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Red Admiral



B I O D I V E R S I T Y A C T I O N P L A N



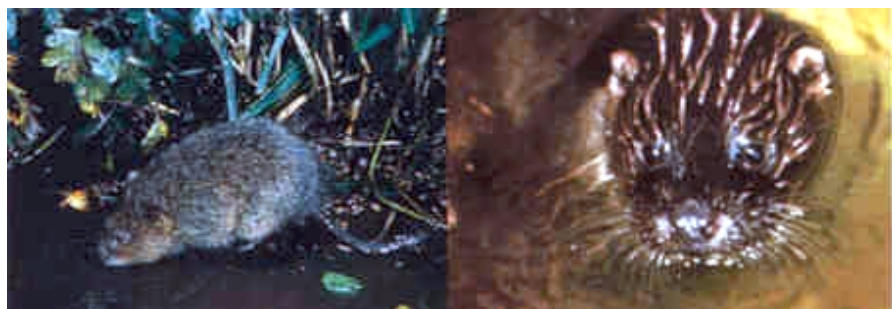
What Is Biodiversity?

Biodiversity is the variety of living things on earth, from the smallest insect to the largest mammal and tree. It encompasses the variation within a species and the complex ecosystems, or habitats, where they are found. It is not just restricted to rare species or threatened wildlife sites, but includes the whole of the natural world.

At the national level, there are around 90,000 different species in Scotland and all of these have a role to play directly or indirectly in the lives of Scottish people. They contribute to many of the essentials of our lives – our oxygen, food, clothing, health and relaxation.

Plants and animals play a major part in our traditions and culture. The thistle is Scotland's national emblem and the bonnie purple heather and Scots pine internationally renowned. However, biodiversity is not just an esoteric term to be used by those enjoying countryside pursuits, it is also important from an economic point of view. The government acknowledges that environmental quality is increasingly a key consideration in industrial and business investment decisions. Watching wildlife is also developing into an important factor in the tourist industry with the subsequent requirement for firms to manufacture, supply and sell a wide range of items such as water proof clothing and shoes, rucksacks, wildlife books and photographic and optical equipment. All of our farm crops are descended from the wild and many wild plants are being used in research to find cures for various diseases.

At the local level, the name Glasgow is thought to be derived from the Brythonic Celtic '*Cleschu*' meaning '*dear green place*', whilst the '*fish*' (salmon), '*bird*' (robin) and '*tree*' (originally hazel and now oak) are all an integral part of Glasgow's 'coat of arms'. However, in the City these days, our lives function around buildings, roads and transport whilst biodiversity can appear to be less visible. Nevertheless, water voles, otters and many types of birds and interesting plants can still be found in the City, if you know where to look.



Water Vole

Otter

Glasgow's open spaces with wild plants and native animal species contribute to the health and wellbeing of its citizens. Trees can absorb some pollutants and provide oxygen whilst also providing an attractive, pleasant outlook. In many parts of the City open spaces help to control/absorb water particularly during times of heavy rainfall and help to limit flooding.

To sum up, biodiversity is as much about the quality of our lives, economic development and local distinctiveness as it is nature conservation. A healthy local biodiversity is a reflection of a healthy and sustainable community. It is in our own interests to act now, to preserve our green heritage and also enhance the biodiversity of our City.

Unfortunately, biodiversity is under threat all around us, largely through ignorance. However, steps are being taken to help ensure our City's precious resource is protected and our appreciation of biodiversity enhanced.

The Government's Commitment

As part of its commitment made at the Earth Summit in Rio de Janeiro in 1992, the UK Government has published a Biodiversity Action Plan (Department of Environment, 1994). A subsequent report, published in 1995, by the UK Steering Group presented lists of rare, threatened or declining species and habitats, and also a number of costed Action Plans; further Action Plans have been produced in more recent volumes.

The Scottish Biodiversity Group (SBG) was established in 1996 to help the implementation of the UK action plans relevant to Scotland. It also provides guidance and support for the development of local biodiversity action plans, within each local authority area.

The original Scottish guidance for Local Biodiversity Action Plans (LBAPs) said ***'The challenge is to change attitudes and to create a wider awareness of the value of biodiversity and its relationship to our social and economic life as part of a wider strategy for sustainable development.'*** That challenge still stands, the work is by no means done. However, the government has acknowledged that if the UK Biodiversity Action Plan is to be implemented successfully it requires action at the local level.

Local Action

Local action will not take place without the enthusiasm and interest of local people, and it is not likely to succeed without the building of effective partnerships between landowners, businesses, voluntary organisations, local communities and the City Council. A 'Consultation Paper', issued in 1998, and the subsequent response has ascertained that there is broad support throughout the City for a Plan.

Following on from the 'consultation', a group was set up to steer the creation of a practical and useful Plan. The Steering Group is composed of representatives from the City Council and various other agencies and organisations (*see Table 1*). In addition interested individuals have also contributed to specific aspects of the Plan.



Table 1: Organisations Represented On The Glasgow Steering Group

Representative	Organisation
Jim Coyle (Chair)	Glasgow City Council: Development and Regeneration Services
Iain Gibson	Glasgow City Council: Land Services (Conservation Group)
Richard Sutcliffe	Glasgow City Council: Culture and Leisure Services
Hilda Quail	Glasgow City Council: Education Services
Kate Cuthbert/Mark Irwin	Glasgow City Council: Land Services (Countryside Ranger Service)
Carol MacLean/Keith Watson	Glasgow City Council: Land Services (LBAP Officers)
Catriona Morrison/Steve Edwards	Carts River Valleys Project/Carts Project
Elsbeth Forsyth/Bridget Thomas	Kilpatricks Project
Chris Wood-Gee	Kelvin Valley Countryside Project/Kelvin Clyde Project
Olivia Lassiere	British Waterways
David Robertson/Keith Wishart	Forestry Commission
Kieran Sheehan	Farming Wildlife Advisory Group
Kirsty Kennedy/Richard Weddle	Glasgow Natural History Society
Paul Walton	Royal Society for the Protection of Birds
Kate Arnold	Scottish Environment Protection Agency
Jimmy Hyslop/Mairi Caughey	Scottish Natural Heritage
Fiona Stewart	Scottish Wildlife Trust
Christine Menhennet/Andy Drysdale	The WISE Group
Kate Sanford	Glasgow Chamber of Commerce

All of the member organisations of the Steering Group have been involved with many activities and projects aimed at promoting nature conservation and environmental improvement over a number of years. However, the development of action plans is seen as a way of focusing attention, involving more people and co-ordinating efforts, so as to achieve real and demonstrable results on the ground.

The Glasgow Local Biodiversity Action Plan aims to:

- *show the surprising range of the biological resource of the City;*
- *explain why it is so important that we all try to help this wildlife survive and thrive; and*
- *suggest what can be done to ensure that our children, and their children, benefit from an even greater variety of plants and animals than we can enjoy today.*



Reed Bunting (male)

Small Pearl-bordered Fritillary

The Natural Resource of Glasgow

The River Clyde situated in a broad, shallow 'valley' is a central feature of the City. As it flows from east to west, it is fed by several tributaries, notably the North and Rotten Calder Waters, the River Kelvin and, eventually, the White Cart Water. The topography is generally low-lying, with land below 10m OD (Ordnance Datum) occurring along a broad band following the Clyde. Only in the far south, as the land rises to the Cathkin Hills, does the altitude reach 200m OD. The low-lying landscape relief is punctuated by a large number (approximately 180) of small hills, called drumlins, that were derived from glacial activity.

The majority of Glasgow's bedrocks are of sedimentary origin such as various sandstones, shales, limestones and the Coal Measures. These were laid down as marine deposits or formed in freshwater or wetland swamps. All date from the Carboniferous Period (360 to 290 million years ago). Igneous rock also occurs interspersed with, and dating from the same period as, the sedimentary rock. Two types can be found: basalt, forming the Cathkin Hills to the south, and more local dolerite intrusions exposed at various locations in the east of the City.

Overlaying the bedrock are superficial deposits, most laid down by glacier ice or meltwater in the last million years. They comprise mostly clays, sands and gravels, and are an important influence on the development of soils. The glacial tills, derived from sandstones, shales and limestones of the Clyde Valley, have encouraged the formation of a range of brown earth and gley soils throughout the City. On rocky exposures and steep slopes, shallower soils called 'rankers' have formed. However, where the land is low-lying and/or poorly draining, alluvial fine sands, silts and clays have been deposited. A special feature of the northeast of the City is the formation of organic peats supporting important fen and raised bog communities.

In contrast with much of the rest of Scotland, the local soils tend to be less acidic, falling within a narrow pH range of 4.5 – 6. The type of soils found is a very important factor influencing the type and range of plant species and vegetation occurring within the City. In the 10,000 years or so since the last Ice Age, vegetation naturally recolonised the Glasgow area, firstly by low growing herbs and shrubs, that are now confined to the high mountain tops further north, but soon after by a range of trees. By the time the first Stone Age hunters arrived the landscape was dominated by natural, broad-leaved woodland (e.g. of Oak, Ash and Elm) on drier ground, with wet woodland (Alder, willows and Birch) and open water or wetlands, including developing peat bogs, on low-lying, poorly draining ground.



B I O D I V E R S I T Y A C T I O N P L A N



Glasgow did not begin its rapid expansion to the densely populated conurbation known today until the 18th and 19th Centuries. However, the natural landscape had been altered dramatically over the preceding years, since the first human settlers arrived. Medieval Glasgow would have presented a largely pastoral environment with cultivated farmland and a dramatically reduced woodland cover, as can be readily seen from early engravings and maps of the 17th and 18th Centuries.



Even more dramatic changes to the natural or semi-natural habitats have occurred over the last 150 years or so. The increased urbanisation of industrial and residential developments, and associated pollution, have all tended to impact negatively on the City's natural heritage. However, even though undoubted serious losses have occurred, the City still supports a surprising richness of habitats and species.



Glasgow's woodlands today only account for about 2.5% of the total land cover of the City. Of this total only about 80% of the woodlands have been defined as Ancient, Semi-natural or Long Established. It is in examples of such older woodlands that the more natural features of woodland structure and associated plants and animals are found. Many of the more natural woodlands survive on steeper ground, such as on the Cathkin Braes or local sites such as Garscadden Wood, but several valuable woodlands have also survived on the less accessible slopes along the local water courses.



The City has inherited a number of old estate woodlands, many now publicly owned, and forming an important backdrop to housing and other developments or incorporated into public parks. A number of the woodlands form part of a designed landscape and have important cultural significance. These woodlands include a number of now familiar, exotic species such as Sycamore, Beech, limes, larches and pines, as well as undershrubs such as Rhododendron, Cherry Laurel and Snowberry and various introduced plants in the herb layer.



Low growing scrub also contributes to the woody cover, providing important habitat for animal species, notably invertebrates and birds. Thorny scrub (e.g. Gorse, Hawthorn, Blackthorn, roses) occurs in rural areas, but can extend into urban areas, although vacant ground in the latter often supports scrub of Birch, Willow, Elder and in recent times Buddleia.



Buddleia davidii

Grasslands are an important natural resource but also make a valuable contribution to the landscape, notably on the urban fringe of the City. All grasslands are very much dependent on human activity and traditional management, such as grazing and meadow cutting, helped in the evolution of a range of species rich, unimproved grasslands. However, in recent times, intensive, improved agricultural treatments have resulted in the loss of much of this diversity, and today only small, often 'seminatural' patches survive. Grasslands can be important urban features, particularly where a large number of species have colonised unused ground, thus providing a valuable refuge for wildlife. However, at such locations active management is usually absent, and over time diversity can decline, as tall grasses, herbs or scrub invades and/or development takes place.

The City supports a number of standing open water bodies such as Hogganfield, Bishop, Possil and Frankfield Lochs, and various smaller ponds, often in parks, and occasionally on farmland and waste ground. The Forth and Clyde Canal is also a key area of linear open water with an extensive fringe of emergent swamp vegetation. A number of water bodies, known from maps and the literature of previous centuries, have long since been lost along with any associated mire and swamp vegetation communities. However, the remaining wetlands form some of the most important wildlife sites in the city with rich swamp, fen and mire communities supporting many locally rare plant species and hosting a rich diversity of associate fauna.

Agricultural activity has greatly influenced the rural fringe of the City and the farmed landscape, despite recent years of intensification, still remains an important resource for wildlife. Arable fields or improved pastures are important, often seasonal, habitats for a variety of bird species such as geese, Lapwing and Snipe. The associated farm buildings, dykes, field margins, hedgerows, boundary trees, shelter-belts, tracks, ponds and ditches all provide niches for a range of wildlife to utilise.

In a large conurbation such as Glasgow, the built environment cannot be ignored when assessing the natural resources of the City. The stonework and roof material particularly of older buildings, provide a habitat for lower plants such as mosses, ferns and lichens as well as providing breeding or nesting space for many invertebrates and birds such as House Sparrow, Starling, House Martin, Swift and Kestrel. Gardens and associated landscape planting can be even more valuable for wildlife, especially if consideration is given to the needs of wildlife during planting and maintenance regimes.

Valuable open spaces do occur, even near to the centre of the City. Some of these are heavily managed for their amenity value, but the short grasslands and parkland trees, some quite old, are important for a number of commoner, but also scarcer wildlife. Open disused sites, many the result of industrial changes in recent years, have proved to be surprisingly rich in botanical diversity; a number of species, including many exotic aliens, can produce rich and colourful displays brightening up the heart of the City. Disused and live railways often support diverse fringes of wildlife habitat and can serve as valuable corridor links, allowing species movement between the urban centre and rural fringes. This valuable corridor function is also provided by the rivers, canal, road, cycle and path networks and also small burns and drainage ditches.

The Action Plan Process

In 1991, a 'habitat survey', commissioned by the City Council and the then Nature Conservancy Council was published. This survey completed the mapping of the vast majority of habitats occurring within the City and confirmed the need for a series of Sites of Importance for Nature Conservation (SINCs). The Council's Conservation section, based in the former Parks & Recreation Department, now Land Services, has continued to monitor and review the environmental resource and this means that the habitats existing within the City are well recorded.

Information on 'Species' is of variable quantity and quality. Records for flowering plants have been well established through the Flora of Glasgow Project. Similarly, birds are well recorded through the local bird recorder of the Scottish Ornithologists Club (SOC) and the SOC's annually produced 'Clyde Bird Report.' Published information on other animals, particularly invertebrates, and lower plants and fungi is not so comprehensive.

Habitats and Species of National Concern which occur in Glasgow

The UK Steering Group has identified 17 Broad Habitat types (plus a further 10 marine types) which occur in the UK and from these habitat types defined a sub-set of 26 nationally important 'Priority' Habitats (see UK Biodiversity Group Tranche 2 Action Plans: Volume II - terrestrial and freshwater habitats 1998). A number of these 'Broad' Habitats can be found within the City (see Table 2).

Table 2 - 'Broad' Habitat Types Occurring In Glasgow

Broad-leaved, Mixed and Yew Woodland	Dwarf Shrub Heath
Coniferous Woodland	Fens, Marsh and Swamp
Boundary Features	Bogs
Arable and Horticulture	Standing Open Water and Canals
Improved Grassland	Rivers and Streams
Neutral Grassland	Inland Rock
Acid Grassland	Built up areas and Gardens
Bracken	Littoral Sediment



Following on from the 'consultation', Glasgow's LBAP Steering Group agreed to target three 'broad' habitat types due to their scarcity and/or importance in the context of the City. These were Wetlands, Woodlands and Grasslands. These broad categories have been refined to 11 individual habitat types for which full action plans have been prepared. Other habitats will be dealt with later in subsequent updates of the Plan. Further information on the habitats can be seen in the recently produced '*Audit of Habitats and Species*' (see below).

The UK Steering Group has also prepared lists of species of varying degrees of rarity, threat or in decline, a number of which occur in the City. For example:

- *Nationally endangered key bird species such as Skylark, Song Thrush, Grey Partridge, Linnet, Reed Bunting, Spotted Flycatcher, Tree Sparrow and Bullfinch can still be found.*
- *Endangered mammals such as Brown Hare, Water Vole, Pipistrelle and European Otter; fish such as Bullhead and Atlantic Salmon; and butterflies such as the Small Pearl-bordered Fritillary are all known to occur.*
- *The rich plant diversity includes Bluebell, River Crowfoot and several types of Sphagnum bog-moss.*

Three of these - the Reed Bunting, the Small Pearl-bordered Fritillary and the Water Vole – were initially identified by the Steering Group as requiring special attention within the City and full Action Plans produced. Following consultation further Action Plans have been developed for an additional six species, including four species of flowering plant.

There is a clear and obvious need to tackle species that are in decline, including those which may be declining in the city context although not nationally. However, we also need to ensure that we continue to address the needs of common species as well. Feeding Blue Tits and other common garden birds is as important an action as safeguarding a rare bird's nest - both actions reflect the need for everyone to contribute, no matter the scale or impact. Both actions add colour and variety to our lives and to the quality of our environment.

A detailed '*Audit of Habitats and Species*' which lists all of the 'nationally threatened' habitats and species found in the City is available. Should you require further information please contact the Conservation Section of Land Services or visit the Council's website (<http://wildlife.glasgow.gov.uk>).



Habitat and Species Action Plans - What Are They?

An important part of the **Local Biodiversity Action Plan (LBAP)** process is the production of Habitat and Species Action Plans (HAPs and SAPs). These are short documents that bring together relevant information on a particular species or habitat, and most importantly, set out objectives and targets for promoting the long term health and viability of the species or habitat. Each plan presents summary background information, including ecological data, followed by a description of current threats but also current actions aimed at conservation management or protection. The objectives and associated targets are followed by a long list of actions, annotated with the organisations (agencies) that will carry out the work. Each plan has a Lead Agency responsible for overseeing implementation and monitoring of the actions. It is through the co-ordinated implementation of projects and activities implementing these actions that the plan will be delivered. Each Plan is intended to run for a five year period.

A number of Action Plans have been produced and these are listed below. Other plans are being developed and these will be published at various stages in the following years.

Tranche 1: Habitat and Species Action Plans

Priority Habitats:

Woodland
Wet Woodland (Carr)
Neutral Grassland
Acid Grassland
Dwarf Shrub Heath
Open Water
Swamp
Reedbed
Marsh
Fen
Raised Bog

Priority Species (with associated habitat):

Reed Bunting (Wetlands)
Water Vole (Wetlands)
Small Pearl-bordered Fritillary (Wetlands)
Palmate Newt (Wetlands)
Swift (Human Environment)
Bluebell (Woodland)
Burnet-saxifrage (Grassland)
Tufted Loosestrife (Wetlands)
Purple Ramping-fumitory (Human Environment/Arable)

Tranche 2: Proposed Habitat and Species Action Plans (to be launched at a future date)

Habitats:

Human Environment/Awareness
Canal
Rivers and Streams
Hedgerows
Roadside Verges
Cereal Field Margins/Arable

Species:

Bog-rosemary (Lowland Raised Bog)
Bennett's Pondweed (Canal)
Heath Cudweed (Grassland/Heath)
Marsh-stitchwort (Fen)
Toothwort (Woodland)
Wood Crane's-bill (Woodland)
Yellow Water-lily (Open Water)
Bog-moss communities (Sphagnum spp.)(Wetlands/Bogs)
Smooth Newt (Wetlands)
Common Frog (Wetlands)
Common Toad (Wetlands)

What Can You Do To Help?

Although many organisations and agencies have resources to help implement actions for biodiversity conservation, success will be very dependent on the general public's understanding, support and actual involvement as individuals or local groups. Everyone can do something to conserve or enhance biodiversity. Below are a number of suggestions on how you can help:

- *in your garden, leave some long grass, weeds and dead wood to benefit insects*
- *use fewer chemicals in the home and garden*
- *erect bird and bat boxes*
- *create a garden pond*
- *retain or plant native berry bearing shrubs and/or trees to help feed birds*
- *use home made compost or peat substitutes rather than peat*
- *plant flowers to attract butterflies; even a window box could help*
- *avoid disturbing breeding/nesting areas or over-wintering sites in the garden*
- *don't buy souvenirs that encourage the exploitation of the natural world here or abroad*
- *don't drop litter or dump rubbish; it can kill small animals, particularly beside waterways*
- *never take plants from the wild*
- *help out at one of the City's nature reserves*
- *write to the local media expressing your support for the Plan and the process*
- *encourage your neighbours, community council, residents and tenants association, workplace or sports club to consider adopting some of the above ideas*
- *avoid wasting energy and other natural resources in the home and at work or school*
- *reduce car journeys by using public transport, cycling or walking*

Any individuals or groups who think that they may be able to contribute to the implementation of actions of the following Local Biodiversity Action Plans can contact the lead agency of the relevant plan or the Biodiversity Officer (see below). It is also possible that individuals or local groups can become involved in the process through helping to develop new Action Plans for species or habitats of interest. Local Biodiversity Action Plans may also be developed for a local area of community ground, such as a residential estate (or part of), or the grounds of your school or workplace.

If you are interested in finding out more about Biodiversity or helping out in the implementation of the action plans, please contact us at the address below:

The Biodiversity Officer, Conservation Section, Land Services, Glasgow City Council,
37 High Street, Glasgow, G1 1LX

Tel: 0141-287-5665

E-mail carol.maclean@land.glasgow.gov.uk or keith.watson@land.glasgow.gov.uk



B I O D I V E R S I T Y A C T I O N P L A N

Useful Addresses



Forestry Commission
Erskine House
Clydebank Business Park
CLYDEBANK G81 2DR
Tel: 0141-941 2611
Fax: 0141-941 2125
email: david.robertson@forestry.gsi.gov.uk

Countryside Ranger Service
Glasgow City Council
Pollok Country Park
2060 Pollokshaws Road
GLASGOW G43 1AT
Tel: 0141-632 9299
Fax: 0141-649 2477
email: mark.irwin@land.glasgow.gov.uk



SEPA West
5 Redwood Crescent
Peel Park
EAST KILBRIDE G74 5PP
Tel: 01355 574256
Fax: 01355 574688

Glasgow Natural History Society
Glasgow Museum & Art Gallery
Kelvingrove
GLASGOW G3 8AG
Tel: 0141-339 1343
email: richard.weddle@lineone.net



Kelvin Clyde Project/Greenspace for Communities
Provan Hall House
Auchinlea Road
Easterhouse
GLASGOW G34 9QN
Tel: 0141-771 4399
Fax: 0141-771 7899
email: kvcp_99@yahoo.co.uk

British Waterways
Canal House
1 Applecross Street
GLASGOW G4 9SP
Tel: 0141-332 6936
email: olivia.lassiere@britishwaterways.co.uk



Carts Project/Greenspace for Communities
c/o Planning & Transport Department
Renfrewshire Council
Cotton Street
PAISLEY PA1 1LL
Tel: 0141-842 5272
Fax: 0141-842 5833
email: carts.rvp@care4free.net

The WISE Group (Treewise)
Larchgrove
1212 Edinburgh Road
GLASGOW G33 4EJ
Tel: 0141-774 5115
Fax: 0141-774 0566
email: wisegroup@compuserve.com



Strathclyde Green Belt FWAG
Easter Poldar Farm
Thomhill
STIRLING FK8 3QT
Tel: 01786 870185
Fax: 01786 447588
email: kieran.sheehan.fwag.org.uk

Cultural & Leisure Services (Museums)
Glasgow Museum & Art Gallery
Kelvingrove
GLASGOW G3 8AG
Tel: 0141-287 2660
Fax: 0141-287 2690
email: richard.sutcliffe@cls.glasgow.gov.uk

Scottish Natural Heritage
Clydebank Business Park
Caspian House
8 South Avenue
CLYDEBANK G81 2NR
Tel: 0141-951 4488
Fax: 0141-951 8948
email: jimmy.hyslop@snh.gov.uk

Education Department
Glasgow City Council
Nye Bevan House
20 India Street
GLASGOW G2 4PJ
Tel: 0141-287 8193
email: hilda.quail@education.glasgow.gov.uk

RSPB,
Unit 3.1, West of Scotland Science Park
Kelvin Campus
GLASGOW G20 OSP
Tel: 0141-576 2616
Fax: 0141-576 4200
email: paul.walton@rspb.org.uk

Land Services (Parks & Recreation)
Glasgow City Council
37 High Street
GLASGOW G1 1X
Tel: 0141-287 5067
Fax: 0141-287-3519
email: iain.gibson@land.glasgow.gov.uk

Scottish Wildlife Trust
71 Houldsworth Street
GLASGOW G3 8EH
Tel: 0141-248 4647
Fax: 0141-284 1982
email: fstewart@swt.org.uk

Development & Regeneration Services
Glasgow City Council
229 George Street
GLASGOW G1 1RX
Tel: 0141-287 8614
Fax: 0141-287 8444
email: jim.coyle@drs.glasgow.gov.uk