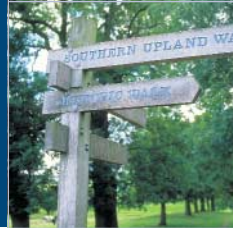
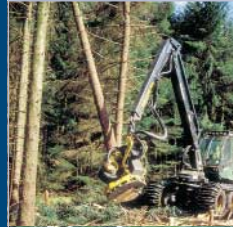
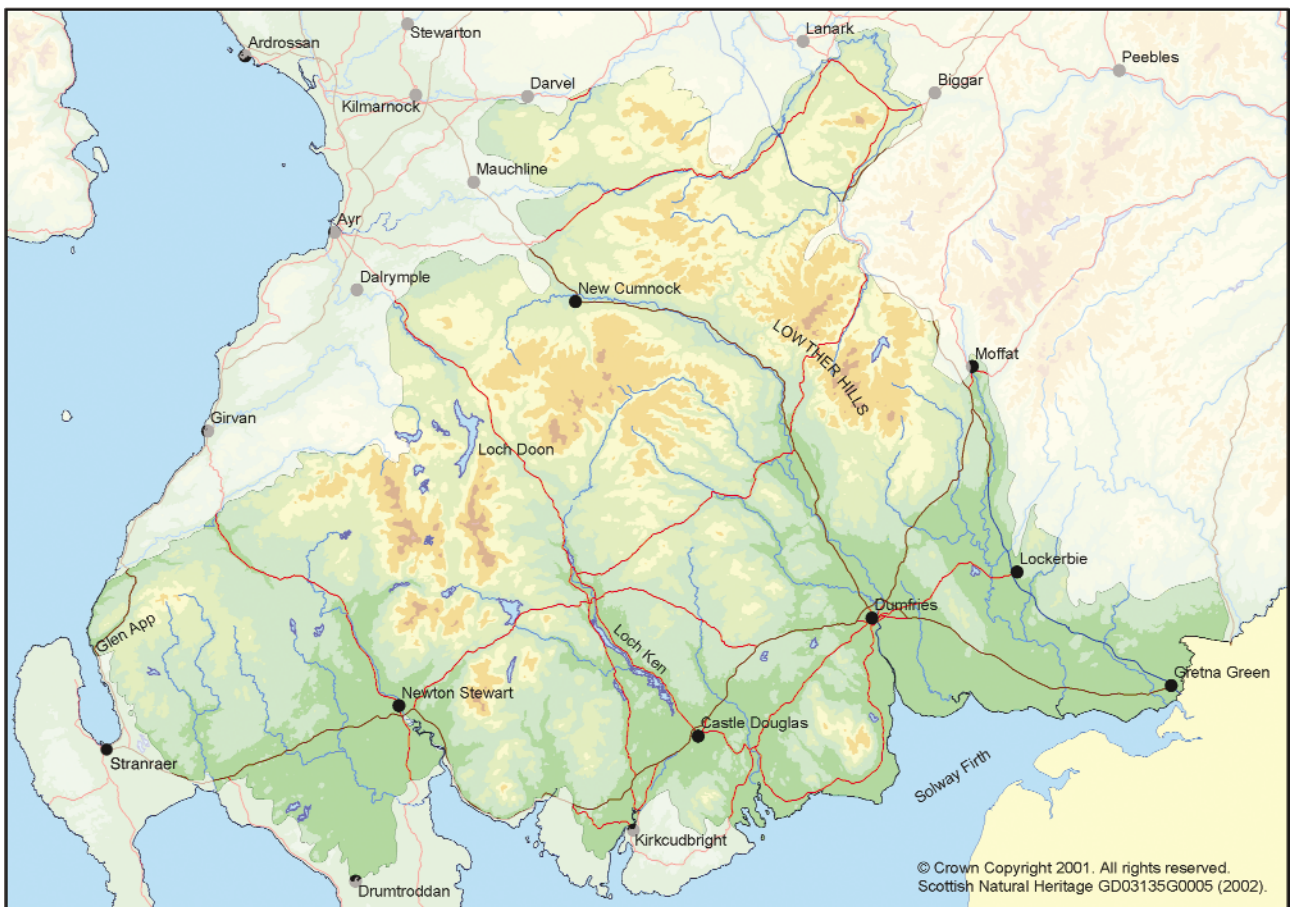


# *Western Southern Uplands and Inner Solway*





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# Natural Heritage Futures

Scottish Natural Heritage's Natural Heritage Futures is our contribution to putting sustainable development into practice. It will ensure that we take an integrated approach to our work across our whole remit and, at the same time, provide the basis for our engagement with other stakeholders. Caring for the natural heritage is a long-term business and we have deliberately taken a more visionary approach in setting goals for the natural heritage and society's use of it. Also, SNH cannot do everything itself: it does not have the powers, or the resources, or the desire to do so. Many other public, private and voluntary organisations have an important role to play. It is our hope that, through engagement on Natural Heritage Futures, together we shall have a substantial, positive and long-lasting impact on the management and use of the natural heritage and the benefits which society derives from it.

*“a bold and imaginative way of establishing some high-level objectives for the natural heritage of Scotland”*

## INTRODUCTION

This is one of a suite of publications which Scottish Natural Heritage has prepared to guide the future management of the natural heritage towards 2025, within the wider context of sustainable development. Our landscapes and wildlife are highly valued assets which have often been shaped by human activity. Under sensitive management, the natural heritage also has the potential to enhance people's lives and provide substantial economic benefits, of particular value to fragile rural populations. As far as possible, these documents aim to identify common goals and encourage an integrated approach in which all sectors work together to achieve them.

Covering the **Western Southern Uplands and Inner Solway**, this is one of 21 local documents, which together cover the whole of Scotland, each presenting a vision for sustainable use of the local natural heritage and the action required to achieve it. The 21 areas each have their own identity resulting from the interaction of geology, landforms, landscapes, wildlife and land use – and hence are affected by distinct issues. There are also six documents detailing national objectives for different settings: Forests and Woodlands, Hills and Moors, Coasts and Seas, Settlements, Farmland, and Fresh Waters. Data underpinning these local and national objectives are provided in a series of National Assessments which are available on CD-ROM.

This suite of publications is intended to assist all organisations and individuals which have an influence on the natural heritage. The priorities presented will be used to inform SNH's input to plans and strategies for various sectors and geographical areas such as Development Plans, Community Planning, Indicative Forestry Strategies, access, tourism and renewable



energy strategies, local and national Biodiversity Action Plans, integrated catchment management, integrated coastal zone management and National Park Plans.

The documents take account of the views of a wide range of partner organisations, which were sought through consultation carried out during 2001. These included local authorities, public agencies, and representatives of private interests, and voluntary bodies concerned with conservation, rural development, recreation and land management. There was considerable agreement with the visions, objectives and actions, but SNH recognises that there are also some issues where further discussion is needed: the roles of different parties in taking action and the ability to agree a shared vision being examples. We will be working with partners to achieve agreement and to identify any actions which are not currently being taken forward.

The vision statements and associated objectives set out through this programme remain essentially those of SNH, although shared to a greater or lesser extent by a wide range of partners. A key function of these published documents is to stimulate the wider debate necessary to establish a broader vision for sustainable development in Scotland, and to translate it into action.

The objectives and actions in these documents will be refined and translated into detailed targets through the plans and strategies which will take them forward. Local biodiversity action plans, for example, will identify detailed targets for species and habitats. Also the framework provided through Natural Heritage Futures can help determine spatial priorities in, e.g. development plans and community plans. SNH will also review its own work programmes against the objectives and actions in these documents, and make the necessary adjustments.

The objectives for the natural heritage set out in this document link to a wide range of other plans, strategies and initiatives, including local development plans, community planning, access strategies, Local Biodiversity Action Plans, and the South of Scotland Objective 2 Programme. The wider policy context also includes the Scottish Forestry Strategy, A Forward Strategy for Scottish Agriculture, Rural Scotland: a New Approach, the Rural Development Regulation, Water Framework Directive, Habitats and Birds Directives, land reform legislation and national Biodiversity Action Plans.

Natural Heritage Futures does not seek to replace existing administrative boundaries. It does, however, emphasise the need for flexibility across all systems of governance in order to work towards sustainable development, acknowledging that natural systems do not recognise administrative boundaries and that integrated action across those boundaries is essential.

The framework of 21 areas is intended to be used to promote integrated approaches to the natural heritage at the local scale; it is a means to facilitate discussion on areas that share essentially similar natural heritage. The boundaries should be viewed as indicative, with places lying close to a boundary having transitional character with adjacent areas.

# Summary



The Western Southern Uplands and Inner Solway is a large rural area where land use is dominated by agriculture and forestry. The Solway Firth, one of the largest intertidal mudflat and saltmarsh areas in the UK, is an important area for biodiversity, in particular barnacle geese and other wildfowl, waders, shellfish and the entire Scottish population of the natterjack toad. The lowland areas support mixed farming, small woodlands and a number of rivers containing strong populations of salmon and otter. The raised mires along the Solway coast are among the best examples in Europe of this rare and declining habitat. The uplands contain grouse moors and are grazed by sheep and cattle. They are home to golden eagle, hen harrier, black and red grouse and many unusual plants. Approximately a quarter of the upland area is afforested. The area's forests support around one-fifth of Scotland's red squirrels. There are excellent opportunities for recreation and access particularly near the coast and in the hills and forests with interpretation provided by many Ranger services and nature reserves. The increasingly popular Southern Uplands Way, Scotland's only coast-to-coast long distance footpath, passes through the hills and forests.

The key changes affecting the natural heritage over the past 50 years have been through the intensification of agriculture and increases in forestry. The scale of increase of productive forests (1% to 23% land cover between 1940s and 1980s) and the intensification of farming over the same period have led to the associated reductions in areas of heather moorland (>50%), blanket mire (>50%) and grassland (28%) and this has been at a level not experienced so extensively elsewhere in Scotland. These major changes in land use took place without the guidance of a strategic framework incorporating natural heritage interests. Traditional landscapes have also been significantly altered by other changes such as increased silage production. Upland farming has shifted from extensive grazing by cattle towards sheep. Moorlands have lost areas of heather and are experiencing reduced grouse numbers. There is an increasing trend of greater recreational use of the countryside and provision for access and interpretation has increased to accommodate this.

The key drivers for the natural heritage over the coming years will be climate change, international commitments to nature conservation and sustainable development, government policies and availability of resources.

The key challenge facing the natural heritage of the area is the need to ensure a reasonable balance of land use while maintaining sustainable rural development. This would involve the continuing restructuring of forestry to enhance landscapes, expansion and restoration of areas of native woodland, more sustainable management of grouse moors, restoration of priority habitats lost during agricultural and forestry changes between the 1940s and 1980s. Other challenges include delivering integrated shoreline and river catchment management, and implementation of the new access legislation.

The natural heritage priorities are to:

- maintain or improve the quality and diversity of landscape character, and diversity of habitats and species, as a significant contribution to sustainable development; and
- encourage increased awareness and understanding and greater but sustainable use of the natural heritage.

These objectives can in part be achieved through:

- establishing a strategic framework for land use within the Southern Uplands in order to maintain a reasonable balance of land uses;
- encouraging all forests to be managed to minimum standards for landscape, biodiversity, recreation and access, as defined in UK Forestry Standard;
- promotion of restoration and expansion of native woodland for both productive and biodiversity purposes;
- encouraging best practice conservation management of farmland through agricultural support schemes, minimum standard codes and grouse moor management;
- enhanced integrated land-use decision-making through increased stakeholder and community involvement through various fora;
- encouraging restoration of priority habitats and species which were lost or reduced during the land-use changes between the 1940s and 1980s;
- development of a comprehensive system of Local Wildlife Sites;
- development of Access, Environmental Education and Interpretation Strategies and Community Learning Plans;
- establishment of Environmental Resource Centres;
- establishment of Core Path Networks, footpaths around settlements and increased facilities for wider countryside access; and
- development of a scheme of management and a shoreline management strategy for the Solway.



# Description



A description of the main  
features of the natural  
heritage and its enjoyment



The area comprises the hills, moors and forests of the Southern Uplands west of the M74 corridor, lowland farmland along the river valleys and coastal plain, and the Scottish side of the inner Solway Firth, the third largest intertidal area in the UK. The land rises to 844m which is the highest point in Scotland outside the Highlands. There are many hills over 610m (2,000ft), predominantly within the north and west. The south-eastern half of the area is mostly low-lying farmland under 250m with the notable exceptions of the hills of Criffel (569m) and Bengairn (391m) situated on either side of Dalbeattie. The boundary includes much of the local authority area of Dumfries and Galloway, and parts of South Ayrshire, East Ayrshire and South Lanarkshire.

## GEOLOGY

The underlying geology of the area is dominated by sandstones, silts and shales laid down some 4-500 million years ago when the Southern Uplands were separated from the land mass which now makes up the north of Scotland. These rocks erode to form the rounded hills which characterise the Southern Uplands. The soils are thin and poor and typically form moorland or acid grassland although there are botanically-rich flushes. Granite intrusions create the more rugged scenery typical of Galloway and south-east Stewartry. The granite is used extensively as a local building stone, as monumental stone and as aggregate. Deposits of minerals, including gold and other metals, occur throughout the uplands and these have been exploited in the past at various sites. These deposits, particularly at Wanlockhead and Leadhills, often have associated rare minerals which are of international interest to geologists and mineral collectors.

Limestones, deposited later beneath shallow seas, underlie pastures in the coastal fringe east of Southwick and locally support a rich flora. Many of the settlements are sited on small basins of more recent sandstones or on coal measures in southern Ayrshire, southern Lanarkshire, Nithsdale and Eskdale where there was local building stone and fuel. These sandstones also underlie areas of arable land. The **coal** measures provide a local source of employment in rural areas and extraction has moved from deep mining to open-cast.

The coastal lowlands and dales are extensively mantled in glacial deposits, the drumlin fields of the Solway Lowlands and the area around New Galloway being particularly distinctive. Gorse-covered knolls are evident where older rocks are exposed through the more recent glacial deposits. The gravel deposits continue to be extracted especially to the north of Dumfries.

## SETTLEMENTS

While there are no cities in the area, there are several small to medium-sized towns including Dumfries, Annan, Dalbeattie, Castle Douglas, Newton Stewart, Cumnock and Douglas, and many villages and farms. The settlements are mostly located along river valleys or in mining districts. **Traditional buildings** reflect the local underlying geology, creating distinctive farms and townscapes, from the granite of Dalbeattie to the red sandstone of Dumfries, and the pink sandstone around Thornhill.

## ACCESS

The numerous roads and tracks make access in the hills relatively easy but reduce the sense of remoteness. However, a substantial area of **remote ground** lies within the Galloway Forest Park centred on the Merrick. Access can be gained to most sections of the coast. The afforested areas offer many recreation opportunities. The Southern Uplands Way Long Distance Route crosses the uplands. 'Urban' greenspace proves an important recreational resource. There are a number of nature reserves open to the public and managed by various public and voluntary organisations. While walkers are the largest recreational group, cycling, horse riding, wildfowling, rough shooting, grouse shooting, freshwater and sea angling are all important recreational activities, and there are good opportunities for water-based recreation on both inland and coastal waters.

For the purposes of describing the natural heritage, the area has been subdivided into three broad categories:

- coastal fringe;
- lowland farmland; and
- hills and moors.

## COASTAL FRINGE (INCLUDING INTERTIDAL AREAS)

### *Coastal landscape and habitats*

The **coastline** is made up of two starkly contrasting types. On the westernmost coast, between Auchencairn Bay and Mersehead, the shoreline is rocky with occasional small bluffs and promontories separating long stretches of sand and shingle with distinctive vegetation. A five-kilometre sand-dune ridge stretches west of the foreshore rock exposures around Southernness and has coastal heath communities on the landward side.

To the east of this, the Inner Solway Firth presents a very different picture. Here, relatively sheltered conditions prevail and wide expanses of **sandflat, mudflat and saltmarsh** (merse) have developed. Typically, the saltmarshes have developed upon low, raised beaches of sand or shingle. They display a complex micro-topography of pans, creeks and terraces with a continuous process of erosion and rebuilding on an estuarine system with one of the highest tidal ranges in the UK. The saltmarsh and tidal flats of the Solway each make up one-third of Scotland's resource of these habitats. Raised estuarine deposits occur extensively along the Solway coast and provide valuable records of sea-level changes during the last 13,000 years.

**Coastal mosses** (raised mires) are often found adjacent to estuarine flats. Now scarce in a European context, these mires comprise flat, poorly-drained areas with bog moss vegetation including cranberry, bog rosemary and great sundew, and support rare invertebrates. These mosses have been subject to drainage, peat extraction and are extensively afforested but good examples still remain at Kirkconnell Flow and Longbridge Muir, the latter being one of the largest in the UK. Coastal heath is present near Powfoot. The rest of the coastal plain is gently undulating and is predominantly farmed as pasture with some arable cultivation.

#### Coastal species

The entire Scottish population of **natterjack toads** is to be found in four colonies along the inner Solway. The coastal fringe also supports several ponds containing great crested newt, a species considered scarce in Europe. The cliff on the edge of the Inner Solway is one of a small number of localities in Scotland for sticky catchfly while holy grass, a nationally rare species, can be found in the upper saltmarsh. Common cord-grass has recently spread from introductions in the south of England and has colonised mudflats locally.



Natterjack toad



Barnacle geese feeding on Solway saltmarsh

The Solway Firth mudflats and adjacent grasslands support over 120,000 wintering **wildfowl**, many of the populations being of national or international importance. These include the entire Svalbard population of barnacle geese, pink-footed geese, duck such as shelduck, teal, shoveler, and goldeneye, and waders such as golden plover, bar tailed godwit, curlew, redshank, grey plover and dunlin. Turnstone and ringed plover are found along the rockier shores and beaches.

These large wildfowl and wader populations are dependent on the high productivity of the mudflats, which also support large numbers of shellfish including cockles and mussels. The coastal waters also attract a range of coastal fish both resident and migratory. Salmon and sea trout are caught using the ancient practice of Haaf netting which is unique to the Solway.



Recreational sailing at Kippford

### Recreation

The natural heritage of the Solway Firth supports various recreational activities. Wildfowling takes place along the coast and the range of coastal fish support both shore- and boat-based sea angling. The Inner Solway coast is a popular tourist destination. The caravan parks and golf courses at Sandyhills, Southernness and Powfoot attract many visitors and Kippford is an attractive centre for small sailing boats and other craft. Birdwatching is an increasing attraction for tourists on the coast particularly on the many nature reserves with Wildfowl and Wetlands Trust (WWT) and RSPB managed visitor centres. Access along the coast is possible at various locations with Gretna, Annan, Caerlaverock, Southernness, Sandyhills and Rough Firth especially popular for informal beach-based recreation. The favoured bathing areas include Sandyhills Bay and Southernness



Farmed landscape at Loch Ken

## LOWLAND FARMLAND

### Landscape

The lower dale landscape in Nithsdale and Annandale is generally flat or gently undulating. The central section contains flat flood plains through which the major rivers meander. Closer to the valley sides, glacial deposits create a more irregular landscape covered in medium- to large-scale improved pasture and arable fields. These dales gradually narrow upstream with actively eroding river meanders and occasional riparian woodland. There are narrow, wooded, river valleys on the Urr and Kirtle. **Designed landscapes** and estates together with historical and cultural features strongly influence the local landscape character and contribute to the wider landscape setting. There is a significant number of designated Historic Gardens and Designed Landscapes in the lowlands.

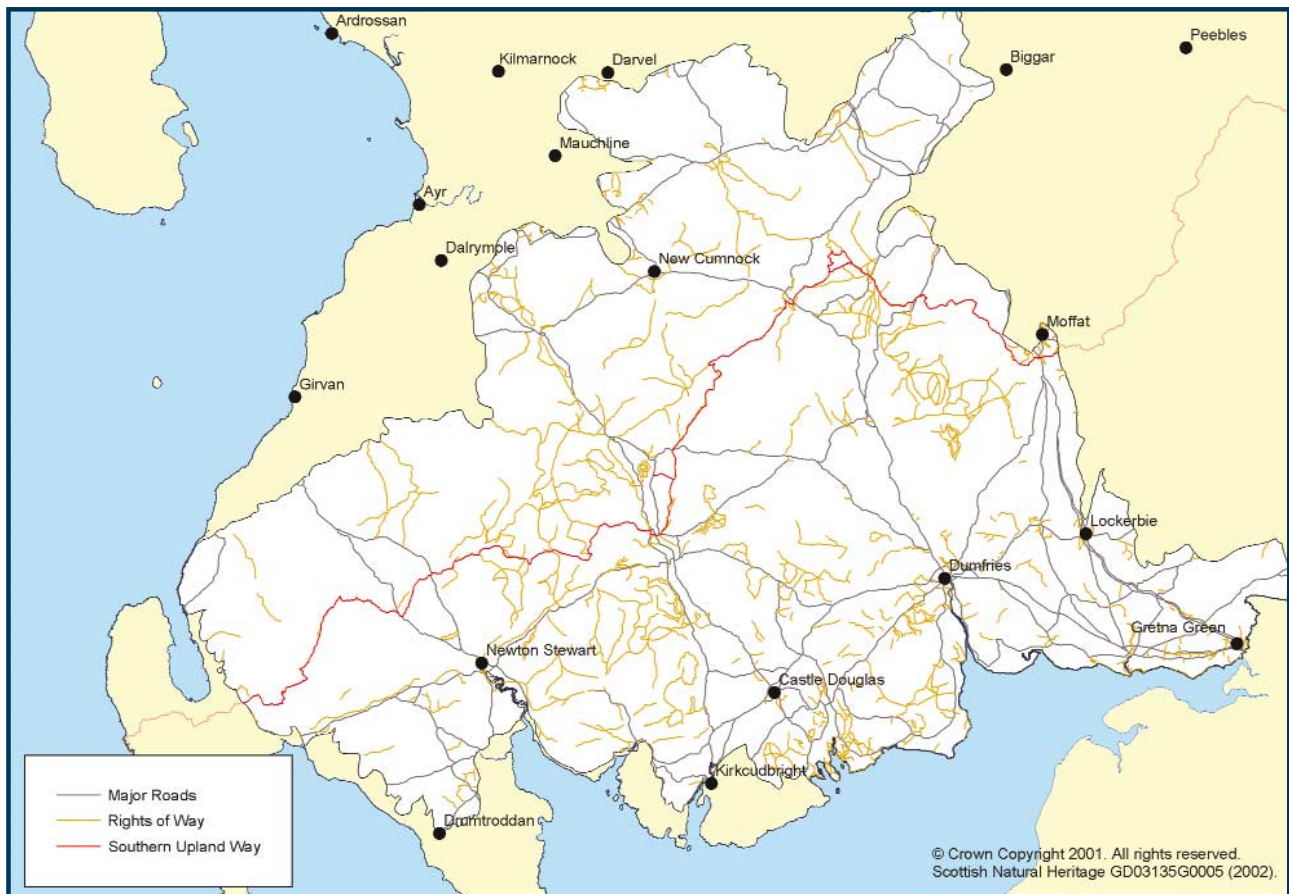
### Habitats and species

The predominance of stock and mixed farming has resulted in a landscape of improved or semi-improved grassland for pasture or silage production. The improved grasslands of Nithsdale, Annandale and around River Dee/Loch Ken are important feeding areas for barnacle geese, pink-footed geese and Greenland white-fronted geese. Some of these **geese** roost on inland water bodies such as Castle Loch and Stroan Loch. The geese compete with domestic livestock for grass during the winter. There is some arable farming in the lower dales and these areas still support birds such as skylark, linnet, tree sparrow, reed bunting, song thrush and grey partridge which are known to be declining in agricultural areas elsewhere. **Field boundaries** comprising dykes, hedges, tree lines, ditches and grass verges provide corridors for wildlife although the hedges typically contain few species and are often thin. The mosaic of hedgerows, small woodlands, pasture and buildings provide shelter and feeding areas for badgers, hares, a significant proportion of Scotland's barn owl population and eight species of bat. Many of the farms still have wet grassland and unimproved damp hollows and some botanically interesting fens still remain. Unimproved areas of lowland **grassland** in Galloway support a restricted type of species-rich purple moor-grass and rush pasture with scarce species such as whorled caraway. This habitat needs to be maintained by regular grazing to ensure that the purple moor grass does not become dominant. There are good examples of **raised mires** in lower Dumfriesshire and South Lanarkshire, and mires showing characteristics of raised and blanket mire in Wigtownshire.



Raised mire, Lower Dumfriesshire – Kirkconnel Flow NNR





Main footpaths in the Western Southern Uplands and Inner Solway

The numerous **lochs and rivers** provide important refuges for wildlife. The lowland lochs lie within productive agricultural land and the resulting run-off has led to plant assemblages which reflect their heightened nutrient status. The slender naiad, a scarce underwater plant more frequent in the north and west of Scotland, is present in at least one loch. The major rivers are the Annan, Nith, Dee and Cree. They have their sources in the hills and meander through the farmland into the Solway. There are also smaller rivers such as Water of Luce, River Bladnoch, and Urr Water. The River Cree is outstanding for rare fish with spurling (now extinct in the Rivers Annan and Nith), and the twaite shad. The Cree and Bladnoch both



River view, Crawick Water

contain nationally notable river invertebrate species. Most rivers also have otter, Atlantic salmon, brown trout and sea trout, and there are populations of the three lamprey species, each considered to be declining in Europe. North American rainbow trout has been introduced to some lochs and American signal crayfish are known to occur in the River Dee and Upper Clyde catchments. Grayling were introduced to the Rivers Clyde, Nith and Annan during the last 150 years and are firmly established. Water voles are present in a few isolated colonies throughout the area, however American mink, one of their main predators are now widespread. Some stretches of riverbank are dominated by non-native plants such as Japanese knotweed, giant hogweed, and Himalayan balsam. Some areas of the River Bladnoch, Luce, Fleet, Cree and the Black Water of Cree are still too acidic to support juvenile salmonids.

Small- to medium-sized policy woodlands and shelterbelts are interspersed with the farmland and add additional biodiversity and landscape interest. Productive forests tend to be on the steeper slopes, or on former peatlands, while the native woodlands are mostly riparian and provide important wildlife corridors.



Smooth domed hills, Dalveen Pass, Lowther Hills

### Recreation

There are opportunities for sailing on Loch Ken and Castle Loch Local Nature Reserve (LNR) while canoeists use many of the larger rivers. Several areas are managed for informal **outdoor recreation** in the area, e.g. at Threave Castle and Gardens, and Hoddom Estates in Lower Annandale which both have Ranger services. Facilities for bird-watching are provided at the RSPB reserve at Loch Ken. Outwith these areas formal access in the farmland is restricted although riverside access is good on the Nith and the Annan. Facilities for access exist in many of the lowland forests such as Dalbeattie. There are extensive rough shooting and fishing opportunities in many areas. Access close to the large settlements of Dumfries, Annan and Moffat are developing while local path networks have been initiated at Dalbeattie, Castle Douglas, Newton Stewart, Sanquhar and Kirkconnel. There are a number of tourist routes such as the Clyde Valley National Tourist Route and the Solway Coast Heritage Trail, while national cycle routes run from Glasgow to Carlisle and Gretna to Newton Stewart.



Canoeists, Loch Ken

## HILLS AND MOORS

### Landscape

The Southern Uplands are characterised by large, smooth, domed hills. The hills are dissected by steep-sided valleys and broader glens which result from ice-scouring during glaciation. The foothills are generally undulating with gently rounded summits in the east and craggier peaks in the west. Steep-sided, rugged, granite uplands dominate the landscape at Cairnmore of Fleet, around the Merrick and south and east of Dalbeattie including Criffel. Plateau moorland is found in the western part of the area and is typically bleak and wild, with extensive waterlogged soils, nutrient-poor lochs and numerous streams. Throughout the uplands the landscape is dominated by large-scale forestry of predominantly sitka spruce. The unafforested uplands are grazed by sheep with cattle on the lower ground. Many of the hill estates are also managed for shooting. Farm buildings, hill dykes, sheep fanks and archaeological remains provide important landscape features.

### Habitats and species

Open ground is either acid grassland dominated by mat-grass, fescues or purple moor-grass, or heather moorland with areas dominated by bracken. Occasional flushes provide **botanical interest** with plants such as hairy stonecrop and starry saxifrage. Much of the hill ground with heather is managed for red grouse. The moorlands of Muirkirk, North Lowther and West Galloway have particularly significant bird populations. The grassland and moorland give way to mountain heath on the highest ground with characteristic arctic/alpine species. These are valuable southern examples of vegetation types dominated by species tolerant of high exposure such as woolly hair moss, although many other species characteristic of mountains in the Highlands are absent. Blanket bogs occur in



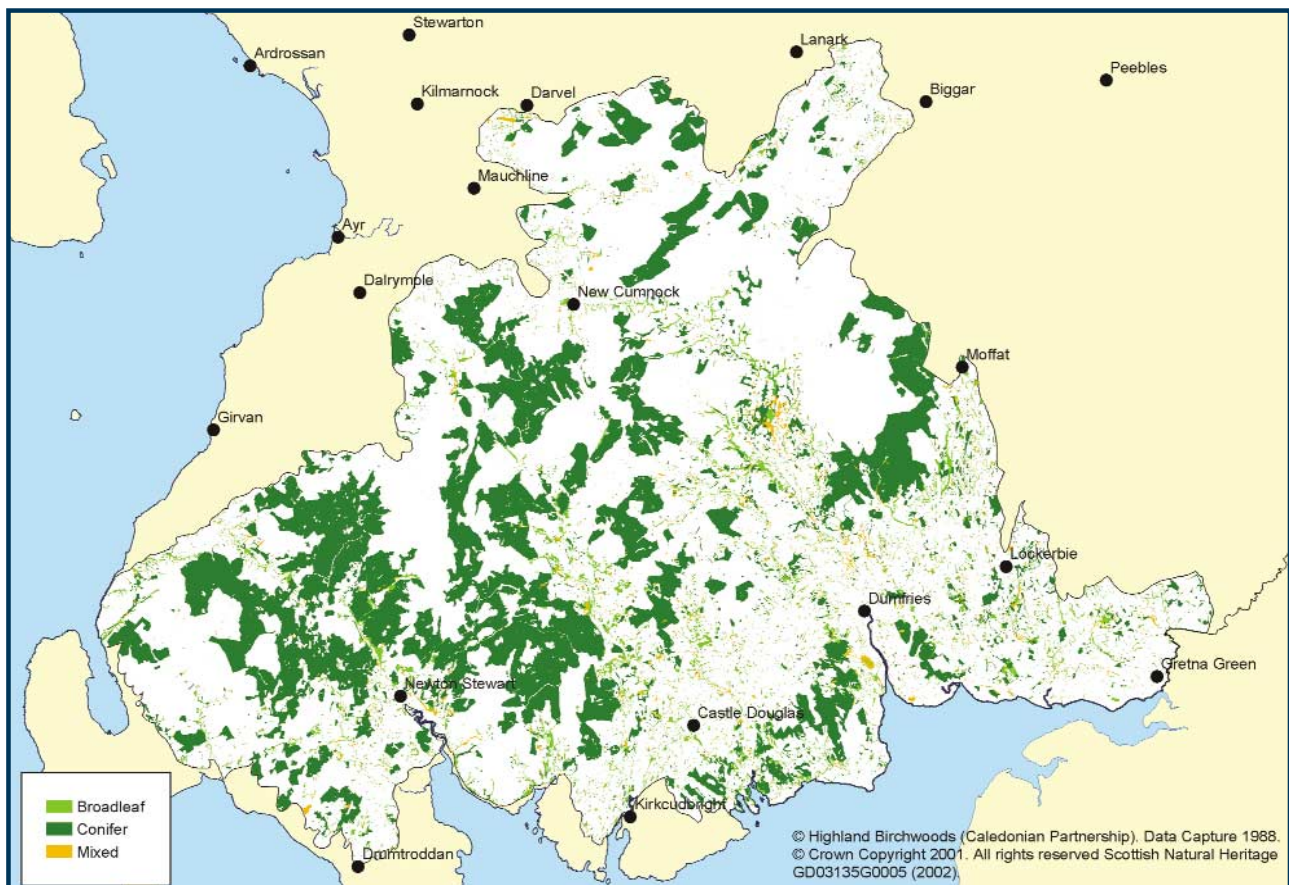


Dunlin in upland habitat

many areas such as at Airds Moss and Silver Flowe, and appear as peaty pools linked by drier hummocks of heather and cotton grass, or as wider expanses of heather and bog moss over deep peat. The deep peat acts to store carbon and also preserves evidence from the past such as pollen, seeds, insects, wooden structures, and even human remains in distinct chronological layers.

The acid grassland and moorland are particularly important **breeding habitats** for hen harrier, short-eared owl, merlin, buzzard, raven and waders such as golden plover, curlew, dunlin and redshank. The mountains of the Southern Uplands still support peregrines and a few golden eagles which are now rare in Europe. Mountain hares frequent the high ground. Red deer and goats roam the Galloway hills; sika deer are already colonising from the north-east and interbreed with the native red deer. Cliffs in the mountains provide a refuge for some plants sensitive to grazing, although goats are able to access areas inaccessible to sheep and deer. Adders are widespread in the moors and hills.

In the upland valleys, there are still significant remnants of native woodland of oak, ash and elm. These **cleuch woodlands** provide habitat for a range of birds such as pied flycatcher and common redstart as well as plants, and invertebrates such as pearl-bordered fritillary which prefers sheltered clearings. Tynron Juniper Wood is the best example of the scarce mid Nithsdale juniper woods. **Productive forests**, predominantly of spruce and larch, dominate many areas, particularly the lower hill ground. The young and restocked productive forests are used by short-eared owl, nightjar and black grouse, a species which has declined



Woodland in the Western Southern Uplands and Inner Solway (excluding new planting since 1988 under the Woodland Grants Scheme)



significantly in Scotland. The mature productive forests provide valuable habitat for crossbill, goshawk and red squirrel. Grey squirrels are starting to colonise the area from the north and possibly the east.

Several important **rivers** have their source in these hills such as the Clyde and the Doon which drain north, and the Water of Girvan and the River Stinchar which drain west. Headwater tributaries of the Dee, Nith and Annan are akin to mountain torrents. There are many lochs in the Galloway hills and the western moors which provide important habitats for wildlife such as black-throated diver. Acidification has seriously affected some of the lochs. Loch Doon is now the only southern Scottish loch to support Arctic charr. Vendace have recently been introduced to Daer Reservoir following their extinction during the 1970s at Lochmaben Lochs, their last-known native site.

### Recreation

There is formal access along the Southern Upland Way Long Distance Route which stretches from Portpatrick through the hills heading east towards the North Sea. Informal open access is available on much of the hill ground, and there are a number of popular hills for walking. These range from the rugged and quite remote Merrick in the Galloway Hills, to the Lowther Hills in the east, and in the north Tinto a very popular



Long distance route: Southern Upland Way

and accessible hill. Shorter, low-level walks are available at the Buccleuch Estate's country park at Drumlanrig, and provision has been made for access in other parts of the estate managed by a Ranger service. The greatest network of paths for walking, horse riding and mountain biking is through the extensive forests such as Forest Enterprise's Mabie Forest close to Dumfries and the Galloway Forest Park which provides interpretation through three visitor centres. Grouse shooting and fishing are practised on many moorland and upland areas.

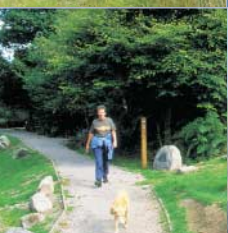


Native woodland in cleuch – Nether Cog, Crawick Water



# Key influences on the Natural Heritage

An outline of how the natural heritage has changed, how it is changing and the key factors influencing change. The changes described are both positive and negative and together with the **Description**, provide the basis for the **Vision**.



The key drivers for the natural heritage over the coming years will be climate change, international commitments to nature conservation (e.g. Rio Earth Summit), economics (increasingly globalised), demands of society, and European Community, UK and Scottish Parliament policies, especially those affecting agriculture, environment, forestry, rural affairs, tourism, business and communities. In particular the Rural Development Regulation, South of Scotland Objective 2 Programme, Scottish Forestry Strategy, A Forward Strategy for Scottish Agriculture, Land Reform, Water Framework Directive, Habitats and Birds Directives, Community Planning, Sustainable Rural Development Processes, renewable energy targets, Community Learning Plans, Social Inclusion and Biodiversity Action Planning are likely to be significant drivers.

### **SUSTAINABLE RURAL DEVELOPMENT**

Successive governments' commitments to encourage better **integrated** rural development will be a key factor in shaping the future of the Western Southern Uplands and Inner Solway. Social inclusion, regard for the natural heritage, prudent use of natural resources and the maintenance of high and stable levels of economic growth and employment will be central to all future policies. The economic development strategy for rural Lanarkshire 'Reviving our Rural Areas' provides a model for local action and best practice such as its Douglas Valley Initiative. The Southern Uplands Partnership and the Solway Firth Partnership assist all interest groups from communities to local authorities and government agencies to come together to develop integrated policies for sustainable rural development. Such joint working aims to help keep local rural communities viable with the intention of preventing closure of local facilities such as schools and shops.



Sawmill: local processing

The area remains much more dependent than most of Scotland on the traditional primary industries of agriculture and forestry. In recent years BSE and foot-and-mouth disease have both hit the farmer hard, while the economic fortunes of forestry have fluctuated sharply with world timber prices and the strength and weakness of sterling. There has been some **diversification** of the economy into tourism and other services and an innovative effort to break into the new knowledge-based economy through the development of the new Crichton Campus in Dumfries. The economic potential inherent in the area's position as the main transport route from England to central Scotland and Northern Ireland has yet, however, to be fully exploited. So too has the scope for adding value to local primary produce, although the Stephen's Croft development on the M74 is an example from the wood-processing sector of what may be possible.

There is **open-cast** coal mining in East Ayrshire and to a lesser extent in Lanarkshire and Nithsdale. This is likely to continue although its scale will depend very much on UK energy policy choices and on the sterling exchange rate. Careful planning should make it possible to contain the adverse impacts on landscape and biodiversity interests, while the revenue generated could not only boost the local economy but also help to fund environmental enhancement work to improve both the quality of life of local residents and the wider image of the communities concerned.

Housing demand will continue to increase both around the existing settlements such as Dumfries, within the wider countryside and along the coast bringing with it a demand for associated infrastructure and coastal protection.

### **AGRICULTURE**

Agriculture is the principal land use within the area covering 73% of the land and is dominated by hill sheep grazing, dairy cattle, beef cattle and localised arable farming. However, there has been a 22% decrease in area of land farmed between 1940s and 1980s as a result of afforestation. Agricultural support systems, focusing on productivity, have contributed to an increasing intensification of farming. More recently there has been a shift from subsidies for production and headage towards area payments with emphasis on environmental enhancement.





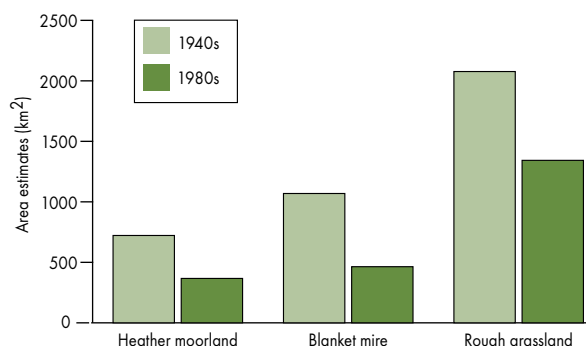
Sheep in Lowther Hills, Durisdeer

The **upland** areas have seen a shift from small farm units lightly grazed by hill cattle, to large farms with high sheep numbers. This shift has coincided with significant reductions in farm employment, reducing the amount of labour available for land management. This trend is likely to continue with larger agricultural units, fewer farms and a loss to the intricate management of land which has maintained landscape character and biodiversity. Reseeding, drainage and nutrient application have improved upland pastures, and large areas of former hill grazings have been afforested. Grazing pressure particularly of sheep has increased on the remaining areas of open hill ground. At the same time bracken has spread and in some areas purple moor grass is increasingly dominant. Purple moor grass is more palatable to cattle than sheep and forms tussocks shading out less vigorous and lower-growing plants. Heather is particularly vulnerable to grazing in winter, unlike purple moor grass which dies back in the autumn.

Cattle farming is now concentrated in **lowland** areas where pastures have been improved. Silage production has virtually replaced hay and the earlier cutting time has significant impacts on farmland birds. Mixed farming has declined with this focus on specialisation, and only small arable areas remain, usually as part of mixed enterprises. There have been significant reductions in boundary features such as hedgerows, dykes, treelines as well as native woodlands and wetlands. Continuation of these trends would lead to reduction in both landscape and habitat diversity and in particular to farmland birds, heather moorland and species-rich grasslands. However, changes in support to agriculture to promote diversification and environmental stewardship could lead to a farming industry that is more diverse in social and economic as well as environmental terms. Organic farming and locally branded niche-marketing are increasing. Changes to agriculture resulting from new technology will assist both productivity and conservation.

The outbreak of **foot-and-mouth** disease in spring 2001 had a very significant impact on agriculture (as well as tourism and other businesses) with many farms losing some or all of their stock, especially in the southern half of the area. The subsequent restructuring of farming is likely to have significant long-term impacts. A Foot and Mouth Disease Economic Recovery Plan has been developed by partners to promote both short-term relief and long-term recovery covering both economic and social objectives.

With the current low financial returns from hill sheep farming, incentives are available to support **diversification** of hill farms. The Rural Development Regulation is one measure supporting future opportunities for this. Local Biodiversity Action Plans (LBAP) are being prepared with input from all sectors of the local community, setting out objectives and actions to enhance the biodiversity interest of farmland and riparian zones. 'A Forward Strategy for Scottish Agriculture' has recently been published by the Scottish Executive and seeks to encourage a prosperous farming industry which will also deliver sustainable rural development and protection and enhancement of the environment.



Estimated loss of moorland habitats in the area between the 1940s and 1980s

## FISHERIES

There has been a downward trend in the catches of salmon and sea trout with spring migrations of salmon at very low levels. The catch of **salmon** is split between traditional netting in the estuary and rod-and-line fishing on the river. These declines, however, have been less marked than other west coast rivers and this may reflect the absence of marine fishfarms in the Solway. Continuation of these trends could impact on the local economy.

## FORESTRY AND WOODLAND DEVELOPMENT

Since the Second World War government forestry policy implemented in public forests, and private forests through grant schemes, has encouraged a shift within the Southern Uplands from areas of rough grazing toward productive forests which are typically dominated by Sitka spruce and larch. The forested area has increased from 1% to 23% of the total between the 1940s and 1980s. This in conjunction with agricultural intensification has resulted in loss of heather moorland (>50%), blanket bog (>50%), grassland (28%) and changes in landscape. On the acid geology in the west the forests have contributed to the acidifying effects of atmospheric pollution on some water systems through their increased scavenging of airborne pollutants. These major **land-use changes** occurred in the absence of strategic guidance taking account of their impacts on biodiversity and landscapes. Growing concern over the environmental impact of productive forest management led to the development of a series of environmental **guidelines** from the mid 1980s culminating in the publication of the UK Forestry Standard in 1998. All new forest schemes since the late 1980s have been required to comply with the guidelines and as the older forests mature and



Young forestry, South Lanarkshire

are harvested they are being brought up to modern standards of water management, species diversity and landscape design. The UK Woodland Assurance Scheme is an independent audit of forests leading to Forest Stewardship Council (FSC) certification for sustainable management. Between 50-75% of the forests in south-west Scotland are FSC certified.

The public forests have developed systems of long-term **planning**. Forest Design Plans promote the restructuring of the age structure of the forest and the development of a semi-permanent network of riparian broadleaf and open ground within the forest as well as improving the overall design of the forest in the landscape. The private sector forests are generally younger but are now also using similar long-term forest plans. Forest Enterprise have also developed Forest District Strategic Plans for all the public forests of the area which allow the targeting of different types of forest land management as well as setting out principles for sustainable management at a local level.

The Local Forestry Framework pilot project in Dumfries and Galloway has recently completed strategic guidance on the nature and location of new forestry schemes in consultation with all key partners and the public. The objective is to ensure a reasonable **balance of land uses** within the areas covered by the Framework. These take account of factors which will influence forestry, landscape character, catchment management, agriculture, biodiversity and recreation. It should achieve a balance of economic, social and environmental concerns. The methodologies arising from this study may be applied across other areas. There will be scope for expansion of both productive forests and native woodlands within the guidelines. The Indicative Forestry Strategies for each local authority structure plan area will be updated. The recent Forest Enterprise's Forest District Strategic Plans provide a coherent and transparent strategy for the future management of public forests and provide a good model of best practice for the rest of the industry. The Local Biodiversity Action Plan for Dumfries and Galloway has produced a Habitat Action Plan for Planted Coniferous Woodland.

**Restructuring** of forestry will always be slow given the long timescales of the crop rotations. There will, however, be a significant increase in harvesting of forestry over the next few decades (expected to double in 10-15 years) as the existing productive forests reach maturity. This will cause significant changes to the landscape and allow opportunities to improve landscape design of the restocking proposals. The increased harvesting will create opportunities for rural development



through increased labour and felling processing, community involvement, economic boost to the forestry sector, reinvestment the forestry industry as well as natural heritage enhancement. There will need to be improvements to the existing processing, marketing and transportation infrastructures to effectively accommodate the large influx of timber onto the market place. The public sector forests have been in the lead in restructuring and development of access because of the generally older age structure of the public forests compared with private sector.

Much of the western Southern Uplands would be naturally tree covered. Although forestry plantations cover almost a quarter of the area, only 2-3% of the land currently has native woodland which represents the lowest percentage in Scotland. Fragmentation of the resource, lack of clear economic value and untargeted grants restrict **native woodland** conservation and expansion. Many of these remaining areas are grazed by stock which while providing an economic reason for their existence also prevents regeneration. The longer harvesting timescales for native hardwoods act as disincentives to native woodland expansion. There is a need to improve linkages between fragments of native woodland. There has been increased protection of, and interest in, native woodlands since the mid 1980s although many still suffer from neglect. There are increased opportunities to create and manage these woodlands through the Woodland Grant Scheme (WGS) and community action such as East Ayrshire Woodlands, South West Community Woodlands and Cree Valley Community Woodlands Trust.



Native woodland planting, Ayrshire near New Cumnock

## CLIMATE CHANGE

The effect of climate change, while difficult to forecast accurately, is likely to result in less predictable, stormier and wetter weather with general warming and increases in sea level. **Sea-level rise** and increased erosion could cause loss of restricted coastal habitats such as saltmarsh, sand dunes and vegetated shingle – if these habitats are ‘squeezed’ between rising sea levels and human development. Increased temperatures would impact on arctic-alpine species that are on the edge of their range in montane areas. Increased precipitation would cause increased water flows and, potentially, inundation of flood plains on which development has been permitted. These effects could increase pressure for both coastal and river flood defences to protect property, although integrated planning and land use within river catchments may offer a longer-term solution. The stormier weather could increase windthrow in forestry areas.

The likelihood of climate change has led to government policies for alternatives to fossil-fuel use, in particular there are likely to be growing trends for increased energy efficiency and renewable energy sources such as onshore and offshore wind farms, tidal/wave power, hydro schemes, waste-to-energy and biofuels. There are currently proposals for wind farm development, hydro schemes, and waste-to-energy plants within the area. These would help harness the natural energy available and possibly provide new value to the forestry industry’s by-products. There may be longer-term trends associated with impacts on landscape and consequently the tourism industry as well as habitats and species such as fish and birds. The continued active accumulation of peat and the large area under afforestation will help act as a significant carbon sink which will contribute to reducing the effects of global warming, but there is still a need to reduce energy demand through energy efficiency measures and integrated transport strategies.

## RECREATION AND TOURISM

The recently-launched Dumfries and Galloway **Access Strategy**, developed in conjunction with all stakeholders, provides a framework for developing access provision for the area with guidance from an access forum. A similar approach is being taken in the preparation of the South Lanarkshire Outdoor Access Strategy while East Ayrshire Council have recently commissioned an Access Strategy. Such strategic frameworks encourage the participation of local communities in both decision-making and the delivery of projects which will



Windfarm, Ayrshire, Hare Hill

address provision for both residents and visitors. The content of these strategies will change with the proposed new access legislation and the Scottish Outdoor Access Code. There has been a significant increase in the demand for access around settlements and this is likely to continue.

The **tourism** sector is a major part of the local economy and is likely to increase demand for countryside recreation, access, interpretation facilities and nature reserves. The South Lanarkshire strategic plans identify Tourism Development Areas. The draft Dumfries and Galloway Tourism Strategy encourages the development of both sustainable and green tourism, and provides a framework for identifying opportunities to meet the increased demand building on existing facilities such as the long distance route. The Ayrshire Tourism Strategy has specific plans for the East and South Ayrshire Council areas. The character of tourism is changing towards increases in green tourism, wildlife tourism and improved visitor facilities based on the natural heritage. There are likely to be significant increases in the access infrastructure both around settlements, in forests and along the coast and this will have significant benefits for tourism. The demand for all forms of countryside recreation is continuing to grow and will put additional pressure on a few areas while creating opportunities for managed expansion of facilities and tourism ventures.

## CONSERVATION POLICY

There is a network of natural heritage **sites** with statutory designations (including National Scenic Area (NSA), Site of Special Scientific Interest (SSSI), Special Protection Area (SPA), candidate Special Area of Conservation (SAC) and Ramsar) throughout the area but particularly along the Solway Firth and in the uplands. These sites aim to ensure appropriate protection and management of landscapes, habitats and species and earth science features of national and European importance. Management depends on the continued co-operation of landowners and managers.

Areas of conservation importance outwith statutory designated areas are now being considered as Wildlife Sites and guided by the **Local Biodiversity Action Plan** (LBAP) process. Some of these areas have now been identified in Local Plans and receive advice on positive management through the Scottish Wildlife Trust.

## EDUCATION

The role of environmental education in promoting sustainable practices to all partners and sectors is critical to delivering progress. The recent endorsement of Ranger services following the Ranger's Review, the creation of a University based in Dumfries and proactive initiatives such as environment fairs and environment dramas will aid the delivery of environmental education.

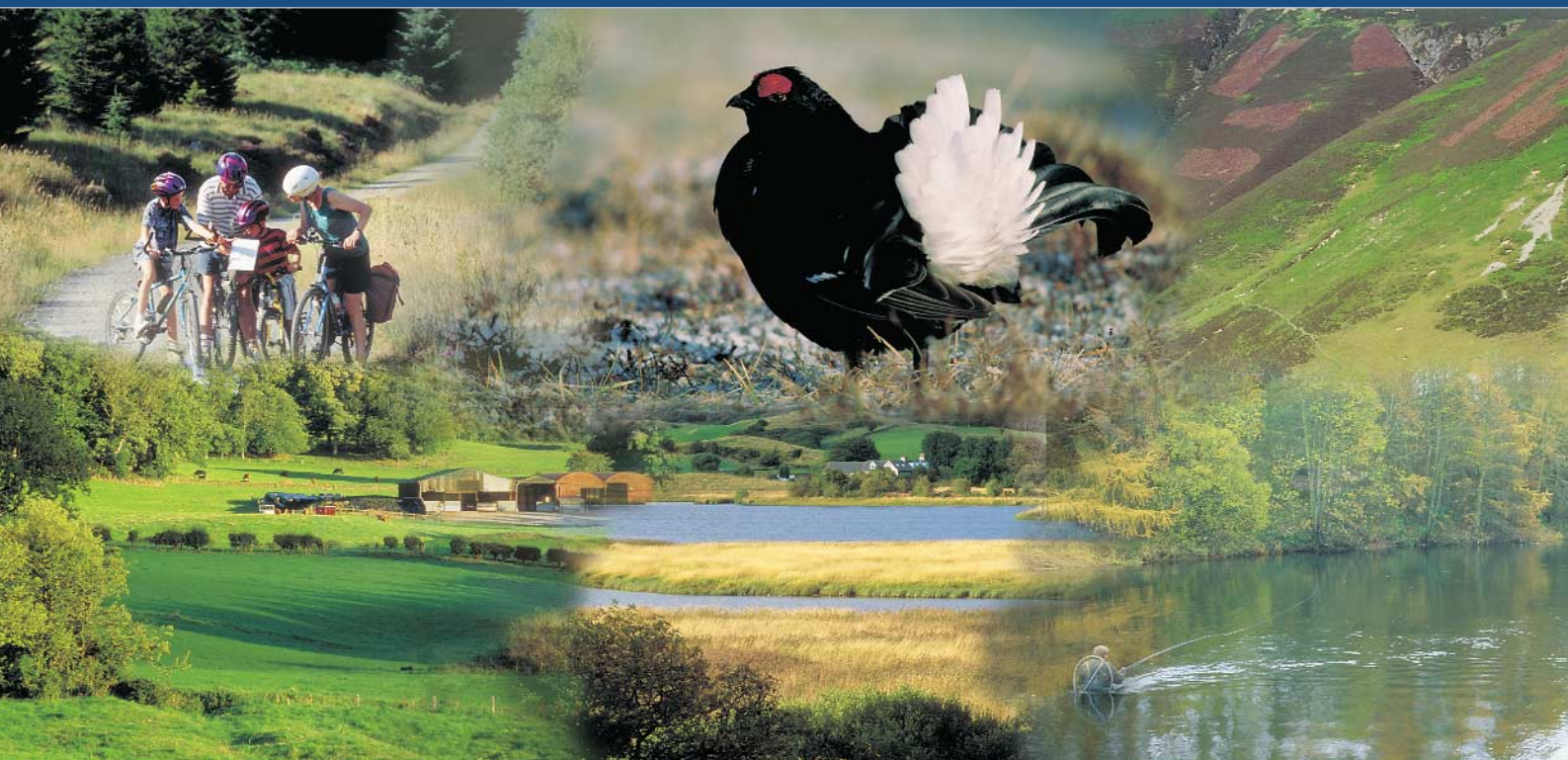


# Vision

*- what the natural heritage could look like based on better stewardship of natural resources*

The Vision sets out how **Western Southern Uplands and Inner Solway** could look based upon sustainable use of natural resources. It is an illustration of a **possible scenario** based on fulfilling the **Objectives and Actions** in this document. It is neither a 'Utopia' nor a 'blueprint', but the basis for developing a shared vision between all parties with a responsibility for, or an interest in, the natural heritage of the Moray Firth and a consensus on the way forward.

*It is written in the present tense, as if in the year 2025.*





**Belted Galloway cattle on rough pasture**

The intimate relationship between the environmental, economic and social well-being are widely understood and the principles of sustainable development have been adopted by all sectors. The condition of the environment as detailed in environmental audits at the turn of the Millennium has been significantly enhanced. Strategic planning focuses on the longer term and fully integrates community and sectoral views.

### UPLAND FARMLAND

The upland and moorland landscapes, with their varied vegetation are maintained by a return towards -intensity cattle and sheep grazing. The balance between moorland and productive forests now reflects the need to maintain large areas of open ground, and some afforested areas are being restored to **moorland** to improve linkages between open areas and enhance the landscape. This increase in open ground allows these uplands and moorlands to support increasing populations of upland birds and improved recreational access.

There is a thriving agricultural **economy** based on a shift towards extensive sheep and cattle grazing producing high quality, locally-branded beef and lamb based on sustainable practices. In some parts this income stream is supplemented by sporting revenue from well-managed grouse moors. The rural economy supported by regional marketing and local processing supports both large and small agricultural holdings, creating a diversity of land management. The diversification of many farms into tourism and other business sectors has maintained and locally increased rural employment, and the increasing co-operation between farmers has attracted new sources of funding to the rural economy. The increased wealth in the agricultural sector has helped facilitate local enhancement of landscape and habitats for biodiversity. Goat management groups actively manage populations to benefit the natural heritage as well as reducing damage to woodlands.





Lowland farmland with field boundaries near Haugh of Urr

## FORESTRY

Although the last 25 years have not seen a full rotation of forestry, very significant progress has been made in the restructuring of the first generation forests to meet the requirements of UK Forestry Standard. Forestry management is integrated with other land-use interests and objectives. Productive forests, producing good quality timber, support the continued development of large-scale, state-of-the-art processing as well as encouraging smaller-scale industries, adding value to timber and contributing significantly towards sustainable rural development. These initiatives have reduced the distances over which timber has to be transported. The by-products from the industry support renewable energy generation and the standing timber makes a modest contribution to efforts to combat climate change by acting as a temporary carbon sink.

The productive **forests** are characterised by a diversity of ownership and management and are designed to respect and enhance landscape and biodiversity. All the forests have long-term plans and are independently certified as sustainable. Their management is in accordance with current best practice which is guided by quality research. Forests are managed for the multiple benefits appropriate to their location, providing significant local employment, local recreation and access facilities. The forests are used and enjoyed by significantly more people and provide many tourism opportunities. Many are managed as community forests. Well-designed new forests have been established to maintain the land cover of forestry following earlier reductions during restructuring to accommodate landscape and biodiversity concerns. Many of these new woods have been integrated into, and are managed as part of, existing agricultural holdings.

The significant increase in the areas of **native woodland** has created habitat networks and aided the development of local, small-scale industry dependent on a constant local supply of native timber products. An increased understanding of the use made of productive forests by key species has allowed adaptation of management practices to benefit species while maintaining timber production. The forest-moorland edge is structured and managed to benefit species such as black grouse whose sustainable numbers allow shooting. The forests support a number of species not found elsewhere including the red squirrel, the numbers of which are increasing in stronghold areas.

## LOWLAND FARMLAND

The biodiversity and landscape of the lowland farmland has been significantly enhanced through sympathetic management of a **network** of verges, hedges, dykes, treelines, shelterbelts, small woods, ditches, river corridors, buffer strips, ponds and lochs. Habitats within farmland such as flower-rich grasslands, marshes, fens and small woods are also benefiting from practical conservation management. The increasing acceptance of the use of headlands and beetle banks and appropriate targeting of chemicals and organic methods is allowing a return of many formerly declining farmland birds and arable weeds while allowing the more intensive farming practices, such as silage and winter wheat production, to continue. There have also been significant improvements to countryside **access** through integrating access into farm management. This has been facilitated through making more of opportunities created by wildlife habitat and landscape enhancement, e.g. by including a new path along a shelterbelt.

## RIVERS

Riparian planting and exclusion of stock from watercourses coupled with a reduction in acidification and chemical inputs to agricultural land and management of sustainable fisheries is resulting in improved aquatic biodiversity and a return of the spring-migrating salmon to many rivers as well as improved catches and enhanced aquatic biodiversity.

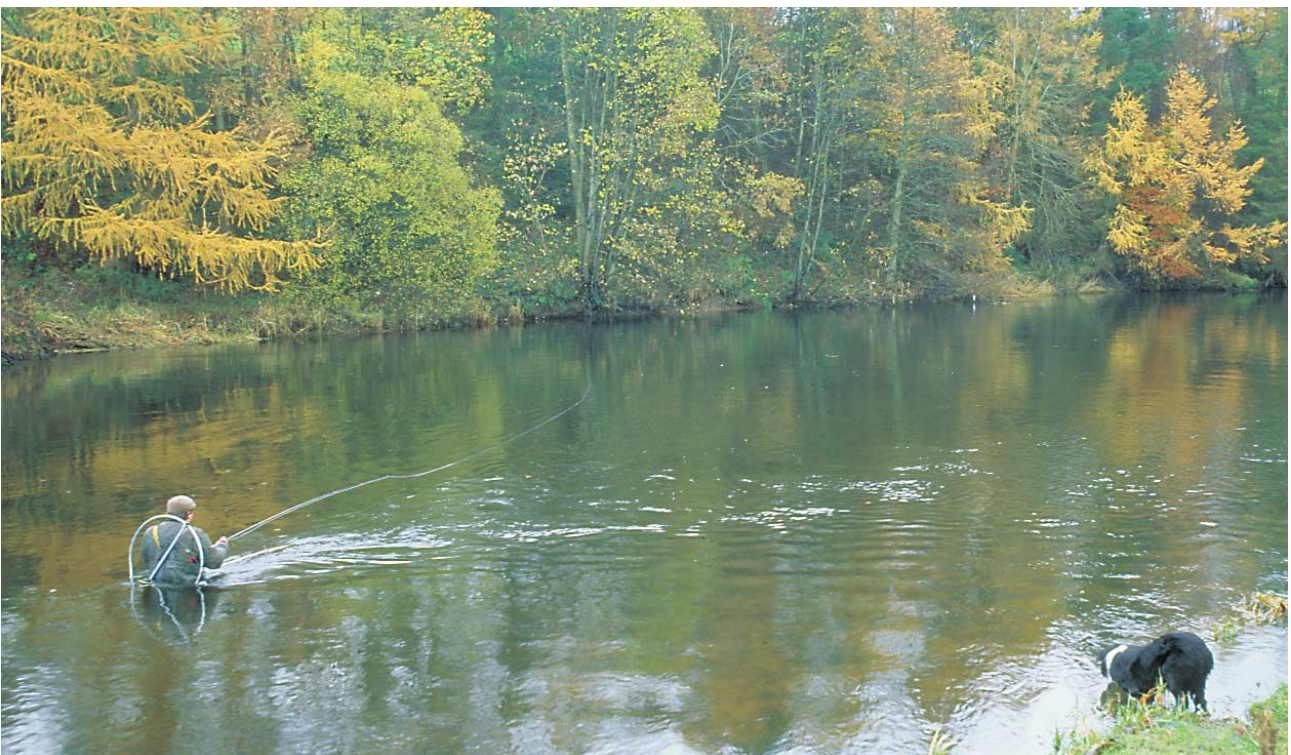
Good practice management of the watercourses minimise point source pollution incidents and greatly reduces diffuse **pollution** problems, and there are no non-native species introductions or significant artificial reductions in water flow. The impacts of earlier non-native **introductions** have been minimised through careful management and local eradication. The use of sustainable urban drainage systems (SUDS) is common practice and the wildlife benefits of these are maximised. The installation of reed beds as secondary or tertiary waste water treatment has also increased and these areas are managed sensitively for wildlife.

Demonstration schemes have shown that best practice **river engineering**, riparian management, and the restoration of managed flood plains with seasonal flooding replaces the need for expensive floodbank maintenance. This has also eased the pressure of flooding on the lower reaches of many rivers at times of high flow, in particular on the Nith in

Dumfries. The development of **catchment management** schemes for all rivers is improving management and linkages between all interest groups. Sensitive management of riparian zones in productive forests including conifer removal and broadleaved planting has helped deliver positive biodiversity benefits downstream including reduced acidification.

## COAST

Coastal waters are clean and rich in wildlife providing an important recreational resource. The coastal tourism industry is guided by the **Shoreline Management Strategy** which takes account of natural coastal processes and important wildlife and landscape features. The Strategy also provides a holistic approach to coastal zone management including allowing coastal realignment in some areas in response to rising sea levels. Some fields have already been given over to inundation by the sea allowing new merse habitat to develop and hard coastal defences are being removed in some places. The resurrected shellfish industry on the Solway provides employment and is locally and sustainably managed. The unsustainable extraction of materials from coastal habitats has ceased. Natterjack toad populations and coastal heaths have recovered significantly on formerly damaged sites. Sustainable eco-tourism, and associated infrastructure, have developed based on the wildlife and scenery of the coast.





## INTEGRATED LAND-USE PLANNING

A suite of effective integrated local planning policies contained in development and subject plans, provide a framework guiding developments and take full account of natural heritage interests. These subject plans cover minerals, energy development, waste management and rural land use including forestry, while strategies guide access, tourism, and Local Biodiversity Action Plans. These documents clarify the limits within which developments can proceed without unacceptably compromising the environment thus saving much time and conflict between interest groups. This **strategic framework** has promoted a vibrant business sector which has delivered sustainable rural development, tackling rural regeneration and increasing rural employment.

The development of **renewable energy** has resulted in waste-to-energy plants, biofuels, small-scale hydroschemes and some onshore and offshore wind farms. The schemes are carefully located and well designed so that they deliver broader environmental benefits at minimum cost to natural heritage interests. These schemes, together with the widespread adoption of waste minimisation and increased energy efficiency by industry and domestic users, have reduced pressure for landfill and demand for fossil fuels.

The integrated policy for sustainable **transport** and transport-route biodiversity action plans are promoting the enhancement of biodiversity within transport corridors while allowing for well-designed improvements to the road network promoting sustainable rural development. Appropriate roadside verge management and better road design have minimised road kills

of animals such as otter and badger and reduced the landscape and visual impacts of roads. A network of footpaths, cycleways and bridleways provide safe and pleasant opportunities for both commuting and recreational use. Improved public transport has increased accessibility to the countryside while increased use of the railways to transport timber and other goods has lowered the volume of traffic on the road network.

High-quality **environmental data** from biological recorders and others are collated at the Local Environmental Resource Centres. The data are easily accessed over the Internet and boost environmental education and awareness of the natural environment. They provide sufficient data to inform planning and land management decision-making. The data also form the basis of attractive guides for visitors who want to know what can be seen in the area.

The best examples of wildlife **sites** now carry the European designation of Natura 2000 or are Sites of Special Scientific Interest and demonstrate exemplary management. These sites highlight the international and national importance of the area's wildlife, attracting visitors, for example, to view the spectacular displays of wintering geese and wildfowl on the merse and breeding moorland and upland species. A comprehensive suite of non-statutory Local Wildlife Sites and Regionally Important Geological/Geomorphological Sites complements the suite of sites of national and European value. They are widely recognised as representing valued areas for habitats and species and help focus improved conservation management and advice.



All abilities access, Dalbeattie forest

The strategies adopted for the management of sensitive landscapes ensure that distinctive **landscape** qualities have been maintained. Many of the Historic Gardens and Designed Landscapes are being restored and managed in keeping with their original design intention. Improved public access to the Historic Gardens and Designed Landscapes provides further opportunities for public enjoyment and tourism.

## **COMMUNITY INVOLVEMENT, EDUCATION AND RECREATION**

Partnership resources are directed by comprehensive and regularly updated strategies driven by Community Planning and covering access, interpretation, environmental education, Community Learning Plans and tourism. Environmental education is effective in influencing all levels of community and society and is a compulsory part of the school curriculum. This is encouraging greater responsibility towards the environment, widespread adoption of good environmental principles, sustainable planning and a greater knowledge of how the countryside is managed. This has helped break down the urban/rural divide in society. Active public and community involvement in land-use decision making, alongside joint working between local agencies and authorities, is achieving more informed and effective decisions at the local level and more sustainable projects with improved use of resources. Through effective **training** and information exchange, this joint working is also helping to disseminate good practice. All communities have their own woodland area for recreation with many communities engaged in the strategic planning process for productive forests and some also directly managing their local woodlands.

The improved countryside interpretation and recreational facilities add value to a strong but sustainable tourism industry, and include high-standard, well-signposted core path networks, local **path networks**, footpaths around settlements, cycleways and bridleways/multi-functional paths which fully meet public demand following consultation. There are appropriate linkages between adjacent local authority core path networks and local path networks. Access is practised responsibly and is fully



**New cycle way and badger fencing alongside A75**

integrated with other forms of land use such as farmland, forestry, shooting and urban greenspace. Planning of sustainable and integrated transport systems has increased the availability of countryside **access** to all. Ranger services suitable to needs of residents and locals alike provide education and interpretation as well as welcoming and informing visitors and helping with visitor management. There is increased enjoyment and understanding of the natural heritage through promotion of **sporting activities**, angling, recreation within forests and access for all to the wider countryside including fresh water and coast as well as greenspace in and around settlements. Mutual understanding between recreational users and land managers has benefited from the continued promotion and development of the Scottish Outdoor Access Code. The increasing demand for water sports has been well managed by restricting motor activities to those water bodies and parts of water bodies which can best accommodate them, and through better dialogue and co-operation between users and land managers.

In summary, the natural heritage is maintained by sympathetic land management guided by a variety of partnership strategies, making a substantial contribution to the local economy. The integrated approach results in greater efficiency and enhanced landscapes, a richer wildlife resource and improved recreational opportunities.



# Objectives

- priorities for the natural heritage, and action required

These are **objectives for the natural heritage** and indicate what needs to be done to ensure that we use the natural heritage sustainably. The objectives indicate the priorities relevant to the natural heritage in the light of current changes. Once agreed, these priorities can inform the development of relevant action plans with more specific objectives and resource implications: relevant **Actions** are identified under each **Objective**. Changes to national or international policies will depend on action at a national level and these are identified in the relevant **National** documents.



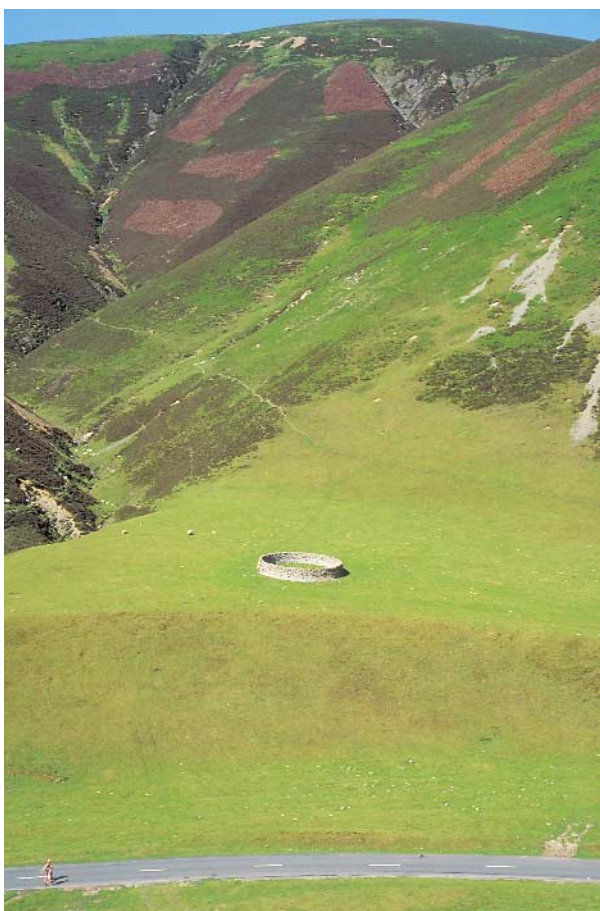


## Objective 1

### To encourage sustainable rural development and to maintain and restore semi-natural habitats in farmland in lowland and upland areas and enhance linkages and corridors

Many habitats within lowland farmland have declined due to changes in **agricultural practices** and reductions in farm labour. Arable weeds and birds dependent upon arable farmland would benefit from better targeted chemical inputs, increases in organic farming and the wider use of beetle banks and headlands.

Within the uplands heather moorland, semi-natural grasslands, bogs and wetlands have declined considerably and become fragmented since the 1940s due to increases in **afforestation, agricultural intensification and drainage**. The extent of these reductions varies from 28% to 55% according to land cover category, and has occurred without guidance from any strategic policy taking account of natural heritage interests. In



Grouse moor and sheep grazing, Stel, Lowther Hills near Wanlockhead

some areas this has reduced the habitat available below the critical size required by some species, causing significant declines in, e.g. hen harrier, merlin and red grouse populations. These effects of fragmentation could be ameliorated through linking areas of non-forested land by habitat networks and corridors especially on the higher ground. Conversion of any further areas of open hill ground to forestry should take place within a framework that retains a balance of upland land uses and maintains ecological and landscape diversity.

Some of the priority habitats identified in Local Biodiversity Action Plans (LBAP), including raised bog, blanket bog, and upland heathland, could be restored through the removal of productive **forests**. Recent reintroduction of proactive management for biodiversity in public forests has provided raptor feeding areas, black grouse conservation, grazing and deer/goat management to allow restoration of vegetation. This has been focused on the more important semi-natural habitats of open ground and in some cases on clearfell areas reversing the trend of abandonment of these areas which had caused a biodiversity decline with vegetation becoming overgrown.

Heather moorland, blanket bog and upland grassland habitats would benefit from a general reduction in grazing intensity, in particular a reduction in sheep during winter. The widespread adoption of good **heather management** practices including muirburn would help restore the habitat by recreating a varied age structure of heather and reducing the dominance of purple moor grass. This management should also improve the value of grouse moors, both as wildlife habitat and for shooting. However, muirburn on blanket bog should be avoided, as should further moor-gripping.

The shift in farming subsidies from production payments towards area payments and environmental enhancement schemes provides significant opportunities to integrate biodiversity and landscape objectives into farming practice. There has been a significant increase in the number of farms converting to organic methods.

Sustaining variety in farming practices and scale from small to large agricultural units is important in maintaining **habitat diversity**. Alongside financial support for continuing favourable management, financial assistance for diversification and local niche marketing would help to ensure hill-farming as well as lowland farming remain economic. These incentives can also assist to develop opportunities offered by the natural heritage to farmers by provision of access, tourism accommodation, farm visits and shooting/fishing. These would





### Sheep farming

help to encourage the retention of small-scale beef and sheep farms in the uplands and keep people working on the land as a core part of the rural economy. The current 30-month cull limit on cattle is acting as a disincentive to farm native breeds such as Galloways on hill ground. Diversification of farming is an integral part of the development of rural communities. The Galloway Hills suffer from locally high populations of **goats** which can have a detrimental impact on many of the rarer upland plant species and communities which otherwise only survive on ledges inaccessible to sheep. Goat grazing also inhibits the regeneration of native woodlands. At the same time, goats form a significant element of the cultural tradition of the Galloway hills and there is a public and educational interest in maintaining a managed population. There is thus a need to manage populations carefully to reduce damage to forests and biodiversity interests while maintaining the cultural association.

The promotion of well-planned economic development, local processing and improved transport links based on best practice and sustainable principles will help maintain rural employment and population levels. Effective community engagement and consultation will be essential to ensure that **rural regeneration** is effective. Planning agreements provide an opportunity to improve the natural heritage while allowing developments to go ahead. Appropriately designed rural diversification projects such as golf courses can have positive environmental and landscape benefits.

Recently developed national guidance and local biodiversity action plans for trunk roads will assist in this process. An **integrated sustainable transport** strategy should seek to minimise negative impacts on wildlife and landscapes while enhancing potential benefits. The improvement of the transport network and the transportation of goods (such as timber and coal) by rail would promote sustainable rural development.

**Mining and quarrying** provide a significant contribution to the local economy but may impact upon sensitive habitats. If well planned, the extraction of hard rock, sand/gravel or open cast coal resources can often be undertaken with minimal, or at least only short-medium term, impacts on habitats and species. Restoration schemes for former extraction sites provide excellent opportunities for positive enhancement and creation of habitats and retention of permanent geological exposures.

**Peat** is currently extracted from raised mires in low-lying areas both by extrusion sausage peat production and scale stripping. This extraction removes the peat that is critical to the survival of the range of interests found on lowland raised mires. Given the international significance of peatland habitats, particularly lowland raised bogs, no new sites should be opened up for peat extraction. Existing working sites should be managed, and ultimately restored, in a way that maximises their habitat value as wetlands, even though the peatland habitat interest may be degraded.

### ACTIONS

- **Ensure local priorities for agricultural support schemes include the restoration of lowland and upland farmland habitats through:**
  - retention of existing hill cattle grazing practices;**
  - a shift towards low-intensity cattle or sheep grazing;**
  - appropriate muirburn of heather moorland;**
  - conservation of blanket bog, raised mire and peat soils from further erosion and drainage;**
  - creation of beetle banks, headlands and small woodlands;**
  - reinstatement of flood plains and hay meadows to restore species-rich grasslands;**
  - targeted chemical inputs;**
  - bracken management; and**
  - organic farming.**
- **Ensure the re-creation and appropriate management of habitat linkages, e.g. hedges, dykes, tree lines, shelterbelts, verges, ditches, buffer strips and ponds.**
- **Restore open ground in upland areas by restructuring forests to ameliorate land-use change between 1940s and 1980s (informed by LBAPs where applicable).**

ONGOING

SHORT TERM (0-5 YEARS)

MEDIUM TERM (5-15 YEARS)

LONG TERM (15-25 YEARS)

- Ensure appropriate management of Natura 2000, SSSIs and other statutory sites, taking account of the needs of vulnerable habitats.
- Complete and implement LBAPs for farmland habitats.
- Enhance integrated land-use decision making through a bottom-up approach with increased stakeholder, community and business involvement and development and use of various fora and partnerships.
- Promote sustainable rural communities through varied land management on all scales involving economic development initiatives, farm diversification, regional marketing, niche-marketing, locally-branded produce, local processing, business rings and a closer integration between farming and multi-purpose forestry.
- Develop strategic minerals plans to:
  - minimise adverse impacts on habitats, species and landscapes;
  - maximise benefits from restoration proposals for habitat and landscape enhancement and access to geological exposures;
  - protect exploited peatlands from further extraction; and
  - manage remaining peatlands in line with local Habitat Action Plans.
- Promote the revised Muirburn Code and supplementary guidance.
- Develop minimum standard codes of good agricultural practice which benefit the natural heritage and are linked to agricultural support schemes.
- Sustain goat populations at levels compatible with agricultural management and to allow maintenance of cliff and ledge habitats through a co-ordinated approach by goat management groups.
- Promote sustainable rural regeneration through promotion of rural businesses (including primary industries such as farming and forestry), rural transport infrastructure and community engagement which take account of and in many cases add value to natural heritage interests.

- Promote sustainable rural development through consultation, local strategy development and best practice methods.
- Continue support for Community Plan process.
- Continue support for voluntary sector organisations which contribute towards natural heritage management, enhancement and sustainable rural development.
- Promote waste minimisation and energy efficiency to reduce pressure on landfill sites and fossil fuels.
- Promote appropriate policies in development plans to maintain natural heritage integrity.
- Consider natural heritage impacts within an integrated sustainable transport policy and consider natural heritage in road development schemes before design stage.
- Develop transport corridor habitat action plans and conservation verge initiative.
- Ensure biodiversity and landscape benefits from land-use changes such as golf course development.

## Objective 2

### To maintain marine and coastal habitats and the natural processes on which they depend

There is an increasing demand for development along the Solway, much of which is driven by **tourism**. This in turn can lead to an increasing demand for coastal **defences** where the coast is made of soft sediment and natural coastal processes can be interrupted. These soft sediment coasts are nature's natural defences against the sea and modifications with hard engineering can disrupt these natural systems, moving the erosion problems further along the coast. This can have an



Coastal defences at Southerness



adverse impact on fragile coastal habitats and species through habitat loss. In addition, more people living near or visiting the coast could impact on species that are susceptible to disturbance such as wintering waders and wildfowl.

The commercial extraction of beach sand or shingle at unsustainable rates causes serious damage and erosion of restricted and fragile habitats and impact on coastal processes outwith the area of extraction. Extraction should take account of natural replenishment to ensure that it is sustainable. Sourcing sand and gravel from underground glacial deposits is potentially less damaging to natural heritage interests, particularly if the abandoned workings are restored with the creation of new habitats in intensive agricultural areas.

The impacts of **climate change** and the associated uncertainty in weather patterns and sea-level rise are likely to increase pressure on coastal habitats. In particular dune systems and saltmarsh could be eroded and lost as they are 'squeezed' between rising sea levels and higher ground or artificial coastal defences. There could, in addition, be increased demand for coastal and flood protection measures. Coastal defences should be restricted to areas where they are essential, with new development prevented in vulnerable areas and opportunities identified for allowing coastal habitats to migrate inland as the coast retreats in response to changes in sea level.

The Inner Solway has been designated a Site of Special Scientific Interest (SSSI), and a European Site (Special Protection Area (SPA) and candidate Special Area of Conservation (SAC)) in recognition of its national and international importance for habitats and species. There is a Scheme of Management for the Solway Firth which provides a basis for integrated management of the site by the relevant authorities to achieve the conservation objectives.

The ancient practice of haaf **netting** for salmon and sea trout is still practised on the tidal sections of the Rivers Nith and Annan. Over-exploitation of the cockle stocks in the Inner Solway resulted in a collapse in the cockle population and reduction in food available for the internationally important numbers of birds which winter on the Solway. While the fishery has been closed to mechanised extraction, hand raking continues and could be causing significant damage in some areas. The Solway Firth Partnership was established in 1994 and has developed a strategy for the estuary. This includes **fisheries management** and is currently being addressed through the development of a cockle and mussel fishery plan.



Traditional haaf netting, Inner Solway

#### ACTIONS

- **Develop and implement integrated coastal zone management through:**
  - a **Scheme of Management for the Solway Firth which ensures the protection of its important habitats and species by relevant authorities;**
  - a **Shoreline Management Plan for the Solway that ensures the coastline is managed as an integrated unit in sympathy with natural processes, to guide coastal protection and development and identify areas for potential coastal realignment and habitat creation; and**
  - a **Shellfish Management Plan and regulation process through Solway Shellfish Management Association.**
- **Include appropriate policies in development plans to maintain the integrity of the natural heritage of coastal and marine areas.**
- **Ensure fishing, particularly cockling, on the Solway is compatible with maintaining the significant natural heritage interests of the site.**
- **Develop a code of conduct for the cockle fishery.**
- **Ensure that Mineral Plans include the conservation of coastal sands and shingle through the use only of sustainable sources and/or sustainable extraction rates.**
- **Educate land managers and the public on damaging impacts of coastal extraction.**
- **Increase awareness of the effects of sea-level rise on the Solway coast.**

### Objective 3

**To maintain and enhance landscapes, including Designed Landscapes, coast, lowland and upland farmland, woods and forests, and geological and geomorphological sites**

Many types of **development** can bring about significant changes in the landscape, either individually or cumulatively. There is current pressure for further buildings, tracks, utility infrastructure, pipelines, telecommunication masts, wind farms, coastal defences and tourism-related developments in the countryside. Although local plans identify potential housing sites within small settlements, the demand continues for new isolated developments. Mineral extraction and the upgrading of transport routes have varying degrees of visual and landscapes impact. With careful siting and design, adverse effects can be minimised. The wildland character of the more remote areas could be eroded by siting of visually inappropriate development or tracks. Landscape Character Assessments (LCA) exist for the area and should be used to guide accommodation of potential changes to the landscape. Particularly sensitive landscapes are identified in three coastal National Scenic Areas (NSA) and pilot management strategies are being prepared for them. Development within these areas requires particular care; currently there are pressures for rural housing and telecommunications infrastructure.

**Renewable energy** is a more environmentally sustainable alternative to fossil fuels, particularly if coupled with energy efficiency measures to reduce greenhouse gas emissions. There are currently several hydroschemes and domestic and commercial wind farms within the area, and these are likely to increase in number. If poorly planned these developments can have detrimental visual and landscape impacts. An onshore



Telecom mast in prominent location, near Haugh of Urr

windfarm strategy has been developed for Dumfries and Galloway which takes account of technical and natural heritage considerations. Similar strategies should be prepared for offshore technologies and other renewable energies such as small-scale hydroschemes and biofuels/waste incineration. A regional landscape capacity study for renewable energy development would help provide a strategic framework.



Productive forest and hydroscheme, Daer Reservoir

Improved landscape design guidelines for both new **productive forests** and more importantly for restocking areas are in many cases improving the appearance of forestry. The Forest Enterprise's Forest District Strategic Plans provide a model of best practice elements of which are featuring in good long-term forest plans. The Landscape Character Assessments provide guidance on appropriate design of forestry for various landscape types. Views from the Southern Upland Way Long Distance Footpath will benefit from forestry restructuring. The planning of new forestry through strategic frameworks should take account of the need for a balance of land uses which maintains landscape character and diversity in addition to the economic viability of communities.

The landscape character of lowland **farming** areas could be enhanced through maintenance of drumlin landscapes, gorse-covered knolls and traditional field boundaries in particular, hedges in the east and dykes in the west. The character of the uplands could also be improved by maintaining hedges, drystone dykes, sheep fanks and agricultural buildings.

The area supports a number of important **Historic Gardens and Designed Landscapes**; these are especially sensitive landscapes some of which are suffering from neglect. Changes to the management of these sites or inappropriate development close to them can undermine their integrity and character and wider setting in the landscape.



The traditional relationship between building stone and local geology is not generally found in modern building, and many **houses** are built with no reference to local materials or vernacular styles. This has a negative impact not just locally on townscapes but on the setting of settlements within the wider landscape.

Nationally important geological and geomorphological sites are recognised as Sites of Special Scientific Interest. The development of a suite of Regionally Important Geological/Geomorphological Sites (RIGS) would help conserve locally important sites and landscapes as well as enhance awareness and educational opportunities.

#### ACTIONS

- Promote appropriate policies to conserve and enhance landscape character both within the wider countryside and within NSA through development plans.
- Continue to develop NSA Management Strategies.
- Promote best management practices to minimise developments' impacts on landscapes.
- Ensure landscape issues are fully taken into account, making use of LCA and siting and design guidance in development plans and thematic strategies for:
  - road developments;
  - telecommunications facilities;
  - renewable energy;
  - minerals;
  - open-cast coal;
  - waste management;
  - rural land use; and
  - forestry.
- Take opportunities during felling/restructuring to improve forest structure and design in the landscape.
- Promote landscape enhancement through new native woodland planting and appropriately designed forestry.
- Promote restoration and improved management of farmed landscapes including riparian planting and traditional field boundaries.

- Maintain integrity of remote areas of wild land through policies in strategic plans, in line with NPPG 14.
- Encourage appropriate management and promote awareness, public access and enjoyment of designed, historical and cultural landscapes.
- Support the production of management plans for Historic Gardens and Designed Landscapes and other designed landscapes.
- Encourage use of local materials and vernacular building design.
- Promote development of a suite of RIGS.

#### Objective 4

To encourage natural river processes, maintain sustainable aquatic biodiversity including fish populations, and improve water quality and riparian habitat throughout river catchments

The area contains many good quality salmonid rivers. Salmon and brown trout hatcheries provide local stock of young fish to supplement the sporting interest of the rivers while maintaining the genetic distinctiveness of local fish populations. Rainbow trout fisheries if carefully managed and isolated from the natural drainage network can increase recreational use and reduce pressure of fishing on native stocks. The introduction of non-native species into river and loch systems for game or coarse **fishing** can have a detrimental impact on native biodiversity and an information programme is needed to highlight the issues. Rainbow trout and signal crayfish upset the natural ecology of rivers and streams, with negative effects on native fish and invertebrate species. American mink are widespread throughout the area and pose a problem for fishing interests. They may also be contributing to the decline in water voles.



River showing water's edge and bank vegetation, Dee

Management of the river bed and banks to improve fisheries needs to be undertaken sensitively if it is not to compromise natural heritage interests. For example, the encouragement of bankside vegetation and the minimising of hard engineering in the channel can allow the watercourse to behave more naturally. At present, some of the rivers, such as the lower sections of the River Nith, have extensive flood defences. While such floodbanks may in some places be essential to protect human safety and property, they should be minimised, as they prevent the regular inundation of the flood plain and the associated traditional grassland management which promotes a more species-rich sward.

Stock grazing up to the edge of watercourses can result in rapid bank erosion, causing sediment **pollution** of water and damage to fish stocks. Pollution of watercourses can come from both diffuse and point sources, and from agriculture (pesticides and sheep dip), industrial, transport, sewerage and landfill activities. These are currently being addressed through legislation and best practice management. Much of this work will be supported by the implementation of the EC Water Framework Directive and monitoring of watercourses is continuing. Precision farming and the adoption of best practice organic methods will help reduce pollution impacts. Abstraction of water for hydroschemes, fisheries, agriculture and municipal supplies reduces river flows which may impede the passage of fish during migration.

**Afforestation** of large areas of previously open ground, particularly close to watercourses, has contributed to acidification of streams and lochs in areas where the base rock does not buffer the increased capture of atmospheric pollutants by trees. It also causes overshadowing of the streams and has changed the catchment response to rainfall, with streams becoming more 'flashy' or quick to rise in clear-felled or recently restocked areas. The Forest and Water Guidelines set out principles for the management of forest operations and



Afforestation adjacent to watercourse, River Bladnoch

riparian zones to protect and enhance water quality. The guidelines identify means to reduce nutrient run-off and sediment erosion resulting from felling operations. These measures, focusing on broadleaved tree planting along watercourses, should benefit salmonid fisheries and improve riparian habitat generally.

A catchment co-ordination group has recently been established for both the Annan and Ken-Dee catchments and could serve as an example for other catchments as a way of finding integrated solutions to complex management issues integrating water, habitat and landscape management. The Water Framework Directive is likely to increase impetus for such approaches. The Cree Catchment European LIFE project is currently setting up a catchment inventory and planning system while demonstration sites of best forest practice are being developed to monitor water quality and aquatic biodiversity.

#### ACTIONS

- **Develop and implement a strategic, integrated, catchment-based approach to achieving high water quality which promotes natural processes in rivers, lochs and wetlands. This approach should address:**
  - land management including agriculture and forestry;**
  - riparian and floodplain management;**
  - waste water management;**
  - freshwater fisheries;**
  - flood appraisal; and**
  - water abstraction.**
- **Ensure pollution prevention measures are incorporated into relevant operations (including farm steadings, aerial application, landfill sites, sewage sludge disposal, waste water treatment and fish hatcheries) through precision farming, organic methods, legislation enforcement, and best practice guidelines.**
- **Continue to apply the Forest and Water Guidelines to the management of watercourses within forests.**
- **Reduce and locally reverse effects of acidification through best practice methods targeted in specific areas.**
- **Develop integrated catchment management schemes to identify and implement solutions to complex management issues.**



- Promote sustainable fisheries on all salmon and sea trout rivers.
- Minimise nutrient enrichment from farming through dissemination of best practice targeted on sensitive catchments.
- Encourage good land management practice and ensure local priorities for agri-environment schemes include:
  - reinstatement of traditional grassland management on flood plains through the selective removal of floodbanks;
  - restoration of natural drainage systems;
  - exclusion of livestock from riverbanks; and
  - re-creation of riparian habitats including native trees.
- Promote best practice in fisheries management and river engineering.
- Minimise impacts from escaped rainbow trout from fishfarms by careful siting, design and monitoring.
- Discourage the introduction of non-native species, and reduce impacts through a co-ordinated programme (including signal crayfish and mink).

## Objective 5

### To improve the habitats and biodiversity of all forests and the restoration and expansion of native woodlands, to create viable woodland networks

Many of the forests planted in the 1950s have reached or are reaching maturity, and are being felled and restocked. The UK Forestry Standard and associated design guidelines encourage the creation of areas of open ground and broadleaves which enhance the biodiversity of both restocked and newly planted areas.

There is a need to guide hydro-schemes within a strategic framework to achieve sustainable rural land use for the Southern Uplands. This strategic framework will be informed by best practice methods and guidelines including the UK Forestry Standard, Scottish Forestry Strategy, Forest Enterprise's Forest District Strategic Plans, revised Indicative Forestry Strategies, UK Woodland Assurance Scheme and Biodiversity Action Plans. Progress towards this has been made through the Local

Forestry Frameworks at Galloway and Langholm and further progress will be achieved through the Ayrshire Indicative Forestry Strategy. There would be biodiversity and economic benefits from integrated farming and forestry management on the same landholdings.

Forest Enterprise have been in the lead in restructuring and development of access because of the generally older age structure of the public forests compared with the private sector. There are, however, large areas of **private forestry** within the area. The owners and managers of these should be encouraged to accelerate the improvements to existing forests where these are required to bring them up to the environment and recreation standards currently being set by the public forests and detailed in their Forest District Strategic Plans. The UK Forestry Standard and the UK Woodland Assurance Scheme (UKWAS) will assist in defining appropriate standards through the Long-Term Forest Plans. The current low returns from forestry are in part reducing private landowners' ability to accommodate this. Innovative and integrated funding mechanisms need to be developed to encourage delivery of multi-benefit woodlands. This could in part be achieved through a central source for advice on various funding schemes.

The restoration of open ground habitat linkages and improvements to age structure at the **restocking** stage will enhance the biodiversity interest of the forests. During restructuring, some forest areas are identified for alternative management to clearfell and restock. These include permanent retention, long-term retention and continuous cover management systems in more sheltered areas. Where not managed, open ground within productive forests can lose biodiversity interest. Restoration of an appropriate type and intensity of grazing in many areas could reduce the dominance of the more vigorous grasses.



Forest restructuring

There are opportunities for enhancing **native woodland** as existing forests are restructured through identifying existing woodland remnants, restoring these sites and creating new woodland to expand and link them. In other areas remnant native woods should be allowed to regenerate through reducing stock grazing and management. However, existing native woods may be too small to support the full richness of their characteristic biodiversity, and reducing isolation and fragmentation is a key priority. Other opportunities should be identified for restoring and creating significant areas of native woodland in appropriate locations in both the uplands and lowlands using habitat network concepts and planning tools (e.g. Native Woodland Model) to prioritise and guide restoration. The full range of woods should be encouraged, including riparian woodland and juniper scrub. Native woods in general would benefit from the development of new markets using good quality native hardwood timber and from an increased awareness of other potential products, e.g. biofuels, charcoal and crafts. New farm woodlands could help create new native woodland habitats.

The natural regeneration of native woodland is inhibited in many areas by excessive grazing by domestic livestock, deer and goats. The establishment of Goat Management Groups and liaison with Deer Management Groups (DMGs), the Deer Commission for Scotland (DCS) and with owners could help redress the imbalance.

## ACTIONS

- **Establish a strategic framework for forestry development within a sustainable rural land-use context for the Southern Uplands in order to maintain a reasonable balance of land uses.**
- **Complete revised Indicative Forestry Strategies which promote multi-purpose forestry.**
- **Encourage long-term and strategic planning in private forestry through the adoption of long-term forest plans and the UK Woodland Assurance Scheme.**
- **Deliver restoration and expansion of significant areas of native woodlands to create viable woodland habitat networks with productive and biodiversity purposes in public forests and through incentives for private land.**
- **Restructure forests, removing trees from priority areas for restoration, such as peatlands, upland heathlands and linking open ground, and ensuring appropriate management of areas of open ground.**

- **Increase the diversity of species-mix and age structure in productive forests, with more use of native species and the retention of mature trees and deadwood to enhance landscape and biodiversity.**
- **Encourage positive management for biodiversity following forest habitat network principles.**
- **Encourage best practice, multi-purpose forestry throughout the area.**
- **Promote sustainable rural communities through local forestry processing and added value to primary products on all scales involving diversification, regional marketing and locally-branded produce.**
- **Encourage the development and management of broadleaved woodlands for quality hardwood timber.**
- **Develop market niche for hardwood products.**
- **Encourage closer links between forestry and farming on same landholdings.**
- **Influence deer and goat management in conjunction with estates, Goat Management Groups, DMGs and DCS to allow native woodland regeneration in priority areas without fencing.**
- **Promote use of training and information exchange by both foresters and farmers to encourage woodland management which enhances the natural heritage and provides local benefits, i.e. amenity use and economic return.**

## Objective 6

### To maintain populations of characteristic species and increase overall species diversity

**Local Biodiversity Action Planning (LBAP)** has established a framework and priorities for action to maintain biodiversity. The Ayrshire and Dumfries and Galloway areas are covered by the recently developed Plans and the South Lanarkshire LBAP is currently being developed. In addition South Ayrshire Council will develop a Wildlife Strategy. Targets for particular species may need specific action and these actions should also be fully integrated with social and economic considerations in all policy frameworks which cover the area. Some scarce or declining species have particular requirements and need specific action to ensure these are met. Examples featured in the Dumfries and Galloway Plan include red squirrel, bats,



barnacle geese, black grouse, hen harrier, pearl-bordered fritillary butterfly and natterjack toad. The draft South Lanarkshire LBAP focuses on indicator species such as lapwing, curlew, barn owl, brown hare, water vole and ragged robin. Some of these are located within designated sites which need to be managed appropriately but many are not. However, a lack of adequate, up-to-date environmental data for some areas reduces the effectiveness of strategic planning. A **Local Environmental Resource Centre** could act as a collection point for data on habitats and species. Various organisations are currently working towards a system for identifying areas with habitats or species of particular local value as Local Wildlife Sites and these will be referenced in the local development plans. These will act as a focus for directing conservation advice and improved management.

A number of **species**, particularly raptors and badgers still suffer illegal persecution and this is having a significant local impact. Non-native species have had a detrimental impact on some native species. American mink are thought to have contributed to the decline in water voles. Grey squirrels may out-compete red squirrels in broadleaved woodland, although the dominance of conifer forests in certain areas could act as refuges for red squirrels. Red Alert South West and the local Red Squirrel Project Officer are working to raise awareness and identify 'red squirrel priority areas' to promote positive management. Sika deer interbreed with the native red deer, and further research is required at national level to assess the likely consequences of this process. Attempts to control the spread of sika should continue for the time being on a precautionary basis. Non-native plant species such as Japanese knotweed and giant hogweed can be invasive, replacing the native flora. The re-introduction of species which have been lost from the area would help restore the natural flora and fauna and consideration could be given to red kite, Baltic bog moss and beaver.



Hen harriers and other raptors still suffer persecution

## ACTIONS

- Ensure appropriate management of Natura 2000, SSSIs and other statutory sites taking account of the needs of vulnerable species.
- Work with partners to eliminate illegal persecution, implementing the recommendations of the UK Raptor Working Group.
- Complete and implement local Species and Habitat Action Plans.
- Ensure conservation of wintering geese through Geese Management Groups.
- Identify a suite of Wildlife Sites to be highlighted in Local Plans to act as a focus for conservation advice and improved management.
- Deliver practical conservation management and advice on land outwith designated sites.
- Reduce damage to native species and habitats caused by non-native species through monitoring, research, advice, and targeted action.
- Prevent further incursion of sika deer in line with agreed joint agency policy and repel any future invasion by muntjac.
- Encourage woodland owners to provide positive habitat management for red squirrels and to manage grey squirrel populations.
- Establish appropriate mechanisms to manage all environmental data and ensure that it is accessible, e.g. through Local Environmental Resource Centres.
- Complete environmental audits to cover gaps in data and carry out regular surveys to update certain data sets.
- Co-ordinate action to reduce mink population in key areas.
- Consider the reintroduction of species which have been lost from the area.

ONGOING

SHORT TERM (0-5 YEARS)

MEDIUM TERM (5-15 YEARS)

LONG TERM (15-25 YEARS)

## Objective 7

### To encourage greater recreational use of the area for both residents and visitors within sustainable limits

The hills, forests, lowland farmland and coast are viewed as a major recreational and tourism asset for the area and there is potential to increase access to all areas, particularly around settlements. The development of access is being guided by local access and tourism strategies, access fora, local community/public aspirations, and initiatives like Paths for All, as well as the proposed new access legislation. The increased **access** will be developed following consultations with all interested parties including user groups, communities, landowners and agencies. It will reflect the balance of demand for formal and informal recreation, including walking, cycling, horse riding, all-abilities and water-based access. Access provision will provide added value through its clear signage and linkages to existing tourism infrastructure. Local access fora can assume a co-ordinating role, ensuring a balanced approach which takes account of all sectors, and incorporating and disseminating best practice. The role of the development plan is likely to become increasingly important following new access legislation for planning and safeguarding core path networks. Development control procedures will also be important, particularly for the urban fringe and public open space in protecting existing access and integrating new access into planned developments. The promotion of countryside access, environmental education, and sporting activities will all have positive benefits to local tourism and will also promote sustainable rural development.

**Tourism** is a very significant sector of the economy and is firmly rooted in the existing quality of the natural heritage. Its expansion will be important in delivering sustainable rural development. Market research, promotion, integrated planning and appropriate signage within the area will be critical in ensuring this expansion. The character of tourism is moving towards increased environmental tourism. There is still significant scope for expansion in these areas.

**Woodland** is a robust recreational resource with a high carrying capacity. There has been a steady improvement in the provision of walking, horse riding and cycling routes within the area's forests but there remains substantial potential to further enhance these recreational opportunities. The recent agreement between Forest Enterprise (FE) and the British Horse Society promotes the use of forests for horse riding. Design

plans for restocking forests provide opportunities for improving access provision and this needs to be linked to demand. The management of forests should also take account of access needs to minimise the area and duration of any restraints on access. There is an increasing move towards greater community participation in the management of public forests such as at Mabie, Dalbeattie and Cairnhead and through community consultation on long-term forest plans for public and private forests.

There is less provision for access in **farmland** areas and around **settlements**, and in these areas opportunities could be improved through development of core and local path networks. The new access legislation will encourage responsible access to farmland and increase the duty upon local authorities to identify, manage and maintain core path networks which should be fully linked across local authority boundaries. The maintenance of local path networks will be essential and may have to be a more widely shared responsibility, although access agreements may be appropriate to tackle specific issues. Increasing the current access to coastal areas and improved links with the increasingly popular Southern Upland Way Long Distance Footpath are highlighted as priorities in the Dumfries and Galloway Access Strategy. The emerging South Lanarkshire Outdoor Access Strategy focuses on cycle networks, links to the Southern Uplands Way, footpath networks around settlements and provision in specific areas including Tinto Hill and Watermeetings and Whitelee Forests. Upland path erosion is restricted to a few popular sites such as Criffel and the Merrick. Increased access and recreation could attract additional visitors and improve opportunities for residents.



Cyclists using forest tracks



**Sporting activities** such as rough shooting, grouse shooting, wildfowling, stalking, golf, sailing and angling are all important contributors to the local economy and encourage a greater participation and appreciation of the countryside. On Loch Ken, a system of zonation for various categories of water-based recreational use has helped manage potential conflicts, including impacts on wildlife, and may be introduced to the Solway. Wildfowling is popular especially along the Inner Solway. The retention of areas as nature reserves and regulation through permit systems has resulted in a level of wildfowling compatible with the wildlife interests.

Impacts on **sensitive habitats and species**, and potential conflicts with land management, can be reduced in various ways. These include dialogue between interested parties, encouraging responsible behaviour by the public and land managers through the Scottish Outdoor Access Code, and in areas of high recreational pressure, the provision of Ranger services. Further Ranger provision should be supported where needs are identified, particularly to support new access proposals that are in accord with the strategic framework. The development of an interpretation strategy would help to improve interpretative facilities which also contribute to visitor management.

## ACTIONS

- **Implement the new access legislation.**
- **Promote the Scottish Outdoor Access Code to increase understanding of responsible access and encourage greater participation in outdoor recreation.**
- **Develop Access Fora whose roles could include:**
  - developing and implementing Access Strategies to integrate sustainable levels of recreation and access with other land uses;
  - managing, co-ordinating and monitoring development of access;
  - co-ordinating resources within an agreed framework; and
  - developing closer links between land managers and others to enable delivery of access legislation and path networks.
- **Establish and maintain core path networks, and establish footpath networks around settlements, taking account of local consultations, appropriate signage and linkages to adjacent networks.**

- **Promote improved access through Development Plans and other strategic plans which involve consultation with communities, users and landowners and promote access for all sectors of interests and abilities.**
- **Develop interpretative facilities through Interpretation Strategies.**
- **Continue to develop Tourism Strategies to promote sustainable development, enjoyment and understanding of the natural heritage.**
- **Continue to support Ranger services and access officers where needed.**
- **Develop further path networks for walking, cycling and horse riding within forests, as part of forest design and restocking plans, and integrate core path networks with indicative forestry strategies and local forestry frameworks.**
- **Develop the potential of 'themed' access (e.g. birdwatching, archaeology, wildlife, botany, geology, pilgrimage trails etc) and access which integrates with other attractions to provide added value and benefit sustainable tourism.**
- **Promote increased use of the Southern Uplands Way and encourage development of circular walks and network links with settlements.**
- **Increase consultation and community participation in delivering access in local forests.**
- **Promote responsibility in the practice of freshwater- and marine-based recreation, including zoning and codes of conduct where necessary.**
- **Encourage, and provide support for, the voluntary sector in the development, management, and maintenance of local access networks.**
- **Encourage research, marketing and adoption of best practice to underpin expansion of sustainable tourism.**
- **Promote sustainable expansion of tourism ventures such as golf, shooting, fishing and watersports.**
- **Promote enjoyment and understanding of the natural heritage through raising awareness of existing access facilities and through sustainable programmes of sporting activities.**
- **Develop sustainable and environmental tourism.**

ONGOING

SHORT TERM (0-5 YEARS)

MEDIUM TERM (5-15 YEARS)

LONG TERM (15-25 YEARS)

## Objective 8

### To provide opportunities for increasing awareness and understanding of the natural heritage of the Western Southern Uplands and Inner Solway

Environmental education is currently co-ordinated through the local authority, SNH-funded Ranger services, Solway Firth Partnership, voluntary conservation groups and agencies. Schools and other groups make use of a range of facilities for environmental education at outdoor and visitor centres, nature reserves, and through projects such as 'Salmon in the classroom', an ongoing education initiative in partnership with the West Galloway Fisheries Trust, which involves active participation by the schools and the Forest Education Initiative. The area could benefit from the development of a set of Environmental Education Strategies to focus the limited resources of the partners to best effect and where possible attract additional resources. Environmental education, including the issues within this prospectus, should be an integral part of Community Learning Plans. These strategies and plans should fit with lifelong learning objectives for all the sectors of society and help to reduce the urban/rural divide as well as encourage more sustainable lifestyles. This lifelong learning should build on a strong environmental educational base developed as part of the mainstream education curriculum during primary and secondary school.

Local Biodiversity Action Plans covering the area have programmes of public involvement and awareness raising. These Plans depend on good information and there has been interest in the development of a Local Environmental Resource Centre to cover Southern Scotland. This would aim to ensure public participation and improve the environmental database available to promote environmental education while augmenting the Environmental Audit of Dumfries and Galloway. Ayrshire is currently re-establishing its Biological Record Centre.

The earth science heritage of the area is rich and varied and influences the patterns of settlement and land use. There is interpretation in the museums at Creetown and Wanlockhead. The expansion of earth sciences interpretation should be included within Environmental Education and Interpretation Strategies.

## ACTIONS

- **Develop Environmental Education Strategies that cover key natural heritage interests and deliver through a variety of multi-media.**
- **Develop Community Learning Plans, to promote awareness and understanding of the local natural heritage, sustainability and their relationship to global environmental issues.**
- **Encourage increased attention to the natural heritage in formal education.**
- **Develop a Local Environmental Resource Centre.**
- **Support local environmental education projects, particularly those which increase understanding and involvement in the local natural heritage, e.g. school grounds projects, Glencairn Community, Barony Wildlife Hospital, Red Squirrels in South Scotland, environmental dramas or 'Salmon in the classroom'.**
- **Support the development of visitor and tourism facilities which interpret, promote and develop awareness of the natural heritage and which fit with an agreed and integrated strategy.**
- **Encourage the use of the LBAP and the local natural heritage by all ages to learn about the local environment.**
- **Encourage various techniques, including fora and formation of a group similar to Farming and Wildlife Advisory Group (FWAG), for dissemination of best practice methods for the forestry sector.**
- **Promote high standards of knowledge and practice by using demonstration schemes, training and knowledge sharing, that are in keeping with the enhancement of the natural heritage and sustainable development.**
- **Develop role of National Nature Reserves and other nature reserves for increased understanding of the natural heritage.**
- **Support research projects into the natural heritage where gaps are identified.**
- **Encourage responsibility in fossil and mineral collecting.**



# Stakeholders

The stakeholders listed below all have interests in the natural heritage of the area. To work towards the Vision, further work is required with stakeholders to develop more specific objectives linked, where necessary, to action plans.

Note: For categories which encompass a large number of bodies, e.g. non land-managing NGOs, recreational groups and private companies, organisations are not listed individually.

## Local authorities and other local public bodies

Area Tourist Boards  
Dumfries and Galloway Council  
East Ayrshire Council  
Health Boards  
Local Enterprise Companies  
Police  
Schools  
South Ayrshire Council  
South Lanarkshire Council

## Community interests, groups and voluntary partnerships

Community Councils  
Community Planning groups  
Community trusts and fora: access, education, woodland, rivers etc.  
Local Biodiversity Action Plan partnerships  
Local Record Centres  
Solway Firth Partnership  
Solway Heritage  
Southern Uplands Partnership  
Rural partnerships

## National public bodies

Communities Scotland  
Crown Estate  
Deer Commission for Scotland  
Defence Estates  
English Nature  
Forest Enterprise  
Forestry Commission  
Historic Scotland  
Maritime and Coastguard Agency  
Paths for All Partnership  
Scottish Enterprise  
Scottish Executive and Departments  
Scottish Environment Protection Agency  
Scottish Inshore Fisheries Advisory Group  
Scottish Natural Heritage  
Scottish Water  
South of Scotland European Partnership  
SportScotland  
VisitScotland

## Land, freshwater and marine management groups

District Salmon Fishery Boards  
Deer Management Groups  
Goat Management Groups  
Native woodland initiatives  
Solway Shellfish Management Association

## Private land/marine managers and their representatives

Farmers  
Farming and Wildlife Advisory Groups  
Fishermen  
Forestry and Timber Association  
Landowners and estates  
National Farmers' Union for Scotland  
Professional institutes  
Scottish Gamekeepers Association  
Scottish Landowners' Federation  
Shellfishery owners  
Solway Shellfish Hand Operators' Association

## Non-governmental organisations with local land management interest

National Trust for Scotland  
Royal Society for the Protection of Birds  
Scottish Wildlife Trust  
Wildfowl and Wetlands Trust  
Woodland Trust

## Recreation, sporting and angling representative bodies and clubs

## Other non-governmental organisations with environmental interests, including Scottish Environment Link

## Private companies and local businesses

## Research and advisory organisations

Centre for Ecology and Hydrology  
Fisheries Research Services  
Fisheries Trusts  
Game Conservancy Trust  
Heather Trust  
Scottish Agricultural College  
Universities, colleges and institutes

## PICTURE CREDITS

Cover photographs

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## SCOTTISH NATURAL HERITAGE

is a government body established by Parliament in 1992, responsible to the Scottish Executive and Scottish Parliament.

**Our mission:**

Working with Scotland's people to care for our natural heritage.

**Our aim:**

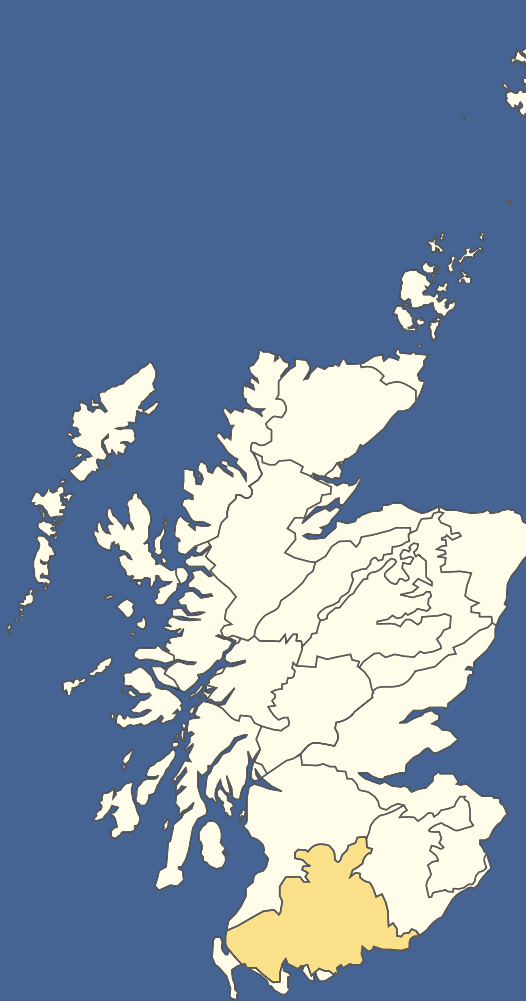
Scotland's natural heritage is a local, national and global asset. We promote its care and improvement, its responsible enjoyment, its greater understanding and appreciation and its sustainable use now and for future generations.

**Our operating principles:**

We work in partnership, by co-operation, negotiation and consensus, where possible, with all relevant interests in Scotland: public, private and voluntary organisations, and individuals.

We operate in a devolved manner, delegating decision making to the local level within the organisation to encourage and assist SNH to be accessible, sensitive and responsive to local needs and circumstances.

We operate in an open and accountable manner in all our activities.



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