



# FIFE

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FORESTRY & WOODLAND  
STRATEGY 2013—18

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Acknowledgements

A partnership approach has been key to the production of the Fife Forestry and Woodland Strategy, which was developed through joint working with a range of organisations. Fife Council wishes to thank Forestry Commission Scotland, the Lothians and Fife Green Network Partnership, Scottish Natural Heritage and the Fife Coast and Countryside Trust for their assistance in developing the Strategy. Consultation has been integral to the writing of the Strategy to ensure that proposals for the future of forestry and woodlands in Fife are both realistic and implementable. The contributions of local community groups, industry, landowners and managers are also gratefully acknowledged.

Purpose of the Strategy

The Fife Forestry and Woodland Strategy will be used by Fife Council and stakeholder organisations to advance national and regional objectives, to bring forward investment, to support sustainable economic growth and to deliver community and environmental benefits. It aims to direct new planting to the most appropriate locations, whilst maximising the potential benefits of forests and woodlands. The Strategy will also:

- Promote the creation of high quality, multi-objective woodland
- Provide guidance to woodland managers and developers on the location and type of woodland management and creation schemes that will be supported in Fife
- Inform the design and management of woodland in Fife
- Assist in protecting and enhancing valuable woodland
- Assist in guiding plan makers on the strategic and spatial priorities for forestry and woodland in Fife
- Guide the development of Regional Priorities under the Scottish Rural Development Programme
- Guide the assessment of applications for grant support for woodland creation and management
- Provide support for local authority development planning and management decisions including proposals for woodland removal and creation
- Provide guidance on the range of social, environmental and economic benefits that the partners expect forestry and woodland to deliver to Fife's communities

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# 1 Introduction

## A STRATEGY FOR FORESTRY AND WOODLANDS IN FIFE

Fife's trees, forests and woodlands provide a wide range of benefits for the local economy, communities and the environment. They make an important contribution to the character and biodiversity of the region and to quality of life. They also provide valuable 'ecosystem services' such as climate regulation, filtering of pollution, flood prevention and carbon sequestration. The Fife Forestry and Woodland Strategy replaces the Fife Indicative Forestry Strategy 2006, and will guide the future expansion and restructuring of woodlands in Fife to maximise these benefits. It will also inform future woodland management and planting proposals.

Currently, woodland  
of all types occupies  
**11% of the  
land area of Fife<sup>1</sup>**



Fife's forest and woodland resource should contribute to sustainable rural development, support national policy and aspirations for sustainable economic growth.

The Strategy addresses the wide diversity of interests and opportunities relating to forestry and woodlands in Fife. It provides a coordinated plan with key priorities for action and a spatial framework to help deliver Scottish Government aspiration to deliver 10,000 hectares of new woodland per year for the next ten years.

An overarching aim of the Strategy is to ensure that Fife's existing and future forest and woodland resource contributes positively to sustainable rural development and supports national policy and aspirations for sustainable economic growth. Forest industries are an important component of the Fife economy, such as timber production and biomass, and have significant potential to bring income and employment in an increasingly competitive economic environment. A key role of the Strategy is to promote partnerships and the exchange of information, in order to better understand and take advantage of the growth opportunities of existing and new markets.

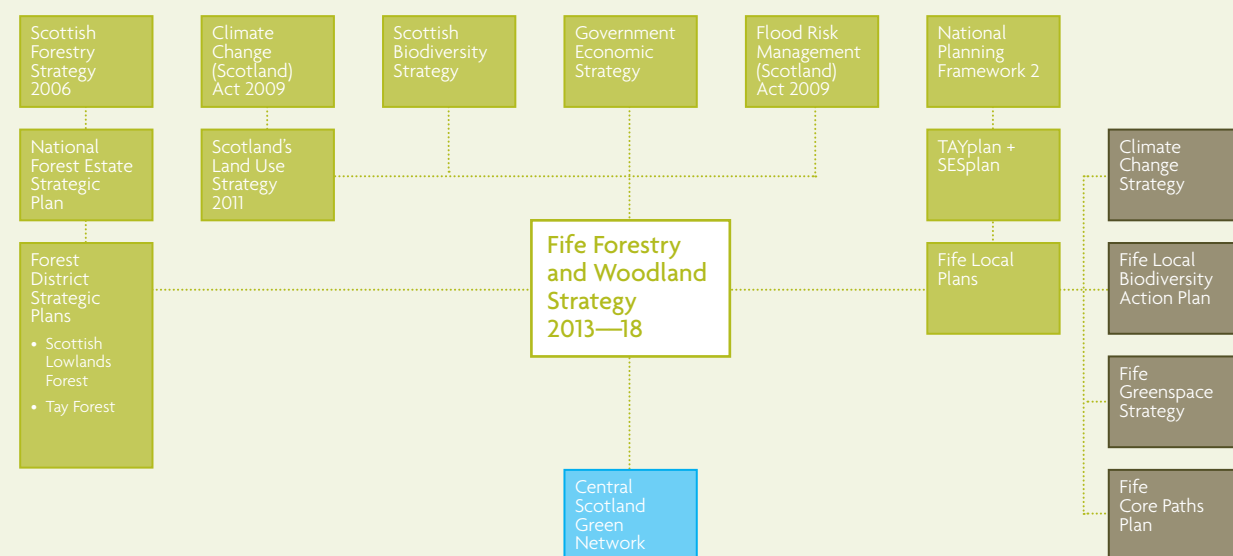
### Policy framework

The preparation of the Fife Forestry and Woodland Strategy was guided by the Scottish Government policy in the Scottish Forestry Strategy (SFS) 2006 and 'The Right Tree in the Right Place – Planning for Forestry and Woodlands' 2010. The SFS changed the emphasis of forestry policy by setting out a long term framework to enhance and expand Scottish forests so they become an integral part of Scotland's culture, economy and environment. It strongly supports the economic role of forests, including the generation of business and employment opportunities through new markets, products and process technologies.

The planning system is a key mechanism for delivering the aspirations of the SFS (see Figure 1), and the National Planning Framework 2 (NPF2) reinforces the need to proactively plan for woodland expansion. It identifies the main issues and drivers of change along with priorities and opportunities. NPF2 also notes that "a substantial increase in woodland cover will improve landscape quality, biodiversity and amenity and help to absorb CO<sub>2</sub>." Scottish Planning Policy (SPP) recognises that forests and woodlands are vitally important to the economic and social well-being of Scotland's communities, helping adapt to and mitigate climate change, providing an abundance of recreational opportunities, supplying forest and timber products and also generating a source of renewable energy.

<sup>1</sup> National Forest Inventory, Forestry Commission, 2011



Figure 1: Fife Forestry and Woodland Strategy policy context<sup>2</sup>

<sup>2</sup> The policies of the SFS are supported by other Forestry Commission guidance, including the UK Forestry Standard, the UK Woodland Assurance Standard and the Policy on the Control of Woodland Removal. Note: the Fife Local Plans will be replaced with a single Local Development Plan.

The SPP also supports the development of green networks “where this will add value to the provision, protection, enhancement and connectivity of open space and habitats in the city regions and in and around other towns and cities”. The Central Scotland Green Network (CSGN) is a national development within the NPF2, which aims to make “a significant contribution to Scotland’s sustainable economic development” and change the face of Central Scotland by restoring and transforming the landscape. The CSGN provides an important opportunity to build high quality, multi-objective woodland management and expansion into the planning policy framework, as national developments must be taken into account in the relevant Strategic and Local Development Plans.

The Strategic Development Plan for Edinburgh and Southeast Scotland (SESplan) promotes an increase in woodland planting to increase competitiveness, enhance biodiversity and create more attractive, healthy places to live. The Plan also includes a policy supporting the CSGN, which includes the south of Fife, and highlights the role of Forestry and Woodland Strategies in contributing to its delivery. TAYplan includes the north of Fife and provides policy to shape better places through the provision of green infrastructure, neighbourhoods greening, and the integration of greenspace and water networks.

The emphasis of current Scottish Government policy makes the delivery of multiple benefits from all woodland, regardless of origin, a necessity.

### Definitions

Woodland is a habitat of diverse structure, containing a wide range of tree, scrub and ground flora. The definition of woodland in United Kingdom forestry statistics is land under stands of trees with a canopy cover of at least 20% (or having the potential to achieve this), including integral open space and felled areas that are awaiting restocking. The Strategy uses the term ‘woodland’ throughout to refer to all areas of land over 0.25 hectares in area where trees are growing.

The terms ‘woodlands’ and ‘forests’ are used interchangeably by many people, although ‘forests’ are often perceived to comprise larger scale, commercially planted areas of trees. Where clear differentiation is required, ‘softwood forest’ or ‘forest block’ is used to denote areas planted with introduced conifers, generally for timber production.

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. The emphasis of current Scottish Government policy makes the delivery of multiple benefits from all woodland, regardless of origin, a necessity.



# 2 The Vision for Fife

## VISION FOR THE FUTURE OF FIFE’S FORESTS AND WOODLANDS

The Strategy sets out the following 40 year vision for the future development of forests and woodlands in the region to the year 2053.

**By 2053**, Fife will be known for its high quality, multi-objective network of woodlands that enhance the landscape, are appropriate to local conditions and have a diverse mixture of species and habitats. This well-managed resource will support jobs, attract visitors, provide recreational opportunities and an environment in which education for all ages can thrive.

Key to the success of Fife’s economy for the next 40 years is the ability to continue enhancing Fife’s special qualities whilst utilising its infrastructure, natural environment, people skills and resources to support sustainable economic growth. Timber production is important to the rural economy and can be delivered in a way that also promotes biodiversity, local amenity, community health and well-being and helps mitigation of and adaptation to climate change.

It is now widely recognised that these apparently non-productive values have a critical economic role by providing a landscape that attracts tourists, supports stronger communities and provides opportunity for inward investment. The Strategy seeks to maximise many of these benefits, whilst acknowledging the role of other land interests such as farming. It will assist in directing and supporting the investment of time, knowledge, finance and skills in Fife’s woodlands.

### Aims and objectives

The Vision for the Strategy will be achieved through the following aims:

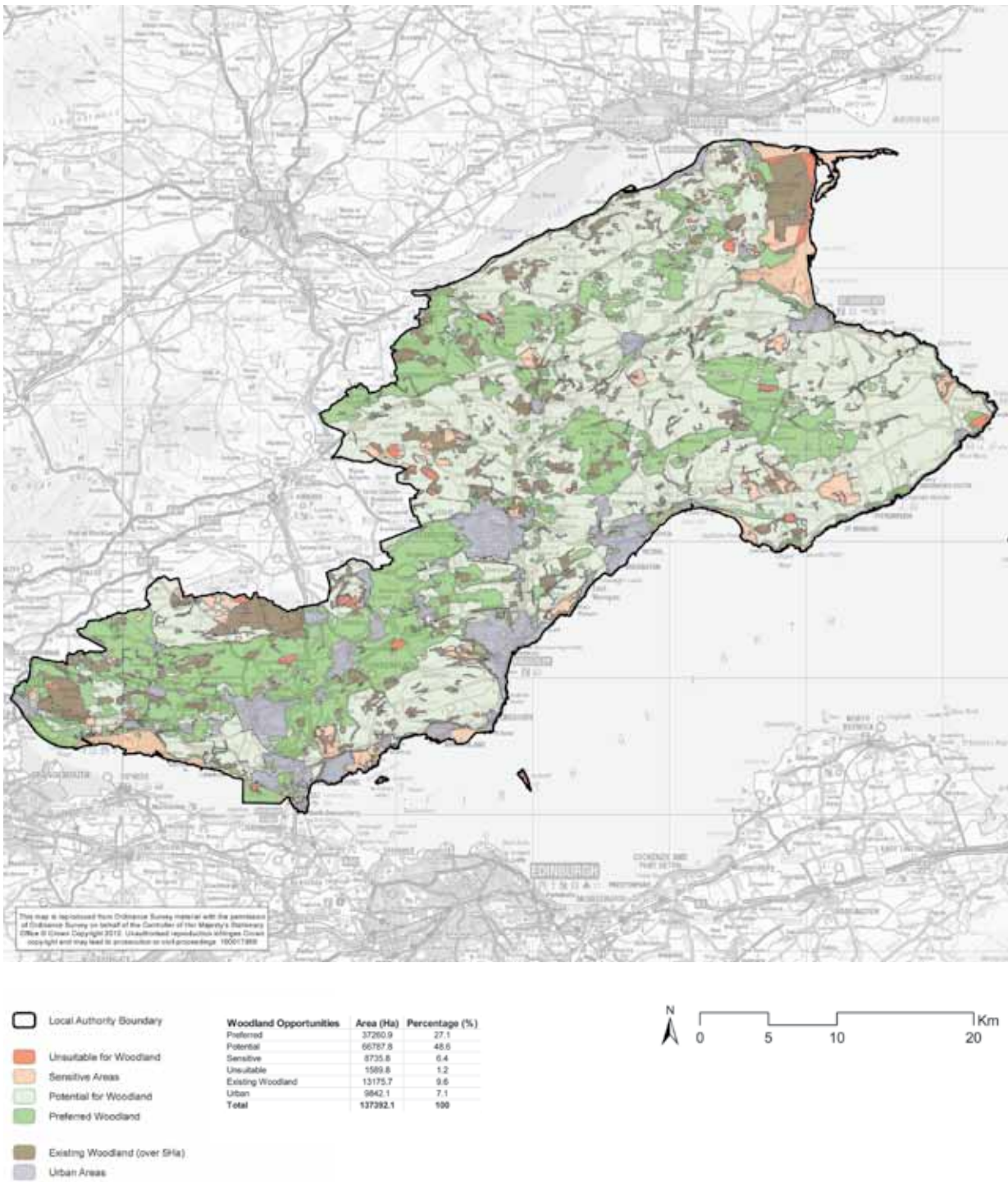
- Expanding the woodland resource
- Maximising Fife’s forest and woodland economy
- Responding to climate change
- Protecting and enhancing environmental quality
- Woodlands for people

These aims are developed in the following sections of the Strategy and each is supported by more detailed objectives and key priorities for their delivery. The aims, objectives and priorities are brought together into a reference table at the end of the Strategy for ease and to provide a framework for informing more detailed action plans and monitoring progress.

Image © Forestry Commission Scotland

The Woodland Creation Opportunities Map (see Figure 2) provides an indication of where opportunities for new planting are likely to be in Fife. Fife has the capacity to make a significant contribution to meeting the national woodland expansion target and also to add value to the local economy, enhance the quality of the environment and to play an important role in mitigating and adapting to the effects of climate change. The strategy examines these opportunities in more depth.

Figure 2: Woodland creation opportunities map





# 3 Fife's Woodland Resource

The diversity of woodland types found throughout Fife reflects its diverse natural and industrial landscapes



## HISTORIC WOODLAND COVERAGE AND PLANTING

Fife was once covered by natural woodland. However, the decline of Scottish woodlands was famously commented upon by Dr Samuel Johnson, who said that “a tree in Scotland is as rare as a horse in Venice” after travelling through Fife in his journey through Scotland in the 18th century. The reasons for the decline were a combination of clearance for agriculture, exploitation of timber and over-grazing by domestic animals<sup>3</sup>. Timber also contributed to the construction of large structures such as the Great Michael, which was built in 1504 by order of King James IV of Scotland using wood from Fife. The chronicler Lindsay of Pitscottie wrote that “all the woods of Fife” went into the boat’s construction, suggesting that by this period there was not much woodland left.

**Woodlands of all types occupy 11% of the Fife land area, a total of 16,508 hectares of woodland in Fife**

**The total woodland area is accounted for by 1,140 individual woodlands (<2ha), with a mean size of 13.6 hectares. The largest woodland site is 1,149 hectares in size**

**An average of 41 hectares has been planted per year since 1924**

**Fife has approximately 190 hectares of ancient woodland**

**There are 3,108 hectares of existing native / nearly native woodland which equates to 19% of total woodland**

**There are 102 hectares of Plantations on Ancient Woodland Sites (PAWS), which are ancient woodlands that have been subsequently planted but still retain characteristics of primary woodlands**

<sup>3</sup> Smout, T.C., People and Woods in Scotland: A History, 2002.

Note: The National Forest Inventory (NFI) and the Native Woodland Survey of Scotland (NWSS), both completed in 2012, provide detailed information on Fife's woodlands.



Historic Woodland Coverage and Planting

The 18th century saw an upsurge in interest in planting woodland on the traditional estates in Fife, for example Wemyss, Balbirnie, Blairadam, Elie, Falkland, Melville and Raith estates. The Blairadam estate was reported to have a single tree when it was purchased in 1733. By 1792 there were 1,144 acres of woodlands. These early estate planting initiatives combined planting for financial gain, landscape enhancement and agricultural improvement. The growth of industry in the 19th century, including the coalfields around Kirkcaldy and the west of Fife, ship building at Methil and Rosyth, textiles and gun powder production in the Vale of Leven, and the production of linoleum and flax helped shape the distribution of woodland. Trade with Baltic countries included timber imports.

At the start of the 20th century woodland management was at a low ebb in Scotland. Woodland covered less than 4% of Scotland’s land area and was fragmented into many small and isolated blocks. The First World War changed everything. Lloyd George said in 1919 that Britain “had nearly lost the war for want of timber than of anything else”. In 1919 the Forestry Commission was created with the primary aim of preventing such a strategic weakness from arising again. The forests at Ladybank, Devilla, Tentsmuir, and Pitmedden were planted at this time.

Since the 1940s the area of woodland in Fife has increased mainly as a result of large scale afforestation. The 20th century has seen the diversification of industry in many of the main towns but the legacy of the coalfields remains in many parts of the lowland hills and valleys. Most of the former colliery sites have been reclaimed, with woodland planting being an integral part of the original land reclamation scheme for those sites. The development of Glenrothes New Town with its large scale structural and amenity tree planting, and the use of trees and woodland in urban areas have increased awareness of the benefits of woodland in the landscape.

Since the mid-1980s there has been considerable improvement in the sensitivity with which new woodlands have been established, with the thrust of expansion towards a much broader set of objectives, including landscape, biodiversity, recreation, rural development and community involvement. Planting by the private sector, for example on the Lomond Hills, has increased Fife’s woodland cover today.

The 20th century has seen the diversification of industry in many of the main towns but the legacy of the coalfields remains in many parts of the lowland hills and valleys.

### Blairadam Forest

Blairadam Forest is a 2584ha mixed forest close to the former mining town of Keltie. The Adam family planted their estate of Blair Adam as a designed landscape in the 18th and early 19th centuries. The Forestry Commission bought the estate in 1925. Much of the existing timber was felled during the two World Wars and the forest was also devastated during the 1968 gale, leading to dense replanting of spruce in the 1970s. Today Forestry Commission Scotland manages the forest for recreation, conservation and timber.



Image © Forestry Commission Scotland

Woodland Cover, Type and Size

Fife has a lower proportion of woodland cover<sup>4</sup> than other Scottish regions. However, forests and forest industries play an important and growing economic role in Fife. In 2006, woodlands of all types occupied 11% of the Fife land area compared with the Scottish figure of 17.8%. This lower figure is understandable given the high quality of agricultural land in Fife. Current land-use is heavily dominated by agriculture, with areas of urban settlement and industry more concentrated in the south. Agriculture remains the dominant land use, covering 75% of land area and the built up area accounts for 11% of total land surface<sup>5</sup>. Fife has long been one of the major agricultural production areas in Scotland.

The diversity of woodland types found throughout Fife reflects its diverse natural and industrial landscapes. There are approximately 16,508 hectares of woodland in Fife, and the total woodland area is accounted for by 1,140 individual woodlands greater than 2 hectares in size, with a mean size of 13.6 hectares<sup>6</sup>. The largest woodland site is 1149 hectares in size. About 38% of the total woodland area comprises conifers, 36% is broadleaf, 25% is mixed broadleaf and conifer and less than 1% is scrub<sup>7</sup>. In general, the woodland cover, type and size reflect local soil conditions, location and management practices, and the fact that it is secondary to farming.

The range of tree species found in Fife is more diverse than in western parts of Scotland due to the climate and soil quality, which enables a wider range to be grown. Figure 3 illustrates the area in hectares of different woodland types across Fife. The Native Woodland Survey of Scotland (NWSS) statistical summary information on composition, structure, condition and management practices in Fife’s woodlands is now available. The NWSS is a comprehensive field-based survey of all of Scotland’s native woodlands (ie woods with more than 50% native species in the canopy)<sup>8</sup>.

In recent years most of the new planting in Fife has been farm woodlands and amenity planting rather than commercial woodlands. The average private plantation has tended to be less than 10 hectares in size. These trends have been led by the availability of woodland grants from Forestry Commission Scotland and include the Woodland Grant Scheme, Scottish Forestry Grant Scheme and Woodlands in and Around Towns. The trends for new planting in Fife in the last 80 years have been modest, and a significant increase in woodland planting is required to work towards meeting the Scottish Governments targets.

Distribution of woodland

The distribution of woodland in Fife varies significantly, set within a very fragmented landscape, and ranges from small copses and hedgerows to large commercial plantations. The hills are typically open and exposed with semi-natural land cover. There are extensive areas of hillside plantations, shelterbelts, roadside planting and policies associated with large estates. Woodland cover on the lower hills consists mainly of small plantations, shelterbelts, parkland and policy planting and hedgerow trees. Some of these features are mature or over mature and many are falling into neglect.

In the open farmland of eastern Fife, the high quality agricultural land means that woodland occupies odd corners and copses, providing shelter, sport and habitat, landscape enhancement and a level of woodland productivity. Fife has approximately 190<sup>9</sup> hectares of ancient woodland, which has had a continuity of woodland cover since the 1750 maps and is likely to be the modified remnants of Scotland’s original forest cover.

<sup>4</sup> Source: National Inventory of Woodland and Trees – Fife, Forestry Commission, 2000. <sup>5</sup> SEPA SOE Report, 2006. <sup>6</sup> Source: National Forest Inventory, Forestry Commission, 2011. <sup>7</sup> Source: Scottish Semi-natural Woodland Inventory. <sup>8</sup> The NWSS has not been completed for Fife at the time of writing but the Strategy will be updated to reflect any new information when it becomes available. <sup>9</sup> Fife Local Biodiversity Action Plan. <sup>10</sup> Source: Scottish Semi-natural Woodland Inventory.

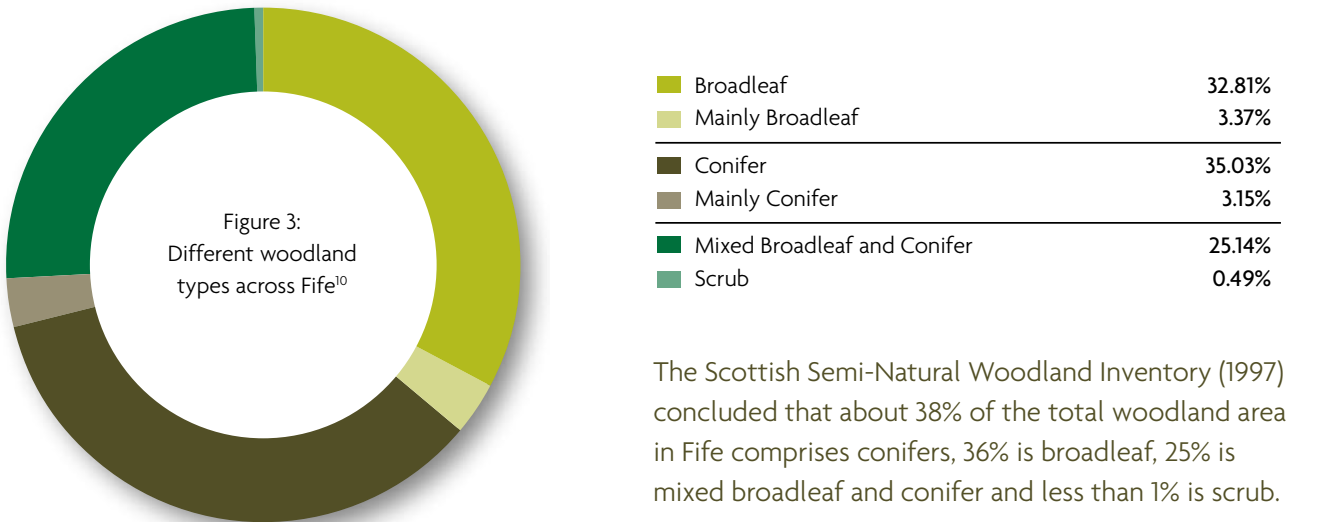
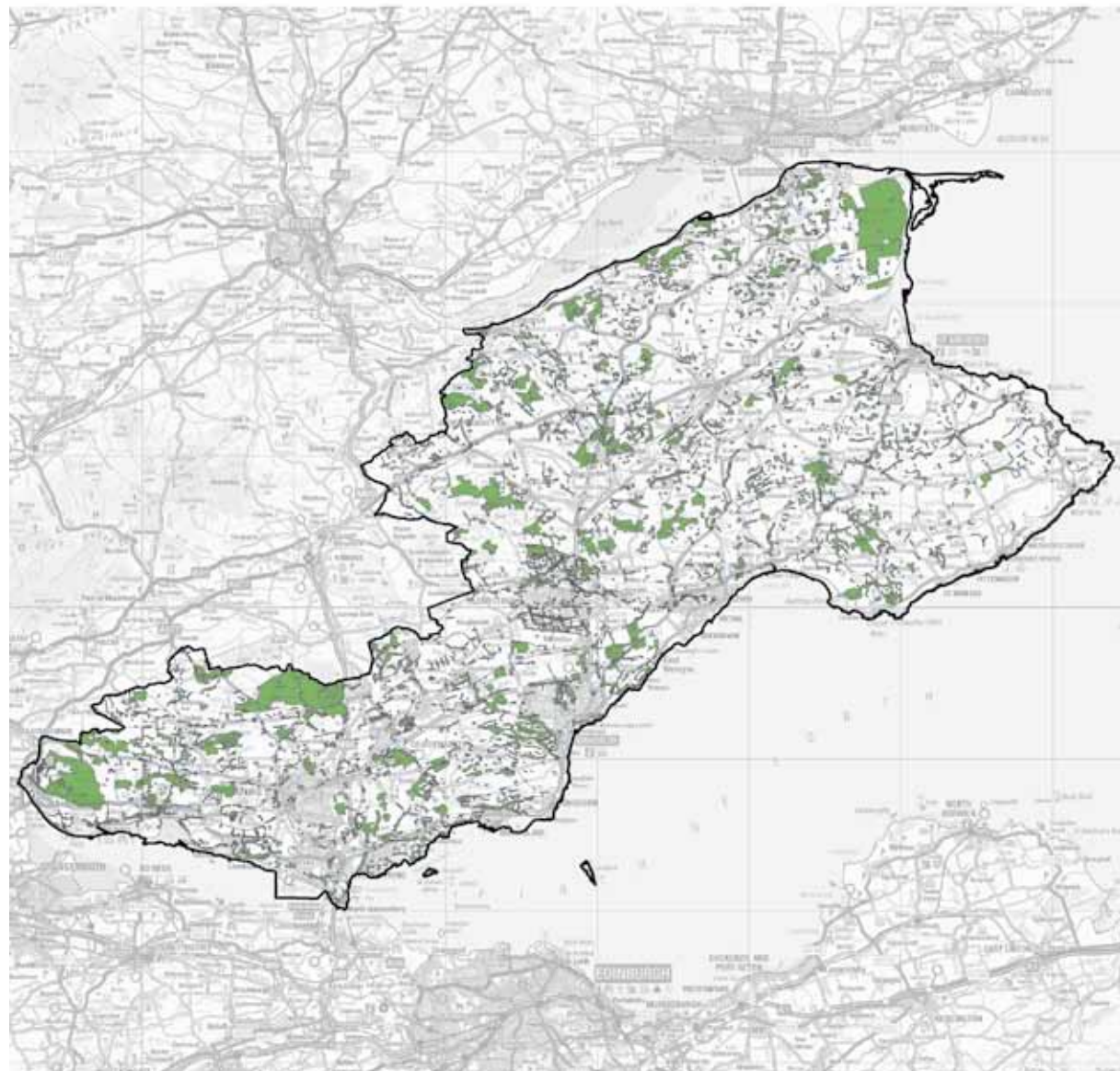




Figure 4: Fife's woodland cover



Local Authority Boundary  
Woodland

N  
0 5 10 20 Km



### Distribution of woodland (continued)

There are also 243 hectares of long-established semi-natural woodland that has developed between 1750 and 1860. This includes the den woodlands, which are widespread in Fife and consist of narrow strips of woodland in valleys. The distinctive gorges or valleys (the dens) on the north, east and south east coasts have extensive broadleaved woodlands. Other significant areas of woodland exist along lowland river basins (River Leven and Ore) and the loch basins (Fitty, Gelly, Ore and Kilconquhar).

The coastal areas in the east and south of Fife have little woodland cover, apart from policy planting and shelter-belts around the large houses and Designed Landscapes, or on the steeper slopes above burns. An exception is Tentsmuir Forest, which was planted on the old dune systems on the north east coast. There are also approximately 102 hectares of Plantations on Ancient Woodland Sites (PAWS), which are ancient woodlands that have been subsequently planted but still retain characteristics of primary woodlands.

### Ownership and management

The Forestry Commission is the largest owner of forests in the UK and most of what they own is in Scotland. Of the total woodland cover in Fife, approximately 28% is in FCS ownership and the remaining 72% is in private and local authority ownership<sup>11</sup>. The largest woodlands managed by FCS are the five major softwood forests at Devilla, Blairadam, Pitmedden, Ladybank and Tentsmuir, originally

planted for the production of commercial timber. Management has now evolved to achieve multiple woodland benefits including wildlife conservation and public access provision, which is particularly important regionally given the emphasis on intensive farming across much of Fife. Other woodlands tend to be small, particularly those that are privately owned. The large scale woodlands are mainly softwood plantations, whilst the smaller woodlands are often mixed woodlands with some significant areas of predominantly broadleaf woods.

The area of private and local authority owned woodlands includes over 1,000 hectares of scrub woodland (over 8% of the total broadleaved woodland in Fife) which is of little commercial value but is high in conservation and amenity value<sup>12</sup>. Privately owned woodlands are found on private estates and farms in more rural areas away from the towns. Many of the former industrial sites are becoming woodland by default due to the colonisation of the land through the natural regeneration of native and other tree species. Some former mining / quarrying sites have already been converted to woodland as a condition of their restoration bond. Several woodlands in Fife belong to charitable trusts. The Woodland Trust has significant holdings at Glenrothes, Keil's Den and Inzievar.

<sup>11</sup> Possible Opportunities for Future Forest Development in Scotland, 2006, Forestry Commission. <sup>12</sup> Integrated Forestry Strategy.

Community initiatives in Fife have shown that woodlands can be **effectively managed** by local groups.

### Woods around Glenrothes

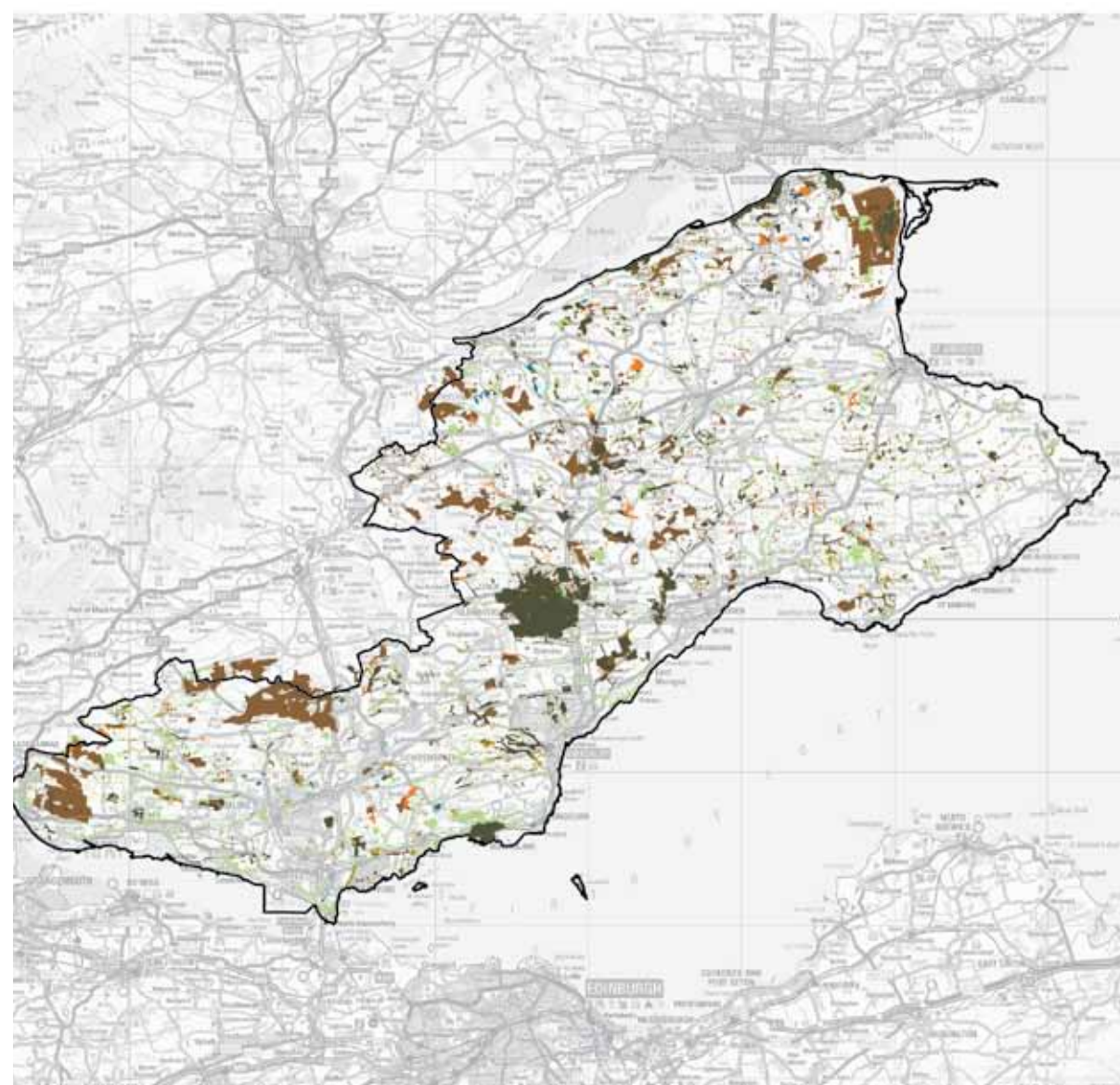
Glenrothes New Town is unusual as it was designed to provide an urban environment with extensive areas of open space and woodland. Glenrothes woods are mostly owned by the Woodland Trust, having been donated by the Glenrothes Development Corporation when it was disbanded. On the town edge there are some excellent accessible woodlands, including Formonthills to the north of the town. Balbirnie Park to the east offers walks and recreation in mature woodlands.

### Craighall Den, East Fife

The Den is a broad-leaved, mixed and yew woodland and designated SSSI located to the south of the village of Ceres. There have been a number of recent projects involving interpretation, access, education and biodiversity enhancements. Children from Ceres primary school visit the woods regularly and Ceres Nursery use the site extensively as part of the 'Forest Nursery Initiative'.



Figure 5: Existing woodland types



Local Authority Boundary

**Tree Type**

- Broadleaf
- Mainly Broadleaf
- Mixed Broadleaf and Conifer
- Conifer
- Mainly Conifer
- Scrub

Extracted from the Semi Natural Ancient Woodland Inventory

N 0 5 10 20 Km

Other publicly-managed woods include those owned by Fife Council located around the major towns of Kirkcaldy and Dunfermline. They are municipal woods and parkland, formal in character and managed with long established public benefit-oriented objectives. There are also Council woods at the Lochore Meadows Country Park and Valleyfield, delivering a wide range of community benefits.

The Fife Coast and Countryside Trust (FCCT) manages more than 70 countryside sites on behalf of and in partnership with Fife Council. Many of these sites are woodland or sites that contain woodland areas, including Townhill Wood and a number of woodlands in and around Lochore Meadows Country Park. The aim is to develop and maintain management plans for these sites that allow local communities to enjoy them while also protecting existing wildlife and creating habitat networks where possible.

Community woodlands have made a contribution to the greening of Fife and four areas, Blair Oaks (Comrie/ Oakley); Harran Hill, (Lochore Meadows); Dunnikier, (Kirkcaldy) and Magus Muir, (Strathkinness) were Fife's contribution to the Millennium Forest, a national initiative to restore native woodlands and their links with communities. Fife Council has also undertaken work at Valleyfields Woodlands in partnership with the community.

A number of community initiatives in Fife have demonstrated that woodlands can be effectively managed by local groups. West Fife Woodlands is a community group dedicated to the preservation, enhancement and accessibility of West Fife's woodland areas. The group is currently creating a 9 mile path linking Valleyfield Woodland Park with Devilla Forest and making improvements to Balgownie Woods (owned by Fife Council) with the British Trust for Conservation Volunteers. These types of projects help to foster local ownership and involvement and can have social as well as economic and employment benefits.

The Falkland Centre for Stewardship has been taking a lead in the development of a non-profit partnership called "Woodlands on the Edge", with the support of Forestry Commission Scotland, Fife Council and local groups. The Centre is adapting old ideas of stewardship to the needs of our modern, fast changing world. An organic farm on Falkland Estate is starting to produce affordable food, and the Estate is upgrading miles of paths, providing schools education initiatives and forestry apprentice schemes, planting thousands of trees and considering plans for allotments and woodfuel production. The Centre is a partner in the Living Lomonds Landscape project, which has recently secured a successful first round pass from the Heritage Lottery Fund with additional funding from FCS and Fife Council to allow the partnership to commence the 'development phase' of the project.

Image © Forestry Commission Scotland



## Barns Farm Woodlands

Barns Farm has a range of woodlands of individual character lying between Dalgety Bay and Aberdour. The land, owned by Shell Property Co. Ltd, has three main enterprises - industry, farm and woodland. A range of work was undertaken using the WIAT funding grant, including improving access, restoration of ancient woodland and signage.

Image © Andrew R Black



## Falkland Centre for Stewardship

The Falkland Centre for Stewardship is run by the Falkland Stewardship Trust, a small charity based at the heart of the Estate. Together with a range of partners, volunteers and Friends, the centre runs a number of events throughout the year and manages One Planet Food, which is an initiative to encourage a sustainable, healthy and inclusive food culture. Activities include: woodland learning, craft workshops, community arts, children's activities, volunteering and skill share sessions.



Fife’s forest industries

Biomass and woodfuel

There are an increasing number of bioenergy plants being developed throughout Fife (see Figure 6 below). Bioenergy is now seen as a tried and tested and cost effective manner of supplying heat and power to high industrial energy users, including Tullis Russell, Scottish Power, Diageo and Quaker Oats. Reports commissioned by Fife Council <sup>13 14</sup> highlight that an increase in biomass plants will put pressure on the limited supply of fuel currently available locally.

The increasing number and scale of biomass plants will require substantial volumes of wood fuels, notably the Tullis Russell and Longannet developments. If the local market cannot supply the volume of fuel required it is likely to increase the price paid and the distance the fuel has to travel. This would impact on both the economic and environmental sustainability of future biomass projects.

Biomass is best used on a small to medium scale principally to provide heat. Large-scale electricity generation (greater than 10MW and not utilising the heat potential) using biomass from virgin Scottish grown timber is likely to distort the market and displace existing important downstream timber users (though plants using imported timber and/or recycled material are exempt from this).

An economic opportunity for Fife is directly associated with supplying woodfuel to existing, emerging and future bioenergy plants. Other regions, notably Angus, and specialist companies, such as Scottish Woodfuels and local co-operatives, are gearing up to serve this growing market. Fife’s forests and woodlands can play an important role in this activity, as there is strong policy fit in relation to the region’s focus on renewable energy and the proximity to sizeable existing bioenergy developments presents a competitive advantage.

A recent report found that there are 1,878 hectares of woodland / community woodland with the potential to yield approximately 15,000 Tonnes / year from active management for use as sawlogs and 7,500 Tonnes / year as biomass<sup>15</sup>. In addition, the Council owns around 650 hectares of agricultural land and additional grazing land, which may be suitable for short rotation forestry / coppice.

A recent survey of forest owners and forest management contractors<sup>16</sup> presented a range of challenges affecting the development of the woodfuel activities in Fife. A key finding was that the cost of harvesting firewood is too high, the sale price too low, and the firewood sale price is limited by the price of alternative fuels. The relatively high returns on alternative crops on better sites and the perceived uncertain nature of the woodfuel market in the long term, as well as the possible effects of short rotation coppice on tree roots on field drains, were also an issue. A number of possible solutions to encourage woodland owners to plant and harvest woodfuels were presented in the report. A major issue is the lack of awareness and knowledge between local woodland owners and contractors and the biomass operators.

A study prepared for the Confederation of Forest Industries<sup>17</sup> found that the demand for wood fibre is forecast to increase dramatically in Britain in the next 15 years. However, there are imbalances between the potential availability and forecast demand, which could result in significant supply and price pressures which will have major consequences for existing wood processing industries and the future of the biomass energy sector in the UK. Businesses in Fife that currently supply woodfuel to local markets include Wemyss Fife Firewood, Markinch Firewood Supplies, Tayfield Estate, Branching Out in Glenrothes, Kelly Tree Care in Auchtermuchty, Shiresmill Woodlands in Dunfermline, J Forestry Firewood & Fencing in Kelty, Acorn Oak Kindling in Cupar and Logsinfife in Thornton.

<sup>13</sup> Growing Fife’s Future – The Renewable Energy Opportunity, Fife Economic Partnership, 2010. <sup>14</sup> Reid, G., Biomass in Fife  
<sup>15</sup> Piper, C.J., Community Development in Fife Regeneration Areas  
<sup>16</sup> Private landowners’ engagement with woodfuel production: a scoping study in Fife, Forest Research, 2009  
<sup>17</sup> Wood Fibre Availability and Demand in Britain 2007 to 2025

Figure 6: Fife biomass projects

Overview of Biomass Projects						
	Investment £m	Capacity MW	CO <sub>2</sub> Reduction Tonnes	Planning Permission	Projected date of operation	Wood Source
Tullis Russell	200	50	396,000	Yes	2012	Yes
Diageo	65	5.5	56,000	Yes	2011	No
Longannet	100	21	102,000	Yes	2011	Yes
Landfill Gas	1.75	3.5	283,000	N/A	2008	No
EPR	18	9.8	48,000	N/A	2000	Yes
Quaker Oats	6	2	1,800	No	2012	No

Figure 7: Fife’s key woodland industries

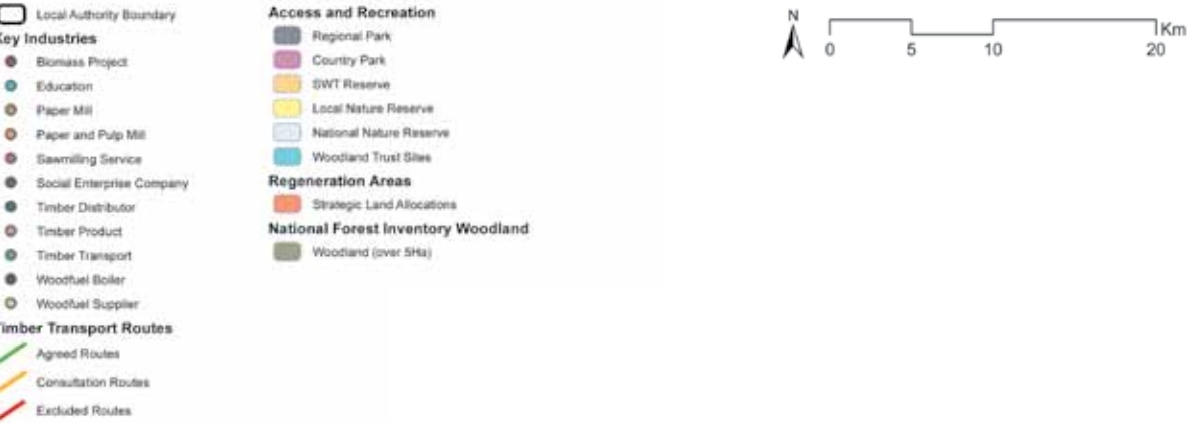
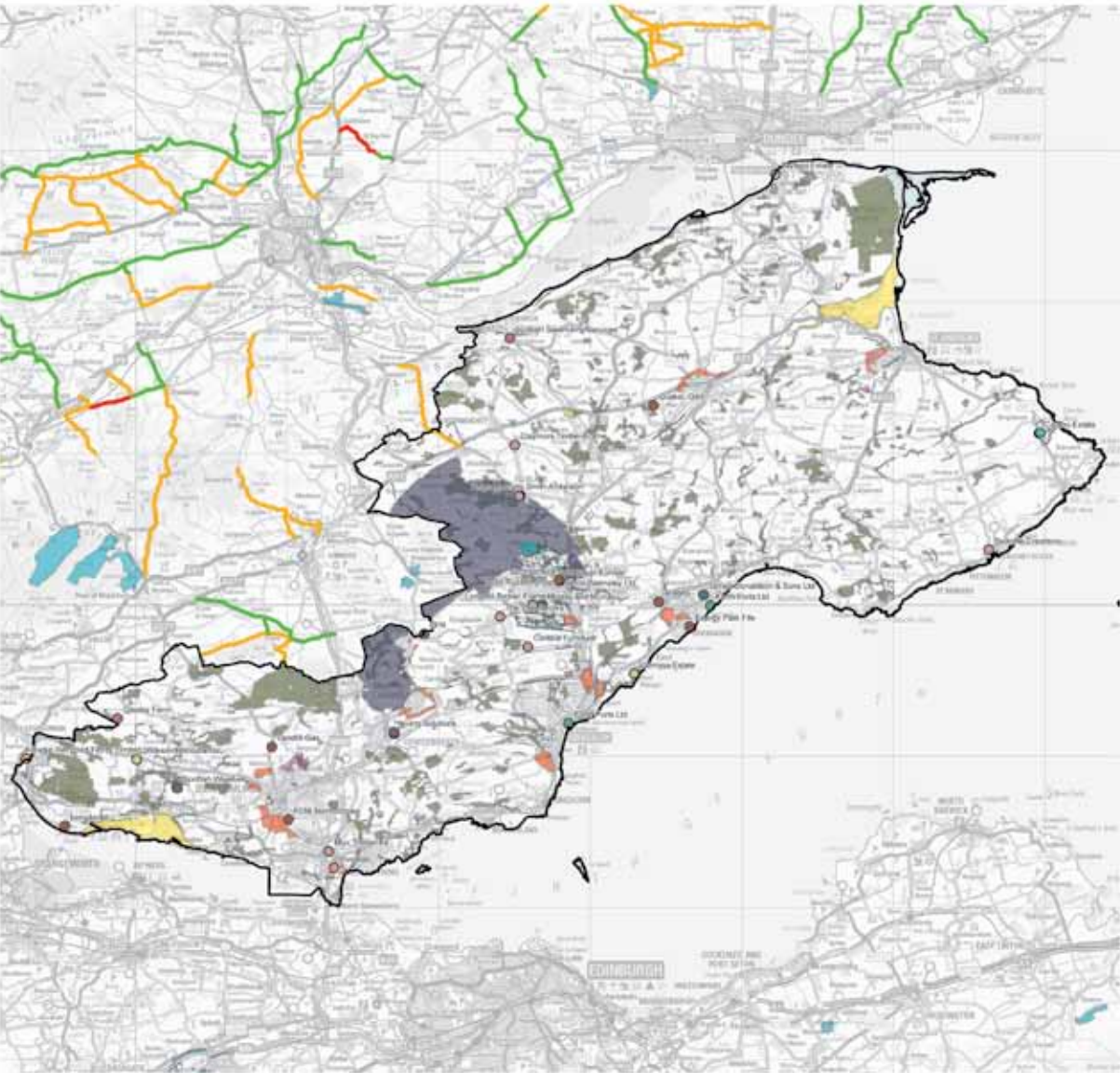




Image © Forestry Commission Scotland

### Softwood

By 2016 the supply of softwood in Scotland will exceed 8.4 million m<sup>3</sup> - a doubling of the existing harvest. This places Scottish forests in a unique position as Britain imports 90% of its paper, almost 80% of its lumber and a third of its wood-based panel consumption. Currently the annual cost of these imports is more than £6 billion.

There are clear opportunities for import substitution and additional job creation with minimal displacement.

It is essential that the industry takes the appropriate steps now to ensure that this opportunity is maximised. Recent studies suggest that imports could be reduced by over one fifth, with Scotland benefiting from a transfer of £1.5 billion and 3,000 additional jobs. Softwood products include construction (largely timber kit homes), fencing, landscape, decking, pallets and cladding. There is a range of uses for the by-products, including chips, sawdust, barks and shavings.

Increasing the level of softwood planting in Fife can help support the development of new indigenous businesses to supply Fife businesses that currently import softwood, including Muir Timber Kit (which now includes Thomas

Mitchell Homes) in Inverkeithing, Lomond Timber Frame in Glenrothes and Claymore Timber Frame in Cupar. Other major customers include builders' merchants, home and DIY centres and local trade companies including fencing, decking and garden companies.

### Papermills

Tullis Russell, one of Fife's largest businesses and Scotland's largest paper manufacturer, is head-quartered in Glenrothes and now directly employs more than 1,000 people nationally, of whom around 600 are local, and has an annual turnover approaching £150m. In addition to Tullis Russell, Fourstones Paper Mill Company purchased the mothballed Fettykil Mill in Leslie in 2010. Manufacturing recommenced at Fettykil Mill later in 2010, and the company now employs around 95 people. Fourstones use locally sourced waste paper as a raw material to manufacture recycled paper products for the tissue and packaging markets.

Another key papermill employer, Curtis Fine Paper, closed their Guardbridge operation in 2008 with a loss of around 200 local jobs. Smith Anderson have been manufacturing in Scotland since 1859, operating from their Falkland site, producing over 50 million paper

**Fife's forests and woodlands can plan an important role in supplying wood fuel and have a competitive advantage from their proximity to bioenergy plants.**

Image © Jeff Wadell Forestry Commission Scotland

### Wemyss-Fife Firewood

Wemyss Castle Estate has sold firewood and Christmas trees from their 1000 acre woodland to the local market for more than 60 years. In 2010 a substantial investment was made in firewood preparation and handling equipment to better meet the demands of the local market. The estate has an abundant supply of hard and softwood trees all within 3 miles of the timber yard. High quality air dried firewood (hard and softwood logs) are sold in bulk or bagged.



Image © Forestry Commission Scotland

bags per week. The company has recently announced the relocation of the factory to a new state-of-the-art production facility in Kirkcaldy.

Kilbagie, about a mile north of Kincardine, is noted for its paper works, being the base of Kilbagie Recycled Fibres Limited. Run by the LPC Group, the waste paper recycling plant has the capacity to recycle 50,000 tonnes of waste paper into cleansed pulp every year. The majority of the pulp is used by the group's Leicester-based paper mill, but there are plans to develop a new state-of-the-art mill on the site.

Modern paper mills use large amounts of energy, water, and wood pulp in complex series of processes. At present most wood pulp is imported into Scotland as there are no pulp mills. As there are only four remaining paper mills it is unlikely that wood pulp will be sourced locally, or nationally. The scope for supply chain linkages with the paper mill sector is through the development of new biomass plants.

### Timber manufacturing, processing and distribution

Timber manufacturing, processing and distribution is a downstream opportunity, where locally sourced wood can present local companies with quality and cost effective wood to service their demand in terms of key woodland products. Developing 'added-value' products from wood is where sustainable and sizeable economic opportunities exist. Ensuring local firms can source good quality and cost effective raw wood materials enables them to manufacture valued products. There is scope for woodlands in Fife to supply local timber manufacture and processing companies, as well as firms outside

Fife, with a focus on provenance and sustainability. The financial returns could be high if more added value products could be manufactured by existing firms or by new Fife businesses.

Over the last century, the Fife based firm of James Donaldson has grown to become one of the UK's leading independent processors, manufacturers and distributors of timber and engineered timber products. From one branch in Fife, Donaldson's has become a nationwide group with 23 operating branches across the UK as well as a Head Office in Markinch. Donaldson's now has an annual turnover approaching £100m. Sawmilling services is another key business in Fife and includes Scottish Sawmilling Services in Cupar, Living Solutions in Cowdenbeath, Scottish Wood in Dunfermline and Gibsley Farm in Saline.

### Woodland management

Although the vast majority of planting, harvesting and forestry management activities are contracted out to a select number of major forest management companies such as Tillhill and Scottish Woodlands, there is scope for Fife businesses to become more active in the management of local forests. This could be achieved through sub-contracting arrangements with the larger forestry management companies and forest owners, or by developing local capacity to manage woodlands in Fife. This could include skills development initiatives in partnership with local colleges and notably the Scottish LANTRA programme.

Image © Forestry Commission Scotland

### Scottish Wood

Scottish Wood is a not for profit social enterprise based in Inzievar. Local timber is used in the hardwood sawmill creating jobs and training opportunities. Funds raised through the sale of timber are covenanted to Dynamic Woods to be used for local environmental and community projects. It aims to bring together local communities, landowners and local businesses to regenerate a thriving woodland culture, maximising the potential from the broadleaf woodlands.





Building key relationships with the Forestry Commission Scotland and Fife Council as well as individual estates is a key first step in ensuring local firms have the opportunity to tender for future management contracts. As well as traditional private companies there is scope for social enterprise and co-operative models of business, for example DWP Harvesting, a consortium co-operative of 36 forests in the north of Scotland or Scottish Woodlands, an employee owned co-operative.

#### Woodland tourism

Fife's economic strategy identifies renewable energy and tourism as the key industries to secure Fife's economic future. Outdoor recreation generates a significant spend and boost to the local economy. In 2009 Fife hosted 13% of the outdoor trips made in Scotland, an increase from 7% of visits in 2006<sup>18</sup>. The 22.7 million visitors to the outdoors in Fife in 2009 generated their share of the £3.2 billion that outdoor recreation is worth to the Scottish economy.

Attractive places attract visitors, and Fife's woodlands have an important role in growing the region's tourism industry. The SNH Scottish Recreation Survey 2010 provides a ranking of Scotland's Local Authorities as destinations for outdoor trips, concluding that Fife was the most visited place in 2010 (10% of all visits in Scotland were to Fife). As well as amenity and landscape value, Fife's woodlands are utilised for country sports including shooting and stalking, which can be profitable ventures and can cater for both domestic and international demand. There is also potential to view iconic species such as red squirrels, ospreys and sea eagles in or near to Fife's existing woodlands.

Fife's tourism market was recently valued at £184million<sup>19</sup>. The potential value of woodlands and forests to the tourism industry is difficult to quantify, but could be considered to contribute approximately £30million in woodland related tourism expenditure, which arises from the influence of woodlands on the countryside areas that tourists choose to visit. These figures are based on research carried out by Forestry Commission<sup>20</sup>. The potential value to the tourism market is currently under exploited, but more detailed assessment is required to explore options for development.

<sup>18</sup> Scottish Recreation Survey: Annual Summary Report 2009, SNH

<sup>19</sup> Tourism in Kingdom of Fife, Visitscotland, 2008

<sup>20</sup> Forests' Role in Tourism, Forestry Commission, 2003

The 22.7 million visitors to the outdoors in Fife in 2009 generated their share of the **£3.2 billion** that outdoor recreation is worth to the Scottish economy.

### Cambo Estate

Some private estates, including Cambo Estate, run children's events, after school clubs, forest schools, earth education and holiday clubs. Cambo Estate runs a variety of events throughout the year, including a snowdrop festival to celebrate the National Collection of Snowdrops (over 350 varieties). There is a tea room and they have a large variety of bulbs and plants for sale.

### Tentsmuir Forest

Tentsmuir Forest is located to the north of St Andrews. Covering some 50 square miles (130 km<sup>2</sup>), it was originally moorland before acquisition by the Forestry Commission in the 1920s. There are many waymarked walks and cycle routes. The forest abuts Tentsmuir National Nature Reserve and the site is managed by Forestry Commission Scotland, Scottish Natural Heritage and the Fife Coast and Countryside Trust.

#### Forestry and farming

Anecdotal evidence on current forestry practices has emerged during consultation on the Strategy with a range of large estate owners, smaller woodland owners and stakeholder organisations. In recent decades land ownership in Fife has changed resulting in a transferral of land from large estates to smaller owner occupied farms. Where larger estates remain, however, forestry activity is usually secondary to the higher value of land involved in farming and significant planting of new woodland has been a result of the owner's personal interest in forestry and the benefit to the environment rather than the perceived financial gain.

The abundance of prime quality agricultural land in Fife has led to landowners producing crops on higher quality land and woodland on lower quality land in the form of shelter belts and small areas of mixed woodland. However, land management practices have taken a more integrated approach to conservation, farming, landscape and access. The importance of biodiversity within a farmed landscape is recognised. Linked, wildlife-rich habitats interspersed amongst farmed areas provide a more attractive and varied landscape.

Forty years ago, the larger estates had teams of foresters to manage the estate woodlands and saw mills to process the timber, which was exported. Today, the scale of operations is small and estate based, with most forestry work out-sourced to contractors. Some estates have successfully operated joint forestry management arrangements to share labour and machinery costs. The smaller farms do not have the resources, equipment and skills to undertake woodland management operations and therefore need to use other parties to provide services.

A report on potential biomass production in Fife found that there is a lack of professional forestry management in many small woodlands due to high cost of management operations, resulting in an abundance of under-managed woodlands. An interesting development on the larger estates is the move to install biomass boilers, using timber removed from estate woodlands, to provide power to dry grain and heat estate properties. Substantial savings on estate running costs can be made, which makes the new technology attractive.

Image © Forestry Commission Scotland





# 4 Fife's Timber Economy

Forestry contributes around **2.5 % of the UK economy**, and directly employs around **30,000 people in full-time jobs**.<sup>21</sup>

## INVESTMENT AND OPPORTUNITY

The economic value and opportunity for investment in forests in Scotland is increasingly recognised and is well supported through national, regional and local economic development and planning strategies. Fife's forest and woodland resource offers significant potential to attract investment, secure additional income and support employment. Forestry and woodlands are an important part of Fife's economy and make significant contribution to sustainable economic growth and social and environmental activity with positive benefits in terms of support to agriculture and rural land management, tourism, community wellbeing and place quality.

Research was undertaken for the Strategy into the contribution of the forestry sector to the Fife economy, including a comparative assessment of the regional and national picture over time. The economic analysis utilised the FCS definition for the forestry sector (Figure 9) and data on Fife based businesses from the Scottish Annual Business Statistics. This was to provide a comparative assessment of how the region compares to the national picture. It is based on a time series assessment and provides a useful insight into the changes regionally and nationally over the previous decade.

The following section is not a detailed audit of the forestry sector and therefore does not provide details of the in and outflows of timber at the regional and national level. Further work would be required to undertake a detailed economic impact assessment to establish a baseline for Fife.

### Economic importance of timber

There is scope for timber to contribute to sustainable economic growth in Fife, much of which is linked to new policies, processes and products. However, barriers to growth include a lack of clear financial profitability, scale of current production and a perceived dependence on public subsidy. It is therefore desirable to generate sufficient income from forest products and related activities to cross-subsidise the management operations needed to generate environmental and social outputs.

In the UK, forestry has declined markedly over the past 40 years, as production costs are relatively high, rendering the industry comparatively un-competitive. The UK forest area is now around 12%, but new planting is only 8,000 ha/year, compared with 40,000 ha/yr in the early 1970s. Softwood timber production increased by 28.2% between 1995 and 2004, whilst hardwood timber production decreased by 42.0%<sup>22</sup>. Timber production in the private sector remains well below annual increment, particularly for hardwoods. The Forestry Commission dominates forestry in the UK, both as a producer and as a regulatory agency.

Some forest owners in Fife are deliberate investors in forestry as a primary activity, but it is probably the case that most privately owned forestry is a secondary activity of existing land owners. The UK currently relies largely on imports to satisfy current and predicted demands for wood and related products. However, rising global demand for most types of wood products, and wood energy, and concern over energy costs in transport suggest that investment in UK timber may be on the increase. These conditions may encourage greater use of home-grown timber. The benefits of a stronger forestry industry will bring wider benefits, especially for rural economies, the environment and social wellbeing.

<sup>21</sup> Heggie, B., Forest employment survey 1998/99: employment in forestry and primary wood processing. 2001. Forestry Commission, Edinburgh.  
<sup>22</sup> Lawson, G and Hemery, G.E World timber trade and implementing sustainable forest management in the United Kingdom, Land Use Policy Group, 2007.



### Valuation of forestry

The valuation of forestry is complicated, requiring consideration of a number of variables along with very long-term projections<sup>23</sup>. Variable factors include the price of land, stumpage, timber products (sawn-timber and wood pulp), maintenance costs, felling and extraction costs, rates of planting and cropping of different species, patterns of biological growth and patterns of demand for timber from different species. The growing cycle of tree crops is intrinsically long term and, depending on the species, measured in decades.

Forecasting movement in prices so far into the future, involving assumptions about inflation and rates of investment etc., is inherently uncertain. In addition, governments in different countries and at different times use grants and tax concessions to encourage private investment which distorts market behaviour and adds further complication to valuations. The uncertainty of valuation is as much of a problem for a government agency seeking to measure the prospective economic benefit to a community, as for an investor seeking to measure a prospective financial return.

Assessing the value of the forestry sector is not easy as it is made up of a range of tangible and non-tangible activities. Figure 8 below illustrates both tangible market benefits associated with tradable commodities such as timber products and wood fuels, and the 'harder to measure' benefits associated with non-tradable, or non-market, features such as landscape amenity value, biodiversity and carbon sequestration.

### Timber products and prices

Wood is the ultimate sustainable raw material. Lifecycle greenhouse gas emissions in timber-construction can be as low as 20% of conventional materials, and therefore significant for reducing emissions. The principal uses of timber are in the production of sawn-timber and wood-pulp<sup>24</sup>. Demand in the US construction industry has been historically the principal determinant of international

prices for sawn-timber. However, China's demand for timber has been increasingly exerting its influence in recent years and latterly the demand for bio-fuel has been increasing in response to high oil prices.

The worldwide demand of paper and packaging manufacturers is the principal determinant of prices for wood pulp. Wood pulp is traded as a commodity as it has a consistent quality. The key indicator is the price of NBSK (Northern Bleached Softwood Kraft, the paper industry's benchmark grade of pulp) which is traded on a variety of exchanges.

Institutional investors, which are much more significant, diversify their ownership through different funds that are further diversified in the type and location of the forestry which they own or lease. Forestry is either omitted from, or represents only a tiny proportion of asset allocations in most investment funds. Investment managers generally prefer other asset classes but will give various reasons for excluding timber such as the difficulty of valuing it, the very long-term returns, or because it is not correlated to stock-market, commodity, or land values.

The Forestry Commission has an agreed definition of the forestry sector, using 2003 Standard Industrial Classification (SIC) codes, which has been used to estimate its relative scale in Fife, and to enable a comparison against the Scottish picture (see Figure 9 opposite).

<sup>23</sup> Blinkley, C., Investment Advisors, LLC, The Sensitivity of the Value of Timberland Assets to Changes in the Discount Rate, International Forestry, February 2009 and Suckling, C. Forest Industry: Application Review of IAS 41, Agriculture: The Fair Value of Standing Timber, PWC Accountants.  
<sup>24</sup> Forestry Commission Quarterly report: Timber Price Indices; Gleeson, E., Timber: Grow Profits in a crisis, Moneyweek Magazine, Issue 384, May 2008; Tom Fritzbert-Brockoles, T., Growing on Trees?, Environmental Finance, June 2009.  
<sup>25</sup> Source: Snowdon, Forestry for People, 2009.

Figure 8: A broad typology of the forestry sector<sup>25</sup>

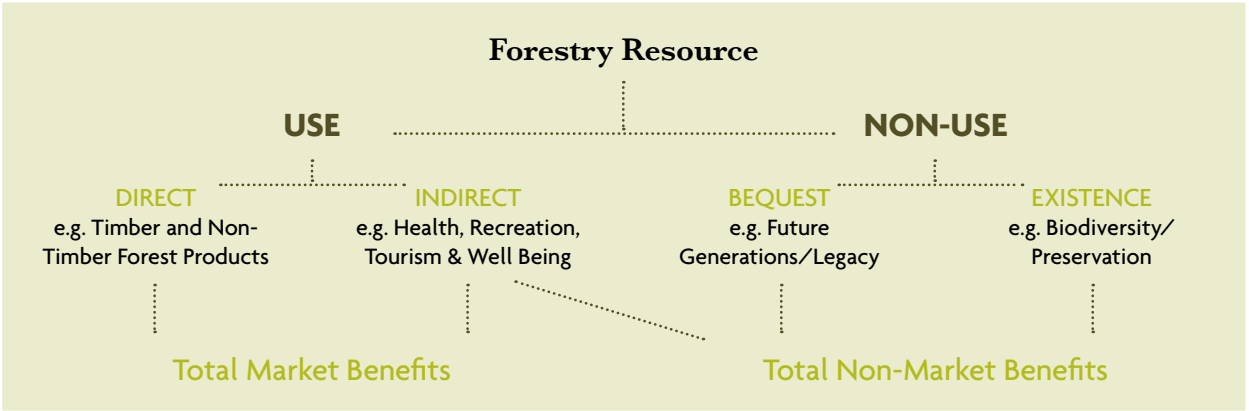


Figure 9: A broad definition of the forestry sector using SIC classification codes<sup>26</sup>

The Forestry Sector	
Title	SIC 2003
Forestry	02 Forestry, logging & related services
Wood Products	20 Manufacture of wood and wood products
Sawmilling	20.1 Sawmilling and planing of wood; impregnation of
Panels	20.2 Manufacture of veneer sheets, manufacture of plywood sheets, laminboard, particleboard and other panels
Secondary Products	Other SIC 20 Manufacture of builders' carpentry & joinery, wooden containers, and other products of wood, straw and plaiting materials.
Pulp, Paper and Paper Products	21 Manufacture of pulp, paper and paperboards
Pulp & Paper	21.1 Manufacture of pulp, paper and paperboard products
Articles of Paper & Board	21.2 Manufacture of articles of paper and paperboard
Total Wood Processing	SIC 20 + SIC 21
Total Primary Wood Processing	SIC 20.1 + SIC 20.2 + SIC 21.1

### Contribution to the Fife economy

The relative economic value of the Fife forestry sector against the national picture has been assessed through an analysis of the Scottish Annual Business Statistics (SABS)<sup>27</sup> (see Appendix 1). The sector is an important contributor to Fife's economy in terms of jobs, turnover and the Gross Value Added (GVA), and has witnessed robust growth since 2000. Although Fife has a lower proportion of woodland cover compared to the national average, the number of forest enterprises as proportion of total businesses is the same as the national level. Forestry jobs in Fife account for 14% of the total number of forestry jobs in Scotland.

Forest businesses in Fife are a relatively important part of the Scotland wide forest sector, with around 6% of Scottish forest businesses located in Fife. In 2007 there were 92 forest businesses in Fife, accounting for 14% of the total turnover of all Scottish forest businesses. The figures may be distorted by the presence of two large firms, Tullis Russell and Fourstones, which could account for a significant proportion of the total turnover recorded in Fife. However, forest businesses make an important contribution to the local economy by providing employment for 3% of the workforce (2,600 full time jobs in 2007), including management, business, skilled technical services and operational activities.

In 2007 the forestry sector was estimated to contribute £394 million turnover to the Fife economy, through sales of timber, timber processing, distribution and manufacturing. This figure represents almost 5% of the turnover of all Fife's businesses, making forestry

a relatively significant sector of the local economy. Furthermore, there has been a 16% increase in turnover since 2000 and an 11% increase in the number of businesses, indicating the forestry sector in Fife is growing. The combined turnover of the forestry sector in Fife is proportionally greater than recorded at the national level, confirming the importance of the sector at the local level.

The Gross Value Added (GVA) contribution of forestry businesses in Fife is greater than that recorded at the national level, indicating that the goods and services provided by Fife's forestry businesses are adding a significant level of financial value to the timber that is being produced locally or imported. Fife's GVA accounts for 3.5% of the total Fife GVA, which is significantly higher than the national level where forestry related GVA accounts for 1.5% of total GVA in Scotland. Activities include primary and secondary wood processing, woodland management, contracting and haulage, wood products, sawmilling and secondary products such as the manufacture of joinery products. Wider economic benefits accrue from woodland tourism and recreational activities.

<sup>26</sup> Source: Forestry Statistics 2010, Forestry Commission, 2010  
<sup>27</sup> Scottish Annual Business Statistics, Scottish Government, 2008



# 5 Achieving the Vision

The spatial analysis has demonstrated that

# 75%

of Fife has potential for woodland creation

## AIM1: EXPANDING THE WOODLAND RESOURCE

Woodland expansion across Fife will require investment to create a diverse and high quality resource that will benefit the local economy and environment, whilst stimulating rural / agricultural development and diversification. The increase in woodland will be appropriately located, part of a mosaic of habitats, habitat networks and multi-purpose woodlands to deliver the widest range of economic, environmental and social benefits.

### Objective:

Encourage the expansion of well-designed woodland cover of an appropriate scale, composition and purpose to meet the Fife **minimum** target of 13.2% of the land area by 2053, thereby contributing to Scottish Forestry Strategy targets.

### Opportunities for woodland expansion

Mapping has demonstrated that 75.7% of Fife has potential for woodland expansion. This illustrates the opportunity across Fife to enhance the contribution of forestry and woodland to sustainable land use and landscape planning (Figure 2). Land economics would suggest that forestry will not displace farming in much of Fife, however, with changes in market mechanisms and values (such as CAP reform, land reform, energy costs, timber prices, forestry support) the mix and balance of farm and forestry activity may offer new opportunities.

Scottish Government's aspirations are to deliver 10,000 hectares of new woodland per year for the next ten years, which would then be comparable to other northern European countries. In 2011, woodlands of all types occupied 11% of the Fife land area compared with the Scottish figure of 17.8%.

Forestry Commission records show that in 1924, Fife had 12,936 hectares of woodland, equating to 9.9% of the land area<sup>28</sup>. In 1924 Fife was relatively well wooded compared with the woodland cover recorded for the whole of Scotland, which had only 5.6% woodland cover. By 2011 woodland cover in Fife had increased to 16,508 hectares, 11% of the land area<sup>29</sup>, an increase of 3,572 hectares. Woodland cover across the whole of Scotland has increased from 5.6% to 17.8% in the same time period.

Over the 87 years between the two surveys, an average of 41 hectares was planted per annum. If this figure is used to determine the minimum targets for woodland expansion in Fife, approximately 1,640 hectares of new woodland should be planted over the next 40 years. This will increase Fife's woodland cover to 13.2% of the land area. The Strategy aspires to a higher target of 60 - 100 hectares to be planted on average per year. At this rate, between 2,280 - 3,800 hectares of new woodland would be planted over the next 40 years, increasing Fife's woodland cover to between 13.8 - 14.9% of the land area.

### KEY PRIORITY

**WR1:** Encourage the delivery of at least 60 - 100 hectares per year of new woodland across Fife, in accordance with the aims of the Fife Forestry and Woodland Strategy.

<sup>28</sup> Report on the Census of Woodland and Census of Production of Home Grown Timber 1924, FC 1928

<sup>29</sup> National Forest Inventory, Forestry Commission, 2011



New Softwood Forests

The majority of the softwood plantations in Fife are the five major softwood forests at Devilla, Blairadam, Pitmedden, Ladybank and Tentsmuir, owned and managed by Forestry Commission Scotland. These forests are managed to achieve multiple woodland benefits including wildlife conservation and public access provision, which is particularly important regionally given the emphasis on intensive farming across much of Fife. Other woodlands tend to be small and located on the lower hills and are privately owned. The large scale woodlands are mainly softwood plantations, whilst the smaller woodlands are often mixed woodlands with some significant areas of predominantly broadleaf woods.

Restructuring and restocking of Fife's existing forests offers opportunities to secure future timber resources, while providing significant benefits to environmental quality and biodiversity. The potential expansion of existing forests and planting of new softwood forests will contribute to meeting Fife's woodland expansion targets.

Figure 11 shows areas which are most suitable for the creation of new softwood forests. It maps the 'preferred areas' for potential planting, excluding the higher quality agricultural land (James Hutton Institute Land Capability for Agriculture Classes 1 to 3.1). Softwood forests are unlikely to be economically viable on higher quality agricultural land. The relative emphasis on softwood forest expansion, and the most appropriate scale and design of new forests, varies considerably within the areas identified on this map. Larger scale forests are likely to be most appropriate in West Fife and in areas to the north, along the Firth of Tay. Smaller scale forests are located in the agricultural areas, while there could be scope for medium sized forests in some areas of higher ground, associated with existing woodland.

KEY PRIORITY

**WR2:** Encourage new softwood forests in appropriate locations, particularly in areas identified on the woodland creation opportunities map as being preferred.



Restructuring and restocking of Fife's existing forests offers opportunities to secure future timber resources

Image © Forestry Commission Scotland

Creating and expanding native woodlands

Fife has a diverse range of woodland types, including native and non-native woodland, semi-natural and plantations, reflecting its diverse landscapes and the range of industrial activities that have shaped it. Native woodlands are one of our oldest land uses and are remarkably diverse ecosystems. They are highly valued for the wealth of wildlife they contain and the contribution they make to the landscape and biodiversity.

Fife's native woodland resource is highly fragmented and dispersed throughout the region, due to development and agricultural practices. The value of this woodland to biodiversity means that it is particularly important to expand the existing native woodland resource and increase habitat connectivity. Native woodland creation will be promoted in association with existing forest habitat networks, using sustainable woodland management practices, which will contribute to the creation of better connected and maintained woodland corridors. Figure 12 identifies areas that are potentially suitable for the planting of new native woodland, which builds upon the 2010 Integrated Habitat Network datasets provided by Forest Research.

Opportunities for the strengthening of habitat networks include woodland expansion through the Living Lomonds Project, working with the Lothians and Fife Green Network Partnership and working with partners to develop Woods In and Around Towns initiatives, particularly in west and central Fife. Specific opportunities include consolidation / linking of the River Leven ancient woodlands and habitat network enhancement through restoration of vacant and derelict land at Westfield / Kinglassie.

KEY PRIORITY

**WR3:** Promote targeted expansion of existing woodlands through native woodland planting to strengthen existing forest habitat networks, thereby creating an interconnecting biodiverse network of woodland.

Energy forests

Energy forests are woods planted and managed with a primary focus on the production of wood fibre to provide feedstock for woodfuel boilers and CHP systems. Such woodlands can take the form of short-rotation coppice, cut on an average of a 5-yearly cycle, or short-rotation forestry, where fast-growing trees are planted and harvested on an 8 to 20 year cycle. Fife's existing and planted woodlands have an important role in supplying woodfuel to existing, emerging and future biomass plants in Fife.

However, it is unlikely that large scale planting for biomass production will become a significant element of Fife's woodland resource. Biomass production from Fife grown timber is likely to be at a small to medium scale, supplying small local biomass users. Figure 13 indicates where there are opportunities for the planting of new energy forests coinciding with the 'preferred' and 'potential' areas and lower quality agricultural land (James Hutton Institute land classes 3.2 to 4.2). Vacant and derelict land in urban areas and stalled sites could provide sites for the planting of new woodland, with biomass production as part of the overall scheme.

KEY PRIORITY

**WR4:** Encourage new energy forests in appropriate locations, particularly in areas identified on the woodland creation opportunities map as being preferred.

Mixed woodlands

There are many opportunities in Fife for the expansion of new mixed woodlands, illustrated in Figure 14. The mapping indicates areas of high quality land (James Hutton Institute Land Classes 1 and 2) in the 'preferred' and 'potential' areas, which may be suitable for planting of some areas of mixed woodland. These are areas where there is likely to be most potential for the creation or expansion of farm woodlands and shelterbelts as part of existing farm businesses. These woodlands should also deliver a range of benefits including recreation, woodfuel, landscape enhancement and sustainable flood management.

The next decade will be a critical period for the farming and forestry sectors because it will coincide with a fundamental review of the Common Agricultural Policy in 2013. Woodland expansion has an important part to play in increasing the diversity of the farming practices at individual farm level and across the wider Scottish rural economy, creating employment and self-employment opportunities in woodland management, harvesting, woodfuel processing, small-scale sawmilling and other added value activities.

Well-designed farm woodland expansion can allow farms to produce much or all of their own woodfuel requirements for domestic heating, and to produce a surplus for commercial sale. Increased shelterbelt woodlands can help increase crop yields. Collective use of woodfuel production and use by farm cooperatives offers the potential for drying grain on farms using biomass to reduce farm costs. Cooperatives can encourage more efficient joint use of tree management equipment and labour (similar to the Tayforth Machinery Ring).

Promotion of targeted expansion of existing woodland through planting may include the expansion of existing native woodland remnants, shelterbelts, woodlands on urban fringes, restoration of former quarries, coal mines and other vacant and derelict land and advance planting of woodland as part of green infrastructure on stalled development sites.

The map also indicates search areas for new riparian woodland and wider opportunities for new mixed woodland, located on lower quality agricultural land (James Hutton Institute Land Capability for Agriculture Classes 3.2 to 4.2). Creation of new urban / peri-urban woodlands can create a strong setting for urban areas and urban expansion areas, encouraging greater community involvement, and providing opportunities for countryside recreation.

KEY PRIORITIES

**WR5:** Facilitate the expansion of woodland to complement farming activities and encourage diversification, including the creation of woodland related businesses.

**WR6:** Promote extension of shelterbelt woodlands to help increase crop yields, the productivity of livestock benefiting from shelter and assist soil stability.

**WR7:** Through the planning system, including masterplanning, ensure that new development and regeneration proposals include provision of high quality greenspace and woodland creation.

**WR8:** Promote woodland creation to enhance existing and new greenspace initiatives in urban and urban fringe areas, to encourage greater community involvement, opportunities for recreation and creating better links to the countryside.



## AIM 2: MAXIMISING FIFE'S FOREST AND WOODLAND ECONOMY

Fife's forestry sector is an important contributor to the region's economic well-being, despite the relatively low woodland cover compared to the rest of Scotland. Woodland economic activities have the potential to make a valuable contribution to sustainable economic growth. Fife's forestry sector has experienced robust growth since 2000, with an increase in the number of businesses and turnover, and therefore has a solid base upon which to build.

### Objectives:

Increase awareness of the role that Fife's forests and woodlands play in the local economy and work with the forest sector in Fife to optimise the contribution it makes to the local Fife economy.

Maximise the use of biomass for heat through support of new energy technologies.

Promote Fife's forests and woodlands as destinations for visitors to assist the development of Fife as a UK recognised tourist destination.



Image © George Logan Scottish Natural Heritage

### Opportunities for forest and woodland businesses

Fife's woodland resource could add significant economic value. There is potential to attract investment in woodland expansion and secure additional income from the management of existing woodlands, further developing 'added value' products from wood and ultimately providing more employment opportunities. This could be achieved through a range of initiatives from small business start-ups, expansion of existing forestry businesses, social enterprise activity and the setting up of farming / forestry co-operatives.

However, further assessment is required to gain an up to date and detailed assessment of the forestry economy and the role of existing businesses, their supply chains and the levels of timber produced in Fife and exported. Research work should be undertaken as a priority and should focus on the demand opportunities to highlight the 'scale of the opportunity', presenting the constraints and challenges to growth and identifying solutions.

#### KEY PRIORITIES

**EC1:** Undertake detailed research into Fife's forest economy, highlighting the constraints and challenges to growth and identifying solutions.

**EC2:** Assist the development of a forest business network at a regional level, in association with the mid Scotland Forest & Timber Technologies Regional Group. The network should aim to share best practice, provide access to expertise, share resources and information.

### Softwood forests, energy forests and biomass

Softwood is in high demand and this demand is forecast to double in the period to 2016. Forestry Commission Scotland has reported a recent and continuing trend in the demand for wood for energy. The Confederation of Forest Industries (Confor) predicted that plans to build a new wave of biomass power plants may result in demand for wood chips and pellets exceeding domestic supply by 2012<sup>30</sup>, thereby putting pressure on the currently available local supplies. The trend is likely to strengthen markets for forestry firms and wood chip producers and will further promote investment in biomass supply.

Fife's woodlands can play an important role in supplying woodfuel to existing, emerging and future biomass plants, as there is strong policy fit and competitive advantage with the region's focus on renewable energy and the proximity to sizeable existing biomass developments. Biomass is increasingly being seen as an important potential contributor to reducing CO<sub>2</sub> emissions. The production and use of biomass for heating or CHP systems has the potential to help de-carbonise the economy, reduce reliance on fossil fuel, provide local employment and reduce timber haulage distances.

<sup>30</sup> Wood Fibre Availability and Demand in Britain 2007-2025, Confor.

The Strategy focuses on finding ways of increasing local biomass supply in order to sustain the needs of both the biomass sector and the traditional users of woodchips and other timber products. However, there are issues with the logistics of acquiring the timber from the larger estates at reasonable cost. The potential business opportunities of utilising Fife Council owned woodlands, parks and derelict land for biomass production should be explored, which might include the use of CHP systems to heat housing schemes, community facilities, industrial plants and hospitals. Further research is required, to identify the feasibility of establishing local biomass supply networks and the development of a woodfuel strategy.

#### KEY PRIORITIES

**EC3:** Develop a wood-fuel strategy for Fife, in partnership with stakeholder organisations including the Central Scotland Woodfuel Forum, and integrate with Fife Council policy on renewable energy.

**EC4:** Encourage the development of a sustainable timber supply chain to service the development of local wood-based heating schemes and timber products

### Active management of existing woodlands

Active woodland management includes operations such as periodic thinning to improve quality and yield when the crop is harvested at the end of the rotation. Careful management, for example for hardwood timber production, will increase economic, environmental and social value and bringing Fife's neglected woodland into management will release a larger than normal volume of biomass material. This should be undertaken in accordance with the UK Forestry Standard and Forestry Commission Scotland best practice guidelines.

Support for woodland owners could be improved by providing information on how to manage and improve small woodlands to get the most out of them. Supporting appropriate training programmes for woodland managers and implementing best practice standards as conditions on grant support will be a key mechanism for bringing woodlands back into good management.

#### KEY PRIORITY

**EC5:** Provide information to woodland owners on how to manage and improve small woodlands.





‘Added Value’ products

Opportunities to develop “added value” products may emerge in a number of ways, for example through the use of timber in manufacturing products (such as timber frames, fencing, decking, pallets and chips, sawdust), the increased use of biomass boilers in local businesses and increasing demand for woodfuel. However, awareness needs to be raised of the potential of these products within the forestry sector in Fife.

There is also scope to ‘brand’ Fife’s wood and woodlands with specific focus on quality and/or the sustainability value of the product, countering the ‘cheaper’ import argument. Showcasing Fife’s woodlands in a particular market segment can assist in developing a unique selling point which makes the product distinct and unique. The Falkland Centre for Stewardship is an example of how woodland management and creation can be undertaken alongside other ‘value added’ activities such as education, craft workshops, community arts, children’s activities and community volunteering.

KEY PRIORITIES

**EC6:** Work with the forestry sector to develop and increase the competitiveness of the Fife timber manufacturing, processing and distribution businesses, with a focus on provenance and sustainability.

**EC7:** Encourage Fife’s timber businesses to increase the competitiveness of “value added” hardwood and softwood timber products, creating a Fife ‘brand’ with specific focus on quality and sustainability.

**EC8:** Encourage the use of Fife grown timber for manufacturing purposes (construction materials, furniture, fencing, etc.).

Associated woodland industries

Most landowners employ a forestry contractor to carry out their woodland management. However, the high cost of this is a significant barrier to many woodland owners. Whilst it may be difficult for owners of small woodlands (10 to 25 hectares) to manage their woodlands economically on their own, by clustering groups of owners together, the prospect becomes much more viable. One operation shared by several woodland owners brings economies of scale into play, whereby all will benefit.

There is opportunity for small business start-ups, social enterprises and for expansion of existing forestry businesses to provide much needed forestry services, which could return economic benefits if local firms can win contracts in forest estates. There is also scope for social enterprise and co-operative models of business to encourage more efficient joint use of equipment and labour. Examples of these include DWP Harvesting - a consortium co-operative of 36 forests in the north of Scotland, Scottish Woodlands - an employee owned co-operative and the Tayforth Machinery Ring.

A forestry “champion” is needed to take such an initiative forward, to coordinate activities of the larger estates and smaller farm units. The development of a forest business network at a regional level, in association with the Central Scotland Regional Forestry Forum, would aid greater knowledge transfer and may be a platform from which cooperative working might be advanced.

KEY PRIORITY

**EC9:** Support the growth of existing and the development of new woodland management businesses including traditional private companies, social enterprise and co-operative models of business.

Extending recreation and tourism potential

Promoting woodlands as recreational, cultural and tourism assets and recognising them as an important part of the Fife ‘tourism mix’ will assist the Fife Tourism Partnership achieve ambitious growth targets for the sector. Outdoor recreation generates a significant spend and boost to the local economy. Research suggests woodland based tourism is a notable component of the tourism infrastructure of Fife and presents demonstrable financial and economic returns associated with woodland related visits.

Enhancing Fife’s woodlands as visitor destinations, as well as increasing their number, can have a marked economic impact and assist the development of Fife as a UK recognised visitor destination. Potential projects could include ensuring that the path network provides access to woodland and links to other nearby tourist destinations. Interpretation of natural and local history could increase visitor interest in Fife’s woodlands (eg interpretation of Fife’s mining heritage).

KEY PRIORITY

**EC10:** Work with the public and private sectors to promote Fife’s woodlands as visitor destinations and encourage the growth of woodland-related tourism businesses.

AIM 3: RESPONDING TO CLIMATE CHANGE

Fife’s contribution to tackling climate change through woodlands will involve reducing carbon emissions and therefore mitigating the effects of climate change through increased woodland cover and the use of woodfuel as a substitute for fossil fuels, and adapting to changes in the climate by increasing woodland planting in flood catchments and ensuring sustainable and lower impact woodland management.

Objectives:

Mitigate climate change through new woodland creation, of appropriate tree species and provenance, and through the protection of existing woodland.

Seek opportunities to contribute to reducing carbon emissions within the forestry sector in Fife

Promote the sustainable production and use of locally derived woodfuel.

Maximise the potential of trees and woodlands to alleviate flooding.

Mitigating climate change

Meeting the Scottish Government targets of 80% reduction in carbon emissions by 2050 will require major transformational change nationally throughout all sectors of the economy. Fife Council and community plan partners have begun this process of change as outlined in the 2011 Climate Change Declaration Report. Forests and woodlands are widely recognised for their ability to sequester carbon from the atmosphere and store it in woody biomass, soils and litter. The forestry sector in Fife can help meet Scottish targets for reducing climate change emissions through woodland expansion. Where development is proposed, the Scottish Government policy on the Control of Woodland Removal includes a 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.

A further contribution is made when woodfuel substitutes for fossil fuels and timber and wood products substitute for more energy intensive materials such as concrete and steel. As a result there is increasing global and national interest in linking woodland projects with carbon market investments to deliver greenhouse gas abatement objectives and attract additional funding as an added incentive for sustainable woodland creation and management. It can also provide a way of locking up carbon in the longer term.

In order to create a more carbon efficient economy, reduce greenhouse gas emissions and meet the requirements of targets and legislation set by the European Union, both UK and Scottish Government strategies have explored opportunities associated with the use of renewable energy sources, including bioenergy. Using wood for fuel can provide local energy and employment as well as reducing timber haulage distances. Energy crops (such as short rotation coppice or short rotation forestry) can also provide local opportunities for rural diversification.

The Fife forestry sector has a significant role in reducing greenhouse gas emissions as fossil fuels are used at every stage of the process from planting, through harvesting and transport to processing and use. Reducing the sector’s reliance on fossil fuels will be critical in meeting carbon reduction targets.

KEY PRIORITIES

**CC1:** For new development, ensure that due consideration is given through the planning system, to the Scottish Government policy on the Control of Woodland Removal.

**CC2:** Encourage the development of locally sourced woodfuel as a low carbon and cost-effective source of heat and power.

**CC3:** Seek opportunities to raise awareness within the forestry sector of the importance of reducing the reliance on fossil fuels for forestry operations and associated activities.

**CC4:** Seek to encourage the use of locally sourced timber as a building material, by local businesses and stakeholder organisations.

The Fife forestry sector has a significant role in reducing greenhouse gas emissions as fossil fuels are used at every stage of the process from planting, through harvesting and transport to processing and use.



Adapting to climate change

The benefits of trees, woodland and habitat networks in facilitating ecological adaptation to climate change is well documented. Habitat connectivity is crucial in enabling species to adapt, allowing migration in response to changed local conditions. There are also likely to be impacts on movement of animals and the prevalence of pests and disease because of a changed climate. Ensuring that new woodlands do not adversely affect the success of other key habitats is important to the delivery of a more resilient environment. Fife's Climate Change Declaration Report includes the following objective:

**Fife's natural ecosystems should be used more sustainably and degraded ecosystems should be restored, contributing to protected and enhanced biodiversity and provision and maintenance of carbon sinks.**

Trees and woodlands can also play a substantial role in helping people and communities adapt to a changing climate by providing shade and temperature regulation, slowing the passage of floodwaters, trapping debris and increasing the infiltration capacity of soils. Trees, woodlands and greenspace in urban areas, including green infrastructure and Sustainable Urban Drainage Systems (SUDS), are also important due to the contribution they make to local environmental quality, surface water drainage and the positive effect they can have on the local microclimate.

Climate change may also have positive benefits for woodland expansion, potentially increasing the length of the growing season, increasing productivity and allowing woodland to be planted in areas that are currently less suitable. Where possible, forestry plantations should be managed using 'continuous cover' forestry techniques, rather than clear felling, to help reduce flood risk or soil erosion and reduce vulnerability to windthrow. Forestry Commission Scotland<sup>31</sup> provides information to help forest managers plan for climate change by anticipating the implications of site selection, tree species, management techniques, harvesting and the design of forest infrastructure in new and restructured forests.

<sup>31</sup> www.forestryresearch.gov.uk/fr/climatechangescotland

**Fife's natural ecosystems should be used more sustainably and degraded ecosystems should be restored, contributing to protected and enhanced biodiversity and provision and maintenance of carbon sinks.**

Changes in rainfall patterns are likely to result in flooding on a more frequent basis, and local authorities have a duty to reduce the risk of flooding. Riparian and floodplain woodland can help protect river morphology and moderate stream temperatures, while potentially reducing downstream flooding. There are three mechanisms identified whereby trees could help alleviate downstream flooding: their greater water use; higher infiltration rates of woodland soils; and greater hydraulic roughness of floodplain and riparian woodland. In principle, riparian and floodplain woodlands could also produce timber in future, if sensitive low-impact silvicultural practices are employed.

KEY PRIORITIES

CC5: Raise awareness of the importance of trees in urban areas, including street trees and greenspaces, in reducing localised flooding and surface water flow.

CC6: Promote the use of trees and woodland as part of new greenspaces and Sustainable Urban Drainage Systems (SUDS) in urban areas.

CC7: Ensure forestry plantations are managed using the most sustainable option including continuous cover forestry techniques where possible.

CC8: Identify and promote locations where better management of existing woodland or planting of new woodland will aid natural flood management programmes at a catchment scale, in partnership with the relevant authorities.

AIM 4: PROTECTING AND ENHANCING ENVIRONMENTAL QUALITY

Fife's woodlands and trees make a substantial contribution to rural and urban landscape character as well as cultural and natural heritage. Irreplaceable ancient woodlands and other species-rich woodland habitats have a vital role in providing a wide range of ecosystem services, contributing to pollution control, soil and water resource management. The quality of woodland habitats is determined by the condition and function of woodland soils, water, biodiversity, landscape and heritage. Achieving improvements in the condition and management of woodlands will be the key to healthy and resilient woodland ecosystems and a long-term healthy environment.

**Objectives:**  
 Enhance the quality of Fife's landscapes through sensitive woodland planting and management, reflecting local variances in landscape character and current woodland cover.

Protect existing native and ancient woodland and manage to maintain and enhance natural heritage and biodiversity.

Increase riparian woodland planting to protect and improve water quality.

Recognise and promote the contribution of woodland to the quality of Fife's designed landscapes and historic features.



Images © Forestry Commission Scotland

Landscape quality

Fife has a range of woodland types, reflecting the diverse landscapes and the nature of 19th century industrial activities. The legacy of the coalfield remains in many parts of the lowland hills and valleys and the primary impact of the evolution of land use and human activity has been a significant loss of biodiversity, leading to woodland fragmentation. New woodland planting and the management of existing woodland should seek to conserve the character of important landscapes, enhance landscapes where quality has been lost or degraded, or create new high quality landscapes.

Enhancement opportunities include the restoration and management of ancient, semi-natural, native and long-established woodlands to form green networks and core areas of larger woodland, and the restructuring of existing conifer plantations with a wider range of productive species (including native species). Other opportunities involve developing networks of open space, paths and tracks, increasing diversity in the farmed landscape to reinforce local distinctiveness, planting more varied woodlands where sporting activities can take place, and encouraging co-operation between neighbouring farms and estates to improve the network of wildlife habitats with woodlands, hedgerows and hedgerow trees.

When associated with buildings, trees and woodlands can soften the interface between built and natural environments and contribute to the greening of urban areas and the restoration of industrial land. Opportunities should be promoted for planting trees and woodlands in new developments, and in the restoration of brownfield sites. Trees and woodlands can help create a distinctive place identity, contribute to the wider landscape context and improve the quality of urban and rural greenspace.

KEY PRIORITIES

EQ1: Encourage the positive management of woodlands and trees where they are an important contributor to natural heritage and landscape quality.

EQ2: Create and expand new woodland in areas that have become degraded through past industrial activities.

EQ3: Ensure that trees and woodlands are considered as an integral part of development proposals through the planning system, including supplementary guidance, development briefs and masterplans.

EQ4: Promote the development of green networks in association with the Central Scotland Green Network and the Lothians and Fife Green Network Partnership.



### Supporting biodiversity

Fife makes an important contribution to Scottish, UK and international biodiversity, reflected by the wealth of sites designated for their nature conservation value. The Fife Local Biodiversity Action Plan (LBAP) 2009-11 identifies eight priority species which are associated with woodland, namely aspen, bluebell, five species of bat and the red squirrel. Fife appears to be a stronghold for the rapidly declining red squirrel. Records exist for the species throughout Fife, however there are strong concentrations of sightings at Devilla Forest in the west, along the north eastern coast including Tentsmuir Forest and in numerous forests in the central areas of the region including Ladybank Forest and Falkland Estate<sup>32</sup>.

Fife contains a wide of range of diverse habitats and landscape types, but a long history of intensive land-use has resulted in the loss and fragmentation of semi-natural habitats and a subsequent reduction in biodiversity. It is estimated that there are 190 ha of ancient woodland remaining, 243 ha of long established semi-natural woodland and 7020 ha of long established woodlands of plantation origin. The Fife LBAP identifies three priority woodland habitats (ancient semi-natural and long established woodland, mixed lowland woods and urban woodland) as well as two associated priority habitats (Parks and Veteran Trees and Field Margins and Boundaries).

Conservation policy and practice now seek to reverse the effects of fragmentation by combining site protection and restoration measures with landscape-scale approaches that improve connectivity and landscape quality. In 2010 Forest Research undertook a study to identify Integrated Habitat Networks (IHNs) within Fife. The study constructed maps showing different habitat types including woodland, along with indicative species dispersal distances around each area of habitat where there may be opportunities to improve habitat connectivity and thereby facilitate the movement of species.<sup>33</sup>

The IHN maps and data can be used along with other datasets to identify opportunities to create new woodland networks. Woodland hot spots represent areas where there are the largest networks, the greatest area of habitat within the networks and greatest density of networks. In general, within these hotspots efforts to protect, manage and enhance the networks may produce bigger benefits than outwith. Figure 10 illustrates the ancient woodland habitat network in Fife including hot spots. The opportunities for new native woodlands map (Figure 12) identifies areas that are potentially suitable for the planting of new native woodland, which builds upon the IHN datasets.

Opportunities for the strengthening of habitat networks include woodland creation through the Living Lomonds Landscape Project, delivery of the Central Scotland

Green Network and promoting Woods In and Around Towns initiatives, particularly in west and central Fife, consolidation / linking of the River Leven ancient woodlands and habitat network enhancement through restoration of vacant and derelict land at Westfield / Kinglassie.

#### KEY PRIORITY

**EQ5:** Ensure the protection and management of existing woodland and the creation of new native woodland to safeguard and improve biodiversity and habitat connectivity.

### Restoring ancient, semi-natural and long-established woodlands

Ancient woodlands collectively form a highly prized and finite resource. However, the twentieth century saw major losses and changes to the already scarce and fragmented ancient woodland resource. The remaining ancient woodlands in Fife are few in number and largely fragmented, and some have been felled and replanted, sometimes with non-native species. The contribution that ancient semi-natural woodland makes to our natural and cultural heritage is widely recognised.

Restoration involves re-establishing a functioning native woodland ecosystem by securing features from the former ancient semi-natural woodland, removing introduced non-native species of trees, shrubs, and other plants, encouraging the re-establishment of native species and initiating or enhancing ecological processes which may be absent or damaged (such as appropriate grazing regimes).

The Strategy specifically identifies the Plantations on Ancient Woodland Sites (PAWS) in Fife (102 hectares) as many of these sites have the potential for restoration to ancient semi natural woodland. Appropriate restoration of these sites through targeted grants or education initiatives may encourage the return of native species and reduce fragmentation.

#### KEY PRIORITY

**EQ6:** Increase the area of well managed native, ancient and semi-natural woodland, and encourage appropriate management of existing Plantations on Ancient Woodland Sites including habitat enhancement for key native species.

<sup>32</sup> The Red Squirrel Group was established in 2006 to address the need for a co-ordinated approach to red squirrel conservation in Fife. This initially centred around two site-based projects in Devilla and Ladybank Forests. Funding was then secured for a Fife-wide project focusing on the nine 'key sites' for red squirrels identified in the LBAP. Much of this work is carried out by volunteers including members of the public, community groups, landowners and schools.

<sup>33</sup> For further information see [www.snh.gov.uk/planning-and-development/approach/snh-devt-planning](http://www.snh.gov.uk/planning-and-development/approach/snh-devt-planning)

### Soil and water quality

The preparation of River Basin Management Plans setting out how water bodies will achieve good ecological status by 2015 is a requirement of the Water Framework Directive. The Scottish Environmental Protection Agency (SEPA) oversees the preparation of RBMPs by all EU member states. The Forth Area Management Plan covers southern Fife and northern Fife is covered by the Tay Area Management Plan. These Plans provide detailed information on the current condition of the water environment, the pressures and risks, objectives for improvements and actions to achieve these objectives.

Climate trends and predictions indicate that changes in rainfall patterns are likely to result in flooding on a more frequent basis. Together these factors are likely to lead to an increased risk of flooding, soil erosion and slope instability. Woodlands can play an important role in improving waterbodies by restoring rivers to good ecological status, whilst also helping to reduce the severity of flooding and helping to stabilise slopes. Research has shown that new woodland planting on flood plains and riparian woodlands has the potential to contribute to flood attenuation and improvements in water quality and soil stability.

No water catchments in Fife have been identified as priorities for rural diffuse pollution in the current River Basin Management Planning cycle. However, SEPA has identified the following waterbodies in Fife as failing, ie categorised as being of less than good ecological status:

**Moderate condition:** Bluther Burn, Grange Burn, Keithing Burn, Cocklemill Burn/Den Burn, Black Devon, Foulbutts Burn, Gairney Burn/Pow Burn, River Ore, Kelty Burn, Lochfitty Burn, Meldrums Mill Burn/Linn Burn, Den Burn and Loch Gelly.

**Poor condition:** St. Monans Burn/Inverie Burn, Balmonth Burn, Dour Burn, Den Burn/Lochgelly Burn, Lochty Burn, Lothrie Burn, Hatton Burn/Keil Burn, Lyne Burn, Ballo Reservoir, Loch Glow, Loch Ore and Loch Fitty.

**Bad condition:** Dreel Burn, Tower Burn, River Leven, Kennoway Burn/Back Burn, Tiel Burn and Dronachy Burn.

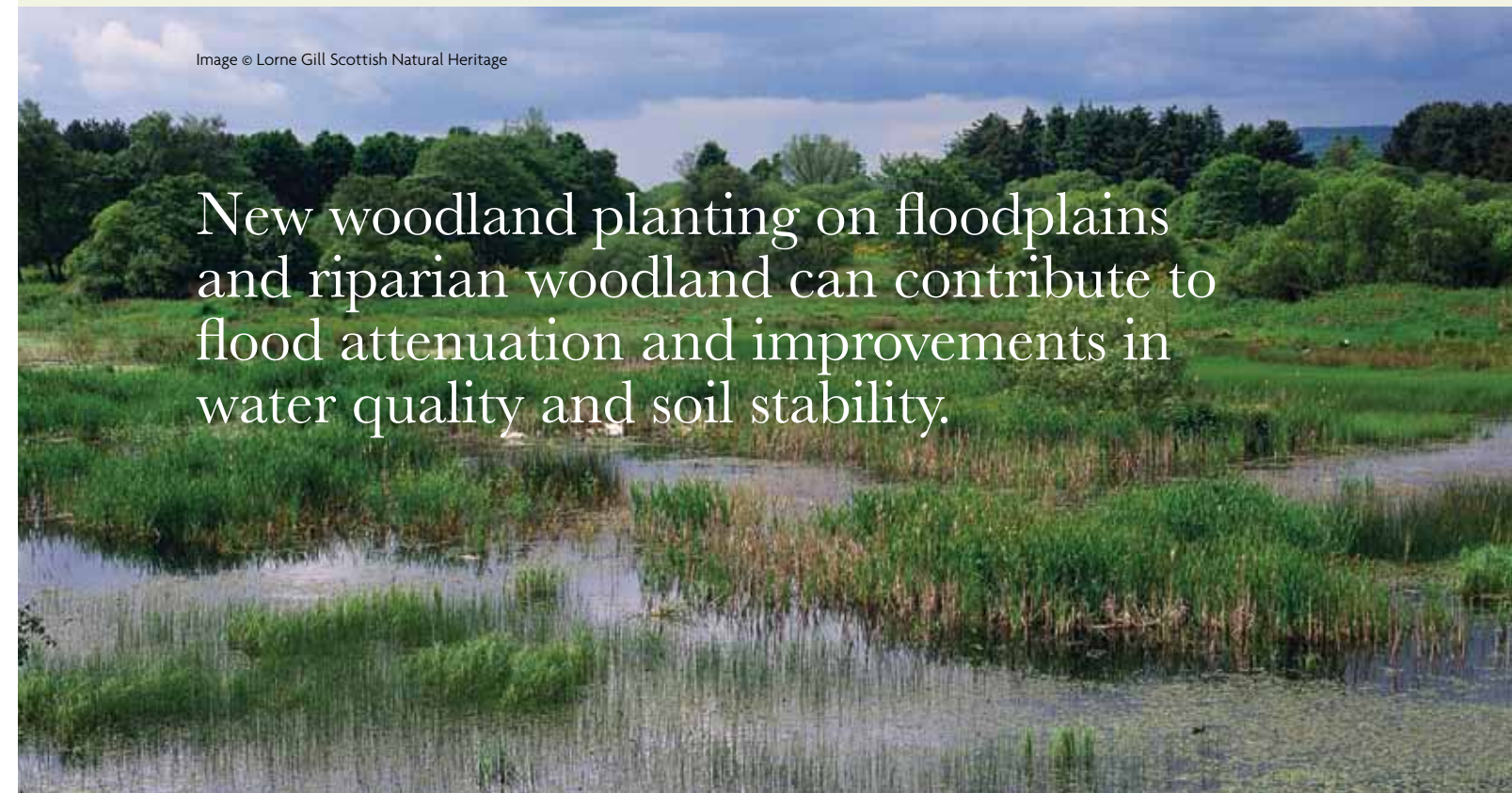
Opportunities should be identified within the failing water body catchments to target appropriate woodland planting and restructuring to help achieve the necessary improvements.

#### KEY PRIORITY

**EQ7:** Work with SEPA, Forestry Commission Scotland and other relevant stakeholders to identify opportunities for new woodland planting where this could assist in improving the quality of failing waterbodies.

Image © Lorne Gill Scottish Natural Heritage

New woodland planting on floodplains and riparian woodland can contribute to flood attenuation and improvements in water quality and soil stability.





Fife’s cultural heritage

Fife has an important legacy of country houses and designed landscapes, illustrative of the area’s rich industrial and agricultural heritage. They include the House of Falkland, Dysart House and Ravenscraig Park, Fordell Castle, Letham Glen, Balbirnie, Cambo, Balcaskie and Balcarres estates, Tentsmuir Forest, and historic town parks such as Beveridge Park and Pittencrieff Park. Many of Fife’s greenspaces reflect the history of the area such as Lochore Meadows Country Park, reclaimed from coal workings, and Riverside Park, zoned as part of Glenrothes New Town.

They also often reflect the rich culture of Fife such as Bow Butts in Ceres, used for an annual fair since the battle of Bannockburn. More recent changes in the landscape include the conversion of some policy woodlands back to agricultural use. There are a number of Heritage Trees in Fife, including the Balmerino Sweet Chestnut which is found within the ruins of a 13th century Cistercian Monastery and is one of the oldest to be found in Scotland. The Cockairnie Sweet Chestnut, found near Aberdour Fife, has a girth of 8.82 metres and is thought to be 500 years old. Other historic trees include the St Andrews Holm oak which was planted in the mid-eighteenth century in St Andrew’s University. Nearby is a thorn tree which is said to have been planted by Mary Queen of Scots.

Past land-use choices and human interventions continue to influence the character that we experience today, some are relatively subtle, others are more evident. All contribute to the local character and sense of place. This Strategy seeks to promote the contribution of woodland to the quality of Fife’s designed landscapes. The management and restructuring of existing woodlands can also improve the setting of historic features and landscapes. Proposals for new woodland should follow the guidance set out in the Scottish Historic Environment Policy (SHEP) and Forestry Commission Scotland guidance in order to protect and enhance the cultural heritage.

KEY PRIORITIES

**EQ8:** Promote the protection, planting and management of policy woodlands, hedges and hedgerow trees where they will contribute to the appearance and diversity of the agricultural landscape.

**EQ9:** Encourage long term plans for the sustainable management of woodland within Designed Landscapes.

Deer management

Woodlands are closely integrated with other aspects of land use and management, including the management of deer populations. Grazing by deer can be a positive feature of woodland management. However overgrazing can hamper the regeneration and expansion of native woodlands and softwood forests. Managing the deer population through culling and exclusion by fencing can protect important habitats and commercial woodlands. Local deer management to maintain a healthy population should be carried out in consultation with SNH, ensuring that impacts on woodland habitats are minimised.

KEY PRIORITY

**EQ10:** Encourage sustainable deer management in line with SNH Draft Code of Practice on Deer Management, taking into account other species and habitat management objectives.

The management and restructuring of existing woodlands can also improve the setting of historic features and landscapes



Image © Edward Parker



Image © Archie Miles

AIM 5: WOODLANDS FOR PEOPLE

The Strategy seeks to maximise community benefit from forests and woodlands through a variety of means, including securing new opportunities for community woodland projects, community involvement and / or ownership, education and social enterprises. This will create opportunities for a range of activities in Fife’s forests and woodlands, thereby contributing to quality of life and healthy living. Well managed woodlands, associated with parks and open spaces, can create attractive environments where people will wish to live and work and host community woodland initiatives to contribute to community health, well-being and learning.

Objectives:

Develop a range of initiatives to use existing woodlands for health, learning, outdoor education, training and interpretation

Optimise the opportunities for public access to woodlands for recreation, promoting community health and well-being

Develop a range of social enterprises through woodland projects

Community Health and Well-being

Woodlands are an important part of Fife’s natural and built environment and have positive benefits on health, wellbeing and place quality. The health and community benefits of woodlands are increasingly recognised, along with outdoor recreation and exercise. In addition to the benefits for physical wellbeing, access to high quality natural environments has been shown to have significant health and wellbeing benefits.

Woodlands are also a location for community action, a meeting place and venue that is an important aspect of local identity. Forests and natural landscapes provide a haven to escape to. Research into the benefits of woodlands to community health and well-being by various organisations, such as Forest Research, Forestry Commission, Greenspace Scotland and the National Health Service, has concluded that the main benefits of using woodlands include:

Mental and emotional therapeutic benefits from contact with nature, stress reduction and stimulation of the senses

Social benefits of exploring woodlands with family /friends and place for community action and participation

Physical benefits of fitness, reduction in blood pressure and prevention of obesity

Fife’s forest and woodland resource offers significant potential to develop a range of initiatives for health, learning, outdoor education and interpretation, building on the activities that are currently underway. Opportunities should be explored to set up wellbeing initiatives (eg Branching Out, Green Gym, and organised walking and cycling activities) and projects for community capacity building through woodland projects. The Forestry Commission’s Active Woods Campaign is a good example of a programme which encourages greater use of woodlands.

Forestry Commission Scotland operates a funding programme called Woods In and Around Towns (WIAT). The programme aims to bring neglected woodland into management, create new woodlands and support people to use and enjoy their local woods. The current phase of the programme (2011-2014) has evolved to include a stronger emphasis on the role of urban woods in delivering environmental and economic benefits.

KEY PRIORITIES

**WP1:** Work with the public and voluntary sectors to increase awareness of the health benefits of woodlands and publicise the location of local recreational opportunities /path networks in Fife’s woodlands.

**WP2:** Support the setting up of community woodland groups to enable the active involvement of local communities.

**WP3:** Increase the level of community engagement in woodlands through a range of initiatives to promote activity, learning, outdoor education and interpretation, in conjunction with the Core Paths Plan.

**WP4:** Increase the area of Fife woodlands brought into management, thus providing more places for woodland recreation.



Education and training

Fife’s woodlands have the scope to support wider economic and social objectives, such as training and education and addressing social inclusion. The consultation identified a perceived skills gap in the forestry sector as experienced staff (both practical and management) are either retiring or leaving the sector. Projects and programmes which encourage new business development, social enterprise and training / education opportunities (for example school programmes, apprenticeships, skills training and lifelong learning) should be assessed and piloted. Opportunities could include the extension of the Woodland Nursery, Forest Schools and the Forest Nursery Initiative coordinated by the Fife Forest Education Initiative (FEI).

Fife’s woodlands are also being used for a variety of outdoor learning initiatives to deliver the Curriculum for Excellence, including Forest Schools and Forest Kindergartens. The West Fife FEI and the North East Fife FEI were established in 2009 by a small number of committed individuals to take forward Forest Schools in the area. They have recently set up a School Level 3 Practitioners course to enable people to teach woodland learning / play or to lead their own Forest School.

**KEY PRIORITY**  
**WP5:** Extend training and education opportunities in Fife to address forestry skills gaps.

Access to woodlands

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 Woods In and Around Towns (WIAT) schemes have played an important role in increasing public access to woodlands, and access to woodlands is also a priority of the Central Scotland Green Network initiative in the South of Fife. Over the past decade, there has been an increase in the number of community woodland initiatives that aim to build community capacity through woodland projects.

Access rights across all rural land, including forests, were established by the Land Reform (Scotland) Act 2003. The Fife Core Path Network makes extensive use of forest paths, tracks and existing rights of way. There are networks of paths and tracks to and around most public sector forests and some privately owned woodlands, making it easier for people to access high quality woodland environments.

The Fife Access Strategy aims to improve countryside access and environmental management within Fife, by providing a better connected access network, while the Fife Greenspace Strategy (2011 - 2016) aims to ensure that the majority of Fife residents have access to quality greenspace, including urban woodlands. The Strategy seeks to coordinate actions to improve access to woodlands with those of the Fife Access and Greenspace Strategies and other relevant initiatives.

**KEY PRIORITY**  
**WP6:** Work with the public, voluntary and private sectors to increase access to high quality woodlands for recreation, active sports and other recreational activities, in association with the Fife Access Strategy.

Social enterprises

Over the last ten years, there has been growing interest in the potential contribution that social enterprises can make to society. It has been suggested that they can help to create a more ethical, sustainable and socially inclusive economy and they can support community empowerment, build community capacity, facilitate social inclusion and generate social capital. There are a number of social enterprises that currently operate in Fife, such as Scottish Wood based in Inzievar which brings together local communities, landowners and local businesses to regenerate a thriving woodland culture, maximising the potential from the broadleaf woodlands.

There is opportunity to support wider economic objectives, such as forestry training and education and addressing social inclusion through woodland initiatives. The promotion of woodland businesses combined with other enterprises (for example the Falkland Centre for Stewardship ‘Woodlands on the Edge’ project and Living Solutions) can be a valuable source of training and employment. Projects and programmes which encourage social enterprise as well as educational benefits (from school through to apprenticeships and lifelong learning) should be assessed and piloted.

BioRegional have also helped develop a concept known as ‘Tree Stations’. The idea was pioneered in the London Borough of Croydon and it consists of a local collection point where arboricultural arisings from tree surgery or woodland management are processed into woodchips and sold. The Croydon Tree Station is now a successful social enterprise producing up to 10,000 Tonnes/year of biomass fuel. Tree stations may be worth considering as a way of processing woodchips for Fife’s biomass plants.

**KEY PRIORITY**  
**WP7:** Encourage and promote social enterprises centred around woodland and woodland business /activities.

The key priorities are summarised in the following table:

Table 1: Collated aims, objectives and key priorities

Aim 1: Expanding the woodland resource	
<b>Objective:</b> Encourage the expansion of well-designed woodland cover of an appropriate scale, composition and purpose to meet the Fife minimum target of 13.2% of the land area by 2053, thereby contributing to Scottish Forestry Strategy targets.	
Ref:	Key priorities
WR1	Encourage the delivery of at least 60 - 100 hectares per year of new woodland across Fife, in accordance with the aims of the Fife Forestry and Woodland Strategy.
WR2	Encourage new softwood forests in appropriate locations, particularly in areas identified on the woodland creation opportunities map as being preferred.
WR3	Promote targeted expansion of existing woodlands through native woodland planting to strengthen existing forest habitat networks, thereby creating an interconnecting biodiverse network of woodland.
WR4	Encourage new energy forests in appropriate locations, particularly in areas identified on the woodland creation opportunities map as being preferred.
WR5	Facilitate the expansion of woodland to complement farming activities and encourage diversification, including the creation of woodland related businesses.
WR6	Promote extension of shelterbelt woodlands to help increase crop yields, the productivity of livestock benefiting from shelter and assist soil stability.
WR7	Through the planning system, including masterplanning, ensure that new development and regeneration proposals include provision of high quality greenspace and woodland creation.
WR8	Promote woodland creation to enhance existing and new greenspace initiatives in urban and urban fringe areas, to encourage greater community involvement, opportunities for recreation and creating better links to the countryside.

Aim 2: Maximising Fife’s forest and woodland economy	
<b>Objectives:</b> Increase awareness of the role that Fife’s forests and woodlands play in the local economy and work with the forest sector in Fife to optimise the contribution it makes to the local Fife economy. Maximise the use of biomass for heat through support of new energy technologies. Promote Fife’s forests and woodlands as destinations for visitors to assist the development of Fife as a UK recognised tourist destination.	
Ref:	Key priorities
EC1	Undertake detailed research into Fife’s forest economy, highlighting the constraints and challenges to growth and identifying solutions.
EC2	Assist the development of a forest business network at a regional level, in association with the mid Scotland Forest & Timber Technologies Regional Group. The network should aim to share best practice, provide access to expertise, share resources and information.
EC3	Develop a wood-fuel strategy for Fife, in partnership with stakeholder organisations including the Central Scotland Woodfuel Forum, and integrate with Fife Council policy on renewable energy.
EC4	Encourage the development of a sustainable timber supply chain to service the development of local wood-based heating schemes and timber products.
EC5	Provide information to woodland owners on how to manage and improve small woodlands.
EC6	Work with the forestry sector to develop and increase the competitiveness of the Fife timber manufacturing, processing and distribution businesses, with a focus on provenance and sustainability.



Aim 2: Maximising Fife’s forest and woodland economy contd.

Ref:	Key priorities
EC7	Encourage Fife’s timber businesses to increase the competitiveness of “value added” hardwood and softwood timber products, creating a Fife ‘brand’ with specific focus on quality and sustainability.
EC8	Encourage the use of Fife grown timber for manufacturing purposes (construction materials, furniture, fencing, etc.).
EC9	Support the growth of existing and the development of new woodland management businesses including traditional private companies, social enterprise and co-operative models of business.
EC10	Work with the public and private sectors to promote Fife’s woodlands as visitor destinations and encourage the growth of woodland-related tourism businesses.

Aim 3: Responding to climate change

**Objectives:**  
Mitigate climate change through new woodland creation of appropriate tree species and provenance, and through the protection of existing woodland.  
Seek opportunities to contribute to reducing carbon emissions within the forestry sector in Fife  
Promote the sustainable production and use of locally derived woodfuel.  
Maximise the potential of trees and woodlands to alleviate flooding.

Ref:	Key priorities
CC1	For new development ensure that due consideration is given, through the planning system, to the Scottish Government policy on the Control of Woodland Removal.
CC2	Encourage the development of locally sourced woodfuel as a low carbon and cost-effective source of heat and power.
CC3	Seek opportunities to raise awareness within the forestry sector of the importance of reducing the reliance on fossil fuels for forestry operations and associated activities.
CC4	Seek to encourage the use of locally sourced timber as a building material, by local businesses and stakeholder organisations.
CC5	Raise awareness of the importance of trees in urban areas, including street trees and greenspaces, in reducing localised flooding and surface water flow.
CC6	Promote the use of trees and woodland as part of new greenspaces and Sustainable Urban Drainage Systems (SUDS) in urban areas.
CC7	Ensure forestry plantations are managed using the most sustainable option including continuous cover forestry techniques where possible.
CC8	Identify and promote locations where better management of existing woodland or planting of new woodland will aid natural flood management programmes at a catchment scale, in partnership with the relevant authorities.

Aim 4: Protecting and enhancing environmental quality

**Objectives:**  
Enhance the quality of Fife’s landscapes through sensitive woodland planting and management, reflecting local variances in landscape character and current woodland cover.  
Protect existing native and ancient woodland and manage to maintain and enhance natural heritage and biodiversity.  
Increase riparian woodland planting to protect and improve water quality.  
Recognise and promote the contribution of woodland to the quality of Fife’s designed landscapes and historic features.

Ref:	Key priorities
EQ1	Encourage the positive management of woodlands and trees where they are an important contributor to natural heritage and landscape quality.

Aim 4: Protecting and enhancing environmental quality contd.

Ref:	Key priorities
EQ2	Create and expand new woodland in areas that have become degraded through past industrial activities.
EQ3	Ensure that trees and woodlands are considered as an integral part of development proposals through the planning system, including supplementary guidance, development briefs and masterplans.
EQ4	Promote the development of green networks in association with the Central Scotland Green Network and the Lothians and Fife Green Network Partnership.
EQ5	Ensure the protection and management of existing woodland and the creation of new native woodland to safeguard and improve biodiversity and habitat connectivity.
EQ6	Increase the area of well managed native, ancient and semi-natural woodland, and encourage appropriate management of existing Plantations on Ancient Woodland Sites including habitat enhancement for key native species.
EQ7	Work with SEPA, Forestry Commission Scotland and other relevant stakeholders to identify opportunities for new woodland planting where this could assist in improving the quality of failing water bodies.
EQ8	Promote the protection, planting and management of policy woodlands, hedges and hedgerow trees where they will contribute to the appearance and diversity of the agricultural landscape.
EQ9	Encourage long term plans for the sustainable management of woodland within Designed Landscapes.
EQ10	Encourage sustainable deer management in line with SNH Draft Code of Practice on Deer Management, taking into account other species and habitat management objectives.

Aim 5: Woodlands for people

**Objectives:**  
Develop a range of initiatives to use existing woodlands for health, learning, outdoor education, training and interpretation  
Optimise the opportunities for public access to woodlands for recreation, promoting community health and well-being  
Develop a range of social enterprises through woodland projects

Ref:	Key priorities
WP1	Work with the public and voluntary sectors to increase awareness of the health benefits of woodlands and publicise the location of local recreational opportunities / path networks in Fife’s woodlands.
WP2	Support the setting up of community woodland groups to enable the active involvement of local communities.
WP3	Increase the level of community engagement in woodlands through a range of initiatives to promote activity, learning, outdoor education and interpretation, in conjunction with the Core Paths Plan.
WP4	Increase the area of Fife woodlands brought into management, thus providing more places for woodland recreation.
WP5	Extend training and education opportunities in Fife to address forestry skills gaps.
WP6	Work with the public, voluntary and private sectors to increase access to high quality woodlands for recreation, active sports and other recreational activities, in association with the Fife Access Strategy.
WP7	Encourage and promote social enterprises centred around woodland and woodland business / activities.



# 6 Spatial Guidance



Analysis of available data for Fife found that 75.7% of land has the potential to support woodland cover of some description, demonstrating that the region could accommodate a significant increase in woodland cover.

## Introduction

This section of the Strategy sets out the broad spatial priorities for woodland expansion in Fife. The land area of the region has been categorised according to its suitability or otherwise for woodland planting, based on the guidance provided by The Right Tree in the Right Place. Categorisation is necessarily a strategic process, giving a general impression of opportunities and constraints. Decisions on individual proposals for woodland creation, or for woodland removal, will be based on a wide range of other factors and on site specific assessment.

The map at Figure 2 identifies areas that are considered to be **unsuitable** for new planting or sensitive to new planting. Other areas are identified as having **potential** to accommodate future expansion of a range of woodland types, but where at least one significant sensitivity exists. **Preferred** areas are locations where no significant sensitivities have been identified.

This map is indicative and does not preclude woodland planting in sensitive areas. However, it does highlight where there are sensitivities that need to be considered and where opportunities are likely to be more restricted. Equally there may be sites within preferred areas where planting may not be appropriate. Additional land categories were also identified, including existing woodland and urban areas. The datasets which have been used to produce the map are listed at Appendix 2.

In general, the more sensitive the classification, the more numerous and significant are the issues that will need to be addressed in considering a change of land use and the greater the likelihood that an Environmental Impact Assessment will be required. An appropriate assessment under the Habitat Regulations will be required for all proposals which could have a significant effect on Natura 2000 sites (SACs and SPAs).

Extra consideration is required in these locations and any proposals for woodland expansion should seek appropriate advice about the range of likely sensitivities of the proposed site at the earliest opportunity. Where there are issues of land use balance or impacts on specific sensitivities, for example open habitats with specific requirements to remain open, then this should be identified.



Prioritising the opportunities for woodland expansion

The woodland creation opportunities map (Figure 2) provides an indication of where opportunities for new planting are likely to be. The map demonstrates that 75.7% of Fife has potential for woodland expansion as detailed in Table 2 below.

Areas have been identified that have potential to accommodate future expansion of a range of woodland types, but where at least one significant sensitivity exists (Local Landscape Areas or Land Capability for Agriculture Classes 1, 2 and 3.1). 48.6% of the land area falls into the potential category as Fife has a large proportion of prime agricultural land, particularly in the Howe of Fife, East Neuk and the Ore Valley. Prime agricultural land is likely to remain in use for farming, although there may be opportunities for woodland planting to deliver significant farming and environmental benefits.

The 19 Local Landscape Areas include the Cleish Hills, Lomond Hills, Largo Law and the Tay Coast. Policy E19 in the Fife Local Plans protects these landscape areas from unsympathetic development (the Local Landscape Areas in mid Fife are now adopted following the adoption of the mid Fife Local Plan). There is very limited unimproved ground in Fife which is suitable for large-scale afforestation. It is not considered appropriate to promote significant woodland expansion on better quality land unless there is a clear public benefit, such as habitat enhancement or public amenity. Some opportunities may be available in the Lomond Hills and the Eastern Ochils outliers.

The remaining 27.1% of the land area with potential for woodland expansion has been identified as locations where new planting at an appropriate scale, composition and purpose is preferred and given the highest strategic priority. These areas offer the greatest scope to accommodate woodland expansion that will help deliver the Strategy objectives. The most significant of these areas is a corridor stretching from Kincardine to Glenrothes. There are three other significant areas around Clatto Hill, Auchtermuchty and Radernie. These have areas of derelict land or post-industrial/mining neglect. There are also areas around the major towns and villages where new woodlands might best be located to deliver multiple benefits. Suggested locations include West Fife, the Greenbelt around St Andrews and Glenrothes to Kirkcaldy.

Table 2: Availability of land for woodland expansion

CATEGORY	Area (ha)	Proportion of Fife (%)
PREFERRED AREAS	37,260.9	27.1
POTENTIAL AREAS	66,787.8	48.6
SENSITIVE AREAS	8,735.8	6.4
UNSUITABLE AREAS	1,589.8	1.2
EXISTING WOODLAND (over 5ha)	13,175.7	9.6
BUILT-UP AREAS	9,842.1	7.1
TOTAL	137,392.1ha	100

Fife has the capacity to make a significant contribution to meeting the national woodland expansion target and also to add value to the local economy



The areas that have been identified as being unsuitable for woodland expansion comprise small areas of land designated as Scheduled Ancient Monuments, concentrated around Leuchars and Tentsmuir Forest, the major water bodies and a small area of land identified as unsuitable for tree planting (Land Capability for Forestry) in the Lomond Hills. Opportunities for new woodland within built-up areas are limited in size and therefore not large enough to map on a strategic scale.

Limited expansion is only likely to be possible in areas identified as sensitive to new planting where proposals are of a scale, composition and purpose that can be accommodated without significant negative impacts and/or where it would positively enhance the features of interest locally. Woodland expansion should be carefully designed and sited to fit with existing conservation and landscape features and land management objectives. These areas include designated and protected sites. The SSSIs, Ramsar sites, Special Areas of Conservation, Special Protection Areas are mostly associated with the coastal areas and the peat soils are located in the Lomond Hills, Cleish Hills and in Devilla Forest. The 25 Designed Landscapes in Fife are scattered throughout the region, mainly associated with towns and estate policies.



Image © Forestry Commission Scotland

Table 3: Categories of woodland

TYPE	Definition
Softwood forests	<b>Forests to provide a source of softwood timber</b> Softwood forests consist largely of Sitka spruce, Norway spruce, larch and lodge pole pine, for the production of softwood timber for various manufacturing / business purposes. Forests will comply with the UK Forestry Standard in terms of species mix. These woodlands can create a backdrop for outdoor access and recreation.
Energy forests	<b>Existing and new woodlands with potential to provide a source of woody biomass</b> Woodlands where fuel production is the principal objective such as short rotation coppice using willow and poplar and short rotation forestry. This type of planting can also be used in flood risk areas or areas of poor quality land, acting to stabilise soils and ameliorate pollution and in association with new development.
Mixed woodlands	<b>Mixed woodlands such as farm woodlands and shelterbelts</b> Mixed species woodland often including native species, traditional broadleaves and conifers. These woodlands are largely planted as amenity woodlands, community woods and policy woodlands.
Native woodlands	<b>Native woodlands contributing to habitat networks</b> Woods composed of native species and making use of natural colonisation where evident. These woods are used for recreation and amenity, stock shelter, fishery enhancement, sporting uses, community woodlands and green networks. The development and enhancement of native woods will help develop forest habitat networks, as part of integrated habitat networks, to enhance both core habitat and ecological connectivity and thereby help conserve viable ecosystems.

## Types of planting for woodland expansion

In addition to identifying the potential areas for woodland expansion, it is useful to identify the broad categories of new woodland that may be suitable within Fife. It also allows indicative maps to be prepared to guide the selection of suitable woodland types for a given area. Woodland expansion in Fife should seek to be multipurpose, delivering a variety of benefits including timber production, recreation opportunities and biodiversity benefits. The four categories of woodland for new planting listed in Table 4 have been defined in the Forestry Commission Scotland guidance the Right Tree in the Right Place.

The woodland types mapping (Figures 11 to 14) provide a starting point to inform the development and evaluation of more detailed woodland expansion proposals. It is likely that there will be opportunities for each type of woodland outside the areas identified on these maps. Some areas are likely to be suitable for more than one woodland type, and some woodlands may fall within more than one category.

### Softwood forests

Figure 11 shows areas which are most suitable for the creation of new softwood forests. It maps the ‘preferred areas’ for potential planting of softwood forests, excluding the higher quality agricultural land (James Hutton Institute land classes 1 to 3.2). Softwood forests are unlikely to be economically viable on higher quality agricultural land.

The relative emphasis on softwood forest expansion, and the most appropriate scale and design of new forests, varies considerably within the areas identified on this map. Larger scale forests are likely to be most appropriate in West Fife and in areas to the north, along the Firth of Tay. Smaller scale forests are located in the agricultural areas, whereas there could be scope for medium sized forests in some areas of higher ground, associated with existing woodland.

Woodland expansion should be carefully designed and sited to fit with existing conservation and landscape features and land management objectives.

### Native woodlands

Figure 12 identifies the location of existing native / nearly native woodland and shows areas which are most suitable for new native woodlands. It is based on Integrated Habitat Network (IHN) data and shows opportunities for enhancing existing habitat networks, which should be used to guide the development of native woodlands across the region. The mapping also identifies the Plantations on Ancient Woodland Sites (PAWS), which are given priority for the restoration of native woodlands.

### Energy forests

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

Figure 13 shows areas which are likely to be most suitable for energy woodlands. The map identifies existing woodlands and farm/estate woodlands where management could increase the supply of woodfuel. The map also indicates where there are a wide range of opportunities for new energy forests coinciding with the ‘preferred’ and ‘potential’ areas and lower quality agricultural land (James Hutton Institute land classes 3.2 to 4.2).

### Mixed woodlands

Figure 14 shows areas which are most suitable for the creation of new mixed woodlands. The mapping indicates areas of high quality land (James Hutton Institute land classes 1 and 2) in the ‘preferred’ and ‘potential’ areas, which may be suitable for planting of some areas of mixed woodland. These are areas where there is likely to be most potential for the creation or expansion of farm woodlands and shelterbelts as part of existing farm businesses. These woodlands should also deliver a range of benefits including recreation, woodfuel, landscape enhancement and sustainable flood management.

The maps also indicates search areas for new riparian woodland and wider opportunities for new mixed woodland, located on lower quality agricultural land (James Hutton Institute land classes 3.2 to 4.2).



Figure 10: Areas of ancient woodland hotspots with high potential to contribute to habitat network development

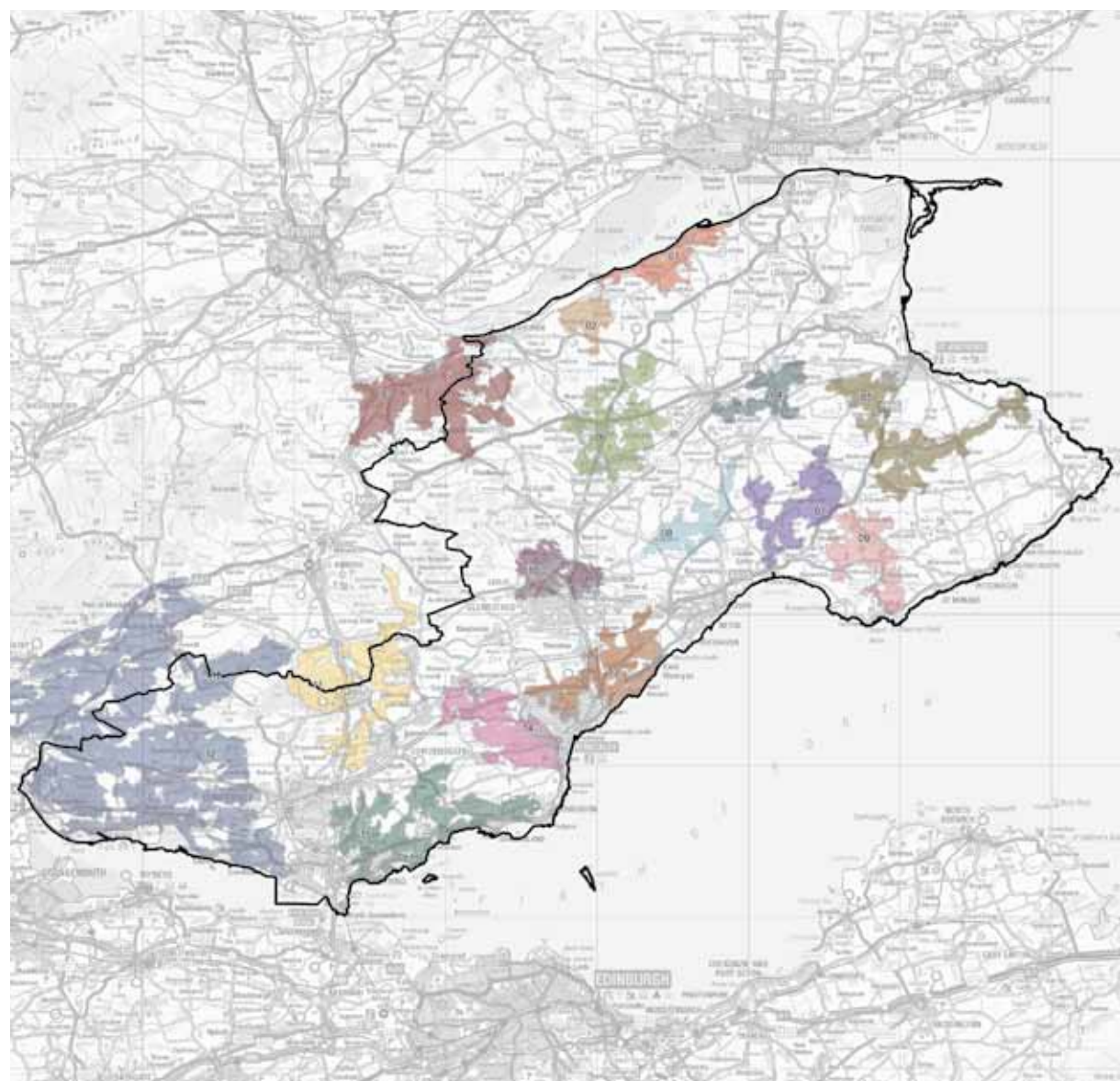


Figure 11: Opportunities for new softwood forests

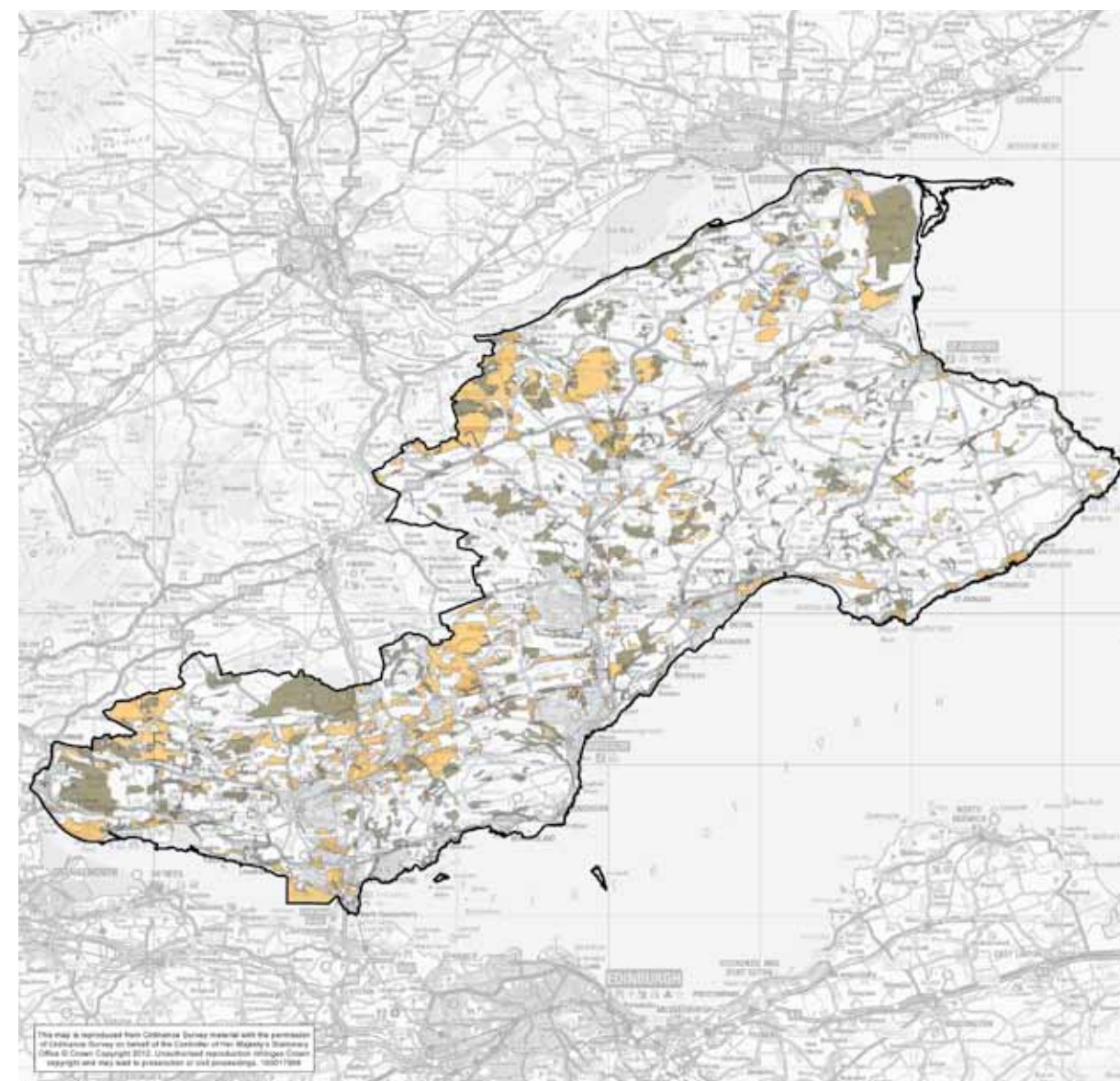
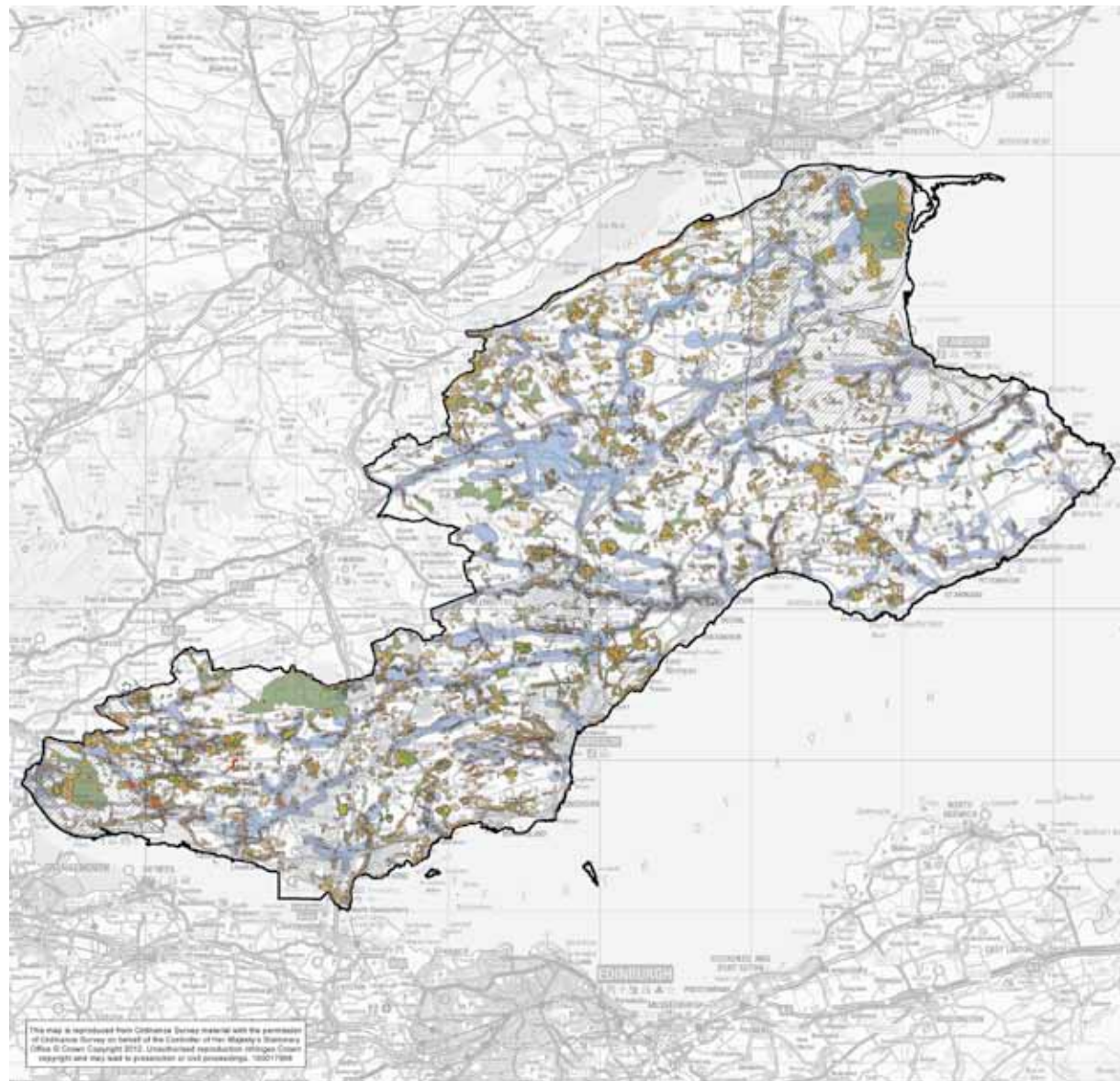




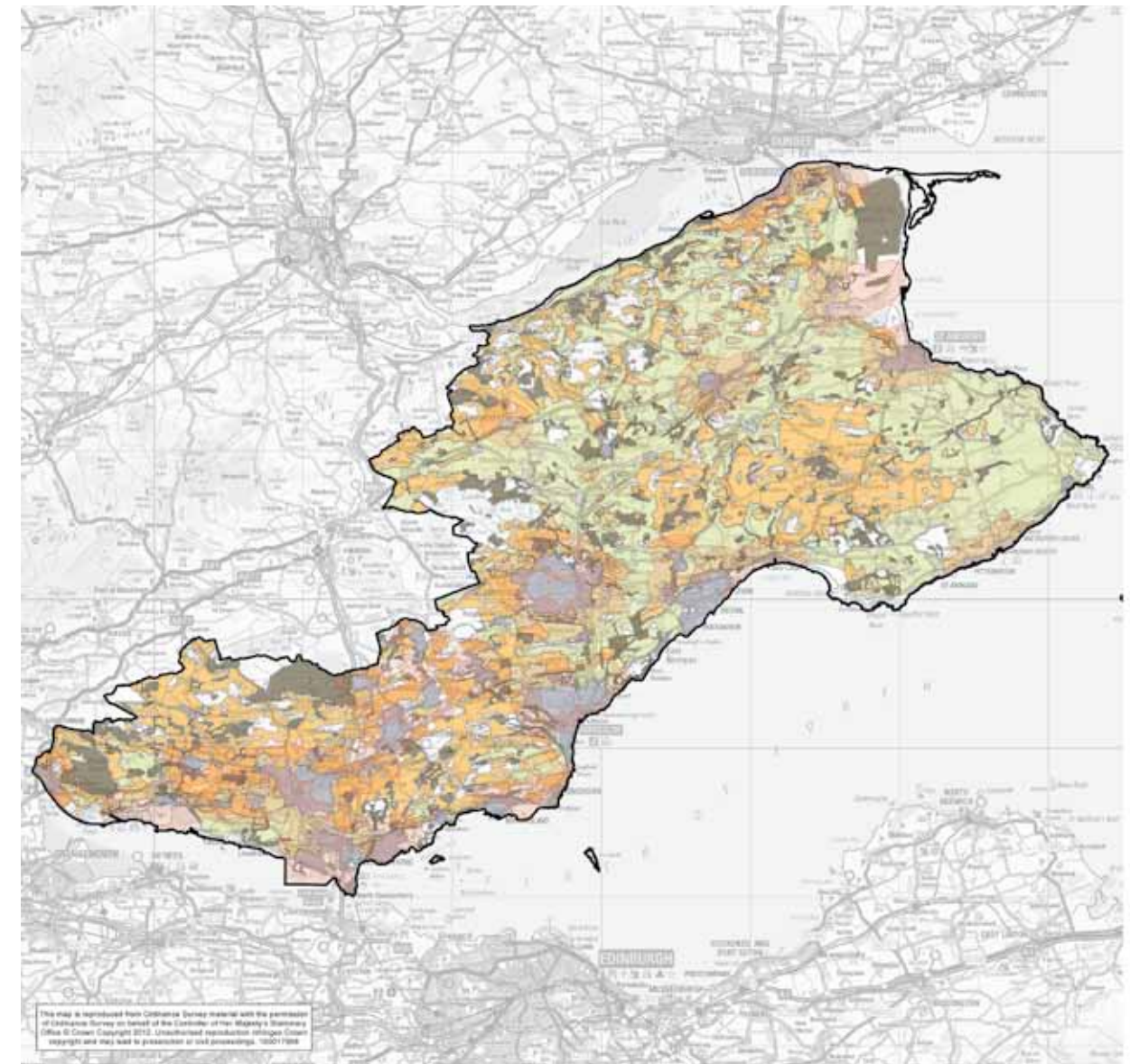
Figure 12: Opportunities for new native woodlands



- Opportunities to contribute to woodland habitat network
- Local Authority Boundary
- Existing Native Woodland
- Existing Nearly Native Woodland
- Native Woodland Not Yet Surveyed
- Plantations on Ancient Woodland Sites (PAWS)
- Other Woodland
- Area of Search for New Riparian Woodlands



Figure 13: Opportunities for new energy forests

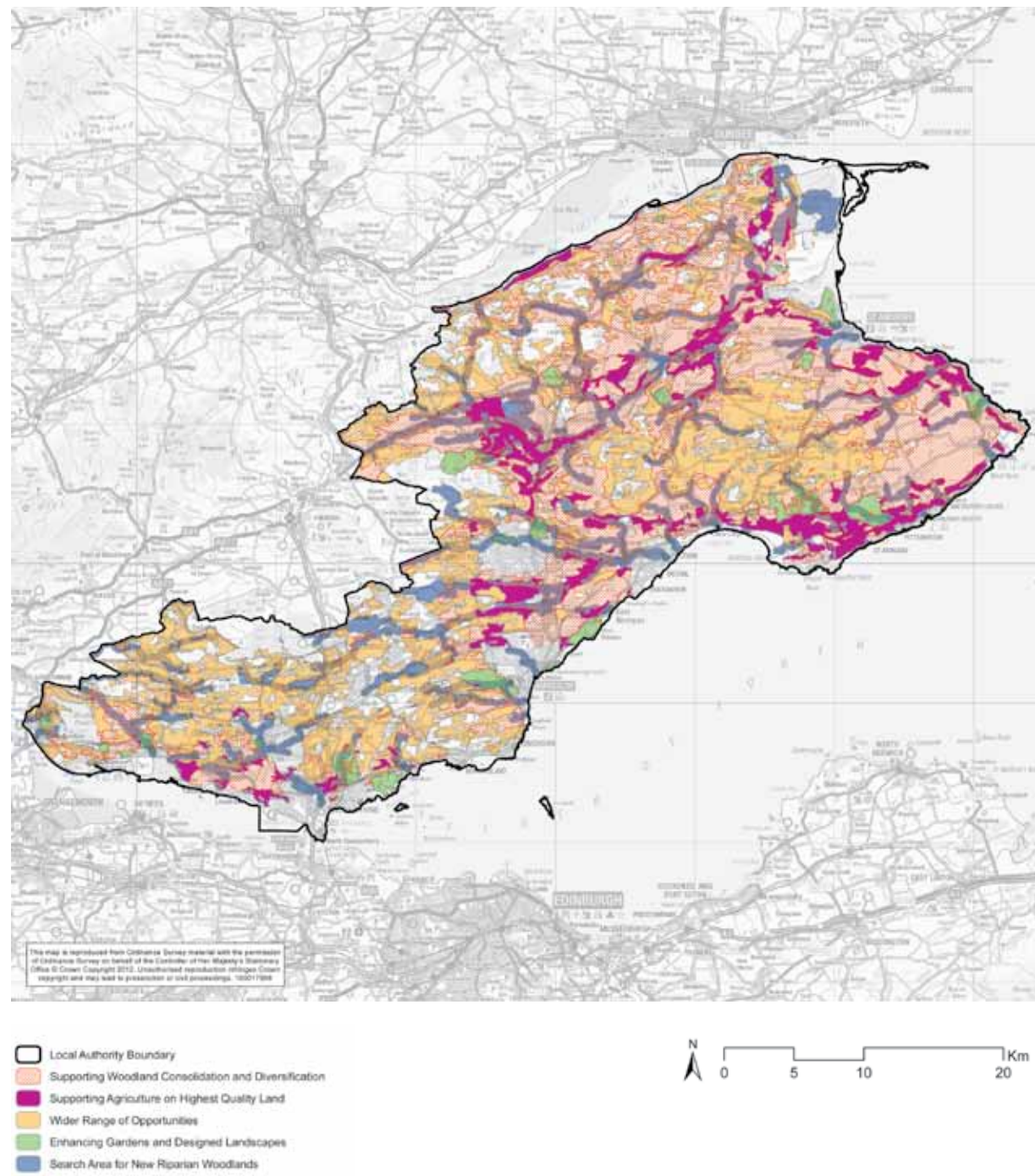


- Local Authority Boundary
- Managing Urban Fringe Woodland (1km buffer around settlements of more than 2000 people)
- Managing Existing Woodland (over 5Ha)
- Managing Farm and Estate Woodland
- Wide Range of Opportunities for Planting & Management
- Urban Areas





Figure 14: Opportunities for new mixed woodlands





# 7 Delivery Mechanisms

## DELIVERY MECHANISMS FOR IMPLEMENTATION

Implementation of the Fife Forestry and Woodland Strategy depends upon effective partnership and co-operation between the private, public and voluntary sectors. An officer group will be set up to develop an Action Plan for the delivery of the Fife Forestry and Woodland Strategy, identifying resources to implement the priorities identified in Chapter 5. The group will draw up an annual action plan to support the implementation of the Strategy's priorities, which can be monitored and evaluated.

Detailed assessment and development work will be required to define specific economic opportunities and how these might best be advanced working with partners such as Forestry Commission Scotland, the Scottish Forest and Timber Technologies Advisory Group, Scottish Enterprise and industry representatives. Research should focus on the demand opportunities to present a 'scale of the opportunity', highlighting the constraints and challenges to growth and identifying solutions. Findings should be presented to stakeholders in Fife's forestry sector, ensuring that woodland owners better understand the growth opportunities of existing and new markets.

Investment in this initiative needs to be seen as a long term programme, with a minimum of a thirty year timescale. Many of the benefits of the initiative will only become apparent in the medium term (10 – 20 years).

### Working with key partners

Key to the implementation of the Strategy and delivery of the Vision is partnership working and the full engagement of all stakeholders, including the following:

#### Partners

Woodland sector businesses, industry groups and representatives

Land managers - farmers and stakeholders with an interest in woodland delivery

Forestry Commission Scotland

Lothians and Fife Green Network Partnership

Scottish Natural Heritage

Fife Coast and Countryside Trust

Fife Council

Community organisations, Community Councils, Housing Associations, etc.

Local communities

#### Stakeholders

Fife Access Forum

Woodland Trust

Scottish Enterprise Fife

VisitScotland

NHS Fife

Scottish Wildlife Trust

British Trust for Conservation Volunteers

Falkland Centre for Stewardship

Living Solutions

CSGN Support Unit

RSPB Scotland



Long Term Management

Both an annual action plan and a summary progress statement will be prepared on an annual basis by the Woodland Steering Group to achieve the following:

Annual Action Plan identifying the tasks required for implementation of the Strategy, in conjunction with Service Plans and the Community Plan

Summary Progress Statement to summarise progress made on the Action Plan and undertake an evaluation of success

Mitigation Framework

The Strategy is founded upon a set of principles that seek to ensure sustainable development and expansion of the woodland and forestry sector in Fife. A best practice, environmentally sensitive approach has been applied in identifying the most suitable areas for woodland expansion and defining the focus of the Strategy.

Throughout the implementation of the Strategy, it is imperative that environmental considerations are made at each step and mitigation measures implemented, where necessary, in a proportionate, effective and focused manner.

To support the Strategy in delivering its aims and priorities, a clear, discrete mitigation framework is provided. This framework comprises the following steps that will contribute towards making the Strategy as sustainable as possible, effectively avoiding, mitigating and reducing potential adverse environmental impacts across regional and local, strategic and project levels.

Follow at all levels the mitigation hierarchy: avoid, reduce, remedy or compensate

Ensure effective and ongoing dialogue and consultation with statutory consultation authorities (SNH, SEPA & Historic Scotland), local authorities and key stakeholders to identify at an early stage any potential conflicts and environmental impacts;

Implement, where appropriate, statutory nature conservation and environmental protection legislation at the project level;

Enable flexibility within the Strategy and subsequent projects and activities. This allows for monitoring outcomes to feed back and change methods of implementation, land management practices and policy that benefit, protect and enhance the environment.

Monitoring

Best practice recommends that a Monitoring and Evaluation Framework should be set up to establish a formal and measurable process to record outputs and outcomes. It is vital that the Forestry and Woodland Strategy becomes a part of the day-to-day management of the Council's open space resource. The monitoring process should address the following issues:

- Other related strategies
- Future stakeholder and community engagement
- Capital and funding programme
- Woodland quality improvements
- Links to Single Outcome Agreement outcomes and indicators
- User satisfaction



The evaluation will inform the Strategy and Action Plan updates.

Appendix 1  
ECONOMIC ANALYSIS

Contribution of the forestry sector to the Fife economy

It is possible to assess the relative economic value of the Fife forestry sector against the national picture through an analysis of the Scottish Annual Business Statistics (SABS). The SABS estimates cover Scottish businesses registered for Value Added Tax (VAT) and/or Pay As you Earn (PAYE), classified to the Standard Industrial Classification (SIC) system.

SABS provides data mainly on the Manufacturing, Construction and Service Sectors in Scotland. The SABS, from which the following statistics are derived, covers approximately two thirds of the economy. The main sectors not covered are agriculture (Groups 01.1, 01.2, 01.3), financial intermediation, public administration and defence and some of the public sector. Due to the change in SIC codes in 2007, the full dataset covers the period 2000 to 2007.

Number of registered business units

The number of registered forestry businesses in Fife increased from 83 in 2000 to 92 in 2007, representing an 11% increase; at a Scotland level the number of forestry businesses decreased from 1783 to 1697 – a reduction of 5%.

The number of forestry businesses in Fife accounts for 1.1% of the Fife business stock, which is the same proportion recorded at the national level.

Fife forestry businesses account for 5.5% of the total number of forestry businesses in Scotland, which is in line with the proportion of the total Scottish business stock located in Fife (5.6%).

Although Fife has a lower proportion of woodland cover (11%) compared to the national average (16%) the number of forest enterprises as a proportion of total businesses is the same as the national level. The number of forest enterprises in Fife increased over the 2000-2007 period, whereas at the national level the number of businesses declined.

Number of registered employees

The number of forest related jobs in Fife decreased from around 3,000 in 2000 to 2,600 in 2007, representing a 13% decrease; nationally the number of forestry jobs decreased from around 21,000 to 19,000 – a reduction of 8%.

Forestry jobs in Fife account for 3.0% of total Fife employment. This is significantly higher than the national picture where forestry jobs account for 1.2% of total Scottish employment.

Fife forestry jobs account for 14% of the total number of forestry jobs in Scotland, which is substantially greater than the regional proportion of national jobs located in Fife (5.4%).

Although forestry jobs reduced over the 2000-2007 period it is apparent that the forestry sector is more important at the local level than it is nationally – employing 3.0% of the workforce compared to 1.2% nationally. A significant proportion of forestry related posts (14%) are situated in Fife.





Turnover

The total turnover of forest businesses in Fife increased from £339m in 2000 to £394m in 2007, representing a 16% increase; comparable Scottish figures are not available.

The total turnover of forest businesses in Fife accounts for 4.7% of the total turnover of Fife based businesses; this is significantly higher than the national picture where forestry related turnover accounts for 1.7% of total turnover.

Forest enterprises in Fife account for 14% of the total turnover of all Scottish forest businesses, which is greater than the proportion of national turnover generated in Fife (5.1%).

In keeping with the employment data, the combined turnover of the forestry sector in Fife is proportionally greater than recorded at the national level – confirming the importance of the sector at the local level.

Gross Value Added (GVA)

The combined GVA of local forest businesses increased from £97m in 2000 to £99m in 2007, representing a 2% increase; at a Scotland level the total GVA of forestry businesses increased from £702m to £866m – an increase of 23%.

GVA of forest businesses in Fife accounts for 3.5% of the total Fife GVA. This is significantly higher than nationally, where forestry related GVA accounts for 1.5% of total Scotland GVA.

GVA of Fife’s forest businesses accounts for 11% of the total GVA of forest businesses in Scotland, which is greater than the proportion of the Scottish GVA generated in Fife (5.0%).

GVA is the true measure of economic wealth as it strips out ‘purchases on goods and services’ from turnover figures and therefore avoids double counting. The GVA contribution of forestry related businesses in Fife is greater than at the national level. However, the GVA contribution is lower than the employment and turnover measures suggesting a lower level of ‘value added’ processes and products in Fife.

GVA per employee

Dividing total GVA by the number of employees in a particular sector or geography provides GVA per employee – essentially providing a barometer of productivity.

The GVA per employee of local forest related businesses increased from £32.3k in 2000 to £37.9k in 2007, representing a 17% increase. At a Scotland level the total GVA per employee of forestry businesses increased from £33.4k to £44.8k – an increase of 34%.

Overall GVA per employee in Fife increased by 9% over the same period and was valued at £32.0k in 2007. GVA per employee at a Scotland level increased by 39% over the 2000-2007 period and was valued at £35.4k in 2007.

GVA per forestry employee in Fife is higher than the Fife and Scottish averages. However, it has not kept up with the national growth recorded in the forestry sector, again suggesting a lower level of ‘value added’ in the Fife forestry sector.

The Fife forest based sector can be summarised as being an important contributor to the region’s economic well-being. It has witnessed robust growth over the previous decade and is now more valuable to the local economy in terms of jobs, turnover and GVA.

The sector may be reliant on a small number of major employers and their supply chain but the sector remains more important locally than witnessed nationally. Although an important economic contributor the evidence drawn from the SABS suggests the area has not witnessed the sharp increase in GVA per head, resulting in lower value added activities.

# Appendix 2

## TECHNICAL ABSTRACT

### Developing the spatial guidance

Introduction

One of the key objectives of the Strategy is to identify the areas where woodland expansion could be best accommodated, to deliver the Strategic Priorities. The project has involved detailed Geographic Information Systems (GIS) based mapping to review the spatial information available for the Fife area. The mapping provided in the Strategy is indicative, as site specific opportunities and constraints cannot be effectively illustrated on a regional scale.

This technical appendix provides further details of the process and databases analysed in the preparation of the woodland creation opportunities mapping. The output has been the preparation of indicative mapping that can guide future opportunities for woodland expansion.

Land categorisation

A range of options for mapping the potential for woodland expansion were considered during the project, but a relatively simple approach based on the intersection of sensitivities was developed. Each of the datasets set out in Table 4 was assembled into a merged shape layer to produce the woodland creation opportunities map (Figure 2).

The Right Tree in the Right Place provided the background for the mapping exercise, outlining the broad criteria that the Forestry Strategies should follow. It states that “woodland strategies should divide land into categories, including the suitability of different locations for new woodland planting”. The categorisation is intended to give a general impression of an area’s suitability or otherwise for woodland expansion. The advice sets out the following categories:

- The map identifies areas that are considered unsuitable for new planting or sensitive to new planting.
- Other areas are identified as having potential to accommodate future expansion of a range of woodland types, but where at least 1 significant sensitivity exists.
- Preferred areas are locations where encouragement for new planting of an appropriate scale, composition and purpose that will help deliver the Fife Forestry and Woodland Strategy objectives for woodland expansion, without conflicting with any local sensitivities, will be given the highest strategic priority.

Additional land categories were identified as follows:

- Existing woodland – areas of woodland above 5 hectares in size
- Unsuitable areas – considered as being physically unsuitable for the growth or management of trees, based on the James Hutton Institute Land Capability for Forestry maps
- Urban areas – specific opportunities for new woodland in these areas are too detailed to map at a regional scale

Figure 2 provides an indication of where opportunities for new planting are likely to be, which may assist targeting of future woodland expansion and prioritisation of existing and future funding support. Preferred, potential, sensitive and unsuitable areas for woodland expansion have been identified using the GIS parameters as set out in Table 4 below.



Table 4: Datasets used to create the opportunities for woodland expansion map

Zones	Sensitivities: GIS Datasets
Preferred Areas	Sensitivities are limited.
Potential Areas	Local Landscape Areas Land Capability for Agriculture (Classes 1, 2 and 3.1)
Sensitive Areas	SSSI Ramsar sites Special Area of Conservation Special Protection Area (incl. habitat supporting qualifying species of the SPA outwith the designated site) RIGS Peat, peaty gleys and peaty podzol soils Designed Landscapes
Unsuitable Areas	Land unsuitable for tree planting (Land Capability for Forestry) Scheduled Ancient Monuments Water bodies
Unsuitable Areas	National Forest Inventory (over 5ha)
Unsuitable Areas	Urban Areas (Land Capability for Forestry)

Woodland types

In addition to identifying the potential areas for woodland expansion, it is useful to identify the broad categories of new woodland and forest that may be planted within Fife. It also allows indicative maps to be prepared to guide the selection of suitable woodland cover for a given area (Figures 11 to 14). It should be noted that the mapping is indicative only, and detailed site issues should be reviewed when proposals for new planting are considered. All new planting should be matched to local site conditions. Four woodland types have been identified in line with ‘The Right Tree in the Right Place’.

The maps for each woodland type were developed using the woodland creation opportunities map (WCOM) as a basis to ensure that the key sensitivities were reflected in the mapping of woodland type. Additional sources of data were used to draw out opportunities and different priorities, including the following:

Integrated Habitat Network data (IHN) – identifying opportunities for new woodland

Land capability for agriculture (LCA) – identifying better quality agricultural land, where the priority would be for supporting existing agriculture and areas where woodland planting could add value for agricultural activities

Indicative flood risk map – highlighting the areas of search for new riparian woodland on floodplains

Table 5 below lists the datasets used for mapping the potential for different woodland types.

Table 5: Datasets used to produce the woodland type maps

Zones	Layer	GIS Datasets
Softwood Forests	Existing woodland	National Forest Inventory Woodland over 5 hectares in size
	Potential areas for new softwood planting	WCOM ‘preferred’ areas cut to exclude LCA classes 1 – 3.2
Energy Forests	Existing woodland	NFI Woodland over 5 hectares in size
	Priority is for managing Farm and Estate Woodlands	LCA classes 1 – 3.1, with WCOM ‘sensitive’ areas cut out
	Wide range of opportunities for new energy forests	LCA classes 3.2 – 4.2, coinciding with WCOM ‘preferred’ or ‘potential’ areas
	Management of urban fringe woodland / WIAT	FCS WIAT boundary - 500m buffer around the 15% most deprived areas
Mixed Woodlands	Urban areas	Land Capability for Forestry maps
	Supporting woodland consolidation / diversification	LCA classes 3.1 clipped with WCOM ‘sensitive’
	Supporting agriculture on the highest quality land	LCA classes 1 – 2, clipped with WCOM ‘sensitive’, ‘urban’ and ‘unsuitable’ areas and coincident with ‘preferred’ or ‘potential’ areas
	Wider range of opportunities	LCA classes 3.2 – 4.2, coinciding with WCOM ‘preferred’ or ‘potential’ areas
	Search areas for new riparian woodlands	SEPA 1-in-200 year flood area, plus 200 metre buffer
	Enhancing gardens and designed landscapes	Historic Scotland Inventory of Gardens and Designed Landscapes
Native Woodlands	Existing native woodland	Native Woodland Survey of Scotland (NWSS) data
	Nearly native woodland	NWSS data
	Plantations on ancient woodland sites (PAWS)	(see below)
	Search areas for new riparian woodlands	SEPA 1-in-200 year flood area, plus 200 metre buffer
	Opportunities to contribute to woodland habitat networks	IHN priority enhancement areas for ancient woodland and broadleaf/ yew woodland, where coincident with WCOM ‘preferred’ or ‘potential’ areas
	Existing woodland	NFI Woodland over 5 hectares in size



### Defining the Plantations on Ancient Woodland Sites (PAWS)

PAWS are defined as plantations on ancient semi-natural sites shown to exist on the ancient semi-natural woodland inventory. They have been created by selecting all ancient woodland inventory polygons that have an antiquity code of “Ancient (of semi-natural origin) – Alpha numeric codes 1a and 2a”.

When viewed against recent air photography these plantation woodlands did not seem to have a good spatial correlation. So the areas of PAWs described above were trimmed to the area of woodland shown in the National Forest Inventory that overlapped them creating the “PAWs cut to NFI” shape (Table 6).

The 17 PAWs sites generated 26 PAWs cut to NFI sites. Of these, 3 sites (1.23 hectare, maximum 0.693 hectare - minimum 0.222 ha) were described as Non woodland in the NFI. The remaining 23 sites (100.53 hectare, maximum 15.837 hectare - 0.0003 minimum) were classified as woodland.

Table 6: Distribution of PAWS cut to the National Forest Inventory

Parish	PAWs polygon count	Sum Hectares
Aberdour	2	1.124
Balmerino	1	6.920
Carnock	1	8.743
Culross	2	16.944
Culross/ Torryburn	6	19.599
Dunfermline	1	4.122
Dunino/ St. Andrews	5	9.639
Flisk/ Balmerino	3	16.380
Kinghorn	1	1.491
Kirkcaldy/ Kinghorn	1	2.771
Saline	2	12.781
Strathmiglo	1	1.254

Image © Forestry Commission Scotland



# FIFE

## FORESTRY & WOODLAND STRATEGY 2013—18

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Each of the aims identified for the Strategy will be accomplished through a number of objectives, reflecting the priorities for woodland and forestry in the region over the next five years.

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