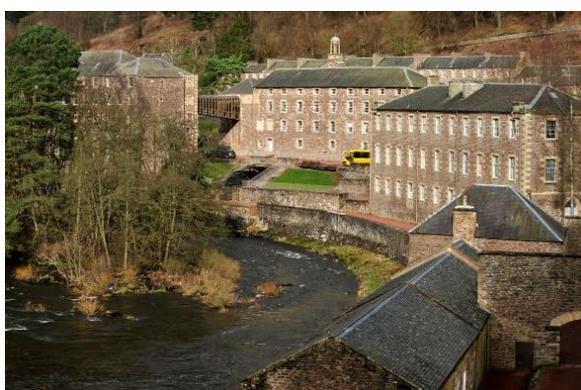




LANDSCAPE CHARACTER ASSESSMENT

GLASGOW AND THE CLYDE VALLEY LANDSCAPE EVOLUTION AND INFLUENCES



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Title page photographs, clockwise from top left.

Tinto Fell © Glyn Satterley/NatureScot

Greenock and Gourock, Inverclyde © Peter Sandground/NatureScot

Aerial view east over the River Clyde and the Erskine Bridge towards Glasgow. P&A Macdonald/NatureScot

New Lanark ©Lorne Gill/NatureScot

This document provides information on how the landscape of the local authority area has evolved. It complements the Landscape Character Type descriptions of the 2019 dataset.

The original character assessment reports, part of a series of 30, mostly for a local authority area, included a “Background Chapter” on the formation of the landscape. These documents have been revised because feedback said they are useful, despite the fact that other sources of information are now readily available on the internet, unlike in the 1990’s when the first versions were produced.

The content of the chapters varied considerably between the reports, and it has been restructured into a more standard format: Introduction, Physical Influences and Human Influences for all areas; and Cultural Influences sections for the majority. Some content variation still remains as the documents have been revised rather than rewritten,

The information has been updated with input from the relevant Local Authorities. The historic and cultural aspects have been reviewed and updated by Historic Environment Scotland. Gaps in information have been filled where possible. Some reports have been combined where original LCA area coverage was very small.

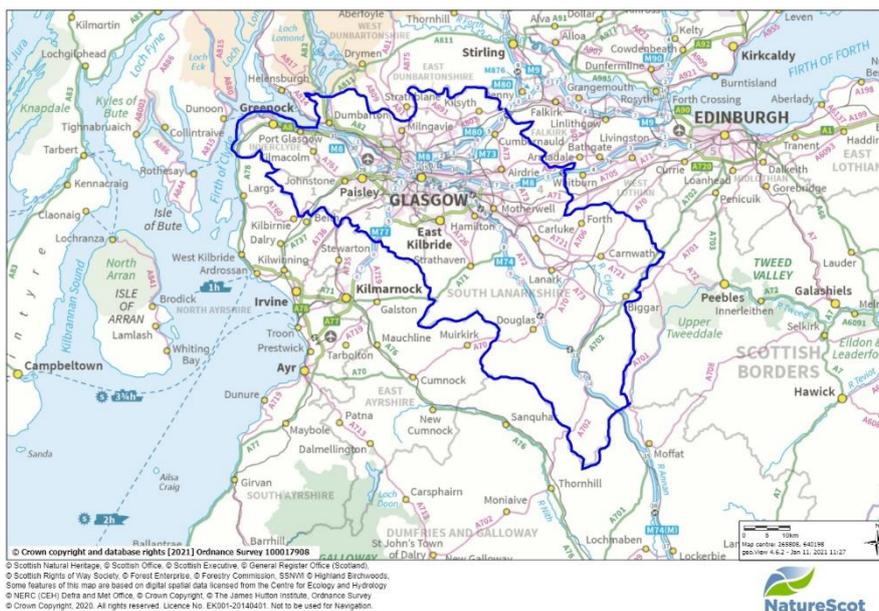
The new documents include photographs. They do not include the maps or sketches from the original LCAs, but these are still available from the [NatureScot Information Library](#). Additional information can be obtained from the websites of;

- [British Geological Survey](#) www.bgs.ac.uk
- [Historic Environment Scotland](#) (Historic Land use Assessment, Gardens and Designed Landscapes, historic features and their designations, etc). www.historicenvironment.scot/
- NatureScot website especially [Landforms and Geology](#) (more specifically the “Landscape Fashioned by Geology” series) and [About Scotland’s Landscapes](#) soils; wild land; landscape character; designations etc.) www.nature.scot
- The relevant local authority, which will have information on landscape policies, etc.

The content of this document was drawn from the background chapter information in the “NatureScot Review 116 – Glasgow and Clyde Valley landscape character assessment”, 1999, Land Use Consultants in association with Glasgow University Archaeological Research Division.

If you have any comments, please email LCA_REVIEW@nature.scot

1. INTRODUCTION



The area covered by this report

The Glasgow and Clyde Valley LCA covers the administrative areas of East Dunbartonshire, West Dunbartonshire, Glasgow City, Inverclyde, Renfrewshire, East Renfrewshire, North Lanarkshire and South Lanarkshire. It covers an area of 334,610 hectares, and extends from Gourrock and the Firth of Clyde in the west to Carnwath and the Pentland Hills in the east, and from southern Loch Lomond and Balloch in the north to Abington and the Lowther Hills in the south. Geologically it mostly lies in the Midland Valley of Scotland, a rift valley between the Highland Boundary Fault to the north and Southern Upland Fault to the south.

This large area contains a very diverse range of environments, ranging from extensive urban areas to remote rural areas. The landscape seen today has been extensively influenced by human activity. At the core of the area is Glasgow city centre, with a variety of adjoining settlements and outlying rural settlements. The River Clyde lies at its heart – a focus along much of its length for settlement, transport and, downstream, industry. Other rivers are mostly tributaries of the Clyde and they are also varied in character, generally becoming more urban in their lower reaches, for example the Avon; the South Calder and the White Cart.

It is contained by plateau moorland uplands to the south; the Campsie Fells and Kilpatrick Hills to the north; the Firth of Clyde (which has some of the deepest inshore coastal waters in Britain at 164 metres deep) and intervening low moorland hills to the west; and the Slamannan Plateau and southern end of the Pentland Hills to the east. The lowlands in the central areas have mostly fertile soils.

One third of Scotland's population live in the area (1,789,500 in 2012, projected to grow to 1.84 million by 2029). This is creating a need for extensive new housing development on periphery of urban areas, as well as a great deal of inner city and riverside regeneration. The population has an increasingly ageing profile. The region generates a third of the country's wealth and is home to over 29% of all businesses in Scotland. The traditional reliance on

heavy industry, shipbuilding and mining has now changed to include modern engineering, manufacturing, and technology.

One of the city region's key assets is the network of greenspaces which surround and intersect the urban area. It incorporates both green and blue spaces, such as parks, canals and woodlands, as well as the interconnected corridors which allow the movement of people and species between spaces.

According to the National Forest Inventory 2013, there are approximately 56,850 hectares of woodland within the region, of which approximately 14,691 hectares are native woodlands (derived from the Native Woodland Survey of Scotland 2014). This is around 17% of the area, which is close to the Scottish average of 18% of woodland cover.

2. PHYSICAL INFLUENCES

This section outlines the main physical processes which have determined the solid and drift geology of the Glasgow and Clyde Valley area, and the patterns of hydrology and topography of the area today. These attributes represent the physical structure of the landscape and are fundamental to its present character.

Solid Geology

Most of Glasgow and the Clyde Valley is within the Midland Valley of Scotland: a geological rift valley bounded by the Highland Boundary Fault to the north and Southern Upland Fault to the south. These faults run roughly parallel to each other, about 80 kilometres apart, from the south-west of Scotland to the north-east coast. The rift valley was formed by the unit of rocks between these faults being displaced downwards, creating a body of land of generally lower altitude than those bordering units to the north and south. Glasgow and the Clyde Valley occupies a large central portion of this rift valley: from the Firth of Clyde around Wemyss Bay in the west; inland as far as the western edge of the Pentland Hills: north to the Campsie Fells; and south over the Southern Upland Fault into the Southern Uplands.



Rounded hills and plateau, Muirkirk Uplands ©NatureScot

Land to the north of the Highland Boundary Fault is comprised mainly of hard metamorphic rocks of the Dalradian supergroup. These formations do not outcrop in the area, but fragments of them occur in the glacial deposits which overlay much of the area. These are discussed below. South of the Southern Upland Fault, the rocks are Silurian and Ordovician sedimentary formations. These are generally fine-grained and form greywackes, shales and mudstones.

These rocks have proved relatively resistant to weathering and have formed the rounded hills and plateaux of the Southern Uplands. Within the area, Silurian sedimentary rocks are found between Lesmahagow and Muirkirk.

The rocks of the Midland Valley itself are principally sedimentary and of the Old Red Sandstone (Devonian) and Carboniferous ages. The Devonian sandstone and conglomerate beds often have a distinct red-brown colour; they outcrop in the Lanark area. Late in the Devonian the conditions were desert-like, shown by sand dunes in the rock record. At the beginning of the Carboniferous period around 355 million years ago, the desert environment gave way to more tropical conditions. Additionally, there was major volcanic activity in the Glasgow area. Contemporaneous igneous rocks occur in the form of lavas and tuffs, and numerous intrusions such as plugs, dykes and sills also outcrop. The differential erosion of these harder igneous rocks and the softer sedimentary forms on which they lie has had a significant role in creating the present day landforms and landscape.

There is a broad distinction between the main hill regions and plateaux areas which are formed from, or capped by, the extrusive volcanic rocks, and the lowland areas which tend to be sedimentary in origin. The Glennifer Braes, Beith-Barrhead Hills and Cathkin Braes are all formed from early Carboniferous basalt lavas. In particular, the lavas which cap the Kilpatrick Hills, Campsie Fells and Renfrewshire Hills created distinctive 'stepped' or terraced slopes. Igneous intrusions have created the features such as Dumbarton Rock (volcanic neck) and Tinto Hill (felsite laccolith). Similar landforms are found in neighbouring areas outwith the area.



Dumbarton Rock ©NatureScot

The remainder of the area is comprised of Carboniferous limestones, grits and coal measures, generally forming the lower ground and basin areas. While these rocks also form the exposed

central plateau between the east and west sides of the country around Shotts, Harthill and Caldercruix, the highest points of the plateau are still notably lower than the igneous hills elsewhere in the Midland Valley. The coal measures which underlie much of the basin have had a very significant influence on the pattern of industrial development and settlement in the area. Some of their fossil content is of international importance, for example at Bearsden; and Fossil Grove in Victoria Park in Glasgow is renowned for the glimpse it provides of the Carboniferous forest environment. However, their contribution in terms of physical landform is relatively limited.

The shapes and forms into which the rocks of the area have been eroded and moulded reflect millions of years of weathering under a variety of climatic conditions. In particular, the actions of successive glaciations have carved the rock surfaces, deepening and over-deepening valleys and basins, and sculpting other rock features. Fluvial erosion had a continuing influence over the millions of years before the Ice Ages, and over thousands of years since the withdrawal of the last glaciers.

Glacial Erosion

During periods of glaciation there are thought to have been a number of ice sheets centred on different locations in Scotland. At their maximum extent, these would all have been connected to form a single sheet over most or all of Scotland, possibly joining the main Scandinavian ice sheets over the North Sea. One of the major centres of ice dispersal in Scotland was centred over the Rannoch Moor area, and it is ice originating from that area which had the greatest effect on the Glasgow and Clyde Valley LCA area.

Ice from the Rannoch sheet travelled south, down what is now Loch Lomond, along the Clyde Valley south and east towards the Southern Uplands and Edinburgh. A further branch flowed west towards the Firth of Clyde. The Southern Uplands themselves are thought to have held a similar, but smaller, ice sheet with glaciers of considerably less erosive power. This movement has been traced from the shapes and orientation of rock features which have been streamlined by ice over many glaciations. Also, deposits known to have been left by ice of the most recent period of glaciation to affect the whole area, (the Dimlington Stadial, around 26,000-13,000 years ago) indicate where ice travelled. The distribution of pieces of Glen Fyne granite for example, the source of which is located at the northern end of Loch Lomond, shows that ice transporting this rock must have extended far up the Clyde Valley.

A small readvance of the Scottish ice sheets occurred between 11,000 and 10,000 years ago; known as the Loch Lomond Stadial or readvance, it had a small effect on parts of the area. Small areas of land around Loch Lomond itself have been very slightly modified by glaciers from that time, and there has been speculation that some small glaciers may have formed on higher ground in the Southern Uplands.

The main ice-cut basins and valleys in the area are the Loch Lomond-Leven Valley, Strathblane, the Glasgow basin (or Howe of Glasgow) and the inner Clyde Valley for most of its length. These channels were present prior to the advance of the ice, probably formed by pre-glacial rivers over millions of years, but were deepened further by the glaciations. Much of the Glasgow basin, which now holds most of the conurbation, has been infilled with deposits from the Dimlington Stadial and later periods when sea levels were higher, flooding much of the Clyde Basin. Ice-streamlined landforms are common, such as crag-and-tail where

resistant volcanic rocks protected weaker sediments from the eroding effects of glaciers. The Necropolis in Glasgow is an example.



The Corrie of Balglass, Campsie Fells. ©P&A Macdonald/NatureScot

Glacial Deposition

The materials eroded by glaciers were subsequently deposited by the glaciers or by meltwaters associated with the ice. These deposits can simply be a blanket-like covering of material plastered onto rock surfaces in varying thicknesses, or they can be specific and separate landforms related to the particular mode of deposition. Such deposits are extensive throughout Glasgow and the Clyde Valley and make a significant contribution to the present landscape.

The general area of the Glasgow basin has a thick layer of glacial deposits. These were moulded underneath the last glaciers to form streamlined hummocks known as drumlins. Drumlin fields extend south and east from Loch Lomond in the north, towards Ayrshire and the central plateau. Much of the conurbation is built over drumlins, and they have influenced the settlement pattern adopted there. These are reflected in place-names such as Maryhill, Hillhead and Drumchapel as well as the way street patterns curve around the steeper slopes, or buildings – such as Glasgow University – are placed prominently on top.

Glacial deposits also fill, and can obliterate, pre-glacial valleys. Parts of Motherwell overlie a buried valley around 50 metres deep and another extends from Kirk o'Shotts to Wishaw. Former courses of some tributaries of the Clyde, the Mouse and Avon waters, are also recorded by deep buried valleys.

Fluvio-Glacial Deposition

Meltwaters from the glaciers deposited large volumes of sand and gravel over parts of the Glasgow and Clyde Valley area. There are great accumulations of fluvio-glacial materials (which were deposited by meltwaters) in the upper Clyde Valley tributaries around Carstairs and in the Douglas Valley. The Carstairs Esker is a long, ridge-like form which was deposited by a river or stream running underneath the ice which once covered that area.



Eskers near Carstairs. ©P&A Macdonald/NatureScot

Other related landforms in the area are kames and kame terraces, formed from deposits left at the margins of the ice and land by meltwaters running off the ice. These features tend to form a chaotic hummocky terrain of lumps and hollows. The sands and gravels of these deposits are now a financially viable mineral resource and are extracted in some parts of the area.

Sea Level Change

In the aftermath of the last glaciation (the Dimlington Stadial), a rise in the relative sea level meant that sea waters extended up the Clyde and reached up to some 25 metres higher than at present. At that time much of the Glasgow area would have been under water, with tidal sea waters cutting shorelines into the drumlins of the Glasgow basin and into the fluvio-glacial deposits from the meltwaters of the receding glaciers. Cliff lines were also cut into the solid geology of the coasts of the Firth of Clyde. Subsequently, the sea level dropped relative to the land as a result of isostatic uplift. This left the former cliffs and beaches dry and raised above sea level. The raised beaches of the Firth of Clyde are now important topographic features utilised as communication and development corridors.

Fluvial Erosion

Postglacial rivers have cut channels through the soft deposits of the valley floors to create terraces. The postglacial drainage system of Glasgow and the Clyde Valley differs in some respects to that which existed prior to glaciation. While many postglacial rivers have followed old courses, they had to cut through new deposits and have only occasionally found the true rock valleys through which they formerly flowed. Where deposition by the ice and its meltwaters filled-in preglacial valleys, as is the case near Motherwell and in some of the Clyde tributaries such as the Mouse Water and Avon Water, the waters have been forced to find new courses through these sediments.

The Clyde has 'captured' a number of new tributaries since the last glaciation, taking away waters which once flowed east to the Tweed valley. It is thought that at some time prior to the last period of glaciation, the watershed of the Clyde and Tweed waters was situated close to the present location of Lanark. However, the Clyde had enough erosive power to cut backwards to collect firstly the Mouse Water, then the Douglas and the North Medwin Water, and finally the Upper Clyde itself near Symington. These tributaries have also extended their catchment areas to make the Clyde the size it is today.

A combination of the need to reinstate river valleys through deposits or rocks, and isostatic uplift of the land adjusting to its lighter weight without ice sheets, has meant that many rivers have cut narrow gorges. This feature is most pronounced in the upper Clyde area where the Clyde itself and several of its tributaries such as the Mouse and Avon Waters and the River Nethan at Crossford, all have gorges or narrow steep-sided sections to their courses.

Topographic Features

Glasgow and the Clyde Valley is predominantly a lowland area surrounded by hill ranges. Whilst the latter reach over 700 metres in South Lanarkshire, they generally lack the rugged grandeur of mountains north of the Highland Boundary Fault. Nevertheless, the hills that enclose the Clyde basin are important visual boundaries for a large population and their topographic variety is appreciated and physically experienced on a regular basis. The terraced lava cliffs and scarps of the Campsie Fells, Kilpatrick Hills and the Renfrewshire Heights are distinctive features to the north and west. To the south are the larger scale, but more uniform, domed forms of the Southern Uplands.

Volcanic activity has introduced topographic landmarks into comparatively lowland situations. Dumbarton Rock, Duncryne Hill, Dumbuck Hill and Tinto Hill are the most noticeable within the Glasgow and Clyde Valley LCA area, appearing as prominent conical hills. Many of these have been utilised for their prominence with the erection of Bronze Age cairns, such as at Tinto, or Iron Age hill forts and/or later castles, on their summits – Dumbarton being one of the most prominent examples. Similar features can also be found just outside the area at Dunglass, Dumgoyne and Loudoun Hill, the latter perhaps being most famous as acting as an evocative landmark for the location for one of the most important battle in the Wars of Independence.

Topographic features related to glacial and post-glacial activity are important in this predominantly lowland landscape. Drumlin hills determine the scale of spatial enclosure in many areas. They have also had a considerable influence on settlement and urban development patterns. In rural areas, many villages and farmsteads are sited on drumlins.



Tinto Fell ©Glyn Satterley / NatureScot

In Glasgow, the views afforded by drumlins were used to great effect in the layout of urban blocks and parklands. Other glacial deposition features include eskers and kames near Lanark and Carstairs. Glacial erosion also had a significant influence within the Southern Uplands in particular, carving the deep, rounded glens and smooth domed hills and summits.

Changes in sea level have created the raised beaches of the Clyde Estuary, extending as far inland as Erskine. These have provided important communication and development corridors beside the Clyde with an immediate hinterland of steep bluff slopes.

The major valleys of the Clyde, Kelvin and the Leven are, of course, essential topographic features of the area, with characteristics that vary throughout their length. There are also many smaller valleys with distinctive relief. The gorge sections of the Clyde near Lanark, the North Calder near Calderbank and the Avon near Hamilton are particularly distinctive examples.

Freshwater

The river Clyde, with its estuary and tributaries such as the Leven, Cart and Kelvin, is important in the landscape. River valleys frequently follow the north-east/south-west grain of the dominant faults. They influenced the location of much of the human settlement and transport infrastructure that followed. Walkway routes now follow several of the main river corridors, including the Clyde itself, and the Avon and Kelvin.

The Falls of Clyde, New Lanark are of geological, botanical, historical and cultural interest. They were harnessed for electricity in 1926, Britain's first commercial hydroelectric generating station, but on 'waterfall days' they can be seen as they were viewed in the past by tourists.

Water bodies include man-made reservoirs as well as natural lochs, many the result of glacial processes, eg. kettlehole lochs such as the Seven Lochs, now a wetland park, which include Frankfield Loch and Hogganfield Loch on the northern boundary of North Lanarkshire. Many are still managed to support multiple usage including access and recreation. Strathclyde Loch is the prime example, visible from the M74 between Hamilton and Motherwell. Others were originally created to provide power to industry along the banks of the Clyde and other valleys. Thom's Cutts, on the hills between Inverkip Greenock, is one of the most the extensive and well-preserved examples, along with that at the northwest end of Lochwinnoch.

The Forth & Clyde and Monkland Canals pass through the area. These once served as transport routes for business and industry and have now become a valuable recreational and natural heritage resource.

The Forth and Clyde Canal is a superlative example of Georgian civil engineering. It was the first of Scotland's great inland waterways to be constructed and, even at the time of its opening in the 1790s, it was christened 'The Great Canal,' a recognition of its undoubted importance even then. The Monkland Canal is an excellent example of Georgian civil engineering. The earliest sections, constructed from 1770 onwards, are the work of celebrated engineer and inventor James Watt. As the main means of transport between the North Lanarkshire coalfields and the rapidly expanding city of Glasgow, the canal epitomises the interdependence of 18th Century Glasgow with North Lanarkshire, which led to the region becoming the most important industrial centre of 19th Century Scotland.

Climate

Like the rest of Scotland, Glasgow and the Clyde Valley experience a generally cool and wet climate. It is oceanic, that is, with little extreme variation or events but there is often considerable daily variation in the weather. The prevailing winds are south-westerly. Winter temperatures in the Glasgow area are similar or slightly cooler than the Scottish average; summer temperatures are warmer. Rainfall is distributed evenly throughout the year and there is significant annual rainfall – even the drier months tend to have a good deal of rainfall.

There is variety in the weather experienced across the area given the range of heights and varying proximity to the coast. There can be snow on the higher ground (despite its relatively low heights, generally less than 600 metres) while the lower ground is rainy (70% of the west Central Belt is below 200 metres in height). The Clyde downstream from Glasgow feels the evidence of the Gulf Stream and also shelter from coastal gales: tender plants can be found in gardens on the Firth. This provides a strong contrast to the exposure of the higher ground.

Soils

Most of the soil parent materials are of glacial influence, such as tills, fluvioglacial sands, silts and gravels. Alluvial and organic parent materials are also present. In the lowland areas, parent materials derived from Lower and Upper Old Red Sandstone can give rise to reddish brown sandy clay loam soils, or more gravelly textures. Carboniferous sediments can result in yellowish brown and greyish brown tills of clay loam or sandy clay loam.

Soils in the lowland areas are generally mineral soils. Frequently derived from fine-textured parent materials, they commonly have gley features with poor natural drainage. (Gleys are periodically or permanently waterlogged.) The most common major soil sub-groups are brown

forest soils with gleying and noncalcareous gleys. Fluvioglacial sands and gravels occur locally in the broader valleys.

The major soil sub-groups in the upland and hill areas are mostly peaty gleys and peat. Soils are often shallow over the bedrock. Deep wet peat or peaty soils accumulate in depressions. Peat blankets large areas of gently sloping upland.

The best land (Land Capability Classes 3.1 and 3.2) is found on remaining alluvial floodplains in the heart of the basin. At Rosebank and Crossford in the heart of the Clyde Valley there are pockets of Class 2 land. Relatively small areas are found to the south-west and north of Glasgow, with a greater concentration forming a broad (if fragmented) band to the east of Glasgow. Further areas are found within the tight confines of the incised part of the Clyde Valley between Hamilton and Lanark, and within the broad alluvial basin near Biggar. Poorer farmland (Class 4) forms a band around the moorland hills and uplands, corresponding broadly to the areas defined as plateau farmland. On the south western side of Glasgow these areas extend up to the urban edge. The poorest land, Classes 5 and 6, is concentrated on the moorlands and plateau that enclose the Clyde Valley, principally the Renfrewshire Heights, Kilpatrick Hills, Campsie Fells, central plateau and the moorlands separating the valley from the Ayrshire Basin.

Landcover

Lowlands

Throughout the more accessible, low altitude areas, where not developed for urban uses, the land is mainly agricultural, mostly under pasture including silage grassland, but there are areas of arable land growing: in particular barley, wheat, oats and oil-seed rape. There is less arable land than the Scottish average in this region.

The pattern of agriculture closely reflects the physical structure of the landscape, as well as soils, climate and other factors. These patterns are reflected in the distribution of farming types and many of the farming units have characteristic field boundaries of stone dykes, hedgerows or field boundary trees, depending on their location. Arable production is concentrated within the Black Cart floodplain in Renfrewshire and along the southern side of the Kelvin Valley between Glasgow and Kirkintilloch. The Upper Clyde Valley, including the narrow valley between Hamilton and Lanark, has historically been dominated by orchards, horticulture and arable, including large areas of greenhouses for growing tomatoes. These industries were established on the sand and gravel terraces and alluvial soils of the valley, though recent decades have seen the decline of fruit and vegetable growing in the area. Remnants can still be seen in what is now more of a garden centre landscape.

Much of the remainder of the lowlands are dominated by pastoral farming, with cattle in the lower areas and cattle and sheep grazing on higher, less productive land. The uplands are dominated by extensive hill farming, though improved pastures are found along many of the valleys and glens.

The vast majority of the grasslands have been dramatically altered, and sometimes created by improvement treatments such as draining, fertilising and seeding, and areas of unimproved, or even semi-improved, pasture or traditional meadow grasslands are becoming an increasingly rare resource. Even though large areas of the urban fringe still retain a rural

atmosphere, the ecological interest of this improved farmland landscape is in general fairly low.

Local areas of less-improved grassland, and other habitats such as heaths, mires, wetlands and woodlands occur scattered throughout the lowlands, usually on marginal farmland such as along the sides of water courses, poorly draining depressions or haughs, local rocky ridges, upland transition slopes, areas of abandoned industry, and on the urban fringes (several of these are noted further in other sections). These areas can be of high diversity and interest and many are noted as being local nature conservation sites (LNCS) within their respective local authority areas.

Uplands

The high ground typically supports three main habitats: species-poor upland pasture, heather moorland or forestry. These habitats can occur in complex mosaics but frequently they are represented in discrete units, reflecting the local estate management regimes. The combinations of these habitats over the seasons can impart characteristic ranges of colours and textures to the landscape with shades of greens, browns, ochres and straw, and at flowering periods, the vivid purple of the extensive heather dominated areas and the white heads of cotton-grasses in blanket bog. These contrast with the predominantly agricultural landcover of the lower ground

The pasture grasslands, maintained by sheep grazing, with some dairy and beef cattle in Clydesdale, are dominated by fine-leaved fescue, mat and wavy-hair grasses and broader-leaved bent grasses, usually with a limited range of associate herbs and mosses. The acidic grasslands can occur in complex mosaics with dry and wet heaths, in part reflecting soils and drainage, but mostly the localised influence of stock grazing; such mosaics can be of high value to wildlife and species diversity and have visual landscape appeal. However, there has been a loss of unimproved and semi-improved grassland, with an average decline between the 1940's and 1980's of 14%, with the highest rates occurring between the 1970's and 80's in the northern part of the area.

The species diversity can be locally high, often associated with bent-fescue type grasslands on shallower soils or those with a more basic underlying geology such as in the Renfrewshire Hills can have locally high species diversity. Locally, bracken can form extensive stands, sometimes indicating former woodland areas, and generally impacting both on the ecology and landscape.

Many of the field boundaries are defined by hedgerows, frequently devoid of trees, which establish rectilinear patterns in the landscape. Hawthorn is the commonly used species although beech is characteristic of certain areas where locally favoured, such as in the north of the area, adjoining the Trossachs. The hawthorn hedgerows are badly maintained in many parts of the area and are now seldom stock-proof. At many areas the defunct hedgerows have large gaps, some being seriously overcut or conversely are overgrown appearing more like rows of widely spaced shrubs. Some of the better maintained hedgerows can occur along roadsides, where there can be well developed hedge-bank grass and herb floras; such floras are now rare or absent in the heavily grazed pasture fields.

Trees and woodland

Woodlands are widely distributed and varied. The area has a very extensive softwood resource, concentrated on the moorland plateaux and hills around the edges of the city region, most notably in the Southern Uplands, Lowther Hills, on Eaglesham Moor, the Slamannan Plateau and in the Campsie Fells and Kilsyth Hills. These forests make an important contribution to the rural area, as well as contributing to a sustainable timber supply to meet the needs of Scotland's growing timber processing sector. According to the National Forest Inventory 2013, there are approximately 56,850 hectares of woodland within the area, of which approximately 14,691 hectares are native woodlands (derived from the Native Woodland Survey of Scotland 2014).

Conifer forests are concentrated in the upland areas where farming has become or has always been marginal. Areas lacking rugged relief were favoured and consequently the largest plantations are found in the Southern Uplands, on the gentler plateau slopes of the Campsie Fells and Kilpatrick Hills, and in plateau moorland areas between the Clyde and Ayrshire Basins.



Forestry at Carnwath Moss ©Lorne Gill/NatureScot

As later sections describe more fully, modern forestry policy aims to create multi-purpose woodlands which satisfy a range of objectives including commercial production, aesthetic amenity, recreation, and nature and heritage conservation. The more recent forest plantations and rotations are, therefore, more sympathetically designed and frequently incorporate felling coupes more closely related to landform in scale and shape, more extensive open space patterns, broadleaf and mixed conifer fringes and corridors, public access routes and recreational facilities. Within the Glasgow and Clyde Valley area, the Carron Valley Forest, Cuningar Loop and Whitelee wind farm contain recreational facilities.

Much of the broadleaf woodland is associated with principal and tributary rivers. The middle Clyde Valley, and its series of deeply incised tributaries, has some of the most intact and ecologically rich woodlands in the area, much of which is internationally or nationally designated. The Clyde Valley has a legacy of orchards, many of which have been lost or stand derelict, and a series of designed landscapes many with distinctive policy woodlands. Neighbouring areas of plateau farmland are, by contrast, more open and exposed, with woodland cover often limited to lines of field boundary trees and small farm woodlands.

Over the past decade, the Central Scotland Green Network Trust has made a significant positive contribution to vacant and derelict land, using woodland planting and other enhancements to improve damaged ecosystems and secure significant benefits for communities across the area. Across significant parts of Lanarkshire the pattern of coal mining and associated industrial activity has left a legacy of vacant and derelict land within a wider fragmented rural landscape. There is significant potential to further increase woodland cover in these areas to transform post-industrial landscapes but this needs to be balanced against the potential impact on this area's industrial heritage.

The native woodland networks of the Clyde Valley and its tributaries are internationally important for their biodiversity value, as some of the most intact – and dramatically located – ancient and semi-natural woodlands in lowland Scotland. Similarly, being located within an hour's drive for the majority of the nation's population, they are highly accessible. They also incorporate areas of high cultural heritage value, taking in important areas of ancient wood pasture and the remains of medieval royal deer parks at Hamilton High Parks (in Chatelherault Country Park). Across the region, riparian networks hold a significant proportion of the higher quality native woodland resources – for example in the foothills of the Campsie Fells and the Kilsyth and Kilpatrick Hills. However, outside these relatively undisturbed areas, much of the region's native woodlands are often both highly fragmented and relatively small in size. The ash-elm woodlands and ancient wood pastures of the Clyde Valley support rare and endangered species of deadwood invertebrates and are particular significance.

Trees and woodlands are an important aspect of the region's urban areas. These features are key aspects of the quality, character and distinctiveness of the region's historic towns and villages. Historically, extensive networks of new woodlands were created in parallel with the establishment of New Towns at Cumbernauld and East Kilbride, and these have matured into an important component of the region's woodland resource. The region has already benefitted significantly from efforts to expand and positively manage woodlands in and around urban areas, through the work of the Central Scotland Green Network and the then Forestry Commission Scotland's 'Woods In and Around Towns' (WIAT) programme. Successes of projects such as the Bishop's Estate Woods, bringing a substantial area of woodland on the edge of Easterhouse into positive management, improving habitat, access networks and reconnecting communities to environmental assets, illustrate the potential that the region's woods have in contributing to regeneration.

Trees contribute to the quality of urban greenspaces such as Strathclyde Park and Castlemilk Woodland Park, to formal squares and gardens such as those found across the West End, key river corridors including the Kelvin, Leven and the White Cart through Linn Park in



Cadzow Oaks, Hamilton ©Lorne Gill/NatureScot/2020VISION

Glasgow and East Renfrewshire. New Towns such as Cumbernauld, by contrast, have an extensive planned greenspace network, much of which includes woodland. Trees and woodlands are, however, much less common in large areas of social housing and some of the newer suburbs. There is significant potential to increase tree cover across the area's townscapes, linking and extending existing habitats, providing stepping stones and corridors through the urban area, offering shelter and improving the physical environment. The area's mixed woodland resource is primarily located in the region's parks, gardens and designed landscapes, and in amenity planting associated with transport corridors and development.

Moorlands, bogs and mire

The moorlands are characterised by the abundance of heather but range from dry heaths with other ericoids such as blaeberry, bell heather, crowberry, and, on higher ground, cowberry, to wet heaths or blanket bogs, on shallow slopes, depressions or plateaux. In these areas graminoid elements such as purple moor-grass, deer-grass and cotton-grasses can be more extensive. The ecological interest and species diversity of relatively less disturbed areas can be high, supporting various herbs, and notably lower plants such as mosses, liverworts and lichens. The heather moorlands are often maintained by muirburn, and the patchwork result can be seen over much of the Southern Uplands, although inappropriate burning practices can have an adverse effect on upland habitats and species. Heather moorland has declined by about a quarter since the 1940's, with most losses occurring in the 1970's and 80's in the Clyde Valley.

Blanket bogs, often the result of prehistoric land management coupled with climate change, are a feature of the poorly draining ground of slopes, shoulders and plateaux of the uplands. Heather with cotton grass are the main dominants, although cross-leaved heath, deer-grass

and purple moor-grass can also be common; cloudberry is also a feature of the upland blanket mires above 400m. However a significant feature of bogs is the usually abundant growth of mosses, notably the main peat forming bog- mosses (*Sphagnum* spp.). Where degraded the graminoid elements can become more prevalent, with cotton grass and purple moor-grass locally dominant. Extensive areas of blanket bog occur at Clyde Muirshiel in Renfrewshire, the summit plateaux of the Kilpatrick and Kilsyth Hills to the north of Glasgow, the moors above Eaglesham (the Whitelee wind farm area has a habitat management plan) and in the southern uplands.

There are many lowland raised bogs of national and international importance. Raised bogs, although superficially similar to blanket bogs, are more discrete units, typically developing in the lowlands, in shallow basins or on broad, river flood-plains, and may have been growing for several thousands of years. When in a relatively pristine condition they support a luxurious growth of bog-mosses with associate liverworts, other mosses and lichens, in addition to previously mentioned bog species. Raised bogs are well represented in the area with notable examples being Cranley and Carnwath mosses to the east of Lanark and Red and Coalburn mosses, north of Abington. Other sites occur on the urban fringe such as Blantyre Muir by Hamilton, Commonhead Moss (Local Nature Reserve), east Glasgow, Langlands Moss (National Nature Reserve), East Kilbride and Branchal Moss by Newmains. The western margins of the Slamannan plateau support a number of raised or intermediate bogs of note such as Black Loch (SSSI and SAC) and Lady Bell's (SSSI) Mosses.

Other mires, including, basin or valley mires and rush-dominated pastures usually occur in association with bog habitats but can occur as distinct units, and as noted with other wetlands, can significantly add to the species diversity and interest, when present as part of site habitat mosaics. Rush-dominated pastures are a very common landscape feature, often marking out drained hill slopes and rig and furrow drainage patterns in pasture grasslands, but are also important habitats at a range of sites, including marginal farmland, disused industrial workings and urban areas.

3. HUMAN INFLUENCES

The landscapes of Britain have been inhabited permanently since soon after the retreat of the last ice sheets around 10,000 years ago. Humans have, therefore, utilised and manipulated the landscape and its physical resources for millennia. The results of this activity can be characteristic of the landscape, although a legacy from all periods of history may not be evident. The land itself can obscure and distort our understanding of human activity in the past. Much of the Glasgow and Clyde Valley area has poorly drained soils which do not allow for arable agriculture. Over the past few decades our understanding of human activity in some parts of Scotland has been revolutionised by our ability to record and interpret the remains of otherwise invisible buried structures through the cropmarks they create in cereal or grass crops under dry conditions. Such conditions are rare in the physical landscape of Glasgow and the Clyde Valley and as a result our understanding of human activity in the past is hampered by the limited nature of the evidence.

Mesolithic Period (12,000-4,000BC)

The Mesolithic period was a time of massive environmental change in Scotland. Over 9000 years the landscape transformed from glaciers and tundra to a mixture of woodland, scrub, marshland and upland moors. The Mesolithic colonists of Scotland left little evidence of their passing due to their nomadic lifestyle. They survived by hunting, gathering and fishing and left little in the way of evidence for built structures.

Scatters of stone-working debris are often the only trace of human activity for this period and these can be found across much of the area. The earliest evidence for human activity in Scotland has been found in the upper reaches of the Clyde Valley. Around 13,000 years ago, a hunting party following game on the tundra recently exposed by the retreat of the ice sheets left a scatter of flint-working debris at one of their camps in an area just to the north of Biggar. There is a particular concentration of artefacts from all phases of the Mesolithic recorded in the upper Clyde valley. Beyond the area, in the hills near Peebles, was an easily accessible source of chert, a flint-like rock, and this would have drawn people to the area. An intensive programme of survey by a local heritage group has also revealed a richness of remains that may simply be undiscovered elsewhere.

Neolithic and Early Bronze Age Period (4,000-1,500 BC)

The Neolithic (New Stone Age) marks the introduction of farming around 6,000-5,500 years ago. The origins and spread of Scotland's first farmers are hotly disputed, but farming appears to arrive as a "package" with domesticated animals and plants, new forms of stone tools, pottery and monumental construction projects. The first farmers would have altered the landscape, felling trees to create fields. Domesticated livestock would have been used to keep the cleared areas open.

Evidence for settlement and agriculture is rare for this period, largely due the intensity of subsequent land use and occupation, and there are no certain remains of Neolithic settlement in the area, the only possible exception being a few identified as cropmarks in aerial photographs. Perhaps, because people settled in an area, they began marking places in the landscape which were important to them, erecting massive monuments such as henges, long cairns, and stone and timber circles, which would have required the mobilisation of large communities to provide the labour necessary for their construction. Remains of these

structures are also not common and those that are known are concentrated in the uplands of the Clyde Valley, where they tend to occupy unobtrusive locations within the landscape. The massive ceremonial enclosure at Blackhouse Burn between Thankerton and Hyndford Bridge exemplifies this. It is a huge sub-circular structure measuring 320 metres east-west and 310 metres north-south, defined by a stone wall just over one metre high and up to 11 metres wide, with entrances on the east-south-east and west-north-west. It sits in a natural south facing bowl on Swaites Hill surrounded by the multiple peaks of the hill, where it commands extensive views to the south but is also virtually invisible from the valley below. Excavations at the site showed evidence for multiple phases of rebuilding and alteration. Journeying to such sites and engaging in communal activities there appear to have been essential factors in their function and use. Burial monuments, such as at Burngrange and Greens Moor, show the same pattern with repeated rebuilding and manipulation of the human remains within the sites. There is a marked concentration of axes between Biggar, Lamington and West Linton, suggesting the area was intensively occupied.

To the north of the area there is a very different pattern. Apart from the two long cairns at Gallangad Muir and Stockie Muir on the northern slopes of the Kilpatrick Hills, the only clear evidence of Neolithic activity is the presence of cup and ring marked rocks in the hills around the mouth of the Clyde. These sites comprise circular patterns carved into bedrock often in areas offering extensive views across the surrounding landscape. There is a particular concentration of these carvings along the southern side of the Kilpatrick Hills, with the Cochno Stone being one of the most complex examples.

Between 2,500 and 2,000 BC, bronze artefacts start to appear in Britain. They are accompanied by a new form of pottery known as beakers and new ostentatious burial rites for individuals featuring intact bodies or cremations with grave goods placed either in large round burial cairns or barrows, often within or close to existing Neolithic monuments. The enclosure at Blackhouse Burn is ringed around with Bronze Age cairns, as are the long cairns at the head of the Westruther Burn north of Carnwath and the henge at Normangill Rigg north-east of Crawford. These Bronze Age cairns do not just focus on earlier sites but can be found across the area. The massive cairn on the summit of Tinto Hill dates from this period and dominates the point where the high ground of the southern uplands give way to the lower-lying ground to the north. Recent DNA analysis indicates that the individuals buried in this way are genetically distinct from the Neolithic farming community, hinting at an influx of new migrants with significant power and influence.

Later Bronze Age and Iron Age (1,500BC – AD50)

By around 1,500BC, the archaeological record has shifted from ritual and ceremonial sites towards settlement and field systems. The best preserved remains from this period are around the upper Clyde Valley, with numbers platform settlements surviving in the hills. These sites comprise groups of earth platforms cut into hill slopes to accommodate circular wooden houses, sometimes with associated yards and platforms for smaller outbuildings. This area also has a dense concentration of small round cairns or barrows, which is not found further north within the study area. At 45 metres in diameter, the round cairn on Tinto Hill in South Lanarkshire is one of the largest Bronze Age cairns in Scotland, visible from throughout the surrounding area. Fall Hill near Crawford is an enclosed cremation cemetery, and the only example of this type of monument to be identified with some certainty in Lanarkshire, but it is possible that other enclosures may belong to the same class. Some examples of these are to

be found at Wester Yardhouses: at Hare Law and, to the south east, at Horse Law. Together these monuments betray a significant expansion of settlement and farming, enabled by a substantial intensification of vegetation clearance. A cooling in the climate after 1,500BC, accompanied by environmental degradation caused primarily by land clearance and the development of peat in upland areas, meant these areas were gradually abandoned and the archaeological remains have survived undisturbed by later land-use.

In the first millennium BC there is an increasing emphasis on building settlements with substantial defences comprising varying combinations of ramparts, ditches and palisades. Sites like Arbory Hill above Abington and Sheep Hill near Dumbarton are classic examples of the type, but it is notable that there are few such sites in the area between Lanark and Clydebank. Black Hill and Fallburn Fort in Lanarkshire and Walls Hill Fort in Renfrewshire are exceptions and instead there seems to have been an increase in smaller fortifications, occupying less impressive fortifications, instead. There are also fortified headlands above the Clyde, with extensive complexes of ramparts, such as Castle Qua. This is in marked contrast to the settlement pattern in other parts of southern Scotland such as the Tweed valley and Dumfries and Galloway where substantial forts are more common.

The presence of a group of crannogs in the mouth of the Clyde estuary is another peculiarly local feature of the Iron Age in this area. Crannogs are artificial islands or platforms built in bodies of water that would have supported a substantial timber roundhouse. While they are reasonably widespread across Scotland, particularly in the west, they are almost exclusively a feature of freshwater lochs; the only similar group of such sites in a marine context is in the Beaully Firth.

Change during this period was not limited to settlement. Technical innovations such as the introduction of iron tools and the rotary quern would have increased the efficiency of agricultural production, while the increasing influence of the Roman Empire brought luxury goods like glass, jewellery, fine pottery and wine.

Roman Occupation (c.AD 70s - AD 390)

Glasgow and the Clyde Valley has some of the best evidence of the period of Roman occupation in Scotland. From the late AD70s, Iron Age life was disrupted by the invasion of the Roman army, and the Roman author Tacitus informs us that his father-in-law, the Roman governor and general of the province of Britannia, Gnaeus Julius Agricola, drove northwards. Archaeology paints a more complex picture but the first Roman remains in this area date to the later part of the 1st Century AD. Dominance was assured by a network of roads and forts which allowed the Romans to contain troubles and to prevent raids from locals living to the north. It has been suggested that the Selgovae, an Iron Age tribe whose territory probably included the Upper Tweed Valley and the easternmost part of the Clyde Valley, were opposed to the Roman invasion. This resulted in a strong presence in this area of the Clyde Valley. The fort at Castledykes and its associated annexes and temporary camps may have been constructed on the border of the lands of the Selgovae where they met with those of the Damnonii, who were sympathetic towards the Roman presence.

Trouble elsewhere on the continent caused the Romans to remove troops for action elsewhere, resulting in the withdrawal from the conquests in Scotland. By around AD 90 it is thought that all of the Roman forts had all been vacated. In the 120s, the Emperor Hadrian

instructed his soldiers to build the Wall that bears his name, marking the northern limit of the Empire at that time. With the accession of Antoninus Pius as emperor in AD 138 came a new instruction to move north, reoccupy lowland Scotland and build a new frontier. The Antonine Wall was constructed to link the firths of Clyde and Forth, with outpost forts to the north-east and west plus a network of hinterland forts down the Clyde to the south. The valley was linked to the south by a road close to the line subsequently chosen for the present day A74. Although the Roman army maintained its presence in southern Scotland till the 4th Century, including outpost forts for Hadrian's Wall, there was no permanent presence in west-central Scotland.

The most significant assemblage of Roman remains in the area is the Antonine Wall, the line of which runs from Old Kilpatrick in the west through East and West Dunbartonshire and North Lanarkshire to Allandale in the east before heading over to Bo'ness on the Forth. In places along its length it is still visible as a rampart or ditch, and it has a number of forts, fortlets, other structures and camps associated with it. Good sections of remains of the earthworks can be seen between Dullatur and Twechar, particularly at Croy Hill, North Lanarkshire and at Bar Hill (Roman fort). Stretches of the Wall base can be seen in New Kilpatrick Cemetery, East Dunbartonshire. Other remains include the Bearsden Bath House, East Dunbartonshire, the fortlet at Lurg Moor, Inverclyde, and the Redshaw Burn fortlet, South Lanarkshire.

Early Medieval Period (c.AD200 - AD1000)

The early medieval period was characterised by many political and religious changes. There are relatively few records and very little archaeological evidence from this period: much of the history has been pieced together from the works of religious chroniclers working many years later.

Glasgow and the Clyde Valley was, along with much of the rest of west central Scotland, absorbed within the kingdom of Strathclyde, whose lands included the general areas of Dumbarton, Lanark, Renfrew and Ayr, with the seat of Strathclyde at Dumbarton Rock. Dumbarton Rock, known as Alt Clut, or Clyde Rock, occupying a key strategic location in the fledgling Kingdom of Strathclyde, was heavily fortified in this period. The rock was besieged by Viking forces in 870, only succumbing after four months. Following the siege Strathclyde became a hybrid mix of Norse, Gaelic and Brittonic culture. Strathclyde's centre of power shifted away from Dumbarton, with a royal estate established further up the Clyde at Partick and an important assembly mound erected at Govan.

Christianity was introduced to west central Scotland in the early 5th Century by Ninian, who carried out missionary work from his base at Whithorn, Wigtownshire. It is Christianity that has left the greatest impression on the landscape from this period through the tradition of stone carving: raising ornate crosses, memorial stones and gravestones; examples are the Barochan Cross in Paisley Abbey and the stones in the New Parish Church in Inchinnan.

Govan Old Parish Church was erected over a much earlier church built near to an assembly mound or 'moot hill' believed to be of Norse origin. The church contains a number of hogbacks: large, ornate recumbent stones that are generally believed to originate to the Norse activity in the area. While often assumed to be grave markers, the function of hogbacks remains unclear. The church is also home to the Govan Sarcophagus, an ornate sarcophagus believed to be 9th or 10th Century AD in origin and discovered in the graveyard in 1855. Another collection of

sculpture from this period was recovered from an ecclesiastical centre at Inchinnan close the historic ford across the Cart Water.

Glasgow Cathedral, first consecrated in 1136, stands on the site of a monastery founded by St Kentigern in the 6th or 7th Century AD. The cathedral and its surrounding precinct marks the location of the original medieval settlement of Glasgow prior to its gradual expansion westwards. The crypt is particularly fine, containing the tomb of St Mungo, Glasgow's patron saint. The cathedral is also noteworthy for containing architectural details that survived the reformation, such as its rude screen separating the nave from the choir.

The Medieval Period (AD1200 - AD1600)

During the medieval period, the Scottish Crown sought closer links with the Norman aristocracy of England. The Norman influences which subsequently arrived changed the nature and style of architecture, the Church and Land laws. By the 13th Century, much of lowland Scotland was a feudal state society with castles, churches and towns. The Normans established shires, governed by feudal lords, as the principal form of administrative unit.

The church was reorganised during this period to follow the rest of western Christendom. The new structure was based on territorial divisions where a Bishop controlled a diocese from a cathedral base. The diocese was then further divided into parishes, each with its own church and priest. The early parish churches have largely been replaced with more recent buildings, but a piece of the original church in the form of a 12th Century Romanesque arched doorway is present in the wall of the post reformation church at Lamington in South Lanarkshire. Other medieval parish churches were adapted and largely survived as burial enclosures, such as St Kentigern's in Lanark, Dalry and Killallan, near Houston.

Following the Wars of Independence, the centre of ecclesiastical power in the area shifted from Rutherglen to Glasgow. Whilst much reduced after the reformation Glasgow Cathedral contains much surviving medieval material, attesting to its former grandeur. A similar example can be seen at Paisley Abbey which attests to the influence of former monastic estates, which have now largely disappeared, mostly leaving only ruined buildings behind, such as Blantyre Priory.

The feudal overlords in medieval society granted lands and delegated functions to lesser lords and their vassals. The lands granted form the basis of many estates in Glasgow and the Clyde Valley and at the centre of these estates control was exercised from castles, home farms, tower houses or mansions. Early castles took the form of earthwork and timber mottes and baileys. A very well-preserved motte can be seen on the golf course at Carnwath. The glaciated landscape around the Clyde allowed easy conversion of drumlins and other glacial features into these defensive structures, and to a certain extent influenced their location. Many of these were gradually replaced during the 13th Century with stone structures. An example of this can be seen at the Bishop's Castle in Glasgow, where excavations show that a stone hall was added to an earlier earthwork castle.

This period saw the creation of a number of large and imposing castles, often built by royal or highly important families, and concentrated along the Clyde: most notably at Bothwell. Originally constructed in the 13th Century, Bothwell was demolished and rebuilt after a series of sieges throughout its life. Described as 'among the foremost secular structures of the Middle

Ages in Scotland,' Bothwell Castle was originally conceived by Walter de Moray who acquired the land in 1242. The castle was laid out on a grand scale that demonstrated clear influences from the large castles of enceinte constructed by Edward I in Wales. Like these castles, Bothwell was originally intended to contain a large and imposing gatehouse of two towers. This, along with much of the curtain wall, was never constructed. The castle as it appears today was probably completed by Archibald 'the Grim' Douglas of Threave. Bothwell Castle's most iconic feature is undoubtedly its massive, stout donjon or keep. This enormous round tower shows clear stylistic ties to castles in mainland Europe, indicating the wealth, societal connections, and cultural ties of its constructors.

Cadzow Castle, near Hamilton, was probably constructed between 1500 and 1550 by the second Earl of Hamilton. The Hamiltons were very much to the fore in the politics of state surrounding Mary Queen of Scots. The castle is unlikely to have been occupied following a siege in 1579, with the fifth Duke of Hamilton subsequently building the hunting lodge of Chatelherault close by in 1732. The picturesque ruins of Cadzow Castle were subsequently incorporated into the more formalised landscape around Hamilton Palace, with the castle showing evidence of being 'romanticised' with alterations in the 18th and 19th Centuries. The early artillery emplacements erected around Craignethan Castle, above the Clyde near Lanark, show that the area continued to be at the forefront of lordly design throughout this period.

Lesser lords tended to build much smaller castles, especially in the later medieval period. Where they have not been adapted as later homes their remains are a common feature in the landscape, with ruined towerhouses still visible ranging from relatively well preserved, publicly accessible and complex ones, such as Crookston Castle, to more ruined examples often re-used as eye catchers within later designed landscapes, such as Ranfurly Castle at Bridge of Weir, and other examples surviving in urban locations, such as Strathhaven Castle or Stanely Castle which sits within a reservoir.

It was during the medieval period that many of the towns in the area were first established. Comparative stability and the new social order allowed trade to expand, and the main towns grew with merchants, minor nobles and a tertiary population of servicers such as market gardeners, artisans and tradesmen. The medieval origins of the areas towns can be seen in street patterns, churches and castles, most of which have been subsequently heavily adapted. A smattering of medieval townhouses also survive, such as in Lanark.

The majority of the medieval population was involved in farming through feudal tenancy agreements. Farm units tended to be a group of dwellings for several families with gardens or kailyards attached. Nearby was an "infield", an area intensively farmed on a run-rig system. Beyond the "infield" was the "outfield", which was cultivated but used less intensively and allowed fallow periods. The surrounding "common" areas of rough pasture were used for cattle grazing.

This system, which followed patterns possibly established during the Iron Age, but which is more likely to be connected to the introduction of feudalism, continued until the agricultural revolution of the 18th Century. It was responsible for further removing woodland from the area until it was largely devoid of ancient or semi-natural woodland. The religious orders, and particularly the monasteries, were responsible for large areas of land into which new

agricultural techniques, crops and crafts were introduced. A vast area of Lanarkshire, for example, at this time appears to have been granted to the monks of Kelso Abbey. Further evidence of this type of landholding are “The Monklands”, centred on what are now Airdrie and Coatbridge. These towns are divided into the Old Monklands (Coatbridge) and the New Monklands (Airdrie). The name ‘Monklands’ goes back to the High Middle Ages, when the Cistercian monks farmed in the region. In 1162, the lands were officially granted to the monks of Newbattle Abbey in Midlothian, by King Malcolm IV. Originally establishing farms and mills there, the Cistercian monks would keep these lands all through the Middle Ages, becoming the first people in the area to exploit the local coal. When the Reformation came to Scotland, the monks were dispossessed, and their lands given away.

18th and 19th Centuries

After the Act of Union in 1707, the pace of economic, political and social change increased dramatically. Throughout the medieval period, the landscape had changed very gradually: small changes to patterns which had existed for hundreds of years. Post- medieval Scotland however, saw agricultural improvements, industrialisation, urban development and population growth all combining to change dramatically the landscape of Scotland and particularly west-central Scotland.

The improvements in agriculture during this period had a significant effect on the landscape. In addition to new technologies and dissemination of improved methods of farming, many landowners replaced traditional yearly tenancies with longer ones to encourage farmers to carry out longer-term improvements to the land. Land was drained and enclosed, increasing the productivity, field sizes and human control over the land. Tree planting was considered a crucial element of improvement and very large numbers of trees were planted throughout the 18th Century. Much landscape woodland – avenues, shelter belts, copses and small and large plantations - have their origins in this period and in many cases are remarkably little changed in shape. Farmhouses and steadings became progressively better-built and more substantial, with much thought given to their design and layout. Many farm buildings from this period can be seen in the more rural parts of the Glasgow and Clyde Valley area and form an important element in the landscape.

Increased revenues from mining, trade and industry (and, to a lesser extent, improved rents from agricultural improvements) made landowners richer and helped to finance the mansions and planned landscapes of the estates. These are found throughout the lowland areas. One of the finest examples is the grounds of the Hamilton estate with the now-demolished Hamilton Palace and the still present Chatelherault garden building built in 1732. At Castle Semple, near Lochwinnoch, improvements carried out in the 1720s and 30’s were paid for by the profits of sugar plantations on St Kitts. Many 18th Century estates in the vicinity of Glasgow belonged to merchants who had made their money in tobacco or sugar. Estate planned landscapes throughout the region tend to have their origins in the 18th or 19th Centuries. Many have since suffered from decline or have been built over. In part, this reflects the changing economic position of many estates, but is also a result of planning policies that permitted redevelopment on parkland in preference to agricultural land.

Urban growth and industrial expansion occurred simultaneously, starting towards the end of the 18th Century and due primarily to the loss of the American colonies which changed the trading patterns of the time. Initially, spinning and weaving industries expanded; this is

recorded dramatically by the cotton mills of New Lanark. These used the waters of the Clyde for power, and employed up to 2,000 workers to create one of the first mass production factories. Renfrewshire too had a major cloth weaving industry which grew around Paisley. Much of the preparatory work on the cloth was carried out by outworkers in villages such as Kilsyth, Cumbernauld, Condorrat and in Airdrie and surrounding villages: a weaver's cottage is still present at Kilbarchan.



New Lanark, World Heritage Site. ©Lorne Gill/NatureScot

By the start of the 19th Century, heavier industries such as coal and iron ore mining, engineering and ship building were starting to expand. The most accessible coal measures in the region were mined, as were locally abundant supplies of Iron ore and limestone. The Clyde and the Glasgow basin became one of the world's major industrial locations of the 19th Century. Ships were built all along the shores of the Clyde with major centres at Greenock and Port Glasgow in the west and Govan near the centre of Glasgow itself. They were marked out by their prominent cranes and covered yards. The Forth-Clyde Canal, built in the late 18th Century, allowed bulk transport of goods with the east coast; places such as Kirkintilloch built smaller boats such as tugs for the Clyde. While little can now be seen of the working of the coal and iron industries from the 19th Century, cast iron street furniture - including fountains, decorative lamp standards, bandstands and architectural ornaments such as balconies and braticcing (ornamental work along a ridge or cornice) - which was made during this period can still be seen in many towns in the Glasgow and Clyde Valley area. It was also exported to other parts of the world.

As the industries grew, so did the urban area within Glasgow and the Clyde Valley. The need for labour meant that the region became a magnet for migrants from the Highlands and other parts of Scotland as well as from England and Ireland. With so many new people in the area,

the towns expanded to support them, industry owners employing them grew richer, and towns grew, with bulk housing for the poor and extravagant homes for the wealthy. It was around this time that Glasgow became the physical and economic centre of the area. Between 1755 and 1851 the population of Glasgow increased from around 23,500 to around 333,500, and by the beginning of the 20th Century was close to 800,000.

The area contained some of Scotland's earliest railways, developed from the mid-1820s to serve the North Lanarkshire coal- and ironfields. The Monkland and Kirkintilloch Railway was the first in Britain to specify steam locomotive haulage in its Act of Parliament (1824). This area also contained some of Scotland's earliest main line passenger lines, including the Glasgow Paisley Kilmarnock & Ayr Railway, the Glasgow Paisley and Greenock Railway and the Edinburgh-Glasgow Railway, which opened in 1840, 1841 and 1842 respectively. Railways built along both shores of the Clyde in the mid-19th Century augmented established steam-boat services and encouraged the building of large numbers of weekend and holiday villas in settlements such as Skelmorlie, Helensburgh, Craigendorrnan and Rhu for wealthy Glasgow businessmen and their families. Many of these villas were built by leading architects of the day and are of the highest quality.

The introduction of the railway network to Lanarkshire caused large fluctuations in population there. Initially, the number of people living in areas such as Carstairs increased due to an influx of railway workers and their families around the once-important junction. Eventually, in some places the improved transport links caused a population decrease as people from the local communities became aware of the larger towns and cities nearby, with their thriving markets and new lifestyles. Places such as Thankerton suffered a decrease in population as the local tradespeople were usurped by the cheaper and more varied goods available in nearby Glasgow and Edinburgh. Overall, it appears that the farming communities in the area were least affected, and appear to have had the most stable populations over time.

20th and 21st Century Developments

Industry

The 20th Century saw the dramatic decline of Glasgow and the Clyde Valley's heavy industry. By the early 1900s, the mining of the Lanarkshire coalfields was slowing as shallow deposits in the area were 'worked out' by conventional methods. A few of the deeper pits continued to be worked until the 1990s. Evidence in the landscape for the mining industry remains in the form of many small bings and spoil heaps. The area has a number of examples of isolated housing groups, particularly over parts of the central plateau, a legacy of communities where mining once thrived.

Aggregate production in the area is 26% of all Scotland's hard rock and sand & gravel. In relation to hard rock mined, 88% is retained within the city region. Distribution of sand and gravel shows 77% of production is retained within the city region. Exports can go further afield, such as the Lanark red granite chips which are in demand within Western Europe for road infrastructure projects. Some hard rock quarries have not been fully restored following mining operations.

In the 1980's and 1990's open-cast coal mining increased, with some large areas worked this way in North Lanarkshire in particular. This form of mining caused some locally significant changes in the landscape. Past open-cast restoration schemes have often produced constant

engineered gradients, unrelieved by localised changes in topography or vegetation and lacking the features and grain which combine to create landscape character. In parts of the area, sites have not been fully re-instated, due to financial and legal issues, resulting in unnatural slopes and mounds which can have a considerable negative effect on the landscape as a result.



Open-cast coal workings at Glenbuck. ©P&A Macdonald/NatureScot

Peat, used for horticulture, has been extracted commercially on parts of the central plateau south of Cumbernauld, having a locally significant effect on the landscape of the plateau. In South Lanarkshire, there have been impacts on the landscape due to the extraction of sand and gravel. This extraction has been responsible for the removal of local archaeological sites but has enabled several archaeological discoveries. This type of landscape modification is evident in areas around the Tinto Hills. Sand and gravel extraction continues, for example, in the valley of the upper River Avon near Drumclog.

Shipbuilding and steel making, core industries of the conurbation, struggled to survive after the Second World War. The major steelworks all closed during the 1980s and early 1990s, and the Clyde now has only two working shipyards. The towers of the Ravenscraig Steelworks by Motherwell were a significant feature of the landscape until they were removed in the mid-1990s. The area is now home to one of Europe's largest urban regeneration projects with £200 million investment on the 1200 acre site creating 1000 homes, sports and community centre, new green space, transport infrastructure and employment opportunities. Some of the quays, sheds and cranes (such as at Finnieston Quay, and the Titan crane at Clydebank) on the Clyde in Glasgow have been retained as landmarks and reminders of Glasgow's

shipbuilding past. Many former industrial sites have been cleared to provide 'brownfield' land for redevelopment, or are being redeveloped for new commercial, infrastructure, public amenity, housing, leisure and retail uses. Prime waterfront examples include the Glasgow Science Centre, IMAX, the Scottish Exhibition and Conference Centre (SECC) national exhibition centre, the Armadillo and Pacific Quay which are all clustered here, along with the distinctive footbridge that is the Clyde Arc. One of the major successful developments is the creation of the new SSE Hydro, a major new venue for Scotland. On the south bank of the river, Creative Clyde provides a focus for creative and digital activity, with the BBC and STV studios both located here. Many of these buildings have formed new landmarks. Further upstream, a group of sports facilities and housing in the east end of Glasgow and at Clyde Gateway form part of the Commonwealth Games legacy from 2014. Other sites remain derelict or contaminated and have been the subject of a range of initiatives designed to improve their environmental quality. Several of these sites are found adjacent to, or within settlements.

The decline of heavy industry in the 1980s prompted programmes designed to attract new development and inward investment. These focused on low density business parks, information technology manufacturers and distribution businesses and are generally located on the edge of settlements and similar locations accessible to the motorway network. This investment had the effect of increasing pressure on surviving fragments of countryside around and between settlements in the conurbation. Pressure has been greatest on the eastern side of Glasgow, particularly in the sector served by the M8/A8, M80 and M74, but the trend is evident in other areas also, such as Mossend Rail Freight Terminal, Eurocentral, and the expansion of Newhouse industrial Estate. There has been less emphasis on speculative development of business parks in recent years with most new developments being bespoke premises for the relocation or expansion of existing businesses. The location of businesses on the edge of settlements has contributed to the decline of town centres.

Urban Redevelopment

The pattern of residential development has also seen changes. The population is concentrated in Glasgow and the larger towns in its hinterland such as Hamilton, Motherwell and Paisley. Past periods of development created relatively high density settlements, exemplified by the tenement areas of Glasgow.

After the Second World War, Glasgow suffered from significant problems of overcrowding in a city whose housing stock dated largely to the Industrial Revolution. The city's subsequent efforts to tackle its housing crisis have been described as one of the more extreme episodes in the history of post-war rebuilding. The Gorbals in particular had become the most impoverished and overcrowded urban area in western Europe. Two plans were devised to solve this problem: the *Bruce Report* (by City Engineer Robert Bruce) and the *Clyde Valley Regional Plan* (by Sir Patrick Abercrombie, the pre-eminent planner of the era, and Robert Matthew) both published in 1946. The *Bruce Report* advocated rehousing the city's residents within city limits in modern high-rise flats; the *Regional Plan* estimated that 250,000 Glaswegians would need to be 'decanted' to New Towns at East Kilbride, Cumbernauld, and Bishopton.

In the event, elements of both plans were adopted. In the 20 years after the war, Glasgow saw an extensive rebuilding and infrastructure development programme that fundamentally altered the character of the city. High-rise tower blocks were built across the conurbation from

Drumchapel in the northwest to Kennishead in the southeast. These buildings, emblematic of post-war redevelopment, dramatically altered the Glasgow skyline. Some of the most iconic of these were the series of massive slab- and point-blocks constructed at Red Road and the Basil Spence-designed blocks constructed at the Gorbals. Through a combination of poorly-planned infrastructure and growing stigmatisation of tower blocks, both schemes (along with other tower blocks in the city) were later demolished by Glasgow City Council.



Tower blocks and Forth and Clyde Canal, Glasgow. ©Lorne Gill/NatureScot

Other tower blocks were constructed in the City Centre, such as those at Cowcaddens and the Richard Seifert-designed towers at Anderston. Anderston and the surrounding areas saw wholesale demolition in the 1960s for the creation of the M8: a new motorway that was driven through Glasgow city centre, forming an “inner ring road”. Ultimately, only the north and west flanks of this ring road were built. This has resulted in various dead-end slip roads and “bridges to nowhere” appearing across Glasgow’s motorway network. The most famous of these is the Tradeston “ski jump” which would have met the southern flank. A modified version of this section was later constructed as a stretch of the M74, joining the M8 100m to the south, in 2011.

Alongside redevelopment of Glasgow, and in response to the *Clyde Valley Plan*, was the creation of New Towns as part of the United Kingdom’s post-war New Town programme. The first of these, designated in 1947, was East Kilbride. The sixth New Town in the UK’s programme, East Kilbride was conceived specifically to take some of Glasgow’s estimated 250,000 overspill population. With its economic prosperity bolstered by its proximity to Glasgow, East Kilbride subsequently grew into a successful town of more than 70,000 residents.

East Kilbride was joined by Cumbernauld in 1955. One of only two New Towns to be designated in the 1950s, Cumbernauld ushered in a new design language for its plan that would greatly influence many other New Towns throughout the United Kingdom. These New Towns, designed to grow over decades and be flexible in their layout, later became known as Mark II New Towns. More than ever, this generation of New Towns catered to the stratospheric rise in car ownership in the 1960s and 1970s and are characterised by large and often dramatic pieces of road infrastructure, contrasted with fully segregated systems of green path networks for pedestrians.

Cumbernauld was unusual in that it proposed a fairly compact, linear town centre for the relatively constrained site of the town. The town centre's architect, Geoffrey Copcutt, produced a design for "a single citadel-like structure, half a mile long, 200 yards wide, and up to eight storeys high". Cumbernauld Town Centre, was conceived by Copcutt as an uncompromising piece of New Brutalism. The building straddled a central dual carriageway, which ran underneath the centre with car parking to either side. Above this was a series of floors incorporating retail and civic spaces, with a bank of penthouse duplexes at the top of the building.

When completed, Phase 1 of the building was hailed as 'the projection of a new urban design language' showcasing 'ideas that could radically alter the built environment as a whole'. Cumbernauld, and its town centre building, were therefore the darlings of the New Town movement in the 1960s. In the following decades, however, the huge town centre building suffered from a spectacular fall from grace. Subsequent phases deviated significantly from Copcutt's linear megastructural vision, with the result that Phase 1 gradually became surrounded and partly demolished by successive developments.

Cumbernauld Town Centre was subsequently voted 'Britain's Most Hated Building' in 2005 and won the Carbuncle Award in 2001 and 2005. The building is now enjoying reassessment as one of the most iconic and important buildings in post-war Britain.

In general, the conurbation grew during the 20th Century, often at the expense of the surrounding countryside and remoter settlements. The built up area increased by 50% between the 1940s and 1980s, with the largest area increase in the more developed north of the Glasgow and Clyde Valley area. The great numbers of people living in the conurbation, increased car ownership and individual mobility since the war have been instrumental in creating the demand for a road building/improvement programme. The area has many important arterial roads: the M74/A74, M8, A77, M80/A80 and A82 being some of the biggest. Increased mobility provided by the car has created commuter demands for development in the countryside at the edges of the conurbation. A planned approach to urban expansion has involved the development of masterplanned 'community growth areas' on the edge of several of the area's larger settlements. These include East Kilbride, Hamilton, Newton and Larkhall in South Lanarkshire; Maidenhill in East Renfrewshire; Robroyston, Easterhouse/Garloch and Baillieston/Broomhouse/Carmyle in Glasgow City; and Gartcosh/Gleboig, South Cumbernauld and South Wishaw in North Lanarkshire.

Other settlement expansion

There are also pressures for development in areas beyond the conurbation. The proximity to the major employment centres, the accessibility provided by the road and rail networks and

the quality of the landscape combine to make parts of the region highly sought after as places to live. As well as areas inside the Glasgow boundary, for example Bearsden, such places include:



Aerial view of suburban growth, Glasgow. ©Lorne Gill/NatureScot

- the Kelvin Valley and the lower part of Strathblane;
- Lenzie / Kirkintilloch;
- the fringes of Loch Lomond;
- other lowland areas including Eaglesham, Strathaven and Biggar to the south and east, and Kilamcolm and Bridge of Weir to the west; and
- Clyde Valley between Hamilton and Lanark.

To a degree the demand has been accommodated within existing settlements. There has, however, been considerable pressure for new residential development in the open countryside. Many houses built in the open countryside have adopted modern, suburban designs and use standard materials and finishes which lack the local distinctiveness of traditional buildings. The effect can be to suburbanise the countryside and reduce its rural character. Although these trends are visible across much of Glasgow and the Clyde Valley (indeed much of Scotland), they are most evident within the Clyde Valley locally designated landscape, which represents an attractive landscape within easy reach of Glasgow and the other towns on the eastern side of the conurbation. Here, many large bungalows and houses, often set in landscaped gardens, are located in prominent locations on the valley slopes and on the valley floor. Their design and materials contrast with traditional buildings in the area.

There is also some demand for residential conversion of redundant traditional buildings. Many of these are former farm buildings or single dwellings in the countryside. Generally, these restoration projects have significant environmental benefits, providing new uses which will help ensure that historic structures survive. However, in some cases conversion can result in changes in character. These are typically caused by changes to windows, pointing or rendering, roofing, the creation of driveways, gates and gardens, all of which change the building and its immediate setting. Other additional or upgraded infrastructure such as roads, water supply or foul water disposal can compound these effects.

Farming and forestry

Farming has become more specialised during the 20th Century, largely driven by national and international agricultural policy particularly in dairying, potatoes and sheep farming, and more land has been given over to grazing. Emphasis on farm productivity brought about many changes to farm structure including field management, drainage schemes, and expansion of cultivated areas and loss of traditional farm features. The use of fertilizers has increased and the greater numbers of stock require the importation of feedstuffs, silage making and longer rotations under grass. This has introduced silage towers as fairly common features of the rural landscape. The decline of mansion houses and their designed landscapes has followed, e.g. Allanton House and grounds near Motherwell, and Hamilton Palace and grounds by Hamilton. Several mansion houses have been converted to new uses as museums, flatted accommodation, or hotels, such as Crossbasket Castle near Blantyre. The loss of estate control through the sale of land to several former tenants has allowed some differences in management approach to become evident, e.g. upkeep of hedgerows or decline of policy and shelterbelt woodland.

In 1919, the Forestry Commission was established with a remit to build up the UK's strategic reserves of timber. The Forestry Commission purchased large areas of uplands and estate forests and pursued a policy of maximum timber production. As a result, large Sitka-spruce dominated forests have been created in the Southern Uplands hills bounding the region with Ayrshire, parts of the central plateau and the Campsie Fells. Forestry in the Glasgow and Clyde Valley area increased steadily during the last century, generally on the foothills and plateau areas of the area. There is relatively little large scale forestry within the lowlands around the conurbation.

There was a 10% decline in the amount of broadleaved woodlands, with the greatest loss concentrated in the north of the area between the 1940s and 1970s. Between the 1970s and 1980s there was a slight reversal of this trend, reflecting the range of woodland initiatives during this phase. Between the 1940s and 1980s the length of hedges and tree lines decreased by almost a quarter, due to a combination of factors including field amalgamation and forestry expansion. There was a major increase in coniferous forestry in the area from 56 square kilometres in the 1940s, to 600 square kilometres in the 1980s. There was a decline of about a quarter in the extent of mixed woodland too, which was greatest in the north of the area. There was an increase in mixed woodland creation under the Scotland Rural Development Programme 2007-13.

Over the last twenty five years or so, initiatives (such as Central Scotland Green Network) in the Central Belt of Scotland have sought to improve the environments of industrial settlements, many of which were surrounded by derelict industrial mining land or despoiled farmland. As a

result, new community woodlands have been planted in urban fringe areas and on marginal farmland. Many older woodlands have also been improved and extended. These woodlands generally comprise mixed native species (predominantly deciduous) and include access routes and 'green links' between neighbouring settlements or countryside recreation areas.

Recreation

The urban centres of Glasgow and the Clyde Valley represent a significant source of demand for formal and Informal recreation. While much of this is met outwith the area (for example in the coastal settlements of Ayrshire or in the Highlands and Southern Uplands), there remains considerable demand within the area. The economic benefits of tourism have supported many positive works in the landscape (e.g. building restoration and the upkeep of designed landscapes). Leisure and recreation developments fall into a number of categories:

- out-of-town large scale indoor facilities such as multiplex cinemas (Coatbridge) and bowling alleys;
- diversification of lowland agricultural and horticultural businesses into leisure and retail activities (particularly within the Clyde Valley between Hamilton and Lanark);
- formal recreation sites including racecourses, golf courses, golf driving ranges, sports pitches and tracks;
- the creation of National, Regional and Country Parks and Regional Parks. These include the nearby Loch Lomond & Trossachs National Park, Clyde Muirshiel Regional Park, and Strathclyde Country Park. These all accommodate informal and semi-formal recreation close to the urban fringe;
- the growth of informal recreation activity outwith the main tourism centres, encouraged by the potential offered by 'heritage' attractions such as castles, National Trust properties, designed landscapes such as Balloch Castle, industrial archaeology museums (e.g. Summerlee and Leadhills/Wanlockhead) and nature centres such as the RSPB reserve at Lochwinnoch and Cathkin Braes Country Park;
- water sports and recreation including boating, fishing provided by reservoirs, canals, rivers, quarry pools and natural waterbodies;
- informal recreation In the Southern Uplands, Campsies, Kilpatricks and Renfrewshire Heights;
- medium and long distance trails for pedestrians and cyclists, e.g. along river systems, canal towpaths and disused rail lines. These include several of Scotland's Great Trails and parts of the National Walking and Cycling Network, for example the Clyde Walkway, John Muir Way, and the Forth & Clyde Canal Towpath.
- reservoirs, for example the Milngavie reservoirs were designed to act as a public park and provide space for recreational walkers.
- Newer urban fringe parks and informal recreational areas have been created, including Redlees Urban Park, formed from an old quarry site in Blantyre; and, on the south side of Glasgow Fernbrae Meadows, developed from an old golf course; and the Cuningar Loop, formed from a brownfield site.

To a greater or lesser extent, each of these has the potential to affect the landscape. In many cases this can be beneficial, particularly where positive management and investment is brought to areas such as the urban fringe. However, much depends upon the design of such sites and facilities. Although there is often now an emphasis on retaining characteristic features such as hedges and trees wherever possible, and on enhancing ecological diversity, some of the older schemes have created open and modified landscapes which are visually

divorced from the surrounding countryside. Signage related to tourism facilities can be intrusive in some areas.

Renewables

Wind Power – The area is home to a number of large wind farms, including Whitelee, Blacklaw and Clyde, as well as several smaller wind farm clusters and many single turbines. Wind turbines are generally concentrated to the south and also the east of Glasgow. The larger wind farms are set on higher ground at the edges of the area. The main clusters are:

- Whitelee and some 'satellite' groups;
- Dungavel, Bankend Rig and Kype Muir;
- An extensive loose grouping around Hagshaw Hill;
- A somewhat looser group, centred on Black Law and including Muirhall, as well as Pates Law, and Greendykeside in neighbouring West Lothian; and
- Clyde wind farm forming a group of its own in the south, with Glenkerie in Borders Council area to the east.



Whitelee wind farm ©NatureScot

These clusters have had an effect on the upland areas, given the previous lack of modern development and sense of relative remoteness. The open nature of these skylines is characteristic and prominent in certain views. Turbines and related infrastructure have changed the previously simple skylines, many of which are inter-visible with neighbouring areas and across wider views along and across the Clyde Valley and the Glasgow conurbation.

Smaller single wind turbines tend to be located on farmland. The dispersed pattern of single and small turbine groups of different heights and design can have a considerable landscape impact in the lowland areas. Many proposals are now over 100 metres in height, which can be out of scale with the local landscape.

Wind farms can present an opportunity for establishing new access paths for recreational use. The visitor centre at Whitelee Wind Farm has had more than 350,000 visitors since it opened in 2009, with tens of thousands more estimated to have used the extensive path and cycle network built throughout the site.

4. CULTURAL INFLUENCES

The Glasgow and Clyde Valley landscape has provided the inspiration and setting for many artists and writers.

Artists

The Falls of Clyde were a renowned visitor attraction and Turner was amongst those who painted them. Dorothy and William Wordsworth also visited the site.

“The Glasgow Boys” were part of the beginnings of modernism in Scottish painting, mostly in the 1880’s and 1890’s. So-called because they were based in and around the city, much of their painting was done elsewhere in Scotland, for example at Cockburnspath and Kirkcudbright, as well as England and France. The “New Glasgow Boys” were a group at Glasgow School of Art in the 1980s.

Glasgow-born Charles Rennie Mackintosh was a major figure in the Art Nouveau movement. His distinctive style remains in several buildings in and around Glasgow. The influence of what became known as the Glasgow Style became widespread.

The “Clyde Clock” by sculptor George Wyllie is well-known and fun landmark outside Glasgow’s Buchanan Street bus station.

Writers

Half of Alasdair Gray’s “Lanark” is set in Glasgow, with recognisable places such as the Art School featured. “No Mean City” by Alexander McArthur follows a gangster in the city and explores Glasgow working class life in the 1920’s. The title became associated with the Glasgow underworld. James Kelman’s Glasgow-centred “How Late it Was, How Late” won the 1994 Booker Prize.

Crime novels and characters set in Glasgow include Denise Mina’s “Garnethill” trilogy; Christopher Brookmyre’s “The Sacred Art of Stealing”; and Louise Welsh’s “The Cutting Room”.

Whistler’s Glen, near Helensburgh, was written about by Sir Walter Scott in “Heart of Midlothian”, the seventh of his Waverley Novels.

Film and Television

Glasgow has stood in for American cities in films such as “World War Z”. It might be best known as the setting for the television police dramas “Rebus” and “Taggart” as well as soap opera “River City” and sitcoms “Rab C Nesbitt” and “Still Game”. The 2018 Agatha Christie drama “Ordeal by Innocence” was filmed at Ardgowan House in Inverkip, Inverclyde.

Appendix 1 Features of the Landscape

Views and Skylines

The interplay of natural topographic features, and the pattern of settlement, means that views from within the urban area are an important feature of the landscape in the Glasgow and Clyde Valley area. In part, this reflects the presence of hills and moors to the north and south of Glasgow. The Campsies and Kilpatricks to the north of Glasgow and the Renfrew Heights and plateau moorlands separating the Clyde and Ayrshire basin to the south, and the distinctive rolling hills along the Southern Upland Fault Line, create strong and containing skylines. These come together west of Glasgow to emphasise the narrow part of the Inner Firth of Clyde. Tall structures such as pylons, masts and wind turbines are visible on the skyline in some areas particularly to the south of the city. The presence of these upland skylines contrasts with the settled and managed character of the urban areas they enclose. Snow on the Campsies or on the hills to the south of Glasgow, for example, can be a proxy for the white winter which rarely visits the urban area.



Greenock and views north. ©NatureScot

The importance of views from the city is accentuated by the natural landform. Much of Glasgow is constructed on steep-sided, elongated drumlins. These are recognised by the word 'hill' in local place names. These often provide fine views across the city to surrounding hills. Within the city centre, the effect is particularly dramatic, in part because the Georgian grid pattern of streets was laid down with apparently little regard for natural undulation. Elsewhere, Victorian Glasgow responded to these landforms and used them as a basis for crescents,

circuses and concentric road patterns, e.g. most dramatically at Park Circus in the West End and at Pollockshields.

This visual relationship between the urban area and its containing rim of hills works in two directions. Many of these uplands provide extensive views over the city and its hinterland, providing perspective on the mass of the conurbation. For example, the coastal part of Inverclyde is one of the few parts of the region where views extend beyond the Clyde Basin, extending to the Argyll coast and into the south-west Highlands.

In parts of the Clyde Valley, particularly between Rutherglen and Hamilton, this relationship is reversed, with urban development concentrated on higher ground on either side of the river valley. The same is true for many of the green corridors (particularly along rivers) which pass through the urban area. The character of these areas can be influenced by the nature of development on nearby high ground. All too often, settlements have expanded with little regard for these important areas.

Natural Heritage Features

Glasgow and the Clyde Valley encompasses coastal, lowland, mid-altitude and upland landscapes which are predominately cultivated or affected by human activities and contain significant urban developments. The area supports a broad range of natural heritage interests, fundamentally reflecting climatic, topographical, geological and altitudinal variations; as with nearly all landscapes in Scotland they are variously altered by past land-use.

The nature conservation interest of the area is widespread and a number of general habitat or more specialist surveys have identified a whole range of habitats, vegetation communities or species of interest. The wide range can cover remnant semi-natural habitats to more recently formed habitats, and occur on the upland, lowland and even densely populated urban areas. Habitats of particular nature conservation interest and importance in the Clyde Valley area are the valley or gorge woodlands, a number of bog and mire communities, the upland fringe habitats, the Clyde estuary and the various lochs and flood-plain haughs.

Upland Habitats

Upland habitats are well represented throughout the Clyde Valley catchment area, ranging from the basaltic rocks of the Kilsyth Hills in the north and much of the west, from Renfrewshire to East Kilbride, to the highest ground in the southern uplands, with the coal measures and gritstones of the high ground of the Slamannan plateau occurring to the eastern fringes.

On many of the more accessible hillsides and lower slopes, agricultural improvement such as drainage and fertiliser applications, can increase the frequency of broader-leaved pasture grasses, reducing the ecological interest and creating a brighter, green sward, contrasting with the paler hues of the unimproved grasslands.

In general, the less intensively used upland areas provide a valuable resource for wildlife with a wide range of invertebrates, birds and mammals supporting including, for example, emperor moth, mountain hare, skylark, curlew, golden plover and lapwing, red and black grouse and hen harrier. These species are threatened by agricultural intensification, particularly sheep over-grazing, and afforestation and may be affected by wind farms.

Bogs and Mire

Habitats associated with impeded drainage and in particular deep peat formation are of special note within the Clyde Valley area, and extend into the adjacent ground of Ayrshire, Falkirk and West Lothian. Many peatlands of the local area are recognised at a national and European level, and both raised and blanket bogs are identified as priority habitats by the EC Habitats Directive, and a number of sites are designated as Sites of Special Scientific Interest (SSSI) and/or as Special Areas of Conservation (SAC). The bog and mire habitats, as previously noted, can occur in mosaics with wet and dry heaths and, where degraded by draining, burning or grazing, with acid grasslands.

The bog and mire habitats can be threatened by land-use pressures such as drainage for agriculture, but also afforestation, wind farms and mineral extraction. Significant areas of the former peat resource have been lost over the last century to these activities and to urban spread. Peatland Action, a peatland restoration programme, is improving the condition of degraded peatland across Scotland. This helps their important roles in tackling climate change as well as benefits for flood regulation, water quality, farming and tourism. They are also reservoirs for preserved archaeological information.

Lowland Habitats (Agriculture)

Agriculture in the Clyde Valley has generally followed broader trends within the whole country, particularly in relation to farm amalgamation and mechanisation. In the 1970s, money was provided by the government to improve farm structure and allow mechanisation, particularly in the arable sector. Pastures too were improved, often by a combination of drainage, reseeding and fertilisation, creating the brighter green swards which characterise many lowland areas. Many upland areas were drained using 'grips' (parallel drainage ditches in blanket bog areas) with aim of increasing the moors' capacity for stock. The relatively low proportion of arable land means that many of the more visible effects of this phase of agricultural improvement (such as field enlargement and field boundary loss) have had a limited impact. However, it is likely that many local habitat features such as ponds, ditches and copses have been lost.

River Valleys

The Clyde Valley is fed by a number of tributary rivers and burns, draining from the surrounding uplands. This has been augmented by historic adaption and alteration to facilitate the area's industrial capacity. This drainage network is an important landscape feature and is perhaps of greater importance for its nature conservation and heritage interests. The steeper valley sides are significant factors in this interest, as the inaccessibility has allowed habitats and species to be less affected by direct human intervention. Many of the woodlands and grasslands of interest, and associated species, are now to be mainly found along, or are even restricted to, various water courses.

The diversity of the valley sides, can also be due to the exposure of different rock types, most notably the base enriched carboniferous limestones and shales, prevalent along the Clyde and tributaries to the south-east of Glasgow. This is manifested in the ash-elm type valley woodlands of steeper sides, and also in local areas of species rich grassland (e.g. supporting wild thyme, quaking grass, birds-foot trefoil, rock-rose, burnet saxifrage) and flushes (notably with short sedges and mosses), which often occur well upstream and along upland burn margins.

The river valleys can take on particular importance at the urban fringe, where the wildlife corridor function can be well exemplified by the presence of high quality habitats set amid abandoned historic industry and dense urban areas. Ravenscraig and Gartcosh are good examples of this, as are the fringes of the rivers Kelvin, Carts and Calder. The rivers support a range of habitats, providing more-or-less continuous links to the open rural countryside, and forming a core resource for urban greenspace planning. This historic and ecological interest has been widely recognised within the various urban fringe and other River Valley Projects. These included the Clyde & Avon Valley Landscape Partnership, which ran for a five year period from 2011-2016, and the Seven Lochs Wetland Park.

In addition to the steeper valley side habitats, the river valleys are an integral part of local flood-plains, where important wetland habitats can occur such as along the Kelvin Valley and various Clyde haughs. The swamp and marsh habitats supported can be of high ornithological significance.

Estuary

The extensive mudflats, sands and shingles of the Clyde estuary are important sites for wintering and migratory birds. These are recognised at national and international levels and large parts have been designated as SSSIs. Coastal grasslands and saltmarshes occur, often narrowly, along both tidal banks to the west of Glasgow. The saltmarshes are best represented on the north side near Dumbarton and about the Erskine Bridge to the south, where stands of sea club-rush, sea aster and common reed are most prominent. Examples of coastal grassland are restricted to the extreme north-west, such as between Greenock and Wemyss Bay, where the local species diversity can be high, and species such as thrift, scurvy-grass and bird's-foot trefoil provide early summer colour.

Lochs and Open Water – natural heritage interest

A number of widespread lochs, reservoirs and small ponds provide aquatic ecological interest to the Clyde Valley area. They provide additional diversity within an often otherwise urban, cultivated or pastoral landscape. The open water can support a range of aquatic macrophytes such as pondweeds and occasionally water-lilies. Towards the margins a range of tall swamp communities support various sedges, water horsetail, reeds and bulrush; where shallow marginal slopes are suitable, a range of species-rich lens or marsh transitional vegetation types can occur, creating sites of high botanical diversity. Loch Lomond, outwith the area, is a significant landscape and recreational resource in its own right.

The ornithological interest of water bodies is well recognised within the area and a number of sites are designated as SSSIs. Notable examples include the lochs around Drumpellier and Gartcosh (including Bishops and Woodend Loch SSSIs), the Scottish Wildlife Trust (SWT) reserve at Possil Marsh and the RSPB reserves at Lochwinnoch (which in its current form is largely the product of adaption for local historic industry) and Barons Haugh; the last is part of the flood-plain and river valley haughs which occur along the upper reaches of the Clyde and also along other, formerly meandering rivers such as the Kelvin, to the north of Glasgow. The artificially constructed reservoirs, scattered around the urban fringe, can also have bird interest e.g. Balgray and other nearby reservoirs to the south west of Glasgow; a feature of these can be the occasional low-water levels exposing muddy substrates and encouraging distinctive plant communities.

Numerous small ponds or wetlands occur in marshy habitats, along water courses, in mosaics with other habitats and frequently at disturbed ground such as former gravel working, industrial sites (some being abandoned water bodies) and have formed following recent mining subsidence. These sites can all add significantly to the local diversity of such areas, supporting a range of plant and animal species, and a number have recently been highlighted for their amphibian interest, and some for water vole interest (including fossorial voles that have adapted to live away from water bodies).

Note should also be made of the Forth & Clyde Canal. Besides acting as a 'linear loch' supporting a diverse range of aquatic plants plus with bird and invertebrate interest, it also serves as a recreational resource and wildlife corridor, performing a similar function to that noted for the river valley corridors.

Urban Areas - natural heritage interests

The large human population living in the Clyde Valley area has produced an extensive area of urban development, and much of this has been to the detriment of the natural heritage. However, the role of urban areas as an ecological resource is being increasingly recognised. In addition to semi-natural areas that have escaped development, a large number of open spaces associated with recreation such as parks and golf courses, and other areas of industrial waste ground, can be of benefit. The Glasgow and Clyde Valley Green Network Partnership works to provide well-connected, high quality, multi-functional greenspaces. Some new developments here, e.g. at Seven Lochs, aim to ensure hydrology and ecology are seen as integral to development and its design.

Urban areas can represent important refuges for rare species and in general the biodiversity can be very high due to the large numbers of alien species, which although problematical in semi-natural ecosystems, can be considered as welcome, often colourful, additions to the urban flora. Species diversity and wildlife can also be encouraged by sympathetic gardening. The remnant semi-natural habitats such as lochs, estate woodlands, small habitat mosaics and river valleys although threatened by development pressure and several disturbance factors, may gain additional protection by being recognised as recreational assets by local residents.

The often large areas of waste ground in urban areas are usually the result of the decline in heavy industry. Such sites have frequently been colonised by a range of species (natives and aliens), which have exploited the often varied but stressful substrates of rubble, concrete, clinker, ash and shales, to produce species rich mosaics of grassland, wetlands and scrub. Notably large areas of habitat value have developed at former iron and steel works and associated factories along the Clyde south east of Glasgow, such as at the Cuningar Loop which is now a woodland park. Where there were former railway lines, the now disused tracks and embankments can support diverse habitats, and serve as corridors with recreational potential.

Special mention should also be made of the diverse floras, including several local rarities, and habitats that have developed on the shales of the numerous pit bings in the area. Many are well represented in the Lanarkshire coalfields to the east of Glasgow.

Trees, Woodlands and Hedgerows – natural heritage interests

The Clyde Valley between Glasgow and New Lanark has a special concentration of fine examples of gorge woodlands. Several areas form a National Nature Reserve, with some of the best examples of ash-elm woodland also having European recognition by being listed as Clyde Valley Woods Special Area of Conservation. The tributary Calder waters also support good examples of valley woodlands, with a wide range of species typical of ash-elm woodland to be found. The upper slopes of the river valleys can support oak/birch type woodland. However, this type, which is the most likely natural vegetation cover of lowland areas away from the valleys, is now very rare and has presumably suffered disproportionately from the human influences alluded to above. Most examples tend to occur as part of policy estates (see below) or forestry woodland blocks where management has influenced the canopy and ground flora. Flushed slopes and river margins can support local areas of alder woodland, and at several wetland or mire sites there can be willow carr scrub or boggy birch woodland.

Policy and Park Woodlands

Policy and park woodlands are a feature of the many country houses, castles, hospitals and their designed landscapes or policies. Typically policy woodlands comprise mixtures of native and exotic trees. Oak, elm, ash, beech, chestnuts, sycamore, maple, Scots pine, larch and yew are commonly combined with tall and distinctive conifers in the vicinity of the mansion house. There can also be a range of shrubs associated with the trees including rhododendrons, laurels and snowberry. Introduced species of plant, often originating from these areas can cause problems for management if they invade ancient woodland sites, where they tend to out-compete the native flora.

The woodlands can be of considerable age and interest, even though at some sites the original house and associated features have gone or are in disrepair. The woodlands represent valuable components of public open space, several forming core features of Country Parks, or are incorporated into urban developments, and can provide shelter, recreation, visual design effect, game hunting or represent tree collections, in addition to their nature conservation interest. The variety and maturity of these woodlands, combined with their interesting design layouts, represent a positive inheritance in many parts of the Glasgow and Clyde Valley area. A total of 22 sites within the area are listed in Historic Environment Scotland's Inventory of Gardens and Designed Landscapes in Scotland. Policy and park woodlands of particular significance in the Clyde Valley area are those of Balloch Castle, Ross Priory Castle, Overtoun, Finlaystone, Formakin, Hamilton Palace/Chatelherault, Duntreath Castle, and several of Glasgow's major parks and hospitals.

Farm Woodlands, Tree Lines and Hedgerows

Woodlands, in the form of shelterbelts, roundels, hedgerow tree lines, farmstead copses, field corner plantings and boundary hedgerows are important features of the farm landscape. Most originate from the 18th and 19th Centuries and are, therefore mature and visually significant features. They are important in determining visual boundaries, spatial enclosures and in defining patterns in the landscape.

Shelterbelt woodlands are widespread but especially notable on the valley slopes of the Clyde and Kelvin, together with the middle sections of upland river valleys such as the Avon and Douglas. They are also notable elements of the landscape around Tinto Hill and Biggar. Old shelterbelts have traditional mixes of Scots pine, beech and sycamore.

Hedgerow treelines and roadside tree avenues are also distinctive and attractive features of the landscape. Beech, oak and sycamore are common but ash, elm and lime can also be frequent. Beech trees can be locally significant at marginal upland areas, such as the upland fringes of east Lanarkshire, where the wind swept trees can take on distinctive growth forms.

Archaeological Features

The most significant visible evidence of prehistoric human endeavours is found in the hills of South Lanarkshire and uncultivated areas of the Renfrewshire Heights, the Kilpatrick Hills and Campsie Fells. These features are discussed in Chapter 2 so relatively brief mention is provided here. They include a small number of henges, standing stones and chambered cairns from the Neolithic Period, but many more Bronze Age features include round cairns, urnfield cemeteries, hut circles and platforms. Two of the most significant Bronze Age sites are at Eilerslie Hill and Normangill Rig in South Lanarkshire. These features are subtle and often hard to discern in the landscape. They are sometimes highlighted, however, by frosty or snowy conditions or by low sunlight when the subtle undulations caused by features such as banks and ditches appear as highlighted areas or shadows.

Iron Age defensive structures are usually stronger features in the landscape due to their prominent locations, larger size and more robust construction. South Lanarkshire has a particularly fine concentration of Iron Age sites including settlements and defensive structures. There are several large hill forts and many small stone fortifications (duns) and evidence of many defended settlements in the area. Some of the latter are in the form of 'crannogs', man-made island dwellings. Hilltop forts and duns can often be recognised from considerable distances, although most walls and ramparts are a fraction of their original size and some sites have become obscured by vegetation.

The legacy of Roman occupation in the Clyde Valley area is most clearly visible in the form of the Antonine Wall and its associated forts. This linear earthwork of rampart and ditches has been lost in certain urban areas, but is discernible for much of its rural sections, and is followed by footpaths for some of them. The main Antonine Wall garrison sites within the region are in East and West Dunbartonshire at Bar Hill, Croy Hill, Kirkintilloch and Bearsden. Other Roman sites of significance in the Glasgow and Clyde Valley area are the stations associated with the main Roman road from the south. The fortlet at Redshaw Burn in South Lanarkshire is one such station. In Inverclyde, the Roman legacy is the Lurg Moor Fortlet, one of the stations established to guard the west flank of the Antonine frontier.

A vast resource of information that often goes unnoticed, because detection is almost impossible on the ground, are the cropmark sites in the area. These indicate the presence of not only Roman sites, although these tend to be the most distinctive and easily recognised of all of the periods discussed, but of many periods of occupation of the land. The cropmarks appear throughout the region, in arable land under certain favourable conditions, and mainly in barley crops. The most spectacular of these cropmarks set out in plan, settlement, cultivation and burial sites, and defensive structures, which are visible from an aerial viewpoint.

Built and Industrial Heritage Features

The following paragraphs seek to identify and describe the main types of built and Industrial heritage which make significant contributions to today's landscape.

Castles and Country Houses

The remains of earthwork castles of Norman origin are numerous and occasionally prominent features in the Clyde Valley area (and much of lowland Scotland). Unlike the prehistoric forts, many mottes were located in lowland situations amongst productive farmland and with ready access to watercourses, roads and associated settlements. Most remains comprise the man-made mound or 'motte' and its associated ditches. These represent the foundations of the original castles which were of timber construction. Nowadays, these earthworks remain as grassy mounds or are partly obscured by vegetation. Three of the most notable mottes are found in South Lanarkshire at Abingdon, Carnwath and Coulter. Other less significant mottes can still be seen at Kilsyth, Kirkintilloch, Kilmacolm, Hamilton and East Kilbride.

Between the 13th and 17th Centuries, stone-built castles and tower houses developed, many of which remain in ruined or semi-ruined condition. The Clyde Valley's major medieval castles were developed at Bothwell, Dumbarton and Craignethan. Many tower houses were also constructed during this period. Arguably, it is these that have a greater impact in the landscape due to their larger numbers and typically prominent isolated locations. Crookston Castle in Glasgow is a fine, intact example of such a structure.



Bothwell Castle ©Gail Foster/NatureScot

As conditions became more peaceful in the late medieval period, castles were extended and converted to more sophisticated dwellings: alternatively they were abandoned in favour of new country houses set within designed parklands. The country houses, palaces and castles of

older estates were joined by new developments for the Clyde Valley's industrialists and wealthy merchant classes. Equally, landed families exploited the mineral resources of their wider estates to finance building improvements and new developments. The result is that the Clyde Valley area has many grand residences of varying ages, sizes and styles, several of which have designed landscapes or large gardens. A number of these are no longer private but function as important urban and country parks.

The most well-known country houses and designed landscapes in the area are: Balloch Castle, Ross Priory, and Overtoun House in West Dunbartonshire; Colzium House in North Lanarkshire; Finlaystone in Inverclyde; Formakin in Renfrewshire; Pollok House and Provan Hall in Glasgow; Chatelherault (part of the former Hamilton Palace Estate); Barncluith, Lee Castle and Douglas Castle in South Lanarkshire; and Murdostoun Castle in North Lanarkshire. In addition to these, there are very many smaller mansion houses with gardens which contribute significantly to the local character of the landscape: the buildings provide architectural landmarks: the woodlands add texture to the landscape and create visual enclosure. These houses also reinforce the settled, comfortable character of certain areas and often add an air of romance or mystery.

In this densely populated area, those hospitals that have designed landscapes are also noteworthy features. The former asylums, in particular, have a considerable local impact due to the scale and architectural quality of their building complexes, their 'gothic' qualities and the extent of their parklands. Gartloch Hospital in Glasgow, Woodilee and Lennox Castle in East Dunbartonshire, and Leverndale in Glasgow, are particularly significant sites. Within the conurbation of Glasgow, the parklands of the major hospitals also provide valuable green space for the city.

The town and city parks of the region are important for local amenity, but also help to integrate town and country through both physical and visual links. The urban parks fall into a number of broad categories:

- parklands formerly pertaining to private residences (e.g. Pollok Park, Bellahouston Park, Tollcross Park, and Rouken Glen Park in Glasgow; Dalmuir Park in Clydebank; and Levensgrove Park in Dumbarton);
- purpose-designed urban parks and cemeteries (e.g. Kelvingrove Park and the Necropolis in Glasgow);
- green space of historic origin (e.g. Glasgow Green, and Dumbarton Castle Park);
- green space recently developed as parkland for strategic or technical reasons (e.g. Monklands Canal Corridor, and Forth & Clyde Canal Corridor);
- green space developed from restoration of previous uses, e.g. Cuningar Loop, Fernbrae Meadows, Redlees Urban Park.



Forth and Clyde Canal Corridor, Glasgow © NatureScot

Religious Buildings

Few pre-reformation ecclesiastical buildings remain standing or unaltered within the Clyde Valley area. Glasgow Cathedral and Paisley Abbey are the main exceptions; both are essential parts of their town's development and important landmark buildings from considerable distances. Other old ecclesiastical sites which retain significant parts of their medieval structures include St. Bride's Church, Douglas in South Lanarkshire and the Castle Semple Collegiate Church in Renfrewshire.

Post-reformation parish and town churches make considerable contributions to today's landscape. They are numerous and many are strategically located on hilltops, at crossroads and at sites of antiquity. They frequently have towers, spires or belfries, which increases their visual significance and identifies the centres of communities or parishes in the countryside. Churches from the 17th and 18th Centuries are generally of simple form, lacking transepts and employing a simple pitched roof of large scale. 19th Century churches were often more elaborate, employing towers, spires, classical porticoes and ornamentation in the form of stone details and stained glass. A number of churches were sited in isolated locations between settlements; these are particularly prominent landscape features. The churches at Netherhouse, west of Coatbridge, and Kirk of Shotts are particularly noteworthy examples, being within the visual corridor of the M8. Similarly, the church in provides an important focal landmark.

Traditional Buildings

The pace and scale of urban development following the Industrial Revolution caused a large proportion of the old buildings to be demolished and replaced, while many small settlements expanded and coalesced into the Glasgow conurbation. Consequently, there are relatively few

buildings typical of the rural tradition. These are in areas where agricultural activity is still dominant and where the pace of change has been less dramatic.

The plentiful supply of good masonry stone meant that most traditional buildings were constructed of cream or red sandstones and employed a variety of masonry techniques, e.g. dressing, tooling, polishing and carving. The majority of buildings used coursed or sneaked stonework except where whinstones were prevalent, in which case random rubble was used. This was particularly the case in parts of East Dunbartonshire. The predominant building colours within the area correspond to the local geology: reds are common in the west and north; creams in the centre, east and south; while dark greys occur in various locations within the lava covered areas. White painted or rendered walls with dark painted margins are also characteristic in northern parts of the region and of parts of Lanarkshire. Slate roofs of blue/purple and dark grey are characteristic of the whole area making the recent introductions of pantiles particularly incongruous.

The oldest remaining traditional buildings are terraced cottages and houses of one and a half and two storeys. 18th Century urban houses frequently have gables and chimneys on their front elevations. In more rural settings, simple two-storey terraces, often with front gardens, are common.

Traditionally, the Clyde Valley supported extensive dairying and beef production. It retains many farmsteads which have both linear and courtyard layouts. In low-lying and valley areas, farmsteads are commonly situated on hills, drumlins or ridgelines in a similar manner to those in Ayrshire. In Renfrewshire, three sided courtyard arrangements within an integral farmhouse are common; in South Lanarkshire, small farm units distributed along the Clyde are typical; whilst in the eastern part of North Lanarkshire, the farmhouse often stands apart from the steading.

Wealth generated through industry led to a significant amount of development in the countryside and in rural settlements by townspeople seeking cleaner environments. These developments imported suburban styles and introduced more romantic and ornate architecture into rural areas. Terraced and semi-detached houses with gardens were built during the 19th Century. These typically had bay windows and dormers, and a range of decorative features such as crowsteps, decorative timber-work, stone mouldings and mullions. Sedate buildings employed 4-pane or 12-pane sash windows of traditional proportions; however, the more ornate buildings often had unequal sashes with horizontal astragals or astragals only in the upper sashes.

In the 19th and early 20th Centuries, large numbers of houses were built for workers in the heavy industries and coal mines. These were initially built of stone or stone and brick, widely utilising Dumfries-shire and Ayrshire red sandstones. In Glasgow and the large towns, tenement schemes were constructed. The pre-war period saw the more extensive use of brick in housing construction. Rendered brick miners' housing is now a characteristic feature of many central belt towns. North Lanarkshire, in particular, has significant numbers of these distinctive houses, which are typically semi-detached, have slate roofs with twin front gables and patterns of brickwork set within the render.

Industrial Heritage

In addition to the above developments, Glasgow and the Clyde Valley has a wealth of industrial heritage features related to mining, iron and steel making, textiles, engineering, shipbuilding, energy provision and communications. The majority of the heavy industries are discontinued and significant efforts have been made over the last twenty years to reclaim areas of industrial dereliction. Many reclaimed areas have been redeveloped for new manufacturing industries, business or retail developments which have themselves become a feature of the 20th Century landscape; however, many old industrial features still exist and are of importance.

The textile industry, which declined relative to other heavy industries at the end of the 19th Century, has a remarkable legacy at New Lanark where an industrial village has been conserved. Founded in 1786 by David Dale, the Scottish industrialist and philanthropist, New Lanark comprises a comprehensive range of cotton-mill buildings, housing and public buildings adjacent to the Falls of Clyde. Under the care of Robert Owen, Dale's successor, New Lanark thrived and grew into one of the earliest examples of a planned settlement. An important milestone in the development of urban design and planning, New Lanark would go on to influence urban design in the 19th and 20th Centuries; and is now, consequently, recognised as an internationally significant piece of Scotland's heritage as a World Heritage Site.



Train and bing in central Scotland. ©Lorne Gill/NatureScot

Coal and iron ore mining has left many bings and despoiled working areas, several of which have a significant visual impact. Their long disuse has allowed most sites to become overgrown, in some cases creating sites of nature conservation interest.

Disused mineral lines and railway tracks are still discernible and several have left stone and iron viaducts, small bridges, cuttings and embankments as a permanent legacy. The larger viaducts are impressive and often dramatic features of the valley landscapes. Particular concentrations are found within the Clyde Valley north-west of Lanark, and across the farmlands along the eastern side of the Glasgow conurbation. Little of the early iron industries remain intact, but the important sites in Coatbridge and Calderbank retain extensive structures which are local landmarks.

The canal system developed to service industries prior to the railway is still a significant feature which is nowadays valued for recreation and as a wildlife resource. The Forth and Clyde Canal and parts of the Monkland Canal exist but are used primarily for leisure activities and for water supply. Other mineral extraction activities, including hard rock quarrying, lead working, and sand and gravel workings in several valleys, have also left a mark on the landscape.

The maritime heritage of the Clyde is world renowned and many of its features are intact and some are still in use. Most of the Clydeside docks, harbours, shipbuilding sheds, cranes and warehouse buildings are impressive and evocative structures which are an essential part of the region's identity and character. The size of many of the structures and their visibility allowed by the estuary makes them important landmarks for communities on both sides of the Clyde.