Incised River Valleys

### Overview

- 9.21 Between Lanark and Hamilton, the Clyde Valley, together with tributary valleys such as the Avon, Nethan, South Calder and Garrion, contains some of Scotland's finest areas of riverine and gorge woodlands. Many of these woodlands are ancient in origin and have a history of 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 19<sup>th</sup> and early 20<sup>th</sup> centuries. The woods are not untouched, however, reflecting the history of grazing, coppicing and other types of management.
- 9.22 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.
- 9.23 A significant portion of the incised river valleys are designated as Special (local) Landscape Areas (SLAs) namely the Lower Clyde and Calderglen SLA, and the Middle Clyde Valley SLA.
- 9.24 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.



### Existing woodland resource

- 9.25 As noted above, the zone holds outstanding examples of ancient, semi-natural deciduous woodland with SAC, NNR and SSSI designations. This comprises the bulk of the woodland in the zone, along with the ancient wood pasture habitats at Chatelherault Country Park, in the Avon Valley.
- 9.26 This is one of the most densely-wooded zones, and therefore management of existing resources – rather than expansion – is the priority.

### Key issues

- 9.27 Local issues for woodland and forestry include:
- The role of trees and woodland in contributing to the character and setting of the New Lanark World Heritage Site
  - Conserving and enhancing the internationally important ancient and semi-natural woodland, and securing their resilience to the effects of climate change
  - Ensuring that tourism and recreation uses can be reconciled with effective conservation and management of native woodland resources
  - Ensuring that the cultural and historical value of the area's ancient woodlands continues to be recognised and promoted

### Local sensitivities

- 9.28 For a comparatively small area, this zone contains a large number of designations - reflecting the natural and cultural heritage values present. This means that any new planting proposals would need to be planned, designed and implemented to the highest standards to ensure that the qualifying features and conservation objectives of the SAC/SSSI, the landscape importance of the SLAs, and the Outstanding Universal Value of the World Heritage site are maintained.



### **Priorities for woodland management**

- Active management of more accessible woodlands to maintain their diversity and heritage values through appropriate management techniques
- Succession planning for key landscape features in the zone's designed landscapes (this is already being considered as part of the management plan for Chatelherault)
- Felling of larger areas of non-native conifer woodland at the end of their rotation and replacement with more appropriate native species that would make a greater contribution to landscape, biodiversity and heritage values, with particular priority to restoring PAWS sites

### **Priorities for woodland expansion**

- Reinforcing the native woodland networks to boost resilience to the effects of climate change
- Re-establishment of shelterbelts that provide important landscape structure

## Lowland Valley

### Overview

- 9.29 In the northern portion of the zone, the zone comprises the broad valleys of the River Kelvin and the Blane Water. In the southern portion, the zone is centred on the Lochwinnoch Gap – a glacial trough between two sections of the Clyde Plateau lava, now filled by Castle Semple and Barr Lochs and drained by the Black Cart Water.
- 9.30 The historic environment is a critical aspect of the character and woodland resource of both areas. The extensive designed landscape and historical hydraulic engineering of the former Castle Semple Estate is a key aspect of character in the southern portion. In the north, the Forth and Clyde Canal and the Frontiers of the Roman Empire (Antonine Wall) World Heritage Site shadow the Kelvin Valley from the boundary with Falkirk into north Glasgow. The site of the Battle of Kilsyth (1645) is included on the Inventory of Historic Battlefields.

### Existing woodland resource

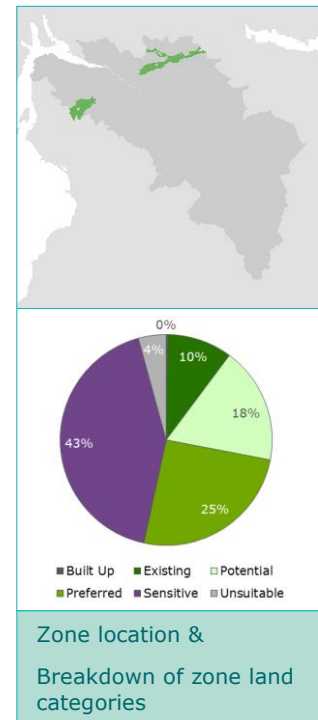
- 9.31 Around 10% of the zone is currently in woodland. The majority is concentrated in and around the historic policies of Castle Semple<sup>42</sup>, by Lochwinnoch, and the riparian and farm woodlands of the Kelvin Valley.

### Key issues

- 9.32 Local issues for woodland and forestry include:
- Major flood risk
  - Comparatively high land values for mixed and pastoral agriculture
  - Fragmentation of key native woodland assets, particularly riparian networks in the Black Cart and Kelvin Valleys
  - Local landscape designations:
    - Glazert Valley Local Landscape Area (East Dunbartonshire)
    - Bardowie, Baldernock and Torrance Local Landscape Area (East Dunbartonshire)

### Local sensitivities

- 9.33 The World Heritage Site is a major sensitivity. Although substantial sections of the Wall are already within woodland, the setting of the asset as a whole is highly sensitive to change – as this has the potential to affect functional and visual relationships critical to its significance. Any proposals within the Buffer Zone would therefore require the highest standards of planning and design, as well as rigorous assessment. However, in some sections, the presence of trees on the line of the Wall are a key part of the asset's character – and the ability to perceive it in the wider landscape – therefore careful stewardship of these woodlands is imperative.
- 9.34 Historic policy woodlands, such as those at Castle Semple, are a particular management challenge. Maintaining the character and significance of the landscape, and its contribution to the setting of a large number of designated heritage assets, is a key consideration. The Clyde Muirshiel Regional Park has undertaken a range of work to understand and inform the restoration of the landscape, through Heritage Lottery funded projects.
- 9.35 The Kilsyth battlefield covers a substantial area and is likely to influence the nature, scale and design of woodlands that would be considered appropriate within the designated area.



<sup>42</sup> Now the Castle Semple Country Park, managed by the Clyde Muirshiel Regional Park

### **Priorities for woodland management**

- Conserving and enhancing the character and significance of historic policy woodlands
- Maintaining and planning for the succession of woodland and specimen trees along the line of the Antonine Wall
  - Succession planning is a particular challenge, as new planting on the asset itself is inherently problematic – but the eventual loss of existing trees will erode the visibility of the asset on the ridgeline above the Kelvin Valley (particularly adjacent to Castlecary / Cumbernauld Airport)
- Conserving and enhancing the structure and character of the landscape within the Kilsyth Inventory Battlefield area

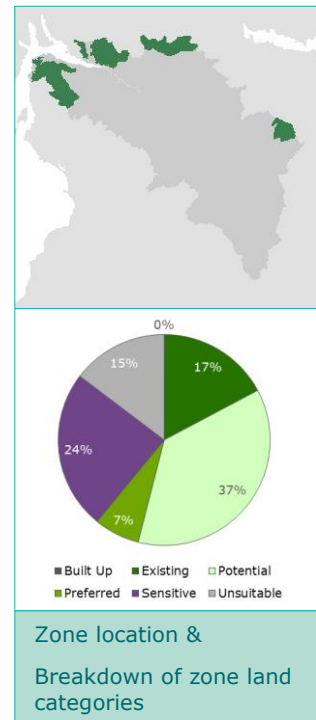
### **Priorities for woodland expansion**

- Expanding riparian networks can help protect river morphology and moderate stream temperatures, while potentially reducing downstream flooding; improve habitat connectivity; improve water quality and soil stability; assist in tackling agricultural diffuse pollution (by providing a buffer between pollution sources and watercourses); and, contribute to sustainable water management
- Identifying appropriate locations where new floodplain woodland could contribute to catchment-scale flood attenuation and management
- Restoring lost shelterbelts and field trees to assist in agricultural adaption to the effects of climate change, and to reinforce landscape character
- Promoting the development of new farm woodland to contribute to climate change adaptation and farm diversification

## Moorland Hills

### Overview

- 9.36 This zone comprises the Clyde Muirshiel Hills, Kilpatrick Hills, Campsie Fells and Kilsyth Hills and the south western part of the Pentland Hills. Together, these hills make up just over 9% of the Clydeplan area. The moorland hills support a range of upland habitats including peat bog, grasslands and wetlands. The hills also include some areas of softwood forest.
- 9.37 The hills are already an important recreation resource for the Clydeplan 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 visitor centres 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 Kilsyth Hills are designated as a Special Landscape Area and are highly regarded in terms of scenic value, informal recreation and landscape appreciation. The Kilpatrick Hills are also important, with work underway to expand native woodland and improve recreation opportunities through the Land Management Plan<sup>43</sup> for the National Forest Estate in the area. That part of the Pentland Hills within this zone lies outside the Pentland Hills Regional Park.



### Existing woodland resource

- 9.38 The zone holds a significant area of softwood forest, although generally smaller in scale than those on the Plateau Moorlands and in the Southern Uplands. Restructuring of some of this resource is already underway, and should contribute to better quality second rotation timber – as well as improving landscape and biodiversity values.
- 9.39 Networks of good quality native riparian woodland are also present in the steep, deeply-incised valleys of the Kilpatrick Hills and Clyde Muirshiel/Renfrewshire Heights uplands.

### Key issues

- 9.40 Local issues for woodland and forestry include:
- Positively managing increased demand for woodland-based recreation
  - Flood risk and water management
  - Presence of deep peat and carbon rich soils
  - Potential loss of productive area as a consequence of restructuring and delivering higher quality, multi-benefit woodland

### Local sensitivities

- 9.41 Significant areas of the Renfrewshire Heights are designated for their natural heritage value (SPA for breeding hen harrier; SSSI for hen harrier and geodiversity); as are smaller areas of the Kilpatrick Hills (e.g. Dumbarton Muir SSSI) and the Campsie Fells. The Kilsyth Hills are designated as a proposed Special Landscape Area (West Dunbartonshire) and a Local Landscape Area (East Dunbartonshire). In addition, the south western part of the Renfrewshire Heights is identified as an area of wild land<sup>44</sup>.

<sup>43</sup> Formerly 'Forest Design Plan': available at: <http://scotland.forestry.gov.uk/managing/plans-and-strategies/land-management-plans/616-kilpatrick-hills>

<sup>44</sup> SNH, 2014. *Mapping Scotland's wildness and wild land* [online]. Available at: <http://www.snh.gov.uk/protecting-scotlands-nature/looking-after-landscapes/landscape-policy-and-guidance/wild-land/mapping/> [Accessed 22 June 2015]



- 9.42 Where proposals for new woodland could generate likely significant effects on the qualifying interests or conservation objectives of the SPA, Habitats Regulations Appraisal will be required to identify and mitigate adverse effects ensuring there would be no adverse effects on the integrity of the SPA.

#### **Priorities for woodland management**

- Continuing to deliver higher quality, multi-benefit woodland through restructuring existing softwood forests
- Bringing riparian woodlands into positive management to improve their biodiversity and water management potential, particularly in the steep-sided glens of Inverclyde
- Managing existing native woodland networks to optimise their biodiversity value
- Contributing to continued development of the regionally important tourism and recreation offer of the zone's woodlands

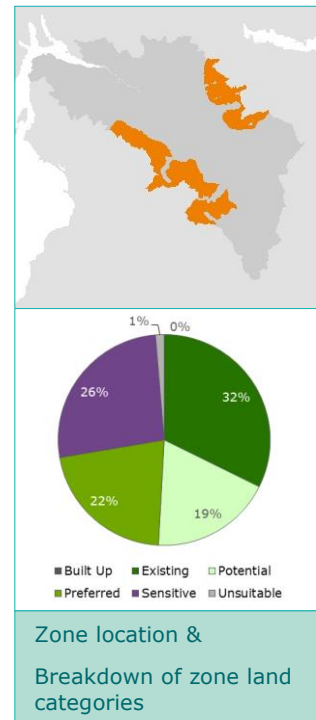
#### **Priorities for woodland expansion**

- Expansion of softwood forests in appropriate areas to support a sustainable timber industry, compensate for loss of productive area through restructuring and greater provision for the leisure and recreation market
- Reinforcing riparian networks to improve natural flood attenuation and contributing to sustainable catchment management, particularly in catchments subject to flash flood events where woodland could add significant value in helping to slow catchment response times
- Expanding native woodland in lower-lying areas to contribute to landscape and biodiversity restoration objectives

## Plateau Moorland

### Overview

- 9.43 The Plateau Moorlands enclose much of the Clyde Valley to the south and east of the Glasgow conurbation. Key characteristics of this area include a distinctive upland character created by the combination of elevation, exposure, smooth, plateau landform and moorland vegetation; and, a sense of remoteness which contrasts with the farmed and settled lowlands.
- 9.44 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 significant number of wind energy developments.



### Existing woodland resource

- 9.45 This is the region's second-largest zone, and is the most heavily wooded, with woodland comprising almost a third of land cover. This is composed principally of very large softwood forests; although in several locations these have been reduced in recent years as a consequence of wind energy development (for instance at Whitelee, straddling the boundary with Ayrshire). Substantial areas of relatively recent planting are also present, generally adjacent to larger existing forests.
- 9.46 Given its moorland / upland character, the zone has comparatively little native woodland. This is mainly confined to the lower slopes, where small-scale riparian networks link into adjacent zones, and where native broadleaves have been incorporated as part of forest design for recently established softwood forests.

### Key issues

- 9.47 Local issues for woodland and forestry include:
- Continued pressure for wind energy development
    - Future losses to consented schemes will be required to be compensated under the Scottish Government Policy on the Control of Woodland Removal
  - Restructuring of sites on peatland potentially necessitating restoration, where appropriate and there is a realistic prospect of restoring ecosystem function, resulting in further losses of productive area
  - Ongoing and legacy mineral working sites

### Local sensitivities

- 9.48 Both portions of the zone have designations for internationally significant bird populations – the Muirkirk and North Lowther Uplands (breeding hen harrier) and Slamannan Plateau (overwintering Taiga bean geese) SPAs. New woodland in the vicinity of these sites – particularly the Slamannan Plateau – could have the potential to generate likely significant effects on supporting habitat, affecting the qualifying interests and/or the site conservation objectives. In such circumstances, Habitats Regulations Appraisal (HRA) would be required to identify and mitigate any such effects ensuring there would be no adverse effects on the integrity of the SPA. Similarly, a number of remnant peatlands are located in the eastern portion of the zone are designated SSSI, with Black Loch and North Shotts Mosses also being designated as Special Areas of Conservation (SAC)<sup>45</sup>.

<sup>45</sup> Proposals with likely significant effects on SACs invoke the same requirement for HRA as SPAs

- 9.49 The historic Wilsontown Ironworks, dating from the late 18<sup>th</sup> century, are a key part of Scotland's industrial heritage. Located entirely within productive forest, a major campaign of research, investigation and conservation has been undertaken by Forestry Commission Scotland to secure the future of a nationally significant asset and improve access to and understanding of the asset for visitors and local people alike.

#### **Priorities for woodland management**

- Continued restructuring of existing softwood forests to improve second rotation timber quality, remove inappropriate and unsuccessful species (e.g. lodgepole pine) and contribute to improved landscape, biodiversity and recreational values

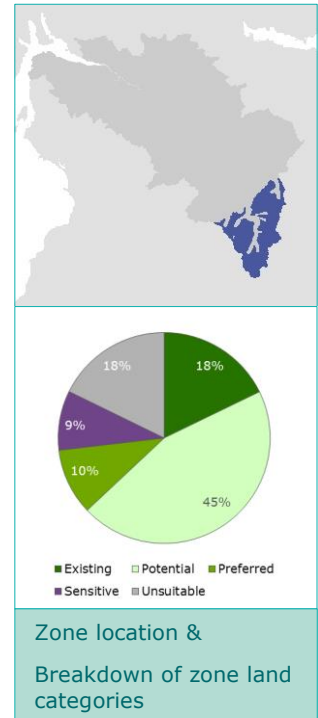
#### **Priorities for woodland expansion**

- Delivering new softwood forests in appropriate areas to compensate for losses of productive area to development and restructuring.
  - There is more 'preferred' land (i.e. with no strategic constraints) in the eastern portion of the zone, but the presence of large numbers of small, nationally-designated natural heritage sites and peat soils, means that acceptable proposals are likely to be comparatively small
- Developing networks of native woodland on the lower slopes and drier ground to link to existing resources in adjacent zones
- Promoting the development of farm forestry to contribute to diversification and deliver appropriate productive woodlands

## Southern Uplands

### Overview

- 9.50 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 [included in the Upland Valley zone].
- 9.51 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 cleughs. There are also extensive areas of softwood forest, together with prominent, almost sculptural plantations, particularly around the fringes of the higher hills. Woodland cover in this zone has also been reduced as a result of wind farm development.



### Existing woodland resource

- 9.52 As noted above, the bulk of the resource in this zone is composed of softwood forest, often still in its first rotation. This means that the landscape will change significantly – albeit temporarily – as these forests reach maturity, are harvested and restructured / restocked.
- 9.53 The zone has very little native or mixed woodland, as this is concentrated on the valley floors and river corridors [included in Upland Valley zone].

### Key issues

- 9.54 Local issues for woodland and forestry include:
- Continued pressure for wind energy development
  - Significant historical losses of woodland cover as a consequence of wind energy development
  - Ongoing restructuring of softwood forests
  - Low biodiversity value of transitional and upland valley landscapes, where new native woodland could make a substantial contribution to habitat enhancement
  - Water management

### Local sensitivities

- 9.55 The Southern Uplands, as some of the most significant areas of upland landscape outside Highland Scotland, are highly valued. Consequently, all but the central third of the zone is covered by Special Landscape Area designations, put in place by South Lanarkshire Council to conserve and enhance the key characteristics of the landscape. Proposals for new woodland within the designated area should be planned and delivered to reflect and conserve the key characteristics of the landscape.
- 9.56 Heritage also plays a role in the character of area, ranging from the remains of the main Roman road through southwest Scotland, and attendant fortifications, to the legacy of the historic lead mining and processing industry.

### Priorities for woodland management

- Continued restructuring and enhancement of existing softwood forests



### **Priorities for woodland expansion**

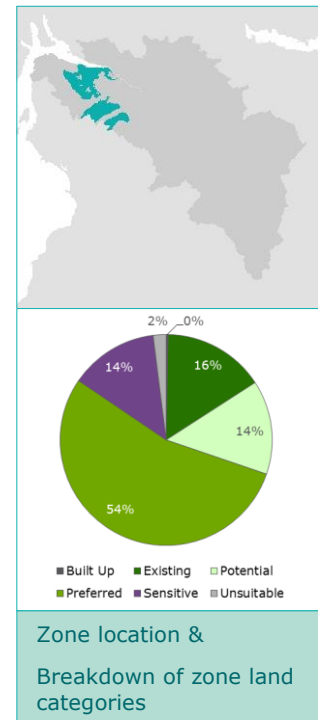
- Small scale expansion of carefully designed softwood forests to compensate for losses of productive area
- Creating and expanding networks of native woodland in more sheltered valleys
- Contributing to sustainable water management and flood attenuation through the development of woodland in the upper catchments of flood-prone burns and rivers
- Investigating the potential for 'forest landscape restoration'-type initiatives, where suitable sites can be found and support mechanisms allow, to improve the biodiversity value of upland landscapes
  - Building on the successes of exemplar projects, such as that of the Borders Forest Trust at Carrifran and Corehead (both Scottish Borders) and the Devil's Beef Tub (Dumfries and Galloway) in the Southern Uplands; and the Great Trossachs Forest around Loch Katrine in the Loch Lomond and Trossachs National Park

## Upland Farmland

### Overview

- 9.57 This landscape is similar to the 'Farmland' zone, though characterised by more rugged, hummocky landforms and craggy bluffs. It occurs across Inverclyde, Renfrewshire and East Renfrewshire, divided by river valleys into three discrete areas:
- an area between the River Clyde and the Black Cart Water including Kilmacolm, Bridge of Weir and Erskine. This area straddles Inverclyde and Renfrewshire, and takes in Strathgryfe and parts of the former Royal Ordnance Factory (ROF) site south of Bishopton;
  - the hills which lie between Paisley and Johnstone in the north, and Neilston in the south, covering Renfrewshire and East Renfrewshire; and
  - the hills south of Neilston, in East Renfrewshire.

- 9.58 The more complex, convoluted landforms and lower levels – and different types – of existing woodland cover mean that issues for management and expansion are potentially different.



### Existing woodland resource

- 9.59 Around 16% of the zone is currently wooded, composed mainly of native broadleaved woodland (42%) and a further 20% softwood forests. All the woodlands in the zone are generally far smaller than the equivalents within the main 'Farmland' zone, and are more closely integrated with the character of the landscape. The zone also contains a number of historic gardens and designed landscapes, three of which are included on the Inventory of nationally important sites. These, and a pattern of smaller estate centres and policy woodlands, contribute much to the general character of the area and the nature and distribution of woodland.
- 9.60 The area has also experienced reasonably significant recent woodland creation, with young trees and recently planted areas respectively comprising 11% and 8% of the resource.

### Key issues

- 9.61 Local issues for woodland and forestry include:
- Competition with existing land uses, particularly pastoral agriculture, potentially becoming more significant as a consequence of climate change
  - Significant flood risk in Strathgryfe
  - Locally important heathland habitats in the upper Gryffe catchment
  - Building on already good levels of functional connectivity in woodland habitat networks
  - Contributing to regeneration, development and creating successful distinctive places – particularly at the former ROF Bishopton

### Local sensitivities

- 9.62 As noted above, flooding is a significant issue for communities in the valley of the River Gryfe, both within the zone and downstream.
- 9.63 The heritage of the area, particularly in the form of historic gardens and designed landscapes, both Inventory-listed and locally designated, and the historic towns and villages, require careful consideration in the planning and delivery of new woodland planting to ensure that their heritage values and significance are conserved. However, new woodland could play an important role in helping new development fit in to the landscape.

### **Priorities for woodland management**

- Positive management of the zone's historic gardens, designed landscapes and policy woodlands to optimise their heritage, landscape and biodiversity values
- Maintaining the health and function of existing riparian networks to secure their contribution to sustainable water management and flood attenuation
- Bringing small farm woodlands back into positive management to secure landscape and biodiversity benefits, and assist in delivering farm diversification
- Gradual restructuring of small conifer blocks to improve timber quality in subsequent rotations;
- Encouraging future thinning of planted woodlands, more diverse species choice and better landscape design

### **Priorities for woodland expansion**

- Contributing to sustainable water management and flood attenuation through appropriate planting in the upper catchment of the River Gryfe to help intercept runoff and slow flow rates
- Delivering new woodland in parallel with new housing development, particularly in subsequent phases of development at ROF Bishopton
- Promoting new, smaller-scale farm woodlands

## Upland Valley

### Overview

9.64 This zone comprises five separate river valleys and upland glens, cutting through the upland and pastoral landscape of the region. The character of these valleys is united by their south-west to north-east orientation, and by their relationship to the surrounding moorlands, although each of the five valleys has distinct characteristics. The five main valleys are:

- the Levern Valley around Neilston;
- the upper Avon and Glengavel Water Valley;
- the Douglas Water Valley;
- the Duneaton Water Valley; and
- the upper Clyde Valley and its main tributaries rising in the Southern Uplands.

### Existing woodland resource

9.65 The zone is comparatively sparsely-wooded, and is dominated by large softwood forests in the valley of the Douglas Water and the upper Clyde Valley. Given the upland nature of the zone, riparian woodland is relatively sparse, with broadleaves accounting for only 17% of the zone's woodland.

### Key issues

- 9.66 Local issues for woodland and forestry include:
- Flood risk throughout the zone, but also affecting communities and assets downstream
  - Presence of major transport corridors
  - Effects of climate change on flooding and neighbouring land uses
  - Some issues with agricultural diffuse pollution

### Local sensitivities

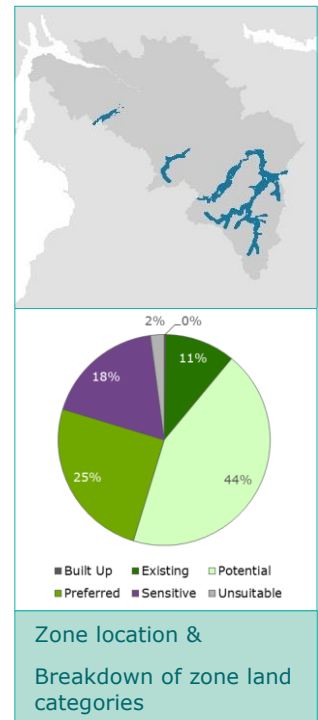
- 9.67 The upper Clyde Valley, as the key historical route through the Southern Uplands, has a rich cultural heritage ranging from very early evidence of Mesolithic hunter-gatherer communities, later prehistoric hillforts, Roman fortifications and road networks to medieval fortified farmsteads.
- 9.68 As the zone is relatively tightly drawn to take in only the core valley floors, any proposed woodland expansion in these areas should also be aligned to the priorities for the adjacent zones to optimise the benefits delivered.

### Priorities for woodland management

- Ongoing restructuring of existing softwood forests to improve separation distances from watercourses and convey a wider range of benefits
- Conservation and enhancement of existing fragmentary riparian networks

### Priorities for woodland expansion

- Identification of appropriate areas for creation of new floodplain woodland to contribute to sustainable water management and flood attenuation
- Creating new riparian networks to link with the high quality resources in the lower reaches of the Clyde and Avon valleys in particular





## Urban & Urban Greenspaces

### Overview

- 9.69 These zones are considered together for simplicity – the large urban greenspaces (with the addition of the Broad Urban Valley landscape type) are retained from the Landscape Character Assessment as simply including them within the general urban area would appear incongruous on mapping outputs, and in reflection of their unique management requirements.

### Existing woodland resource

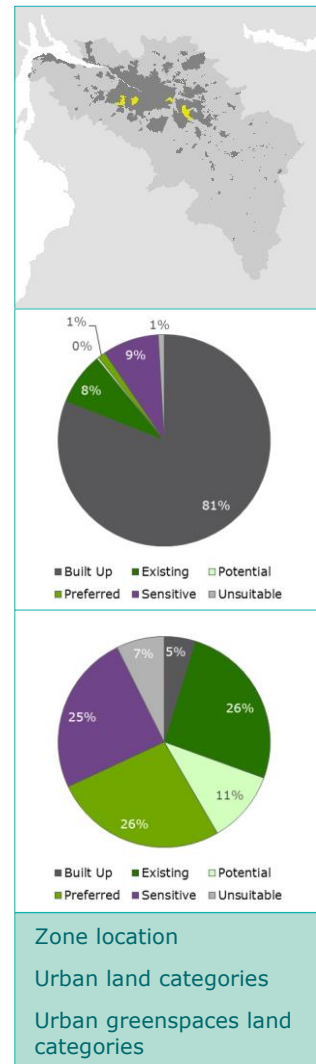
- 9.70 The urban area itself accounts for 8% of the region's woodland cover, which is impressive given that it comprises Scotland's largest conurbation. The resource is overwhelmingly broadleaved, and comprises several major river valleys cutting through the urban areas, the region's many parks and gardens and extensive amenity planting associated with development. The New Towns of Cumbernauld and East Kilbride were designed with extensive networks of woodland and greenspace, and recent environmental regeneration work across the region has delivered significant areas of expanded and enhanced woodland (e.g. as part of the Commonwealth Games legacy programme).
- 9.71 The urban greenspaces zone represents remnant estate landscapes which have become 'fossilised' as open spaces within the greater Glasgow urban area. These have become important green spaces, connected to the countryside by green corridors, and forming a contrast to the surrounding city. They comprise: Pollok Park, located entirely within the City of Glasgow, and provides recreational parkland, as well as the setting for Pollok House and the Burrell Collection. The Hurler Policies area lies between Glasgow, Paisley and Barrhead, straddling the boundaries of City of Glasgow, Renfrewshire and East Renfrewshire. This is a more fragmented area of settlement fringe, including policy woodlands, pasture and a golf course.
- 9.72 The remainder of the zone comprises the 'Broad Urban Valley' Landscape Type, and consists of Strathclyde Country Park, land around the M74 and River Clyde in Hamilton, and a large area of derelict land between Carmyle and Newton.

### Key issues

- 9.73 Local issues for woodland and forestry include:
- Increasing pressures for recreational use of urban woodlands and greenspace
  - Maintaining local authority woodlands in the face of ever-diminishing resources
  - Long term management of amenity woodland connected with transport infrastructure where ownership is not always clear
  - Remediation and reuse of vacant and derelict land
  - Supporting settlement expansion and regeneration
  - Managing the effects of anti-social behaviour, and designing new woodland with community safety as a key consideration

### Local sensitivities

- 9.74 Pollok Park Hamilton Palace policies (now largely the Strathclyde Park golf course and sports grounds), and several green spaces in Glasgow are Inventory-listed Gardens and Designed



Landscapes<sup>46</sup>, while many more areas of trees and woodland lie within Conservation Areas, therefore conserving and enhancing their nationally significant heritage features is a priority.

- 9.75 Communities often enjoy strong attachments to local environmental resources, and the region's woodlands are no exception. There are now substantial numbers of community woodlands, and WIAT schemes across the region have been highly successful in building engagement – however, any substantial change should be planned in a manner that involves local people in the process in an open and meaningful manner.
- 9.76 Flooding is a serious issue in much of the metropolitan area.

### **Priorities for woodland management**

- Building on existing successes (e.g. through WIAT) to bring under-managed publicly-owned woodlands back into positive management, delivering social and environmental benefits
- Ensuring that historic parks, gardens and street trees are covered by appropriate Conservation Management Plans so that management activities are informed by a good understanding of heritage significance
- Succession planning for parks, gardens and specimen trees to ensure long-term preservation of character and improved resilience to the effects of climate change
- Bringing under-managed urban fringe woodlands into positive management through FCS 'Woods In and Around Towns' to improve the setting of existing and proposed development
- Working positively with communities to help understand their rights under the forthcoming Community Empowerment Act, and bring forward appropriate proposals for community ownership and management of woodland assets

### **Priorities for woodland expansion**

- Reinforcing existing urban edge and river corridor woodlands to enhance their contribution to the setting of settlements
- Identifying areas of under-managed and/or under-performing areas of amenity grassland – ideally through Open Space Audits and Strategies, and locally-specific woodland policy and guidance – that could be partially converted to woodland. This can both reduce management and maintenance bills for local authorities and create attractive, flexible resources that can be managed to produce an income from biomass and other forest products.
- Continuing to identify 'stalled' development sites where woodland, including appropriate planting for biomass, can play a positive role in temporary greening solutions, contributing to green network objectives and improving local environments for communities
- Building on recent uses of woodland in bioremediation of contaminated land, and identifying suitable sites on which to deploy the approach
- Ensuring new development delivers high quality, multi-benefit woodland with secure arrangements for ongoing management and maintenance
- Promoting the potential role of new street trees and urban woodlands in contributing to climate change adaption – assisting in local micro-climate attenuation – and in helping to manage stormwater but improving infiltration and absorption
- Build on [creative proposals for retrofitting green infrastructure](#) in urban areas, where trees and woodland could make a meaningful contribution
- Expanding woodland networks in transport corridors to help address air quality issues and make an enhanced contribution to character and biodiversity

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<sup>46</sup> Kelvingrove, Victoria Park, the Botanic Gardens, and the Necropolis.

# Appendix 1

## Policy context

## Policy context

### Forestry

#### *The Scottish Forestry Strategy*

The national policy context for the Clydeplan Forestry and Woodland Strategy is set by [The Scottish Forestry Strategy \(SFS\)](#)<sup>47</sup> (2006) which outlines Scottish Ministers' aspirations for Scotland's woodland resource, highlighting key themes, issues and policies for expansion and management.

It sets out a vision which looks ahead to the second half of this century, but focuses on the key priorities until 2016. Its vision is that:

*"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".*

The policies of the SFS are reinforced by the current suite of Forestry Commission guidance in particular the mandatory **UK Forestry Standard** (UKFS), supported by the voluntary **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.

The SFS sets 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 Woods In and Around Towns** (WIAT) initiative, delivered through the Woodland Improvement Grant (WIG) and the Sustainable Management of Forests (SMF) funds in the Scottish Rural Development Programme (SRDP) 2014-2020, aims to improve and regenerate urban woodlands close to where people live and work (within 1km of settlements with a population of over 2000 people). **The Role of Scotland's National Forest Estate and Strategic Directions 2013-2016** is a strategic plan which defines how Forestry Commission Scotland, through its operating arm, Forest Enterprise Scotland, will implement the Scottish Forestry Strategy in the National Forest Estates. The strategy is complemented by a set of strategic plans – one for each of the ten forest districts. The **Scottish Lowlands Forest District Strategic Plan** covers the national forest estate in all the Clydeplan local authorities, with part of South Lanarkshire covered by the **Dumfries and Border Forest District Strategic Plan**, and part of West Dunbartonshire covered by the **Cowal and Trossachs Forest District Strategic Plan**.

#### *Rationale for Woodland Expansion*

[The Scottish Government's Rationale for Woodland Expansion](#)<sup>48</sup> sets out the Scottish Government's vision on how woodland expansion can best increase the delivery of public benefits from Scotland's land in line with the contents of the Scottish Forestry Strategy. It notes the role of woodland expansion and management in:

- Helping to tackle greenhouse gas emissions;
- Restoring lost habitats and adapting to climate change;
- Delivering ecosystem services;
- Underpinning a sustainable forest products industry;
- Supporting rural development;
- Providing community benefits; and,
- Enhancing urban areas and improving landscapes.

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<sup>47</sup> Scottish Executive, 2006. *The Scottish Forestry Strategy*. Edinburgh: Scottish Executive.

<sup>48</sup> Scottish Government, 2009. *The Scottish Government's Rationale for Woodland Expansion*. [pdf]. Available at: <http://scotland.forestry.gov.uk/images/corporate/pdf/ForestExpansion.pdf> [Accessed 01 November 2014]



It sets a target of planting a further 650,000ha of woodland, necessitating a planting rate averaging **10,000ha per year**. This has been adopted as the national target, and is a critical means of achieving Scotland's emission reduction commitments<sup>49</sup>.

#### *Policy on Control of Woodland Removal*

[The Scottish Government's Policy on the Control of Woodland Removal](#)<sup>50</sup> seeks to facilitate the desired increase in woodland area by preventing avoidable woodland loss. It establishes the need for compensatory planting where development proposals or forestry work necessitates the loss of woodland.

#### *Scotland Rural Development Programme*

The [Scotland Rural Development Programme](#) (SRDP) includes a range of options to fund many types of woodland creation and management that can be utilised to meet the specific characteristics of the region.

The Forestry Grant Scheme encourages an increase in the sustainable management of existing woodlands and the creation of well-designed woodlands and forests<sup>51</sup> in areas identified as being 'preferred' or 'potential' in forestry and woodland strategies, priority areas in the Forestry Commission Scotland-SEPA opportunity map for riparian woodland, priority areas for woodland expansion in the Cairngorms National Park, and in the Central Scotland Green Network.

The Woodland Improvement Grant (WIG) of the Forestry Grant Scheme prioritises the improvement of existing woodlands by providing grants to:

- encourage natural regeneration which will benefit priority habitats and species (through the Habitats and Species grant);
- increase species and structural diversity through the use of Lower Impact Silvicultural Systems (LISS) (through the LISS grant);
- contribute to the sustainable management of urban woodlands and improve public access (through the Woods In and Around Towns [WIAT] grant);
- support the preparation of forest and/or management plans that set out management objectives for woodlands (through grant support for Long-term Forest Plans; Forest Plan Renewals; Woodland Grazing Management Plans; WIAT Urban Woodland Management Plans; and, Deer Management Plans); and,
- improve the biodiversity, resilience, and structural diversity of even aged woodlands (through the Restructuring Regeneration grant).

The Sustainable Management of Forests (SMF) of the Forestry Grant Scheme supports a range of activities in existing woodlands that will:

- increase species and structural diversity through LISS management (through the LISS grant);
- encourage natural regeneration to expand native woodlands (through the Native Woodlands grant);
- bring native woodland and designated woodland features into active management and good ecological condition (through the Livestock Exclusion, and Woodland Grazing grants);
- support the management of rural and urban woodlands for public access (through the Public Access - Rural Woods, and Public Access - WIAT grants); and,
- control the spread of non-native invasive species (through the Grey Squirrel Control; Predator Control for Capercaillie and Black Grouse, and Reducing Deer Impact grants).

Other support measures identified in the Forestry Grant Scheme include the:

- Agroforestry grant which provides support to create small scale woodland within sheep grazing pastures;

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<sup>49</sup> See [Low Carbon Scotland: Meeting the Emissions Reduction Targets 2010-2022](#)

<sup>50</sup> Scottish Government, 2009. *The Scottish Government's Policy on Control of Woodland Removal*. [pdf]. Available at: <http://scotland.forestry.gov.uk/images/corporate/pdf/fcfc125.pdf> [Accessed 01 November 2014]

<sup>51</sup> In particular conifer, diverse conifer and broadleaved woodlands and forests.

- Tree Health grant which provides support for the restoration of forests affected by tree diseases by removing infected trees and carrying out subsequent replanting;
- Harvesting and Processing grant which supports investments in new specialised equipment to increase the local small-scale harvesting and processing capacity with the aim of bringing woodlands into positive management; promoting the economic and sustainable production of timber and timber products through processing; adding value to local economies on a non-industrial scale; providing support to facilitate and support diversification and to assist with the creation of new small enterprises and related employment;
- Forest Infrastructure grant which provides support for new access infrastructure to bring small scale, undermanaged woodlands or inaccessible woodlands back into active management to improve the economic value of forest and woodland through timber production; increase the area of woodland that is in sustainable management; and improve the environmental and social benefit of woodland.

### *Central Scotland Green Network*

Within the pan-regional policy context, the [Central Scotland Green Network](#) (CSGN) is defined as a 'national development' within the [National Planning Framework 3](#)<sup>52</sup>, encompassing 19 local authorities across Central Scotland, which aims to change the face of Central Scotland by restoring and improving the rural and urban landscape of the area. The CSGN's vision has been defined as follows:

*"By 2050, Central Scotland has been transformed into a place where the environment adds value to the economy and where people's lives are enriched by its quality".*

Over the lifespan of NPF3, CSGN and its lead organisations will focus on:

- Promoting active travel;
- Addressing vacant and derelict land; and
- Focussing action in disadvantaged areas to maximise community and health benefits.

There is substantial synergy between the aims of CSGN and those of the Clydeplan Forestry and Woodland Strategy. It is anticipated that the Strategy will be a key tool for delivering CSGN actions in the Clydeplan area.

## **Planning**

### *National Planning Framework*

The finalised version of the **National Planning Framework 3 (NPF3)**<sup>53</sup> published on the 23<sup>rd</sup> June 2014, aims to increase the rate of woodland creation to deliver 100,000 hectares of new woodland over the next 10 years. In addition, NPF3 pledges to plant 100 million trees by 2015, and to take action towards delivering the proposal in Low Carbon Scotland (RPP2) to increase the rate of peatland restoration to 22,000 hectares per year.

### *Scottish Planning Policy*

The Scottish Planning Policy (SPP) (2014) sets out the Scottish Government's national level policy on the purpose, practice and core principles of spatial planning.

Paragraph 194 of the **Scottish Planning Policy**<sup>54</sup> requires the protection and enhancement of ancient and semi-natural woodland as an important and irreplaceable resource, together with other native or long established woods, hedgerows and individual trees with high nature conservation or landscape value. It highlights the value of the Native Woodland Survey of Scotland in the production of forestry and woodland strategies.

Paragraph 201 states that *"plans should identify woodlands of high nature conservation value and include policies for protecting them and enhancing their condition and resilience to climate change"*. Paragraph 201 also states that planning authorities should prepare forestry and

<sup>52</sup> A 'national development' must be supported in all lower tier plans and strategies.

<sup>53</sup> Scottish Government, 2014. *Scotland's Third National Planning Framework*. Edinburgh: Scottish Government.

<sup>54</sup> Scottish Government, 2014. *Scottish Planning Policy*. Edinburgh: Scottish Government.

woodland strategies as supplementary guidance to inform the development of forestry and woodland in their area, including the expansion of woodland of a range of types to provide multiple benefits. In addition, paragraph 201 highlights that Scottish Government advice on planning for forestry and woodland is set out in *The Right Tree in the Right Place*.

The SPP acknowledges the role that woodlands can play in climate change mitigation and adaptation. Paragraph 220 states that green infrastructure should be protected and enhanced to provide multiple benefits.

### **Forestry and Planning**

#### *The Right Tree in the Right Place – Planning for Forestry and Woodlands*

**The Right Tree in the Right Place – Planning for Forestry and Woodlands**<sup>55</sup> sets the current context for the production of indicative forestry strategies. New forestry and woodland strategies have been published for Edinburgh and the Lothians, Stirling and Clackmannanshire, Fife, Argyll and Bute, Dumfries and Galloway, and Ayrshire and Arran.

#### *Getting the best from our land: A Land Use Strategy for Scotland*

**Getting the best from our land: A Land Use Strategy for Scotland**<sup>56</sup> sets the strategic framework for bringing together proposals for optimising the potential of Scotland's land resources.

It establishes the vision and objectives for land-based economic activity in Scotland and sets out ten 'principles for sustainable land use', which should be taken into account in the development of the Clydeplan Forestry and Woodland Strategy. These are:

- a) Opportunities for land use to deliver multiple benefits should be encouraged.
- b) Regulation should continue to protect essential public interests whilst placing as light a burden on businesses as is consistent with achieving its purpose. Incentives should be efficient and cost-effective.
- c) Where land is highly suitable for a primary use (for example food production, flood management, water catchment management and carbon storage) this value should be recognised in decision-making.
- d) Land use decisions should be informed by an understanding of the functioning of the ecosystems which they affect in order to maintain the benefits the ecosystem services they provide.
- e) Landscape change should be managed positively and sympathetically, considering the implications of change at a scale appropriate to the landscape in question, given that all Scotland's landscapes are important to our sense of identity and to our individual and social well-being.
- f) Land-use decisions should be informed by an understanding of the opportunities and threats brought about by the changing climate. Greenhouse gas emissions associated with land use should be reduced and land should continue to contribute to delivering climate change adaptation and mitigation objectives.
- g) Where land has ceased to fulfil a useful function because it is derelict or vacant, this represents a significant loss of economic potential and amenity for the community concerned. It should be a priority to examine options for restoring all such land to economic, social or environmentally productive uses.
- h) Outdoor recreation opportunities and public access to land should be encouraged, along with the provision of accessible green space close to where people live, given their importance to health and well-being.
- i) People should have opportunities to contribute to debates and decisions about land use and management decisions which affect their lives and their future.

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<sup>55</sup> Scottish Government, 2010. *The Right Tree in the Right Place – Planning for Forestry and Woodlands*. [pdf] Edinburgh: Forestry Commission Scotland. Available at: [http://www.forestry.gov.uk/pdf/fcfc129.pdf/\\$FILE/fcfc129.pdf](http://www.forestry.gov.uk/pdf/fcfc129.pdf/$FILE/fcfc129.pdf) [Accessed 01 April 2014]

<sup>56</sup> Scottish Government, 2011. *Getting the Best from our Land: A Land Use Strategy for Scotland*. Edinburgh: Scottish Government.

- j) Opportunities to broaden our understanding of the links between land use and daily living should be encouraged.

## Climate Change

### *The Climate Change (Scotland) Act 2009*

**The Climate Change (Scotland) Act 2009**<sup>57</sup> establishes the legal framework for emissions reductions by 2050. The Act sets targets for the reduction in carbon emissions of 42% by 2020 and 80% by 2050 (1990 baseline). From 2020, Scotland will need to reduce its emissions by at least 3% per year.

While the Strategy 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 particular importance are issues of improving the sustainability of timber transport and forest operations reliant on the use of heavy machinery.

### *Scottish Climate Change Adaptation Programme*

**Climate Ready Scotland: Scottish Climate Change Adaptation Programme**<sup>58</sup> sets out Scottish Ministers' objectives, policies and proposals to tackle the climate change impacts identified for Scotland in the UK Climate Risk Assessment as required by section 53 of the Climate Change (Scotland) Act 2009.

The overarching aim of the Programme is "*to increase the resilience of Scotland's people, environment, and economy to the impacts of a changing climate*". The Programme is structured around three themes:

- Climate Ready Natural Environment Theme (forestry and woodlands are discussed in detail under this theme);
- Climate Ready Buildings and Infrastructure Networks Theme; and,
- Climate Ready Society Theme.

The Programme advocates a move towards planned adaptation in woodland creation and management, as well-structured and diverse forests can better withstand change and extreme weather events. It also highlights the benefits of agroforestry to create diverse, productive, profitable and sustainable land-use systems.

The Programme lists several objectives relating to climate change adaptation within the forestry sector including:

- Embedding climate change adaptation considerations and potential responses such as habitat networks and green networks, into wider land use planning decisions through the use of Forestry and Woodland Strategies (N2-11).
- Improving the condition and connectivity of native woodlands, promoting natural regeneration as a means of increasing resilience to change, and taking other steps to increase adaptive capacity in woodlands (N2-12).
- Encouraging the consideration of climate change impacts (and how they will be addressed) in Forest Plans, and supporting this with grants and regulations so as to ensure that forest plans support ecosystems and habitat resilience and allow resilience-building measures to be trialled by forest managers (N2-23).
- Promoting the UK Forestry Standard and Climate Change guidelines (N2-10).
- Improving understanding of how more resilient forests can be developed and identifying adaptation strategies for all types of woodlands (N1-4).

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<sup>57</sup> Climate Change (Scotland) Act 2009.

<sup>58</sup> Scottish Government, 2014. *Climate Ready Scotland: Scottish Climate Change Adaptation Programme*. Edinburgh: Scottish Government.



## Natural resources

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

**The Flood Risk Management (Scotland) Act 2009**<sup>59</sup> 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.

The Flood Risk Management Act guides the way that land use interacts with flood risk. This may, for example, influence the provision of woodland within river catchments in order to intercept rainfall and slow run-off into rivers, or lead to the restoration of functional floodplains where these have been lost in the past.

### *River Basin Management Planning*

**The River Basin Management Plan for the Scotland River Basin District 2009-2015**<sup>60</sup> provides detailed information on the environmental quality of rivers, lochs and seas and sets out what needs to be achieved for all water bodies in the area to reach 'good ecological status'.

Eight **Area Management Plans** (AMPs) have been prepared as supplementary documents to the River Basin Management Plan for the Scotland River Basin District 2009-2011, of which the Clyde Area Management Plan is relevant to the Clydeplan area. The **Clyde Area Management Plan**<sup>61</sup> describes how the water environment will be managed over the next six years, with the current plan covering the period from 2010 to 2015.

### *The Scottish Soil Framework*

**The Scottish Soil Framework 2009**<sup>62</sup> aims to raise awareness of the services soils provide to society and the pressures they encounter. Scotland's soil resource is in generally good health, but is under pressure from soil carbon loss and the effects of climate change. Ensuring forestry planning and practice protects key soil carbon resources and maximises woodlands potential to lock up carbon in soils is a key aspect of the Strategy.

**Scotland's National Peatland Plan: Working for our future**<sup>63</sup> sets out a strategic framework to protect, manage, and where required, restore peatlands. The plan states that peatlands are ecosystems, with a peat deposit exceeding 50cm, which may currently support vegetation that is peat-forming, may not, or may lack vegetation entirely. The plan recognises that carbon stock can be boosted by increasing Scotland's woodland cover outwith peatland areas. Bog woodland is recognised as one of the rarest peatland habitats in Scotland.

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<sup>59</sup> Flood Risk Management (Scotland) Act 2009.

<sup>60</sup> Scottish Government, 2009. *The River Basin Management Plan for the Scotland River Basin District 2009-2015*. Edinburgh: Scottish Government.

<sup>61</sup> SEPA, 2010. *Clyde Area Management Plan 2010-2015* [pdf]. Available at: [http://www.sepa.org.uk/water/river\\_basin\\_planning/area\\_advisory\\_groups/docid=98cc845e-038d-45d6-a9ad-51ffa5df35b0&version=-1](http://www.sepa.org.uk/water/river_basin_planning/area_advisory_groups/docid=98cc845e-038d-45d6-a9ad-51ffa5df35b0&version=-1) [Accessed 01 November 2014]

<sup>62</sup> Scottish Government, 2009. *The Scottish Soil Framework*. Edinburgh: Scottish Government.

<sup>63</sup> Scottish Natural Heritage, 2014. *Scotland's National Peatland Plan: Working for our future: A consultation paper* [pdf]. Available at: <http://www.snh.gov.uk/docs/A1306595.pdf> [Accessed 15 October 2014]

## Appendix 2

### Mapping methodology

## Context

Scottish Government advice 'The Right Tree in the Right Place' 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.

It is clear from The Right Tree in the Right Place 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

The Right Tree in the Right Place 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, the Clydeplan Forestry and Woodland Strategy and its attendant Strategic Environmental Assessment focus on regionally significant sensitivities and environmental effects. Figure 4.1 was therefore compiled using GIS datasets that depicted the most important environmental features of the region. In line with The Right Tree in the Right Place, 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 . These were discussed and agreed with the project Steering Group and moved through a number of iterations.

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

- **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.
- **Built-up**: larger settlements – 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.

**Table A2.1 List of Datasets**

Category	GIS Dataset
<b>Sensitive</b>	Local Nature Reserves (SNH, 2014) Wetlands of International Importance (RAMSAR) (SNH, 2012) Special Areas of Conservation (SNH, 2014) Special Protection Areas (SNH, 2014) Sites of Special Scientific Interest (SNH, 2014) National Nature Reserves (SNH, 2014) Sites of Importance for Nature Conservation (Clydeplan Local Authorities, 2014/2015) Scottish Wildlife Trust Reserves (SWT, 2014) Scheduled Monuments (HS, 2005) World Heritage Sites (HS, 2013) Battlefields (HS, 2013) Inventory of Gardens and Designed Landscapes (HS, 2014) Conservation Areas (HS, 2014) National Scenic Areas – none in the Clydeplan area Carbon and Peatland Class 1, 2, X (SNH, 2015) Land Capability for Agriculture Class 1, 2, 3.1 (JHI, 2011) (no class 1 in the Clydeplan area) Wild Land Areas (SNH, 2014)
<b>Potential</b>	Special (local) Landscape Areas (Clydeplan Local Authorities, 2014/2015) IHN Wetland Hotspot (SNH, 2014) IHN Neutral Grassland Hotspot (SNH, 2014) Carbon and Peatland Class 3 (SNH, 2015) Vacant and Derelict Land (Clydeplan Local Authorities, 2014/2015) Slamannan Plateau SPA supporting habitat: Bean geese (SNH, 2014)
<b>Preferred</b>	No strategic constraints
<b>Unsuitable</b>	Land Capability for Forestry 'unsuitable' OS MasterMap water bodies
<b>Built-up</b>	LDP land allocations (Clydeplan Local Authorities, 2014/2015)
<b>Existing</b>	National Forest Inventory Scotland (Forestry Commission Scotland, 2013)

## 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 Strategy. 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 was assembled into a unified 'category' layer using the relevant operations in ArcGIS. The seven category layers were then joined using a series of 'union' processes, 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. 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.

### 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 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.

## Mapping woodland types

The Right Tree in the Right Place 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;
- Softwood forests;
- Energy forests; and,
- Urban woodlands.

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.

## Appendix 3

### Interpreting the maps

## Interpreting the maps

This section of the FWS provides a brief overview of what the detailed maps in accompanying the spatial guidance depict, and what this means for woodland management and expansion 'on the ground'.

### Land Categorisation

Figure 4.1 depicts the broad potential of the region's environment to accommodate new woodland of all types.

**Table A3.1: Interpreting the IFS map**

Key	Interpretation
<b>Built-up</b>	Local Development Plan Settlements: opportunities for trees and woodland generally too small to be mapped at a strategic scale
<b>Existing</b>	Existing woodland of all types (derived from FCS National Forest Inventory)
<b>Preferred</b>	Land with no strategic constraint to woodland expansion. Detailed assessment may reveal site-specific issues
<b>Potential</b>	Land with at least one strategic constraint to new woodland, but with some flexibility to accommodate expansion where this responds appropriately to local conditions
<b>Sensitive</b>	Land with significant constraints to woodland expansion. The type and scale of acceptable new woodland is likely to be very limited
<b>Unsuitable</b>	Land physically unsuitable for the growth and management of trees

### Softwood

Figure 4.2 depicts areas of land currently managed for softwood timber production and the 'preferred' areas where new planting for timber production could be accommodated, subject to site-specific constraints and relevant design considerations.

**Table A3.2: Interpreting the Softwoods map**

Key	Interpretation
<b>Preferred land</b>	Land with no strategic constraint to woodland expansion (source: IFS dataset - Preferred)
<b>Existing softwood forest</b>	Existing planted softwood forests; may be approaching or at maturity – opportunities for restructuring (source: National Forestry Inventory – Conifer)
<b>Recently-established</b>	Areas recently planted; woodland likely to be in place for at least 20 years (source: NFI – Young Trees)
<b>Felled</b>	Areas of softwood forest recently felled; likely to be restocked (source: NFI- Felled)
<b>New planting</b>	Area recently converted from some other land use to woodland (source: NFI – Ground Prepared for Planting)

### Energy

Figure 4.3 depicts the existing producers of biomass products, potential larger-scale producers of waste wood products that could be used in energy generation – and also potential users of biomass heat and power.

**Table A3.3: Interpreting the Energy Woodlands map**

KEY	Interpretation
<b>Managing existing woodland</b>	Woodland of all types that could contribute to the supply of material for biomass, either as a result of planned management operations or through bringing woodland into positive management (source: IFS dataset – Existing woodland)
<b>Contributing to temporary greening of vacant and derelict land</b>	Land identified as either vacant or derelict could support planting and management of woodland to contribute to biomass supply (source: LDP land allocations – vacant and derelict land)

<b>Managing and expanding of farm woodlands</b>	Areas of better quality agricultural land where the principal contribution to biomass will be through management and smaller-scale expansion of farm woodland (source: Land Capability for Agriculture classes $\geq 3.2$ and $\leq 4.1$ )
<b>Wider range of opportunities</b>	Land of lower agricultural capability that offers greater flexibility to accommodate new woodland to contribute to biomass supply, including short rotation forestry and coppice where site-specific constraints allow (source: Land Capability for Agriculture classes $> 4.1$ and $< 7$ )
<b>Built-up area</b>	Cities, towns and villages likely to sustain facilities that could make use of biomass, principally for heating (e.g. schools, hospitals and other public buildings) (source: IFS dataset – Built-up)

### Mixed

Figure 4.4 depicts the areas in which establishing new mixed woodland has the potential to contribute to a range of objectives including rural diversification, enhancing cultural heritage and supporting resilience to climate change.

**Table A3.4: Interpreting the Mixed Woodlands map**

KEY	Interpretation
<b>Supporting agriculture on prime land</b>	Prime quality agricultural land (Class 1-3.1): identified as 'sensitive' in the land classification. Appropriate woodland expansion in these areas will focus on providing shelter for crops and livestock, reducing erosion and contributing to management of diffuse pollution. It will generally be small scale and focused on native broadleaves (source: Land Capability for Agriculture Classes 1, 2, 3.1)
<b>Supporting resilience and diversification</b>	Agricultural land in a wider range of uses where woodland could support existing practice, or contribute to farm diversification (source: Land Capability for Agriculture classes $\geq 3.2$ and $\leq 4.1$ )
<b>Wider range of opportunities</b>	Land of lower capability where the potential for new woodland with both broadleaved and conifer components could contribute to landscape character, climate change objectives and provision of high quality timber (source: Land Capability for Agriculture classes $> 4.1$ and $< 7$ )
<b>Conserving and enhancing historic gardens and designed landscapes</b>	Gardens and designed landscapes with a significant woodland element (source: Historic Landscape Assessment – Designed landscapes, Inventory-listed Gardens and Designed Landscapes, and local gardens and designed landscapes)
<b>Supporting development priorities</b>	Land allocated as housing or industry in current and emerging Local Development Plans that could incorporate mixed woodland (source: LDP land allocations – housing, industry)

### Native

Figure 4.5 depicts the areas in which planting of new native woodland can deliver the widest range of benefits.

**Table A3.5: Interpreting the Native Woodlands map**

KEY	Interpretation
<b>Native woodland</b>	Woodland where canopy cover is composed mainly ( $> 50\%$ ) of native species (source: Native Woodland Survey of Scotland – native woodland)
<b>Nearly-native woodland</b>	Woodland where canopy cover is composed of between 40% and 50% native species. These are woodlands that could have the potential to be converted into native woodland by gradual alteration of species mix (source: Native Woodland Survey of Scotland – nearly native woodland)
<b>Plantations on Ancient Woodland Sites (PAWS)</b>	Planted woodlands identified as being in locations with 'natural' woodland cover prior to the mid-19th century. Subject to detailed site assessment, these areas could have the potential for restoration to native woodland (source: Native Woodland Survey of Scotland – PAWS)
<b>Search area for new riparian woodland</b>	Areas adjacent to watercourses where new planting could contribute to networks of riparian woodland habitat. Detailed site assessment is required to understand the potential interactions with flooding and existing habitats. Described as an area of search to reinforce the idea that not all areas will be suitable and may require detailed analysis and assessment (Source: Fluvial Flood Risk dataset with buffer)



<b>Opportunities to contribute to woodland habitat networks</b>	Areas within the 'moderate' and 'high' dispersal network; areas identified by the SNH Integrated Habitat Network model (for broadleaved and yew woodland). This is land in which native woodland expansion could contribute to wider habitat connectivity, supporting resilience to climate change (source: INH Woodland Network)
<b>Other woodland</b>	Areas of woodland not classed as native (IFS dataset – Existing)
<b>Built-up area</b>	LDP settlements (source: IFS dataset – Built-up)

## Urban

Figure 4.6 depicts the potential for new woodland in urban environments.

**Table A3.6: Interpreting the Urban Woodlands Map**

<b>KEY</b>	<b>Interpretation</b>
<b>Contributing to the setting of new housing developments</b>	Land allocated for housing in current and emerging development plans (source: LDP land allocations – housing)
<b>Managing existing woodland</b>	Existing woodland in urban areas (source: IFS dataset – Existing woodland)
<b>Opportunities to contribute to woodland habitat networks</b>	Areas within the 'moderate' and 'high' dispersal network; areas identified by the SNH Integrated Habitat Network model (for broadleaved and yew woodland). This is land in which woodland expansion could contribute to wider habitat connectivity, supporting resilience to climate change (source: INH Woodland Network)
<b>Contributing to enhanced greenspaces</b>	Greenspaces identified in the Greenspace Scotland Map whose primary use is amenity (business, transport, residential), other functional greenspaces, public parks and gardens, and riparian routes (source: Greenspace Scotland dataset)
<b>Contributing to temporary greening of vacant and derelict land</b>	Land identified as either vacant or derelict could support planting and management of woodland to contribute to biomass supply (source: LDP land allocations – vacant and derelict land)



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