

THE CSGN 2010 BASELINE REPORT – TEXT ONLY VERSION

Please note this is a text only version of The CSGN 2010 Baseline Report with added information on data used and links to relevant information sources.

PURPOSE OF THE REPORT

This document should be read in tandem with ‘The Vision’. The first section of the report presents an overview of the CSGN area, describing its main characteristics and the influences that have changed the landscape over time. Following this section, the document presents the CSGN Baseline – a dataset of 10 key indicators that capture the starting point of the CSGN in 2010.

THE DATA

The data presented in this report will be used to track the progress of the CSGN towards our ambition of delivering a step change in environmental quality by 2050. The indicators are set out under the 5 themes used in ‘The Vision’, the information provides a profile of the area from a variety of angles and forms a snapshot description as to the challenges facing the CSGN.

These statistics and analysis will be periodically updated to provide key intelligence which will enable the Partnership Board to report on what has been achieved, assess the effectiveness of this and shape future actions in response.

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INTRODUCTION

The CSGN area offers a rich variety of landscapes, settlements and natural heritage. It is an area that reflects the diversity of geological formations, and processes that have shaped this part of Scotland. It reveals an imprint of human activities which have adapted and used the natural resources to further commercial ambitions and increasing population demands. This section of the report provides a brief overview of some of the most important influences on the CSGN landscape.

Where is the CSGN?

The CSGN area covers just under 10,000¹ square kilometres, has 3.5million² residents and stretches from Girvan in the Southwest to Leven and Dunbar in the East. The Southern boundary shares existing local authority boundaries, while in the North-West it is bordered by the Loch Lomond and Trossachs National Park. The North-eastern boundary divides Fife, reflecting strategic planning boundaries in the East.

¹ CSGN Support Unit calculation. Exact figure is 996501.41Ha using CSGN Boundary file and GIS analysis

² CSGN Support Unit calculation. Exact figure is 3,531,508 from General Register Office for Scotland using 2010 Small Area Population Estimates at datazone level

GEOLOGY³

The majority of the CSGN area lies within the Midland Valley between the Southern Upland fault and Highland Boundary fault. The rocks within this area were formed during the Carboniferous Period, around 340 million years ago and are mainly the result of lava flows and sedimentary rock deposits.

For the most part, these rocks provide gently undulating landforms (around 100m above sea level). Basaltic lava flows form the major upland masses, including the Pentlands, Campsie Fells and Kilsyth Hills. The remnants of volcanoes can also be seen, such as the laws of North Berwick, Traprain and Largo, along with the Seven Hills of Edinburgh. As explored later in this section, the local geology and the natural resources (coal, ironstone, limestone, etc) have had a profound effect on mankind's relationship with the area.

FRESHWATER & COASTAL AREAS

The CSGN area includes some 700km of coastline (10% of the total Scottish mainland)⁴ including several stunning sites rich in biodiversity such as the Barns Ness Coast, near Dunbar. The area is also drained by two major rivers, the Clyde and the Forth. These rivers have been heavily modified as a result of human developments, but continuing improvements in water quality means that they now support several fish species of international importance, such as Atlantic Salmon and Lamprey.

Freshwater lochs, such as Castle Semple in Renfrewshire, are widespread throughout the area. Many lochs are artificially regulated to support multiple usages access and recreation. Similarly, the Union, Forth and Clyde, and Monkland canals have now developed from industrial origins into important leisure and natural heritage resources.

As the heavily urbanised Clyde and Forth rivers meander towards the sea, the modified banks give way to more natural landscapes – inter-tidal mudflats, sand and

³ Data derived from British Geological Survey and Scottish Geology website accessed 30/11/2011
http://scottishgeology.com/geology/regional_geology/midland_valley.html

shingles and coastal grasslands. These areas support internationally important numbers of wintering wildfowl and waders.

FORESTRY & FARMING⁵

The history of vegetation cover in Scotland is intimately linked to both Scotland's changing climate and the activities of its people. Around 5,000 years ago, as much as 80% of the land was covered by forest. The CSGN area's predominant tree types were oak, ash and birch. Neolithic farmers were the first to start clearing these trees for agricultural and pastoral use. The process accelerated during the subsequent Bronze Age and especially during the Iron Age.

Over the next 3,000 years, the native vegetation gradually changed from woodland to open land. A progressively cooler and wetter climate led to the development of boggy moors and heathland and an extensive growth of peat. There was a slight expansion of woodland following the Roman withdrawal, but the subsequent arrival of Vikings and Normans saw sustained expansion of settlements and development of farming practices.

By the 13th and 14th centuries, timber was in such short supply that legislation was enacted to safeguard the cutting of oak. The Cadzow Oaks within Chatelherault Country Park, is one of the few examples of ancient woodland left in the CSGN area today.

Over the next centuries, monasteries brought horticulture, improved farming methods and introduced new livestock to the area. Agricultural improvements of the 18th and 19th centuries created much of the landscape we recognise today. This agricultural revolution facilitated huge increases in yields, which fed the increasing workforces living in the towns and cities. Formal gardens and extensive landscaped grounds with policy woodlands, shelterbelts and hedgerows also began to be developed around this period. The 20th century saw the creation of larger fields, better suited for mechanised

⁴ CSGN Support Unit calculation. Using the CSGN Boundary Line dataset (high water line layer) with islands removed and methodology based upon British Cartographic Society website accessed 30/11/2011 [Cartopics](#) > *How long is the UK coastline?* Giles Darkes. January 2008

farming. This coincided with a decline in sheep farming in the face of competition from Australia and New Zealand.

By the end of the industrial revolution woodland cover was down to about 5% of the land area. In 1919, the Forestry Commission (FC) was set up to expand Britain's forests and woodlands. A programme of rapid afforestation took place across the UK with notable activity in the CSGN area at sites such as Carrick Forest in South Ayrshire. Forest cover increased six-fold between 1947 and 1998. Up until the 1960s, mainly non-native conifers were planted due to their fast-growing nature and usability of the timber. However, having achieved the primary objective of safeguarding British timber supplies, the FC has become much more focused on diversifying woodland cover, and promoting sustainable forest management to maximise public benefits.

Today, the CSGN area is characterised by mixed agriculture on naturally poorly drained soils, particularly South and West of the Glasgow conurbation. However, where wetness limitations have been mitigated, the land is suited to a rich variety of both agricultural and pastoral farming, as is the case in much of Ayrshire and South Lanarkshire. More arable activity is possible in Eastern areas along the shores of the Forth and on the Lothian Plain. The rest of the CSGN area, including large expanses of Falkirk and North Lanarkshire, is improved grassland, with pockets of rough grazing confined to more hilly areas such as the Campsie Fells.

Since the mid 20th century, we have seen marked increases in the proliferation of invasive, highly-competitive non-native plants species such as Himalayan Balsam, Japanese Knotweed and Giant Hogweed. These plants are widespread across the CSGN area and not only threaten the native plants, animals and habitats but can affect human health and cost millions to control.

⁵ Data and information in this section from: C. Auslan. 1998 *Fragile land : Scotland's environment*. Polygon, Edinburgh. and SNH *Natural Heritage Futures. West Central Belt*. 2002 updated in 2009. SNH Website accessed 30/11/2011.

HUMAN SETTLEMENT ⁶

The earliest known sites of occupation date from Mesolithic times (some 8,000 years ago), following the last glaciation. These people began hunting and gathering along the coastline but gradually moved inland and created settlements. Over time, they became farmers, deforesting land for crops and the keeping of domestic animals. Archaeological evidence reveals that early society was structured around hilltop townships (e.g. Traprain in East Lothian). Inhabitants traded goods and information aiding the spread of new technology and culture.

When the Romans advanced into the area in the 1st century, they faced fierce resistance from local tribes. They responded by building a series of forts and walls including the Antonine Wall, which stretches across the CSGN area. The arrival of Vikings saw the introduction of new buildings and farming practices. Similarly, Norman expansion brought new forms of buildings such as churches, abbeys and castles to the area.

Following the Reformation, many landowners enclosed common land to create parks for keeping deer or cattle. Over time, this 'natural' landscape gave way to formal gardens. In particular, the Tudors followed Italian influences in creating gardens that harmoniously mirrored the alignment of the house.

During the Victorian era, the pace of change started to accelerate. This impacted on central Scotland's growing towns and cities. The emergence of a new middle class fuelled the construction of public building and parks. The advent of rail travel also saw large influxes of people into rural and coastal areas seeking recreation and tourism activities, which heralded the further expansion of towns and industrial activities.

The speed of the industrial revolution impacted on Scotland's urban housing, which was becoming increasingly inadequate, particularly in Glasgow. By the mid 1940s, the problems of overcrowding, poor hygiene and damp were made even worse by war damage. In response, huge municipal schemes such as Castlemilk in Glasgow and

⁶ Data and information in this section from J.M.Fladmark, G.Y.Mulvagh and B.M.Evans. 1991 *Tomorrow's Architectural Heritage – Landscape and Buildings in the Countryside*. Mainstream Publishing Company (Edinburgh) Ltd. Edinburgh.

Craigmillar in Edinburgh were developed on greenbelt adjacent to urban areas. This was followed in the late 1950s and early 1960s by the creation of several 'new towns', such as Cumbernauld, where housing was delivered through constructing a series of satellite neighbourhoods and the separation of people and cars was a major component.

In more recent years, the density of housing developments has decreased and, as a result, settlements have expanded outwards. Since the 1940s there has been a 46% expansion in the amount of land required for settlements. This is linked to increased personal mobility and changing social and economic conditions.

New building ⁷peaked in the late 1960s at around 40,000 houses per year. Following this high point, the rate quickly declined and, over the last fifty years, it averaged around 25,000 per year. However, during the last three years, the number of new builds fell to just 16,000 per year. This decline has coincided with a reduction of the proportion of total Scottish new builds within the CSGN area.

INDUSTRY⁸

The late 18th and 19th centuries brought rapid industrial change to the CSGN landscape, and the Central Belt became an area of enormous economic significance. This was thanks to the area's abundance of natural resources such as coal, ironstone, limestone and fireclay, coinciding with the advent of steam power, development of transport infrastructure, a fast growing population and ever-increasing markets for products both home and abroad.

Newly created canals such as the Forth & Clyde and the Union facilitated the transportation of coal and iron. As the canals reached capacity, railways took over. Heavy industry began to develop in the second half of the 18th century in locations such as New Lanark and on the Carron in Falkirk. The iron industry expanded tenfold between 1830 and 1844. Likewise, on the River Clyde, the shipbuilding industry

⁷ Scottish Government Housing and Regeneration. Housing Statistics for Scotland. August 30, 2011. *Housing Statistics for Scotland 2011: Key Trends Summary*. Scottish Government Website accessed 30/11/2011.

⁸ Data and information in this section from: S.D. Boyle. Ed – J.B. Stevenson. 1998. *Forts, Farms and Furnaces – Archaeology in the Central Scotland Forest*. Royal Commission on the Ancient and Historical Monuments of Scotland. Edinburgh

increased rapidly from the 1840s. By 1870, the Clyde was producing more than half of Britain's tonnage of shipping.

The power behind this industrial transformation came from huge reserves of Scottish coal – much of which was located in the CSGN area. Coal mining has existed in Scotland since the 12th century, but demands from industry and mining technique advances saw the exploitation of deeper and more-hard-to-reach seams. During the last century, the CSGN area was mined by well over 570 deep pits. By the time coal production peaked in 1913, Scotland's pits produced over 40 million tonnes per year.

Industrial activity reached its peak in the late 19th century. Following the First World War, the decline began in earnest. Despite many industries remaining important well into the mid 20th century, minerals became exhausted, markets changed, demand fell, and dereliction became a feature of both town and countryside. The legacy of this decline is evident today, as seen in the incidence of vacant and derelict land throughout the CSGN area.

Since World War II there has been a marked shift in employment from the extraction and manufacturing industries to the service sector. Although Scotland still produces over 6 million tonnes⁹ of coal per year, nearly all of this comes from intensely mechanised open-cast sites such as Mainhill in South Lanarkshire. Similarly, manufacturing and processing industries still account for a large proportion of total Scottish exports. Principally these are food and drink, petrochemical, and precision engineering equipment. However, due to the degree of automation and mechanisation, relatively few people (less than 8%¹⁰ of the population) are employed in this sector.

Today, both commerce and employment in the CSGN area are mainly based upon information rather than goods. This includes e-commerce, call centres, software development and, notably, Edinburgh remains one of the leading centres in world banking and finance.

⁹ Scottish Government website. Business and Industry > Energy > Energy Sources > Traditional Fuels > Coal. Accessed 30/11/11

¹⁰ Office for National Statistics. *Annual Business Inquiry, 2010*. Accessed 30/11/11

POPULATION

Prior to the industrial revolution, Scotland was a rural nation with a relatively even population distribution throughout the country. However, the rise of industry led to a huge migration of people to the Central Belt from both other areas in Scotland and outwith the country. In just 250 years, Scotland's population increased from 1 million to over 5 million by the 1950s. Historic data are not available for the CSGN area, but figures for Glasgow indicate that the population increased fourfold between 1801 and 1851.

In 2010 there were just over 3.5 million people living in the CSGN area (68% of the Scottish total)¹¹. The population is highly concentrated with 9 out of 10 people living with urban settlement that cover just 19%¹² of the total CSGN area. As shown in figure 1, half of the CSGN residents live within the Glasgow Clyde Valley region and a third live in the Lothians & Fife area, which includes Edinburgh.

The circumstances and population characteristics of people living within the CSGN area are far from uniform. There are areas of affluence, where a higher proportion of people enjoy high levels of employment, good health, live in quality housing and have access to a wealth of natural and social resources. Conversely, there are areas of relative deprivation where a disproportionate percentage of people suffer from poorer health and other socio-economic problems.

The Scottish Government undertake an exercise to map this inequality across Scotland called the Social Index of Multiple Deprivation (SIMD)¹³. This dataset reveals that the CSGN has 835 areas classed as being 'severely deprived' (within the bottom 15%). In fact, 86% of Scotland's severely deprived areas are found within the CSGN boundary. This equates to around 643,000 residents or 18% of the CSGN area's total population. As shown in the Chart 1, the majority of these residents live within the Glasgow Clyde Valley area.

¹¹ CSGN Support Unit data from General Register Office for Scotland using 2010 Small Area Population Estimates at datazone level

¹² Data derived from *National Greenspace Map*, greenspace scotland. 2011. Data accessed 30/11/11

¹³ All SIMD analysis undertaken by CSGN Support Unit, based on the 2009 dataset. Scottish Government. 2010

Over the next 25 years the CSGN's population is projected to increase by around 6%¹⁴. However, within this picture some areas, such as Inverclyde are forecast to decrease – whilst the population in other areas (e.g. Lothians & Fife) are set to increase. In terms of demographic changes, the general trend for all parts of the CSGN is for an increasingly aged population with the number of pensioners increasing by 31% and children decreasing by 2%.

THE NEED FOR THE CSGN

The CSGN is a development established in the Scottish Government's 2nd National Planning Framework. It aims to make 'a significant contribution to Scotland's sustainable economic development by working together with existing organisations to align policies, programmes and actions to achieve the common goal of improving the face of Central Scotland.

The CSGN will complement improvements in infrastructure, making Central Scotland a more attractive place to be in, do business and visit. Improving the health of the natural environment will help it adapt to climate change. An increase in woodland cover can substantially improve the landscape of our towns and cities, improve biodiversity and amenity, and help absorb CO₂. Improvements can also be made to important habitats, including wetlands, to counter fragmentation and assist species migration through habitat networks. The development of footpath and cycle networks and other facilities/attractions will contribute to a more sustainable transport network and expand the range of recreational opportunities, helping to encourage active travel and healthier lifestyles.

In 2010, the CSGN area is administered by 19 Local Authorities. Of these, only four are not wholly encompassed by the CSGN boundary. Fife is split according to the strategic planning boundary (i.e. SESPlan), while in West Dunbartonshire and Stirling the boundary is contiguous with the Loch Lomond & Trossachs National Park. None of the islands in the constituent authorities (such as Arran in North Ayrshire) are included.

¹⁴ CSGN Support Unit analysis based on General Register Office for Scotland *Population Projections for Scottish Areas 2008*. NB CSGN area calculation uses whole Local Authority data CSGN Support Unit data

To aid interpretation some of the data included in this report is broken down by four sub-regions. These are Ayrshire, Glasgow Clyde Valley, Forth Valley and Lothians & Fife. Figure 2 below shows the relationship of the Local Authorities to the CSGN sub-regions.

Figure 2. **Sub-Regions and Local Authorities within the CSGN area**

Ayrshire	Glasgow Clyde Valley	Forth Valley	Lothians & Fife
East Ayrshire	East Dunbartonshire	Clackmannanshire	East Lothian
North Ayrshire	East Renfrewshire	Falkirk	Edinburgh
South Ayrshire	Glasgow	Stirling	Fife
	Inverclyde		Midlothian
	North Lanarkshire		West Lothian
	Renfrewshire		
	South Lanarkshire		
	West		
	Dunbartonshire		

THE INDICATORS

This Baseline report sits within a wider monitoring framework which will record and report on other key measures including activity undertaken by the CSGN Board, Lead Partners and Support Unit. The reporting structure of the document follows the approach taken in ‘The Vision’ which identifies five themes and a number of associated outcomes.

Every five years, we intend to measure and report on progress in delivering these outcomes by tracking 10 key indicators. Wherever possible, we have selected indicators that come from existing independent datasets to allow us to understand trends over time.

The indicators do not provide a comprehensive measurement of every activity undertaken to achieve the ambitions specified in ‘The Vision’. Instead, they are a

carefully chosen set that we believe will show progress clearly. The majority of the indicators are freely accessible and published on Government websites. Updates are anticipated for these indicators for the foreseeable future. In addition to these, data for certain indicators was commissioned as primary research.

A PLACE FOR GROWTH

‘Creating an environment for sustainable economic growth’.

Outcomes:

Businesses want to be based in Central Scotland

Increased levels of economic activity, competitiveness and employment

Increased levels of enterprise and creativity

A strong ‘green industry’ sector

Increased levels of tourism

The CSGN area is of vital importance to the Scottish Economy. Three fifths of all Scottish businesses are located in this part of Scotland and there were over 10,000 new business start-ups in the CSGN area in 2009.¹⁵ In terms of tourism, there were nearly 25 million CSGN area visits to monitored sites in 2009, with total revenue of around £63M¹⁶.

As with the rest of the UK, Scotland’s business sector suffered negative GDP from 2008 to 2010 and the forecast is for only modest growth for the years up until 2013. This situation has had a profound effect on the labour market and the CSGN area has fared far worse than both the Scottish and UK averages. In 2010, there were around 157,000 unemployed¹⁷ people in the CSGN. Economic inactivity rates are also higher in the CSGN area than both the Scottish and UK averages.

CSGN’s *A Place for Growth* theme fits in with the Scottish Government’s *Wealthier and Fairer* strategic objective, which has the ambition to enable businesses and people to increase their prosperity and allow more people to share fairly in that wealth.

¹⁵ Office for National Statistics. Business Statistics Division. *Business Demography, 200*. Published Dec 2010.

¹⁶ The Moffat Centre, Glasgow Caledonian University, *CSGN Tourism Survey 2010*. CSGN Support Unit study. Published Dec 2010.

CSGN will contribute to this objective by creating high quality greenspace settings which encourage enterprise and investment. CSGN will also work towards a reduction in the proportion of land classified as vacant and derelict, creating a more attractive landscape for employees, residents and visitors.

Indicator 1. Rating of greenspace quality near businesses.

Why is this important?

We want businesses to be based in Central Scotland. This means holding onto existing businesses, whilst attracting new ones. Although business retention and creation are not determined by environmental factors alone, high quality business settings can contribute towards increasing economic competitiveness in the area and, therefore, help to increase business output and economic activity.

What will influence this indicator?

This is a qualitative indicator; it records how those who own and run businesses (ie managers and directors) feel about the environment around their workplaces. To see change happen, we will need to work with partners, including Scottish Enterprise, to engage with the local business community to encourage improvements to the environments around enterprises.

Methodology

In 2010, the CSGN Support Unit, in partnership with Scottish Enterprise, conducted a telephone survey of the CSGN business community. A representative sample (292 enterprises) was achieved and a variety of environment related questions were asked which revealed a rich source of information. One of the questions asked respondents to rate the quality of the greenspace outside their premises.

How are we performing?

The figures show **52% of managers in the CSGN area think their local greenspace is of either 'high' or 'very high' quality.** Just one in ten (9%) rated their greenspace as being of a 'low' or 'very low' quality. There was also a geographic difference –

¹⁷ Exact figure is 157,400 people. Office for National Statistics. *Annual Population Survey. Apr 2009-Mar 2010* data based on whole Local Authority areas.

respondents located in the East rated their local space as being of higher quality than those in the West. In particular, more business managers in Glasgow, North Lanarkshire, Renfrewshire and South Lanarkshire reported having a lower quality environment than other areas. No trend data is available for this indicator as this was the first year that the survey had been undertaken.

Chart 2. Rating of greenspace near business

Source: CSGN Support Unit, Business Survey, 2010¹⁸

Indicator 2. Number and area of vacant and derelict land

Why is this important?

The Scottish Vacant and Derelict Land Survey (VDL) is an annual survey undertaken to establish the extent and state of vacant and derelict land in Scotland.

Vacant land is land that is unused for the purposes for which it is held. It is viewed as an appropriate site for development. This land must either have had prior development on it or preparatory work has taken place for future development. Derelict land (and buildings) is land that has been so damaged that it is incapable of development for beneficial use without rehabilitation.

This is seen to be a particularly relevant measure because such land can commonly become an eyesore, and detract from the attractiveness of an area. A key ambition of the CSGN is to stimulate regeneration, especially for green infrastructure services, or to encourage use of stalled sites awaiting development.

What will influence this indicator?

Simply put, if the market declines then more businesses are likely to fail and this can lead to more sites slipping into disuse. Conversely if the market becomes more competitive then more sites are likely to be converted to profitable use. The means by which new sites are detected and removed from the register is largely centred on the expert knowledge of Local Authority planning officers.

¹⁸ Data commissioned by CSGN Support Unit undertaken by George Street Research. Published Nov 2010

It is understood that Local Authorities may not update all historic site information every survey. Thus, some information may not be current. In addition, a site may be sold and the ownership type changed without a Local Authority having knowledge of the transaction. Changes in site details can also cause other difficulties in interpreting the data. However, this is relatively rare and the impact would be minor across an area the size of the CSGN.

Methodology

The survey is a co-operative effort between Local Authorities and the Scottish Government. Its main purpose is to provide a national data source to inform the programming of the rehabilitation, planning and reuse of urban vacant and derelict sites. In 2010, data was available from every CSGN authority.

How are we performing?

In 2010, there were 3,122 vacant and derelict land sites in the CSGN area covering some 8,737Ha of land. ¹⁹This represents 78% of Scotland's 4,001 VDL sites, but 81% in terms of area.

Chart 3 shows the percentage change in hectares of land on the register since 2002. In Scotland, there has been a 1% increase (125Ha) in the total amount of VDL land over the period. Within the CSGN area the increase was much more pronounced (7% or over 500Ha). However, since 2007 both have remained fairly static.

Chart 3. Percentage change in Ha. of VDL in Scotland and the CSGN area

Source: Scottish Government, Vacant & Derelict Land Survey, 2010

NB: CSGN data in chart includes all of the 19 Local Authority Areas.

Within the CSGN area, there is a pronounced concentration of VDL land in the West. Just four council areas – North Lanarkshire, North Ayrshire, Renfrewshire and Glasgow account for 58% all of CSGN's total, and nearly half of the national total.

¹⁹ Scottish Government. *Scottish Vacant and Derelict Land Survey 2010*. Published Jan 2011 and CSGN Support Unit Analysis

A PLACE IN BALANCE

'Creating an environment more in balance, one that will support Central Scotland to thrive in a changing climate'.

Outcomes:

- An environment that can adapt to climate change
- Communities which function well and can cope with change
- Properly maintained natural resources cost less to maintain
- Natural resources are valued and managed
- A region in greater carbon balance

Current climate predications suggest that, over the next 40 years, Scotland will experience warmer, drier summers and warmer, but wetter winters. Sea levels are set to rise between 10 to 18 cm and extreme weather events are likely to increase in frequency.²⁰

In 2009, the Scottish Government introduced the Climate Change (Scotland) Act²¹. The Act sets out ambitious targets for the reduction of greenhouse gas emissions, the generation of renewable energy and the reduction of Scotland's consumption on the environment. For example, an 80% reduction in greenhouse gas emissions by 2050 with an interim target of 42% by 2020.

A range of actions for various sectors has been set out by the Act. The CSGN aims to support these activities and, where possible, contribute towards the specified targets. This includes creating woodland to sequester carbon, encouraging sustainable drainage systems, ensuring management of peat bogs, increasing the resilience of habitats and species and improving flood risk management.

Around 100,000 properties²² in Scotland are thought to be at risk of flooding, but, if climate change predictions are realised, a much larger number will be at risk in the future. Flooding in Scotland costs around £50 million per year²³. However, such

²⁰ Scottish Climate Change Impacts Partnership. *Adapting to Climate Change: A Guide for Businesses in Scotland*. April 2010

²¹ Scottish Government website. Climate Change > Scotland's Action *Climate Change (Scotland) Act 2009*. Accessed 30/11/11

²² SEPA data quoted in Education Scotland. Climate Change in Scotland – Flooding. Website accessed 30/11/11

²³ SEPA data quoted in Education Scotland. Climate Change in Scotland – Flooding. Website accessed 30/11/11

estimates focus on direct costs and reveal little about the social impacts of flooding. A number of damaging floods have occurred across the CSGN area in recent years, e.g. Edinburgh 2000 and Glasgow 2002. As of March 2010, there were 84 confirmed Flood Prevention Schemes ²⁴ within Scotland, of these 48 are within the CSGN.

Temperate peatlands, such as those within the CSGN area, hold 7 times more carbon than any other ecosystem (including forest cover). A loss of 16% of global peatlands would release the same amount of CO₂ as the global annual greenhouse gas emissions due to humans. It is estimated that the CSGN peatlands make up around 8% of Scotland's carbon rich soils. This totals an area of around 3,440km².²⁵ CSGN is committed to ensuring that this land is managed and protected as effectively as possible to safeguard sequestered carbon.

Although air quality in the Scotland has improved considerably over the last decade it still harms health and the environment. Research has shown that air pollution reduces the life expectancy of every person in the UK by an average of 7-8 months, with estimated equivalent health costs of up to £20 billion each year²⁶. The CSGN supports ameliorating the harmful effects of pollutants through local air quality management strategies and appropriate activities like woodland creation.

Indicator 3. Area of woodland cover

Why is this important?

The 2006 Scottish Forestry Strategy (SFS) identifies a range of economic, social and environmental benefits that forestry can deliver within the context of sustainable forest management. These include:

- Helping to tackle greenhouse gas emissions through carbon sequestration
- Restoring lost habitats through planting new native woodlands
- Protecting and managing ecosystems including soil and water resources
- Ensuring a reliable timber supply for industry

²⁴ Scottish Government. SEPA. *Indicative River & Coastal Flood Map (Scotland) 2010*. Website accessed 30/11/11

²⁵ SNH. *Broad description of soil and geodiversity of the CSGN area*. Report for CSGN Support Unit, Aug 2011

²⁶ Environmental Audit Committee. *Air Quality. Fifth Report of Session 2009–10. Volume 1*. Mar 2010

- Supporting rural development including new business creation
- Enhancing urban areas and improving landscapes
- Providing community benefits through welcoming and well-managed woodlands

Several of these benefits are particularly relevant to the CSGN area given its urban nature and high population.

What will influence this indicator?

The SFS sets a target of increasing Scotland's woodland cover from 17% to 25% by 2050. Latest figures indicate that woodland cover remains at around 18% with around 20,000ha of new woodland being planted in Scotland over the last 5 years. Increasing woodland cover in line with the target is ambitious, but not unachievable, if appropriate policies are adopted and funding mechanisms put in place to facilitate planting.

An increase can occur through planting, seeding or the natural colonisation of new woodland trees. Planting and sowing occurs solely through human intervention, but natural colonisation can come from a combination of both natural and human processes. Information about Forestry Commission planting, seeding and colonisation comes from FC administrative systems. Information about non-FC planting, seeding and colonisation comes principally from grant schemes.

Woodland loss can occur for a variety of reasons most notably through development (urban expansion, wind farms etc). Reduction in woodland cover is reported using remote sensing.

Methodology

The Forestry Commission's National Forest Inventory (NFI) is a new dataset and designed to be a continuous inventory of Britain's woodlands conducted on a 5 year cycle. Updates are derived from a range of sources including aerial photography.

Woodland is defined as areas with a canopy cover of 20% or more (or the potential to achieve this), with a minimum area of 0.5Ha and a minimum width of 20 metres. Areas of less than 0.5Ha of open space within woodlands are included as part of the total

woodland area, being considered as an integral part of the woodland ecosystem. Integral open space areas of greater than 0.5Ha are excluded. Orchards and nurseries are not included in woodland area estimates in NFI.

If an area of woodland is clear felled, it is presumed that tree cover will be replaced. Unless an obvious and permanent land use change is detected, a period of 10 years is allowed for trees to be re-established before such an area is mapped as non-woodland.

How are we performing?

Within the CSGN area, there are around 171,000Ha of woodland, covering 17% of the total area. As illustrated in Chart 4, although there was an increase in the amount of planting between 2008/09 and 2009/10, this increase is marginal in the context of figures for the last decade. New planting was 1,000Ha in 2000/01 and just 120Ha in 2008/09. This dramatic decrease within the CSGN area is in line with the wider trend across Scotland as a whole, which has seen a decline of over 70% during the period.

Within the CSGN area, two thirds of the woodland is located in Ayrshire (64,000Ha) and Glasgow Clyde Valley (54,300Ha). Ayrshire has the highest amount of woodland as a percentage of land cover at nearly 22%. This is in marked contrast to the Glasgow Clyde Valley and the Lothians & Fife regions, which both have less woodland cover than the CSGN and national averages.

Chart 4. Ha of woodland planted in the CSGN area

Source: Forestry Commission, National Forest Inventory, 2010²⁷

Indicator 4. Percentage of rivers with 'good' or 'high' quality status

Why is this important?

Water quality is of fundamental importance for the economy, the environment and society as a whole. Fresh water bodies support biodiversity, the natural ecology, provide drinking water and facilitate activities such as industry and recreation.

²⁷ Special data request supplied by Forestry Commission Scotland to CSGN Support Unit, Aug 2010

Safeguarding and sustainably managing water resources is particularly relevant today as we face the effects of climate change, a global economic crisis and other pressures which present a risk to many of the essential services and benefits that rivers provide to communities and society. The CSGN believes that water resources should be sustainably managed in order to meet the needs of society without causing damage to the environment.

What will influence this indicator?

Human activity has a significant effect on the water environment. Pollution comes in one of two forms: source point (discharges from industry and overflows from sewers during heavy rain) or diffuse (contaminated run-off from urbanised areas and run-off of pesticides and nutrients caused by agriculture and forestry). Changes in river flow patterns due to unseasonal rainfall events and urbanisation may also increase the risk of pollutants due to flooding.

Human intervention can also have a beneficial effect on water quality such as the recent improvements in several sections of the River Clyde due to substantial upgrading of sewage treatment works at Daldowie, Shieldhall and Dalmuir.

Methodology

As a proxy measure for the quality of all the CSGN area's fresh water bodies, this indicator draws upon the extensive monitoring network designed to record the quality of all significant rivers.

In accordance with European conventions, the smallest streams with catchments less than 10 km² are excluded, except where they are the main source of a larger river, or they are substantially polluted. The classification network is divided into river stretches; each is assigned a monitoring point where surveys are taken. The quality or "class" of a length of river is calculated from the monitoring point. The stretch lengths in each class are added together and assigned a classification.

Classification categories are 'Excellent', 'Good', 'Fair', 'Poor', and 'Seriously Polluted'. The final allocation of the quality class is based on the lowest class determined from

the chemistry, ecology, aesthetic and toxicity assessments for the associated monitoring point. The latest figures available are for 2009.

How are we performing?

Across Scotland, water quality is generally good and is improving, mainly due to a reduction in end-of-pipe discharges. However, diffuse pollution (ie from farmland and roads) remains a problem.

The total length of rivers monitored in the CSGN area is 5,300km. Of these, **24% are of either 'good' or 'high' status**. This compares to around 50% at a Scottish level. The lower CSGN area figure reflects the fact that the area contains much of Scotland's historic and current industrial activity, as well as two thirds of the population – which increases the likelihood of urban diffuse pollution, especially at times of high rainfall when old sewer systems often fail to cope.

Within the CSGN area, two thirds of Lothians & Fife and over half of Glasgow Clyde Valley rivers are classified as either 'poor' or 'bad'. Again, this reflects concentrations of population, transport networks and industrial activity.

Chart 5. Percentage of 'good' or 'high' quality status rivers in the CSGN area

Source: Scottish Environmental Protection Agency, Water Quality Monitoring Network, 2010²⁸

²⁸ Special data request supplied by SEPA to CSGN Support Unit, Oct 2011

A PLACE TO FEEL GOOD

'Creating an environment which supports healthy lifestyles and good physical and mental well-being'.

Outcomes:

- People feel good about their physical surroundings
- More people use and enjoy outdoor spaces
- Improved levels of physical and mental well-being
- A reduction in health inequalities
- A reduction in cases of preventable health problems

People living in Scotland have poorer health than those in many other industrialised countries. Chronic diseases caused by poor nutrition, heavy drinking, smoking and lack of physical activity are particular areas of concern. For example, a third of all children in Scotland are overweight and may be at risk of developing Type 2 diabetes by retirement age.²⁹

The CSGN area has a higher proportion of people living in poor health than the national average. The Scottish Household Survey³⁰ reveals that a lower proportion of people in the CSGN area report good health, or think they live in a 'good' neighbourhood compared to the Scottish average. It also indicates that the proportion of CSGN residents using active travel for journeys to work/place of education is lower than the national average. Although, the overall life expectancy at birth for a CSGN area resident is just a little less than the national average, in CSGN's most severely deprived areas, women can expect to live 4 years less and men 7 years less than the Scottish average.³¹

The encouraging aspect of this rather bleak picture is that the majority of these public health problems are biologically reversible. The challenge is that the solution involves a change in the culture and lifestyles of people rather than medical intervention. Research shows that greenspace can play an important part in this solution as there are positive links between access to greenspace and improving health and well being.

²⁹ Scottish Government. RR Donnelley. *Preventing Overweight and Obesity in Scotland : A Route Map Towards Healthy Weight*. Scottish Government. 2010. Website accessed 30/11/11

³⁰ Special data request supplied by Scottish Household Survey, (Scottish Government) to CSGN Support Unit. Dec 2010

To combat physical and mental health issues, the CSGN will work towards providing quality greenspace within easy walking distance of everyone in the CSGN area. It seeks to increase physical exercise amongst residents through the promotion of active travel and developing a strategic network of routes and paths. The CSGN will also stimulate localised community-led activities, such as community growing projects, which have profound societal benefits on a number of levels including better nutrition, improved community engagement and physical exercise.

Indicator 5. Proportion of adults making one or more visits to the outdoors per week

Why is this important?

Outdoor recreation is beneficial for health and well being. It provides opportunities for people to come into contact with, and increase their understanding of, the natural environment. Although outdoor recreation has multiple motivations, this indicator provides a useful measure of the number of people who gain benefit and enjoyment from nature.

What will influence this indicator?

Availability of outdoor recreation space is an important influence, both in terms of its proximity to people's homes and its accessibility (ie how easy is it to reach). Another important influence is the way people feel in these spaces – e.g. are there concerns over safety?

Education is important in that it can increase people's perception of outdoor recreation as a valuable activity and their knowledge of the natural environment. Lastly, increasing awareness of available green spaces will help to stimulate their use and enjoyment.

Methodology

³¹ Special data request supplied by GRO(S) to CSGN Support Unit. Nov 2010

The Scottish Recreation Survey (ScRS) is a continuous monitoring survey of the Scottish adult population, commissioned by Scottish Natural Heritage. It is used to monitor progress on the Scottish Government's Nation Performance Indicator 41 ³² – 'to increase the proportion of adults making one or more visits to the outdoors per week'.

The survey started in 2003 and comprises a series of questions inserted each month into the Scottish Opinion Survey. The questions are asked of a representative sample of approximately 12,000 Scottish adults per year, including around 8,000 CSGN residents.

Within the ScRS, the term 'outdoors' includes everything from mountains and moorland, to beaches and open spaces in towns and cities. 'Outdoor recreation' is defined as any non-motorised activity carried out for leisure purposes – anything from walking the dog to specific outdoor activities such as cycling or even informal family outings and day trips.

How are we performing?

In terms of weekly visits, 44% of CSGN adult residents visited the outdoors at least once in 2010. As shown in the Chart 6, this proportion has increased in recent years but remains below the Scottish average.

An estimated 82% of adults living in the CSGN area visited the outdoors for leisure or recreation at least once during 2010. This is similar to that found among adults in the rest of Scotland (85%).

Chart 6. Proportion of people who visited the outdoors for leisure or recreation at least once a week

Source: Scottish Natural Heritage, Scottish Recreation Survey, 2010. ³³

³² Scottish Government. *Technical Note for Scotland Performs Indicators and Targets – National Indicator 4*. Website accessed 30/11/11

Indicator 6. Urban greenspace per head

Why is this important?

Greenspaces are the essential elements of the CSGN, especially in urban areas. Having easy access to these areas can improve people's quality of life by increasing neighbourhood satisfaction and creating places where people want to live. They can also contribute towards reducing health inequalities by providing a resource for recreation.

This indicator considers the existence and quantification of recognisable greenspace environments around where people live. Data created from this process will aid strategic decision-making to ensure this resource is safeguarded and developed in areas where it is needed most.

What will influence this indicator?

Greenspace can be defined as any vegetated land or water within or adjoining an urban area. This includes paths, disused railway lines, rivers and canals, woodland, grassed areas, parks, gardens, playing fields, cemeteries and allotments etc. Often these areas have come under pressure from urban and industrial development.

Policies, programmes and investment by public bodies such as Scottish Government, Local Authorities and other key agencies such as Forestry Commission Scotland and Scottish Natural Heritage will all have an impact in safeguarding existing greenspace and developing the multifunctional qualities of these resources. Similarly, the private sector has a key role to play in not only preserving existing greenspace but developing new areas for people to enjoy. This is true around workplaces (eg business parks) and also residential areas (eg designing communal greenspace within new housing estates).

Methodology

³³ Special data request supplied by SNH to CSGN Support Unit, Aug 2011

The data draws upon information gathered by *greenspace scotland* from all Scottish Local Authorities, using a consistent PAN 65 typology which classifies different types of open space by usage. The data specifically relates to urban areas – defined as settlements of 3,000 people or more and including a 500M buffer around each settlement for mapping purposes.

While the quality of these spaces is often the most important factor in determining their use and benefit to local communities, it is not yet possible to report data on this attribute across the CSGN area. However, many Local Authorities are beginning to audit this characteristic and it may be possible, in future, to enhance the data presented below with an understanding of greenspace quality.

It is also recognised that proximity to greenspace, as used in this analysis, does not equate exactly to access to greenspace as people are rarely able to travel to greenspace in straight lines from their homes (due to the layout of residential areas, transport infrastructure and greenspace entry points etc.). However, because of issues of complexity and scale more detailed route analysis was not possible in this calculation.

Lastly, the dataset records multiple usage of greenspace for the same site. The data presented below relates only to primary greenspace usage and it is recognised other greenspace usage will exist within this, for example *allotments and community growing spaces* may exist within larger *civic spaces*.

How are we performing?

Around two fifths of both Scotland and the CSGN area's settlements are classified as being greenspace. **For the CSGN area, there are 14.8Ha of greenspace per 1,000 people (if private gardens are excluded)** and 22.6Ha of greenspace per 1,000 if private gardens are included.³⁴ As shown in Chart 7, both these figures are less than the Scottish averages of 24.5Ha and 16Ha respectively.³⁵

Source: greenspace scotland, Scotland's Greenspace Map, 2011

Within the CSGN area:

- 39% of greenspace is classified as *private gardens*
- a further 20% is made up of *natural and semi-natural* greenspace
- *public parks and gardens, amenity greenspace and sports areas* (which are the accessible public spaces most often used in daily life) account for 10%, 16% and 10% of greenspace respectively
- play spaces, allotments and burial grounds cover relatively small areas³⁶

³⁴ Special data request commissioned by CSGN Support Unit. Aug 2011

³⁵ greenspace scotland, *Scotland's Greenspace Map, 2011*. Publication pending

³⁶ greenspace scotland, *Scotland's Greenspace Map, 2011*. Publication pending

A PLACE TO BELONG

‘Creating an environment that people can enjoy and where they choose to live and bring up their families’.

Outcomes:

- People want to live here and move here because “...it’s a great place to live...”
- People feel safe in and have pride in their surroundings
- People feel that they live in communities, not in isolation
- People are involved in volunteering and in community action
- More people take part in, and appreciate, cultural activities

Improving the quality of the physical environment where people live, especially in deprived communities, is an important objective of the Scottish Government as identified in the *National Identity* and the *Communities* National Outcomes. It is anticipated that the development, long-term management, and active use of greenspace within the CSGN area will make a significant and valuable contribution towards creating stronger communities.

Through CSGN activities it is envisioned that more people will take pride in their local environment and feel more connected to their neighbourhoods. This collective feeling of ownership will lead toward more use of local greenspace and increase the sense of communal responsibility towards caring for and maintaining it.

The CSGN can play a role in promoting local food production and healthy eating. It can help facilitate the creation of new allotments and informal growing spaces to help individuals and communities to grow food locally. In order to understand the current position and record progress, the CSGN Support Unit initiated an audit and mapping exercise of community growing spaces. Output from this research indicates that in 2010 there are some 234 sites used as allotments or for community growing across the CSGN area.³⁷

The CSGN also aims to improve the safety of greenspaces – so people feel they can use and get involved in nurturing and protecting these valuable resources. We will use

³⁷ Data gathered in Spring 2011 by CSGN Support Unit. *CSGN Growing Spaces Audit*. Publication of report pending

data from the Scottish Household Survey to measure progress on this particular ambition.

The two indicators chosen to report progress in this theme are 'volunteering' and 'perception of attractiveness of local area by residents'.

Indicator 7. Proportion who feel strongly that 'my greenspace is an attractive place'

Why is this important?

Creating more attractive and usable greenspace for residents is at the heart of much of the CSGN's ambition and activity. As such, it is important to gather and understand the public's opinions and views on their local greenspace. This will help to inform the development of policies and projects that can make positive changes.

What will influence this indicator?

Public opinion can be accurately obtained through a random sample survey. Both governments and business use such surveys extensively as vital tools for guiding policies, strategies and programmes.

Public opinion is a dynamic variable which can change radically due to a wide range of personal and external influences. Importantly, it is recognised that factors such as the current economic downturn, can influence people to be more negative in their responses than they might otherwise be.

Methodology

greenspace scotland commissions research investigating the Scottish urban population's use of greenspaces and their attitudes towards the availability and quality of them. This research is able to track changes in attitudes over time and to assess the impact developments may have had on the local community.

The data is gathered using the Scottish Opinion Omnibus, this survey involves conducting 1,000 telephone interviews on a weekly basis to produce a representative sample of Scottish adults. In addition, as analysis was required across the CSGN

area, additional interviews were conducted to provide a robust dataset for analysis purposes. As the focus of this particular survey was on people living in urban areas (defined as settlements with over 3,000 people) a screening question was added asking respondents whether they lived in a town or city.

The question chosen for this indicator: *How strongly do you agree or disagree that 'My local greenspace is an attractive place?'* was specifically selected to try and limit the effects of public opinion swing.

How are we performing?

Just over half (51%) of all the CSGN area's residents feel strongly that local greenspace is attractive. This is similar to the figure for Scotland as a whole. In fact, across both Scotland and the CSGN area, one in eight people either 'agree' or 'strongly agree' with the statement 'my local greenspace is an attractive place' and this overall proportion has remained the same for the last couple of years.

Source: greenspace scotland, omnibus survey, 2011³⁸

Indicator 8. Proportion of adults volunteering in the last year

Why is this important?

The collective aims and ambitions of the CSGN will not be achieved without the engagement and participation of local residents. Volunteering is an excellent proxy measure for this type of community-minded activity.

Participation in volunteering brings numerous benefits for the individual, such as work experience, skills development, training opportunities, improving confidence and self-esteem. It benefits society as a whole. It can also help to deliver government priorities in the fields of sustainable communities, rural communities, health and social welfare, criminal justice, education, social inclusion and antisocial behaviour.

What will influence this indicator?

³⁸ greenspace scotland, *omnibus survey, 2011*. Special data request commissioned by CSGN Support Unit

Volunteers are often attracted to volunteering by a desire to help their community and/or to help people experiencing a similar situation, problem or condition which has been lived through by the volunteer or family member.

Research suggests that volunteers are more likely to give their time to organisations that focus on children, young people or sports and physical recreation than any other type of organisation. Also, volunteers are more likely to take part in raising money, committee work or general help than other types of activity.

Volunteers are likely to quit due to a lack of time, often caused by a change in circumstances such as having children or starting a new job. People who have never volunteered feel that a lack of awareness of what it involves can act as a barrier to taking part.

Methodology

The Scottish Household Survey records data on 'formal volunteering' which is effectively unpaid help given to groups, clubs, charities or other organisation and lists 16 different types of groups including an *Environmental volunteering/animals* category. However, it was understood that this category would not necessarily capture data on greenspace activities which could also fit other categories (e.g. Youth/children, Sport/exercise, Health, etc.). Therefore, results for proportion of adults who have provided any type of unpaid voluntary help in the last 12 months was selected as the best variable for this indicator.

How are we performing?

In 2009, 25% of the CSGN area's residents undertook some form of voluntary activity; at a Scottish level the figure was 28%. Both areas experienced an increase between 2006 and 2008 then a marked decrease to 2009. However, throughout the period the CSGN figure has remained less than the Scottish average.

In 2009, the greatest amount of volunteer work within the CSGN appeared to take place within Ayrshire 29% and Forth Valley 28%. Glasgow Clyde Valley has a comparatively lower proportion (24%), however, this area also includes hotspots of

volunteering such as East Dunbartonshire where 45% of people had volunteered over the last year.

Source: Scottish Government, Scottish Household Survey, 2009³⁹

A PLACE FOR NATURE

‘Creating an environment where nature can flourish’.

Outcomes:

- Habitats and species will become more resilient as a result of an integrated habitat network
- Characterful, high-quality landscapes add value to the region

In 1992, the Convention on Biological Diversity was signed in Rio de Janeiro, Brazil by 159 world leaders. By doing so, they pledged to help stop the global loss of species, habitats and genetic resources by “developing national strategies, plans or programmes for the conservation and sustainable use of biodiversity”.

In 2004 a Scottish Biodiversity Strategy⁴⁰ was published. This document represents Scotland's response to its obligations under the Convention on Biological Diversity and to the UK Biodiversity Action Plan, along with Scottish Ministers' desire to put biodiversity at the heart of our national identity and culture. It contains a number of Biodiversity Implementation Plans for a series of ecosystems, which identify the priority actions required to implement the Strategy.

Each Local Authority area in the UK has produced a Local Biodiversity Action Plan (LBAP), and some have joint plans with neighbouring authorities, e.g. Ayrshire. These local plans concentrate on the development of local partnerships which can integrate the biodiversity process across all sectors and provide focused action on habitats and species considered important in a local context, as well as those identified as national priorities. The Nature Conservation (Scotland) Act 2004⁴¹ has furthered this in Scotland, by placing a duty on every public body to further the conservation of biodiversity consistent with the proper exercise of their functions.

Landscapes result from interaction between different components of the environment both natural and cultural. People's perceptions are also an inherent part of landscape and there is a close relationship between perceptual experience and appreciation of landscapes qualities. The diverse range of identifiable landscapes within CSGN area is, therefore, a key resource, fundamental to the delivery of an integrated programme of care for the natural environment.

The indicators selected report on change in the natural landscape from two different perspectives: one from an integrated habitat network approach; and the other by examining how much of the area is positively managed.

³⁹ Scottish Government, *Scottish Household Survey, 2009*. Special data request by CSGN Support Unit. Dec 2010

⁴⁰ Scottish Executive. May 2004. *Scotland's Biodiversity: It's in Your Hands - A strategy for the conservation and enhancement of biodiversity in Scotland*. Scottish Government website accessed 30/11/11

⁴¹ Scottish Executive. Feb 2005. *Nature Conservation (Scotland) Act 2004*. Scottish Government website accessed 30/11/11

Indicator 9. Average patch size of woodland, wetland and neutral grassland habitats.

Why is this important?

The CSGN aims to deliver an integrated habitat network across the area with a mosaic of habitats connected across the landscape facilitating species movements between sites and habitats. This is important in ensuring the long-term survival of biodiversity in a fragmented landscape, especially to provide resilience and allow adaptation under a changing climate and where other land uses (such as the built environment and agriculture) can have significant effects.

A key aim is that land management activity should maintain or help improve habitat connectivity, and avoid further fragmentation of habitats. Measuring habitat connectivity will help evaluate the effectiveness of action on the ground both CSGN-wide and at regional/local scales. Collecting data on connectivity is also useful in informing the decision making-process within Local Authorities and National Government when considering land management issues.

What will influence this Indicator?

This indicator is a proxy measure for the relative ease with which typical species can move through the landscape. It records the number and size of habitats in existence across the CSGN area and the average size of these network patches. The three habitats are Woodland (broadleaved, mixed and yew), Wetland (fen, marsh & swamp) and Neutral Grassland.

The indicator will pick up changes in the number, size of habitat patches, changes in land use in the wider landscape, and the degree to which removal, restoration or creation of new habitat patches affects existing habitat connectivity.

Using this measure, an example of change would be; if a new isolated woodland planting scheme occurs, then this will have the effect of both increasing the total number of patches, and the total area of patches. In this scenario, average patch size will be dependent on the size of the new planting. The converse is true for loss of a woodland patch.

Another change could occur if an existing area of woodland is expanded, so it joins with another patch of woodland. This would reduce the total number of patches, but it will increase the total area of woodland patches and increase the average patch size. Conversely, a loss of woodland would also be recorded in the data in a similar manner and this would show a decrease in average patch size.

A more refined Connectivity Indicator, which will measure levels of habitat-specific, functional connectivity across the CSGN area as well as at local levels, is currently under development by SNH and not available for this report. When complete, it will enhance the baseline indicator by assessing existing habitat patch connectivity in terms of the surrounding landscape matrix, and the ease with which generalist species can move through it.

Methodology

As the Connectivity Indicator is not fully developed yet, a simple proxy measure of existing integrated habitat networks and their connectivity has been used for this baseline. This is essentially the number of existing networks for each of the habitat types and the area which they cover. The three habitats are Woodland (broadleaf, mixed and Yew), Wetland (Fen, Marsh & Swamp) and Neutral Grassland.

Over time, we would expect the number of network patches for each habitat to decrease as the overall area of each habitat increases and the habitats become more connected. This would have the overall output of increasing the average patch size.

How are we performing?

The table below shows the current situation as of 2010. We have no trend analysis for this measure at this time.

Habitat networks type	Number of habitat patches	Total coverage in Ha	Average patch size in Ha
woodland	7,429	964,340	129.8
wetland	15,757	224,108	14.2
neutral grassland	3,052	347,551	113.9

Source: Scottish Natural Heritage, Habitat Network Indicator, 2010.⁴²

Indicator 10: Proportion of natural land under positive conservation management

Why is this important?

The 'natural environment' is managed for a variety of purposes, including the conservation of their biological, physical or visual character. Reflecting this, parts of Scotland are of national or international importance and afforded special protection. Conservation value more widely may also be reflected in management agreements, ownership by conservation bodies, land management through agri-environment schemes, or policy zonation within Local Plans. Collectively these can reflect values placed on conservation within the context of multiple and productive use.

In densely populated Central Scotland, the proximity of natural habitats and wildlife to where the majority of Scotland's people live is intimately associated with quality of life. The varied character of landscape and the accessibility of open spaces for recreation and enjoyment can make the difference between a sense of congestion and degradation, or a vibrant and pleasant place for life, work and play.

What will influence this Indicator?

⁴² Special data request supplied by SNH for CSGN Support Unit. Sept 2010

This indicator maps land influenced to varying degrees by, conservation objectives reflected in the designation of sites for nature conservation, ownership by organisations with a conservation remit, management agreements with a conservation purpose, and local plan policies.

The indicator is an aggregate of four types of positive conservation management devices. Firstly, *designated sites*, includes Sites of Special Scientific Interest and Natura 2000 sites. These are responsive to legislative change but otherwise relatively stable. Secondly, *land tenure* is primarily land ownership by governmental and non-governmental bodies with nature conservation interests. Again it is responsive to government policy on public sector ownership and changing economic conditions, but is otherwise slow to change.

Areas covered under *management agreements* are more susceptible to influence according to the availability of government funding. Finally, the fourth component is *Local Planning Policy* and this is considered to be subject to change from local pressures such as housing, transport and industrial expansion.

Methodology

Positive conservation management data are compiled by Scottish Natural Heritage (SNH) through a rolling programme of monitoring including Site Condition Monitoring (SCM) which checks the condition of sites and the influence of management on the nature conservation interest. SCM aims to look at the condition of each site every six to twelve years. If this process raises concerns about the condition of a habitat or species on a site, or a change in the condition, SNH works with managers and landowners to decide how to make improvements.

In practice, a number of the components recorded may overlap because they meet several conservation criteria. For example, a *designated* site may often be owned by a conservation organisation with a *management agreement* in place. In such cases, the multiple positive management components have been noted, but the actual area of land covered is only counted once.

How are we performing?

In 2010, 57% of land in the CSGN area was under positive conservation management through designation, tenure, management agreements and/or planning policies. This is testament to the value placed on what remains of natural spaces in Central Scotland. However, it remains less than the national figure of 64%. The 2010 results can be summarised as follows:

- Designation: 6.3% was covered by three types of national wildlife conservation designation.
- Tenure: 7.5% was occupied by 11 organisations with conservation interests.
- Management Agreement: 11.5% was covered by eight types of management agreement.
- Planning policy: 48% was covered by five types of positive planning policy.

As shown in the map below, 43% of the CSGN area, is covered by just one form of positive management. A further 12% has two overlapping types and an additional 2% has three.

Source: Scottish Natural Heritage, Various conservation management datasets, 2010⁴³

⁴³ Special data request supplied by SNH for CSGN Support Unit. Sept 2010