



**Biodiversity in the Scottish Borders**  
Overview and First Steps

# Scottish Borders Local Biodiversity Action Plan

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# Purpose of this Document

## This document has two main themes:

- It introduces the concept of Biodiversity in the Scottish Borders (Part One), and
- It acts as a guide to the individual action plans that make up the Scottish Borders Local Biodiversity Action Plan (Part Two).

The Scottish Borders Local Biodiversity Action Plan is one of many such plans operating across the UK. All share the same approach based around detailed action plans for species, habitats and common themes. Together, the component local action plans produce a framework for activity, collectively known as the Local Biodiversity Action Plan. In sharing a common format it allows individual Local Plans to retain their identity whilst still being able to integrate with other Local Biodiversity Action Plans. The local plans also link local action to the UK Biodiversity Action Plan which targets the highest priority species and habitats within the UK.

The quality of local biodiversity is an important test of the 'sustainable development' of the region. It shows how well we are balancing the needs of regional development with those of one of our most important local resources - the natural environment. As such, Scottish Borders Local Biodiversity Action Plan is part of the community planning process and informs Local Agenda 21 activities. (Appendix III provides further details on the UK process).

This document serves to introduce and explain the content of the Scottish Borders Local Biodiversity Action Plan. It illustrates the overall Plan structure and describes the component action plans (Habitat Action Plans, Species Action Plans etc.). Copies of the entire Scottish

Borders Local Biodiversity Action Plan are available in local libraries and has also been issued separately to prompt wider involvement in development and implementation. The Plan has been written by the Scottish Borders Local Biodiversity Partnership, a broad grouping of interests responsible for land management and natural heritage in the Scottish Borders. The partnership aims to grow with the plan to reflect a wide cross-section of the many interests that inter-act with the region's rich natural heritage.

## How to use this document.

You may read the document from start to finish as an overall introduction, or use it as a guide to the plan contents (which are colour coded to help with this). Once you are familiar with the overall reasoning and aims of the Plan, most questions can be answered by referring to the appendices and individual Action Plans.

The Introduction sets out the Vision of the Plan and the objectives of the first five years.

**Part One** introduces the concept of Biodiversity, what it means in the Borders and why we should act locally.

**Part Two** sets out the Plan Structure, content of the individual action plans and includes a number of questions to act as prompts for future action. The appendices contain quick reference information.

**For further enquiries please contact the Scottish Borders Biodiversity Officer at Scottish Borders Council HQ, Newtown St Boswells, TD6 0SA  
Tel: 01835 824000.**

# Introduction

The Scottish Borders has a rich natural heritage. Our beautiful landscapes, and the wildlife that inhabits them, make the Borders a special place in which to live, work and relax. Additionally, our natural heritage is a key resource underpinning many sectors of the region's economy and quality of life. The Scottish Borders Local Biodiversity Action Plan is not an end in itself, but marks the first step in a new process for the conservation of this resource. The process is a dynamic one that recognises the changing nature of our countryside and the many forces that shape it. Its principal focus is not the museum-like preservation of our countryside but the reconciliation of current uses with the future's need for the retention of a high quality environment.

## Vision

The vision contained in the Biodiversity Action Plan's is intended to last well beyond the five years of this initial document. It questions what we might wish to see in the future Borders' landscape, and in what state we wish to bequeath our natural resources to future generations?

The Borders landscape is visualised as being at least as rich in wildlife as at present, a working countryside capable of supporting the full range of habitats and species found today (both the common and rare). All species and habitats would be present in populations and distributions of appropriate size to ensure both their own future and that of the natural systems of which they form part. The habitats of the Scottish Borders would be part of a planned, high quality biodiversity network extending across the region and beyond. Highly fragmented or endangered habitats such as herb-rich grasslands and native woodlands would be linked through this network. The land-use policies and practices of the region would, wherever practical, integrate with the natural and man-managed processes that form this healthy landscape.

Beyond the conservation of what now, exists our vision of the future landscape includes the restoration of habitats and species recently lost from the Scottish Borders. Where intensive land

management has been particularly damaging to biodiversity, the patterns and methods of management will have been adapted to allow wildlife to return. Native species lost through habitat deterioration or destruction will have been re-introduced where possible.

This vision can only be achieved through the sensible and sustainable use of local natural resources and the conservation of the Scottish Borders way of life. The Borders' countryside must continue to be managed by people. Farming, forestry and other land uses need to be profitable and practical; local communities be enabled to manage their local environments; and the economy developed sustainably whilst maintaining the rich resources of the local environment. The vision depends on the striking of a balance between the conservation needs of all our heritage resources and those activities that may impact upon them such as farming, forestry, recreation and development - a balance that must be able to be sustained in the future.

Parts of the vision are dependent upon activity that is outwith local control. National and international policy has direct impact upon our local natural heritage: but wildlife knows no political boundaries. Clearly, diverse issues like Climate Change and the Common Agricultural Policy cannot be addressed at the local level. However, local reality is the only way of testing the effectiveness of national policy. This Action Plan aims to ensure both a local contribution to UK Biodiversity Action and a co-ordinated local input to national policy making.

Finally, the vision requires that as many people as possible from all walks of life will come to appreciate, understand and value the natural heritage of the Scottish Borders. Developing a shared understanding of all our local needs and an enthusiasm to work in partnership to integrate them into action for biodiversity is essential to the future success of the Plan. The achievement of co-ordinated action for biodiversity across the region will provide a catalyst, and key test, for the sustainable development of the Scottish Borders in the years ahead.

## Scottish Borders Local Biodiversity Action Plan Aims

In order to realise this vision the plan aims to

- Ensure the conservation, educated use and appropriate enhancement of the Biodiversity of the Scottish Borders through the development of an effective regional partnership
- Act as a framework for the process of Biodiversity Planning
- Measure and inform the sustainable development of the Scottish Borders
- Link action in the Scottish Borders to the UK Biodiversity Action Plan.

This first plan, for the years 2001 -2005, will achieve these aims through plans for action to

### Analyse and Plan for Biodiversity

- Identify, monitor and report the current state, trends and history of local biodiversity.
- Determine priorities for action in the Scottish Borders using both Local and UK Biodiversity Action Plan criteria.

## Support Action for Biodiversity

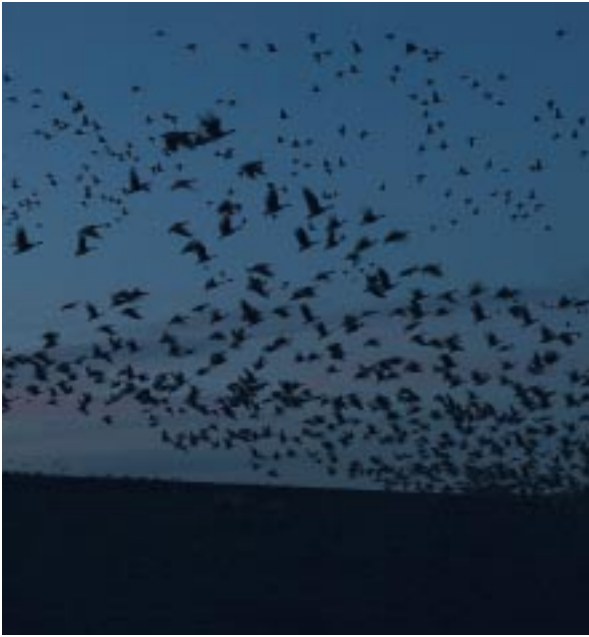
- Co-ordinate current activity and promote future action for Biodiversity in the Scottish Borders.
- Develop a close dialogue and partnership with land managers in the implementation of the component action Plans.
- Identify and secure external funding and guide the efficient use of local resources.

## Inform for Future Action

- Publicise, to all interest groups, the rich Biodiversity of the Scottish Borders and how everyone can act in its interests.
- Develop a shared vision for the integration and monitoring of Biodiversity as part of the sustainable development of the Scottish Borders through action planning and growth of the local biodiversity partnership.
- Identify the current benefits and opportunities arising from local biodiversity for economic and social development.

# What is Biodiversity?

Biodiversity is a short hand term for Biological Diversity. Its subject matter is the whole variety of life on earth.



*Winter Geese*

Biodiversity is everywhere. It is a complex association of species and their inter-action with their environments. Biodiversity is the consequence of literally billions of everyday events, the scope of which may spread no further than the limits of a woodland pool or right around the planet. Some species may exist entirely within one habitat; others, such as some of our winter geese, may pass through many, using local habitats for just one night a year. Through understanding how each part of biodiversity is intimately linked to others, we learn how our individual actions can combine to have massive and unpredictable impacts on the natural world.

Biodiversity therefore includes:

- The habitats and associations within which plants, animals and other organisms inter-act,
- All of the different plant, animal, fungi and micro-organism 'species', (an estimated 90,000 occurring on land and in the seas around Scotland alone), and
- All of the variety found within each of the species.

Biodiversity can have one of several meanings.

As a **descriptive term and measure**, it describes the variety of life found in a place, region or the whole planet.

As a **concept**, it recognises the fundamental link between the richness of our natural heritage and our long-term quality of life. It highlights the complex interconnection of the world's biological and physical processes, how we rely upon them and how we impact upon them.

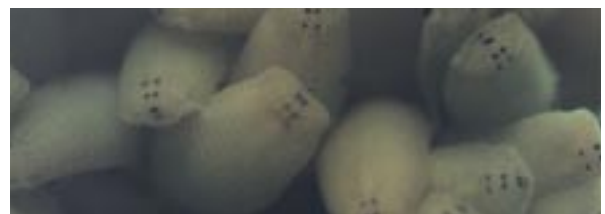
As a **process**, it operates through targeted and monitored action which aims to introduce biodiversity interests into our everyday lives. Plans for action are developed and implemented through a wide partnership of interests from the plan area.

As a **measure of sustainable development**, it is a key test of international, national and regional sustainable development. It informs us how well we are managing our actions for the future.

Whilst it is relatively easy to grasp the differences between species (such as Buzzard and Dandelion) or habitats (like Heather moorlands and Wetlands), the variety that occurs within species is often less obvious. It is probably best seen in the tremendous variety that is seen in domestic livestock. Each breed is the product of genetic differences developed through selective breeding over centuries. (The maintenance of this variety for future use, through rare breed survival is equally relevant to biodiversity). Variety within a species enables it to adapt more easily to change in its environment. This is the basis of the complexity at the heart of biodiversity. Lack of a sufficiently wide set of 'options' for change reduces a species ability to adapt and leaves it liable to extinction through a sudden change in its environment.

Biodiversity highlights the roles played by all habitats and species, the common as well as the rare. It is clear that to maintain biodiversity for the future we must consider all of our actions in our fields, moorlands and gardens.

The Biodiversity of an area is thus the product of many complex interactions over time. Each area is unique with its own history and physical features (annual rainfall, local soils etc.), and no two places or regions are alike. Each is a component of global biodiversity - a web that stretches from Gala to the Galapagos!



*Young Leeches*



*Moorlands*



*Wetlands*



*both the Lichen and the Fly .....*



*and the Fossils within the rock.*



*Diatoms*



*Red Grouse*



*Orchid*



*Livestock*



*Fungi*

# The Biodiversity of the Scottish Borders

The Scottish Borders are mainly defined by the natural catchment of the River Tweed and its tributaries. In its journey to the sea the Tweed links all of the habitats of the Borders. Rising in montane uplands, it passes through forestry, rich arable land, pasture and our towns and villages. This landscape formed the enduring character of the Borders' which was a frontier, dividing nations, a maze of uncharted bogs and high hills; a rugged landscape only truly tamed to man's purpose with the introduction of large-scale drainage and turnpike road building in the eighteenth century.

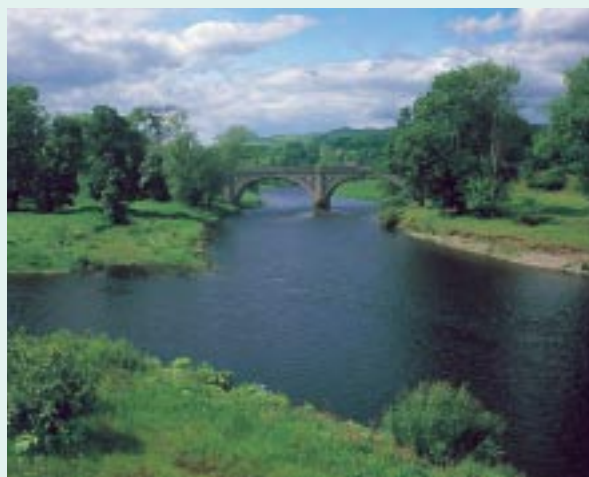


*Source of the Tweed*

The region comprises over 4500 square kilometres of which almost half lies above 300 metres. A wide range in rainfall from the very wet west to the dry coastal strip, marks the region's climate. These differences in climate combine with varying soil types and land-use to produce a wide diversity of semi-natural vegetation. Apart from the higher hilltops, virtually all the region's landscapes are the product of the intimate relationship between its natural resources and man. The region's topography (the 'lie of the land') has determined transport routes and the location of settlements. Local soils have determined the agriculture and land use of the region, and local stone has provided the character of our towns. Historically, the landscape and, at times, harsh climate produced a fiercely independent and distinctive culture. Equally, man's management of the land increasingly determines the composition of the landscape and its natural heritage.

## Landform, Geology and Soils

The distinctive landforms, geology and soils of the region largely determine the natural vegetation patterns. Our local Biodiversity dates back to the time when the bare rocky landscape, scoured by ice, emerged from the melting glaciers of the last Ice Age, 10,000



*Middle reaches, Tweed and Ettrick*

years ago. The corrugated topography of 'hummels' and 'knowes', the rich soils of the Merse and the ice carved valleys of the Cheviot and upper Tweed are all products of glaciation.

The Borders is contained by a horseshoe rim which is formed by older hills that ring a central plain of younger rocks. To the north and west, the Southern Uplands are formed from sediments laid down on the floor of an ancient sea over 400 million years ago. In the course of time these sediments have been folded by earth movement and shaped by rivers and ice to produce the rounded hills of today. Sandstone and limestone laid on top of these ancient sediments include fossilised examples of past biodiversity, examples of which can be found wherever rivers cut through these later strata, especially along the Whiteadder Water, the Liddel Water and lower Tweed.

The Cheviot, a granite massif of volcanic origin, provides the south-east boundary to the region. This and other hills, such as the Eildons, Minto Hills and Ruberslaw, stand proud of the surrounding landscape of softer rocks. These were formed as the result of volcanic activity around 280 million years ago. A variety of soils result from the weathering of these volcanic rocks. Some, like the Minto Hills, are rich in minerals and other nutrients; others, like the Eildons, are composed of nutrient poor 'acidic' rocks each with its own distinctive vegetation.



*Lower reaches, Tweed at Paxton*



## Man's Influence & History

Human activity has played a major role in the evolution of the Borders landscape and its Biodiversity for almost as long as it has been free of ice. Throughout history, land management practices have fluctuated with climatic, social and economic cycles - a situation no less true today.

Pollen evidence indicates that large-scale forest clearances were occurring in the Borders' uplands over 5000 years ago. Widespread evidence shows that deliberate management, including burning, over two millennia resulted in the formation of a patchwork of heather heathland and scrub within woodland areas. Cereal production came to the region about 5000 years ago. It enabled permanent settlement to take place and remains a major feature of the regional landscape and economy.



*Kelso Abbey*

By the time of the Roman conquest, large areas of woodland had been cleared for cultivation. Climate change, resulting in increased rainfall, led to the development of blanket peat in once wooded uplands and some lowland areas, thus necessitating further clearance.

The monastic sheep farms introduced in the twelfth century had significant ecological impact. Feudal society also introduced the first protected landscapes in the form of Royal Forests. These provide the first historical records of man's impact on biodiversity and laws aimed at limiting this damage.

Warfare and raiding in the Borders punctuated the history of land-use between the thirteenth and seventeenth centuries. Physical destruction of woodland and an increased reliance upon sheep husbandry led to the reduction of cultivated land and the virtual removal of forestry from the landscape. Regrowth of felled woodland was effectively eliminated by the combined actions of warring humanity and their grazing sheep. Plantings associated with the designed landscapes of the eighteenth and nineteenth centuries improved the tree cover of the region. However, these plantings were largely of introduced species on previously unwooded ground and, whilst of conservation value, are no replacement for the ancient 'wild-wood'. Similarly, the widespread coniferous planting of the uplands, that returned the wooded land-cover to what it was in the early medieval period, did not return lost woodland biodiversity to the region. Blanket planting and the reliance upon a limited number of introduced conifer species has had a largely negative impact on biodiversity, which is offset by only a few benefits.



*Neidpath Castle*

Large areas of fen and marshland marked the landscape until the mid-eighteenth century. Now greatly reduced by drainage, remnants of this landscape can still be seen in the National Nature Reserve of the Whitlaw Mosses and the scattering of marshes around the borders.

Upland heathland has been managed for grouse shooting for over 100 years. The retention of some nationally important areas in the Newcastleton, Lammermuir and Tweedsmuir Hills are due to this practice.

Similarly, the management of small woodlands and hedgerows in the lowlands for sport, shelter and stock management, started in the eighteenth century, this introduced a network of habitats into the landscape that enhanced those of the mixed farm landscape. Changing farming practices of the past fifty years has led

to a dramatic simplification and decline in quality of this network of farmland habitats.

Habitat loss and hunting has led to the extinction, at various times in history, of many species. Moose, Lynx, Wild pig, Brown bear and Beaver are all known to have inhabited the Borders. These have been eradicated, in addition to Wolves, Pine marten, Polecat and other predators. Man has also introduced species that continue to have profound effects on the landscape and Biodiversity of the Borders: for example, the Rabbit, American mink and Sika deer. He has also re-introduced species lost in earlier centuries, like the Mountain hare and the unsuccessful reintroduction of Capercaille. The Red squirrel was reintroduced to the Scottish Lowlands from England in the eighteenth century when it became extinct; it is now threatened again by the spread of another introduction, the Grey squirrel.



*Maiden Pink - forebear of garden carnations it is now a scarce plant in Britain with a stronghold in the Scottish Borders*



*Red squirrel - threatened a second time with local extinction*

## Protected Areas of the Scottish Borders:

The richest sites for Biodiversity in the Scottish Borders are legally designated for their natural heritage value. These sites are home to our rarest habitats and species and are subject to special planning restrictions and policies.

Within the Scottish Borders there are three 'tiers' of protected area.

### Internationally Important Areas

Natura 2000 Network - a network of areas identified as being of European importance and designated as either Special Protection Areas (**SPAs**, for Birds), or Special Areas of Conservation (**SACs**; for habitats and non-bird species). The Berwickshire coastline is also part of a European Marine Site (**EMS**), a combination of SACs and SPAs.

Ramsar Sites - 3 sites in the region are designated under the Ramsar Convention on Wetlands of International Importance. They are designated for wildfowl and waders.

### Nationally Important Sites

Sites of Special Scientific Interest 88 **SSSIs**, have been notified by Scottish Natural Heritage under the 1981 Wildlife and Countryside Act listed for their biological or geological interest. Three of which are designated as National Nature Reserves.

### Regional and Locally Important Areas / Sites

Include areas managed for their local value, such as Gala Policies or Selkirk Hill; Nature Reserves such as the SWT reserve at Gordon Moss; And Wildlife Sites designated by Scottish Wildlife Trust and other conservation bodies.

### Other Designations

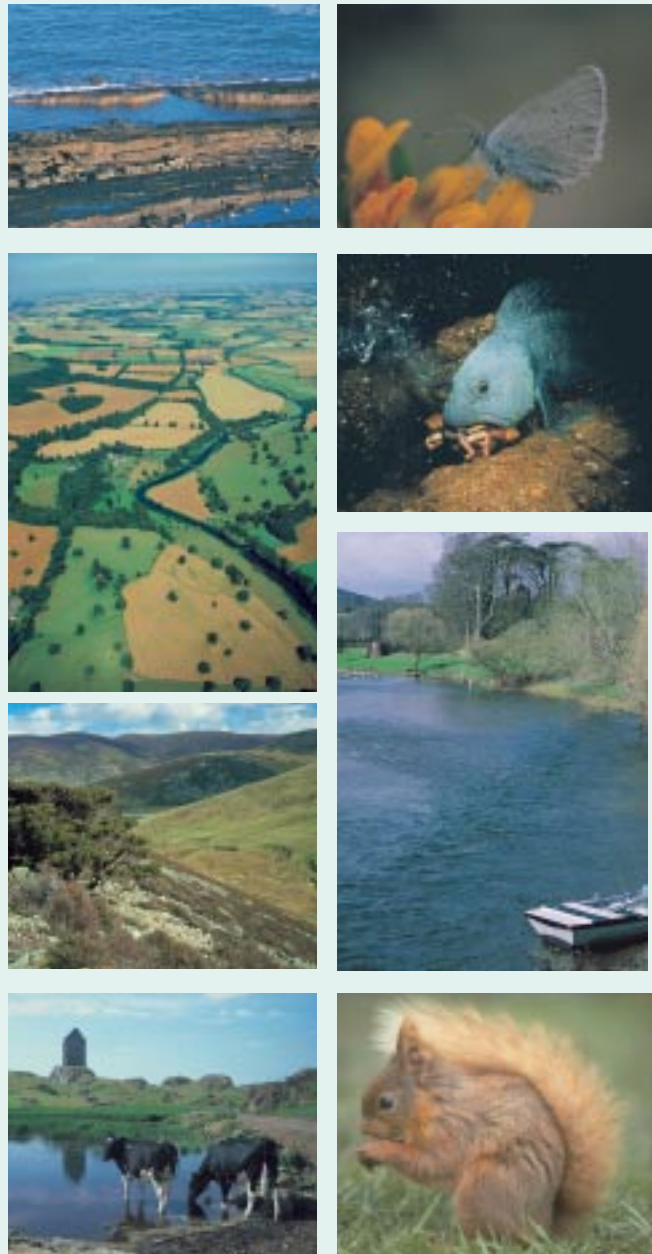
Parts of the Scottish Borders are defined as Environmentally Sensitive Areas (**ESAs**), they were previously the focus of a voluntary scheme which offered annual payments for farming that benefited natural and cultural heritage. **National Scenic Areas (NSA)** and **Areas of Great Landscape Value (AGLV)**, safeguard natural heritage as part of landscape. They recognise the value to tourism and the local economy of retaining of these areas.

# The Habitats and Species of the Scottish Borders

The following sections introduce the habitats of the Borders in terms of the broad themes or 'types' as they are viewed in the landscape. Each section a) describes a **broad habitat** type, b) identifies **Special Features** for biodiversity (many of which are the subject of individual habitat action plans), c) identifies **Important** and **Characteristic Species** found, and d) outlines **Key Issues** of significance. Finally, an overall aim for management of all features of the broad type is identified. A final section introduces **the Borders 100** (detailed in Appendix II), a list of species chosen as a representative sample of local issues. (Species of this list are highlighted when they appear in the Habitats section).

An initial audit of the region's habitats and species has been undertaken. This audit confirmed the major habitat types present in the region; it identified 5558 individual species and noted all habitats and species prioritised by the UK Biodiversity Action Plan known to occur in the region. Forty-four Priority Species from the UK Plan were identified as currently occurring in the region. The audit highlighted a lack of data for all habitats and the majority of species groups (moths, plants, mammals etc.). Whilst confident that all major habitat types present in the region have been appraised, the Partnership is aware of the urgent need to improve the recording of the region's Biodiversity.

Appendix I presents the Plan Outline and shows how the broad habitat types of this document relate to Partnership working groups, local Habitat Action Plans and UK priorities.



## Broad Habitats in the Landscape

Sea and Shore

Coastal Braes and Deans

Woods & Scrub

Hummels, Haughs and Knowes

Mosses, Lochs and Clarty Holes

Hills, Heather and High Tops

Rivers and Burns

## Sea and Shore

The shoreline and associated inshore waters of the Scottish Borders are internationally recognised for their wide diversity of habitats and species (forming part of the Berwickshire and North Northumberland European Marine Site, a Natura 2000 site). This variety is all the more remarkable in that the coastline is only thirty-six kilometres long. The rich coastal waters support internationally important populations of breeding seabirds and marine mammals, an important inshore fishery and year-round tourism. The high seas fishery operating out of Eyemouth is also a key part of the local economy.

The rich seas result from the mixing of cold northern and warmer southern waters, over a highly varied geology which serve to increase the number of species found. The packing of all the Borders' major rock types into such a small area creates a wide range of marine and shoreline features, each with its own community of associated plants and animals.

The water quality of the coast is mixed. In terms of bathing water quality, the beaches of Pease Bay and Coldingham are of high standard; others suffer from varying degrees of pollution from sewage outfall and agricultural run-off.

The marine habitats benefit mainly from non-interference which allows natural processes to continue on a sufficiently large scale. Marine Habitat action offers a model for habitat conservation through voluntary partnerships. Two partnerships, involving all interest groups, have been formed for the St Abbs Marine Reserve and the preparation of the Management Document for the Berwickshire North Northumberland Marine Site. The Marine habitats will benefit from further survey work and awareness activities, exploring further the amazing richness that lies beneath the waves.



*Cove Harbour*



*A Rockpool Ramble part of the education work of the Voluntary Marine Reserve*

### Special Features

#### Sea Caves and Wave-lashed Reefs.

The Berwickshire cliffs plunge to a depth of 30m and have been eroded by the battering waves into numerous gullies, fissures and fields of boulders. These Reefs are the home of the northern Wolf Fish and southern waters Cup Corals. Caves in the rockfaces, excavated by the power of the sea, are decorated by pink coralline seaweeds and are home to Sea squirts and Sponges. Where the reefs are exposed by the tide they form rocky shores. Low tide uncovers the life that abounds in this extremely stressful environment, including dogwhelks, sea anemones and shore crabs.



*Divers exploring a sea cave*

### Key Issues

**Pollution - marine oil, sewage discharges and nitrate discharge**

**Disturbance to sea floor through dredging, dumping and trawling**

**Sustainable levels of fishing and related issues**

**Climate change, leading to sea rise and loss of cold water species**

**Raising the awareness of the marine habitats and the model of partnership working**



Reef coastline - St Abbs



Wave-cut platforms (reefs)

### Example Species of Sea and Shore

Lower Plants  
Kelps (Seaweeds)

Invertebrates  
Sea Cucumber  
Sea Squirt

**Dead Mens' Fingers (a coral)**

Cup Corals  
Anemones  
Sea Slugs

Fish  
Wolf Fish  
**Atlantic Salmon**

Birds  
**Kittiwake**

Mammals  
**Harbour Porpoise**



Wolf Fish and prey



Sea slugs



Rocky Shore - Coldingham

### Principal aim of the Biodiversity Action Plan for Sea and Shore Habitats:

The continued development of integrated management to protect and conserve the marine habitats of the Scottish Borders through partnership working

## Coastal Braes and Deans

The cliffs of the Berwickshire coastline are amongst the highest on the East Coast of Scotland. With their associated clifftops and inland running valleys (known as deans), they are some of the least modified of our habitats. The cliffs are internationally famous, home to important sea-bird populations and uncommon plants, they have long been the subject of geological scrutiny. As with the marine habitats, the highly varied geology of the Borders coastline has led to the development of a mosaic of varying habitats and features, including base-rich grassland, ancient woodlands, maritime heathland and scrub. The intimate mixture of these habitats creates a landscape full of contrast and surprise, making it a popular area for recreation. Tourism is a key sector of the local economy (St Abb's Head is the second most visited tourist site in the Borders with 62,720 visitors in 1998).



*St Abbs - highest cliffs on the East Coast of Scotland*

### Special Features

#### Cliffs

The cliff-faces themselves are home to a wide range of flowering plants, including Scots Lovage, (here at its most southern location in Scotland), Thrift and Rock Sea Spurrey. There are lichens, rare mosses and ferns such as Sea Spleenwort (which grows in shaded rock niches where it tolerates high levels of salt thrown by winter gales). Fulmar, Kittiwake and Guillemot are some of the birds that breed here in nationally important numbers, along with a handful of Puffins on the gentler slopes. Also to be found here are rare cliff-nesting House Martins and an equally rare flea these birds play host to.



*Thrift*



*Kittiwake and Guillemots*

### Clifftop and coastal habitats

The narrow cliff-top mosaic of maritime heathland, grasslands and scrub is rich in regionally scarce plants and has for many years benefited from low intensity mixed farming. Recent pressures for change include agricultural improvement of cliff-top grasslands, intensive grazing by stock and rabbits, some undergrazing leading to scrub encroachment, and chemical pollution from herbicide drift and fertilizer run-off.



*Siccar Point*

## Coastal Deans

The Deans are steep sided valleys, running inland, that have a rich flora of ancient woodlands with rare orchids and other plants, including Autumn Gentian. Their conservation interest is heightened by the maritime influence.



Tower Dean

## Maritime Heath

The lowland heathland of the coastline is an important and vulnerable habitat. Spring Squill occurs here at the northern edge of its distribution.



Coastal Heath



Spring Squill

## Sand Dunes and Shingle Beaches

Together with associated grasslands, saltmarsh and flushes, these habitats form a small but valuable component of our coastal biodiversity.

### Key Issues

Intensive land use, including grazing levels, woodland management, improvement of the cliff top mosaic

Land abandonment, leading to scrub encroachment

Pollution

Development pressures

Recreation impact

Need for increased data gathering and monitoring of the coastland habitats

Need to raise general awareness of the international importance of the coastal mosaic of habitats

## Example Species of Coastal Braes and Denes

Lower Plants  
Rare and scarce mosses including  
**Weissia condensa**

Higher Plants  
**Yellow Horned Poppy**  
Frosted Orache  
Scots Lovage  
Marram Grass  
**Spring Squill**  
**Purple Milk Vetch**  
Thrift

Insects  
**Small Blue Butterfly**  
Northern Brown Argus Butterfly  
Grayling Butterfly

Birds  
**Shag** (and other nationally important breeding seabirds)  
House Martin (cliff nesting)

## Principal aim of the Biodiversity Action for Coastal Braes and Deans

The integrated management of the coastal strip to conserve and enhance its unique mosaic of habitats

# Hummels, Haughs, and Knowes (enclosed farmlands)

Composed of a corrugated series of small valleys (hummels) and low ridges (knowes), the lowlands of the Borders have some of the richest agricultural land in Scotland. Extending into the upland fringes, these fertile ridges are home to some of the highest extensive arable land in the UK. The hollows are marked by the remnants of the great wetlands that once covered the region, and were drained for agriculture in the nineteenth century. The lowlands and river valleys bring further fertile sediments down to the lowland and middle river regions depositing them in the winter flood plains (haughlands); rich in nutrients, they have long been used for grazing and arable farming

Enclosed farmland and its management is key to a large part of the Biodiversity of the Borders. The rich network of farmland habitats, including grasslands, woodlands and wetlands, extends from the coast high into the upland valleys. In itself this network is a rich repository of biodiversity, but it plays an equally large role in influencing the quality of other habitats, both farmed and unmanaged, that it borders. Agriculture underpins many local communities and the landscape that has evolved over the centuries of farming is an important attraction for visitors. Recently, intensive management and specialisation has led to a widespread decline in the biodiversity of our enclosed farmland. This decline has been exacerbated by an economic crisis in agriculture and a rigid

system of production support. It is to be hoped that this situation can be turned around with more land managers joining the large numbers already involved in conservation management.



*Upland Inbye Land*

## Special Features

### Boundary features and field margins

An inter-connected network of boundary features (Hedgerows, thickets, walls and ditches, along with associated field margins and small woodlands), mark our traditional lowland landscapes. They represent safe havens for woodland and aquatic species which are largely excluded by management from the remainder of the farmed landscape. This network can also provide vital cover for all types of species.



*Network of Farmland habitats*



*The Borders has approximately 20% of the species rich hedgerows in Scotland. Careful and ongoing management is crucial to retain their quality,*



*Cereal field margin*





*Wide Field Margin and hedgerow provide field edge cover*

### Species Rich Grasslands

Areas of conservation grassland have been greatly reduced by intensive practices. What remains is confined to the steep-sided hummels, rocky knowes and unmanaged tracts (although the latter is always prone to becoming overgrown by scrub). Lowland meadows are traditionally to be found on the haughlands left by winter flooding. These grasslands have been converted to intensive grassland and are increasingly subject to development pressure.



*Species rich Grassland of hummel and knowe terrain*

### Rush Pastures

The grazed rush pastures of the moorland fringe are an intricate mixture of wet and dry, upland and lowland, habitats. Intensive grazing and agricultural improvement has reduced their quality and extent in the Borders

### Upland Arable

Traditionally, hill farms grew grain for winter use. The virtual cessation of this practice is thought to have contributed to a marked loss of farmland birds in the upland regions, most notably the Black Grouse.

## Example Species of Hummels Haughs and Knowes

Lower Plants

**Hornwort**

***Bacidia incompta*** (and other rare lichens of boundary trees)

Higher Plants

**Purple Ramping Fumitory**

**Maiden Pink**

Meadow Cranesbill

**Ragged Robin**

**Large Flowered Hemp Nettle**

Yellow Rattle

Black Poplar

Hawthorn

Insects

**Large Red Damselfly**

Birds

**Grey Partridge**

**Lapwing**

**Tree Sparrow**

**Bullfinch**

**Barn Owl**

Snipe

**Yellowhammer**

**Skylark**

Mammals

**Brown Long-eared bat (and other bat species)**

**Brown Hare**

## Key Issues

**Intensive management and continuing habitat loss**

**Impacts of fertilizer, herbicide and pesticide use**

**Size, scale and mechanisms of agri-environment support**

**Restoration and enhancement of the habitat network of enclosed farmland**

**Farm business diversification (natural heritage components)**

**Increased delivery of practical and viable habitat management advice**

**Data, survey and monitoring of the biodiversity resource of enclosed farmland**

## Principal aim of the Scottish Borders Local Biodiversity Action Plan for enclosed farmland

The development of measures to conserve, enhance and restore farmland biodiversity as part of the development of a sustainable agricultural economy in the Scottish Borders.

## Woods and Scrub

The woodlands of the Scottish Borders are a relatively small, but highly valued component of the landscape. It is virtually impossible to imagine the richly diverse and ancient woodland that once covered the majority of the land. Today only 17% of the land area is wooded and of this only 1% (738 ha) can be regarded as remnants of ancient woodland. This ancient woodland has clung on to the steeper valley slopes, unsuitable for agricultural use and less prone to heavy grazing by stock and deer. Yet the Borders retains a more wooded feel due to the coincidence of river valleys with the main travel routes and the large plantings found in the grounds of the large estates.

The woodland cover of the Scottish Borders contributes a significant number of jobs to the local economy and is highly valued both by residents and visitors alike. There has been a renaissance of interest in the Borders' woodlands over the past decade with a renewed public interest in becoming involved in woodland conservation and use. A number of organisations are currently working on projects to investigate the biodiversity value of all our woodlands and the creation of markets for local broad-leaved timber.

### Special Features

#### Native Woodlands

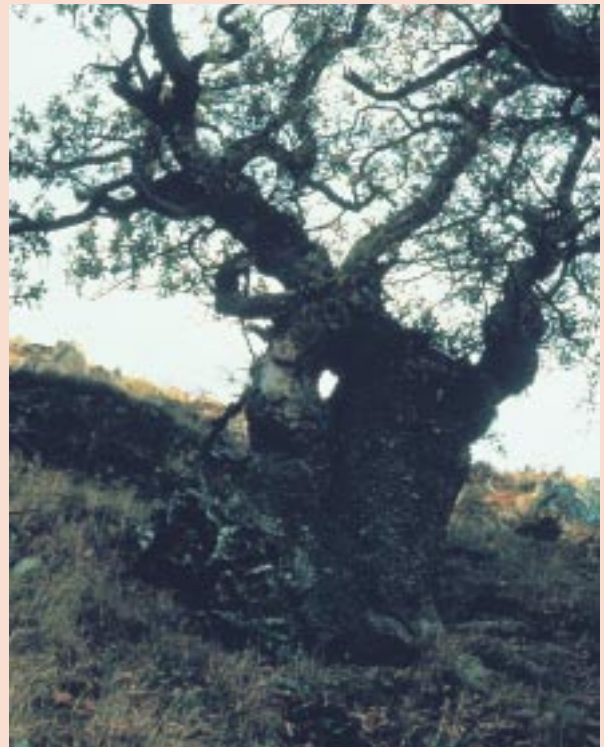
The native woodlands of the Scottish Borders are characterised by their small size and fragmented nature. Most of the woodlands have significant numbers of introduced species like Beech and Sycamore and low numbers of young trees as a result of heavy grazing by deer and livestock. However, they remain rich in Biodiversity with high numbers of rare plants, invertebrates and other species.



*Cragbank Wood NNR*

#### Veteran Trees and Parkland

A veteran trees project undertaken by Borders Forest Trust continues to uncover the tremendous variety of ancient trees to be found in the Borders and their links with the cultural heritage.



*Veteran Oak Tree, Yarrow*

#### Coniferous Plantations

The coniferous plantations of the upland areas comprise 85% of the wooded cover of the Borders, and have been regarded as low in conservation value. However, many of the forests have large areas of grassland and wetlands within them that can be further developed through the restructuring that will take place during harvesting. The majority of the Borders' plantations are reaching this stage. With sensitive management, local coniferous plantations can offer significant benefits for UK priority species such as Black grouse, Red squirrel and Juniper, along with a wide range of species otherwise absent from our unforested uplands.



*Coniferous plantation with wetlands and heathland habitats*

## Cleuch and Scrub Woodland

The steep narrow valleys, carved through our upland areas, often contain remnant woodland that harbours species such as, Black grouse and scarce flowering plants and mosses. These woodlands have been extensively damaged by intensive grazing and often now exist on only the steepest slopes. Loss of lowland scrub (defined as low woody plants and bushes), such as gorse has also contributed to the decline of farmland birds like the Yellowhammer and Linnet, and insect species like the Green Hairstreak butterfly.



Cleuch Woodland

## Policy Woodlands

Although they are of less importance than ancient woodland and have a large component of introduced species, the woodlands planted to landscape the grounds of the large Borders' houses form an important link in the landscape. They provide valuable habitats for some rare and uncommon Borders' species. For example, the inclusion of Scots Pine within mixed estate plantings provides valuable, if limited, lowland habitat for two UK Priority Species, red squirrel and twinflower. The Nuthatch a bird of mature woodland is expanding its population northwards through the policy woodlands of the Tweed valley.



Policy Woodland

## Example Species of Wood and Scrub

### Lower Plants

**Lobaria pulmonaria** (and other lichens of ancient woodland)  
Orange Fruited Elm Lichen

### Fungi

Plums and Custard  
Chanterelle  
Stinkhorn

### Higher Plants

Aspen  
**Twinflower**  
**Toothwort**  
Moschatel  
**Herb Paris**  
Dogs Mercury  
Bluebell

### Insects

**Dark Bordered Beauty** (a moth)  
Rhino Beetle

### Reptiles

**Adder**

### Birds

**Marsh Tit**  
**Black Grouse**  
**Spotted Flycatcher**  
Jay  
Tawny Owl  
Song Thrush  
Nuthatch  
Hawfinch  
Woodcock  
Green Woodpecker

### Mammals

Badger  
**Red Squirrel**

## Key Issues

Grazing of existing woodland

Developing a strategy for woodland expansion across the region

Amenity use of woodlands

Economic viability of native woodlands

Sustainable development of the Borders woodland economy

Raising the awareness of the value of woodland and related issues

Survey and monitoring of the woodland resource

**Principal aim of the Scottish Borders Local Biodiversity Action Plan for woodlands**

To maintain, enhance and expand in area the conservation value woodlands of the Scottish Borders

# Mosses, Lochs and Clarty Holes

The region has a remarkable variety of wetlands varying in both size and chemistry from small man-made ponds and bog pools, to large lochs and reservoirs. The mosses of the Borders are internationally recognised 'fens' with scarce plant communities and home to insects found nowhere else in the UK. They have a strong historical link, being for centuries, the frontier home of the reivers and moss-troopers and entered by few others. In common with the similar upland blanket bogs and wet heaths, our lowland bogs and mires (the clarty holes of the title) have historically been undervalued and regarded as 'barren wasteland', something that closer inspection contradicts.

Our wetlands are in a constant state of change with sediment and dead vegetation accumulating over time to form nutrient rich deposits. Man has widely exploited these rich reserves for use as fuel and fertiliser in peat cuttings and marl pits and, through drainage, extensive rich farmland. The true extent of our wetlands is unknown, with many small areas not even marked on maps; rich in wildlife, they continue to be destroyed through drainage and commercial peat extraction.

Many of our open waters are important leisure sites for angling, sailing and other pursuits, whilst others have cultural and historic attachments. The conservation and enhancement of the full range of wetlands is key to the retention of their rich biodiversity.



*Glimpse of a past landscape, Folly Loch formed in the 1990's after the end of drainage*

## Special Features

### Open Waters

The Borders has relatively few semi-natural waterbodies. The majority having naturally silted up or been drained by man. Indeed, the largest natural water bodies of the region, St Mary's Loch and Loch of the Lowes, were once a single body, that has become divided by silt deposition. Man has created further open waterbodies in the landscape for his own purposes ranging in size from the large reservoirs like Megget to the smallest of garden ponds. The value to local Biodiversity varies dependent on local geology, water chemistry, and adjacent land management. Ironically, one of the greatest threats to aquatic biodiversity exists in the smallest of these waterbodies, our garden ponds. The success of plants like Himalayan Balsam and Japanese Knotweed shows how introduced species can prove dangerously successful if introduced to natural waterbodies, outcompeting native plants.

**Widely sold in garden centres and to be avoided at all costs !**

Australian stonecrop (*Crassula*),  
Parrots Feather (*Myriophyllum*),  
Floating Pennywort (*Hydrocotyle ranunculoides*)  
and  
Water Fern (*azolla* sp),

All can rapidly outgrow a garden pond and released to the wild are a major threat to the biodiversity of our rivers and ponds.



*Williestruther Loch*



*Smailholm Tower*

### Fens, Carr (wet woodland), Marsh & Swamp

A diverse range of wetlands filled the hollows and pits gouged from the land by the last Ice Age. Today, the processes that created those wetlands continue and large areas of land require continued drainage to remain free of surface water, whilst other areas become waterlogged in winter. These once extensive wet areas are complex mosaics of scrub, wet woodland and emergent plants interspersed with the open water of meres. The variety of habitats found within them means they are home to many birds, plants and insects. Fed by groundwater or small burns, the wetlands are fragile, their quality easily destroyed by drainage, pollution and inappropriate management.



*Clarty Hole, Willow Carr at Whitlaw Mosses NNR*

### Lowland Raised Bog

Identified by their distinctive domed shape, these lowland bogs are composed of dead plant material, principally sphagnum mosses. These plant remains accumulate over many years and eventually form peat deposits. The raised surface of the bog is cut off from the supply of groundwater and as a result the surface soils are poor in nutrients. Plants adapted to these conditions thrive, such as Ling Heather, Bog Asphodel and the insect catching Sundews. Over time, large numbers of raised bogs may link up to form large plains of deep peat, which share the characteristics

of raised bogs and upland 'blanket bogs'. These fragile communities are vulnerable to peat-extraction, burning for grazing and management that interferes with the processes that forms them. Such practices have degraded the majority of local raised bogs, making the remainder a key priority for conservation.

### Example Species of Mosses Meres and Clarty Holes

#### Lower Plants

##### **Rugged Stonewort**

*Hamatocaulis vernicosus* (and other rare mosses)  
Norfolk Flapwort (an endangered liverwort)

#### Higher Plants

##### **Marsh Valerian**

**Fibrous Tussock Sedge** ( and other scarce sedges)

##### **Lesser Water Parsnip**

##### **Coralroot Orchid**

#### Molluscs

##### **Vertigo lilljeborgi** (a snail)

##### **Lymnaea glabra** (a pond snail)

#### Insects

##### **Nematus monticola** (and other rare flies)

**Donacia aquatica** (and other scarce water beetles)

##### **Large Heath Butterfly**

##### **Dark Bordered Beauty** (a moth)

#### Amphibians

##### **Great Crested Newt**

##### **Common Frog**

#### Bird

##### **Greylag Goose** (and other wintering wildfowl)

##### **Reed Bunting**

##### **Black-necked Grebe**

##### **Lapwing**

##### **Curlew**

### Key Issues

**Habitat loss and fragmentation**

**Pollution, especially artificial enrichment**

**Conflict of uses**

**Data availability and quality**

**General awareness of the range and value of the Border wetlands**

**Management advice**

### Principal aim of the Scottish Borders Local Biodiversity Action Plan for Wetland Habitats

To conserve, enhance (and where practicable), expand the full range of wetlands and water bodies found in the Scottish Borders

# Hills, Heather and High Tops

Beyond the enclosure boundary, the upland regions of the Borders countryside are characterised by their rounded shape and steep river-cut valleys. The differing climate across the region shows itself in the range of habitats present. The dry, heather clad eastern hills, particularly the Lammermuir Hills, are ideally suited to management for grouse. The wetter, western slopes have a more mixed mosaic of habitats, including grass moor, wet heaths and blanket bog. In the west, the Broad Law massif is truly mountainous, often with snow lying till early June. A number of upland species occur here at their southernmost point in the British Isles. The principal land-use of the western hills is rough grazing and stock rearing, nowadays predominantly sheep. The upland areas attract large numbers of visitors and make a significant contribution to the regional economy.



*Juniper a UK BAP Species and Local Priority is vulnerable to heavy grazing and wide-scale burning*

## Special Features Upland Heathland

A large number of important types of heath exist in the Borders, ranging from the eastern, dry grouse moors to the mosaic heaths of the wetter western areas. The wet heaths consist of mixtures of heathland, blanket bogs and upland grasslands. The Borders has approximately 5% of Scotland's heathland which itself forms a large part of the world's resource. Elsewhere in Britain, pollution and heavy grazing has led to the loss of large swathes of moorland, increasing the importance of the region's moors. Our heathlands contain a wide range of breeding birds, rare plants, mosses and lichens. Well managed grouse moorland with low intensity grazing and controlled muirburn has resulted in the maintenance of extensive areas of high quality habitat rich in biodiversity. However, some problems remain, in places high stock densities and wide-scale burning has led to the loss of many of the rare plant species from our

managed hills; and illegal persecution of birds of prey, though reduced, still occurs. Management of our heathlands is a delicate balance which, if achieved, can have huge benefits for local communities and our natural heritage.



*Well managed Heather Moorland*



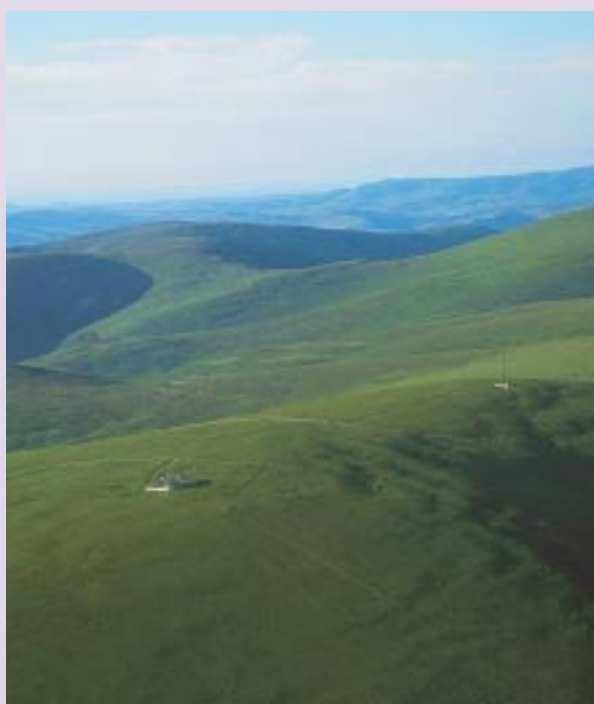
*Red Grouse- unique to Britain and the focus of moorland management with its many biodiversity and economic benefits*

## Blanket Bog

Often disregarded as featureless and lacking in interest, blanket bog is rich in biodiversity. Local blanket bogs are an important part of the 10% of the world's blanket bog found in Britain. They play a major environmental role in filtering atmospheric pollutants from water which are otherwise bound for our streams and rivers. They also 'lock-up' carbon dioxide, a greenhouse gas, in the form of peat. The complex of pools, associated heathland and grasslands, are widely populated by plants such as Round-leaved Sundew, Bog Asphodel, Blaeberry, Cross-leaved Heath, Hare's tail cotton grass and peat-forming Sphagnum mosses. Important breeding birds include Golden plover, Dunlin and Merlin. The importance of local blanket bog is underlined when one considers that the Borders lost almost 75%, in area, of this resource between the 1940s and 1980s.

## Montane Plateaux

At heights over 600m the region's uplands have a diverse range of fragile mountain habitats which are subject both to recreational pressure and heavy grazing. Development has even occurred here with the building of a ground station for air navigation on the summit itself. The ridge is a regular stop-off point for migrating Dotterel and has been a breeding site for it in the past. Mountain hare, reintroduced in the nineteenth century, can be found here and in the Lammermuir Hills. The impact of climate change on the montane habitats remains to be seen, but is, potentially, highly damaging.



Summit of Broad Law

## Upland Grasslands

Many upland grasslands and unenclosed rush pastures of the Borders are in fact degraded heathlands and bogs damaged by drainage, burning and heavy grazing. However, examples of species rich grassland and nutrient rich 'flushes' do occur. If grazing levels allow banks of thyme and patches of brightly coloured mosses often advertise these areas. Border grasslands are important for Waxcap fungi, including the UK Priority Species Pink Waxcap, a species that requires the close cropped sward typical of much of our sheepwalk.

## Cliffs and Screes

The predominant, easily eroded, nature of the geology of the Borders leads to relatively few natural cliffs and extensive screes. Where they do occur, they are often the preserve of cliff-nesting birds and scarce plants such as Juniper.

## Example Species of Hills Heather and High Tops

### Lower Plants

**Cyphelium inquinans** (and other lichens of upland dykes)  
Sphagnum mosses

### Higher Plants

**Petty Whin**  
**Lesser Twayblade**  
**Juniper**  
**Round-leaved Sundew**  
**Bog Blaeberry**  
**Hairy Stonecrop**

### Insects

**Sword Grass** (moth)  
Emperor Moth

### Reptiles

Adder  
Common Lizard

### Birds

**Black Grouse**  
Red Grouse  
**Hen Harrier**  
**Curlew**  
**Merlin**  
**Ring Ousel**  
Golden Plover

### Mammals

Pygmy Shrew

## Key Issues

**Awareness raising of the international importance and value of regional Upland Habitats**

**Climate change**

**Changing land use and local disturbance**

**Development issues**

**Habitat loss due to drainage, grazing and inappropriate burning**

**Illegal persecution**

**Management research and advice**

**Principal aim of the Scottish Borders Local Biodiversity Action Plan for Upland Habitats:**

To ensure the continued maintenance and (where possible), enhancement of Upland Habitats as part of the sustainable development of the Uplands of the Scottish Borders .

# Rivers and Burns

The Scottish Borders is defined by the huge bowl-shaped catchment of the River Tweed. The Tweed comprises a significant proportion of Scotland's river and streams. The number of large tributaries joining its 100-mile long central spine makes the Tweed more a collection of rivers than a single channel. The Tweed has never had a connection to the Continent, unlike rivers further south. This means that true freshwater fish were never able to colonise it at the end of the last Ice Age. The native fish species of the Tweed are therefore all fish, that at some stage of their life-cycle are able to traverse salt water.

In addition to the Tweed catchment, the Borders includes the Eye & Liddle Water catchments, the latter a salmon and trout river, running to the Solway, with a fine collection of fossil beds. In addition to the large part played by the Tweed in the local economy, the valleys, rivers and streams of the Borders have long defined our communities. In the past we tended to ignore their value, using them to generate power and take our rubbish. However, there is now increasing recognition of the value of our rivers and streams and the role that they can play in the regeneration of our towns and villages.

The Tweed is naturally rich in nutrients derived from the base rich rocks of the catchment. This marks the Tweed out as distinctively different from the more acidic waters common in Scotland and Northern England. This feature of the catchment also reduces the impact of acidification which is a common problem in other catchments.

The rivers of the wetter western areas differ greatly from those further east. These western rivers, marked by steep inclines, waterfalls and rapids, contrast with the more gentle tributaries to the east. This diversity is heightened by the variety of rock types, each with their own distinctive features, over which the rivers flow.

For centuries the Tweed has been an important salmon and trout fishery, and its catchment now represents around 15% of all the spawning water available to the Atlantic Salmon in Scotland.

Implementation of the EU Water Framework Directive will include integrated management planning for the whole of the catchment. It will dovetail with the components of this Action Plan to produce an holistic, or all inclusive, approach to catchment management and problem solving.



*Tweed Catchment*

## Special Features

### Variety of Stream Types

The large catchment area, over a highly varied geology and topography, produces a great variety in the number of different types of river and stream in the region. This variety is responsible for the rich diversity of species found in Tweed waters.

### Internationally Important Plant Communities

The Floating Water Crowfoot beds of the middle reaches of the River Tweed are of international conservation interest. Indeed, one of these species of water buttercup is named after Kelso.



*Water Crowfoots*

### Important Fish Populations

In addition to salmon and trout, the Tweed is home to important populations of all three lamprey species found in the UK - sea, brook and river. The Allis Shad, a freshwater spawning relative of the herring, has been recorded in the river although its status is unclear. Overfishing of the salmon stock is an issue highlighted recently by the call for the banning of drift netting off the Northumberland coast and the review of Scotland's Freshwater Fish and Fisheries.



## Spring Running Salmon

Research conducted by the Tweed Foundation is discovering that spring running salmon, originating mainly from the Ettrick, may be genetically distinct from the main run of autumn fish. The research also shows that 75% of these fish are the same age and shows how vulnerable the population is to environmental catastrophe or over-fishing. Without the spring and summer running salmon the fishing would last for only three months and not the ten it does at present. Clearly the loss of a spring run would have a wide economic impact. (see page 29)



## Invertebrate Populations

A notable feature of the catchment is the presence of over 80 scarce or rare invertebrate species present. Even allowing for some degree of under-recording of these secretive creatures, the number is remarkable - a product of the rich variety of the catchment.

### Example Species of Rivers and Burns

Lower Plants  
River Jelly Lichen

Higher Plants  
**Wilson's Filmy Fern**  
**Kelso Water Crowfoot**  
**Green Figwort**

Insects  
**Meotica anglica** I (and other rare shingle beetles)  
**Spiriverpa lunulata** (a stiletto fly)

Fish  
**Atlantic Salmon**  
**Lampreys**  
**Allis Shad**  
**Brown Trout**

Birds  
**Kingfisher**  
Grey Heron  
Little Grebe  
Goosander

Mammals  
Daubenton's Bat  
**Otter**  
**Water Vole**  
Water Shrew

### Key Issues

**Bankside management and landuse**

**Water extraction levels**

**Implementation of the Water Framework Directive**

**Instream engineering works**

**Introduction of new species to the catchment**

**Overfishing**

**Pollution, especially nitrate levels**

### **Principal aim of the Scottish Borders Local Biodiversity Action Plan for Rivers and Streams:**

The integrated management of the Tweed catchment to conserve and enhance the natural and economic resources for the communities of the Scottish Borders.

## Towns and Villages

Our towns and the wider engineered landscape of roads, industrial sites, mineral workings and leisure areas are often overlooked as areas of natural heritage interest. Most of us live and work in this environment and, perhaps do not associate it with wildlife. Yet for this very reason it is important - for it can raise awareness of issues which affect biodiversity and the wide approach needed to find solutions. The fortunes of biodiversity in our built environment are a key test of the success of sustainable development in the Borders. The issues concern or relate directly to the reduction of the damage caused by development and the enhancement of the biodiversity currently found around our homes and workplaces.

Our towns and villages are not continuous blocks of development. Each contains a tremendous variety of open and enclosed spaces: school grounds, gardens, derelict land, road verges, parks, golf courses and playing fields, in a patchwork of linked features. Many of our urban areas contain examples of natural habitats like woods and rivers that enable species from the wider countryside to live in our towns. Disturbance may not suit some species, but others have adapted and thrive in the specialised environment. Given the right conditions, many more species could join them.

The management and development of our urban areas, although small in terms of land area occupied, have a dramatic effect on the habitats they adjoin. Development can 'fragment' the natural landscape, isolating parcels of habitat from the wider countryside. Roads and associated developments account for thousands of fatalities annually and pollution is a continuous risk. However, as in the wider countryside, declining biodiversity results from intensive uniform management severing habitat links. The inclusion of biodiversity at the heart of the Planning and Development process is the subject of the Sustainable Links Action Plan.

### Special Features

#### Greenspaces

The great variety of open spaces and corridors found in the built environment, and the variation in disturbance levels and management practices across them, is a key feature of the 'urban' environment. Vestiges of rare grasslands survive on our roadsides. Old mineral workings can provide cliff faces and other relatively rare local habitats. Many organisations that may not imagine themselves as conservation groups control the



*Scottish Executives Trunk Road BAP aims to incorporate the operations of the Trunk Road System with local biodiversity action*

management of large areas of greenspace. The sustainable management of parks and other open spaces to reflect and balance the needs of various user groups and biodiversity can provide significant benefits for all. The success of the Scottish Golf Course Wildlife Group has shown that action for biodiversity can be good for wildlife - as well as the challenge of a round of golf.



*Tweedbank Pond*



*Wilton Park, Hawick*

## Development Planning

The character of the built environment is dynamic, with its character continually evolving through the landscaping and management of public and private space, changes or additions to the building stock and the changing demands on land. If we are to foster wildlife within the built environment, it must be recognised, identified, valued, prioritised, protected and managed as a vital component of our evolving towns and villages. The integration of this process with the statutory planning process is central in striking the balance required over issues of land-use and the impact of development.



Melrose / Galashiels

## Countryside on our doorstep

Our settlements often have natural habitats from the wider countryside associated with them. River corridors (long neglected in some towns), woodlands and other open spaces are all linked to our towns and valued by all of us. River corridors especially offer significant opportunities for biodiversity enhancement as part of wider regeneration schemes.



Countryside on our Doorstep - Footpaths are a part of the biodiversity network

## Education and Opportunity for Action

The development of any new idea takes place best where we feel most at home and that for most of us is the built environment. Developing ways of working together to identify local issues and ways of improving our towns and villages for wildlife has important spin-offs both for biodiversity action in the wider countryside and other activities in our towns and villages. A great deal can be achieved for biodiversity through minor changes in our daily routines, and the impacts and successes will be highlighted by the developing Education and Awareness Action Plan.

## Example Species of Towns and Villages

### Lower Plants

**Cynodontium tenellum** Threatened Moss  
found in the centre of Melrose

### Higher Plants

Black Spleenwort (a fern)  
Fairy Foxglove  
Butterfly Bush  
Meadow Cranesbill (roadside verge plant)

### Reptiles

**Slow Worm**  
**Common Frog**

### Birds

**Barn Owl**  
**Bullfinch**  
**Swift**  
**House Sparrow**

### Mammals

**Brown Long eared Bat**  
Pippistrelle Bat

## Key Issues

Development planning and mitigation

Education and awareness

Greenspace and infrastructure management

Survey, monitoring and evaluation of 'urban' natural heritage

Pollution and dumping

## Principal Aim of the Scottish Borders Local Biodiversity Action Plan for Urban Habitats:

The integration of measures to conserve and enhance biodiversity into the wider development and management of our towns and villages as part of the sustainable development of the Scottish Borders.

## The Species: audit, action and reporting

The habitat and species audit, of 2000, identified 5558 species occurring in the Scottish Borders. This represents only a small fraction of the actual number present and indicates that much remains to be understood about our local biodiversity. The Information Action Plan sets out a strategy for improving our knowledge of local habitats and species in order to identify fully those of local priority concern.

Habitat actions will meet the needs of the majority of the many species in the region. A number of species will require greater attention and individual species action plans may need to be written for those such as Black grouse, that use a variety of habitats. Additionally, the needs of specialised habitats may best be served through action plans for species closely associated with them, such as the yellow-horned poppy distinctive of coastal vegetated shingle banks. Similarly, the fortunes of individual species can also serve as useful 'indicators' of the overall quality of biodiversity. More familiar or widespread species can be used to represent issues of habitat quality and local character.

As a first step towards creating a representative sample of local species, Appendix II lists 100 Species chosen to represent the issues that the partnership wish to address in the Biodiversity Action Plan. Each species will be reported on annually as part of the Implementation and Monitoring Action Plan. The 100 list is meant to be flexible and it is hoped that it will develop into a useful tool for monitoring the progress of the Action Plan.

Many of the 100 species are examples of the Forty-four species of priority concern within the UK Biodiversity Action Plan that are known to occur currently in the Borders. All of these, and any further ones identified, will be reported on annually and action co-ordinated with the UK BAP, and relevant adjacent local biodiversity action plans.



*Ragged Robin - A wetland indicator*



*Northern Brown Argus - UK BAP species (Scottish Borders has an estimated 13% of UK Population)*



*Twinflower - (UKBAP Species)*

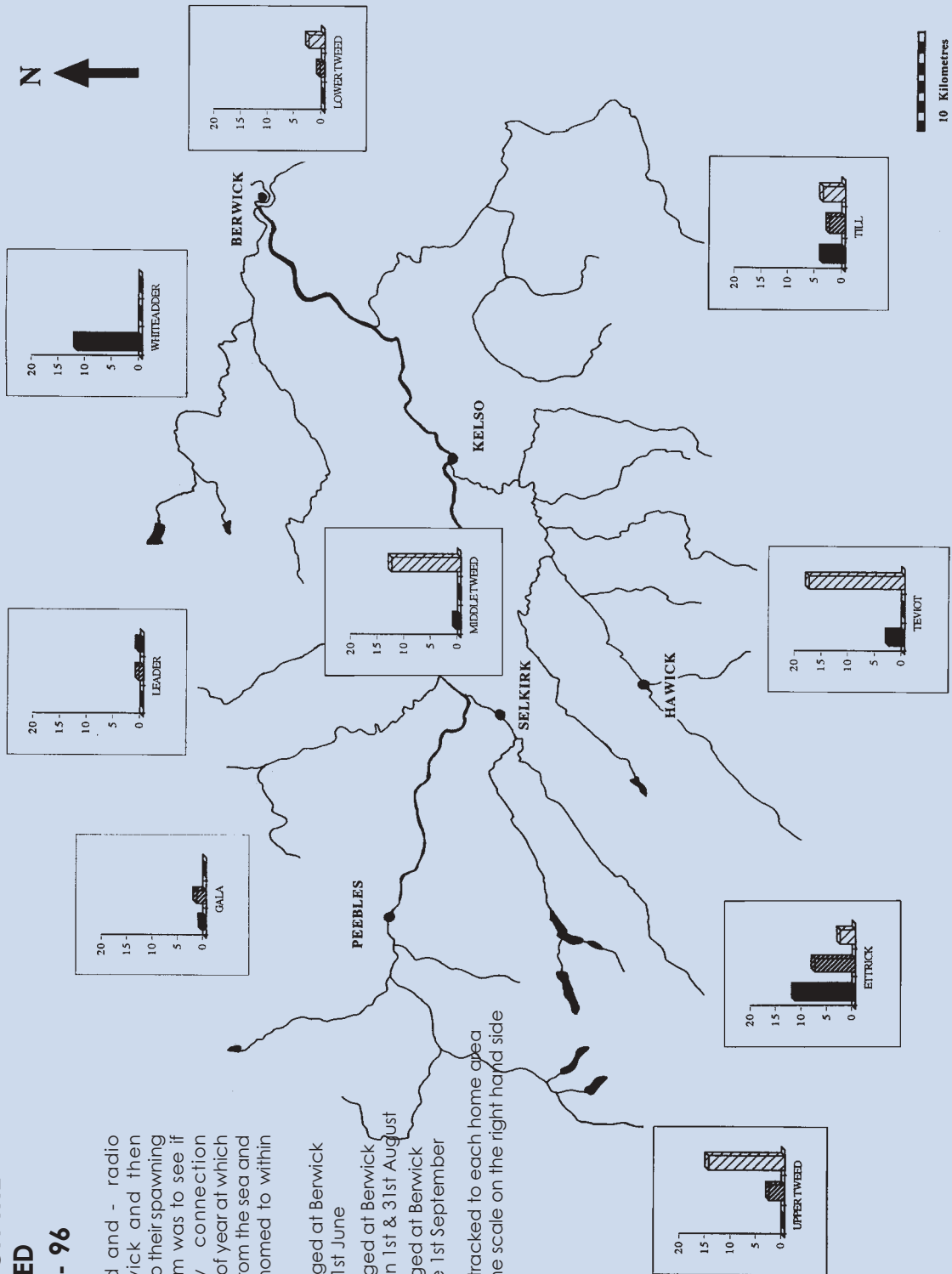
# The Importance of Species Information

## RESULTS OF THE RADIO - TRACKING OF SALMON ON THE TWEED 1994 - 96

Fish were netted and - radio tagged at Berwick and then followed through to their spawning destination. The aim was to see if there was any connection between the time of year at which fish had returned from the sea and where they then homed to within the catchment.

- Fish tagged at Berwick before 1st June
- ▨ Fish tagged at Berwick between 1st & 31st August
- ▧ Fish tagged at Berwick after the 1st September

The numbers of fish tracked to each home area can be seen from the scale on the right hand side of each graph



## Who Manages Biodiversity?

Whether we farm 500 ha or water a window-box we make decisions that impact upon biodiversity. Many of our daily activities have direct links to biodiversity. Driving to work, tending our gardens, buying furniture or fixing the roof can effect local biodiversity. Less than 6% of the Scottish Borders is officially designated for its natural heritage value; smaller still is the area specifically managed for nature conservation. The vast majority of the land and its biodiversity is primarily managed for other purposes, principally agriculture and forestry.

Farmers, foresters, landowners and land managers are key players in managing the Borders Biodiversity. Over 75% of the region is managed for crops, grasslands or as rough grazing. The economics of the industry and associated support schemes have led over the past few decades to the decline of traditional systems of mixed farming and increasingly intensive practices. The increased intensity of land-use has led to declines in the overall quality of farmland biodiversity. This is set against the fact that many land managers are keenly interested in the biodiversity of their holdings; farm activities and management for country sports benefit important local habitats. In order to be truly effective, biodiversity action must be integrated into the normal working practices of viable farm businesses across significant areas of land. The success of the two Environmentally Sensitive Areas in the region shows what can be achieved given sufficient funding. The comprehensive agri-environment scheme, 'Rural Stewardship', offers an opportunity for the channelling of support payments into biodiversity action.

Much of the remaining land in the Borders is managed for forestry. Intensive planting policies and management practices, in the past, have led to a loss of biodiversity. Increasingly, though, the industry is now integrating biodiversity into its everyday operations. Through grant funding and best practice guidance, the Forestry Commission is guiding the adoption of sustainable practices in forestry.

Although the remaining land-use is a tiny proportion of the Borders, its management has significant effects on the quality of local biodiversity. Different approaches to managing open space and buildings in our towns and villages can have dramatic effects. The road network, quarries industrial sites, our parks, gardens and playing fields all harbour biodiversity and we all make daily choices about their management and use. All need to be managed in a sustainable manner balancing the various needs of users and the environment.

## Why Act for Biodiversity?

### The Benefits of Biodiversity

Biodiversity directly benefits many areas of our lives; in addition, the quality of local biodiversity also produces wider benefits than might at first be apparent.

Biodiversity provides the requirements for life; a breathable atmosphere, clean water and food. We derive the direct benefits of shelter, clothing and medicine from local biodiversity. 'Natural' materials continue to form the basis of many everyday products at the heart of our economies and biodiversity lies at the heart of pleasing environments in which to work and live.

We derive great benefits, from the functioning of natural processes when they are balanced, and equally suffer the consequence of catastrophe when they aren't. Our growing understanding of the interdependence of species within and across ecosystems highlights the unpredictable impact that the loss of a single species can have. All that we can say with certainty is that the loss of a single species will probably lead to further losses and a decline in the wider quality of biodiversity. Similarly, the introduction of new species to an ecosystem can have far-reaching and damaging effects. The histories of the Grey squirrel and Giant hogweed since their introduction are examples of this.

Finally, it is generally accepted that we have a moral duty to care for our environment in order that we may pass on to future generations one no less rich than the one we inherited.

The principal benefits derived from high quality biodiversity include: -

- Direct and Potential Economic Value
- Environmental Functioning & Monitoring
- Individual and Social Benefits
- Educational Resource

### Direct and Potential Economic Value

The biodiversity of the region (and beyond) is of importance to the local economy in a number of ways: for example our food production, fisheries, timber, textile and tourism industries.

Maintaining the quality of this local asset, whilst developing the sectors of the local economy dependent upon it, will be a key test of sustainable development.

Understanding the needs of local biodiversity can allow us to benefit from emerging markets, add value to existing ones and adapt to changing economic circumstances. Examples include

- The reform of the Common Agriculture Policy will have profound effects on an already troubled local agriculture industry. The industry makes up 20% of the local economy and in some communities, particularly upland areas, all of the employment. Previous support measures, encouraging intensive practices, have proved disastrous for Biodiversity. Change to this system is welcome provided it can be introduced on a wide enough scale and proves sustainable in the long term for both our farming communities and the biodiversity which they manage. Thirty priority habitats and species from this plan will be incorporated into the local implementation of the Rural Stewardship Scheme, the comprehensive agri-environment scheme that will operate from 2000.
- The increased demand for 'organic' food, requiring producers to investigate wider methods of biological control and production.
- The renewed consumer interest in regional food and drink products. This sector and associated high value export markets benefit both from the resource and the branding opportunities provided by a high quality local environment.
- The recent increase in leisure time is leading to growth in year-round tourism and 'eco-tourism'. As yet, wildlife tourism markets are relatively undeveloped locally, but experience suggests that a large potential market exists. A greater use of local biodiversity in tourism would spread the benefits across the region. Further development of these markets will have to balance the benefits of increased visitor numbers with the interests of the wildlife that attracts them.

Biodiversity may hold the key to future product development. New medicines, crops and even whole technologies will be developed from the continuing investigation of biodiversity. Recent examples include the rediscovery of a local breed of Potato now named the Yetholm Gypsy and the suggestion that chemicals found in slug slime may form the basis of chemical computers capable of working dramatically faster than current silicon



*Glentress Forest, the Borders top tourist attraction. UK visitors, mainly day trippers, spent £42 million in Scottish Borders in 1997*



*Salmon fishing annually brings £12.5M into the local economy. Habitat enhancement benefits both tourism and biodiversity through increasing salmon stocks and enhancing the quality of many river habitats*

technology. The selective breeding of hardy sheep and goats with fine quality fleeces may allow local upland farmers to supply the local textile industry. Therefore, the maintenance of biodiversity wherever we find it represents an investment in our future.

Massive economic damage is caused by pest species. The level of the pest problem can indicate a loss of quality in local biodiversity. Often pests are introduced species, exploiting the lack of a local predator in ecosystems that perhaps have developed without them or because they have been eliminated as a result of previous control measures. Similarly, they can be native species responding to a change in the local environment. The continuing spread of Bracken in our upland margins is an example, the result of a complex number of land management, socio-economic, climatic and biological factors.

## Environmental functioning & Monitoring

Ecosystems involving thousands of species, maintain the level of oxygen in our atmosphere, recycle essential nutrients through intricate food-webs and contribute to the regulation of water flow through the water cycle. Local habitats act to limit the damage being caused by our activities; local peat bogs 'capture' large volumes of carbon-dioxide that would otherwise contribute to 'greenhouse warming'. Variation in species diversity and the size of individual populations often provides early warning of wider changes or damage to the environment, before other monitoring programmes are able to identify them.



*Burying Beetles - Just one part of the nutrient cycle*

## Individual and Social Benefits

A rich local biodiversity enhances the quality of our lives, our health and the local economy. Most of us have a favourite place where we regularly relax and unwind; a local walk, open-space or view. Wildlife, birdsong, and the changing colours of the seasons enrich these important places. Each species adds to the richness of our favourite places and ensures their continuity. We are willing to pay more for property in 'leafy suburbs' of towns and cities and there has been a recent trend for many people to move into the country. Research also indicates that we recover more quickly after illness when we have a 'green' view.

Our modern communities, like their local biodiversities, are unique 'places' and, products of local circumstance and history. This distinctive character is under threat from the development of standardised practices in construction, agriculture and forestry. Similarly, the decline in usage and loss of 'local names' for habitats and species contributes to a loss of local identity. A renewed awareness of the links between cultural, historic and natural heritage and how these combine to produce a sense of place will help our communities rediscover their individuality.

The quality of local biodiversity is a major component of the character of our communities. Working through the issues relating to local biodiversity increases the scope of other community activities. The confidence, identity and economy of a local

community can receive dramatic benefits from Biodiversity Projects.

## Educational Resource

The rich diversity of the habitats and species of the region represents a large educational resource for all ages and levels of interest. Learning through practical experience reinforces understanding and enables us to see how abstract ideas like climate change effect the landscape around us. Local biodiversity is now studied by schools, universities and colleges throughout Scotland and further afield. However, tremendous potential exists to develop a focussed approach to both the formal and informal study of local biodiversity, linking Scottish Borders communities to wider national and global research programmes. The Macauley Landuse Research Institute with other national institutes and universities are investigating such links at their research station near Kelso.

The Education and Awareness Action Plan will bring together local organisations who are currently providing and using biodiversity information. The plan will identify current activities, highlight any gaps in provision and guide future development.

Wider environmental education and understanding will enable us all to make informed decisions and avoid costly mistakes in terms of both environmental quality and economic cost in an increasingly legislated world.



*Soil Biodiversity, International research in the Scottish Borders is looking at the links between soil organisms, management practices and wider ecosystems.*



# The Need for Action

In the Scottish Borders, as elsewhere in the world, biodiversity is being lost at an alarming rate. The pace and scale of this loss is comparable to the extinction of the dinosaurs. Global climate change is wreaking havoc on tropical coral reefs and, closer to home, threatens the montane peaks of the Southern Uplands. Over one hundred species are known to have disappeared from the United Kingdom in the twentieth century. Locally, we can not be sure of the total losses. Nightjar and Bittern were lost from the Borders long ago. Are Tree sparrow and Corn bunting to follow? .

Extinction, however, is part of the natural process of evolution. Geological evidence also, shows that climate-induced habitat change occurs naturally. The actions proposed as part of this plan are not designed to halt these processes, but are aimed at identifying and counteracting the increased losses to our biodiversity which are caused by man's activities.

The National Countryside Monitoring Scheme, published by the Nature Conservancy Council in 1991, compared local land cover in 1940 with that of 1980. The results show the changing character of the Scottish Borders in the second half of the twentieth century. All major semi-natural habitats had declined with a consequent increase in man-made habitats, 'especially plantations and intensive agriculture'. Where, in the 1940s, heather moorland and unimproved grassland were the most widespread habitats, by the 1970s improved habitats and development covered the majority of the area. Current data, though patchy, indicates that this change continues.

The change in gross areas of local habitats also hides a loss of quality occurring in the remaining areas. The Countryside Survey 1990, commissioned by the then Department of the Environment, as well as confirming continuing losses, also identified a widespread decline in the quality of the UK's Biodiversity. The main changes in the lowlands were a loss of species diversity and increasing 'sameness' in vegetation with a few species increasing at the expense of the majority. Habitats such as upland moorland and bogs have tended to be invaded by the same species that benefit from man's activities in the lowlands.

Once common species continue to decline at alarming rates. Well-documented losses, such as the UK breeding Skylark population by 52% in the 28 years from 1970 - 98, are occurring year on year. Increasingly, small populations are vulnerable to extinction as evidenced by the decline of Black grouse in the UK, which fell by 75% over six years to 1998-9. The decline in bird species is indicative of similar trends in species further down the food chain. The Countryside Survey 1990 identified significant reductions of nineteen widely occurring butterfly food-plants - all directly attributable to declining populations.

All is not lost, however. Research by Glasgow University, Macaulay Land Use Research Institute and the Scottish Agricultural College has shown that significant pockets of biodiversity remain on farmland. Positive action to identify and rejoin these pockets, coupled with changes in management and aided by targeted farm incentives could start to improve the quality of local biodiversity. Partnership working will achieve a similar recovery in the Borders.

## Scottish Borders Habitat Losses 1940 - 1980

<b>Heather Moorland</b> 20% Decline
<b>Unimproved Grassland</b> 26% Decline
<b>Blanket &amp; Raised Bogs</b> 71% Decline
<b>Source National Countryside Monitoring Scheme 1991</b>



*Hedge planting at a primary school -part of the Borders Forest Trust School Ground Project*

## Threats to Biodiversity

Many factors are influencing change and threatening local Biodiversity. These include:

### Intensive production methods and land use

- Agricultural practices involving habitat destruction through wetland drainage, grassland re-seeding, heavy grazing, and hedgerow removal.
- Loss and fragmentation of scarce habitat types resulting from land-use change.
- Intensive forestry planting of the uplands and marginal farmland.
- Over-fishing of marine and freshwater stocks.
- Inappropriate amenity use of areas leading to habitat damage, disturbance, littering and tipping.

### Inappropriate Management Regimes

- Decline in traditional management practices.
- Water course engineering, discharge extraction and hydrological management.
- Over-management of amenity open-space.
- Land abandonment.
- Inappropriate tree planting in scarce and fragmented habitats.

### Wider Environmental Impacts

- Air quality and atmospheric deposition of nitrates, etc.
- Chemical pollution and agricultural discharges.
- Marine oil pollution.
- Current and potential impact of exotic species.
- Climate change through species extinction, and the wider impacts of increased wind-speeds, rainfall and sea rise.

### Other Issues and Deficiencies

- Illegal persecution.
- Road casualties.
- Lack of detailed information on the distributions and populations of the habitats and species of the Scottish Borders.
- Lack of general awareness and more freely available practical advice, specifically for land managers, developers and other decision-makers.
- Limited resources for action.
- Lack of co-ordination across sectors

Perhaps the principal obstacle to effective action is the continued lack of knowledge. Without a dramatic increase in readily available information and its use in guiding local decisions, habitats and species will continue to be lost through ignorance.



*Urban watercourses offer significant challenges and opportunities for enhancement benefitting local economies, communities and wildlife*

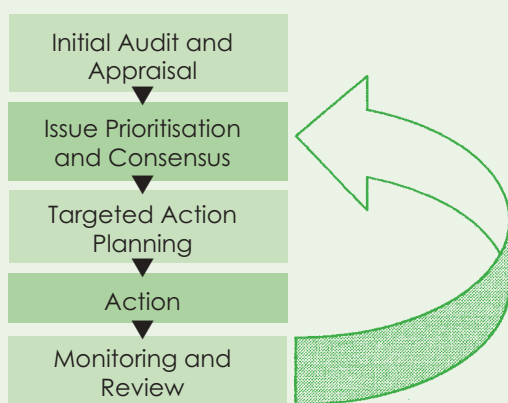
# Biodiversity Action

## Plan Process and Format

The whole plan is presented on two levels (see Appendix I for a full listing of the initial Action Plans).

- This introduction presents the broad issues and highlights. It presents an overall vision and lists principal guiding aims for the overall plan in each of the broad habitat groups.
- The second level of the plan is composed of the **individual action plans**. These plans are drawn either from the Sub-group Priorities or from common themes which are identified as central for implementation of the whole plan (e.g. data requirements).

## Biodiversity Planning: The Process



## Plan Process

The process of Biodiversity Planning, applied to both the overall Action Plan and its component plans, relies on a series of cycles in which improved information leads to planning, action and review. Clearly, through time information will improve and new partners will add to the resources available and the refinement of plan activities. Each component of the plan will be monitored and reported on an annual basis with an overall review at the end of the plan period in 2005.

## Common Themes

Three key issues are common to all Habitat types

- The need to educate, inform and develop local good practice throughout all sectors of society and the local economy. (**Education and Awareness Action Plan**)
- The need to increase the amount, and use of local biological data (**Information Action Plan**)
- The need to incorporate Biodiversity Planning into the wider strategies for sustainable development (**Sustainable Links Action Plan**)

These themes are being addressed by the overarching plans.

## Action Plan Formats

The component action plans are published separately to enable future update. All plans share the same format, whereby they:

- Define the **subject** of the plan, e.g. Water Vole, Heather Moorland or Local Awareness
- Describe the **current status** of the subject and, if relevant, refer to national plans, distributions etc.
- Describe **current national and local action, management, threats and benefits** in order to identify the future direction of local activity
- Set out **necessary actions** together with a list of **targets** for judging success. Plans also identify **lead organisations** responsible for co-ordinating the action plan's implementation and review. (It is vital that all proposed actions are able to be of monitored and that realistic, but challenging targets are set)

Plans may also outline links to pilot projects and other activities in the overall Action Plan.

## Action to Date

Since the Partnership formed in 1998, it has:

- Drafted an initial tranche of **Habitat Action Plans**,
- Commenced a review and initiated action linking Biodiversity to wider issues of sustainability,
- Commenced an **Education and Awareness Action Plan** for which this document marks the start,
- Commenced implementation of the Information Action Plan, including development of an Environmental Record Centre to increase regional Biodiversity data, access and wider use,
- Conducted an Audit identifying UK BAP Species & Habitats present in the Scottish Borders,
- Prepared the Implementation and Monitoring Plan.

# Future Action

## The Partnership:

- Will continue to develop and seek to include representation from local communities, business, interest groups and other organisations.
- Will lead and report on the implementation of the component action plans.
- Will work to identify and secure resources for the ongoing development of the plan.
- Member organisations will, wherever practicable, integrate Biodiversity action into their individual policies and activities.

## The Plan:

- Component action plans will be developed over the next five years.
- Annual Reports will be compiled in order to monitor and review plan activities.
- Additional action plans will be developed
  - to further the principal aims of the Action Plan and habitat groupings,
  - to reflect the developing Partnership's interests,
  - to reflect the improving knowledge about the Biodiversity of the Borders.

## You:

This introduction marks the start and not the end of the Biodiversity process in the Scottish Borders. We all need to understand and apply the principles of sustainable development in our everyday lives if we are to play a full part in ensuring a rich and sustained biodiversity for the Borders. What is good for the environment is usually good for Biodiversity.

Examples include:

- careful use of energy, transport, water and materials,
- minimising of waste and pollutants,
- recycling.

Ideas and examples for action can be found in the **Borders 21 Information Pack**, which is available from Scottish Borders Council.

We should all think about the different actions we take on a daily basis and how Biodiversity might be included in them. Each one of us can make a difference. The following are prompts to a better understanding of the different ways in which we can each act for Biodiversity.

## AS - AN INDIVIDUAL

- How practicable do you feel it is to get involved with the Action Plan?
- Would you feel able to put the plans into practice in your home, garden, local patch, school or workplace?
- What help would you require to get involved in writing, developing or monitoring an action plan or help to write an overall plan for an area?
- Would you be able to record the plants and animals you see around you, the time of year new migrants arrive etc., and then contribute your records to the local Environmental Record Centre?
- Would you consider experimenting with wildlife gardening?
- Would it be practicable to create and retain a wild part of your garden, leave seed heads on plants, avoid the use of peat, use native species in new ponds and plantings, put up bird or bat boxes?
- How would you wish to learn more about biodiversity?
- Written materials, web products, guided walks or formal tuition?
- Would you be prepared to share your knowledge of local habitats and species with others?
- Would you be prepared to organise and co-ordinate local biodiversity action?

## AS A FARMER, FORESTER OR LANDOWNER

- What more can be done to inform land managers of regional Biodiversity action?
- Would you be willing to get involved with Best Practice Projects or write individual Biodiversity Action Plans for your land?
- Would you either carry out or allow a biodiversity survey on your land, to note changes over time and contribute to the wider picture?

## AS - FAMILIES & RESIDENTS

- In what ways could you get together as local residents to identify action you can take locally for Biodiversity: for example, manage a local patch, research local features, record local wildlife?
- Are there any obstacles that appear to prevent you from doing this?

# Action to Date

## AS-EMPLOYEES/EMPLOYERS

- Could you persuade the organisation you work for to assess the Biodiversity impact of its activities?
- Can you identify ways in which negative actions could either be mitigated or offset with positive action elsewhere?
- What would be the most practical way for an organisation to review its land-holdings and consider whether Biodiversity is included in land-management decisions?
- Would organisations with significant land holdings be willing to grant access to allow assessment for Biodiversity?
- What organisational operations might impact upon Biodiversity?
- What are the best ways of ensuring all relevant operations are covered?
- Would publicising the costs and the benefits of action taken for Biodiversity encourage further action?
- In what ways could organisations be encouraged to provide support in-kind for local action or champion a local species?
- How best might small and medium sized businesses get involved?
- Would it be useful to identify the benefits to local Biodiversity of action taken by companies for the wider environment?
- How might Biodiversity action play a part in staff development or team building?

## AS-MEMBERS OF INTEREST GROUPS AND ASSOCIATIONS

- Identify whether your interest group, club etc. can act for Biodiversity - be creative!

## ACT NOW

- Register with the Local Biodiversity Partnership and keep in touch with the Scottish Borders Local Biodiversity Action Plan.
- Please send your feedback / request for further information to the Biodiversity Officer at Scottish Borders Council.



*Partnership Working* - Anglers at work with the Tweed Foundation to erect fencing for bankside vegetation enhancement on the Leet. This catchment is the focus of a catchment management plan involving many of the Local Biodiversity partners.



*Learning and Working together*



*The smallest patch can be managed for wildlife*

# Appendix I Initial Plan Outline

Borders Habitats (This Document)	Local Habitat Action Plan (HAP)	UK Broad Habitat/s included in HAP	UK/Local Special Features included	Notes
<b>Sea and Shore</b>	<b>Coastal and Marine Habitats</b>			Local Awareness Priority
		Supra-littoral Sediment	Vegetated Shingle (Yellow - Horned Poppy) Sand Dunes (Small Blue Butterfly)	
		Littoral Sediment	Mudflats	Berwickshire Coast SAC
		Inshore & Off shore Habitats	<i>Modiolus modiolus</i> beds <i>Sabellaria spinulosa</i> reefs	Berwickshire Coast SAC
		Natura 2000 Designated Habitats Sea Caves and Rocky Reefs		Berwickshire Coast SAC
<b>Coastal Braes and Denes</b>	<u>Maritime Cliff and Slope HAP</u>	Supra-littoral Rock Dwarf Shrub Heath	Maritime Cliff and Slopes Dean Woodland Maritime Heath	Links to Native woodland and Heathland action
<b>Hummels, Haughs and Knowes</b>	<b>Enclosed Farmland and Lowland Grasslands</b>			<b>Enclosed Land Sub-group</b>
	<u>Boundary features, Hedgerows &amp; Arable Margins HAP</u>	Boundary and Linear Features	Species rich Hedgerows Wayside Trees	Includes all Boundary Ditches
	<u>Enclosed Grasslands HAP</u>	Arable and horticulture	Cereal Field Margins Upland Arable	Includes rotational set-aside, annual leys etc
		Neutral Grassland	Lowland Meadows Haughlands	
		Calcareous Grassland	Lowland Calcareous	
		Acid Grassland	Lowland Dry Acid	
		Improved Grassland (Bracken)		Agricultural use only Separate HAP to be written
	<u>Rush Pastures HAP</u>	Fen, marsh and swamp	Purple Moor Grass and Rush Pasture	
<b>Woods and Scrub</b>	<b>Woodland Habitats</b>			<b>Woodlands Sub-group</b>
	<u>Native Woodlands HAP</u>	Broad-leaved mixed and yew Woodland	Upland oakwood Upland mixed Ashwood	Includes Veteran Trees
	<u>Wood Pasture and Parkland HAP</u>		Lowland Wood Pasture and parkland	Includes Policy Woodland
	<u>Upland Scrub and Cleugh Woodland HAP</u>		Juniper Scrub	Links to Montane HAP
	<u>Coniferous Woodland HAP</u>			Links to FC Forest Plan Production
<b>Mosses, Lochs and Clarty Holes</b>	<b>Wetland Habitats</b>			<b>Wetlands Sub-group</b>
	<u>Fens, Carr Marsh Swamp and Reedbed HAP</u>	Fen Marsh and Swamp Bogs Broad-leaved, mixed and yew woodland	Fens Lowland raised bog Wet Woodlands Reedbeds	
	<u>Lochs and Ponds HAP</u>	Standing open waters and canals	Mesotrophic Lakes Eutrophic Standing waters Ponds, pools and meres	
	<u>Raised Bogs HAP</u>	Bogs	Lowland Raised Bogs	
<b>Rivers and Burns</b>	<u>Rivers and Burns HAP</u>	Rivers and Streams		Links to Catchment Management Plan & Urban HAP
<b>Hills, Heather and High Tops</b>	<b>Upland Habitats</b>			<b>Uplands Sub-group</b>
	<u>Upland Heath HAP</u>	Dwarf Shrub Heath	Upland Heathland	Includes conservation Grasslands when part of mosaic
	<u>Blanket Bog HAP</u>	Bogs		
	<u>Montane HAP</u>	Montane habitats		

Town and Villages	Urban Habitats			Urban Sub-group
		Built up Areas and Gardens	Urban Watercourses Transport Corridors Agricultural Buildings Amenity Grasslands	Co-ordinates activity for all HAPs within Urban context
Theme Plans/Groups				
Implementation and Monitoring 2001-2005		LBAP Partnership		
Education and Awareness Action Plan		Awareness Sub-Group		
Information Action Plan		LBAP Partnership		
Sustainable Links Action Plan		LBAP Partnership		

## How to use the Plan Outline

Appendix I outlines the initial Scottish Borders Local Biodiversity Action Plan. It shows how the sections of this introduction relate to the component action plans of the Scottish Borders Local Biodiversity Action Plan. It also shows the links to the UK BAP and some of the other plans directing Biodiversity Action in the Scottish

### Example

The Mosses, Lochs and Clarty hole section **(1)** of this document includes habitats covered by the component habitat action plan, **(2)**, Lochs and Ponds (HAP). This HAP includes action for those habitats listed by the UK BAP **(3)** under the broad heading 'Standing open waters and canals'. Of particular concern to the local plan are the Special Features listed under section **(4)**. No notes **(5)** are included in this example. Further detail is set out in the action plan **(2)** and the section heading shows that the plan is one of the Wetland Habitats overseen by the Wetlands Sub-group

<b>1</b> Borders Habitats (This Document)	<b>2</b> Local Habitat Action Plan (HAP)	<b>3</b> UK Broad Habitat/s included in HAP	<b>4</b> UK/Local Special Features included	<b>5</b> Notes
Mosses, Lochs and Clarty Holes	Lochs and Ponds HAP	Standing open waters and canals	Mesotrophic Lakes Eutrophic Standing waters Ponds and bog pools	

## Appendix II Borders 100

Algae	Rugged Stonewort	1	Coral	Dead Men's Fingers	5	Bird	House Sparrow	1,4 & 5
Fungi	Pink Waxcap	2,3	Odonata	Large Red Damselfly	1,5	Mammal	Brown Hare	1,2 & 5
						Mammal	Brown Longeared Bat	1 & 5
Lichen	River Jelly Lichen	2,3	Lepidoptera	Common Blue	1,5	Mammal	Harbour Porpoise	2 & 5
Lichen	Cyphelium inquinans	3	Lepidoptera	Dark Bordered Beauty	2,3 & 4	Mammal	Otter	1,2,3&5
Lichen	Lungwort	1,5	Lepidoptera	Large Heath	1,3	Mammal	Red Squirrel	1,2,3,4&5
			Lepidoptera	Northern Brown Argus	2,3	Mammal	Water Vole	1,2,3,4&5
Bryophyte	Weissia condensa	1,3	Lepidoptera	Small Blue	3,4&5			
Bryophyte	Fossombronia fimbriata	1,3	Lepidoptera	Sword grass	2,4			
Bryophyte	Cynodontium tenellum	3,5						
Bryophyte	Hornwort	1	Coleoptera	Water Beetles	1,2&3			
			Coleoptera	Shingle Beetles	1,2&3			
Pteridophyte	Wilson's Filmy Fern	3	Coleoptera	Neobisnius procerulus (rove beetle)	1,2&3			
Pteridophyte	Forked Spleenwort	3						
			Hymenoptera	Nematus monticola (sawfly)	3			
Higher Plant	Alpine Rush	1,3&4	Diptera	Parhelophilus consimilis (hover fly)	1,4			
Higher Plant	Autumn Gentian	1,4	Diptera	Spiriverpa lunulata (stilleto fly)	2			
Higher Plant	Bog Blaeberry	1,3&4						
Higher Plant	Chickweed	3,4						
	Wintergreen							
Higher Plant	Common Ramping	2,3,4&5	Fish	Atlantic Salmon	1,3,5			
	Fumitory							
Higher Plant	Common Rock Rose	5	Fish	Grouped Plan for Lamprey	1,2,3,5			
Higher Plant	Globeflower	1,4&5	Fish	Allis Shad	2			
Higher Plant	Green Figwort	3	Fish	Brown Trout	1,3,5			
Higher Plant	Hairy Stonecrop	1,4						
Higher Plant	Herb Paris	3,4	Reptile	Adder	1,4			
Higher Plant	Holy Grass	3	Reptile	Slow Worm	1,4			
Higher Plant	Juniper	1,2,3,4&5						
Higher Plant	Kelso Water Crowfoot	1,2 & 5	Amphibian	Great Crested Newt	1,2			
Higher Plant	Large Flowered Hemp Nettle	1	Amphibian	Common Frog	5			
Higher Plant	Lesser Twayblade	1						
Higher Plant	Lesser Water Parsnip	3	Bird	Black Grouse	1,2,3,4&5			
Higher Plant	Maiden Pink	1,3,4&5	Bird	Grey Partridge	1,2,4&5			
Higher Plant	Marsh Valerian	3	Bird	Skylark	1,2,3,4&5			
Higher Plant	Narrow Small Reed	3	Bird	Spotted Flycatcher	2,4			
Higher Plant	Northern Hawksbeard	3	Bird	Tree Sparrow	2,4			
Higher Plant	Northern Spike Rush	3	Bird	Yellowhammer	1 & 5			
Higher Plant	Pale Forget - me Not	3	Bird	Bullfinch	1,2,5			
Higher Plant	Petty Whin	1,4	Bird	Reed Bunting	1,2,5			
Higher Plant	Purple Milk Vetch	1,4	Bird	Hen Harrier	1,2,3,4&5			
Higher Plant	Purple Ramping	2	Bird	Merlin	1,2,4&5			
	Fumitory							
Higher Plant	Ragged Robin	1,5	Bird	Black-necked Grebe	1,3			
Higher Plant	Round-leaved Sundew	1	Bird	Shag	1,3&5			
Higher Plant	Sand Leek	4	Bird	Greylag Goose	3 & 5			
Higher Plant	Sheathed Sedge	3	Bird	Lapwing	1,3,4&5			
Higher Plant	Sticky Catchfly	3	Bird	Curlew	1,3,4&5			
Higher Plant	Toothwort	1,3&4	Bird	Kittiwake	1,3&5			
Higher Plant	Tussock Sedge species	1,3,4	Bird	Barn Owl	1,3,4&5			
Higher Plant	Twinflower	2	Bird	Short eared Owl	1 & 3			
Higher Plant	Wall Whitlow Grass	3	Bird	Swift	1 & 5			
Higher Plant	Water Chickweed	3	Bird	Kingfisher	1 & 5			
Higher Plant	Yellow horned Poppy	1,3	Bird	Ring Ousel	1,4 & 5			
			Bird	Marsh Tit	3			
Mollusc	Lymnaea glabra (pond snail)	3						
Mullusc	Vertigo Lilljeborgi (whorl snail)	3						

### Key

- 1 Habitat Quality Indicator
- 2 UK BAP Priority/Natura 2000
- 3 Importance of Local Population
- 4 Recent Local Declines/Threat
- 5 Flagship Species



## Appendix III Biodiversity Action Planning - A History

### International

The UK Government signed the UN Convention on Biological Diversity at the Earth Summit held in Rio de Janeiro in 1992. Over 150 countries attended, at that time the largest ever meeting of world leaders, and each recognised the urgent need for coordinated action to counter the damage being caused to the natural environment by the activities of man. The meeting resulted in the production of agreements for co-ordinated international action to address: loss of global biodiversity, world climate change and sustainable management of the world's forests.

The meeting attempted to reconcile the continuing drive towards world economic development and environmental protection (Agenda 21). Agenda 21 is designed to integrate environmental requirements into policies covering such activities as industry, agriculture, energy, recreation, transport, tourism, land-use and fisheries as the basis for sustainable development in the 21st Century (hence Agenda 21). Emphasis is placed on local action towards the world's environmental problems, reflecting the idea that damage is the result of the gradual accumulation of local actions (hence Local Agenda 21). 'Local', when viewed from the world's perspective, can apply to whole countries as well as neighbourhoods and villages. Education and awareness-raising projects are seen as central to the process of change.

### UK and National

Article 6a of the Convention on Biological Diversity required the development of national strategies for the conservation and sustainable use of biological diversity. The UK Government produced 'Biodiversity: the UK Action Plan' in January 1994. This reviewed the content, status and trends of Biodiversity in the UK, and created a Steering Group to advise the Government on the implementation of the plan. The core of the plan is presented in a series of '59 Steps' to be taken towards the securing of biodiversity within the UK.

The report of the Steering Group set up by the UK Plan was produced in 1995. It presented a basic classification for all UK Habitats and criteria for prioritisation of species. The heart of the report lies in the action planning process, 'the emphasis being on action required and the changes needed to achieve targets', which is the core of all Biodiversity Action Plans.

The report also recommended the formation of groups charged with the implementation

and on-going review of the plan, with a central UK Biodiversity Group and Secretariat for overall monitoring and international liaison. The report highlighted the urgent need to develop national and local information resources; and the need to increase public awareness and greater involvement. Since 1995, Species and Habitat Action Plans have been published covering the full range of habitats found in the UK. Of these, 226 species and 41 habitat action plans are relevant to Scotland.

In keeping with the principles of the Rio meeting the report identified local partnership activity as the most effective way of ensuring that action occurred across the whole of the UKBAP area. Supported and co-ordinated by the national and UK Groups, local partnerships would also ensure the inclusion of action for local priorities within the wider process. Finally it was hoped that the existence of local groupings would replicate and reinforce the organisational partnerships being made at higher levels.

As a result of the report, the Scottish Biodiversity Group was formed in 1996. Chaired by the Scottish Executive, it is a broad partnership with representation of statutory and non-statutory organisations, commercial and business interests, land manager associations, technical experts and recreational interests. The group is charged with the co-ordination of the implementation of the UK plan within Scotland and to directly oversee the implementation of Action Plans most relevant in Scotland. The group has three sub-groups and three sector groups reflecting the scope expected of Biodiversity Plans.

Sub-Groups of the Scottish Biodiversity Group	Sectoral Groups of the SBG
Costed Action Plans	Agriculture
Public Awareness & Marketing	Education
Local Biodiversity Action Plans	Business

Group members represent statutory and non-statutory organisations, commercial and business interests, landowners, land managers, academics, scientists and recreational representatives.

## Appendix III Biodiversity Action Planning - A History

The Scottish Group (through its LBAP sub-group chaired by the Confederation of Scottish Local Authorities) acted upon the advice of the UK Steering Group and set up four pilot LBAP projects across Scotland.

These have acted as a core group whose experience continues to advise and encourage other partnerships to form and develop in the remaining 28 Local Authority areas. The group also appointed a Project Officer to facilitate the process who has greatly contributed to the shaping of Local Biodiversity action in Scotland through networking and other support.

### **The Scottish Borders**

Local Action Planning for Biodiversity started with the formation of the Scottish Borders Biodiversity Partnership in December 1998. Scottish Borders Council agreed to administer the plan and, with funding from Scottish Natural Heritage and European Union Funding under the Leader II programme, have provided a project officer during the drafting of the plan. Scottish Borders Council and Scottish Natural Heritage have also ensured the publication of this document. All members of the Partnership have given freely of their time in the drafting of the Action Plans.

The Local Biodiversity Action Plan was started as part of the 'Sustainable Communities Initiative' set up to promote Local Agenda 21 measures in the Borders. This linkage still continues with the Local Biodiversity Action Plan being a key element of the Environmental Strategy of the Scottish Borders Community Plan. Biodiversity also appears as a theme in the other strategies of the Community Plan (the Economic Strategy and the Social & Health Strategy).

## Appendix IV Glossary

Acidic / Acid	Naturally low in nutrients – tending to a more acidic chemistry with a low pH value.
Action Plan	A structured approach to guiding and prioritising action involving research, consensus and informed targeted action subject to monitoring and review.
Base-rich	Naturally high in nutrients – tending to a more alkaline or ‘basic’ chemistry with a high pH value.
Community Planning	A partnership of public bodies, the private sector and local groups working together to an agreed strategic plan that guides the regions development.
Enhancement	Action to improve the conservation interest of a site or area.
Food webs	The complex relationships of species linking plants and herbivores, predators and prey etc.
Fossil beds	Geological formations rich in fossilised remains of past biodiversity.
Greenhouse Gas	Atmospheric gases that trap heat in the lower parts of the atmosphere, without such gases the planet would be significantly colder. However, man’s activities have vastly increased the volume of these gases and added new ones.
Habitat	Distinct combination of physical features, and often, plant species (geology, soils, water etc), (e.g Heather Moorland) within which species live.
Montane	Defined as all land above 600m.
Natural Heritage	All geological features and processes, plants and animals, providing amenity, natural beauty and economic resource.
Peat	Plant remains (principally Sphagnum Mosses), that due to climatic effects do not totally breakdown, over many years these accumulate to form ‘Peat’.
Physical Process	Together with biological and chemical processes these are naturally occurring events such as erosion or silting up that shape the landscape and the habitats within it.
Pollen Evidence	Analysis of pollen grains found in deposits of known age that indicate the plants growing at that time.
Species	A separate group of organisms (plant, animal etc), capable of producing fertile offspring.
Species Rich	Habitats marked by their high number of individual species.
Sustainability	Development that meets the needs of current generations without compromising the ability of future generations to meet their needs.
Water Cycle	The circulation of water through the environment, from precipitation to rainfall to river to ocean etc.

## The Scottish Borders Local Biodiversity Partnership (Initial Members)

- **Borders Forest Trust**
- **Borders FWAG**
- **Bridging the Borders Project**
- **East of Scotland Water**
- **Forest Enterprise**
- **Forestry Commission**
- **National Farmers' Union Scotland**
- **National Trust for Scotland**
- **Royal Society for the Protection of Birds**
- **Scottish Agricultural College**
- **Scottish Borders Biological Records Centre**
- **Scottish Borders Council (Chair and Secretariat)**
- **Scottish Environmental Protection Agency**
- **Scottish Executive Rural Affairs Division**
- **Scottish Landowners' Federation**
- **Scottish Natural Heritage**
- **Scottish Wildlife Trust**
- **Southern Upland Partnership**
- **The Moorland Gamekeepers' Association**
- **Timber Growers' Association**
- **Tweed Forum**
- **Tweed Foundation**