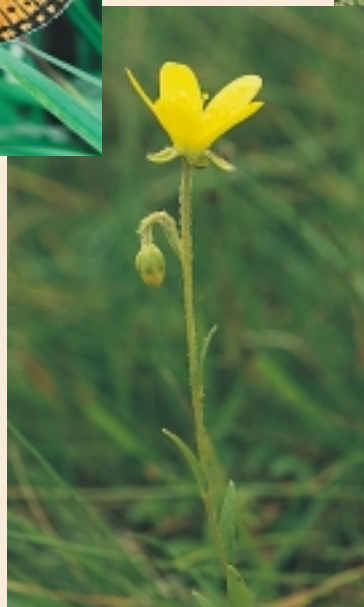
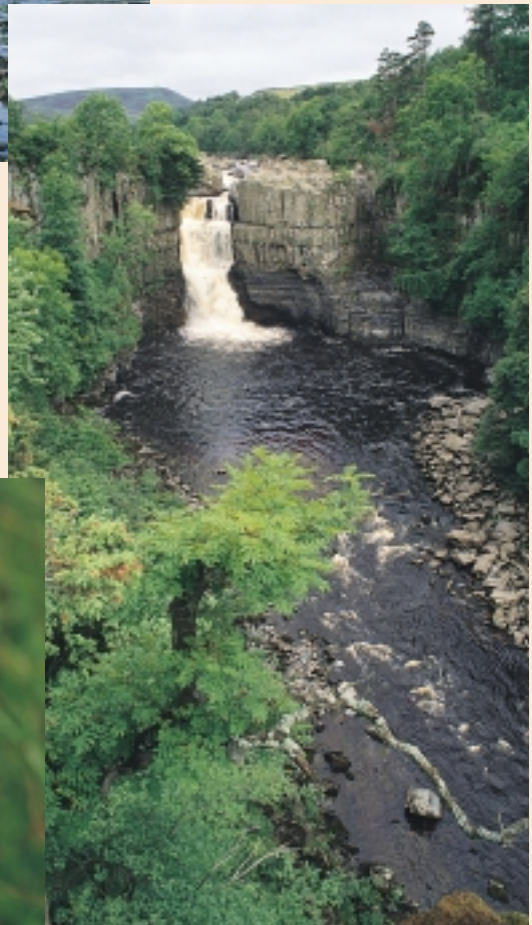




# Natural Areas in the North East Region

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helping to set the regional  
agenda for nature





# Introduction

**R**egional strategies and policy documents are being drawn up by the newly-created Regional organisations. These are required to encompass the protection and management of the environment by applying the principles of sustainable development.

This document has been produced by English Nature, the Government body that promotes the conservation of wildlife and natural features throughout England. It is for use by the Regional Development Agency, the Government Regional Office and the Regional Chambers, when making Regional policy. We hope that it will provide a starting point for discussion with our network of Regional Lead Teams, who can provide valuable support, and links into wider partnerships.

The conservation of nature is a key test of policy in all three facets of sustainable development, the social, the economic and the environmental. While its role in the environment is self evident, it also has social implications through the spiritual, cultural and recreational value of people's experience of the natural world; and economic implications through the provision of exploitable resources and the attractiveness to investors of high quality environments.

If we are serious about achieving sustainable development, then understanding the priorities for the conservation of the biodiversity and Earth heritage resource of the Region is therefore essential. This report is a first step towards that understanding, and provides the basis for integrating

local and national priorities for nature into the Regional decision-making framework. It contains information of direct relevance to the development of Regional Planning Guidance and Single Programming Documents to support the delivery of European Union Structural Funding, regeneration funding and other economic and social programmes.

The Ministry of Agriculture, Fisheries and Food, the Environment Agency, the country forestry organisations, local authorities and statutory and other agencies involved in land use and land management issues will also find it relevant and, we hope, of value.

We envisage that this document can therefore be used at a number of key points within the Regional strategy-making and planning process.



Lindisfarne NNR, Northumberland. Peter Wakely/English Nature



Sugar limestone on Upper Teesdale NNR, County Durham. Peter Wakely/English Nature

## Natural Areas as a Regional framework for nature

English Nature has divided England into a series of **Natural Areas**. Their boundaries are based on the distribution of wildlife and natural features and the land use patterns and human history of each area. They do not follow administrative boundaries but relate instead to variations in the character of the landscape. They reflect our cultural heritage and are central to English Nature's organisational strategy *Beyond 2000*.

We worked with the Countryside Commission (soon to become the Countryside Agency) to identify a joint approach to the characterisation of the countryside into locally distinctive units called character areas. Where the wildlife and natural features are similar between adjacent character areas we have merged them into one Natural Area - so, a Natural Area may contain several character areas that are considered to be different landscape types.

Natural Areas offer a more effective framework for the planning and achievement of nature conservation objectives than do administrative boundaries. Although they are not formal designations they are now recognised in Government Planning Policy Guidance (PPG) and other statutory advice.

Within this framework, we have, with our key partners in the Region, identified the chief threats to, and opportunities for, nature conservation. Together, we have defined a range of issues, and set associated objectives that we believe provide a starting point for Regional action to protect and manage our biodiversity and geological assets. These objectives are set out in the sections which follow.

### Relevant Government Planning Policy Guidance (PPG)

- PPG 7: The Countryside: environmental quality and economic and social development
- PPG 9: Nature Conservation
- PPG 11: Regional Planning Guidance
- PPG 12: Development Plans and Regional Planning Guidance (presently under review)
- PPG 13: Transport

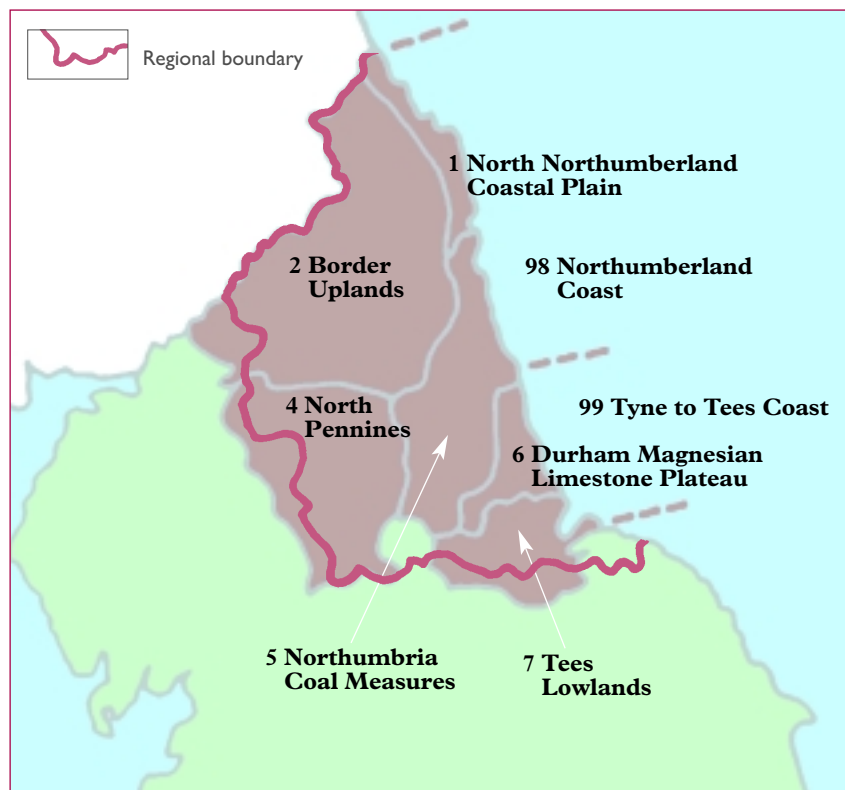
Department of the Environment, Transport and the Regions Policy Guidance: Policy appraisal and the environment (DETR, 1998).

## Objectives for sustainable development and nature conservation in the North East Region

The North East Region is traditionally associated with coal, ship building, iron and steel and other heavy industries, and a strong sense of community identity. Agriculture is the dominant land use and is the mainstay of the rural economy. It is known as a Region of dramatic and rugged coastal and upland landscapes that support a characteristic combination of wildlife and geological heritage. Areas like Upper Teesdale have a remarkable diversity of high quality habitats, and some rare species, of which the Region can be justifiably proud. The North East has some of the wildest countryside in England. This wilderness and natural beauty supports a significant tourism industry.

The distribution of wildlife and the texture of the landscape are the product of complex interactions. The basic physical qualities of the rock, soil and climate have set the scene, but the detail has been, and will continue to be, shaped through human activity which is driven by economic, social, and environmental forces.

Our ability to exploit the environment for economic gain is beginning to jeopardise our present and future well-being. Since our decisions can have far-reaching effects on present and future generations, we need to look at how we can act to maintain and improve both our local and global environments. There is no doubt that work at the Regional level



Natural Areas covered in the North East Region report

can be a powerful force in steering local agendas for environmental action, whilst providing strong links to national and international programmes.

Sustainable development requires integration, rather than balance or trade off. Decision makers need to build environmental and social criteria into the heart of their policies and programmes - and ensure that they are given the same weight as economic considerations at the beginning of the process. This is what is meant by integration, and contrasts with the more familiar situation, where proposals are drawn up against economic criteria alone and are only weighed against their environmental impact when they are about to be implemented.

The basic means for many of the Regional level structures and

organisations to act will be through the planning process for built development and infrastructure. Planners have a key role in incorporating economic, environmental and social factors into decisions about where to put homes, jobs, shops and leisure facilities. In this way, demands on land, the environment and nature can be managed more sustainably. Regional Planning Guidance will be written to help with this process.

Current government policy encourages investment in urban areas and existing centres rather than out of town sites. This means re-using previously developed urban land as much as possible, while ensuring that the quality of towns or cities is maintained or improved. The challenge will be to determine which patterns and locations of development prove most sustainable.

Conserving and enhancing nature can be compatible with development and, whilst the built environment has fewer designated sites, Local Nature Reserves, pocket parks, green space and even private gardens, are the only contact the majority of people have with nature. They are also important reservoirs of biodiversity.

Another essential role will be played by those charged with the design and implementation of policy and programmes for forestry, agriculture, water and recreation. Farming is the North East Region's major land use. The habitats described in the following chapters are predominantly part of agricultural management systems. **Farmland therefore provides a major source of opportunity for habitat**

**creation and maintenance, and species protection and enhancement. Its importance is reflected in the issues and objectives that are listed at the start of each section.**

The intensification of agriculture, and associated decline in traditional land management, combined with the huge growth of the major towns and cities, has resulted in the reclamation and loss of much of the lowland semi-natural habitat of value to wildlife in the North East Region. The semi-natural habitats that remain are often small and isolated and are adversely affected by agricultural practices and pressure from development, including the use of pesticides and fertilisers, run-off of pollutants from

industrial and housing estates, and the lowering of water tables through drainage and abstraction. Similar pressures of agricultural intensification, notably overgrazing, inappropriate burning regimes and a move from traditional grassland management, are applied to the wildlife of the uplands.

The populations of birds, mammals and plants which rely on the agricultural systems themselves have also plummeted. Major priorities therefore include: the sensitive management of existing habitats; increasing the area of existing habitats and re-establishing the links between them; and restoring the conditions in which the wildlife of cereal fields and pasture can also thrive.



Walkergate Nature Gardens, Newcastle-upon-Tyne. George Barker/English Nature

## How the contents of the report may be applied

Specific application	Relevant contents
Sustainable development	We have sought to set biodiversity and Earth heritage in the context of sustainable development - and to define the latter as a process of integration.
Providing context	Descriptive text which outlines the natural character of the Region.
Identifying issues and objectives	Specific issues and objectives written for direct inclusion in policy documents and/or distillation into policy to protect and enhance nature.
Links to international site designations and biodiversity	Key Natural Areas are named in each section in order to ensure that national priorities for habitat conservation are taken into account. They are identified as supporting nationally important concentrations of a habitat or Earth heritage feature and/or international sites (Special Protection Areas and Special Areas of Conservation) and biodiversity habitats and species.
Benchmarks for nature	A checklist is provided (Annex 1) to make an assessment of the contribution of policies, projects and programmes to the delivery of sustainability in relation to nature.
Key contact points	The English Nature contact addresses are provided for the Region, including the Regional Lead Team, together with a list of sources of information (Annex 2).

## Glossary

**BAP:** Biodiversity Action Plans for habitats and species.

**Biodiversity:** Simply means the variety of life on earth. It covers everything from human beings to oak trees, bacteria to blue whales. Many Regions have already produced or are working on Biodiversity Audits and Action Plans which begin to catalogue and summarise their wealth of wildlife. This document complements these and other initiatives, including work on Local Agenda 21 and Local Biodiversity Action Plans, and existing Nature Conservation Strategies.

**Earth heritage:** We have a rich and diverse heritage of rocks, fossils, minerals and land forms. The protection and management of these features is an integral part of nature conservation.

**European Union Habitats and Birds Directives** requires the Government to designate and protect some of the most important areas for wildlife. They are or will be classified as Special Protection Areas (SPAs) and/or Special Areas of Conservation (SACs). These sites are also Sites of Special Scientific Interest (SSSIs) but meet specific criteria for international importance. In the case of marine SACs the SSSI designation only applies down to the low water mark.

**Habitat:** is the natural home of any plant, and where animals feed, breed and rest.

**Statutory guidance from the Secretary of State to the Regional Development Agencies (RDA) includes:** Sustainable Development; Rural Policy; Regional Economic Strategies. **White Papers** include: Building Partnerships for Prosperity; The United Kingdom Sustainable Development Strategy; Rural White Paper; Urban White Paper.

**Sustainable development:** was defined by the 1987 World Commission Report on Environment and Development as “development which meets the needs of the present without compromising the ability of future generations to meet their needs”. It is often described as a ‘three legged stool’ whose legs comprise environmental, economic and social. If any one of them is missing as a consideration in decisions, the stool will topple.

# Earth heritage

## Key issues and objectives

*Issue: maintenance and protection of existing resource*

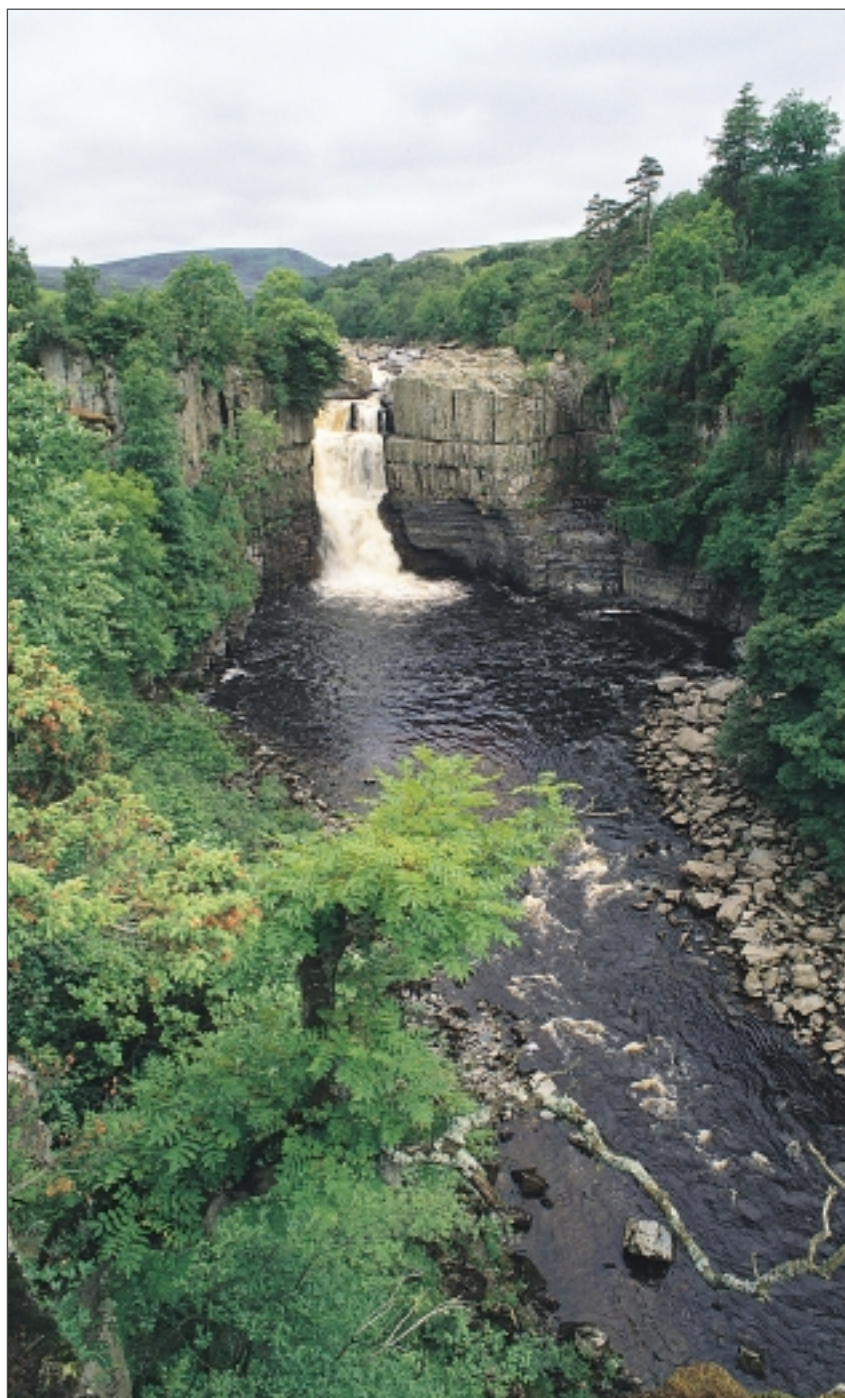
- **Maintain** existing geological sites of Earth heritage interest by **agreeing**, with extraction companies, the conservation of exposures in working quarries.

*Issue: recreation and education*

- For vulnerable cave systems, **support** local caving groups in producing cave conservation plans.
- **Promote** responsible fossil and mineral collecting at vulnerable sites.
- **Promote** local Earth heritage by:
  - ▶ using initiatives to **strengthen** links between geology, industrial heritage and industrial archaeology;
  - ▶ using Regionally Important Geological Sites for **education** and **interpretation**, especially in urban areas.

**T**he landscape of the upland areas of the North East Region is physically dominated by Devonian and Carboniferous limestones and igneous intrusions. Border Uplands has a diverse geology; the north is formed of Devonian lava flows with

intrusions of basic dykes and granite forming the Cheviot massif, which to the south and east are overlain by Carboniferous sandstones, siltstones and limestones, and dolomites. To the south the Whin Sill, a Late Carboniferous igneous intrusion, forms a prominent east-west



High Force Falls, Upper Teesdale NNR, County Durham. Peter Wakely/English Nature





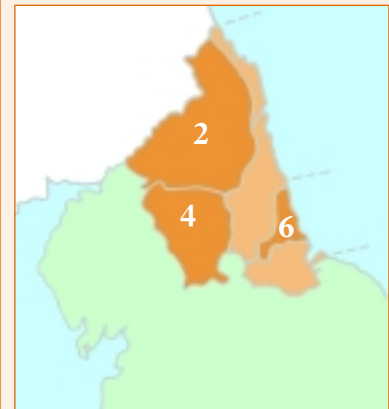
Cove's Haven, Lindisfarne NNR, Northumberland. Peter Wakely/English Nature

escarpment which outcrops in several adjacent Natural Areas. To the south, the North Pennines is formed of Carboniferous limestones (with extensive underground cave systems), grits and shale, and coal seams, with igneous intrusions. In both Natural Areas, igneous intrusions caused mineralisation in the limestone, creating veins of lead, zinc and associated rare minerals which were a traditionally important economic resource, giving these areas a rich mining heritage.

In contrast, the North Northumberland Coastal Plain is a low-lying area dominated by Carboniferous sandstones and limestone with igneous intrusions, including outcrops of the Whin Sill. Much of the bedrock in the lowland areas is concealed by boulder clays. To the south the Northumbria Coal Measures is formed by sandstones, shales and clays with numerous coal seams that were the source of one of

the richest coal mining regions in the country. Along the shore, the low-lying Northumberland Coast is dominated by limestones, sandstones and coal measures with extensive sand dunes and cliffs in places. Much of the geology of the Northumberland Coast and Northumbria Coal Measures has a covering of glacial clays, sands and gravels.

Durham Magnesian Limestone Plateau is dominated by the Permian Magnesian Limestone escarpment overlying sandstones, shales and coal seams, while largely concealed sandstone and mudstone form the Tees Lowlands. Both areas are capped by boulder clay, sands and gravels. The coastline of the Tyne to Tees is characterised by steep Magnesian Limestone cliffs in the north and in the extreme south Lower Jurassic shales, mudstone and limestones outcrop on the foreshore.



## Main Earth heritage features of key Natural Areas

### 2. Border Uplands

- Carboniferous stratigraphy
- Exposures of the Whin Sill and other igneous rocks such as the Cheviot volcanics
- Mineralisation of the Carboniferous rocks

### 4. North Pennines

- Exposures of Carboniferous rocks
- Mineral veins in Carboniferous Limestone and links with mining heritage
- The Whin Sill and its landscape value
- Extensive underground cave systems developed in limestones

### 6. Durham Magnesian Limestone Plateau

- Magnesian Limestone escarpment and associated exposures
- Thick boulder clay cap in valley areas, thinning on escarpment
- Upper Carboniferous coal resource and links with mining heritage

# Freshwater

## Key issues and objectives

*Issue: water quality*

- **Maintain** high water quality by:
  - ▶ **improving** sewage treatment where necessary;
  - ▶ **preventing** contamination from mine water;
  - ▶ **safeguarding** all waterbodies from agricultural and urban runoff, especially mesotrophic lakes and ponds.

*Issue: lack of or inappropriate management*

- **Manage** waterside habitats appropriately by:
  - ▶ **re-establishing** natural waterside habitats;
  - ▶ **reducing** overgrazing of waterside margins in the uplands;
  - ▶ **countering** the impact of drainage and overshadowing by conifer plantations in upland areas.

The most significant freshwater habitats in the North East Region are rivers and streams. These range from the large catchments of the Tweed and the Tyne to the shorter rivers liable to spate, such as the Wansbeck and the Coquet. The River Coquet is one of the best upland rivers in England and supports characteristic plant, invertebrate and bird life, with one of the highest concentrations of dippers

in Britain. The River Tweed and its English tributaries, the Till, Glen and Breamish, is an outstanding example of a sandstone and limestone river and supports features of European interest, such as water-crowfoot beds and otters. River shingles on the Till support populations of rare and scarce beetles, including two BAP species, the ground beetle *Bembidion testaceum* and the diving beetle *Hydroporus rufifrons*.



Crag Lough, Roman Wall Loughs SSSI, Northumberland. Peter Wakely/English Nature

An unusual habitat occurs on the gravel and river terraces of the South Tyne and Allens where metal-rich sediments from the mining industry have settled into the gravel beds and river terraces. The heavy metal (or ‘calaminarian’) flora that has developed here is the most extensive and species-rich area of riverine calaminarian grassland in the UK, and for which The Tyne and Allen River Gravels is a candidate Special Area of Conservation (SAC).

The relatively clean waters of the rivers and streams in the North East Region support good populations of a number of freshwater species, including fish of European importance such as lampreys and bullhead. The white-clawed crayfish exists in some of these rivers, at the northern limit of its range in Britain, and the freshwater pearl mussel survives here at one of its few locations in England. Each of these species are listed for protection under the EU Habitats Directive.

Most bodies of open water in the Region are of artificial origin. The largest are water storage reservoirs, including Kielder, Derwent and other reservoirs in the North Pennines, and some are significant habitats for waterfowl. The majority of water bodies are smaller, where lakes or pools have developed as a result of subsidence, in abandoned quarries, or as part of restoration schemes. Such pools are widespread



River Coquet SSSI, Northumberland  
David Withrington/English Nature

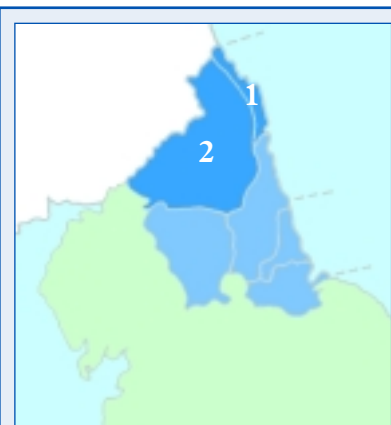
in the lowlands and most are of average nutrient status (mesotrophic). In the North East Region mesotrophic lakes of natural origin are uncommon, but Roman Wall Loughs in Border Uplands are of particular note for they support rich communities of aquatic plants and invertebrates, and breeding and wintering wildfowl. Such mesotrophic lakes are a priority BAP habitat.

#### Candidate Special Areas of Conservation

- Tyne and Allen River Gravels (North Pennines)

#### Special Protection Areas

- Holburn Lake and Moss (Border Uplands)



#### Characteristic habitats of key Natural Areas

##### 1. North Northumberland Coastal Plain

- Rivers and streams, including lower reaches of River Coquet and River Tweed
- Numerous small lakes and ponds, including some *mesotrophic lakes*

##### 2. Border Uplands

- Rivers and streams, e.g. Coquet, Wansbeck
- Some large reservoirs, e.g. Kielder Reservoir, Derwent Reservoir
- Small number of naturally-occurring *mesotrophic lakes*, e.g. Roman Wall Loughs
- Numerous small lakes and ponds

*NB Priority BAP habitats in italics*

# Inland rock

## Key issues and objectives

### *Issue: rock removal*

- Where fragile plant and animal communities exist, **avoid** the removal of stone and scree for footpaths and walls.

### *Issue: recreation*

- **Protect** rock surfaces, rock habitats, their vegetation, and nesting birds where they occur, by:
  - ▶ **avoiding** disturbance through rock climbing;
  - ▶ **considering** the impact on inland rock habitats, especially scree, when designing and routing footpaths and new tracks.

### *Issue: overgrazing*

- Where overgrazing is causing erosion, or loss of rock/ledge plant communities, **reduce** stocking levels.



Scree habitat. Andy Brown/English Nature

**A**cross the North East Region there are a number of rocky outcrops, crevices and screes that support specialised plant communities, which vary with rock type and stability, slope, aspect and shelter. There is also a relatively small limestone pavement at Appleby Fells. Of greatest significance are the screes and rocky ledge communities of the North Pennines uplands.

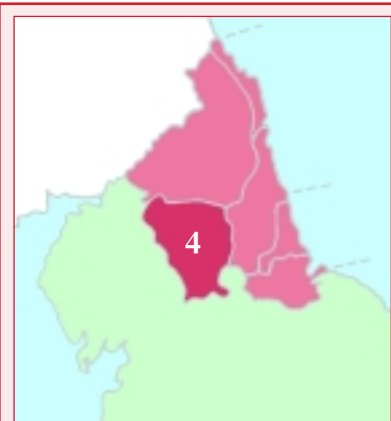
Moor House and Upper Teesdale in the North Pennines have extensive areas of acidic and base-rich screes, which are important for their relatively rich fern flora and act as refugia for a number of rare species. In the Cross Fell area the screes of acidic shales and gritstone support fern communities, characteristically with parsley fern and rare lichens, while the more extensive, base-rich limestone screes in Upper Teesdale and Appleby Fells support a richer flora that includes nationally scarce species such as the rigid buckler-fern

and limestone fern. The crevices and cliffs of the limestone scars of the Pennine escarpment and hill summits also support an important vegetation type, characterised by bryophytes and vascular plants including green spleenwort and brittle bladder-fern. The international importance of Moor House and Upper Teesdale for these scree and crevice vegetation communities is reflected in this site being a candidate Special Area of Conservation (SAC).

Across the Region numerous disused quarries, open-cast mines and associated spoil heaps provide additional rock and rock spoil habitats. The spoil heaps from mining mineral deposits are often rich in heavy metals and only a specialised flora can tolerate such soils. One important example of such a flora also occurs on the alluvium of the River Tyne, which is described in the Freshwater chapter.



Cauldron Snout, Upper Teesdale NNR, County Durham. Peter Wakely/English Nature



### Characteristic habitats of key Natural Areas

#### 4. North Pennines

- Extensive limestone screes
- Extensive acidic screes
- Rock crevice vegetation on Pennine escarpment and hill summits (on limestone)
- *Limestone pavement* at Musgrave Scar and Middle Fell
- Heavy metal-rich spoil heaps and river alluvium supporting a specialised flora

#### Candidate Special Areas of Conservation

- Moor House - Upper Teesdale (North Pennines)
- Tyne and Allen River Gravels (North Pennines)

#### Special Protection Areas

none

*NB Priority BAP habitats in italics*

# Bog, fen and swamp

## Key issues and objectives

### *Issue: loss of habitat*

- **Re-establish** bog, fen and swamp habitat by **restoring** water levels of degraded bogs and fens, e.g. by grip blocking.

### *Issue: inappropriate management*

- **Manage** existing bog, fen and swamp by:
  - ▶ **reducing** stocking levels where overgrazing of blanket bogs is occurring;
  - ▶ **avoiding** burning on 'active' (i.e. still peat-forming) bogs.

### *Issue: water*

- **Enhance** water quality and soil water levels through **control** of agricultural drainage and run-off and extraction from aquifers.
- **Maintain** hydrological integrity of wetlands by **avoiding** policy and planning decisions that interfere with hydrology.

### *Issue: inappropriate development*

- **Discourage** development of windfarms in sensitive upland habitats.

**B**lanket bog and raised bog cover extensive areas of the wetter upland and western areas of the North East Region. Dominated by *Sphagnum* mosses, these bogs and their associated pools are poor in nutrients and support a specialised flora and fauna that can include rare and scarce invertebrates such as grey scalloped bar moth, northern dart moth, pale shining brown moth and great yellow bumblebee, all of which are BAP

species. These bogs are also important for birds including raptors, grouse and waders, and a large area of the North Pennines is a potential Special Protection Area (SPA). Raised bogs and blanket bogs are internationally rare habitats and both Border Mires, Kielder - Butterburn and Moor House - Upper Teesdale, are candidate Special Areas of Conservation (SACs) for their extensive areas of blanket bog.



Coom Rigg Moss NNR, Northumberland. Peter Wakely/English Nature



Great sundew. G J Cambridge/NHPA

Fens are present in several of the Natural Areas of the Region, notably in the lowlands towards the east, where these naturally cover relatively small areas. Of particular note are the fens at Moor House - Upper Teesdale in North Pennines and Newham Fen in the North Northumberland Coastal Plain, which are candidate SACs. Other wetland habitats are present across the Region, such as swamps and reedbeds, and these often occur in association with ponds, lakes or streams. Many of these wet

grasslands are important for breeding waders such as redshank, lapwing, curlew and snipe.

Flushes and springs occur in a wide range of habitats including bogs, fens and wet grasslands, but generally occupy only small areas. Upper Teesdale is one of the few sites in northern England that has an extensive series of hard-water or 'tufa' (petrifying) springs that deposit calcium carbonate, for which Moor House - Upper Teesdale is a candidate SAC.

#### Candidate Special Areas of Conservation

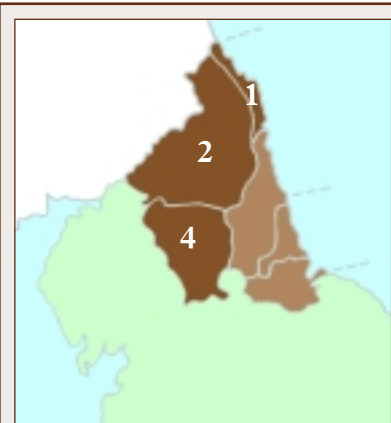
- Border Mires, Kielder - Butterburn (Border Uplands)
- Moor House - Upper Teesdale (North Pennines)
- Newham Fen (North Northumberland Coastal Plain)

#### Special Protection Areas

- Holburn Lake and Moss (Border Uplands)

#### Potential Special Protection Area

- North Pennine Moors (North Pennines; plus South Pennines in Yorkshire and the Humber Region)



#### Characteristic habitats of key Natural Areas

##### 1. North Northumberland Coastal Plain

- Limited areas of *fen* vegetation

##### 2. Border Uplands

- Extensive areas of *blanket bog*, some areas of *raised bog*
- Wide range of bog vegetation communities
- Some areas of wet grasslands and *rush pastures*

##### 4. North Pennines

- Extensive areas of *blanket bog* in uplands
- Wide range of bog vegetation communities
- Acidic and basic springs and flushes common in uplands
- Limited areas of *fen* vegetation
- Wet grassland and *rush pastures*

*NB Priority BAP habitats in italics*

# Woodland

## Key issues and objectives

### *Issue: loss of habitat*

- **Create** new broadleaved woodland:
  - ▶ around **existing** blocks of woodland;
  - ▶ along river corridors and in the upland fringes, especially where this will **link** fragments.
- **Create** new areas of juniper scrub, particularly through extension of existing sites.
- **Re-create** hedgerows, especially where this will **link** fragments.

### *Issue: conversion to plantation*

- To **improve** the conservation value of plantations:
  - ▶ **restructure** upland plantations through design plans;
  - ▶ **restore** native broadleaved trees on ancient woodland sites replanted with conifers.

### *Issue: management*

- To **encourage** management of existing woods:
  - ▶ **use** local woodland products;
  - ▶ **reduce** grazing and use as shelter for stock.

### *Issue: development*

- When planning development:
  - ▶ **avoid** the loss of ancient and semi-natural woodland;
  - ▶ **plant** locally native species as part of landscaping and other works associated with development.

In the North East Region much of the remaining semi-natural broadleaved woodland is concentrated along the major, deep, gorge-like river valleys. Many of these woods are small and are predominantly upland mixed ash woodland or upland oak woodland, often with a rich ground flora. In comparison with the rest of the Region the woods of the North Pennines are particularly rich in ferns, bryophytes and lichens due to the higher humidity, and can include

uncommon species such as hard shield-fern. Small areas of wet woodland, notably of alder, occur along the wetter riversides and along valley bottoms.

Juniper stands occur at scattered localities within the Region, most notably within Border Uplands and North Pennines. Upper Teesdale has one of the largest stands of juniper scrub in Britain, for which Moor House - Upper Teesdale is a candidate Special Area of



Castle Eden Dene NNR, County Durham. Peter Wakely/English Nature





Juniper berries. Peter Wakely/English Nature

Conservation (SAC). The yew woodland at Castle Eden Dene in Durham Magnesian Limestone Plateau is also a candidate SAC.

Large, regular blocks of coniferous plantation woodland are present, including Kielder Forest, the largest planted forest in Europe. Some of these large coniferous and mixed plantations hold populations of birds such as goshawks and these woods are of particular importance for the red squirrel, a priority BAP species. Throughout England the red squirrel has been largely replaced by the introduced grey squirrel, which is still actively colonising from areas to the north and south. The large conifer plantations, and some of the ancient semi-natural woods of the north of England, are the final mainland stronghold in England for red squirrels.

North Pennines is also of note for a wood that supports the northernmost population of the dormouse in the British Isles. A number of the gorge woods of the Region support a wide range of uncommon invertebrates, including the waved carpet moth, argent and sable moth, small pearl-bordered fritillary, the weevil *Procas granulicollis* and the northern wood ant. Each of these species is the subject of Biodiversity Action Plans.



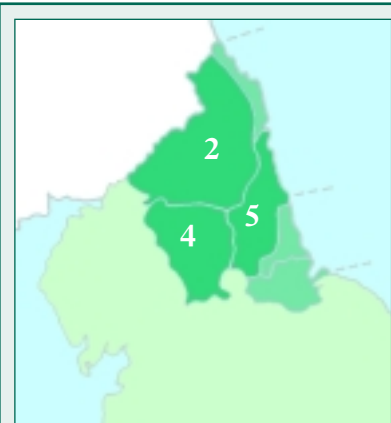
Small pearl-bordered fritillary. Peter Wakely/English Nature

### Candidate Special Areas of Conservation

- Castle Eden Dene (Durham Magnesian Limestone Plateau)
- Moor House - Upper Teesdale (North Pennines)

### Special Protection Areas

none



## Characteristic habitats of key Natural Areas

### 2. Border Uplands

- Extensive conifer plantations
- Few broadleaved woods, mostly *upland oak woodland* and *upland mixed ash woodland* along river valleys
- *Wet woodland* along riversides

### 4. North Pennines

- Mostly plantation woodland
- Some small, natural woods of *upland oak woodland* and *upland mixed ash woodland* along river valleys
- *Wet woodland* of alder along riversides
- Juniper scrub

### 5. Northumbria Coal Measures

- Small areas of *upland oak woodland* and *upland mixed ash woodland* along river valleys
- *Wet woodland* of alder and willow along riversides

*NB Priority BAP habitats in italics*

# Lowland grassland and heath

## Key issues and objectives

*Issue: opportunities for habitat creation*

- **Create or restore** grassland and heaths on farmland, in disused quarries and in opencast mining sites, particularly where this links existing fragments.

*Issue: lack of appropriate management*

- **Promote** appropriate management through:
  - ▶ extensive, low-intensity **grazing** on grasslands and heaths;
  - ▶ controlled **burning, cutting or scrub control** on heaths.

*Issue: pressure for agricultural intensification*

- **Avoid** further agricultural intensification by:
  - ▶ **encouraging** traditional, low-intensity agriculture;
  - ▶ **promoting** agri-environment schemes, where changes in farming practice would benefit wildlife;
  - ▶ **creating** cereal field margins to halt the decline in arable plant species;
  - ▶ **reducing** the use of fertilisers and pesticides.

**D**urham Magnesian Limestone Plateau is of outstanding importance for lowland calcareous grassland, associated with the Magnesian Limestone. Almost two-thirds of all Magnesian Limestone grassland in Britain is found within this Natural Area and the remaining examples are small and highly fragmented. These grasslands include a very rare grassland community, characterised by blue moor-grass and small scabious, which is unique to this Natural Area in a European context. The finest example is at Thrislington NNR, which is a candidate Special Area of Conservation. Some areas of lowland dry acid grassland occur very sparsely on the Magnesian

Limestone. Elsewhere in the North East Region there are some lowland calcareous grasslands associated with the Whin Sill in Border Uplands and North Northumberland Coastal Plain, and Durham Magnesian Limestone Plateau and Northumbria Coal Measures hold small but locally significant examples of species-rich neutral grassland.

The limestone grasslands support a rich flora that includes some nationally scarce plant species such as blue moor-grass and dark-red helleborine. A number of invertebrates typify these grasslands, including the northern brown argus (or 'Durham argus') butterfly, a BAP species which is restricted to northern England.



Rockrose and perennial flax at Thrislington NNR, Durham. Peter Wakely/English Nature



Bishop Middleham Quarry SSSI, County Durham. Peter Wakely/English Nature

The coastal lowlands are intensively farmed, with large, open fields of arable land and some beef cattle and sheep grazing. The margins of cereal fields in the Region support a number of priority BAP species. The lowland farming areas are frequented by brown hares; notable populations of the grey partridge occur in all the inland Natural Areas, and corn buntings frequent lowland farmland on the Durham

Magnesian Limestone Plateau, North Northumberland Coastal Plain and Northumbria Coal Measures.

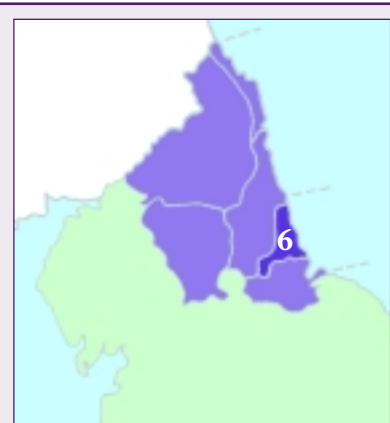
Lowland heathland does not cover extensive areas in the Region, but fragments occur in Northumbria Coal Measures with smaller total areas in North Northumberland Coastal Plain, Border Uplands and Durham Magnesian Limestone Plateau.

#### Candidate Special Areas of Conservation

- Thrislington (Durham Magnesian Limestone Plateau)

#### Special Protection Areas

none



#### Characteristic habitats of key Natural Areas

##### 6. Durham Magnesian Limestone Plateau

- Large areas of improved grassland
- *Lowland calcareous grasslands* on Magnesian Limestone, including a unique grassland type
- Small areas of species-rich neutral grassland
- Small areas of *lowland heathland*

*NB Priority BAP habitats in italics*

# Upland grassland and heath

## Key issues and objectives

### *Issue: habitat fragmentation*

- **Recreate** upland grasslands and heaths, especially where this would **link** existing fragments.

### *Issue: inappropriate management*

- **Control** overgrazing by **reducing** stocking levels.
- **Encourage** sensitive burning regimes (follow the *Heather and Grass Burning Code*).
- **Restore** a variety of traditional management regimes, particularly for hay meadows and pastures.

### *Issue: inappropriate development*

- **Discourage** development of wind farms in sensitive upland habitats.

### *Issue: pressure for agricultural intensification*

- **Avoid** further agricultural intensification by **promoting** the uptake of agri-environment and other environmental support schemes.

**T**here are extensive areas of heather moorland in the uplands of the North East Region. Such upland heathland is characteristic of the Border Uplands and the North Pennines and is mostly dry heath, with some areas of wet heath in western areas. The extensive area of dry heath of Bollilhope, Pikestone, Egglestone and Woodland Fells in the North Pennines is of particularly high quality and is a candidate Special Area of Conservation (SAC). Although often rich in shrubs, heather moorland in the Region has a poor ground flora but supports rich communities of invertebrates (including some uncommon ground beetles) and birds such as red grouse, black grouse, merlin, peregrine and golden plover. Large areas of the North Pennine Moors are a potential Special Protection Area for their populations of breeding birds.

Grasslands in the unenclosed upland areas are predominantly acidic and these are extensive in Border Uplands and North Pennines, with some areas of upland calcareous grassland on limestone outcrops. In the North East Region the enclosed neutral grasslands are of particular note, for they include a large proportion of the UK's upland hay meadows, a rare habitat linked with traditional low-intensity pastoral agriculture in upland areas. These small, fragmented meadows occur in scattered fields or as isolated small groups, predominantly in the north of England, and their rarity is recognised by the inclusion of a large proportion of these meadows in candidate SACs.

The upper summits of Border Uplands and North Pennines are of considerable significance for their montane dwarf-shrub heaths, moss and lichen heaths and grasslands,



Widdybank Fell, Upper Teesdale NNR, County Durham. Andy Brown/English Nature

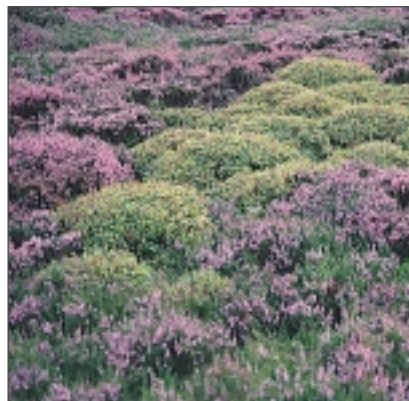


Yellow marsh saxifrage.  
Peter Wakely/English Nature

which are southern outliers of habitats that are more widespread in Scotland. The upland flora of Border Uplands and North Pennines includes a concentration of rare and scarce vascular plants, such as alpine foxtail and alpine meadow-grass, many of which are arctic-alpine species. One upland species of particular note is the yellow marsh saxifrage, which is a BAP species

and is listed for protection under the EU Habitats Directive. Around 80-90% of the UK population of yellow marsh saxifrage grows in Moor House - Upper Teesdale, for which this site is a candidate SAC.

Upland grasslands and heaths also support rare and scarce invertebrates, including the northern dart moth which is a BAP species. The rarest species is the round-mouthed whorl snail found in the upland flushes of Moor House - Upper Teesdale, which is the only site in the UK where this snail is found. This is a priority BAP species and the site is a candidate SAC for this species.



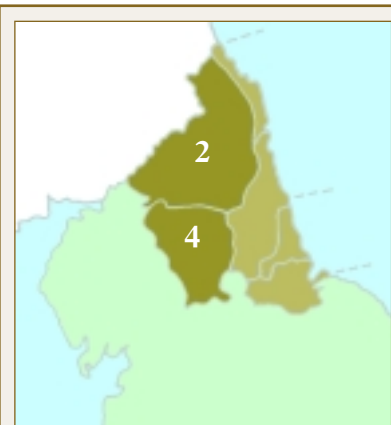
Upland heathland.  
Andy Brown/English Nature

### Candidate Special Areas of Conservation

- Bollilhope, Pikestone, Egglestone and Woodland Fells (North Pennines)
- Moor House - Upper Teesdale (North Pennines)
- North Pennines Dales Meadows (Border Uplands; North Pennines; plus Cumbria Fells and Dales & West Cumbria Coastal Plain in the North West Region)

### Potential Special Protection Areas

- North Pennine Moors (Border Uplands; plus South Pennines in the Yorkshire and the Humber Region)



### Characteristic habitats of key Natural Areas

#### 2. Border Uplands

- Extensive areas of *upland heathland* (heather moorland)
- Large areas of unenclosed acidic grassland
- Some unenclosed *upland calcareous grassland*
- Montane heath and fragments of moss heath on summits

#### 4. North Pennines

- Large areas of dry *upland heathland*
- Extensive acid grasslands
- *Upland calcareous grasslands* on limestone outcrops in Upper Teesdale
- Neutral grasslands including *upland hay meadows*
- Areas of montane heath, acid grasslands, and fragments of moss-heath on summits
- Alpine flush mires with relict mountain flora

*NB Priority BAP habitats in italics*

# Maritime

## Key issues and objectives

*Issue: maintenance of coastal processes*

- **Allow** natural, dynamic coastal processes to operate by:
  - ▶ **avoiding** hard sea defences that would interrupt the natural flow of sediments, except where important settlements and economic concerns are identified;
  - ▶ **avoiding** dredging and sand extraction that would remove sediment from the system.

*Issue: water quality*

- **Maintain** high water quality by:
  - ▶ **reducing** inputs of untreated sewage effluents;
  - ▶ **reducing** contamination from industrial discharges, mine waste and agricultural run-off.

*Issue: recreation and tourism*

- **Avoid** detrimental impacts on key wildlife features by **promoting** recreation and tourism that is environmentally sensitive.

*Issue: species/habitat management*

- **Maintain** and, where appropriate, **increase** populations of key species.
- **Minimise** disturbance to birds and marine mammals from recreation and industrial activities.

The coast of the North East Region has a variety of important maritime habitats. There are several stretches of sea cliffs along the shore, mostly formed of hard rock which extends into the sea to form subtidal rocky reefs, and at several locations the cliffs have weathered to form sea caves, tunnels and arches, both in the intertidal and subtidal. The partly submerged sea caves in the limestone at Howick (south of Craster) and the

submerged sea caves, tunnels and arches in the volcanic rock of the Farne Islands are of international importance, and are a candidate Special Area of Conservation (SAC).

Sand dunes are present at the mouth of the Tees Estuary and there is an extensive series of dunes with associated sandy beaches along the Northumberland Coast. The large areas of embryonic shifting dunes with lyme-grass and fixed dune



Seagrass bed, Lindisfarne, Northumberland. Peter Wakely/English Nature



Bloody crane's-bill. Peter Wakely/English Nature

vegetation with bloody crane's-bill are representative of dunes in the North East Region and the variety of dune slacks supports a number of uncommon species, such as dune helleborine, and a range of important bryophytes including petalwort, a priority BAP species.

Sandflats and mudflats are the predominant intertidal habitat along the coast of the Region. Small areas of saltmarsh occur in several estuaries, with the largest area of saltmarsh occurring at Lindisfarne. Also of note at Lindisfarne are the extensive beds of seagrasses, which are a priority BAP species. There are some areas of rocky shore in the Region, for example at the Farne Islands and St Mary's Island. Subtidally, the coast is dominated by

a mosaic of coarse sand and mixed sediments, with outcrops of limestone, igneous rock or shales. One area of subtidal rock north of Sunderland is of particular interest, for it supports a reef of the polychaete worm *Sabellaria spinulosa*, which is a priority BAP habitat.

The maritime habitats of the Region are also of importance for a number of species. The intertidal sandflats, mudflats and saltmarshes of Lindisfarne have been designated a Special Protection Area for the internationally important populations of wintering birds that they support, and the offshore islands of the Farnes and Coquet are internationally important for their populations of breeding seabirds, including the globally threatened roseate tern. Teesmouth and Cleveland Coast SPA is designated for its wintering waterfowl and breeding little terns. The intertidal flats in the mouth of the Tees Estuary support a small breeding population of common seals and the Farnes Islands support the biggest breeding population of grey seals in England. Both seals are the subject of Biodiversity Action Plans.

#### Candidate Special Areas of Conservation

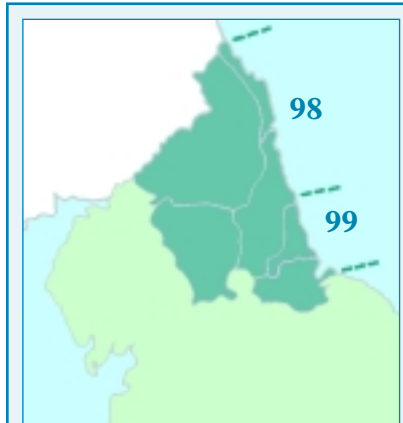
- Berwickshire and North Northumberland Coast (Northumberland Coast)
- North Northumberland Dunes (Northumberland Coast)

#### Special Protection Areas

- Coquet Island (Northumberland Coast)
- Farne Islands (Northumberland Coast)
- Lindisfarne (Northumberland Coast)
- Teesmouth and Cleveland Coast (Tyne to Tees Coast)

#### Potential Special Protection Areas

- Northumbria Coast (Northumberland Coast)



### Characteristic habitats of key Natural Areas

#### 98. Northumberland Coast

- Hard rock *cliffs*, particularly in the north
- Intertidal and subtidal sea caves in a range of hard rock exposures
- Extensive series of *sand dunes*
- Extensive intertidal flats
- Intertidal *seagrass* beds
- Scattered areas of *saltmarsh*
- Extensive intertidal and subtidal *reefs*

#### 99. Tyne to Tees Coast

- Limestone *cliffs* in north
- Tyne, Wear and Tees Estuaries
- Significant areas of intertidal *mudflats* in Tees Estuary
- *Sand dunes* and sandy beaches at mouth of Tees Estuary

*NB Priority BAP habitats in italics*

# Annex 1: Benchmarks for nature

The conservation of nature is a key test of sustainable development. The list below provides a set of questions to be applied as positive indicators for biodiversity and Earth heritage, where relevant strategies, policies, projects and programmes are under consideration. These may include developments such as agricultural improvement or intensification, coastal and flood defence works and water abstraction, as well as built development or infrastructure such as roads, rail and energy.

## Policy links

- Is there compatibility with relevant policies within: any local/regional Biodiversity Action Plan, sustainable development plan, nature

- conservation strategy or priority setting document for nature; any Government Planning Policy Guidance or Regional Planning Guidance; Local Development Plans/Unitary Development Plans/Structure Plans/etc?
- Is there active contribution to the resolution of Natural Area issues and the delivery of UK, Regional and Local Biodiversity Action Plan targets and Natural Area objectives?
- Has there been an appraisal of the environmental impact of policies, plans and programmes within Regional strategic documents? (See: the eight step approach in Department of the Environment, Transport and the Regions Policy Guidance: 'Policy Appraisal and the Environment', DETR 1998)

## Biodiversity and Earth heritage

- Will any areas with local/national/international designation for nature conservation be affected or directly damaged?
- Is there scope for the enhancement of biodiversity through the provision of: opportunities for achieving the targets for priority habitats and species in the context of UK, Regional and Local Biodiversity Action Plans; improved habitat and/or the creation of additional habitat for plants and animals, appropriate to the local character?
- Will any non-designated habitat such as woodland, grassland and other vegetation, linking habitats



Tweed Estuary SSSI, Berwick-upon-Tweed, Northumberland. Peter Wakely/English Nature



such as trees, hedges, grass strips, ditches, that may be destroyed, or fragmented be fully compensated/mitigated for?

- Do any plant and tree planting programmes use an appropriate mix of species native to the Natural Area in question?
- Will any habitat be in danger of abandonment, under management, change or intensification of management? (e.g. Overgrazing, loss of crop rotations and arable-pasture mosaics; shift from spring sown to autumn sown cereals, loss of winter stubbles, application of artificial fertiliser, etc. - leading to impacts on associated farmland species)
- Will any habitat be in danger of a secondary or indirect damage? (e.g. Wetland or aquatic habitats and ecosystems in danger of drying out, loss or degradation as a result of over-abstraction of surface and groundwaters, pollution and eutrophication of surface and groundwaters; development in a flood plain which may require canalisation of watercourses impacting on river valley wetlands and aquatic ecosystems; coastal development that impacts on natural processes; etc.)

- Is there scope for the enhancement of geological interest? (e.g. Through the improvement of geological exposures or features; the creation of additional geological exposures or features, etc.)

### Environmental good practice for nature

- Has an environmental impact assessment been carried out?
- Will post implementation impacts be assessed and managed by regular review and monitoring programmes?

### Community involvement for nature

- Will all sections of the community be consulted as part of the decision making process?
- Have the needs of local communities for access to, and experience of, nature been taken into account?
- Does the project help vulnerable, disadvantaged or excluded groups to gain access to nature and wildspace?
- Will there be a contribution to improving the quality of life by



Thrislington NNR, Northumberland.  
Peter Wakely/English Nature

#### Designated areas

National/International Nature Conservation Designations:

- Sites of Special Scientific Interest (SSSI)
- National Nature Reserves (NNR)
- Special Protection Areas (SPA)
- Special Areas of Conservation (SAC)
- Ramsar Sites

Local Nature Conservation Designations (often non-statutory but recognised in local plans, PPG and other similar documents):

- Sites of Importance for Nature Conservation (SINC - locally other terms may be used)
- Local Nature Reserves (LNR)
- Regionally Important Geological/Geomorphological Sites (RIGS)
- Non-statutory nature reserves

local inhabitants, for example: through improved general access to nature, but in particular on foot or by public transport?

- Will local distinctiveness for nature be valued, and community and cultural identity be strengthened?
- Will community enterprises for nature be encouraged?

(Modified and adapted from a document produced by the Environment & Energy Management Team, Government Office for the South West).

# Annex 2: Sources of information

Each Natural Area has an associated profile which contains the issues and objectives specific to that ecological unit. These have already been passed on to our key partners, including local authorities. The complete set of profiles for England is available from English Nature's local teams on a CD-ROM.

## National overviews of habitats, species and earth heritage

- Brown, A.E., Burn, A.J., Hopkins, J.J. and Way, S.F. (Editors). 1997. The Habitats Directive: selection of Special Areas of Conservation in the UK. *Joint Nature Conservation Committee Report No. 270*. Joint Nature Conservation Committee, Peterborough.
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- Reid, C.M., Kirby, K.J. and Cooke, R.J. 1996. A preliminary assessment of woodland conservation in England by Natural Areas. *English Nature Research Report No. 186*. English Nature, Peterborough.
- Sanderson, N.A. 1998. A review of the extent, conservation interest and management of lowland acid grassland in England. Volume I: Overview. *English Nature Research Report No. 259*. English Nature, Peterborough.
- Sanderson, N.A. 1998. A review of the extent, conservation interest and management of lowland acid grassland in England. Volume II: County Descriptions. *English Nature Research Report No. 259*. English Nature, Peterborough.

All available free from the Enquiry Service, English Nature, Northminster House, Peterborough PE1 1UA Tel. 01733 455101 Fax. 01733 568834.




## Natural Areas CD-ROM.

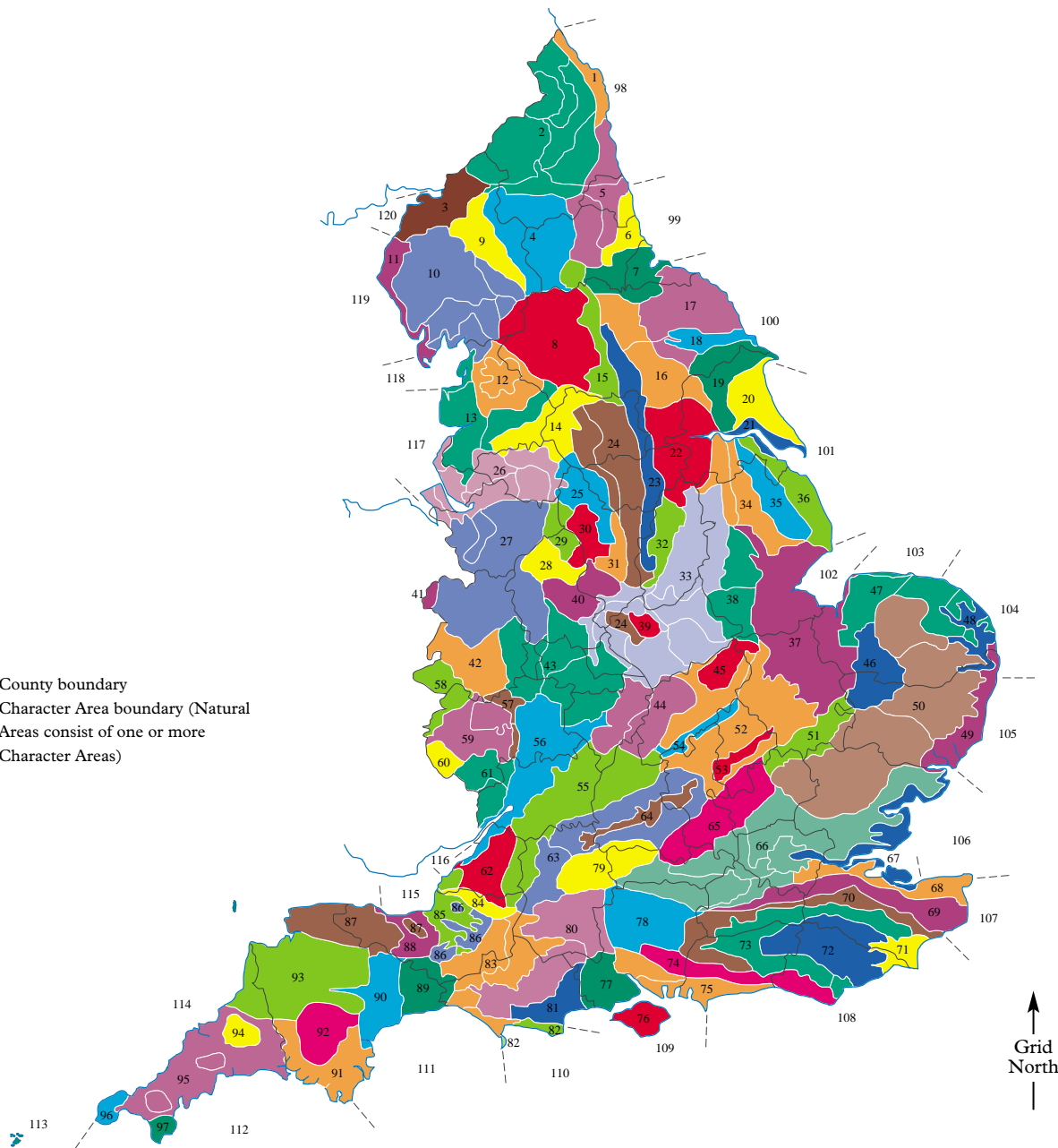
Available, priced £15, from Telelink Ltd., PO Box 100, Fareham, Hampshire PO14 2SX Tel. 01329 331300 Fax. 01329 330034.

## Natural Area Profiles

The individual profiles used in this report are available from the Local Team, address and telephone number shown on the back cover, or can be found on English Nature's web page at [www.english-nature.org.uk](http://www.english-nature.org.uk).

Key

-  County boundary
-  Character Area boundary (Natural)
-  Areas consist of one or more Character Areas



- |                                      |                                                 |                                            |                                             |                                  |
|--------------------------------------|-------------------------------------------------|--------------------------------------------|---------------------------------------------|----------------------------------|
| 1 North Northumberland Coastal Plain | 25 Dark Peak                                    | 49 Suffolk Coast and Heaths                | 73 Low Weald and Pevensey                   | 97 The Lizard                    |
| 2 Border Uplands                     | 26 Urban Mersey Basin                           | 50 East Anglian Plain                      | 74 South Downs                              | 98 Northumberland Coast          |
| 3 Solway Basin                       | 27 Meres and Mosses                             | 51 East Anglian Chalk                      | 75 South Coast Plain and Hampshire Lowlands | 99 Tyne to Tees Coast            |
| 4 North Pennines                     | 28 Potteries and Churnet Valley                 | 52 West Anglian Plain                      | 76 Isle of Wight                            | 100 Saltburn to Bridlington      |
| 5 Northumbria Coal Measures          | 29 South West Peak                              | 53 Bedfordshire Greensand Ridge            | 77 New Forest                               | 101 Bridlington to Skegness      |
| 6 Durham Magnesian Limestone Plateau | 30 White Peak                                   | 54 Yardley/Whittlewood Ridge               | 78 Hampshire Downs                          | 102 The Wash                     |
| 7 Tees Lowlands                      | 31 Derbyshire Peak Fringe and Lower Derwent     | 55 Cotswolds                               | 79 Berkshire and Marlborough Downs          | 103 Old Hunstanton to Sheringham |
| 8 Yorkshire Dales                    | 32 Sherwood                                     | 56 Severn and Avon Vales                   | 80 South Wessex Downs                       | 104 Sheringham to Lowestoft      |
| 9 Eden Valley                        | 33 Trent Valley and Rises                       | 57 Malvern Hills and Temе Valley           | 81 Dorset Heaths                            | 105 Suffolk Coast                |
| 10 Cumbria Fells and Dales           | 34 North Lincolnshire Coversands and Clay Vales | 58 Clun and North West Herefordshire Hills | 82 Isles of Portland and Purbeck            | 106 North Kent Coast             |
| 11 West Cumbria Coastal Plain        | 35 Lincolnshire Wolds                           | 59 Central Herefordshire                   | 83 Wessex Vales                             | 107 East Kent Coast              |
| 12 Forest of Bowland                 | 36 Lincolnshire Coast and Marshes               | 60 Black Mountains and Golden Valley       | 84 Mendip Hills                             | 108 Folkestone to Selsey Bill    |
| 13 Lancashire Plain and Valleys      | 37 The Fens                                     | 61 Dean Plateau and Wye Valley             | 85 Somerset Levels and Moors                | 109 Solent and Poole Bay         |
| 14 Southern Pennines                 | 38 Lincolnshire and Rutland Limestone           | 62 Bristol, Avon Valleys and Ridges        | 86 Mid Somerset Hills                       | 110 South Dorset Coast           |
| 15 Pennine Dales Fringe              | 39 Charnwood                                    | 63 Thames and Avon Vales                   | 87 Exmoor and the Quantocks                 | 111 Lyme Bay                     |
| 16 Vale of York and Mowbray          | 40 Needwood and South Derbyshire Claylands      | 64 Midvale Ridge                           | 88 Vale of Taunton and Quantock Fringes     | 112 Start Point to Land's End    |
| 17 North York Moors and Hills        | 41 Oswestry Uplands                             | 65 Chilterns                               | 89 Blackdowns                               | 113 Isles of Scilly              |
| 18 Vale of Pickering                 | 42 Shropshire Hills                             | 66 London Basin                            | 90 Devon Redlands                           | 114 Land's End to Minehead       |
| 19 Yorkshire Wolds                   | 43 Midlands Plateau                             | 67 Greater Thames Estuary                  | 91 South Devon                              | 115 Bridgwater Bay               |
| 20 Holderness                        | 44 Midland Clay Pastures                        | 68 North Kent Plain                        | 92 Dartmoor                                 | 116 Severn Estuary               |
| 21 Humber Estuary                    | 45 Rockingham Forest                            | 69 North Downs                             | 93 The Culm                                 | 117 Liverpool Bay                |
| 22 Humberhead Levels                 | 46 Breckland                                    | 70 Wealden Greensand                       | 94 Bodmin Moor                              | 118 Morecambe Bay                |
| 23 Southern Magnesian Limestone      | 47 North Norfolk                                | 71 Romney Marshes                          | 95 Cornish Killas and Granites              | 119 Cumbrian Coast               |
| 24 Coal Measures                     | 48 The Broads                                   | 72 High Weald                              | 96 West Penwith                             | 120 Solway Firth                 |

# English Nature in the North East Region

**Northumbria Team**  
(Regional Lead Team)  
Archbold House  
Archbold Terrace  
Newcastle-upon-Tyne  
NE2 1EG

Tel. 0191 281 6316  
Fax. 0191 281 6305

## **Natural Areas for which they lead:**

- 1 North Northumberland Coastal Plain
- 2 Border Uplands
- 4 North Pennines
- 5 Northumbria Coal Measures
- 6 Durham Magnesian Limestone Plateau
- 7 Tees Lowland
- 98 Northumberland Coast
- 99 Tyne to Tees Coast



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